Town of Canmore

GUIDELINES FOR SUBDIVISION AND DEVELOPMENT IN MOUNTAINOUS TERRAIN

(replaces "1993 Slope Development Policy")

Adopted 13 June 2006
Council Resolution # 282-2006

1. Introduction

1.1 Purpose

Much of Canmore consists of mountainous topography which presents challenges for subdivision and development if the Town is to meet the Municipal Development Plan goals of retaining the natural features of Canmore's landscape. Many undeveloped sites will present unique challenges in maintaining the integrity of the natural environment, creating safe and economical developments, and contributing to the unique character of the Town. This document outlines a series of guidelines for appropriate development within such areas, with the primary goal of protecting the character and topography of the mountainous environment through responsible development practices and where feasible the integration of existing topographic features into new developments.

The guidelines contained in this document are intended to meet the following objectives:

- To protect the natural characteristics of the mountainous topography which contributes to the character of Canmore with particular emphasis on steep slopes and prominent ridgelines due to their high visibility in the landscape.

- To encourage a form of development sensitive to the natural setting that respects existing landforms and minimizes grading and site disturbance.

- To promote slope-adaptive development where feasible.

- To ensure that the visual impact of developments on escarpments is minimized.

- To encourage flexibility and innovation on the part of the Town, developers, and builders.

1.2 Use of this Document

The guidelines that follow provide general direction on appropriate planning, design, and construction in areas with mountainous terrain. Each location will have site-specific opportunities and constraints to be dealt with through the subdivision and development process. The guidelines indicate a preferred approach for subdivision and development on mountainous terrain while allowing for alternate solutions to meeting the goals of the Municipal Development Plan to be put forward and considered. While the design criteria contained in this document are guidelines and not regulations, proponents will be required to demonstrate how the relevant guidelines have been considered.

A variety of municipal guidelines, regulations and bylaws control building, development and subdivision of land in the Town of Canmore. Where applicable to the scale of the project, the following documents should be referred to for use in conjunction with the Guidelines for Subdivision and Development in Mountainous Terrain:

- Town of Canmore Municipal Development Plan
- Relevant Area Structure Plans and Area Redevelopment Plans
- Town of Canmore Land Use Bylaw
- Town of Canmore Engineering Design Guidelines and Construction and Landscaping Standards
- Town of Canmore Open Space Development Guidelines

1.3 Definitions

Building Envelope - That portion of a site where a structure may be located within the setback requirements as described in the Land Use Bylaw and/or conditions of subdivision or development.

Building Site - The area of a parcel required for the building footprint.

Development - In accordance with the Town of Canmore's Land Use Bylaw and the Municipal Government Act, development means:

a) An excavation or stockpile;
b) A building, or an addition, replacement or repair to a building;
c) A change in the use of land or a building, or an act done in relation to lands or a building that results in, or is likely to result in, a change in the use of the land or building; or
d) A change in the intensity of use of land or a building, or an act done in relation to land or a building that results in, or is likely to result in, a change in the intensity of use of the land or building.

Escarpment – A slope of 35% *(19^{o})* or steeper over a vertical distance of 6 metres or more which separates two more gently sloping or flat areas.

Escarpment Crest - Within sloped lands containing an escarpment, the escarpment crest is defined as a transition line at the upper portion of the 35% *(19^{o})*+ slope, and is the transition line between the escarpment and the adjacent upland area.

Escarpment Toe – Within sloped lands containing an escarpment, the toe of the escarpment is situated within the lower part of the 35% *(19^{o})*+ slope, and is the transition line between the escarpment and the adjacent land below the escarpment.

Factor of Safety – The ratio of the sum of the resisting forces to the sum of the driving forces in a geotechnical analysis of slope stability.

Open space - Any parcel of land that is set aside, designated, or reserved for public use and/or protection of the natural environment. Open space is comprised of maintained or natural parks, as well as undeveloped land preserved in its natural state and may include privately owned land that has public access easements.

Ridgeline - A linear topographic feature of an area resulting from an extended, elevated form within a landscape from which the ground slopes down in at least two directions. A ridgeline line is normally identified in profile in a cross section or series of cross sections of a site.

Slope – The measure of surface inclination expressed in degrees or as a percentage of the distance in vertical rise over the horizontal distance.

Slope Analysis– A map required for any site containing slopes of 15% or greater. The size of the slope-category polygons required for a slope map and how such mapping is to be completed is dependent on the scale of the subdivision or development and the nature of the terrain within and adjacent to the site. Slope categories are to be mapped as follows:

Areas from 0%-14% *(0- 8^{o})*
Areas from 15%-21% *(8-12^{o})*
Areas from 22%-34% *(12-19^{o})*
Areas of 35% *(19^{o})* or greater

Viewshed - those areas within a subdivision or development site which are or may become significant visual images from identified relevant locations beyond the boundaries of the site. Viewsheds are normally divided into subunits of the landscape where the scene is contained by topography as viewed from a particular point, or series of points, in the case of a linear corridor.

2. Considerations for Subdivision and Development in Mountainous Terrain

Planning in mountainous terrain should be undertaken to protect important physical features of the terrain as well as important viewsheds. The following factors will be considered throughout the planning process:

- Slope stability
- The protection and retention of mountainous terrain features
- Minimizing terrain modification
- Maintaining natural water courses
- The provision of open space
- Visual impact objectives

A range of factors, including stability, visual impact, accessibility, and relevant planning documents such as ARPs and ASPs will be utilized by the Town to determine the appropriate scale and intensity of development in mountainous terrain. This will be undertaken as a two-step process:

1) An assessment of the physical (geotechnical) ability of the site to accommodate proposed development, and;

2) An evaluation of the visual impact of the proposed development.

These factors are discussed in the following sections.

2.1 Topographic Guidelines and Subdivision Layout

The topographic guidelines outlined here are intended to protect the physical integrity of developments and to minimize substantial terrain modifications. The approving authority will consider the following guidelines in conjunction with site-specific constraints such soil stability, drainage, and the intensity of development, when evaluating area structure plans, land use redesignations, subdivision applications and development and building permits, giving due consideration to innovative practices for development in mountainous terrain.

2.1.1 Slope Conditions Where Guidelines Apply

These Guidelines apply to subdivision and development on sites containing slopes of 15% or greater for a minimum horizontal distance of 15 metres. The Canmore Land Use Bylaw requires development permits where engineered excavations, embankments or retaining walls are required.

The following are intended to guide the location of new developments through the subdivision process and minimize negative impacts on the topography in mountainous terrain:

- Slopes of 35% or greater which require grading in order to create building sites should be avoided
- Exceptions may be warranted in situations where an applicant can demonstrate that the intent of these Guidelines and the Municipal Development Plan can be met.
- No parcel should be created for development that has an average cross slope of 50 % *(27^{o})* or greater, unless designated as permanent open space.

Where a development is proposed on an existing parcel of land that is not consistent with these requirements, the following guidelines shall be applied:

- Building sites should not be created with the use of grading on slopes greater than 35%. Development is permitted where the building footprint can be accommodated without grading or where construction techniques are slope-adaptive while maintaining existing grades.
- Where there is no buildable area with 35% or less slope, a building may be placed on the location that will require the least grading for vehicle and pedestrian access and incur the least impact on the existing topography.
- Retaining walls, when constructed, should be located in less visually-prominent locations and be constructed from materials specified in the Land Use Bylaw.
- Spot grading and the development of small terraces is the preferred method of terrain modification.

Subdivision applications for sites containing slopes in excess of 15% shall include contour plans with a contour interval of 1.0 metre or less, proposed setbacks, driveways and building envelopes for each parcel. In addition to contour plans, slope maps may be required as part of a subdivision or development application. Subdivision or development applications for sites containing steep slopes may also require a geotechnical slope stability analysis in conformity with Development and/or Building Grading Plans.

2.1.2 Slope Stability

As the steepness of slope does not necessarily correlate directly with stability, a geotechnical investigation may be required for subdivisions and/or developments on slopes of 15% or greater in accordance with the requirements of the Town of Canmore Engineering Design Guidelines.

2.1.3 Maintaining a Natural Appearance Grading

Where grading is required, the modified slopes should provide natural contours that complement the existing topography and maintain a natural appearance. To accomplish this the following guidelines are to be applied:

- Prominent topographic features such as knolls, ridgelines, bedrock outcrops, cliffs, ravines, should not be graded or otherwise altered,
- Uniform or sharp geometric forms should be avoided (Figure 1),
- Finished contours should appear smooth, rounded and natural,
- Long or wide slopes with a uniform grade should be avoided,
- The crest and toe of regraded slopes should be adequately blended to prevent sharply defined changes in grade, and,
- A landscaped transition area should be provided between areas that have been graded for development and adjacent undisturbed area.

.

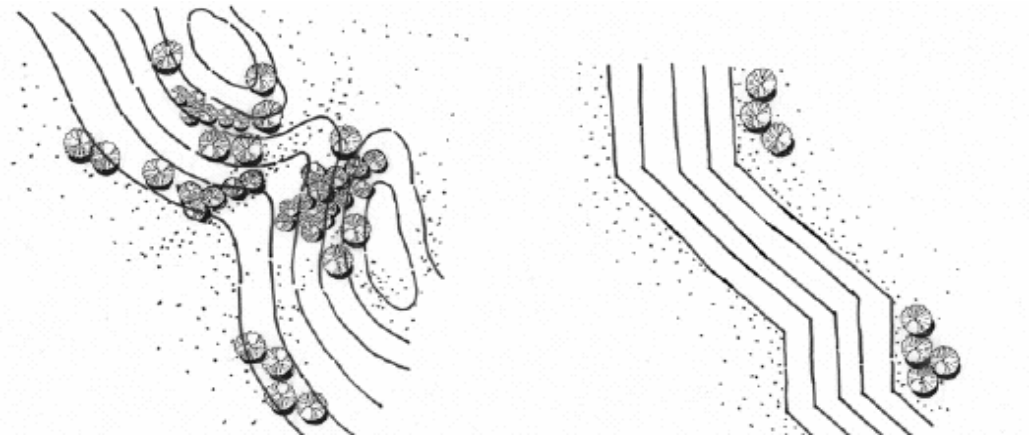

Figure 1. Grading should provide natural contours that blend in with existing topography. The contoured grading shown on the left is preferable to the straight lines and hard edges shown on the right.

2.1.4 Minimizing Erosion

The Town of Canmore Engineering Design Guidelines address requirements for erosion control. In order to minimize erosion on sloped lands the following measures are particularly relevant:

- Grading and vegetation clearing should be phased to minimize the area of exposed soil at any one time. Phasing may be related to the timing of service installation and construction or spatially related.
- Exposed slopes should be revegetated or otherwise stabilized as quickly as possible to prevent erosion and slope stability problems.

- Potentially hazardous or unstable areas shall be professionally evaluated to determine stability and potential for erosion*.*
- Preparation of an erosion control plan in accordance with Town standards and/or best management practices.

2.1.5 Retaining Walls

Development in mountainous terrain is likely to require more grading and soil retention measures than development in flatter areas. Retaining walls may be constructed where they can provide useable development sites and where such a retaining wall would serve to minimize disturbances. In order to reduce the visual impact of retaining walls within a development the following points should be considered:

- Retaining walls should respect the natural topography and not visually dominate the site. They should not be used to create large, flat yard areas.
- Retaining walls should blend with the natural topography, follow existing contours, and be curvilinear or articulated to the greatest extent possible. They should be designed to reflect the shape of the existing topography on the site and designed with offsets and vegetated breaks.
- The height and depth of the retaining wall steps should be consistent with the natural terrain or with the slope above and below the walls and conform to the requirements of the Land Use Bylaw. Spot grading and the creation of small terraces are preferred over large-scale retaining walls. However, safety, stability, and aesthetics shall provide the primary direction in the construction of retaining walls on sloped sites.
- Retaining walls should be sufficiently setback from property lines that no excavation, supports or construction are required on adjacent sites and that drainage on adjacent sites is not affected.
- The form and articulation, character, and materials used to create the retaining wall should complement the character of adjacent natural or built environments, be consistent with any applicable architectural controls, and provide visual interest. The preferred facing materials are natural rock, wood, or exposed aggregate.
- The terraces separating stepped retaining walls should be landscaped to soften the appearance of the wall.

Where retaining walls are related to the structural integrity of the building, driveway or parking areas, over 1.0m in total height, constructed on sloping terrain or having multiple tiers, they shall be designed by a professional engineer and be in compliance with the Town of Canmore Engineering Design Guidelines and PART E of the Land Use Bylaw. Landscape and site plans for all developments should indicate the location, size, materials and construction details of retaining walls and the landscaping used to reduce visual impacts.

2.2 Viewsheds and Preservation of Significant Topographic Features

Prior to creating road and lot layouts for a subdivision or identifying a building envelope for an individual lot, significant features such as water courses and water bodies, slopes steeper than 35%, ridgelines and the crests and toes of slopes shall be identified.

2.2.1 Protection of Environmentally Sensitive Areas

As part of the subdivision process the Town may consider the protection of environmentally significant areas in accordance with the reserve and easement provisions of the Municipal Government Act as well as Town of Canmore policies contained in the Municipal Development Plan and Open Space Guidelines.

2.2.2 Retention of Significant Landscape Features

Throughout new developments sloped terrain and other significant features should remain undisturbed to the greatest extent possible in order to maintain slope stability and create an esthetically pleasing community. Prior to development, significant features of the landscape shall be identified and should be protected and incorporated into the subdivision plan or site plan. Significant features may include, unique landforms – particularly crests of slopes, ridgelines, cliffbands and escarpments. Development around these features should complement the character of the feature.

Where possible, existing vegetation should be retained on escarpment crests and other topographic features with high visibility from lower elevations in accordance with visual impact assessments where those are required. Escarpment crests should be seen as a continuous line of natural terrain and vegetation. Where interruptions in the natural vegetation of the crest are required for access or infrastructure they should occur in several smaller breaks rather than a large continuous interruption.

In order to maintain the topographic and visual integrity of ridgelines and escarpments site-specific building setbacks and/or bylaw setbacks may be established from ridgelines and the crests and toes of escarpments at the time of subdivision or Land Use Bylaw amendment . Escarpments, including the escarpment crest and toe, should be maintained in their natural state.

2.2.3 Visual Impact Management

Visual impact management of development shall be considered in subdivision planning for areas containing ridgelines and/or steep slopes. Views of prominent topographic features such as ridgelines and escarpments shall be evaluated and managed from locations identified from a visual impact analysis. Notwithstanding the setback requirements within a Land Use Bylaw district, a building setback, including setbacks for roads, may be established from the crest and/or toe of an

escarpment at the time of subdivision in order to limit the visual intrusion of a development.

Where the geotechnical analysis allows for buildings to be located within 20 metres of an escarpment, the following factors based on a visual impact assessment shall be considered in determining site-specific setbacks and/or building envelopes as described above:

- Viewshed implications of the development
- Existing natural screening and buffering
- Distance of proposed development from relevant viewpoints
- Building envelope, design and finishing colours and materials
- Building location, height and orientation
- Escarpment safety considerations

By their nature, evaluations of visual impact assessments involve subjective judgments on the part of the Development Authority. Visual impact will not necessarily be assessed on whether a development is simply visible but on whether the proposed development significantly changes the subject landscape feature as observed from the relevant identified viewpoints within the Town.

2.2.4 Optimizing Open Space

Optimizing open space within a subdivision or development area in mountainous terrain can be achieved by allowing for a variety of housing forms and flexibility in setbacks and encouraging innovative subdivision layout. The following land uses may be used separately or together to direct development to the less sensitive portions of a site and to optimize open space:

- Detached housing with reduced or flexible yard setbacks
- Multi-family development
- Cluster development
- Large lot development may be appropriate where building sites are limited

2.3 Buildings and Driveways

In mountainous terrain, sites are often accessed by driveways with steep grades, parking is limited, and turn-around opportunities are restricted. In order to provide safe and functional access to individual properties throughout the year the following constraints shall be considered and addressed in subdivision and site design:

- Minimizing driveways with significant elevation difference between the road and the turnaround or parking area
- Aspect and solar radiation available on driveways
- Short travel distance or tight corners
- Limited parking capacity
- Limited visibility on the road

- Difficult access in winter conditions
- Limited space for maintenance, emergency and service vehicles

Driveways are to provide safe, convenient access throughout the year. Unique lot configuration and shared driveways may be required to minimize cut and fills or to access smaller developable areas not accessible by conventional roads. Where possible, driveways shall be constructed along existing contours.

2.3.1 Driveways

Driveways shall be designed in accordance with the current Town of Canmore Engineering Design Guidelines.

Common driveways are encouraged where:

- significant re-grading of sites can be reduced
- Access to developable lots could otherwise not be achieved
- Impervious surfaces and runoff can be controlled or minimized

2.3.2 On-Site Parking

Separating a garage or parking area from the house may better suit the terrain, allow for less grading, and avoid excessively steep driveways. Detached garages or parking structures may be allowed in front yards where this would reduce the impacts on the slope and provide easier, safer vehicle access.

2.3.3 Building Setbacks and Siting

The priority in locating buildings on a lot is to minimize disruption of the natural terrain. Buildings should be located in a manner that minimizes the need for grading and preserves natural features such as prominent knolls, ridgelines, escarpments, ravines and natural drainage courses to the maximum extent possible. Graded areas shall not be larger than the area required to accommodate the excavation and finished footprint of the building, plus the area necessary to accommodate vehicle and pedestrian access and minimal landscaping and services.

Variations to the front, side, and rear setbacks specified by the Town's Land Use Bylaw may be considered if such variances meet the normal tests for variances and also:

- Result in reducing terrain modification
- Reduce visual impact
- Result in more effective and safer access

Figure 5. Terrain adapted architecture responds to the natural slope of the hillside, minimizes grading, and reduces the visual impact of the building.

2.3.4 Terrain Adapted Architecture

The use of terrain-adapted architecture is strongly encouraged as it can reduce the need for grading, cut and fills, and retaining walls. Terrain-adapted architecture responds to the natural slope of a site by using provisions such as stepped foundations and setting the building into the hillside to help integrate it with the natural landform.

2.4 Wildfire Urban Interface

The Town of Canmore has adopted a Wildland/Urban Interface Plan and requires wildfire risk assessments to be completed as part of the subdivision approval process. In addition, architectural design guidelines for all subdivisions include provisions for construction and landscaping materials to reduce the risk of fires.

Because fires may spread more rapidly in sloped terrain and access to sites may be more difficult than in flatter areas, the use of FireSmart principles is particularly important in the design of subdivisions in areas of steep topography bounded by natural areas.

3 Site Grading and Infrastructure Guidelines for Mountainous Terrain

3.1 Grading and Earthworks

Grading practices within sites containing sloped terrain should reduce potential hazards, retain the natural topographic character of the site, and protect natural features – particularly ridgelines, escarpments and steep slopes.

3.1.1 Minimizing Cut and Fill

Site grading should minimize the amount of soil that is excavated and the amount of vegetation that is removed. On individual lots, grading and clearing should be limited to what is required for installing services.

If cuts and fills do result in an excess of material such material should be utilized in landscaping or berming in a manner consistent with these Guidelines where such use is feasible and appropriate. Berming or side casting of rock or soil solely for the purpose of the disposal of excess material is not appropriate.

3.2 Roads

3.2.1 Minimizing Disturbance to the Site

The cuts, fills, and retaining walls associated with road construction in steep terrain can negatively impact the aesthetics of a development and biophysical integrity of the terrain. Alternative road standards and road layouts to complement the topography should be considered in conjunction with public safety, ease of access, and maintenance considerations

In areas of steep terrain roads should be aligned to conform to the natural contours of the site in order to minimize disturbance and the potential for erosion. Curvilinear roads that respect topography without compromising public safety are preferred. Gradual horizontal and vertical curves are preferable to linear road patterns that require significant earthmoving or create steep grades.

Prior to designing the layout of the road network, existing vegetation and other significant features discussed in Section 2.2.2 should be identified and preserved. The alignment and profile of roadways and utilities should minimize disruption of identified significant terrain features.

Retaining Walls for Roadways. Retaining walls may be permitted along roadways where they contribute to the safety and stability of the site. In constructing retaining walls within the road right-of-way, the Town Engineer must be satisfied that:

- The retaining wall is required to allow for sufficient vehicle access, which could not otherwise be achieved,
- The retaining wall will significantly reduce the need for cut and fills or other site disturbances,
- Public safety is not compromised,
- Pedestrian and bicycle access is not compromised,
- Access for the maintenance of utilities is not compromised,
- The road right-of way provides adequate space for snow storage,
- The height and massing of retaining walls is balanced with the above factors to improve the overall appearance of the area, and,
- Maintenance of the retaining wall is practical and cost effective.

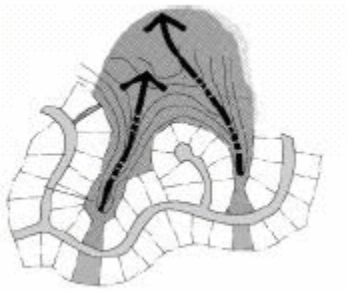

Figure 2. The road and lot layout should be responsive to the existing topography and natural drainage

The height and depth of the retaining walls within the road right-of-way should be consistent with the natural terrain or with the slope above and below the walls. A general guideline is to limit the height of retaining walls to 3.0 metres alongside roadways. However, safety, stability, and aesthetics should provide the primary direction in the construction of retaining walls on sloped sites. As with retaining walls constructed within lots, retaining walls within the road right-of-way should be articulated, stepped back, and landscaped.

Where the magnitude of grading can be significantly reduced or the natural character of terrain can be preserved, the road specifications outlined in the Town's Engineering Design Standards may be modified to suit site-specific conditions, subject to review and approval.

While safety is a fundamental requirement in road design, development on sloped lands may warrant modified right-of-way widths, parking arrangements, turnarounds, speed variations**,** and pedestrian access to complement the local topography and minimize disturbance to the site.

3.2.2 Adapting Road Standards for Hillside Areas

The following access issues shall be considered and planned for in order to develop an optimal design and layout of the road network:

- Short travel distance or tight corners
- Hidden driveways
- Limited visibility on the road
- Limited parking capacity
- Difficult access in winter conditions

Alternative standards for local roads which provide direct access to adjacent residential properties should be considered where the alternative standard would reduce negative impacts on the terrain. The reduction of existing standards shall be considered on a site-specific basis where:

- Significant amounts of earth moving would otherwise be required and slope disturbance can be significantly reduced
- The visual integrity of a site can be retained
- Special features or significant environmental habitat are protected
- Continuous pedestrian, bicycle and vehicular movement are provided within the road right-of-way or elsewhere through the development
- Adequate signage is provided to warn motorists of changes in road configurations
- Parking requirements are satisfied off the road and on-street parking is not needed
- Provision of utilities is not adversely affected
- Side slopes may be appropriately graded and rehabilitated after construction

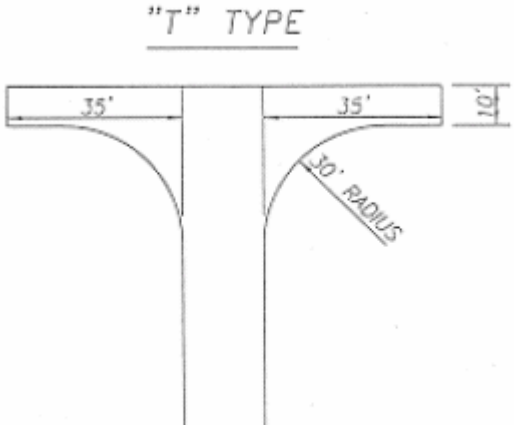

Figure 3. T- Type ("hammerhead") road ends may allow for less grading and a smaller impermeable surface, while accommodate maintenance equipment, snow storage and emergency vehicles.

- Opportunities for snow plowing are not compromised within the road right-of-way

Split roads and one-way roads may be considered on a site-specific basis where:

- All of the conditions listed above apply
- Existing road standards would create difficult parcel access
- Intersection clearance is maintained before the split or one-way system occurs
- Additional signage clearly identifies the direction of traffic flow
- Through traffic can continue to a conventional road connection

Alternative road ends may be considered to reduce excessive grading on a site-specific basis when accommodating a standard cul-de-sac would require excessive cutting and filling. Reduced cul-de-sac radii or hammerhead road ends should be considered where they are able to accommodate road maintenance equipment, snow storage and emergency vehicles as determined by the Town Engineer. (Figure 3)

3.2.3 Road Grades

The Town of Canmore Engineering Design Guidelines establish maximum grades for roads within the Town. Alternative road standards may be permitted where the overall environmental impacts will be reduced, the natural character of the slope is retained, and year-round safety is not compromised.

3.2.4 On-Street Parking

On-street parking lanes may significantly increase the volume of cut and fill required within a subdivision on a sloped site. Therefore, alternatives to parking lanes such as clustered parking or parking bays within flatter portions of the subdivision should be considered if required to supplement on-site parking within a subdivision.

An example of a single parking bay is illustrated in Figure 4.

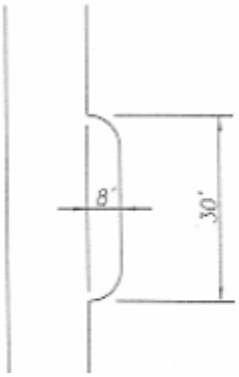

Figure 4. Parking bays should be provided where on street parking is needed and the requirements for additional grading are minimal.

3.2.5 Sidewalks and Trails

Local and regional trails should be located to ensure a safe and functional transportation system, considering gradients, corners and intersections on a case-by-case basis. Flexible sidewalk, and trail alignment, and alternate road right-of-way design will be considered where existing standards would require excessive grading or disturbance to the environment, and where the Town Engineer is satisfied that pedestrian safety is not compromised.

The requirement for sidewalks on both sides of collectors and local roads in areas of steep terrain may be reduced to one side where pedestrian access and safety will not be compromised. Locations that are not recommended for removing one sidewalk from the right-of-way are those areas within 0.5 km of a school or other high-traffic public destinations. The requirement for sidewalks on local roads may be entirely eliminated on particularly steep terrain where the subdivision generates low traffic volumes, the traffic design speed is reduced, and visibility of pedestrians is not obscured. However, alternative pedestrian connections may be required.

Curvilinear or meandering sidewalks and trails may be used where they eliminate long sustained grades. Varying offsets between the road and the trail may also be appropriate where a significant natural feature may be preserved, or where the grade of the trail may be reduced.

Provision for pedestrians with mobility limitations within mountainous terrain is a challenge, particularly achieving moderate sidewalk grades when local roads may be as steep as 10% or more. Subdivision design and road layout should consider the principles of universal accessibility and provide pedestrian routes that meet accessibility standards where possible. In all cases, the intention is to make slopes as gradual as possible and make transitions smooth and predictable.

3.3 Utilities

Services and utilities shall be provided in accordance with the Town of Canmore Engineering Design Guidelines and within mountainous terrain they should be provided in a manner that:

- Meets maintenance and operational objectives,
- Provides cost-effective utilities and services, and
- Produces the least environmental and visual impact.

3.3.1 Accessibility and Efficiency for Utility Installation in Hillside Areas

As development on steep slopes may require additional infrastructure to deal with elevation changes, a comprehensive design and phasing of infrastructure process should be used to minimize redundancy or insufficient capacities, to limit the impact to the natural environment caused by repeated digging, and to limit alterations to the landscape.

Roads and road rights-of-way should be designed to allow flexible offsets for utility trenches and other facilities such as transformers and water service valves. Flexible offsets should improve ease of access and maintenance, allow more flexibility to grade rights-of-way to match existing topography, reduce negative impacts to the environment, and provide easier servicing in steep

neighbourhoods. Pedestrian or bicycle access must be considered when allowing for flexible offsets.

For ease of access utility boxes, fire hydrants and other services that require periodic inspection should be located in areas where slopes are minimized and where they are clearly visible from the road. Access points to utilities should be located where future grading or landscaping of boulevards will not make access difficult.

Within road rights-of-way and in service easements, the use of common trenches for compatible services is encouraged to reduce the number of trench excavations, right-of-way width, and the impacts on the terrain.

Electricity, telephone and cable utilities should be located in a single trench where feasible and in accordance with the Town's Engineering design Guidelines. Alternative design standards which assist in meeting the intent of these Guidelines will be encouraged provided they are consistent with the Town's Engineering Design Guidelines.