



Strathroy Turf Farm Ltd.

Slope Assessment

DRAFT

Project Name

Kettle Creek Golf and Country Club Development

Project Location

320 Carlow Road, Port Stanley, Ontario

Project Number

LON-0013222-SA

Prepared By:

exp Services Inc.
15701 Robin's Hill Road
London, ON N5V 0A5
Canada

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Date Submitted:

May 16, 2017

Legal Notification

This report was prepared by **exp** Services Inc. for the account of **Strathroy Turf Farm Ltd.**

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. **Exp** Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.

Table of Contents

1.	Introduction	1
1.2	Terms of Reference	1
2.0	Site and Subsurface Conditions	2
3.1	Site Description	2
3.2	Soil Stratigraphy.....	2
3.4	Site Reconnaissance	2
4.0	Slope Stability	4
4.1	Stable Slope Geometry	4
4.2	Erosion Access Allowance	5
4.3	Erosion Hazard Limit	5
4.4	Building Face Line.....	6
4.5	Additional Comments	6
5.0	General Comments	6
	Drawings	8
	Appendix A - MOECC Well Records	8

1. Introduction

As requested, **exp** Services Inc. (**exp**) has conducted a slope assessment at 320 Carlow Road, Port Stanley, Ontario. It is understood that a new development is planned for this site. The new development will be consisted of dwelling units. The units will cover entire site and will also run along toe of slope from east and north sides.

This report summarizes the results of the assessment, and provides geotechnical comments and recommendations with regards to the slope assessment.

1.2 Terms of Reference

Authorization to proceed with this investigation was received from the Client.

The purpose of the assessment was to determine the recommended Development Setback Limit.

Based on MOECC well records and an additional reconnaissance site visit on April 6, 2017, this report provides geotechnical comments and recommendations on slope stability and recommended Development Setback Limit.

This report is provided on the basis of the terms of reference presented above, and on the assumption that the design will be in accordance with applicable codes and standards. If there are any changes in the design features relevant to the geotechnical analyses, or if any questions arise concerning geotechnical aspects of the codes and standards, this office should be contacted to review the design.

The information in this report in no way reflects on the environmental aspects of the soil. Should specific information in this regard be needed, additional testing may be required.

2.0 Site and Subsurface Conditions

3.1 Site Description

The Kettle Creek Golf and Country Club is located on the west side of Carlow Road between George Street and Lake Line in Port Stanley, Ontario. The site is approximately 13 hectares in size and about square in shape. It is bounded to the north and east by vegetated slope, south and west by agricultural land. The site is relatively flat and the majority of the site is used as a Golf Course.

3.2 Soil Stratigraphy

The detailed stratigraphy encountered in the MOECC well records is detailed in the well logs found in **Appendix A**, and summarized in the following paragraphs.

Based on the well records, the soils within the height of the slope and below the toe are consisted mainly from clayey and sandy soils. These soils were alternately deposited with thicker layers of clay compared to the sandy layers. Seepage groundwater were recorded within the sandy soils at depths.

3.4 Site Reconnaissance

A slope review survey was carried out on April 6, 2017. The survey included detailed observations such as slope height and inclination, soil type, the presence and location of seepage zones, vegetative cover, overland drainage, and evidence of previous instability or landslide activity.

At the time of the investigation, the slope surface is a well vegetated with heavy shrubs and trees. No drainage over slope except few seepage zones at lower portion of the slope, landslide or erosion activities were observed. Bare or exposed areas were not observed to indicate areas of slumping or slippage in the face of the slope. Few tilted trees were observed. Selected photos for the slopes along the north and east borders of the site are presented below.



Photograph 1:

Looking to the east and northeast of the property from toe of slope.



Photograph 2:

Looking north to top of slope located along the north property line.



Photograph 3:

Looking to slope face along the north property line.



Photograph 4:

Looking down along the slope face at the east property line.



Photograph 5:

Water standing at toe of the north slope due to seepage from the face of the slope.

4.0 Slope Stability

4.1 Stable Slope Geometry

The stability of the existing slope was investigated for a number of different Factors of Safety (FOS). The various types of failures resulting include shallow slumping failures, medium depth rotational failures near the crest of the slope, and deep rotational failures through the entire height of the slope. The analyses were undertaken by computer methods utilizing the Slope/W computer program for select slope profiles.

The soil parameters and water conditions found in the MOECC well records were used to build in an added safety factor for the analyses. The following table summarizes the parameters for the predominant soils which were used in **exp's** evaluation of the stable slope configuration:

Soil Type	Density	Cohesion	Angle of Internal Friction
Clayey Soils	18 kN/m ³	5 kPa	27°
Sandy Soils	19 kN/m ³	0 kPa	30°

Three (3) profiles, designated as Sections A-A, B-B and C-C, were drawn for the slopes that are located along the north and east property lines. The cross-section locations are shown on **Drawing No. 1** and the profiles provided on Drawing Nos. 2, 3 and 4. The top and toe of slope is typically defined by the point where the slope inclination becomes gentler than 3H:1V. Worst slope gradient was found at Section B-B'; therefore, slope analysis was only undertaken at section B-B' by computer methods utilizing the Slope/W computer program. Slope at section B -B' has gradients ranged from about 0.6H:1V to 1.3H:1V while sections A-A' and C-C' have gradients ranged between 1.1H:1V and 1.3H:1V. The failure at cross section B-B' was shallow slumping failures and medium depth rotational failures with factor of safety ranged from 0.7 to 1.1. Those numbers are based on the bare slope surface but would be greater when it is covered with vegetation. The vegetation will reinforce soils and increase its shear strength. Furthermore, based on the slope reconnaissance there is no any evidence of land sliding observed which support our belief.

Whatever the slope/W results yield, it is recommended, based on the engineering judgment, that a slope stable allowance should be considered. The slope stable allowance should be equal to "D" but not less than Toe Access Allowance (5.0 m). "D" is a distance from existing or determined toe of slope and should be equal half of slope height but need not exceed 4.5 m.

For a slope steeper than 1H:1V, the slope stable allowance is a distance from a determined/considered toe while for a slope with gradient between 1 to 3H:1V, the slope stable allowance is a distance from an existing toe.

The determined/considered toe could be defined by drawing a plane tangent to the slope at an angle of 45° to the horizontal. The point at which the plane intersects the ground surface is considered the toe. The above was illustrated on Drawings 2, 3 and 4.

4.2 Erosion Access Allowance

When buildings are planned to be constructed at toe of slope, Erosion Access Allowance is required. This allowance is required in order to provide access for repairs to the slope from the top of the slope. **Exp** recommends that 5.0 m for the erosion access allowance be provided at the toe of the slope. No permanent structures should be constructed within the 5.0 m of the erosion access allowance.

4.3 Erosion Hazard Limit

The Erosion Hazard Limit (Recommended Development Limit Setback) for construction at toe of the slope could be defined by the sum of the Stable Safe Slope plus the

Erosion Access Allowance. The table below summarizes the two components and the total distance back from the existing toe of slope to the Recommended Development Limit Setback.

Cross Section	Stable Slope Allowance m	Erosion Access Allowance, m	Erosion Hazard Allowance from Toe of Slope to Property Line (Development Setback) m
A-A', B-B' and C-C'	NR	5.0	5.0

NR: not required.

The Recommended Development Setback Limit is shown on Drawing No.'s 1, 2, 3 and 4.

4.4 Building Face Line

Since the slope is covered with tall and mature trees, it is recommended that the face line of the proposed residential units should be located at distance not less than height of the nearest tree line covered the slope face. This was illustrated on Drawings 2, 3 and 4.

4.5 Additional Comments

The vegetation on the slope should be maintained and no tree removal is allowed.

The site should be graded such that surface water is directed away from the slope.

Groundwater seepage from the slope surface should be collected at the toe and directed to daylight.

Water from downspouts and perimeter weeping tile etc. should be collected in a controlled manner and directed away from the slope.

Additional loading should be avoided in proximity to the slope crest.

5.0 General Comments

The comments given in this report are intended only for the guidance of design engineers; and should be read in conjunction with the complete package of design documents, when used during construction.

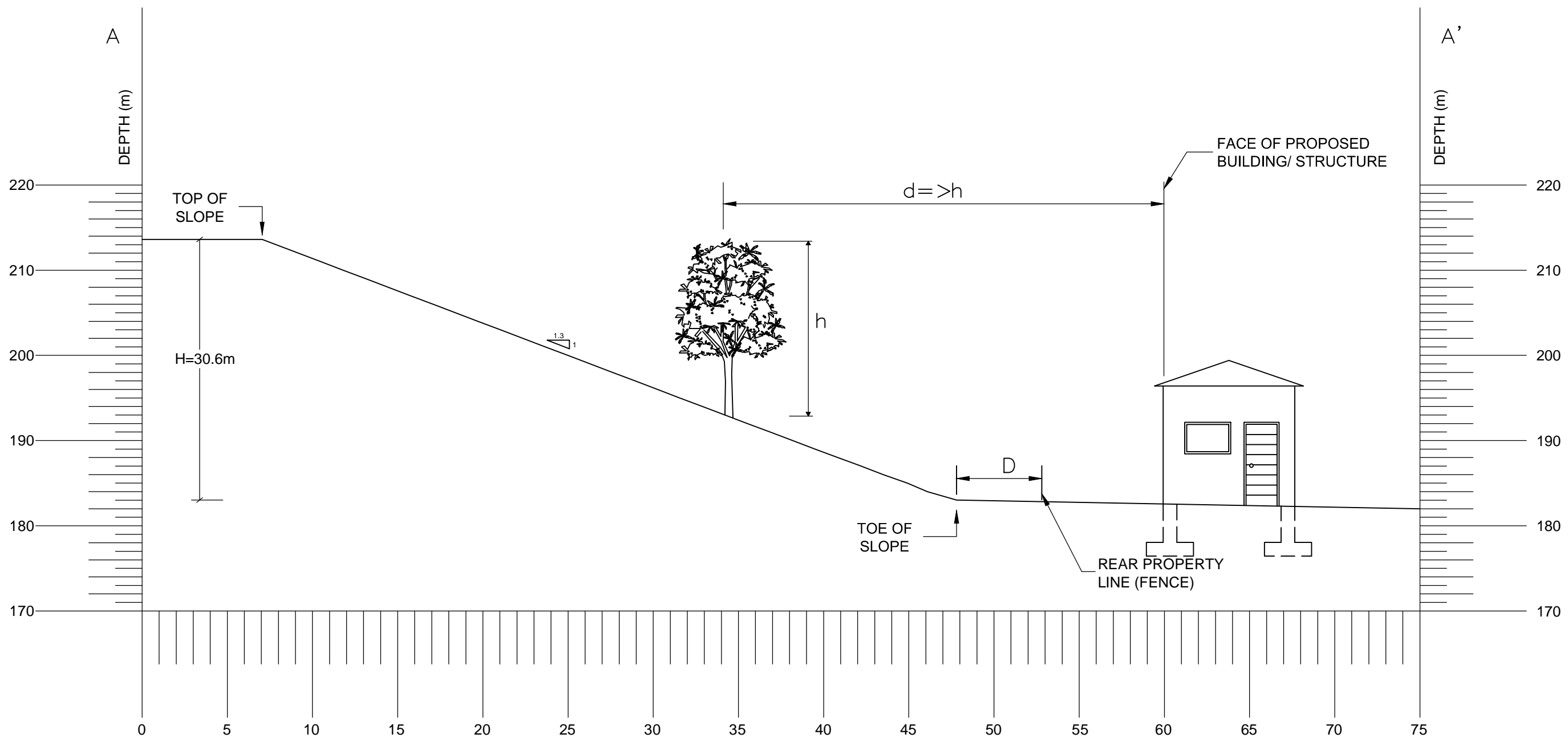
The number of test holes required to determine the localized underground conditions between test holes affecting construction costs, techniques, sequencing, equipment, scheduling, etc. would be much greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should in this light, decide on their own investigations, as well as their own interpretations of the factual borehole results, so that

they may draw their own conclusions as to how the subsurface conditions may affect them.

Exp Services Inc. should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not afforded the privilege of making this review, **exp** Services Inc. will assume no responsibility for interpretation of the recommendations in this report. In the event that variations in soil or groundwater conditions are encountered onsite, it is recommended that **exp** be contacted to review the findings and confirm the suitability of recommendations provided in this report.

We trust that this report is satisfactory to your present requirements and we look forward to assisting you in the completion of this project. Should you have any questions, please contact the office at your convenience.

Drawings



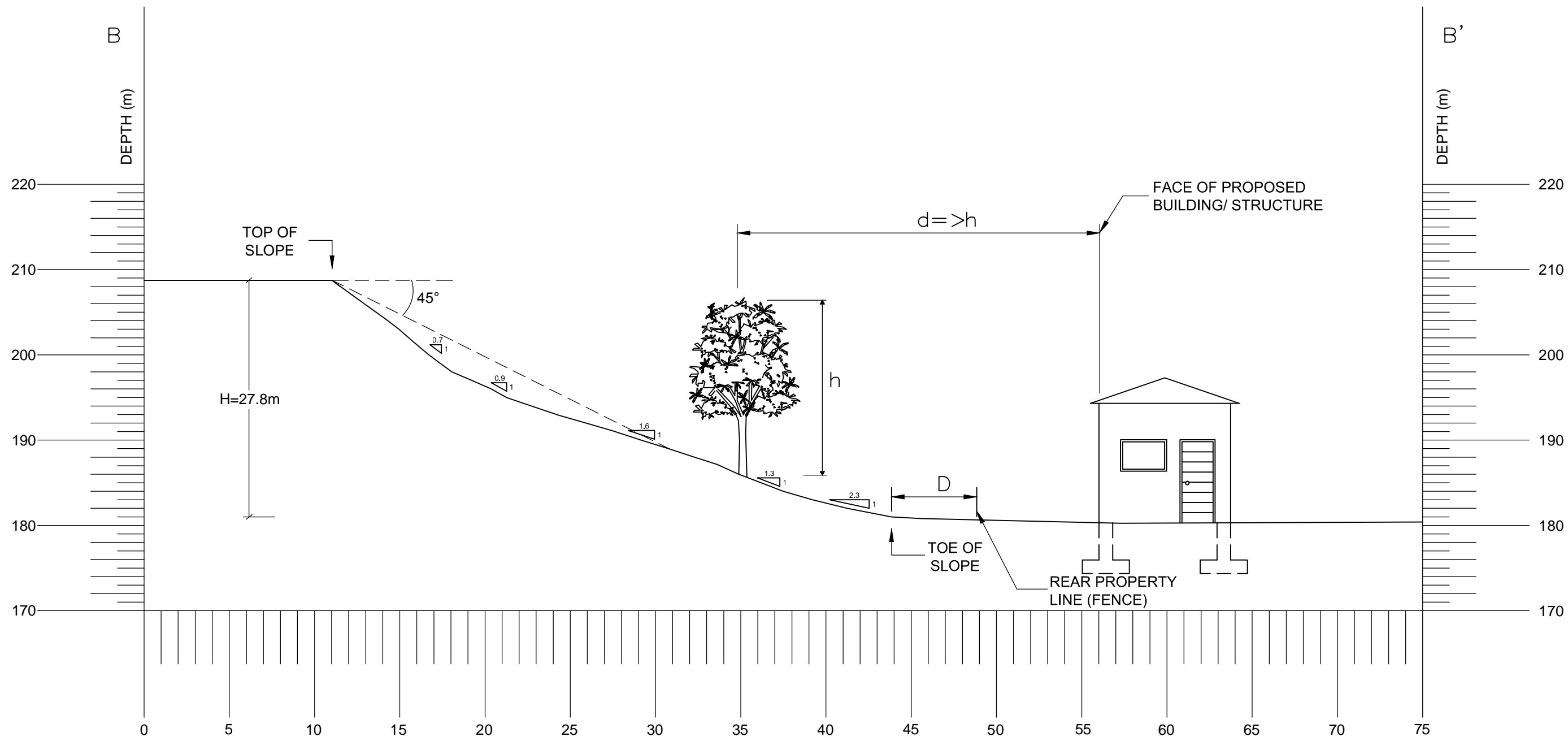
H: HEIGHT OF SLOPE
D: DISTANCE BETWEEN (EXISTING OR DETERMINED) TOE OF SLOPE TO REAR PROPERTY LINE (FENCE) = MIN. 5.0m TOE EROSION ALLOWANCE
h: GREATEST HEIGHT OF TREE LINE
d: DISTANCE BETWEEN TREE LINE TO FACE OF PROPOSED BUILDING/ STRUCTURE

SECTION A-A'

NOTES:
1. The site plan was reproduced from drawing provided by client and should be read in conjunction with exp Slope Assessment Report LON-00013222-SA dated May, 2017.

Slope Assessment & Development Setback
Proposed Kettle Creek Residential Development
320 Carlow Road, Port Stanley, ON

CLIENT Strathroy Turf Farm Ltd.	
TITLE SECTION A-A'	
DRAWN BY D.B.	REVIEWED BY I.S.
 exp Services Inc. 15701 Robin's Hill Road, London, ON, N5V 0A5	
DATE MAY 2017	SCALE 1:250
PROJECT NO. LON-00013222-SA	DWG. 2



H: HEIGHT OF SLOPE
D: DISTANCE BETWEEN (EXISTING OR DETERMINED) TOE OF SLOPE TO REAR PROPERTY LINE (FENCE) = MIN. 5.0m TOE EROSION ALLOWANCE
h: GREATEST HEIGHT OF TREE LINE
d: DISTANCE BETWEEN TREE LINE TO FACE OF PROPOSED BUILDING/ STRUCTURE

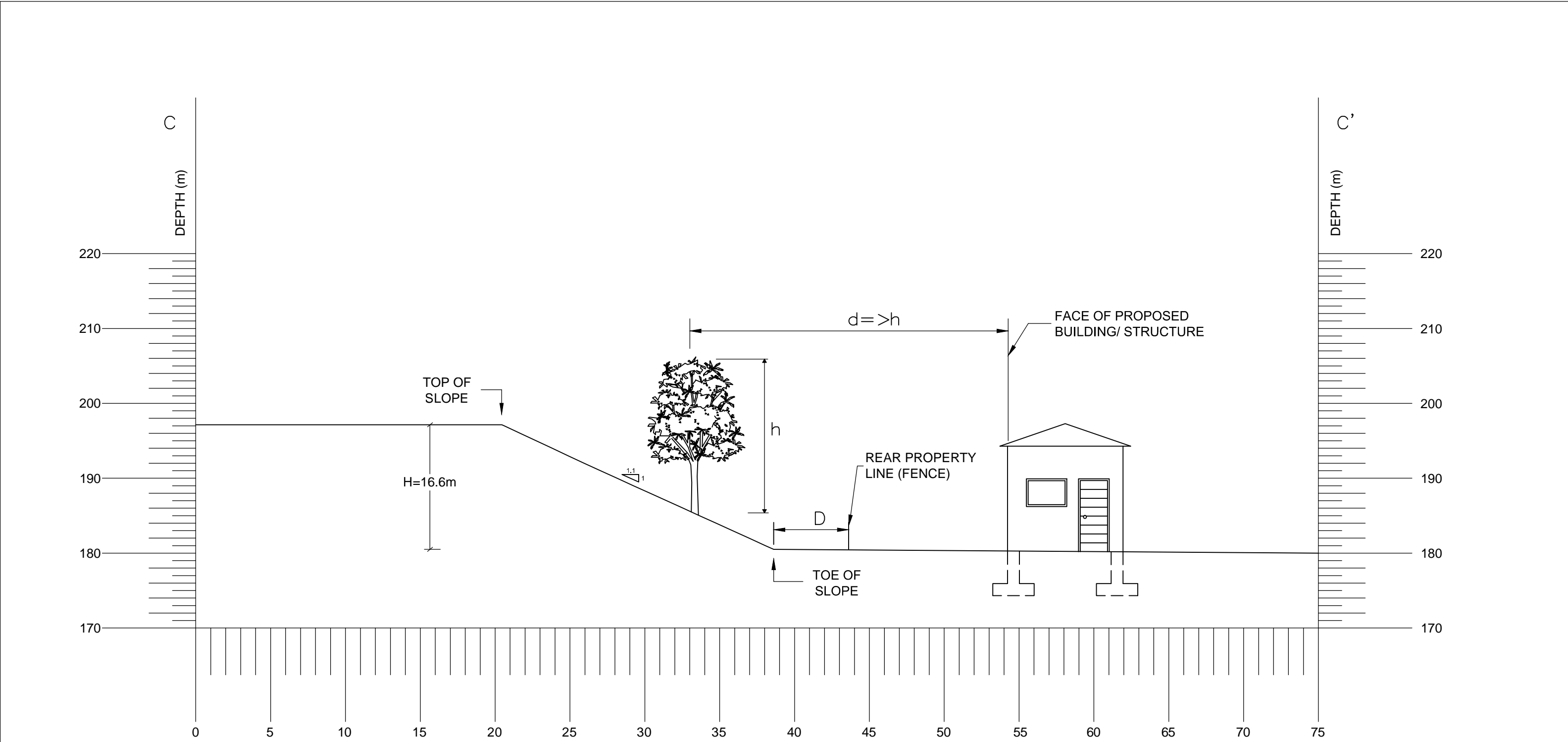
SECTION B-B'

NOTES:

1. The site plan was reproduced from drawing provided by client and should be read in conjunction with exp Slope Assessment Report LON-00013222-SA dated May, 2017.

Slope Assessment & Development Setback
**Proposed Kettle Creek Residential
Development**
320 Carlow Road, Port Stanley, ON

CLIENT Strathroy Turf Farm Ltd.	
TITLE SECTION B-B'	
DRAWN BY D.B.	REVIEWED BY I.S.
 exp Services Inc. 15701 Robin's Hill Road, London, ON, N5V 0A5	
DATE MAY 2017	SCALE 1:250
PROJECT NO. LON-00013222-SA	DWG. 3



H: HEIGHT OF SLOPE
D: DISTANCE BETWEEN (EXISTING OR DETERMINED) TOE OF SLOPE TO REAR PROPERTY LINE (FENCE) = MIN. 5.0m TOE EROSION ALLOWANCE
h: GREATEST HEIGHT OF TREE LINE
d: DISTANCE BETWEEN TREE LINE TO FACE OF PROPOSED BUILDING/ STRUCTURE

SECTION C-C'

NOTES:
1. The site plan was reproduced from drawing provided by client and should be read in conjunction with exp Slope Assessment Report LON-00013222-SA dated May, 2017.

Slope Assessment & Development Setback
**Proposed Kettle Creek Residential
Development**
320 Carlow Road, Port Stanley, ON

CLIENT Strathroy Turf Farm Ltd.	
TITLE SECTION C-C'	
DRAWN BY D.B.	REVIEWED BY I.S.
exp Services Inc. 15701 Robin's Hill Road, London, ON, N5V 0A5	
DATE MAY 2017	SCALE 1:250
PROJECT NO. LON-00013222-SA	DWG. 4

Appendix A - MOECC Well Records



The Ontario Water Resources Act **WATER WELL RECORD**

Mark correct box with a checkmark, where applicable.

11

2005459

Municipality
2006

Con. CON 01

County or District ELGIN	Township/Borough/City/Town/Village SOUTHWOLD	Con block tract survey, etc. 1	Lot 14
First name [REDACTED]	Address PT. STANLEY	Date completed 25 07 9 day month year	

U Zone Easting Northing RC Elevation RC Basin Code II III IV
 T 21 10 12 17 18 24 25 26 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
 M

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)[illegible]

31

32

41		14 15				81		WATER RECORD			
Water found at - feet		Kind of water									
16	10-13	1	<input checked="" type="checkbox"/> Fresh	3	<input type="checkbox"/> Sulphur	14					
	2	<input type="checkbox"/> Salty	4	<input type="checkbox"/> Minerals							
	15-18	2	<input type="checkbox"/> Gas	6	<input type="checkbox"/> Gas						
		1	<input type="checkbox"/> Fresh	3	<input type="checkbox"/> Sulphur		19				
2	<input type="checkbox"/> Salty	4	<input type="checkbox"/> Minerals								
6	<input type="checkbox"/> Gas										
	20-23	1	<input type="checkbox"/> Fresh	3	<input type="checkbox"/> Sulphur	24					
		2	<input type="checkbox"/> Salty	4	<input type="checkbox"/> Minerals						
		6	<input type="checkbox"/> Gas								
	25-28	1	<input type="checkbox"/> Fresh	3	<input type="checkbox"/> Sulphur	29					
		2	<input type="checkbox"/> Salty	4	<input type="checkbox"/> Minerals						
		6	<input type="checkbox"/> Gas								
	30-33	1	<input type="checkbox"/> Fresh	3	<input type="checkbox"/> Sulphur	34					
		2	<input type="checkbox"/> Salty	4	<input type="checkbox"/> Minerals						
		6	<input type="checkbox"/> Gas								

CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
5-10 36"	1 <input checked="" type="checkbox"/> Steel 2 <input checked="" type="checkbox"/> Galvanized 3 <input checked="" type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	12 3"	0	13-16 30
17-18	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	19		20-23
24-25	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	26		27-30

SCREEN	Sizes of opening (Slot No.)	31-33	Diameter	34-38	Length	39-40
			inches		feet	
	Material and type	<p><i>FILTER SAND</i></p>			Depth at top of screen	41-44
					feet	

61 PLUGGING & SEALING RECORD			
<input checked="" type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
10-13	14-17	HOLE PLUG AND CLAY FILL.	
0	10		
18-21	22-25		
26-29	30-33	80	

PUMPING TEST	Pumping test method ¹⁰ <input type="checkbox"/> Pump <input checked="" type="checkbox"/> Bailer		Pumping rate ¹¹⁻¹⁴ 12 GPM		Duration of pumping ¹⁵⁻¹⁶ 1 Hours ¹⁷⁻¹⁹ 0 Mins	
	Static level ¹⁹⁻²¹ 10 feet		Water level end of pumping ²²⁻²⁴ 25 feet		Water levels during ²⁵ <input type="checkbox"/> Pumping <input type="checkbox"/> Recovery	
			²⁶⁻²⁸ 15 minutes ²⁹⁻³¹ 30 minutes		³²⁻³⁴ 45 minutes ³⁵⁻³⁷ 60 minutes	
			feet		feet	
			feet		feet	
	If flowing give rate ³⁸⁻⁴¹ GPM		Pump intake set at ⁴² 25 feet		Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
	Recommended pump type <input checked="" type="checkbox"/> Shallow <input type="checkbox"/> Deep		Recommended pump setting ⁴³⁻⁴⁵ 25 feet		Recommended pump rate ⁴⁶⁻⁴⁹ 8 GPM	

<h3>FINAL STATUS OF WELL</h3> <p>54</p> <div> <div> 1 <input checked="" type="checkbox"/> Water supply 2 <input type="checkbox"/> Observation well 3 <input type="checkbox"/> Test hole 4 <input type="checkbox"/> Recharge well </div> <div> 5 <input type="checkbox"/> Abandoned, insufficient supply 6 <input type="checkbox"/> Abandoned, poor quality 7 <input type="checkbox"/> Abandoned (Other) 8 <input type="checkbox"/> Dewatering </div> <div> 9 <input type="checkbox"/> Unfinished 10 <input type="checkbox"/> Replacement well </div> </div>	
<h3>WATER USE</h3> <p>55-56</p> <div> <div> 1 <input checked="" type="checkbox"/> Domestic 2 <input type="checkbox"/> Stock 3 <input type="checkbox"/> Irrigation 4 <input type="checkbox"/> Industrial </div> <div> 5 <input type="checkbox"/> Commercial 6 <input type="checkbox"/> Municipal 7 <input type="checkbox"/> Public supply 8 <input type="checkbox"/> Cooling & air conditioning </div> <div> 9 <input type="checkbox"/> Not used 10 <input type="checkbox"/> Other </div> </div>	
<h3>METHOD OF CONSTRUCTION</h3> <p>57</p> <div> <div> 1 <input type="checkbox"/> Cable tool 2 <input type="checkbox"/> Rotary (conventional) 3 <input type="checkbox"/> Rotary (reverse) 4 <input type="checkbox"/> Rotary (air) </div> <div> 5 <input type="checkbox"/> Air percussion 6 <input checked="" type="checkbox"/> Boring 7 <input type="checkbox"/> Diamond 8 <input type="checkbox"/> Jetting </div> <div> 9 <input type="checkbox"/> Driving 10 <input type="checkbox"/> Digging 11 <input type="checkbox"/> Other </div> </div>	

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.

The diagram is a hand-drawn sketch on a rectangular border. At the top center, the title "LOCATION OF WELL" is printed. Below it, two lines of text instruct the user: "In diagram below show distances of well from road and lot line." and "Indicate north by arrow." In the top right corner, the word "NORTH." is written with an arrow pointing upwards. On the left side, "SLOUCH RD." is written vertically. A horizontal arrow points from the left towards a vertical dashed line, with "1000 FT." written above it. Above the dashed line, a solid black rectangle is labeled "HOUSE." Below the house, a dashed line is labeled "LT. 14". To the right of the dashed line, a circled 'X' is labeled "WELL" with an arrow pointing to it. Further right, the text "50 FT. OFF. RD." is written. At the bottom, a wavy line represents a road, with an arrow pointing to it and the text "TO PT. STANLEY". In the bottom right corner, the number "177785" is printed.

SLOUCH RD.

1000 FT.

HOUSE.


LT. 14

WELL

50 FT. OFF. RD.

TO PT. STANLEY

177785

Name of Well Contractor HAYDEN WATER WELLS	Well Contractor's Licence No. 2552
Address R.R.#1 LUCAN ONT.	
Name of Well Technician J. HAYDEN.	Well Technician's Licence No.
Signature of Technician/Contractor 	Submission date day mo yr

MINISTRY USE ONLY	Data source	58	Contractor	59-62	Date received	63-68
			2552		JUL 16 1998	
	Date of inspection		Inspector			
Remarks						
CSS. S9						

1. PRINT ONLY IN SPACES PROVIDED 2. CHECK [X] CORRECT BOX WHERE APPLICABLE

11 2004518 20006 URS R 01

COUNTY OR DISTRICT TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE CON. BLOCK, TRACT, SURVEY ETC LOT

Old Township Pt K, Pt 3, P1 11R-3244 C14

Inverness Ave., London, Ontario DATE COMPLETED 48-53

DAY 6 MO 6 YR 90

24710 0690

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					DEPTH - FEET	
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION		FROM	TO
Yellow	Sand				0	1
Brown	Clay				1	15
Grey	Sand	Clay			15	32
Yellow	Sand	Clay			32	43
Brown	Clay	Sand			43	75
Grey	Sand	Silt			75	88
Brown	Clay				88	101
Grey	Sand	Clay			101	118
Grey	Clay	Stones			118	179
Brown	Clay	Stones			179	234
Grey	Sand				234	238

31 32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
234	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
6 1/2	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	188	+2 235
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		

SCREEN

SIZE (S) OF OPENING (SLOT NO.) 12ths

DIAMETER 5 INCHES LENGTH 3 FEET

MATERIAL AND TYPE S/S

DEPTH TO TOP OF SCREEN 235 FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE	(CEMENT GROUT LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33	80

71 PUMPING TEST

PUMPING TEST METHOD 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE 5 GPM

DURATION OF PUMPING 24 HOURS

STATIC LEVEL 85 FEET

WATER LEVEL END OF PUMPING 95 1/2 FEET

WATER LEVELS DURING 1 ☒ PUMPING 2 ☐ RECOVERY

15 MINUTES 94 FEET 30 MINUTES 94 1/2 FEET 45 MINUTES 95 FEET 60 MINUTES 95 FEET

IF FLOWING, GIVE RATE 38-41 GPM 150

PUMP INTAKE SET AT 42 FEET

WATER AT END OF TEST 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE 1 ☐ SHALLOW 2 ☒ DEEP

RECOMMENDED PUMP SETTING 43-45 FEET 150

RECOMMENDED PUMPING RATE 46-49 GPM 5

FINAL STATUS OF WELL 1 ☒ WATER SUPPLY 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 2 ☐ OBSERVATION WELL 6 ☐ ABANDONED, POOR QUALITY 3 ☐ TEST HOLE 7 ☐ UNFINISHED 4 ☐ RECHARGE WELL 8 ☐ DEWATERING

WATER USE 1 ☒ DOMESTIC 5 ☐ COMMERCIAL 2 ☐ STOCK 6 ☐ MUNICIPAL 3 ☐ IRRIGATION 7 ☐ PUBLIC SUPPLY 4 ☐ INDUSTRIAL 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF CONSTRUCTION 1 ☒ CABLE TOOL 6 ☐ BORING 2 ☐ ROTARY (CONVENTIONAL) 7 ☐ DIAMOND 3 ☐ ROTARY (REVERSE) 8 ☐ JETTING 4 ☐ ROTARY (AIR) 9 ☐ DRIVING 5 ☐ AIR PERCUSSION 10 ☐ DIGGING 11 ☐ OTHER

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW.

CTY. RD. 20

125' x 1/2 mi

LAKE RD

VILLAGE OF PORT STANLEY

75827

DRILLERS REMARKS

CONTRACTOR

NAME OF WELL CONTRACTOR Hopper Well Drilling Limited

WELL CONTRACTOR'S LICENCE NUMBER 2658

Box 203, Port Stanley, Ontario

NAME OF WELL TECHNICIAN A. Roberts

WELL TECHNICIAN'S LICENCE NUMBER T-0261

SIGNATURE OF TECHNICIAN/CONTRACTOR

SUBMISSION DATE DAY 20 MO 6 YR 90

OFFICE USE ONLY

DATA SOURCE 58 CONTRACTOR 59-62 DATE RECEIVED 63-68 80

2658 JUN 26 1990

DATE OF INSPECTION INSPECTOR

REMARKS

CSS S8

Basip 23



RECEIVED

007 11 1988

GEOLOGICAL BRANCH
DEPARTMENT OF MINES

20 № 769

The Well Drillers Act
Department of Mines, Province of Ontario

Water Well Record

County or Territorial District... Flain Township, Village, Town or City... So J H W O I D

Con.....Lot.....¹⁵.....Street and Number (if in Village, Town or City).....^{222 1st St. N York}.....

Owner. [REDACTED] Address. RR 2 Pt. Stanley

Date Completed... 20 (day) May (month) 19/53 (year) Cost of Well (excluding pump)..... 1

Pipe and Casing Record

Pumping Test

Casing diameter(s).....	5.75" PULG	Date.....	
Length(s) of casing(s).....	100' PULG	Static level.....	320'
Type of screen.....		Pumping level.....	not tested
Length of screen.....		Pumping rate.....	not tested
Distance from top of screen to ground level.....		Duration of test.....	observed
Is well a gravel-wall type?.....		Distance from cylinder or bowls to ground level.....	

Water Record

Kind (fresh or mineral).....	Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
Sulphur.....			
Black.....			
Quality (hard, soft, contains iron, sulphur, etc.).....			
Black.....			
Appearance (clear, cloudy, coloured).....			
For what purpose(s) is the water to be used?.....			
.....			
How far is well from possible source of contamination?.....			
What is the source of contamination?.....			
Enclose a copy of any mineral analysis that has been made of water.....			

Well Log

Overburden and Bedrock Record

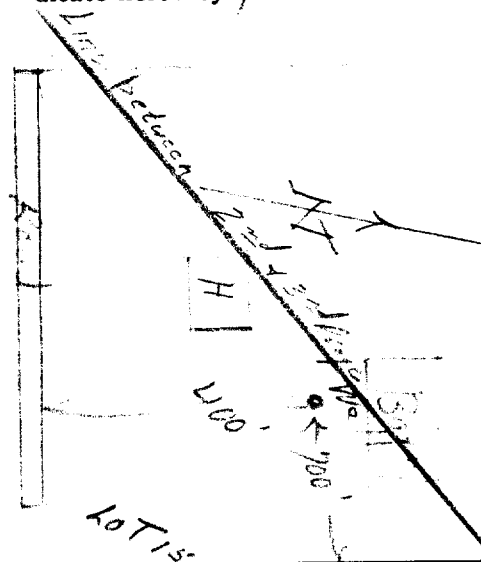
From	To
0 ft.ft.

Sand	0	70
Clay	70	150
(Sand Gravel)	150	200
Clay	200	250
Brown Lime	250	360

Pulled and Plugged
Well

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Situation: Is well on upland, in valley, or on hillside?.....

Drilling Firm... Edna Hoover

Address.....300 Taylor St. East.....Hy. Amer.

Name of Driller.....Address.....

Date.....September 18/58.....Licence Number.....618.....

Signature of Licensee