

## COMMISSIONERS COURT OF FORT BEND COUNTY, TEXAS

### **Policies and Procedures Relating to Access along the Fort Bend Westpark Tollway/FM 1093**

#### **Section 1: Policy & Background**

The primary purpose of the Fort Bend Westpark Tollway and FM 1093, (the “highway”) is to provide a corridor that affords vehicular traffic a high level of service.

The development of property adjacent to the highway for commercial and residential purposes is a secondary purpose of the highway and should not negatively impact the primary purpose of mobility along the corridor.

The purpose of this document is to establish a uniform framework to receive and evaluate requests for access to the highway, including mainlanes, ramps, and frontage roads.

The policy of the Fort Bend County to allow access only where the applicant has demonstrated that the requested access will not significantly diminish the level of service on the highway and traffic safety will not be impaired. Preference for access will be given to dedicated public roadways that are identified on local thoroughfare plans. Driveway access will be considered only when access from an alternative public roadway is not possible.

#### Limitations and Disclaimers

This Policy does not create or limit any current or future right to access as a matter of state property law. Rather, the purpose of this policy is to establish the engineering criteria and application process to be used for permitting the construction of specific access point when the right of access already exists (e.g., when such access rights are reserved in a deed conveying property to the Authority, the County, or TxDOT for the road).

Access may require a permit from other jurisdictions. This policy is cumulative of those policies, and a permit issued by the County pursuant to this Policy does not eliminate the need to obtain a separate permit from those jurisdictions.

#### **Section 2: Definitions**

**Access Connection:** Facility for entry and/or exit such as a driveway, street, road, or highway that connects to the highway or frontage road within the Fort Bend Westpark Tollway / FM 1093 right of way.

**Applicant:** A real property owner, or the owner's authorized representative, applying for an access connection permit from the County to construct or modify an access connection from the owner's property to a highway or frontage road.

**Authority:** Fort Bend County Toll Road Authority.

**Connection Spacing:** The distance between connections, which is measured along the edge of the traveled way from the closest edge of pavement of the first access connection to the closest edge of pavement of the second access connection.

**Capacity:** The number of vehicles that can traverse a point or section of a lane or roadway during a set time period under prevailing roadway, traffic, and control conditions.

**County:** Fort Bend County

**Deceleration Lane:** A speed-change lane, including tapered areas, for the purpose of enabling a vehicle that is exiting a roadway to leave the travel lanes and slow to a safe exit. The deceleration lanes can be for left-turn or right-turn movements.

**Drainage Structure:** A circular pipe, elliptical pipe, arch pipe, box culvert, or other similar conduit installed for the purpose of draining the flow of surface water.

**Driveway:** A private (i.e. non-public road) entrance to, or exit from, any residence or commercial establishment.

**Frontage Road:** A local street or road along the highway within the right of way or arterial highway allowing control of access and service to adjacent areas and property. A frontage road may also be referred to as a service road.

**Intersection:** Any at grade connection with a roadway, including two roads or a driveway and a road.

**Level of Service (LOS):** A measure of traffic flow and congestion. As defined in the Highway Capacity Manual (published by the Transportation Research Board – National Research Council), it is a qualitative measure describing operational conditions within a traffic stream, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

**Permit:** Authorization for entry to and/or exit from the highway or frontage roads and adjacent real property, issued by the Permitting Authority.

**Permitting Authority:** Fort Bend County, Fort Bend County Toll Road Authority or any combination of these agencies.

**Project:** Development that is being permitted.

**Right of Way:** A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

**Shared Access:** A single connection serving two or more adjoining lots or parcels.

**Sight Distance:** The distance visible to the driver of a passenger vehicle measured along the normal travel path of a roadway from a designated location and to a specified height above the roadway when the view is unobstructed by traffic.

**Signal:** A traffic control signal.

**Traffic impact analysis:** A traffic engineering study to the level of analysis determined by the Permitting Authority that determines the potential current and future traffic impacts of a proposed traffic generator and is signed, sealed, and dated by an engineer licensed to practice in the state of Texas.

**TxDOT:** Texas Department of Transportation.

### **Section 3: Application Procedures**

The land owner, or designated representative, desiring connection to the highway shall submit an application to the Fort Bend County Engineering Department requesting access. The application shall be submitted on forms and using procedures adopted by the County and shall, as a minimum, contain the following information:

- 1 The applicant's full legal name, address, and daytime phone number. If the applicant is a corporate or partnership entity, the application shall contain the name of the person designated by the entity as the contact person for the application. If the applicant is not the owner of the property, the applicant shall provide the name, address and daytime phone number of the owner.
- 2 A copy of the recorded deed or purchase contract evidencing the applicant's ownership interest in the property from which the applicant is requesting access to the highway.
- 3 A plat or map showing the applicant's property, the adjoining highway property, the proposed location of the access points and distances to adjoining existing and proposed access points, and a site plan indicating existing and proposed land uses. The map should be submitted both on paper and electronically.
- 4 A traffic impact analysis prepared in accordance with the County's requirements. If the applicant's property is located in a City or ETJ, a traffic impact study prepared for the City may be submitted.
- 5 Evidence of compliance with all applicable federal, state, and local environmental laws and regulations and permitting requirements.
- 6 Plans of the access, signed and sealed by a registered or licensed professional engineer in Texas, that meet the requirements as described in this document. Plans must include a Construction Traffic Control Plan.
- 7 A non-refundable processing fee in an amount as provided by the current County Fee Collection Schedule approved by Fort Bend Commissioners Court.
- 8 Such other information as the Permitting Authority may request. Applications should be submitted to Fort Bend County Engineering Department, Mailing Address: 301 Jackson Street, Richmond, Texas 77469.

### **Section 4: Access Connections**

#### ***Toll Road Mainlanes***

Toll roads are intended to provide a very high degree of mobility. Accordingly, mainlanes provide no direct access to property and access to the mainlanes is provided only at interchanges and ramps. The spacing of interchanges and ramps needs to allow entering and exiting vehicles to weave safely and to provide adequate acceleration/deceleration.

The design of toll roads and freeways is governed by the TxDOT *Roadway Design Manual*, Chapter 3, Section 6, Freeways.

#### ***FM 1093***

FM 1093 is constructed generally parallel to the Fort Bend Westpark Tollway, similar to frontage roads. Frontage roads normally have at-grade interchanges with the arterial streets, which are generally

perpendicular to the toll road and are grade-separated from the toll road mainlanes. Under fully developed conditions, the at-grade intersections of frontage roads and arterials are typically signalized.

It should be noted that for areas with conventional diamond ramp patterns, where an exit ramp is just prior to the arterial street, the most critical areas for operations are between the exit ramp and the arterial street and between the arterial street and the entrance ramp. In X-ramp configurations, where the exit ramp is just after the arterial street, the most critical areas are between the exit ramp and the subsequent entrance ramp. The critical areas with respect to the ramp pattern may warrant greater spacing requirements for operational, safety, and weaving efficiencies than would be typical along other portions of the highway.

Direct access to the frontage road is prohibited in the vicinity of ramp connections, as described in the *TxDOT Roadway Design Manual*, Chapter 3, Section 6. Additional information is shown in Table 1 and Figures 1 and 2.

**Table 1: Desirable Spacing between Exit Ramps and Driveways, Side Streets, or Cross Streets**

Total Volume (Frontage Road+Ramp) (vph)	Driveway or Side Street Volume (vph)	Spacing (ft)		
		Number of Weaving Lanes		
--	--	2	3	4
<2500	<250	560	750	1000
--	>250	560	750	1000
--	>750	790	1000	1500
--	>1000	1000	1250	2000
>2500	<250	920	1200	1500
--	>250	950	1200	1500
--	>750	1000	1500	2000
--	>1000	1000	1750	2500

Figure 1. Recommended Access Control At Exit Ramp Junction With Frontage Road.

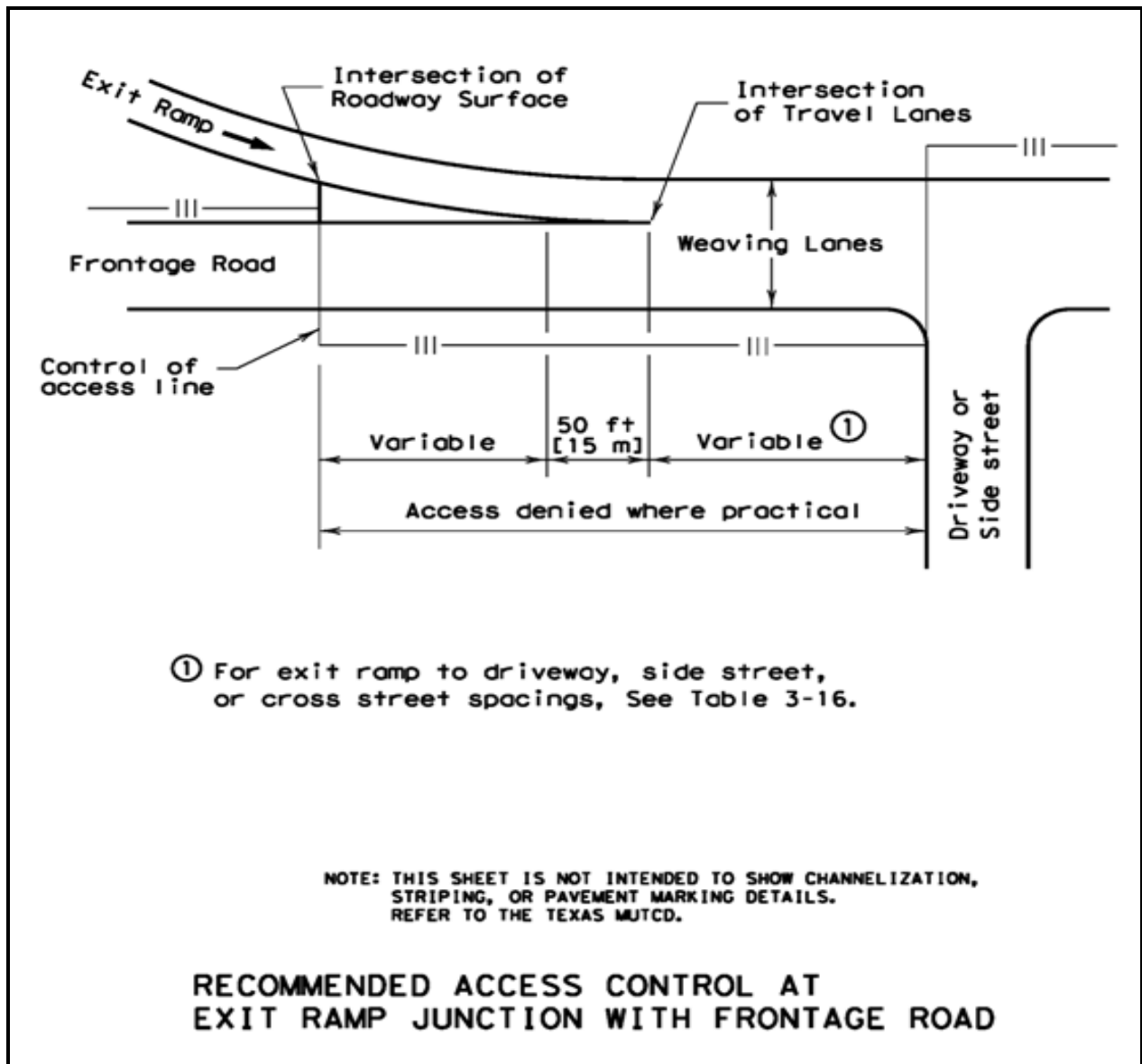
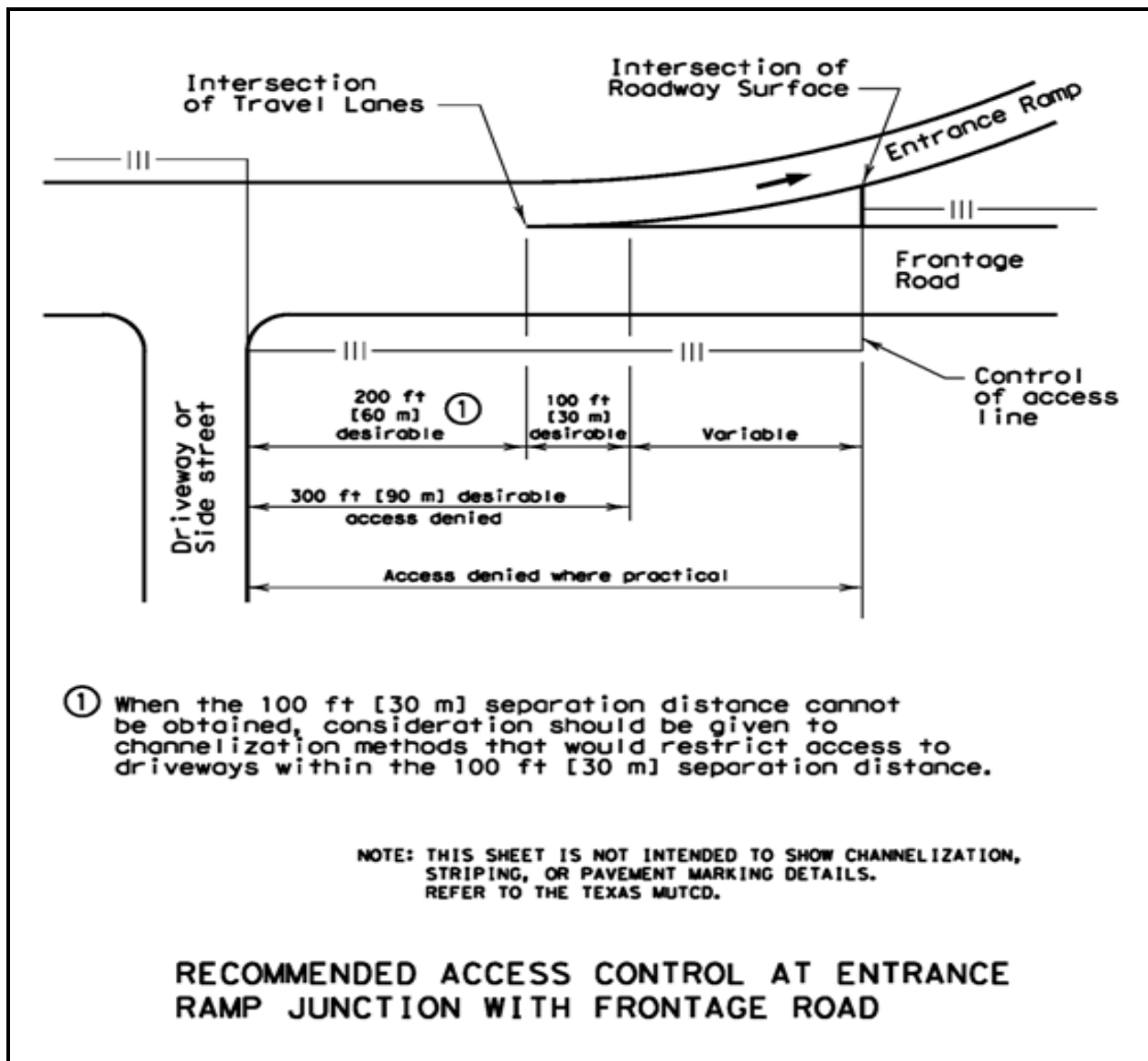


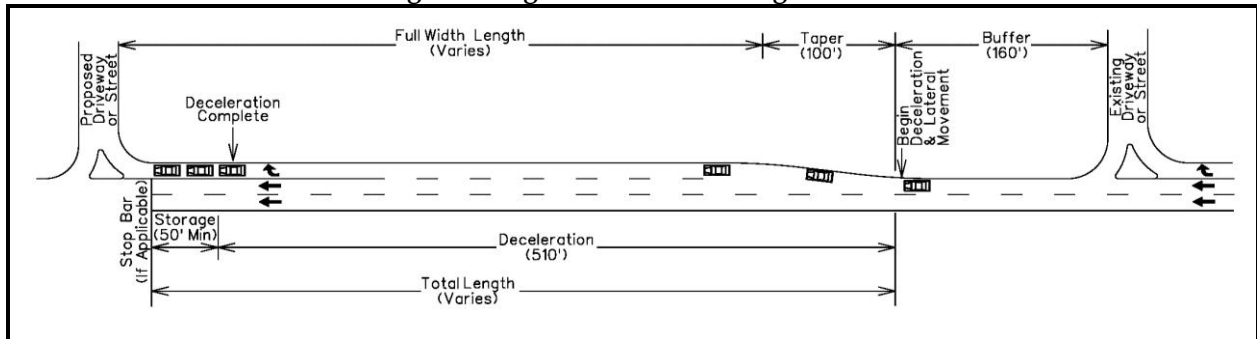
Figure 2. Recommended Access Control At Entrance Ramp Junction With Frontage Road.



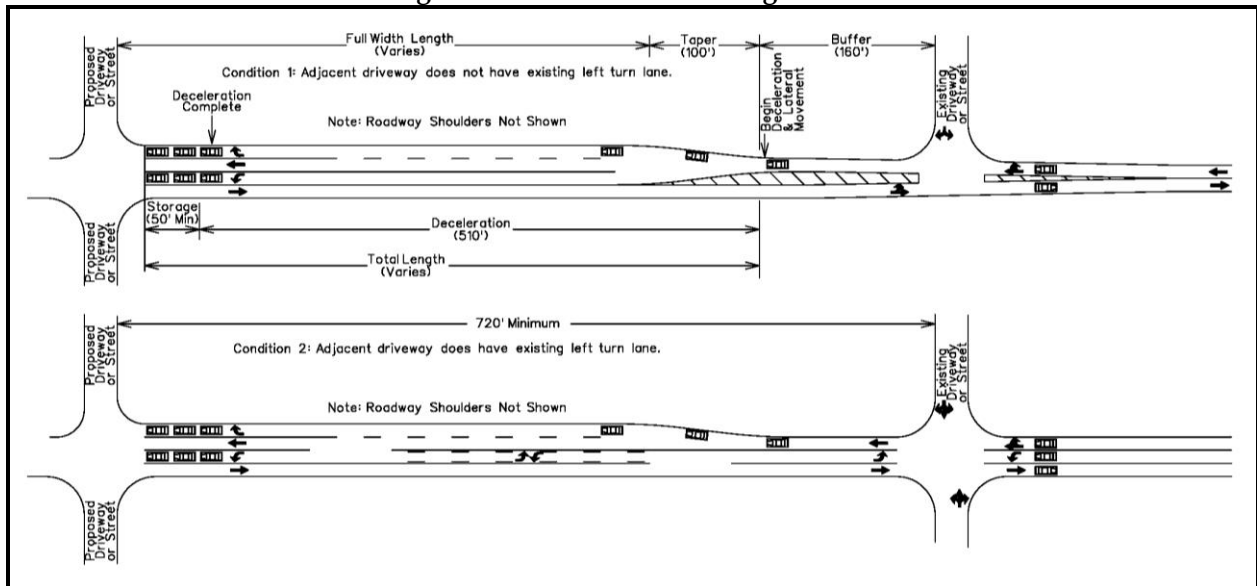
## Deceleration Lanes

- Deceleration lanes will be required at all access points with a Peak Hour Volume exceeding 50 vehicles in order to maintain vehicle capacity and speeds on the through lanes and still providing safety for the traveling public.
- Deceleration lanes provide for turning movements and their associated transitions and storage requirements. Turning movements increase conflicts, delays, and crashes, particularly where a speed differential of 10 mph or more exists between the speed of through traffic and the turning vehicles.
- See Figure 3 for Right Turn Lane Configuration or Figure 4 for Left Turn Lane Configuration
- See Table 2 for Deceleration Lane Dimension Requirements
- Deceleration length may be reduced under certain conditions on a case by case basis. The reason for the reduction is a physical restriction such as a bridge or other existing structure (property line is not considered a physical restriction). See TxDOT Roadway Design Manual Table 3-3A Deceleration Lengths for Speed Differentials Greater than 10 mph for deceleration length.

**Figure 3. Right Turn Lane Configuration**



**Figure 4. Left Turn Lane Configuration**



**Table 2: Deceleration Lane Dimension Requirements**

Operational Speed (MPH)	Taper (Feet)	Minimum Storage Length (Feet)	Deceleration Length (Feet)	Total Turn Lane Length <sup>(3)</sup> (Feet)	Required Buffer Length <sup>(4)</sup> (Feet)	Total Driveway Spacing <sup>(5,6)</sup> (Feet)
55 <sup>(1)</sup>	100	50 <sup>(2)</sup>	510 <sup>(1)</sup>	560	160	720 <sup>(1,2)</sup>

<sup>1</sup> The Operational Speed for FM 1093 is currently defined as 55 MPH. If the speed limit is raised for any segment of FM 1093 in the future, that speed limit will be used to determine deceleration length and total driveway spacing.

<sup>2</sup> Additional Storage Length may be required at signalized or stop controlled intersections. A projected 95% queue analysis shall be provided by the applicant within the traffic impact analysis.

<sup>3</sup> Storage plus Deceleration.

<sup>4</sup> Buffer is to provide separation of decision points and is based on 2.0 second Perception-Reaction time (rounded).

<sup>5</sup> For uncontrolled intersections, spacing shall be measured from the nearest curb line of adjacent street, driveway, or u-turn. For existing or future signalized or stop controlled locations, measurement shall be from ultimate stop bar pavement marking location.

<sup>6</sup> If a city or other agency has adopted a different driveway spacing policy, the most stringent policy will prevail.

#### ***Street or Driveway Spacing***

- Street and driveway spacing shall be based on deceleration lane design (Table 2). Even if deceleration lane construction is not required with the project, driveway spacing shall provide sufficient spacing to allow for future construction of the deceleration lane in the event that the land use changes.
- Additional access points within right turn deceleration lane will not be allowed. Exceptions may be made for existing driveways that cannot be relocated.
- The applicant shall be responsible for dedication of all right of way and construction of turn lanes required by the project. If the required deceleration lane extends beyond the limits of the applicant's property, the County, at its discretion, may enter into an agreement with the applicant to assist with right of way acquisition beyond the limits of the applicant's property. All costs will be the responsibility of the applicant.
- If the applicant's driveway location is near the property line, the applicant shall coordinate with the adjacent property owner. The subject driveway shall not negatively impact the ability of the adjacent property owner from obtaining a driveway due to spacing restrictions. "Near" is defined as one-half the length of the required right turn lane.
- Applicant shall dedicate public right of way for deceleration lanes for downstream access point on adjacent property.

Conditions for granting access will be stated in the access permit. Applicant shall include the name of the proposed business to be located within the project. Violation of the conditions under which the permit was granted, as determined by the Permitting Authority, may require reevaluation of the access. If existing access is in place but the **land use changes**, the owner must submit a new access permit.

Where topography or other existing conditions make it inappropriate or not feasible to conform to the connection spacing intervals, the location of reasonable access will be determined with consideration given to topography, established property ownerships, unique physical limitations, and/or physical design constraints. The selected location should serve as many properties and interests as possible to reduce the need for additional direct access points. In selecting locations for access points, preference will be given to public roadways that are on local thoroughfare plans.



## **Section 5: Permits**

No construction work on the driveway shall be undertaken on the right of way until a fully executed driveway permit has been received by the applicant and the applicant has given 48-hour notification to the Permitting Authority.

A driveway must be constructed in accordance with a fully executed driveway permit and all applicable regulations. A Permitting Authority inspector will review the driveway construction to determine if it is acceptable or if modifications are needed. A driveway will be considered an authorized permitted driveway installation only after construction has been completed and the construction has been determined to be satisfactory to the Permitting Authority.

Any impacts to drainage on the public road or drainage system resulting from installation of access driveways must be coordinated with and approved by the Permitting Authority.

## **Section 6: Driveway Design**

All parts of the driveway, including the radii but excluding the deceleration lane, shall be confined within the applicant's property frontage. Frontage is that portion of the right of way lying between two most distant possible lines drawn perpendicularly from the centerline of the highway to the applicant's abutting property line.

When the applicants of two or more adjoining properties agree to combine their property frontage for a shared access driveway, the combination is encouraged and authorized under the applicable regulations. The Permitting Authority reserves the right to require an applicant to permit shared access where appropriate to minimize the number of access points. The frontage will then be the portion of the right of way lying between the two most distant possible lines of the combined frontage drawn perpendicularly from the centerline of the highway to the applicants' abutting property lines.

At any intersection of a highway with another highway, road, or street where the existing right of way is flared or widened to allow for additional sight distance, no access driveway will be permitted within the flared or widened right of way section.

Fixed objects will not be allowed in the highway right of way.

The angle of the driveway from the highway pavement shall be 75 to 90 degrees, except that one-way 45 to 90 degree driveways will be permitted for connections to one-way frontage roads.

All driveway construction shall comply with the Americans with Disabilities Act Accessibility Guidelines and Texas Accessibility Standards requirements and standards. The applicant shall provide appropriate access as determined by the Permitting Authority regardless of the presence of adjacent sidewalks.

The width of a private residential driveway shall be between 20 and 24 feet within the right of way measured at right angles to the centerline of the driveway, except as increased by permissible radii. The radius connecting the driveway to the highway pavement shall not be less than 25 feet.

A typical design for a private farm/ranch driveway should provide a 25-foot return radii and a 20-foot throat width. The distance from the edge of the highway pavement to a gate must be sufficient to store the longest vehicle, or combination of vehicles anticipated for use of the property. At a minimum, this distance should accommodate a pickup truck with trailer.

The width of a commercial driveway pavement may vary in size depending on traffic and location and should be selected in accordance with Table 3.

**Table 3. Designs for Two-Way Commercial Driveways**

Condition	Radius (R) (ft)	Throat Width (W) (ft)
One entry lane and one exit lane per day	35	30 <sup>(1)</sup>
One entry lane and two exit lanes, without divider	35	40
One entry lane and two exit lanes, with divider	35	44 <sup>(2)</sup> – 50 <sup>(3)</sup>
Two entry lanes and two exit lanes, with divider	35	56 <sup>(2)</sup> – 62 <sup>(3)</sup>

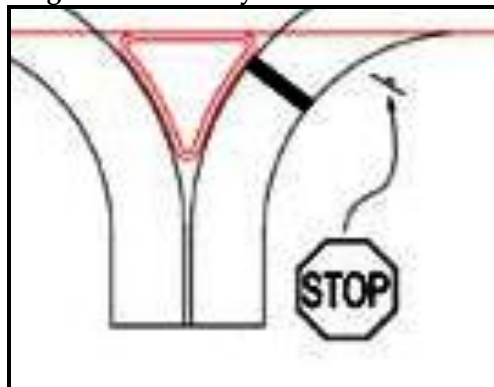
<sup>(1)</sup> Driveway designs for larger vehicles will be considered on a case by case basis

<sup>(2)</sup> 4 ft. wide divider, face-to-face of curbs

<sup>(3)</sup> 10 ft. wide divider, face-to-face of curbs

Undivided driveways on one-way portions of FM 1093 shall have a raised island (4-inch minimum height) at the mouth of the driveway (see Figure 5). The separation area may be landscaped or may contain a surface material having a contrasting color to the driveway pavement that will be highly visible to motorists. Exceptions to the raised separation requirements must be approved by the Permitting Authority. The width of the lane should be a minimum of 15 feet but may be required to be wider based on the design vehicle for the driveway.

**Figure 5. Driveway with Raised Island**



## Section 7: Drainage

Drainage in highway side ditches shall not be altered or impeded. When drainage structures are required, the size and other design features shall be approved by the Permitting Authority. Relocation of existing inlets shall be approved by the Permitting Authority.

Access driveways shall be constructed to match the grade of the highway pavement edge or the shoulder edge if a shoulder is present. The driveway shall be designed and constructed in such a manner as to not impede the flow of water away from or along the highway pavement.

If the driveway is approved to be constructed at grade through the roadside ditch or natural grade of the roadside, the driveway shall be paved with a stabilized all weather surface material acceptable to the Permitting Authority to conform to the cross section shape of the ditch or other natural grade of the roadside to form a stable driveway. An exception to using stabilized new surface may be approved by the Permitting Authority if the roadside or ditch is naturally stabilized with rock which may be driven on without eroding or rutting in all types of weather.

Safety end treatments will be used for all driveways with drainage structures constructed within the highway right of way. The side slopes of the driveways must not be greater than the slope of the required safety end treatment and shall match the slope of the safety end treatment at the junction of the two. Approved safety end treatments may be found on TxDOT's website, standard CAD drawing under Bridge Standards for Safety End Treatments. The most frequently used standard is 'Parallel Drainage for 12"-72" Diameter.' These can be found under Bridge Standards (English), Safety End Treatments. The design requirements of the safety end treatments are as follows:

- There shall be no culvert headwalls or similar vertical ends.
- Ends shall be sloped at 6:1 (6 horizontal to 1 vertical) or flatter, with concrete riprap to prevent erosion and to protect the pipe end.
- The access driveway embankment slope shall be 6:1 maximum, with 8:1 preferred beginning five feet from the edge of the driveway pavement or top of curb. A maximum slope of 5 percent is allowed between the driveway and the top of slope.
- For pipes greater than 30 inches in diameter or multiple pipes with individual diameters greater than 24 inches, grates shall be provided with maximum slope of 6:1 or a preferred slope of 8:1. Cross-pipes are not required on small (single pipes having a diameter of 30 inches or less) structures regardless of end location with respect to the horizontal clearance requirements; however, the ends of small structures shall be sloped and provided with concrete riprap as described above.

A ditch within the highway right of way may be filled in with dirt or other approved material, provided that prior Permitting Authority approval is obtained and the following conditions are met:

- The property along the right-of-way frontage has two or more permitted driveways that are in compliance with the "Number, Location, and Spacing of Access Connections" requirements described herein.
- Surface drainage shall be provided so that all surface water on the filled-in area shall be carried away from the highway roadbed in a suitable manner.
- The design of a drainage structure underneath the filled-in area shall be adequate to carry the flow of water in the highway ditches.
- The filled-in area shall be sufficiently delineated and, where required by the Permitting Authority, delineation or other satisfactory methods shall be used to prevent the use of the area for parking or travel. The area shall be kept free of obstructions.
- The filled-in area shall extend from the right-of-way line to the edge of pavement, edge of shoulder or back of curb as the case may be. Other requirements may be imposed by the Permitting Authority for filled-in areas in order to conform with planned future improvements to the existing highway section.
- The filled-in area and safety end treatment on the drainage structure may not extend beyond the boundary line of the applicant's property without written consent of the adjoining property owner whose property will contain the extension.

## **Section 8: Materials**

The applicant shall furnish all materials necessary for the construction of the access driveways and all appurtenances authorized by the permit. All materials shall be of satisfactory quality and shall be subject to inspection and approval by the Permitting Authority. Access driveways within the highway right of way shall be paved with the same material as the roadway (concrete or asphalt) to prevent tracking mud onto the highway and to prevent damage to the edge of the roadway from vehicles using the driveway. Permitting Authority may require different pavement material on a case by case basis.

## **Section 9: Traffic Control, Signing and Pavement Markings**

The applicant shall include appropriate temporary traffic control devices (during construction) and permanent signing and pavement markings in the plans. The latest version of the Texas Manual on Uniform Traffic Control Devices shall be used for the design.