

APPENDIX "T"

TRANSPORTATION MANAGEMENT REGULATIONS

Section 100

Intent

To promote effective multi-modal transportation including safe and reasonable access between public roadways and adjacent land, transit service, bicycle, and pedestrian travel. These regulations aim to improve the convenience and ease of movement of travelers on public roads and provide for the reasonable speeds and economy of travel while maintaining the capacity of the roadway. The location and design of transportation facilities shall be in accordance with the following regulations. These regulations shall apply to all existing, planned or proposed transportation facilities within unincorporated Campbell County and the cities of Crestview, Melbourne, Silver Grove, Southgate, Woodlawn, and any city once it becomes a member of the joint planning unit. These regulations shall also provide the basis for further detailing of acceptable street access for specific areas within the County, through special corridor/district studies conducted by the Planning Commission.

Section 105

Provision For Bicycle Facilities

The Campbell County & Municipal Planning & Zoning Commission and Kentucky Transportation Cabinet may provide for or require bike lanes, routes, or paths. Bicycle facilities are currently planned for Campbell County in the current Campbell County Transportation Plan, the OKI Regional Bicycle Plan and specific corridor plans.

All bicycle facilities must be accompanied by appropriate pavement markings and signage and designed according to the AASHTO Guide for the Development of Bicycle Facilities. These multimodal facilities must be incorporated into the design of circulation patterns of sites and in the location of access points. Such facilities shall be considered in the design of public streets by both developers and the applicable public works agency and reviewed in accordance with local and regional bicycle plans.

Section 108

Provision For Pedestrian Network

Sidewalk connections to adjacent developments and/or public rights-of-way shall be provided along public roads. New developments or re-developments of existing sites shall provide sidewalks along public roads. Where adequate right-of-way does not exist, right-of-way or public sidewalk easements shall be granted. Provisions shall be consistent with local pedestrian and multi-use trail plans.

The width of the sidewalks shall be in conformance with the requirements of the Campbell County Subdivision Regulations. At intersections and pedestrian crosswalks, wheelchair ramps shall be installed.

Section 110

Functional Roadway Classification

Roadways in Campbell County are grouped into categories based upon their function or use to insure that each roadway can operate at an acceptable level-of-service. Figure 2-16 Functional Classification of the 2008 Campbell County Comprehensive Plan refers to existing functional classifications for analysis purposes; however, the lists in this Appendix take into account the

future needs of each roadway based on projected growth and other impacts described in the Transportation Plan, as well as the Campbell County Comprehensive Plan. The lists in this article are anticipated to grow in the future, especially with the future construction of Controlled Access Collectors that are conceptually described in the Transportation Plan. The classifications of roadways in Campbell County are as follows:

Freeway/Urban Interstates – A multi-lane divided highway having a minimum of two lanes in each direction for exclusive use of through traffic. Access is fully controlled, with full grade separation at interchanges.

Freeway/Urban Interstates:

I-471

I-275

Expressways – A divided arterial highway that serves through-traffic. Access is partially controlled, with full or partial grade separations at major intersections.

Expressway Roadways:

None

Arterial – High volume roadways that serve primarily through-traffic at relatively high speeds. The provision of direct access to abutting land is subordinate to providing service to through traffic as facilitated through the following conditions:

1. Direct private access to arterial roadways shall be permitted only when the property in question has no other reasonable access to the public roadway network;
2. The design and location of allowable private access points must comply with all applicable sections of this regulation;
3. Direct private access points to arterial roadways may be designated as "temporary" and all requirements of Section 125 shall apply.

The Comprehensive Plan breaks this classification of roadway into three categories:

Principal Arterial – Urban, Minor Arterial - Urban and Minor Arterial - Rural.

Principal Arterial – Urban examples:

US 27

AA Highway/ State Route 9

Minor Arterial – Urban examples:

State Route 8

Minor Arterial – Rural example:

Four Mile/Gresskamp Road

Collector – Streets having the dual function of providing land access and traffic circulation service within residential, commercial, and industrial areas. Collector streets provide the connecting link between local streets and the arterial network. The Comprehensive Plan identifies these roadways as Collector – Urban.

Collector Roadway examples:

Mooch Road

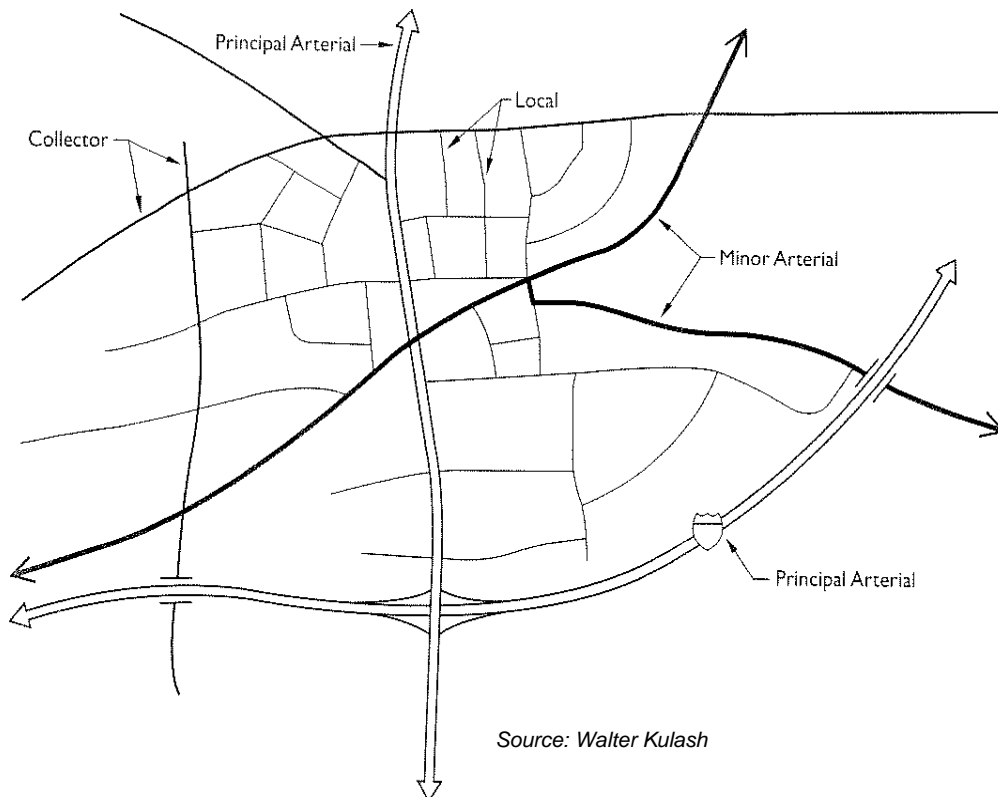
Poole's Creek Road

Sub-Collector and Local – Streets that provide the greatest degree of access to abutting property. A sub-collector, while serving access to adjacent parcels, must facilitate traffic movement within a development. Service of through traffic on local streets is clearly subordinate and even discouraged by low posted speeds, street design, and signing or signalization which causes frequent stops. The Comprehensive Plan identifies these roadways as Rural Minor Collector.

Sub-Collector Roadway example:

Oneonta Road

Illustration of Functional Roadway Classification



Section 113

Reclassification of Roadways and Assignment of New Roadways

The access classification of an existing or proposed roadway, through action of the Planning Commission, may be reviewed based upon a consideration of existing and projected traffic volumes, newly adopted transportation plans, changes in the existing and/or proposed character of lands adjoining the roadway, amended land use plans and zoning (including Special District/Corridor Studies) and the availability of reasonable access to affected lands. If through its review, the Planning Commission finds reasonable cause it may recommend to the appropriate legislative unit(s) a modification, change, or assignment of a new access classification to an existing or proposed roadway within Campbell County.

The Planning Commission may also recommend to the appropriate legislative body a change in the access classification of a roadway as part of a request for a zoning map amendment, when determined that the requested zone change, if approved, would significantly change the transportation function of the roadway.

Section 115

Minimum Spacing of Driveways

In order to minimize the potential for accidents and delay to through vehicles, all adjacent driveways onto public roadways must be separated by the minimum distance shown in Table 1. These minimum spacing requirements may be adjusted slightly to better accommodate minimum sight distance requirements if determined by the Administrative Official that such adjustment is necessary to preserve the intent of these regulations.

TABLE 1

Minimum Spacing of Adjacent Driveways

Collector Roadways:	Arterial Roadways
<40 M.P.H. = 185'	=275'
≥40 M.P.H. = 230'	

Section 116

Minimum Corner Clearance of Driveways from Intersection Streets

The locations of driveways adjacent to intersecting streets shall conform to the minimum corner clearances provided in Table 2.

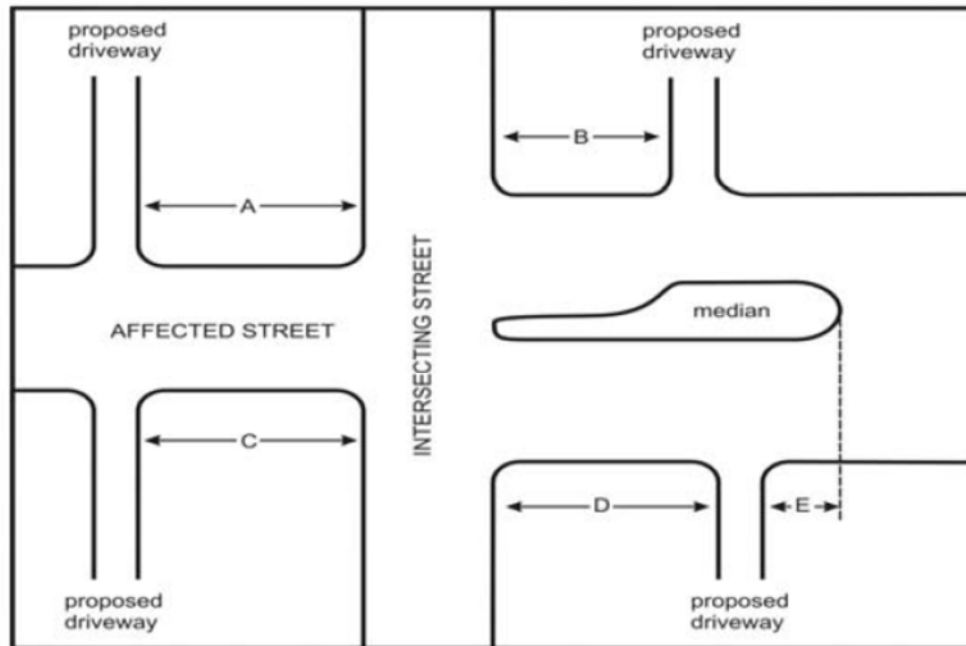
TABLE 2
Minimum Corner Clearances of Driveways from Intersecting Streets

SIGNALIZED INTERSECTION:

Item	Arterial	Collector	Commercial or Industrial Sub-Collector, Con trolled Access Collectors	Other
A	230'	175'	125'	50'
B	115'	85'	100'	50'
C	230'	175'	125'	50'
D	230'	175'	125'	50'
E	75'	0'	0'	0'

NON-SIGNALIZED INTERSECTION:

Item	Arterial	Collector	Commercial or Industrial Sub-Collector, Con trolled Access Collectors	Other
A	115'	75'	75'	50'
B	115'	85'	85'	50'
C	85'	85'	85'	50'
D	115'	75'	75'	50'
E	75'	0'	0'	0'



- Rotate 90 degrees for access controls on intersecting street.
- Measurements are edge of pavement to edge of pavement.

Section 117

Minimum Sight Distances

All driveways and intersecting roadways shall be designed and located so that the minimum sign distances as shown in Table 3 and 4 are provided. The required sight distance must be unobstructed by horizontal and vertical road curves, embankments, structures, or vegetation. Utilities must also be taken into consideration. These distances shall be applied as demonstrated by Figure 1.

TABLE 3

Minimum Sight Distance for Vehicle Entering T'Fare From Proposed Access

Posted Speed Limit	25 MPH	35 MPH	45 MPH	55 MPH
Automobile Dominated*	257 Ft.	360 Ft.	462 Ft.	565 Ft.
Substantial Truck Usage of Proposed Access as Determined by Administrative Official**	514 Ft.	720 Ft.	924 Ft.	1,130 Ft.

*Distance based on six seconds standard of the Kentucky Transportation Cabinet Plus one second of Driver Reaction time. Right and left may be different based on different posted speed limits in each direction.

**Distance based on the average truck having effectively one-half the acceleration of a typical passenger vehicle.

TABLE 4

Minimum Stopping Distance and Opposing Left Turn Sight Distance
For Vehicle on T'Fare Approaching Proposed Access Point – Both Directions

Posted Speed Limit	25 MPH	35 MPH	45 MPH	55 MPH
Automobile	155 Ft.	250 Ft.	350Ft.	495 Ft.
Trucks Forecasted over 5% on Affected Roadway*	235 Ft.	375 Ft.	540 Ft.	745 Ft.

Source: New Jersey Department of Transportation Roadway Design Manual, 2003.

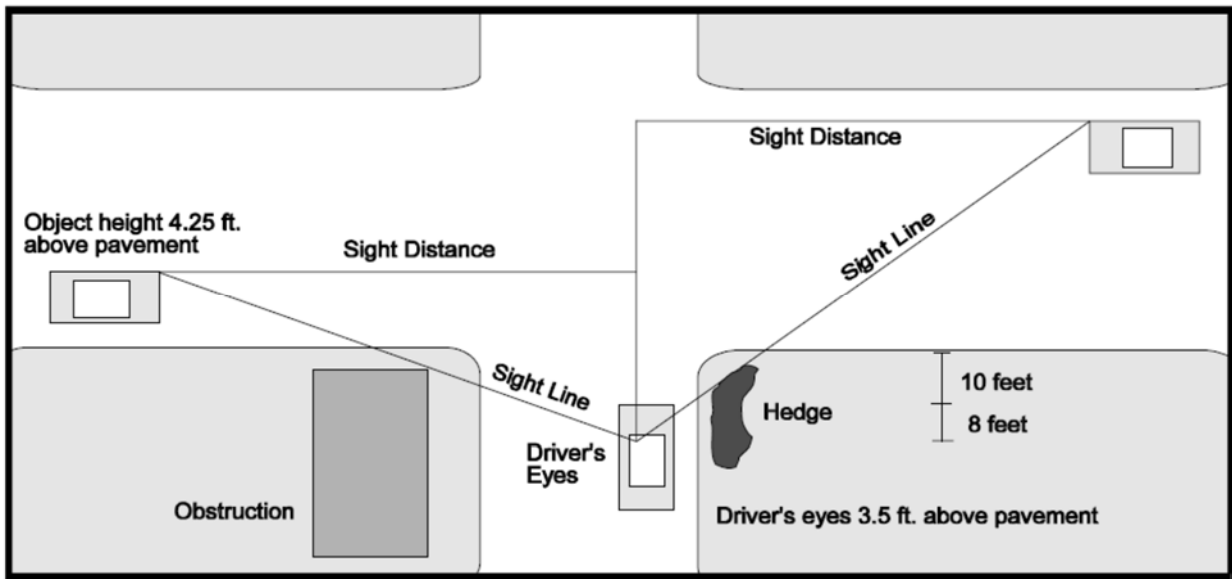
*Determined by Administrative Official. 5% Based on San Jose, CA, Study 11.96.070 of Municipal Code, 2002.

Section 118

Sight Triangle

Measurements for Tables 3 and 4 must be calculated with a driver eye height of 3.5 feet and a sight object height of 4.25 feet. The exiting driver position at the proposed access point must be calculated at 18 feet back from the pavement edge of the thoroughfare. To achieve the design and location of new access points with adequate sight distance, an adequate sight triangle shall also be maintained, as shown in Figure 1. Sight triangles are areas clear of visual obstruction to allow for the safe egress of vehicles from an access point, including an intersecting street, onto a roadway.

FIGURE 1
Sight Triangle



Note: Driver position measured from edge of pavement.

Section 120

Provisions for Maintaining the Level of Service of the Roadway

The Planning Commission may require that all traffic requiring access to and from a development shall operate in such a manner as to not adversely affect the level of service of the roadway. Provisions for the present or future construction of a frontage road, restriction or channelization of turning movements, or other improvements may be required, as a condition of approval, in order to maintain the level of service of any adjacent roadway.

Section 121

Number and Location of Access Points

An encroachment permit shall be obtained from the appropriated legislative unit for whichever road is to be accessed. Each existing tract of land is entitled to one access point provided that its location and design fulfill, as a minimum, the requirements of these regulations including the following:

1. Where an undeveloped parcel adjoins another undeveloped parcel on collector or arterial roadways, access points shall be located along common property lines of such parcels, providing the potential access meets other applicable portions of these regulations. When the second undeveloped parcel is developed, it shall utilize the common access. Where access is provided along common property lines, an easement granting common access shall be provided. In addition, such access easements shall be of sufficient depth to provide adequate stacking distance for vehicles entering the access point from a public street, and shall also provide for dedication of right-of-way if the access should ever be developed into a public street.

2. A proposed development is permitted one access point for each 500 feet of site frontage, however, a single family dwelling in a residential or agricultural zone may be granted one additional access point on a local or subcollector street where a lot frontage is at least 100 feet. All access points must be in compliance with all applicable sections of these regulations.
3. If a property has frontage on more than one street, access will be permitted only on those street frontages where standards contained in this ordinance and all other regulations can be met.
4. If a property cannot be served by any access point meeting these standards, the Planning Commission will designate one or more access point(s) based on traffic safety, operational needs and conformance to as much of the requirements of these regulations as possible.

Section 122

Coordination of Access Points

Access points on opposite sides of the arterial, collector, and subcollector roadways shall be located opposite each other. If not so located, turning, movement restrictions may be imposed as determined necessary by the Planning Commission. In addition, in order to maximize the efficient utilization of access points, access drives shall be designed, located, and constructed in a manner to provide and make possible the coordination of access with and between adjacent properties developed (present or future) for similar or compatible uses. As a condition of approval for construction, use or reuse of any access point, the Planning Commission may require that unobstructed and unencumbered access, in accordance with the provisions of this ordinance, be provided from any such access point to adjacent properties if the uses are similar or compatible and such connection is physically possible.

Section 123

Change in Property Use

Whenever the use of a parcel of land changes, or two or more parcels of land are assembled under one purpose, plan, entity, or usage, the existing access permit(s) shall become void. The Planning Commission may require the reconstruction, relocation, or closure of the access point(s), based on the new property use. Any such new or reauthorized access point must be in compliance with all applicable sections of this regulation, and may require the submission of a traffic study in accordance with Section 140 of this order.

Section 124

Existing Access

Existing access points, even if not in use, may not be relocated, altered, or developed without approval of the Planning Commission.

Section 125

Temporary Access Points

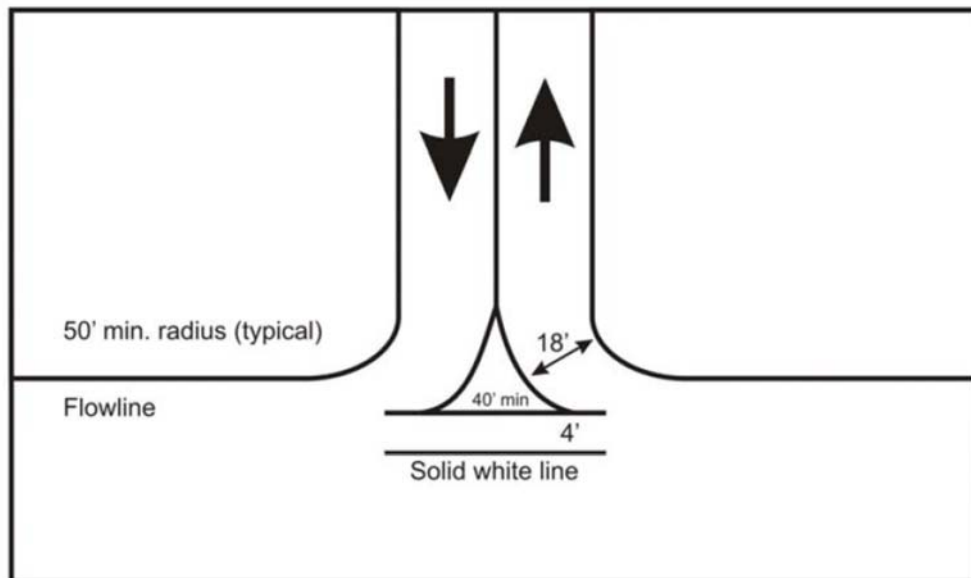
Any access point that does not comply with one or more sections of this regulation may be designated as "Temporary" upon approval by the Planning Commission. Any access point so

designated by be terminated, reduced, limited to certain turning movement, or caused to be relocated by the Planning Commission at such time as the particular use served by the access point changes and/or the property is otherwise provided an alternate means of access via a frontage road, an intersecting street, or a shared common driveway. In all cases where said access points are classified as “temporary”, such designation shall be duly noted on the plan submitted for approval and also recorded as a Certificate of Land Use Restriction at the Campbell County Clerk’s office with the expiration date noted. An encroachment permit shall be obtained from the appropriate legislative unit for whichever road is to be accessed.

Section 126
Restriction of Turning Movements

Where necessary for the safe and efficient movement of traffic, the Planning Commission may require access points to provide for only limited turning movements (see Figure 2). Access points with restricted turning movements must still meet requirements for number and location of access points as specified in these regulations.

FIGURE 2



Right Turn In/Out Access Design

Section 127
Construction Access Points

Construction access may be granted to undeveloped property prior to development of a site plan if access is needed for construction or preliminary site access. Construction accesses are subject to removal, relocation, or redesign after final site plan approval.

**Section 130
Driveway Design**

Design of driveway width, angle, grade, curb radii shall comply with the provisions of this section. Table 5 presents the required dimensions for driveway design based on rural or urban conditions. These dimensions should be adjusted upward as necessary to accommodate design vehicles. If center channelizing islands are used in a two-way driveway, clearance widths of 1.5 to 2 feet should be added on both sides of the center island.

TABLE 5								
Recommended Basic Driveway Dimension Guidelines								
Dimension		Reference	Urban			Rural		
			Resid.	Commer.	Indus.	Resid.	Commer.	Indus.
Width ¹	Minimum	W	10'	15'	20'	10'	15'	20'
	Maximum		30'	35'	40'	30'	40'	40'
Right-turn Radius ²	Minimum	R	5'	10'	15'	10'	15'	25'
	Maximum		15'	20'	25'	25'	50'	50'
Angle ³		A	45'	45'	45'	45'	45'	45'

1. The minimum width of commercial driveways is intended to apply to one-way operation. In high pedestrian areas, the maximum basic width should be 30 feet.
2. On the side of a driveway exposed to entry or exit by right-turning vehicles. In high pedestrian areas, the radii should be half the values shown. The maximum radii for major generator driveways can be higher than the values shown.
3. Minimum acute angle measured from edge of pavement, and generally based on one-way operation. For two-way driveways, and in high pedestrian areas, the minimum angle should be 70 degrees.

FIGURE 3

Recommended Basic Guidelines

Driveway Dimension

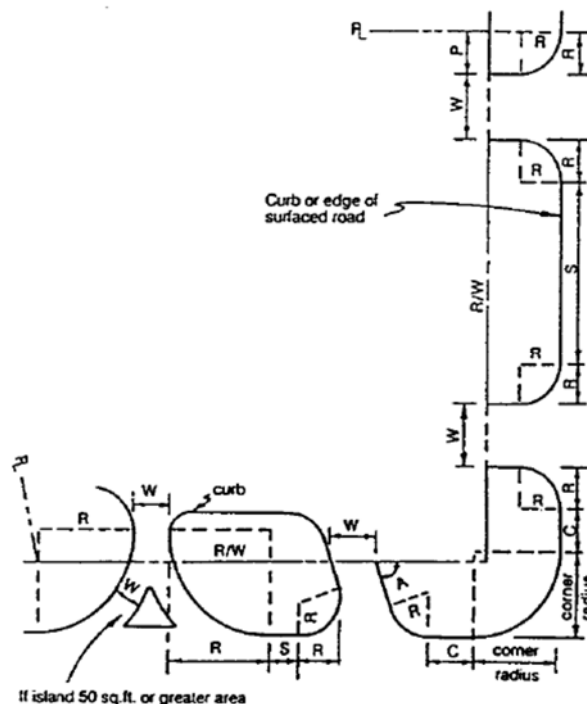
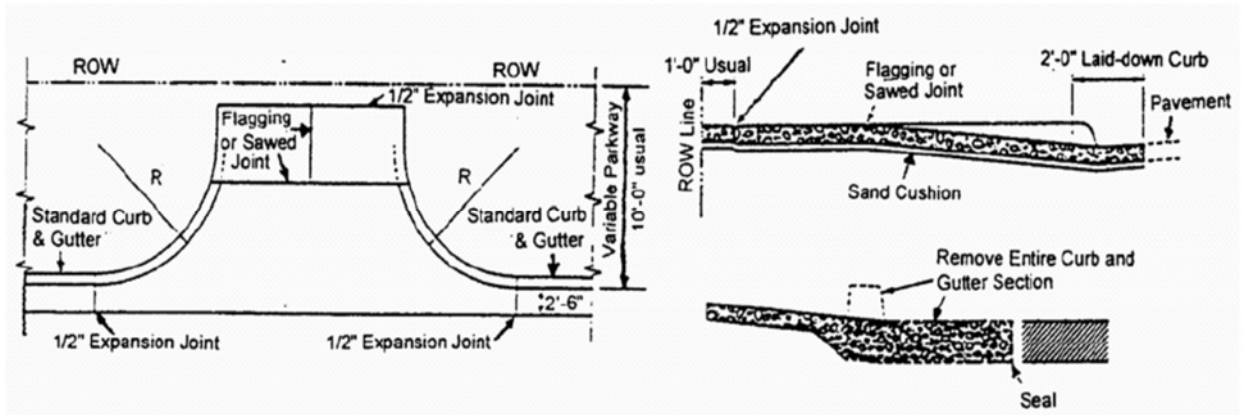


FIGURE 4

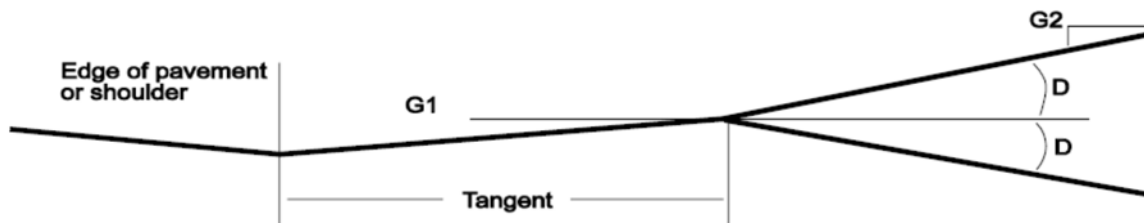


Driveway Design

**Section 131
Driveway Grades**

In high traffic areas, the grade of a driveway should reflect the design illustrated in Figure 4. Existing curbing should be completely removed to insure a safe and efficient access to the development. Where drainage of water flowing onto a roadway is anticipated, a trench drain shall be installed as part of the driveway. Figure 5 indicates recommended driveway grades. The value of G1 is limited by shoulder slopes and the presence of a sidewalk. In general, G1 should not exceed 8% and the change in grade between driveway grade and street cross-slope should not exceed 10%. Driveway grades (G2) should not exceed 15% for residential driveways and 8% for commercial or industrial driveways. A level "landing" area should be provided at the approach to the roadway. However, the effect of a vertical curve on sight distances should also be considered. Concrete sidewalk sections are to be provided through curbcuts where existing sidewalks exist or are required.

FIGURE 5
Driveway Grade



Suggested Max. Grade Change (D)

	<u>Desirable</u>	<u>Maximum</u>
High Volume	0%	±3%
Low Volume on Major or Collector Streets	±3%	±6%
Low Volume on Local Streets	±6%	Controlled by vehicle clearance (±15%)

Section 132

Vehicle Storage/Circulation

No access will be approved for parking or loading areas that require backing maneuvers in a public street right-of-way except for single-family, duplex or townhouse residential uses on local streets. Any parking facility must have full internal vehicular circulation and storage. Vehicular circulation must be located completely within the property. In addition, each portion of the development must have access to all other portions without using the adjacent street system. Where a proposed development includes a truck loading operation, adequate space must be provided such that all truck maneuvering is performed off street.

Adequate stacking capacity must be provided for both inbound and outbound vehicles to facilitate safe movement. Inbound vehicle storage areas must be of sufficient size to ensure that vehicles will not obstruct the adjacent street, sidewalk, or circulation within the development. Outbound vehicle storage areas must be provided to eliminate backup and delay of vehicles within the development.

Section 133

Spacing Restriction for Signalized Access Points

Access points shall be designed such that those which will warrant signalization shall be spaced a minimum distance of one quarter mile apart. The location and design of the signalized access points shall be determined by a traffic engineering study prepared by the developer and subject to the approval of the Planning Commission, as detailed in Section 140. If the installation of a traffic signal is approved, the developer may be responsible for the cost of purchasing, installing, operating, and maintaining the signal equipment.

Section 135

Provision of Exclusive Turning Lanes and Deceleration Lanes

At those access points where vehicles turning to and from the roadway will affect the capacity of the roadway, the developer shall dedicate sufficient right-of-way and construct turning lanes or deceleration lanes as necessary to maintain the capacity of the roadway. If the roadway in question has bike lanes, the developer shall also include adequate right-of-way for the bike lane and continue the bike lane through the access point. Acceleration lanes should be discouraged except for freeway applications.

Section 136

Provision of Frontage Roads

The Planning Commission may require the use of frontage roads, backage roads, or driveway connections to provide access to property adjacent to arterial and collector roadways. The landowner/developer may be required to construct the frontage road to the side and/or rear property lines or reserve sufficient right-of-way to allow future construction of such road.

As adjacent property developers, the landowner/developer shall be required to interconnect the individual portions of frontage roads as appropriate. Access to the roadway via an intersecting street or a common driveway may be required if the use of a frontage road is not feasible, as may the interconnecting of parking lots.

Section 137

Approval of Access Points - KYTC

A copy of the plans for all access points to be constructed along a state-maintained or controlled route shall be submitted to the Kentucky Transportation Cabinet for review and approval at the same time as plans are submitted to the Planning Commission. Permission for the construction of access points along state-maintained roadways is subject to the approval of plans by both the local and state agencies. Proposed access points along local public roadways must also be approved by the respective legislative unit.

Section 138

Approval of Access Points – Planning Commission

All access to roadways for development purposes require Site Plan or Preliminary Plat and Improvement Plan (if applicable) approval from the Planning Commission. Access to collector and arterial roadways will only be permitted if no other reasonable access is possible.

The Planning Commission (or Administrative Official where appropriate) will review development plans for compliance with these regulations at the earliest practical stage of plan review. These regulations shall be reviewed at the following stages unless otherwise designated by the Planning Commission or Administrative Official:

Type of Development	Review Procedure
Subdivisions	Preliminary Plat Review, and if applicable, Improvement Plan
Planned Developments, Employment Planned Developments, Residential Planned Developments	Subdivision or Site Plan Review
Principally Permitted and Conditional Uses in Commercial, Employment, Public Facilities, and Recreation Zones	Site Plan Review
Conveyance Plats and Single Family Residential applications	Zoning Permit Review with building permit

Section 139

Waiver of Requirements

The Planning Commission through the official Administrative Official for the subject jurisdiction, may reasonably waive or modify, with conditions, the requirements of these regulations, if it is determined that such action is warranted give the nature of an individual project and such action will serve to preserve the purpose and intent of these regulations. The Administrative Official can require a detailed traffic study from the applicant in order to make a determination.

Section 140

Traffic Studies

Traffic studies may be required by the Planning Commission in order to adequately assess the impact of a development proposal on the existing and/or planned street system. The primary responsibility for assessing the traffic impacts associated with a proposed development will rest with the developer, while the Planning Commission serves in a review capacity.

The traffic study will be the responsibility of the applicant and must be prepared by a professional individual or firm with adequate experience in Transportation Engineering and Planning. Upon submission of a draft traffic study, the Planning Commission will review the study data sources, methods, and findings. Comments will be provided in a written form. The applicant/developer will then have an opportunity to incorporate necessary revisions prior to submitting a final report. All studies must be approved by the Planning Commission before acceptance.

The applicant should be notified at the pre-application state whether a traffic study will be required, provided adequate information is available to the Planning Commission. If the proposed development appears to generate significant impact on the infrastructure, the applicant will be informed that a traffic study is required.

Transportation consultants are required to discuss projects with the Planning Commission prior to starting the study. Topics for possible discussion at such meetings will include trip generation, directional distribution of traffic, trip assignment, definition of the study area, intersections requiring critical lane analysis, methods for projecting building-out volume, and needs analysis of pedestrian/bicycle facilities. Specific requirements will vary dependent upon the specific site location being reviewed. No traffic study will be accepted unless the traffic study requirements of this regulation are met, and the applicant has a pre-application meeting with the Planning Commission.

Traffic Study Format

In order to provide consistency and to facilitate Staff review of traffic studies, the following format (see Table 6) shall be followed in the preparation of such studies by transportation consultants. The analysis shall be presented in a logical sequence with footnotes where appropriate. A detailed description of what should be incorporated into a study is detailed in "Traffic Access and Impact Studies for Site Development" published by the Institute of Transportation Engineers. The following outline, taken from that document indicates the information that shall be included in a transportation study:

TABLE 6
Sample Table of Contents- Site Traffic
Access/Impact Study Report

- I. Introduction and Summary
 - A. Purpose of Report and Study Objectives
 - B. Executive Summary
 - 1. Site location and study area
 - 2. Development description
 - 3. Principal findings
 - 4. Conclusion
 - 5. Recommendations
 - C. Qualifications and experience of firm or individual(s) who prepared the study.

- II. Proposed Development (Site and Nearby)
 - A. Off-site development
 - B. Description of on-site development
 - 1. Land use and intensity
 - 2. Location
 - 3. Site plan
 - 4. Zoning
 - 5. Phasing and timing

- III. Area Conditions
 - A. Study Area
 - 1. Area of influence
 - 2. Area of significant traffic impact (may also be part of Chapter IV)
 - B. Study Area Land Use
 - 1. Existing land uses
 - 2. Existing zoning
 - 3. Anticipated future development
 - C. Site Accessibility
 - 1. Area roadway system (a. Existing; b. Future)
 - 2. Traffic volumes and conditions
 - 3. Transit service and Pedestrian/Bicycle facilities
 - 4. Existing relevant transportation system management programs
 - 5. Other as applicable

- IV. Projected Traffic
 - A. Site Traffic (each horizon year)
 - 1. Trip generation (24 hour, AM peak hour and PM peak hour)
 - 2. Trip distribution
 - 3. Modal split
 - 4. Trip assignment
 - B. Through Traffic (each horizon year)
 - 1. Method of projections
 - 2. Trip generation (24 hour, AM peak hour and PM peak hour)
 - 3. Trip distribution
 - 4. Modal split
 - 5. Trip assignment
 - C. Total Traffic (each horizon year)

- V. Traffic Analysis
 - A. Site Access
 - B. Capacity and Level of Service (including AM and PM peak hour LOS changes)
 - C. Critical Lane Analysis
 - D. Traffic Safety
 - E. Traffic Signals
 - F. Vehicle/Bicycle/Pedestrian Circulation and Parking

- VI. Improvement Analysis
 - A. Improvement to accommodate base traffic
 - B. Additional improvement to accommodate site traffic
 - C. Alternative improvements
 - D. Status of improvements already funded, programmed, or planned
 - E. Evaluation

- VII. Findings
 - A. Site accessibility
 - B. Traffic impacts
 - C. Need for any improvements
 - D. Compliance with applicable local codes

- VIII. Recommendations
 - A. Site access/circulation plan
 - B. Roadway improvements
 - 1. On-site
 - 2. Off-site
 - 3. Phasing, if appropriate
 - C. Transportation System Management Actions
 - 1. On-site
 - 2. Off-site
 - 3. Phasing, if appropriate
 - D. Other

- IX. Conclusions

The executive summary should be a one or two-page synopsis that concisely summarizes the study purpose, conclusions, and recommendations. Throughout the study, assumptions must be detailed and described. The study should also specify which transportation improvements will be the responsibility of the developer to complete.