BYLAW 115/2000

BEING A BYLAW OF THE MUNICIPAL DISTRICT OF FOOTHILLS NO. 31 TO ADOPT AN AREA STRUCTURE PLAN

WHEREAS the Council of the Municipal District of Foothills No. 31 (hereinafter called the "Council") is empowered by Section 633(1) of the Municipal Government Act, being Chapter M-26.1, to adopt an Area Structure Plan which provides a framework for subsequent subdivision and development of an area of land within the Municipality's boundaries; and

WHEREAS the Council did direct the preparation of an Area Structure Plan for the properties legally described as the 119.49-acre portion of SE 16-21-29 W4; and

WHEREAS the Area Structure Plan has been prepared under the direction of the Council;

NOW THEREFORE the Council of the Municipal District of Foothills No. 31 in the Province of Alberta, hereby enacts as follows:

1. This Bylaw may be cited as the "*Willowside Farms Area Structure Plan*".

2. The Willowside Farms Area Structure Plan being Schedule "A" attached hereto and forming part of this Bylaw.

3. That the Willowside Farms Area Structure Plan may be amended by Bylaw from time to time in accordance with the Municipal Government Act, by the Municipal District of Foothills No. 31.

4. This Bylaw comes into full force and effect upon the third and final reading.

FIRST READING: July 13, 2000

Roy R. McLean
Reeve

Municipal Manager

SECOND READING: October 12, 2000

Roy R. McLean
Reeve

Municipal Manager

THIRD READING: October 12, 2000

Roy R. McLean
Reeve

Municipal Manager

PASSED IN OPEN COUNCIL assembled at the Town of High River in the Province of Alberta this 12 day of October 2000

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INTRODUCTION

1.1 Purpose of the Plan

The Willowside Farms Area Structure Plan (the "Plan") has been prepared pursuant to Section 633(1) of the Municipal Government Act and is in accordance with "Guidelines for the Preparation of Area Structure Plans" as adopted by a resolution of the Council of the M.D. of Foothills No. 31.

This Plan will provide Council with supporting planning rationale for re-designation of the subject lands from Agricultural (A) to Country Residential (CR) in order to accommodate the development proposal. The Plan will further provide Council with a statutory mechanism to guide and control subdivision through the establishment of policies that provide specific direction for land use and subdivision issues identified in this Plan.

1.2 Background to the Plan

The objectives of the Plan are as follows:

.1 To establish a set of appropriate and comprehensive policies addressing the development proposal within the Plan area so as to enable a high quality country residential development that is compatible with surrounding country residential areas yet maintains some of the current equine character that exists at the subject lands.

.2 To establish the appropriateness of the subject lands for the land use proposed by the development proposal taking into consideration existing land use, surrounding developments, physical characteristics of the subject lands, public/community consultation, infrastructure availability and a sequential framework for implementation of the Plan.

.3 To establish a land use strategy which is consistent with the principals of the Foothills Municipal Development Plan and conforms with the provisions of the Municipal Government Act.

1.3 The Approval Process

The Municipal District of Foothills No. 31 requires the preparation of the Plan to provide a framework for the subsequent subdivision and development within the Plan area.

Following circulation, staff and stakeholder reviews and public consultation the Plan will be presented to Council as a proposed by-law adopting the Plan as the Willowside Farms Area Structure Plan.

1.4 Plan Implementation

The Willowside Farms Area Structure Plan, should it be adopted by Council in accordance with Section 633(1) of the Municipal Government Act, shall become a statutory document of the M.D. of Foothills No. 31. The Plan does not supersede, repeal, replace or otherwise diminish any other statutory plan in effect in the Plan area.

The policies contained in this document may be reviewed and implemented by the M.D. of Foothills No. 31 Council members at their discretion.

1.5 Plan Review and Amendment

While the Plan presents a long-term planning strategy for the Plan area, changing considerations (planning, social, economic) may require periodic review and occasional amendment. The Plan is flexible enough to allow for review and amendment should Council deem it necessary.

1.6 Legislative Framework

.1 The Municipal Government Act

The Municipal Government Act as amended to this date sets out the requirements for an Area Structure Plan in Section 633(2) as follows:

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, and
- iv the general location of major transportation routes and public utilities;

and

(b) may contain any other matters the Council considers necessary.

.2 The Foothills Municipal Development Plan

The Foothills Municipal Development Plan, adopted by Council is a statutory planning document affecting land use within the Municipal District of Foothills No. 31.

The Willowside Farms Area Structure Plan is prepared in accordance with guidelines set forth in the Foothills Municipal Development Plan.

1.7 Interpretation

In this Plan:

.1 "Willowside Farms Area Structure Plan" or the "Plan" means the land use planning document prepared for the Plan Area.

.2 "Plan Area" means the portion of SE16-21-29-W4 consisting of 118.64 ± acres (more or less) and is also referred to as the "subject lands".

.3 "Council" means the Council of the Municipal District of Foothills No. 31.

.4 "Development Proponent" means C. Donald Wilson Management Ltd. Mr. Don Wilson, the principal of C. Donald Wilson Management Ltd., has owned the subject lands for 20 years.

.5 "M.D." or "Approving Authority" means the Municipal District of Foothills No. 31.

.6 "Development Agreement" means the M.D. of Foothills No. 31 document which governs the subdivision and servicing of the Plan Area.

2. THE PLAN AREA

2.1 Regional/Municipal Location

The Plan Area is situated approximately 2 kilometers south of the Highway 2/2A interchange and exactly 1 kilometer east of the 2A Highway and fronts onto 306th Avenue (see Figure 1 – Location Map).

2.2 Definition of Plan Area

.1 Boundaries of Plan Area

There exists a number of land uses within a half-mile radius of the Plan Area. To the west an large agricultural parcel. To the east and southeast exist a number of country residential parcels of varying sizes. To the south and southwest are mostly country residential parcels. To the north are several small country residential and agricultural parcels. The subject lands front onto 306th Avenue, which was hard surfaced by the M.D. several years ago. Further to the west, on 306th Avenue is the Hebson Arena and the U.G.G. Mill Store.

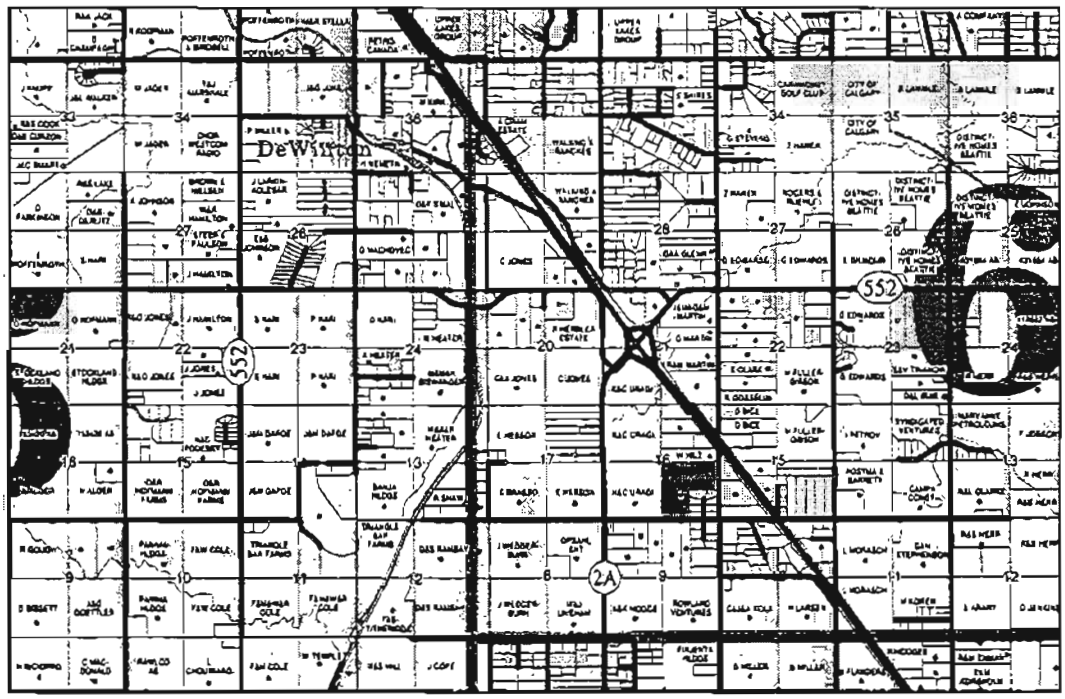
The subject lands are in an area where country residential subdivision has occurred and is in proximity to existing infrastructure such as Highways 2 and 2A. Approximately nine years ago the Development Proponent subdivided a portion of the subject lands into eight country residential lots (see Figure 2 – Excerpt from M.D. Land Use Map).

.2 General Physical Description

The Plan Area is generally flat with a small rise in elevation at the westerly and northerly boundaries. No slopes would exceed 3%. The subject lands have substantial tree cover provided by mature stands of poplar, willow and spruce. Natural site drainage is to the east.

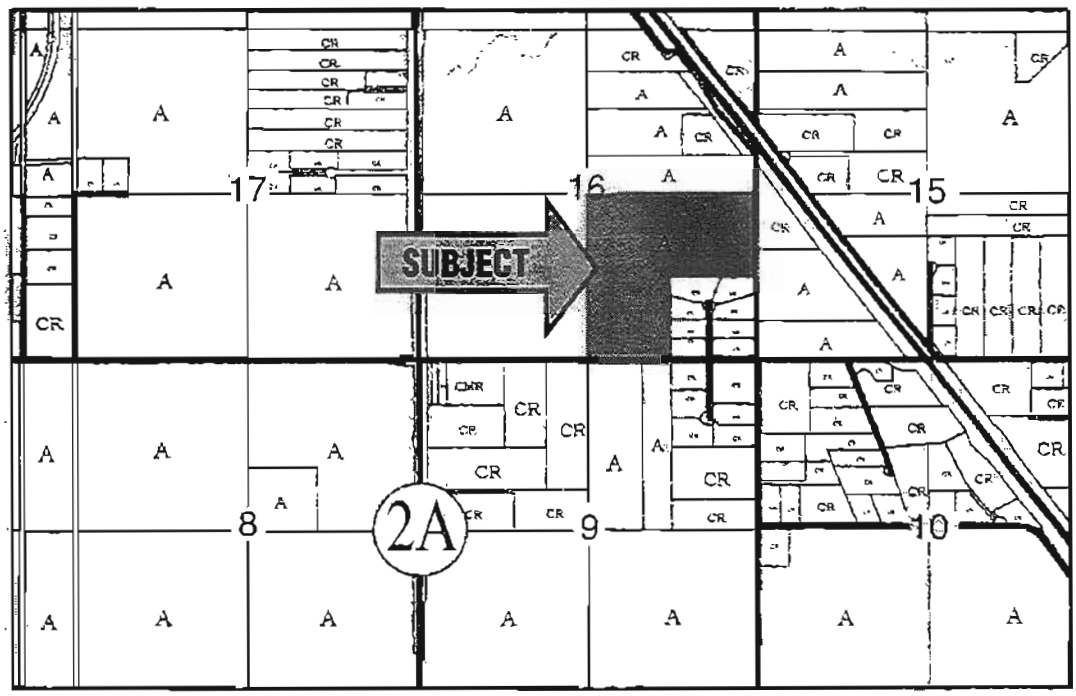
The existing structures on subject lands include the Development Proponent's house, a farm office, a 20 stall stable, horse paddocks, two mobile homes and a half-mile horse training track (see Figure 3 – Aerial Photo of Subject Lands).

FIGURE 1 – LOCATION MAP



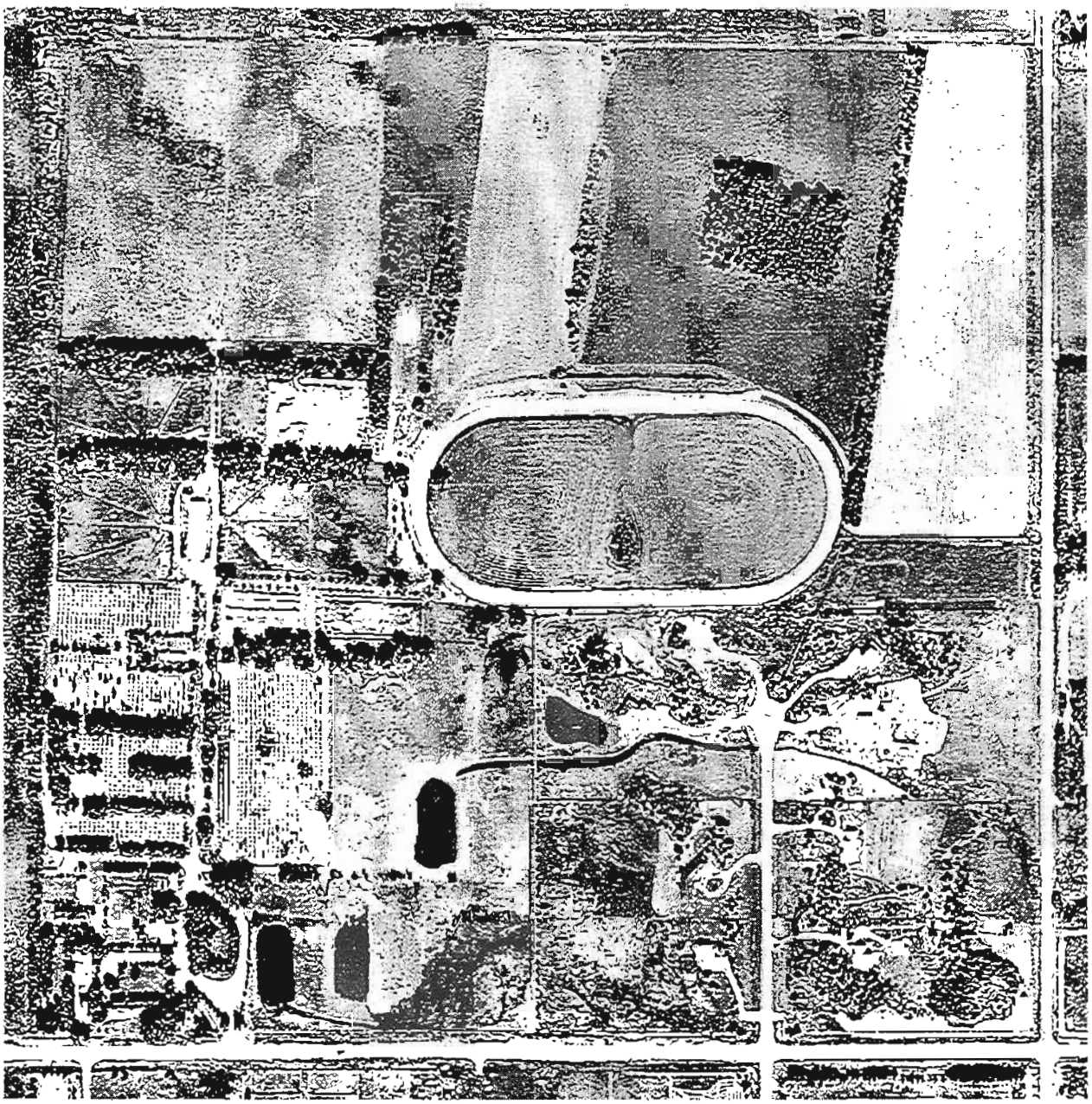
Excerpt from M.D. Ownership Map

FIGURE 2 – LAND USE MAP



Excerpt from M.D. Land Use Map

FIGURE 3 – AERIAL PHOTO OF SUBJECT LANDS



3. PLAN GOALS AND OBJECTIVES

3.1 Goals and Objectives of the Plan

(a) To plan a country residential development of estate quality that combines with some of the subject lands horse character, thereby creating unique country residential home site opportunities with a high standard of design and aesthetic excellence.

(b) To act as a guide under which the M.D. can review and evaluate the development proposal and provide a framework for subsequent subdivision.

(c) To establish policies which will direct the development of the subject lands including proposed land use, open space, density, transportation servicing, phasing and other such matters, as Council deems necessary.

3.2 Principles of Development

The development of the Plan Area will be governed by the following:

(a) All development will be done in accordance with the Development Agreement set forth by the M.D. and municipal standards.

(b) Provide a country residential development that is compatible with existing landform /uses and adjacent land uses.

(c) Ensure the M.D.'s recreational needs are met through the provision of municipal reserve.

(d) Develop an efficient internal road system and servicing plan.

(e) Develop the subject lands in an orderly and efficient manner.

4. PLAN POLICIES

4.1 The Plan Concept

.1 Background

The Development Proponent's principal, Mr. Don Wilson, has owned the subject lands for 20 years. During that time the proponent has operated a standard bred horse training facility on the property and also maintains a small cow/calf operation. In 1991, Mr. Wilson subdivided 40 acres from his home quarter into eight country residential lots (known as Willowside).

While Mr. Wilson has been involved in the home building and land development industry for over 40 years he has also been a pioneer in the standard bred horse industry. It is the goal of Mr. Wilson to combine elements of his horse operation with an estate-type country residential development in order to create a unique equestrian country residential community. This community will feature:

- Privately maintained bridle paths located on the private lots through access easement.
- A private user-pay barn stabling facility.
- A development layout that is sensitive to the mature stands of trees on the property thereby providing numerous tree-sheltered home sites.
- An extensive set of architectural guidelines that contributes to the western/country/prairie architectural theme.
- A uniform fencing scheme which contributes to the overall theme.
- A provincially registered homeowner association which ensures the maintenance of the horse facility, P.U.L. and fencing and helps contribute to an overall sense of community.
- Each lot buyer will receive a 5-year membership to the Okotoks Agricultural Society, thereby providing ongoing access to the Hebson Arena.
- For a more detailed description of the Plan Concept see Appendix A4. Architectural Guidelines.

.2 The Plan of Subdivision Concept

Figure 4 – Proposed Subdivision Site Plan, illustrates layout of the proposed Plan Area. Willowside Farms will consist of 24 home sites on the 118.64± acres. Also included is 12± acre municipal reserve, which is located on comparable development land with access provided by the internal subdivision road. Two points of internal road access are provided to M.D. roads (i.e. 306th Avenue & 32nd Street). The road layout is designed to preserve as many trees as possible in order to create a "country lane" feel

(see Figures 6 & 7 – Photograph of the entry into the subdivision from 306th Avenue and the proposed location of the road proceeding north from that entry). The Plan also proposes to incorporate a 20 metre wide road allowance (with lower speed limits, standard width asphalt surface and lower profile ditching) to assist in preserving the trees.

The bridle paths will be situated on the private lots. An Easement Agreement registered on each lot that includes bridle paths will specify location, maintenance plans, etc. These paths will be approximately 20' wide, will have a cultivated dirt surface. A uniform fencing scheme (e.g. white three-rail) will be provided by the developer.

The Municipal Reserve has road access and is similar land to the rest of the subdivision. As it is located close to the stable facility the development plan proposes to obtain an agreement or license whereby development proponent could use and maintain the land for pasture which is its current use.

In response to suggestions from neighbors in the eight lot subdivision adjacent to the Plan Area (located adjacent to the southeast corner of the Plan Area) the developer proponent proposes to build a storm water management pond. During "spring melts" this area receives run-off from the lands on the south side of 306th Avenue through a culvert in that road. These ponds, which will be designed according to good engineering practice, will help alleviate this situation. At the same time, it will help remediate the same spring melt problem that affects the homeowners in the eight lot subdivision adjacent to the Plan Area. It is proposed this lot be zoned as a public utility lot (P.U.L.), which restricts public access when compared to a Municipal Reserve zoning. The development proponent would maintain the P.U.L. until Final Acceptance Certificate upon which the Homeowners Association will maintain the lot under a license agreement.

The development will also incorporate a series of new tree plantings (as shown on Figure 5 – Tentative Outline Plan), including plantings adjacent to the existing eight lot Willowside subdivision.

A Homeowners Association will be registered as a non-profit organization under the Society's Act of Alberta. As well as operating as a vehicle to promote community spirit in the Willowside Farms neighbourhood it will be obligated to fulfill maintenance and liability insurance requirements as set forth in the Development Agreement.

FIGURE 4

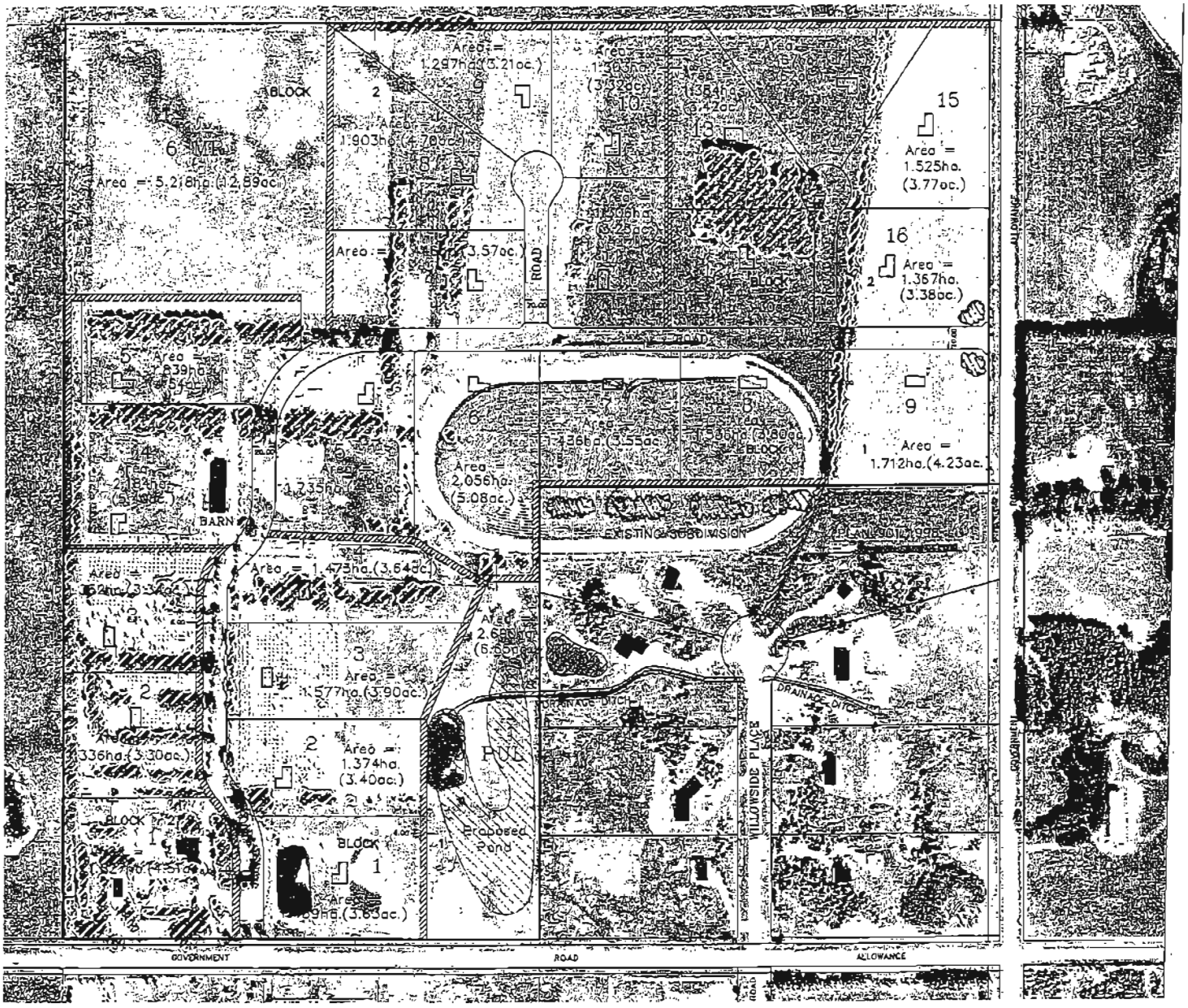
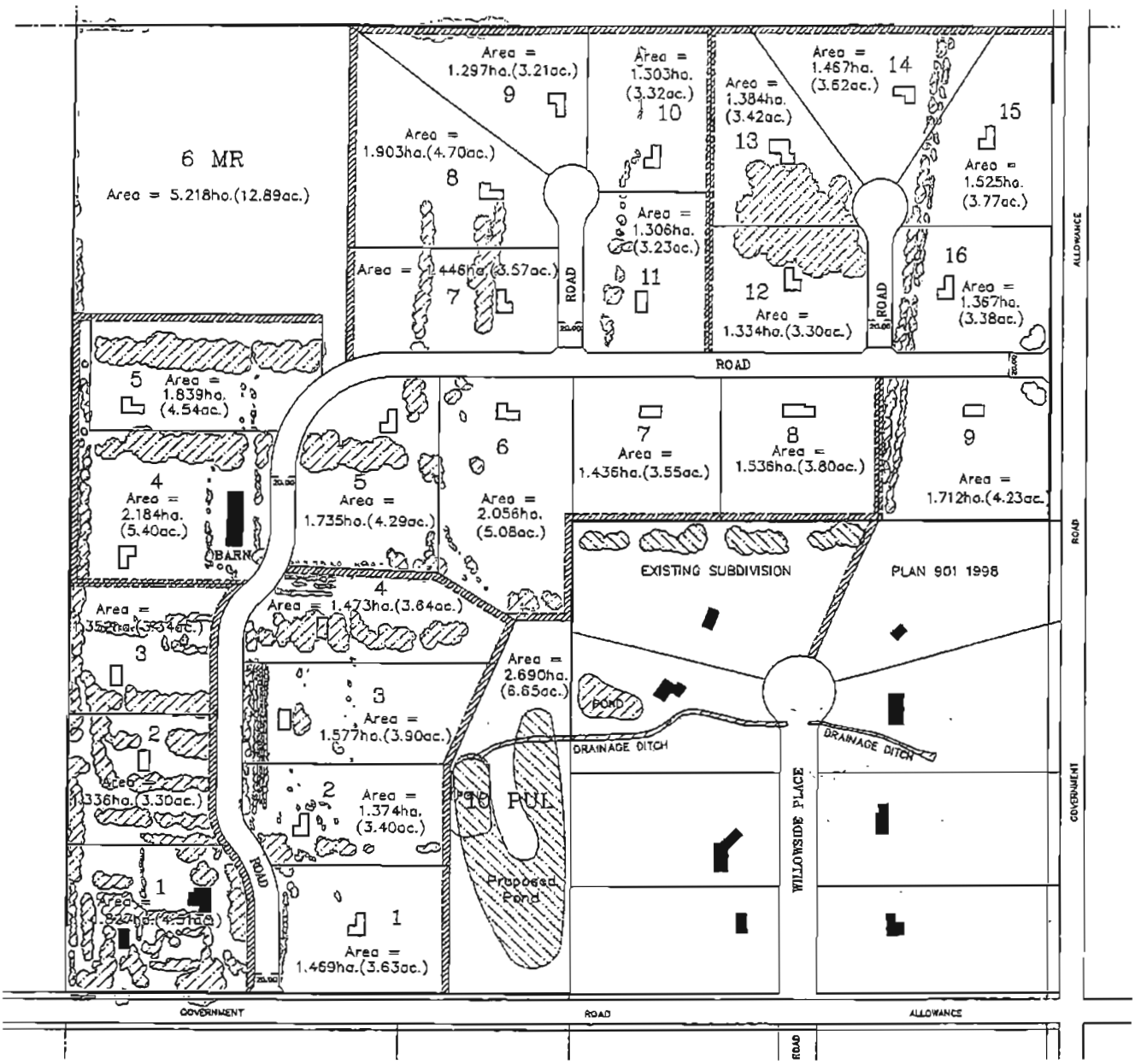
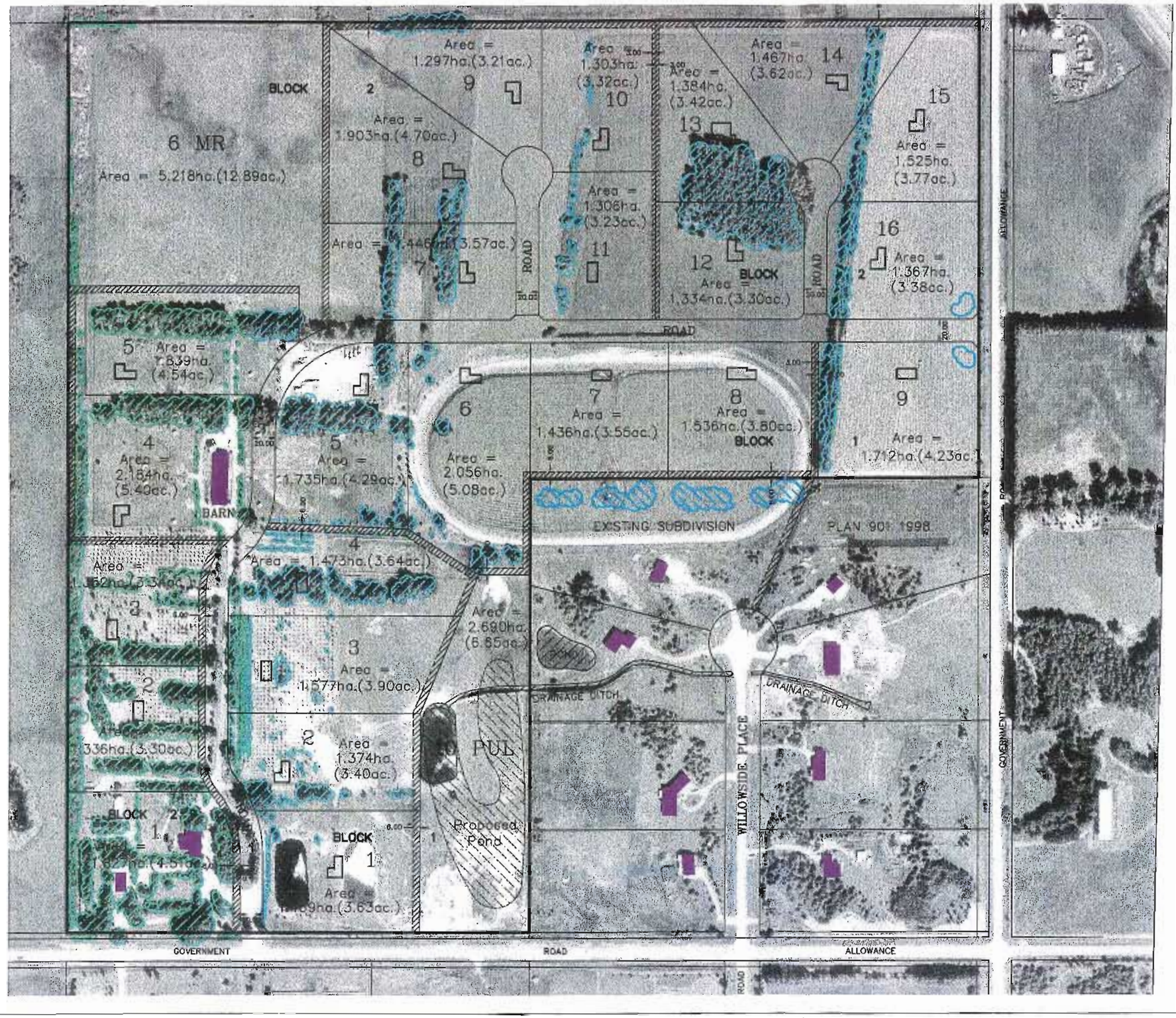

BLOCK
Area = 1.297ha.(3.21ac.)
Area = 1.903ha. 4.70ac.
Area = 5.218ha.(12.89ac.)
Area = (3.57ac.)
ROAD
15
Area = 1.525ha. (3.77ac.)
16
Area = 1.367ha. (3.38ac.)
9
Area = 1.712ha.(4.23ac.
Area = 2.056ha. (5.08ac.)
BARN
EXISTING SUBDIVISION
PLAN 9011990
Area = 1.473ha.(3.64ac.)
Area = 1.577ha.(3.90ac.)
Area = 1.374ha. (3.40ac.)
DRAINAGE DITCH
WILLOWSIDE PLACE
PUL
Proposed Pond
GOVERNMENT
ROAD
ALLOWANCE

FIGURE 5 – PROPOSED OUTLINE PLAN





TENTATIVE

M.D OF FOOTHILLS NO. 31

PLAN SHOWING SURVEY OF
SUBDIVISION
WITHIN
S.E.1/4 Sec.16, Twp. 21, Rge. 29, W. 4 M.

LEGEND

EXISTING TREES =

NEW PLANTINGS =

BRIDLE PATH =

STORMWATER

EXISTING =

PROPOSED =

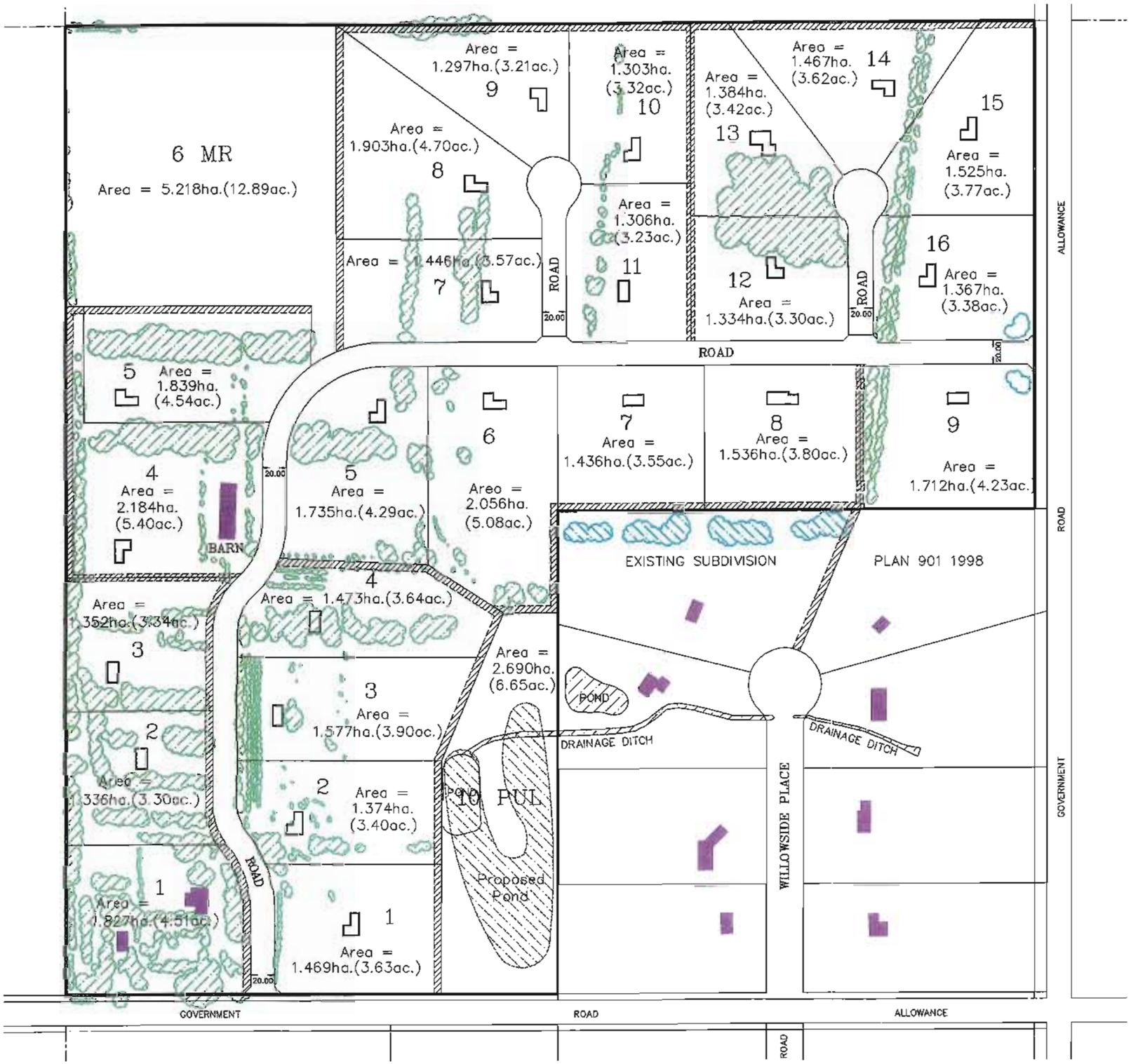
BUILDING SITES

EXISTING =

PROPOSED =

TRONNES SURVEYS (1978) LTD.

Apr. 5, 2000 File: 99-2094 A.C.C.



TENTATIVE

M.D OF FOOTHILLS NO. 31

PLAN SHOWING PROPOSED
SUBDIVISION
WITHIN
S.E.1/4 Sec.16, Twp. 21, Rge. 29, W. 4 M.

SCALE: 1:2000 0 10 20 40 100 200 METRES

BY: AZIZ M. DHARAMSHI, A.L.S., 2000

LEGEND

Distances shown are in metres and decimals thereof.
Distances shown on curved boundaries are Arc distances.
Statutory Iron Posts are shown thus; found ●, planted o, marked 'P 078'
Bearings are Grid and derived from Subdivision Plan 901 1997.
The area affected by the registration of this plan is denoted thus; ——
and contains: +/- 48.357 ha. (+/- 119.50 ac.).
Access Right of Way is shown thus; — — —
and is 6.00 wide, unless otherwise shown.

ABBREVIATIONS

N.W.-Northwest, Sec.-Section, Twp.-Township, Rge.-Range, W.-West, M.-Meridian, Fd.-Found
I.-Iron Post, mk.-Mark, Pl-Planted, R/W-Right-of-Way, R-Radius.

Certified correct this 26h day of January, 2000.

Alberta Land Surveyor

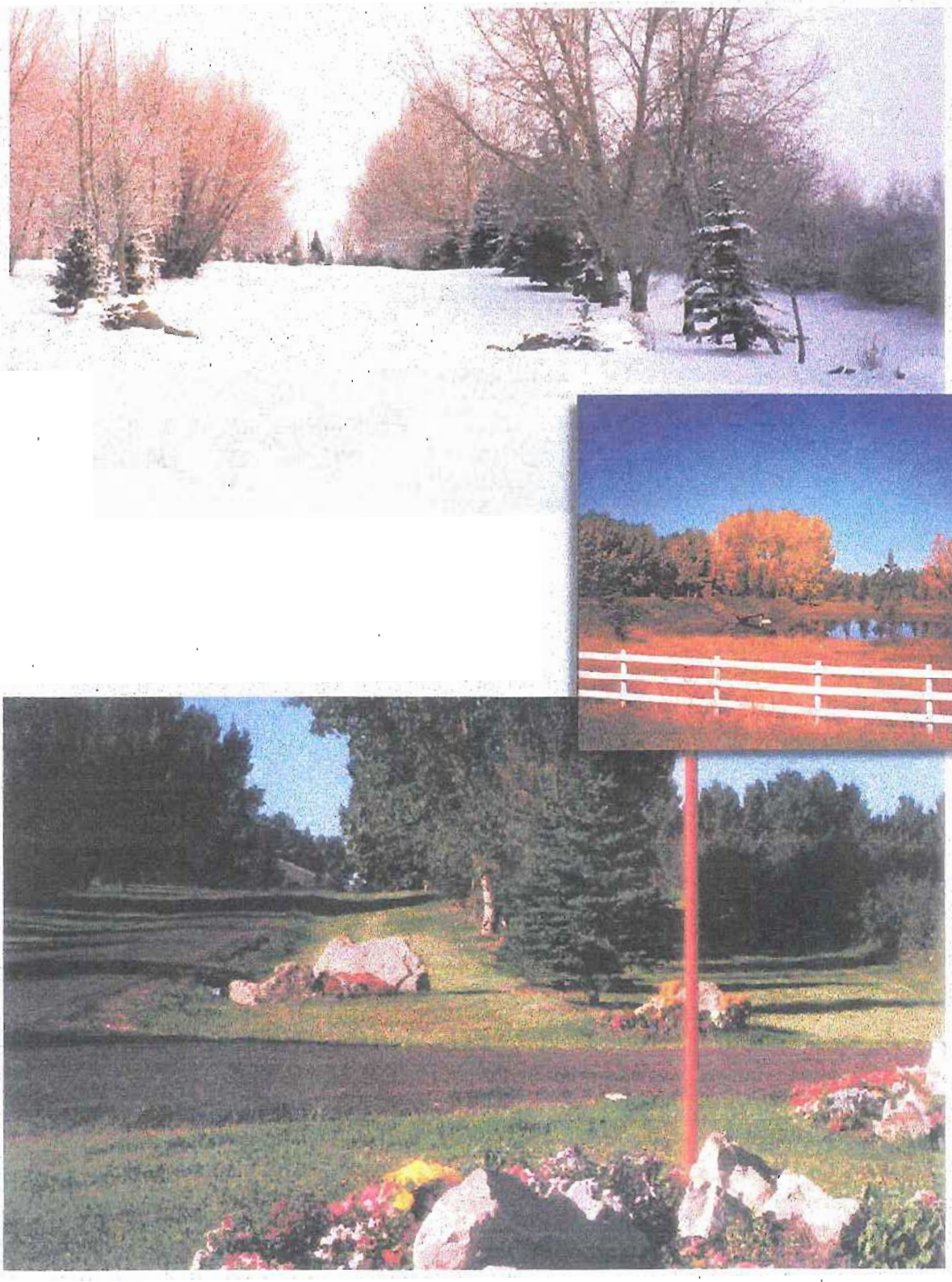
ALBERTA LAND SURVEYORS ASSOCIATION PERMIT NUMBER P 078 TRONNES SURVEYS (1976) LTD.

OWNERS

C DONALD WILSON MANAGEMENT LTD.
BOX 16, SITE 2, RR2
OKOTOKS, ALBERTA

TRONNES SURVEYS (1976) LTD. 110, 3030 - 3rd Avenue N.E., Calgary, Alberta T2A 6T7; 403-207-0303; File: 99-2094

FIGURES 6 & 7



It is the Development Proponent's intention to continue to live on lot 1 and for the next 5 years continue to own and operate the horse related facilities which include the stable, paddocks and track. This operation would be governed by an intensive use permit authorized by the M.D. and pursuant to the Development Agreement.

The Development Proponent's farm and training staff will provide advice regarding horse husbandry, stabling, feed, etc. to those homeowners who intend to stable horses on their own lot. Horse shelters must comply with the architectural guidelines which will be registered on each lot's title.

4.2 Land Use Component

.1 Country Residential

The development proposal consists of 24 country residential lots (ranging from 3.3 acres to 5.4 acres); one 12.9± acres M.R. Lot (comprising more than 10% of the gross acreage of the Plan Area and 5.9± acres Public Utility Lot (see Figure 5). This proposed development conforms to the Country Residential Guidelines for density as set forth in the Foothills Municipal Development Plan of not more than 1 lot per 5 acres of the parent parcel.

The goal of the Plan is:

To comprehensively plan a country residential estate community combined with the best elements of existing equine character of the subject lands in order to create a neighbourhood that offers a unique sense of community and one that achieves high design, aesthetic and environmental standard that are compatible with existing land uses and in conformance with the Municipal Development Plan.

The policies that will govern the development are:

- The country residential development shall conform to provisions of the Land Use By-Law including permitted and discretionary uses and including general and specific setback requirements.
- The country residential lots shall be greater than 3 acres in size.
- All subdivision and development shall be in conformity with the Municipal Government Act, Foothills Municipal Development Plan and the Development Agreement that would be required by the M.D. of Foothills at the time of plan of subdivision.

- All internal subdivision and approaches shall be designed in accordance with M.D. standards and shall be approved by the M.D.'s engineer, including the request to relax internal road allowance widths in order to preserve existing stands of mature trees.

- The bridle paths will be completed at the developer's expense and maintained by the homeowners, or Homeowners Association.

- The horse stable aspect of the development will be governed by an intensive agricultural permit and will include, among other things, regular disposal of manure from the stable facility. To the extent homeowners have horse shelter facilities the design and finish must receive committee approval and must be consistent with the house design and materials.

- Installation of underground power, gas and telephone shall be completed at developer's expense and in accordance to utility company standards.

- The Homeowners Association shall be registered with the Society's Act of Alberta and will be mandated to charge an annual fee to lot owners in order to pay for the maintenance obligations it undertakes.

- A comprehensive set of architectural guidelines will be implemented and each lot will be caveated with a restrictive covenant respecting the guidelines in order to ensure aesthetic integrity of the development.

- Each home site location will be pre-set by the development proponent and will take into account land form, topography, trees and possible view sheds.

- With respect to phasing the development, the development proponent intends to service the project in full in order to minimize inconvenience to the adjacent neighbors.

4.3 Environmental Considerations

The Plan Area has been cultivated, grazed and operated as a standardbred horse-training facility for two decades. There are no slope areas greater than 3% and there are no waterways or creeks (other than the spring melt described herein) on the subject land. The goal of the Plan is to develop the subject lands in a manner that is sensitive to existing trees, shrubs and landforms.

.1 Environmentally Sensitive Areas

There are no environmentally sensitive areas deemed to be on the property.

.2 Topographic Considerations

There are no topographical constraints. The development will include a storm water management pond to assist in handling spring melt run-off from the lands to the south of the Plan Area.

.3 Policies:

(a) The storm water management pond shall be completed in accordance with good engineering practice with surrounding green space seeded in natural grasses.

(b) The architectural guidelines will include pre-selected home sites in order to protect existing trees as much as possible.

4.4 Reserve Lands

.1 Environmental Reserve

There is no environmental reserve.

.2 Municipal/School Reserve

To ensure the recreational land needs of the M.D. are met the Plan proposes to dedicate 10% of the subject lands as Municipal Reserve. Capacity currently exists within area schools to accommodate possible student population from the Plan Area so no provision has been made for school reserve.

.3 Policies:

(a) Municipal Reserve will be dedicated as required by the Municipal Government Act and Subdivision Regulation

(b) Lands dedicated for Municipal Reserve shall be of similar nature as lands being used for development.

(c) Subject to mutual agreement between the M.D. and the development proponent, the development proponent would obtain a license to use and maintain the Municipal Reserve.

.4 Other Land Uses:

(a) Other Land Uses

The Plan proposes to create a P.U.L. at the southeast corner of the development (see Figure 5 – Site Plan). This lot will accommodate a storm water management pond that assists in remediating the "spring melt' run-off generated by the lands to the south of 306th Avenue. This land which is about 6 ± acres will also form a "green space" buffer between the proposed subdivision and the existing Willowside subdivision.

Policies to govern the P.U.L. are:

(I) The storm water management pond shall be designed and sized according to good engineering practice.

(II) The Development Proponent (prior to F.A.C.) and the Homeowners Association shall maintain the P.U.L. according to terms contained in the Development Agreement and a use license.

(b) Bridle Paths

The bridle paths will be located on the private lots formed by a plan of subdivision which grants a right of access through a registered easement. The easement bridle paths will be approximately 20 feet wide and will be located throughout the Plan Area (as shown on Figure 5 – Site Plan).

Policy with respect to the bridle path:

(I) The Homeowners Association and/or the individual lot owners shall be responsible for maintenance (e.g. weeds, cultivating) of the riding surface.

(II) The surface of the bridle path will consist of cultivated topsoil or low maintenance grass.

(III) The easement will be a three (3) party agreement between the development proponent, the lot owners and the M.D. of Foothills No. 31.

(c) Horse Shelters

Homeowners may build horse shelters on their lot; however, the facility must be consistent with house design and materials and also receive architectural approval.

Policies with respect to horse shelters are:

(I) As specified in the architectural guidelines restrictive covenants, homeowners may not board more than 2 horses on their lot.

(II) All horse shelters and out buildings are subject to architectural guideline approval. Standards of care, for horses, may be established by the Homeowners Association and all lot owners shall be bound by those standards.

5. TRANSPORTATION

5.1 Internal Roadways

The Plan strives to create an efficient internal road system and also attempts to enhance the aesthetic and environmental home site building experience.

The following policy shall apply:

(a) The roads shall be developed for M.D. standards including a standard paved road surface excepting the width of the road allowance is proposed to be 20 metres wide in order to preserve mature trees along the first 300 metres of internal roadway (i.e. narrower ditches). Such design shall be subject to approval of the M.D.'s engineer at subdivision approval stage.

5.2 External Roadways

The primary point of access into the subdivision is 306th Avenue which is a hard surfaced municipal road. The secondary access is provided by the eastern access point of 32nd Street.

The policy governing access to external roadways is:

(a) A traffic impact study is to be prepared at subdivision stage, to the satisfaction of the M.D. and Alberta Infrastructure. This study shall be prepared by a qualified professional at the expense of the developer. The study shall include an analysis and evaluation potential impact on the existing roads.

(b) The development proponent will contribute to the upgrades required on 32nd Street to meet Municipal Standards and to meet the satisfaction of Council.

6. SERVICING

The Plan contemplates a first class country residential community and servicing shall be in conformance to M.D. standards and other such guidelines as set forth in provincial regulations.

6.1 Water Supply

The proposed water system will include individual wells for each lot. The two wells in operation on the subject land currently produce at 7gpm and 15 gpm. While no extensive water testing has been done, the subdivision to the east (Willowside) has wells that have been tested up to 26 gpm. This knowledge, along with the development proponent's experience on the land suggests development of suitable wells will not present a problem. The study prepared by Groundwater Exploration & Research (see Appendix A2- Supporting Studies) confirms that a communal well/water distribution system is satisfactory for a development of this scale.

Policies governing water supply include:

(a) The necessary exploration wells and recovery testing and Q20 calculations will be undertaken as part of the subdivision application necessary to meet M.D. guidelines and the Provincial Water Act in order to satisfy licensing for a communal distribution system. However, upon further testing it is the development proponents' preference to employ individual wells on each lot; subject to satisfaction of M.D. guidelines and the Provincial Water Act.

6.2 Sewage Disposal

Treatment of sanitary effluent will be accomplished through individual septic tank and field systems in accordance with Alberta Labour regulations. This is typical of domestic use within the M.D. Previous experience in the area suggests septic fields work satisfactorily in similar landforms.

Policies with respect to sewage disposal are:

(a) The development proponent shall conduct percolation tests for each lot as part of the subdivision application in order to establish the suitability for septic fields.

(b) As part of the subdivision application the development proponent shall conduct a geotechnical and near surface groundwater study that will further confirm the suitability of septic field disposal methods, to the satisfaction of the M.D.

6.3 Storm Water Management

Currently the "spring melt" from the lands south of 306th Avenue drain towards the intersection of 306th Avenue and 32nd Street, as well as draining through a culvert at 306th Avenue approximately 200 metres west of that intersection. This causes water to pool in the southeast corner of the Plan Area as well as several lots in the existing Willowside subdivision. The Plan includes a provision for a storm water management pond to help alleviate this situation.

Policies respecting Storm Water Management are:

(a) The design of the Storm Water Management System will be provided with the subdivision application and will be designed in accordance with good engineering practise and to the satisfaction of the M.D.

(b) Prior to any plan of subdivision approval, a master drainage plan will be prepared for the Plan area and to the satisfaction of the M.D.

(c) All required Provincial approvals will be obtained with respect to storm water management and the storm water management will be done with the cooperation of the neighbours in the eight (8) lot development to the east.

6.4 Shallow Utilities

The shallow utilities include gas, telephone and electrical. The shallow utilities shall be provided to the individual lots by the development proponent at his expense.

Policies governing the provisioning of shallow utilities include:

(a) The provisioning of shallow utilities within the Plan Area shall be provided at the expense of the development proponent and in accordance with the standards of the M.D. Development Agreement.

6.5 Other Services

.1 Fire and Emergency Services

The Plan area is five miles north of Okotoks and can be serviced from fire and ambulance departments from that municipality.

Policies respecting fire and emergency protection are:

(a) The application for subdivision shall assure proper emergency vehicle access is incorporated in final design.

.2 Police Protection

The Plan Area will be serviced by the R.C.M.P. detachment from Okotoks and the M.D. of Foothills Special Constables.

7. IMPLEMENTATION

Subject to M.D. approval and adoption of the Area Structure Plan and subject to satisfactory subdivision the Plan Area shall be developed in accordance with the Plan and pursuant to the Development Agreement.

C. Donald Wilson Management Ltd (whose principal is Mr. Don Wilson) and URBCO Inc. will be the developers for the Willowside Farms project. Mr. Wilson has worked in the housing and development industry for over 40 years. During his career Mr. Wilson managed or directed the Wilson family companies, then Engineered Homes and finally Genstar Homes which also included Keith Homes, Engineered Homes and Broodmoor Homes of California. Currently, Mr. Wilson is Chairman of Urbco Inc., a publicly traded real estate company that has developed such projects as Sheep River Ridge in Okotoks and Pinnacle Ridge in the M.D. of Rockyview.

Mr. Wilson has retained the services of Barry Poffenroth and George Gordon to assist in the development process. Mr. Wilson and Mr. Poffenroth have been associated in the home building and development industry since 1977. Mr. Poffenroth worked at both Engineered Homes and Urbco Inc.and was instrumental in developing the 51-lot country residential development of Pinnacle Ridge. Mr. Gordon (M.C.I.P.) has an architectural and planning career that spans over 40 years.

In late December 1999 Messrs. Wilson and Poffenroth "knocked on doors" visiting as many of the residents as possible within a half mile radius of the Plan Area. Approximately 25 neighbours were shown the concept plan as part of the public consultation. In late December 1999 a presentation was also made to the Okotoks Agricultural Society to inform them of the Plan and make the offer for 5-year memberships for residents living in Willowside Farms. Over 2.5 hours of individual "face to face" meetings were held with the neighbours. The discussions resulted in excellent feedback, and these ideas were incorporated in the plan. These meetings confirmed support for the concept.

APPENDIX TO THE WILLOWSIDE FARMS AREA STRUCTURE PLAN

A.1 Agricultural Soils and Use

APPENDIX

A1. Agricultural Soils & Use

Within a half mile radius of the Plan Area (8 quarter sections that "touch" the Plan Area) there are 13 parcels with agricultural zoning; 53 parcels zoned country residential; 1 parcel zoned commercial rural and 1 parcel zoned commercial. This particular area of the M.D. is in transition to primarily a country residential setting. This has occurred because of the closeness to existing and satisfactory infrastructure such as Highways 2 and 2A. This is consistent with the Municipal Government Act and the Municipal Development Plan). Development has also occurred because the surrounding country residential uses do not interfere with the present agricultural uses.Given the number of country residential parcels it is clear that further country residential zoning is compatible with surrounding uses. The proposed development fronts onto a hard surfaced municipal road (306th Avenue) and is about 1 kilometer west of Highway 2 and 1 kilometer east of Highway 2A.

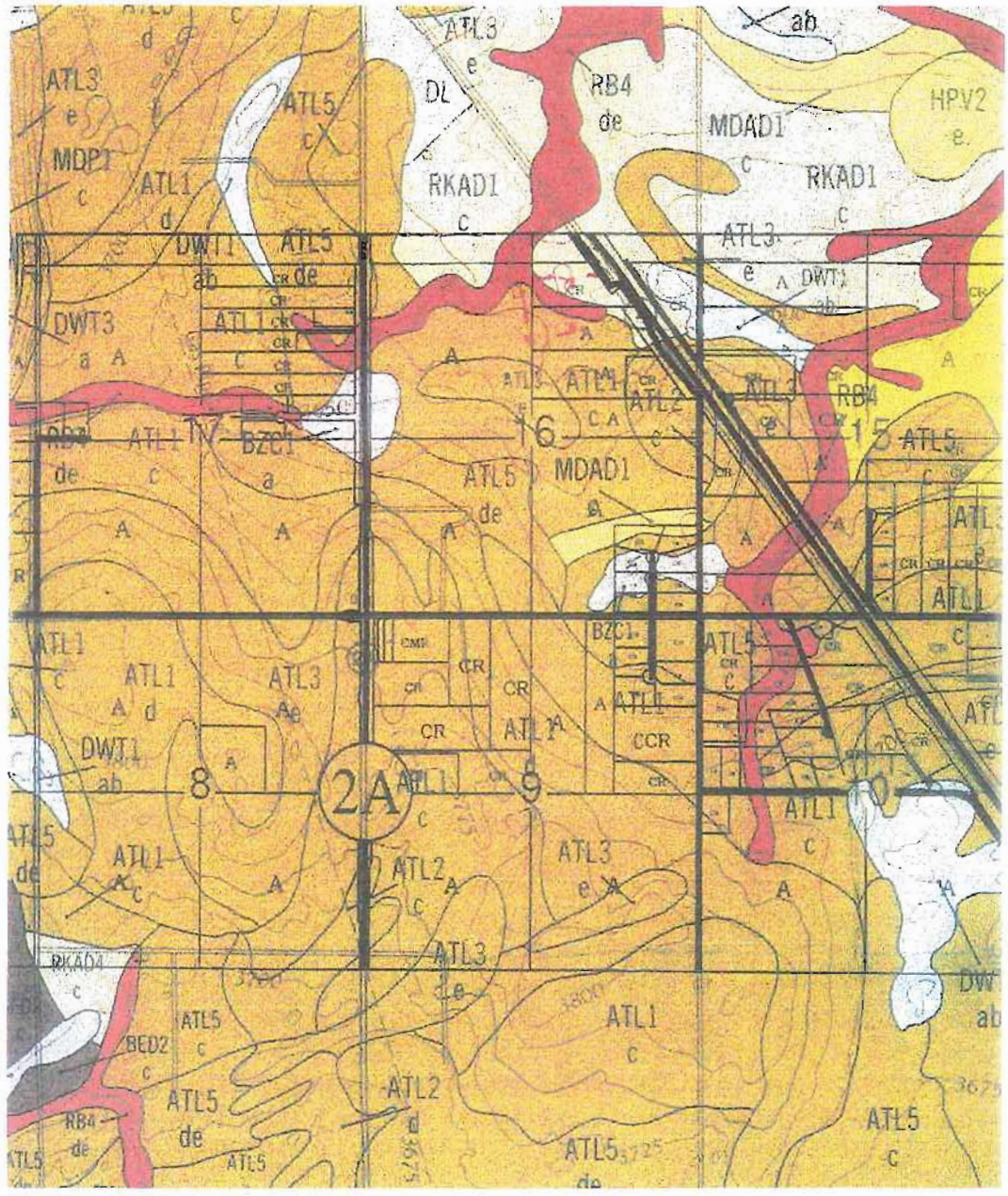
The equestrian nature of the Plan (e.g. bridle paths, stable, paddocks, etc.) is carefully designed to allow residents to co-exist with the horse ambiance created by the development. For example, the bridle paths are "fenced off" from residential yard spaces. Other facilities, such as the stable, paddocks and training track will be maintained by the development proponent for 5 years or until the community is fully established. The horse facilities and the nature of the subject lands present use (i.e. standardbred horse training) is essentially preserved by this Plan. By preserving the existing character the development also helps complement the operation of the Hebson Arena, as each lot owner will have a 5-year membership to the Okotoks Agricultural Society. The Society organizes such activities as the Pony Club, cattle penning, team roping and other equestrian events. There are frequent dinners on various aspects of horsemanship.

Of the 53 parcels zoned country residential, approximately 14 of the parcels, or 26% of the country residential parcels, have horses on their property. It is reasonable to assume no more than a quarter of the lots at Willowside Farms would have horses, especially when taking into consideration that Willowside Farms will have a 20 horse stable that could house residents' horses.

Previous subdivisions within a half mile of the Plan Area, the majority occurring to the southeast of the subject lands have occurred in land with soils consisting of Class 2, 3, 4 and 6; in similar percentages of soils classes (see Appendix – Figure 1 – C.L.I. Land Map with Zoning Map). Graecam Incorporated, a soils agrology firm, was retained to assess the agricultural capability of the subject land; as the C.L.I. mapping is performed on such a broad scale the results can

often overlook individual site variations. Graecam's report indicates class 3, 4, 5 soils (see A2 – Supporting Studies). The report indicates the subject lands consist of 69% Class 3; 24% Class 4 and 4% Class 5 soils with the Farmstead representing 3% of the site. Sustained crop production is made difficult as there are 13 units of Class 4 and 5 soils scattered throughout the subject site.

APPENDIX FIGURE 1



A2. Agricultural Capability Assessment

March 13, 2000
File # 00-01

Graecam INCORPORATED

Mr. Don Wilson,
Willowside Farms
Box 16, Site 2
RR #2
Okotoks, Alberta
T0L 1T0

RE: portion of SE 16 - 21 - 29 W4
Agricultural Capability Assessment

Dear Mr. Wilson,

Pursuant to your request, the following letter report will present the findings of an Agricultural Capability Assessment on the above noted property. The site was inspected on February 29 and March 8, 2000.

INTRODUCTION

The following report presents the Agricultural Capability for the above noted property for two assessment procedures. The first procedure is basically that of the Canada Land Inventory (CLI) fashioned after Brocke (1977) and is based upon the site inspections and on a review of the following publications:

> Alberta Environment, 1977. Soil Capability for Agriculture in Alberta. Prepared by L. K. Brocke, Pedology Consultants, Edmonton.
>
> Bowser, W. E. 1967. Agro-Climatic Areas Map of Alberta. Surveys and Mapping Branch, Dept. of Energy Mines and Resources, Ottawa.
>
> Canada Land Inventory, 1971. Soil Capability for Agriculture, Map Sheet 82I, Gleichen. Dept. of Regional and Economic Expansion, Ottawa.
>
> MacMillan, R.A., 1985. Soil Survey of the Calgary Urban Perimeter. Alberta Soil Survey Report # 45., Alberta Inst. of Pedology, Edmonton.

The second procedure is based upon field inspections and the Land Capability Classification for Arable Agriculture in Alberta Edited by W.W Pettapiece and reprinted in 1990. This system replaces the 1977 Soil Capability for Agriculture in Alberta and reworks the Agro-Climatic Areas Map of Alberta (Bowser 1967).

The above publications serve as a guide for the assessment of Agricultural Capability in the Calgary area. The maps included in these publications are intended for regional planning purposes and due to their small scale, can be misleading when dealing with small parcels of land such as the property investigated herein. The most reliable soil information is found in Macmillan's Soil Survey of the Calgary Urban Perimeter which is presented at a scale of 1:50,000.

1712 - 13th Avenue S.W., Calgary, Alberta T3C 0T9
Tel. (403) 244-3556 Fax. (403) 228-9794 Cel. (403) 540-0797
E-mail: graecam@cadvision.com

1977 C L I

CLIMATE ZONE

The property is located in Climate Zone 2H. Bowser describes conditions for Climate Zone 2H as "Areas where the amount of precipitation has usually been adequate but where wheat has suffered some frost damage in approximately 30 percent of the years. The frost free period has averaged between 75 and 90 days".

Soils within a climate zone are initially assessed a capability class equal to the climate zone. Soil and landscape limitations are then employed to further downgrade the soil capability for agriculture where warranted.

SOIL CAPABILITY CLASSIFICATION SYSTEM

The classification system does not consider the following:

1. Shrubs, trees, or stumps are not considered as limitations unless it is not feasible to remove them.

2. The soils will be cropped under a largely mechanized system and with good management practices.

3. Soils considered feasible for improvement by practices that can be made by the farmer himself are classified according to their limitations after the improvements are made. Soils requiring improvements beyond the means of the individual operator are classified to their present condition.

4. Distance to market, kind of roads, location, size of farm, characteristics of land ownership, cultural practices and the skill or resources of the operator are not criteria for capability groupings.

SOILS AND TOPOGRAPHY

The following discussion of soils and capability classes is based on the soil inspections advanced during the course of the project and a review of MacMillan (1985)

The property includes 120 acres. Previous mapping by MacMillan (1985) indicate the dominant soils are Orthic Black Chernozems developed on fine loamy textured till. Lowerlying soils developed in the depressions and drainage ways are imperfectly drained Gleyed Black Chernozems and in two northern units are poorly drained Gleysols. Lower lying wet spots in the south end of the property are poorly drained sodic and saline Gleysols. Topography is for the most part gently undulating with slopes in the 2 to 5 % range.

The larger depressional units are areas of groundwater discharge. This reflects the presence of a near surface water table for a good portion of the growing season.

AGRICULTURAL CAPABILITY

The distribution of Agricultural Capability Classes according to the 1977 CLI system is provided on the appended map.

The highest capability permitted within Agro-climatic Zone 2 is Agricultural Capability Class 2. The limitations of the soils and landscapes where applicable, are then assessed to adjust the soil capability. Agricultural Capabilities are assessed from the Canada Land Inventory Soil Capability for Agriculture in Alberta (Alberta Environment, 1977) and as proposed by MacMillan (1985).

The dominant soil is some what restricted for agriculture by the combined limitations of topography (T) and erosion (E) which is evidenced by thinner surface Ah soil horizons. These soils are rated as Agricultural Capability Class 3 ET.

Eight map units were identified as lowerlying and comprised of imperfectly drained Black Chernozems. These soils are severely limited by excessive wetness (W) and generally restricted to grazing or forage production, class 4 W.

Two areas in the southeast corner are affected by excess salinity/sodicity (N) as well as wetness (W). One area is severely limited for agriculture (class 4 NW) and the other is very severely limited (class 5 NW). The presence of surface salts is indicative of groundwater discharge.

Two map units in the northwest corner are very poorly drained gleysolic soils with the watertable at or near the surface for the majority of the year. These soils are severely restricted by the excessive wetness (W) to class 5 W.

The Farmstead (FS) is not rated for agriculture.

SUMMARY

The distribution of Agricultural Capability Classes as assessed under the 1977 CLI system is presented on Table 1.

Table 1. Distribution of Agricultural Capability Classes

Agricultural Capability Class	Number of Map Units	Area (acres)	Percentage of Total Area
3 ET	2	82.6	68.8
Total Class 3		**82.6**	**68.8**
4 NW	1	8.5	7.1
4 W	8	19.3	16.1
4 T	1	0.5	0.4
Total Class 4		**28.3**	**23.6**
5 NW	1	2.5	2.1
5 W	2	2.5	2.1
Total Class 5		**5.0**	**4.2**
Farmstead (FS)	1	4.1	3.4
TOTALS		**120**	**100**

In summary, approximately 83 acres or 68.8 % of the property is Class 3. Class 3 soils have moderately severe limitations that restrict the range of crops or require special conservation practices.

Approximately 24 % of the property is rated as Class 4 for agriculture. Class 4 soils have severe limitations that restrict the range of crops that can be grown or require special conservation practices to overcome or both. These soils are not suited for annual cultivation.

Approximately 4% of the property is rated as Class 5. Class 5 soils have very severe limitations that restrict their capability to producing perennial forage crops and improvements are feasible.

Including the Farmstead over 31% of the property is rated as Class 4 or worse under the 1977 CLI system.

1990 LAND CAPABILITY CLASSIFICATION SYSTEM

BACKGROUND

The Land Capability Classification for Arable Agriculture In Alberta (sponsored by the Alberta Soils Advisory Committee (ASAC) and Edited By. W.W. Pettapiece, 1990) was prepared by representatives of Alberta Agriculture (Land Use Branch), Alberta Energy and Natural Resources (Resource Evaluation and Public Lands Division), Alberta Municipal Affairs (Assessment Services) and Agriculture Canada (Soil Survey). The document was

prepared to address concerns that the use of several different systems in the province was leading to unnecessary confusion and conflict. Previous systems employed in the province included the Farmland Assessment Schedule of Municipal Affairs (Department of Municipal Affairs, 1979), the Public Lands System (Storrie (1933) and the CLI - Soil Capability for Agriculture (Brocke 1977, Canada Land Inventory 1965).

The basic concepts of the Canada Land Inventory: Soil Capability for Agriculture (Canada Land Inventory 1965) were adopted, that is a seven class system with Class 1 having the highest capability (least limitations) and Class 7 having the lowest capability (greatest limitations). The ASAC system was designed to accommodate the three major components of climate, soils and landscape. It was agreed that each of these components by themselves could be limiting to agriculture and therefore each should be considered separately and each should be assessed over the total of 0 to 100 points. The final agricultural capability rating would be based on the most limiting of the three, not the accumulated total.

The new system retains a close similarity to the older CLI - soil capability for agriculture system (Canada Land Inventory 1965) but attempts to be more quantitative. In both systems land is grouped into seven classes according to their potentialities and limitations for agricultural use. The definition of the classes are essentially the same as previously defined except that a range of index points is now assigned to each class. The first three classes are capable of sustained production of common cultivated crops, while the fourth class is considered marginal.

CLIMATE FACTORS

The two principal climatic variables are the energy factor and the moisture factor, the most limiting of which determines the basic climatic rating. Four climatic modifiers; spring moisture, fall moisture, fall frost and hail occurrence are recognized as having an effect on the climatic assessment of agricultural capability. Climatic data from over 200 locations throughout Alberta were used to generate the climate maps. A major test of the climate factors and maps was conducted using crop choice to define capability classes.

For the property in question the moisture factor is taken as the precipitation minus the potential evapotranspiration and is approximately -250. For this value a deduction of 19 points is made which gives a climatic rating based only on moisture of 81 points or class 1.

The energy component is based on effective growing degree days (EGDD) which incorporates the length of the season, degree days, day length and diurnal temperature range parameters. The start of the growing season is taken as the first occurrence of five consecutive days with a mean temperatures above 5° C after March 15. The end of the growing season is represented by the average date of the first occurrence of 0° C after July 15. Climatic data are taken for the period of 1951 to 1980. Translation of EGDD values to agricultural capability follows:

1500 EGDD	Should be no limitation. deduction = 0 points
1200 EGDD	This is closer to the point where wheat drops to a minor component in a dominantly barley system. This should be class 3. deduction = 40 points
1100 EGDD	This is near the point where annual crops occupy less than 50% of the cultivated area. This is close to marginal or class 4. Deduction = 50 points
950 EGDD	This marks the edge of arable agriculture which should be class 5. Deduction = 70 points
200 EGDD	Has no agricultural potential. Deduction = 100 points.

The map of Effective Growing Degree Days included in Land Capability for Arable Agriculture in Alberta (ASAC 1987) places the property at an EGDD of 1125. This value for Effective Growing Degree Days results in a deduction of 52 points leaving a rating value of 48 points or class 3 based on the climatic energy component only.

Four climatic modifying factors are available for assessment. Excess spring moisture that delays seeding and therefore shortening the growing season, excess fall moisture which cause a decrease in farming capability, hail index and resultant loss in yield/quality of crops and fall frost which is based on the occurrence of frost prior to the regional average recognized in the EGDD assessment. All of the climatic modifying factors are evaluated as non-limiting and therefore no further deductions that those from the growing season (EGDD) assessment are made.

SOIL CAPABILITY

The Climatic rating has no effect of changing the soil capability class. Class 3 ET would change to 3 C and all other classes would remain the same.

Should you have any questions or require further information please do not hesitate to contact the undersigned.

Yours Truly,

Craig Heath, M.Sc., P. Ag.

-Graecam-
Incorporated

A3. Groundwater Supply Feasibility

#99205

Groundwater Supply Feasibility
CD Wilson Management property
Area Structure Plan: SE-16-21-29-W4M

Submitted to:

Barry Poffenroth

Prepared by:

Groundwater Exploration & Research Ltd
April 2000

Groundwater
Exploration & Research

Groundwater Exploration & Research LTD

Box 15
Balzac, AB. CANADA T0M 0E0
Phone (403) 226-0330: Fax (403) 226-6593: Email: nowakb@cadvision.com

April 10, 2000
File No: 99205

Barry Poffenroth
113 Pinnacle Ridge Place RR12
Calgary, AB.
T3E 6W3

Dear Mr. Poffenroth:

RE: CD Wilson Management property: SE-16-21-29-W4M
Area Structure Plan - Groundwater Feasibility Assessment

Enclosed find our report which addresses the groundwater feasibility in the immediate area of the CD Wilson Management property at SE-16-21-29-W4M in the Municipal District of Foothills.

Background Information

A 24 lot subdivision is being proposed for the 48.56 hectare [120 acre] balance parcel in the SE-16 quarter section. An 8 lot subdivision [Willowside Farms] currently exists in the southeast corner of the quarter section. The proposed property is located approximately 2.5 km south of the Highway #2 and Secondary Road 552 interchange, and southeast of the Hamlet of DeWinton. The proposed lot size for the 24 lot subdivision is approximately 1.62 hectares [4 acres].

In accordance with the Municipal District of Foothills regulations, there is a requirement to prepare an Area Structure Plan for subdivisions with 8 or more parcels. This report addresses the feasibility of finding sufficient volumes of groundwater to sustain an additional 24 lots in SE-16-21-29-W4M.

In accordance with the Water Act, a household is allowed to withdraw up to 1250 m^3/year without requiring a license to divert water. Based on the maximum allocation of 1250 m^3/year or 3.42 m^3/day, the total water requirement is 82.1 m^3/day [12.5 Cgpm] for individual wells per lot. For a licenced communal well, the water requirement is 400 gpd/lot or a total of 43.64 m^3/day [6.7 Cgpm].

Geomorphic/Geologic Setting

The land in the area of SE-16 is gently rolling with a regional slope toward the northeast. The elevation change across the SE-16 quarter section is less than 7.5 meters [Dalemead 82 I/13; 1:50,000 topographic map sheet] based on contour interval spacing.

The bedrock in the area [Green, 1970: Geologic Map of Alberta; 1:267,000] is mapped as the Porcupine Hills Formation of continental origin. The Porcupine Hills Formation consists of greenish-grey, thick bedded, chloritic and feldspathic sandstone and blocky grey mudstone; with some tuff and thin coal beds. Water bearing units in the Porcupine Hills Formation are generally lenticular in geometry and of limited lateral extent.

Ozoray & Lytviak [1974: Hydrogeology of the Gleichen area, Alberta; Alberta Research Council, Report 74-9] map the area as having a groundwater potential of 33 to 164 m^3/day [5-25 Cgpm]. The regional groundwater flow is northeast toward the Bow River drainage basin.

Pertinent Regulations

Country residential subdivision and groundwater supply is regulated by Section 23(3) of the Water Act and stated as follows:

"If, after this Act comes into force, a subdivision of land of a type or class of subdivision specified in the regulations is approved under the Municipal Government Act, a person residing within that subdivision on a parcel of land that adjoins or is above a source of water described in section 21 has the right to commence and continue the diversion of water under section 21 only if

(a) a report certified by a professional engineer, professional geologist or professional geophysicist, as defined in the Engineering, Geological and Geophysical Professions Act, was submitted to the subdivision authority as part of the application for the subdivision under the Municipal Government Act, and the report states that the diversion of 1250 cubic meters of water per year for household purposes under section 21 for each of the households within the subdivision will not interfere with any household users, licensees or traditional agriculture users who exist when the subdivision is approved, and

(b) the diversion of water for each of the households within the subdivision under section 21 is not inconsistent with an applicable approved water management plan.

Water Regulation [AR 205/98]

9(1) Subject to subsection (2), a type of subdivision of land for the purposes of section 23(3) of the Act is a subdivision that results in 6 or more parcels in a quarter section or in a river lot.

In essence, Section 23(3) of the Water Act asks two basic questions:

[a] Is there sufficient water to satisfy the maximum requirement of 1250 m^3/year for each lot in the proposed subdivision?

[b] Will the allocated volume of water per lot result in a significant adverse effect on neighbouring wells and licensed users existing at the time of subdivision application?

Groundwater Well Data

A survey of groundwater well data in SE-16 and the surrounding 8 quarter sections of land was undertaken utilizing available information from Alberta Environmental Protection's groundwater database file. A total of 61 well records were available for review, including 9 well records from the SE-16 quarter section. A summary of available water well information is summarized in Table 1, appended to this report. The following observations have been drawn from a review of the water well data:

[1] Well depths vary significantly from 7.6 to 114.3 meters over the nine quarter sections. Within the SE-16 quarter, the well depths vary from 7.6 to 30.5 meters. The topographic relief across the nine quarter section block is up to 61.0 meters and up to 7.5 meters across the SE-16 quarter section. The variability in well depth exceeds the topographic relief across the site, indicating that the water bearing zones are not continuous across the immediate area. The geometric mean well depth is 29.3 meters which gives an indication of the anticipated well depth for future well drilling on the proposed lots.

[2] Completion intervals vary from shallow depths of 7.3 to 22.6 meters [Willowside Farm: SE-16, Apr 90], to deeper completions at 47.3 to 59.5 meters [Burly: NW-15] also suggesting that the water bearing zones are not continuous across the nine quarter block section or even within the immediate area of SE-16.

[3] Preliminary flow estimates vary from 13.1 to 163.6 m^3/day over the regional nine block section; and 26.2 to 163.6 m^3/day over the SE-16 quarter section. The variability in flow rates can be attributed to differences in bed geometry, texture, and cementation characteristics; in addition to well depth completion interval. The geometric mean flow, based on available well records is 56.7 m^3/day. This volume of water is sufficient to accommodate up to 16 lots based on the maximum allowable of 3.42 m^3/day per lot for a scheme involving individual wells per lot.

Within the SE-16 quarter section, the geometric mean estimated flow rate is 63.9 m^3/day which is sufficient to service up to 18 lots. This estimated number of lots is less than the proposed 24 lot subdivision for individual wells on each lot. However, both the local and regional flow estimates exceed the groundwater requirement based for a licensed communal well.

[4] Some of the wells are completed with extensive open areas [Willowside Farm, May 90: 6.1 to 30.5 meters; Kolfam Farm: 12.2 to 33.5 meters]; and/or multi-layer watering bearing zones [Dykster: NE-16; Illick: NW-10; Whyte: NW-10 and Campbell: NW-09]. Domestic wells with extensive open areas and or multi-layer completion zones generally signify the presence of low yield, water bearing zones.

[5] The non-pumping water level data displays a significant variability in depth from 1.5 to 22.3 meters. In general, for wells less than 45 meters in depth, the non-pumping water level is fairly constant with a geometric mean of 7.9 meters. With increased well depth, the non-pumping water level drops indicating that the area is within a zone of downward groundwater flow.

[6] The available drawdown in the wells generally exceeds 9 meters which should be sufficient to accommodate any potential well interference.

[7] Although country residential subdivision has been fairly extensive within the nine quarter block section, there is some evidence to suggest that the regional water table has not dropped. Seven wells drilled in the 1960's and 1970's have a geometric mean non-pumping water level of 8.1 meters; 12 wells drilled in the 1980's have a geometric mean of 6.9 meters; and 15 wells drilled in the 1990's have a geometric mean of 7.7 meters. Over nearly a 35 year period, there is no evidence for any major decline in regional water table.

Licensed Users

There are no licensed users within the block of nine quarter sections.

Site Specific Flow Test:

To develop some site specific data, the Wilson house well was tested by Aaron Drilling Inc. on March 17, 2000. The well was tested at a rate of 94.91 m^3/day [14.5 Cgpm] for a period of 750 minutes. The transmissive capacity was determined graphically as 18.0 m^2/day. The calculated sustainable flow rate, based on the flow test data and available drawdown, was 47.6 m^3/day [7.3 Cgpm]. The sustainable flow was constrained by the limited amount of drawdown [5.8 meters] in the well. The calculated Q_{20} of 47.6 m^3/day [7.3 Cgpm] is sufficient to accommodate 24 lots based on a licensed communal well scheme.

Additional well drilling and testing would be required to confirm the capability for the proposed 24 lot subdivision to be serviced with individual wells.

Well Interference

With respect to the potential for well interference as indicated in Section 23(3) of the Water Act, a calculation for well interference, neglecting recharge, at any given distance from the pumping well can be determined from:

$$u = r^2S/4Tt \text{ and}$$

$$s = QW(u)/4*pi*T$$

where:

u and W(u)	=	well function parameters
T	=	transmissive capacity in m^2/day calculated from actual pump test data
S	=	coefficient of storage, dimensionless
t	=	20 years of continuous pumping, in days
r	=	distance between pump well and neighbouring well
s	=	projected drawdown at the neighbouring well and assumed to be 1 meter or less
Q	=	pumping rate of 1250 m^3/year or 3.42 m^3/day

The calculation for well interference is based on the general assumption that a maximum projected drawdown of 1 meter, after 20 years of continuous pumping and neglecting recharge, is an acceptable drawdown that would not unduly interfere with a neighbouring wells' performance.

[3] The transmissive capacity will need to be calculated on an individual well basis. A minimum well test duration of 12 hours pumping and 12 hours of recovery is sufficient to generate the required data. For a licensed communal well, a minimum flow test of 36 hours pumping and 36 hours recovery should be undertaken.

Closure

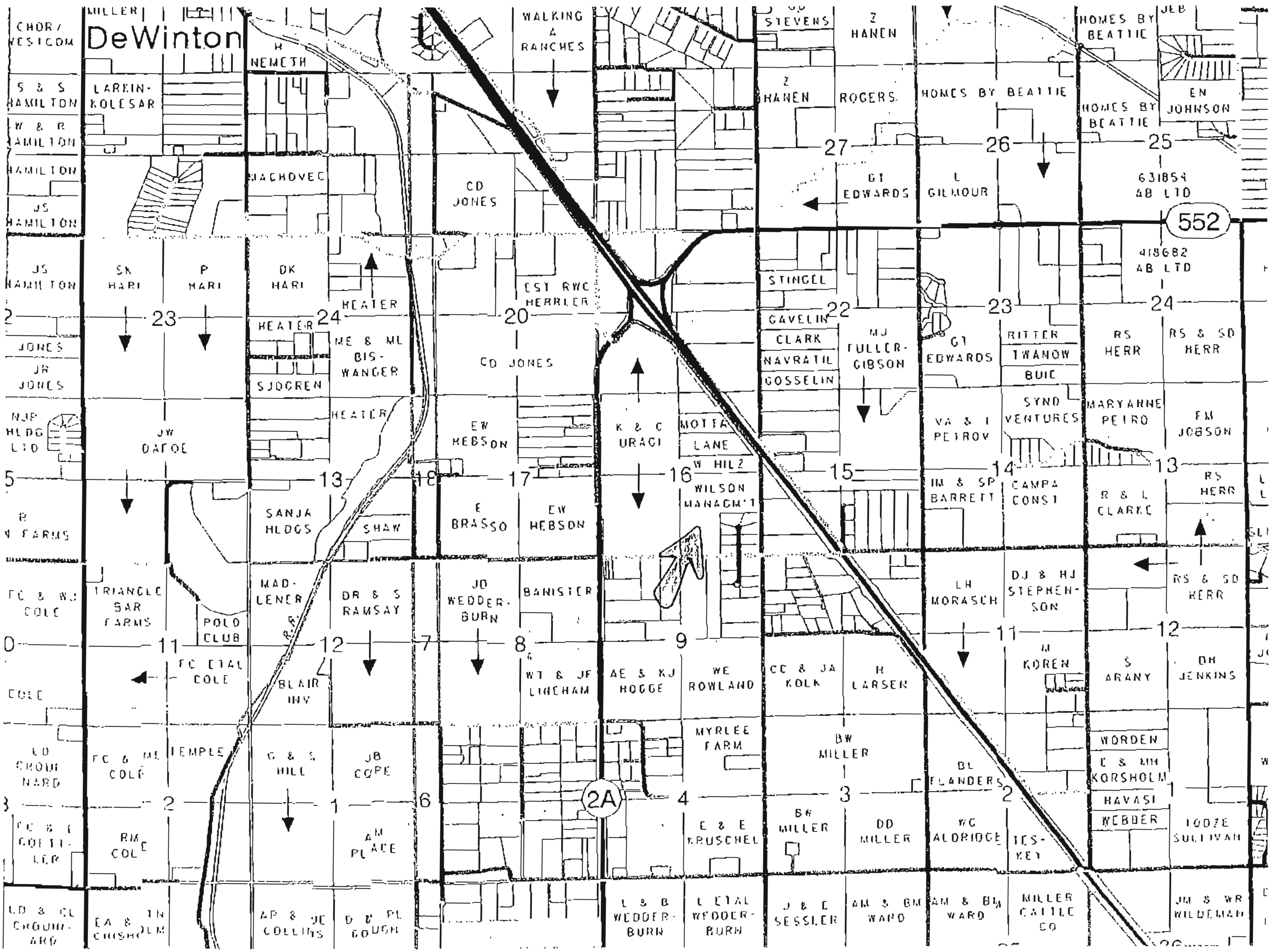
If you have any questions or comments regarding the assumptions and conclusions drawn in this groundwater feasibility assessment, contact the undersigned at your convenience. Thanking your for the opportunity to have been of service, we remain,

Respectfully yours,
Groundwater Exploration & Research Ltd

Bob Nowak

Bob Nowak; Ph.D., P.Geol.
Groundwater Geologist

Appendix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IM & SP BARRETT
CAMPA CONST
R & L CLARKE
SANJA HLDGS
SHAW
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POLO CLUB
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DR & S RAMSAY
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LH MORASCH
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CC & JA KOLK
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Table 1
Summary of Groundwater Well Data

Location	Landowner	Date Drilled	Td/Npwl (m)	Flow Estimate (m^3/day)	Completion Interval (m)
TP21, R29					
SE-16	Willowside Farm	Apr 90	25.9/5.5	91.6	19.8-25.9
SE-16	Willowside Farm	Apr 90	25.9/3.0	26.2	7.6-25.9
SE-16	Willowside Farm	Apr 90	25.6/4.9	52.4	16.5-25.6
SE-16	Willowside Farm	May 90	18.3/3.7	39.3	9.1-18.3
SE-16	Willowside Farm	Apr 90	24.4/3.7	163.6	14.3-24.4
SE-16	Willowside Farm	May 90	30.5/3.7	78.5	6.1-30.5
SE-16	Willowside Farm	Apr 90	25.6/4.6	26.2	7.3-22.6
SE-16	Bucham	May 59	7.6/1.5	163.6	na
SE-16	Wilson	Jan 87	22.9/7.6	65.5	16.8-22.9
NW-16	Thompson	Dec 59	38.1/7.0	98.2	na
NE-16	Motta	Nov 97	61.0/6.9	39.3	30.5-54.9
NE-16	Dykster	Oct 69	114.3/na	78.5	12.2-22.9 & 29.0-35.1 & 41.2-50.3
NE-16	Bice	Aug 46	30.5/na	na	na
NE-16	Bice	Aug 46	30.5/13.7	na	na
NE-16	Kelly	Jul 59	11.0/na	na	na
NE-16	Molitor	Aug 91	94.5/6.1	19.6	12.2-36.6
NE-16	Hilz	Nov 88	48.8/12.2	19.6	30.5-36.6 & 42.7-48.8
SW-16	Uragi	Jul 88	26.5-10.7	98.2	14.3-26.5
00-10	Parker	Feb 47	22.9/7.6	16.4	na
NW-10	Rollinson	Nov 69	34.5/14.3	32.7	29.0-33.8
NW-10	Illick	Mar 93	35.1/7.6	130.9	6.7-8.2 & 19.8-32.0
NW-10	Whyte	Jul 94	50.0/13.7	36.0	27.4-36.6 & 45.7-49.7
NW-10	Hromic	Jul 87	36.6/6.1	78.5	30.5-36.6
NW-10	Illick	Mar 93	25.9/4.6	32.7	13.7-21.3
NW-10	Grey	May 72	21.3/9.1	45.8	13.7-16.8
NW-10	Laybourne	Nov 69	26.8/9.1	45.8	21.3-26.8
NW-10	Hromic	Apr 91	45.7/15.2	163.6	24.4-45.7
NW-10	Johnston	Jul 88	22.9/9.1	130.9	10.7-22.9
NW-10	Hromic	Apr 91	36.6/10.4	16.4	18.3-36.6
NW-10	Johnston	Sep 90	22.9/7.6	58.9	12.2-22.9

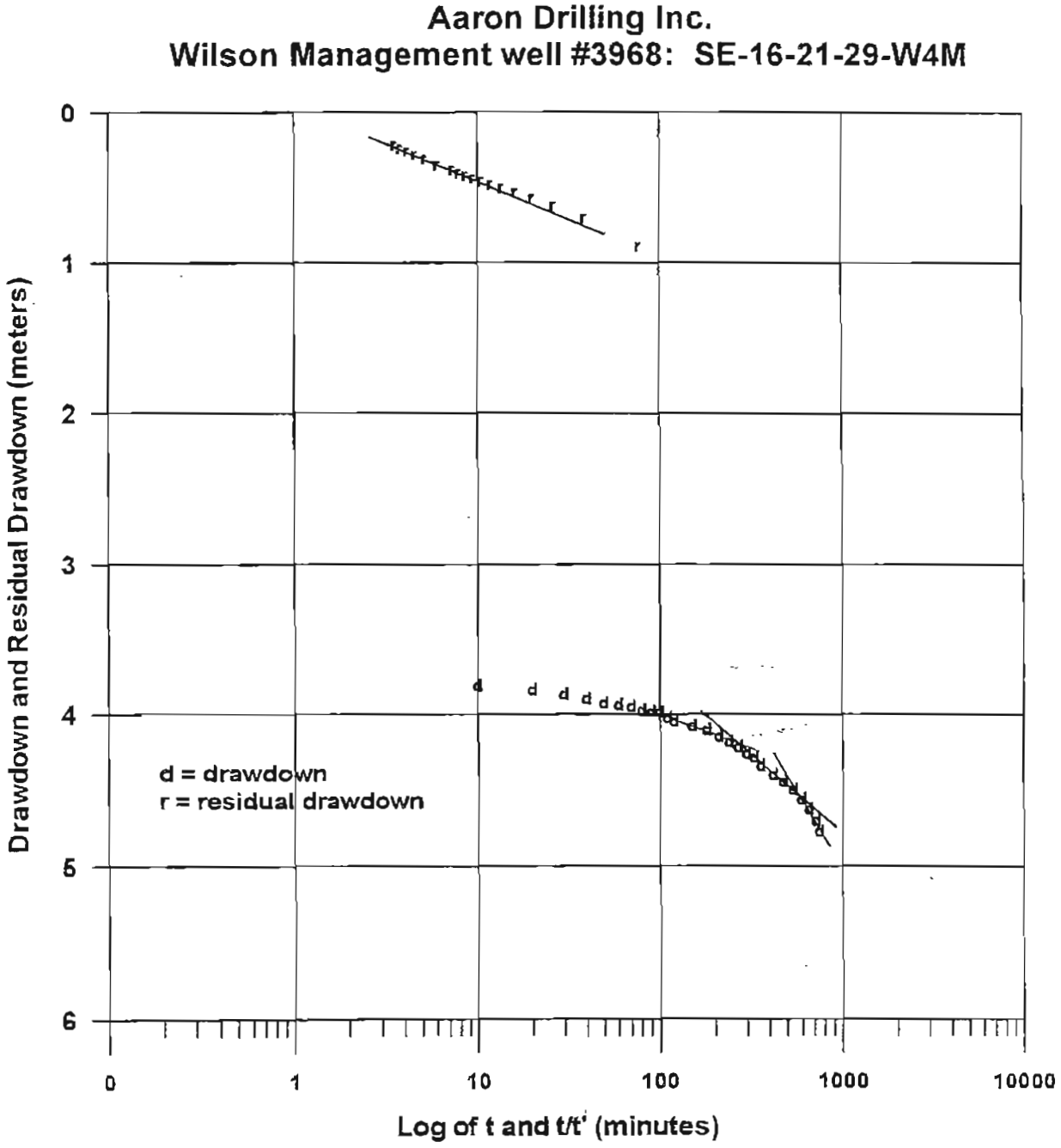
Table 1 [continued]
Summary of Groundwater Well Data

Location	Landowner	Date Drilled	Td/Npwl (m)	Flow Estimate (m^3/day)	Completion Interval (m)
NW-10	Leany	Jul 90	18.3/7.9	32.7	9.1-18.3
NW-10	Reid	Apr 71	29.0/6.1	19.6	16.8-20.7 & 28.0-29.0
NW-10	Johnston	Sep 90	22.9/9.1	52.4	12.2-22.9
NW-10	Hromic	Apr 91	30.5/6.7	19.6	12.2-30.5
NW-10	Leany	Jul 90	19.8/6.4	65.5	10.7-19.8
NW-10	Hromic	Apr 91	24.4/7.6	39.3	6.1-24.4
NW-15	Burly	Mar 92	59.5/22.3	32.7	47.3-59.5
NW-15	Burly	Jan 90	29.0/15.9	32.7	22.9-29.0
SW-15	DeWinton Tree	Apr 88	18.3/7.6	52.4	10.7-18.3
SW-15	Hartmann	Jul 75	59.5/9.1	13.1	na
SW-15	Dadey	Nov 93	22.9/6.7	98.2	12.2-19.8
SW-15	Dadey	Dec 76	16.8/9.1	32.7	12.2-16.2
SW-15	Wright	Oct 69	21.3/6.7	163.6	17.4-19.8
NE-09	Kolfam Farm	Sep 81	28.4/4.3	78.5	9.5-26.5
NE-09	Kolfam Farm	Sep 81	36.6/7.6	65.5	12.2-33.5
NE-09	DeWinton Tree	Jul 89	18.3/6.1	130.9	10.7-18.3
NE-09	DeWinton Tree	Jul 89	15.2/4.6	130.9	7.6-12.2
NE-09	DeWinton Tree	Apr 86	13.7/5.2	104.7	6.1-13.7
NE-09	Gunton	Nov 89	16.8/6.1	130.9	9.1-16.8
NE-09	Campbell	Aug 73	30.5/9.1	78.5	6.1-12.2 & 18.3-30.5
NE-09	Gunton	Nov 89	16.8/4.6	130.9	9.1-16.8
NE-09	Taylor	May 85	24.4/9.1	98.2	15.2-24.4
NE-09	Hunt	Feb 80	48.2/9.1	117.8	35.1-45.7
NW-09	Cuthbertson	Dec 59	44.2/18.3	45.8	na
NW-09	Campbell	Oct 88	61.0/18.3	19.6	36.6-42.7 & 54.9-61.0
NW-09	Cram	May 83	61.0/15.2	26.2	42.7-61.0
NW-09	Cuthbertson	Apr 80	52.4/10.7	78.5	46.3-52.4
NW-09	Campbell	Jan 86	45.7/18.3	130.9	18.3-45.7
NW-09	Norris	Apr 68	22.9/11.3	39.3	16.8-22.9
NW-09	Urbco	Sep 94	47.3/20.4	76.6	35.1-47.3
NW-09	Armstrong	May 62	29.0/15.2	130.9	27.4-29.0

Pump Test Data
Wilson well: SE-16-21-29-W4M

Project: CD Wilson Management subivision
Date: March 17-18, 2000
Non-Pumping Water Level: 3.35 meters, below top of casing
Pump Test Rate: 94.91 m^3/day (14.5 Cgpm)
Test Duration: 750 + 300 minutes

Elapsed Time t (min)	Drawdown (m)	Elapsed Time t/t' (min)	Residual Drawdown (m)
10	3.79	76	0.87
20	3.82	38.5	0.68
30	3.85	26	0.60
40	3.88	19.8	0.54
50	3.91	16	0.51
60	3.92	13.5	0.48
70	3.93	11.7	0.45
80	3.95	10.4	0.44
90	3.96	9.3	0.42
100	3.97	8.5	0.40
110	4.00	7.8	0.38
120	4.02	7.3	0.36
150	4.05	6	0.33
180	4.08	5.2	0.29
210	4.13	4.6	0.26
240	4.16	4.1	0.24
270	4.19	3.8	0.22
300	4.24	3.5	0.20
330	4.26		
360	4.32		
420	4.38		
480	4.42		
540	4.47		
600	4.53		
660	4.60		
720	4.68		
750	4.74		


Aaron Drilling Inc.
Wilson Management well #3968: SE-16-21-29-W4M
Drawdown and Residual Drawdown (meters)
0
1
2
3
4
5
6
d = drawdown
r = residual drawdown
0
1
10
100
1000
10000
Log of t and t/t' (minutes)

AARON DRILLING
Test name: 3968

Test started on: 3/17/00 16:12:43

Data gathered using Linear testing
Time between data points: 10. Minutes.

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Sensor Range: 100 PSI.
Specific gravity: 1
Mode: TOC
User-defined reference: 11 Feet H2O N.P.W.L.
Referenced on: test start
Pressure head at reference: 18.375 Feet H2O
Pump test flow rate 14.5 igpm

Date	Time	ET (min)	Chan[1] Celsius	Chan[2] Feet H2O
3/17/00	16:12:43	0	7.92	11
3/17/00	16:22:43	10	7.65	23.441
3/17/00	16:32:43	20	7.65	23.522
3/17/00	16:42:43	30	7.65	23.617
3/17/00	16:52:43	40	7.69	23.72
3/17/00	17:02:43	50	7.72	23.815
3/17/00	17:12:43	60	7.67	23.848
3/17/00	17:22:43	70	7.64	23.886
3/17/00	17:32:43	80	7.64	23.965
3/17/00	17:42:43	90	7.64	23.997
3/17/00	17:52:43	100	7.64	24.011
3/17/00	18:02:43	110	7.64	24.121
3/17/00	18:12:43	120	7.63	24.186
3/17/00	18:22:43	130	7.63	24.2
3/17/00	18:32:43	140	7.63	24.251
3/17/00	18:42:43	150	7.64	24.297
3/17/00	18:52:43	160	7.63	24.343
3/17/00	19:02:43	170	7.64	24.389
3/17/00	19:12:43	180	7.64	24.389
3/17/00	19:22:43	190	7.64	24.454
3/17/00	19:32:43	200	7.63	24.467
3/17/00	19:42:43	210	7.64	24.532
3/17/00	19:52:43	220	7.64	24.61
3/17/00	20:02:43	230	7.63	24.629
3/17/00	20:12:43	240	7.63	24.643
3/17/00	20:22:43	250	7.64	24.721
3/17/00	20:32:43	260	7.63	24.767
3/17/00	20:42:43	270	7.63	24.753
3/17/00	20:52:43	280	7.63	24.8

3/17/00	21:02:43	290	7.63	24.846
3/17/00	21:12:43	300	7.63	24.896 —
3/17/00	21:22:43	310	7.63	24.924
3/17/00	21:32:43	320	7.63	24.956
3/17/00	21:42:43	330	7.64	24.975 —
3/17/00	21:52:43	340	7.63	25.113
3/17/00	22:02:43	350	7.64	25.132
3/17/00	22:12:43	360	7.63	25.164 —
3/17/00	22:22:43	370	7.63	25.21
3/17/00	22:32:43	380	7.63	25.242
3/17/00	22:42:43	390	7.63	25.289
3/17/00	22:52:43	400	7.63	25.275
3/17/00	23:02:43	410	7.63	25.275
3/17/00	23:12:43	420	7.63	25.353 —
3/17/00	23:22:43	430	7.63	25.381
3/17/00	23:32:43	440	7.64	25.399
3/17/00	23:42:43	450	7.63	25.432
3/17/00	23:52:43	460	7.63	25.464
3/18/00	0:02:43	470	7.63	25.492
3/18/00	0:12:43	480	7.63	25.492 —
3/18/00	0:22:43	490	7.63	25.524
3/18/00	0:32:43	500	7.63	25.57
3/18/00	0:42:43	510	7.63	25.602
3/18/00	0:52:43	520	7.63	25.635
3/18/00	1:02:43	530	7.63	25.635
3/18/00	1:12:43	540	7.63	25.667 —
3/18/00	1:22:43	550	7.63	25.699
3/18/00	1:32:43	560	7.63	25.731
3/18/00	1:42:43	570	7.64	25.759
3/18/00	1:52:43	580	7.63	25.81
3/18/00	2:02:43	590	7.63	25.81
3/18/00	2:12:43	600	7.63	25.87 —
3/18/00	2:22:43	610	7.63	25.888
3/18/00	2:32:43	620	7.63	25.948
3/18/00	2:42:43	630	7.63	26.013
3/18/00	2:52:43	640	7.63	26.027
3/18/00	3:02:43	650	7.63	26.045
3/18/00	3:12:43	660	7.63	26.091 —
3/18/00	3:22:43	670	7.63	26.124
3/18/00	3:32:43	680	7.63	26.156
3/18/00	3:42:43	690	7.63	26.17
3/18/00	3:52:43	700	7.63	26.234
3/18/00	4:02:43	710	7.63	26.294
3/18/00	4:12:43	720	7.63	26.345 —
3/18/00	4:22:43	730	7.63	26.405
3/18/00	4:32:43	740	7.63	26.47
3/18/00	4:42:43	750	7.63	26.562 — 750
3/18/00	4:52:43	760	7.66	13.857 — 10
3/18/00	5:02:43	770	7.82	13.225 — 20
3/18/00	5:12:43	780	7.94	12.962 — 30
3/18/00	5:22:43	790	7.99	12.786 ~ 40

3/18/00	5:32:43	800	8.05	12.662—50
3/18/00	5:42:43	810	8	12.57—60
3/18/00	5:52:43	820	7.96	12.487—70
3/18/00	6:02:43	830	7.91	12.427—80
3/18/00	6:12:43	840	7.85	12.362—90
3/18/00	6:22:43	850	7.78	12.297—100
3/18/00	6:32:43	860	7.74	12.251—110
3/18/00	6:42:43	870	7.72	12.187—120
3/18/00	6:52:43	880	7.69	12.154
3/18/00	7:02:43	890	7.67	12.108
3/18/00	7:12:43	900	7.66	12.076—130
3/18/00	7:22:43	910	7.66	12.03
3/18/00	7:32:43	920	7.66	11.998
3/18/00	7:42:43	930	7.61	11.947—150
3/18/00	7:52:43	940	7.59	11.915
3/18/00	8:02:43	950	7.61	11.887
3/18/00	8:12:43	960	7.58	11.855—210
3/18/00	8:22:43	970	7.56	11.836
3/18/00	8:32:43	980	7.53	11.804
3/18/00	8:42:43	990	7.54	11.776—240
3/18/00	8:52:43	1000	7.54	11.744
3/18/00	9:02:43	1010	7.56	11.725
3/18/00	9:12:43	1020	7.53	11.712—270
3/18/00	9:22:43	1030	7.52	11.679
3/18/00	9:32:43	1040	7.59	11.665
3/18/00	9:42:43	1050	7.55	11.647—300

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 151652

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: ALBERTA SOUTHERN EXPLORATION DRILLING LTD.

ADDRESS: Box 488, Station G
Calgary, Alberta T3A-2G4

LICENCE NO.: 0731 JOURNEYMAN NO.: VB7233

WELL OWNER:

NAME: WILLOWSIDE FARM HOLE #3

ADDRESS: 219-20 MIDPARK CR. SE, CALGARY

POSTAL CODE: T2X 1P3

WELL LOCATION: IC#:

~ OR LSL	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD: MAP
LOCATION IN QUARTER:

LOT: 001 BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
1	Topsoil
11	Sandy Till
22	Till
26	Weathered Sandstone
73	Silty Shale
77	Water Bearing Sandstone
78	Siltstone
85	Bentonitic Clay

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: No **RATE:** L Litres/Min
GAS PRESENT: No OIL PRESENT: No
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: PERFORATED CASING/LINER
TOTAL HOLE DEPTH: 85 Feet

CASING TYPE: STEEL
SIZE OD: 6.62 Inch WALL THICKNESS: 0.188 Inch
BOTTOM AT: 25 Feet

PERFORATED CASING/LINER:
TYPE: PLASTIC
SIZE OD: 5.00 Inch ID: Inch
WALL THICKNESS: 0.248 Inch
TOP AT: 19 Feet BOTTOM AT: 85 Feet
PERFORATED FROM: 65 Feet TO: 85 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.625 Inch X 6.000 Inch
HOW PERFORATED: OTHER
SEAL TYPE: DRIVEN
INTERVAL TOP: 22 Feet TO: Feet
GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:
PACK TYPE:
GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: April 27, 1990 START TIME: 11:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 0 Gal/Min
TEST DURATION: 2 Hours 0 Minutes
TESTING METHOD: AIR
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING(STATIC) WATER LEVEL: 18.0 FEET
TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: 12 Gal/Min
RECOMMENDED PUMP INTAKE AT: 75 Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED: April 27, 1990

DATE WORK COMPLETED: April 27, 1990

COMMENTS:
(Maximum of 9 lines printed)

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN: N HELD: DOCUMENTS HELD: /

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:54:28 *DATE DATA KEYED:* May 30, 1994 GIC4 AC

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 151651

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: ALBERTA SOUTHERN EXPLORATION DRILLING LTD.

ADDRESS: Box 488, Station G
Calgary, Alberta T3A-2G4

LICENCE NO.: 0731 JOURNEYMAN NO.:VB7233

WELL OWNER:

NAME: WILLOWSIDE FARM WELL #7

ADDRESS: 219-20 MIDPARK CR. SE, CALGARY

POSTAL CODE: T2X 1P3

WELL LOCATION: IC#:

~ OR LSD	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD:MAP
LOCATION IN QUARTER:

LOT: 002 BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
2	Topsoil
8	Yellow Clay
12	Till
16	Black Clay
22	Gray Clay
30	Gray Fine Grained Sandstone
38	Gray Water Bearing Sandstone
41	Clay
45	Medium Grained Sandstone
80	Fine Grained Sandstone
85	Clay

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: No **RATE:** L Litres/Min
GAS PRESENT: No OIL PRESENT: No
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: PERFORATED CASING/LINER
TOTAL HOLE DEPTH: 85 Feet

CASING TYPE: STEEL
SIZE OD: 6.62 Inch WALL THICKNESS: 0.188 Inch
BOTTOM AT: 85 Feet

PERFORATED CASING/LINER:
TYPE: PLASTIC
SIZE OD: 5.00 Inch ID: Inch
WALL THICKNESS: 0.248 Inch
TOP AT: 15 Feet BOTTOM AT: 85 Feet
PERFORATED FROM: 25 Feet TO: 85 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.625 Inch X 6.000 Inch
HOW PERFORATED: OTHER

SEAL TYPE: DRIVEN
INTERVAL TOP: 12 Feet TO: Feet

GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:

PACK TYPE:
GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: April 30, 1990 START TIME: 11:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 4.0 Gal/Min
TEST DURATION: 2 Hours 0 Minutes
TESTING METHOD: AIR
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING(STATIC) WATER LEVEL: 10.0 FEET
TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: 3 Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED: April 30, 1990

DATE WORK COMPLETED: April 30, 1990

COMMENTS:
(Maximum of 9 lines printed)

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN: N HELD: DOCUMENTS HELD: /

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:54:34 **DATE DATA KEYED:** May 30, 1994 GIC4 AC

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 161650

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: UNKNOWN DRILLER

ADDRESS:

LICENCE NO.: JOURNEYMAN NO.:

WELL OWNER:

NAME: GARDINER, CAROL & WAYNE #2

ADDRESS: 52012 HWY 21 SHERWOOD PARK

POSTAL CODE: T8B 1J6

WELL LOCATION: IC#:

- OR LSD	SEC	TWP	RGE	W. MER
SE	01	052	23	W4

LOCATION VERIFICATION METHOD: NOT VERIFIED
LOCATION IN QUARTER:

LOT: BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	

DRILLING METHOD: NOT APPLICABLE

TYPE OF WORK: CHEMISTRY

FLOWING WELL: No **RATE:**
GAS PRESENT: OIL PRESENT:
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: NOT APPLICABLE
TOTAL HOLE DEPTH: 93 Feet

CASING TYPE:
SIZE OD: Inch WALL THICKNESS: Inch
BOTTOM AT: Feet

PERFORATED CASING/LINER:
TYPE:
SIZE OD: Inch ID: Inch
WALL THICKNESS: Inch
TOP AT: Feet BOTTOM AT: Feet
PERFORATED FROM: Feet TO: Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: Inch X Inch
HOW PERFORATED:

SEAL TYPE:
INTERVAL TOP: Feet TO: Feet

GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:

PACK TYPE:
GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: START TIME:

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: Gal/Min
TEST DURATION: Hours Minutes
TESTING METHOD:
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING(STATIC) WATER LEVEL: FEET
TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED:

DATE WORK COMPLETED:

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN N HELD: 1 DOCUMENTS HELD: 1

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

COMMENTS:

(Maximum of 9 lines printed)

DATE FORM PRINTED February 8, 2000 13:54:39 **DATE DATA KEYED** January 30, 1992 GIC4 SA

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 151647

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: ALBERTA SOUTHERN EXPLORATION DRILLING LTD.

ADDRESS: Box 488, Station G
Calgary, Alberta T3A-2G4

LICENCE NO.: 0731 JOURNEYMAN NO.: VB7233

WELL OWNER:

NAME: WILLOWSIDE FARM WELL #11

ADDRESS: 210-20 MIDPARK CR. SE,
CALGARY

POSTAL CODE: T2X 1P3

WELL LOCATION:

IC#:

~ OR LSD	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD: MAP
LOCATION IN QUARTER:

LOT: 005 BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
2	Topsoil
6	Sandy Clay
13	Till
15	Sandstone
34	Siltstone
40	Water Bearing Sandstone
44	Bentonitic Clay
47	Sandstone
48	Bentonitic Clay
50	Gray Fine Grained Sandstone
60	Clay

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: No **RATE:** L Litres/Min
GAS PRESENT: No **OIL PRESENT:** No
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: PERFORATED CASING/LINER
TOTAL HOLE DEPTH: 60 Feet

CASING TYPE: STEEL
SIZE OD: 5.00 Inch WALL THICKNESS: 0.248 Inch
BOTTOM AT: 20 Feet

PERFORATED CASING/LINER:
TYPE: PLASTIC
SIZE OD: 5.00 Inch ID: Inch
WALL THICKNESS: 0.248 Inch
TOP AT: 10 Feet BOTTOM AT: 60 Feet
PERFORATED FROM: 30 Feet TO: 60 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.625 Inch X 6.000 Inch
HOW PERFORATED: OTHER
SEAL TYPE: DRIVEN
INTERVAL TOP: 13 Feet TO: Feet

GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:
PACK TYPE:
GRAIN SIZE: AMOUNT:

FITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: May 2, 1990 START TIME: 1:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 6.0 Gal/Min
TEST DURATION: 2 Hours 0 Minutes
TESTING METHOD: AIR
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING(STATIC) WATER LEVEL: 12.0 FEET
TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: 5 Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED: May 2, 1990

DATE WORK COMPLETED: May 2, 1990

COMMENTS:
(Maximum of 9 lines printed)

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN: N HELD: DOCUMENTS HELD: 1

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:54:44 **DATE DATA KEYED:** May 30, 1994 GICA AC

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 151641

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: ALBERTA SOUTHERN EXPLORATION DRILLING LTD.

ADDRESS: Box 488, Station G
Calgary, Alberta T3A-2G4

LICENCE NO.: 0731 JOURNEYMAN NO.VB7233

WELL OWNER:

NAME: WILLOWSIDE FARM HOLE #5

ADDRESS: 219-20 MIDPARK CR. SE,
CALGARY

POSTAL CODE: T2X 1P3

WELL LOCATION: IC#:

– OR LSD	SEC.	TWP	RGE	W. MER.
SE	16	021	29	W4

LOCATION VERIFICATION METHOD:MAP
LOCATION IN QUARTER:

LOT: 003 BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
2	Topsoil
12	Yellow Wet Clay
18	Till
42	Siltstone
43	Grey Fine Grained Sandstone
51	Siltstone
53	Grey Fine Grained Sandstone
58	Shale
62	Grey Water Bearing Sandstone
80	Bentonitic Clay

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: No **RATE:** L Litres/Min

GAS PRESENT: No OIL PRESENT: No

DATE OF ABANDONMENT:

MATERIAL USED:

PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: PERFORATED CASING/LINER

TOTAL HOLE DEPTH: 80 Feet

CASING TYPE:STEEL

SIZE OD: 6.62 Inch WALL THICKNESS:0.188 Inch

BOTTOM AT: 25 Feet

PERFORATED CASING/LINER:

TYPE: PLASTIC

SIZE OD: 5.00 Inch ID: Inch

WALL THICKNESS: 0.248 Inch

TOP AT: 17 Feet BOTTOM AT: 80 Feet

PERFORATED FROM: 47 Feet TO: 80 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.625 Inch X 6.000 Inch

HOW PERFORATED: OTHER

SEAL TYPE: DRIVEN

INTERVAL TOP: 18 Feet TO: Feet

GEOPHYSICAL LOG TAKEN:

RETAINED ON FILE:

SCREEN:

MATERIAL:

SIZE ID (CLEAR): Inch SLOT SIZE: Inch

INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:

TOP FITTINGS:

BOTTOM FITTINGS:

PACK TYPE:

GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE:April 28, 1990 START TIME:1:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST:5.0 Gal/Min
TEST DURATION: 2 Hours 0 Minutes
TESTING METHOD: AIR
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING(STATIC) WATER LEVEL: 12.0 FEET
TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: 20 Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED: April 27, 1990

DATE WORK COMPLETED: April 28, 1990

COMMENTS:
(Maximum of 9 lines printed)

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN:N HELD: 1 DOCUMENTS HELD: 2

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:54:50 **DATE DATA KEYED:**May 30, 1994 GICJ AC

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 151649

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: ALBERTA SOUTHERN EXPLORATION DRILLING LTD.

ADDRESS: Box 488, Station G
Calgary, Alberta T3A-2G4

LICENCE NO.: 0731 JOURNEYMAN NO. VB7233

WELL OWNER:

NAME: WILLOWSIDE FARM HOLE #9

ADDRESS: 219-20 MIDPARK CR. SE,
CALGARY

POSTAL CODE: T2X 1P3

WELL LOCATION: IC#:

~ OR LSD	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD: MAP
LOCATION IN QUARTER:

LOT: 008 BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
2	Topsoil
8	Yellow Clay
12	Till
15	Weathered Sandstone
23	Siltstone
26	Water Bearing Sandstone
27	Gray Fine Grained Sandstone
30	Mudstone
34	Gray Water Bearing Sandstone
40	Mudstone
47	Siltstone
48	Gray Fine Grained Sandstone
49	Clay
60	Siltstone
90	Water Bearing Sandstone
100	Bentonitic Siltstone

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: No **RATE:** L Litres/Min
GAS PRESENT: No **OIL PRESENT:** No
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: PERFORATED CASING/LINER
TOTAL HOLE DEPTH: 100 Feet

CASING TYPE: STEEL
SIZE OD: 6.62 Inch WALL THICKNESS: 0.188 Inch
BOTTOM AT: 24 Feet

PERFORATED CASING/LINER:
TYPE: PLASTIC
SIZE OD: 5.00 Inch ID: Inch
WALL THICKNESS: 0.248 Inch
TOP AT: 10 Feet BOTTOM AT: 100 Feet
PERFORATED FROM: 20 Feet TO: 100 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.625 Inch X 6.000 Inch
HOW PERFORATED: OTHER
SEAL TYPE: DRIVEN
INTERVAL TOP: 12 Feet TO: Feet
GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:
PACK TYPE:
GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: May 1, 1990 START TIME: 11:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 2.0 Gal/Min
TEST DURATION: 2 Hours 30 Minutes
TESTING METHOD: AIR
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING(STATIC) WATER LEVEL: 12.0 FEET
TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: 12 Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED: May 1, 1990

DATE WORK COMPLETED: May 1, 1990

COMMENTS:
(Maximum of 9 lines printed)

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN: N HELD: DOCUMENTS HELD: 1

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:54:55 *DATE DATA KEYED:* May 30, 1994 GICA AC

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 151640

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: ALBERTA SOUTHERN EXPLORATION DRILLING LTD.

ADDRESS: Box 488, Station G
Calgary, Alberta T3A-2G4

LICENCE NO.: 0731 JOURNEYMAN NO.: VB7233

WELL OWNER:

NAME: WILLOWSIDE FARM WELL #6

ADDRESS: 219-20 MIDPARK CRESC.SE
CALGARY

POSTAL CODE: T2X 1P3

WELL LOCATION:

LOC#:

– OR LSI	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD: MAP
LOCATION IN QUARTER:

LOT: 006 BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
6	Till
10	Yellow Clay
15	Till
32	Yellow Fine Grained Sandstone
41	Siltstone
43	Black Siltstone
45	Grey Fine Grained Sandstone
47	Clay
48	Sandstone
57	Siltstone
58	Water Bearing Sandstone
65	See Comments
68	Sandstone
72	See Comments
74	Sandstone
84	Bentonitic See Comments

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: No RATE: L Litres/Min

GAS PRESENT: No OIL PRESENT: No

DATE OF ABANDONMENT:

MATERIAL USED:

PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: PERFORATED CASING/LINER

TOTAL HOLE DEPTH: 84 Feet

CASING TYPE: STEEL

SIZE OD: 6.62 Inch WALL THICKNESS: 0.188 Inch

BOTTOM AT: 20 Feet

PERFORATED CASING/LINER:

TYPE: PLASTIC

SIZE OD: 5.00 Inch ID: Inch

WALL THICKNESS: 0.248 Inch

TOP AT: 14 Feet BOTTOM AT: 84 Feet

PERFORATED FROM: 24 Feet TO: 74 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.625 Inch X 6.000 Inch

HOW PERFORATED: OTHER

SEAL TYPE: DRIVEN

INTERVAL TOP: 15 Feet TO: Feet

GEOPHYSICAL LOG TAKEN:

RETAINED ON FILE:

SCREEN:

MATERIAL:

SIZE ID (CLEAR): Inch SLOT SIZE: Inch

INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:

TOP FITTINGS:

BOTTOM FITTINGS:

PACK TYPE:

GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:

DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch

ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: April 30, 1990 START TIME: 11:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 0 Gal/Min

TEST DURATION: 2 Hours 30 Minutes

TESTING METHOD: AIR

DEPTH OF PUMP/DRILL STEM: Feet

WATER LEVEL AT END OF TEST: Feet

NON-PUMPING(STATIC) WATER LEVEL: 15.0 FEET

TOTAL DRAWDOWN: Feet

RECOMMENDED PUMPING RATE: 3 Gal/Min

RECOMMENDED PUMP INTAKE AT: 70 Feet

TYPE OF PUMP INSTALLED:

MODEL: H.P.:

DATE WORK STARTED: April 30, 1990

DATE WORK COMPLETED: April 30, 1990

COMMENTS: WELL #6
RECOMM PUMP SET AT 70-75'
(Maximum of 9 lines printed) Litho depths of 65', 72, & 84' - clarification

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN: N FIELD: DOCUMENTS HELD: /

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:55:01 DATE DATA KEYED: May 30, 1994 CICJ AC

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 126988

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: BLACKWOOD ROGER

ADDRESS:

LICENCE NO.: JOURNEYMAN NO.:

WELL OWNER:

NAME: BUCHAM

ADDRESS:

POSTAL CODE:

WELL LOCATION: IC#: 01

- OR LSD	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD: FIELD
LOCATION IN QUARTER:

LOT: BLOCK: PLAN:
WELL ELEV: 3650. Feet How obtain: ESTIMATED

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
20	Brown Shale
21	Sandy Shale
25	Sandstone

DRILLING METHOD: DRILLED

TYPE OF WORK: WELL INVENTORY

FLOWING WELL: **RATE:**
GAS PRESENT: No **OIL PRESENT:** No
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC

WELL COMPLETION DATA:

WELL FINISH: CASING
TOTAL HOLE DEPTH: 25 Feet

CASING TYPE: UNKNOWN
SIZE OD: 5.50 Inch WALL THICKNESS: Inch
BOTTOM AT: 25 Feet

PERFORATED CASING/LINER:
TYPE:
SIZE OD: Inch ID: Inch
WALL THICKNESS: Inch
TOP AT: Feet BOTTOM AT: Feet
PERFORATED FROM: Feet TO: Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: Inch X Inch
HOW PERFORATED:
SEAL TYPE: DRIVEN
INTERVAL TOP: Feet TO: Feet

GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:
PACK TYPE:
GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:
TEST DATE: May 1, 1959 START TIME: 11:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 25 Gal/Min
TEST DURATION: 1 Hours 20 Minutes
TESTING METHOD: UNKNOWN
DEPTH OF PUMP/DRILL STEM: Feet
WATER LEVEL AT END OF TEST: Feet
NON-PUMPING (STATIC) WATER LEVEL: 5.0 FEET
TOTAL DRAWDOWN: 12 Feet

RECOMMENDED PUMPING RATE: Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED:

DATE WORK COMPLETED: May 1, 1959

COMMENTS:
(Maximum of 9 lines printed)

ADDITIONAL TEST AND/OR PUMP DATA:

CHEMISTRIES TAKEN: N HELD: DOCUMENTS HELD: 1

WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:55:06 **DATE DATA KEYED:** December 30, 1994 GICJ DM

ALBERTA ENVIRONMENTAL PROTECTION

COMPUTER GENERATED WATER WELL DRILLER'S REPORT FORM

WELL I.D. 126993

Page 1 of 1

THIS DATA MAY NOT BE FULLY CHECKED; THE PROVINCE DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY:

CONTRACTOR:

NAME: GOODISON WATER WELL DRILLING

ADDRESS: Box 1238
High River, Alberta T0L-1B0

LICENCE NO.: 0568 JOURNEYMAN NO.: 3665AD

WELL OWNER:

NAME: WILSON, C.D.

ADDRESS: 219-20 MID PARK CRES SE,
CALGARY

POSTAL CODE:

WELL LOCATION: IC#: 13

- OR LSD	SEC	TWP	RGE	W. MER
SE	16	021	29	W4

LOCATION VERIFICATION METHOD: MAP
LOCATION IN QUARTER:

LOT: BLOCK: PLAN:
WELL ELEV: Feet How obtain: NOT OBTAIN

FORMATION LOG DESCRIPTION:

Depth (Feet):	Lithology:
Ground to:	
26	Clay
28	Sandstone
56	Shale
66	Sandstone
75	Shale & Sandstone Ledges

DRILLING METHOD: ROTARY

TYPE OF WORK: NEW WELL

FLOWING WELL: **RATE:**
GAS PRESENT: No OIL PRESENT: No
DATE OF ABANDONMENT:
MATERIAL USED:
PROPOSED USE: DOMESTIC & STOCK

WELL COMPLETION DATA:

WELL FINISH: CASING/PERFORATED LINER
TOTAL HOLE DEPTH: 75 Feet

CASING TYPE: STEEL
SIZE OD: 5.56 Inch WALL THICKNESS: 0.188 Inch
BOTTOM AT: 20 Feet

PERFORATED CASING/LINER:
TYPE: PLASTIC
SIZE OD: 4.50 Inch ID: Inch
WALL THICKNESS: Inch
TOP AT: 15 Feet BOTTOM AT: 75 Feet
PERFORATED FROM: 55 Feet TO: 75 Feet
Feet TO: Feet
Feet TO: Feet

SIZE OF PERFORATIONS: 0.125 Inch X 6.000 Inch
HOW PERFORATED: MACHINE
SEAL TYPE: DRIVEN
INTERVAL TOP: Feet TO: 20 Feet
GEOPHYSICAL LOG TAKEN:
RETAINED ON FILE:

SCREEN:
MATERIAL:
SIZE ID (CLEAR): Inch SLOT SIZE: Inch
INTERVAL TOP: Feet TO: Feet
Feet TO: Feet

INSTALLATION METHOD:
TOP FITTINGS:
BOTTOM FITTINGS:
PACK TYPE:
GRAIN SIZE: AMOUNT:

PITLESS ADAPTER TYPE:
DROP PIPE TYPE: LENGTH: Feet
DIAMETER: Inch
ADDITIONAL PUMP INFORMATION:

PRODUCTION TEST:

TEST DATE: January 16, 1987 START TIME: 1:00

Elapsed Time in Min:Sec	Depth to Water Level During Pumping	Depth to Water Level During Recovery

WATER REMOVAL RATE DURING TEST: 10 Gal/Min
TEST DURATION: 2 Hours 0 Minutes
TESTING METHOD: AIR
DEPTH OF PUMP/DRILL STEM: 75 Feet
WATER LEVEL AT END OF TEST: 75 Feet
NON-PUMPING (STATIC) WATER LEVEL: 25.0 Feet
TOTAL DRAWDOWN: 50 Feet

RECOMMENDED PUMPING RATE: Gal/Min
RECOMMENDED PUMP INTAKE AT: Feet
TYPE OF PUMP INSTALLED:
MODEL: H.P.:

DATE WORK STARTED: January 16, 1987

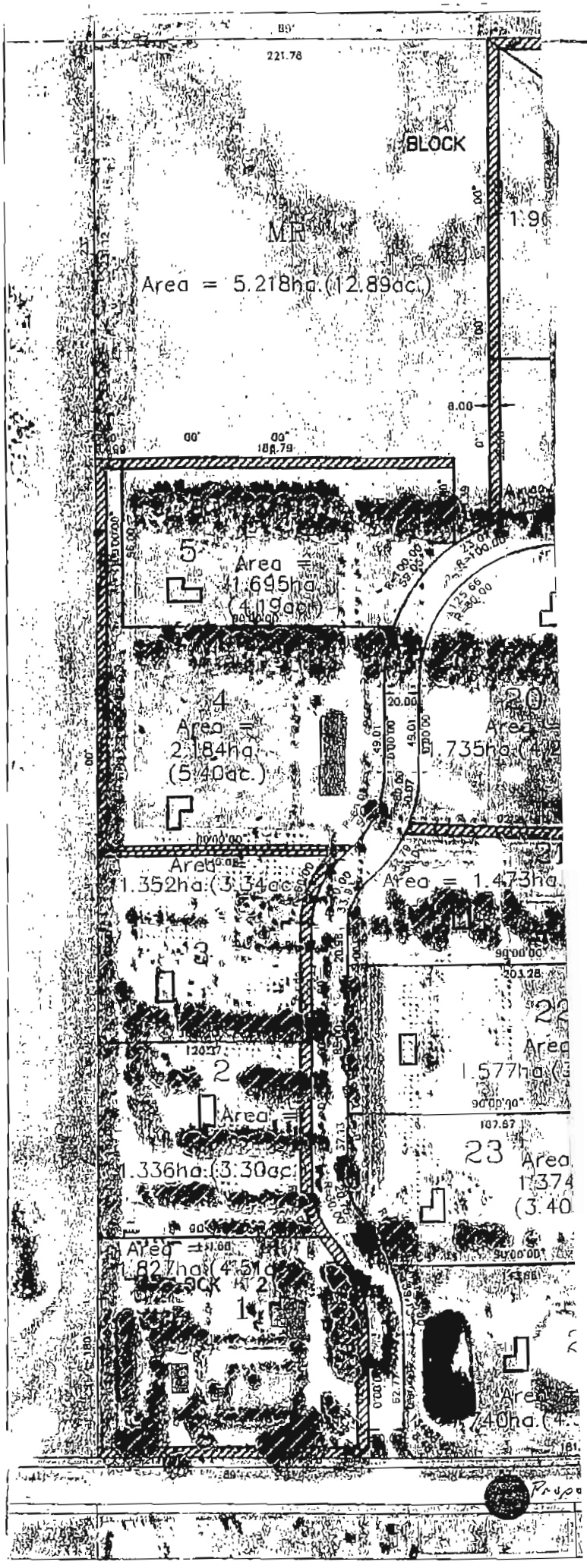
COMMENTS:
(Maximum of 9 lines printed)

DATE WORK COMPLETED: January 16, 1987
ADDITIONAL TEST AND/OR PUMP DATA:
CHEMISTRIES TAKEN: N HELD: DOCUMENTS HELD: J
WELL OWNER'S ANTICIPATED WATER REQUIREMENTS PER DAY:

DATE FORM PRINTED: February 8, 2000 13:53:22 DATE DATA KEYED: December 30, 1994 GIC4 DM

A4. Ecological Screening Report of the Proposed Willowside Farms Subdivision

Ecological Screening of the proposed Willowside Farms Subdivision



TENTATIVE

Figure 1.

M.D OF FOOTHILLS NO. 31

PLAN SHOWING SURVEY OF

SUBDIVISION

WITHIN

S.E.1/4 Sec.16, Twp. 21, Rge. 29, W. 4 M.

LEGEND

EXISTING TREES =

NEW PLANTINGS =

BRIDLE PATH =

STORMWATER

EXISTING =

PROPOSED =

BUILDING SITES

EXISTING =

PROPOSED =

TRONNES SURVEYS (1976) LTD.

Apr. 5, 2000 File. 99-2094

4.2 Wildlife Habitat Availability and Wildlife Use

4.2.1 General Review

In general, wildlife habitat values in the study area are largely impaired due to the existing level of intensive human activity and ground disturbances. However, the existence of three dugouts with open water, and abundant tree and shrub cover make the property desirable for a range of wildlife species adapted to co-habitatation with humans. Both white-tailed deer (*Odocoileus virginianus*) and mule deer (*Odocoileus hemionus*) can be expected to use the property in question for foraging, cover and travel at various times of the year. However, deer populations are currently high and there are no concerns regarding impacts on this group (pers. comm. William Glasglow). No red or blue listed wildlife species were noted during field investigations and according to Glasglow (pers. comm.) there are no wildlife or habitat concerns related to this specific area.

4.2.2 Detailed Review

The following section provides a brief overview of observed wildlife use, and habitat availability. The Allotment numbers refer to pre-assigned numbers presented in the Area Structure Plan (Figure 2).

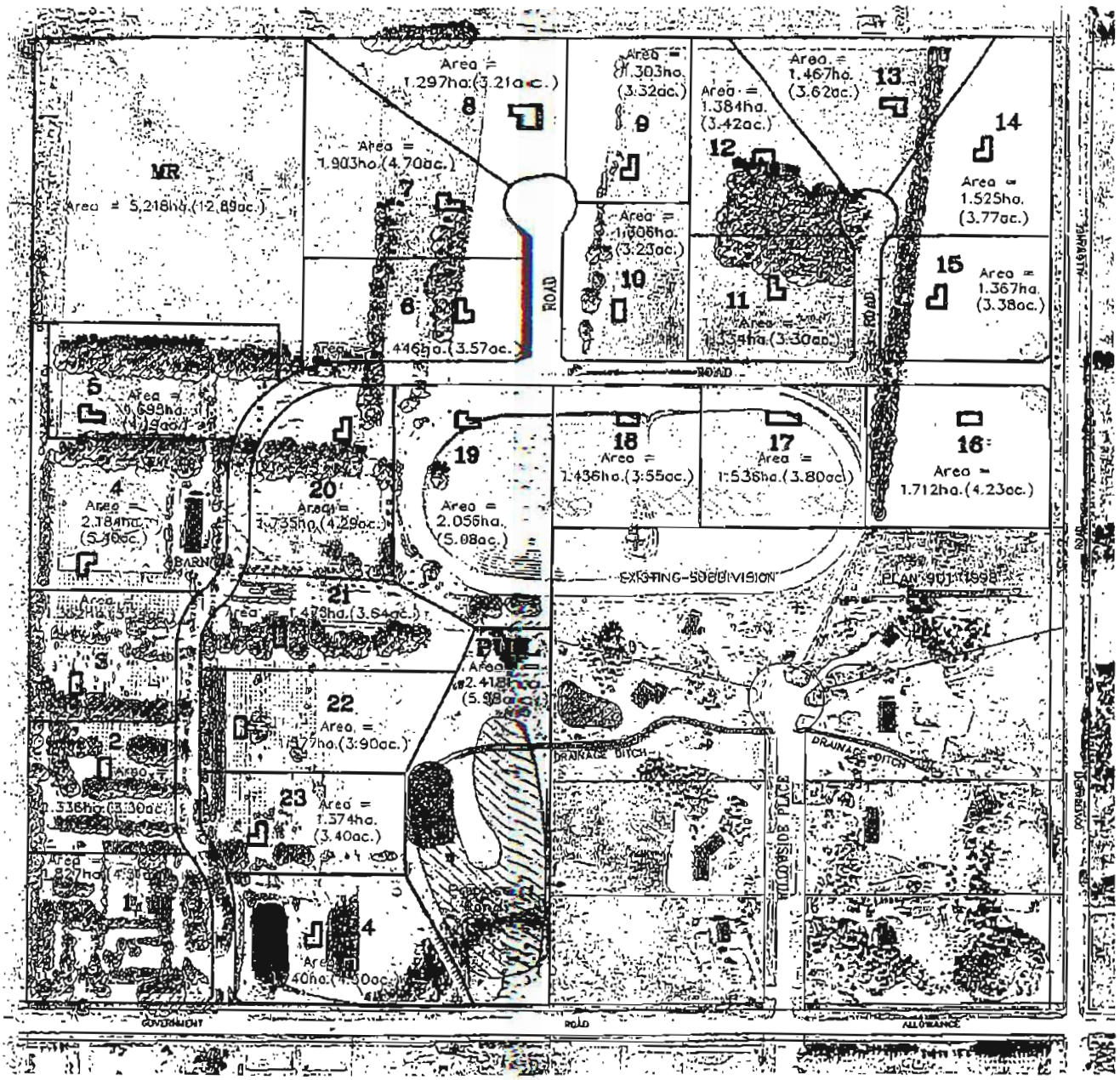
Allotments 1-5, 20-21, western half of 22 and 23

This section supports mature trembling aspen (*Populus tremuloides*), and nursery trees with a tilled ground surface and lawn areas. Along the western boundary of this section is a dense thicket of shrubbery consisting of saskatoon (*Amelanchier alnifolia*), willow (*Salix bebbiana*), buckbrush (*Symphoriocarpus* spp.), cherry (*Prunus* sp.) and currants (*Ribes* spp.) with a thick herbaceous layer of brome grass, stinging nettle, asters (*Aster* spp.), and fireweed. The saskatoon bushes were heavy with abundant fruit and several foraging birds (likely American robins) were flushed from this site. The only other wildlife recorded here were deer (tracks only). However, the band of dense shrubbery along the western boundary can be expected to provide good foraging, travel corridor, security/thermal cover and reproductive habitat to a variety of birds and mammals. Other wildlife recorded in this section included several American crow near buildings on the east side.

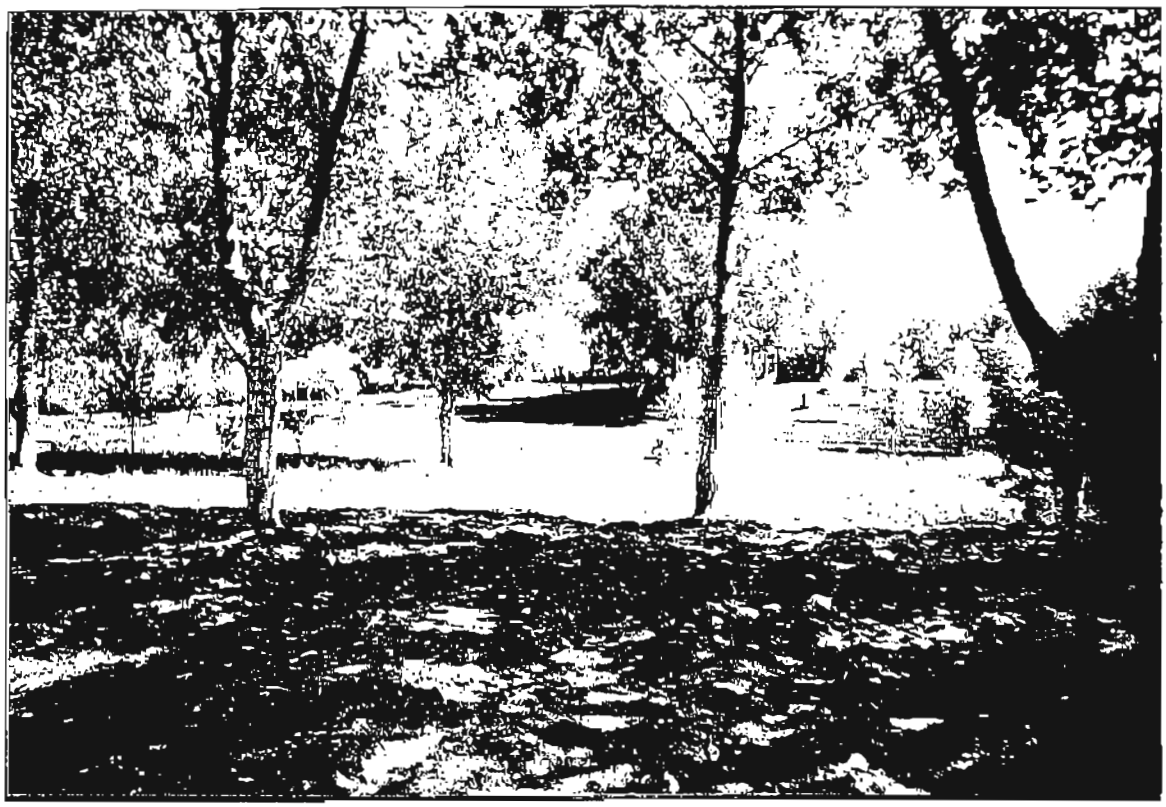
Allotments 6-10, 13-16

This portion of the study area exists mainly as hayfield consisting of alfalfa and timothy. Four bands of trees run north-south through this area and this tree cover can be expected to provide perching, nesting and foraging opportunities to a variety of bird species. Species of wildlife recorded along the band of willow trees in Allotment #10 included a pair of red-tailed hawks, clay-coloured sparrows, vesper sparrow, goldfinch, and pocket gopher. Vegetation along this section included brome grass, thistle, sow thistle, goats-beard, dandelion, and shepherd's-purse.

FIGURE 2


MR
Area = 5.218ha.(12.89ac.)
Area = 1.297ha.(3.21ac.)
8
Area = 1.903ha.(4.70ac.)
7
6
Area = 1.446ha.(3.57ac.)
Area = 1.303ha. (3.32ac.)
9
Area = 1.384ha. (3.42ac.)
12
Area = 1.467ha. (3.62ac.)
13
14
Area = 1.525ha. (3.77ac.)
15
Area = 1.367ha. (3.38ac.)
10
11
Area = 1.334ha.(3.30ac.)
ROAD
ROAD
ROAD
5
Area = 0.699ha. (1.73ac.)
4
Area = 2.184ha. (5.40ac.)
BARN
20
Area = 1.735ha.(4.29ac.)
19
Area = 2.056ha. (5.08ac.)
18
Area = 1.436ha.(3.55ac.)
17
Area = 1.536ha.(3.80ac.)
16
Area = 1.712ha.(4.23ac.)
EXISTING SUBDIVISION
PLAN 901 1998
21
Area = 1.473ha.(3.64ac.)
3
Area = 1.382ha.(3.41ac.)
22
Area = 1.579ha.(3.90ac.)
2
Area = 1.336ha.(3.30ac.)
23
Area = 1.374ha. (3.40ac.)
Area = 1.827ha.(4.51ac.)
1
4
Area = 1.740ha.(4.30ac.)
DRAINAGE DITCH
DRAINAGE DITCH
WILLOWSIDE PLACE
GOVERNMENT ROAD
ALLOWANCE

Colour plates. Continued.



View of Allotment #2 showing mature aspen and nursery trees with recently tilled ground.

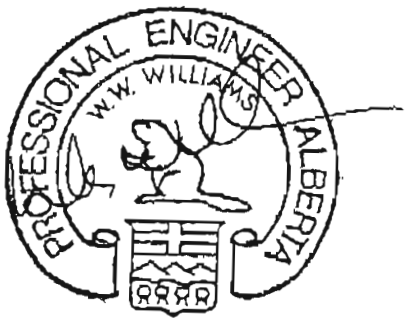
View looking north along the western boundary of Allotment #2. Note the dense shrubbery and herbaceous cover.

A5. Storm Water Management Plan – Willowside Farms

STORM WATER MANAGEMENT PLAN

SE - 16 - 21 - 29 - W4

WILLOWSIDE FARMS



Prepared by:
Tagish Engineering Ltd.

PERMIT TO PRACTICE
TAGISH ENGINEERING LTD.
Signature
Date Sept 18, 2000
PERMIT NUMBER: P 3586
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

September 18, 2000
DW01

1.0 INTRODUCTION

A preliminary Storm Water Management Plan has been developed for Willowside Farms proposed Country Residential Subdivision in the SE 16 - 21 - 29 - W4. This report will identify the contributing drainage basins to Willowside Farms plus outline the drainage patterns within the proposed development. To meet Alberta Environment's Storm Water Management Guidelines, it is necessary that the runoff from the development be controlled to existing pre-development rates. To achieve this, a storm water detention pond will be necessary to attenuate the peak pose-development flow rates.

2.0 DRAINAGE PATTERNS

In addition to the proposed development there is an additional 149 ha of land south of Willowside Farms that contributes runoff to this development as shown in Figure 1. Runoff from Basin 1 flows north across Range Road 29-2 through a 600 mm diameter culvert and into a low depression in Basin 2. Runoff will eventually discharge into a drainage ditch which flows east through an existing development before discharging through a 450 mm diameter culvert across Township Road 21-3. This culvert outlets into the roadside ditch which acts as the headwater of a drainage course that crosses Highway 2.

A second definitive Basin exists in the northwest corner of the proposed development. The runoff from this area will flow northwest into a proposed MR Lot and outlet into an intermittent water course.

3.0 STORM WATER ANALYSIS

A storm water analysis was done to determine the pre and post-development runoff for the proposed development. Using the SCS method with CN values of 72 for pre-development Pasture Land and 75 for post-development Country Residential with a 1:100 year rainfall event the following information was calculated.

Drainage Basin	Pre-development	Post-development
Basin 1	0.41 cms	0.41 cms
Basin 2	0.41 cms	0.57 cms
Basin 3	0.63 cms	0.71 cms
Basin 4	0.46 cms	0.49 cms
Basin 5	0.43 cms	0.454 cms
Basin 6		0.42 cms

Through the storm water analysis, the data contained in Appendix A and B illustrate that even though Basin 1 is a large contributing area of storm water, the peak runoff generated from

Willowside Farms will be gone before the peak runoff from Basin 1 has any effect on the drainage pattern.

4.0 RECOMMENDATIONS

The proposed detention pond shown on the tentative plan of subdivision would have an estimated volume of 5000 cu.m. based on an operating depth of 0.9 m (3 feet). It is proposed that an outlet pipe of 300 mm (12 inches), be installed out of the pond. When Basins 1, 2 and 5 are routed into the pond, the maximum storage depth would be 0.5 m and volume of 2815 cubic metres. It is imperative though that runoff generated from the developed area of Basin 5, be routed into the storm water detention pond. By achieving this the peak runoff at the culvert at Township Road 21-3 will be the same for both the pre and post-development scenario's.

The only other recommendation proposed, is that the 450 mm diameter culvert across the cul-de-sac of the existing development could be removed and replaced with a 600 mm (24 inch) culvert. The proposed 600 mm culvert would have a capacity of 0.11 cubic metres/second with a depth of flow of 0.5 of the culvert diameter. The larger size would accommodate glaciation or icing. In addition to replacing the culvert it is recommended that the ditch downstream of the cul-de-sac be reconstructed with 1 metre base and 3:1 side slopes so as to accommodate the existing flow rate.

As for Basin 4 from our analysis, the peak runoff for both the pre and post-development scenario's are approximately the same. The impact downstream caused from this proposed development will be no greater than currently exists.

5.0 CONCLUSION

This storm water analysis represents an evaluation for Willowside Farms. By routing storm water runoff from Basins 1, 2 and 5, through the proposed retention pond, it is possible to control the peak flow rate to pre-development rates.

Once a detailed survey has been completed of the entire development, more accurate values can be calculated and a design can be finalized to ensure this proposed development will not impact downstream owners.

It appears from the data collected that the proposed storm pond will have two times the required storage for the pre-development flow.

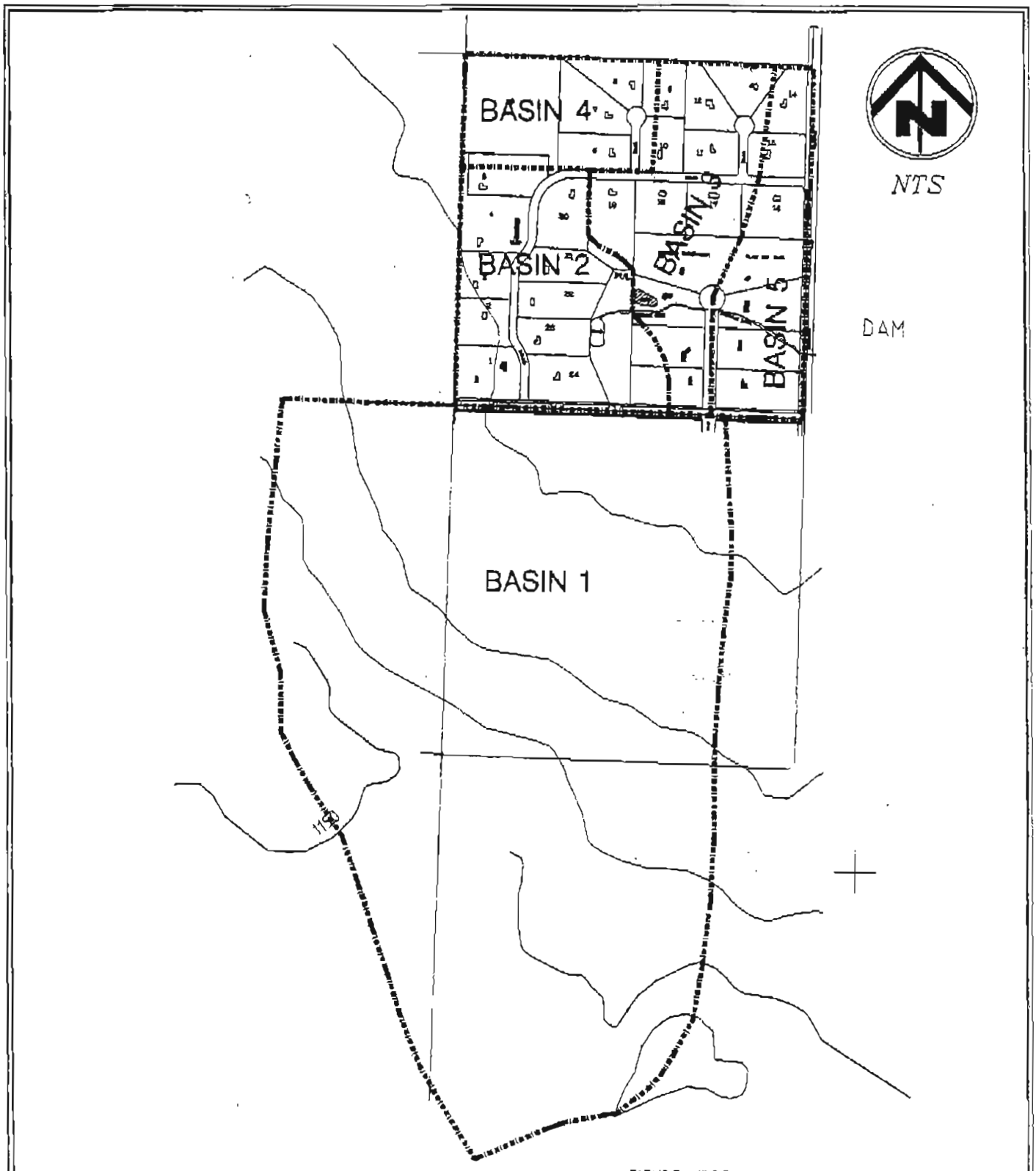


FIGURE 1 (PRE- DEVELOPMENT FLOWS)

Tagish Engineering Ltd.
Environmental Municipal Water Resources Land Development
5205A – 54 Avenue, RED DEER, AB
(403) 346 – 7710 Fax (403) 341 – 4909 E-mail tagish@telusplanet.net

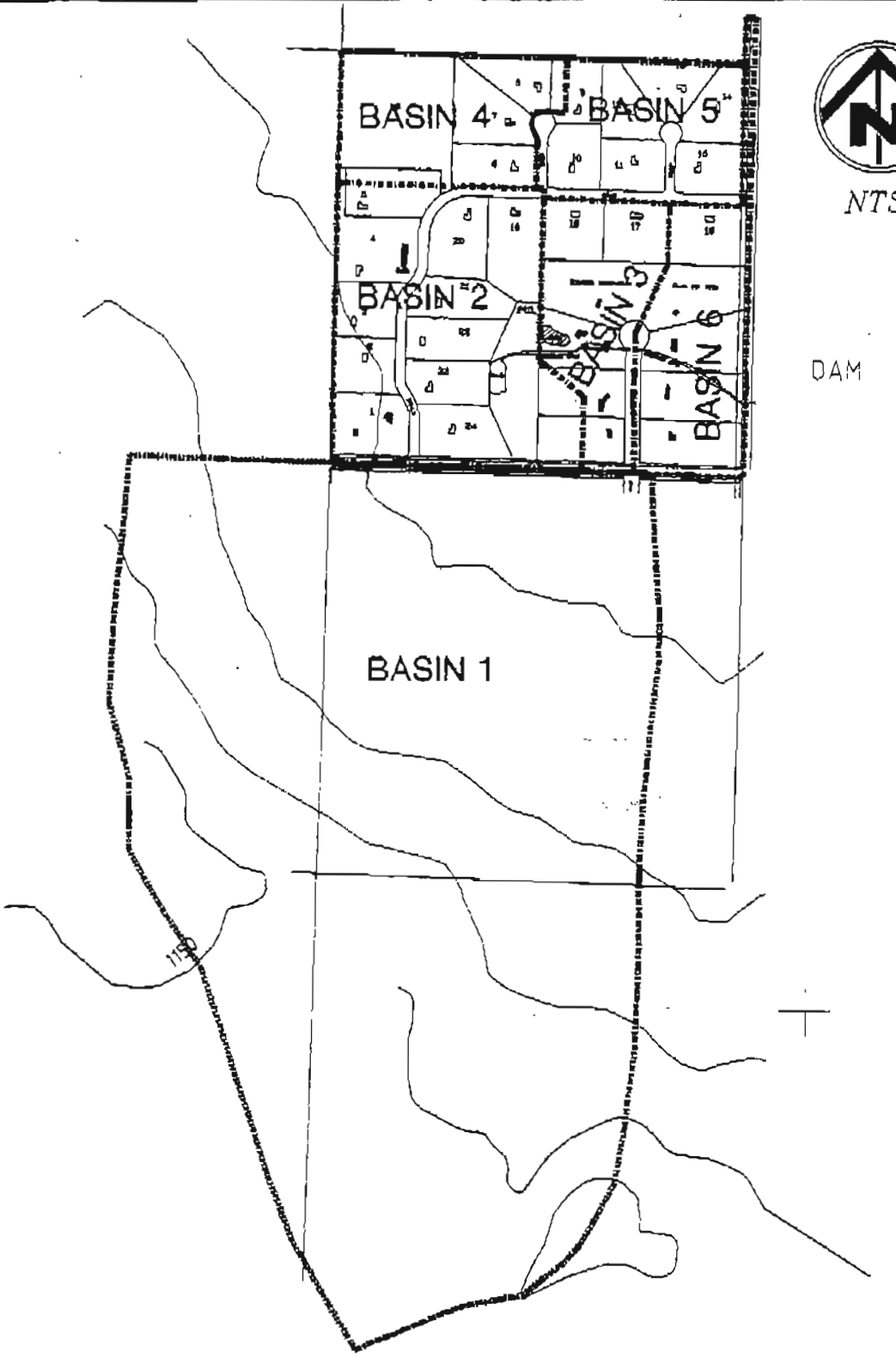
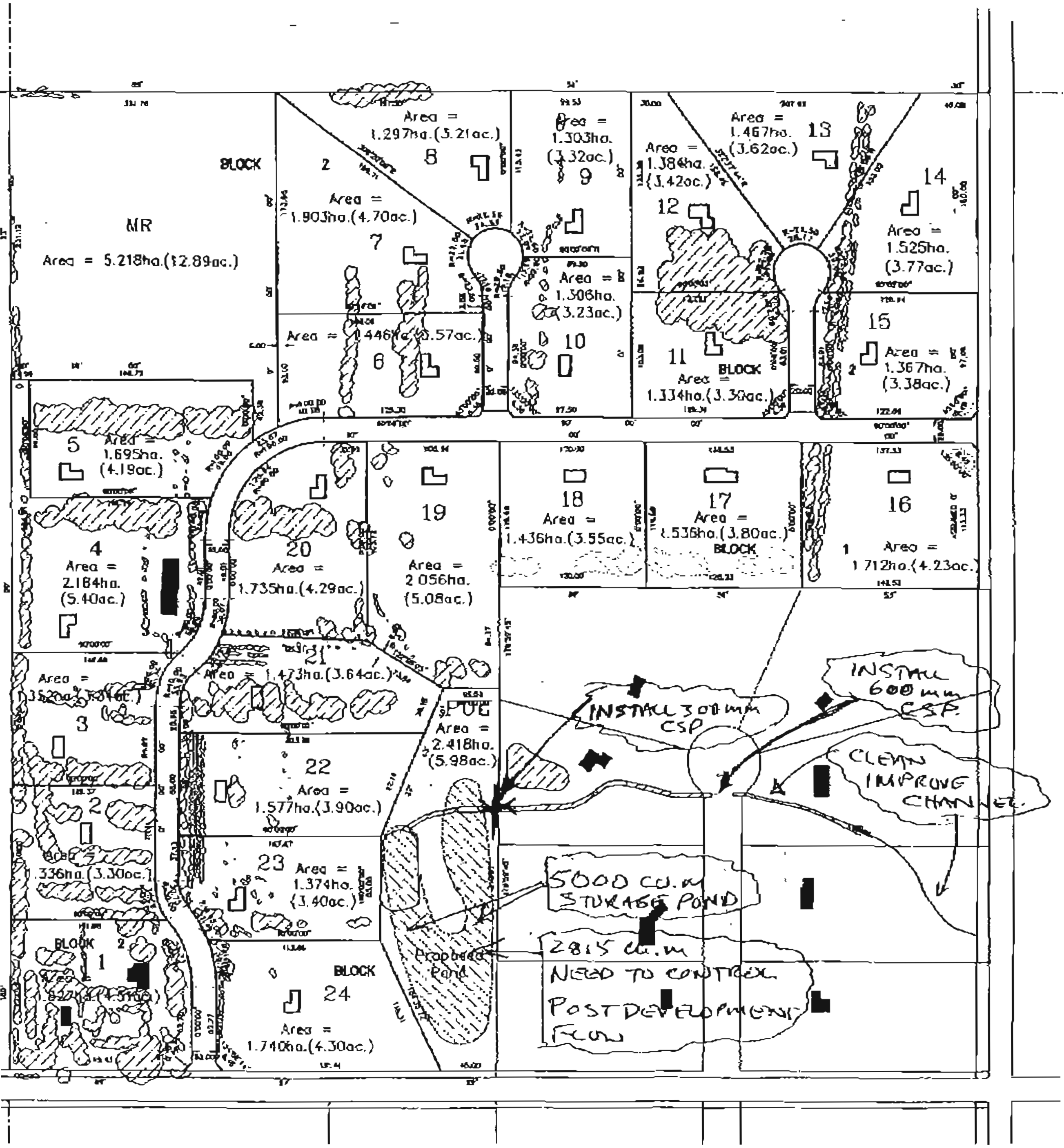


FIGURE 2 (POST DEVELOPMENT FLOWS)

Tagish Engineering Ltd.
Environmental Municipal Water Resources Land Development
5205A – 54 Avenue, RED DEER, AB
(403) 346 – 7710 Fax (403) 341 – 4909 E-mail tagish@telusplanet.net



TENTATIVE

M.D OF FOOTHILLS NO. 31

PLAN SHOWING SURVEY OF

SUBDIVISION

WITHIN

S.E.1/4 Sec.16, Twp. 21, Rge. 29, W. 4 M.

SCALE: 1:2000

BY: AZIZ M. DHARAMSHI, A.L.S., 2000

LEGEND

Distances shown are in metres and decimals thereof.
Distances shown on curved boundaries are Arc distances.
Statutory Iron Posts are shown thus: found ■, planted □, marked "P 078"
Bearings are Grid and derived from Subdivision Plan 901 1957
The area affected by the registration of this plan is denoted thus, and contains +/- 48.357 ha. (+/- 119.50 ac.).
Access Right of Way is shown thus, and is 6.00 wide, unless otherwise shown

ABBREVIATIONS

N.W.-Northwest, Sec.-Section, Twp.-Township, Rge.-Range, W.-West, M.-Meridian, F.I.-Found Iron Post, mk.-Mark, Pl.-Planted, R/W-Right-of-Way, R-Radius.

Certified correct this 28th day of January, 2000.

Alberta Land Surveyor

P 078

OWNERS

C. DONALD WILSON MANAGEMENT LTD.
BOX 16, SITE 2, RR1
OKOTOKS, ALBERTA

TRONNES SURVEYS (1978) LTD.

APPENDIX A

9/17/100 Page 1

PROJECT SUMMARY

PROJECT NAME : 100 YEQAR PRE

[UNIT HYDROGRAPH]

1	BASIN 1				
	Type CURVILINEAR UH	Peak flow	36.900 cfs	Peak time	
2	BASIN 2 PRE				
	Type CURVILINEAR UH	Peak flow	37.391 cfs	Peak time	
3	BASIN 3 PRE				
	Type CURVILINEAR UH	Peak flow	44.988 cfs	Peak time	
4	BASIN 5				
	Type CURVILINEAR UH	Peak flow	31.734 cfs	Peak time	
5	BASIN 4				
	Type TRIANGULAR UH	Peak flow	49.893 cfs	Peak time	

HYDROGRAPH]

1	BASIN 1				
	Type COMPUTED FLOOD	Peak flow	14.519 cfs	Peak time	1243.000 min
	Unit hydrograph				
	1 BASIN 1				
2	BASIN 2 PRE				
	Type COMPUTED FLOOD	Peak flow	14.729 cfs	Peak time	760.000 min
	Unit hydrograph				
	2 BASIN 2 PRE				
3	COMBINE 1 AND 2				
	Type COMBINE	Peak flow	14.729 cfs	Peak time	760.000 min
	Combined Hydrographs				
	2 BASIN 2 PRE				

[HYDROGRAPH]

4 BASIN 3 PRE
Type COMPUTED FLOOD Peak flow 20.263 cfs Peak time 768.000 min

Unit hydrograph
3 BASIN 3 PRE

5 DITCH O/L FROM POND
Type CHANNEL CONVEX Peak flow 4.391 cfs Peak time 870.000 min

Inflow hydrograph
10 OUTLET DITCH

6 COMBINE POND OUTFLOW WITH BASIN 3
Type COMBINE Peak flow 22.151 cfs Peak time 780.000 min

Combined Hydrographs
5 DITCH O/L FROM POND

4 BASIN 3 PRE

7 ROUTING 1,2,3
Type CHANNEL CONVEX Peak flow 21.375 cfs Peak time 800.000 min

Inflow hydrograph
6 COMBINE POND OUTFLOW WITH BASIN 3

8 BASIN 5
Type COMPUTED FLOOD Peak flow 15.340 cfs Peak time 770.000 min

Unit hydrograph
4 BASIN 5

9 BASIN 4
Type COMPUTED FLOOD Peak flow 16.314 cfs Peak time 750.000 min

Unit hydrograph
5 BASIN 4

[HYDROGRAPH]
10 OUTLET DITCH
Type RESER STOR. IND Peak flow 4.409 cfs Peak time 850.000 min

Inflow hydrograph
3 COMBINE 1 AND 2

Reservoir
1 PROPOSED POND

11 combine 1-5 54.47
Type COMBINE Peak flow ~~14410.000~~ cfs Peak time 0.000 min

Combined Hydrographs
7 ROUTING 1,2,3

8 BASIN 5

[RESERVOIR]
1 PROPOSED POND
Storage type MAN STAGE/STOR Max storage 188906.000 cuft
Discharge type COMP STAGE/DISC Max discharge 13.302 cfs

Connecting Structures
1 O\L DITCH

[OUTLET STRUCTURE]
1 O\L DITCH
Type TRAPEZOIDAL WEIR
Max discharge 13.302 cfs

9/17/100 Page 1

PROJECT SUMMARY

PROJECT NAME : 100 POST

[UNIT HYDROGRAPH]

1	BASIN 1				
	Type CURVILINEAR UH	Peak flow	36.900 cfs	Peak time	
2	BASIN 2 POST				
	Type CURVILINEAR UH	Peak flow	44.096 cfs	Peak time	
3	BASIN 3				
	Type CURVILINEAR UH	Peak flow	113.342 cfs	Peak time	
4	BASIN 5				
	Type CURVILINEAR UH	Peak flow	35.934 cfs	Peak time	
5	BASIN 6				
	Type TRIANGULAR UH	Peak flow	40.941 cfs	Peak time	
6	BASIN 4				
	Type TRIANGULAR UH	Peak flow	48.271 cfs	Peak time	

HYDROGRAPH]

1	BASIN 1				
	Type COMPUTED FLOOD	Peak flow	14.519 cfs	Peak time	1243.000 min

Unit hydrograph
1 BASIN 1

2	BASIN 2 POST				
	Type COMPUTED FLOOD	Peak flow	20.202 cfs	Peak time	756.000 min

Unit hydrograph
2 BASIN 2 POST

3	COMBINE 2.5				
	Type COMBINE	Peak flow	34.175 cfs	Peak time	768.000 min

Combined Hydrographs
7 ROUTE BASIN 5

2 BASIN 2 POST

APPENDIX B

[HYDROGRAPH]

4 BASIN 3
Type COMPUTED FLOOD Peak flow 25.219 cfs Peak time 730.000 min

Unit hydrograph
3 BASIN 3

5 BASIN 5
Type COMPUTED FLOOD Peak flow 16.037 cfs Peak time 760.000 min

Unit hydrograph
4 BASIN 5

6 BASIN 6
Type COMPUTED FLOOD Peak flow 17.241 cfs Peak time 756.000 min

Unit hydrograph
5 BASIN 6

7 ROUTE BASIN 5
Type CHANNEL CONVEX Peak flow 14.842 cfs Peak time 768.000 min

Inflow hydrograph
5 BASIN 5

8 ROUTE POND OUTFLOW
Type CHANNEL CONVEX Peak flow 8.639 cfs Peak time 880.000 min

Inflow hydrograph
13 PROPOSED POND

9 COMBINE 2,3,5
Type COMBINE Peak flow 24.146 cfs Peak time 728.000 min

Combined Hydrographs
8 ROUTE POND OUTFLOW

4 BASIN 3

[HYDROGRAPH]

10 ROUTE 1,2,3,5
Type CHANNEL CONVEX Peak flow 20.081 cfs Peak time 744.000 min

Inflow hydrograph
9 COMBINE 2,3,5

11 COMBINE 2,3,5,6
Type COMBINE Peak flow 35.068 cfs Peak time 744.000 min

Combined Hydrographs
10 ROUTE 1,2,3,5

6 BASIN 6

12 BASIN 4
Type COMPUTED FLOOD Peak flow 17.477 cfs Peak time 750.000 min

Unit hydrograph
6 BASIN 4

13 PROPOSED POND
Type RESER STOR. IND Peak flow 8.661 cfs Peak time 864.000 min

Inflow hydrograph
3 COMBINE 2,5

Reservoir
1 PROPOSED POND

[RESERVOIR]

[RESERVOIR]
1 PROPOSED POND
Storage type MAN STAGE/STOR Max storage 377813.000 cuft
Discharge type COMP STAGE/DISC Max discharge 18.531 cfs

Connecting Structures
1 POND PIPE

[OUTLET STRUCTURE]
1 POND PIPE
Type CIRCULAR CORRIGATED METAL PIPE w/ projecting
Max discharge 18.531 cfs

A6. Land Use Statistics

A6. Land Use Statistics

The following chart illustrates the proposed land uses for the Plan Area:

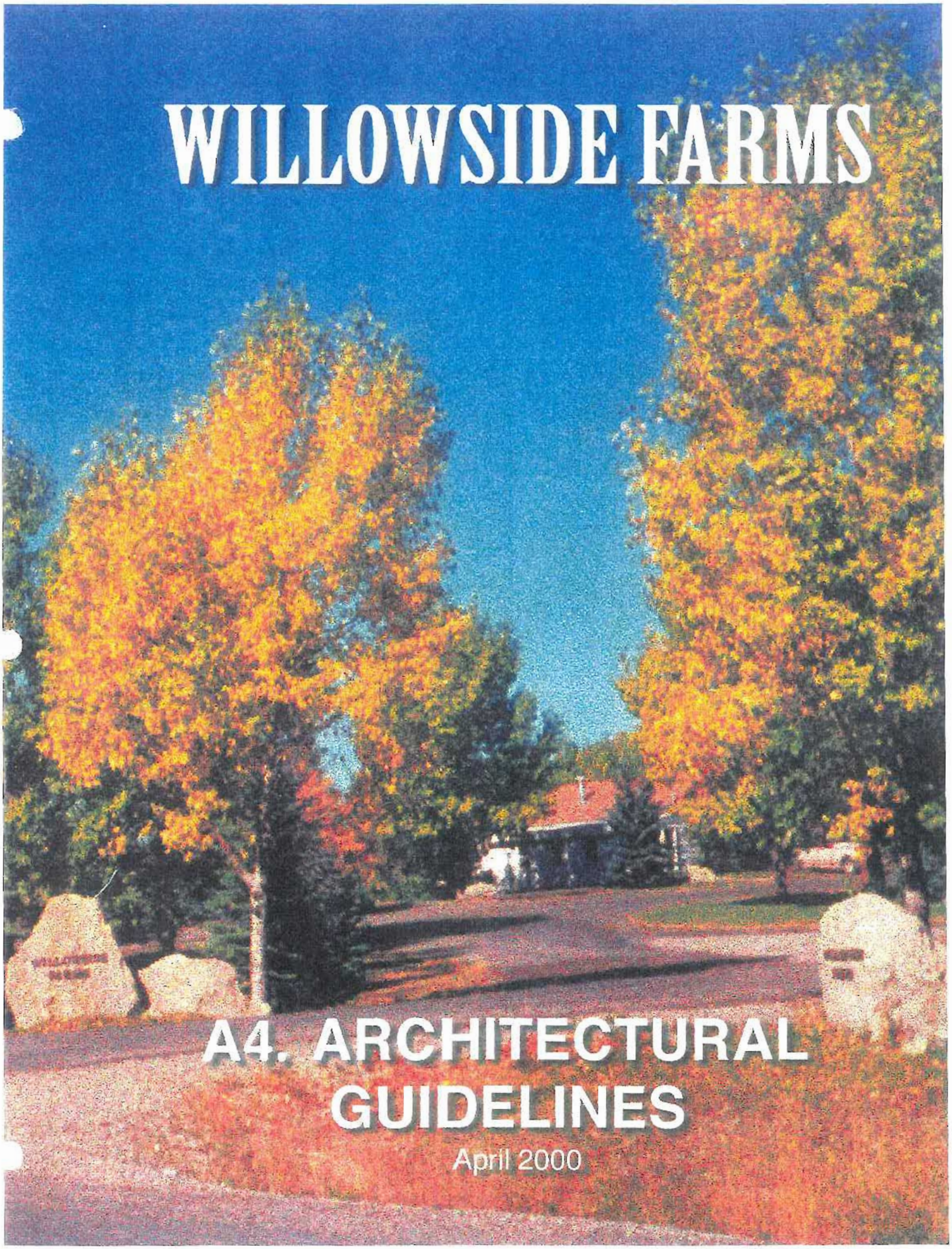
Use	Acres	Hectares	Percentage
Country Residential	91.78	37.37	77.9%
Roads	7.32	2.96	6.2%
Municipal Reserve	12.89	5.22	10.9%
Public Utility Lot	6.65	47.97	5.0%
TOTAL	118.64	93.52	100%

Note:

The Plan Area was 120 acres, however road widening previously removed some of the acreage from the parent parcel.

A7. Architectural Guidelines

WILLOWSIDE FARMS



A4. ARCHITECTURAL GUIDELINES

April 2000

To Future Residents of Willowside Farms

C. Donald Wilson Management Ltd. is proud to be part of Willowside Farms. In an effort to create a pre-eminent country residential development we set out to accomplish three goals:

1. to create a development plan that is in harmony with the natural topography and mature stands of trees at Willowside Farms;

2. to create a country residential setting that blends an equestrian theme and facility into a development plan that contributes to a sense and feeling of "community"; and

3. to create an architectural theme that will help enhance and preserve the investment residents make in their home at Willowside.

We believe Willowside Farms accomplishes this and more.

To the 24 families who will have the select opportunity to build and live in Willowside Farms, we wish you the best and hope you will enjoy the neighbourhood of Willowside Farms.

C. DONALD WILSON MANAGEMENT LTD.

C. Donald Wilson
President

, 2000

WILLOWSIDE FARMS
Architectural Guidelines

TABLE OF CONTENTS

APPENDICES

Willowside Farms Area Structure Plan – Draft Architectural Guidelines

This document was prepared in order to provide prospective purchasers with a general description of the development features within Willowside Farms; and, the general guidelines and specifications for the plotting and architectural design of the homes. While the information presented herein has been checked for accuracy as of the date of publishing, corrections, revisions and amendments may be made without notice. The Architectural Guidelines are intended to be applied to all lots in Willowside Farms. The submission of plans for approval are done on a lot by lot basis and the Willowside Architectural Guidelines Committee will be guided by these Architectural Guidelines; however, each submission will be evaluated on its individual merit, at the sole discretion and interpretation of the Architectural Guideline Committee. *Dated effective , 2000.*

Key Contacts

Developer

C. Donald Wilson Management Ltd..
Box 16, Site 2, R. R. #2 Tel: (403) 938-4606
Okotoks, AB T0L 1T0 Fax: (403) 938-4606
Attention: Mr. Don Wilson

Engineering Consultant

Architectural Guideline Consultant

Nelson MacDonald Design (1986) Ltd.
540, 2424 Fourth Street SW Tel: (403) 228-9010
Calgary, AB T2S 2T4 Fax: (403) 229-3849
Attention: Nelson MacDonald

Surveyor

Tronnes Surveys (1976) Ltd.
911 - 32 Avenue NE
Calgary, AB T2E 6X6
Attention: Darryl Tronnes

1. PREFACE

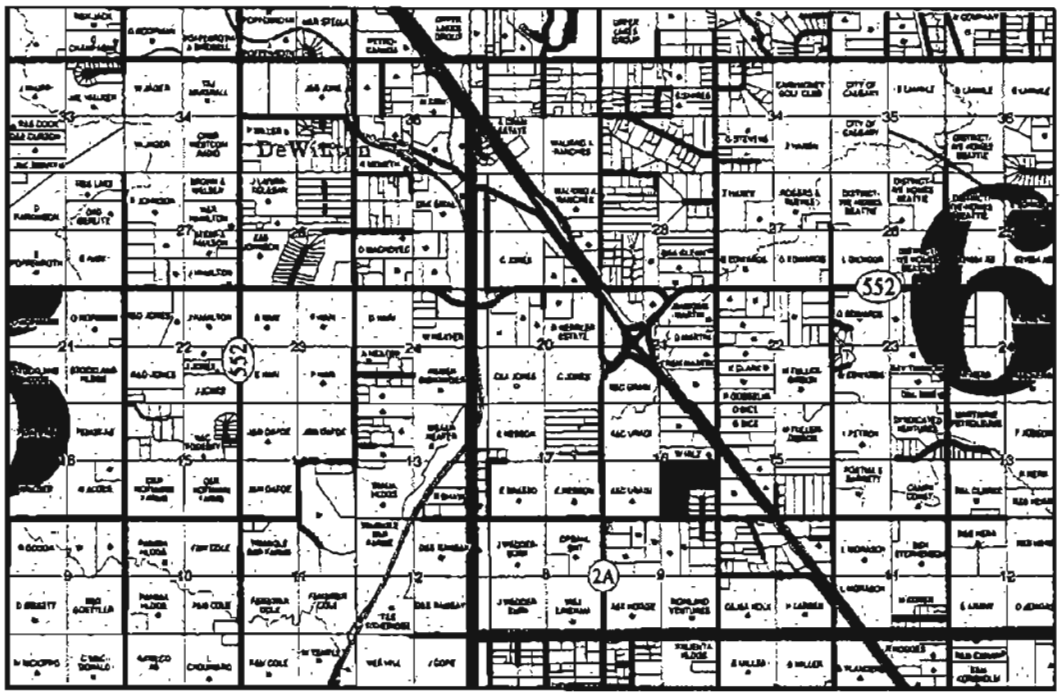
C. Donald Wilson Management Ltd. has established a high standard of Architectural Guidelines that homes built in Willowside Farms will adhere to. The Architectural Guidelines document that follows describes the general guidelines and specific specifications/requirements that will apply to the lots in Willowside Farms. This document also outlines the procedure for obtaining the approvals of the Willowside Farms Architectural Guidelines Committee.

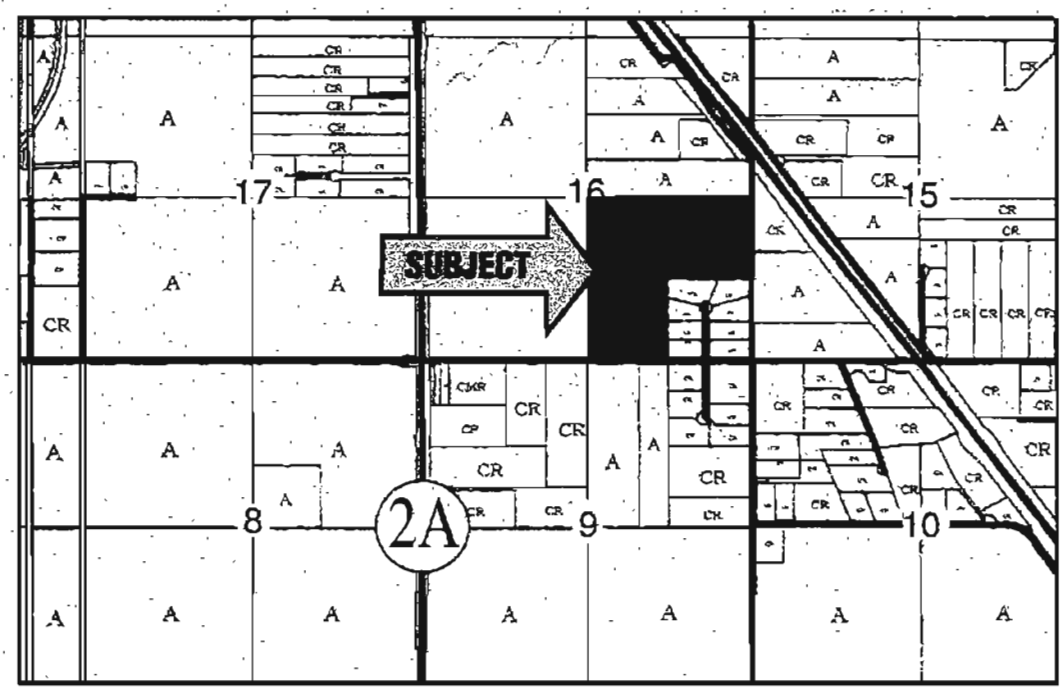
The Willowside Farms Architectural Guidelines provide all the details needed to select a lot, prepare a set of plans and obtain approvals. We trust you will find them useful in helping you design your home exterior and landscape plan. Each homeowner/builder will have the latitude to choose a variety of exterior styles and finishes, however it must integrate into the overall architectural theme (Prairie, Ranch, Victorian and Rocky Mountain) of Willowside Farms. For example, homes that are merely enlargements of styles more suited to city developments or homes with exterior finishes which are not compatible with the character of the development, such as homes that have a pink or lime green coloured stucco, will not receive Architectural Approval as these designs, in our opinion, do not respect the landscape, setting or theme of Willowside Farms.

To further help preserve and enhance the value of your investment in your home, Willowside Farms have incorporated a number of development characteristics. A unique aspect to Willowside Farms is the incorporation of an equestrian feature (20-horse stable, paddocks and bridle path) into a country residential setting. Residents will have the opportunity to board horses at the stable or keep up to 2 horses on their lot, pursuant to the Architectural Guidelines and the M.D. of Foothills No. 31 by-laws. A three rail white fence will be incorporated throughout the development. This serves to define the bridle paths and also serves to unify the architectural theme while allowing for diversity of home exteriors. All building sites will be pre-selected. This will help enhance privacy (as much as practical) and will help conserve existing stands of trees. All lots will be fully serviced with telephone, electricity, gas, wells and water. Sewage disposal will be via a homeowner provided septic system.

2. MAPS

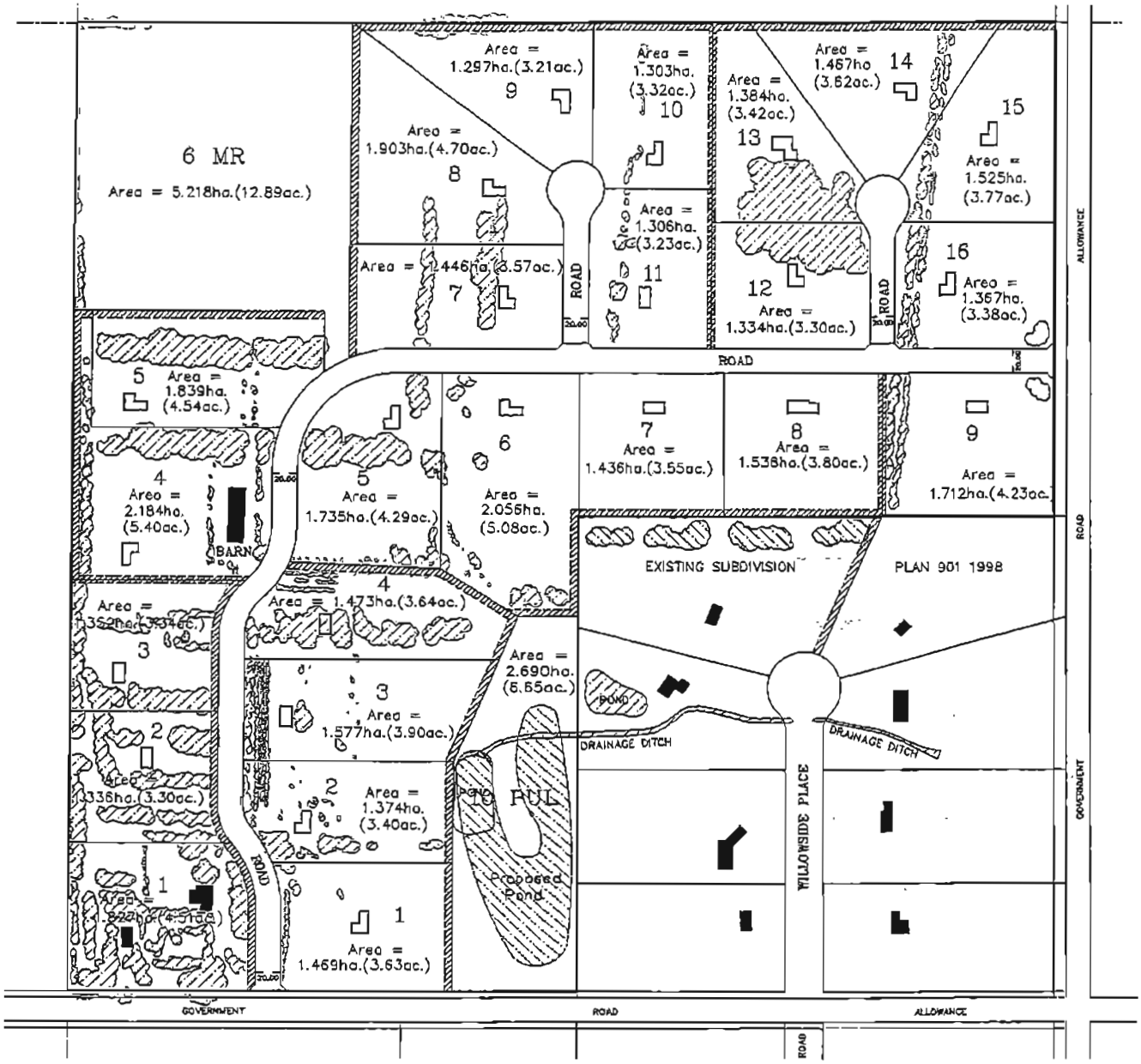
2.1 Location Maps





2.2 Tentative Subdivision Plan

Willowside Farms, a 24-lot country residential estate community. There may be minor changes to this plan in order to satisfy M.D. of Foothills No. 31 requirements.

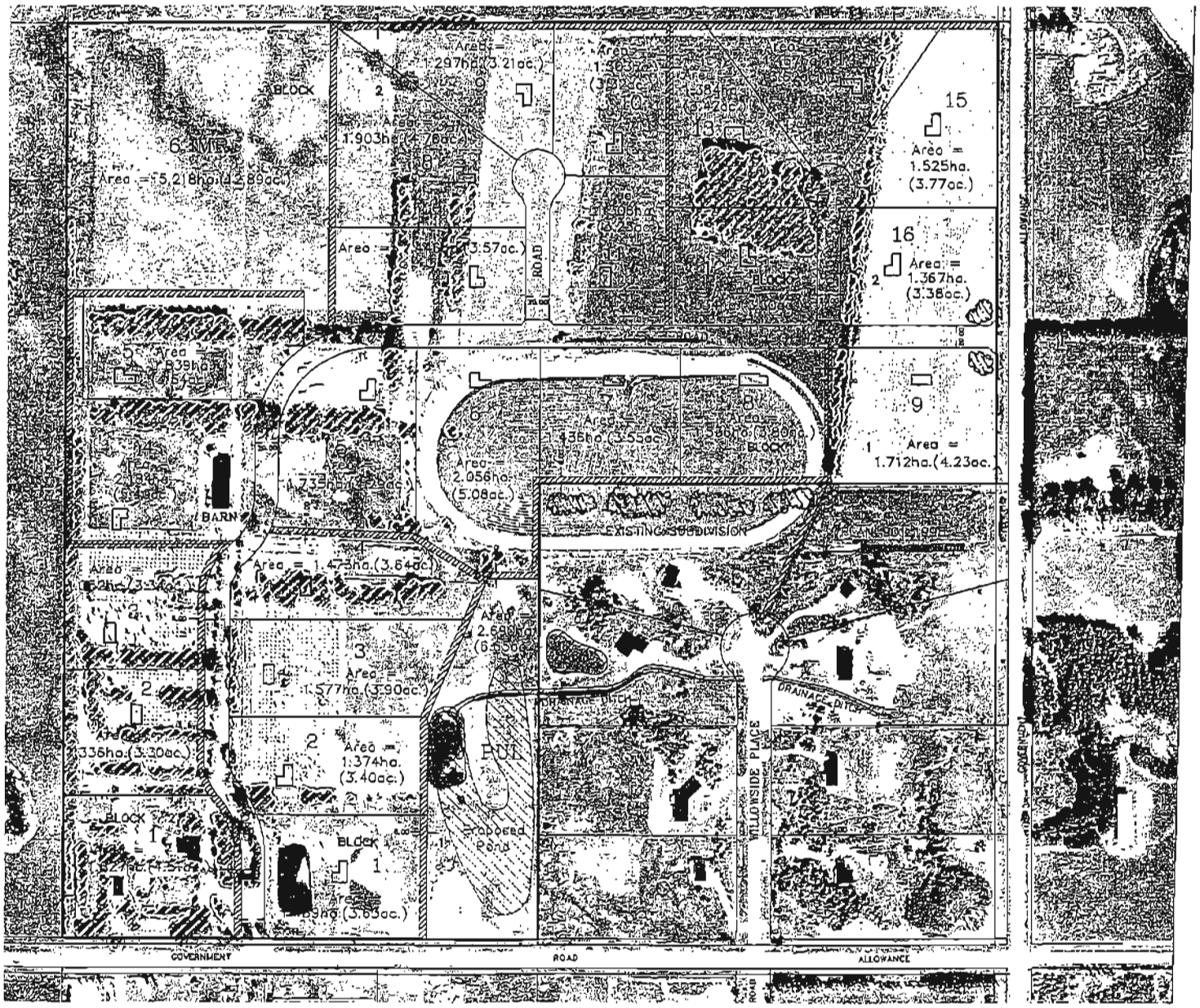


3. DEVELOPMENT FEATURES

3.1 Willowside Farms Site Plan and Plottings

It is the philosophy of Willowside Farms to preserve and enhance the "natural" landscape that currently exists. Homeowners are therefore encouraged to "groom" a small area around one's house and take a more "natural" approach to landscaping the balance of their lot. The fencing will generally define the bridle paths and side/rear lot lines. Any front yard fencing will be set at each lot's architectural guideline approval.

The "house" on each lot indicates the approximate home site location. These locations are subject to final determination by the Architectural Guidelines Committee.



3.2 Bridle Paths

The bridle paths will be provided by way of an access easement on the lots where the path is located (see Section 2.2 Map). The bridle paths are located on the private lots and will be approximately 20 feet wide. The path will be cultivated topsoil. Each lot owner is responsible for maintenance (such as weed removal, etc.), however, the residents may determine to have the Willowside Farms Homeowners Association complete the maintenance of the bridle paths (such as weed control, cultivation, etc.) (Note: this feature is subject to M.D. of Foothills No. 31 approval and location may vary).

3.3 Stable, Track and Paddocks

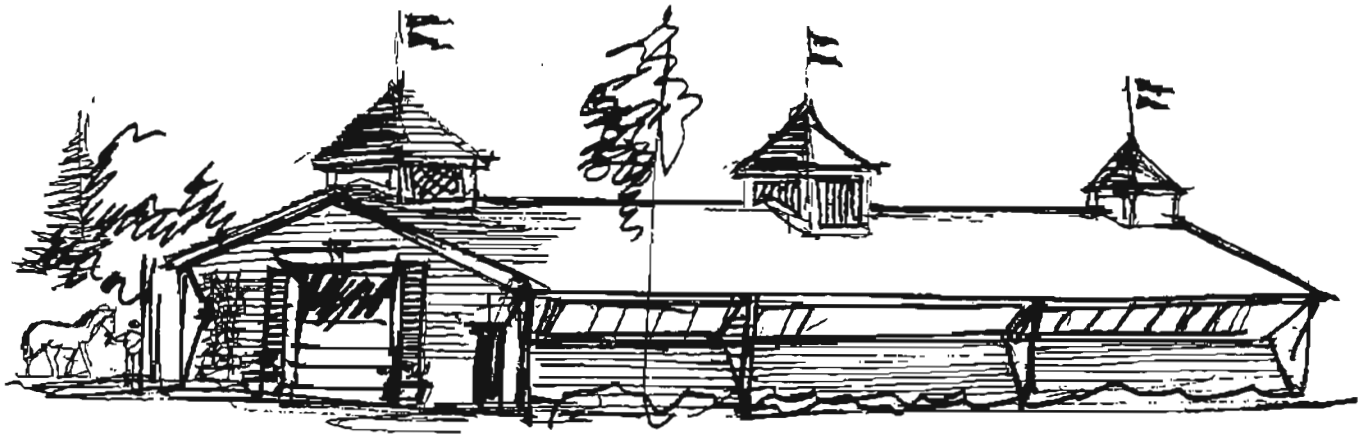
A 20-horse stall stable is located on lot 4. The developer may maintain this stable for a 5-year period. The developer will also operate and maintain the horse-training track located on lots 6, 7 and 8 as well. While the developer will train and board standard bred horses at these facilities residents of Willowside Farms may use the stable and paddock facilities on a user pay basis. Operation of the stable and track will be governed by M.D. of Foothills No.31 requirements and will include a program of manure disposal.

After the developer's obligation to operate the stable and track expires, it is expected lots 4, 6, 7 and 8 will be sold. Lot 4 will be sold with the agreement that the buyer will operate the stable consistent with guidelines set forth in the caveats as described in Section WF.3 hereto, so that the residents of Willowside Farms can continue to enjoy the use of the stable. Once the track use is discontinued the track area will be regraded in order to accommodate housing. (See Illustration 1 for a rendering of the main stable which will receive an exterior renovation that reflects the architectural theme).

3.4 Fencing

The developer will provide a three rail white fence along both sides of the bridle paths in order to enhance and unify the architectural theme intended for the community. Where a bridle path is located a fence will be built along the access easement line excepting in case where the bridle path is located in a front yard. Front yard fencing that is brought forward to the front property line tends to be uninviting; therefore, when each lot owner submits his house plan and plotting for architectural guideline approval, a front yard fencing plan will be defined at that meeting.

Illustration 1 – Main Stable



The main stable will receive a "facelift" that is consistent with the architectural theme of the project.

3.5 Okotoks Agricultural Society

Each lot owner will receive a 5-year membership to the Society, which operates the Hebson Arena. This facility offers residents of Willowside Farms the opportunity to participate in the Hebson Arena's numerous horseback riding programs. The Hebson Arena is a half-mile west of Willowside Farms. This community amenity is very complementary to the equestrian character offered at Willowside Farms.

3.6 Accessory, Out Buildings and Horse Shelters

Accessory and Out Buildings and Horse Shelters are permitted according to M.D. of Foothills No. 31 by-laws, however the design of the structures must be consistent with materials and design used in a lot owners house. Prior to construction of any such buildings architectural guideline approval must be obtained. (See Section 5.2 for detail)

3.7 Willowside Farms Homeowner Association

The Willowside Farms Homeowner Association will be formed as an association under the Societies' Act *RSA 1980. S-18* of Alberta for the purpose of:

a) helping to preserve and enhance the value of homes in Willowside Farms;

b) promoting and fostering a community spirit within Willowside Farms;

c) operating, insuring, and maintaining common facilities of Willowside Farms such as the entry signs, perimeter fencing, the bridle paths, drainage swales and organizing the subdivision garbage pick-up;

d) complying with any maintenance requirements set forth by the M.D. of Foothills No. 31 (e.g. M.R. and P.U.L. maintenance) and

e) advancing any other interests and plans for the advantage of the residents of Willowside Farms, which may be beneficial to the residents.

Each homeowner and subsequent assigns shall become a member of the Association and each lot shall have an encumbrance against the title of each lot securing the payment of $300 per annum. The payment shall not begin until a lot is transferred to a Purchaser.

C. Donald Wilson Management Ltd. will initially capitalize the Association with a contribution of $5,000.

3.8 Stabling and Care of Horses

Residents are allowed to keep no more than two horses on their lot (enforced through the architectural guideline restrictive covenant). As the developer is maintaining the existing stable and horse training operation for five years the farm and training staff are available to provide advice regarding stabling, horse husbandry, feed, exercise, etc. to residents who intend to stable horses on their lots. Residents are expected to maintain a standard of care that is consistent with industry practice.

4. SITE DESIGN AND CONSTRUCTION

4.1 Street Engineering

The roads within Willowside Farms will be constructed to M.D. of Foothills No. 31 specifications. Typical roadways consists of a standard width asphalt surface, an 11 metre ditch on either side and a utility easement. In order to reduce the amount of trees that would have to be displaced to satisfy typical M.D. road requirements, Willowside Farms is attempting to obtain a relaxation road allowance width to 20 metres instead of 30 metres. By shrinking the width of the road allowance, incorporating slightly lower profile ditching and a proposed reduction in neighbourhood speed limits, a large number of trees can be saved during the road construction. This design helps in preserving the

"country lane" feel to the community as one enters the subdivision. Paved road surface will be standard width.

4.2 Shallow Utilities and Water

Gas service is provided by Atco Gas. Electrical service is provided by TransAlta Electric. Telephone service is provided by Telus.

The developer will drill suitable wells and install a distribution system in accordance with M.D. and provincial standards.

4.3 Near Surface Groundwater & Septic Field Requirements

Geotechnical tests indicate near surface groundwater is quite low.

Sewage disposal is handled through septic tank and field disposal system that is to be installed by the builder/homeowner at their cost. Homeowners/builders are responsible for the design and construction of the septic system, however a percolation test for each lot will be provided. Prior to receiving Architectural Guideline approval, the septic disposal location must be approved. Preliminary percolation tests indicate the lands are suitable for septic tank and field sewage disposal. Homeowners are responsible for ensuring design and construction complies with the Drainage and Plumbing act of Alberta.

4.4 Setbacks, Sideyards, & Building Heights

The setbacks, sideyards and building heights as set forth by the M.D. of Foothills No. 31 are listed below. All homes must comply with M.D. Bylaws and Architectural Guidelines. In some cases, the pre-set plottings exceed the minimum front yard setbacks in order to vary the streetscape, enhance potential views and preserve trees.

The purchaser/builder is responsible for conforming to M.D. of Foothills No. 31 bylaws (which may be updated from time to time).

MUNICIPAL DISTRICT OF FOOTHILLS NO. 31

Minimum Requirements

Front Yard Setback:

(a) 48m from the centreline of a municipal road
(b) 64m from the centreline of a secondary highway
(c) 15m from any internal subdivision road or service road
(d) 40m from a primary highway

Side Yard Setbacks:
(a) 15m

Rear Yard Setbacks:

(a) 30m
(b) 15m

Site dimensions:

(a) the minimum parcel size shall be 2 acres

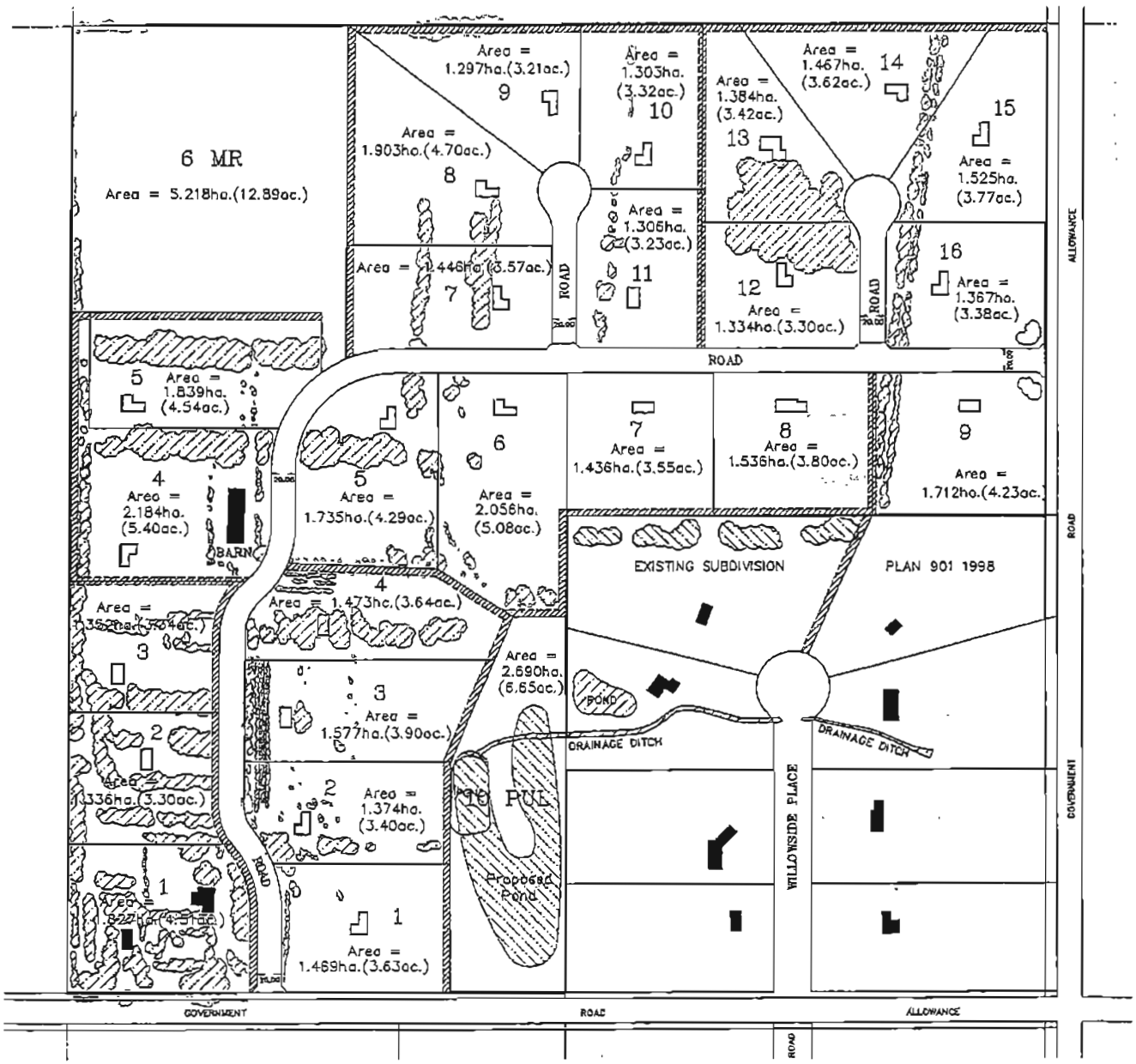
Building height

(a) principal building, maximum 9m

4.5 Building Site Location Detail

The map below denotes the approximate locations of driveways and house locations.

To ensure that view sheds, existing trees and privacy are maximized to their potential, all building sites have been pre-established. Final home site locations will be determined prior to registration of the subdivision plan.



4.6 House Sizes & House Types

Certain lots are more conducive to certain types of house types due to slope, topography, view sheds and vegetation. Orientation of the front of the house does not have to face the street directly and homes should be plotted to take advantage of the characteristics of the lot. Garage doors should not directly face the street and owners are encouraged to use side entry, rear entry or angle garage doors away from the internal subdivision road.

Minimum Size of House (excluding Garage)	
Bungalows:	1600 square feet Main Level
Two Storey/ Split Level/ Multi Level:	2500 square feet on two levels With 1500 square feet on the first level

4.7 Driveways

An asphalt driveway approach from the internal road to the property line will be provided. Homeowners are encouraged to construct narrower driveways (say 5.0 metres wide) and curve the approach to the garage in order to add character to the house. Homeowners must complete driveways with an asphalt or hard surface finish.

4.8 Exterior Lighting & Security Systems

Uplighting and backlighting enhances the appearance of the home and landscaping. These lights can project shadows of large trees onto walls or silhouette the interior structure of unusual plants or frame a panoramic view.

A soft or low voltage light using white or frosted bulbs in metal fixtures is acceptable. Coloured bulbs or lens covers and plastic fixtures are not acceptable. Any security or additional lighting should not be of a wattage or lumen count which indiscriminately affects neighbouring properties or contributes to excessive "light pollution".

The use of exterior security systems is permissible unless they alter the exterior architectural design of the home. The use of design type security doors must be in keeping with the architectural theme of the house.

4.9 Electronic and Mechanical Hardware

No television or radio antennas are permitted. Small satellite dishes (18 inches) may be affixed to the dwelling (hidden from street view) or located on the lot where they are not visible from any street. Central air conditioning or other mechanical hardware must be located where they are not visible from the street or park areas. Careful consideration should be given to sound levels of operating mechanical equipment which may affect adjacent properties.

4.10 Play Structures, Swing Sets, Horse Shelters & Storage Sheds

If play structures, swing sets and storage sheds are installed, they shall be located in the rear of the lot and screened from public view. Construction materials should be resistant to decay and should be painted to match the colour scheme of the home. Roofing of the sheds shall match the material, shape, and slope of the home or garage. Only one storage shed per lot is permitted. Horse shelters must receive architectural approval and design and materials should be consistent with the main house.

4.11 Damages and Lot Inspections

Any damages to shallow utilities, water services, fences, entrance signs and protected trees and shrubs that are present when a builder is about to move onto the site shall be brought to the attention of the developer, in writing. Any damage that is present at the time of the final lot inspection, but was not noted prior to the construction start, will be priced out and deducted from the damage deposit.

Lot inspections will not be undertaken until all exterior work is complete. An inspection may be made prior to sodding or seeding provided grading has been done in accordance with the approved grading plan. Refund of deposits will not occur until the exterior of the house is complete and the driveway is hard surfaced.

4.12 Lot Signs

Lot entry signs will be provided by the developer and all other signage is subject to the Architectural Guidelines Committee's approval.

During home construction a builder's sign may be attached to the dwelling. No other signage (temporary or permanent) will be permitted.

4.13 Excavation Material/Topsoil

Builders must ensure that all excavation material is kept within the confines of their lot. Any spillage on the road or neighbouring lot must be removed immediately or the developer will arrange for its removal and invoice the builder for expenses. Loading and hauling of excess excavated material, backfill material or topsoil is the responsibility of the builder. Homeowners/builders shall not "force the grades" to accommodate walkout basements for lots that are unsuited to same. Grading must accommodate the existing surface drainage and the overland drainage to/and from adjacent lots. Overland drainage easements may be required on some lots.

4.14 Garbage Storage/Vehicle Storage

The Willowside Farms Homeowners Association may arrange for garbage pick-up; however, each homeowner shall store garbage in an appropriate manner prior to pick up and be responsible for his/her cost of removal. Vehicle storage must be in compliance with the Restrictive Covenants.

4.15 Clean-up

Builders must keep building sites litter free and must supply garbage bins on-site. Failure to comply will result in clean-up costs being charged to the lot. Lot owners and/or homeowners are responsible for control/removal of noxious weeds.

4.16 Horses and Stabling

Homeowners can make use of the Willowside Farms existing stable and paddock facilities on a user pay basis, but, the stable will remain a private facility for the homeowners in the S.E. 16 –21-29 W4M and is not intended to be a commercial business.. If residents stable their own horses the shelters and stable facilities must meet with architectural guideline approval. Residents must comply with M.D. policies and by-laws with respect to the number and care of horses stabled on their lot.

4.17 Bridle Paths

Homeowners are obligated to maintain the bridle paths that are situated on their particular lot (eg. Weed control). The paths are available for residents and their guests at all parties use at their own risk. The Homeowners Association shall maintain a liability insurance policy respecting the bridle paths and other common use areas.

4.18 Restrictive Covenants

In addition to the required utility easements, registration of the Architectural Guidelines, and the Willowside Farms Homeowners' Association Encumbrance, all lots at Willowside Farms will have restrictive covenants registered on the title. These advise the lot owner of certain actions that are not permitted. Such restrictions are imposed to assure that the best interests of the entire community are served and helps protect the value of adjacent properties. The restrictions relate to general topics applied to all lots, such as uses of the yard area and changes to the appearance of the lot and home.

The lot purchasers and builders should familiarize themselves with the content of these restrictive covenants prior to the lot purchase.

4.19 Miscellaneous

(a) The Architectural Guidelines Committee will consist of members appointed by the developer and its membership may vary over time.

(b) Recreational vehicles and horse trailers must be stored in garages or at the rear of a house with appropriate mature type landscaping, or walls that blend with house design and materials, in order to screen the vehicles from the street.

(c) Lot owners who have pets on their property must install 'invisible fencing" in order to keep their pets on their lot.

(d) Lot owners in Willowside Farms are restricted by way of restrictive covenant from boarding no more than two horses per lot. Lot owners who board horses are governed by M.D. by-laws and the standards of horse care contained in by-laws of the Homeowners Association.

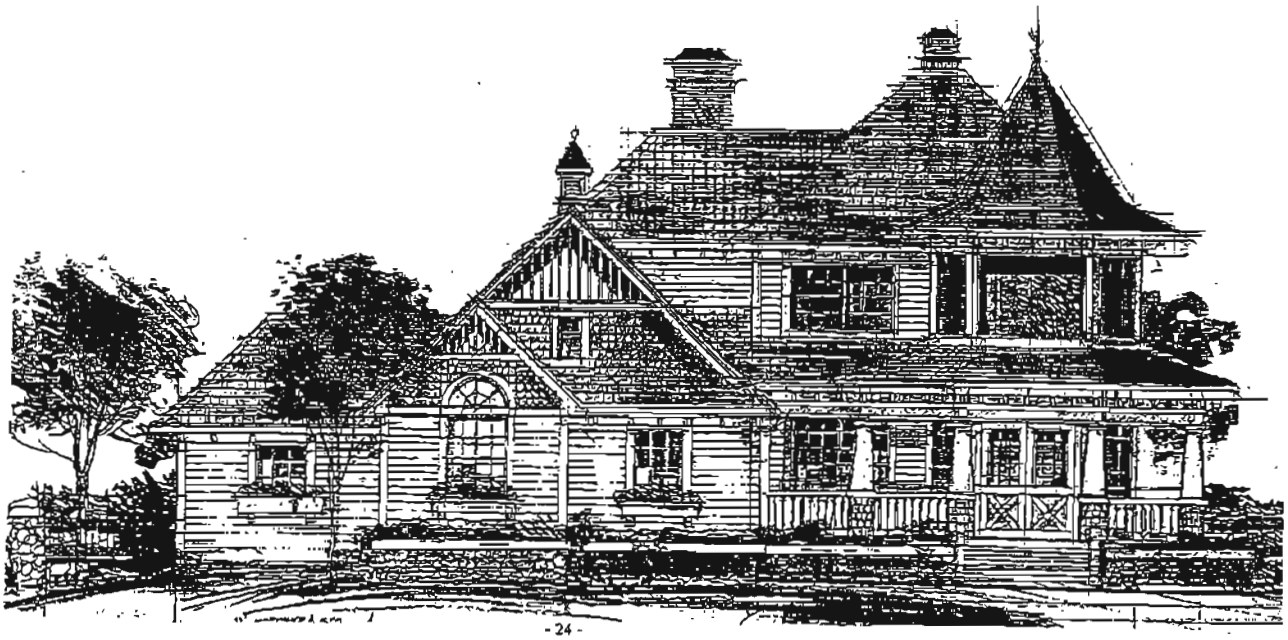
(e) Lot owners must build within 5 years of purchasing a lot and complete their home construction within 12 months of start date. Horse shelters and stables may be built at anytime but such structures must receive architectural guideline approval.

5 DESIGN SPECIFICATIONS

5.1 Suggested Architectural Themes

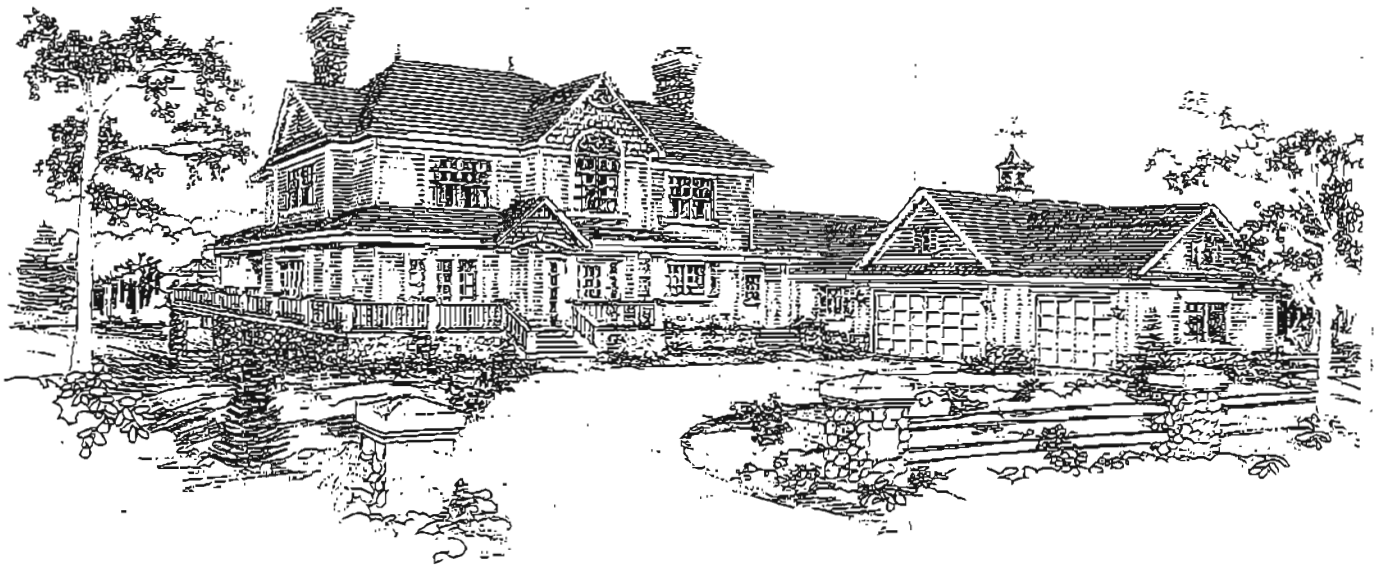
The Architectural Guidelines allow for a variety of home types within the Prairie/Victorian/Western/Rocky Mountain architectural themes as noted on the following pages, however the Architectural Guidelines Committee which will approve all building plans will attempt to introduce a sense of continuity into the project. Homeowners must select exterior finishings from a palette of colours and materials that are in harmony with the natural setting of Willowside Farms. Given the variety in terrain and vegetation within the community, some styles or themes are more appropriate for certain lots. The Architectural Guideline Committee will undertake to apply the guidelines fairly yet rigorously and reserves the right to solely interpret the Architectural Guidelines and disapprove home exteriors and recommend changes to homes, plot plans, elevations, septic system, grades, and landscaping plans submitted for said approvals.

The next several pages illustrate the detailing of home exteriors.



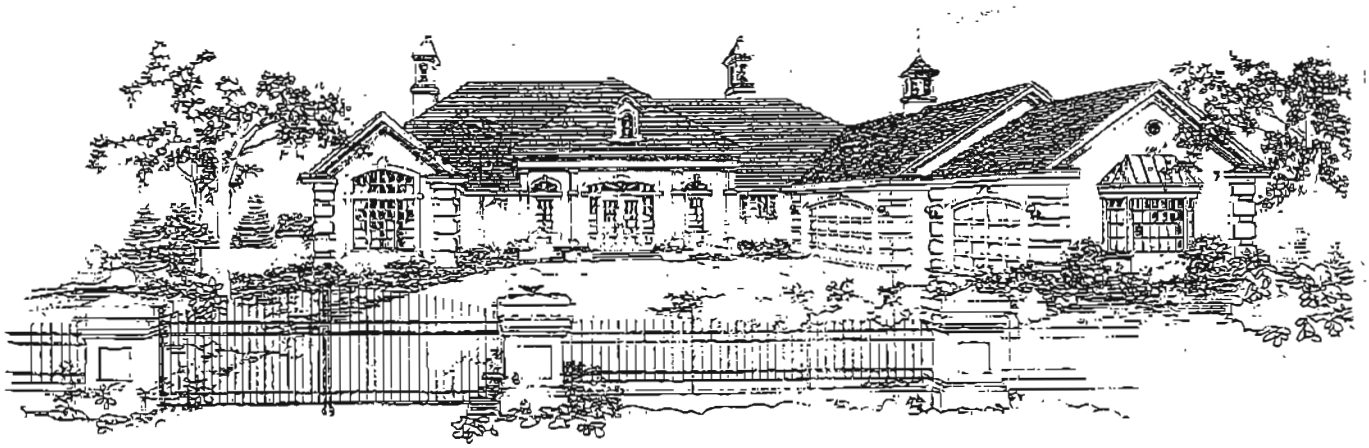
Style: Victorian

5.1 Suggested Architectural Themes (cont'd)



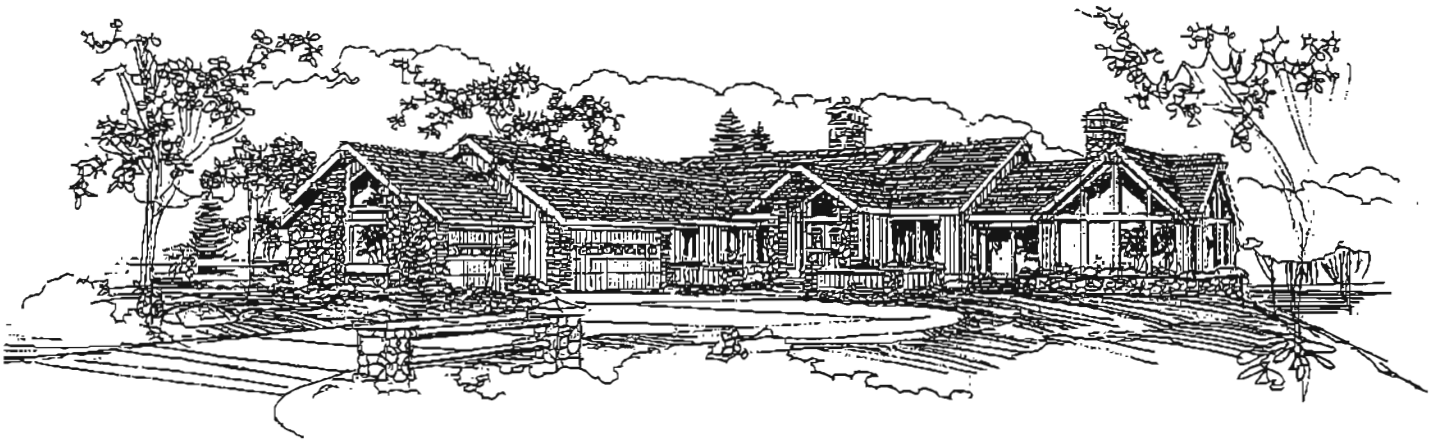
Style: Prairie/Arts & Crafts

5.1 Suggested Architectural Themes (cont'd)



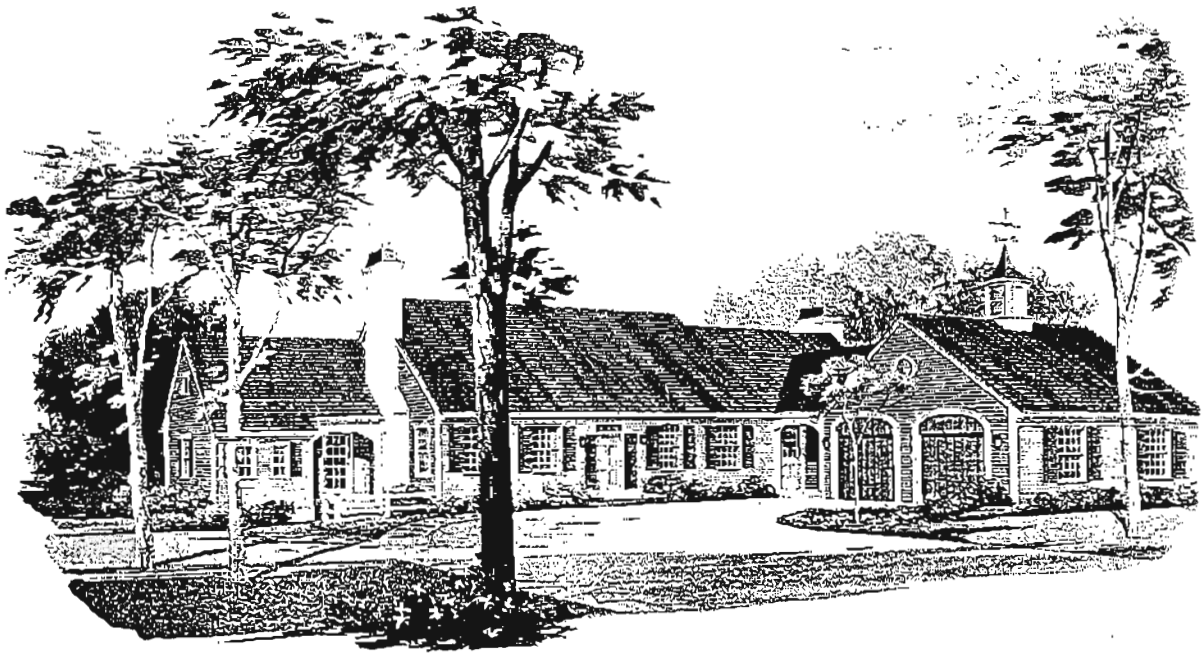
Style: Country French Provincial

5.1 Suggested Architectural Themes (cont'd)



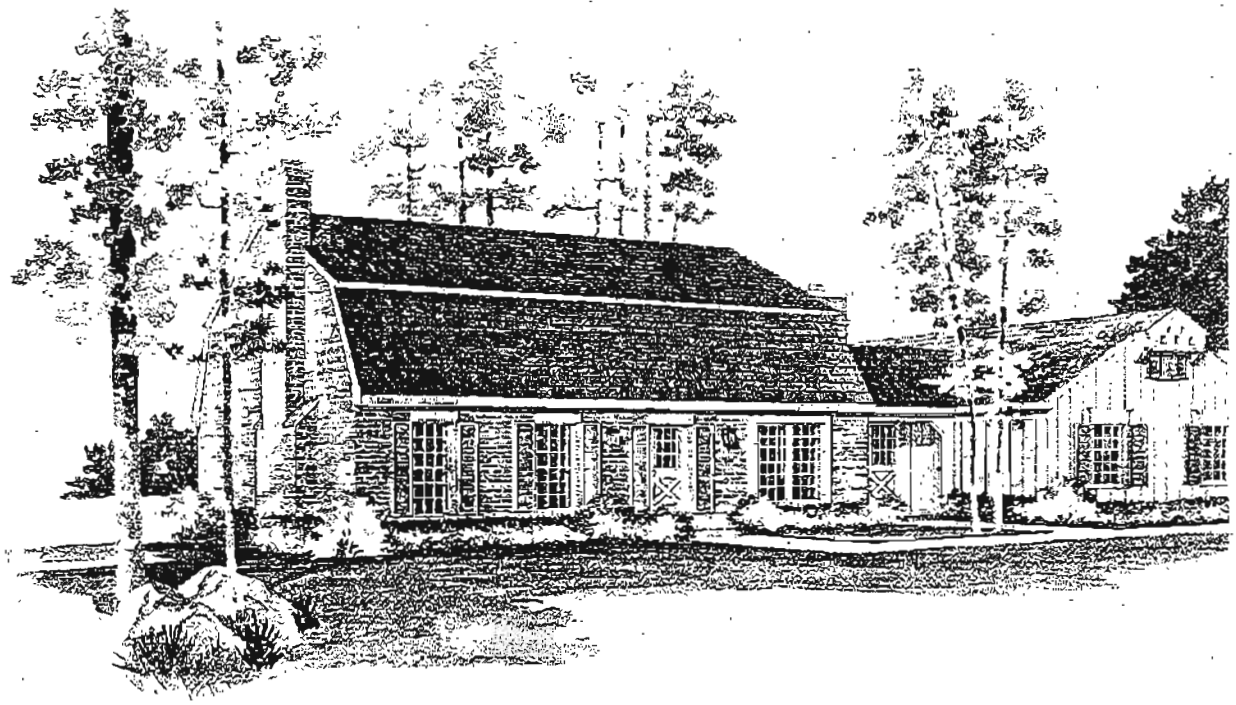
Style: Rancher/Western Contemporary

5.1.1 Suggested Architectural Themes (cont'd)



Style: Classic Country

5.1.2 Suggested Architectural Themes (cont'd)

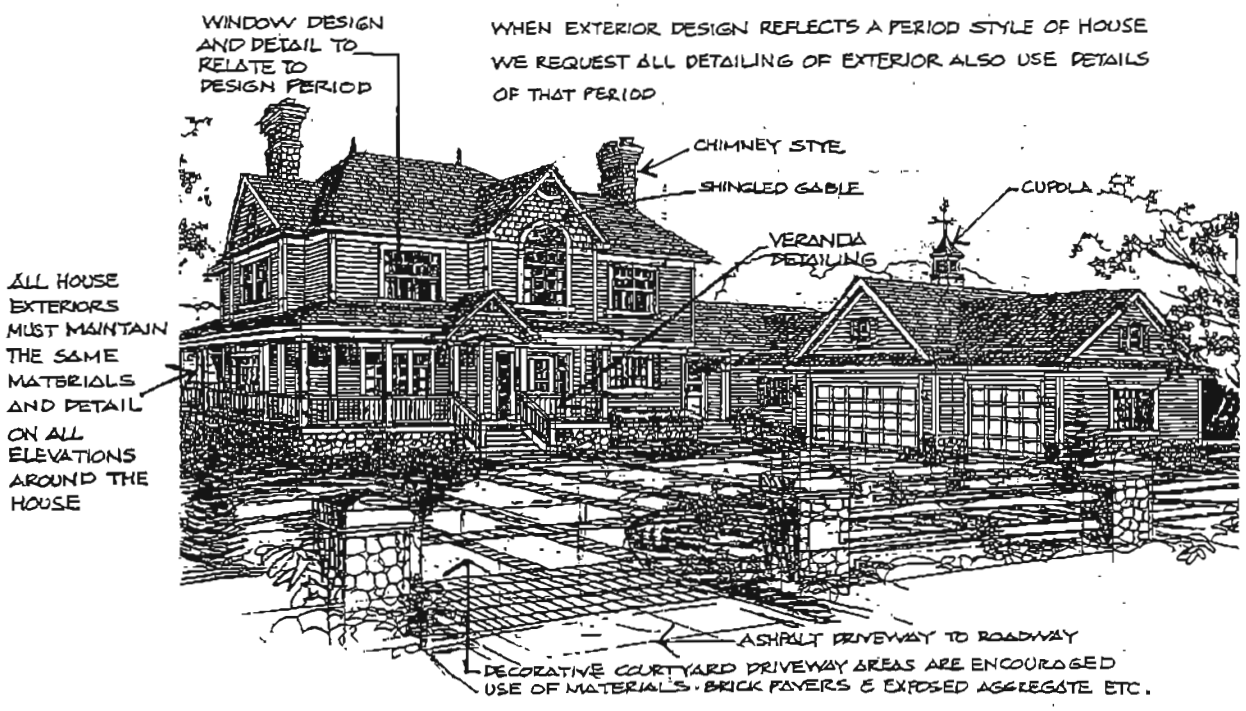


Style: Country Gambrel

5.2 Design Elements

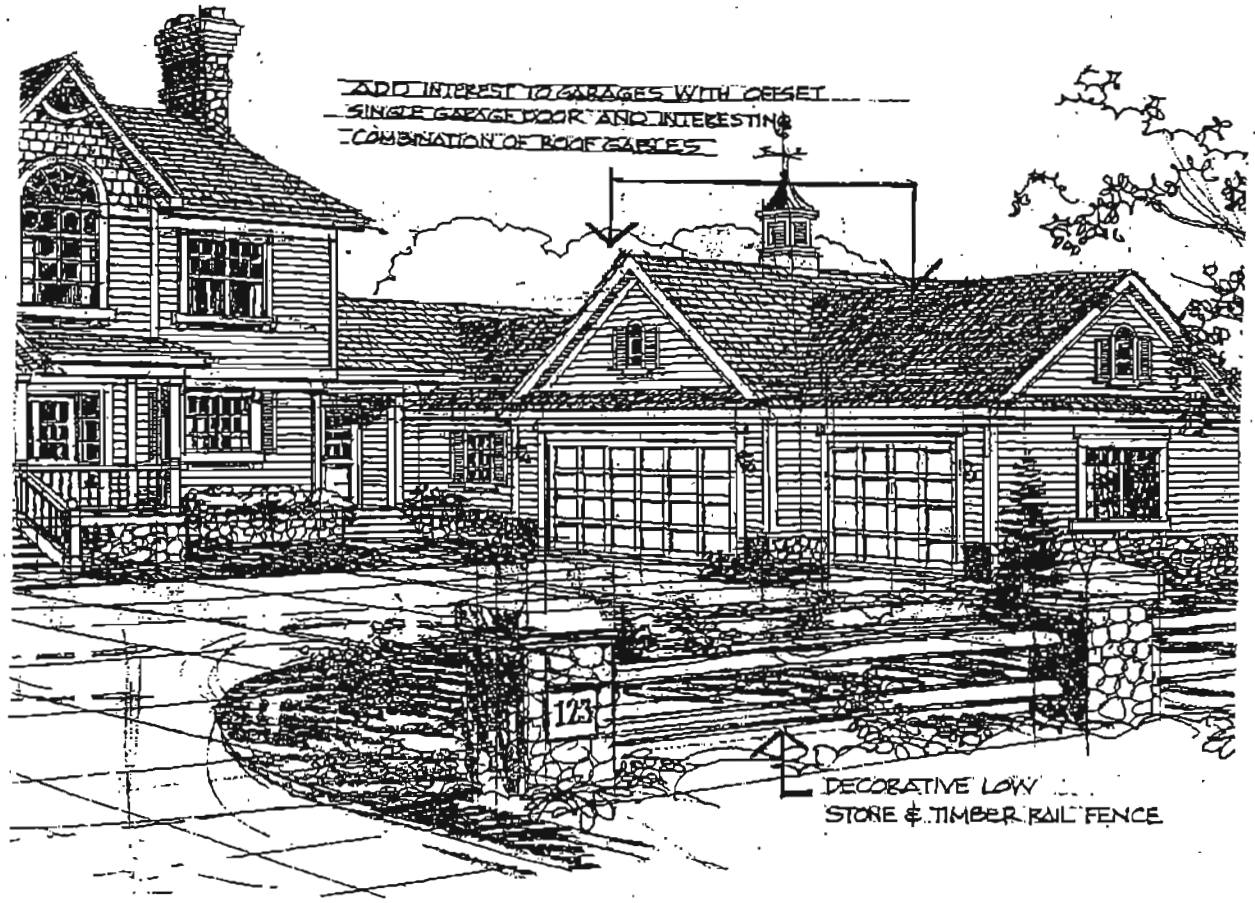
The Architectural Guidelines Committee will look for home designs to incorporate the elements noted over the next several pages.

- In country residential living, the rear elevation of a home can be as important as the front elevation. The main design features, rooflines, cladding material, window treatment must be maintained on all elevations.
- Extensive use of fieldstone and brick is encouraged.
- Wood cladding is allowed where appropriate and the new product lines of vinyl siding are also very attractive, especially in the Prairie Gothic or Victorian styles.
- Window casing detail must be carried through on all elevations of a house. Window casing to be minimum of 3 inches wide on all windows.



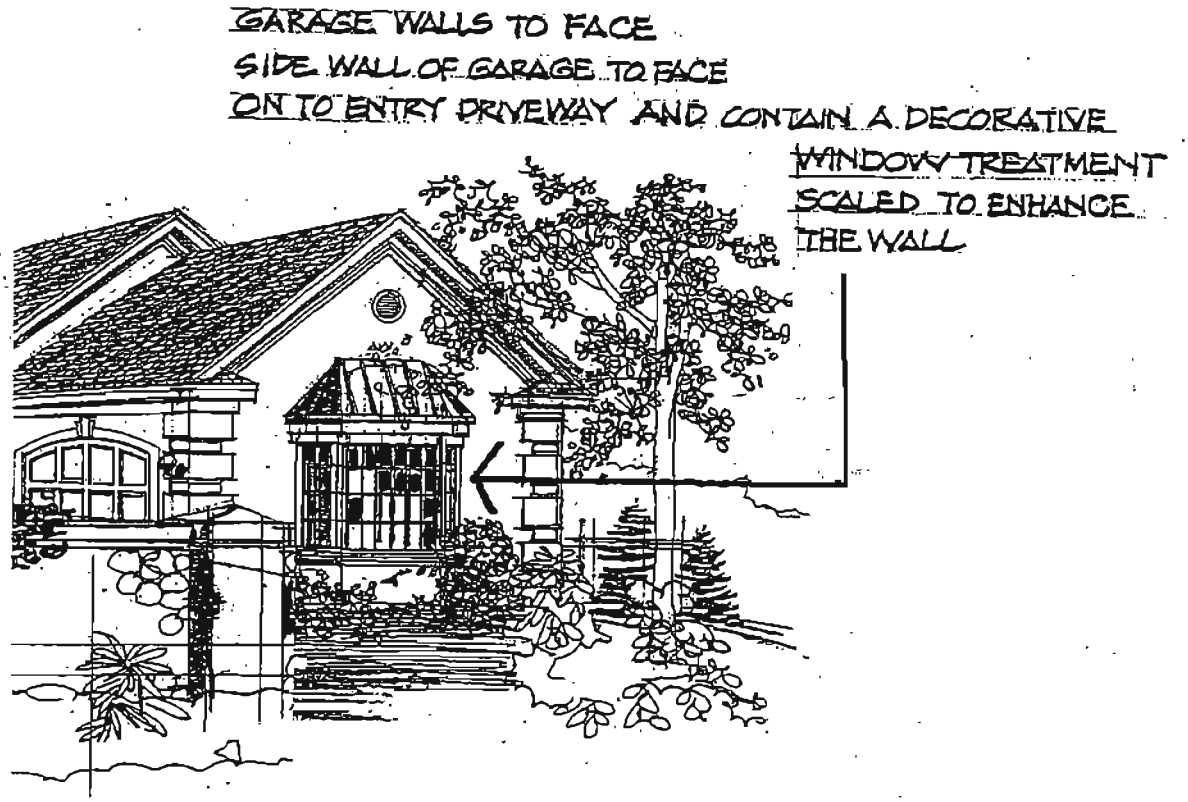
5.2 Design Elements (cont'd)

- Garage doors shall not directly face onto the street. In order to create mass to the house and "get away from the city subdivision look" garages should have side or angled entries. Canting or staggering of the garage is encouraged.
- Use of columns must be in scale with the rest of the house.
- Colours of exterior materials should blend into the environment and reflect the beauty of the land. Bright pastel colours are not allowed.



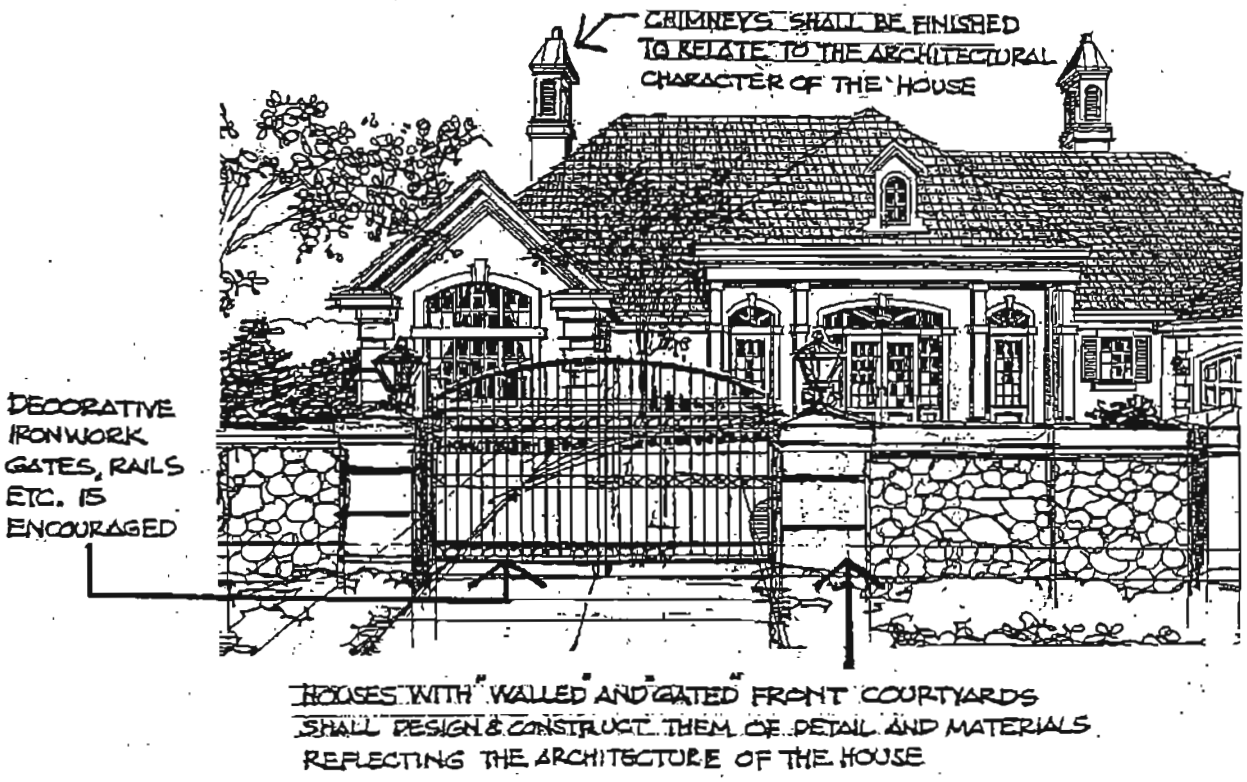
5.2 Design Elements (cont'd)

- Prefinished fascia and soffits are permitted but fascia should respect the scale and proportion of the house. 8 to 10 inch fascia is encouraged.
- Gas and electrical metres and associated conduit should be concealed or at rear of house.
- Garage detailing should include the same detailing emphasis as the rest of the home exterior.



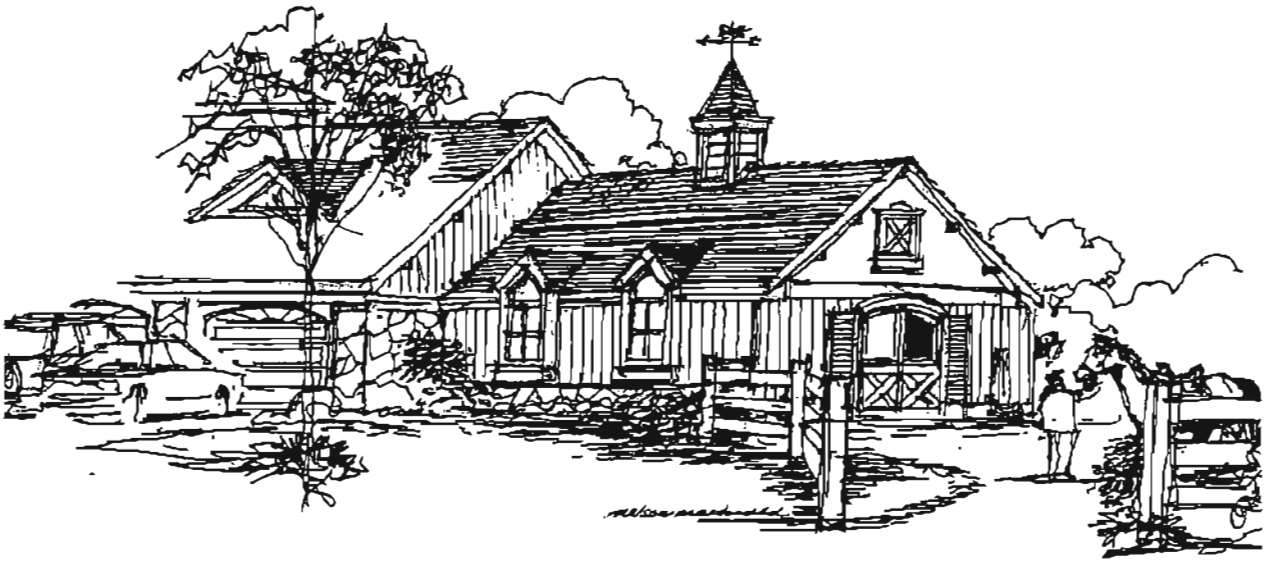
5.2 Design Elements (cont'd)

- Attention should be paid to add chimney detail that is consistent with cornice and eave detail. All chimneys are to be boxed in. No exposed "B" vents.
- Privately initiated fencing and gating is to be within a 40-foot radius of the house exterior (subject to being appropriate for the lot and not detrimentally impacting the existing stands of trees).
- Entries to homes should receive special consideration and detailing.
- Attempt to hide mechanical vents on the least visible side and roof vents should be painted to match roof.
- All wood fireplace chimneys are to have spark arrestors.
- Homeowners are encouraged, although not mandatory, to retain the services or registered architects to create a home that is uniquely suited to their requirements and the constraints/opportunities imposed by the lot.



5.2 Design Elements (cont'd)

The architectural finishes and design of the horse shelters are consistent with the house.



Note how the siding and stone fascia are continued to the horse shelter.

In the example of a detached horse shelter the gambrel styling of the roof is consistent with the style of the main houses' roof.

6. DESIGN, REVIEW, & INSPECTION PROCESS

6.1 Submission Process and Review by Architectural Guidelines Committee

When a lot purchaser is ready to start construction of a home at Willowside Farms, the following steps are to be taken:

(a) Notify a representative of C. Donald Wilson Management Ltd. (Mr. Don Wilson 938-4606) that you intend to start on your house.

A meeting with the Architectural Guidelines Committee will be arranged.

(b) Five days prior to the meeting, the purchaser/builder must deliver to the developer representative the following material:

i) Floor Plans and elevations of the home;
ii) Architectural Approval Sheet (Appendix WF.1);
iii) Sample Colour Board (Appendix WF.2);
iv) Plot Plan (Appendix WF.3); showing house location; septic field design and location, drainage and spot elevations; and, landscape plan; and
v) A Contract Performance Deposit of $5,000.00 made payable to C. Donald Wilson Management Ltd.

c) The meeting with the Architectural Guidelines Committee may take about two hours and will include a review of the exterior design and plan; layout of the house on the lot; material finishes and colours; septic field design review and a review of restrictive covenants and any other items that are appropriate.

The Willowside Farms Architectural Committee will review and approve the submitted plans, plot plans, septic field design, grades and elevations on an individual basis.

It is not unusual for the committee to recommend enhancements to the architecture which will more appropriately capture the architectural theme. Such recommendations are made with the awareness of additional costs and always in the interest of a better designed community. The applicant is invited to discuss any changes, but the Willowside Farms Architectural Committee reserves the right to decline approval of a particular plan.

6.2 Grade Slip Release & Footing Checks

The builder may pick up the grade slip necessary for obtaining the building permit when the following conditions are met:

A. The Architectural Approval Sheet is signed off by the Architectural Guidelines Committee.
B. Contract Performance Deposit is received.
C. A house siting check may be required before the final approval will be released.

6.3 Purchaser Inspection of Lot

The first requirement after application for the building permit is to inspect the lot for damage prior to moving onto the site. Any damage that is present must be brought to the attention of the Architectural Guidelines Committee in writing. Damage to asphalt, water service and shallow utility facilities are specifically referred to but may include other structures or features that may be present on a lot. Any damage that is present at the time of the post-construction lot inspection but was not noted prior to construction start, will be assessed and costs of repair will be due from the lot purchaser.

6.4 Developer Inspection of Lot / Contract Performance Deposit Release

After landscaping, driveway asphalting and all house exterior work is completed, the developer is called for a final lot inspection. An inspection may be made prior to sodding or seeding provided grading has been done in accordance with the approved grading plan. Any deficiencies must be corrected by the builder and a re-inspection is then requested. If all deficiencies have been satisfactorily corrected, the Contract Performance Deposit (less the costs assessed for damages) is returned to the lot purchaser.

The builder is required to forward a copy of the approved grading plan to their customer and also disclose to the purchaser that any landscaping undertaken by that purchaser cannot alter the finished grade or drainage pattern on the lot. Should such drainage pattern or final grades be altered, the developer may enter onto the lot to regrade the lot in accordance with the final grade plan and drainage pattern, and the cost for such work shall be the responsibility of that purchaser.

A lot purchaser shall apply in writing to the Architectural Guidelines Committee, following completion of the home, that the home is now complete and it is in compliance with all provisions of the Lot Purchase Agreement. The developer or its representative shall then make an inspection to determine any deficiencies thereof. If such inspection is satisfactory, the Contract Performance Deposit will be returned.