



Land Use Operational Policy Roadways

NAME OF POLICY:	Roadways
APPLICATION:	Applies generally to: <ul style="list-style-type: none">• public and private roads to <i>Land Act</i> dispositions and to private property;• statutory rights-of-way for access;• public road allowances under Section 79 and 80, <i>Land Act</i>;• roads within Crown land subdivisions;• dedications under <i>Land Title Act</i> Section 102 and 107 of titled lands
ISSUANCE:	Assistant Deputy Minister Crown Land Administration Division
IMPLEMENTATION:	Ministry of Agriculture and Lands
REFERENCES:	<i>Land Act</i> (Ch. 245, R.S.B.C., 1996 Sections 13, 14, 40, 57, 58, 79 and 80) <i>Transportation Act</i> (Ch. 44, R.S.B.C., 2004); <i>Land Title Act</i> (Ch. 250, R.S.B.C., 1996); Ministry of Energy, Mines and Petroleum Resources Handbook on Road Construction.
RELATIONSHIP TO PREVIOUS POLICY:	This policy replaces the previous Roadways policy dated August 16, 2004
POLICY AMENDMENT:	Any formal request for an amendment to this policy is to be directed in writing to the Director, Land Program Services Branch, Crown Land Administration Division.

Warren Mitchell
A/Assistant Deputy Minister
Crown Land Administration Division
Ministry of Agriculture and Lands

Date

EFFECTIVE DATE: August 16, 2004

FILE: 12695-00

APPROVED AMENDMENTS:		
Effective Date	Briefing Note /Approval	Summary of Changes:
August 16, 2004		Changes made as a result of the Policy and Procedures Re-write Project.
October 21, 2005		Policy changed to reflect new agency names and responsibilities
July 19, 2007	Decision Note 152082	Policy changed to add the option to request homeowner's insurance for non-commercial activities.

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1. POLICY APPLICATION

Applies generally to:

- public and private roads to *Land Act* dispositions and to private property;
- statutory rights-of-way for access;
- public road allowances under Section 79 and 80, *Land Act*;
- roads within Crown land subdivisions;
- dedications under Section 102 and 107, *Land Title Act*, of titled lands.

Does not apply to:

- roads authorized by legislation other than *Land Act* and *Land Title Act*;
- roads within Provincial Forests that are intended for forest uses as defined in the Protocol Agreement on Crown Land Administration and Forest Activity;
- gazetted roads constructed under authority of the *Transportation Act* roads that have been constructed or maintained with the use of public money.

The italicized text in this document represents information summarized from standard Crown land management policies and procedures. This material has been inserted where it provides necessary direction or context. As well, website links offer access to the full text of the relevant land management policies and procedures. Text in standard script is applicable to this policy only.

2. PRINCIPLES AND GOALS

Provincial employees act in accordance with applicable legal requirements when making decisions. The [Guiding Principles](#) are a summary of key administrative and contract law principles which guide provincial employees.

This policy is part of a series of policies that have been developed to help provincial staff use business and legal principles to achieve the government's goals with respect to the management of Crown land in a manner that is provincially consistent, fair and transparent. To that end, this policy also serves as a communication tool to help the public understand how the Province of BC makes decisions respecting Crown land.

2.1 Public Roads

The general intent of the Roadway policy is to consider and provide for access needs across Crown lands where required, and to provide access road authorization to private parties planning to build roads which also serve public access needs. This intent creates a responsibility that every public road will contribute as much as possible to the overall network of roads in the area it services. It also creates a responsibility, whenever a parcel of Crown land is alienated, to consider the advisability of a Section 79 *Land Act* corridor for road purposes to provide future access to lands around or beyond the subject parcel. Ongoing liaison with the appropriate approving officers, as designated by Section 77, *Land Title Act*, is essential to the proper execution of these responsibilities.

2.2 Private Roads

Private roads may be authorized only if there are clear physical reasons why access should not be provided to the public, e.g. physical hazards due to industrial traffic, danger from explosives, sour gas, etc.

2.3 Bridges

Bridges generally carry a greater liability risk than roadways, and therefore deserve special consideration. Tenures should be maintained on bridges throughout the construction period and, wherever feasible, during their usable life. Before tenures expire, the need for renewal of the tenure and renovation or removal of the bridge should be considered.

3. DEFINITIONS

Authorizing agency means the provincial ministry responsible for the specific land use authorization.

Public roadway means a portion of Crown land designated or indicated as a road. Includes all roads authorized pursuant to a works permit under Section 14(c), a Section 39 licence of occupation, or a Section 79 and 80 road allowance. Such *Land Act* authorization does not transfer exclusive use of the land to the applicant. Use of a public roadway may not be denied to any person.

Private roadway means a portion of Crown land for a road/railbed associated with an industrial land use over which exclusive use of the land is conveyed to the authorized tenure holder and which is not open to public use.

Resumptive Right (1/20th) means a right in the Crown, or any person acting for it, to resume any part of the land which is deemed necessary by the Crown for making roads, canals, bridges or other public works, but not exceeding 1/20 part of the whole of the land.

4. ABBREVIATIONS

BCA - BC Assessment

ha. - Hectare

MAL - Ministry of Agriculture and Lands

MOT - Ministry of Transportation

MOU - Memorandum of Understanding

5. APPLICANT ELIGIBILITY

Applicants for new tenures, tenure assignment, or tenure replacement must be:

- *Canadian citizens or permanent residents 19 years of age or older; or,*
- *Corporations which are incorporated or registered in British Columbia; or,*

- *Registered partnerships, cooperatives, and non-profit societies which are formed under the relevant provincial statutes; or,*
- *First Nations can apply through band corporations or Indian Band and Tribal Councils. Band or Tribal Councils require a Band Council Resolution a) authorizing the council to enter into the tenure arrangement, and b) giving the signatories of the tenure document the ability to sign on behalf of the Band. For tenures which are to be registered in the Land Title Office, First Nations must apply through either a band corporation or trustees. Band members can elect 1 or more trustees to hold a tenure on behalf of the Band. Verification of election must be by way of a letter signed by the Chief and councilors of the Band giving the full names of the trustees and stating that they were elected at a properly convened meeting of the Band. A Band Council Resolution is not required.*
- *In the case of aquatic land, non-Canadians can apply if they own the adjacent upland (companies must still be incorporated or registered in B.C.).*

For more detailed standard policy information see [Eligibility and Restrictions](#).

An applicant for a Section 80 public road allowance must be the owner of the private land being subdivided, and must require the road allowance for access. An agent may make application in the name of the owner.

6. FORM OF LAND ALLOCATION

Refer to Appendix 1 for a summary of the forms and terms of Crown land allocation available for roadways.

Under the *Land Act*, unless there is express provision to the contrary, roads are deemed to be a maximum of 20 metres in width for all forms of tenure. More detailed information on road specifications is contained in Appendix 2.

For more detailed standard policy information see [Form of Crown Land Allocation](#).

6.1 Works Permit

A road constructed pursuant to a works permit is open to the public and the holder cannot deny use to any person.

A works permit is the standard form of *Land Act* authorization for construction and maintenance of a public roadway or a bridge over Crown land. Other purposes served by works permits are to authorize construction of a road prior to dedication under Section 80 and to upgrade and maintain an existing abandoned access road which provides access to a *Land Act* tenure or private land.

The usual term for a works permit is 2 years.

A works permit is also available for up to 10 years where there are ongoing construction and/or maintenance requirements:

- for bridges;
- for existing roads;

- where completion of construction cannot be assured within a one-year term.

The authorizing agency is responsible to ensure that long term permits are justified.

6.2 Licence of Occupation

A licence of occupation may be issued where minimal improvements are proposed, where short-term tenure is required, where there are multiple users of a site (e.g. communication sites), or in remote areas where survey costs are prohibitive. It may also be used to allow development to proceed while awaiting completion of survey requirements for a lease or right of way.

A licence of occupation conveys fewer rights than a lease. It conveys non-exclusive use for the purpose described, is not a registerable interest that can be mortgaged, and does not require a survey.

A licence of occupation does not allow the tenure holder to curtail public access over the licence area except where it would impact the licencees' right to use the land as per the licence document. Government may authorize overlapping and layering of tenures.

The standard term for a licence of occupation is 10 years.

Where an application has been received for a statutory right of way, a licence of occupation may be issued for a private roadway for temporary use (usually 2 years) as an interim right of occupancy pending completion of the required survey.

For a private roadway, (but not a railbed) a licence of occupation may be issued for short term use (10 years), where there are clear economic reasons why survey costs for a statutory right of way are unaffordable.

6.3 Statutory Right of Way

A statutory right of way is normally used to authorize linear uses of Crown land for transportation, communication, energy production and utility developments.

The tenure holder is granted a legal right of passage over the land for a specific purpose.

A legal survey will be required at the applicant's expense to define the tenured area.

A statutory right of way is the preferred tenure for roads/railbeds where public use must be excluded.

A right of way for a private road may be issued for as long as required, provided the term does not exceed 30 years.

7. PRICING POLICY

7.1 Administrative Fees

Application fees for tenures, and other administrative fees, are payable to the Province of BC. These fees are set out in the fee schedules contained in the [Land Act Fees Regulation](#).

7.2 Method of Valuation

Valuation is normally based on zone rates shown in the map of zone land values for utilities (see appendix 2 of the [Utilities policy](#)).

Zone rates will be adjusted periodically to reflect changes in land values.

7.2.1 Works Permit

\$250 for terms up to one year, or \$500 prepaid for the entire term up to 10 years.

7.2.2 Licence of Occupation

Prepaid Rents

Where a 10 year licence of occupation fee is prepaid in advance the rental is equal to 100% of the utilities zone land value. The minimum prepaid consideration is \$500 for the entire term.

Annual Rents

Where a licence of occupation fee is paid annually, the rental is calculated at 7.5% of double (2x) the utilities zone land value. The minimum annual rent is \$500.

Interim Licence

Where a licence of occupation is issued as an interim tenure pending project construction and completion of legal survey, the tenure holder prepays the right of way consideration in advance for the full term of the right of way. The licence rental is included in the right of way consideration, and where prepaid, the statutory right of way will be issued subject to completion of the legal survey for a nominal \$1.00 fee (plus any additional application fees).

7.2.3 Statutory Right of Way

Statutory right of way consideration is prepaid for the full term of tenure based on double (2x) utilities zone land value and subject to adjustment upon completion of a legal survey. The minimum prepaid consideration is \$500 for the entire term.

7.2.4 Public Road Allowances

There is no rent charged for a Section 79 public road allowance.

Subject to the below, there is no rent charged for a Section 80 road.

The market value of the land (\$500 minimum) is charged if there is existing access to the subdivision and the road allowance is requested to improve access or development potential.

8. ALLOCATION PROCESSES

8.1 Applications

New and replacement tenures are normally offered in response to individual applications.

8.1.1 Application Package

Applications must be complete before they can be accepted for processing. A complete application package will include all the material defined in the [Application Checklist](#).

Location Requirements

Roads should be designed so as to connect to the roadway plan for the surrounding area. If a referral to the Ministry of Transportation is needed, it should be given priority in the referral process so that all referral agencies can evaluate the same proposed route without undue delays.

A public road allowance should be located along the boundary of a parcel unless the road has already been constructed or topographical features indicate a better alternative.

Consultant's Report

The authorizing agency may require a report from a qualified consultant (registered professional forester, registered engineer, or certified engineering technician with a minimum of two years of road building experience.) As a guideline, a consultant's report may be required where:

- the length of a roadway is over 5 km and justifies the expense; or
- the route crossed by the road has known environmental sensitivities.

Requirements for the report may include the following:

- the consultant's declaration that he has been on site and located the road;
- a road plan, profile and cross-section of the located road, including location of culverts, bridges, cattleguards, etc;
- explanation of why the road is required;
- recommendations on type of equipment to be used in construction;
- constraints governing construction of the road, such as time of year construction is to occur.

Engineering Report for Bridges

The authorizing agency may require an engineering report to accompany an application for Crown land to construct a bridge. The report should not generally be requested until after the decision has been made to authorize the road.

8.1.2 Application Acceptance

New applications will be reviewed for acceptance based on application package completeness, compliance with policy and program criteria, preliminary statusing, and other information which may be available to provincial staff. The acceptance review is to be completed within 7 calendar days. Applications that are not accepted will be returned to the applicant.

8.1.3 Clearance/Statusing

After acceptance, provincial staff undertake a detailed land status of the specific area under application to ensure all areas are available for disposition under the Land Act and to identify potential issues.

8.1.4 Referrals

Referrals are a formal mechanism to solicit written comments on an application from recognized agencies and groups. Referrals are initiated as per legislated responsibilities and formal agreements developed with other provincial and federal government agencies. Referrals may also be used to address the interests of local governments and First Nations. Referral agencies, organizations and identified special interest groups provide their responses to the authorizing agency within 30 days (45 days for First Nations).

Outside municipal boundaries the Ministry of Transportation is the primary referral agency. If their response makes re-routing necessary, other referral agencies should be informed of the change as quickly as possible.

Non-forest use roads in Provincial Forest

Forest Service consultation may be required regarding location and construction, in conformance with the subsidiary agreement respecting **Land Act Administration in Provincial Forests**.

Non-forest use roads on parcels adjoining Provincial Forest

The Forest Service should receive referrals for these applications so they can assess the relationship to future forest access needs.

8.1.5 Advertising/Notification

At the time of application acceptance, provincial staff will notify applicants if advertising is required and provide the necessary instructions.

Adjacent Owner Notification

New applications to tenure foreshore adjacent to privately owned property, including Indian Reserves, are brought to the adjacent property owner's attention through referrals or direct contact. In certain circumstances, provincial staff may advise applicants that there is a need to obtain a letter indicating adjacent owner's consent to their application.

8.1.6 Aboriginal Interests Consideration

The authorizing agency is responsible for ensuring the province's obligations to First Nations are met in the disposition of Crown land. Provincial staff carry out consultations in accordance with the consultation guidelines of the Province to identify the potential for aboriginal rights or title over the subject property and to determine whether infringement of either might occur.

8.1.7 Field Inspections

Field inspection means the on-site evaluation of a parcel of Crown land by provincial staff. The need to conduct a field inspection will vary and the decision to make an inspection ultimately lies with the authorizing agency.

8.1.8 Decision/Report

*The applicant will be notified in writing of the government's decision. **Reasons for Decision** are posted on the relevant website.*

8.1.9 Issuing Documents

If the application is approved, tenure documents are offered to the applicant. All preconditions must be satisfied prior to the authorizing agency signing the documents. It is the applicant's responsibility to obtain all necessary approvals before placing improvements or commencing operations on the tenure.

Public road allowance dedications occur on Crown land that is registered in the Land Title Office. To be consistent with Section 102 of the *Land Title Act*, dedications of roads are subject to the applicant providing LWBCauthorizing agency with written confirmation from the appropriate approving officer that the proposed road meets Ministry of Transportation or municipal requirements (unless the highway has been previously established by notice in the Gazette).

The type of survey required for a road dedication can be determined by a land surveyor. The Surveyor General can also provide assistance.

Road Specification

Road specifications for distribution with tenure documents are contained in Appendix 2. They may be used at the discretion of the authorizing agency and may be amended for the particular type of road. Class 5 or 6 standards are appropriate for access roads to private property.

9. TENURE ADMINISTRATION

9.1 Insurance

A tenure holder is generally required to purchase, and is responsible for maintaining during the term of the tenure, a minimum level of public liability insurance (general liability or, for non-commercial activities, homeowner's insurance) specified in the tenure document.

The province accepts no responsibility for maintenance or improvements to roads authorized under the Land Act.

9.2 Security/Performance Guarantee

A security deposit or bond may be required to be posted by the tenure holder where any improvements on, or changes to, the land are proposed. The security deposit is collected to insure compliance and completion by the tenure holder of all the obligations and requirements specified in the tenure. Some examples where such security may be used are for any type of clean-up or reclamation of an area, and/or to ensure compliance with development requirements.

A performance guarantee may be required by the authorizing agency prior to issuance of a works permit or tenure. The amount of the bond, determined by the authorizing agency, should be commensurate with the level of proposed land development.

9.3 Assignment and Sub-Tenuring

Assignment is the transfer of the tenure holder's interest in the land to a third party by sale, conveyance or otherwise. Sub-tenuring means an interest in the Crown land granted by a tenant of that Crown land rather than the owner (the Province).

Assignment or sub-tenuring requires the prior written consent of the authorizing agency. The assignee or sub-tenure holder must meet eligibility requirements. The authorizing agency may refuse the assignment of existing tenures if the details of the assignment or sub-tenure are not acceptable to the province.

Investigative and temporary permits can not be sub-tenured or assigned.

9.4 Tenure Replacement

Replacement tenure means a subsequent tenure document issued to the tenure holder for the same purpose and area.

In most cases, tenure holders may apply for a tenure replacement at any time following the mid-term of the tenure. Replacement of tenures is at the authorizing agency's discretion. The province may decline to replace a tenure, or may alter the terms and conditions of a replacement tenure. For tenure terms and conditions see Section 6.

Investigative permits are not generally replaced. A further two year term may be provided, at the authorizing agency's discretion, when there are legitimate requirements for a longer investigative period.

9.5 Monitoring and Enforcement

Tenure terms and conditions, including requirements contained in approved management/development plans, act as the basis for monitoring and enforcing specific performance requirements over the life of the tenure.

10. PUBLIC ROADS

The province assumes responsibility for ensuring that the need for future roads is considered before disposing of Crown land. When a decision is made regarding sale or lease of Crown land, the road needs for the surrounding area should be considered, and the appropriate public road allowance made. The provision of access to lands beyond by leaving access corridors of vacant Crown land, is an essential consideration in the allocation of Crown land. Road allowances should conform with a grid pattern or follow one side of a property boundary when possible.

Public road allowances authorized pursuant to this policy will be a standard width of 20 metres (25 metres in the Peace Region) plus three (3) metres beyond cuts and fills. A wider allowance should be necessary only if required by the appropriate approving officer.

10.1 Section 79 Land Act Public Road

The purposes of a Section 79 public road allowance are:

- to dedicate road on a survey plan at the time a parcel of Crown land is being surveyed and subsequently disposed of by way of lease or Crown grant, in order to recognize an existing road or trail or to plan for access to lands beyond;
- to record this in the Crown Land Registry; and
- to create a legal road entity.

There must be just cause for the deletion. The allowance should be for a road that is in use or that is necessary for access to lands beyond. It should tie into existing roads or rights of way.

A public road allowance should be located along the boundary of a parcel unless the road has already been constructed or topographical features indicate a better alternative.

A request for deletion is submitted to the Surveyor General Division of the Land Title and Survey Authority. The request should contain a legal description, a sketch map, and a note on the width of the allowance (20 metre minimum). For unsurveyed areas, locational evidence should be provided, where obtainable, from such sources as: forest cover mapping, topographic base maps, air photos, or, if no other evidence is available, a centre line traverse of the roadway with a tie to existing survey evidence. For surveyed areas, an effort should be made to locate survey evidence and identify it on a copy of the official plan, survey plan, or sketch map.

10.2 Section 80 *Land Act* Public Road

A Section 80 public road dedicates Crown land for a road in order to provide access over Crown land to a privately owned subdivision, where there is no suitable access across private land, or where the proposed dedication meets long range objectives for a public road grid for the area.

All applications for a Section 80 public road are to be accompanied by:

- three copies of the preliminary subdivision plan showing the proposed road allowance location;
- a letter from the appropriate approving officer, indicating tentative approval of the proposed road and stating the width required to be dedicated; and
- any supporting information which might assist in the adjudication of the application, such as why the road is needed, why the particular route was chosen, information on any existing roads to the subdivision, and consideration of the availability of the client's land for all or part of the proposed road.

Inspection: Upon receipt of an inspection report, the authorizing agency adjudicates the application and advises the applicant of the result.

Letter of Advisement: If the adjudication is positive, the authorizing agency issues a letter advising the applicant to prepare the final subdivision plan for approval by the municipal or Highways approving officer and subsequent processing and signature by the Surveyor General. If a charge for the land is to be made, the applicant is advised in the letter.

Once an application for dedication of road pursuant to section 80 is approved a letter of approval and a copy of the approved application sketch must be sent to the Surveyor General Division.

Registration: The Surveyor General will sign the subdivision plan thereby authorizing the dedication of road on the plan. Once signed, the Surveyor General Division returns the approved plans to the sender for registration in the Land Title Office, and sends a copy of the covering letter to the authorizing agency.

Construction is authorized under a works permit.

10.3 Dedication of Roads pursuant to the *Land Title Act*

An application for a road over titled Crown land (or a request from a municipality) may lead to dedication under the *Land Title Act* (i.e., Ministry of Transportation or the municipality affected will assume responsibility for the road at a stage to be determined by negotiation). Section 107, *Land Title Act*, requires that title exist in the Land Title Office, or be raised in the name of the Crown by Crown grant, and that a reference plan, signed by the Surveyor General, be approved by the approving officer. The approving officer's confirmation that the proposed road fulfils *Land Title Act* requirements is essential before proceeding with a survey and preparation of a reference plan.

10.4 Reference Map Administration

Map references are needed to identify roadways and protect them from alienation.

The province has a mandate to maintain records of roads that continue to meet access needs whether or not they remain under active tenure. To meet this need, the following procedures should be observed:

- Ensure that all roadway applications forwarded for entry onto Tantalus are accompanied by a sketch map sufficiently accurate that the position of the proposed road can be entered on the graphic system. A scale of 1:20,000 is preferred. Once entered, road positions are stored permanently.
- Works Permit files become inactive upon expiry of the term but after construction, roads often continue to be used or required for access. Once a road file has been established, it should remain in Crown Land Registry and on reference maps until such time as the province decides it is no longer required. Files for roads that continue to meet access needs should not be removed upon review of inactive files. It is essential that road requirements remain visible in the Lands information system and be considered as further applications are received.

11. VARIANCE

Any decision that would vary from this policy must be made by the Assistant Deputy Minister, Crown Land Administration Division, Ministry of Agriculture and Lands.

Appendix 1. Roadways Policy Summary

TENURE	TERM	VALUATION	PRICING	METHOD OF DISPOSITION
Works Permit [<i>Land Act</i> Section 14(1)(c)] for construction and maintenance of a public road or bridge.	Usual term is 2 years. Term of up to 10 years available.	Fixed amount	\$250 for up to 1 year, \$500 prepaid for entire term of up to 10 years.	Application
Interim Licence of occupation pending completion of survey requirement for statutory right-of-way.	Usual term is two years	Fixed amount	Rental is included in statutory right of way consideration.	Application
Licence of Occupation for private roadway where survey costs are unaffordable.	10 years	Utilities Zone Values	Prepaid in advance, rental is 100% of zone value (\$500 minimum).	Application
			Annual rental is 7.5% of double (2x) zone land value (\$500 minimum).	Application
Statutory Right-of-way (private roads only).	30 years normal term	Utilities Zone Values	Double (2x) zone value, prepaid (\$500 minimum).	Application
Public Road Allowance (Section 80).	Dedicated in Perpetuity	Market value where appropriate	In certain cases, market value (\$500 minimum).	Application

Appendix 2. Road Specifications

A. Road Engineering

1. With due consideration for the appearance of forest landscapes in visually sensitive areas and for the protection of water quality, fisheries, and other resource values, the location and design (alignments and gradients) of roads and bridges shall be such that the combined costs of construction and maintenance are minimized. Competent personnel shall be employed for the design and location of roads and firm supervision and control given all construction work.
2. Road construction is recognized as a major cause of stream sedimentation. Accordingly, the amount of road built shall be minimized particularly where unstable or sensitive areas and fine textured soils have been identified. Road construction shall be avoided through areas having a high potential for sedimentation or slope instability, wherever other resources are threatened.

Where possible, environmental impacts will be minimized by:

- locating roads away from streams, narrow canyons, slide areas and marshes;
 - locating roads on benches, ridge tops, and flatter slopes;
 - taking precautions to ensure that non-culverted drainage channels are clear and the risk of subgrade erosion is minimized whenever unfinished road is to be left over the winter;
 - prescribing for each roads those design specifications that are best adapted to given slopes, topography, and soils.
3. The following specifications may be modified or amended only with the approval of the authorizing agency. Construction prescription, e.g., end hauling, may be added to meet unusual or special conditions.

B. Minimum Road Specifications

1. Turnouts: Five turnouts, preferably intervisible, with a usable length of about 30 metres and a total width including road of 8 metres should be built per kilometre of single lane road. For temporary roads, construct turnouts as required and where the least environmental damage will occur.
2. Widening: On blind curves, the road should be at least 8 metres wide around the curve and for 100 metres approaching each end of the curve.
3. Right of Way Clearing, Grubbing and Slash Disposal:
 - Fell all trees within a right-of-way area 4 metres beyond the top of cuts and 3 metres beyond the toe of fills. Fell leaners and damaged trees which are adjacent to the right of way and yard into the right of way any trees felled into standing timber.
 - Recover merchantable logs, (Licence to Cut requirement from the B.C. Forest Service).

- Remove stumps and organic soil to a maximum width of 12 metres on level ground and easy slopes except where construction by overlanding is being done. Go to widths more than 12 metres as dictated by sideslopes and centreline cuts.
 - Dispose of road clearing slash and non-merchantable wood by piling and burning or by burying either in the toe of the fill, or in pushouts adjacent to the right of way as directed by the B.C. Forest Service.
4. Ballasting and Surfacing: Place sufficient ballast or surfacing material to carry planned vehicle traffic without rutting or deforming the road surface. Give due consideration to the planned traffic frequency, quality of ballast and surfacing materials, and required maintenance.

C. Pits and Quarries

Obtain approval of the authorizing agency for pits or quarries that will extend beyond the right-of-way boundaries. Clear the area and dispose of slash as per B3 bullets 1, 2 and 4. Dress the pit slopes to a natural angle of repose before road is abandoned if deemed necessary by provincial staff.

D. Culverts

1. Design all culverts according to accepted engineering principles to carry the design load and pass the specified peak flood. Install metal culverts according to manufacturer's recommendations.
2. Select metal pipe or cedar log culverts with enough capacity to pass the 50 years flood on main roads and the 25 years flood on the other roads at $HW/D=1.0$. Place pipe culverts at a slope coincident with the stream slope whenever practical.
3. Install enough culverts to ensure the natural drainage pattern of all streams both seasonal and continuous. Install additional culverts as necessary to drain ditches and minimize ditch erosion. Provide temporary culverts during the pioneering stage where siltation or erosion is a problem. Keep stream channel free of construction debris.
4. Space crossdrain culverts no more than 150 metres apart on grades over 10% and 230 metres on grades less than 10%.
5. Do not install metal culverts smaller than 500 millimetres in diameter or wood culverts with an opening smaller than 500 millimetres by 1,000 millimetres.
6. Select sound cedar for wood culverts. As a general rule, place sill logs outside the average highwater mark of the stream unless otherwise designated as per D1.
7. Provide adequate drainage at all road junctions.

E. Special Provisions for Maintenance of Water Quality

1. Install aprons or flumes to carry water from culverts over unstable fills or, preferably, replace the unstable fill at the culvert with a non-erodible material (e.g. rip-rap) to absorb the impact of discharge. Protect culvert inlets from erosion as required.
2. Maintain the natural course of all streams whether seasonal or continuous.

3. Install crossdrain culverts to divert ditch water away from seasonal and continuous streams, or direct the water into sediment catchment basins away from the streams.
4. Construct cut and fill slopes to suit the local soil and rock material. See Roadway Cross-section for some recommended slopes.
5. Adopt measures to stabilize cutbanks and fill slopes when soils are unstable, e.g. grass seeding.
6. Plan borrow pit and waste areas to minimize erosion and water turbidity.
7. Do not dump or spill material or debris in any stream or lake. Keep culvert and bridge sites clean during construction.
8. Suspend any road building operation causing erosion or siltation especially during periods of intensive rainfall or heavy runoff or when soils are saturated.
9. For shovel constructed subgrade on easy slopes, increase the cleared width to provide for spreading of unusable material. Such material should be spread no more than 1 metre deep and must be suitably protected to prevent erosion, (e.g. grass seeding).
10. Use backhoes to build road on erodible or poorly drained soils.

F. Special Provisions for Protection of Fish Bearing Streams

1. Obtain the approval of the Ministry of Environment and Department of Fisheries and Oceans for the design, and the time and method of construction of all structures proposed over fish bearing streams.
2. Protect the shorelines of streams and lakes and shoreline shrubs from damage due to right-of-way clearing, logging, and burning.
3. Observe all constraints listed above, particularly in D and E.

G. Cattleguards

Construct suitable cattleguards at all points where the Works cross any fence lines or natural boundaries as may be required.

H. Road Class

Road shall be built to a Class _____ standard (see "Roadway Cross-section").