

1190

DRIVEWAY STANDARDS

Foreword

Driveway permits, if appropriate, are issued by the Regional Offices of the Department after receipt of an official application from the individual desiring to build a driveway. The application must be on a form approved by the Department. Such forms may be obtained from any of the Regional or District Offices listed below. These permits are revocable by the Department at any time if the conditions of the permit are disregarded or violated, or if the Department determines that the continuation of the permitted driveway constitutes an unwarranted safety hazard to the public.

Whenever a person wishes to place a driveway within the State road right-of-way, the law requires that the person obtain a permit from the Department. The required permit allows the construction, continued presence, and maintenance of the driveway within the public right-of-way. Note that the Department does not maintain driveways and will construct driveways only when such construction or reconstruction is required by a change in the public roadway caused by the Department.

Controls placed on driveway location, size, geometric design, and number of driveways per parcel as well as placement of dividers to prohibit left turns, are exercised by the Department as part of the Government's general police powers to regulate traffic upon the State roadway for the safety of the public. As such, these controls are considered non-compensable by the courts; that is, the property owner generally cannot be paid damages due to implementation of these controls.

Property owners abutting roadway rights-of-way are normally allowed access to the roadway unless their access rights have been limited by zoning or purchase of the access rights, such as along a freeway or expressway. However, even where the property owner is allowed access the physical design of the driveways may be restricted by the Department of Transportation and Public Facilities to maintain the safety or efficiency of the public roadways. In some instances, where adjacent property abuts two different roadways, the Department may restrict access to one of those roadways due to the otherwise unsafe conditions which could result. In a similar manner, the Department may place a physical divider in the public roadway to prevent left turns into and/or out of a driveway.

These Driveway Standards represent the Department's adopted minimum criteria for design, construction and operation of driveways within the rights-of-way of State highways, streets and roads. In some instances the Department may include additional criteria within the permit if considered necessary for safe operation on the public roadway. For instance, curbs or curb-stops in a parking lot are normally required by a municipal planning and zoning agency to keep parked vehicles from encroaching within the public right-of-way. If the municipal government does not require such barriers, the Department may include such a requirement in a driveway permit in order to protect the traveling public.

Balancing the access needs of the adjacent property owners and the safety requirements of the motoring public on a roadway is not easy. We believe we have developed these Driveway Standards in such a manner as to create such a balance. It should be noted however, that in any such balancing situation the safety of the public must be paramount. Your cooperation in working with our Department to achieve a balance for your particular property is appreciated.

Mike Downing
Director
Statewide Design and Engineering Services

Regional and District Offices

Central Region
4111 Aviation Drive
P. O. Box 196900
Anchorage, Alaska 99519-6900
907-269-0700
Cassandra Rice, Chief Right of Way Section
1-800-770-5263 toll free
907-248-9456 fax

Southeast Region
6860 Glacier Highway
Juneau, Alaska 99801
907-465-1785
Linda Keikkala, Leasing Officer
907-465-3506

Northern Region
Interior District
2301 Peger Road
Fairbanks, Alaska 99701
907-451-2205
Ron Reitano, Maintenance Supervisor
907-451-5131 fax

Northern Region
Western District
4-Mile Nome-Teller Highway
P. O. Box 1048
Nome, Alaska 99762
907-443-3444
907-443-2618 fax

Northern Region
Southcentral District
1.5 mile Richardson Highway
P. O. Box 507
Valdez, Alaska 99686
907-451-5148
907-451-8341 fax

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1190.01 GENERAL

Driveways that intersect public roadways are in effect a type of at-grade intersection. The number of accidents at driveway intersections is disproportionately higher than at public road intersections and consequently, driveway intersection design merits special attention.

The Alaska statute (AS 19.25.200) is quoted.

Sec. 19.25.200. ENCROACHMENT PERMITS.

(a) An encroachment may be constructed, placed, changed, or maintained across or along a highway, but only in accordance with regulations adopted by the department. An encroachment may not be constructed, placed, maintained or changed until it is authorized by written permit issued by the department, unless the department provides otherwise by regulation. The department may charge a fee for a permit issued under this section.

The commissioner of administration shall separately account for encroachment permit fees that the department deposits in the general fund. The annual estimate balance in the account may be used by the legislature to make appropriations to the department to carry out the purposes of this section.

A driveway constructed within the right-of-way of a public roadway is an encroachment into that right-of-way and requires a written permit. Permits for driveways constructed by the Department either directly or as part of a road construction project, will be issued to the appropriate land owner upon completion of the project. Permits for driveway constructed by others, including the adjacent property owner or the owner's agent, shall be obtained from the Department **prior to beginning any work within the right of way**. Permits shall be on a form prescribed by the Department's appropriate Regional Director and shall contain essentially the same information and controls as shown in Exhibit A of this section. The Department has promul-

gated and adopted regulations (17 AAC 10.010-10.050) setting forth the legal requirements for driveways placed within the right-of-way of roads which are administered or maintained by the Department. In accord with (17 AAC 10.010-10.020) those portions of the driveway within the right-of-way shall be the property of the state but construction, maintenance and liability cost shall be the expense of the property served.

In addition to the legal requirements of AS 19.25.200 and 17 AAC 10.010-10.050, the Statutes (AS 19.10.160) require that any standards adopted by the Department be consistent with those standards adopted by the American Association of State Highway and Transportation Officials (AASHTO). The remainder of this Section 11-9.25 of the **Highway Preconstruction Manual** sets forth Department standards for driveway design on highway, streets and roads administered or maintained by the Department. These standards are consistent with AASHTO policies and hence conform to the requirements of AS 19.10.160.

Driveways legally in place (i.e. with a valid permit) prior to April 1, 1986, are not required to conform with these standards unless the Department determines that existing driveway must be changed or relocated for public safety reasons or the permittee changes or relocates said driveway. Any changes or relocations will require a new permit and shall conform to these standards. All driveways constructed on or after April 1, 1986 shall conform to these standards unless any exception is made by the Department in writing.

Driveways to be constructed or reconstructed along existing highways built to design standards previous to the "AASHTO Policy on Geometric Design of Highways and Streets" may be granted exceptions by the Regional Director or his/her designee. Driveways to be constructed or reconstructed along highways constructed to, or to be constructed to the "AASHTO Policy on Geometric Design of Highways and Streets" shall follow the procedures of Section 1100.03 in the consideration of waivers from the Driveway Standards.

Municipal geometric standards approved for use on Department roadways within a municipality should be used in lieu of the geometric standards

contained in this section for all driveways within the municipality.

Approval of municipal driveway geometric standards for use on roadways administered or maintained by the Department shall be by the Regional Director after review and comment by the following individuals:

- Regional PreConstruction Engineer.
- Regional Director of Maintenance and Operations.
- Headquarters Director of Statewide Design and Engineering Services.

1190.02 DEFINITIONS

(See Figures 1190-1 through 1190-7b).

Angle of Intersection - The horizontal angle of 90° or less between the driveway centerline and the edge of the traveled way of the public roadway.

Buffer Area - The border area along the property frontage between the edge of traveled way and the right-of-way line bounded at each end by the frontage boundary lines.

Collector-Distributor Road - An arterial road (usually one-way, with limited access) auxiliary to and located adjacent to the side of a freeway for collection and/or distribution of traffic entering or leaving the freeway.

Clear Zone - That roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. Establishment of clear zone implies that rigid objects and certain other hazards with clearances less than the minimum width should be removed, relocated to an inaccessible position or outside the minimum clear zone, remodeled to make safely traversable or breakaway, or shielded.

Corner Clearance - The distance along the edge of traveled way of a public road or street from the near edge of traveled way of another public road or street to the tangent projection of the nearest edge of any driveway, not including transition slopes, tapers, or return-radii.

Distance Between Driveways - The distance measured parallel to the centerline of roadway between intersection of the inside edges of two adjacent driveways and the right-of-way line.

Driveway Foreslope - In section that portion of the driveway embankment that slopes downward from the driveway.

Edge Clearance - The distance measured along the edge of traveled way between the frontage boundary line and the tangent projection of the nearest edge of driveway not including returns, flares, or transition.

Frontage - The length along the road or street right-of-way line of a single property tract, measured parallel to the centerline of the road or street, between the edges of property. Corner property at a road or street intersection has a separate frontage along each road or street.

Frontage Boundary Line - A line perpendicular or radial to the public road or street centerline at each end of the frontage, extending from the right-of-way line to the edge of traveled way.

Frontage Road - A local road auxiliary to and located adjacent to the side of an arterial highway for service to abutting property and adjacent areas and for control of access.

Interchange Ramp - A turning roadway at an interchange for travel between intersecting legs.

May - A term indicating a permissive condition. There is no requirement for design or application.

Return - The curbed or uncurbed edge of the road, street, or driveway intersection that connects the edge of the public roadway with the adjacent edge of the driveway or another public roadway; usually as a single radius.

Right-of-Way (R/W) - A strip of land owned by a municipality or the State upon which a public road is constructed.

Setback - The distance measured perpendicular or radial to the right-of-way line and the nearest building, pump island, display stand, or other man made object over six inches in height within the property.

Shall - A term indicating a **mandatory** condition. Where certain requirements in the design standards are described with the "shall" stipulation, it is mandatory that these requirements be met.

Should - A term indicating an advisory condition. Where the word "should" is used the specific design criteria are recommended, but they are not mandatory. However, the designer should document the reasons the recommended criteria were not followed.

Width - The distance across the driveway at its narrow point within the right-of-way measured at right angles to the centerline of the driveway.

1190.03 FUNCTIONAL CLASSIFICATION

Highways, roads and streets are classified according to their intended function or use. Such a classification is known as Functional Classification. Basically, highways, roads and streets may be classified as arterials, collectors, or local roads or streets. Arterials are primarily, if not exclusively, for through traffic movements along the roadway. Local roads and streets are primarily, if not exclusively, to provide access to the public road system from the property adjacent to the roadway. Collectors serve both as limited through traffic ways and to provide access from the adjacent property. For safety and efficiency, arterials should have few, if any, private driveways.

Freeways and expressways are special, high design type arterials that are exclusively for through traffic. As such, access is legally controlled along the arterial and no private driveways are permitted.

In general on other arterials driveways will not be allowed if other access is available. The safe efficient movement of through traffic is the Department's primary concern. If driveways directly accessing the arterial are necessary then their number, location and design will be controlled to minimize the impact on through traffic.

On local roads and streets, the primary purpose of the roadway is to provide access to adjacent lands. Consequently, the Department only exercises

those driveway controls that are necessary to provide a safe roadway environment. Collector roadways require more driveway controls than local roads and streets but less than arterials.

Where there are differences in the required degree of control for driveway design and placement due to variance in functional classes, then differing criteria are provided. The process of formally classifying Alaskan roadways is not completed. If a particular roadway is not classified, the Regional Director or his designee will determine the interim classification for purposes of administering the driveway design standards herein.

1190.04 GENERAL PRINCIPLES

(1) Buffer Area - Buffer areas should be graded and landscaped as such that adequate sight distance along the roadway, proper drainage, adequate clear zones, and a good general appearance are insured.

(2) Sight Distance - The profile grade of a driveway and the treatment of the buffer area should be such that the driver of a vehicle that is on the driveway, without encroaching into the roadway traveled way, can see a sufficient distance along the roadway to enable vehicular entry into the roadway without creating a hazard. (See Figure 1190-1).

(3) Setbacks - Improvements on private property adjacent to the right-of-way line should be so located that parking, stopping and maneuvering of vehicles within the right-of-way will not be necessary for vehicles or patrons to be properly served.

(4) Location of Driveways - Driveways shall be located so as to minimize interference with the free movement of normal roadway traffic. This will reduce the hazards caused by congestion. Driveways should not be placed immediately adjacent to or within an intersection nor should they be located on a separate turning roadway, auxiliary speed change lane, or exclusive turning lane. Driveways shall not be placed so as to provide direct access to the through roadways, ramps, or collector-distributor roadways of a freeway or expressway.

(5) Number and Arrangement of Driveways - The number of driveways provided to a property

should be the minimum required to adequately serve the needs of that property. Frontages of 15 m. or less shall be limited to one driveway per frontage. Not more than two driveways should be provided to any single property tract or business establishment except that where the single ownership frontage exceeds 300 m., additionally driveways may be permitted provided the driveways are required for servicing the property, and the distance between adjacent driveways is at least 100 m.

Where two driveways are provided for one frontage less than 300 m. long, the clear distance between driveways should not be less than the minimum distances set forth in 1190.05, Control Dimensions. Corner clearances at intersections should also be in accordance with the distance shown in 1190.05.

Driveways and adjacent property shall be developed such that vehicles entering any arterial or collector roadway are not required to do so by backing into the right-of-way. All frontages having two or more driveways and all commercial developments shall also be developed such that backing into any public roadway is not required. Multi-family residential development of more than four units per lot shall be considered commercial development insofar as driveway standards are concerned.

(6) Curbs - Where the posted speed limit on an existing roadway or the design speed on a proposed roadway, is 80 km/h or greater, driveway curbs, if used, shall be the mountable type and shall be placed no closer to the edge of through traveled way than the outside edge of shoulder or 2.4 m, whichever is greater. On rural roadways with speed limits or design speeds less than 80 km/h, curbs, if used, should be mountable and placed at the outside edge of shoulder, but no closer than 1.2 m from the edge of traveled way. All roadway areas between the edge of traveled way and curbs placed parallel to the edge of traveled way shall be surfaced with the same material as the traveled way.

(7) Drainage - All driveways and buffer areas shall be constructed such that no surface drainage originating off of the right-of-way is permitted to drain onto the traveled way of the public roadway. Where driveways are on the high side of a

superelevated roadway, or are otherwise on a descending grade into the edge of traveled way, special drainage structures, including drop inlets and/or slotted drains may be required to prevent non-right-of-way drainage from flowing into and/or across the public roadway traveled way. Maintenance of these drainage structures shall be the responsibility of the property owner or permittee.

In addition, design and construction of the driveway and buffer shall not impair or alter drainage within the right-of-way so as to damage or threaten the stability of the public roadway. All drainage facilities placed within the right-of-way shall conform to the Department's standards for such facilities when such standards exist.

(8) Embankment - Driveway foreslopes when constructed in a roadway ditch section should preferably have a 1:6 or flatter slope but shall not be steeper than the roadway ditch backslope. In a roadway embankment section without a ditch, driveway foreslopes shall not be steeper than the roadway foreslope.

(9) Lighting - Roadway illumination will not be provided by the Department solely for private driveways. The adjacent property owner may, except as provided hereinafter, opt to install such lighting providing it conforms to accepted highway lighting criteria as set forth in the AASHTO publication **An Informational Guide for Roadway Lighting**. A property owner may not opt to illuminate a driveway if it is within 150 m. of an unilluminated public road intersection.

(10) Anticipated Traffic - In general it is not necessary to estimate the volume of traffic for the majority of driveways. However, for larger developments it may be desirable if not necessary to estimate the volume of traffic anticipated in order to determine the number, size and basic design of the driveways needed to serve the development. As a rule, a few well-designed driveways are preferable to many smaller driveways.

When the volume of traffic anticipated to be generated by the development is expected to exceed 50 vehicles during the peak hour, an analysis of the vehicle trip generation characteristics of the particular development should be made by a competent transportation

planning individual. If such a specific analysis is not available, the average trip generation factors in Table 1190-1, which are based upon the Institute of Transportation Engineers Informational Report - "Trip Generation," 3rd Edition, may be used to determine anticipated traffic **for the sole purpose of determining the number, size, and design of driveways needed to accommodate the development.**

"Peak hour" for driveway purposes is defined as the peak traffic-generating hour of the off-street facility.

AVERAGE TRIP GENERATION FACTORS *

TYPE OF DEVELOPMENT	PEAK HOUR TRIPS
Apartments and other Residential units	1.00 trips per dwelling unit
Hotels and Motels	1.00 trips per room
Schools (All)	0.25 trips per student
Industrial Facilities	0.50 trips per employee'
Hospitals	1.36 trips per bed
Nursing Homes	0.36 trips per bed
Clinics	2.66 trips per 100 m ² .*
General Office Bldgs.	2.15 trips per 100 m ²
Medical Office Bldgs.	4.20 trips per 100 m ²
Civic Centers	3.07 trips per 100 m ²
Post Offices, Motor Vehicle Offices and other high turn-over Public Services	11.80 trips per 100 m ²
Discount Stores	7.50 trips per 100 m ²
Hardware Stores	5.60 trips per 100 m ²
Shopping Centers, per meter squared	
0-4 500 m ²	$Trips = 11.4\sqrt{m^2}$
4 500-150 000 m ²	$Trips = 3.47\left[\frac{\text{Size of Shopping Center -m}^2}{100}\right] + 614$
Service Stations	6.00 trips per pump (two hoses)
Car Wash	132.00 trips per site
Truck Stop	88.00 trips per site
Supermarket	16.9 trips per 100 m ²
Convenience Market	50.6 trips per 100 m ² .
Wholesale Markets	0.56 trips per 100 m ² .
Furniture Stores	0.11 trips per 100 m ² .
Banks	32.00 trips per 100 m ² .
Savings & Loans Offices	10.40 trips per 100 m ² .
Insurance Offices	2.60 trips per 100 m ² .

* Average number of one-way trips generated (or attracted) by a given facility during the peak generating (or attracting) hour of the facility. This peak may or may not coincide with peak traffic flow on the adjacent street. Where the average time duration of the motorist at the generator (or attractor) is less than one hour, the flow is half into the facility and half out. (Example: Truck stops with 88 peak hour trips per site would represent 44 inbound and 44 outbound trips.)

Trips based on area are based on gross leasable floor area.

Table 1190-1

(11) Median Openings - Where a median exists or is to be constructed on a public roadway, driveways should be designed and controlled to allow right turns only. Median openings should **not** be provided for driveways unless all the following conditions exist:

- (a) There is a sufficient volume of traffic using the subject driveway to warrant driveway intersection design as a public intersection.
- (b) The driveway intersection is evenly spaced between adjacent arterial or collector intersections.
- (c) Installation of a signal at present or in the future at the subject driveway intersection will not adversely affect the capacity of the public roadway.

In order to minimize wrong way movements on the divided public roadway, driveways planned in the vicinity of a median opening should be placed either directly opposite the median opening or at least 60 m from the median opening.

1190.05 CONTROL DIMENSIONS

To implement the General Principles in 1220.04, specific control dimensions are provided. Where dimensions are indicated as minimums for a given situation, they should be exceeded to the extent practicable. Due to the differing conditions present in rural and urban situations, different dimensions are provided for rural and urban areas. Where appropriate, the difference between differing functional classes of roadways is also reflected in the control dimensions.

For purposes of administering these driveway standards, urban areas are those areas with population of 500 or more people located within a defined compact area. The defined area need not be incorporated but an incorporated place of 500 people would be an urban area. Unincorporated places that have the characteristics of an incorporated community of 500 population should be considered urban. In addition, if a roadway has urban characteristics such as small lot frontages, the urban control dimensions may be used.

(1) Sight Distances - Figure 1190-1 indicates the unobstructed sight distance along the public

roadway, which should be available to the motorist entering the roadway. On arterial collector roadways, if the appropriate sight distance cannot be reasonably obtained, then the driveway should be relocated.

The sight line used to set sight distance is from the entering height on eye (1070 mm) above the driveway surface) to the top of the design vehicle (1300 mm above the surface of the public roadway at the required distance from the driveway.) The driver's eye is assumed to be 5.2 m from the centerline of the nearest through traveled way and the triangle formed by the sight lines left and right from this point to the required sight distances left and right along the public roadway is the sight distances triangle. Nothing should substantially obstruct the entering driver's view of public roadway traffic anywhere within this triangle.

(2) Width - Residential driveway rural and urban should be a minimum 4 m wide and a maximum 6 m wide. Rural farm driveways should be a minimum 4 m wide and a maximum of 7 m wide to accommodate machinery. Commercial driveways should be a minimum of 7 m wide for traffic volume up to 100 vehicles per hour and may be a maximum of 10 m. wide for traffic volume up to 200 vehicles per hour. Where repetitive peak hour traffic is expected to exceed 200 vehicles per hour, the driveway should be designed as a normal street intersection in accordance with the AASHTO publication **A Policy on Geometric Design of Highways and Streets**, as modified by Chapter 11 - Design of the Department's **Highway Preconstruction Manual**.

(3) Driveway Angle - The driveway angle should be 90°. It shall not be less than 60° except where designed as a one-way one-lane right-turn-only ramp, in which case it should be designed in accordance with Chapter X of **A Policy on Geometric Design of Highway and Streets (AASHTO)**.

(4) Return Radii - Curb or edge of pavement returns should connect the edge of the driveway with the face of curb on curbed roadways and with the edge of a 2.7 m paved shoulder on uncurbed roadways. Where uncurbed roadways have paved shoulders less than 2.7 m wide, the return should terminate eight feet from the edge of traveled way and be connected to the edge of pavement (traveled way or paved shoulder) with a

10:1 taper (three m longitudinally along the roadway for each 0.3 m transversely).

The return radii for driveways using returns, curbed or uncurbed, should conform to Table **1190-2**.

(5) Curb Cuts - Bottom width of curb-cuts should equal the width of driveway and should match the flow line (or bottom of curb face line) of the curb section at the edge of roadway. Transitional slopes should begin at the edge of driveway and a slope upward to reach the top of a 150 mm high curb face in two m.. The transitional slopes behind the curb face may have a constant width with a variable slope or a constant slope with a variable width.

(6) Distance between Driveways - The minimum distance between two adjacent driveways, on the same parcel, measured along the right-of-way line between the adjacent edges should conform to Table **1190-3**.

(7) Setback - Setback distances shall conform to local zoning requirements. Where local zoning ordinances do not provide a minimum setback, the minimum setback should be 5 m and where angle parking is permitted adjacent to the right-of-way line the setback should be 15 m.

(8) Edge Clearance - The property line edge clearance should be equal to the return radius for driveways using returns and should be 5 m for driveways using curb-cuts with transitional slopes. Exception: where a common use driveway is to serve two adjoining properties, the approximate centerline of the driveway may be on the frontage boundary line.

(9) Corner Clearance - The minimum distance from the nearest face of the curb, or nearest edge of traveled way for uncurbed roadways, of an intersecting public roadway to the nearest edge of driveway should conform to Table **1190-4**.

(10) Driveway Profiles - The maximum access grade for a residential driveway should be 15%. Commercial driveways should have a maximum algebraic difference of 8% between access grade and landing grade. The maximum landing grade is $\pm 2\%$ for all driveway. Driveway profiles shall conform generally to the following descriptions.

(a) Driveway with Uncurbed Returns. Public roadway with Negative cross-slope (i.e. outer edge of traveled way lower than lane or centerline).

1. from the outer edge of traveled way to the edge of shoulder or 2.7 m, whichever is greater, the driveway profile grade should be the same as either the traveled way or shoulder cross-slope;
2. from the outer edge of shoulder a vertical curve should connect the profile to either a positive or negative grade which will bring the driveway profile to the adjacent property grade.

(b) Driveway with Curbed Returns. Public Roadway with Negative Cross-slope. The driveway profile may be developed as follows: Beginning with an angle point at the flow line (bottom of face of curb) along the roadway, the driveway profile should rise at a gradient such that the algebraic difference in grade between the cross-slope of the roadway and the grade of the driveway does not exceed eight percent (8%). A landing zone shall commence after a rise of 150 mm has occurred.

(c) Driveway with Returns. Public Roadway with Positive Cross-slope (i.e. on high side of superelevated section).

1. from the outer edge of traveled way to the edge of shoulder or 2.4 m whichever is greater, the driveway profile grade should be the same as the traveled way superelevation rate;
2. from the outer edge of shoulder a vertical curve should connect the profile to either a positive or negative grade which will bring the driveway profile to the adjacent property grade.

(d) Driveway with Curb-Cuts.

1. From the bottom face of curb or flow line, the driveway profile grade should slope uniformly upward at a grade not to exceed an algebraic difference of 8% with the adjacent lane or shoulder cross-slope;

2. if a sidewalk or portion thereof remains to be crossed, the driveway profile may match the surface of the sidewalk;
3. the profile should then follow a vertical curve or have an angle point, if necessary, to connect with either a positive or negative grade which will bring the driveway profile to the adjacent property grade.

average day for urban areas or 350 vehicles in any hour during an average day for rural areas.

On a one way street the above criteria also apply to the left through lane.

(e) Vertical Curves. Vertical Curve should be symmetrical and as flat as feasible. Desirably crest vertical curves should not exceed a 80 mm hump in a 3.6 m chord and sag vertical curves should not exceed a 50 mm depression in a 3.6 m chord. Vertical curves shall not have humps or depressions exceeding 150 mm in a 3.6 m chord.

(f) Landings. All driveways are to have landing zones. Landing length is dependent on anticipated traffic usage. Passenger cars require 3.6 m minimum while semi-tractor trailers require 9.15 m based on wheel bases.

(g) Pedestrian Areas. Where curbed returns intersect a pedestrian way, appropriate handicapped access ramps shall be provided.

(11) Speed Change Lane - On high speed (80 kph or over) and/or high volume arterial roadways speed change lanes may be required for the acceleration or deceleration of vehicles entering or leaving the public roadway from or to a higher volume traffic generation or attracting development. Where 2.4 m or wider shoulders are available and parking is prohibited, speed change lanes are normally not needed unless the driveway traffic volume exceeds 200 vehicles during the peak hour. Where shoulders are less than 2.4 m wide, or where the shoulders are used for parking, and driveway traffic volume exceeds 200 vehicles in the peak hour, speed change lanes should be considered if any of the following conditions exist.

- (a) Traffic volume in the right lane exceeds 750 vehicles in any hour during an average day for urban areas or 500 vehicles in any hour during an average day for rural areas.
- (b) The posted speed limit on existing roadways or the design speed for new exceeds 60 km/h and traffic volumes in the right through traffic lane exceed 500 vehicles in any hour during an

DRIVEWAY RETURN RADII (m)

<u>Driveway Width (m)</u>	<u>Residential</u>		<u>Farm</u>		<u>Commercial</u>	
	Curbed	Uncurbed	Curbed	Uncurbed	Curbed	Uncurbed
4 - 6	*6	6	-	6	-	-
7 - 10	-	-	-	12	*12	12

* For curbed roadways where residential driveways or commercial driveway have 100 vehicles per hour or less repetitive peak, use a curb-cut rather than a return.

Table 1190-2

DISTANCE BETWEEN DRIVEWAYS (meters)

(On Same Parcel)

<u>Functional Classification</u>	<u>Distance (m)</u>
Arterial Roadways	22.5
Collector Roadways	15
Local Roadways	10.5

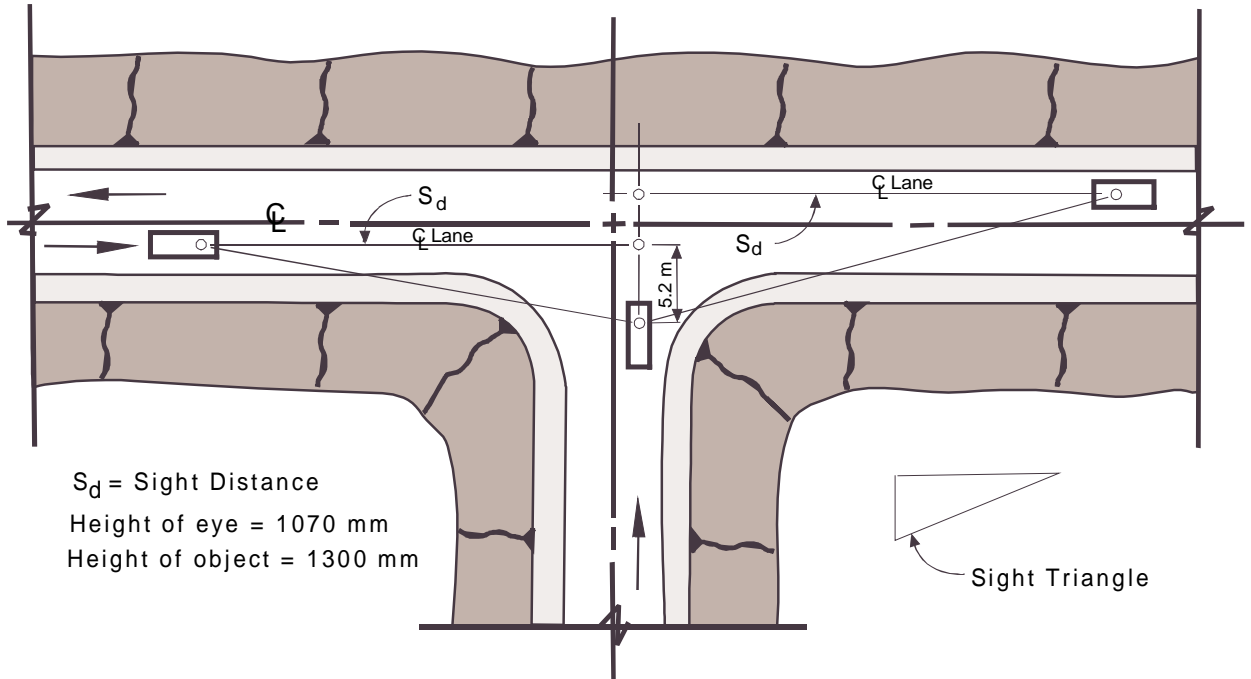
Table 1190-3

CORNER CLEARANCE (m)

<u>Functional Classification</u>	<u>Curbed Crossroad</u>	<u>Corner Clearance</u>	
		<u>Uncurbed Crossroad</u>	
		<u>Urban</u>	<u>Rural</u>
Arterial Roadways	20	21	30
Collector Roadways	15	18	18
Local Roadways	12	15	18

Table 1190-4

DRIVEWAY SIGHT DISTANCE



DESIGN SPEED or POSTED SPEED LIMIT km/h	SD DESIREABLE (m)	SD MINIMUM (m)
30	90	45
40	110	50
50	140	60
55	180	70
60	230	80
70	290	100
80	360	120
90	440	140
100	530	160
105	640	170

Note: SD Minimums are for level grades.

Figure 1190-1

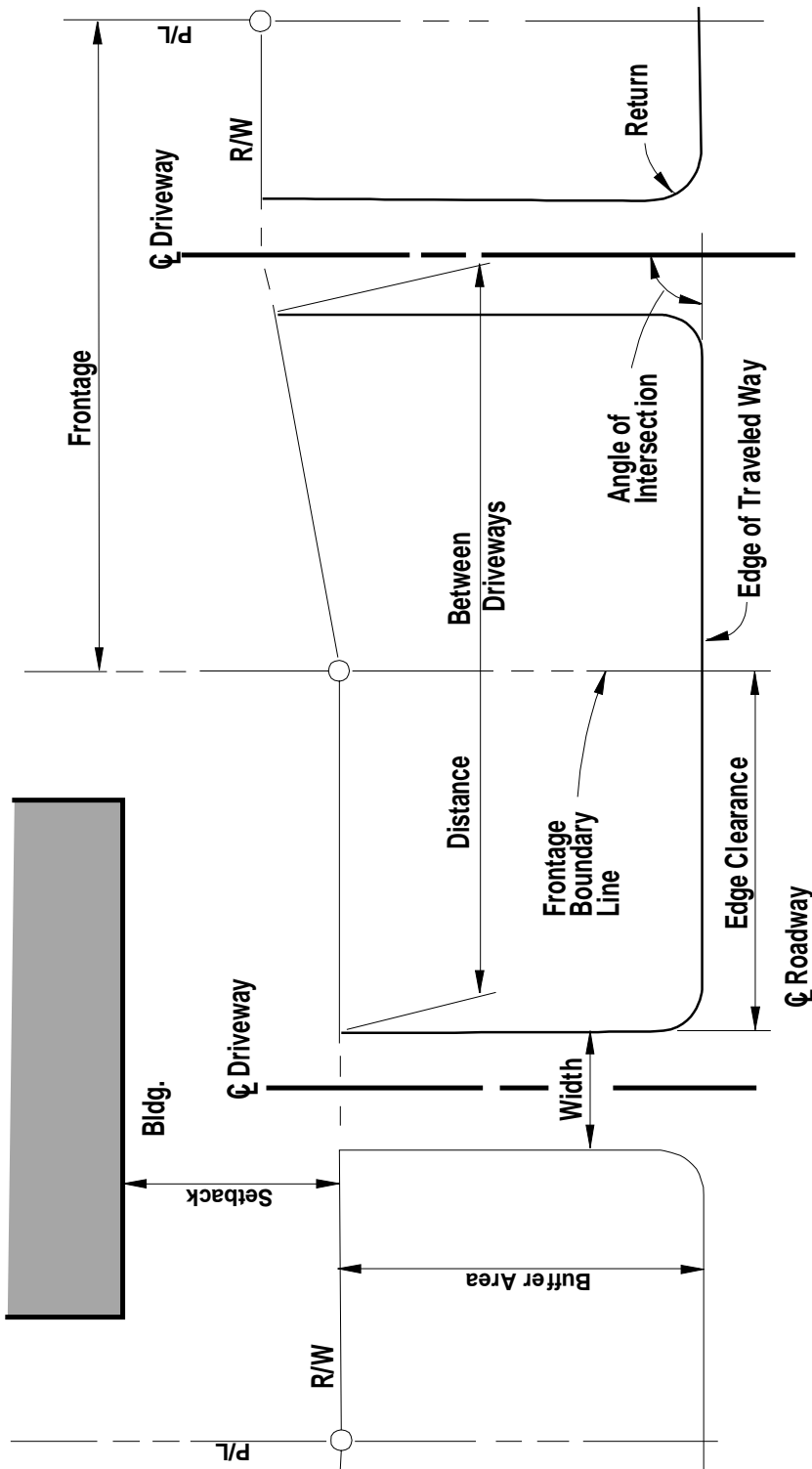
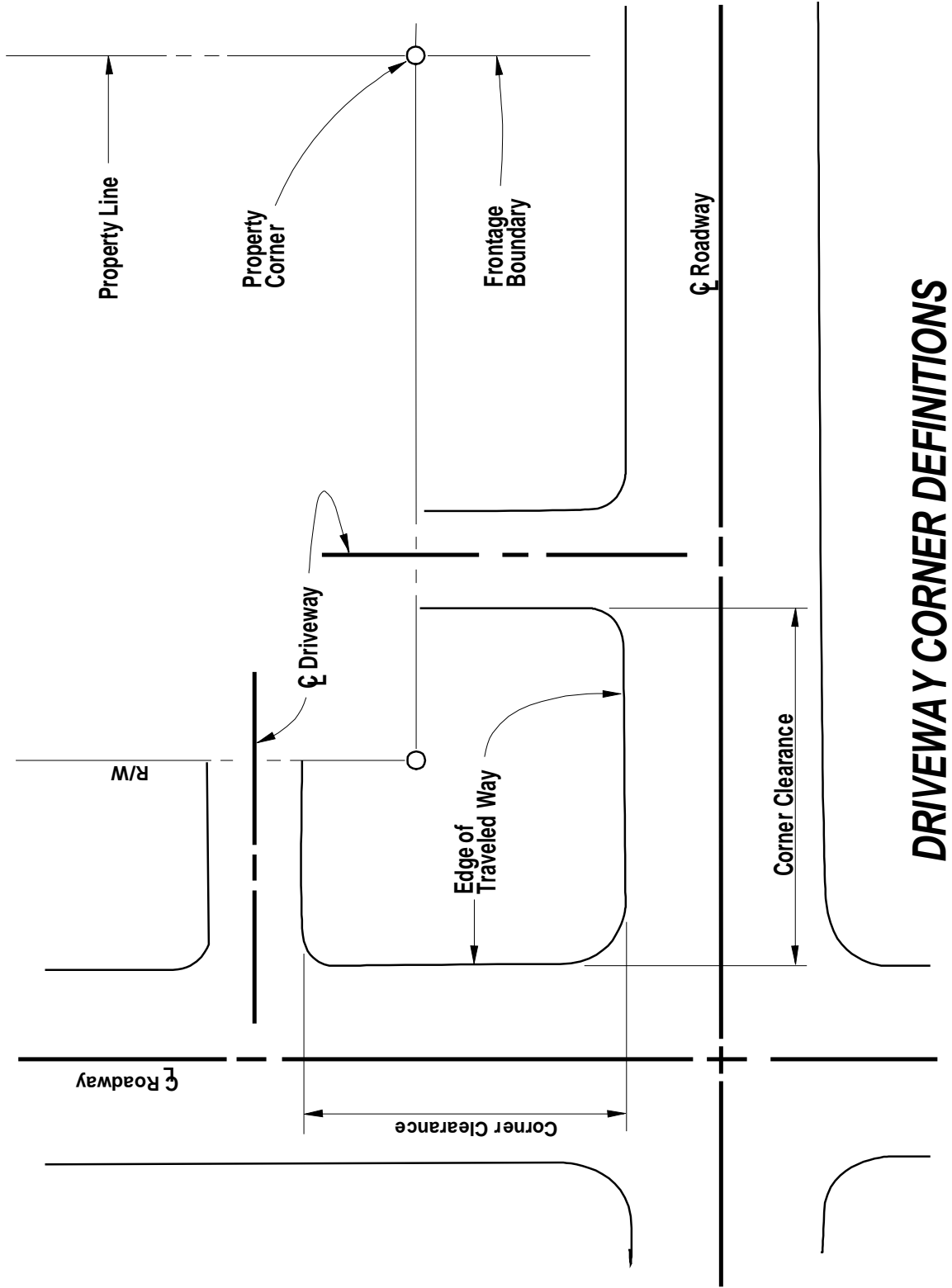


Figure 1190-2

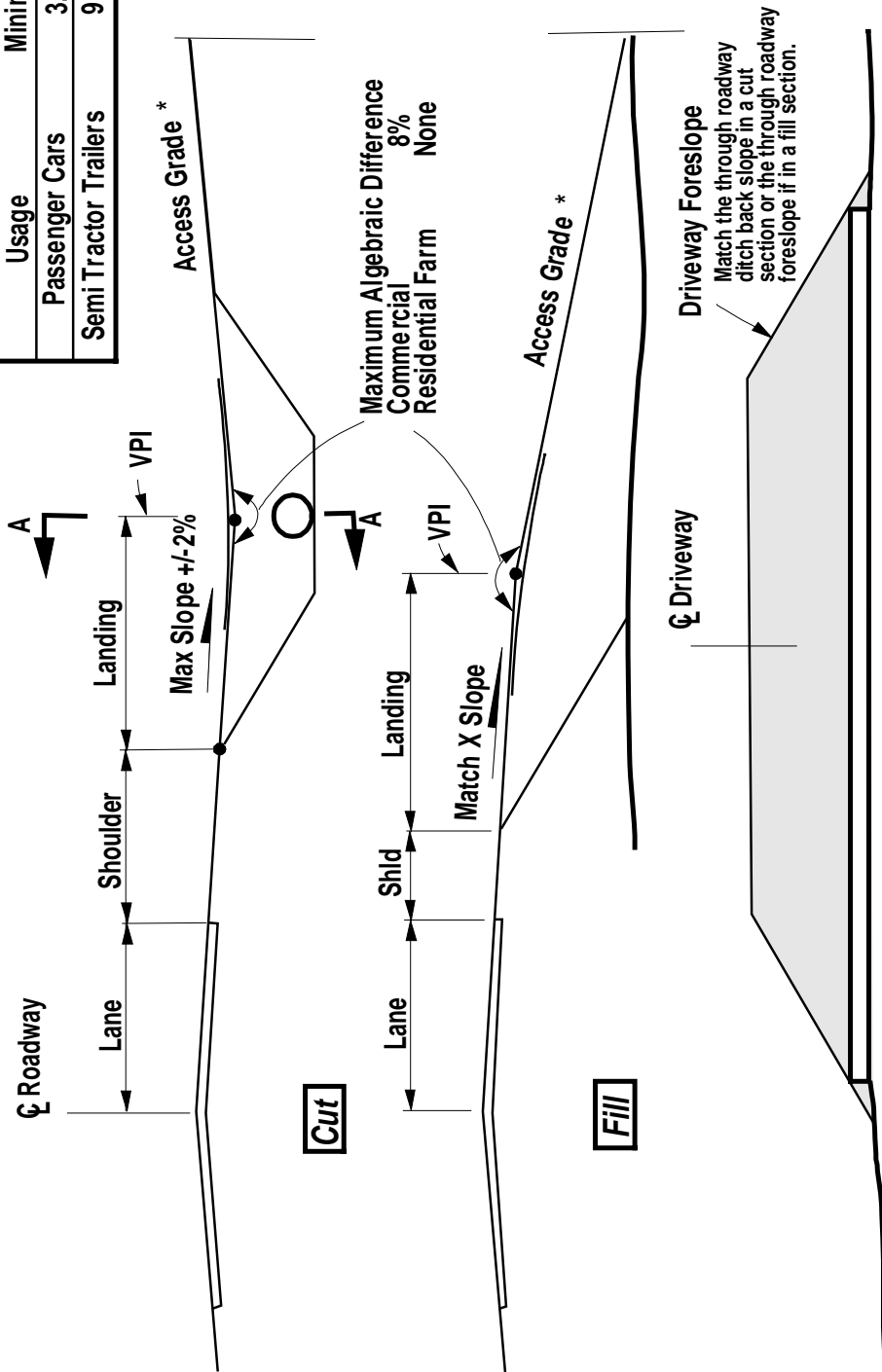
DRIVEWAY DEFINITIONS



DRIVEWAY CORNER DEFINITIONS

Figure 1190-3

Landing Dimensions	
Usage	Minimum
Passenger Cars	3.05 m
Semi Tractor Trailers	9.15 m



SECTION A-A

DRIVEWAY PROFILES

* Access Grade
Max. 15%
Residential/Farm

Figure 1190-4

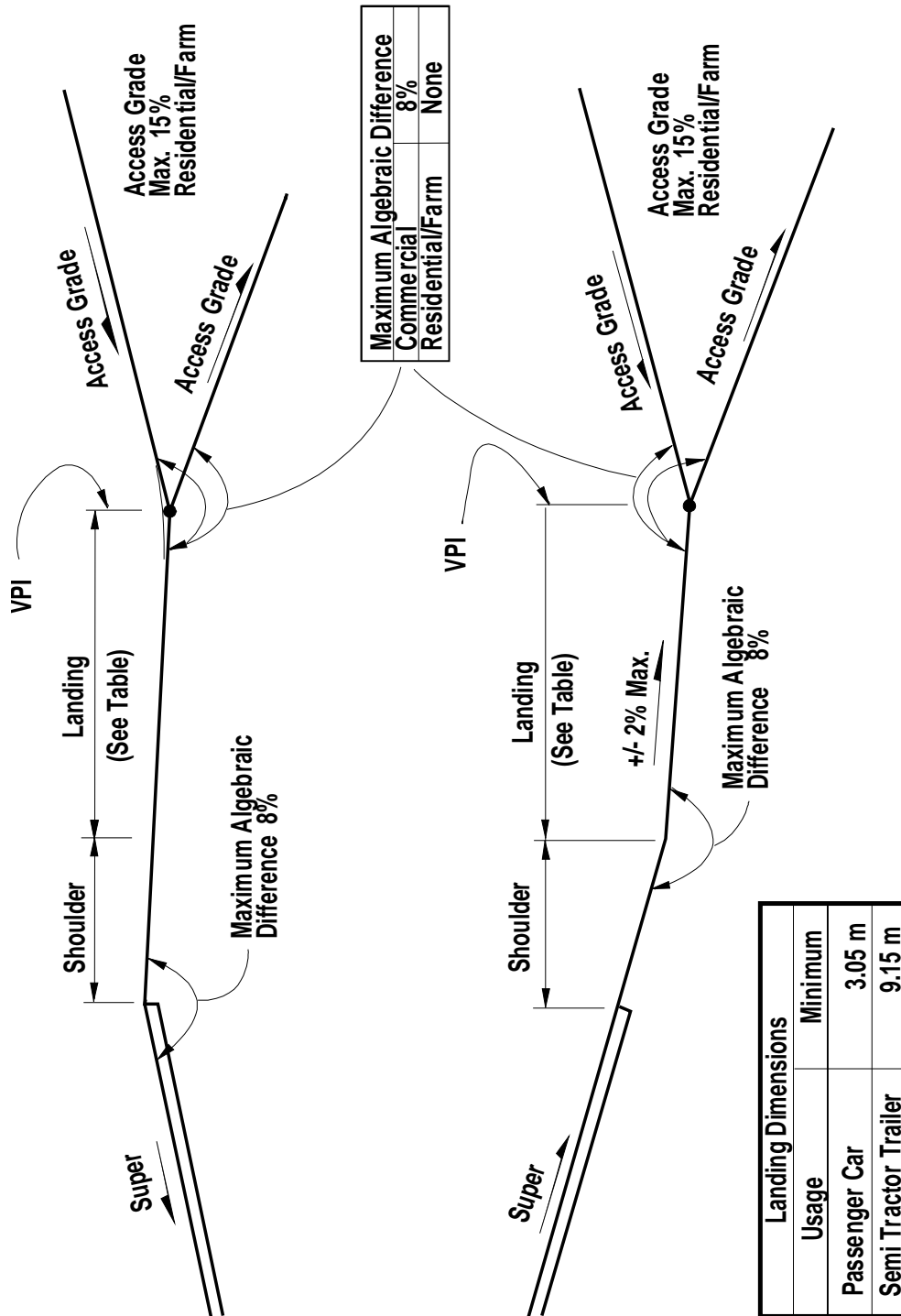
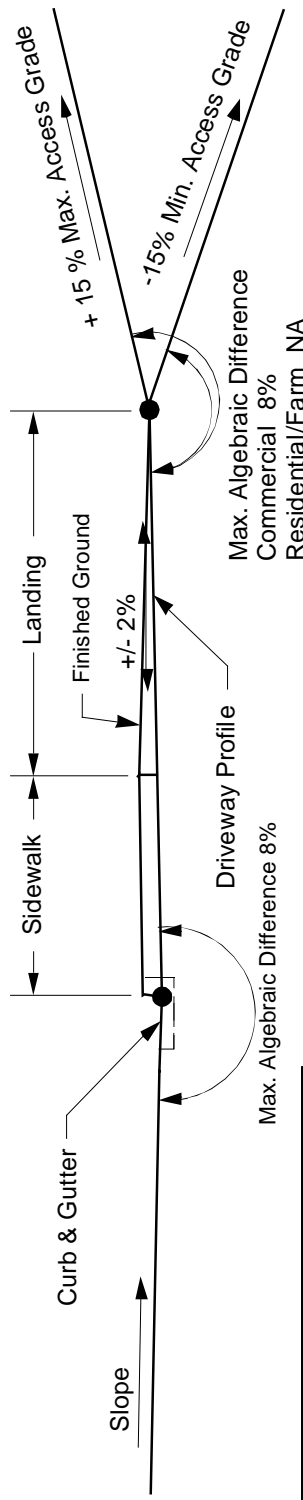


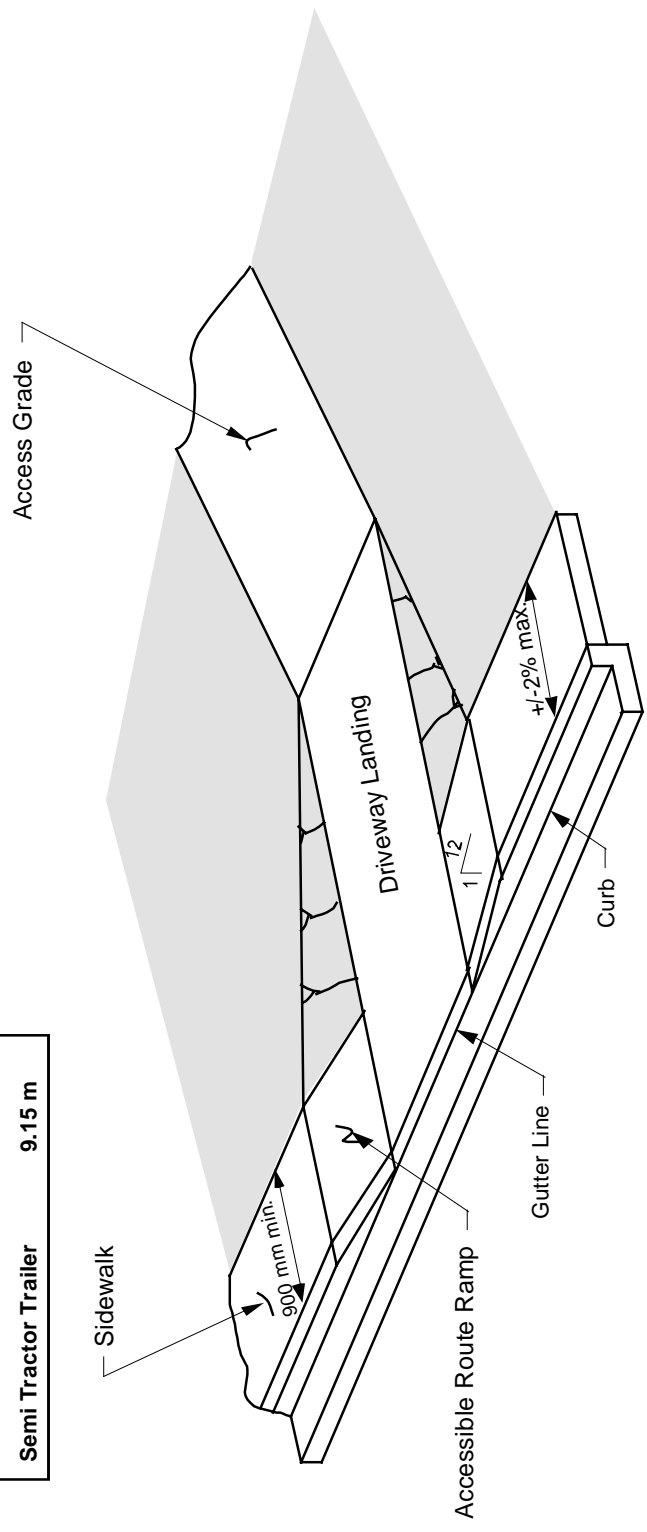
Figure 1190-5

DRIVEWAY PROFILES with SUPER



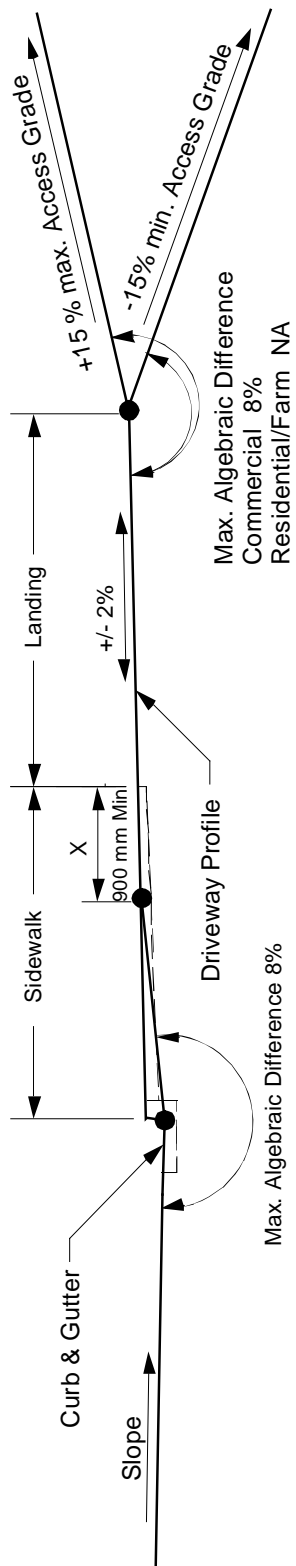
Landing Dimensions	
Usage	Minimum
Passenger Car	3.05 m
Semi Tractor Trailer	9.15 m

CURB CUT PROFILE



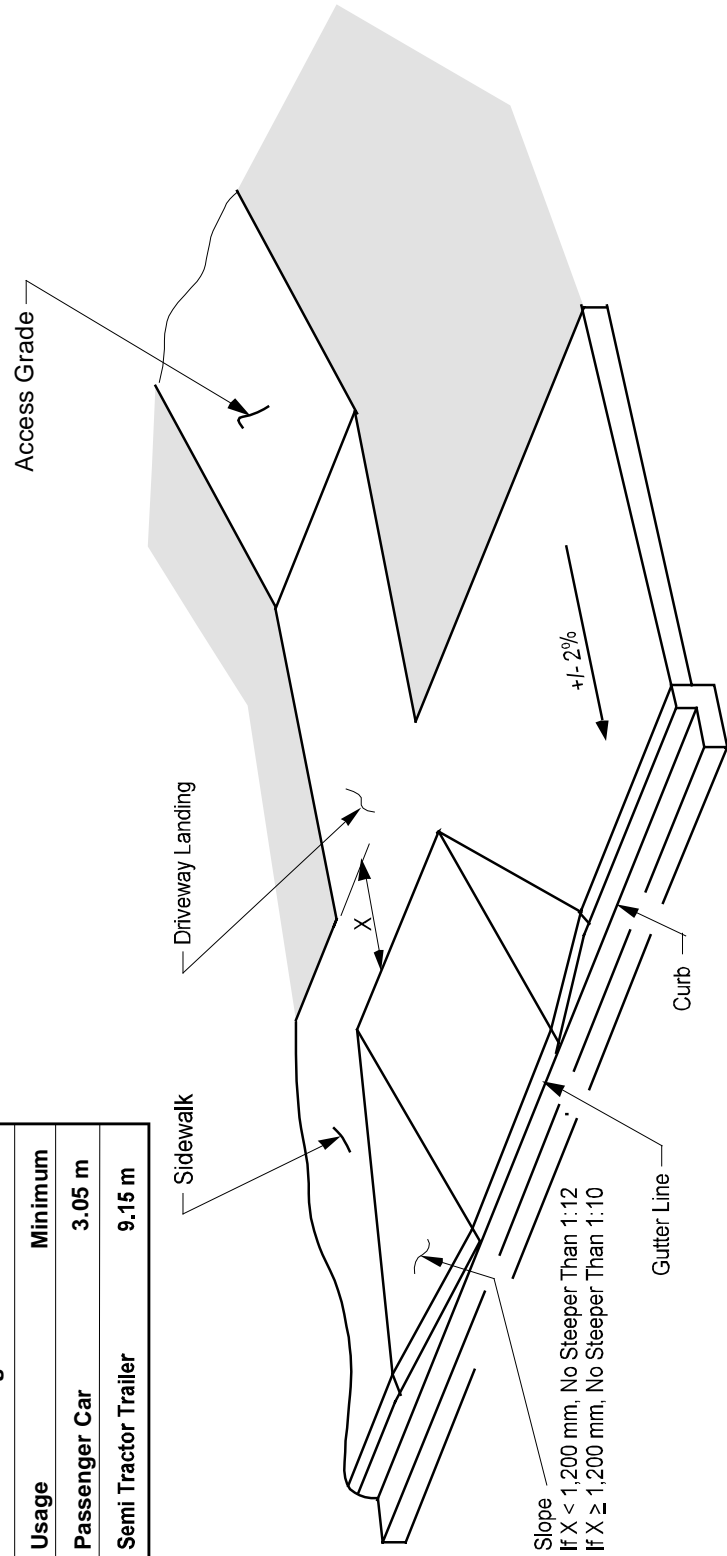
CURB CUT Where Near Level Sidewalk Path (Min 900 mm width & Max 2% X-slope) Can Not be Constructed

Figure 1190-6a



CURB CUT PROFILE

Landing Dimensions	Minimum
Usage	3.05 m
Passenger Car	9.15 m
Semi Tractor Trailer	



CURB CUT Where Near Level Sidewalk Path (Min 900 mm width & Max 2% X-slope) Can be Constructed

Figure 1190-6b

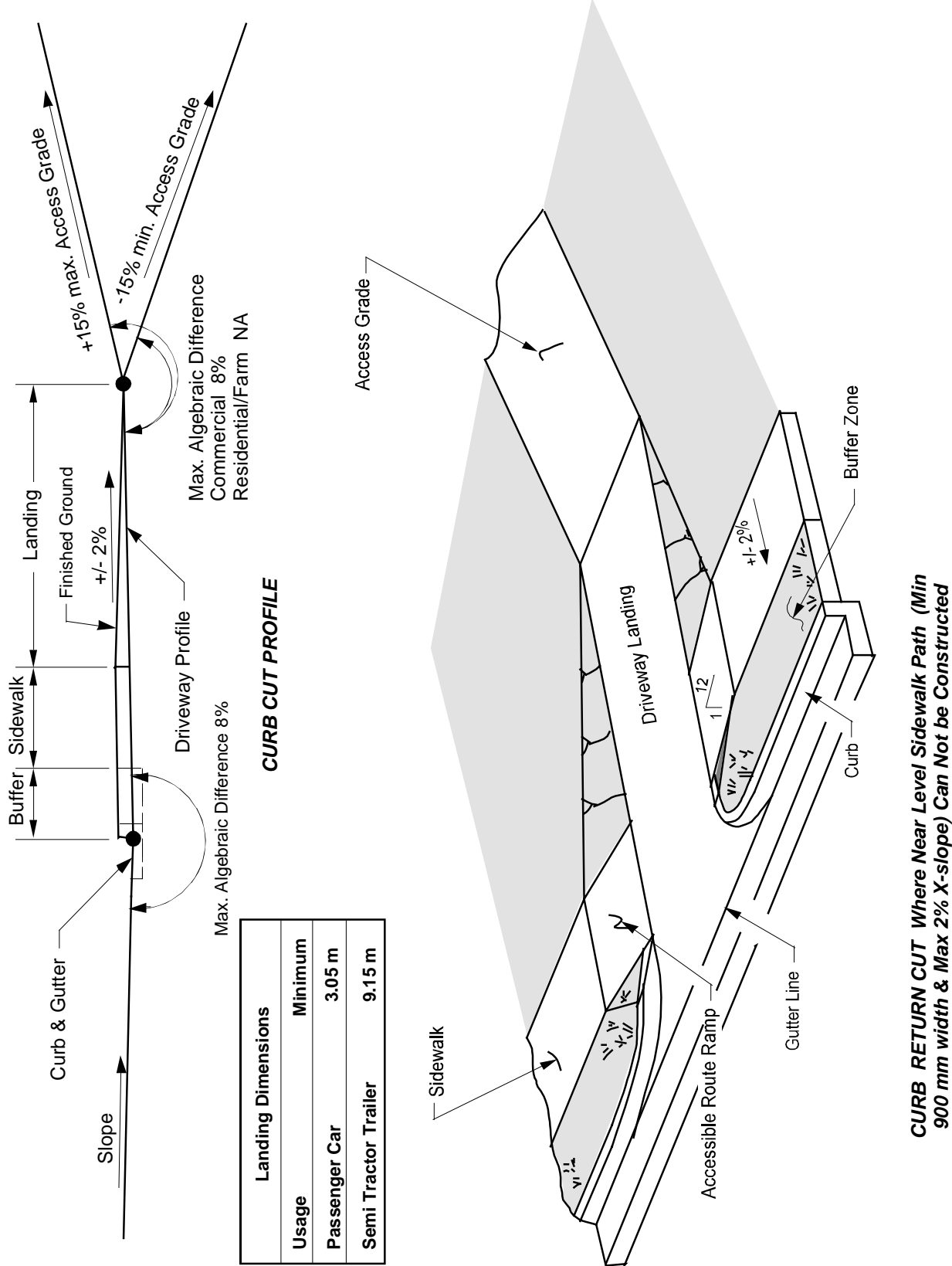


Figure 1190-7a

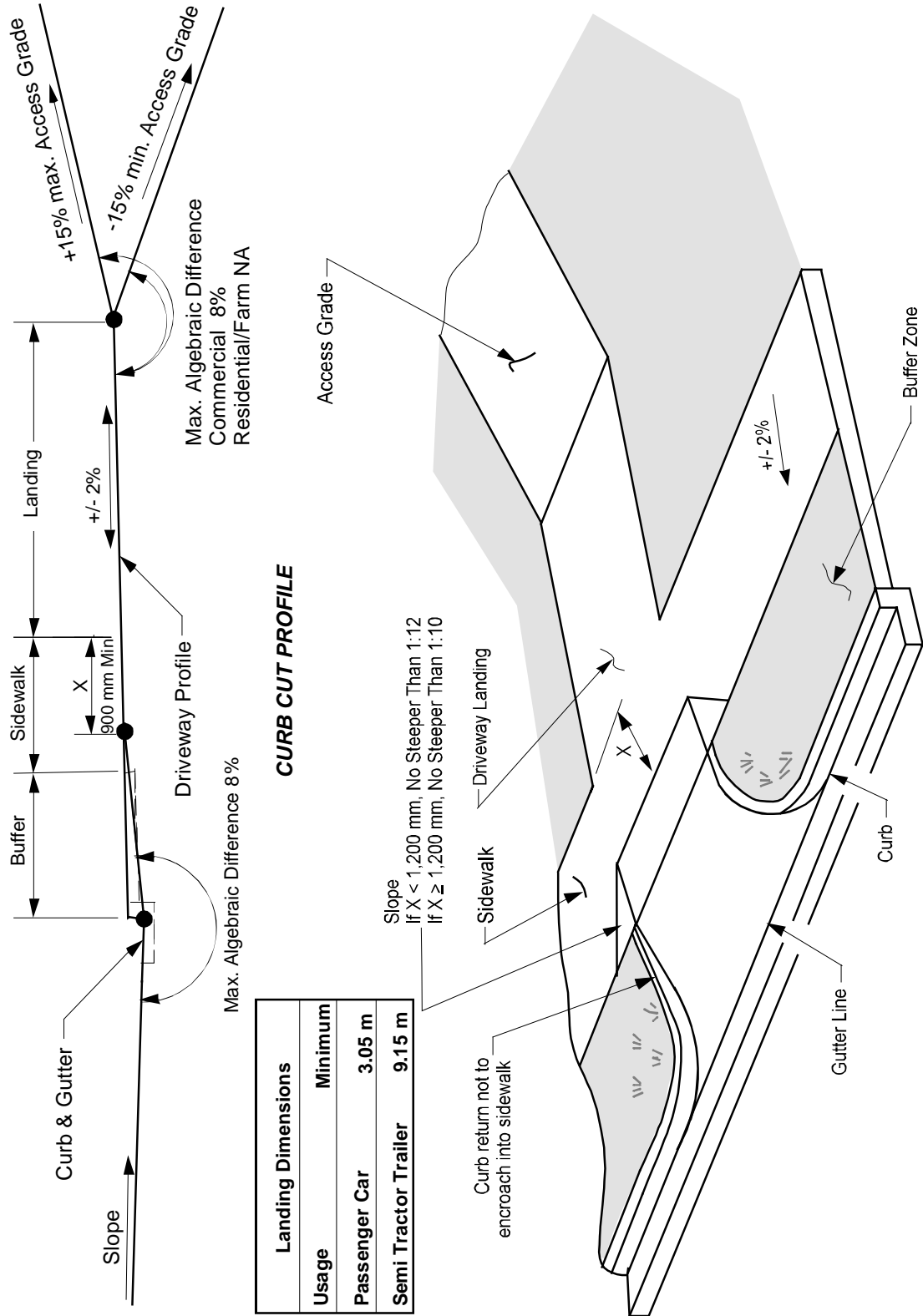


Figure 1190-7b

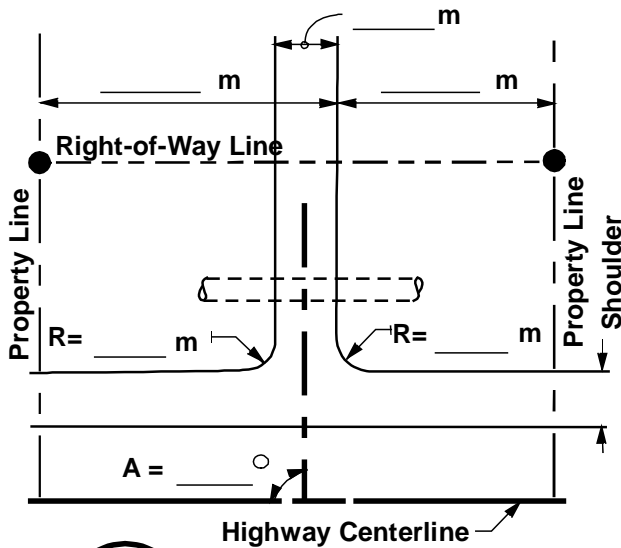
EXHIBIT A
(FRONT)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

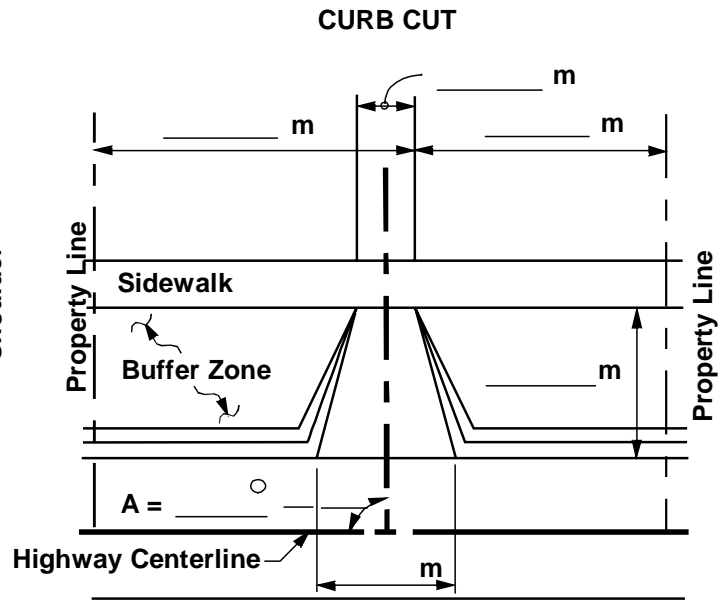
APPLICATION & PERMIT TO CONSTRUCT AND MAINTAIN
DRIVEWAYS ON PUBLIC RIGHT OF WAY

Location: _____ Permit No: _____

Work to be completed in accordance with the below sketch and/or attached plans. The permit will be void if no work is accomplished by this date. Any installation without a valid permit will be treated as an encroachment.



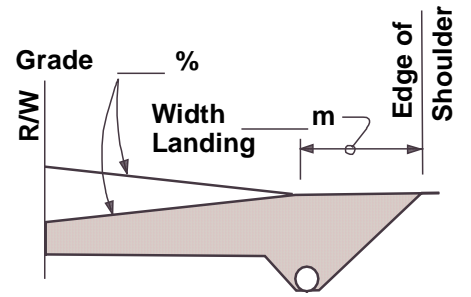
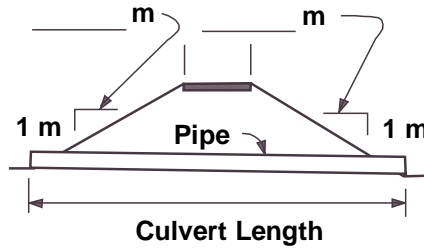
○
 Show North Arrow
 Pavement Type _____
 Shoulder Type _____



○
 Show North Arrow
 Pavement Type _____

DRAINAGE

Culvert Length _____ m
 Size (mm) _____
 Culvert Type _____
 Ditch Depth _____ m



The permittee certifies that he/she is the (circle one) owner, lessee, or authorized agent of the property, that the conditions, restrictions and regulations of the Department will be complied with and that he/she will maintain the driveway in accordance with the provisions of this permit.

- Plat Plan Attached.** **Permittee:** _____
- Construction Plan Attached.**
- Special Provisions Attached.**

PERMIT GRANTED: _____ **BY** _____
 Date

TITLE: _____

Initial Approval

Design: _____ Date: _____ Construction Authority: _____ Date: _____
 Maintenance: _____ Date: _____ Final Inspt.: _____ Date: _____
 Traffic: _____ Date: _____ Surety Bond: _____ Date: _____
 Construction: _____ Date: _____ Bond Released: _____ Date: _____
 Right of Way: _____ Date: _____

The permittee on signing this permit hereby acknowledges and agrees to accept the following provisions:

1. All driveways or road approaches constructed under this permit within any highway lands or rights of way shall be the property of the State. All costs and liability in their connection or in connection with their maintenance shall be at the sole expense of those lands served and/or persons served.
2. Such facilities shall be constructed and maintained in such a manner that the highway and all its appurtenances or facilities including but not limited to, all drainage pipe, culverts, utilities and their safety shall not be impaired or endangered in any way by the construction or maintenance of this facility.
3. The Permittee shall adjust, relocate or remove this facility without cost or liability to the State if, at any time, or from time to time the use or safety of the highway requires this to be done.

The Permittee shall assume all liability or costs in connection with the facilities and shall hold the State or its officers, agents, employees or contractors harmless in any matters pertaining to the facilities.

4. The State has the right to inspect and/or reject materials not to State standards, to stop work until corrections are made, or to require removal of the facility and to charge time and equipment to the Permittee to correct the facility if it fails to comply to the State Codes.
5. A copy of this permit must be on the construction site. If not, the State reserves the right to close the work down until such time as the permit is present.
6. The Permittee certifies that the minimum clearance between the proposed finished driveway grade and the lowest aerial utility conductor is in accordance with the requirements of the National Electrical Safety Code (Sec.23), but in no case is less than 5.5 m.
7. On accepting this permit, the Permittee hereby agrees to the following if the adjoining property is sold or if the lease to the property is terminated:
 - (a) The Permittee will inform the owner, new owner or new lessee to accept the responsibility of the driveway by executing a new permit with the State.
 - (b) If the owner, new owner or new lessee will not accept the responsibility of the driveway under a new permit, the Permittee will remove the driveway and restore the right of way to its original conditions or the satisfaction of the State.
 - (c) If the driveway is not removed or a new permit is not granted, the State will remove the driveway and charge the Permittee for all costs of this removal.
8. The Permittee agrees to post a surety bond, if required by the Department, in the amount designated by the Department. This assurance will be in the form of a check, which will be held by the Department and released upon final acceptance and approval of the driveway. If the driveway is found unacceptable, the Permittee will forfeit the check, which will be used to correct any deficiencies of the driveway installation.