

TRAFFIC PROGRAM



ACCESS MANUAL

2014 Edition



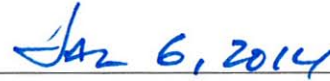
WYDOT's Commitment to Access Management

The Wyoming Department of Transportation (WYDOT) realizes that undertaking effective access management is a tough challenge for the state agency as well as the stakeholder requesting an access. Effective access management standards result in orderly and safe traffic flow onto and off the highway system. These standards also reduce the impact to traffic flow and help preserve mobility and safety on the highway system.

WYDOT offers this manual as a resource guide for the process of obtaining an access to the state highway system. This revision is a result of a change in the rule and regulation which allows reduced spacing in fringe urban areas and low volume roadways located in towns under 5000 population.

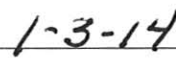
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CHAPTER I

INTRODUCTION

This manual serves as the Wyoming Department of Transportation (WYDOT) detail of the Wyoming Department of Transportation Rules and Regulations, General Section, Chapter 13, Access Facilities, approved by the Transportation Commission of Wyoming and promulgated by authority of W.S. 24-2-105 and W.S. 24-6-101 through W.S. 24-6-111 to administer access facilities on the state highway system. The rule (Chapter 13, Access Facilities) is available on Secretary of State's website: <http://soswy.state.wy.us/Rules/RULES/9157.pdf>. This manual also aids the general public in the application procedure for an access.

This introduction explains why access management is needed and why there are density, spacing, and design requirements for accesses. When retrofitting a corridor due to reconstruction, every effort will be made to follow this manual. Existing non-conforming accesses that are deemed necessary by WYDOT and cannot be closed shall have either been previously permitted or shown on WYDOT construction plans.

Access management of roadways balances the competing needs of providing access to land while preserving safe and efficient traffic flow on the roadway. Effective access management requires that traffic engineering principles are applied to the design, location, and operation of accesses along the roadway. Access management, through the use of traffic engineering principles, attempts to anticipate and prevent safety problems and congestion.

Having poor or no access management contributes to the following:

- High crash rates.
- Poor traffic flow and congestion.
- Neighborhoods disrupted by through traffic.
- Use of parallel local streets to relieve traffic on the overburdened arterial.
- Pressure to widen an existing street or build a bypass.
- Bypass routes as congested as the routes they were built to relieve.
- Decreases in property values.

Without access management and control, new roadways that are built to relieve congestion soon have as much congestion as the old roadways. This is seen with outer belts that are constructed in ever widening circles. With no access management, the 'new' outer roadway becomes as congested as the one it was built to relieve.

In urban areas with poor access management, strip development becomes a congestion nightmare while downtown areas languish with little development or even deteriorate. Drivers begin to avoid getting into, maneuvering around, and getting out of areas that are frustrating, time consuming, and unsafe.

In rural areas, especially areas that have housing developments with 2 to 10 acre lots, granting access to all houses abutting the roadway soon lowers the level of service and safety of the roadway due to the numerous turning movements. **The lack of effective access management and the proliferation of accesses is a major factor leading to the deterioration of highway safety and efficiency.** An example of what good access control can accomplish is the interstate system. The interstate system is 50 plus years old and still has a good level of service despite the increase in traffic volumes. This is due to access control. If non-interstate rural roadways had even a portion of this type of access control, the problems of low level of service and safety would be much less.

Problems with lack of access control in Wyoming are becoming apparent due to increases in traffic volumes. For years traffic volumes were so low that granting access was not a problem and most roadway designs operated fairly well. Because WYDOT hopes to maintain an efficient and safe road system in the future, this type of philosophy is no longer acceptable. Responsible access management along with good design results in a safe, efficient, and cost effective road system. Cost efficiency is realized when roadway life is extended because of good access control and does not need retrofitting or reconstruction. Retrofitting roadways to acceptable standards of access control and design is extremely time consuming and costly and usually accompanied by a concerned and sometimes angry public. To avoid retrofitting corridors because of poorly managed access on State highways, effective access management must be consistent and take place before safety and level of service deteriorate.

Effective access management leads to the following:

- Improved safety due to fewer and less severe crashes and fewer pedestrian conflicts.
- Reduced delay.
- Increased and preserved capacity.
- Good mobility.
- Reduced fuel consumption.
- Preservation of the investment in the road system.
- Aesthetically pleasing and more attractive corridors.
- Reduced access congestion problems for adjacent properties.

ACCESS MANAGEMENT

Access management consists of controlling how, when and where vehicles can enter and exit the roadway. Effective access management allows roadways to function in a much more safe and efficient manner. Since effective access management also preserves integrity and capacity, construction dollars will not be needed to expand the roadway nor add unwarranted traffic signals.

Access management is accomplished through the following:

- Medians.
- Auxiliary lanes.
- Signal spacing.
- Driveway location and design.
- Driveway spacing.
- Corner clearance.
- Reverse frontage or backage roads
- Internal circulation and connectivity of individual businesses.

Effective access management versus roads with little or no access management has the following benefits:

- Reduces crashes by as much as 50%.
- Increases capacity by 20-45%.
- Extends the life of the highway.
- Treats access applications and types of accesses consistently.
- Reduces travel time and delay by 40-60%.
- Decreases fuel consumption by as much as 35%.
- Reduces driver stress.
- Reduces vehicular emissions.
- Reduces transportation costs.
- Protects investment in abutting property.
- Maximizes the economic value of property by providing better coordination between transportation and adjoining land uses.

Effective access management must be consistent in the way it treats types of accesses, density and spacing of accesses, and the application process for accesses. When an exception is made, it must be for a logical and defensible reason. The rules and regulations must be evenly applied for all accesses and access applicants since lack of consistency makes it more difficult to enforce.

FUNCTIONAL ROAD CLASSIFICATION

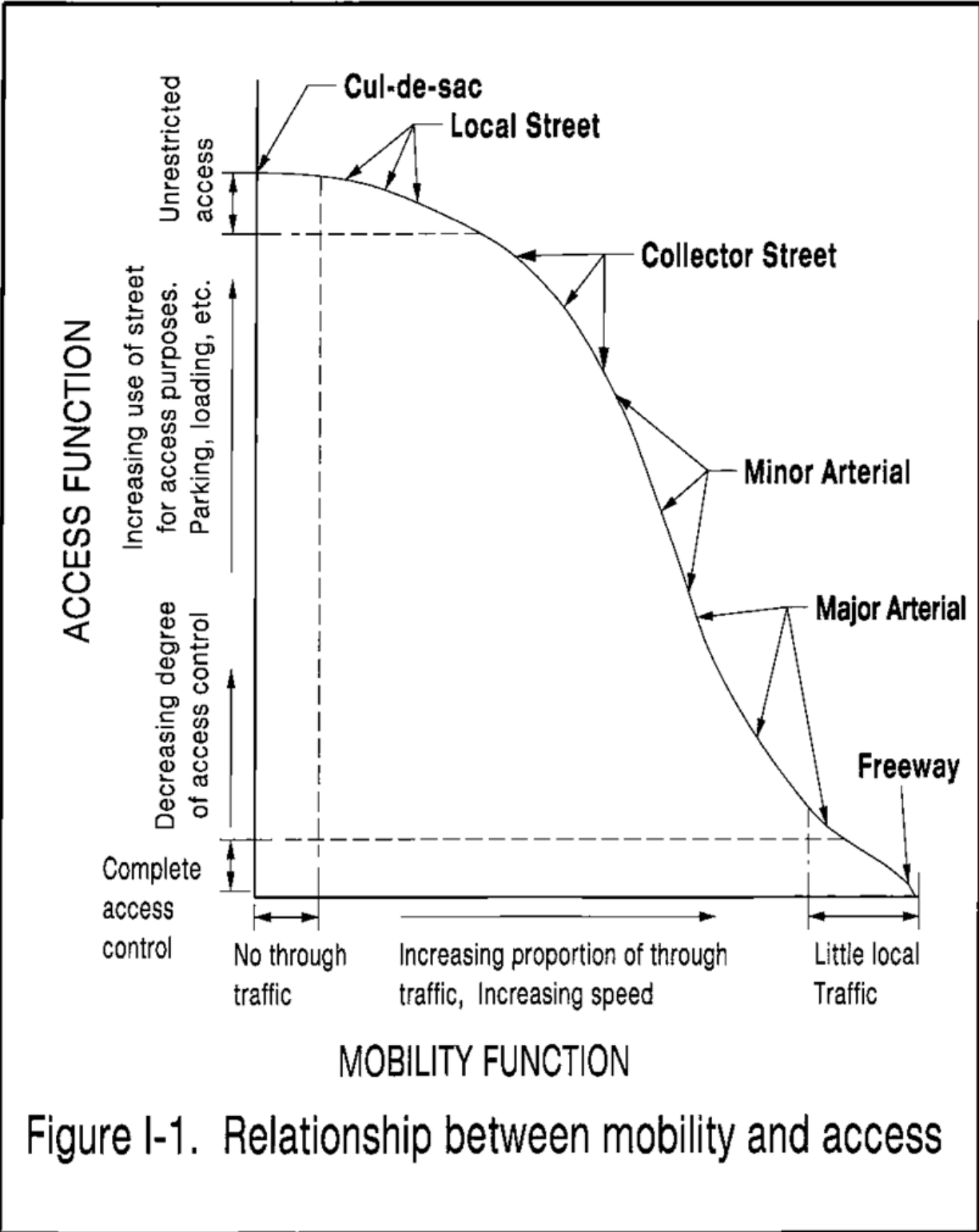
Functional road classification denotes the primary function of a road - be it to predominantly move traffic such as an interstate or arterial, or to predominantly access abutting property such as a local road. The following are a list of functional road types (see Figure I-1):

Interstate and freeway principal arterials have the highest functional classification as far as moving traffic. The main purpose of the interstate system is the high speed movement of people and goods. Access is fully controlled through grade separated interchanges. Direct access to abutting land and at grade intersections is not allowed.

Non-interstate principal arterials (major and minor) are the next functional classification. Their main purpose is still the efficient movement of people and goods but with limited direct access to abutting land.

Collector roads serve the dual purpose of efficiently moving people and goods and directly accessing abutting land.

Local roads have the lowest functional classification as far as moving traffic, but provide the highest degree of direct access to abutting land.



SAFETY

The following two tables illustrate the effect that access control and access density have on accidents and accident rates.

Table I-1. Effect of Access Control on Accidents in Urban and Rural Areas

Accident Rates per Million Vehicle Miles				
	Urban		Rural	
Access Control	Total	Fatal	Total	Fatal
Full	1.86	0.02	1.51	0.03
Partial	4.96	0.05	2.11	0.06
None	5.26	0.04	3.32	0.09

Source: Publication No. FHWA-RD-91-044, Volume 1: Access Control

Table I-2. Annual Access Accidents per Mile by Access Density and ADT

Level of Development	Driveways Per mile	Highway ADT (Vehicles Per Day)		
		Low <5,000	Medium 5,000-15,000	High >15,000
Low	<30	12.6	25.1	37.9
Medium	30-60	20.2	39.7	59.8
High	>60	27.7	54.4	81.7

Source: Publication No. FHWA-RD-91-044, Volume 1: Access Control

These tables clearly show that an increase in access points deteriorates the operational safety of a roadway. Table I-1 applies to both urban and rural settings while Table I-2 applies to an urban setting with lower speeds. Note that the number of driveways (accesses) per mile is a combined total of both sides of the roadway.

CHAPTER II

ACCESS PROCEDURE

Transportation authorities at the state level are authorized to design highways and to regulate, restrict, or prohibit access to those highways. Access to State highways granted by WYDOT authorities must conform to standards set by WYDOT. If WYDOT grants only a residential or field access to a highway, it may not be used for any roadside business or other commercial enterprise.

No highway shall be constructed without providing for the property rights of residents whose homes or businesses are currently located on or abutting the proposed highway, but access to property does not necessarily mean direct access to or from a State highway. Highway access can be denied if certain criteria such as access spacing, sight distance, land use, and/or safety are not met.

Direct access to fully controlled access highways (mostly interstates) is denied by law, with all access rights owned by WYDOT. Except for highways having fully controlled access, this manual describes access regulations for all highways, roads, and streets under the jurisdiction of WYDOT. Highways and roads not having fully controlled access are limited access roadways. This means that access can and is limited by WYDOT and comprises all State roads not having fully controlled access. WYDOT will allow accesses to a state highway which are reasonable and meet the rule and regulations.

The authority to control access, especially arterials, is exercised to provide safer roads and give flow preference to through traffic. To best serve interstate traffic, commercial areas may be developed along the cross roads adjacent to or near interchanges beyond the limits of access control. Access to the interstate will not be permitted under any circumstances except at interchanges.

These regulations are intended to provide standards for design, location, number, etc., which will result in orderly and safe traffic flow in and out of private properties. Adherence to these standards will minimize interference and hazards to highway traffic and will help preserve the level of service (LOS), efficiency, and safety of the highway.

No work shall be done on a state highway right-of-way prior to receipt by the applicant of a copy of the approved permit with supporting documents such as sketches and diagrams as approved and authorized by the District Engineer or authorized representative. WYDOT may require a bond to guarantee the performance of the work and payment for any damage to the highway and related facilities.

WYDOT District Offices

District 1	Laramie	3411 S 3rd	82070	745-2100
District 2	Casper	900 Bryan Stock Trail	82602	473-3200
District 3	Rock Springs	3200 Elk Street	82902	352-3000
District 4	Sheridan	10 East Brundage Lane	82801	674-2300
District 5	Basin	218 West C Street	82410	568-3400

DEFINITION OF TERMS

Acceleration lane: A speed change lane which enables vehicles to accelerate and then merge with through traffic.

Access: An entrance or exit to another public roadway or to private or public land from a street or highway.

Access angle: The intersection angle of the access with the highway.

Access elements: The longitudinal and cross sectional elements such as the slope of access away from the highway, fore slope, top, drainpipe and etc... that compose a driveway.

Access management: Controlling how, when, and where vehicles can enter and exit a roadway.

Access permit: A permit allowing direct access to a State highway. The constructed access must conform to standards set by WYDOT and the terms of the permit. Permit applications can be obtained from WYDOT District offices.

Access Review Committee: A committee consisting of the Right-Of-Way Administrator, the State Highway Safety Engineer, and the State Traffic Engineer. This committee will decide access issues that deviate from these rules and regulations which are submitted to the committee by a District Engineer. Decisions made by this committee are considered final unless appealed to the Transportation Commission.

Access slope: The slope of the access from the roadway to the highway right of way.

Access width: The width inside the throat of the access at the end of the radii measured perpendicular to the driveway edge.

Auxiliary lane: A speed change lane that allows traffic to decelerate away from or accelerate up to the speed of traffic in the main roadway travel lane(s). An auxiliary lane may also be used as storage lanes for right and left turning traffic - see Acceleration lane and Deceleration lane.

Backage or reverse frontage road: A street or road that runs behind businesses, industrial areas, commercial areas, or subdivisions that is used for direct access to these areas.

Barrier curb: A curb consisting of concrete or masonry not less than six inches in height and made to disallow the passage of vehicles.

Car storage: The necessary space off the highway right of way provided for vehicles waiting to enter a commercial establishment, such as fast food restaurants, car washes, and etc.

Commercial access: An entrance into and/or exit from any business, commercial development, cultural/institutional complex, public establishment, or any development serving 10 or more family residences.

Crossing at grade: An intersection where all roadways join or cross at the same level.

Deceleration lane: An extra driving lane which enables vehicles traveling at high speed to slow down to a safe speed without impeding traffic flow before turning off the highway.

Delineator: A Type 2a delineator with amber reflector(s) may be used to mark an access entrance.

District Engineer: A person employed by the DOT having the responsibility of enforcing WYDOT and Transportation Commission policies on all state highways within the District.

Field (Minor) access: An entrance to and/or exit from a field or unoccupied property if the access is not used daily throughout the year. Daily use for only a few weeks a year still qualifies as field access.

Fore slope: The slope extending from the edge of the driveway to the bottom of the adjacent ditch.

Fringe Urban Area: The transitional zone between a defined urban area and a rural high speed area. The fringe urban area cannot exceed one mile.

Frontage road or service road: A street or road connected to and/or running alongside a highway for the purpose of providing access to property adjacent to the highway.

Grantee: The person or persons whose application for an access driveway has been approved.

Island: An area between traffic lanes used to control vehicle movements.

Joint access: An access shared by 2 or more applicants.

Major access: Any access that generates more than 50 trip ends in any hour of a typical day or is a public street or access.

Multi-lane highway: A highway with two or more lanes for each direction of travel.

Residential access: An access providing entrance to and/or exit from residential dwelling(s) for exclusive use and benefit of those residing therein.

Radii: The curved or flared portion of a driveway which connects the driveway with the highway or street and is designed to accommodate turning movements.

Right-of-way: A strip of land acquired for the exclusive use of constructing and maintaining highways and highway appurtenances, such as safety zones, highway signs, and lighting. The right of way also provides clear lines of sight for drivers and allows for future roadway expansion.

Rural area: A location outside of the urban area. Speeds are generally at or above 50 mph.

Sight distance: The distance drivers need (see Table II-1) to stop vehicles in order to avoid striking an unexpected vehicle on the roadway.

Spacing distance: The spacing distance between accesses shall be measured from the center of one access to the center of the next access - see Figures A-1 thru A-7, pages 26-32.

Street access: A street access is a county road, subdivision road, city street, etc.

Trip end: A single vehicle movement entering or exiting from an access.

Urban area: An incorporated or unincorporated area that has been developed primarily for residential and/or business purposes. The speed limit is generally 45 miles per hour or less, and the street or highway is normally curbed.

In accordance with Operating Policy 25-1, the following establishes the urban areas on the state highway system:

- For cities of less than 5,000 population the urban area will be the area within the corporate limits as established in the latest edition of the *Maintenance Section Reference Book* publication located on WYDOT's website:
http://www.dot.state.wy.us/home/engineering_technical_programs/manuals_publications.default.html
- For cities of greater than 5,000 population the urban area will be the area within the urban boundary as established in the latest edition of the *Maintenance Section Reference Book* publication located on WYDOT's website:
http://www.dot.state.wy.us/home/engineering_technical_programs/manuals_publications.default.html
- For locations where the urban area is not defined, the urban area will be the urban district as defined in W.S. 31-5-1 02(lvii). "Urban district means the territory contiguous to and including any public street or highway which is built up with structures devoted to business, industry or dwelling houses situated at intervals of less than one hundred (100) feet for a distance of a quarter of a mile or more;"

Traffic Impact Study (TIS):

A study documenting the impact that a type of land use or the size of a new development has on the transportation infrastructure. Any development or access that generates 50 or more peak hour trips should have a TIS as part of the access permitting procedure. It shall also be at WYDOT's discretion to require a TIS for any development requesting a new access, changing the use of an existing access, or changing the business or type of development within an existing access or area. The cost of the TIS and any mitigation deemed necessary shall be the responsibility of the individual or entity requesting access to a State highway.

**Table II-1
SIGHT DISTANCE (SD)**

MPH	PERCENT GRADE																						
	0%	1%	-1%	2%	-2%	3%	-3%	4%	-4%	5%	-5%	6%	-6%	7%	-7%	8%	-8%	9%	-9%	10%	-10%		
20	130	130	130	125	130	125	135	125	135	125	135	125	135	125	140	120	140	120	140	120	140	120	145
25	175	175	175	170	175	170	180	165	180	165	185	165	185	165	190	160	190	160	195	160	195	160	195
30	220	225	225	215	225	215	230	210	230	210	235	210	240	205	245	205	245	205	250	200	255	200	255
35	275	280	280	270	280	265	285	260	290	260	295	255	300	255	305	250	310	250	315	250	320	250	320
40	330	335	335	325	340	320	345	315	350	315	360	310	365	305	370	305	380	300	385	300	395	300	395
45	395	400	400	385	405	380	415	375	420	370	430	365	435	365	445	360	455	355	465	350	475	350	475
50	465	470	470	450	475	445	485	440	495	430	505	425	515	420	525	420	535	415	545	410	560	410	560
55	535	545	545	520	555	510	560	505	575	500	585	490	595	485	610	480	620	475	635	470	650	470	650
60	610	620	620	595	635	585	645	575	655	570	670	560	685	555	700	550	715	540	735	535	750	535	750
65	695	705	705	670	720	660	730	650	745	645	760	635	780	625	795	620	815	610	835	605	855	605	855
70	780	795	795	755	810	745	825	730	840	720	860	710	880	700	900	695	920	685	945	675	970	675	970
75	870	885	890	845	905	830	925	815	940	805	965	795	985	780	1010	770	1035	760	1060	750	1090	750	1090
80	970	985	985	935	1005	920	1025	905	1050	890	1070	880	1095	865	1125	855	1150	845	1185	830	1215	830	1215

Sight Distance (SD) *-Distances are based on the "2011 6th Addition, A Policy on Geometric Design of Highways and Streets, Decision Sight Distance, Avoidance Maneuver A" and rounded up to the nearest five feet. Eye height is 3.5 feet. Object height is increased to 3.5 feet to design for a driver on the major road to see a vehicle entering or exiting the access location. Large trucks have longer stopping distances but also have much better sight distance due to their height and therefore are not usually given special design consideration. If access generates heavy truck traffic, increase reaction time(t) to 4.8 s for the above values or perform an engineering study.

* SD= 1.47 Vt + V²/30[(a/32.2) ±G]; t is reaction time= 3.0 sec; V is Velocity in mph; a is deceleration rate= 11.2 ft/s²; G is percent grade divided by 100.

HIGHWAY ACCESS CONTROL BASIC CONCEPT

Varying degrees of access control exist on the state transportation system depending upon the functional classification and intent of the highway. The degrees vary from full access control such as interstates to very limited access control such as local streets. The hierarchy of roads and their uses runs from arterials - the highest degree of mobility and the lowest degree of land access - to local streets - the lowest degree of mobility and the highest degree of land access. **Accesses must be strictly limited on a roadway with high mobility since the main purpose is to move people and goods. Adding accesses degrades the safety and efficiency of this type of roadway and defeats its original intent.**

The main purpose of principal arterials, urban or rural, is mobility. Access is a secondary or minor function and a roadway system should be planned and constructed that allows for direct access onto abutting land from side and backage (reverse frontage) roads. This allows the higher speed and higher volume arterial to function as a traffic mover while the lower speed and lower volume side and backage roads provide direct access to abutting lands. The system operates more safely and efficiently and lets the arterial operate as intended.

FUNCTIONAL ROADWAYS WITH ACCESS DENSITY AND SPACING

An access must be used for what it was intended and permitted. If any change in its use is intended, then an access permit must be resubmitted and approved before the change in use can occur. WYDOT has the right to revoke an access permit when an access is not used as permitted. WYDOT also has the right to remove an access that has no permit. For example a permitted field access is an access with minimal use and is not permitted as a residential access, commercial access, or major access. To use the field access for any use other than as a minor access is in violation of the permit and is not allowed

Unless an access meets the requirements and standards of these rules and regulations, no new accesses will be granted and no additional access rights shall accrue upon the splitting or dividing of existing land parcels or contiguous land parcels under or previously under the same ownership or controlling interest. Again, unless the requirements of these rules and regulations are met, all access to newly created properties shall be provided internally from an existing properly permitted access.

Principles for Accesses and Access Spacing

- Accesses should be aligned directly across from each other when on opposite sides of the road. In other words two accesses should not be offset and should form a four legged intersection with the main road. See Figure A-5, page 30.
- The number of accesses should be minimized while the distance between accesses maximized.
- Subdivisions should be allowed no more than one (two maximum, if justified) direct access onto a State highway. All sites or residences within the subdivision shall be directly accessed from an internal road system.
- Joint accesses should straddle the property line between property owners.
- No access shall be within the limits of an auxiliary lane including taper. When an auxiliary lane is warranted and constructed and an access is within the auxiliary lane limits, then the access, if possible, shall be relocated out of the auxiliary lane limits - preferably on a side road.

- Having interconnectivity between businesses (connecting parking lots) will keep traffic from reentering the roadway to access another business.
- When reconstructing a corridor or roadway, every effort will be made to reconstruct accesses according to the spacing and width requirements of this manual.
- Accesses shall be designed to disallow backing onto the State system according to Wyoming State Statute 31-5-226.
- Unless the spacing criteria is met, direct access to malls, residences, or businesses should not be from an arterial, but should be from side and backage roads.
- A bond may be required when applying for an access permit. This guarantees that WYDOT will not be liable for the cost of building, finishing, or removing an access.

Rural Areas

- **Rural principal arterials** consist of the interstate system and all non-interstate principal arterials. They serve movements with trips involving substantial statewide or interstate travel and also serve the larger cities and towns. These highways have high access control and high mobility; their main purpose is the efficient movement of people and goods and they are meant to provide little or no land access. Interstates have no direct access. Access spacing on all other rural principal arterials is contained in Table II-2.

Access Type	Field	Residential	Commercial	Major
Field	330	330	660	1320*
Residential	330	660	1320*	1320*
Commercial	660	1320*	2640*	2640*
Major	1320*	1320*	2640*	2640*

Table II-2. Rural Arterial Access Spacing. Minimum separation distances in feet per side. * If two State highways intersect, then an access may be allowed less than the above distances but the distance from the intersection to an access shall be a minimum of 660 feet. Read this table by selecting the type of approach in the column on the left side. The minimum separation distance from any other access across the top row is where the column and row intersect. For example the minimum separation distance between a field access and either another field or residential access is 330 feet. The minimum separation distance between a field and a commercial access is 660 feet. The minimum separation distance between a field and major access is 1320 feet. Read Table II-3 in the same manner.

If a rural principal arterial is a non-interstate divided multilane highway that allows at grade intersections, then the field and residential accesses shall be right-in/right-out only. The major accesses may have a median crossover, but the median shall be wide enough to accommodate the design vehicle. Auxiliary left turn and right turn deceleration and storage lanes shall be constructed on the main highway to standards established by WYDOT at major access locations.

- **Rural minor arterials** are an integrated intrastate and intercounty service. These roads have limited access and internal spacing consistent with population density so that all areas of the state are within reasonable distance of an arterial highway. Movement is still the primary function of this roadway and the number of accesses should be minimized so as not to interfere with the through traffic. Access spacing shall be the same as for rural principal arterials (see Table II-2).
- **Rural major collectors** are highways that link larger towns not served by arterials and provide the most important intracounty travel corridors. They serve major traffic generators such as agriculture, mining, recreation, and industry and also provide access to arterials. These roads are a compromise between mobility and land access. Access density and spacing is shown in Table II-3.
- **Rural minor collectors and rural local roads** are roads that collect traffic and link developed areas with major collector and arterial systems. These highways provide a greater degree of land access at the cost of reduced mobility. Access density and spacing is shown in Table II-3.

Access Type	Field	Residential	Commercial	Major
Field	220	220	330	660
Residential	220	440	660	660
Commercial	330	660	1320*	1320*
Major	660	660	1320*	1320*

Table II-3. Rural Major Collector, Rural Minor Collector, and Rural Local Road Access Spacing. Minimum separation distances in feet per side. * If two State highways intersect, then an access may be allowed less than the above distances but the distance from the intersection to an access shall be a minimum of 660 feet.

Urban Areas

- **Urban principal arterials, minor arterials, and collectors** serve the major centers of metropolitan activity and are high volume traffic corridors with the longest trips. These highways are integrated to major rural connections and include the interstate system. It is **essential** that accesses are limited to allow the roadways to function with a high degree of mobility. A local road system, funded, constructed, and maintained by city, county, and/or private concerns and separate from the State arterial, is the best method to directly access land abutting a State highway. Access to the local road system would be from the public street spacing listed below. Access density and spacing shall be as follows:
 - In 30 mph or lower speed zones there should be no accesses other than public streets (side roads) and direct access to abutting property will be from the side roads. Public streets should be spaced no closer than 330 feet. Signalized intersections should be evenly spaced with a minimum spacing of 1,320 feet. Access density and spacing is shown in Table II-4.
 - In the 35 mph to 45 mph speed zones, inclusive, no more than one field, residential, or commercial access-per 330 feet of frontage. Again, it is preferred that direct access to abutting land be done through side streets. Public streets should be spaced no closer than 660 feet. Spacing from any access type to any other access type shall be no closer than 330 feet. If more than one access is requested on an individual property and the afore mentioned spacing requirements are met, a traffic impact study (TIS) shall be required (see Chapter V, Traffic Impact Studies) justifying the additional access(es). Signalized intersections should be evenly spaced and with a minimum spacing of 2,640 feet. Access density and spacing is shown in Table II-4.

- In 50 mph to 55 mph speed zones, inclusive, no more than one residential or commercial access per 660 feet of frontage. Again, it is preferred that direct access to abutting land be done through side streets. Public streets should be spaced no closer than 1320 feet. Spacing from any access type to any other access type (other than field to residential or field to field) shall be no closer than 660 feet. If more than one access is requested on an individual property and the aforementioned spacing requirements are met, a Traffic Impact Study (TIS) shall be required (see Chapter V, Traffic Impact Studies) justifying the additional access(es). Signalized intersections should be evenly spaced and with a minimum spacing of 2,640 feet. Access density and spacing is shown in Table II-4.

Access Type	Speed Range (mph)	Access Type			
		Field	Residential	Commercial	Major
Field	<=30	330	330	330	330
	35-45	330	330	330	330
	50-55	330	330	660	660
Residential	<=30	330	330	330	330
	35-45	330	330	330	330
	50-55	330	660	660	660
Commercial	<=30	330	330	330	330
	35-45	330	330	660*	660
	50-55	660	660	1320*	1320**
Major	<=30	330	330	330	330
	35-45	330	330	660*	660
	50-55	660	660	1320*	1320**

Table II-4. Urban principal arterials, Urban minor arterials, and Urban collectors. Minimum separation distances in feet per side.

***If a two way left turn lane is present, the spacing may be reduced by one-half.**

****If two State highways intersect, then an access may be allowed less than the above distances but the distance from the intersection to an access shall be a minimum of 660 feet.**

- In urban areas (cities of less than 5,000 population) with 35 mph and lower speeds and annual average daily traffic volumes less than or equal to 3000 vehicles per day (VPD), the spacing may be reduced, from any access type to any other access type, down to 75 feet.
- On multilane urban arterials with average daily traffic volumes greater than 24,000 VPD, a median should be considered. With volumes greater than 30,000 VPD, a median island should be installed. A median island would prohibit left turn direct access and direct accesses would be right-in/right-out only. Right turn decel lanes should be installed at the direct accesses.

- **Urban local roads** provide both land access service and traffic circulation within residential neighborhoods. These roads collect local traffic and channel it to the arterial system. Land access and traffic circulation are equally important functions. Access density and spacing shall be as follows:

- Public streets should have a minimum spacing of 330 feet.
- No more than one access per 75 feet of frontage.
- The minimum distance between any access types shall be 75 feet.

- **Fringe Urban Areas**

- Access density and spacing for rural arterials in the fringe urban area shall be the same as for the urban areas (see Table II-4).
- In 55 mph or lower speed zones, access density and spacing for rural collectors and rural local roads in the fringe urban area is shown in Table II-5.

		Access Type			
Access Type	Speed Range (mph)	Field	Residential	Commercial	Major
Field	<=30	220	220	330	330
	35-45	220	220	330	330
	50-55	220	220	330	660
Residential	<=30	220	330	330	330
	35-45	220	330	330	330
	50-55	220	440	660	660
Commercial	<=30	220	330	330	330
	35-45	330	330	660*	660
	50-55	330	440	1320*	1320**
Major	<=30	220	330	330	330
	35-45	330	330	660*	660
	50-55	660	660	1320*	1320**

Table II-5. Rural Major Collector, Rural Minor Collector, and Rural Local Road Access Spacing for fringe urban areas.

***If a two way left turn lane is present, the spacing may be reduced by one-half.**

****If two State highways intersect, then an access may be allowed less than the above distances but the distance from the intersection to an access shall be a minimum of 660 feet.**

Full Access Control

The only access points allowed are those designed and built at the time of initial construction. This is to protect the integrity of the highway so it may serve the traffic and function for which it was built. Common types of full access control locations are:

- **Interstate highways and divided freeways:**

Access shall be provided only at interchanges. Any proposed new interchanges must be studied by WYDOT's Planning Program and if warranted, approved by the Federal Highway Administration (FHWA).

- **Cross roads abutting interchange ramps:**

No approach shall be allowed within 660 feet of ramp ends on the cross roads in either urban or rural areas.

- **Selected public roads:**

Accesses are only allowed for bypasses, circumferential routes, or other public roads.

Limited Access Control (All roads not under full access control)

- Urban areas and rural areas not covered under full access control

Reservations

WYDOT reserves the right at any time to make such changes, additions, repairs, and relocations to any access or its appurtenances within the right of way as may be necessary to permit the relocation, reconstruction, widening, and maintenance of the highway and/or to provide proper protection to life and property on or adjacent to the highway.

Appeals

If an access permit has been denied, then an appeal may be made, in writing, to the Access Review Committee. After the committee receives an appeal, it shall respond to the applicant with its final decision within 60 days of its receipt of the written appeal. If this committee still denies the permit, then further appeals and hearings arising shall be conducted according to the procedures described in General Section, Chapter 3, Appeals and Hearings, of the Wyoming Department of Transportation rules and regulations.

The Access Review Committee will include:

Right-Of-Way Administrator

State Traffic Engineer

State Highway Safety Engineer

CHAPTER III

REGULATIONS AND INFORMATION FOR OBTAINING ACCESS PERMITS

Permit Forms

Applications for an access permit to construct any access or to reconstruct or alter any existing access shall be made to the district engineer having jurisdiction in the area. Phone numbers and addresses for the district offices are in Chapter II. **Applications for access permits will be accepted only from an individual, partnership, corporation, qualified agent, or other body recognized by law as owning all or the major interest in the property abutting the highway right of way or proposed highway.** In the case of an easement, the party that has been provided the easement must apply for the access permit.

Information Required

- The location of the property must be identified clearly enough on the application and physically at the site for the proposed access and property to be located in the field.
- Complete names and addresses of the property owner(s) and/or easement users must be given on the application.
- The planned property use must be indicated as one of the following:
 - **Field (Minor) Access.** An entrance to and/or exit from a field or unoccupied property that is not frequently used.
 - **Commercial access:** An entrance into and/or exit from any business, commercial development, cultural/institutional complex, public establishment, or any development serving 10 or more family residences.
 - **Major Access.** Any access that generates more than 50 trip ends per any hour of a typical day or is a street access.
 - **Residential Access.** An access providing entrance to and/or exit from a residential dwelling(s) for the exclusive use and benefit of those residing therein.
- A sketch showing sufficient dimensions **shall** be submitted with the application which clearly indicates the character and extent of the proposed work including:
 - **The location of all existing or proposed buildings, stands, pumps, retaining walls, and** other physical features which affect the access location.
 - Property lines, dimensions, and existing access.
 - All drainage which affects the access location.
 - Off street parking locations which may affect access location.
 - Proposed access.
 - All accesses outside of the property but within 330 feet urban, 660 feet rural of the property line.
 - Radii of proposed accesses.

Materials

The grantee shall furnish all materials necessary for the construction of the entrances and appurtenances authorized by the permit. All materials shall be of satisfactory quality and shall be subject to the inspection and approval of WYDOT

Inspection - Maintenance

WYDOT reserves the right to inspect these installations at the time of construction and at all times thereafter until accepted. WYDOT can require changes and repair considered necessary to provide protection of life and property on or adjacent to the highway. **WYDOT has the right to remove or require to be removed, at the landowner's expense, any access that has not been permitted or approved and accepted, and does not meet the requirements set by WYDOT.** Unless specifically exempted on the permit, once an access has been accepted by WYDOT, it becomes WYDOT's to maintain and repair within the right of way except for snow and debris removal.

Changes in Existing Facilities

No access driveways or other improvements constructed on the highway right of way shall be relocated or have its dimensions altered without an approved permit from WYDOT.

Processing Access Applications

Once an application is received by the district engineer, the application should be processed with an acceptance or denial from WYDOT within **four weeks** of receipt. Delays may arise due to a proposed access that is not straight forward and/or does not meet the requirements of this manual.

Construction and Temporary Accesses

If a highway construction or reconstruction project requires a change in an existing highway access, the new access will be built in accordance with these regulations. The cost of the access work will be charged to the highway project. Also, if during construction a temporary access is needed for one already existing, an access will be provided with the cost borne by the construction project.

If the need for an access to a highway develops after a construction or reconstruction project has begun, the property owner must follow the procedures outlined in this manual. The cost of the access work will be negotiated with WYDOT.

Commercial Development

In certain cases, due to subdivision development or heavy strip development, it may be deemed necessary through a TIS to require landowners to construct service roads or easements off highway rights of way. Permission for temporary access driveways to the highway may be granted, with the provision that such driveways will be removed when the frontage/backage roads or easements are constructed.

Limitation

These regulations shall apply on all highways under the jurisdiction of WYDOT.

Indemnification

The grantee shall hold harmless the WYDOT Transportation Commission and appointed agents and employees against any action from personal injury or property damage sustained by reason of the exercise of this permit.

CHAPTER IV DESIGN REQUIREMENTS

Design Requirements for Driveways

- **Property Frontage:**

All parts of accesses on highway right of way shall be confined within the grantee's property frontage wherever possible. Frontage is that portion confined within the limits of the grantee's property lying between the two most distant possible lines drawn perpendicular from the centerline of the highway to the grantee's abutting property.

- **Location:**

Locations of accesses shall be selected to provide maximum safety for highway traffic and for users of the access. All parts of any access, including the radii, shall have a minimum clearance of 12.5 feet from the abutting property line except as provided in the **Design variations** and **Joint Accesses** paragraphs under **Design Requirements**, but every effort should be made to locate the access to the center of the frontage. Any access driveway shall be located as stated in the **FUNCTIONAL ROADWAY WITH ACCESS DENSITY AND SPACING** section starting on page 11. The measured distance for the spacing shall be from the center of one access to the center of the next access. No access shall be allowed within a deceleration or acceleration lane. At interchanges, accesses shall be located a minimum of 660 feet from any ramp and cannot be between ramps.

- **Sight Distance:**

All sight distances shall meet the values in Table II-1 on page 10.

- **Drainage:**

Drainage in highway side ditches shall not be altered or impeded unless approved by WYDOT when drainage structures are required. Size and type of pipe and other design features shall be as directed by the engineer having jurisdiction in the area. These costs and the costs of a drainage study, if required, shall be borne by the applicant or grantee.

- **Design Variations:**

WYDOT may authorize or require certain changes in the design limits herein when such changes are necessary to preserve the normal and safe movement of traffic or to permit reasonable access. In consideration of type, speed, and volume of highway and access traffic, larger radii than the minimum listed may be required by the district engineer. In all cases, curb return radii shall be confined to the grantee's property frontage wherever possible and shall not be less than 10 feet. For curb drops without radii, see WYDOT Standard Plans for accesses and ADA ramps.

- **Access Elements:**

The driveway slope or grade shall be constructed to drain away from the highway. For typical profiles see Figure A-8, page 33. The approach fore slopes shall conform to the latest safety standards. Variation of the profile may be submitted for approval.

- **Joint Accesses:**

Landowners of adjacent property may be asked or may want to construct a joint access to service both properties. All requirements of this manual shall be met, except for the minimum clearance restriction in **Property Frontage** and **Location** sections of the **Design Requirements**. If an easement is involved, a copy of the easement will be included with the access application and the landowner does not necessarily need to sign the application.

- **Multiple Accesses:**

Two or more accesses entering a State highway from a single commercial or residential establishment must be justified to the satisfaction of WYDOT and shall require a traffic impact or engineering study.

- **Materials:**

The grantee shall furnish all materials necessary for the construction of the access entrances and appurtenances authorized by the permit. All materials shall be of satisfactory quality and shall be subject to inspection and approval by WYDOT.

- **Paving:**

All major accesses shall be paved by the grantee. All other accesses which generate 50 trip ends or more per day shall be paved by the grantee, or as stipulated in the permit.

Residential or Field Accesses

- **Construction:**

The grantee shall do all work and pay all costs for the construction of access driveways and their appurtenances on the highway right of way. Any damages to the road right of way resulting from the construction shall also be paid by the grantee.

- **Width:**

The width, excluding radii and special cases, shall not exceed 24 feet urban or rural, nor be less than 16 feet.

- **Angle:**

The angle of the access driveway from the highway pavement shall be as near 90 degrees as site conditions will permit. The minimum angle allowed is 60 degrees.

- **Radii:**

Residential driveway radii shall not be less than 10 feet nor greater than 30 feet urban, 40 feet rural. Exceptions may be allowed as outlined in **Design Variations** of **Design Requirements**.

Major or Commercial Accesses

- **Construction:**

The grantee shall do all work and pay all costs in for the construction of accesses and their appurtenances on the highway right of way. Any damages to the road or right of way resulting from the construction shall also be paid by the grantee.

- **Width:**

The width of two way access driveways shall not exceed 40 feet nor be less than 24 feet. The width of one way access driveways shall be a minimum of 16 feet and a maximum of 24 feet. Width shall be measured at right angles to the centerline of the driveway. Exceptions may be allowed as outlined in **Design Variations of Design Requirements**. Radii are not included in driveway width.

- **Driveway Angle:**

Driveways connecting to streets with two way operation shall be as near 90 degrees as site conditions will permit. Driveways that have a one way operation and allow only right-in at the entrance and right-out at the exit may have a 60 degree minimum angle.

- **Radii:**

Commercial driveway radii shall not be less than 10 feet nor greater than 50 feet unless as stated in **Design Variations of Design Requirements**.

- **Vehicle Service Fixtures:**

The distance from the right of way line to the near edge of service pumps, vendor stands, tanks, or private water hydrants should be a minimum of 20 feet to permit free movement of large vehicles and to insure that they are entirely off highway right of way while being serviced. Maneuverability of large vehicles may warrant more than 20 feet.

- **Heavy Traffic Volume Access Driveways:**

If WYDOT determines an impact or analysis study is needed, the applicant will pay for the study. Fast food restaurants, car washes, industrial parks, residential subdivisions, and other accesses of this nature must make allowances for car storage on the premises to prevent stacking of vehicles on the roadway. It is recommended that a minimum capacity of 15 vehicles for restaurants and 10 to 20 vehicles for a car wash be provided. If needed and feasible to construct, warranted auxiliary acceleration and deceleration lanes shall be provided and paid by the grantee. No other accesses shall be permitted within the limits of the auxiliary lanes.

CHAPTER V

TRAFFIC IMPACT STUDIES

A Traffic Impact Study (TIS) is a planning tool that documents the impact that a type of land use or the size of a new development has on the transportation infrastructure. Through this process which identifies possible operational problems that are directly related to a change in land use, it is possible to develop effective mitigation measures. Depending upon the anticipated impacts, a TIS may be required as part of the access permitting process.

As a governmental agency which has the responsibility of working with public and private partners to produce a safe and efficient transportation system, WYDOT must manage traffic demand to strike a balance between mobility and land access. A TIS provides WYDOT with the information necessary to make appropriate decisions regarding impacts to road users as well as appropriate decisions related to land access. **The cost of the TIS and any mitigation measures deemed necessary shall be the responsibility of the individual or entity requesting access to a State highway.**

The following guidelines outline the minimum requirements that should be considered in the development of a TIS. These guidelines are not meant to be all inclusive, but rather a starting point from which a specific study can be generated for a specific project.

WYDOT can require a TIS for any development, but as a general rule, any development or access that generates 50 or more peak hour trips should have a TIS as part of the access permitting procedure. This threshold corresponds to residential subdivisions of between 50 and 60 homes, a motel with about 80 rooms, or any free standing store.

The boundaries of the TIS should include any roadway on the State highway system that is impacted or receives an impact that lowers the level of service below “C” or causes operational deficiencies. This might include intersections with other State highways, intersections with public streets, or adjacent driveways.

Minimum Traffic Impact Study Requirements

Introduction

- Description of the proposed project.
- Location of the project.
- Site plan including all existing and proposed access points to the State highway, all accesses across the highway from the site, and all accesses within 660 feet of the site.
- Water drainage plan.
- Internal circulation network including any proposed construction phasing.
- Project sponsor and contact person. Traffic
- Data and analysis may apply to motorized and non-motorized traffic.
- Description of existing conditions.
- Traffic volumes - average daily traffic (ADT) and design hourly volume (DHV).
- Turning movement volumes. Roadway functional classification.
- Existing traffic control, including signal phasing and coordination if appropriate.
- Facility or internal site geometry.
- Traffic generated by approved developments in the area.
- Level of service (LOS) at appropriate locations.
- Project trip generation for full build out.

- Project generated trip distribution and assignment.
- Changes in adjacent land use.
- Total traffic Traffic volumes - ADT and DHV.
- Turning movement volumes for build out DHV and present volumes for at least 4 peak hours of a typical day.
- 95th percentile queue lengths.
- Make sure internal circulation does not cause problems for mainline traffic.
- Impact analysis. Recommendations
- Comparison of impacted facility with and without the project.
- Any necessary mitigation measures. Responsibility for mitigation. Mitigation cost estimate. Timetable for mitigation. If a traffic signal(s) is recommended, demonstrate how it fits into the existing network.

Appendices

- Description of traffic data and how the data was collected.
- Description of methodologies and assumptions used in analysis.
- Worksheets used in analysis.

All Traffic Impact Studies must be done by or under the supervision of a traffic/transportation engineer with a valid Wyoming professional engineer's (P.E.) license. The study should be validated with the appropriate professional engineer's stamp and should contain a certification statement which should read as follows:

“I certify that this Traffic Impact Study has been prepared by me or under my immediate supervision, that I have experience and training in the field of traffic and transportation engineering, and I am a registered professional engineer (P.E.) with the state of Wyoming.”

Signed,

John H. Doe

The TIS will be reviewed by WYDOT staff. The review will ensure that the study is acceptable and that all mitigation measures meet WYDOT standards.

APPENDIX

Figure A-1. Typical Urban Residential Access Layout

TYPICAL RESIDENTIAL ACCESS LAYOUT - URBAN SECTION -

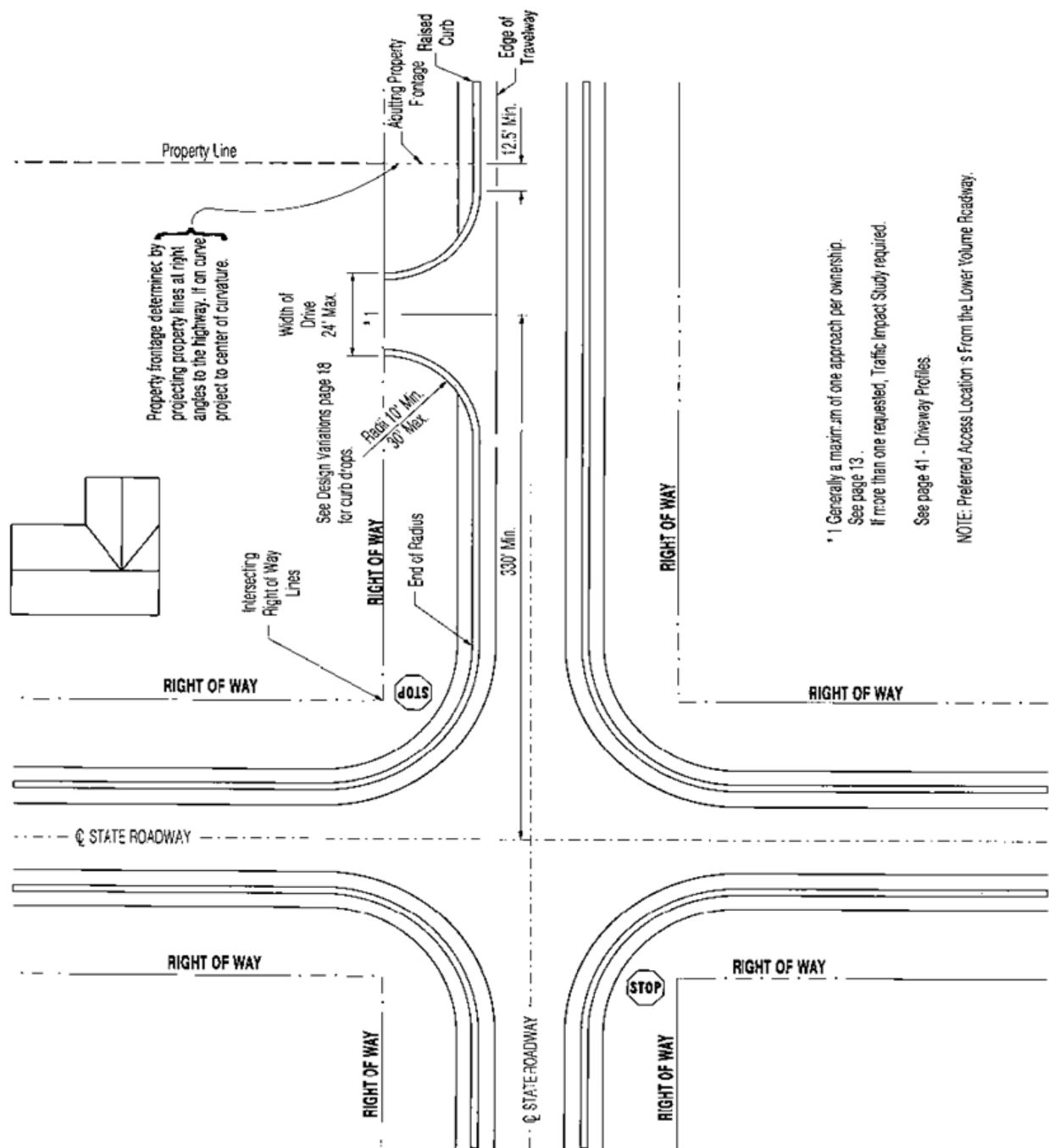
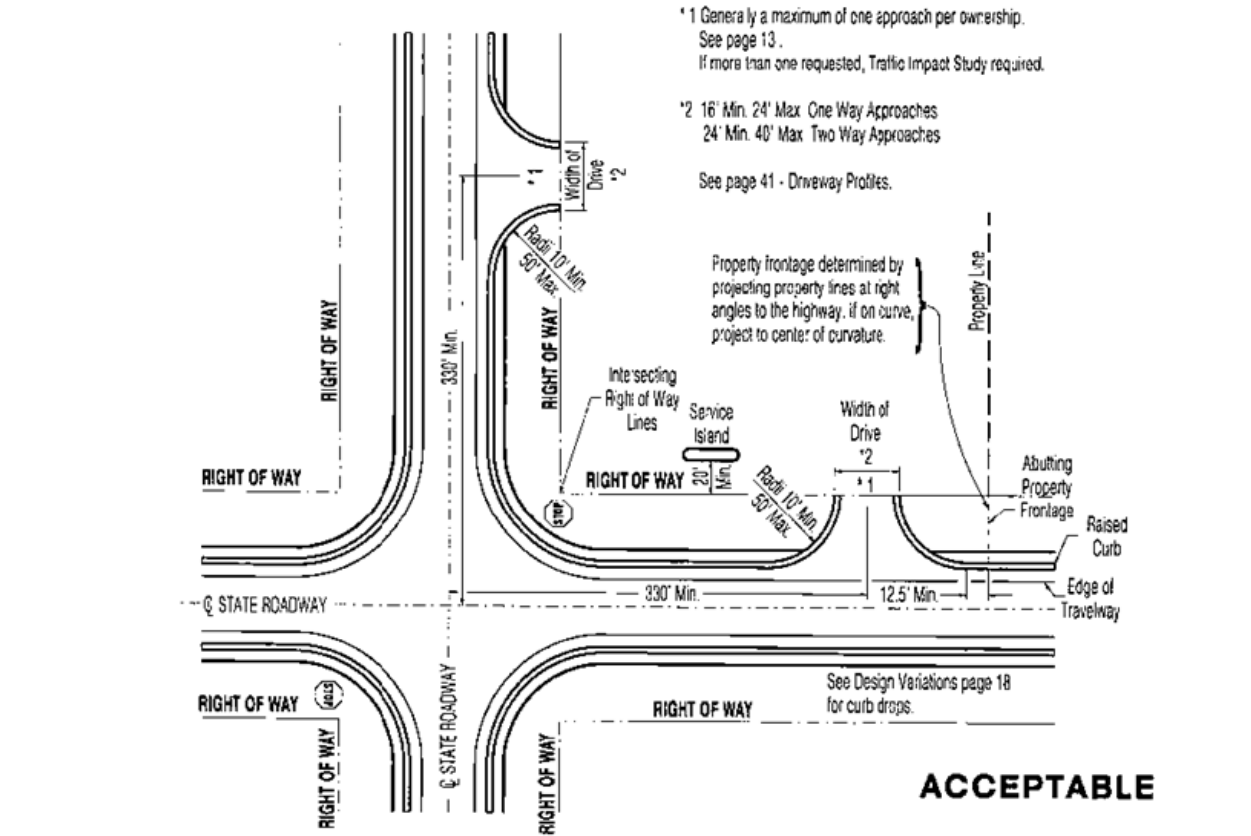
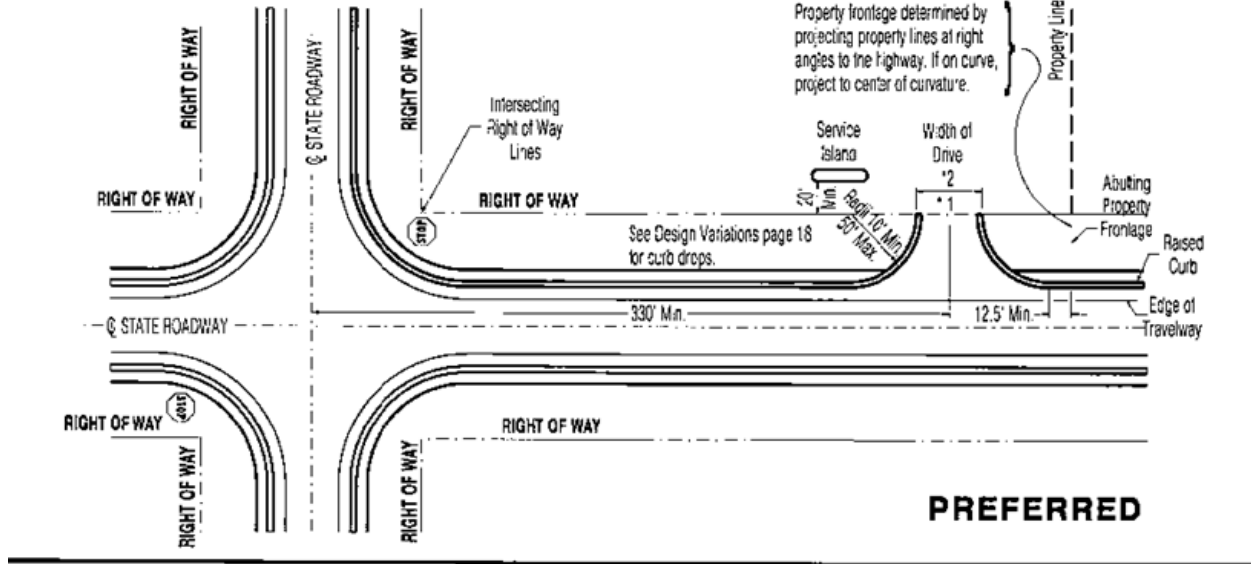


Figure A-3. Typical Urban Commercial Access Layout

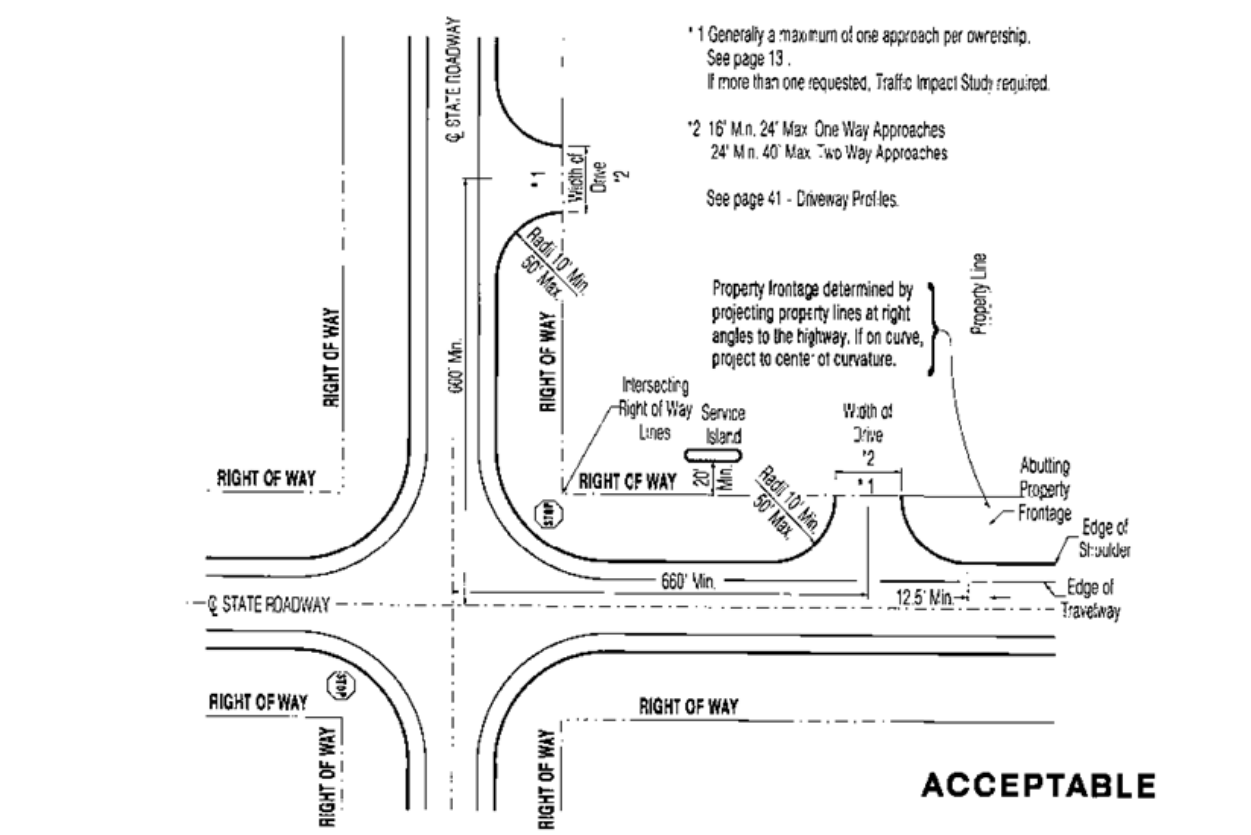
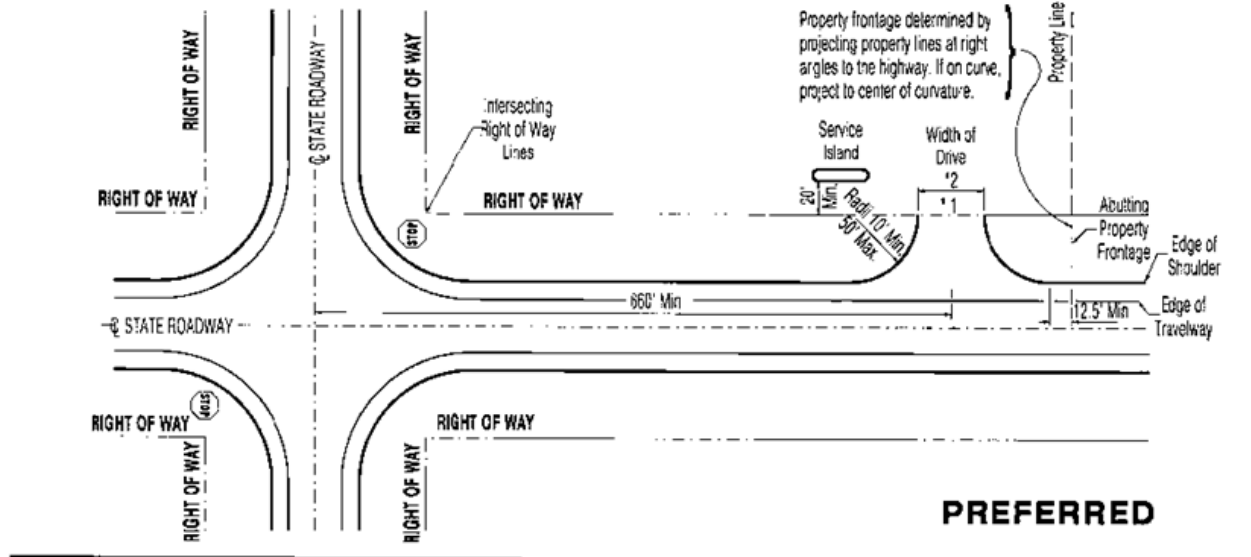
TYPICAL COMMERCIAL ACCESS LAYOUT - URBAN SECTION -



- *1 Generally a maximum of one approach per ownership. See page 13. If more than one requested, Traffic Impact Study required.
- *2 16' Min. 24' Max One Way Approaches
24' Min. 40' Max Two Way Approaches
See page 41 - Driveway Profiles.

Figure A-4. Typical Rural Commercial Access Layout

TYPICAL COMMERCIAL ACCESS LAYOUT - RURAL SECTION -



*1 Generally a maximum of one approach per ownership. See page 13. If more than one requested, Traffic Impact Study required.
 *2 16' Min. 24' Max. One Way Approaches
 24' Min. 40' Max. Two Way Approaches
 See page 41 - Driveway Profiles.

Figure A-5. Backage and Side Road Access and Access Offsets

BACKAGE ROAD AND SIDE ROAD ACCESS AND ACCESS OFFSETS

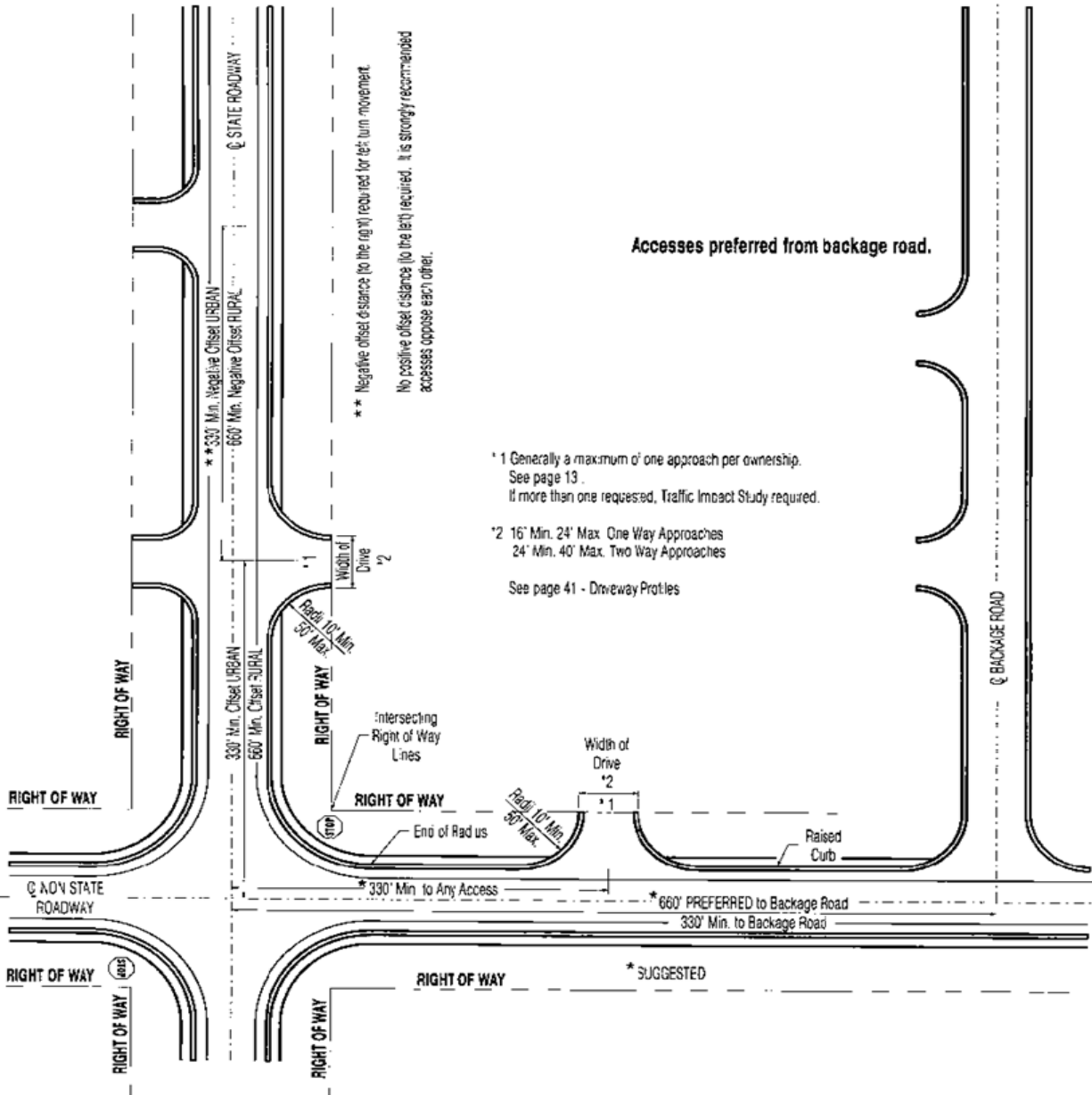


Figure A-6. Access Distance from Interstate Ramp Ends

INTERSTATE RAMP ENDS

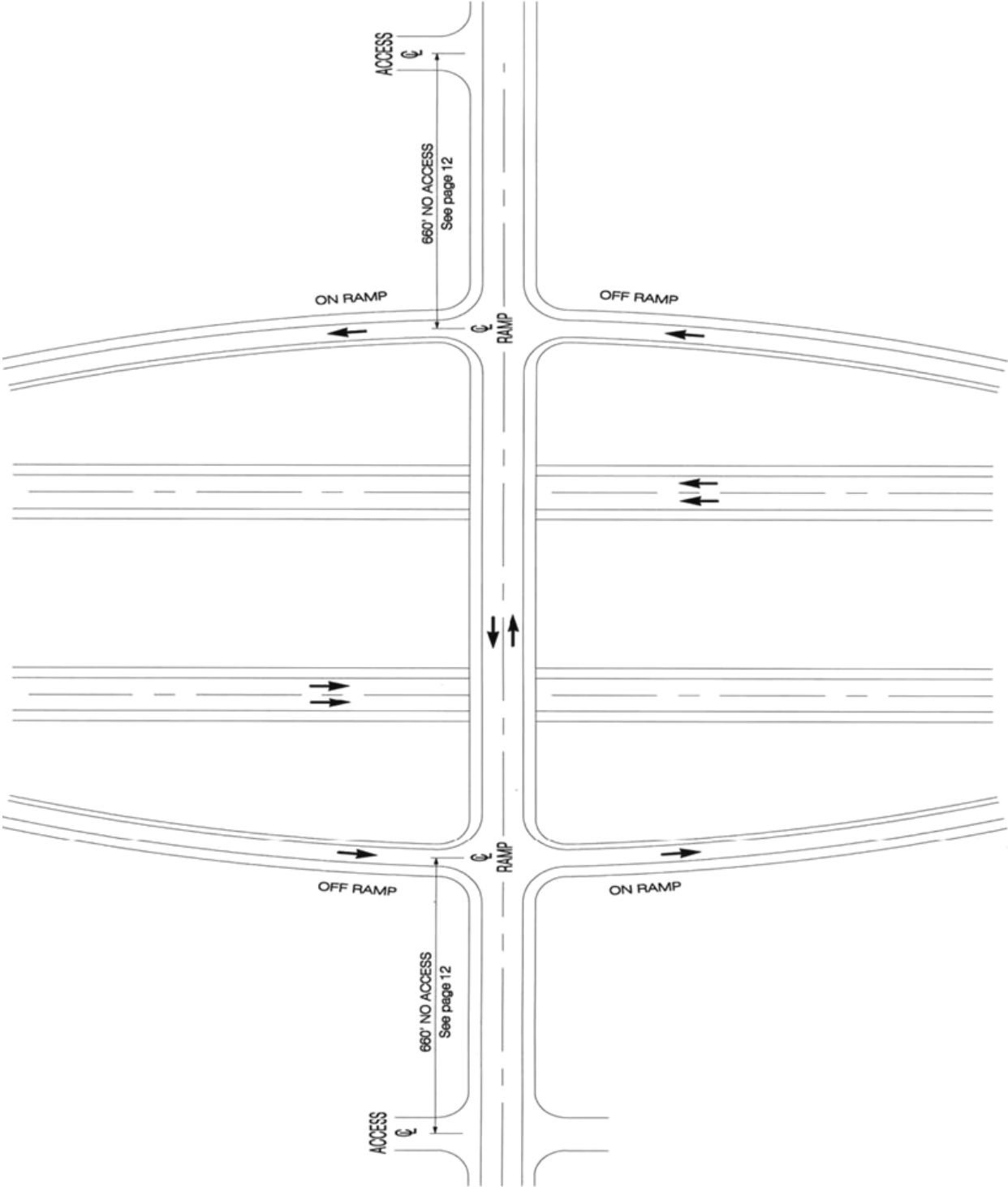
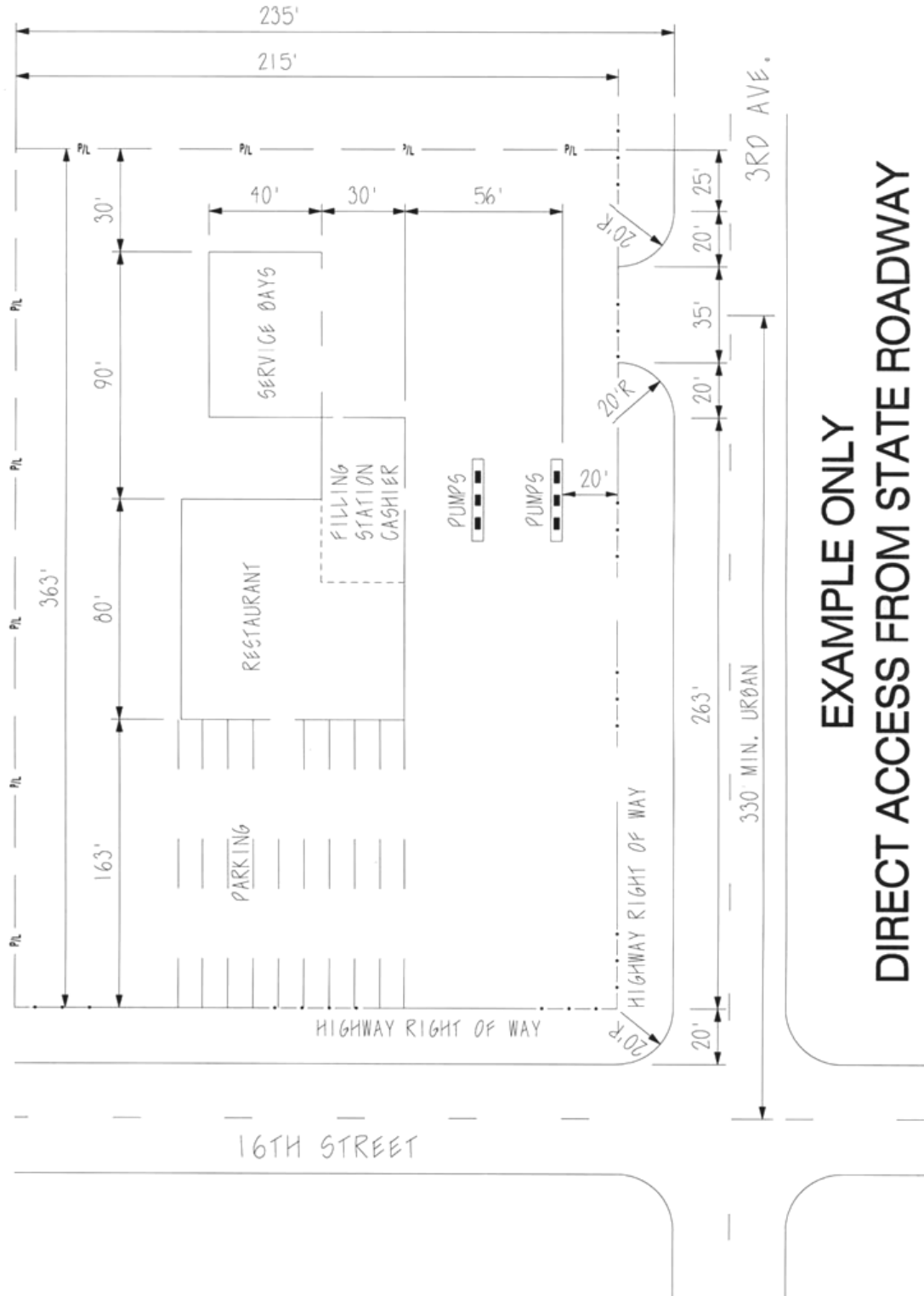


Figure A-7. Example Site Drawing with Proposed Access Location

DETAILED DRAWING OF APPLICANTS PROPERTY

Distances on this drawing are for example only.



EXAMPLE ONLY
DIRECT ACCESS FROM STATE ROADWAY

Figure A-8. Driveway Profiles

DRIVEWAY PROFILES

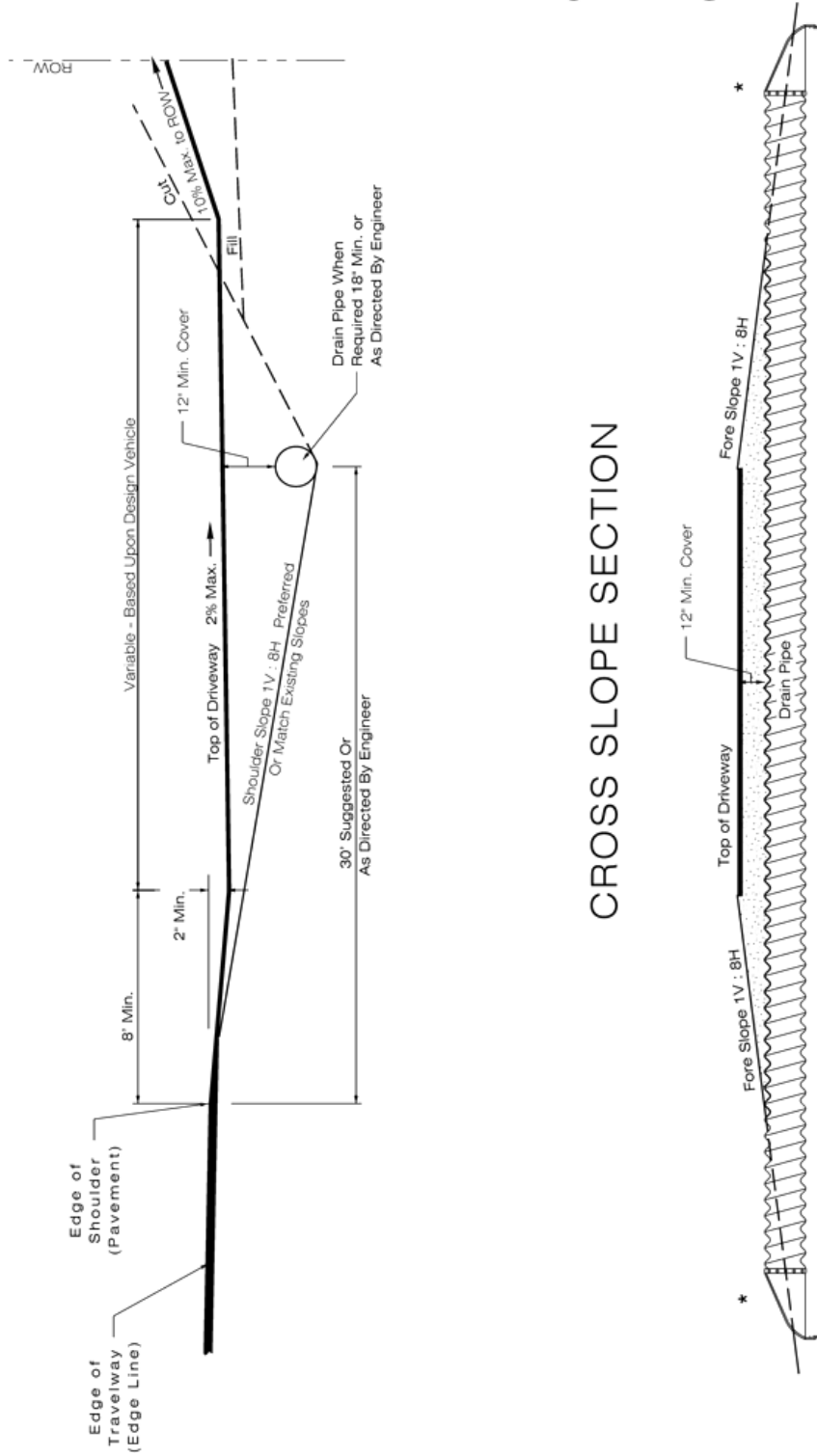


Figure A-9. Driveway Profile Checklist

M-3 drawing attachment

Approach Width (W) _____ Fill Height _____ Radius _____

Property Line

12 1/2 ft MIN.

Required End Panels w/ gate

OPTIONAL Cattle Guard

Required End Panels w/ gate

Radius

Radius

CMP or RCP culvert

Placed in bottom of ditch

Edges of pavement

1/4 HIGHWAY

1/4

ft

ft

Rural Area

cut section

fill section

Urban Area

cut section

fill section

(1) COMMERCIAL ACCESS 5% MAX. (2) PRIVATE ACCESS 10% MAX.

Project # _____ Station _____

Culvert Size; dia., _____ length, _____ type, _____

Maint. Sect. _____ Milepost _____ Section _____ Township _____ Range _____

Right Left

Note: NOT TO SCALE

Name _____ Address _____ State _____

Route # _____ City _____