BY-LAW NUMBER 2003/14

BY-LAW NO. 2003/14 is a by-law of the County of Wetaskiwin No. 10 in the Province of Alberta, to authorize the adoption of an Area Structure Plan for the purpose of providing a framework for subsequent subdivision and development of the area known as Greystones West Phase IV in Lot A, Plan 002 0205 in S½ 35-46-6-W5M in accordance with Section 633 of the Municipal Government Act, Chapter M-26.1, Revised Statutes of Alberta 1994, and amendments thereto.

WHEREAS: at the requirements of County Council, as per Action 13.1 of the Buck Lake Management Plan, an Area Structure Plan has been prepared for portions of Lot A, Plan 002 0205 in S½ 35-46-6-W5M.

AND WHEREAS: the proposed Area Structure Plan has been widely circulated and discussed within the County pursuant to Section 230, 606(1), and 633(1) of the Municipal Government Act, 1994, Chapter M-26.1, and amendments thereto.

NOW THEREFORE: the County of Wetaskiwin No. 10, duly assembled, hereby enacts as follows:

1. The document attached to this By-law as "Appendix A", together with accompanying maps, is hereby adopted as the *"Greystones West Phase IV Area Structure Plan on Lot A, Plan 002 0205 in S½ 35-46-6-W5M"*, with the following amendments:

   (i) Section 10, Storm Water Management:

   Add: "If it is necessary to take storm flow over private lots, easements will be registered in favour of the County".

   (ii) New Section 14, Municipal Reserves, to read as follows:

   "Prior to subdivision, SE and SW 35 contained 39.72 hectares. Under the MGA 10% of this area, 3.97 hectares, is due as reserve. Dedication to date and as proposed is:

Registered plans	1.58
Approved but unregistered RW/02/44	0.61
Shown on Schedule B	0.93
Total dedicated and proposed	3.12
Amount due	3.97
Shortfall	0.85
hectares	

   (Areas to be confirmed by surveyor)

   The reserves still due will be dedicated as a strip along the south side of Lot A, so no deferred reserve caveat will be required.

   Alternatively, remaining Municipal Reserve may be paid out in cash at market value, as decided by Council at the time of subdivision."

   (iii) If required, storm detention pond(s) would be dedicated in appropriate location upon engineering advice.

2. This by-law comes into effect on the date of third reading.

READ: A First time this 10th day of March A.D., 2003.

READ: A Second time this 10th day of March, A.D., 2003.

READ: A Third time and finally passed this 10th day of March, A.D., 2003.

REEVE

SECRETARY-TREASURER

ORIGINAL

COUNTY OF

WETASKIWIN

Area Structure Plan

for development of seven residential lots comprising the final phase of subdivision in

GREYSTONES WEST

Buck Lake, Alberta

Lot A, Plan 002 0205

Approved by County of Wetaskiwin No. 10 Council March 10, 2003
By-law 2003/14

1. INTRODUCTION

This area structure plan (the "ASP") has been prepared in compliance with the County of Wetaskiwin No. 10 Policy No. 6606 which requires an area structure plan for any proposed subdivision that will create three or more parcels, and is intended to provide a framework for development of the final phase of Greystones West. The final phase consists of seven residential back lots lying approximately 500 feet north and east of the shoreline of Buck Lake. The lands within the ASP are presently zoned recreational. Five of the seven lots are to be re-zoned country residential, and contain approximately two acres each; the other two lots are to be re-zoned lakeshore residential, and will contain approximately one acre each.

Greystones West is a 100 acre parcel in the south half of Section 35, Township 46, Range 6, W5M not covered by the waters of Buck Lake, and consists of twenty-four lake front lots developed in Phase I, twelve lake front lots and four back lots developed in Phase II, and twelve back lots approved for development in Phase III. Greystones West is situate on the north end of Buck Lake, and the location of the lots within Phases I, II and III are shown on the general plan of Greystones which accompanies this report. The location of the additional seven lots proposed in connection with this ASP is also shown thereon.

2. SCHEDULES AND REPORTS

The following plans and geophysical reports are incorporated herein and accompany this ASP:

(a) Comprehensive Plan of Subdivision for Greystones West;
(b) Tentative Plan of Subdivision for the lands within the ASP;
(c) Topographical contour map for Greystones West;
(d) Plan of existing and proposed roads and utilities within Greystones;
(e) Drainage plan for Greystones;
(f) Hydrogeological report dated October 14, 1997 prepared by Hydrogeological Consultants Ltd. in connection with development of Phases I and II of Greystones;
(g) Hydrogeological report and aquifer evaluation regarding lands within the ASP dated December 4, 2002 prepared by Sabatini Earth Technologies Inc.; and
(h) Soil and water table survey dated October 19, 1997 prepared by Can-Ag Enterprises Ltd. in connection with development of Greystones.

3. SCHEDULE FOR APPROVAL OF AREA STRUCTURE PLAN

Following staff review and final approval of the proposed ASP, the ASP would be referred to all

required government departments and agencies. Responses would be anticipated by February 28, 2003 given the simplicity of the proposed ASP and the familiarity of government departments with the existing Greystones West subdivision.

Notice of the public hearing for the proposed ASP would be circulated to adjacent land owners and published in two successive editions of the Wetaskiwin Times in March of 2003. The proposed ASP could then be placed on the Council planning agenda for the first available date in April of 2003. With the ASP approved, a re-zoning and subdivision application in compliance with the ASP could be placed on the next available Council planning meeting scheduled for May of 2003.

4. NATURAL AREAS

A contour map showing the topographical relief of the lands affected by the ASP and surrounding lands accompanies this report. A soil and water table report prepared by Can-ag Enterprises Ltd. in connection with the original applications for subdivision of Greystones West and dated September, 1997 also accompanies this report.

It will be noted from the contour map that the lands within the proposed ASP are gently undulating with a gradual slope towards Buck Lake. The ravine on the east boundary of the proposed five country residential lots is designated as a municipal reserve.

5. EXISTING LAND USE AND POTENTIAL LAND USE CONFLICT

There are no intensive livestock operations or sour gas installations within two kilometres of the proposed development. An oil well is located on SW 36-46-6 W5M, which is located approximately one kilometre east of the lands within the ASP.

6. ROADS, UTILITIES AND BUILT FEATURES

The locations of existing and proposed roads and utility lines within Greystones are shown on the Utility Plan attached.

7. **TENTATIVE PLAN OF SUBDIVISION**

A tentative plan of subdivision for the lands within the ASP is attached.

8. GEOTECHNICAL/GROUNDWATER AND PERCOLATION REPORTS

The groundwater report and percolation testing with respect to development in Phases I and II of Greystones prepared by Can-Ag Enterprises Ltd. accompanies this report.

The tentative plan of subdivision accompanying this ASP for the five lots which are to be re-zoned country residential has been designed such that slope stability relative to the ravine abutting the east boundary of the proposed subdivision is not an issue. The lands within the ravine have been dedicated to municipal reserve.

9. SEWAGE TREATMENT

It is anticipated that holding tanks or septic fields will be installed by individual lot owners for disposal of sewage.

10. STORM WATER MANAGEMENT PLAN

A drainage plan with respect to the lands within the ASP accompanies this report. It will be noted from the contour map and drainage plan that the development lands slope south and southeasterly, and are drained primarily through the ravine adjacent to the east boundary of the lands. Drainage from the ravine funnels through a culvert under Lakeshore Drive, and passes into Buck Lake through the drainage ditch constructed on PUL #39 shown on the Plan of Subdivision for Phase I. The drainage ditch along Lakeshore Drive would accommodate any westerly flow of water from the lands within the ASP.

If it is necessary to take storm flow over private lots, easements will be registered in favour of the County.

If required, storm detention pond(s) will be dedicated in appropriate location(s) upon engineering advice.

11. WATER SUPPLY

Domestic water supply for the seven lots within the ASP would be provided by bored wells. A geophysical groundwater assessment report prepared by Hydrogeological Consultants Ltd. dated October 7, 1997, in conjunction with development of Phase I of Greystones accompanies this report.

A further groundwater assessment report prepared December 15, 2002 by Sabatini Earth Technologies Inc. in connection with the lands within this ASP also accompanies this report and concludes there is adequate water supply for all of the lots in Greystones, including the seven proposed in this ASP.

12. TRAFFIC AND ROADS

The cul-de-sac road proposed for the five country residential lots and step out turnaround for the two lakeshore residential lots will be built to the standards of the County of Wetaskiwin. Vehicular Traffic from the seven lots proposed in this ASP will have no significant impact on the roads or residents in Greystones West.

13. ENVIRONMENTAL ASSESSMENT

The proposed development area is not known to be environmentally sensitive and was not contaminated from previous or adjacent land uses.

14. MUNICIPAL RESERVES

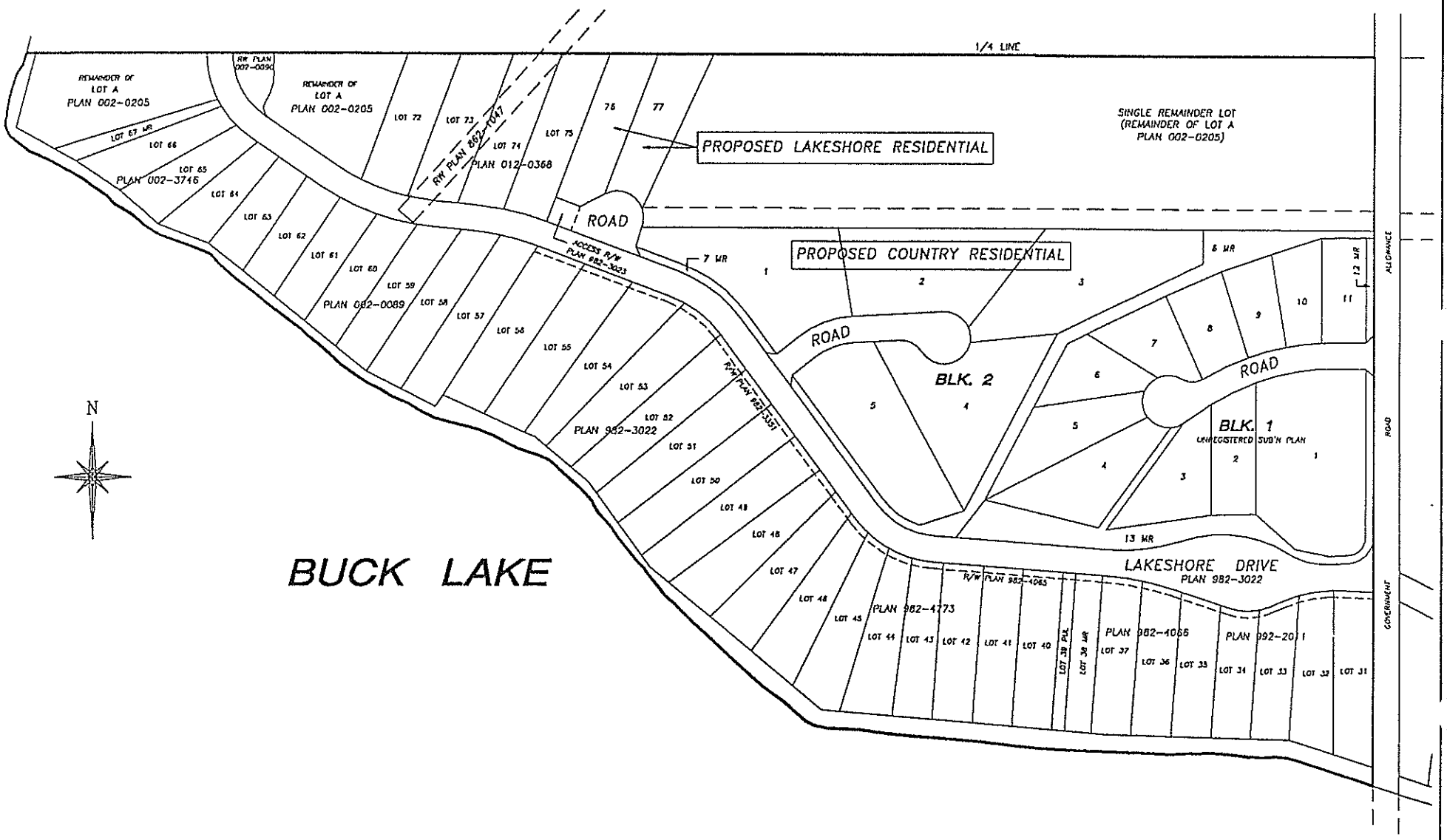
Prior to subdivision, SE and SW 35 contained 39.72 hectares. Under the MGA 10% of this area, 3.97 hectares, is due as reserve. Dedication to date and as proposed is:

Registered plans		1.58
Approved but unregistered RW/02/44		0.61
Shown on Schedule B	0.93	
Total dedicated and proposed	3.12	
Amount due		3.97
Shortfall		0.85 hectares

(Areas to be confirmed by surveyor)

The reserves still due will be dedicated as a strip along the south side of Lot A, so no deferred reserve caveat will be required.

Alternatively, remaining Municipal Reserve may be paid out in cash at market value, as decided by Council at the time of subdivision.



SCHEDULE "A"

COMPREHENSIVE PLAN FOR GREYSTONE WEST

S.E. 1/4 SEC.35 – TWP.46 – RGE.6 – W.5thM.

COUNTY OF WETASKIWIN NO. 10

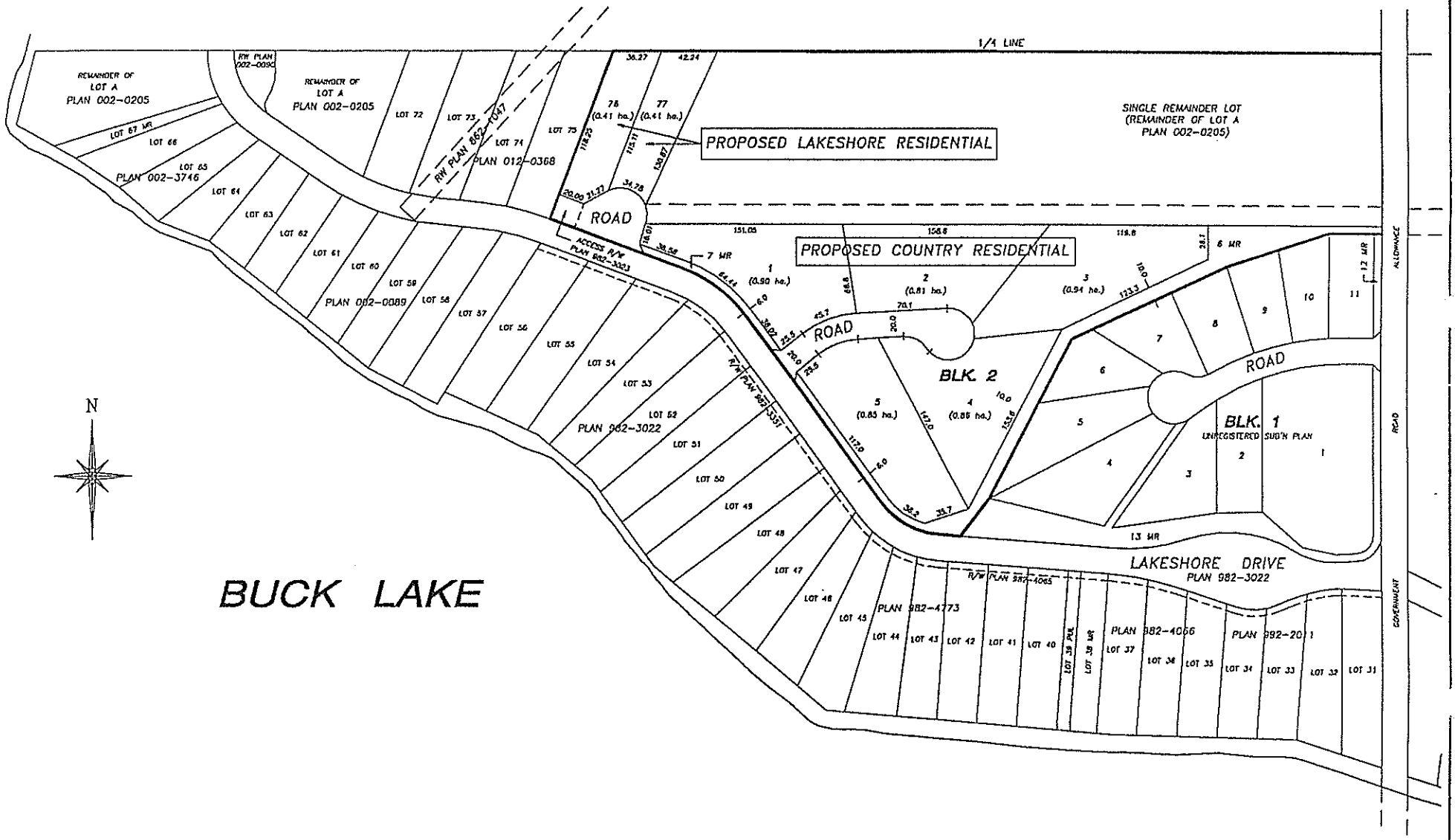
NOTES:

1. AREA REFERRED TO SHOWN THUS ———
2. MR INDICATES MUNICIPAL RESERVE
3. PUL INDICATES PUBLIC UTILITY LOT

NOT TO SCALE	DATE: FEB. 4, 2003	DWG. FILE: 1475-AREA-ST
DRAWN: B.W.	FILE NO: 1475/03	

HARLAND AND HIGGINS LAND SURVEYORS

10722 – 181st STREET, EDMONTON, ALBERTA



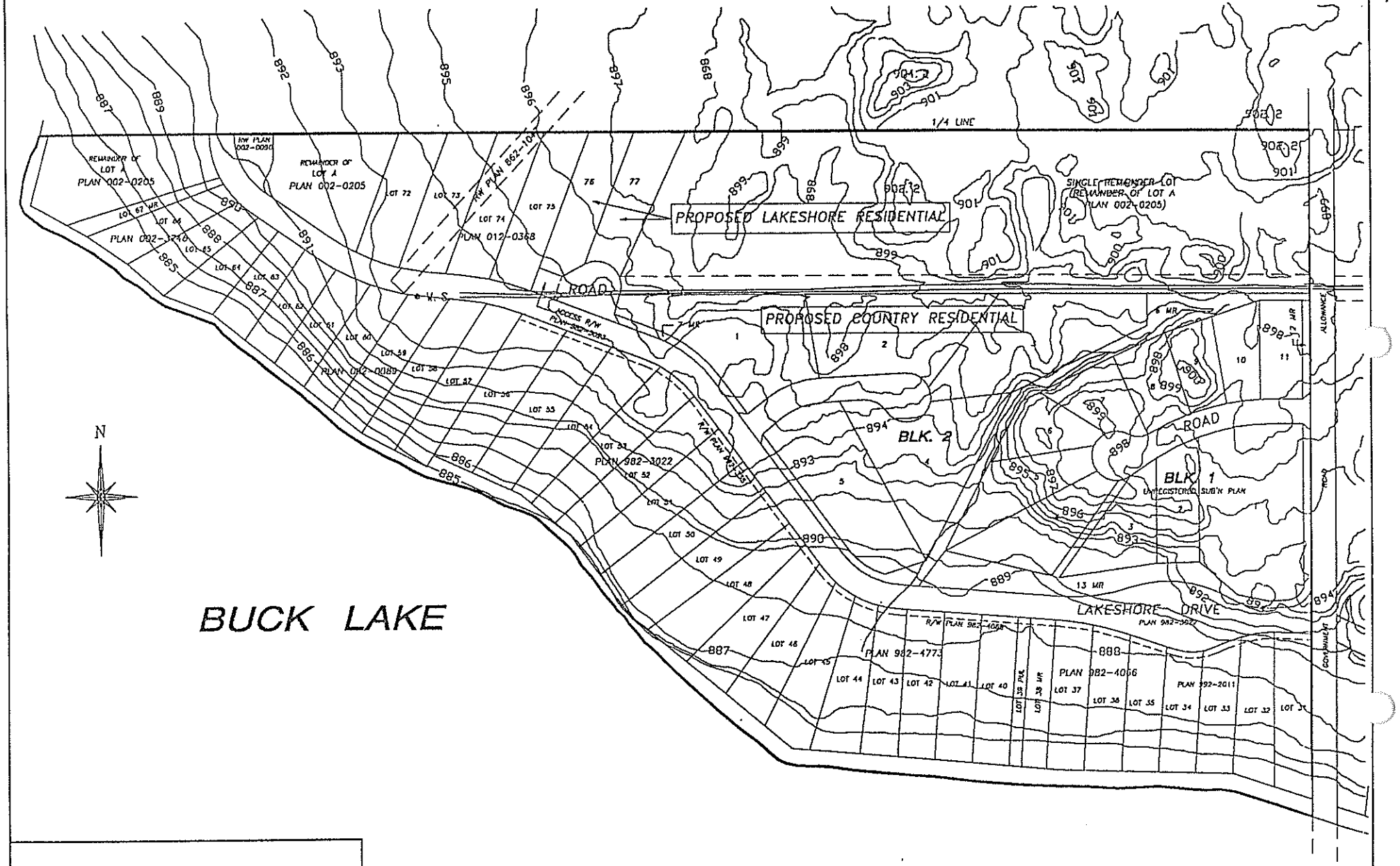
SCHEDULE "B"

PLAN SHOWING
TENTATIVE PLAN OF SUBDIVISION
GREYSTONE WEST
S.E. 1/4 SEC.35 – TWP.46 – RGE.6 – W.5thM.
COUNTY OF WETASKIWIN NO. 10

NOTES:
1. AREA REFERRED TO SHOWN THUS ———
2. ALL DISTANCES ARE IN METRES AND DECIMALS THEREOF.
3. MR INDICATES MUNICIPAL RESERVE
4. PUL INDICATES PUBLIC UTILITY LOT
5. DISTANCES AND AREAS SUBJECT TO CHANGE ON FINAL SURVEY AND SUBDIVISION APPROVAL

NOT TO SCALE	DATE: FEB. 4, 2003	DWG. FILE: 1475-AREA-ST
DRAWN: B.W.	FILE NO: 1475/03	

HARLAND AND HIGGINS LAND SURVEYORS
10722 – 181st STREET, EDMONTON, ALBERTA



SCHEDULE "C"

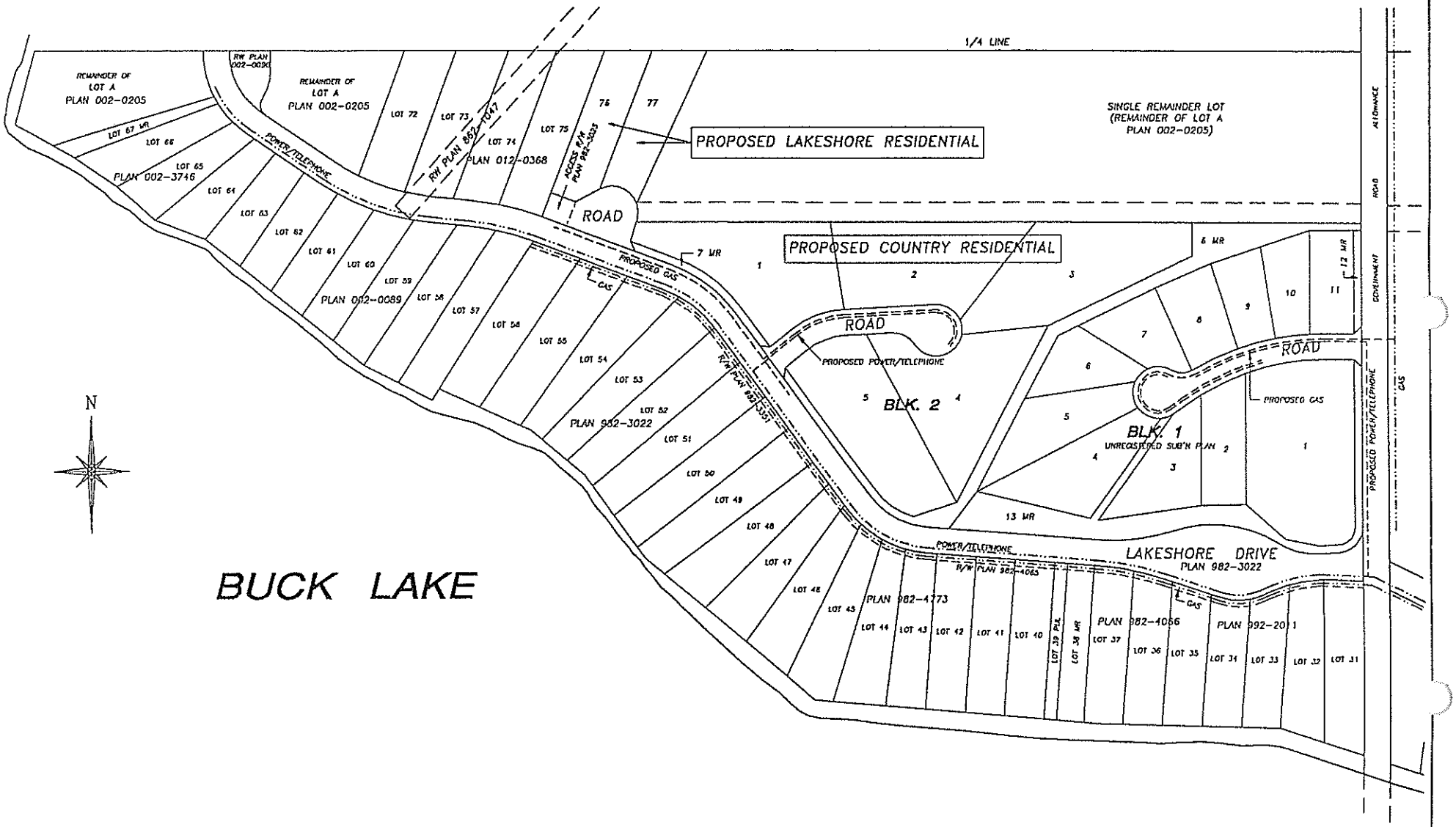
PLAN SHOWING CONTOURS
FOR
GREYSTONE WEST
S.E. 1/4 SEC.35 – TWP.46 – RGE.6 – W.5thM.
COUNTY OF WETASKIWIN NO. 10

NOTES:

1. AREA REFERRED TO SHOWN THUS
2. MR INDICATES MUNICIPAL RESERVE
3. PUL INDICATES PUBLIC UTILITY LOT
4. CONTOUR LINES SHOWN THUS 887

NOT TO SCALE	DATE: FEB. 4, 2003	DWG. FILE: 1475-AREA-ST
DRAWN: B.W.	FILE NO: 1475/03	

HARLAND AND HIGGINS LAND SURVEYORS
10722 – 181st STREET, EDMONTON, ALBERTA



SCHEDULE "D"

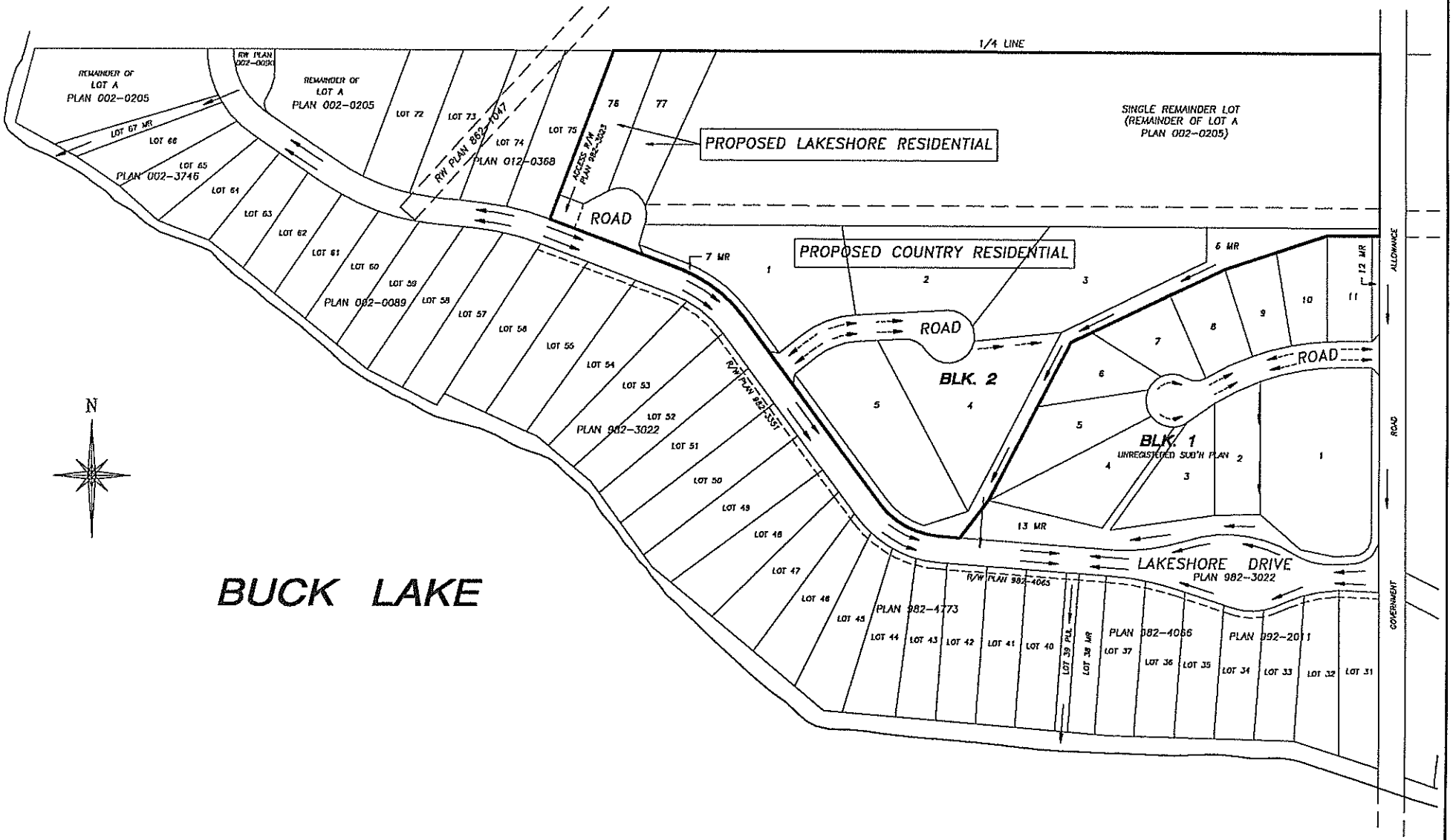
PLAN SHOWING
ROADS AND UTILITIES FOR
GREYSTONE WEST
S.E. 1/4 SEC.35 – TWP.46 – RGE.6 – W.5thM.
COUNTY OF WETASKIWIN NO. 10

NOTES:

1. MR INDICATES MUNICIPAL RESERVE
2. PUL INDICATES PUBLIC UTILITY LOT
3. EXISTING UTILITIES
4. PROPOSED UTILITIES

NOT TO SCALE	DATE: FEB. 4, 2003	DWG. FILE: 1475-AREA-ST
DRAWN: B.W.	FILE NO: 1475/03	

HARLAND AND HIGGINS LAND SURVEYORS
10722 – 181st STREET, EDMONTON, ALBERTA



SCHEDULE "E"

PLAN SHOWING
DRAINAGE FOR
GREYSTONE WEST
S.E. 1/4 SEC.35 – TWP.46 – RGE.6 – W.5thM.
COUNTY OF WETASKIWIN NO. 10

NOTES:

1. MR INDICATES MUNICIPAL RESERVE
2. PUL INDICATES PUBLIC UTILITY LOT
3. EXISTING DRAINAGE
4. PROPOSED DRAINAGE

NOT TO SCALE	DATE: FEB. 4, 2003	DWG. FILE: 1475-AREA-ST
DRAWN: B.W.	FILE NO: 1475/03	

HARLAND AND HIGGINS LAND SURVEYORS
10722 – 181st STREET, EDMONTON, ALBERTA

Report On
GROUNDWATER EVALUATION
PROPOSED SUBDIVISION
SE - 35 & SW -36 46-6W5

Prepared By:
Sabatini Earth Technologies Inc.

Prepared For:
North Shore Properties (Alberta) Inc.

December, 2002

SABATINI EARTH TECHNOLOGIES INC.

203, 6919 - 32nd AVENUE N.W.
CALGARY, ALBERTA T3B 0K6
TEL: (403) 247-1813
FAX: (403) 247-1814

9315 - 35th AVENUE N.W.
EDMONTON, ALBERTA T6E 5R5
TEL: (780) 438-0844
FAX: (780) 435-1812

December 4, 2002

File: 0212-3852

North Shore Properties (Alberta) Inc.
17731 - 103 Avenue
Edmonton, AB T5S 1N8

Attention: Donald H. Heighington

Dear Sir:

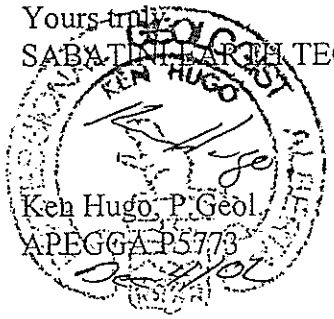
RE: Aquifer Evaluation - SE 35 & SW 36 - 46 - 6W5

An aquifer evaluation was undertaken within the above mentioned area to determine whether the aquifer underlying the site is capable of supporting 18 additional lots. The aquifer evaluation is based, in part, on a pump test conducted on a lot in SW-36 as previously evaluated in a report by Hydrogeological Consultants.

An aquifer transmissivity of 32 m^2/day was calculated for the aquifer underlying the area, which indicates a good aquifer. The maximum anticipated drawdown after 20 years in any well is calculated at 8 m which is less than the available drawdown of 17 m. As a result, as defined in the Water Act, the aquifer underlying the area will be able to supply water at a rate of 1250 m^3/year per lot without causing an adverse affect to existing users.

A water sample collected for chemical analysis shows that the water meets all drinking water standards with the exception of total dissolved solids concentration. The total dissolved solids concentration limit is based on aesthetic limits (not health based) and will not have an adverse affect on users.

Yours truly,
SABATINI EARTH TECHNOLOGIES INC.



Ken Hugo, P.Geol.
APEGGA P5773

Table of Contents

List of Plates	Plate #
Site map showing proposed parcel location	1
Site plan showing all lots within North Shore Development	2
Well schematic showing lithology and well completion details	3
Water well drillers report for pump test well	4
Centre for Toxicology water analysis report	5

A. Introduction

An aquifer evaluation was conducted within the SE 1/4 of Section 35 and the SW 1/4 of Section 36 - 46- 6W5M for the purpose of determining whether the aquifer underlying the site can support a proposed subdivision of 18 additional lots without causing an adverse affect on existing well users.

The proposed subdivision is part of a country residential development of 18 lots within SE-35. The location of the propose lots is shown on Plate 1. Eleven lots are located within Block 1, five lots within Block 2 and two lakeshore residential lots are located adjacent to a previous development. The lots are adjoining additional lakeshore residential lots along Buck Lake. The entire development within SE - 35 and SW -36 are shown on Plate 2. A total of 84 proposed and existing lots are within the subdivision.

No field work or pump tests was undertaken as part of this evaluation. The interpretation relies on a previous assessment undertaken at the site in 1997 by Hydrogeological Consultants Ltd. (their file 97-221).

B. Details of Previous Assessment

The aquifer evaluation by Hydrogeological Consultants Ltd. consisted of undertaking a 24 hour pump test at a flow rate of 45.2 litres per minute (10 imperial gallons per minute) with readings taken during the buildup for 40 hours. An observation well was also utilized for the readings. Plots 3 & 4 from the Hydrogeological Consultants Ltd. report show a schematic of the aquifer and well design and the Water Well Drilling Report from the well used in the pump test.

The pump test data was interpreted using the Jacob Method. A transmissivity of 32 m^2/day and a Storativity of 0.0003 was calculated from the pump test data and used in subsequent calculations.

The aquifer underlying the area consists of a sandstone unit within the Upper Cretaceous

Paskapoo Formation. This formation consist of fluvial sandstones, shales and siltstones with aquifer generally being located within the sandstones. Some minor fracturing may be present. According to regional mapping, yields within the Paskapoo Formation in the area are capable of having long term yields of 650 to 3300 m^3/day.

C. Existing Users

According to the developer, all lots obtain water from their own on-site well. As a result up to 84 wells are expected to utilize the aquifer for water supply. According to the Water Act, a requirement of 1250 m^3/year is necessary for each lot and new subdivisions need to show that their water requirements will not cause an adverse affect on existing users.

A review of the water well database provided by Alberta Environment shows records for 10 wells in SW-36 and 1 well in SE-35. The database is current to the end of 2000 and most wells were drilled in 1998 - 2000 and likely additional wells have been drilled in 2001 and 2002.

The well depths range from 62 to 210 feet with the majority of wells obtaining water from 90 - 130 feet. All wells obtain water from bedrock aquifers of the Paskapoo Formation. A conservative assumption can be made that all wells obtain water from the same, or interconnected aquifers.

D. Calculation of Safe Yield

The Hydrogeological Consultants Ltd. report concluded that the aquifer is capable of supplying 65 m^3/day. Based on a requirement of 1250 m^3/year per lot, the conclusions would show that the aquifer is capable of supplying 19 lots, insufficient amounts for the current subdivision and not enough for further development.

These calculations are based on one well supplying all lots within the development. As the

proposed development has wells on each lot an alternative calculation was undertaken which accounts for pumping from a well in each lot.

A twenty year safe yield calculation can be undertaken to determine whether pumping on the wells in the proposed subdivision will have an adverse effect on the supply from existing wells within the entire development. This calculation involves predicting the total drawdown in an existing well that would occur after 20 years of pumping at a rate of 1250 m^3/years per day from that well plus the influence of all neighbouring wells including the well(s) in the proposed subdivision. If the total drawdown is greater than the available drawdown then the new subdivision is at risk for causing an adverse effect on existing users.

This determination can be calculated using the data derived from the pump test and using the principle of superposition with the Cooper-Jacob approximation to the Theis Equation:

$$\text{Drawdown (s)} = 0.183\frac{Q_1}{T}\log\frac{2.25Tt}{r_1^2S} + 0.183\frac{Q_2}{T}\log\frac{2.25Tt}{r_2^2S} + 0.183\frac{Q_3}{T}\log\frac{2.25Tt}{r_3^2S} + \ldots$$

where Q is the pumping rate prescribed (1250 m^3/year or 3.42 m^3/day), T is the transmissivity (from the pump test - 32 m^2/day), S is Storativity (from the pump test - 0.0003) and t is time (20 years). The various distances between wells is given by the "r" terms where r_1 is the well bore diameter, r_2 is the distance between the well in the proposed subdivision and the nearest well, r_3 is the distance between the well nearest to the proposed subdivision and the next nearest well and so on.

A well located in the centre of the subdivision would be most at risk from dewatering due to pumping of all wells in the area. Selecting a well in Lot 40 and calculating the distances to existing and future subdivision parcels shows that after 20 years a drawdown in the well in Lot 40 due to pumping from that well alone would be 0.22 m. The additional drawdown due to the existing lots would be 6.0 m. The effect of the additional proposed 18 lots would add a further 1.8 m to the drawdown. A total drawdown in any one well of approximately 8 m would be

expected.

The available drawdown, from the static water level to the top of the aquifer is from 0.23 m to 17.67 m or a total available drawdown of 17.44 m. Adding a safety factor of 50% to the anticipated 8 m of drawdown indicates a required drawdown of 12 m. This is less than the available drawdown and the proposed subdivision will have no adverse affects on existing users.

Note that this calculation does not ensure that a well will go "dry". Additional drawdown around the well bore may occur due to encrustation or biofouling that may lead to low well efficiency and wells going dry during pumping without lowering of water levels within the aquifer.

E. Water Chemistry

A water sample was collected from a well in SW-35 on October 3, 2002 and analysed for routine constituents by the Centre for Toxicology. The lab analysis is shown on Plate 3. A summary of the results, with a comparison to drinking water criteria as established by the Canadian Council of Ministers of the Environment (CCME) is as follows:

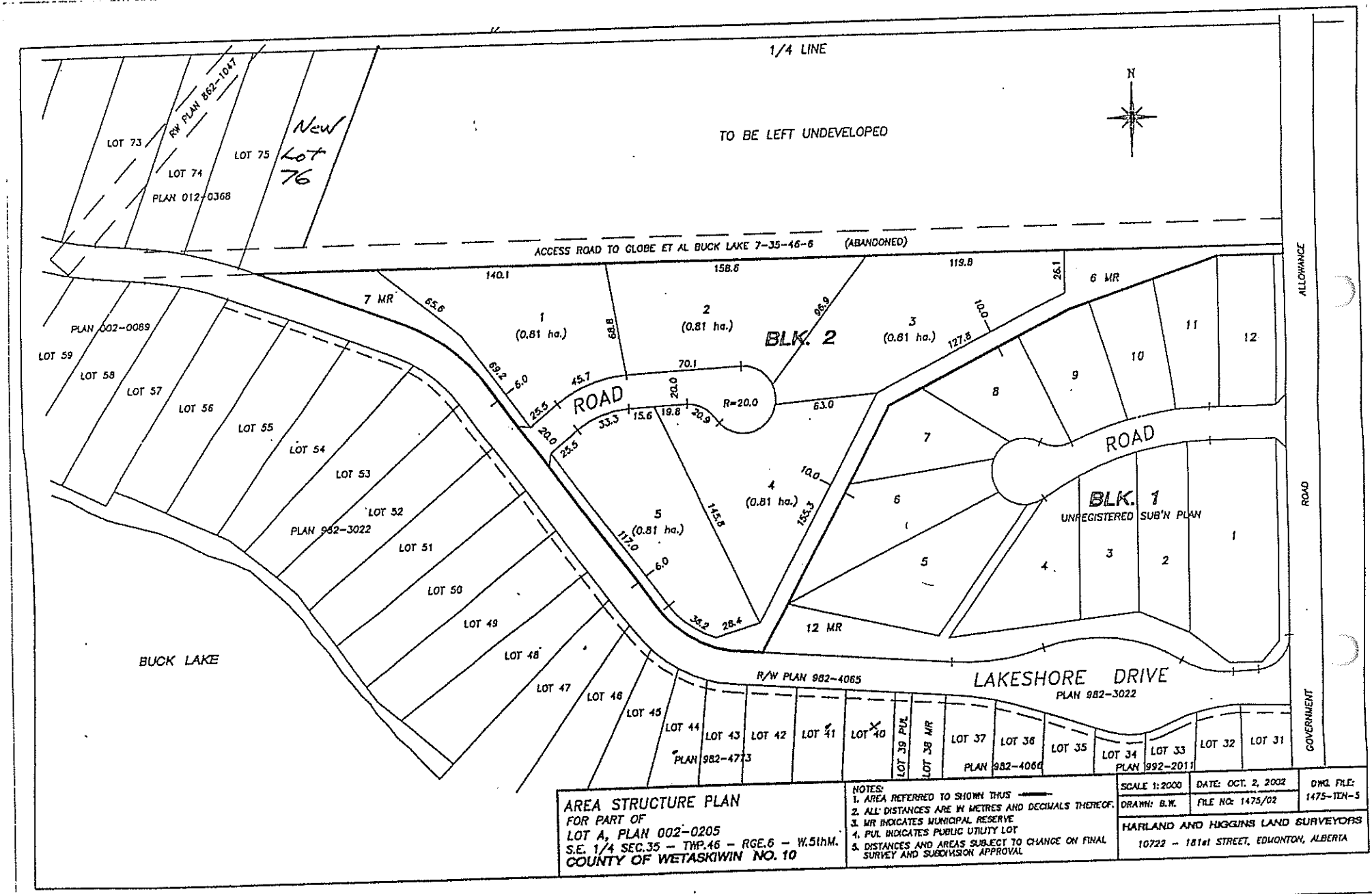
Parameter	SW-35 Well	CCME Limits
pH	8.49	6.5 - 8.5
Sodium	293.8	200
Potassium	1.24	
Calcium	9.13	
Magnesium	1.89	
Iron	0.02	0.3
Bicarbonate	496.9	
Chloride	0	250
Fluoride	0.5	1.5

Nitrate	0	10
Sulfate	259.5	500
Total Dissolved Solids	830.64	500

Note: All results in mg/L except pH in pH units

The results show that the water can be characterized as a sodium bicarbonate-sulfate water of medium salinity. The water meets all drinking water quality guidelines with the exception of total dissolved solids. The limit for total dissolved solids is based on aesthetic, not health based, criteria and the level of total dissolved solids is not thought to be significant.

The water can be treated with reverse osmosis or distillation procedures should lower salinity water be desired.

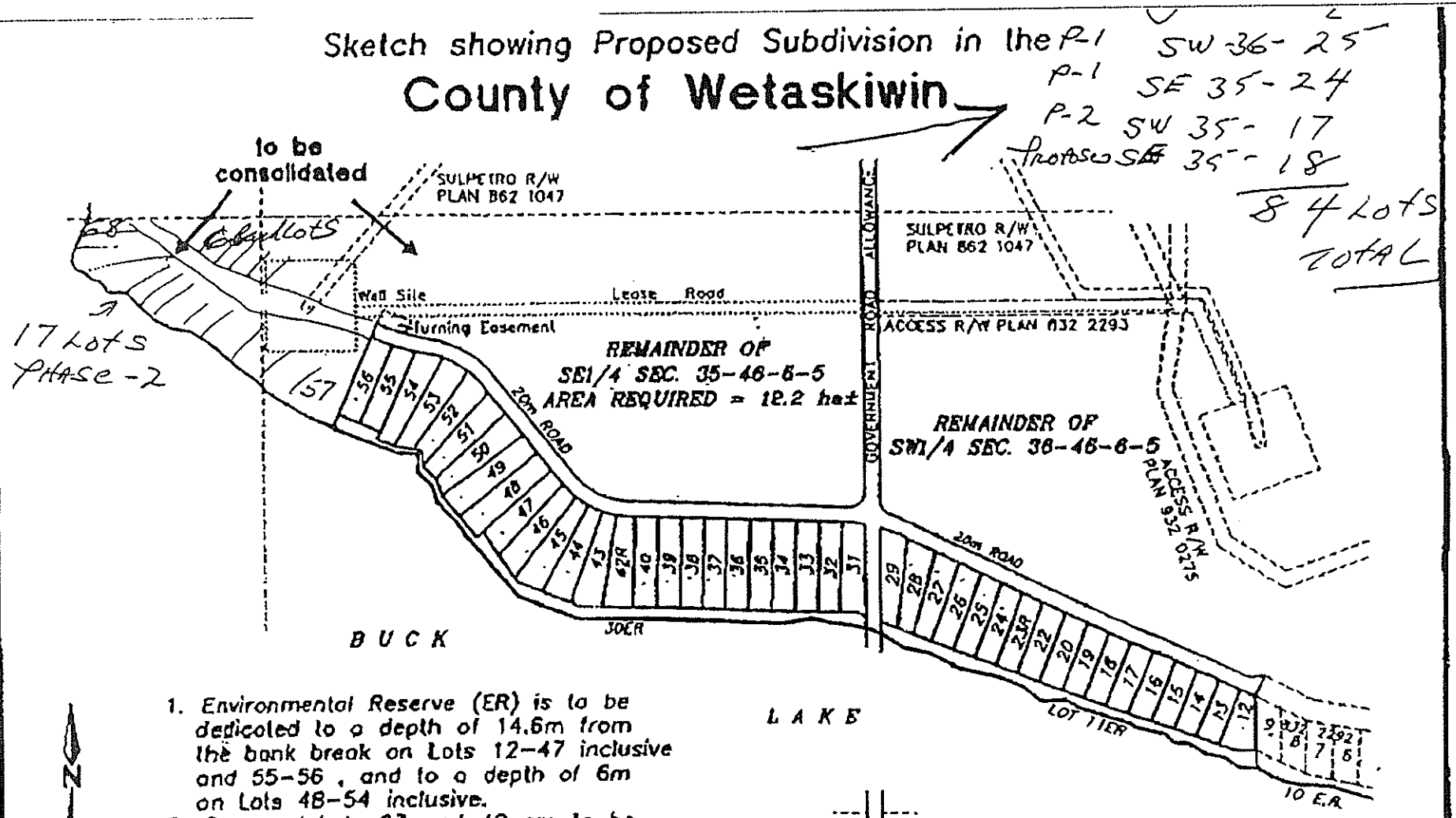


Sabatini Earth Technologies Inc.

North Shore Properties (Alberta) Inc

Buck Lake North Shore Subdivision -Proposed Lots in SW-35-46-6W5

Sketch showing Proposed Subdivision in the County of Wetaskiwin



1. Environmental Reserve (ER) is to be dedicated to a depth of 14.6m from the bank break on Lots 12–47 inclusive and 55–56 , and to a depth of 6m on Lots 48–54 inclusive.
2. Proposed Lots 23 and 42 are to be dedicated as Municipal Reserve Lots (MR) with no more than 30.48m of lake frontage.

N

Scale 1:8000

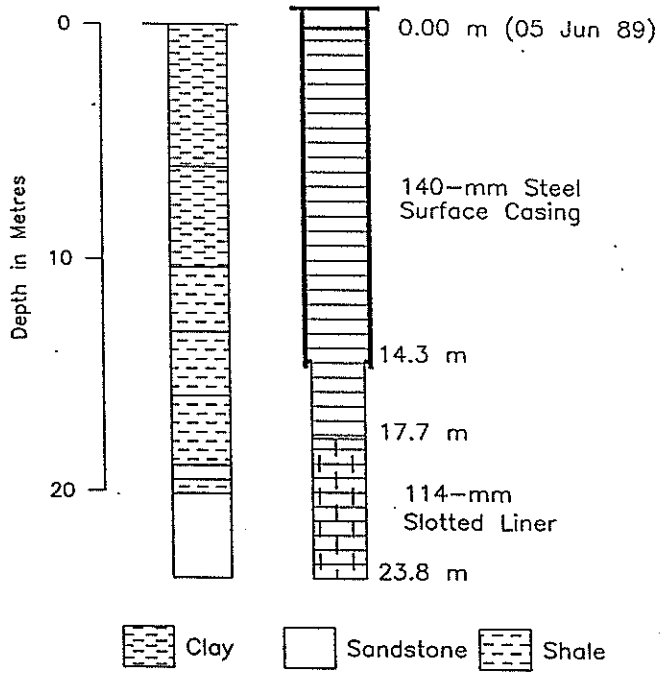
Dimensions are in metres and are approximate

WEST CENTRAL PLANNING AGENCY	File: RW/97/33	Reg. Owner(s): E. Heighington, North Shore Dev. Inc.
	denotes titled area	Photos 15–16, Line 40, Roll AS4397, 2 June 1993
	Drawn: 9 Sept 1997	Revised: 15 Oct 1997 — AutoCAD File: RW9733

Sabatini Earth Technologies Inc.

North Shore Properties (Alberta) Inc

Buck Lake North Shore Subdivision -Existing lots in SE 35 and SW 36



Lot 6 Water Well
Well Diagram

ENVIRONMENT

(1) CONTRACTOR	(2) WELL OWNER	(3) LOCATION
NAME Morrill's Water Well	NAME Don Heightington	LSD / SEC. / TWP. / RGE. / WEST OF MERIDIAN
ADDRESS Drilling Ltd	ADDRESS 17427 - 33A Ave	Lot #6
Box 5089	EDMONTON, AB T6T 3H2	SW ¼ 36 46 6 5
Drayton Valley, AB	MEASUREMENTS SPECIFIED IN IMPERIAL ☐ OR METRIC ☐	

LICENCE NO. 602
DATE STARTED June 5 19 89
DATE COMPLETED June 5 19 89

WELL COMPLETION DATA

(2) DESIGN
OPEN HOLE: SLOTTED CASING: ✓
SCREEN: GRAVEL PACK:
DIAMETER OF HOLE: 6¾ 4¾
BOTTOMED IN: CLAY: SAND: ✓
SANDSTONE: SHALE: COAL:
DEPTH TO TOP OF BEDROCK: 34'
TOTAL DEPTH: 78'

(3) CASING
TYPE: Plastic
SIZE O.D.: 5½" WALL THICKNESS: 3/16
BOTTOM SET AT: 47' FT/M

(4) SEAL: YES ☒ NO ☐
DEPTH OF SEAL: 47' FT/M
DESCRIPTION: Grout

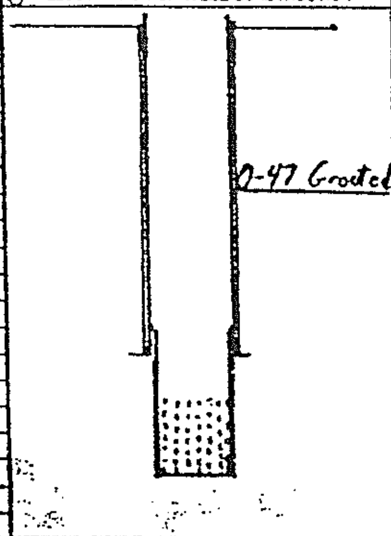
(5) LINER: YES ☒ NO ☐
TYPE: Plastic
SIZE O.D.: 4½
WALL THICKNESS: ¼
BOTTOM AT: 78' FT/M TOP AT: 38' FT/M
PERFORATED FROM: 58' FT/M TO: 78' FT/M
HOW PERFORATED: TORCH ☐
MACHINE ☒ OTHER ☐
SIZE PERFORATIONS: ¼ inches DIA 12 inches

(6) SAND PACK: YES ☐ NO ☒
SIZE: AMOUNT:

(7) SCREEN: YES ☐ NO ☒
MATERIAL:
SIZE I.D. (CLEAR):
LENGTH:
SLOT SIZE:
SCREEN FROM: FT/M TO: FT/M
FITTINGS TOP
FITTINGS BOTTOM
METHOD OF INSTALLATION

(8) PUMP: YES ☒ NO ☐
TYPE: Goulds H.P. ½
SIZE 7GS05 412 VOLTAGE 230
DROP PIPE SIZE 1" plastic LENGTH 40
MATERIAL:
INTAKE AT 39 FT/M

(9) ILLUSTRATION OF WELL CONSTRUCTION



(10) TYPE OF WELL:
ROTARY ☒ BORED ☐ CABLE TOOL ☐
JET ☐ DUG ☐ OTHER ☐

(11) TYPE OF WORK:
NEW WELL ☒ DEEPEN ☐ TEST HOLE ☐
RECONDITION ☐ ABANDON ☐

(12) PROPOSED USE:
DOMESTIC ☒ STOCK ☐ IRRIGATION ☐
MUNICIPAL ☐ INDUSTRIAL ☐ OBSERVATION ☐

(13) FORMATION LOG DESCRIPTION

FROM	TO	DESCRIPTION
GROUND LEVEL	20	Clay Sdy
20	34	Clay blk
34	43	Sh Sh bro
43	52	Sh Grn
52	62	Sh Gray
62	64	SS Gray
64	66	Sh Gray
66	78	Sd SS Gray

ELECTRIC LOG YES ☐ NO ☒
GAMMA LOG YES ☐ NO ☒

(14) PRODUCTION TEST (PUMPING AT A CONSTANT RATE)

TIME	WATER LEVEL WHILE PUMPING FT/M	WATER LEVEL RECOVERY FT/M
0		
30 SEC.		
1 MIN.		
1 MIN. 30 SEC.		
2 MIN.		
3		
4		
5		
6		
7		
8		
9		
10		
12		
14		
16		
18		
20		
25		
30		
35		
40		
50		
60		
75		
90		
105		
120		

PUMP ☐ BAILER ☐ AIR ☒
NON-PUMPING WATER LEVEL Ground level FT/M
RATE OF PUMPING 20 IGPM/LPM
DURATION OF TEST 2 HRS — MINS.
PUMPING WATER LEVEL OR BAILING LEVEL 28' FT/M
TOTAL DRAWDOWN AT END OF TEST 28' FT/M
PUMP SET AT 40 FT/M
ADDITIONAL PRODUCTION TEST INFO. — YES/NO
RECOMMENDED PUMPING RATE IGPM/LPM

(15) WATER QUALITY
CHEMICAL ANALYSIS YES ☐ NO ☒
BACTERIAL ANALYSIS YES ☐ NO ☒
WATER TEMPERATURE
OTHER

OCT 23 1989

CERTIFICATION

WELL OWNER

UNIVERSITY OF CALGARY

Centre for Toxicology

HMRB, University of Calgary
B19, 3330 Hospital Drive NW
Calgary, Alberta T2N 4N1
Tel: (403) 220-5511 Fax: (403) 270-2964

REPORT TO:
CROSSROADS REGIONAL HEALTH AUTHORITY
5610-40 AVE.
WETASKIWIN AB
T9A3E4

PRIVATE DRINKING WATER FROM:
DONALD HEIGHINGTON
1063 FALCONER ROAD
EDMONTON AB
T6R 2C9 (780) 434-7104

Land Description: SW-35-46-6-5
Collected: 10/3/2002 8:40:00 AM
By: DONALD HEIGHINGTON
Site: KITCHEN TAP
Source: Well
Depth: 128
Comments:

Req. ID No: T014918
Lab Code: 2002101514

CERTIFICATE OF CHEMICAL ANALYSIS

			CDW GUIDELINES (2001)
pH	8.49		6.5-8.5 units AO
Conductivity	1363	uS/cm	
Sodium	293.8	mg/L	≤ 200 mg/L AO
Potassium	1.24	mg/L	
Calcium	9.13	mg/L	
Magnesium	1.89	mg/L	
Total Hardness (CaCO3)(Calc)	30.58	mg/L	
Iron	0.02	mg/L	≤ 0.3 mg/L AO
Total Alkalinity (CaCO3)	439.7	mg/L	
Carbonate	19.4	mg/L	
Bicarbonate	496.9	mg/L	
Hydroxide	0	mg/L	
Chloride	0	mg/L	≤ 250 mg/L AO
Fluoride	0.5	mg/L	1.5 mg/L MAC
Nitrite (N)	0	mg/L	1.0 mg/L MAC
Nitrate (N)	0	mg/L	10 mg/L MAC
Sulfate	259.5	mg/L	≤ 500 mg/L AO
Total Dissolved Solids (Calc)	830.34	mg/L	≤ 500 mg/L AO
Cation Sum	13.42	mEq/L	
Anion Sum	14.24	mEq/L	
Ion Balance(Cation/Anion)	94.23	%	
Ion Balance (% Difference)	-2.97	%	

CROSSROADS REGIONAL HEALTH AUTHORITY
RECEIVED
OCT 24 2002
WETASKIWIN, ALBERTA

Comments:

Received: 10/8/2002
Reported: 10/18/2002
Certified By:

For: Siu Chan, PhD, DABFT
Director
Centre for Toxicology
(403) 220-5511

CDW = Canadian Drinking Water
AO = Aesthetic Objectives
MAC = Maximum Acceptable Concentration