SCHEDULE "A" ATTACHED
TO BACK OF B.L. BOOK

COUNTY OF LETHBRIDGE NO. 26
IN THE PROVINCE OF ALBERTA

BY-LAW NO. 838

A BY-LAW OF THE COUNTY OF LETHBRIDGE NO. 26 IN THE PROVINCE OF ALBERTA TO ADOPT AN AREA STRUCTURE PLAN FOR SOUTHBEND SUBDIVISION.

WHEREAS Section 64(1) of the Planning Act, 1980 and amendments thereto allows the Council to adopt the Area Structure Plan for the Southbend Subdivision;

AND WHEREAS THE "Southbend" Area Structure Plan will set out policies and guidelines for future subdivision and development of this area;

AND WHEREAS the Council of the County of Lethbridge No. 26 deems it advisable to adopt the Area Structure Plan for the Southbend Subdivision area.

NOW THEREFORE BE IT RESOLVED that the Council of the County of Lethbridge No. 26 duly assembled, hereby enact that the Area Structure Plan for the Southbend Subdivision as attached hereto as Schedule "A", is hereby adopted.

GIVEN first reading this 15 day of September 1986.

K.W. Lapworth
Reeve

County Manager

GIVEN second reading this 16 day of October 1986.

K.W. Lapworth
Reeve

County Manager

GIVEN third and final reading this 16 day of October 1986.

K.W. Lapworth
Reeve

County Manager

D-4

southbend

master plan

Aug 1986

E-6

SOUTHBEND

Owners	Mr. and Mrs. R. M. Luco	Battleridge Resources Ltd. Box 514 LETHBRIDGE Alberta T1J 3Z4
Planner	Robert Stephens B.A., B.Arch.	Stuart Johnstone Architect Ltd. Suite 202 219 – 12 Street South LETHBRIDGE Alberta T1J 2P9

contents

CONTENTS

INTRODUCTION

Battleridge Resources intends to develop approximately 20 hectares of land 2 km south of the City of Lethbridge. The development has been named "Southbend". Under this name the property was classified "Grouped Country Residential" (GC-R) in conjunction with the adoption of the new Land Use Byelaw No. 806 by the County of Lethbridge No. 26 on 19 August 1985. This document sets out the results of site analysis and the planning process for Southbend. It contains the information required for its adoption as the area structure plan for Southbend.

The charge from Battleridge Resources to the planners was, to develop an overall concept, **"designed to suit the existing landscape taking into consideration all aspects of view potential and weather extremes".** Prior to masterplanning a survey was carried out by D.J.S. Associates of Lethbridge to test the market for a country residential development at this location. Soil tests, slope stability analysis and percolation tests were carried out by Hardy Associates to assess the Southbend property for its capacity to accept development. All preliminary signs pointed to the feasibility of development at Southbend.

The proposed masterplan respects the essential biophysical nature of the site. The site is made habitable without loss of the "country feel" of the place. This is achieved through careful site analysis and the adapting of a well-established rural technique for climate amelioration.

site analysis

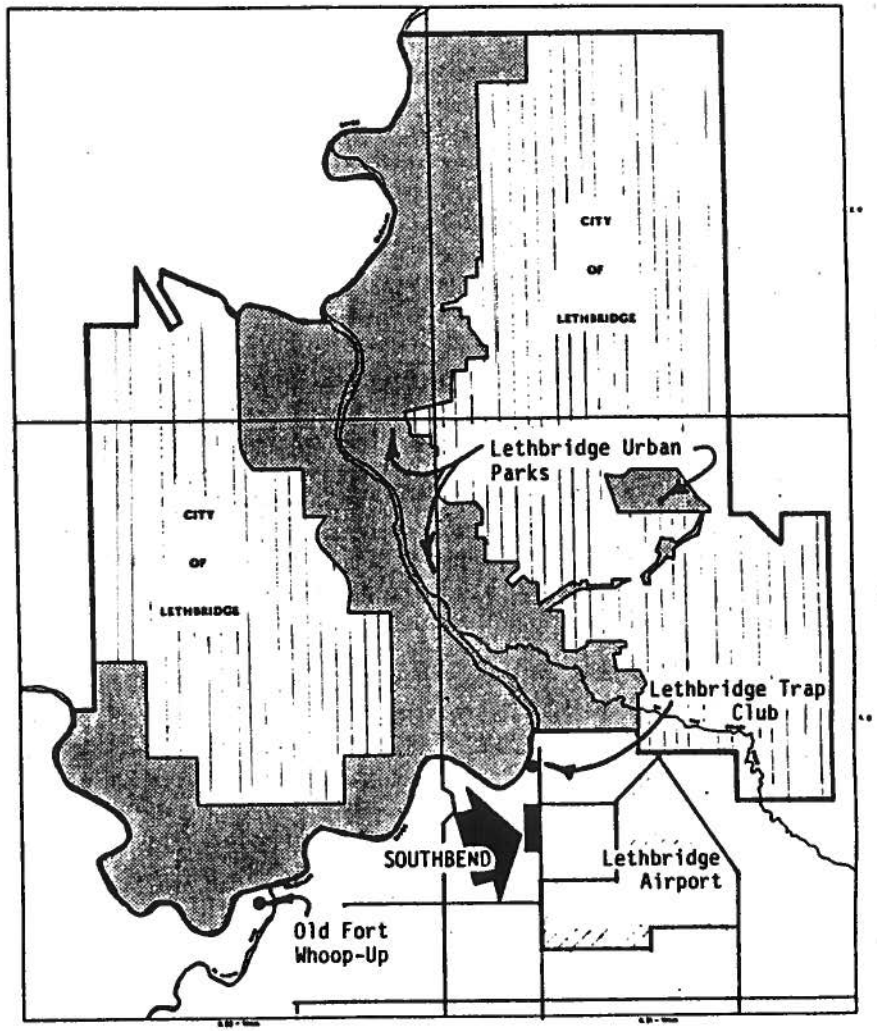
SITE ANALYSIS

THE SITE

The site is "part of NE¼ Section 7 and SE¼ Section 18 Township 8 Range 21 West 4th Meridian. It is made up of coulee top land and a previously cultivated field and is part of the farm of Mr. and Mrs. R. M. Luco. The field is essentially flat with a slight crown in the centre and an overall gentle slope away from the coulee edge. The site affords clear views of the Rocky Mountains, City of Lethbridge and open prairie.

AGRICULTURAL POTENTIAL

In July 1984, T. L. Jensen of Alberta Agriculture examined the whole of NE-7-8-21W4 for its long-term agricultural capability. His conclusion was that the Southbend parcel of land is **"severely limited in its potential for agricultural development by its small size and the availability of water for irrigation"**. The parcel is also physically separated from the extensively cultivated portion of the Luco farm.



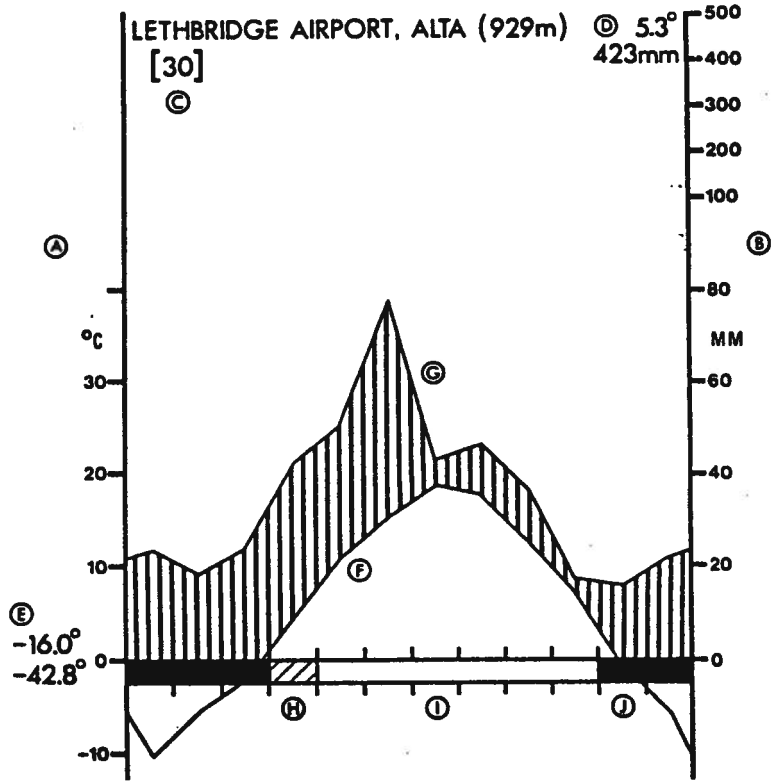
BIOPHYSICAL FACTORS

GEOLOGY

The disturbed topsoil is underlain with ground moraine (till), locally overlain by fine glaciolacustrine sediments, plus alluvial gravel and sand. Beneath these surficial deposits the bedrock is massive coarse grained, light-grey weathering sandstone; grey clayey, siltstone; grey and light grey weathering, green and grey shale; dark grey and brown carbonaceous shale with ironstone concretionary beds. The bedrock belongs to a non-marine sequence of the Upper Cretaceous Oldman Formation.

CLIMATE

The Lethbridge area has a volatile climate. Temperatures and precipitation levels may vary widely throughout the year and within individual months. The constant characteristic of Lethbridge weather is wind. Lethbridge air is calm only 2% of the time in an average year. The prevailing winds are from the west, west-south-west and south-west (46.52% of the time in an average year). Wind speeds average 20.4 kph (high average 23.1 kph, low average 16.8 kph).



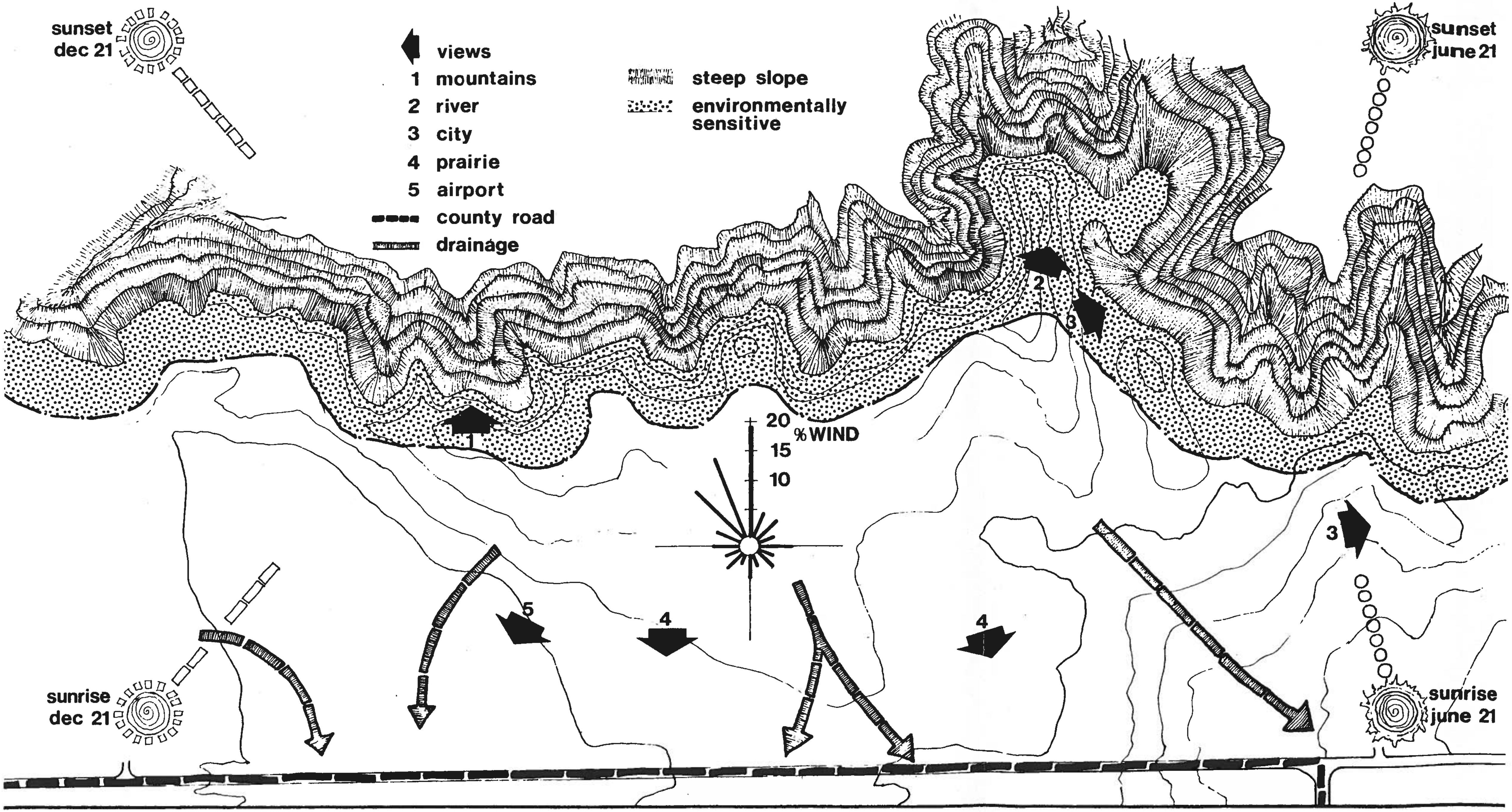
(A - temperature scale, B - precipitation scale, C - length of record, D - mean annual temperature and precipitation total, E - mean minimum daily temperature of coldest month and absolute coldest temperature, F - mean monthly temperature curve, G - mean monthly precipitation curve, H - months with absolute minimum temperature <0°C, I - months with mean daily temperature >0°C, and J - months with mean daily minimum temperature <0°C)

ECOLOGY

The previous cultivation of the site means that its ecological significance is largely confined to the coulee edge and adjacent coulee land. A natural resources survey conducted for the Lethbridge Urban Parks Project reported that the Oldman River valley, in this region, is home to 262 species of Amphibians, Reptiles and Mammals. Of these 114 are considered "common" or "abundant".

The coulees form a distinct and highly fragile ecosystem. The wide variety of grasses, shrubs and cacti survive under very harsh climatic, and precarious physical, conditions. Such vegetation is highly susceptible to trampling either through indiscriminate pedestrian traffic or from the use of motor cycles, trucks, bicycles and all-terrain vehicles.

The inter-relationship of coulee plants and animals produces a diverse, unique but fragile ecosystem. This type of ecosystem forms one boundary of the Southbend site.



site analysis southbend

HUMAN FACTORS

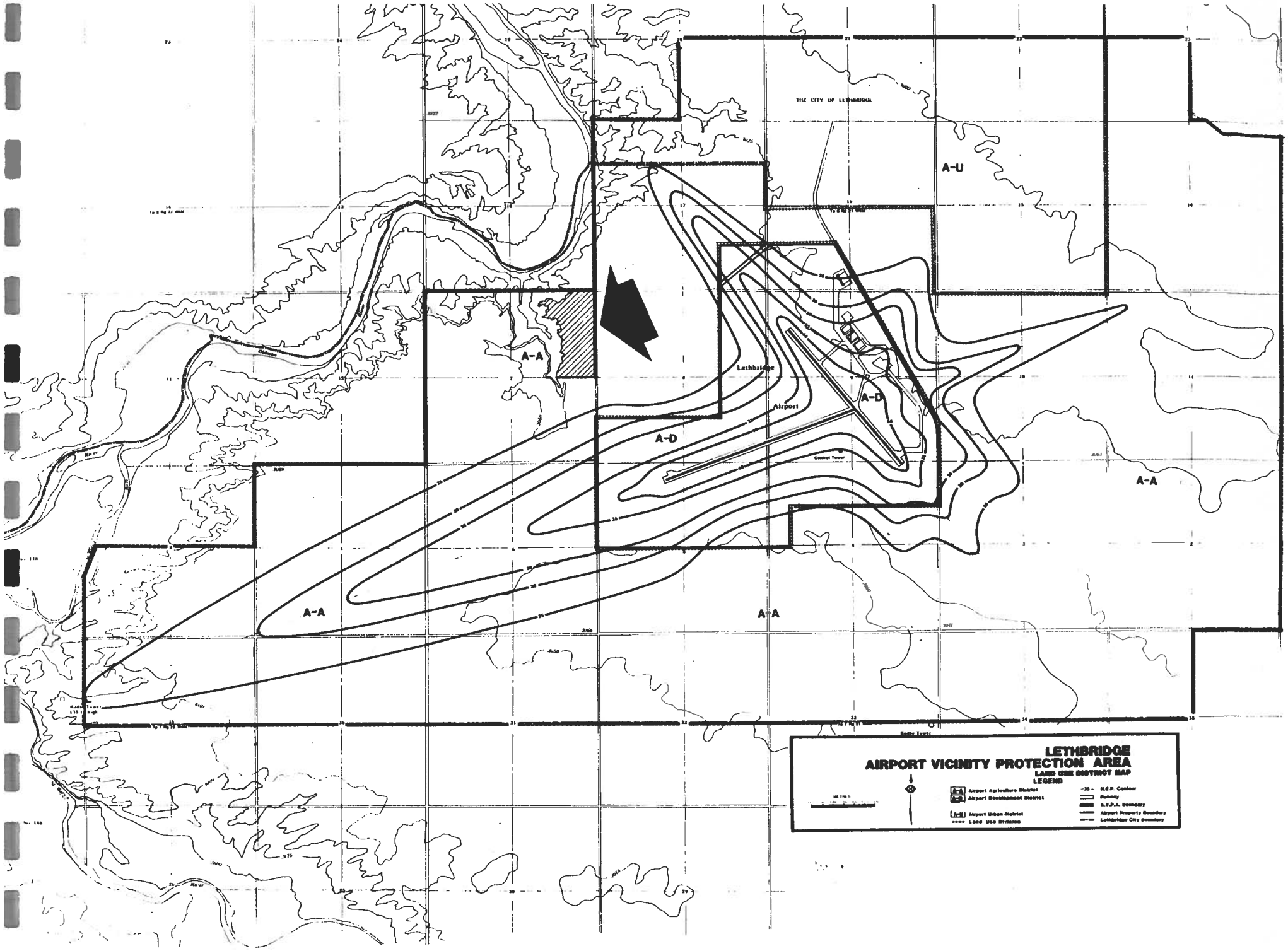
The site has easy access to the City of Lethbridge. It is only 2.5 km by road from the city limits and 10 km from downtown.

The Lethbridge Airport terminal building is 4 km from the site. The site therefore is within the Airport Agricultural District (A-A) of the Lethbridge Airport Vicinity Protection Area. It is beyond the 25 NEP contour. All uses are permitted in this area except sanitary landfill. Currently the airport activities present little interference to the site. The noise levels of aircraft using the airport are very low.

A major portion of the Oldman River valley has been acquired by the City of Lethbridge for the Lethbridge Urban Parks Project. Parkland at various levels of development now covers more than 20 km of river bottom. There are no plans to extend the interconnecting trails beyond Six Mile Coulee on the east side of the river. However Popson Park, on the west side of the river, is considerably south of the site. There is also a proposal for development of the Stasiuk property immediately across the river from Southbend. When the water in the river is low it is possible to wade across. It can be anticipated that developments in the area will result in considerable pedestrian traffic.

Locally significant features within the immediate area include the Lethbridge Trap Club and the original Fort Whoop-Up site.

With these factors in mind, a market survey by D.J.S. Associates was undertaken and concluded that a market in the "over $125,000 (per housing unit) segment is more than large enough to justify the development of an exclusive 'country style' residential area".


THE CITY OF LETHBRIDGE
A-U
A-A
A-D
Lethbridge
Airport
Control Tower
A-A
A-D
A-A
A-A
LETHBRIDGE
AIRPORT VICINITY PROTECTION AREA
LAND USE DISTRICT MAP
LEGEND
Airport Agriculture District
Airport Development District
Airport Urban District
Land Use Division
Runway
A.V.P.A. Boundary
Airport Property Boundary
Lethbridge City Boundary

master plan

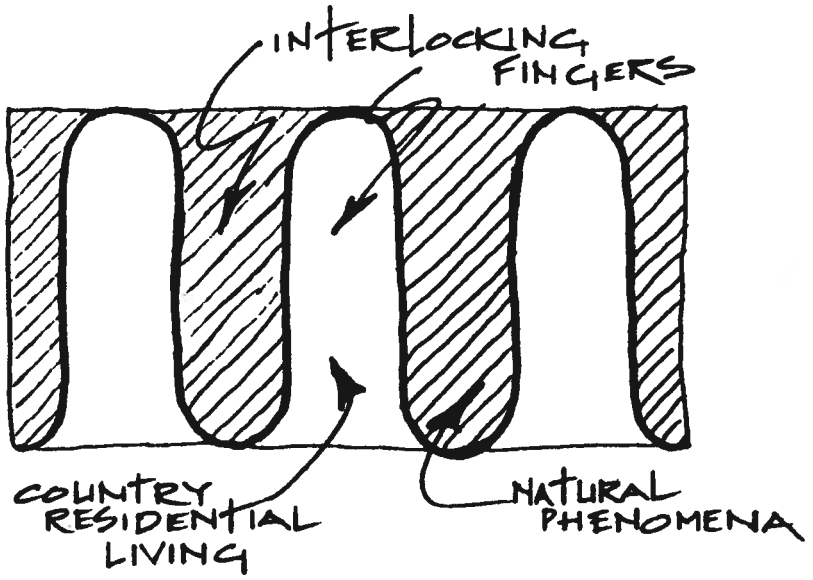
PHILOSOPHY

Changes must be made to the site to make it habitable. There is an obvious danger in changing the site. The characteristics which make it attractive in the first place may be compromised severely or completely lost. This plan attempts to make the place hospitable, without loss of country character, by adapting the well-tested technique of field shelterbelts to a rural residential community.

By introducing shelterbelts to foster habitability a connection is also made to the ecology of the area. Shelterbelts, hedgerows and vegetation islands are important pockets of habitat and corridors for prairie and coulee animals. In its 1986 natural resources study the Urban Parks Project makes (amongst others) the following recommendations:

> ". . . if the natural resources of the study area are to be maintained in their present conditions, or possibly enhanced . . . plant shelterbelts and hedgerows near buildings to improve habitat diversity. Maintain portions of developing areas as native vegetation to provide habitat and travel corridors for wildlife. This should include both over- and under-storey vegetation".

This spirit has been adopted as a complementary goal to that of improving human habitability.



plan ideogram

MASTERPLAN CONCEPT

The masterplan for Southbend incorporates one-acre and half-acre residential lots (45 in total), a 12 to 15 unit condominium development, community space and a stable, within the framework of concerns and concepts previously expressed. The plan places smaller lots on the coulee edge and higher ground. This arrangement is balanced by placing of larger lots close to the road and on the lower ground. All lots therefore share the equitability: extra space and weather protection being balanced by desirable views but greater exposure. Internal roads ensure that all but two lots are accessed from within the boundary of the site.

COMMUNITY SPACE

Under the Planning Act, up to 10% of the developable land must be assigned to community space. The masterplan incorporates this amount in several ways: a large open landscaped area in the centre of the development, a landscaped area in front of the condominium site and in the shelterbelt plantings and walkways, totalling approximately 2.5 hectares.

ENVIRONMENTAL RESERVE

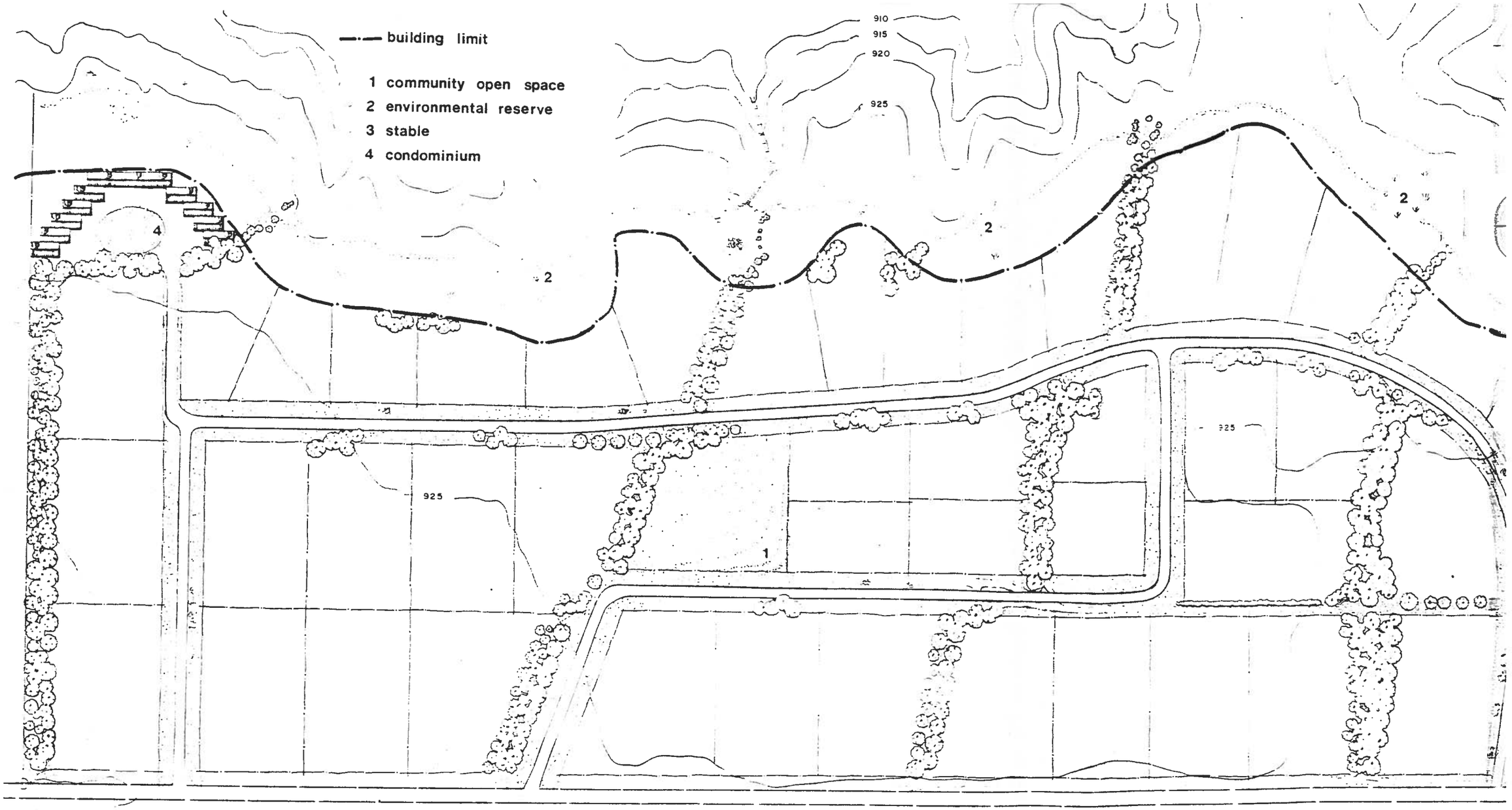
In its 1986 report on soil conditions and slope stability Hardy Associates warn that upland development will increase the moisture content of the coulee slopes. This will produce an attendant loss of stability. To minimize the impact of development on the structure (and hence the ecology) of the coulees it is proposed that an environmental reserve be established in fragile areas. The boundary for the reserve is taken as the building setback line produced by Hardy Associates. The line defines an "area with a factor of safety against deep-seated instability greater than or equal to 1.5". Pedestrian traffic will be encouraged to concentrate away from the coulee edge and descend to the river through the provision of a stair and path system designed to have minimum impact on the long-term biophysical integrity of the coulees.

HORSE STABLE

Country living implies certain obvious recreational activities. Horseback riding is one such activity. It requires more support than others such as hiking, fishing, cycling, etc. To support the sport of horse-back riding an area will be set aside for a small stable (approximately 8 horses) and a 15 m riding ring. The stable location is downwind from all developable lots. It is bounded on two sides by roads and on a third by a shelterbelt. The stable area will be connected to the coulee reserve by paths.

CONDOMINIUM DEVELOPMENT

According to D.J.S., a number of people do want to live in the country, without necessarily owning a sizeable piece of land. To accommodate this desire a high quality condominium (12 - 15 units) is proposed for Southbend. The location chosen is a promontory in the south-west corner of the site. All units will face both outward to the coulee view and beyond, and inward to the site and prairies. The mass of the building, together with the southern shelterbelt, will commence the process of protection for the whole site.



southbend

battleridge resources ltd

DETAIL DESIGNS

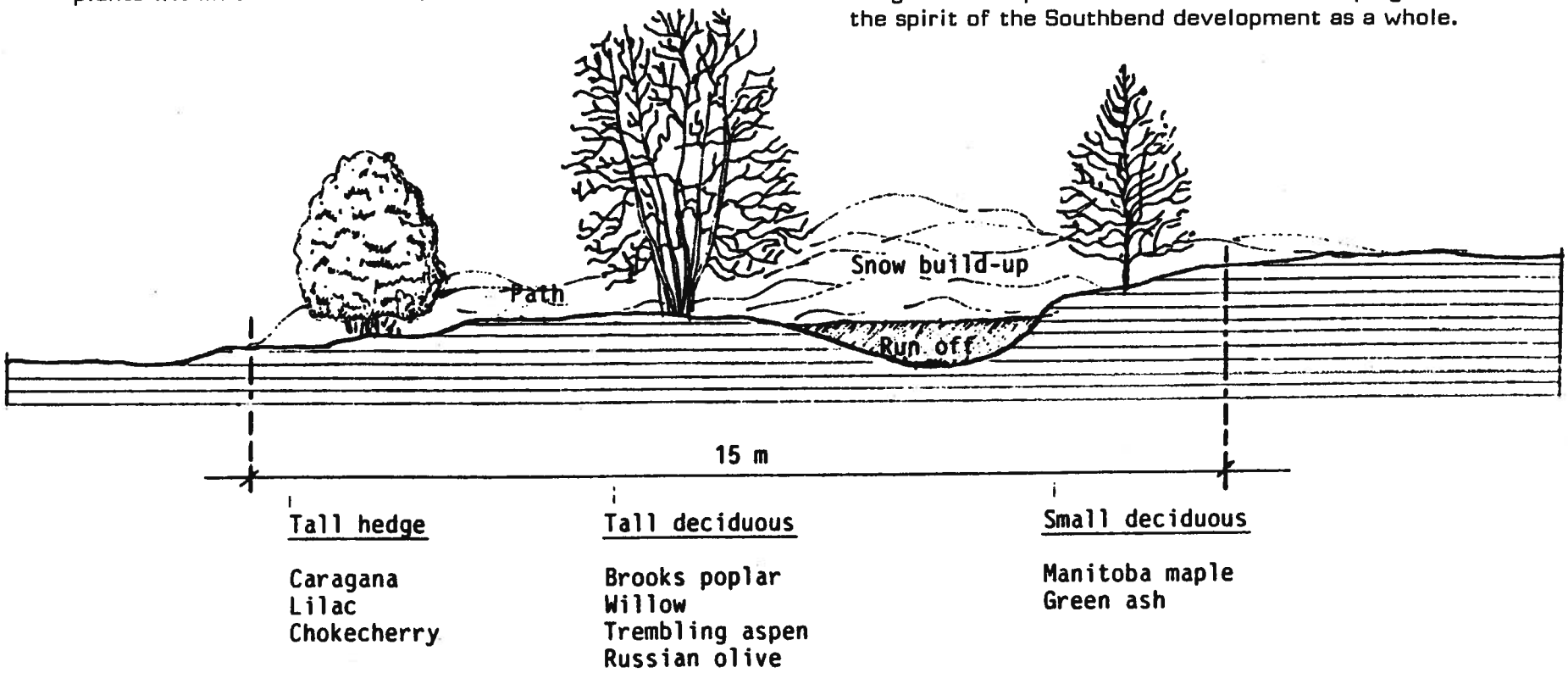
PLANTINGS

The nature of the site and the goals of the masterplan require that basic plantings be hardy and native. This does not imply a random accumulation of vegetation to produce shelterbelts. Guidelines for efficient design have been produced by Alberta Agriculture. These will be followed as closely as possible. Plant selection will be made to achieve a balance of colour, shape and size of plants within the shelterbelts.

The twin system of roads and paths obviously lends itself to detailed design modifications which will result in interesting features at intersections of paths with paths, paths with roads, at view points, widenings, etc.

FENCING

Fencing has the potential to interfere with the openness of country residential living. Where barriers and boundaries are to be marked it will be accomplished through the use of low shrubs and hedgerows. Separations will thus be in keeping with the spirit of the Southbend development as a whole.



shelterbelt

implementation

IMPLEMENTATION

SITE DEVELOPMENT

The developer will install all roads, services and landscaping prior to the construction of residences at Southbend.

RESIDENTS' ASSOCIATION

Responsibility for the running of the Southbend community will rest with a residents' association. A legal structure will be put in place which will allow this. The association's mandate will allow it to assume, during the early development and subsequent life of the Southbend community, responsibility for the following:

- community garbage removal
- monitoring of lot irrigation
- monitoring of long-term slope stability
- maintenance of community landscaping

ACCESS TO WATER SUPPLY

Prior to the establishment of the residents' association, the developer will provide legal documents which assure access to a water supply and all attendant facilities necessary to sustain the Southbend community during its lifetime.

WATER SUPPLY

The developers will warranty the water supply system for an agreed period of time after which the services will be assigned to the County.

ARCHITECTURAL AND LANDSCAPE CONTROLS

The Southbend masterplan is a response to the special characteristics of the site. It is expected that the housing introduced to the site, its landscaping and property maintenance will build on this approach. To this end architectural and landscaping controls will be established. The developer will appoint an architectural controls consultant to establish, co-ordinate and administer architectural and landscaping controls satisfactory to the developer. The controls co-ordinator will provide design advice to all purchasers and a review of all house and site plans prior to construction. An approval process will be established. All potential construction will be required to meet the approval of the developer and his controls consultant.

site servicing

SITE SERVICING

WATER

An existing well at the river bottom will be used to supply water to Southbend. The well, pump and waterlines will be upgraded to meet expected demands and the standards of all regulatory agencies. Raw and treated water will be stored. A seasonal wet spot immediately in front of the R. M. Luco home will be converted into a permanent raw water reservoir. A treatment facility and storage cistern will be provided for domestic water supply. Several alternative locations have been identified for this. A preliminary engineering review has indicated that each alternative would be feasible and not necessitate any change in the masterplan.

IRRIGATION

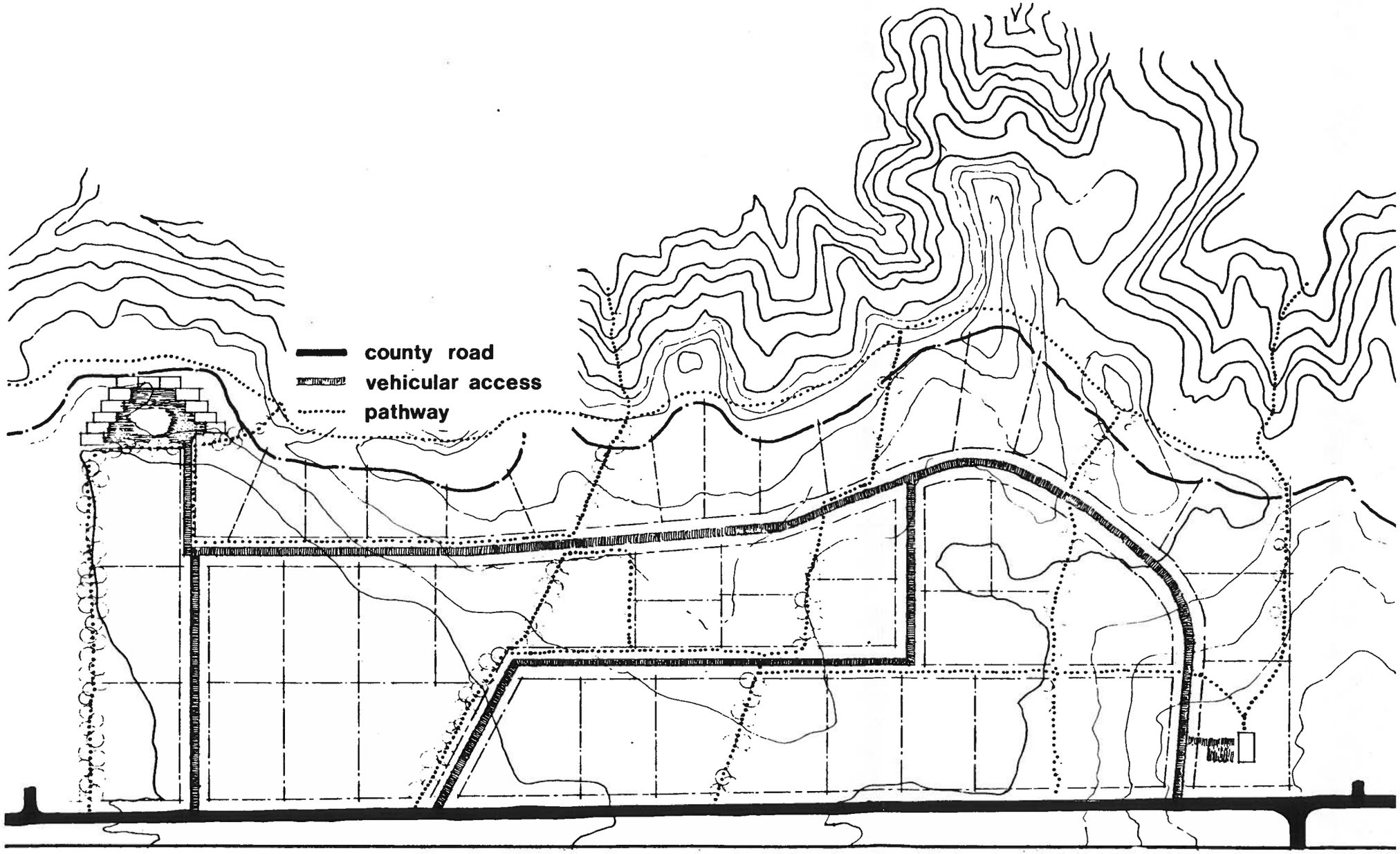
The employment of shelterbelts as key feature of site development allows drainage and irrigation to be partially combined. The geotechnical study by Hardy Associates warns that all surface drainage must be directed away from the coulees. They also recommend that irrigation be carefully monitored. Snow will accumulate in the shelterbelts and melt water will provide irrigation in the spring. By organizing the site into drainage zones around the shelterbelts and by designing them to accommodate storm water run-off, the shelterbelts can become self-irrigating while draining the site of excess water. By choosing hardy, native species for the shelterbelts, supplementary watering may not be necessary.

SEWAGE DISPOSAL

Hardy Associates (1978) Ltd. were requested to perform a Suitability of Septic Field effluent disposal fields for Southbend and came forward with their recommendations on March 20, 1986. Their study indicated that the soil would sustain septic fields. "Since the effective operation of subsurface effluent disposal systems is dependant on unsaturated soil conditions in the surficial soil zone, and the topography will conduct any surface seepage away from the coulee slopes, we expect no significant impact on slope stability from this type of system provided that the existing drainage away from the slopes is maintained and the installation regulations, given in Alberta Regulation 340/77, Part 21, are strictly adhered to."

ACCESS AND CIRCULATION

Roads will be assigned to the County of Lethbridge No. 26, whose design standards will be used for road construction. All internal roads will exist in a 66 ft. (20 m) road allowance. All road surfaces will be paved to a width of one lane in each direction. Adequate drainage will be ensured. A complementary system of pedestrian paths will traverse the site. These will be located within the shelterbelts and environmental reserve.



circulation

southbend

GARBAGE

The residents' association will contract with a private garbage removal company to remove garbage from individual garbage containers on the Southbend site. All purchasers of lots will be required to participate in the scheme and pay a proportional part of such fees which are established between the association and the removal company.

FIRE PROTECTION

Fire protection is of prime importance. All raw water areas will be constructed to NFPA standards as will hook-ups and hydrant placements. Waterflow demands for fire control will be provided at NFPA rates.

ILLUMINATION

The "country feel" of rural residential developments can be quickly destroyed by over-illumination. Artificial illumination will be kept to the minimum necessary to ensure safety. This will avoid the possibility of Southbend taking on too urban a character.