TIPPECANOE COUNTY

HIGHWAY DEPARTMENT

DRIVEWAY PERMIT GUIDELINES AND STANDARDS

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INTRODUCTION

The Tippecanoe County Government mission is to provide responsive, high-quality services that enhance and maintain self-sufficiency, personal safety, economic opportunity, mutual respect and quality of life for present and future generations.

Good access management provides uniform standards and procedures, and promotes their fair and equal application. The quality of site access and the protection of private investments depend on the proper number of driveways, their design, spacing, and location from intersections or traffic control devices. Well designed driveway accesses can greatly contribute to a safe and efficient transportation system, which is highly important to every community's economic base.

The guidelines and standards presented in this manual are intended to promote safe and efficient operation of the county highway road system while accommodating the access needs of adjacent developments. In order for the guidelines and standards to be of maximum value, it is necessary that a wide flexibility be retained in their application. Good engineering judgment should override recommended dimensions or standards if warranted by specific traffic conditions.

Application forms for driveway permits may be obtained from:

Tippecanoe County Highway Engineering Department
20 North 3rd Street
Lafayette, Indiana 47901
Hours are 8:00AM to 4:30PM, Monday through Friday
Phone (765)423-9210
Fax (765)423-9127

Or can be found online at: http://www.tippecanoe.in.gov/highway/ under "Permitting".

SECTION 1: APPLICATION

No private drive or other access way shall be made onto any county highway, without a specific permit being obtained from the County Highway Department for that particular location.

Each driveway permit shall specify the type of use permitted on the driveway for which the permit is granted. A new driveway permit shall be required when a relocation, alteration or remodel of an existing driveway is proposed or any change in character of the use of the existing access. The same guidelines and standards for an entirely new driveway shall apply.

The permit application "Information Sheet" must be filled out in full by the owner or a designated representative. A signed letter of consent from the property owner must accompany the permit application if the application is not submitted by the owner.

All permit applications shall be accompanied by a clear and concise site plan or drawing. The site plan or drawing must include property dimensions; indicate existing facilities and proposed improvements, right-of-way, driveway width, distance from property lines, radii or taper dimensions. The submitted plan shall also include all existing and proposed drainage pipes or facilities, sidewalks and handicap ramps, and traffic control devices as required. A copy of the maintenance of traffic plan shall accompany the application and drawing if required by the Highway Department.

A $500,000 general liability certificate of insurance with the holder being the Tippecanoe County Board of Commissioners must be on file with the Highway Department for the contractor listed on the driveway permit application.

A minimum three year, $5,000.00 construction maintenance bond is required for all commercial, subdivision, and rural estate entrances. Amounts exceeding these minimums may be requested by the Highway Department based on individual project requirements.

If the proposed driveway is located within an easement a copy of the easement should be attached with the permit application. No copy is required for easements already on file with the Highway Department.

Temporary driveway permits will be considered on a case-by-case basis. The application should clearly state the need for the temporary access and designate an expiration time frame tied to a specific date or event. Standard driveway criteria and guidelines apply.

SECTION 2: TYPES OF DRIVEWAY PERMITS

Driveway permits have been separated into seven types, which are Residential, Commercial, Minor Subdivision, Major Subdivision or Rural Estate, Parcelization, Farm Field Entrance and Existing Drive to reference the driveway permit application to appropriate policies, procedures and standards. Each type is defined and discussed in detail as follows:

RESIDENTIAL DRIVEWAY PERMIT: This type of access connects the county road to private property having a residence, garage or barn, in improved or unimproved conditions, used by the owner or occupant of the premises.

COMMERCIAL DRIVEWAY PERMIT: This type of access connects the county road to private property used for commercial purposes or to public property. This type of driveway may require tapers or an auxiliary lane(s) as determined by County Highway.

MINOR SUBDIVISION DRIVEWAY PERMIT: This type of access connects the county road to a minor subdivision, with the driveway access serving more than one lot. This driveway typically does not require tapers or an auxiliary lane(s) as determined by County Highway.

MAJOR SUBDIVISION or RURAL ESTATE DRIVEWAY PERMIT: This type of access connects the county road to a major subdivision (includes planned developments) or rural estate, with the driveway access serving more than one lot by the construction or extension of a public or private road. An individual permit is required for each access to a county road if the subdivision or rural estate is approved with more than one access. This driveway requires tapers and may require an auxiliary lane(s) as determined by County Highway.

PARCELIZATION DRIVEWAY PERMIT: This type of access connects the county road to a parcelization, with the driveway access serving more than one parcel. This driveway typically does not require tapers or an auxiliary lane(s) as determined by County Highway.

FARM FIELD DRIVEWAY PERMIT: This type of access connects the county road to an area used for agricultural operation, that is vacant or in an unimproved condition.

EXISTING DRIVEWAY PERMIT: This type of access connects the county road to private property by the means of an existing driveway, existing common driveway, or existing private road.

SECTION 3: GENERAL SPECIFICATIONS AND REQUIREMENTS

RESIDENTIAL DRIVEWAY PERMIT:
Radius (or Tapers): 5' minimum on county roads with raised curb
10' minimum on county roads without raised curb
Width: 12' minimum - 24' maximum
Number of Drives: One drive per lot, tract or parcel

COMMERCIAL DRIVEWAY PERMIT:
Radius: 20' minimum on all county roads
Width: 20' minimum - 40' maximum
Number of Drives: One drive or divided entrance per lot, tract or parcel
Two entrances may be permitted under certain conditions.
Driveway shall be hard surface within County right-of-way when accessing a hard surface county road. Tapers or auxiliary lanes may be required. No application for access to a county road will be approved until a complete site plan showing proposed land uses, improvements, layouts of parking spaces and internal traffic patterns is submitted to County Highway and approved.

MINOR SUBDIVISION DRIVEWAY PERMIT:
Access for 2 Lots:
Radius: 10' minimum for both ingress and egress radius
Width: 12' minimum – 24' maximum
Access for 3 - 4 Lots:
Radius: 25' minimum ingress and 15' minimum egress radius
Width: 20' minimum
Number of Drives: Typically one drive per subdivision

MAJOR SUBDIVISION or RURAL ESTATE DRIVEWAY PERMIT:
Specifications and requirements for major subdivision or rural estate access are based on criteria found in the Unified Subdivision Ordinance and the latest Tippecanoe County Highway Construction Guidelines and Details. No application for access to a county road(s) will be approved until a complete set of signed construction plans are on file with County Highway.

PARCELIZATION DRIVEWAY PERMIT:
Access for 2 Parcels:
Radius: 10' minimum for both ingress and egress radius
Width: 12' minimum – 24' maximum
Access for 3 - 4 Parcels:
Radius: 25' minimum ingress and 15' minimum egress radius
Width: 20' minimum
Access for 5 or More Parcels:
Driveway shall be hard surface within County right-of-way
Radius: 25' minimum for both ingress and egress radius
Tapers: 12' x 50' taper for both ingress and egress
Width: 20' minimum
Number of Drives: Typically one drive per parcelization

FARM FIELD DRIVEWAY PERMIT:
Radius: 20' minimum, 30' recommended
Width: 20' minimum - 25' maximum
Number of Drives: One drive per property, tract or parcel

EXISTING DRIVEWAY PERMIT:
The existing driveway, existing common driveway or existing private road access must meet the standards and requirements for the intended use of the proposed development(s) as described is this manual.

General Requirements:

(A). It is the policy of the Tippecanoe County Board of Commissioners and Highway Department to encourage and when applicable, require driveways between adjacent lots, parcels or tracts to be shared, located along the common line or to have an internal drive provided a written agreement or required easement(s) between the property owners are properly documented or recorded.

(B). The location of driveways shall be such that no part of the radius, or taper, shall extend beyond the extension of the adjacent property line, unless a written encroachment agreement is obtained from the adjacent property owner. This does not apply to auxiliary lanes. A minimum distance of five feet between the driveway and the property line shall be maintained.

(C). Driveways should not be located within the functional boundary of an intersection. This boundary would include the longitudinal limits of the intersection approach lanes and should be larger than the physical boundary of the intersection.

(D). Multiple entrances may be permitted when circumstances warrant, based on anticipated traffic generation, road classification, average daily traffic volumes, speed limits, total feet of frontage controlled, and other applicable engineering considerations. The number of driveways shall be a minimum to safely and adequately serve the needs of the development while ensuring safe and efficient roadway traffic flow.

(E). A divided (boulevard) entrance may be required for major traffic generators. County Highway reserves the right to require or deny a divided entrance, based on traffic generation for the proposed use and the effect on the traffic carrying capacity of the adjacent highway. The entrance and exit drives shall be operated in a one-way pattern. The length of the median or barrier curb should extend a sufficient length internally to preclude conflicts within the development which could cause traffic stacking on the roadway. The nose of the island shall be set back a minimum of 6 feet from the edge of the existing pavement or curb line. Islands shall have a minimum width of 4 feet.

(F). All required hard surface driveway approaches shall be constructed to meet the Tippecanoe County Highway Construction Guidelines and Details within the right-of-way.

(G). The angle of intersection should be 90 degrees from the tangent centerline of the driveway approach at the intersection of the centerlines. Variations of plus or minus 30 degrees may be allowed if field conditions make 90 degrees impracticable.

(H). Driveways requiring cross-pipes or culverts to ensure proper drainage of the roadway that are installed parallel to the traveled way shall be of sufficient length to create a 1:6, or flatter, traversable slope on each side of the proposed driveway.

(I). If it is proposed to construct any portion of a driveway approach on a slope or grade greater than 15%, the grade or slope shall be designated on the application and drawing or site plan. If no grade is shown the driveway shall be constructed with less than 15% slope.

(J). Approved entrances for use by tractor-trailer combinations shall use the AASHTO WB 50 wheel path templates for geometric design.

(K). Auxiliary lanes may be required for any or all of the following reasons:
1. Existing traffic volumes
2. Projected traffic volumes
3. Accident experience
4. Anticipated trip generation
5. Existing traffic pattern
6. Number of existing lanes
7. Sight distance
8. Existing speed limit
9. Other specific traffic or site conditions

(L). Traffic control devices shall be placed or installed when warranted. All devices shall be installed in accordance with the current MUTCD and Tippecanoe County Highway Construction Guidelines and Details.

SECTION 4: GENERAL DESIGN CRITERIA

Driveway Spacing Requirements

Driveways are, and should be treated as intersections. Driveways should not be located within the functional area of an intersection or the influence area of an adjacent driveway. Maintaining an adequate spacing between driveways is one of the most critical aspects of access management. Traffic turning into and out of driveways moves more slowly than through traffic thus producing conflicts that may lead to collisions between vehicles. The following table presents the clear distance spacing between the near edges of the driveway throats.

County Road Functional Classification	Minimum Spacing between Driveways (feet)	Number of Driveways per Mile
Arterials	600	9
Collectors	300	18
Local Roads	75	70

The functional classification of a roadway (collector, arterial or local) can be found in the Tippecanoe County Thoroughfare Plan published by the Tippecanoe County Area Plan Department. The minimum spacing is related to the operational characteristics of the roadway and interactions between adjacent driveways. Such interactions to consider when determining access spacing include conflicts between vehicles entering the roadway simultaneously from adjacent driveways and blocking of the adjacent driveways by left-turn queues.

Property Line Clearance Requirements

The recommended property line clearance shown in the table below should serve as a guideline if minimum driveway separation distances cannot be implemented directly. The clearance distance shall be measured from the near edge of the driveway throat to the property line.

County Road Functional Classification	Minimum Property Line Clearance (feet)
Arterials	100
Collectors	75
Local Roads	50

Corridor / Intersection Protection Guidelines

To ensure safety standards and reduce congestion, when a full access that will serve a proposed development directly connects to a major roadway (functional classification of collector or arterial as found in the Tippecanoe County Thoroughfare Plan) it is recommended the driveway access be located no less than 1,000 feet from the nearest intersection with another collector or arterial. Accesses limited to right turns into and out of the proposed development may be permitted within 1,000 feet when deemed appropriate by County Highway.

Corner Clearance Requirements
Corner clearance represents the distance between the physical corner of the intersection of two public roadways and the near edge of the throat of the next private driveway. It is important to provide enough distance between the corner and the first driveway to effectively separate conflict points and allow drivers enough time to make safe maneuvers. This distance is determined by the functional area of the intersection, both upstream and downstream of the physical intersection area and should include perception-reaction distance, deceleration and maneuver distance, and the queue-storage distance. The minimum corner clearances listed in the following table do not take into consideration auxiliary lanes and related maneuvering distance or queue-storage; these shall be determined as part of the driveway design and added to the minimum corner clearance distances listed.

County Road Functional Classification	Minimum Corner Clearance (feet)
Arterials	250
Collectors	150
Local Roads	75

Corridor / Intersection Protection Guidelines of 1000' should be considered for developments located on collectors or arterials. On residential, subdivision type streets, corner lot driveways should be located on the lesser street and near the property line most distant from the intersection.

Sight Distance Requirements
Driveway access permits shall not be issued that include design elements or allow any turning movements where the sight distance is inadequate for safe movement of any motorist using the access or roadway. Preparation for issuing a driveway permit must include a prior inspection of the driveway site to ensure sight distance is adequate for vehicles entering and exiting the proposed location. All sight distance measurements are based on a 3.5 ft. eye height and a 3.5 ft. object height. Because the only typical roadway change is an additional entrance to the roadway and a vehicle is the expected object using the driveway and the existing route, the 3.5 ft. object height is used. The line of sight must stay within the limits of the right-of-way. The following table lists the minimum sight distance requirements.

Posted Speed (mph)	Minimum Sight Distance Requirements (feet)
25	155
30	200
35	250
40	305
45	360
50	425
55	495

When a roadway is on a grade the sight distance will be modified as determined by criteria found in the AASHTO Green Book (latest edition).

Tapers
To improve the ingress and egress turning movement characteristics of a proposed development approach, tapers which connect the radii returns to the mainline pavement are required if the roadway average daily traffic is greater than 4000 vehicles per day or if the development full build-out projected average daily traffic is greater than 40 vehicles per day. Tapers shall be a minimum of 12' x 50' for both the ingress and egress.

Deceleration Lane Criteria
A deceleration lane for right turning vehicles may be required if any of the following criteria below are met or exceeded after full build-out.

- At least 5,000 vehicles per day are using, or projected to be using at end of full build-out, the adjacent roadway.
- The posted speed limit is or exceeds 50 mph or the 85th percentile speed limit is greater than 50 mph.
- At least 1,000 vehicles (total entering and exiting) per day will be using the driveway at end of full build-out.
- At least 40 vehicles are expected to make right turns into the driveway for a one-hour period at end of full build-out.
- Engineering judgment indicates the installation of a right turn lane would improve the safety and operation of the driveway and roadway.

A straight line taper of 100' shall be used at the beginning of the deceleration lane. The length of deceleration and the storage length of the lane shall be designed based on criteria found in the AASHTO Green Book (latest edition) and provided as part of the development design plan. A straight line egress taper of 100' shall be installed if a deceleration lane is required.

Left Turn Lane Criteria
A left turn lane may be required to a driveway approach that will allow the turning vehicles to decelerate and to enter the driveway safely and without creating unnecessary congestion to the roadway through traffic if volumes shown in the following table are met or exceeded after full build-out.

Opposing Volume (veh/h)	Advancing Volume (veh/h)			
	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
800	220	160	120	100
600	280	200	160	140
400	360	260	200	180
200	440	320	250	220
100	500	360	280	240

The installation of a left turn lane may also be required based on engineering judgment that indicates it would improve the safety and operation of the driveway and roadway. The length of taper, deceleration and the storage of the lane shall be designed based on criteria found in the AASHTO Green Book and the MUTCD (latest editions) and provided as part of the development design plan.

Passing Lane (Blister) Criteria
If the proposed development driveway access does not meet the criteria for a left turn lane a passing blister may be considered when any of the following criteria are met or exceeded after full build-out of the development.

- There will be 12 or more vehicles turning left into the driveway during the design or peak hour and the opposing volume exceeds 250 for the same hour.
- There will be 20 or more vehicles turning left into the driveway during the design or peak hour.
- The roadway average daily traffic will be 4,000 or greater.
- Engineering judgment indicates the installation of a passing lane would improve the safety and operation of the driveway and roadway

On roadways with a posted speed of 45 mph or less the passing lane shall have a 200' straight line approach taper, a 12' x 200' lane length (with 50' of the lane extending past the far edge of the proposed drive) and a 200' straight line recovery taper.

On roadways with a posted speed of 50 mph or more the passing lane shall have a 300' straight line approach taper, a 12' x 250' lane length (with 50' of the lane extending past the far edge of the proposed drive) and a 300' straight line recovery taper.

Drainage
Each access shall be constructed in a manner that shall not cause water to enter onto the roadway, and shall not interfere with the drainage system on the right-of-way.

The applicant shall provide, at their own expense, drainage structures for the access which will become an integral part of the existing drainage system. The type, design and condition of these structures must meet the approval by County Highway.

Drainage structures shall not restrict the existing drainage system nor any adopted municipal drainage plan. Minimum cross pipe or culvert size is 12" and shall be constructed of RCP or CMP. Pipes shall not be smaller than structures upstream from their locations.

The highway drainage system is for the protection of the highway right-of-way. It is not designed or intended to serve the drainage requirements of abutting properties beyond that which has historically flowed to the right-of-way. Drainage to the right-of-way shall not exceed the undeveloped historical flow and absolutely no detention is allowed on County Highway right-of-way. Any and all proposed deviations to the requirements above must have County Highway approval prior to making application for driveway access.

Curb
A proposed driveway access on roadways with non-mountable curbs shall match the curb design in the driveway. Existing non-mountable curb, or curb and gutter, shall be completely removed as needed for proper driveway installation and the gutter flow-line, or drainage, maintained through the driveway. A curb detail shall be submitted as part of the driveway application. Mountable curb, or curb and gutter, shall only be removed with prior written approval from the County Highway Department.

If the there is no existing curb on the roadway and curbing is proposed in the development the curb shall terminate 2' from the edge of roadway, tapering from the height of top of curb to 0" in 10'.

Traffic Studies
A traffic study or impact analysis, when requested, will follow guidelines for submission of information according to Indiana Department of Transportation standards.

Preliminary warrants for Traffic Impact Studies include.

- A residential development consisting of 150 dwelling units or more.
- A retail development of 15,000 square feet or more.
- Office development of 35,000 square feet or 3 acres.
- Industrial development of 70,000 square feet or 9 acres.
- Educational development of 30,000 or 250 students.
- Lodging development of 120 occupied rooms
- Medical development of 46,000 square feet.
- Special traffic generators with high trip generation rates.
- Mixed use that produces more than 50 street peak period major direction vehicle trips.

County Highway will determine if a study is warranted based on these preliminary warrants and based on experience and engineering judgment.

Maintenance
The owner, his or her heirs, successors-in-interest, and assigns, of the property serviced by the access shall be responsible for meeting the terms and conditions of the permit as issued by County Highway. The owner, his or her heirs, successors-in-interest, and assigns, of the property serviced by the access shall also be responsible for the maintenance of the entire driveway including but not limited to drainage, cross pipe or culvert, and for any needed removal or clearance of snow or ice upon the access even though deposited on the access in the course of snow removal operations of County Highway.

SECTION 5: DEFINITION OF TERMS

Access: A location which allows vehicular and/or pedestrian traffic to cross the county highway right-of-way line and is positioned at the connection of a driveway with the approach at the right-of-way line.

Applicant: A person, partnership, company, corporation, association, or agency making application for a permit to construct a driveway.

Application: A formal prepared request for a permit which is presented by an applicant on an approved form to County Highway seeking permission to construct a driveway.

Approach: A directional portion of roadway or driveway near or at the intersection of a roadway or driveway.

AASHTO: American Association of State Highway Transportation Officials

Auxiliary Lane: A portion of the roadway adjoining the main traveled way for parking, speed change, turning, storage for turning, weaving, truck climbing or for other purposes.

Average Daily Traffic (ADT): The total traffic volume during a given time period (in whole days), greater than one day and less than one year, divided by number of days in that time period.

Conflict: A traffic event that causes evasive action by a driver to avoid collision with another vehicle.

Conflict Point (Conflict Area): An area where intersecting traffic either merges, diverges, or crosses.

Curb (Raised Curb): A barrier of concrete, brick, asphalt or other hard material at the edge of the traveled way that is higher than the road surface.

Deceleration Lane: A speed-change lane, including taper and storage, for the purpose of enabling a vehicle to leave the through traffic lane at a speed equal to or slightly less than the speed of traffic in the through lane and to decelerate to a stop or to execute a low speed turn.

Design Hour Volume (DHV): The traffic volume for the design hour in the peak direction of flow, usually a forecast of the relevant peak hour volume, in vehicles per hour (VPH).

Driveway: A way or place not on the department right-of-way which is used for vehicles that are constructed to connect to the edge of the traveled way.

Driveway Radius (Return): A circular pavement transition between the driveway and the highway for facilitating turning movements.

Driveway Taper (Flare): A triangular pavement surface that transitions the driveway and the highway pavement for facilitating turning movements.

Driveway Width: The narrowest width of driveway measured perpendicular to the centerline of the driveway within the right-of-way.

Egress: The exit of vehicular traffic from abutting properties to the highway.

Grade: The rate or percentage of change in slope, either ascending or descending, from or along the highway. It is to be measured along the centerline of the roadway or access.

Highway: A roadway under the jurisdiction of the Tippecanoe County.

Ingress: The entrance of vehicular traffic to the abutting properties from a highway.

Permit: A document in which County Highway gives written permission to an applicant to construct a driveway.

Right-of-way: Land under the jurisdiction of and whose use is controlled by Tippecanoe County for the purpose of constructing and maintaining highways.

Roadway: An area improved for vehicular traffic to county standards on county right-of-way.

Shall: As being mandatory by County Highway standards.

Should: As being desirable or recommended by County Highway standards.

Sight Distance: The distance visible to the driver of a passenger vehicle measured along the normal travel path of a roadway, or within the right-of-way, to a specific height above the roadway when the view is unobstructed to traffic.

Storage Length: Additional lane footage added to a lane to store the maximum number of vehicles likely to accumulate during a peak period so as not to interfere with the through travel lanes.

Traffic: Vehicles, pedestrians and other conveyances either singly or together while using any highway for the purpose of travel.

Traffic Control: Devices used to direct traffic in a safe and orderly use of the highway, including but not limited to signs, signals and pavement markings.

Traveled Way: The portion of the roadway used for the movement of traffic, excluding shoulders and auxiliary lanes.

Turning Radius: The radius of an arc which approximates the turning path of a vehicle.

The above **Highway Department Driveway Permit Gudelines and Standards** approved and accepted on behalf of the Board of Commissioners of the County of Tippecanoe in the State of Indiana, on this 7th day of November, 2011.

Absent
David S. Byers, President

Thomas P. Murtaugh, Vice President

John L. Knochel, Member

Constituting the Board of Commissioners of the County of Tippecanoe, in the State of Indiana.

Attest: Jennifer Weston
Jennifer Weston, Auditor