CRESTVIEW RANCH ESTATES

AREA STRUCTURE PLAN

Prepared by:
D.A. Badke Enterprises Ltd

On behalf of:
Pat Harvie, Crestview Ranches

Presented to:
The Municipal District of Foothills No. 31

April 2002

Adopted May 2002

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1.0 INTRODUCTION

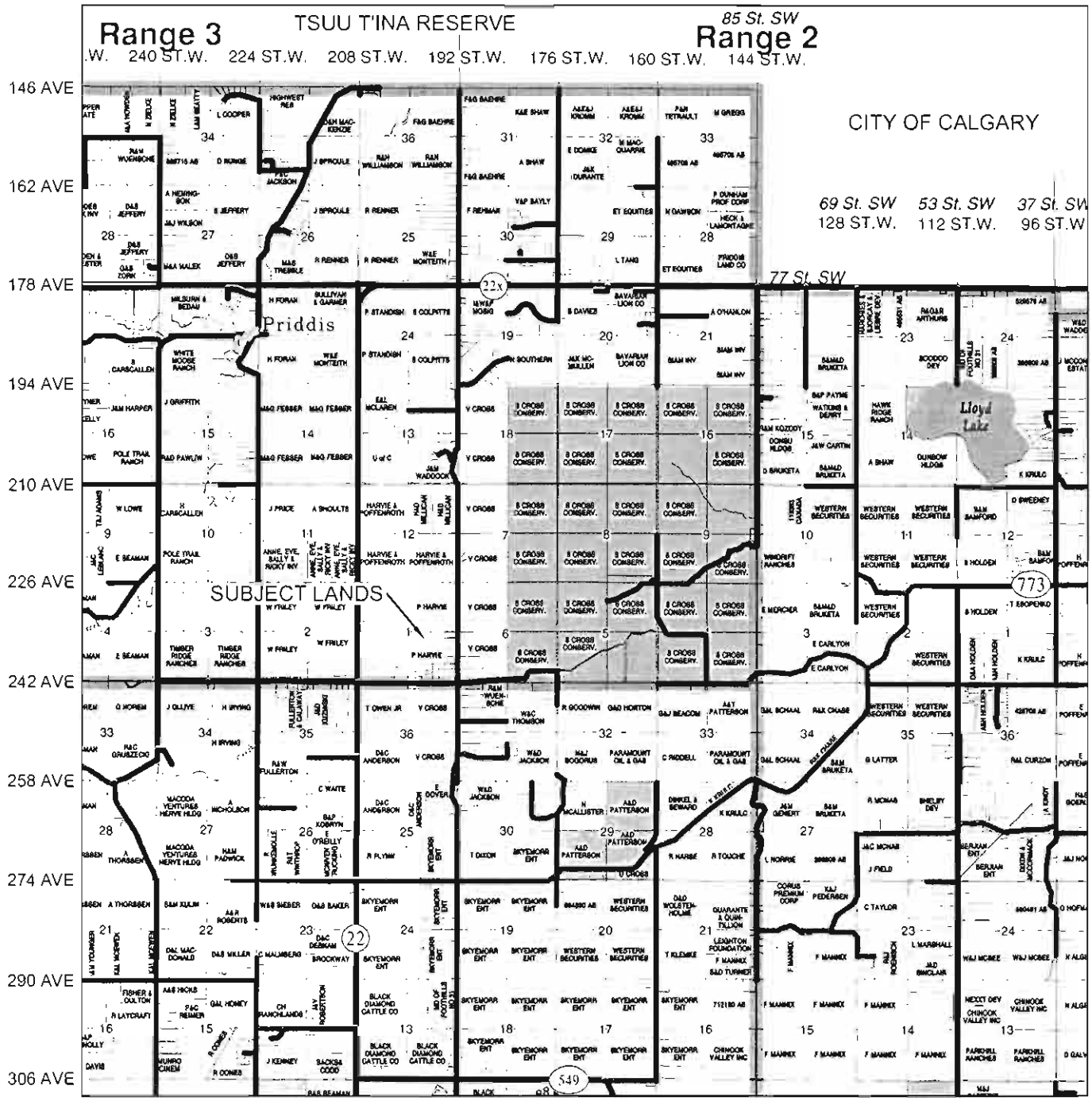
1.1 CONTEXT

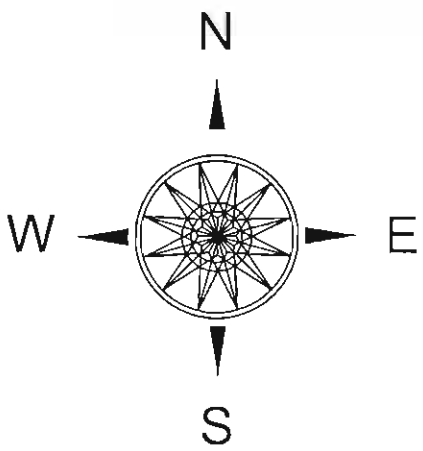
The "Plan Area" referred to in this document, The Crestview Ranch Estates Area Structure Plan, is defined as that portion of Block B Plan 731677 which lies within the Southeast Quarter of Section 1, Township 22, Range 3, West of the 5th Meridian. Figure 1 shows the regional setting of the Plan Area. Figure 2 shows the entire Section 1 and the entire Block B, plus that portion of Block B that lies within the Southeast Quarter of Section 1, shown crosshatched to represent the Plan Area. The Plan Area does not include the existing subdivisions in the SE¼ Section 1.

The Southeast Quarter of Section 1, Township 22, Range 3, West of the 5th Meridian (the "Subject Quarter") can be classified as an area in transition from purely agricultural uses, to a mixture of country residential and agricultural pursuits. Until the 1960's, all of the lands within the Subject Quarter were unsubdivided and utilized mainly for agricultural purposes, that is, for a mixture of pastureland with some hay land. In the late 1960's, a 20-acre (+/-) parcel was removed from the northeast corner of the Subject Quarter. In 1990, another 20-acre (+/-) parcel was removed from southeast portion of the Subject Quarter. Each of these initial subdivisions was later re-subdivided to create a 5-acre (+/-) parcel within each of the parent 20-acre (+/-) parcels. In 1997, an additional four lots ranging in size from 4.0 to 7.44 acres were created along the south boundary of the Subject Quarter. An Environmental Reserve Easement (ERE) was also created in 1997 around the water pond and draws in the southwestern portion of the Subject Quarter, along with a 2.37 acre Municipal Reserve parcel, located immediately east of the ERE lands.

With the creation of the above-mentioned 8 country residential parcels within the Subject Quarter, this quarter section appears well on its way in transition from purely agricultural uses, to a mixture of country residential uses with some agricultural pursuits. This transition is fuelled by the increasing land values in the general area, the rugged nature of the Subject Quarter and the close proximity of the Subject Quarter to a prosperous major urban center.

In the general vicinity of the Subject Quarter, land uses include agricultural pursuits on the larger parcels, such as hay and forage crop production on the flatter more productive lands, with livestock grazing on the rougher less productive lands. Other land uses include country residential uses with minor agricultural pursuits on the smaller parcels located sporadically throughout the vicinity.





CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No.31
SCALE 1:100,000 APRIL 2002

LOCATION MAP FIGURE 1

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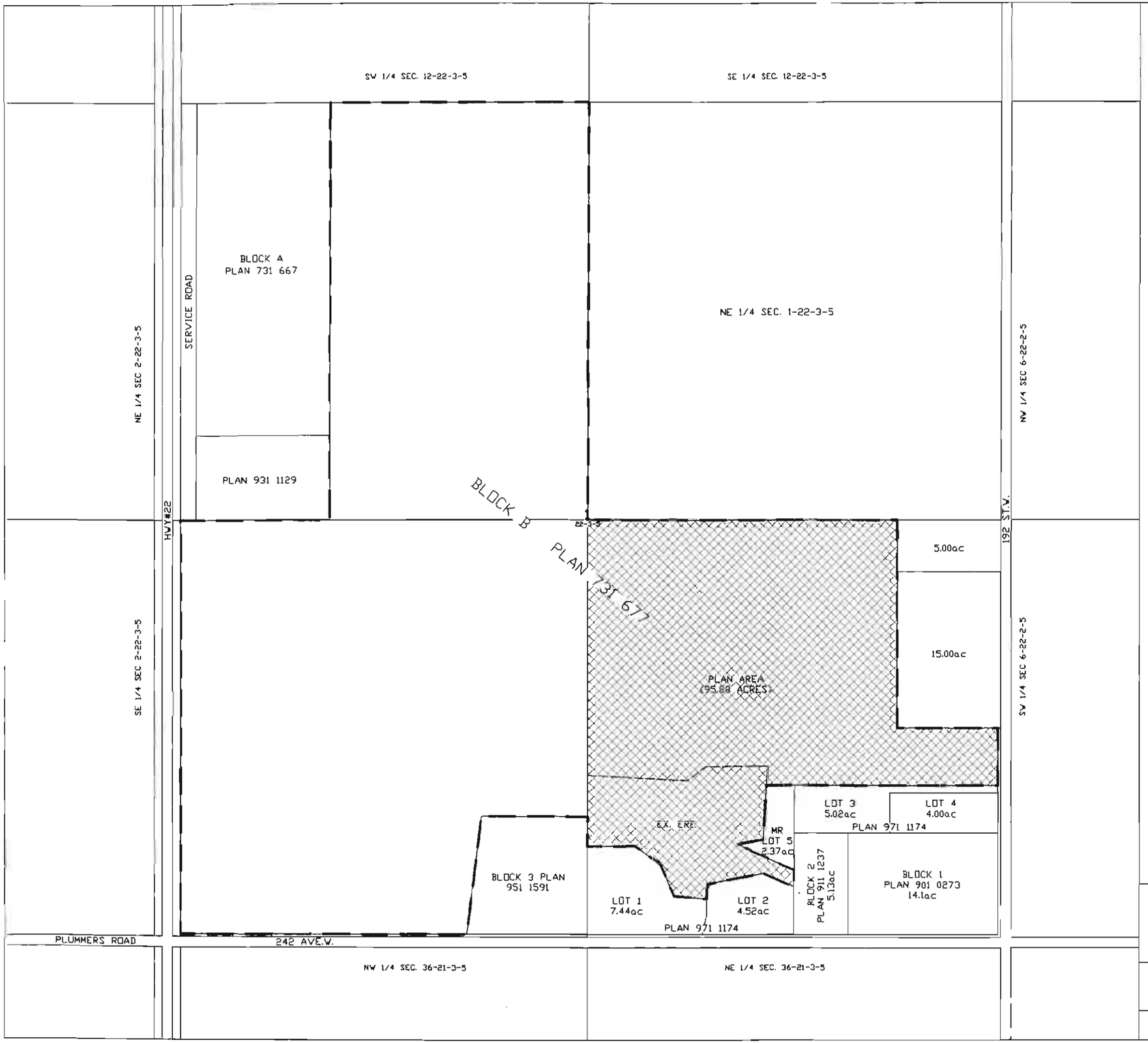

SUMMARY OF EXISTING SUBDIVISION AREAS (acres)

E 1/2 LSD 8		5.00
E 1/2 LSD 8		15.00
PLAN 901 0273	BLK 1	14.10
PLAN 911 1237	BLK 2	5.13
PLAN 971 1174	LOT 1	7.44
PLAN 971 1174	LOT 2	4.52
PLAN 971 1174	LOT 3	5.02
PLAN 971 1174	LOT 4	4.00
PLAN 971 1174	LOT 5 MR	2.37
PLAN 731 677 ROAD WIDENING		1.54
PLAN 731 677	BLK B	95.88
AREA WITHIN SE 1/4 SEC 1 (PLAN AREA)		
TOTAL AREA WITHIN SUBJECT 1/4		160.00

LEGEND

PLAN AREA 95.88ac

OUTLINE OF BLOCK B PLAN 731 677

N

W E

S

CRESTVIEW RANCH ESTATES

AREA STRUCTURE PLAN

MUNICIPAL DISTRICT OF FOOTHILLS No.31

EXISTING SUBDIVISION PATTERNS

IN Sec 1, Twp 22, Rge 3, W5M

0 100 250 500 750

APRIL 2002

FIGURE 2

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1.2 PURPOSE OF PLAN

The Crestview Ranch Estates Area Structure Plan was prepared at the request of the Municipal District of Foothills Council. The purpose of this Area Structure Plan is to act as a planning guide and to set parameters for future developments by establishing a range of compatible and appropriate land uses for the Plan Area. The Crestview Ranch Estates Area Structure Plan is necessary to establish an orderly approach with respect to future subdivision and development within the Plan Area, addressing land use, servicing, access and density.

1.3 LEGISLATIVE FRAMEWORK

The Crestview Ranch Estates Area Structure Plan has been prepared in accordance with the provisions of the Municipal Government Act (MGA) (Statutes of Alberta, 1994, Chapter M-26.1), which reads:

> *633(1) For the purpose of providing a framework for subsequent subdivision and development of an area of land, a council may, by bylaw, adopt an area structure plan.*
>
> *(2) An area structure plan*
>
> *(a) must describe*
> *(i) the sequence of development proposed for the area*
> *(ii) the land uses proposed for the area, either generally or with respect to specific parts of the area*
> *(iii) the density of population proposed for the area either generally or with respect to specific parts of the area*
> *(iv) the general location of major transportation routes and public utilities*
> *and*
>
> *(b) may contain any other matters the council considers necessary*

As well, tbis Area Structure Plan complies with the Municipality's Municipal Guidelines for preparation of Area Structure Plans.

1.4 INTERPRETATION

Within this document, The Crestview Ranch Estates Area Structure Plan:

- ***ASP*** means Area Structure Plan;
- ***Plan Area*** means that portion of Block B Plan 731677 which lies within the SE¼ Section 1, Twp 22, Rge 3, W5M, comprising 95.88 acres more or less which lands are currently owned by Patrick N. Harvie;
- ***Developer*** means the owner of the Plan Area, currently Patrick N. Harvie;
- ***Subject Quarter*** means the entire SE¼ Section 1, Twp 22, Rge 3, W5M;
- ***Municipality*** means the Municipal District of Foothills No. 31;
- ***Council*** means the Council of the Municipal District of Foothills No. 31;
- ***MDP*** means the Municipal Development Plan of the Municipal District of Foothills No. 31;
- ***CLI*** means the Canada Land Inventory soil classification for agriculture;
- ***Development*** means subdivision and installation of roads and services;
- ***ER*** means Environmental Reserve;
- ***ERE*** means Environmental Reserve Easement;
- ***MR*** means Municipal Reserve.

2.0 THE PLAN AREA

2.1 REGIONAL SETTING

The Plan Area is located in the northwestern portion of the Municipal District of Foothills, some 4.5 miles (7 kilometres) southwest of Calgary's south westerly City limits. The Plan Area is also located 3.5 miles (5.6 kilometres) south of Highway 22X and 0.5 miles (0.8 kilometres) east of Highway 22. The Ann and Sandy Cross Conservation Area is located 0.5 miles (0.8 kilometres) east of the Subject Quarter. Figure 1 provides a municipal map showing the regional setting of the Plan Area.

2.2 PLAN AREA BOUNDARIES

The Plan Area for The Crestview Ranch Estates Area Structure Plan is defined as that portion of Block B Plan 731677, which lies within the Southeast Quarter of Section 1, Township 22, Range 3, West of the 5th Meridian. The Plan Area is located in the northwest portion of the Subject Quarter and contains 95.88 acres (38.80 hectares) more or less and currently stands in the name of Patrick N. Harvie as shown on the Certificate of Title contained in Appendix 1. Figure 2 illustrates the current extent of subdivision within the Subject Quarter and shows the Plan Area as the crosshatched balance lands within the Subject Quarter.

2.3 DESCRIPTION OF PLAN AREA

The Plan Area is located in the Foothills region of the Rocky Mountains. The topography of the Plan Area is rolling to hummocky with shallow draws passing through the Plan Area, draining in a westerly direction. These draws are dry for most of the year, except when carrying seasonal melt water or storm runoff water. An 8 acre (+/-) water pond is located in the southern portion of the Subject Quarter and is contained within an existing Environmental Reserve Easement (ERE). Vegetation within the Plan Area is mostly grass with some willows in the draws. Figure 3 is an enlarged aerial photograph of the Subject Quarter on which the existing and proposed subdivisions, as well as the Plan Area, have been superimposed. The Canada Land Inventory (CLI) rating for agriculture, of the soils within the Plan Area, is CLI Class 5 with limitations due to the climate (short frost-free period) and adverse topography (steep slopes). An agrologist has determined the CLI rating of the soils within the Plan Area and the supporting report is enclosed in Appendix 2.

3.0 PLAN GOALS AND OBJECTIVES

3.1 GOALS AND OBJECTIVES

The Crestview Ranch Estates Area Structure Plan attempts to achieve the orderly, economical and beneficial development and use of the lands within the Plan Area. It is intended to be a flexible, long-term framework for development and patterns of human settlement within the Plan Area. The following are the goals and objectives of this Area Structure Plan:

3.1.1 To conform to the provisions of the Municipal Government Act (MGA) Statutes of Alberta, 1994, Chapter M-26.1, as amended and the Subdivision and Development Regulation 212/95.

3.1.2 To define a land use strategy that conforms to the general principles contained in the MD of Foothills No. 31 Municipal Development Plan.

3.1.3 To provide guidance for subdivision and development of lands within the Plan Area which will result in an orderly and sequential development pattern.

3.1.4 To ensure that all future subdivision and development of lands within the Plan Area will conform to the Policies contained in this Area Structure Plan.

CRESTVIEW RANCH ESTATES
AREA STRUCTURE PLAN
ENLARGED AERIAL PHOTOGRAPH
SHOWING LOT LAYOUT
APRIL 2002 SCALE 1:5,000 FIGURE 3
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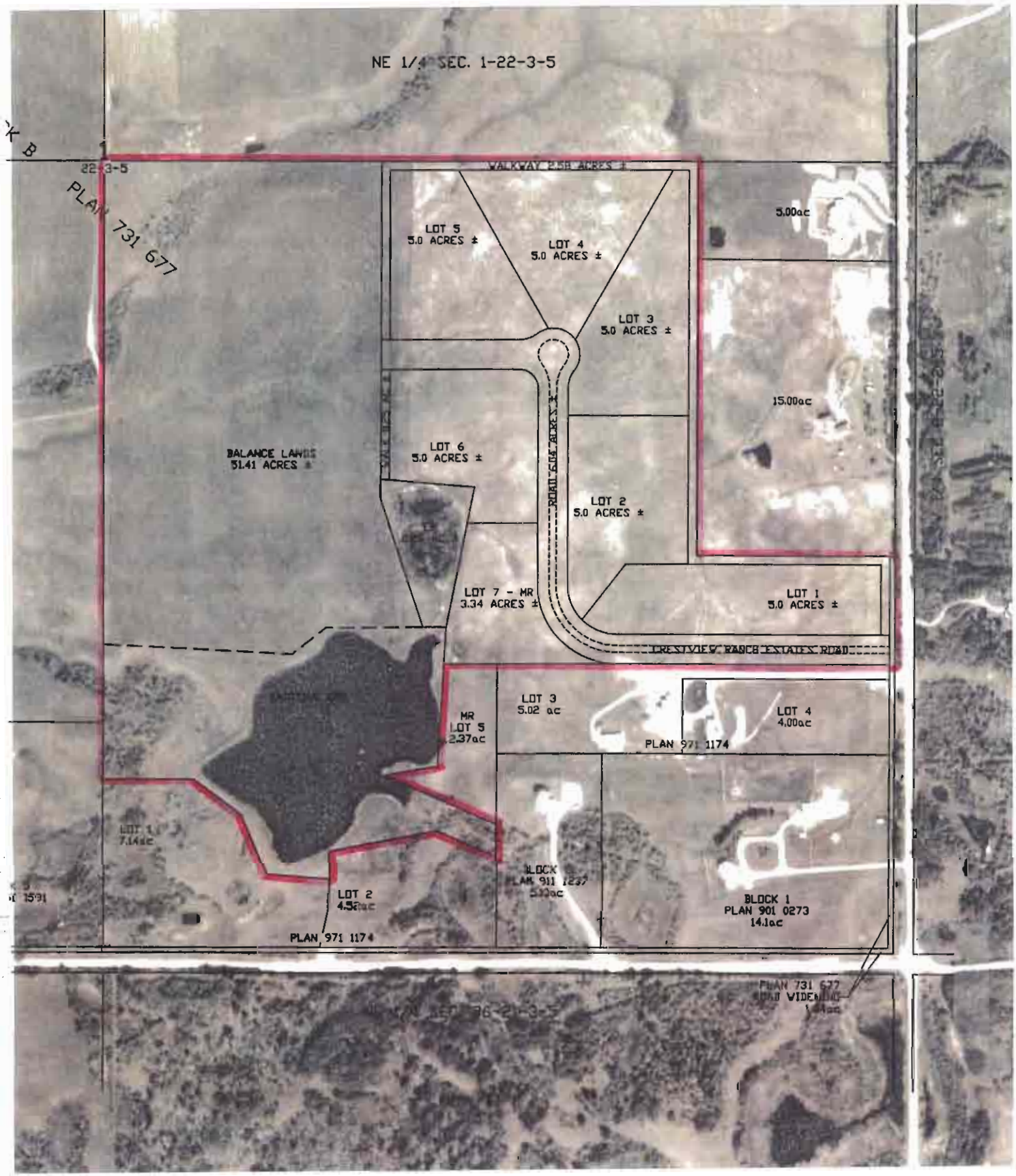
PLAN AREA



3.1.5 To establish high quality developments that are compatible and which will harmonize with existing developments and natural features in the Plan Area and immediately surrounding areas.

3.1.6 To preserve and protect existing natural features including existing wildlife corridors.

3.1.7 To provide an efficient and safe internal road network that yields a minimum of future road maintenance for the Municipality.

3.1.8 To establish policies that will direct proposed land uses, open spaces, transportation patterns, servicing, development phasing, population densities, and wildlife impact, as well as any other matters that the Municipality deems necessary.

4.0 PLAN POLICIES

4.1 THE PLAN CONCEPT

Crestview Ranch Estates is a planned country residential development that is proposed to be developed in one phase which is described as follows.

The development will consist of 6 country residential lots in the eastern portion of the Plan Area, all clustered around an internal road as shown in Figure 4. This development also includes an ER lot encompassing a wetland area, an MR lot and a public walkway around the perimeter of this phase. The remainder of the Plan Area (51.41 acres +/-) will remain unsubdivided with the current Environmental Reserve Easement (ERE) remaining on the southerly 16.1 acres (+/-) around the existing water pond.

The design in this development concentrates the Municipal Reserve lands near the pond and wetland area. A 9 metre wide public walkway is proposed around the periphery of the lots proposed for development.

POLICIES:

4.1.1 All developments within the Plan Area shall conform to all provincial and municipal requirements, specifically, the Municipal Government Act, the Subdivision and Development Regulation, the MD of Foothills Municipal Development Plan, the Foothills Land Use Bylaws, as well as any other relevant statutory provisions adopted by the Province and the Municipality.

NE 1/4 SEC. 1-22-3-5

BLOCK B
PLAN 731 677
1
22-3-5

WALKWAY 2.58 ACRES ±

LOT 5
5.0 ACRES ±

LOT 4
5.0 ACRES ±

LOT 3
5.0 ACRES ±

5.00a.c

15.00a.c

BALANCE LANDS
51.41 ACRES ±

WALK 0.25 AC ±

LOT 6
5.0 ACRES ±

ROAD 6.04 AC ±

LOT 2
5.0 ACRES ±

ER
2.26 AC ±

LOT 7 - MR
3.34 ACRES ±

LOT 1
5.0 ACRES ±

CRESTVIEW RANCH ESTATES ROAD

EXISTING ERC

MR
LOT 5
2.37ac

LOT 3
5.02 ac

LOT 4
4.00ac

PLAN 971 1174

LOT 1
7.14ac

BLOCK 3
PLAN 951 1591

LOT 2
4.52ac

PLAN 971 1174

BLOCK 2
PLAN 911 1237
5.13ac

BLOCK 1
PLAN 901 0273
14.1ac

PLAN 731 677
ROAD WIDENING
1.54ac

NE 1/4 SEC. 36-21-3-5

SW 1/4 SEC 6-22-2-5

PROPOSED PARCEL SIZES IN PLAN AREA

PHASE 1

LOT	AREA (ac)
1	5.0
2	5.0
3	5.0
4	5.0
5	5.0
6	5.0
7 MR	3.34
ER	2.26
ROAD	6.04
WALKWAY	0.25
WALKWAY	2.58
BALANCE	51.41 (INCLUDES 16.1ac ERE)
TOTAL	95.88

N

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CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No 31

PROPOSED SUBDIVISION PATTERNS
IN PLAN AREA

0 50 100 150 200 300 400

APRIL 2002

FIGURE 4

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4.1.2 All subdivision and development within the Plan Area shall be in conformity with the guidelines of Alberta Environment.

4.1.3 Uses on each new lot developed shall comply with the Restrictive Covenant attached in Appendix 6 and this Restrictive Covenant shall be registered as an encumbrance on the title of each new lot.

4.2 LAND USE COMPONENT

All developments within the Plan Area will be for country residential use, except for the use of any balance lands for agricultural uses such as livestock grazing and crop production.

Once the Plan Area is fully developed to its planned potential, the population within the 6 lot country residential development is estimated at 16 people. This estimate assumes an average household size of 2.6 persons per household, which was the average household size as determined by the 1996 Federal Census.

POLICIES:

4.2.1 The development of country residential lots shall be in one phase.

4.2.2 Following the 6 lot country residential development within the Plan Area, the continued use of the balance lands for agricultural pursuits such as livestock grazing or hay and crop production shall be allowed, except that no intensive agricultural pursuits shall be allowed on any balance lands in the Subject Quarter.

4.2.3 Each of the country residential lots shall contain a minimum 5.0 acres (2.0 hectares).

4.3 ENVIRONMENTAL CONSIDERATIONS and RESERVE LANDS

The Plan Area is located in the Foothills Region of the Rocky Mountains and is located one half mile west of the Ann and Sandy Cross Conservation Area. As such, the impact on wildlife movements through or near the Plan Area is an important consideration in designing the developments within the Plan Area. To assess these wildlife movements, a report entitled *"The Ann and Sandy Cross Conservation Area Wildlife Movement Patterns Study"*[1] was reviewed. This report studied the movement of wildlife in all directions from the Cross Conservation Area. With respect to the Plan Area, this report concluded that:

- a wildlife corridor with moderate usage exists through the northwest corner of the Plan Area along a draw containing some willow growth;
- a wildlife corridor with low to moderate usage exists through the southeast corner of the Subject Quarter, through an area that is already subdivided and developed;
- a wildlife corridor with moderate usage exists through the southwest corner of the Subject Quarter along a draw containing willow growth, partially within the existing Environmental Reserve Easement area;

An 8 acre (+/-) water pond is located in the southwestern portion of the Subject Quarter and is currently contained within a 16.1 acre (+/-) Environmental Reserve Easement (ERE). This pond is a manmade feature created by a dyke along the west side of the pond. This pond is important at present for livestock watering and subsequently for wildlife watering and as a waterfowl habitat.

At the time of registration of Plan 731677, the Municipal Reserve requirements within the Plan Area were deferred until further subdivision.

POLICIES:

4.3.1 The lands in the area of the pond, which are currently designated as Environmental Reserve Easement (ERE), shall retain their ERE designation.

4.3.2 All Municipal Reserve land dedication shall be located immediately adjacent to the internal road and the lands proposed for designation as Environmental Reserve, generally as shown on Figure 4.

4.3.3 All Municipal Reserve lands shall be dedicated in accordance with the provisions of the Municipal Government Act.

[1] "The Ann and Sandy Cross Conservation Area Wildlife Movement Patterns Study" by Neil Gilson and Lois Pittaway

4.4 DEVELOPMENT CONSTRAINTS

Topography in the Plan Area is rolling to hummocky in nature. Municipal policies require that all building sites be a minimum of one contiguous acre in size. These building sites shall not contain a high water table or ground slopes that are more than 15%. Figure 5 shows the layout of the proposed lots and roadways within the Plan Area. This plan also shows one metre interval contours and delineates areas that have ground slopes greater than 15%, areas that are wetlands and areas along draws that are unsuitable for building sites. Figure 5 also shows the allowable building envelope on each lot as prescribed by the Land Use Bylaw. The proposed lots within the Plan Area have all been designed such that each lot has an acceptable building site as defined by the Municipality.

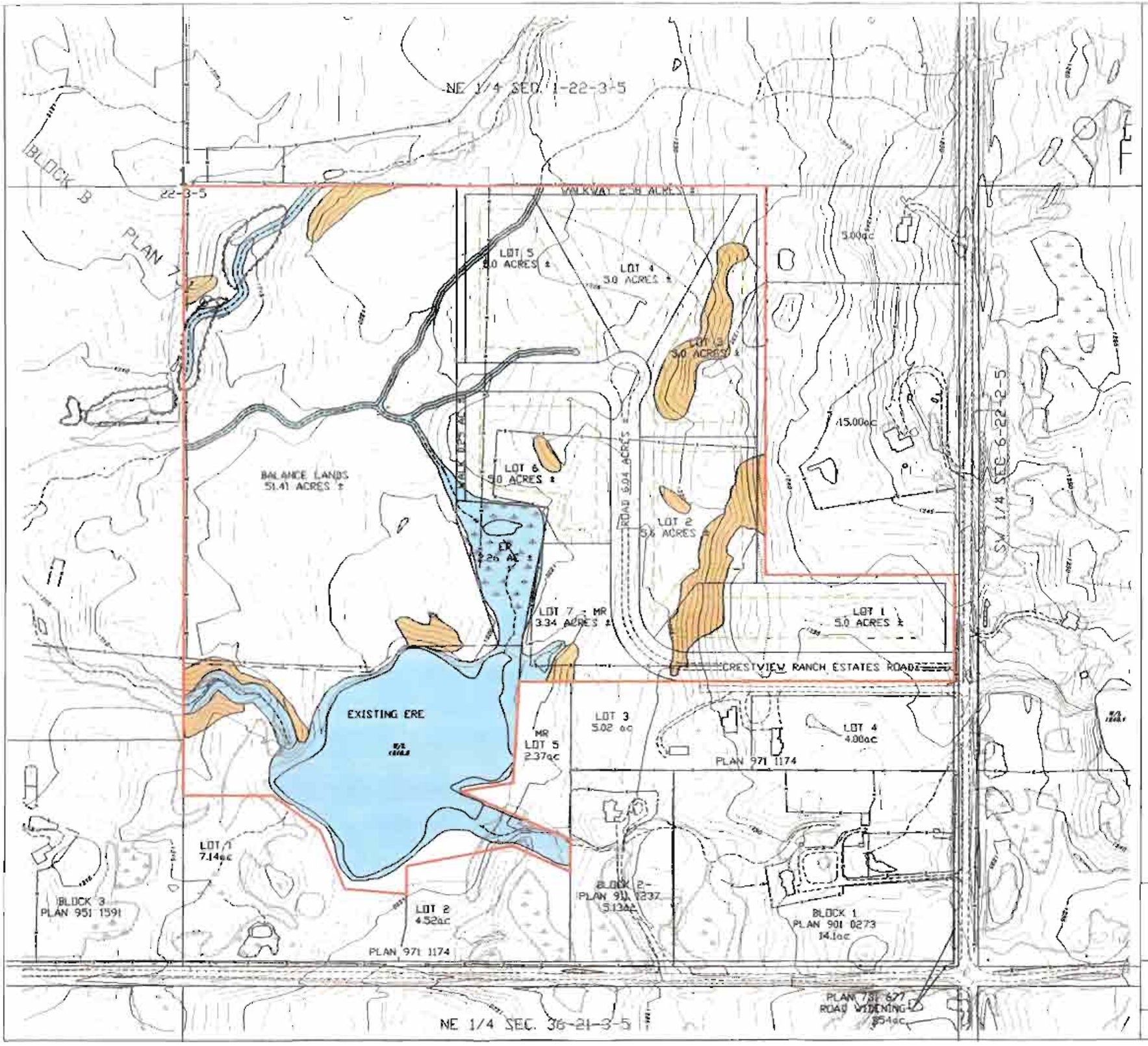
POLICIES:

4.4.1 If deemed necessary by Council, a geotechnical report shall be prepared by a qualified professional, in areas where adverse topography or steep slopes are a factor in development on any lot within the Plan Area.

4.4.2 If deemed necessary by Council, a storm water management report shall be prepared by a qualified professional, in areas where overland drainage is a factor in development on any lot or roadway within the Plan Area. This is to be done in conjunction with the road engineering.

4.4.3 Each lot within the Plan Area shall contain a minimum one-acre building site within which the ground slopes are less than 15% and a high groundwater table is not present.

4.4.4 An overland drainage easement shall be registered on each lot within the Plan Area indicating that the lot owners shall not interfere with any natural or manmade drainage courses approved by the Municipality, which cross their respective lots.



LEGEND

- ROAD (GRAVEL)
- CARTTRACK
- TRAIL
- BUILDING/UNDER CONSTRUCTION
- FENCE
- WALL
- POLE (UTILITY)
- STREAM (INDEFINITE)
- RIVER/STREAM
- LAKE
- SINGLE TREE
- SCRUB
- TREE LINE
- MARSH/SWAMP
- SPOT ELEVATION
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- INDEX DEPRESSION
- INTERMEDIATE DEPRESSION
- AREAS IN EXCESS OF 15%
- LOW LYING AREAS
- BUILDING ENVELOPE
- PLAN AREA

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CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No.31

CONTOUR MAP AND DEVELOPMENT CONSTRAINTS

0 50 100 150 200 300 400

APRIL 2002

FIGURE 5

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4.5 TRANSPORTATION

The Subject Quarter is bounded on the east by an oiled municipal roadway, 192 Street West, which provides access to Highway 22X located 3.5 miles (5.5 kilometres) to the north, as well as SR#549 to the south. The Subject Quarter is bounded on the south by an oiled municipal roadway, 242 Ave West, which provides access to Highway 22 located 0.5 miles (0.8 kilometres) to the west. The Plan Area will be serviced by an internal public roadway, which enters 192 Street West near the center of the Subject Quarter section. All internal roads must provide for safe and efficient movement of traffic as well as reliable access for emergency vehicles.

Traffic surveys conducted on 192 Street West by the MD of Foothills in July 1999, indicated 346 vehicles per day immediately south of Highway 22X and 160 vehicles per day south of the Subject Quarter. A copy of the Municipality's most recent traffic survey is included in Appendix 3. 192 Street West and 242 Avenue West have recently been upgraded by the Municipality from gravelled to oiled road standard. Assuming an average 10 trips per household per day, it is projected that the traffic on 192 Street West will increase by 60 vehicles per day once the proposed lots within the Plan Area have been developed. It is anticipated that about 70% of the traffic generated by the proposed subdivision will travel northwards on 192 Street West, while about 15% will travel southwards on 192 Street West and 15% will travel westward on 242 Avenue West to Highway 22.

Linking of the internal roadway to the lands north or west of the Subject Quarter section was considered. The lands north and west of the Subject Quarter are used as pasture and hay land by the owner of the lands in the Plan Area. Further subdivision beyond the boundaries of the Subject Quarter is not contemplated, therefore a road linkage north or west was not provided.

Walkways have been proposed around the periphery of the proposed development. These walkways are proposed to be 9 metres wide with a grassed surface. The Developer will construct a fence on either side of the walkway to prevent animals from straying beyond the walkway or onto the walkway. It is proposed that a Homeowner's Association will be formed and registered on title to maintain the walkways and adjacent fencing. All walkways will be dedicated to the Municipality as public walkways.

The ground surface along the proposed road right of way has a hummocky to rolling terrain in places. A preliminary design for the internal roadway was carried out, from which it was concluded that the internal roadway can be built to satisfy the MD of Foothills road standards along the proposed road right of way.

POLICIES:

4.5.1 All internal roads within the Plan Area shall be designed and constructed at the sole cost of the Developer in accordance with MD of Foothills Municipal Standards for paved roads.

4.5.2 All internal roads within the Plan Area shall be maintained throughout the maintenance period prescribed by the Municipality, at the sole cost of the Developer. Following issuance of the Final Acceptance Certificate by the Municipality for the internal roads, maintenance of all internal roadways shall be the sole cost and responsibility of the Municipality.

4.5.3 The internal road shall have access to 192 Street West, on the east boundary of the Subject Quarter as shown on the attached plans.

4.5.4 All lots shall have direct access to the internal roadway via approaches built to the MD of Foothills standards.

4.5.5 In this development, the internal road between 192 Street West and the culdesac shall be developed. The road right of way west of the culdesac shall be dedicated as a road right of way, but need not be developed.

4.5.6 All walkways shall be grassed and fenced on the outside by the Developer; page wire shall not be used in the fence construction. A Homeowner's Association shall be responsible for maintaining the walkways and fences.

4.5.7 If deemed necessary by Council, the Developer shall enter into a Development Agreement with the Municipality with respect to a contribution for upgrading and maintenance of external roadways in the area, to the satisfaction of Council.

4.6 SERVICING

The Developer proposes to service the country residential developments within the Plan Area by way of conventional servicing techniques.

Water Service:

The Developer will supply water to each lot by way of an individual well drilled on each lot. Water wells drilled to service the existing lots within the Subject Quarter generally have water yields that are far in excess of normal country residential needs. One water well has been drilled as a test well at the location shown on Figure 6. This well was pump tested and proved a yield that was sufficient to supply a 34-lot subdivision. The hydrologist's report summarizing this testing is included in Appendix 4.

Sewage Disposal:

The existing country residential developments in the Subject Quarter are successfully utilizing fields for sewage disposal. Sewage disposal on the proposed lots is planned by way of conventional sewage disposal fields or treatment mounds, all in accordance with the provisions of the "*Alberta Private Sewage Systems Standard of Practice 1999 Handbook*". Field percolation testing was conducted on 11 typical sewage disposal sites, at the locations shown on Figure 6. The results of this testing indicated that the soils at all sites were suitable for the use of either conventional fields or treatment mounds for sewage disposal. Standpipes were also installed to a depth of 10 feet at each percolation test site to detect the presence of a high water table. Ten of these standpipes were dry while one standpipe showed the near surface water table which was below the required levels. An engineered report summarizing this testing is included in Appendix 5.

Storm Water Management:

Storm water drainage is currently handled by way of naturally occurring and well-defined surface drainage courses passing through the Plan Area, generally draining from east to west. These drainage courses are dry for most of the year, except when carrying seasonal melt water or in extreme cases, storm runoff water. These drainage courses will generally be left intact. Storm water from each of the lots will either be channelled to the road ditches or will continue to flow towards these existing drainage courses. Where the roads cross these drainage courses, appropriate sized culverts will be utilized to pass the storm water beneath the roads. All storm water drainage after development of the Plan Area will continue to be handled by way of surface drainage.

Solid Waste:

Solid waste from the Crestview Ranch Estates development will be hauled by the individual landowners and disposed at the nearest approved waste transfer site.

NE 1/4 SEC. 1-22-3-5

BLOCK B
1
22-3-5
PLAN 731 677

EX. GAS LINE

WALKWAY 2.58 ACRES ±

LOT 5
5.0 ACRES ±

LOT 4
5.0 ACRES ±

LOT 3
5.0 ACRES ±

LOT 6
5.0 ACRES ±

WALK 0.25 AC ±

ROAD 6.04 ACRES ±

LOT 2
5.0 ACRES ±

LOT 1
5.0 ACRES ±

LOT 7 - MR
3.34 ACRES ±

2.26 AC ±

BALANCE LANDS
51.41 ACRES ±

5.00ac

15.00ac

EX. O/H POWER

SW 1/4 SEC 6-22-2-5

WELL

P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11

NS1 NS2 NS3 NS4 NS5 NS6 NS7 NS8 NS9 NS10 NS11

CRESTVIEW RANCH ESTATES ROAD

EX. GAS LINE

EXISTING ERE

MR
LOT 5
2.37ac

LOT 3
5.02 ac

LOT 4
4.00ac

PLAN 971 1174

U/G TELUS

LOT 1
7.14ac

LOT 2
4.52ac

BLOCK 2
PLAN 911 1237
5.13ac

BLOCK 1
PLAN 901 0273
14.1ac

BLOCK 3
PLAN 951 1591

EX. O/H POWER

PLAN 731 677
ROAD WIDENING
1.54ac

NE 1/4 SEC. 36-21-3-5

LEGEND

- ROAD (GRAVEL)
- BUILDING/UNDER CONSTRUCTION (WC)
- FENCE
- WALL
- POLE (UTILITY)
- STREAM (INDEFINITE)
- RIVER/STREAM
- LAKE W/L 041.7
- MARSH/SWAMP
- FIELD PERCOLATION TEST SITE ■ P1
- NEAR SURFACE WATER TEST SITE ▲ NS1
- EXISTING WATER WELL ◉ WELL

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CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No.31

EXISTING SERVICES AND TEST LOCATIONS

0 50 100 150 200 300 400

APRIL 2002

FIGURE 6

D. A. BADKE ENTERPRISES LTD.

POLICIES:

4.6.1 Proof of an adequate water supply shall be provided to the Municipality for each country residential lot within the Plan Area, at the sole cost of the Developer. This shall include a water well on each lot. Pump testing of the wells, well interference and yield calculations, shall all be done in accordance with the Water Act, as amended. A qualified professional shall prepare a report at the cost of the Developer, to confirm that an adequate water supply is available on each lot.

4.6.2 If required by the Municipality, the Developer shall conduct field percolation testing and near surface water table testing, all in accordance with the guidelines contained in the publication entitled "Alberta Private Sewage Systems Standard of Practice 1999 Handbook", in order to properly design the sewage disposal system for each lot. A qualified professional shall prepare a report at the cost of the Developer, to confirm that the soils on each lot are acceptable for installation of a sewage disposal system in accordance with the guidelines contained in the publication entitled "Alberta Private Sewage Systems Standard of Practice 1999 Handbook".

4.6.3 Septic pump-out tanks will not be permitted within the Plan Area due to the road damage caused by tank trucks.

4.6.4 Lagoons and open discharge from septic tanks shall not be permitted in the Plan Area.

4.7 UTILITIES

UtiliCorp Networks Canada (Alberta) Ltd. currently supplies power throughout the Municipality by way of an overhead power line grid. The Developer proposes to obtain power from these existing facilities and distribute underground power to the property line of each new country residential lot developed within the Plan Area.

Meota Gas Co-op Limited currently supplies natural gas throughout that portion of the Municipality surrounding the Subject Quarter, by way of a network of underground service pipelines. The Developer proposes to obtain natural gas from these existing lines and distribute underground gas service to the property line of each new country residential lot developed within the Plan Area.

Telus Communications Inc. currently supplies telephone service throughout the Municipality by way of an underground phone line grid. The Developer proposes to distribute an adequate number of phone lines to the property line of each new country residential lot developed within the Plan Area.

The Developer reserves the right to select other service providers.

Figure 6 shows the location of the existing services in and around the Subject Quarter section.

POLICIES:

4.7.1 The Developer shall at his sole expense, design, construct and install underground power, natural gas and phone service lines to the property line of each new country residential lot developed in the Plan Area.

4.8 PROTECTIVE SERVICES

Police service to the Plan Area is provided by the Royal Canadian Mounted Police and is available through the RCMP's Turner Valley detachment.

Fire fighting service is available from the volunteer fire department at the Priddis station, with backup from the City of Calgary fire department.

Ambulance service is available from the Foothills Emergency Medical Services in Black Diamond with backup service from the Priddis FREMS station and Calgary.

POLICIES:

4.8.1 The design of the subdivision shall ensure that emergency vehicles have public access to each lot created in the Plan Area.

5.0 PUBLIC CONSULTATION

A program of public consultation was undertaken to inform the neighbours surrounding the Plan Area, of the proposed land use changes and subdivision patterns contemplated in the Plan Area. This public consultation program consisted of the following:

- Personal contact with most of the immediate neighbours to the Plan Area and presentation of the first draft subdivision proposal.
- Submit subdivision plans to the manager of the Cross Conservatory for review comments.
- Submit subdivision proposal by way of mail-outs to all neighbours within one mile of the Subject Quarter Section.
- Receipt of comments and concerns from neighbours to the Plan Area.

- Submit draft copy of ASP to the MD of Foothills Planning Staff, walk the site with the Planning Staff, review comments from the Planning Staff.
- Incorporate changes to the ASP as suggested by Planning Staff and neighbours.
- Resubmit second draft copy of ASP to the MD Planning Staff.

6.0 IMPLEMENTATION

6.1 PLAN IMPLEMENTATION

The Crestview Ranch Estates ASP is an intermediate step between the Municipal Development Plan and the Land Use Bylaws as illustrated on the attached Figure 7. The MD of Foothills Municipal Development Plan (MDP) establishes general planning policies which provide guidance for the subdivision and development of lands within the Municipality as a whole. The Crestview Ranch Estates ASP supports the MDP by adding another layer of detail to the guidelines for subdivision and development, specifically within the Plan Area. The Crestview Ranch Estates ASP does not supersede, repeal, replace or otherwise diminish any other statutory plan in effect in the Plan Area.

POLICIES:

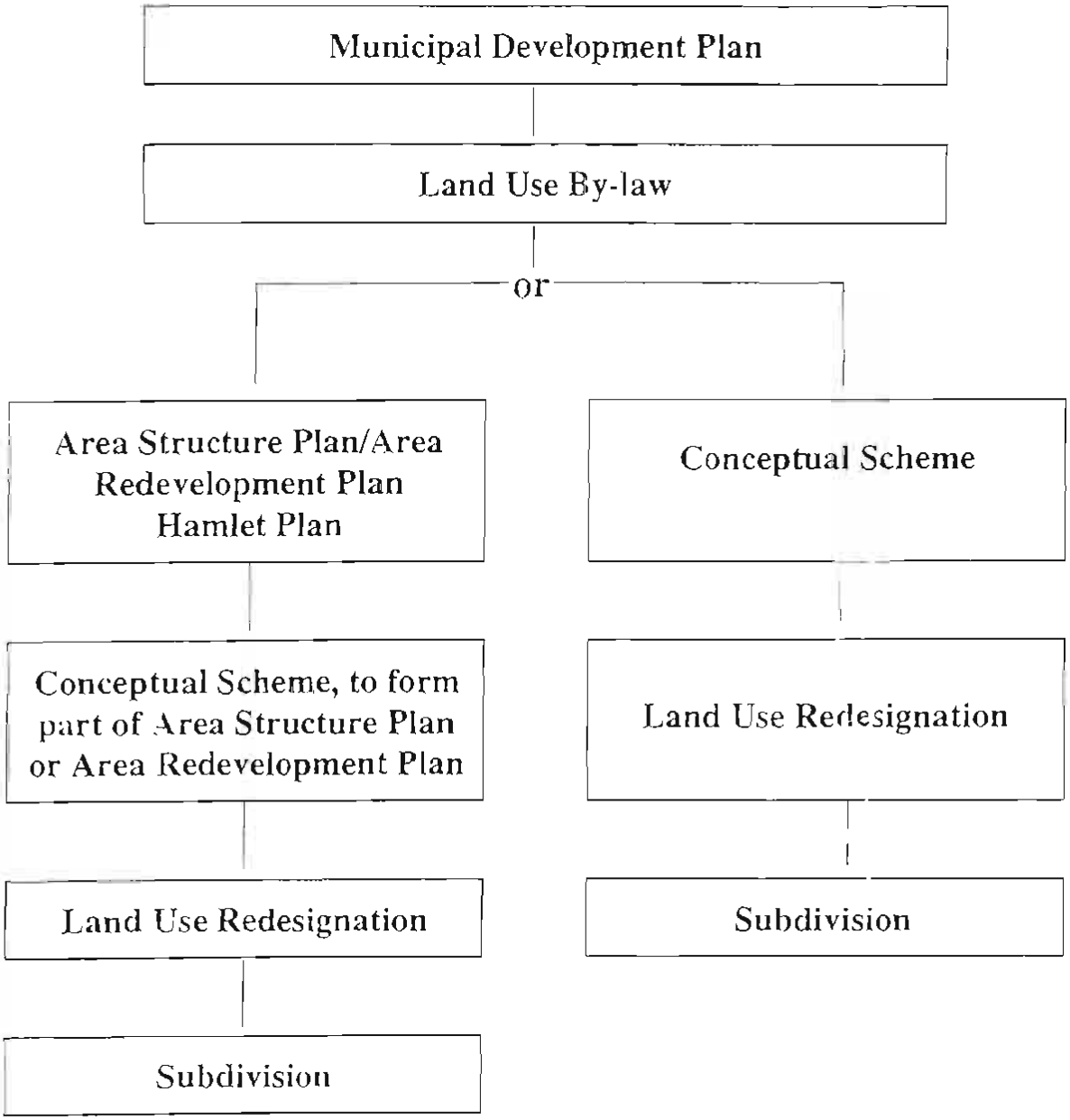
6.1.1 The policies contained in The Crestview Ranch Estates Area Structure Plan shall be reviewed and implemented by the Municipal District of Foothills Council at their discretion.

6.2 PLAN REVIEW AND AMENDMENT

Following approval by Council, the Crestview Ranch Estates ASP will become a Bylaw of the Municipal District of Foothills. This ASP is prepared to address long-term future land use and development within the Plan Area. A formal process as outlined in the Municipal Government Act, is required to amend this ASP.

POLICIES:

6.2.1 Any application for subdivision and development within the Plan Area that is contrary to the land use strategy and policies contained in this ASP, will require a formal application to the Municipality for an amendment of The Crestview Ranch Estates Area Structure Plan.



HIERARCHY OF PLANNING PROCESS

Figure 7

APPENDIX

APPENDIX

1

CERTIFICATE OF TITLE

South Alberta Land Registration District

LAND TITLE (FAX) SEARCH

SEARCH DATE: 11/04/2002

S

LINC	SHORT LEGAL	TITLE NUMBER
0027 093 574	731677;8	971 183 192 +5

LEGAL DESCRIPTION

PLAN 731677
BLOCK '8'
THAT PORTION OF BLOCK 'B' WHICH LIES INSIDE
THE SOUTH EAST QUARTER OF SECTION 1
TOWNSHIP 22
RANGE 3
WEST OF THE 5TH MERIDIAN
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES (ACRES) MORE OR LESS	
SUBDIVISION	9010273	7.78	19.2
SUBDIVISION	9711174	9.45	23.35

EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ATS REFERENCE: 5;3;22;1;SE

ESTATE: FEE SIMPLE

MUNICIPALITY: MUNICIPAL DISTRICT OF FOOTHILLS NO. 31

REFERENCE NUMBER: 901 035 567 +1

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
971 183 192	25/06/1997	SUBDIVISION PLAN		

OWNERS

PATRICK N HARVIE (RANCHER)
OF P.O. BOX 4, SITE 15
PRIDDIS
ALBERTA T0L 1W0

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
971 013 930	14/01/1997	UTILITY RIGHT OF WAY GRANTEE - MEOTA GAS CO-OP LIMITED.
971 154 482	30/05/1997	POWER OF ATTORNEY GRANTOR - PATRICK N HARVIE ATTORNEY - STEPHEN H LOCKWOOD

(CONTINUED)

APPENDIX 2

AGROLOGIST'S REPORT

Colette Dufour, Professional Agrologist

Box 8, Site 20, RR #2 PHONE: 286-1092
Calgary, Alberta T2P 2G5 FAX: 286-8403

May 24, 1996

D.A. Badke Enterprises Ltd.
160 Park Estates Place SE
Calgary, Alberta T2J 3W5

ATTENTION: Doug Badke

Dear Sirs:

RE: Harvie Land, Ptn SE 1/4 Sec 1-22-3W5M, Inspection for Agricultural Capability

Further to your request of May 10, 1996, I inspected the portions of the SE 1/4 Sec 1-22-3W5M which are not already subdivided, to ascertain the suitability of the property for agricultural capability. Photos 1 to 4 show the property at the time of the inspection, May 16, 1996. The property was traversed by foot, the degree of the slopes was measured using a hand held clinometer, a measuring wheel was used to document distances, and soil profiles were observed at several locations.
The land was free of snow, and was in use as a mix of unimproved and improved pasture, with portions on the northwest not dissected by ravines and coulees, as hayland. Slope ranged from 5% to 25%.

The land inventory used to assess arability was the Land Capability for Arable Agriculture in Alberta (1987) system (LCCAA), which was developed specifically for Alberta. The system incorporates all the basic concepts of the Canada Land Inventory (CLI), however, it is improved over the latter in that a specific, quantitative methodology is used to reduce subjectivity, and climate factors were addressed in significantly more detail.

Although stoniness was apparently a concern of the landowner as an impediment to cultivation, the inspection revealed that the main limitations to arability (cultivation/tillability, under dryland conditions for production of cereal/oilseed crops) are climate and landscape, mainly topography, and in the south boundary and southwest west corner, obstacles such as ponds and ravines. Overriding all factors is the climate limitation, which according to the LCCAA guidelines, is Class 5. The main climatic limitation for the production of crops is the amount of energy (heat units) available to produce a crop to maturity in this area.

The soils showed few limitations for arable agriculture in texture, structure, organic matter content, depth of the topsoil and subsoil, acidity, salinity, sodicity, and calcareousness. As already stated, adverse topography, and hence erosion hazard, stoniness and pattern of obstacles to cultivation placed the property in either Class 4, 5 or 6. The property was essentially divided into three regions with similar characteristics. The portions on the south boundary, south of the draw and pond, are Class 5T, and the ponded areas are Class 6W. The steeply sloping long slopes located from the north boundary to the south boundary at about the middle of the quarter, are also Class 5T. The hayfield on the western boundary of the quarter, and the land on the upper slope position on the eastern portion of the property, had lesser degrees of slope, and the slope lengths on the hummocks were shorter, and therefore this portion of the property would be a Class 4 due to landscape limitations. However, this Class limitation would be overridden by the climatic restriction to Class 5.

In conclusion, the inspection of May 16, 1996 for the subject property revealed that as far as capability for arable agriculture, the property is rated as Class 5. In other words, the land is most suitable for the production of perennial forage crops. The limitations to production are adverse climate and landscape.

Please let me know if you require my worksheets or other documentation related to the findings presented herein. I certify that I have no undisclosed interest in the subject property, and my conclusions were not contingent on the fee for the service performed.

Respectfully submitted,

Colette Dufour, PAg

enclosures

Colette Dufour, Professional Agrologist

Box 8, Site 20, RR #2
Calgary, Alberta T2P 2G5

PHONE: 286-1092
FAX: 286-8403

GENERAL EXPERIENCE AND EDUCATION

Senior Agricultural Consultant/Vice President, Jim Lore & Associates Ltd, 1985-1995
Agricultural Consultant, McKinnon Allen & Associates. 1979-1985
Soil Science Research Technician, University of Guelph, Ontario 1977-1979
Farming (Didsbury) 1983-1986
Cow calf herd manager (Springbank, Didsbury) 1987-present

BSc in Agriculture, Honours Major Soils, University of Guelph, Ontario 1978
St John Ambulance Standard First Aid and CPR, current
WHMIS Fundamentals, Petroleum Industry Training Service, current
H2S Alive, Petroleum Industry Training Service, current
Transportation of Dangerous Goods, Petroleum Industry Training Service, current
Basic Principles of Rural Appraising, American Society of Farm Managers and Rural Appraisers, 1981

PROFESSIONAL EXPERIENCE

Soil acidification monitoring and assessments of SO2 and elemental sulphur emissions on forests and agricultural soils and crops
Environmental impact assessments re soils and agriculture
Soil survey for pipeline, wellsite or gravel pit development, reclamation plans
Classification of land for agricultural capability
Rural land appraisal for mortgages and expropriation
Expert testimony on soils

PROFESSIONAL ASSOCIATIONS

Agricultural Institute of Canada
Alberta Institute of Agrologists
International Society of Soil Science
Canadian Society of Soil Science
Air and Waste Management Association
Canadian Consulting Agrologists
Canadian Land Reclamation Association
Canadian Aberdeen Angus Assoc.

OTHER PERTINENT ACTIVITIES

Alberta Institute of Agrologists, Director, Calgary Branch, 1980-1982
Alberta Institute of Agrologists, Provincial Land Use Committee 1981-1984

Photo 1. Looking west-northwest at the portion of SE 1/4 Sec 1-22-3W5M which is located on the east boundary between two existing subdivisions. The land is in use as improved pasture. Slopes on the sides of the knolls shown in this photograph have either southeast or southwest aspect, ranging from 30-50m in length and are generally 7 to 9%.

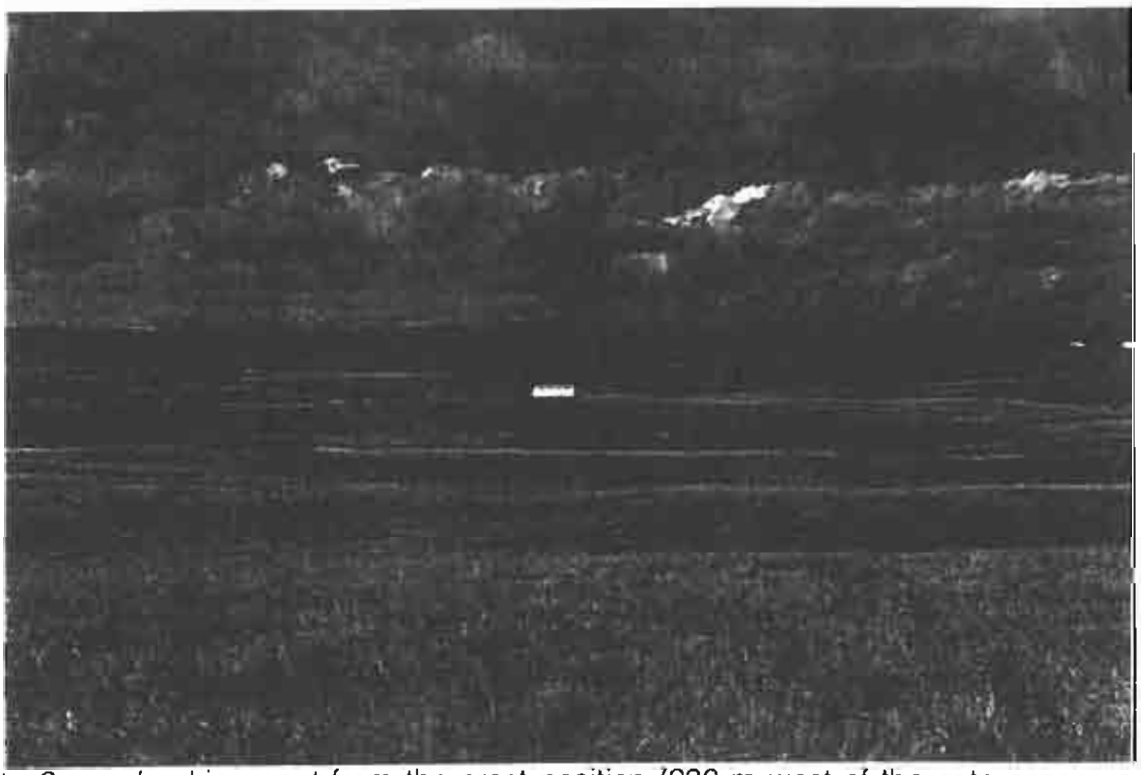


Photo 2. Looking west from the crest position (230 m west of the gate access on the east boundary) at the west end of the proposed subdivisions located on the eastern portion on SE 1-22-3W5M. Slopes in the foreground were 16 to 17%, generally 100-120 m in length. The soil was more eroded and cobbles more obvious in the area.

Photo 3. Looking northwest from the proposed approach at the south west corner of SE 1-22-3W5M. The photograph shows the hummocky terrain on this portion of the property interspersed with ponds in the lower areas. Slopes were as great as 25% in this area. The ponds and low lying areas impose an obstacle restriction to cultivation, in addition to the steep slopes inhibiting equipment operation.

Photo 4. Looking northeast from a point 7 m north of the proposed approach on the south boundary of SE 1-22-3 W5. This photo shows the steeply sloping terrain in the foreground, as well as the long slopes 15-16% in the central portion of the quarter section.

APPENDIX

3

TRAFFIC SURVEY

TRAFFIC SUMMARY FOR 1998-99 COUNTS.

RD	LOC	LEGAL	RD TYPE	THEOR. AADT	TRUCK%	SEMI/ TRAIN%	#DAYS USED	DATE	NOTES
#2A	in Okotoks	[illegible]	ACP	22660	2.41%	0.90%	1	May-99	*24 hour count*
Dunbow	by 12 st. E.	[illegible]	ACP	2719	4.14%	2.67%	13	Jun,Dec 98	*Seasonal count varies widely due to golf courses*
#543	W of 64 st. E	SSE14-19-29-4	ACP	1802	11.72%	5.33%	6	Nov-99	*Only 50.9% of traffic exceeds speed limit.*
370 ave. E	E of 64 st.	SSW25-20-29-4	CHP	1445	8.47%	5.09%	7	Oct-99	*72.6% of traffic exceeds speed limit.*
#549	W of #22	ISW02-21-03-5	ACP	1432	4.93%	2.82%	5	Jul-99	*high weekend traffic*
#549	by 288 st. W.	SSW07-21-03-5	ACP	1153	4.85%	2.60%	6	Jun-99	*high weekend traffic*
224 st.W.	S of #22	WNW23-22-03-5	CHP	916	0.11%	0.06%	7	Aug-99	
#773	by 104 st. W.	SSW01-22-02-5	CHP	872	2.59%	1.31%	11	Oct-Nov 98	
192 st W.	S of #549 (racetrack)	WNW07-21-02-5	CHP	846	7.88%	4.91%	14	Sep-99	*events at racetrack cause high weekend totals.*
#762	S & N of Plummers	WSW11-21-04-5	ACP	760	4.37%	1.96%	14	Jul-Aug 99	*(also WSW26-21-4-5) High recreational traffic Fri-Sun.*
#546	at BF#71048	SSW04-20-03-5	CHP	547	8.00%	5.49%	5	Jul-99	*heavy recreational traffic Fri-Sun. Trailers inflate truck #.*
Plummers	by #22	SSE02-22-03-5	ACP	530	4.00%	1.73%	12	Aug-Sep 98	
Millarville	east access	WNW32-21-03-5	CHP	514	19.60%	13.89%	10	Sep-99	*constant vandalism likely skewed truck stats*
32 st.E.	S of 338 av	WNW34-[illegible]-29-4	GRV	456	1.45%	0.65%	12	Oct-98	*truck traffic almost nonexistent on this truck route*
338 av. W.	W of 240 st.	SSE06-21-03-5	GRV	446	5.89%	2.56%	7	Aug-99	
#540	W of 72 st E	SSE[illegible]-19-29-4	CHP	424	8.02%	3.44%	7	Sep-99	
88 st. E.	N of #540	WSW01-19-29-4	CHP	416	5.69%	2.66%	8	Nov-99	
16 st.W.	by 258 av.	WNW25-21-01-5	GRV	395	2.91%	1.77%	11	Sep-Oct 98	
Coal Tr.	W of 48 st. E	SSE[illegible]0-19-29-4	CHP	367	3.70%	1.83%	7	Oct-Nov 99	*Posted "No Trucks"*
192 st W.	S of #22x	WNW19-21-02-5	GRV	346	3.60%	1.98%	7	Jul-99	
#799	by 482 av. E	WSW24-19-27-4	ACP	345	N/A	N/A	13	Jul-Aug 98	*truck traffic not logged*
242 av. E.	E of 80 st	SSW06-[illegible]-28-4	CHP	323	3.74%	2.50%	13	May-99	
176 st. W.	N of 370 av.	WSW29-[illegible]-03-5	GRV	321	3.91%	2.18%	8	Oct-99	
Coal Tr.	E of Meridian	SSW8-19-29-4	ACP	321	13.62%	4.90%	7	Oct-Nov 99	*74.7% of traffic exceeds speed limit.*
32 st.E.	N of 338 av.	WNW03-21-29-4	GRV	244	3.03%	1.44%	8	Jun-Jul 99	
224 st.W.	by 194 av.	WSW23-22-03-5	GRV	236	4.18%	2.05%	11	Aug-98	
282 st.W.	N of #22	ISW31-22-03-5	GRV	230	7.02%	3.03%	10	Aug-99	
64 st. W.	S of #7	WNW16-20-01-5	GRV	229	7.10%	3.27%	12	Nov-98	
#540	by 80 st. W.	ISE31-[illegible]-03-5	CHP	221	7.72%	4.18%	7	Oct-99	
322 av.E.	E of #2A	SSW[illegible]-28-4	MRO	215	6.73%	4.37%	12	Nov-98	
80 st. E.	N of 354 av.	WSW4[illegible]-28-4	GRV	214	6.89%	3.61%	7	Oct-99	
322 av.W.	W of 336 st.	SNE09-21-04-5	MRO	214	4.02%	1.57%	7	Aug-99	*"Maximum West" road*
240 st.W.	by 186 av.	W[illegible]	MRO	206	2.87%	1.52%	12	Sep-98	

RD	LOC	LEGAL	RD TYPE	THEOR. AADT	TRUCK%	SEMI/ TRAIN%	#DAYS USED	DATE	NOTES
160 st. W.	S of 338 av.	WNW33-20-02-5	GRV	199	5.61%	2.26%	8	Jul-Aug 99	
#540	at BF#1308	ISE14-17-02-5	GRV	166	8.50%	4.89%	7	Jun-99	*suspicious early counts: AADT likely 130.*
240 st.W.	N of 306 av	WSW15-21-03-5	GRV	165	5.08%	3.70%	7	Jun-99	
192 st W.	S of 248 av.	WDC31-21-02-5	GRV	160	0.08%	0.08%	8	Sep-99	
264 st.W.	N of 426 av.	WNE05-20-03-5	GRV	145	5.98%	3.53%	7	Aug-Sep 99	
Ratfarm	by 402 av.	WSW14-20-03-5	GRV	128	6.38%	3.49%	8	Aug-Sep 99	
192 st W.	S of 274 av.	WNW19-21-02-5	GRV	115	11.47%	5.74%	7	Sep-Oct 99	
80 st E.	N of 322 av.	WSW07-21-28-4	GRV	101	7.71%	4.22%	7	Oct-99	
290 av. W.	W of 304 st.	SSE23-21-04-5	GRV	99	4.82%	2.09%	8	Jul-Aug 99	*counts high for total & trucks due to Jul.29 event.*
96 st.E.	S of 242av	WNW32-21-28-4	GRV	96	3.44%	2.82%	14	May-Jun 99	
224 st.W.	S of 370av	WNW23-20-03-5	GRV	90	N/A	N/A	7	Sep-99	*Truck traffic not logged. (Ratfarm rd)*
314 av.E.	E of 32st	SNW10-21-29-4	GRV	83	3.61%	2.93%	7	Jul-99	*odd traffic pattern*
40 st. E.	N of Dunbow	ISW03-22-29-4	GRV	72	14.06%	6.34%	7	Oct-99	*Count will be negligible after close of fishing & hunting.*
498 av.E.	W of 224st	SSE16-19-27-4	GRV	63	2.42%	0.61%	13	Apr-May 99	

Average percentage of trucks on any particular road:	**5.36%**	**2.95%**	(based on 215,587 vehicles)
Average traffic count on M.D. gravel roads:		**202**	(based on 42,042 vehicles)
Average traffic count on M.D. surfaced roads:		**742**	(based on 152,931 vehicles)
Chipped/MRO:		**529**	(based on 67,222 vehicles)
ACP:		**1,085**	(based on 85,709 vehicles)

Theoretical AADT corrects for the weekday-to-weekend ratio.

Truck traffic will include holiday trailers, motorhomes, and horsetrailers.

TRAFFIC COUNTS
M.D. - NORTH
less than 150 per day
150 - 300
300 - 500
500 - 700
700 - 900
900 - 1200
1200 - 2000
2000 - 3000
3000 - 4000
over 4000 per day
counter location
Okotoks
Priddis
Millarville
Turner Valley
Black Diamond

APPENDIX 4

HYDROLOGIST'S REPORT

J.K. ENGINEERING LTD.

CONSULTING * RESEARCH * DEVELOPMENT

#320, 7930 Bowness Rd. N.W. Calgary, AB. Canada, T3B 0H3. Tel. (403) 247-1777 Fax. (403) 286-9895, e-mail. jkeng@telusplanet.net

January 3, 2001

M.D. of Foothills No. 31
P.O. Box 160
High River, Alberta, T0L 1B0

ATTN: Mrs. Judy Gordon, Planning Officer

RE: P. Harvie Subdivision SE 01-22-03-W5M
Ground Water Evaluation

Dear Madam:

We have reviewed the information submitted by D.A. Badke Enterprises Ltd. and some other relevant information, and evaluated the ground water supply potential for the referenced subdivision.

The information reviewed includes the following:

- Driller's Reports on the subject and adjacent wells.
- Pumping Test Data (Drawdown and Recovery Tabulations).
- Pumping Test Procedure.
- Area Topography, Hydrology & Hydrogeology.
- Area Development.

Location and Topography

The proposed development is located approximately 1.7 miles north-east of the Pothole Creek and 2 miles east-south of the Fish Creek.

The proposed development is located in the north-west and central parts of the subject quarter section and it includes approximately 80 acres.

The existing development includes 6 lots and a Municipal Reserve located on the south side. and two lots located in the north-east corner of the subject quarter section.

The ground elevations at the development range between 3970 and 4064 feet, and the subject quarter section ground elevations are between 3970 and 4116 feet approximately.

The subject land ground surface slopes predominantly in the west and west-south directions.

The surrounding area ground surface rises to the east and north and drops to the south and west, i.e. toward the Pothole Creek and Fish Creek. The Pothole Creek Bed is at the elevation of approximately 3850 feet and the Fish Creek Bed is at the elevation of approximately 3900 feet.

A ridge with ground elevations between 4200 or 4300 feet if located approximately 1.0 mile east of the subject quarter section and which stretches in the north-west and south-east direction.

The ridge divides the Pothole Creek and the Pine Creek watersheds which are to the west and to the east of the ridge respectively.

The subject land has two drainage courses located in the north-west corner and a marshland located in the central-south part. The drainage courses drain in the south-west direction and the marshland drains to the south to an existing water pond and to the north-west to the existing closer drainage course mentioned above. The marshland water level is approximately 4000 feet and the pond water level is approximately 3997 feet.

The water pond which is located in the south-west part of the subject quarter section, and south-west of the subject land, drains in the west and south directions toward the Pothole Creek. This drainage course also intercepts another drainage course located approximately 0.2 mile west of the subject land and which drains in the southern direction.

Hydrogeology

The geological formations at the subject well (Well #5, New Well) include 57 feet thick clay and gravel, which is underlain by a 27 feet thick sandstone formation and which is waterbearing between the elevations of 65 and 84 feet below the ground level. The static water level was detected at 29.44 feet below the ground level prior to the pumping test. The well is 84 feet deep and it was pump tested for 27.3 hours at the flow rate of 17.1 IGPM.

The other seven existing wells located in the subject quarter section are 55 to 87 feet deep and their ground surface elevations one between approximately 4008 and 4095 feet which is 87 feet differential as shown on the Water Well Profile attached. The wells were pump tested for 2 to 12 hours in the 1990-1996 period at the flow rates of 4.6 to 30 IGPM.

The surrounding area ground surface rises to the east and north and drops to the south and west, i.e. toward the Pothole Creek and Fish Creek. The Pothole Creek Bed is at the elevation of approximately 3850 feet and the Fish Creek Bed is at the elevation of approximately 3900 feet.

A ridge with ground elevations between 4200 or 4300 feet if located approximately 1.0 mile east of the subject quarter section and which stretches in the north-west and south-east direction.

The ridge divides the Pothole Creek and the Pine Creek watersheds which are to the west and to the east of the ridge respectively.

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The water pond which is located in the south-west part of the subject quarter section, and south-west of the subject land, drains in the west and south directions toward the Pothole Creek. This drainage course also intercepts another drainage course located approximately 0.2 mile west of the subject land and which drains in the southern direction.

Hydrogeology

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The other seven existing wells located in the subject quarter section are 55 to 87 feet deep and their ground surface elevations one between approximately 4008 and 4095 feet which is 87 feet differential as shown on the Water Well Profile attached. The wells were pump tested for 2 to 12 hours in the 1990-1996 period at the flow rates of 4.6 to 30 IGPM.

The wells' parameters are given below:

Well No.	Year Drilled	Well Depth (ft)	SWL (ft)	Q IGPM	Pumping Duration (Hours)	Gr. El. (ft)	SWL Elev. (ft)
1	96	77	21.0	8.8	12	4008	3996 (1)
2	96	87	36.8	8.5	12	4024	3987 (1)
3	96	55	20.6	4.6	2	4048	4027 (2)
4	96	61	29.6	8.6	12	4053	4023 (2)
5	2000	84	29.44	17.1	27.3	4018	3989 (1)
P.H. old	89	75	30.0	30.0	2	4015	3985 (1)
B.B.	90	75	32.0	30.0	2	4095	4063 (2)
B.L.	90	80	38.0	28.0	2	4037	3999 (1)

(1) Wells likely to be located in the same lower aquifer
(2) Wells likely to be located in other upper aquifers

The eight wells listed in the table above are likely to be located in three or four independent aquifers separated vertically. Wells #1, 2, 5, Pat Harvie Old Well and Bob Lailey well have similar static water levels and the wells' bottom elevations, and they are likely to be located in the same lower aquifer. Wells #3,4 and Brian Beary well are located in other upper aquifers.

The other existing 38 wells located in the adjacent quarter sections, as shown on the Summary of Existing Water Wells Data attached, are 54 to 460 feet deep; predominantly 83 to 215 feet deep, with static water levels between 10 and 220 feet; predominantly 38 to 105 feet, and the yield between 1.5 and 60 IGPM, predominantly 8 to 22 IGPM, and the average of 16.6 IGPM.

The above indicates a good ground water potential in the subject quarter section and the surrounding area.

Pumping Test Procedure

Well #5 (new Well) was pumped for 27.3 hours at the constant flow rate of 17.1 IGPM. The pumping was followed by the recovery observation.

The flow rate was controlled by the "DOLE" flow rate restrictors, orifice type and a 1" dia. gate valve, and 45 Gal container.

The water pumped was disposed of on the ground downslope from the well.

The wells' water levels were measured with an electric tape and an automatic water level recorder, and reported on the Drawdown/Recovery Table attached.

The test procedure outline is also attached.

Pumping Test Data

The pumping test produced the following results:

Well No.	Pumping Rate	Drawdown		Recovery
	IGPM	Feet	% TAD	
5	17.1	6.49	18.3	95.2%/27.3H

TAD - total available drawdown

The drawdown curve is relatively stable between 10 and 150 minutes and then between 600 and 1640 minutes of the pumping period. A minor recovery was observed between 150-180 minutes and then a steep section between 420-600 minutes which may be attributed to an interference from an adjacent well.

The recovery curve trend is similar to that of the drawdown curve trend and the 95.2% recovery within 27.3 hours is satisfactory.

Q_{20} Analyses

The Q_{20} analyses were based on the stable section of the drawdown curve i.e. between 600-1640 minutes of the pumping period. The analyses produced the following results:

Transmissivity - 127.6 m^2/day
Q_{20} - 101.6 IGPM

The calculated Q_{20} is too high in regard to the pumping rate of 17.1 IGPM and we recommend to lower the Q_{20} to 18 IGPM.

The recommended Q_{20} of 18 IGPM is adequate for development of 34 lots in the subject quarter section in accordance with the Water Act Requirements of 1250 m^3/year per lot and non-interference with the existing ground water supplies.

Water Quality

The chemical and bacteriological analyses of the subject ground water indicate the following:

- Low Sodium Adsorption Ration (SAR) which is advantages to the conventional septic tank and field disposal system.
- Moderate Total Dissolved Solids level with low Sodium, Sulphates, and Chloride level.
- High Hardness level which may be lowered for the clothing washing but which should not be lowered for the entive household supply as it would adversely effect the SAR and the sewage disposal system performance.
- High Iron and Manganese levels which should be lowered to below 0.3 and 0.05 mg/L respectively.
- High Total Coliform count which should be treated with the well disinfection prior to the well use and the test should be repeated.
- The overall water quality is good.

Conclusions

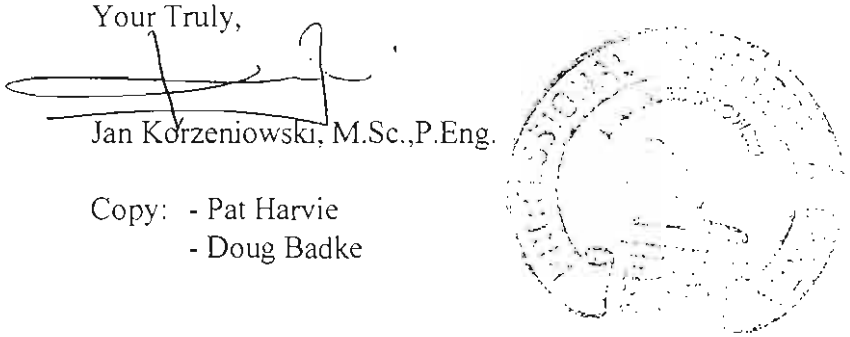
- There is an adequate groundwater supply for the existing and proposed developments of up to 34 lots total in the subject quarter section in accordance with the Water Act.
- The groundwater evaluation was performed in accordance with Alberta Environmental Protection Guidelines.

The following information is attached:

- Driller's report for the subject well.
- Pumping Test Drawdown and Recovery Tabulations and Curves.
- Well Construction and Formation Profile.
- Municipal Location Map.
- Site Plan.
- Area Topography Map.
- Existing Adjacent Well Data Summary.
- Chemical and Bacteriological Analyses on the subject well water.
- Pumping Test Procedure.

Should you have any questions regarding the above, pleases contact the undersigned.

Your Truly,



Jan Korzeniowski, M.Sc.,P.Eng.

Copy: - Pat Harvie
- Doug Badke

Alberta Water Well Drilling Report

ENVIRONMENTAL PROTECTION

The data contained in this report is supplied by the Driller. The province disclaims responsibility for its accuracy.

Well I.D.: #5 (NEW WELL)
Map verified
Date report received:

1 Contractor & Well Owner Information

Company Name: WEBSTER DRILLING — Licence No.: 1035
Mailing Address: BOX 956 — City or Town: TURNER VALLEY — Postal Code: T0L-2A0
Well Owner's Name: MR. PAT HARVIE — Well Owner has a copy of this report: ☑ Yes ☐ No
Mailing Address: BOX 4, SITE 2 — City or Town: PRIDDIS — Postal Code: T0L-1W0

2 Well Location

1/4 or LSD	Sec	Twp	Rge	West of Meridian
SE	1	22	3	5

1000 m/ft from ☑ N ☐ S
1000 m/ft from ☑ E ☐ W
Lot / Block / Plan:

3 Drilling Information

Type of Work: ☐ Testhole ☑ New Well ☐ Reconditioned ☐ Deepened ☐ Reclaimed well
Date reclaimed (Yr Mo Day):
Materials Used: ☐ Cement ☐ Bentonite Product ☐ Other
Proposed well use: ☑ Domestic ☐ Non-Domestic Specify:
Method of Drilling: ☐ Auger ☐ Boring ☑ Cable tool ☐ Rotary ☐ Combination ☐ Backhoe ☐ Other
Anticipated requirement per day: 400 ☐ litres ☑ gallons

4 Well Yield

Test Date (Yr Mo Day): 00 11 17 — Start Time: 11:15 pm
Test method: ☑ Pump ☐ Bailer ☐ Air
Are measurements in metric or imperial? imperial
Non pumping static water level: 29.44
Rate of water removal: 17.1 I.G.P.M.
Depth of pump intake: 70'
Water level at end of test: 35.93
Distance from top of casing to ground level: 1.5'

Depth to water level — Pumping	Elapsed Time minutes	Recovery
	0	
SEE	1	
	2	
ATTACHED	3	.
	4	
27.2	5 HOUR	
	6	
PUMP	7	RECOVERY
	8	
RESULTS	9	
	10	
	12	
	14	
	16	
	20	
	25	
	30	
	35	
	40	
	50	
	60	
	75	
	90	
	105	
	120	

Total Drawdown: 6.5
If water removal was less than 2 hr duration, reason why:
Recommended pumping rate: up to 20
Recommended pump intake: 60'
Pump installed ☐ Yes Depth:
Type
Any further pumptest information? ☐ Yes ☐ No

5 Formation Log

Depth from ground level (feet)	Lithology Description
0-3	T/S
3-8	SANDY CLAY
8-11	PEA GRAVEL
11-57	SANDY CLAY, PEA GRAVEL
57-65	VERY WET BROWN SANDSTONE
65-70	ROTTEN BROWN SS (WATER SATURATED) (WOULD NOT CLEAN UP)
70-84	HARDER BROWN SS

Geophysical Log taken: ☐ Electric ☐ Gamma
Did you encounter: ☐ Mineralized water more than 4000 ppm TDS ☐ Gas
At what depth:
Remedial action taken:

6 Well Completion

Date Started (Yr Mo Day): 000512 — Date Completed: 001027
Are measurements in metric or imperial?
Well depth: 84' — Borehole diameter: 6"
Casing type: STEEL — Liner type: PVC
Size OD: 6 5/8 — Size OD: 4 1/2"
Wall thickness: .188 — Wall thickness: SCH 40
Bottom at: 70 — Top: 68 Bottom: 84
Perforations from: 71 to: 82
from: to:
Perforation size: x
Perforated by ☑ Saw ☐ Torch ☐ Machine ☐ Other
Seal: ☐ Bentonite product ☑ Driven ☐ Cement / Grout ☐ Other:
Sealed interval from: 10 to: 70
Screen type: Size OD:
Intervals: from: to: slot size:
from: to: slot size:
Installation: ☐ Attached to casing ☐ Telescoped
Fittings: Top ☐ Packer ☐ Coupler — Bottom ☐ Wash-down ☐ Bail ☐ Plug
Pack: ☐ Artificial/Mechanical ☐ Natural
Grain size: Amount:

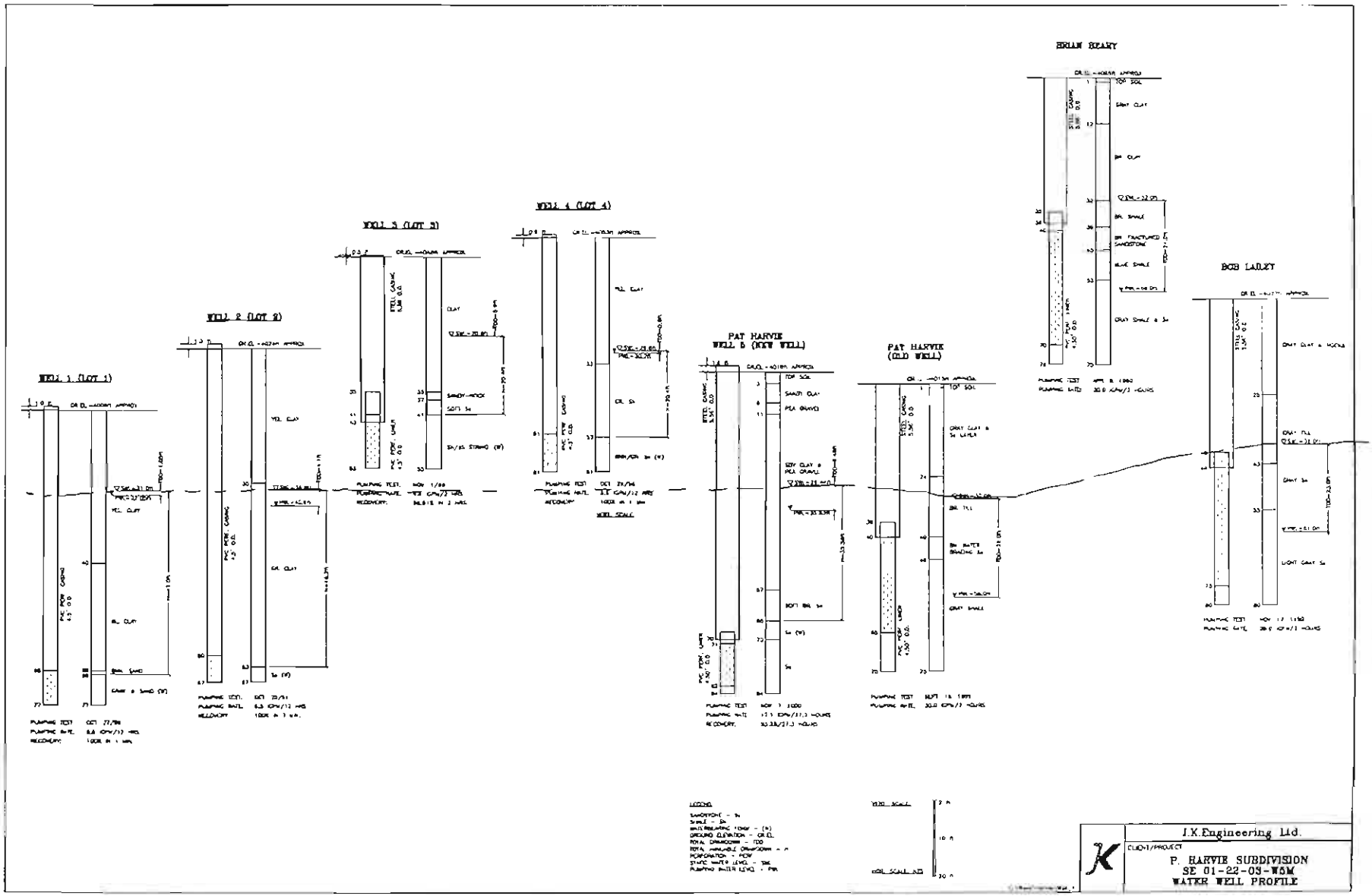
7 Contractor Certification

Driller's Name: MIKE WEBSTER
Certification No.: VA 2103

This well was constructed in accordance with the Water Well Regulation of the Alberta Environmental Protection & Enhancement Act. All information in this report is true.

Signature: [signature] 001110 (Yr Mo Day)

White copy: Environmental Protection — Yellow copy: Well Owner — Pink copy: Contractor



J.K.Engineering Ltd.

CLIENT/PROJECT

P. HARVIE SUBDIVISION
SE 01-22-03-W5M
WATER WELL PROFILE

SUMMARY OF EXISTING WATER WELLS DATA

SW 06-22-02-W5M

Well Owner	Year drilling	Well depth (feet)	SWL (feet)	Q (IGPM)	Waterbearing formations (feet)
Standish, Lloyd	54	131	70	8	119-131 Ss
Atkins, John	73	104	75	6.5	92-104 Ss/ Blue Sh
Elhatton, L.	60	147	44	16	134-147 Sand

SW 07-22-02-W5M

Royal Trust, C/O Cross, A.R.	74	135	109	18	113-135 Light Sandstone
Cross, A.R.	78	108	68	22	74-108 Light Gray Water Bearing Sandstone

SW 36-21-03-W5M

Cross Donald	92	120	35	10	107-111 Gray Water Bearing Sandstone

NW 36-21-03-W5M

Owen, Tommy	92	104	40	60	75-104 Gray Water Bearing Sandstone

NE 11-22-03-W5M

Day, Tom	69	67	10	20	57-60 Dark Sandstone
Medals Lands Farms Ltd.	69	161	25	2.5	156-161 Dark Shale
Price, J.E.	88	150	47	1.5	79-84 & 102-114 Sh

SW 12-22-03-W5M

Harvie, Pat	90	130	37	24	103-130 Light Gray Water Bearing Sandstone
Crestview Ranch	77	105	30	3	85-105 Sand & Shale

SUMMARY OF EXISTING WATER WELLS DATA

NE 31-21-02-W5M

Well Owner	Year drilling	Well depth (feet)	SWL (feet)	Q (IGPM)	Waterbearing formations (feet)
Thompson, Greg.	90	400	178	12	340-380 See comments Ss
Thompson, Greg.	90	460	188	7	400-440 Sandstone
Thompson, Greg.	87	215	165	12	180-192 Gray Shale

NW 31-21-02-W5M

Fisher, Benjamin	80	75	55	20	62-64 Brown Soft Samdstone
Distefano, Tony	89	110	60	24	63-68 Ss
Jost, Manfred	91	85	50	20	67-73 Water Bearing Sandstone
Langerman, Paul	91	115	55	10	82-93 Br. Water Bearing Ss
Atkins, Dr. Lawrence	80	80	60	15	70-72 Brown Sandstone
Morrish, Dr. Hugh	80	90	40	20	77-80 Brown Sandstone
Trueman, E.G. Tess	80	106	45	20	103-106 Fractured Sandstone
Evans, Dr. Barry	80	75	45	20	59-64 Ss

SE 31-21-02-W5M

Jackson, Bill	88	190	105	15	116-122 Ss
Hodorer, Joseph	83	65	30	20	48-55 Water Bearing Sandstone

SW 31-21-02-W5M

Baxter, Fred	72	102	74	6	86-102 Gray Shale
Kemp, Al	72	120	-	3	20-120 Shale & Sandstone
Powell, Bill	72	105	-	50	20-105 Shale & Sandstone
Saxby, B.	79	113	66	35	108-113 Dark Blue Sansstone
Saxby, Bill	82	100	60	20	64-67 Ss
Gwynne, Jim	91	155	60	10	130-145 Gray Water Bearing Sh. & Ss Ledges
Hepton, John	84	168	80	15	135-168 Water Bearing Ss, Sand & GRL
Rogers, Walt	73	103	50	8	71-91 Hard Sandstone/Sh

SUMMARY OF EXISTING WATER WELLS DATA

SE 01-22-03-W5M

Well Owner	Year drilling	Well depth (feet)	SWL (feet)	Q (IGPM)	Waterbearing formations (feet)
Beary B.	90	75	24	30	40-70 Ss/Sh
Lailey B.	90	80	38	28	40-75 Ss
Beary	-	100	30	-	-
Harvie	89	75	14	30	40-65 Ss
Harvie P.	96	77	21	8.8	68-77 Gravel & Sand
Harvie P.	96	87	36.8	8.5	83-87 Ss
Harvie P.	96	55	20.6	4.6	43-55 Sh/Ss stringers
Harvie P.	96	61	29.6	8.6	52-61 Ss
Harvie P.	2000	89	29.4	17.1	65-89 Ss

SW 01-22-03-W5M

Crestview R.	74	54	14	10	45-54 Coarse Grained Sand & Gravel
Harvey, Pat & Elaine	82	83	14	8	Waterbearing sandstone 51-64 & 70-83

SE 02-22-03-W5M

Friley, W.A. Skyla Ranches	88	100	38	40	Waterbearing Sandstone 85-100

NE 02-22-03-W5M

Friley, W.A. Skyla Ranches	88	200	95	12	110-165 Siltstone

SE 06-22-02-W5M

Abbott, Marshall	94	360	220	8	Sandstone

Water Well Pump Test Procedures
Harvie Lands
Ptn SE¼ Sec 1 Twp 22 Rge 3 W5M

The following is a description of the procedures for pump testing of the new well on the subject lands:

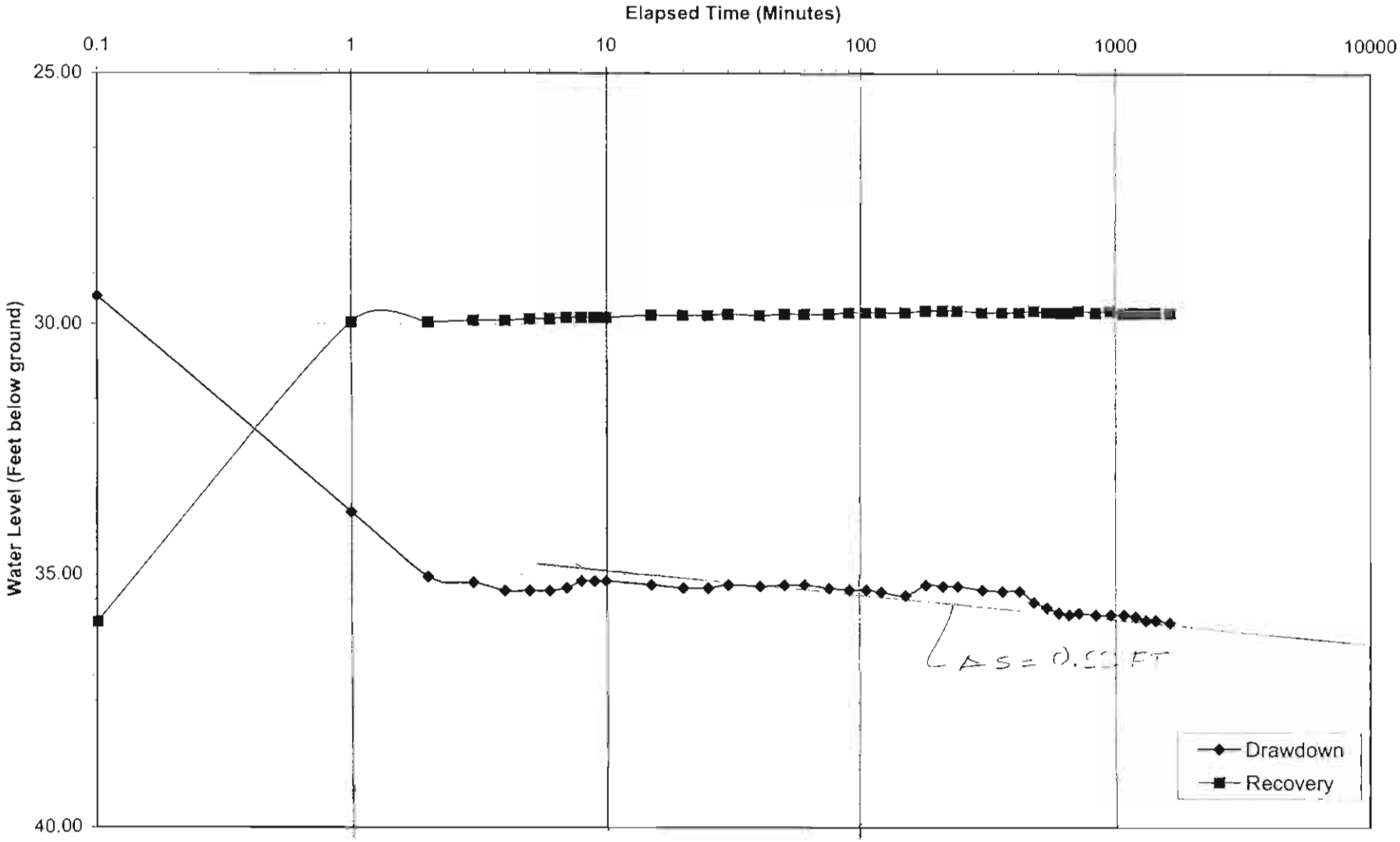
- All testing was conducted and continuously supervised by Doug Badke.
- Pumping was conducted using a ¾ hp submersible pump equipped with a check valve and powered by a portable power generator.
- Water levels were monitored using an automatic water level recorder and electric tape.
- Discharge from the pump was directed to an area sloping away from the well.
- Flows were checked throughout the test period by pumping the discharge into a 45 gallon container.
- No observation wells were monitored.

On November 7, 2000, pumping at the rate of 17.1 IGPM commenced at 11:15AM on the subject well. The pump was set at 70 feet. Flow was discharged without controls and is the capacity of the pump.

The subject well was pumped at the above rate for a 27 hour and 20 minute period, producing the water levels shown on the attached data sheet and graph. A total of 28,044 gallons were pumped from this well during the pumping period.

Recovery readings were monitored for the 27 hour and 20 minute period immediately following the pumping.

Pat Harvie Well Test



D.A. Badke Enterprises Ltd.

WATER WELL PUMP TEST DATA

Well Owner:	*Pat Harvie*	Pumping Rate:	17.1 IGPM
Well Location:	*SE 1-22-3-5*	Depth of Well:	82 ft
Tested by:	*Jeff Badke*	Pump set at:	70 ft
Start Test Date:	*Nov 7, 2000 11:15AM*	Casing Stick-up:	1.6 ft

Time Elapsed (minutes)	Water Level (feet below ground)			
	Production Well		Observation Well	
	Drawdown	Recovery	Drawdown	Recovery
0	29.44	35.93	n/a	n/a
1	33.76	29.96		
2	35.04	29.96		
3	35.15	29.92		
4	35.32	29.92		
5	35.32	29.89		
6	35.32	29.89		
7	35.26	29.86		
8	35.13	29.86		
9	35.13	29.86		
10	35.13	29.86		
15	35.20	29.82		
20	35.26	29.82		
25	35.26	29.82		
30	35.20	29.79		
40	35.22	29.82		
50	35.20	29.79		
60	35.20	29.79		
75	35.26	29.79		
90	35.29	29.76		
105	35.29	29.76		
120	35.34	29.76		
150	35.41	29.76		
180	35.20	29.72		
210	35.22	29.72		
240	35.22	29.72		
300	35.29	29.76		
360	35.32	29.76		
420	35.32	29.76		
480	35.54	29.72		
540	35.64	29.76		
600	35.75	29.76		
660	35.78	29.76		
720	35.75	29.72		
840	35.78	29.76		
960	35.78	29.72		
1080	35.78	29.76		
1200	35.82	29.76		
1320	35.89	29.76		
1440	35.89	29.75		
1640	35.93	29.75		

WATER WELL SAFE YIELD Q_{20} CALCULATIONS

JACOB METHOD

TRANSMISSIVITY:

$T = 2.30 \times Q/4 \times PI \times \Delta s$

where:	**T**	-	transmissivity (m^2/day)
	Q	-	pumping rate (m^2/day)
	Δs	-	drawdown/log cycle time (m)

SAFE YIELD:

$Q_{20} = 0.68 \times T \times H \times 0.7$

where:	**Q_{20}**	-	20 Year Long Term Safe Yield
	T	-	transmissivity (m^2/day)
	H	-	available head (m)
	0.7	-	factor of safety

Note: H = distance between static water level and top of the main water bearing formation, for confined aquifer

H = 2/3 of distance between static water level and the base of the aquifer, for unconfined aquifer

PAT HARVIE WATER WELL

SE 01-22-03-W5M

Q 20 ANALYSES

Well no.: 5 (NEW) *sheet 2 of 2*

PUMP RATE : (Q)

17.1 IGPM = 110.8 cu.m/day

TIME - DRAWDOWN CURVE:

Δs = 0.52 ft = **0.159 m/time log cycle**

T = 2.3 x 110.8 / 12.56 x 0.159 = **127.6 sq.m./day**

H = 35.56 ft = **10.84 m**

Q_{20} = 0.68 x 127.60 x 10.84 x 0.70 = 658.4 cu.m./day = **101.6 IGPM**

RECOVERY: 95.2%/27.3 Hours

WSH Labs (1992) LTD.
3851B - 21 Street N.E.
Calgary, Alberta
Canada T2E6T5
Ph: (403) 250-9164
Fax: (403) 291-4597
Website: www.wshlabs.com

D.A. Badke Enterprises Ltd.	**P.O #**	**Client I.D**	Pat Harvie Lands
160 Park Estates Place SE	Lab # 29541	**Legal**	SE 1 22 35
Calgary, AB T2J 3W5	Ph 271-8708	**Location**	
Attn	Fax 278-3734	**Date Received**	11/9/00
		Date Reported	11/13/00

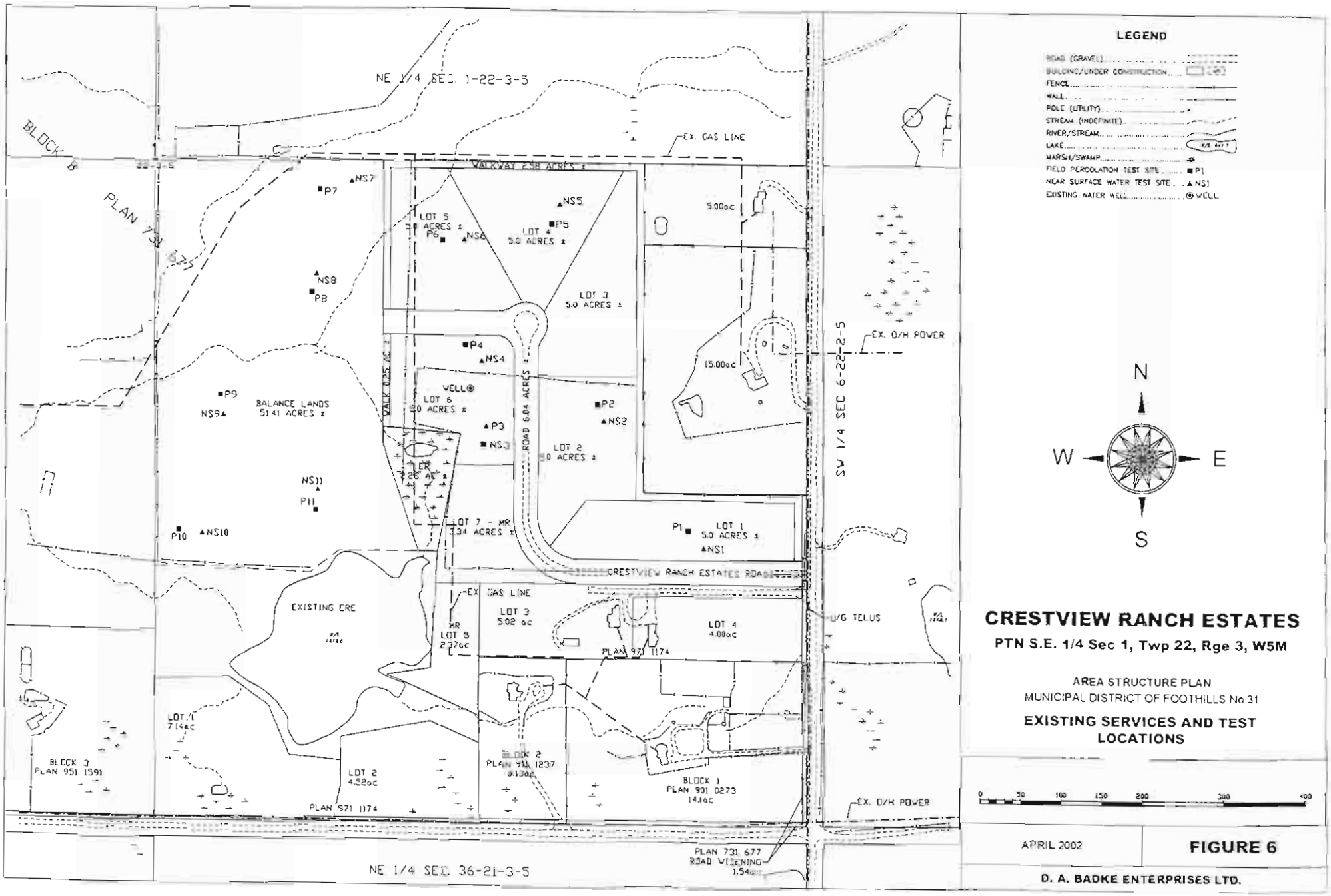
Water Report

Cations	mg/ L	Anions	mg/ L	General Parameters	mg/ L	
Boron		Bicarbonates	502	E.C (US/ CM)	740	
Calcium	79.9	Bromides	<0.3	Coliform,Total CFU/100ml	75	
Iron	4.08	Carbonates	0	Coliform,Fecal CFU/100ml	0	
Magnesium	46.0	Chlorides	1.8	H.P.C (CFU/ mL)		
Manganese	0.282	Fluorides	0.1	Hardness ($CaCO_3$)	389	*Hard*
Potassium	3.3	Nitrates	<0.3	pH	7.56	
Silicon	4.0	Nitrites	<0.1	Sulfides (S)		
Sodium	32	NO_3-NO_2	<0.1	T. Alkalinity ($CaCO_3$)	412	
Sulfur		Phosphates	<0.3	TDS (Calculated)	442	
		Sulfates	32	Turbidity (N.T.U)		
				T.K N		
				T.P		
				NH_3-N		
				T.O.C		
				Color (T.C.U)		

Sum of Cations	9.24
Sum of Anions	8.99
Ionic Balance	1.03
% Difference	1.37
SAR	0.71

Certified By

Silty samples may account for higher iron, manganese and silicon content
TDS Total Dissolved Solids
TNTC . Too Numerous To Count
SAR : Sodium Adsorption Ratio
< Denotes less than Detection Limit
Please See Reverse Side For Canadian Drinking Water Quality Guidelines
** Please call our Water Treatment Department for any questions you may have*



LEGEND

- ROAD (GRAVEL)
- BUILDING/UNDER CONSTRUCTION
- FENCE
- WALL
- POLE (UTILITY)
- STREAM (INDEFINITE)
- RIVER/STREAM
- LAKE
- MARSH/SWAMP
- FIELD PERCOLATION TEST SITE ■ P1
- NEAR SURFACE WATER TEST SITE ▲ NS1
- EXISTING WATER WELL ⊕ WELL

N

W E

S

CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No 31

EXISTING SERVICES AND TEST LOCATIONS

0 50 100 150 200 300 400

APRIL 2002

FIGURE 6

D. A. BADKE ENTERPRISES LTD.

APPENDIX 5

PERCOLATION TEST REPORT

D.A. Badke Enterprises Ltd.
160 Park Estates Place SE, Calgary, Alberta T2J 3W5
Ph 403-271-8708 - Fax 403-278-3734 - email: dougbadke@home.com

May 22, 2001

Pat Harvie
Box 4, Site 15, RR# 1,
Priddis, Alberta
T0L 1W0

Re: **Harvie - Ptn SE 1/4 Sec 1 -Twp 22-Rge 3-W5M**
Field Percolation and Near Surface Water Table Tests

As requested, we have now completed the field percolation and near surface water table testing for typical sewage disposal sites on that portion of Block B Plan 731677 which lies within the SE¼ Sec 1 -Twp 22-Rge 3-W5M, called the "subject lands" in this letter. Descriptions of the test procedures along with the test results are as follows. All testing was done accordance with the provisions as set out in the publication entitled "*Alberta Private Sewage Systems Standard of Practice 1999 Handbook*".

Field Percolation Testing:

On April 30, 2001, 8" (200mm) diameter holes were augered to depths of 36" (900mm) at 11 typical sewage disposal locations on the subject lands. The lands at each test site are gently sloping at between 2 to 8%. The location of each test site is shown on the attached Figure 7. After drilling, the walls of each hole were scratched to remove any glazing or packing from the auger. All loose material was removed from the holes and the holes filled with clean water for the initial soaking period.

The materials encountered at each test site are as follows.

Field Percolation Test Site	Depth (feet)	Materials Encountered
#1	0.0' to 0.6'	Loam
	0.6' to 3.0'	Silty sand, some clay and rocks
#2	0.0' to 0.8'	Loam
	0.8' to 3.0'	Silty clay, some sand and rocks
#3	0.0' to 0.8'	Loam
	0.8' to 3.0'	Clay, some silt and rocks

#4	0.0' to 0.8'	Loam
	0.8' to 3.0'	Silty clay, some sand and rocks
#5	0.0' to 0.8'	Loam
	0.8' to 3.0'	Silty clay, some sand and rocks
#6	0.0' to 0.8'	Loam
	0.8' to 3.0'	Silty clay, some sand and rocks
#7	0.0' to 0.9'	Loam
	0.9' to 3.0'	Silty clay, some sand and rocks
#8	0.0' to 1.0'	Loam
	1.0' to 3.0'	Silty clay, some sand and rocks
#9	0.0' to 0.9'	Loam
	0.9' to 3.0'	Clay, some silt and rocks
#10	0.0' to 1.0'	Loam
	1.0' to 3.0'	Silty clay, some sand and rocks
#11	0.0' to 1.0'	Loam
	1.0' to 3.0'	Clay, some silt and rocks

On May 1, 2001, after an initial soaking period of about 20 hours, each hole was filled to the 18" (450mm) mark with clean water and left to saturate the surrounding soils for about 4 hours. Later on May 1, 2001, each hole was refilled to the 18" (450mm) mark with clean water. After an interval of about 30 minutes, the water level was recorded and the hole was again refilled to the 18" (450mm) mark. This process was repeated four times at each test site.

The resulting water level readings are shown on the attached tables. The field percolation rate was determined using the rate of drop calculated in the last reading. The field percolation rates are summarized as follows:

Test Site	**Field Percolation Rate**
#1	17.2 minutes per inch or 6.8 minutes per centimetre.
#2	24.8 minutes per inch or 9.8 minutes per centimetre.
#3	66.7 minutes per inch or 26.2 minutes per centimetre.
#4	32.2 minutes per inch or 12.7 minutes per centimetre.
#5	31.6 minutes per inch or 12.4 minutes per centimetre.
#6	25.8 minutes per inch or 10.2 minutes per centimetre.
#7	24.2 minutes per inch or 9.5 minutes per centimetre.
#8	32.6 minutes per inch or 12.8 minutes per centimetre.
#9	85.7 minutes per inch or 33.7 minutes per centimetre.
#10	34.1 minutes per inch or 13.4 minutes per centimetre.
#11	58.0 minutes per inch or 22.8 minutes per centimetre.

With reference to the publication entitled "*Alberta Private Sewage Systems Standard of Practice 1999 Handbook*", the allowable range for field percolation rates is as follows:

- 5 to 60 minutes per inch or 2 to 24 minutes per centimetre for septic fields as outlined in Section 7.1.5;
- 5 to 120 minutes per inch or 2 to 48 minutes per centimetre for treatment mounds as outlined in Section 8.1.1.

The soils at all test sites, except for test sites #3 and #9, indicated a percolation rate which fell within the allowable range for the installation of septic fields. The soils at test sites #3 and #9 indicated a percolation rate which fell within the allowable range for the installation of treatment mounds.

Sodium Absorption Ratio:

WSH Labs has tested a sample of water from the new well drilled in Phase 1 of the proposed development. The test results of this laboratory testing are attached. The Sodium Absorption Ratio (SAR) was calculated using the formula $(Na/23)/(((Ca/20) + (Mg/12))/2)^{0.5}$, were Na (sodium), Ca (calcium) and Mg (magnesium), are the ionic concentrations in mg/litre. The SAR from this water source was calculated at 0.71.

Alberta Environmental Protection's guidelines recommend that the SAR for a household water supply to be used in a septic field, should not exceed a value of 8. The SAR value of 0.71 for the water supply at the new well on Lot 9 Phase 1, is very low and this water is suitable for use in the proposed septic fields or treatment mounds. As such, the length of the laterals for the septic fields need not be lengthened to counteract the use of water due to a high SAR.

Near Surface Water Table Test:

On May 8, 2001, 8 inch holes were augered to depths of 10.0 feet (3 metres) at the locations shown on Figure 7. These holes were located in fairly close proximity to each of the field percolation test sites. The materials encountered are as follows:

Near Surface W/T

Test Site	Depth (feet)	Materials Encountered
#1	0.0' to 0.6'	Loam
	0.6' to 6.0'	Silty sand, some clay and rocks
	6.0' to 10.0'	Clay, some silt and rocks
#2	0.0' to 0.8'	Loam
	0.8' to 7.0'	Silty clay, some sand and rocks
	7.0' to 10.0'	Clay, some silt and rocks

#3	0.0' to 0.8'	Loam
	0.8' to 10.0'	Clay, some silt and rocks
#4	0.0' to 0.8'	Loam
	0.8' to 5.0'	Silty clay, some sand and rocks
	5.0' to 10.0'	Clay, some silt and rocks
#5	0.0' to 0.8'	Loam
	0.8' to 7.0'	Silty clay, some sand and rocks
	7.0' to 10.0'	Clay, some silt and rocks
#6	0.0' to 0.8'	Loam
	0.8' to 5.0'	Silty clay, some sand and rocks
	5.0' to 10.0'	Clay, some silt and rocks
#7	0.0' to 0.9'	Loam
	0.9' to 6.0'	Silty clay, some sand and rocks
	6.0' to 10.0'	Clay, some silt and rocks
#8	0.0' to 1.0'	Loam
	1.0' to 5.0'	Silty clay, some sand and rocks
	5.0' to 10.0'	Clay, some silt and rocks
#9	0.0' to 0.9'	Loam
	0.9' to 10.0'	Clay, some silt and rocks
#10	0.0' to 1.0'	Loam
	1.0' to 6.0'	Silty clay, some sand and rocks
	6.0' to 10.0'	Clay, some silt and rocks
#11	0.0' to 1.0'	Loam
	1.0' to 10.0'	Clay, some silt and rocks

A one inch (25mm) diameter slotted PVC standpipe was installed in each test hole and the holes backfilled with excavated materials. Each of the test holes was dry at the time of installation. On May 14th and 20th 2001, each of the standpipes were monitored using an electric tape. The water level in each of the standpipes is summarized in the following table:

Test Site	Depth of standpipe (feet)	Water level (feet below ground level) May 8, 01	May 14, 01	May 20, 01
#1	10.0	Dry	9.3	9.2
#2	10.0	Dry	Dry	Dry
#3	10.0	Dry	Dry	Dry
#4	10.0	Dry	Dry	Dry
#5	10.0	Dry	Dry	Dry
#6	10.0	Dry	Dry	Dry
#7	10.0	Dry	Dry	Dry
#8	10.0	Dry	Dry	Dry
#9	10.0	Dry	Dry	Dry
#10	10.0	Dry	Dry	Dry
#11	10.0	Dry	Dry	Dry

With reference to Section 7.1.6 of the publication entitled "*Alberta Private Sewage Systems Standard of Practice 1999 Handbook*", the minimum distance between the laterals in the disposal field and a water table is:

- 5 feet in a disposal field which utilizes a septic tank
- 3 feet in a treatment mound

The MD of Foothills has a policy that the near surface water table must be 7 feet or more below the ground surface.

As shown in the above table, the standpipes are either dry or the water table is much lower than any of the allowable limits. We therefore conclude that a near surface water table is not present at any of the test sites on the subject lands.

Sizing of Disposal Fields

The results of the above tests are not to be used in sizing of the individual disposal fields on any of the lots on the subject lands. The sites chosen for testing were sites that appeared to be representative of the most logical sites for a disposal fields, however, the home owner and builder may very well choose a different site for the disposal field, based on the house and well placement. That is, the soils at the actual disposal site may not be the same as the soils at the test site and therefore the actual disposal site should be tested for field percolation.

Conclusion

The purpose of the above described testing conducted on the subject lands, was to demonstrate that the typical soil conditions on the subject lands, are suitable for the installation of septic fields or treatment mounds. Based on this testing, we conclude that:

1. The soils at all test sites, indicated a percolation rate which fell within the allowable range for the installation of septic fields or treatment mounds.

2. The Sodium Absorption Ratio for the water supply at the new well is very low and this water is suitable for use in the proposed septic fields or treatment mounds.

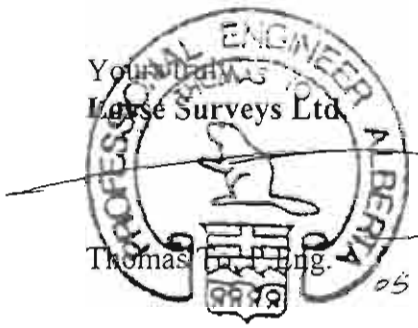
3. The standpipes at the test sites are either dry or the water table is much lower than any of the allowable limits. We therefore conclude that a near surface water table is not present on the subject lands.

We trust this is the information you require.

Yours truly,
D. A. Badke Enterprises Ltd.

Doug Badke, C.E.T.

Yours truly,
Lorse Surveys Ltd.



Thomas [illegible], Eng.

05-22-01

WSH Labs (1992) LTD.
3851B - 21 Street N.E.
Calgary, Alberta
Canada T2E6T5
Ph: (403) 250-9164
Fax: (403) 291-4597
Website: www.wshlabs.com

D.A. Badke Enterprises Ltd.
160 Park Estates Place SE
Calgary, AB T2J 3W5
Attn

P.O #
Lab # 29541
Ph 271-8708
Fax 278-3734

Client I.D Pat Harvie Lands
Legal SE 1 22 35
Location
Date Received 11/9/00
Date Reported 11/13/00

Water Report

Cations	mg/L	Anions	mg/L	General Parameters	mg/L	
Boron		Bicarbonates	502	E.C (US/ CM)	740	
Calcium	79.9	Bromides	<0.3	Coliform, Total CFU/100ml	75	
Iron	4.08	Carbonates	0	Coliform, Fecal CFU/100ml	0	
Magnesium	46.0	Chlorides	1.8	H.P.C (CFU/ mL)		
Manganese	0.282	Fluorides	0.1	Hardness ($CaCO_3$)	389	Hard
Potassium	3.3	Nitrates	<0.3	pH	7.56	
Silicon	4.0	Nitrites	<0.1	Sulfides (S)		
Sodium	32	NO_3+NO_2	<0.1	T. Alkalinity ($CaCO_3$)	412	
Sulfur		Phosphates	<0.3	TDS (Calculated)	442	
		Sulfates	32	Turbidity (N T U)		
				T.K.N		
				T.P		
				NH_3-N		
				T O C		
				Color (T.C.U)		

Sum of Cations	9.24
Sum of Anions	8.99
Ionic Balance	1.03
% Difference	1.37
SAR	0.71

Silty samples may account for higher iron, manganese and silicon content
TDS : Total Dissolved Solids
TNTC Too Numerous To Count
SAR Sodium Adsorption Ratio
< Denotes less than Detection Limit
Please See Reverse Side For Canadian Drinking Water Quality Guidelines
** Please call our Water Treatment Department for any questions you may have*

Certified By

HARVIE - FIELD PERCOLATION TEST RESULTS

Test Date: May 1, 2001

P1 (Lot 1 Phase 1)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	Percolation Rate (min/cm)
1	30	1.90	15.8	6.2
2	30	1.80	16.7	6.6
3	31	1.80	17.2	6.8
4	31	1.80	17.2	6.8
Field Percolation Rate			17.2	6.8

P2 (Lot 3 Phase 1)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	Percolation Rate (min/cm)
1	30	1.30	23.1	9.1
2	30	1.25	24.0	9.4
3	31	1.25	24.8	9.8
4	31	1.25	24.8	9.8
Field Percolation Rate			24.8	9.8

P3 (Lot 9 Phase 1)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	Percolation Rate (min/cm)
1	31	0.50	62.0	24.4
2	30	0.45	66.7	26.2
3	31	0.45	68.9	27.1
4	30	0.45	66.7	26.2
Field Percolation Rate			66.7	26.2

P4 (Lot 8 Phase 1)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	Percolation Rate (min/cm)
1	30	1.10	27.3	10.7
2	31	1.00	31.0	12.2
3	29	0.90	32.2	12.7
4	29	0.90	32.2	12.7
Field Percolation Rate			32.2	12.7

P5 (Lot 6 Phase 1)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	Percolation Rate (min/cm)
1	30	1.20	25.0	9.8
2	30	1.00	30.0	11.8
3	29	0.95	30.5	12.0
4	30	0.95	31.6	12.4
Field Percolation Rate			31.6	12.4

P6 (Lot 7 Phase 1)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	Percolation Rate (min/cm)
1	30	1.40	21.4	8.4
2	31	1.30	23.8	9.4
3	30	1.20	25.0	9.8
4	31	1.20	25.8	10.2
Field Percolation Rate			25.8	10.2

P7 (Lot 1 Phase 2)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	(min/cm)
1	30	1.40	21.4	8.4
2	30	1.30	23.1	9.1
3	30	1.25	24.0	9.4
4	29	1.20	24.2	9.5
Field Percolation Rate			24.2	9.5

P8 (Lot 2 Phase 2)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	(min/cm)
1	30	1.10	27.3	10.7
2	30	1.00	30.0	11.8
3	30	0.95	31.6	12.4
4	31	0.95	32.6	12.8
Field Percolation Rate			32.6	12.8

P9 (Lot 4 Phase 2)

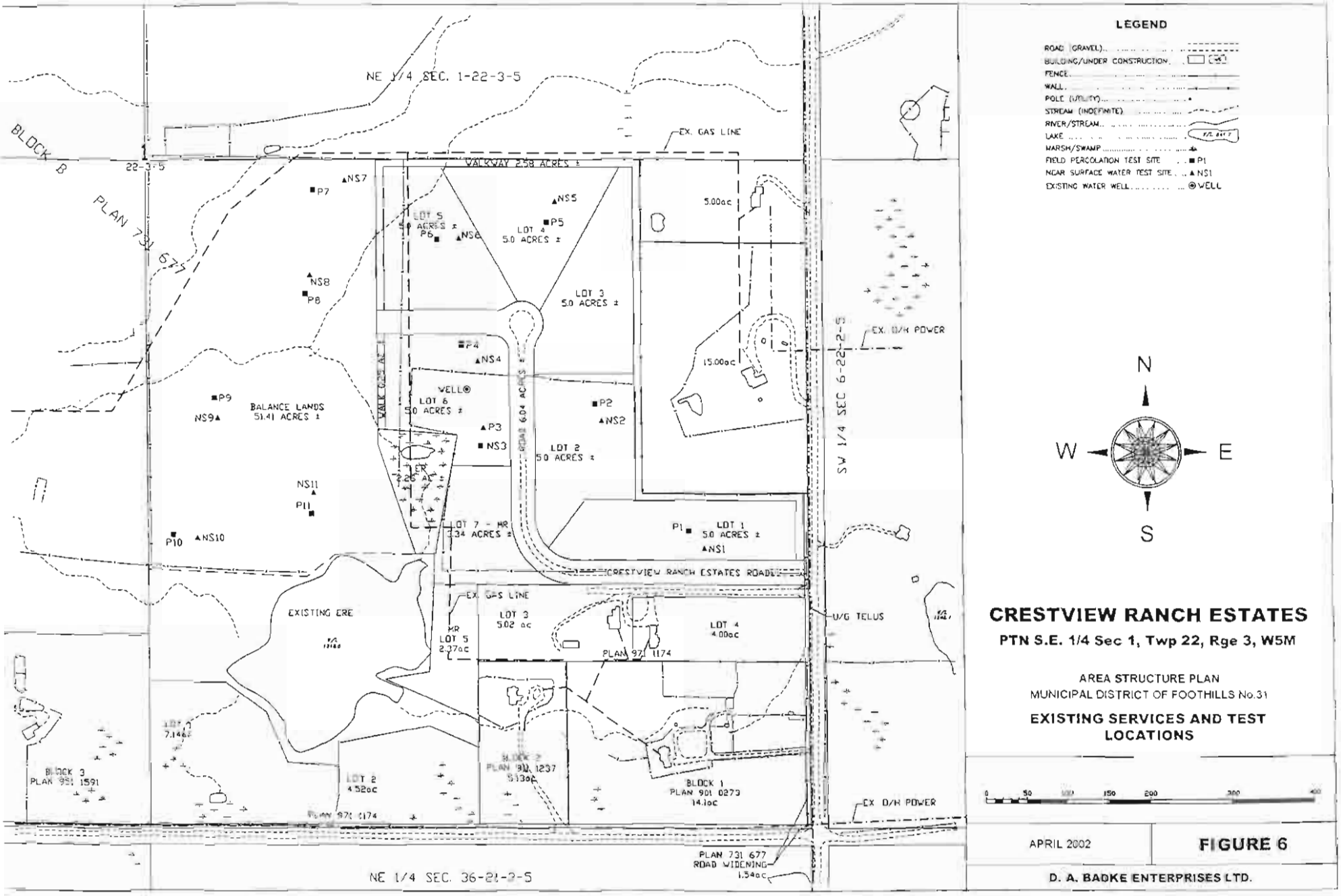
Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	(min/cm)
1	30	0.40	75.0	29.5
2	29	0.35	82.9	32.6
3	30	0.35	85.7	33.7
4	30	0.35	85.7	33.7
Field Percolation Rate			85.7	33.7

P10 (Lot 6 Phase 2)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	(min/cm)
1	30	1.00	30.0	11.8
2	30	0.90	33.3	13.1
3	30	0.90	33.3	13.1
4	29	0.85	34.1	13.4
Field Percolation Rate			34.1	13.4

P11 (Lot 7 Phase 2)

Trial	Time Elapsed (min)	Water Level Decline (inches)	Percolation Rate (min/in.)	(min/cm)
1	31	0.60	51.7	20.3
2	30	0.55	54.5	21.5
3	29	0.50	58.0	22.8
4	29	0.50	58.0	22.8
Field Percolation Rate			58.0	22.8



LEGEND

- ROAD (GRAVEL)
- BUILDING/UNDER CONSTRUCTION
- FENCE
- WALL
- POLE (UTILITY)
- STREAM (INDEFINITE)
- RIVER/STREAM
- LAKE
- MARSH/SWAMP
- FIELD PERCOLATION TEST SITE ■ P1
- NEAR SURFACE WATER TEST SITE ▲ NS1
- EXISTING WATER WELL ◉ WELL

N

W E

S

CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No.31

EXISTING SERVICES AND TEST LOCATIONS

0 50 100 150 200 300 400

APRIL 2002

FIGURE 6

D. A. BADKE ENTERPRISES LTD.

APPENDIX

6

RESTRICTIVE COVENANT

RESTRICTIVE COVENANT

PURSUANT TO SECTION 52 AND 71(1) OF
THE LAND TITLES ACT ALBERTA

DRAFT

WHEREAS **Patrick N. Harvie**, (hereinafter referred to as the "Developer") is the registered owner of an estate in fee simple, subject however to such encumbrances, liens and interests as are notified by memorandum underwritten or endorsed on the existing certificate of title, of the following lands:

Block One (1) Lots One (1) to Six(6) inclusive

all as shown on **Plan** _____,
excepting thereout all mines and minerals,

(hereinafter individually referred to as the "Lot" and collectively referred to as the "Lots");

AND WHEREAS the Developer is developing a planned housing subdivision on the lots, known as **Crestview Ranch Estates** (hereinafter referred to as the "Development") and the Developer wishes the Development to be well planned and that a uniform high standard of appearance be achieved for all buildings, fences, driveways and landscaping (hereinafter referred to as the "Improvements") on the Lots;

AND WHEREAS to establish such high standards of development, the Developer considers it desirable for the greater enjoyment of the Lots and useful to maximize the value of the Lots, to impose a Restrictive Covenant (hereinafter referred to as the "Restrictive Covenant") against the Lots, such Restrictive Covenant containing certain restrictions, covenants and conditions in respect of the exterior design, use and development of the Lots and the buildings, structures, improvements and premises to be erected on the Lots, all as hereinafter set forth;

AND WHEREAS Section 71(1) of the Land Titles Act, Alberta provides that an owner may grant to itself a Restrictive Covenant for the benefit of land which it owns and against lands which it owns and the Restrictive Covenant may be registered under the Land Titles Act;

AND WHEREAS the restrictions and covenants to be imposed by way of this Restrictive Covenant, are for the benefit of all future owners of the individual Lots and are designed to protect the owners of such Lots against the improper development and use of such Lots and to prevent haphazard or inharmonious Improvements and repairs or the use of improper designs or materials;

NOW THEREFORE the developer as registered owner of the Lots, does for himself, his transferees, assigns and successors in title to the Lots, covenant and agree as follows:

1. The land use and building restrictions and conditions contained herein shall be deemed to be covenants running with and annexed to the Lots (as Servient Tenements) and shall be binding upon the respective owner or owners of all the Lots from time to time (hereinafter referred to individually as "Owner" and collectively as "Owners"), and enure to the benefit of each of the Lots (as Dominant Tenements) and the Owner or Owners thereof from time to time. Such restrictions and conditions, having been imposed as a building scheme with a view to maintaining the general character of all the Lots and to controlling the drainage thereof, may be enforced by the Developer of the Lots or by the Owner of any Lot from time to time. Any waiver by the Developer or any Owner of any of the Lots, of the strict performance of the covenants set out herein shall not of itself constitute a waiver of or abrogate any other covenants set out herein, nor a waiver of any subsequent breach of the same condition.

2. If any provision of this Restrictive Covenant is found to be void, invalid or unenforceable, the remainder of this Restrictive Covenant shall not be affected hereby and each remaining provision shall be valid and shall be enforceable to the extent permitted by law.

3. No action shall lie against the Developer for damages for breach of any one or more of the covenants contained in this Restrictive Covenant unless the Developer is registered as owner of the Lot alleged and proven by a court of competent jurisdiction to be in breach of the Restrictive Covenant. This covenant shall constitute an absolute defense to any such action and may be pleaded as such.

4. No building or alteration to any building, shall be constructed on any Lot unless such building or alteration is located wholly within the dashed line on each Lot (hereinafter referred to as the "Building Envelope") on the plan attached hereto as Schedule B (hereinafter referred to as the "Building Envelope Plan").

5. All Improvements on the Lots, and any alterations to such Improvements, shall be constructed in accordance with provisions contained in this Restrictive Covenant, the Architectural Guidelines attached as Schedule A and the Building Envelope Plan attached as Schedule B.

6. No initial construction of any Improvements or subsequent alterations of Improvements, shall take place prior to the Owner making written application to the Developer for Development Approval from the Developer for all Improvements in accordance with the provisions contained in this Restrictive Covenant, the Architectural Guidelines contained in Schedule A and the setbacks shown on the Building Envelope Plan included as Schedule B, both attached to this agreement. Development Approval in writing from the Developer must be obtained prior to application to the municipality for a building permit.

7. The granting of Development Approval by the Developer does not release the Owner from the obligations to comply with all municipal bylaws, building codes, statutes and regulations that are applicable to construction of the Improvements on any Lot.

8. The Developer may retain an architectural consultant (hereinafter referred to as the "Architectural Consultant") to assist in the administration of the Architectural Guidelines on his behalf.

9. No consent or approval given by the Developer or the Architectural Consultant under this Restrictive Covenant shall create any liability on the Developer or the Architectural Consultant or any other consultant and without limiting the generality of the foregoing, such consent or approval shall not constitute any representation of compliance with any laws or the adequacy for construction or other purpose of any plans.

10. The interpretation of the Architectural Guidelines shall be at the discretion of the Developer, acting reasonably, and the Developer shall not have any obligation to provide any consent applied for by the Owner.

11. In the event that the Developer and the Architectural Consultant are no longer in business at the time that the Owner is preparing plans for construction or alterations of the Improvements on any Lot, the Owner shall nevertheless be bound to construct all Improvements or alterations to such Improvements in complete compliance with this Restrictive Covenant and the Architectural Guidelines contained in Schedule A and the Building Envelope Plan contained in Schedule B.

12. No more than one private single-family dwelling house with private garage attached or unattached shall be erected at any time on any one Lot. This restriction shall not prohibit a single-family dwelling house being erected on any Lot resulting from a re-subdivision of any of the Lots.

13. There shall be no time limit on a building commitment, however, once building has been commenced, it must be completed to the extent that the exterior finish is completed, within one year of the commencement date.

14. No building shall be occupied until it has been completed in accordance with the plans and specifications up to the stage that the exterior of the building is completed.

15. No business or commercial use shall be made of any home or other building on any Lot unless permitted under the applicable land use bylaw and then only if a permit has been obtained from the municipal authority having jurisdiction and provided that such use is wholly contained within the home or other building on any Lot and that such use does not attract the general public to the Lot.

16. No Lots shall be used for stockpiling of any materials, or the storage of supplies, stock-in-trade, machinery or equipment other than that as normally used in conjunction with a single-family residence. The storage of recreational vehicles owned and used by the occupants for their personal use is permitted.

17. No buildings shall be erected, except on permanent foundations and all buildings shall be constructed of new and durable materials conforming in all respects with the relevant provisions of the current edition of the Alberta Building Code, as amended from time to time.

18. No signs or advertising manner of any kind, except the ordinary signs offering the Lots or buildings for sale, shall be placed on any of the Lots or on any buildings, fences or trees on the Lots.

19. All septic systems and sewage disposal fields or mounds shall be installed at the sole cost and expense of the Owner and shall be in compliance with the requirements of the public authorities exercising jurisdiction therein. Septic fields shall not be installed within 50 metres of a water well on an adjacent Lot.

20. The Developer will install all shallow utilities (power, phone and gas) to the property line of each Lot and provide a water well on each Lot. It shall be the sole cost and expense of the Owner of each Lot to connect to these utilities or services and to extend these utilities to the point of service requirement. No utility or services shall be installed above ground.

21. No exterior lighting shall be installed on any of the Lots, which would unreasonably illuminate any other lot, and all exterior lighting must be shaded or indirect.

22. Seasonal filling of pools on the Lots shall not be made using water obtained from wells on the Lots. Replenishment of water due to evaporation or spillage, may be made using water from a well on any of the Lots.

23. No noxious weeds, underbrush or unsightly growths shall be permitted to grow or remain on the Lots.

24. No garbage or refuse pile or unsightly objects shall be allowed to accumulate on, or allowed to remain on any of the Lots. Each Owner is responsible for the disposal of their garbage or refuse at an approved off-site disposal site.

25. No fuel, gasoline or chemicals of any nature shall be stored on any of the Lots in amounts exceeding 100 litres.

26. The use of firearms, hunting bows, crossbows or any other weapons is not permitted on any of the Lots.

27. Used car bodies or antiques shall not be stored on any of the Lots, except inside a building.

28. No heavy equipment shall be stored or operated on the Lots, other than for the construction of the Improvements on the Lots.

29. The excavation or removal of any loam, rock, gravel or clay from any of the Lots, for commercial purposes, shall not be allowed.

30. Following completion of construction, the Owner of each Lot, shall ensure that all areas of the Lots are to be left in a natural state or if disturbed, that the disturbed areas are landscaped in a professional manner.

31. No mobile home, ready constructed home or used house shall be moved onto any lot as a temporary or permanent residence.

32. No satellite dishes larger than 24 inches in diameter or high antennas or aerials, shall be located on any Lot.

33. No more than two (2) dogs and two (2) cats over six (6) months of age shall be allowed on any one Lot. Such dogs and cats shall not run free and must be confined to the Owner's Lot by means of a kennel, fence or underground electronic fencing. All dogs must be housed inside at night so that barking does not unreasonably interfere with any neighbours.

34. No livestock or animals shall be kept on any of the Lots for commercial purposes.

35. The Owners of the Lots, shall not make any alterations to the Lots that will impede, impound or divert the natural drainage or storm water drainage across the Lots.

36. Any dispute arising from the interpretation of the restrictions, covenants and conditions contained herein, shall be referred to arbitration pursuant to the Arbitration Act of Alberta and the arbitrator's decision shall be final and binding.

37. This Restrictive Covenant may be enforced by the Developer, his successors and assigns, the Owner or Owners of the Dominant or Servient Tenements, or any of them, and the parties agree that any breach of this Restrictive Covenant constitutes irreparable harm to the Developer, his successors and assigns, the Owner or Owners from time to time; that damages are not a sufficient remedy; and that in addition to the Developer, his successors and assigns, the Owner or Owners from time to time of the Dominant or Servient Tenements, or any of them, shall be entitled to relief by way of injunction or an Order in the nature of an injunction against the offending party.

38. In the event that legal proceedings or arbitration is commenced to interpret or enforce this Restrictive Covenant (hereinafter referred to as a "Proceeding"), all legal fees determined on a solicitor and his own client basis, plus disbursements and arbitration costs (hereinafter referred to as the "Costs") incurred by the successful party or parties, whether the Developer, Architectural Consultant, other consultant or owner of the Dominant or Servient Tenement, shall be born and paid by the unsuccessful party or parties. When none of the parties is wholly successful in any such Proceeding, the Costs shall be apportioned and shall be the responsibility of the parties in proportion to their respective success, or as may be ordered by a Court of competent jurisdiction or an arbitrator.

39. Words herein importing a number or gender shall be construed in grammatical conformance with the context of the party or parties affected by this Restrictive Covenant from time to time.

40. No covenants herein shall be deemed to restrict any provision of any laws, bylaws or regulations passed or imposed by any governmental authority, rather the restrictions and covenants contained herein shall be considered as additional restrictions and covenants.

IN WITNESS WHEREOF **Patrick N. Harvie** has hereto affixed his signature the _____ day of _____, 2002.

_____ _____

Witness Patrick N. Harvie

SCHEDULE "A"

DRAFT ARCHITECTURAL GUIDELINES

1. **House Area (minimum)**

   Bungalow 1,400 sq. ft.

   The dimensions of any garage, porch, veranda, sun room or other appurtenant structure, shall be excluded in computing the ground area except where the same is wholly within the foundations walls of the dwelling house on any of the Lots.

2. **Side yards, Setbacks and Massing**

   The massing of the home is important.

3. **House Style**

   All Lots: House styles are restricted to bungalow style with one level only above ground level on east elevation of house.

4. **Exterior Detail and Design**

   The design and style of the home is to be carried around the home with the detailing on all elevations. Detailing suggestions are as follows:

   - decorative trusses (gable trim)
   - dentil trim
   - muntin bars/window grills
   - front porches
   - shutters
   - batten boards, shadow boards at the soffit line, trim boards, batten detailing at windows and joist levels
   - columns
   - decorative louvers
   - dormers
   - brick or stone
   - detailing in the form a decorative column treatments, porch spindles and handrails, etc
   - bay or box windows

5. **Roof Design, Material and Colors**

   a. The preferred minimum roof overhang is 600mm (24") on the main rooflines, and a preferred minimum of 150mm (6") on boxed out or bay windows.
   b. Minimum roof slope 5:12
   c. Tile, shakes or an architectural asphalt or fiberglass shingles with a 25 year warranty as a minimum.

6. **Exterior Cladding Material and Colors**
   a. Exterior cladding colors should be in the earthtone range, bright blues, pinks, yellows etc should be avoided.
   b. Finishing materials are to be the same for all elevations except for brick or stone. The following exterior materials will be permitted:
      i) Horizontal or vertical manufactured wood siding
      ii) Horizontal vinyl/aluminum siding – to have a double 4 or triple 5 profile
      iii) Stucco
      iv) Brick or stone
      v) Log

7. **Soffit, Fascia, Gutters and Downspouts**
   Soffit and fascias should be prefinished aluminum or vinyl.

8. **Garages and Overhead Garage Doors**
   a. Double garages are a minimum requirement.
   b. The maximum space between the overhead garage door and the soffit line is 16".
   c. Raised panel garage doors are required as a minimum.
   d. The garage shall not block the visibility of the front entry of the home.
   e. Garage doors are to be painted to match the siding or stucco color.

9. **Masonry**
   Brick or stone is to be returned a minimum of 2'0" on corners.

10. **Chimneys, Flues and Roof Vents**
    a. All chimneys and flues that are visible on the front or side elevations are to be boxed in and at a minimum clad with the siding material. Capping detail required.
    b. All roof stacks, vents and flashings should be painted to blend in with the roof color.

11. **Fireplaces**
    Metal fireplaces flues must be enclosed and finished to the top complete with capping detail.

12. All homes to be located within the building envelope as indicated on the attached Building Envelope Plan included as Schedule "B".

13. **General Notes**
    a. Grade should always slope away from the house. Where the rear grade elevation is higher around the house, swales should be constructed to direct the drainage away from the house. They should be placed approximately 10 feet from the house at a minimum 2% slope away from the house.

b. The Developer reserves the right to revise these Guidelines from time to time. The Developer reserves the right to refuse a color combination, and /or the siting, and/or detail and/or house style if it does not coordinate within the area by the Developer's standards.

c. If at the time of construction on site, errors or discrepancies are noticed form information received at the time of approval or from engineering drawings or from existing site grading or existing homes, the builder is to contact the Developer or Architectural Consultant so that the discrepancy may be reviewed and adjustments made to accommodate the existing site construction.

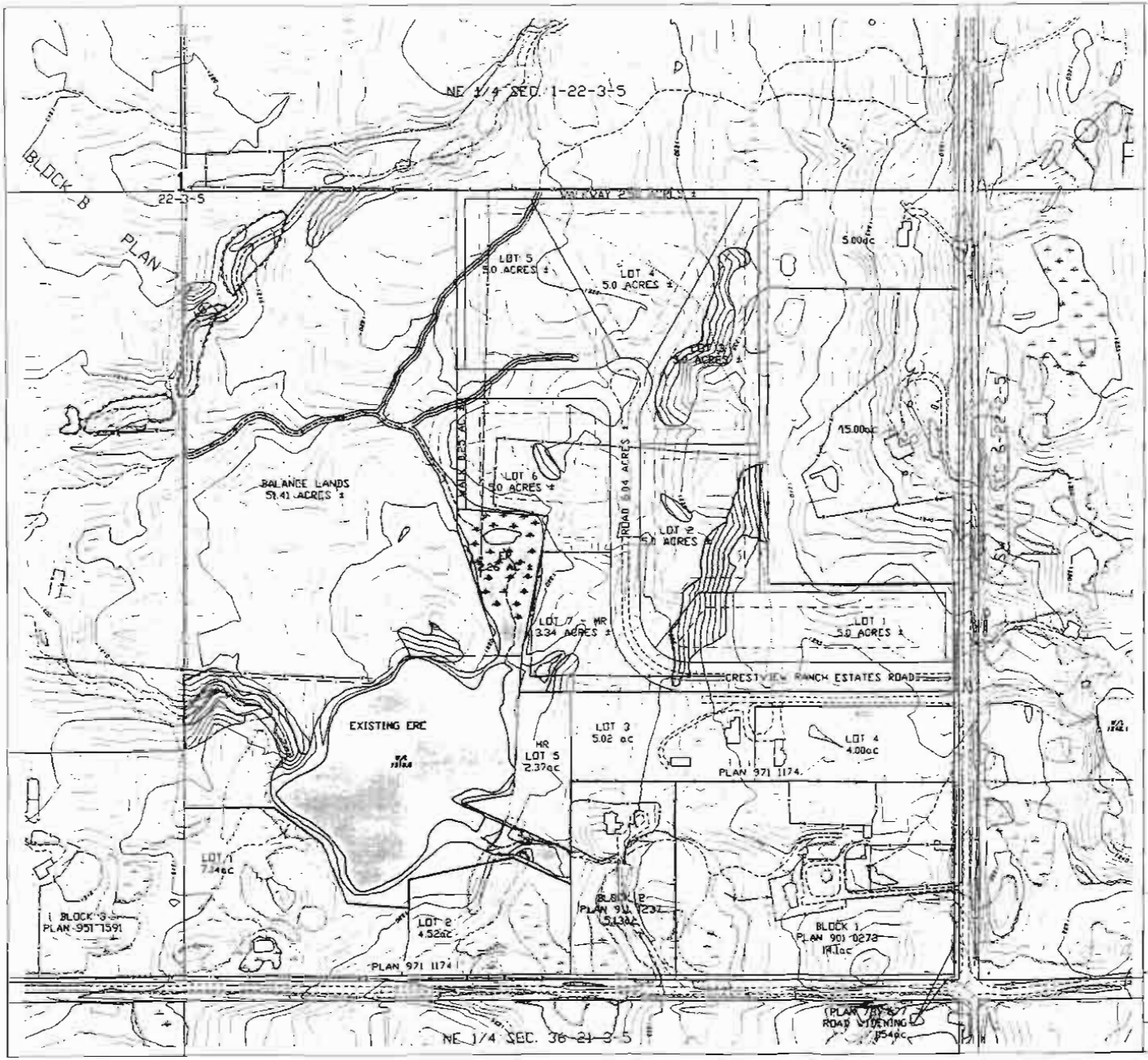
d. Unless otherwise noted in writing prior to house construction, all retaining walls are the responsibility of the builder/owner.

e. Neither the Developer, its Architectural Consultant nor the Developers other consultants take any responsibility for any retaining walls which may be required on or between lots. Any disputes that may arise regarding responsibility for retaining walls are to be resolved by the Builder and their contractors.

f. No approval by the Developer, its Architectural Consultant or its other consultants shall be other than an approval of the Developer's requirements and in particular shall not be any representation of compliance with any engineering requirements or any legal requirements of the M. D. of Foothills or any other government agency or body, all of which are the sole responsibility of the Builder. The house plan approval process is provided as a service. While care is taken to provide precise data, the Developer and its Architectural Consultant and other consultants assume no responsibility for the accuracy of the information given in documents, or for any losses or damages resulting from the use thereof. It remains the responsibility of the Builder to ensure that the construction of any buildings on the Lot conform with all Federal, Provincial or Municipal laws, regulations, By-laws, or other enactments and encumbrances affecting the title to the Lot, including, without limitation, utility rights or way, easements, and restrictive covenants. The Builder is also responsible for the provision of all bearing certificates and footing elevation certificates which may be required for the installation of sulphate resistant concrete or any other precautions in foundations where necessary. The developer and its architectural consultant and other consultants assume absolutely no responsibility to ensure that the building complies with all the Federal, Provincial or Municipal laws, regulations, By-laws, or other enactments and encumbrances affecting the title to the Lot, including, without limitation, utility rights or way, easements, and restrictive covenants.

g. A Security Deposit of $5,000 is required to be paid to the Developer prior to the Developer issuing Development Approval, which is to be held by the Developer to ensure compliance with these guidelines to compensate the Developer for damage to roads and utilities. Following completion of the development, the Security Deposit plus interest at the rate of prime +1%, will be returned to the builder, subject to compliance with these guidelines and no damage to roads and utilities.

h. The cost to repair damage caused by the Owner or his builders, to any utilities, roads, trees, drainage facility or other items, will be charged back to the Owner or may be deducted from the Security Deposit. The Owner shall be liable for the total cost of repairing such damage and the Owner's liability shall not be limited to the amount of the Security Deposit.



LEGEND

ROAD (GRAVEL)
CARTTRACK
TRAIL
BUILDING/UNDER CONSTRUCTION
FENCE
WALL
POLE (UTILITY)
STREAM (INDEFINITE)
RIVER/STREAM
LAKE
SINGLE TREE
SCRUB
TREE LINE
MARSH/SWAMP
SPOT ELEVATION
INDEX CONTOUR
INTERMEDIATE CONTOUR
INDEX DEPRESSION
INTERMEDIATE DEPRESSION
AREAS IN EXCESS OF 15%
LOW LYING AREAS
BUILDING ENVELOPE
PLAN AREA

N
W E
S

CRESTVIEW RANCH ESTATES

PTN S.E. 1/4 Sec 1, Twp 22, Rge 3, W5M

AREA STRUCTURE PLAN
MUNICIPAL DISTRICT OF FOOTHILLS No 31

CONTOUR MAP AND DEVELOPMENT CONSTRAINTS

0 50 100 150 200 300 400

APRIL 2002

FIGURE 5

D. A. BADKE ENTERPRISES LTD.

APPENDIX

7

OVERLAND DRAINAGE EASEMENT

IN THE MATTER OF THE LAND TITLES ACT. R.S.A. 1980. c. L-5 AND AMENDMENTS THERETO; AND IN THE MATTER OF A RESTRICTIVE COVENANT MADE PURSUANT TO SECTION 52 THEREOF.

RESTRICTIVE COVENANT

The undersigned, as registered owners of an estate in fee simple, subject however to such reservations, exceptions, and encumbrances as are notified on the existing Certificate of Title, of the parcels of land legally described as:

Block One (1) Lots One (1) to Six (6) inclusive

all as shown on **Plan** _____,
excepting thereout all mines and minerals,
(hereinafter referred to as the "Lands");

the owners desiring to maintain the general character of the natural and man-made drainage course on the Lands, do HEREBY DECLARE, establish, impose and annex to the Lands, and each of the lots comprising the Lands, the stipulations, restrictions and provisions hereinafter provided, such stipulations, restrictions and provisions to be enforced and to run with the Lands and to be binding on the owners of each of the lots comprising the Lands and all persons claiming under them. This covenant shall be binding upon and enure to the benefit of any person to whom the Lands, or any of the lots comprising the Lands, are conveyed such that the stipulation, reservation and provision hereinafter described shall run with the Lands and each of the lots comprising the Lands.

The stipulation, restriction and provision is as follows:

1. *The Owners of the Lands and each of the lots comprising the Lands, shall not make any alterations to the Lands that will impede, impound or divert the natural drainage or storm water drainage across the Lands, except for the provisions of Clause 2.*

2. *The Owners of the Lands and each of the lots comprising the Lands, may construct an access road across the natural drainage course(s) on the Lands, provided that the portion of the access road which crosses the natural or manmade drainage course(s), shall include a corrugated steel pipe culvert of sufficient size (minimum 450mm) such that it will transmit water flows through the culvert without creating any water ponding upstream of the access road.*

3. *These stipulations, restrictions and provisions may not be altered or deleted without the written permission of the Municipal District of Foothills No. 31, at its office at 309 MacLeod Trail, in the Town of High River, in the Province of Alberta T1V 1M7.*

This covenant is an addition to the requirements of the municipal or other government authorities having jurisdiction in respect of the use of the Lands and nothing herein contained shall be construed as permitting or authorizing anything which is not permitted, controlled or regulated by any statute, bylaw, regulation or like enactment having the force of law.

IN WITNESS WHEREOF the undersigned, have set their hand and seal this ____ day of _____, 2002.

_____	_____
Witness	**Patrick N. Harvie**