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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of the Kananaskis Wilds area structure plan is to describe the existing land use and to establish the objectives for the area. The primary goal is to plan a development that is in keeping with and complimentary to its surroundings. It describes the density and layout of the development, proposed land use, roadway access, and basic servicing.

The intent is to create a bare land condominium subdivision of ⅓ - ½ acre (0.135 to 0.202 hectare) lots designed for those seeking a non-urban setting for their mountain chalet as a secluded retreat. Potential land purchasers seeking opportunities in the Crowsnest Pass have expressed a desire for such development. The proposed concept provides this type of rural setting, found previously only in large group country residential developments, in a more efficient and dense manner.

1.2 LAND USE CONCEPT

The Kananaskis Wilds development applies to an area of land that is approximately 38 acres (15.38 hectares) on the north side of Coleman, Alberta. See figures 1.1 & 1.2 & 1.3. The lands are currently classified as non-urban area (NUA-1) and the developer has requested reclassification to Residential (R-1). See figure 1.4, 1.5, and 5.1.

There are two dominant zonings which border the proposed development. The parcels to the north and west of the property are zoned (NUA-1). The property to the south and across highway 40 to the east are zoned grouped country residential (GCR-1).

The intent of the project is to respect the natural setting of the landscape in the area and to minimize the impact of the development on the surrounding area. The development will strive to preserve as much of the natural vegetation as possible.

1.2 LAND USE CONCEPT CONTINUED

Restrictive covenants will be registered against the titles to ensure respect for the terrain, wildlife, and vegetation. There will also be an architectural control covenant that will provide for the Alpine setting of the site, as well as to ensure quality of development.

SECTION 2.0 EXISTING CONDITIONS

2.1 DEFINITION OF PLAN AREA

The subject land is located north of Coleman in the Municipality of Crowsnest Pass. Lands described in the Area Structure Plan boundary are located within a 38 acre parcel.

Legal Description:
SW ¼ Section 16, Township 8, Range 4, West of 5 M

The property is bounded on the north by land privately owned by Mr. Joseph Trotz and on the south by four 3-acre parcels previously developed by Mr. Ken Bowie in 1996. The Alberta Government owns the land to the west of the site. Highway 40 (the Kananaskis Hwy) borders the east side of the property and will provide access to the development.

2.2 LAND OWNERSHIP & EXISTING USES

The subject property is in the process of being purchased from Mr. Ken Bowie by Douglas J. Bergen and Associates Ltd. of Coaldale, Alberta to facilitate the Kananaskis Wilds development. See certificate of title figure 2.1.

The land is currently vacant with the exception of the Cantel communications tower in the north east corner. Cantel has entered into a long term lease with Mr. Bowie and is due for consideration in 2016. See figure 2.6.

2.3 TOPOGRAPHY & VEGETATION

The topography of this 38 acre parcel of land lends itself well to development. The terrain is undulating and varies in elevation from 1440 m to 1496 m. See figure 2.2 and 2.3.

The subdivision has been designed to work within the natural features of the site with a mandate to disturb as little as possible. The westerly portion of the parcel is severed by a small ravine which prohibits a practical through road. Two cul-de-sacs were designed to avoid disturbing the ravine while also providing the opportunity for walk-out basements on the lots.

The natural slopes on the site have been surveyed by Spencer Geometrics Ltd. of Lethbridge and appear to be stable. EBA Engineering Ltd. have been consulted on a preliminary basis for their opinion of the suitability of the land for development. Geotechnical engineers will be engaged to confirm all slopes on site in order to ensure suitability for residential development and establish necessary building setback lines.

Most of the property is located within a low fuel area as noted in the Municipality of Crowsnest Pass Wildlife Urban Interface Hazard Map. See figure 2.4.

The site was selectively logged some 10 years ago and is covered in native grasses and shrubbery natural to the area. Every effort will be made to preserve the natural beauty of the site. Cutting of trees will be prohibited except where absolutely necessary. See photos of site figure 2.7.

2.4 GEOLOGY & SOILS

EBA Engineering Ltd. of Lethbridge has been retained as the geotechnical consultant for the project.

2.5 CANTEL COMMUNICATIONS TOWER

Cantel Networks currently lease 1.4 acres of land from Mr. Bowie for their communications tower. The lease expires in 2016 and therefore the structure will remain on the property for several years to come. Once the lease has expired the condominium corporation will have the opportunity to evaluate the impact of the tower to the site and decide the best course of action. See Cantel Tower photo in figure 2.6.

2.6 HISTORICAL CONTEXT

Dr. Neil Mirau of Arrow Archeology Limited has been retained to study the site for its historical value. Dr. Mirau's initial archival review concluded that the site has been disturbed by existing and previous development and that it has no recorded historical significance. Arrow Archeology will continue its work to exhaust any evidence of archeological value to this property. See letters in figure 2.5.

SECTION 3.0 PLANNING CONCEPT & POLICIES

3.1 PLANNING CONCEPT

The intention of the this development is to provide for a quality mountain retreat environment for those seeking escape from the fast pace of the urban life. The ⅓ - ½ acre lots allow for privacy for each residence as well as access to the beauty that abounds in the Crowsnest Pass.

The purpose of this development is to ensure owner privacy and to create a feeling of a "mountain retreat". The development is geared toward those seeking to escape the fast pace of urban living.



Communication Tower



Communication Tower

DOUGLAS J. BERGEN & ASSOCIATES LTD.
ARCHITECTURAL TECHNOLOGY

KANANASKIS WILDS
CROWSNEST PASS, AB

CANTEL TOWER PHOTOS

FIGURE 2.6



Site Vegetation - Notice Previous Logging Activity



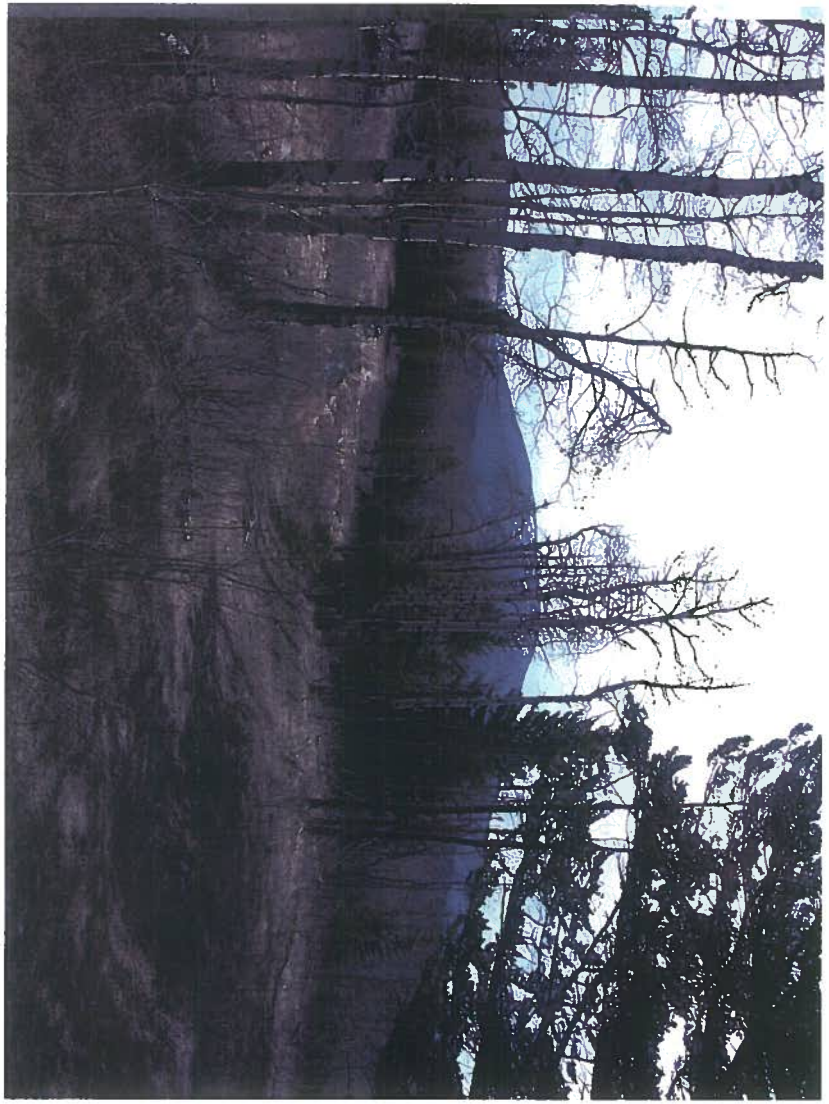
Site Vegetation

DOUGLAS J. BERGEN & ASSOCIATES LTD.
ARCHITECTURAL TECHNOLOGY

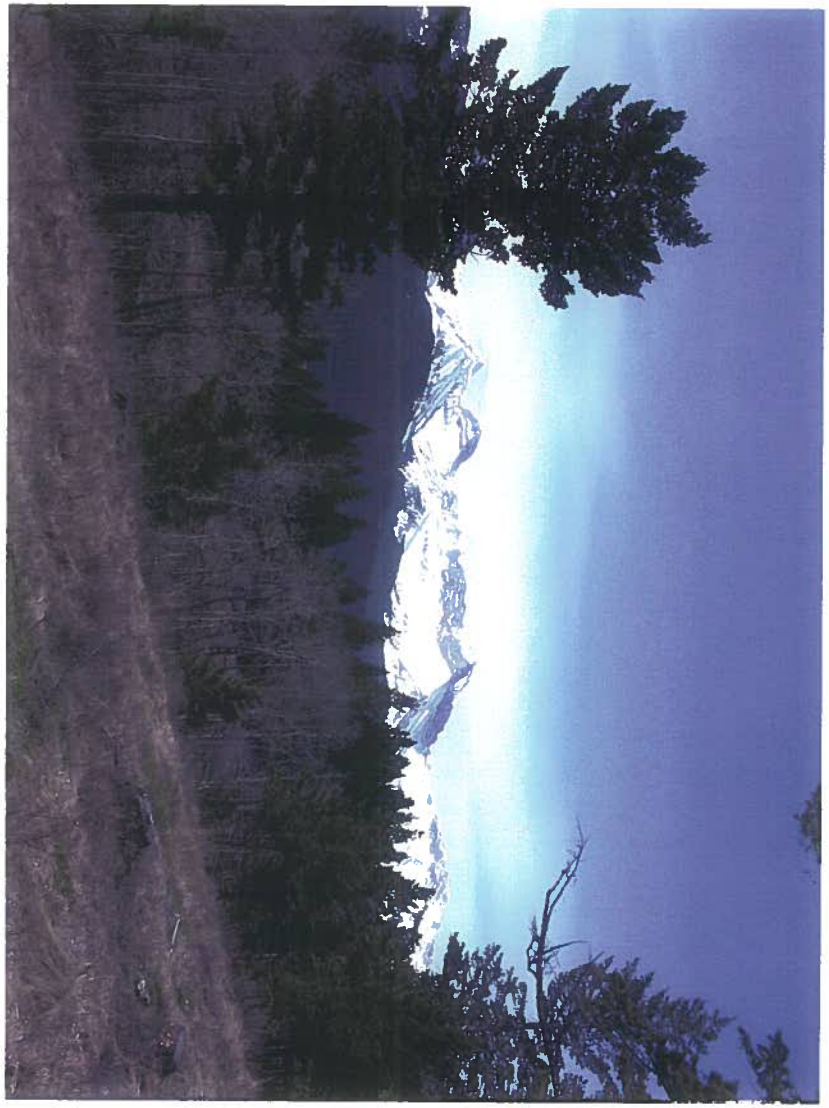
KANANASKIS WILDS
CROWSNEST PASS, AB

SITE PHOTOS

FIGURE 2.7



Existing Trail



Site Vegetation

FIGURE 2.7	SITE PHOTOS	KANANASKIS WILDS CROWSNEST PASS, AB	DOUGLAS J. BERGEN & ASSOCIATES LTD. ARCHITECTURAL TECHNOLOGY

3.1 PLANNING CONCEPT CONTINUED

This particular clientele demands an experience that contradicts their everyday routine of the city life. They typically do not want a traditional home facing or even accessed by a typical paved residential street. An unpaved meandering trail through the trees leading to the building sites with no through traffic is the preferred concept of a "mountain retreat".

The 65-75 parcels would be part of a common ownership group referred to as a bare land condominium development for legal purposes. This group of owners would own and maintain the road which accesses the property as per their ownership agreement. The goal is to have as little disruption as possible to the natural surroundings in order to maintain the setting.

3.2 LAND USE POPULATION DENSITIES

The plan area has been designed to accommodate 65-75 residential lots varying in size from ⅓ to ½ acres (0.135 - 0.202 hectares). All lots are a minimum of ⅓ acres (0.135 ha) in size which is in accordance with Land Use Bylaw No. 481 prepared by Oldman River Regional Services Commission (ORRSC).

The frontage of the lots varies from 15 meters to 50 meters and vary in depth from 30 meters to 70 meters.

Housing density based on one dwelling per lot works out to 2.1 units per acre (5.2 per hectare).

A population figure of three people per residence results in a population density of 225 people for this 38 acre development. It is not likely however that this magnitude of density will be realized given the nature of the target clientele.

3.3 SLOPE STABILITY

The slope of the land from the upper bench to the meadow below varies from 18 % to 30%. The grade of the proposed roads shall not exceed municipal standards within the development area. The slopes consist of considerable vegetation in most areas and show no signs of detrimental erosion. These types of slopes are considered safe. EBA Engineering Ltd. of Lethbridge is addressing these issues for the project.

3.4 MUNICIPAL RESERVE

In accordance to the Municipal Government Act, a minimum 10% of the gross developable land is to be either dedicated as municipal reserve or cash-in-lieu will be provided to the local Municipality. As illustrated within the proposed plan, the retention of significant natural site features and vegetation is of primary importance. The proposed plan will meet and likely exceed the Municipal Reserve (MR) requirement. A detailed analysis of proposed Municipal Reserve Lands will be provided at future subdivision stages to the satisfaction of the Approving Authority. See figure 3.1.

3.5 ROADWAYS

3.5.1. INTERNAL TRAFFIC MOVEMENT

The east border of the proposed Kananaskis Wilds development follows the Highway 40 corridor extending north to south.

The approximately 70 individual lots will be serviced via a private residential road which would extend from Highway 40 throughout the development as seen in figure 3.1.

An easement would be registered as required to provide a right-of-way access to each lot. The internal roads will be owned an maintained by the condominium corporation. All lot owners will contribute to the maintenance costs.

3.5.1. INTERNAL TRAFFIC MOVEMENT CONTINUED

The proposed private road has been positioned to extend from the existing highway at a location that optimizes the sight distances for the entry and exit from the property. The grade on the road throughout the development will not exceed 10%, which meets the municipal road standard. See figure 3.2.

The road will have a 23-0' (7.0 m) surface with properly designed drainage swale on each side. Civil engineering for this project will be provided by Mr. Walter Brodowski of Salbro Consulting Services Ltd. of Lethbridge. The swale will facilitate run-off during precipitation or snow melt events with drainage culverts provided as required.

3.5.2. CONSTRUCTION OF SURFACE

In order to maintain a rural feel the road will not be paved, but rather graveled. The substructure of the road will be engineered to meet the required standards for private roads. Also, reduction of impervious surfaces will reduce the volume of runoff from storm events.

Mr. Ed Drain of Drain Brothers Construction Ltd. has visited the site to determine the suitability of the existing terrain for this type of development and confirmed that it would work well.

3.6 ARCHITECTURAL CONTROLS & DEVELOPMENT STANDARDS

The development of each individual site is paramount in the final concept and appearance of Kananaskis Wilds. Each lot development will be governed by the land use bylaw as well as a restrictive covenant which will be registered against the title. Every effort will be made to maintain the natural setting as will as carefully assess building placement. See figure 3.3 for examples of architecture and placement.

Table 2.2.2 - General Design Guidelines

	Roadway Classification					
	Urban			Rural		
	Local	Collector	Arterial	Local	Collector	Arterial
Application / Typical Use						
Design Speed (km/h)						
Minimum	30	50	50	50	60	80
Maximum	50	70	100	80	80	100
Maximum Allowable Gradient						
Minimum Design Speed	10	10	10	10	10	7
Maximum Design Speed	10	6	6	7	7	6
Minimum Horizontal Curve Radius (m)						
Minimum Design Speed	30	115	75	120	120	230
Maximum Design Speed	115	290	440	230	230	390
Maximum Super-elevation (m/m)						
Minimum Design Speed	0.02	N/A	0.06	0.06	0.06	0.06
Maximum Design Speed	0.02	N/A	0.06	0.06	0.06	0.06
Vertical Crest Curve Minimum k						
Minimum Design Speed	3	7	7	7	15	35
Maximum Design Speed	7	22	85	35	35	75
Vertical Sag Curve Minimum k						
Minimum Design Speed	4	11	11	11	20	30
Maximum Design Speed	11	25	50	30	30	50
Minimum Decision Sight Distance (m)						
Minimum Design Speed	90	140	140	140	170	230
Maximum Design Speed	140	200	300	230	230	300
Minimum Pavement/Surface Width (m)	10.5	12.5	15	8	9	10
Minimum Lane Width (m)	3.3	3.5	3.7	3.5	3.5	4
Minimum Shoulder Width (m)	N/A	N/A	N/A	0.5	1.0	1.0
Ditch width (m)	N/A	N/A	N/A	1.0	1.0	1.0
Maximum Side slope Ratio (m)	N/A	N/A	N/A	3:1	3:1	3:1
Maximum Back slope Ratio (m)	N/A	N/A	N/A	2:1	2:1	3:1
Minimum Right of Way Width (m)	20	20	25	20	25	30
Minimum Cross fall (%)	2	2	2	2	2	2

1. Decision Sight Distance is based on driver's decision to stop and stopping distance required.
2. Horizontal Curve Radius is based on reverse crown (+0.02 m/m)
3. These guidelines mat not be appropriate in retrofit or reconstruction projects.
4. If side slopes of less than 3:1 are proposed guard rails may be required
5. Where side slopes are required, the Right-of –Way must be extended to include the side slope





FIGURE 3.3	CABIN STYLES	KANANASKIS WILDS CROWSNEST PASS, AB	DOUGLAS J. BERGEN & ASSOCIATES LTD. ARCHITECTURAL TECHNOLOGY

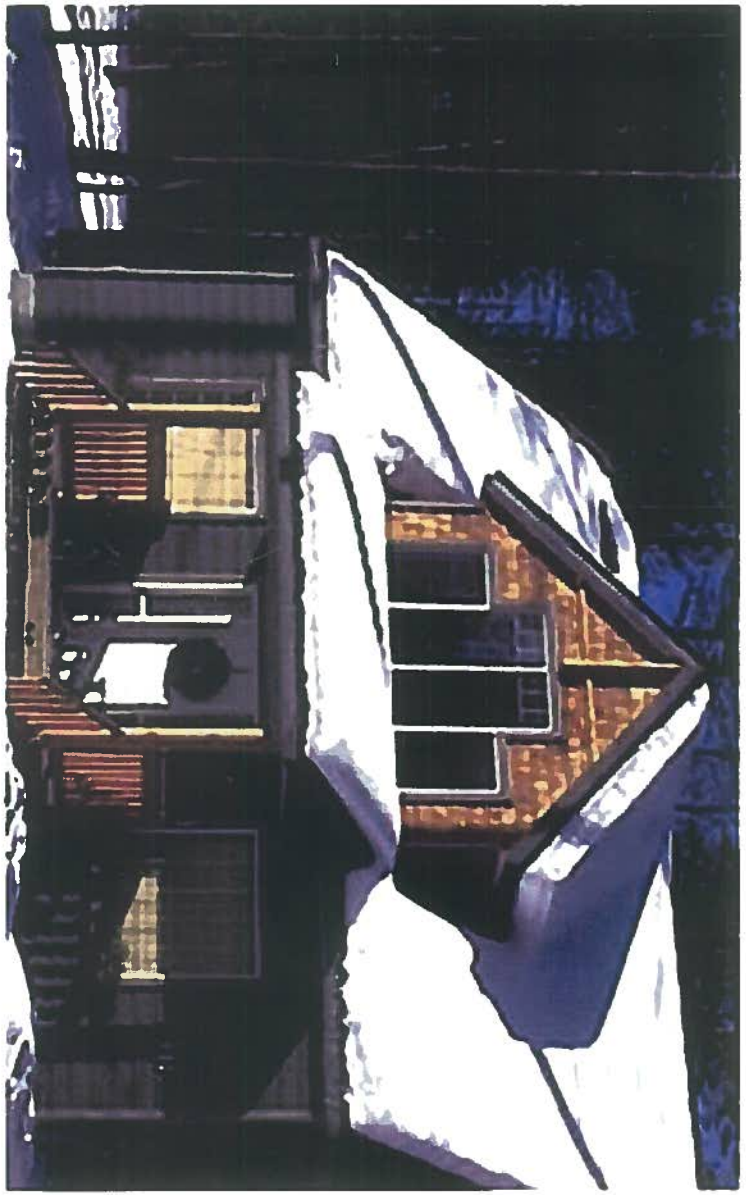




FIGURE 3.3	CABIN STYLES	KANANASKIS WILDS CROWSNEST PASS, AB	DOUGLAS J. BERGEN & ASSOCIATES LTD. ARCHITECTURAL TECHNOLOGY

SECTION 4.0 SERVICE REQUIREMENTS

4.1 TRANSPORTATION

4.1.1 ROAD DIMENSIONS

As mentioned in Section 3.5.1. Internal Traffic Movement, a private road will service the lots and connect to the existing Highway 40. The road surface will measure 23' (7.0 m) on the surface and have a slight crown. There will be an 85'-0" (26.0 m) diameter turn around at the end of each cul-de-sac which meets the municipal guideline and provides adequate turning radius for a fire truck. See figure 4.7.

Mr. John Thomas of Alberta Infrastructure and Transportation was consulted on the proposed site access and capacity of Highway 40. Highway 40 is well within its design capacity to handle the additional traffic proposed by the development. Mr. Thomas is requesting an engineer's assessment of the intersection as opposed to a full Traffic Impact Assessment (TIA). See letter in figure 4.8.

4.1.2 CONSTRUCTION OF SURFACE

In order to maintain a rural feel the road will not be paved, but rather be graveled. The substructure would meet or exceed the criteria for a private municipal roadway.

4.1.3 DRAINAGE OF SURFACE WATER

Surface water would find its way to either side of the road and be carried to a natural drainage facility via the drainage swale at each end of the road. Culverts will be installed at driveway crossings and where needed to ensure proper drainage of the surface water. Driveway crossings will be 23'-0" or 7.0 meters wide to allow for fire truck maneuvering.



Existing Access Road



Property Access at Highway 40

DOUGLAS J. BERGEN & ASSOCIATES LTD.
ARCHITECTURAL TECHNOLOGY

KANANASKIS WILDS
CROWSNEST PASS, AB

PHOTOS OF HIGHWAY 40 AND SITE ACCESS

FIGURE 4.7

4.1.4 ROAD MAINTENANCE

A road maintenance agreement will be registered against the land titles as an encumbrance. This will ensure that regular maintenance takes place.

Each resident will be required to become a mandatory member of a homeowner's association in order to be legally bound to contribute to road maintenance.

4.1.5 BUSING

The current school bus service provided by Livingstone Range School Division #68 does not provide door-to-door pickup of children in this area.

School age children are currently picked up by the bus system at a common drop off area. It is the responsibility of the parent to ensure safe passage to the pick up location.

Kananaskis Wilds residents would be a part of this system and thus the school bus would not travel the private road. In the event that the bus service is altered to accommodate door-to-door pick up in the area the bus would also service Kananaskis Wilds.

Mr. Dale Slade, Superintendent of Busing for the Livingstone Range School Division #68, ensures that the 7.0 m private road would not be an issue for their busses as they currently service areas with steeper grades than Kananaskis Wilds is proposing.

4.2 STORM WATER DRAINAGE

The subject lands currently drain naturally and do not create unusual problems relative to storm and surface drainage. The proposed road and lot layout will work with the existing contour of the land as not to disturb this natural movement of water on the property. Proper swale design and culvert placement will allow for this movement. Natural vegetation and the limited footprint of impervious surfaces within the development will also contribute to water absorption and retention.

4.3 WATER SUPPLY & DISTRIBUTION

The homeowners at Kananaskis Wilds will enjoy the excellent water provided by the Municipality of the Crowsnest Pass via an underground pipeline distribution system. The system would tie into the existing water main in the right-of-way along the west boundary of the property. The existing pump station may have to be retrofitted in order to supply the increased demands of this development in the current system. See figure 4.1.

4.4 SEWAGE DISPOSAL

Municipal sewer service will be provided by the developer. The system will gravity drain into the existing municipal system to the South of the site. See figure 4.1. MPE Engineering Ltd. of Lethbridge designed the service of Mr. Bowie's development in 1996. The services were adequately sized to service the proposed development as confirmed by our engineers. See figure 4.2.

4.5 GARBAGE DISPOSAL

Homeowners will be required to dispose of solid waste via the municipal facilities. They have the option of transporting waste themselves or contracting with a firm to provide the service. Excessive waste will not be permitted to be stored on site. Temporary storage facilities for small amounts of waste will be required to be screened from view.

4.6 ENERGY SUPPLY

4.6.1 ELECTRICITY

Fortis currently maintains a transmission line along the north border of the property which would provide partial service to Kananaskis Wilds residents. The remainder of the electrical service required would come from the existing utility right-of-way which borders the west side of the property. The homeowners would be required to install all services subsurface to avoid unsightly poles. See figure 4.3.

5.1.2 APPLICATION FOR SUBDIVISION

An application for subdivision will be submitted to the Oldman River Regional Service Commission after re-zoning is approved. The application will comply with all requirements as a result of the re-zoning.

5.1.3 REGISTRATION OF RESTRICTIVE COVENANTS AND EASEMENTS

Prior to the sale of any of the individual lots the developer will arrange to register a restrictive covenant on the title to include the architectural controls and development controls.

The private road easement as well as any other servicing easements that require registration will also be filed.

5.1.4 CONSTRUCTION AND PHASING

Construction of the access road as well as the underground servicing will commence shortly after subdivision approval and a development agreement is granted. All design and construction will be monitored by a qualified professional engineer. Phasing of the development will proceed as demand for lots is dictated by the market. See figure 5.2.