

RESOLUTION 2008-01

(Adopting Skamania County Road Approach and Private Roads Standards Development Assistance Manual)

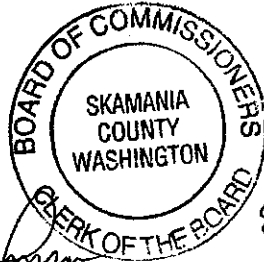
WHEREAS, on March 25, 2008, the Board of Commissioners held a public hearing amending Skamania County Code Title 12.03 Private Road Requirements by Ordinance 2008-02; and

WHEREAS, Ordinance 2008-02 authorizes the adoption of a Skamania County Road Approach and Private Roads Standards Development Assistance Manual to aid in the design of private roads; and

NOW, THEREFORE, BE IT RESOLVED that the attached document consisting of 29 pages and titled "Skamania County Road Approach and Private Road Standards Development Assistance Manual" is hereby adopted.

PASSED IN REGULAR SESSION this 25th day of March 2008.

ATTEST:



Dannela Johnson
Clerk of the Board

BOARD OF COMMISSIONERS
SKAMANIA COUNTY, WASHINGTON

Jan D. Richardson
Chairman

Paul Green
Commissioner

Jenni Taylor
Commissioner

APPROVED AS TO FORM

[Signature]
Prosecuting Attorney

For 3
Against _____
Abstain _____
Absent _____



SKAMANIA COUNTY ROAD APPROACH AND PRIVATE ROADS STANDARDS

Development Assistance Manual

The purpose of this handbook is to assist you in understanding Skamania County's Private Road Standards.

The content of this handbook provides guidance not referenced by Ordinance No. 2008-02, which establish the Road Approach and Private Road Standards for Skamania County.

This handbook, adopted by Resolution No. 2008-01 is the guide to provide the required criteria to aid in your design of the road. It is not intended to replace engineering, legal and other professional services.

The Skamania County Board of Commissioners

**Paul Pearce
Jim Richardson
Jamie Tolfree**

Skamania County Department of Public Works

(March, 2008)

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Why a Road Approach Permit is Required

WASHINGTON STATE LAW requires that the county department of public works coordinate all approaches to county roads. As a result, certain requirements exist in order to provide the driving public with a safe highway system. As most drivers recognize, intersections are one of the most dangerous areas on public roads. Driveways and private roads are an intersection, and require close control to assure the best and safest design and construction possible. If the approach does not intersect with a county road, it is the applicant's responsibility to obtain authorization from the appropriate jurisdiction.

The County Engineer provides the design and construction safety review through an approach permit procedure. The permit is issued through the Public Works Department in the Courthouse Annex in Stevenson.

When the approach being reviewed is associated with a private road, the permit approval will include a road design review, construction standards evaluation and inspections. The specific requirements will vary with each individual roadway situation.

What Is A Private Road?

A private road is any road, which is not publicly maintained and provides access for 4 (four) or more property ownerships.

The construction and maintenance of the private road is the sole responsibility of the landowners using the road for access.

Access roads permitted for the temporary use of logging, agricultural or other such uses may be granted a waiver from the requirements of the road approach standards. Once the temporary use is complete, it cancels the permit along with all conditions set forth; any future development requires a new application with no guarantee of continued use.

Before You Start

The County Engineer, or assigned staff member, must review and approve all driveway and private road construction plans before any construction is started.

When a new road or driveway is required, or when upgrading an existing road that serves or has the potential to provide access to 2 (two) or more properties, it may require additional easement widths to facilitate future growth potential. On existing roads where current property owners are established prior to the start of a proposed development, it shall be the developer's responsibility to obtain the required easements from existing property owner(s). All improvements to the road will be the responsibility of the developer(s) to upgrade the entire road to meet the standards according to the number of properties served as defined on page 14. This may also include improvements to public structure as provided in the Traffic Engineers Study due to the impacts to existing public roads.

PERMITTING CONDITIONS

PERMIT REQUIRED: No person, firm or corporation may modify, construct or change the use of, any approach to a County Road without first obtaining a properly executed permit from the Department of Public Works.

INDEMNIFICATION: The Department of Public Works and its official agents and employees shall not be held liable for personal injury or property damage sustained by exercising the conditions of the permit, or in the use of the approved permit.

PROCEDURES FOR OBTAINING A ROAD APPROACH APPLICATION

- 1) The applicant obtains and completes the application and returns it to the Department of Public Works Office, or mails it to:
Skamania County Department of Public Works
Permit Division
P.O. Box 1009
Stevenson, WA 98648

A non-refundable fee is required along with your permit application for Residential, Permanent Agricultural, or Commercial Approaches. (Please refer to the fee schedule for the applicable permit)

For Short Term (less than 6 months) Agricultural Permits (logging, mining or lot clearing approaches), a refund of 75% of the permit fee will be released once the work has met the conditions of the permit for which the access was required. The repair cost of any work performed to restore the public road and/or ditch to previous conditions shall be deducted from the refundable portion of the permit fees.

Fees are as follows:	Addressing -	N/C
	Single or Joint Driveway -	\$100.00
	Permanent Agricultural -	\$100.00
	Private Road -	\$150.00
	Commercial Use -	\$250.00
	Logging Operations -	\$500.00
	Mining Operations -	\$500.00
	Land Clearing -	\$250.00
	Variance Request to the County Engineer =	Permit Fee
	Appeal the County Engineer's Decision to the Hearings Examiner –	Actual cost

PROCEDURES FOR OBTAINING A ROAD APPROACH APPLICATION (continued)

The applicant is provided a wooden stake with the applicant's name written on it to mark the site for the proposed approach. The applicant will then mark the center of the approach location with the provided stake, allowing the name to be seen from the street side. The applicant will then notify the Department of Public Works by phone or email, that the stake is in place and ready for inspection.

It will then be assigned to the appropriate Public Works Staff Member for inspection. Requirements for construction will be provided to the applicant to ensure the planned approach meets the required safety standards. The application will then be returned to the Permit Division for processing.

The approach permit is then mailed to the applicant, whereupon the permittee signs the permit and conditions for approval, then returns it to the Engineer's Office.

Once the permit has been issued, the permittee shall notify The Department of Public Works at least 2 full working days prior to the beginning of construction. The permit is required to be on the job site during construction. It is also required that the Utilities Locate Service be called at this same time. Their phone number is 800-553-4344.

The Approach Permit is valid for one year. Skamania County will require a new permit to start construction after that time. The County Engineer may give written extensions under special circumstances if recommended by Public Works Staff, provided legal requirements have not changed.

Once the approach is completed, the applicant must contact the Department of Public Works for final inspection. Public Works Staff then inspects the completed approach to ensure that it has been constructed to the required standards. Upon inspection, the findings are:

The approach passes inspection, or;
The approach does not meet the county's standards and the applicant is notified in writing of the discrepancies.

When discrepancies are corrected to the county's satisfaction, said approach will be placed into Skamania County's Road Log as a permanent structure.

In the event discrepancies are not repaired within the time allowed in the written notice, Skamania County will build to the standards required, or remove said approach, and the applicant will be billed the associated costs.

GENERAL DESCRIPTIONS

Design

Each landowner's specific needs and the individual geographic conditions of the property will govern how each road design may be expanded beyond the minimums set forth in this document. The general requirements given here are minimums and will vary with each set of conditions and should be used as a guideline only. **SPECIAL ATTENTION IS GIVEN TO THE DESIGN REGARDING EMERGENCY VEHICLE ACCESS.** Fire trucks and ambulance need to have the ability to respond to each residence quickly and with a minimum of difficulty.

Right-Of-Way/Easement

Generally 60 feet shall be set aside and protected from installation of any permanent structures. Use the Table of Minimum Standards ([Fig. 1](#)), page 14, for the minimum easement width required. In addition to the required easement or right-of-way width, there are required structural setbacks from the easement or right-of-way depending on the land use zoning classification of the property where the private road is located. These setbacks are determined as provided in Skamania County Code Title 21 (Zoning) and Skamania County Code Title 22 (National Scenic Area) depending on the location of the property under development.

Clearing Limits

The Table of Minimum Standards ([Fig. 1](#)), page 14, indicates the required minimum clearances for emergency access. Emergency vehicles such as ambulance and fire trucks have the most critical access needs. Skamania County Emergency Services are all "tax-supported" organizations. As public supported units, these emergency response units must have the ability to respond to all calls that are within their coverage areas. The ability to respond, in part, depends on roadway systems to provide safe access for the emergency equipment. (The county sets minimum private roadway standards that will permit such emergency vehicle access.)

Warning

<p>These cleared widths are minimums and additional widths may be required for certain conditions. Requirements to maintain these clearances are described on page 11.</p>
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Private Road Categories

Classifications:

- Category 1 – Driveway for one home (not classified private)**
- Category 2 – Joint Driveway for 2 - 3 homes (not classified private)**
- Category 3 – Roads serving 4 – 10 homes**
- Category 4 – Roads serving 11 – 20 homes**
- Category 5 – Roads serving over 21 homes**
- Category 6 – Commercial Development**
- Category 7 – Residential with Limited Service**

Private Road Permit Issuance and Inspections

Once an application for a private road approach is received, The Department of Public Works will start the review process. The review will include a site inspection to determine what affect the private road approach could have upon the County Road. Surface drainage and safety for the driving public are important, and these two items may necessitate changing the intended location of the approach to make the best possible access point to the intersecting road.

The actual construction authority on any private road will be granted upon receiving written approval from the County Engineer with all conditions listed as part of the construction requirements from Skamania County. These items will become the requirements for the construction of the road.

The private road approach permit shall be issued once the above information has been received and prior to the start of construction of the road; this permit allows the construction to proceed as directed by the permit conditions. A final inspection will be conducted after Skamania County is notified of the completion of the road. Once accepted, the Approach Permit will be recorded into Skamania County's Private Road Log.

The onsite inspections will be done in three phases:

- 1) After the clearing of all vegetation to meet the requirements as referred to in [Fig 1](#), page 14.
- 2) When the roads sub-grade and roadway drainage has been completed, and PRIOR to the placement of crushed rock.
- 3) After the placement of the required amount of roads base and top coarse rock.

It is the responsibility of the landowner / developer to provide sufficient notice (2 full working days) to Skamania County to schedule these inspections.

Construction

The construction and maintenance of a private roadway is the responsibility of the owners who are provided access from the roadway. The road shall be designed and constructed to the specific standards as stipulated in the authorizing approach permit.

THE PUBLIC WORKS OFFICE MUST BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION.

WARNING!!!!

An approved design and Approach Permit must be in hand before construction work starts on Category 3 - 7 Roads.

The County can also provide technical assistance and inspection to assure that construction standards are achieved. Care must be taken in the design and construction so the finished roadway will provide the required emergency vehicle access.

Driving Surface

The Table of Minimum Standards ([Fig. 1](#)), page 14, indicates the minimum surface width and the surface character required for the driving surface. It can be seen that the width and character required for the driving surface depends on the "Road Category".

Please note that the Table of Minimum Standards ([Fig. 1](#)), page 14, applies only under ideal soil and moisture conditions. Specific roads may have conditions requiring quantities or dimensions greater than those shown.

Skamania County has a variety of soil conditions and, generally, heavy rainfall. The required 6 inches of crushed rock will, in most cases, provide a light service character for roads that are well drained and have ideal soil conditions. To minimize future maintenance costs, greater depths of crushed top and base coarse rock will be required as traffic volumes increase. The types of soil and the moisture conditions are also very important factors in the determination of required amounts of crushed base and top-course rock or other construction methods may be required.

The general design standards set forth in this handbook are for general information only. Specific needs of an individual road shall be designed by a licensed professional engineer and approved by Skamania County prior to construction.

MAINTENANCE AGREEMENT

YOUR ROAD IS A LONG TERM INVESTMENT

The initial construction of access roads is considered by most to be the major cost in a roadway system. Experience indicates that annual maintenance will become the more important consideration. Top quality initial construction will reduce future maintenance and result in minimum costs for continued upkeep. First rate design and construction, however, will never totally eliminate the need for continued maintenance. Failure to establish a good schedule for required maintenance will also lead to unnecessary trouble and added costs. Private road design and construction should be coupled with a good pre-arranged maintenance agreement.

Maintenance Requirements

Maintenance tasks on private roads are the sole responsibility of the landowners. The County, or a political subdivision thereof, will assume no responsibility for private loss or damage that may result directly or indirectly from failure to properly maintain a private road.

Maintenance Compliance

Maintenance deficiencies on a private road may be reported to the Skamania County Fire Marshal by the emergency services or the public at large. The Fire Marshal will review the request to insure that adherence to the standards are being met. If not, there may be a maintenance compliance request issued to the owner(s) of the affected areas of the road listing the required maintenance that is impeding the emergency services access. This notice will include a timeline for completion. When the maintenance is completed, the property owner(s) shall respond to the requestor (Skamania County's Fire Marshal) once the task has been completed. If the requested maintenance is not completed, the Fire Marshal will enforce the standards according to RCW 19.27.110, which references the International Fire Code Enforcement Procedures.

Security Gates

The installation of security gates across a private road access shall be approved by the Skamania County Fire Marshal. When security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained and operational at all times.

In the event damage to a security gate is sustained in gaining access from an emergency service vehicle, or an employee acting under the authority of the responding agency, Skamania County nor any emergency service entities or its employees shall be held liable for that damage.

The following warnings must be prominently displayed on the face of each plat and the property deeds that are serviced by private roads prior to filing the same:

BUYERS WARNING

Purchasers of a lot, or lots, in this plat are advised to consult the “Skamania County Road Approach and Private Road Standards Development Assistance Manual” to ensure that private roads in this plat have been constructed to the required standards of Skamania County. Private roads are not maintained by Skamania County.

IMPORTANT

The above warning shall obligate any seller to give actual notice to any prospective purchaser, and notice shall be included in any deeds or contracts relating to such sale, and such WARNING shall be recorded on the face of the plat or other such document of record, to include the property deeds.

VARIANCES

The requirements as set out in this chapter shall apply uniformly to all future applications for private roads and road approach approvals.

- A. Variances from these Standards may be granted by the County Engineer upon evidence that such variances are in the public interest and that requirements for safety, function, fire protection, appearance and maintainability based upon sound engineering judgments are fully met. A notice of proposed findings shall be submitted to the Board of County Commissioner’s as a public record on the agenda, and public comment as to the variance shall be taken.
- B. The Public Works Department shall provide application forms for private road variance requests and prescribe the type of information to be provided in the application. The application shall include a statement signed by the property owner and developer listing the variance request, the specific reasons for the variance request and any proposed substitute

Variances (cont)

standards being proposed. A completed application for a private road variance shall be filed with the Public Works Department accompanied by a non-refundable fee as set by resolution by the Board of County Commissioners. Once a completed application has been received, will start the appeal process.

- C. Whenever any variance to the provisions of the private road code is sought, the Public Works Department shall require the applicant to submit a site plan for the variance as part of the application. The site plan drawing shall be at a scale of not less one inch equals fifty feet (1" = 50'), unless an alternate scale is approved by the County Engineer, and shall include the following:
- a. Boundaries, dimensions and square footage of the property proposed to be developed;
 - b. All proposed and existing buildings and setback lines;
 - c. All existing and proposed easements;
 - d. Locations of all utility structures and lines;
 - e. All means of vehicular and pedestrian ingress and egress to and from the site and the size (width of physical roadway and width of granted easement) and location of driveways, private roads, existing streets bordering or crossing the site; and,
 - f. Road profile drawings designed, signed and stamped by a Washington State Licensed Professional Engineer or Professional Land Surveyor showing the existing profile of the ground prior to the private road construction, the profile of the private road with the variance being requested and the profile of the private road if the variance was not granted; and,
- D. Appeal. Any person aggrieved by a decision of the County Engineer to grant or deny a private road variance, may appeal the decision to the Hearing Examiner.

OVERVIEW OF POLICY GUIDELINES

Because each private road's standards must be viewed independently of other roads located throughout the County, technical assistance and inspections are arranged prior to any actual construction-taking place. Care will be taken during the design and construction stages to ensure the finished roadway provides emergency vehicle access and a relatively trouble free private road system.

APPENDIX 1 - MINIMUM DESIGN STANDARDS

FIGURE 1 – TABLE OF MINIMUM STANDARDS

Road Category	Parcels of land with potential access	Easement to include Road and Utilities	Clearing beyond roads edge	Driving Surface Width	Min. Curve Radius	Driving Surface Character	Notes ****
1	1	None Required	Height - <u>14'</u> Width – 3' Each Side	12'	50'	50,000 Lb. GVW All-weather	1, 6, 11
2	2 - 3	30' Minimum Recommended	Height - <u>14'</u> Width – 3' Each Side	12' with turnouts Rcmnd.	50'	50,000 Lb. GVW All-weather	1,2, 6, 11
3	Land Division 4 –10	40' Minimum	Height - <u>14'</u> Width – 8' Each Side	22'	50'	50,000 Lb. GVW All-weather	1, 2, 3, 4,5,6,11
4	Land Division 11 - 20	60' * *Recommended 40' Required	Height - <u>14'</u> Width – 8' Each Side	24'	50'	50,000 Lb. GVW	1,2,3,4,5, 6,9, 11
5	Land Division Over 21	60' Minimum*	Height - <u>14'</u> Width – 8' Each Side	24'***	50'	50,000 Lb. GVW	1,2,3,4,5, 6,7,8,9,
6	Commercial Development	As required by use and location	Height - <u>14'</u> Width – As required	30' at Approach	50'	Determined by Use	1,2,3,4,5, 6,7,8,9,
7	Recreational Use with limited access	To meet the use as determined above	Height - <u>14'</u> Width – As required	To meet the use required above	50'	Determined by Conditions	As Required & 10

***Easements shall be centered on complete design and not centerline of road.**

****If lot sizes are less than ½ acre in size, pavement widths shall include a 10' parking strip on a designated side, normally on the same side as the storm drainage system.**

WARNING

THESE STANDARDS ARE MINIMUMS ONLY AND IN MANY CASES, QUANTITIES AND DIMENSIONS MAY BE GREATER THAN THE MINIMUM TO PROVIDE ACCEPTABLE SERVICE.

******NOTES:**

- 1. Any disturbed areas within the land divisions shall be re-vegetated to control erosion with a mix of grasses compatible with the moisture and climate requirements for the area.**

Notes (cont)

2. Survey points in the ground to show easement locations.
3. The roadway must have an approved plan and profile designed by a licensed professional engineer and is approved by the Skamania County Engineer prior to construction being started.
4. The roadway must be constructed, inspected and approved prior to recording of the approach permit into the county's road log file.
5. A licensed surveyor must document the easements centerline upon completion and acceptance of the constructed road.
6. Poor soil conditions and above normal moisture conditions will require increased rock depths. Rock minimum will be increased when clay and silt content of the sub-soil are present and can include geotextiles or other construction methods as defined by Skamania County.
7. Will require Asphalt Concrete Pavement, curbs, to include storm water collection as part of the Storm Water Plan.
8. All driveway approaches shall have either a concrete ramp incorporated into the curbed section, and/or an asphalt apron paved in 2' beyond the edge of pavement, with radiuses on each side.
9. The developer shall provide an analysis outlining the impacts on the Public Road System completed by a licensed Traffic Engineer with recommendations being made to the county. Final conditions will be set by Skamania County.
10. This classification declares the developer and/or landowner shall be notified that all services will be limited or not available at all. Emergency Services are not usually available and should not be expected at any time of the year without long delays in response time.
11. Any upgrades from an all-weather surface to hard surfacing, must maintain minimum widths after the upgrade is completed.

ROAD DESIGN

The landowners establishing a private road system may design each particular segment to their specific requirements. In so doing, the minimum county requirements must be met; however, these requirements can be met by a variety of different designs. The following pages will provide data that will be of assistance in the development of the final design. The landowners should use the parts and pieces put together so as to produce a roadway that will best meet the needs of those it serves.

Driveways – Single and Joint

The following Standards are recommended for Category 1 and 2 Roads but not required as these categories are classified as a driveway and not a private road, but must abide by the Approach Permit Conditions.

Specifications – Driveways should be built and maintained to provide a minimum 12 foot width of all-weather surface capable of supporting gross vehicle weights of 50,000 pounds, a minimum curve radius of 50 feet, and a vertical clearance of 14 feet (See [Fig. 1](#)), page 14.

Joint Driveways – Joint Driveways in excess of 300' should consider turnouts as needed with locations being determined when visibility is a concern. These distances can be determined on a case-by-case basis.

Angle of Approach - Driveways shall be as close to a right angle as is practical and in no event shall be less than sixty (60°) degrees. Approaches with steep terrain will require additional review with recommendations being made to the developer. See [\(Fig.16\)](#) page 29, for clarification.

Turn-around Construction - Dead-end roads in excess of 200' in length shall be provided with provisions for the turning around of vehicles. The configuration of the turn-around shall conform to one of the examples shown in [\(Fig 9\)](#), page 24.

Bridges and Culverts - Bridges and culverts larger than 18" diameter, and other structures in the roadbed shall be constructed and maintained in accordance with the information provided in these guidelines. Permitting is the responsibility of the landowner / developer. See [Fig 4](#), page 18, for bridge design requirements.

Grade – The grade should not exceed 12 percent, with a maximum of 15 percent on short pitches of 100 feet or less.

Residence Identification – Joint Driveways shall be marked with all residences' address at the start of the intersecting road so it is clearly visible from the accessing road; and clearly visible on the residence. Numbers should be a minimum of four inches in height and constructed of reflectorized material.

Private Road Standards Categories 3 – 6

Categories 3 – 6 Roads are considered private roads and shall be designed by a licensed Professional Engineer and constructed to the minimum standards according to [\(Fig 1\)](#), page 14.

Specifications - Private roads shall have an unobstructed driving surface and provide for an all-weather surface capable of supporting gross vehicle weights of 50,000 pounds, or as directed by the category of road.

Turn-arounds - Dead-end roads shall be provided with provisions for the turning around of vehicles. Turn-arounds shall conform to one of the examples shown on [\(Fig. 9\)](#), page 24. Private roads in excess of 1400' shall require a turn-around at a mid-way point of the road, provided the mid-way point is less than 1000' from either end. When more than one turn-around is required on a road, they shall be spaced equally along the road and shall not exceed 1000' between turn-arounds. An intersecting road will meet this requirement.

Bridges and Culverts - Bridges and culverts larger than 18" diameter, and other structures in the roadbed shall be constructed and maintained in accordance with the information provided in these guidelines. Permitting is the responsibility of the landowner / developer. See [Fig 4](#), page 18, for bridge design requirements.

Grades - The grade of a roadway gives the greatest problem to the user. Private roads shall be designed to maintain grades at or below 12%. If this grade cannot be achieved, the following conditions will apply and be reviewed by Skamania County before construction approval:

Grades over 12% and less than 15% will require a detailed analysis included in the proposal to describe why geographic conditions do not allow grades to be maintained at 12% or below. Provide road profiles as designed by a Licensed Professional Engineer or a Professional Licensed Surveyor.

Any grade over 15% will require Asphalt Concrete Pavement, or other approved surface, in addition to the above requirement.

Curve Radius - The curves or the sharpness of curves is also an important design consideration. Sharp corners provide serious points of traffic conflict and reduced safety to the user. Too sharp a corner can have an effect on emergency response apparatus and their ability to access your property. The County requires certain minimum radius curves, as your private road design should reflect the grade and curve data to maximize the intended use for Emergency Services access. The minimum curve radii shown in [\(Fig. 2\)](#), page 17, should be carefully considered before the final design is made.

FIGURE 2 – MINIMUM RADIUS

Speed Limit (mph)	20	25	30	35	40	50	55
* Minimum Radius (ft rounded)	100	160	230	320	430	695	880

*AASHTO Guidelines

Signage - Private roads shall be signed in accordance with the provisions of Section 2.36.040 Skamania County Code.

Private Road Sign – Signing of private roads shall consist of a name placard at the beginning of the road on a white reflective background with sizes defined in Fig. 5, page 22. There shall also be a stop sign attached below the road name sign for all Category 3 – 6 Roads.

Angle of Approach - Road Approaches shall be as close to a right angle as is practical and in no event shall be less than sixty (60°) degrees. Approaches with steep terrain will require additional review with recommendations being made to the developer. See (Fig. 16), page 29, for clarification.

Turn-around Construction - Turn-arounds shall be designated to provide an area within the right-of-way to facilitate a vehicles ability to turn around, (See (Fig 9), page 24, Typical Cul-de-sac) on all Category 5 - 6 Roads, with a minimum radius of fifty (50) feet. On Category 3 - 4 Roads, all options in (Fig 9), page 24, are adequate.

Stopping Sight Distance -The ability to see an adequate distance along a roadway, also may affect the final design. The initial amount of right-of-way set aside must be adequate to accommodate safe sight distance consideration. The sight distance varies according to the speed limit and surface type of the roadway. The selection of sight distance designs should be tempered with the understanding that the minimum speed limit the County can use on any new road is 20 MPH. The stopping sight distances shown in (Fig. 3), page 18, are the minimum, additional distances may be required dependent on the type of roadway surface and grades. In addition, Skamania County will factor in all private road approaches for ingress and egress to a public road to allow sufficient sight distance for stopping distances on the Public Road System.

FIGURE 3 – STOPPING SIGHT DISTANCE MINIMUMS

Speed Limit (mph)	20	25	30	35	40	50	55
* Stopping Sight Distance (ft)	115	155	200	250	305	425	495

* AASHTO Guidelines

Bridges and Tunnels - Bridges and Tunnels are seldom required in the private road system. When they are, the County requirements shown on Fig. 4 , page 18, may provide guidelines in design consideration. Any permits required are the responsibility of the landowner / developer.

FIGURE 4 – MINIMUM BRIDGE DESIGN TABLE

Bridge Design	Category 1 & 2	Category 3 - 7
Curb – Curb Width	12'	Same as Road Width
Design Load	H-20 (State Design Standard)	
Vertical Clearance	14'	

Storm Drainage - Storm Drainage, and its affect on a road design are dependent

upon the terrain, soil conditions and weather conditions, as such no general requirements are applicable. The specific needs will depend on the details surrounding each proposal. In those cases where surface drainage of the storm water is serious, the following items shall be required:

Storm Water Plan on Categories 3 – 6 Roads

Completed storm drainage plans and design by a licensed Professional Engineer shall show existing drainage and contours as well as the location and size of any proposed culverts, underground drainage pipes, ditches, inlets, catch basins.

Drainage easements shall be provided to ensure that rights have been acquired to allow drainage of all roads over and across any lot or parcel where the water may take a natural course.

No drainage waters on any lot or adjacent parcel of land shall be blocked or diverted so as to drain upon any public road right-of-way or hamper proper road drainage.

Private Road Standards Category 7

Categories 7 Roads shall be designed by a licensed Professional Engineer and constructed to the following minimum standards according to [\(Fig 1\)](#), page 14, based on the number of parcels being accessed.

- a. Categories 7 Roads are generally in areas that do not have sustainable emergency services, no public utilities, limited, or no road maintenance on the traveled way during certain times of the year.
- b. They shall be designed by a licensed Professional Engineer and constructed to the following minimum standards according to [\(Fig 1\)](#), page 14, and based on the number of parcels being accessed.
- c. Category 7 Roads shall be listed by definition on all plats.

Private Roads - Private roads shall have an unobstructed driving surface as defined by the class of road.

Surface - Private roads shall provide for an all-weather surface capable of supporting gross vehicle weights of 50,000 pounds, or as directed by the category of road.

Turn-around - Dead-end roads shall be provided with provisions for the turning around of vehicles. Turn-arounds shall conform to one of the examples shown on [\(Fig. 9\)](#), page 24. Private roads in excess of 1400' shall require a turn-around at a mid-way point of the road, provided the mid-way point is less than 1000' from either end. When more than one turn-around is required on a road, they shall be spaced equally along the road and shall not exceed 1000' between turn-arounds. An intersecting road will meet this requirement.

Bridges and Culverts - Bridges and culverts larger than 18” diameter, and other structures in the roadbed shall be constructed and maintained in accordance with the information provided in these guidelines. Permitting is the responsibility of the landowner / developer. See [Fig 4](#), page 18, for bridge design requirements.

Grades - The grade of a roadway gives the greatest problem to the user. Private roads shall be designed to maintain grades at or below 12%. If this grade cannot be achieved, the following conditions will apply and be reviewed by Skamania County before construction approval:

Grades over 12% and less than 15% will require a detailed analysis included in the proposal to describe why geographic conditions do not allow grades to be maintained at 12% or below. Provide road profiles as designed by a Licensed Professional Engineer or a Professional Licensed Surveyor.

Any grade over 15% will require Asphalt Concrete Pavement in addition to the above requirement.

Curve Radius - The curves or the sharpness of curves is also an important design consideration. Sharp corners provide serious points of traffic conflict and reduced safety to the user. Too sharp a corner can have an effect on emergency response apparatus and their ability to access your property. The county requires certain minimum radius curves, as your private road design should reflect the grade and curve data to maximize the intended use for Emergency Services access. The minimum curve radii shown in [\(Fig. 2\)](#), page 17, should be carefully considered before the final design is made.

Storm Drainage - Storm Drainage, and its affect on a road design are dependent upon the terrain, soil conditions and weather conditions, as such no general requirements are applicable. The specific needs will depend on the details surrounding each proposal. In those cases where surface drainage of the storm water is serious, the following items shall be required:

Storm Water Plan on Category 7 Roads

Completed storm drainage plans and design by a licensed Professional Engineer shall show existing drainage and contours as well as the location and size of any proposed culverts, underground drainage pipes, ditches, inlets, catch basins.

Drainage easements shall be provided to ensure that rights have been acquired to allow drainage of all roads over and across any lot or parcel where the water may take a natural course.

No drainage waters on any lot or adjacent parcel of land shall be blocked or diverted so as to drain upon any public road right-of-way or hamper proper road drainage.

The following warnings must be prominently displayed on the face of each plat or other recorded document serviced by Category 7 Roads prior to filing the same:

Category 7 Notice to Purchaser

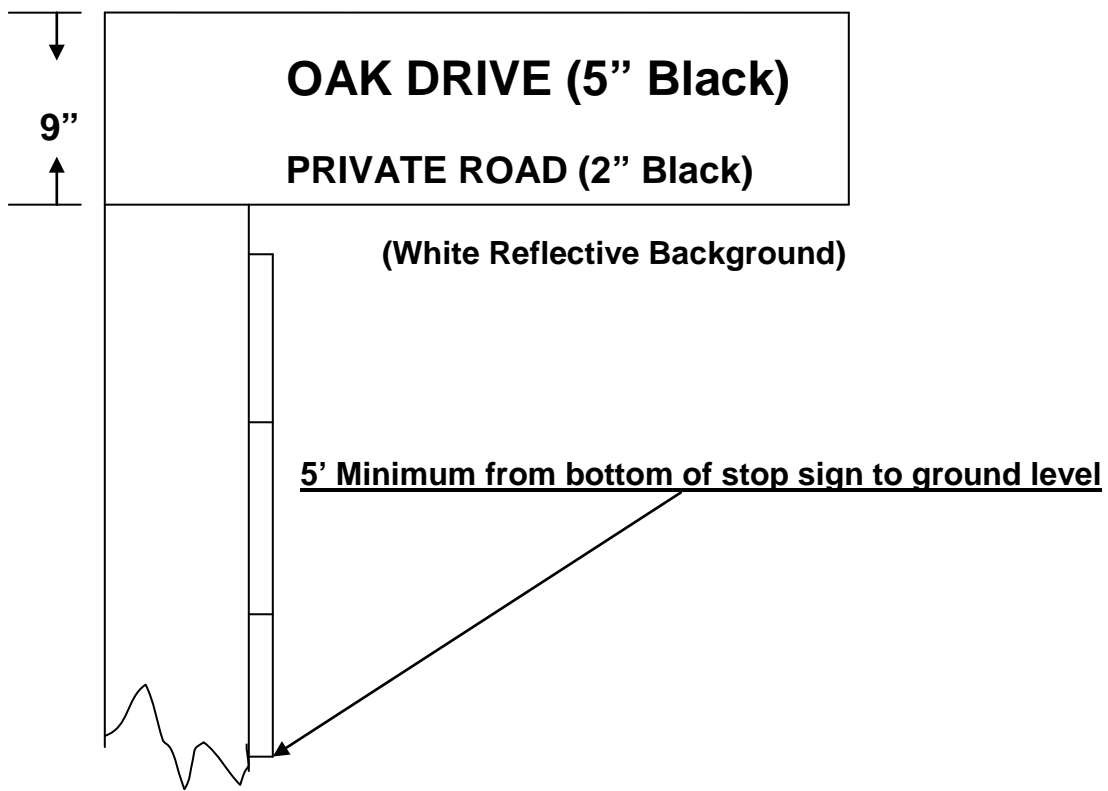
Purchasers of property that utilize a Category 7 Road to access their property shall be notified of the conditions set forth by Skamania County and that Emergency Services, Utilities and General Services from public access roads may be limited or non-existent.

DESIGN REQUIREMENTS

Category 3 - 7 Roads shall be designed by a Professional Engineer licensed and qualified to practice engineering in the State of Washington. The design criteria for roads shall be submitted with the application for road approach permit or, in the case of a short plat, subdivision, RV or mobile home park, or commercial/industrial park along with the preliminary plat plan. No road shall be considered for acceptance into the County Road System unless the design standards are equal to or better* than those established for County Roads, and determined by Skamania County to be in the best interests of the public to accept said road.

***The determination of equal or better standards shall be the responsibility of Skamania County.**

FIGURE 5 – TYPICAL PRIVATE ROAD SIGN



Typical Roadway Sections - Recommended Typical Roadway Sections are presented to give the landowners some ideas of the types of roadway construction that may be used. It will be seen that pieces of each particular design can be used to arrive at a personally tailored roadway that will fit individual needs.

	Page
Typical Roadway Section, Category 1 and 2	23
Typical Roadway Section, Category 3 and 4	23
Typical Roadway Section, Category 5	24
Typical Turn-around Designs	24

Typical Driveway Approach - Typical Approach designs are presented to indicate various methods individual lot owners should use to construct their driveway approaches to a private road. Also, these designs apply in most cases where the approach of the private road connects to the County Road System.

	Page
Approach Requirement (Descending)	25
Approach Requirement (Ascending)	26
Approach Requirement (Level & Turnpike)	28
Approach Requirement (Minimum Angle of Approach) ..	29

APPENDIX 2 – TYPICAL PRIVATE ROADWAY SECTIONS

**FIGURE 6 – CATEGORY 1 AND 2 – DRIVEWAY AND JOINT DRIVEWAY
(Illustration only, not classified as a private road)**

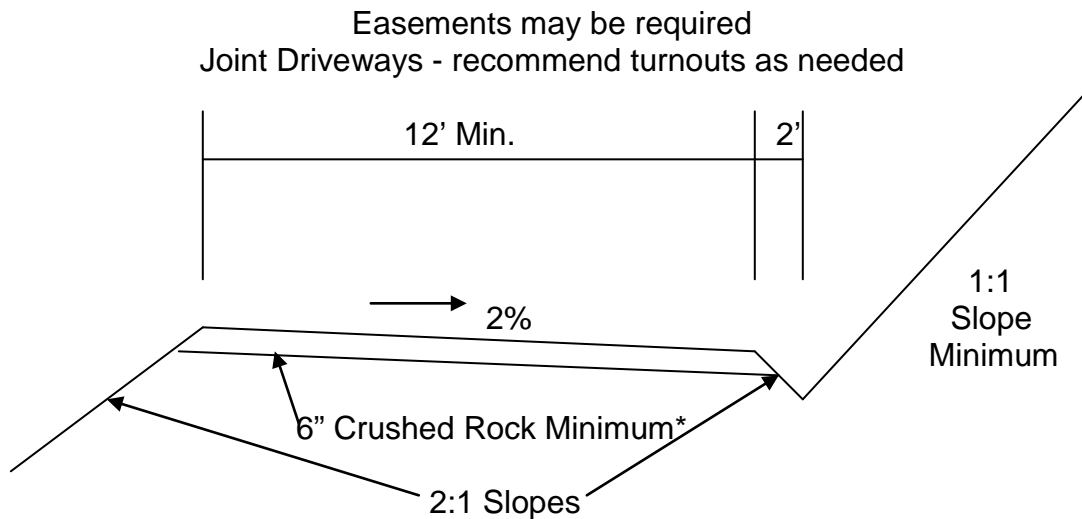
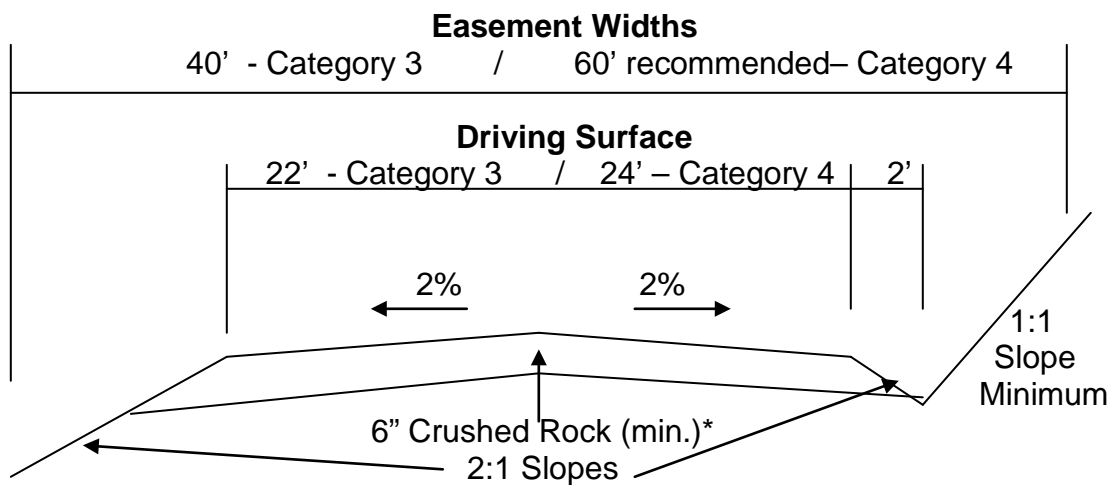


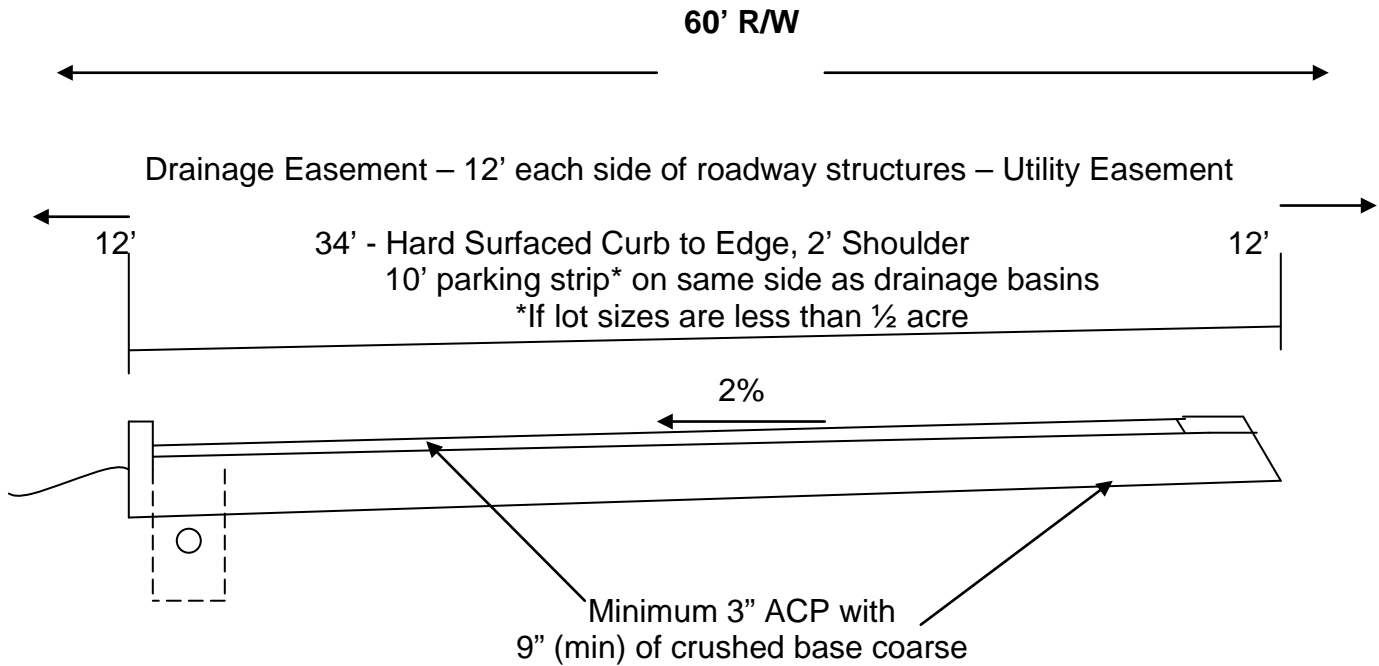
FIGURE 7 – CATEGORY 3 AND 4 – LOW VOLUME PRIVATE ROADS



* Crushed Base Coarse Rock and construction methods can change due to sub-grade conditions and will be adjusted by Skamania County when soil conditions are substandard. Crushed rock standard sizes:

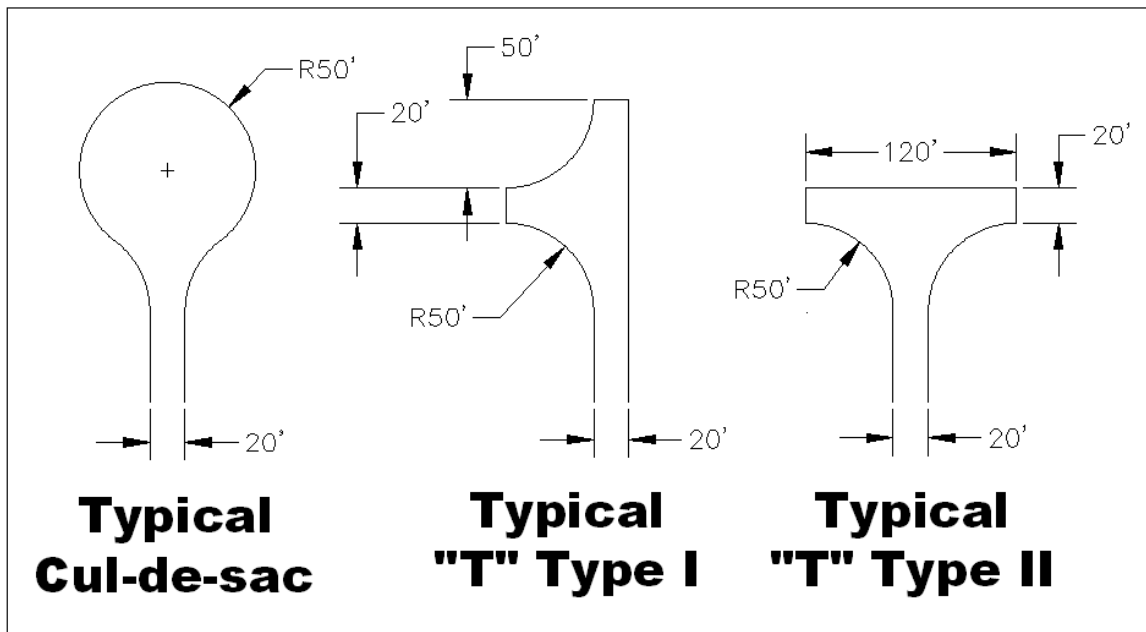
Base coarse –	1 ¼" - 0"
Top coarse –	¾" - 0"

FIGURE 8 – CATEGORY 5 - HIGH VOLUME PRIVATE ROADS



Walking paths or sidewalks are optional, and may be required if connecting to other pedestrian facilities, which will cause revisions to the minimum requirements.

FIGURE 9 – TYPICAL TURN-AROUND DESIGNS



APPENDIX 3 – APPROACH REQUIREMENTS

FIGURE 10 – DESCENDING APPROACH

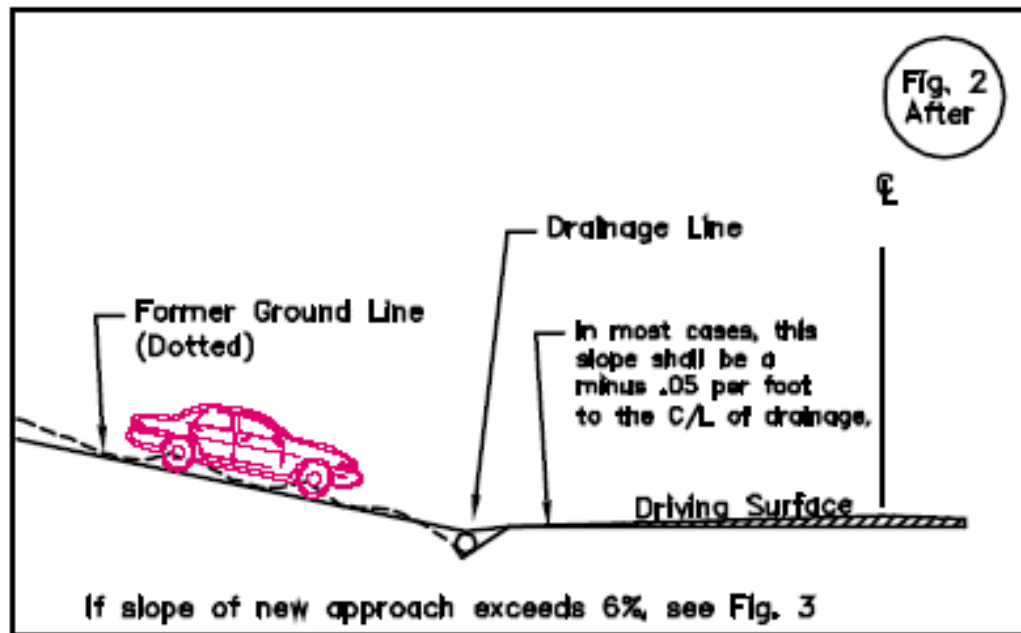
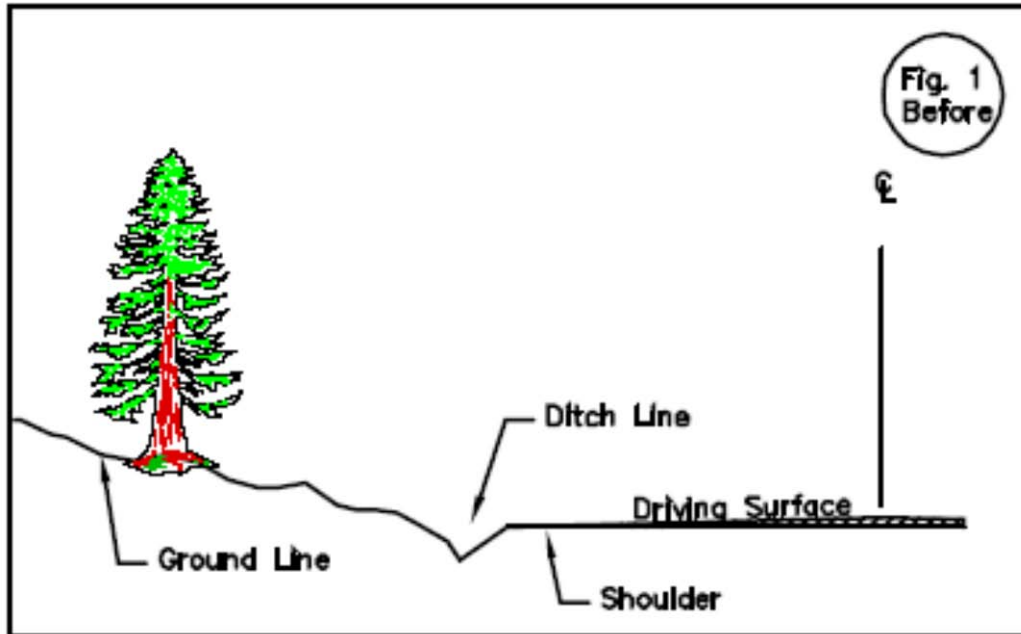


FIGURE 11 – STEEP DESCENDING APPROACH

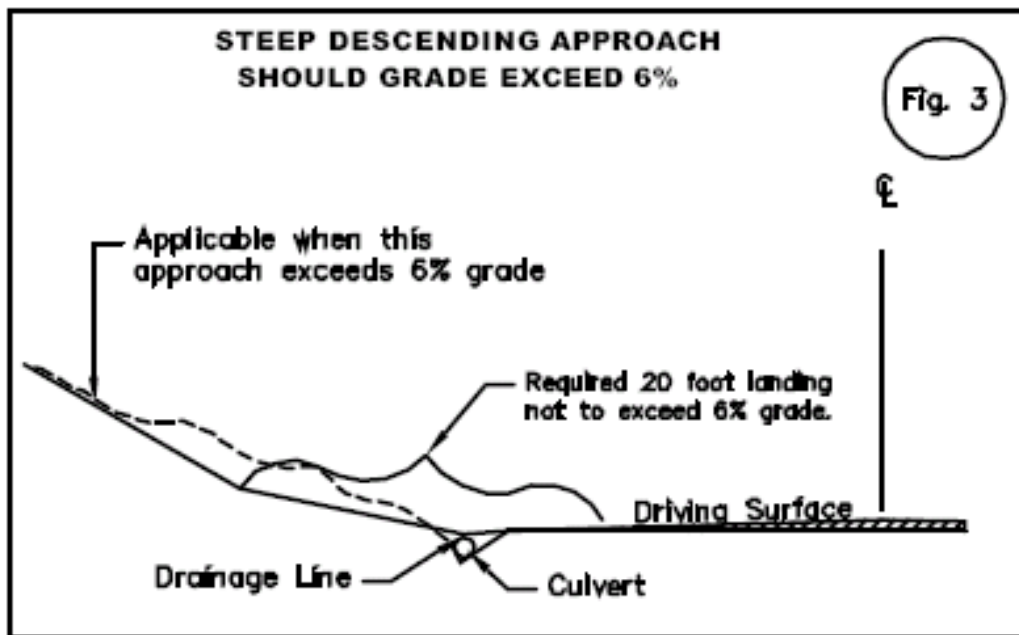


FIGURE 12 – ASCENDING APPROACH

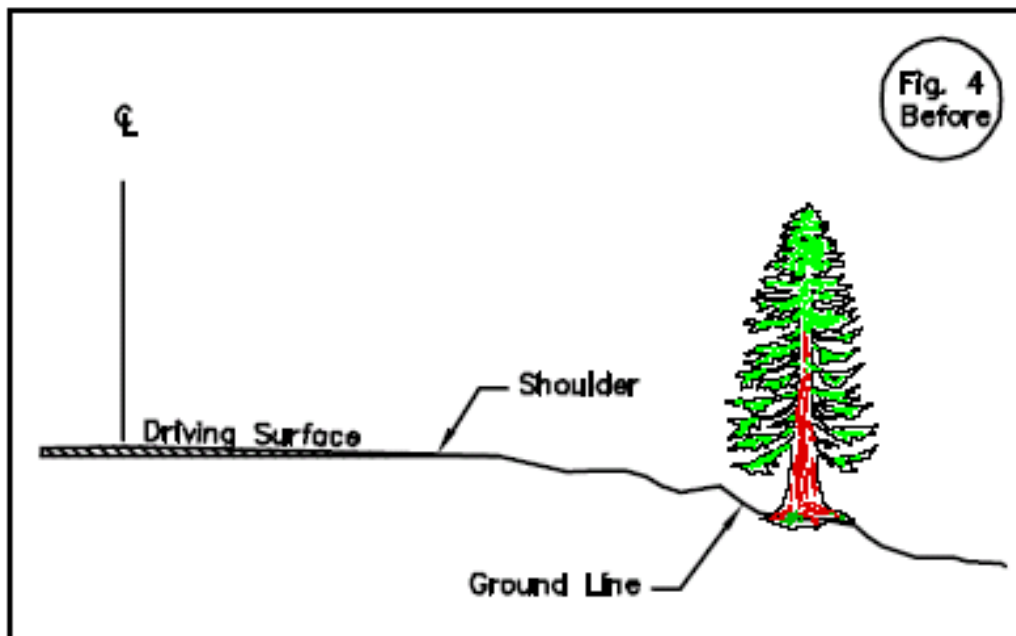


Figure 12 – Ascending Approach (cont)

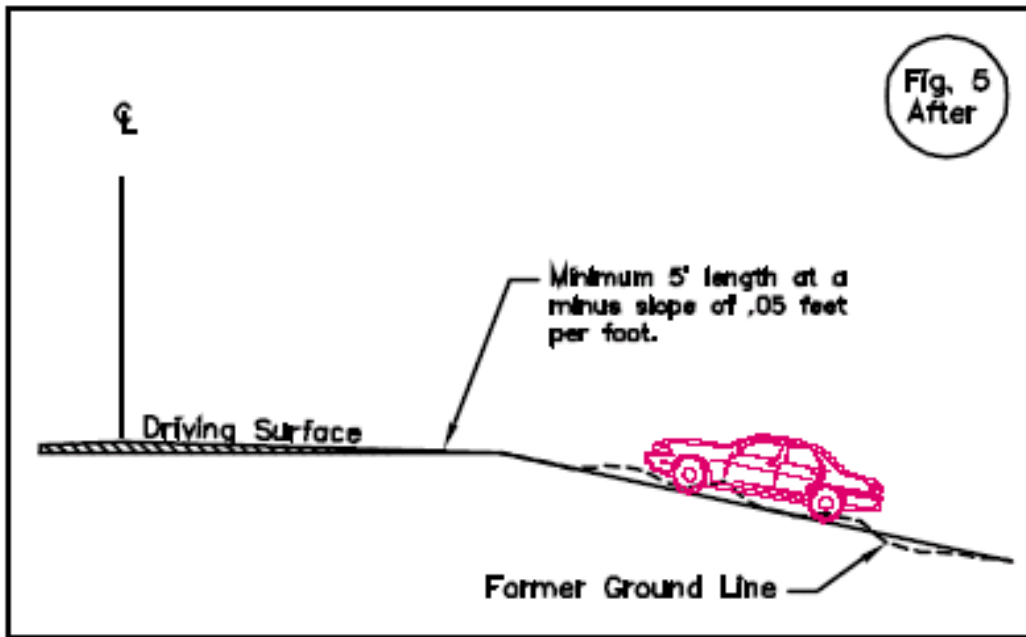


FIGURE 13 – STEEP ASCENDING APPROACH (SHOULD GRADE EXCEED 6%)

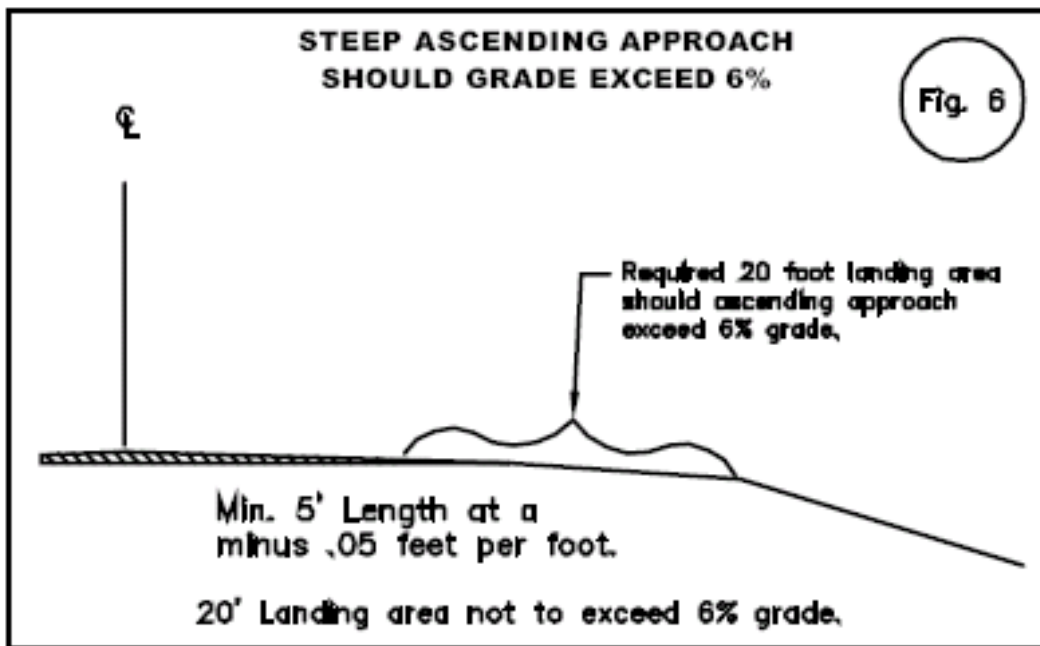


FIGURE 14 – LEVEL APPROACH

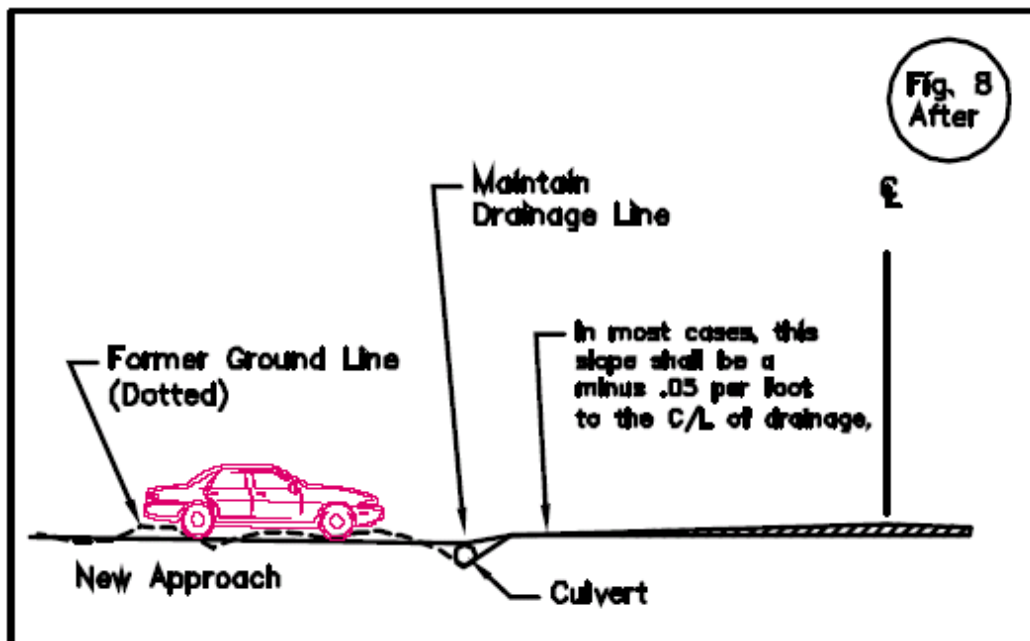
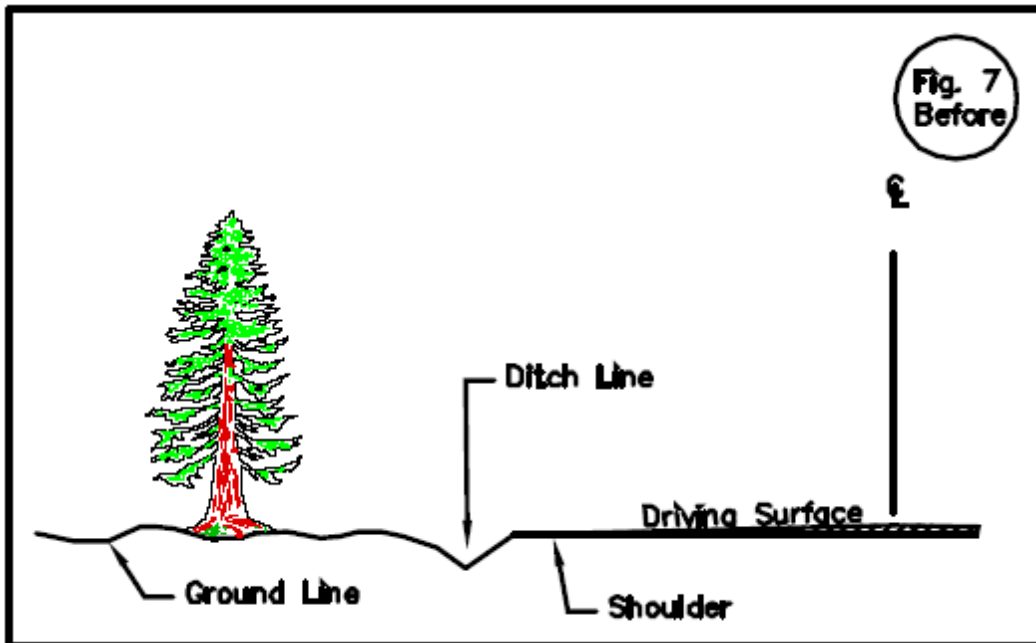


FIGURE 15 – TURNPIKE APPROACH (CULVERT NOT REQUIRED)

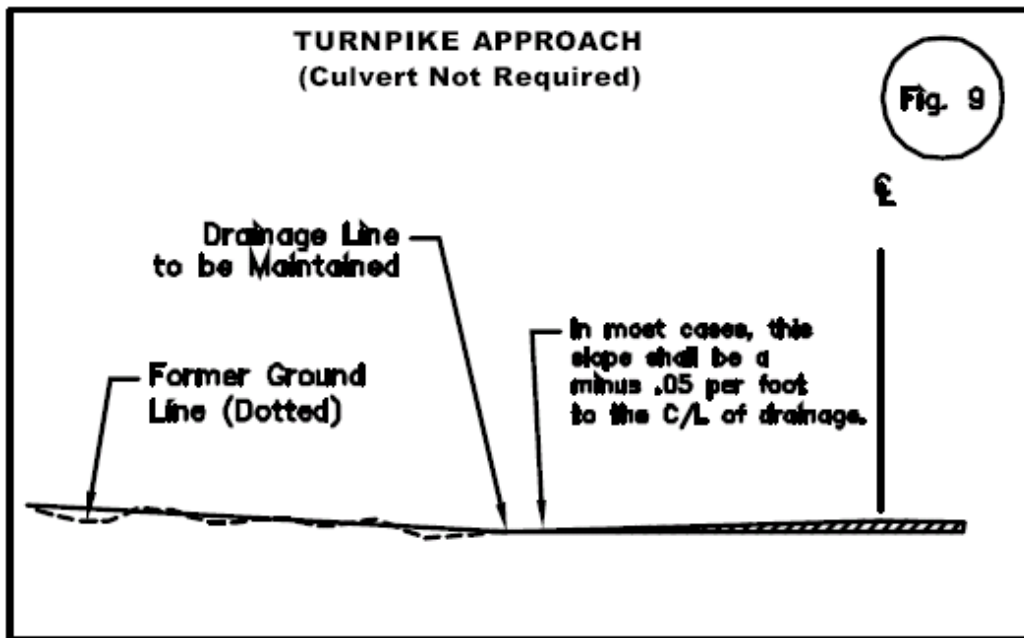
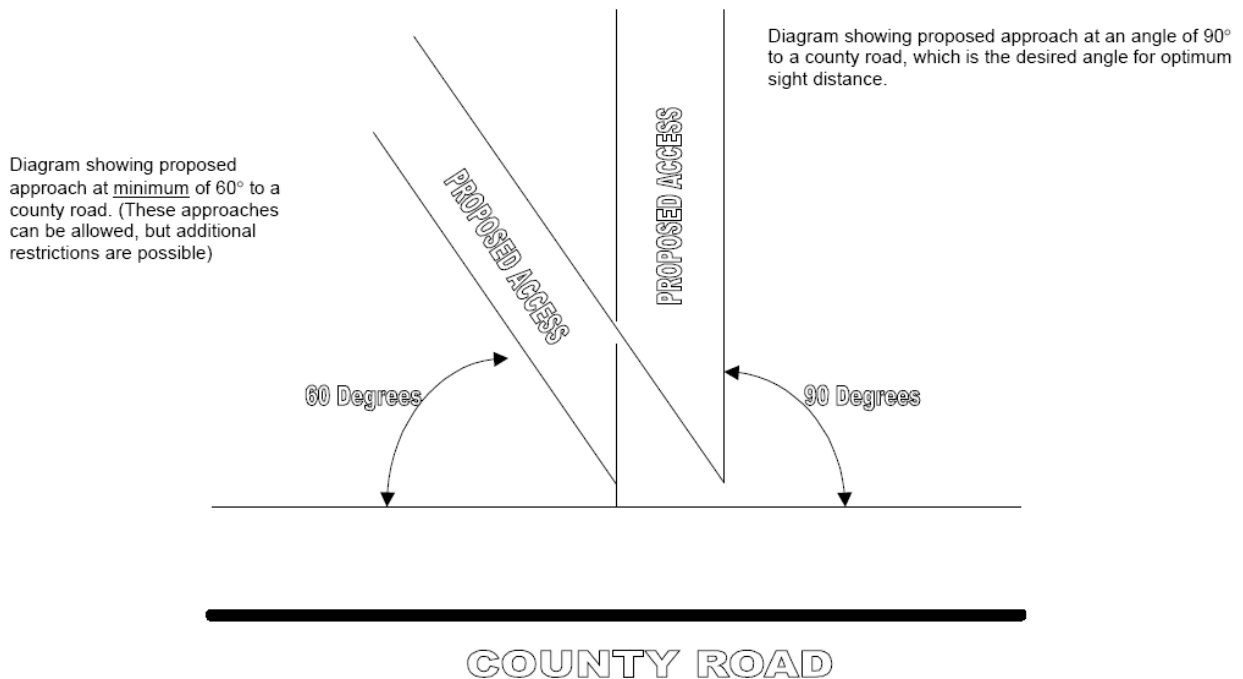


FIGURE 16 – MINIMUM ANGLE FOR APPROACHES



Approach aprons, as designed and created by the County, will take into consideration their effect on private roads and be maintained by the County.