SUMMER VILLAGE OF BIRCHCLIFF
SUBDIVISION AND DEVELOPMENT APPEAL BOARD AGENDA
DENIAL OF DEVELOPMENT PERMIT FOR LANDSCAPING REVISIONS/MECHANIZED EXCAVATION ON THE ESCARPMENT
JULY 11, 2023 @ 10:00 a.m.

1.	Call to Order	Chairman
2.	Purpose of Hearing/Confirmation of Notice	Secretary
3.	Polling for Objections to members	Secretary
4.	Background of appeal (appeal letter)	CAO
5.	Duties & Jurisdiction	CAO
6.	Hearing Procedures	Chairman
7.	Background from Development Officer	Kara Hubbard
8.	Appellant Statement & Presentation	Neish or Representative
9.	Questions from the board	
10.	Written letters supporting development	Secretary
11.	Speakers supporting development	
12.	Questions from the board to speakers	
13.	Written letters opposing development	Secretary
14.	Speakers opposing development	
15.	Questions from board to speakers	
16.	Development Officer Summary	Kara Hubbard
17.	Rebuttal Statement from Appellant	Neish or Representative
18.	Additional questions from Board to anyone	
19.	Conclusion of Hearing	

An appeal was received, one on June 13, 2023, appealing the denial of a development permit for landscaping revisions/mechanized excavation on the escarpment by the Municipal Planning Commission on May 18, 2023, in the Summer Village of Birchcliff.

Under the provisions of the *MGA,* the Subdivision and Appeal Board may deny the appeal and uphold the permit; or allow the appeal and deny the permit; or allow the appeal and approve the permit with or without variations to the permit.

NOTICE BEING GIVEN by mail on June 16 , 2023, to the appellant and owners of property located within 200' radius of the proposed development and published on the Municipal website.

MUNICIPAL PLANNING COMMISSION AGENDA
SUMMER VILLAGE OF BIRCHCLIFF
SUMMER VILLAGES ADMINISTRATION OFFICE
MAY 18, 2023 @ 1:00 P.M.

A. CALL TO ORDER

B. ADOPTION OF AGENDA

C. DEVELOPMENT ITEMS

1) 71 Birchcliff Road

D. ADJOURNMENT

Summer Village of Birchcliff – Municipal Planning Commission

Agenda Item

May 18, 2023

71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX)

Development Permit Application

Background:

An application was submitted by the homeowners of 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff for landscaping revisions/ mechanized excavation on the escarpment. This property is in the R1 District (Lakeshore Residential). There is currently a dwelling development permit for this property as well.

Previously In March of 2021, the applicants applied to the Municipal Planning Commission to obtain permission for work on the escarpment, and the application was approved by the MPC. (Schedule A - approved development documents).

On October 6, 2021, a site inspection was completed, it was found that the landscaping was not complete in accordance with the approved plans. It was found that the landscaping constructed was very unlike the approved landscaping plans, with the majority of the escarpment area covered in hard landscaping. The firepit area had also been relocated, expanded, and lowered, meaning one of the sections of retaining wall measures at 2.4m (7.87ft.) and is exceeding the approved 2m (6.56ft.).

In many conversations with the developer over several months, it became clear that there appeared to be a misinterpretation or difference of opinion over what had been approved. The application before the MPC today shows the approved landscaping plan with additional comments added by the developer. Administration does not agree with how the developer is interpretating the approved drawings and what has been constructed is in our opinion not what was approved by the MPC. Those reasons are as follows:

- **Tier levels** - On the original drawing (Schedule B) it appears the winter storage area is on the same level as the beach, there is no elevation difference shown. This was all considered the lowest tier and as it was shown on the drawings as “beach”. MPC referenced beach in the condition as that is what was proposed in the area (Schedule A).

  The current application before MPC notes a tier 1 (lower) and (upper) which was never shown on the original drawings. As referenced in the applicant’s current

submission, what is classified as tier 1 (lower) was approved to be a now mow zone and tier 1 (upper) was approved to be grass only. It appears that the applicant is referring to both tier 1 (upper) and (lower) as a now mow zone. However, a no mow zone is a buffer strip or area of vegetation that includes native plantings that let aquatic vegetation grow to maintain a stable natural state. A no mow zone allows native plants to seed and re-establish and is not to be maintained. As noted on the original approved drawings, it is meant to be filled with native grasses and shrubs. What is currently in place is not what we would consider a no mow zone, however, tier 1 (upper) was approved to have grass in the original application.

- **Landscaping** – The approved documents show grass on every tier except the lowest winter storage and beach area which was to be a no mow zone (Schedule C). Condition #11 in the development permit also states, *"Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit"*. This is clear that the tiers are to be entirely grass as shown in the proposed/approved drawings.

- **Firepit area** – (Schedule D) Condition #11 of the development permit states *"Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit"*. The proposed and approved drawings show a small circular firepit location that the MPC gave permission to have a permitter around. In our opinion, the perimeter would be only as significant as the small circle shown on the drawings.

  The developer's current application is stating that a 2m perimeter is required by the National Fire Code. However, administration was unable to find this stipulation in the Fire Code. We also reached out to Lacombe County Fire Chief and Lacombe Regional Emergency Management Partnership member Drayton Bussier who confirmed there is no code requirements for fire pits. Birchcliff does have a Fire Pit Bylaw which states that *"firepits should follow the recommendation that there should be a minimum of 3.4 meters (10') clearance from buildings, property lines, and combustible materials"*.

  The area around the firepit was approved as grass. We do not consider grass to be a combustible material, so the above listed regulation from the Fire Pit Bylaw would not apply. It was also confirmed with the Town of Sylvan Lake Fire Chief and Lacombe County Fire Chief that grass and manicured lawn is not considered to be a combustible material. According to the NFPA (National Fire Protection Agency) a combustible material is *"any material that, in the from which is used and under the conditions anticipated, will ignite, and burn or will add heat to an ambient fire".*

What was originally approved was a small circular firepit area. What was constructed appears to be a 240ft^2 stone patio that is not required by Fire Code or the Birchcliff Fire Pit Bylaw. While the relocating of the fire pit to another tier may be an acceptable minor amendment, the substantial enlargement of the hard landscaped area is not.

- **Retaining Walls** – The proposed and approved drawing shows a cross section of the tiers (Schedule E). The cross section shows each of the walls are the same height, with the exception of the wall along the winter storage area as there are stairs going down to that lower area.

  As the currently constructed firepit area was recessed, the height of that retaining wall is now 2.4m.

Discussion:

This application is before MPC for the following reasons:

- Land located below the top of the bank/top of the escarpment should be in a natural state, a variance is required. (LUB Part Three: 4.1 4(5))
- Mechanized Excavation, Stripping and Grading is listed as a discretionary use, and Retaining walls greater than 1m (3.28ft) in height above any adjoining grade requires a development permit, therefore MPC approval is required. (LUB Part Three: 4.1 4(4)(f))

What was constructed on site was not approved in the original landscaping plan. Therefore, the developer has two options. Option one would be to remove what was constructed and replace it with what was approved in the original application. Option 2 would be to apply to the MPC for approval of a different landscaping plan, which is what is before the board today.

Recommendation:

After reviewing the application, all relevant planning documents, and the previous decision of the application, it is administration's opinion to deny the application with the proposed revisions. The drawings approved were clear that landscaping was to be in place, that the tiers were indicated as grass and the no mow zone/natural vegetation was labeled by administration and by the applicant on drawings. It was our understanding of the MPC's decision that the firepit perimeter was approved small in scale as shown on the drawing. The constructed development compared to the approved plans is drastically different. Birchcliff's planning documents state the desire for shorelines and escarpments to be as natural as possible, to replant areas with native shrubs where vegetation was removed. Occasionally retaining walls are needed to stabilize the bank so development can take place, as is the case with this property. While the retaining walls are necessary, there are ways to ensure that the rest of the landscaping is done with lots of vegetation to keep the bank as natural as possible.

Adjacent landowners have been notified and no response has been received.

Conditions:

If approved, Administration would recommend the following conditions:

- Completions Deposit of $3,000.00 to be carried over from current development permit.
- There shall be no further alterations to the escarpment.

Authorities:

For a discretionary use in any district:

- The Municipal Planning Commission may approve an application for a Development Permit:
  - With or without conditions;
  - Based on the merits of the proposed development, including its relationship to any approved statutory plan, non-statutory plan, or approved policy, affecting the site;
  - Where the proposed development conforms in every respect to this Land Use Bylaw; or
- May refuse an application for a development permit based on the merits of the proposed development, even though it meets the requirements of the Land Use Bylaw; or
- Subject to provisions of section 2.4 (2), the Municipal Planning Commission shall refuse an application for a development permit if the proposed development does not conform in every respect to the Land Use Bylaw.

The MPC may:

- Grant a variance to reduce the requirements of any use of the LUB and that use will be deemed to comply with LUB.
- Approve application even though the proposed development does not comply or is a non-conforming building if:
  - It would not unduly interfere with the amenities of the neighborhood, or
  - Materially interfere with or affect the use, enjoyment, or value of neighboring parcels of land, And
  - It conforms with the use prescribed for that land or building in the bylaw.
- Consider a Variance only where warranted by the merits or the proposed development and in response to irregular lot lines, parcel shapes or site characteristics which create difficulties in siting structures within the required setback or in meeting the usual bylaw requirements, except there shall be no

variance for Parcel Coverage or Building Height.

Decision:

In order to retain transparency of the Commission, Administration recommends one of the following:

1. Approve the application with or without conditions *(Section 642 of the MGA),* or
2. Deny the application stating reasons why *(Section 642(4) of the MGA).*

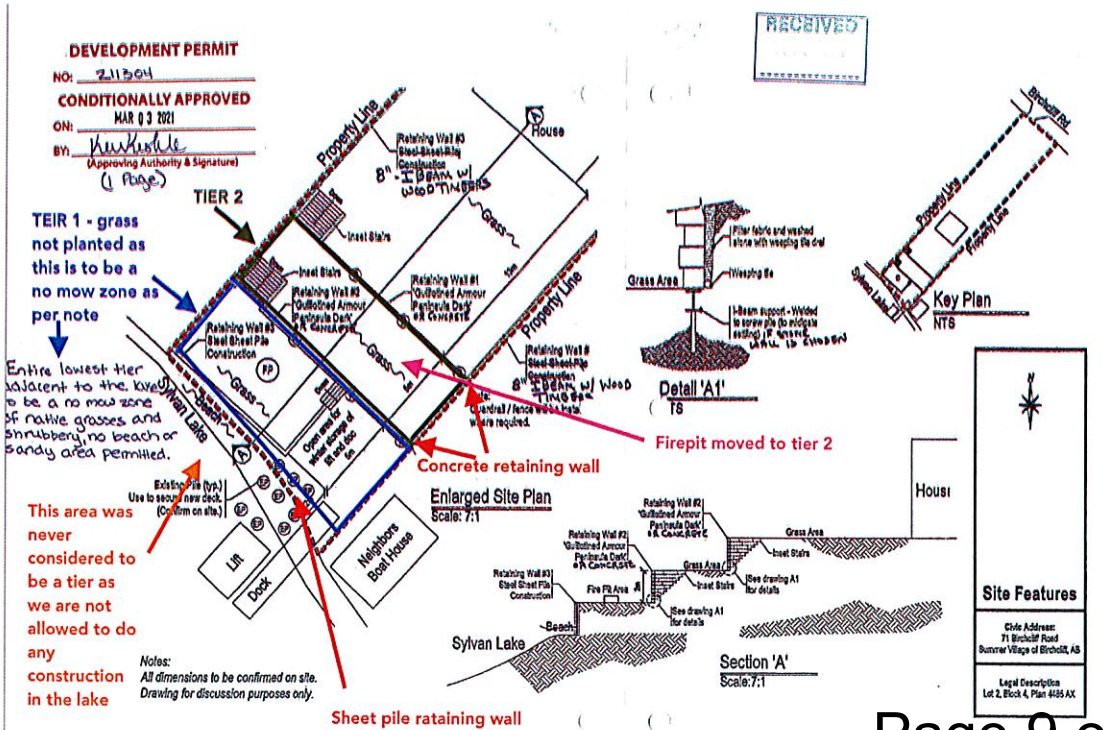
February 10, 2023

Kara Hubbard
SV of Birchcliff

Re: Development Permit #211304 Landscaping/Mechanized Excavation Amendment Application at 71 Birchcliff Road (Revised Plan)

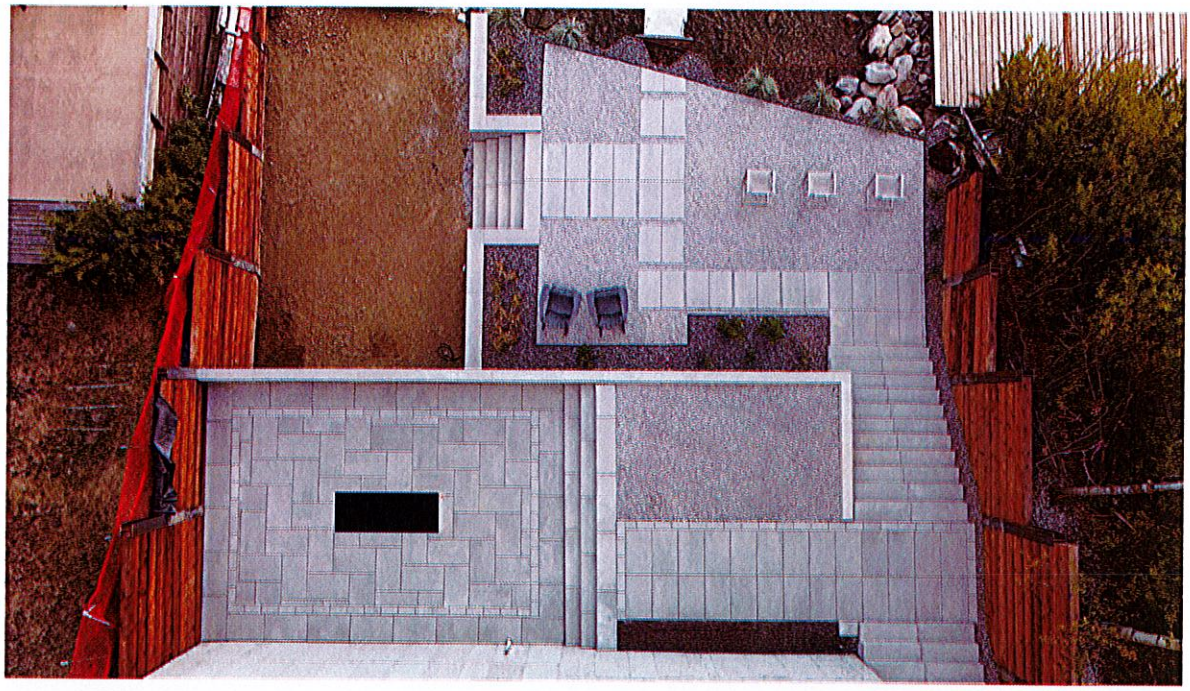
Kara, as per our email correspondence regarding the landscaping permit for 71 Birchcliff Road, this is a new application for the landscaping on the escarpment with a revised landscape plan. This application is being submitted due to the fact that both the Summer Village and the applicant identified different understanding and or interpretation of the wording in the permit and what was discussed at the MPC (zoom meeting) on March 1, 2021. It was decided that we provide a detailed outline of these items and how we interpreted them to become what was constructed so that we can meet with MPC and discuss each item in detail in a letter of intent. This was done however we were told that we could not meet with MPC and the best way to move forward would be with a New or Revised application and application fee. Here is the details and description of what was originally approved and the new/revised application.

This is what was originally approved by MPC.



The landscape work completed to date is slightly different than what was proposed and approved however in concept things were just moved around a bit and are determined by the natural slope of the bank on the properties adjacent to this lot.

Here a aerial photo of what has been constructed to date along with a plot plan (attached to email) that was submitted to the SV for the development application.

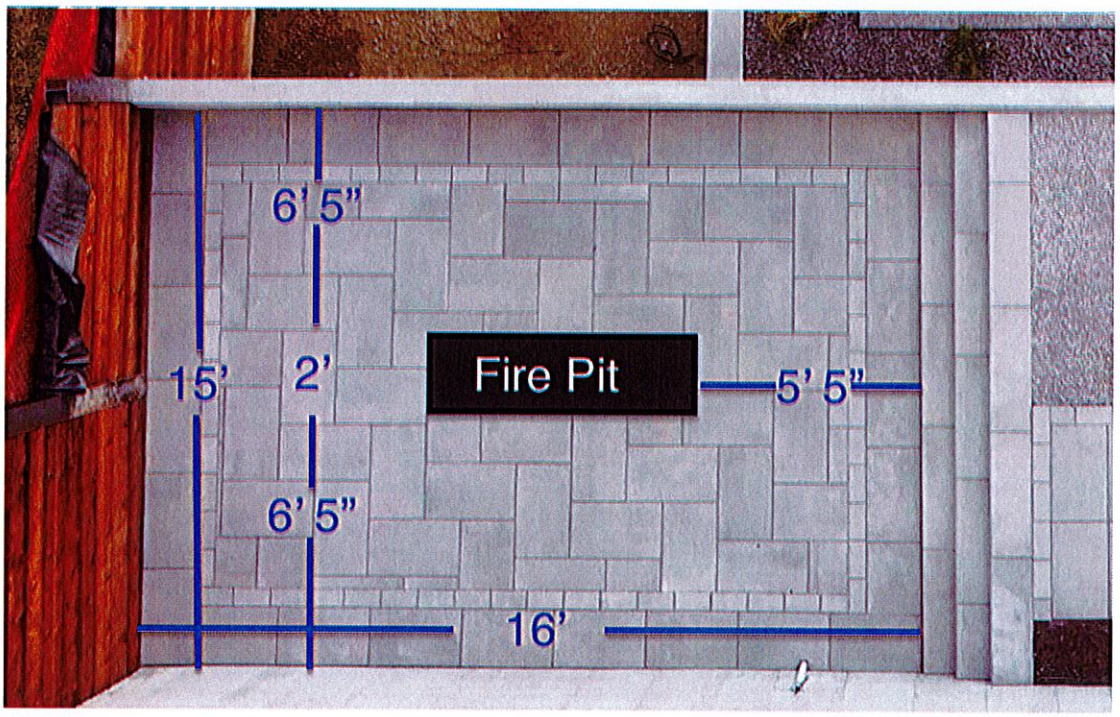


To better understand which areas we are discussing I have labeled them for discussion purposes.

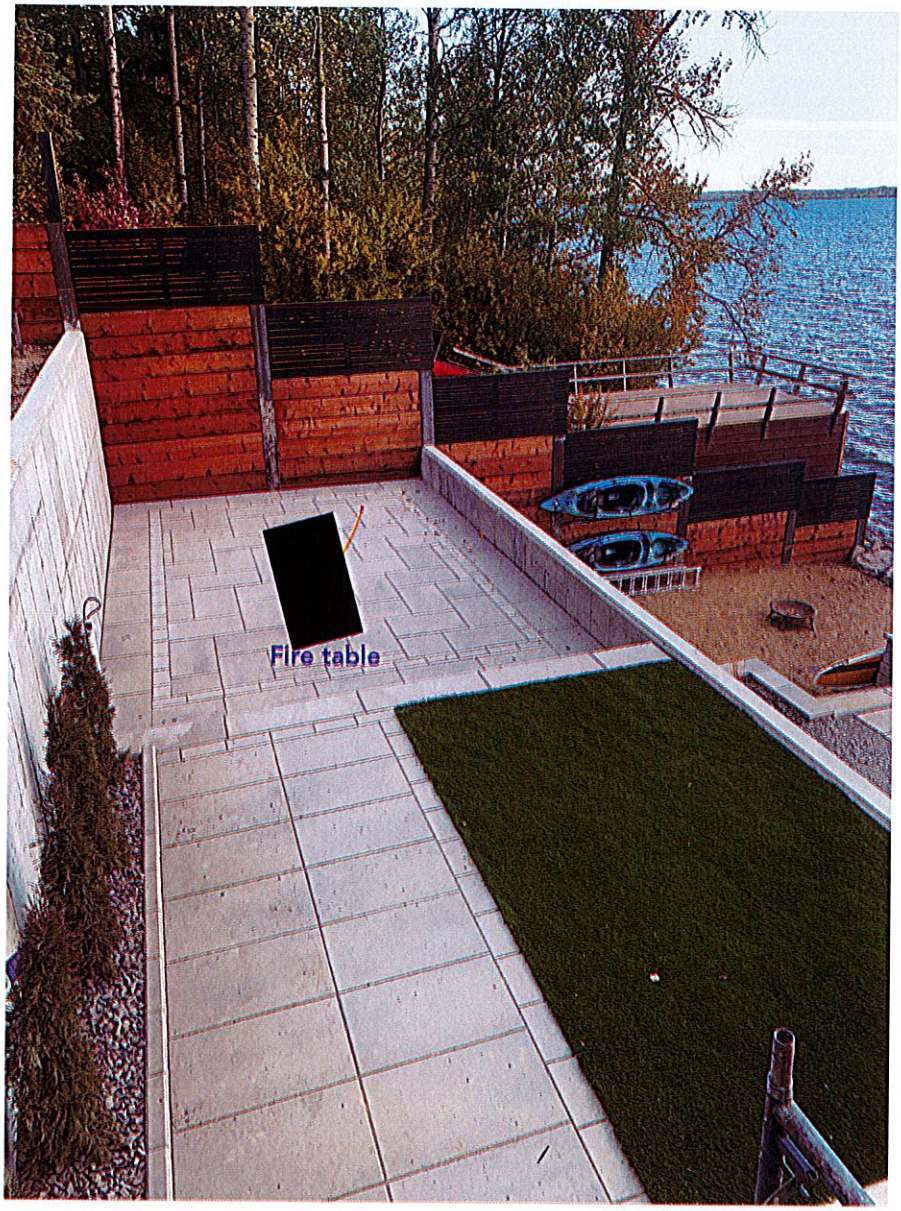
Tier 1 (Lower). This is the boat lift/dock storage area. The approved permit indicates that "*The entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted*". This area will be a no mow zone and left to naturally revegetate.

Tier 1 (Upper) This tier has a combination of paving stones and natural rundle stone. The pavers serve as a walk way from the stairs to access the dock and the dock/lift storage area. We have elderly parents that spend a lot of time with us and require accessible access to the lake. We planted 32 shrubs and grasses on the perimeter of this tier. Natural vegetation can also grow in the areas amongst the rundle rock.

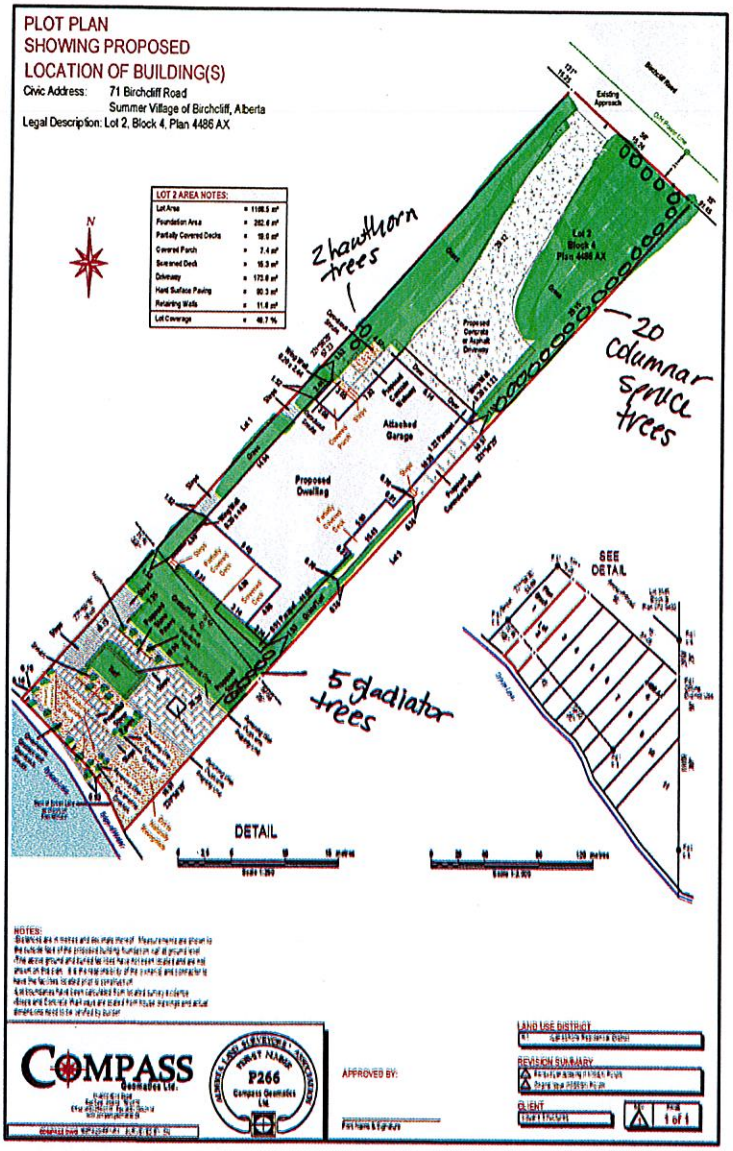
Tier 2 This tier is a combination of a lowered fire pit area and a turfed lounging area. The fire pit area was recessed 2' for protection from the wind. The size of the wood burning fire pit is approx 2' x 4'. Permeable paving stones were installed surrounding the fire pit as per the National Fire Code which states that a 2 meter stone perimeter is a safe flame protective perimeter.



The lounging area of Tier 2 includes stone pavers that access the fire pit area, a turfed area for lounge chairs and perimeter planting of 5 shrubs.



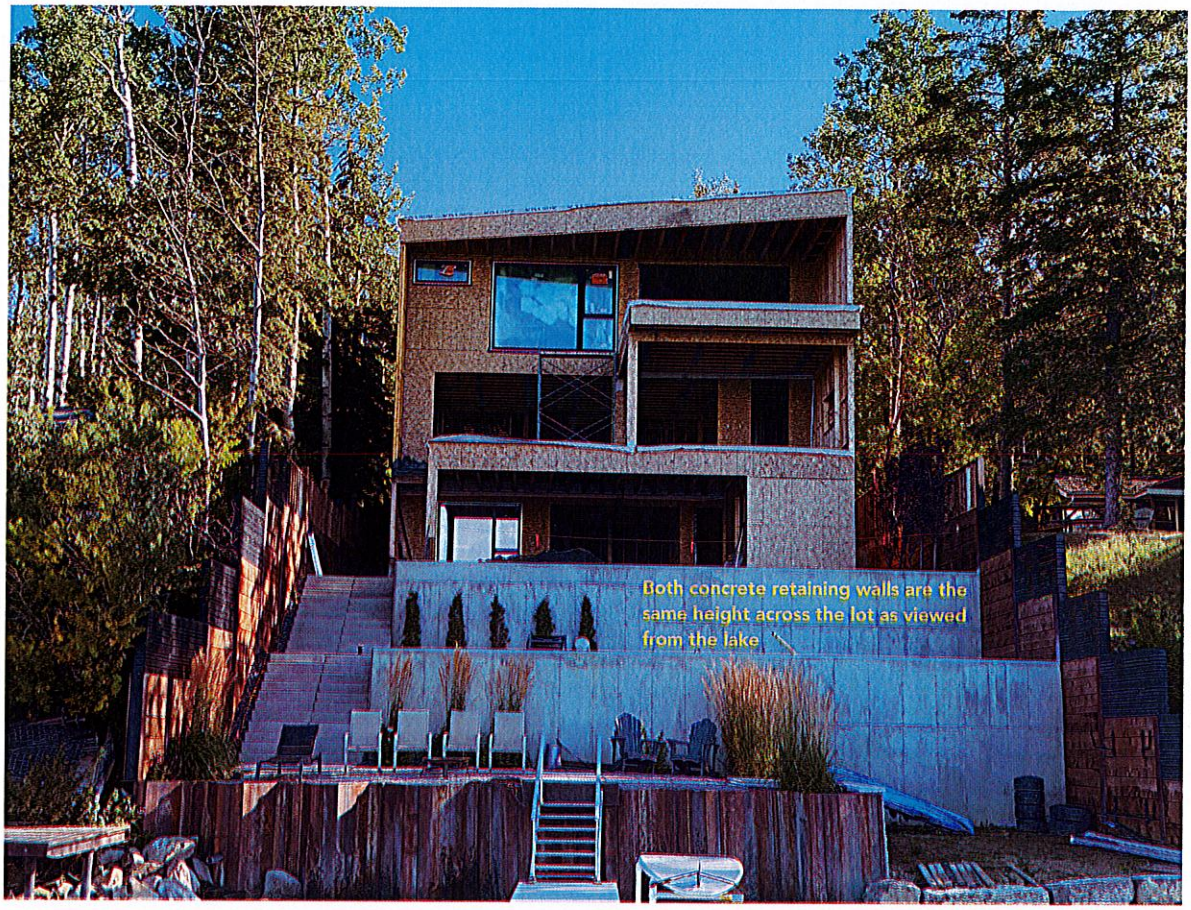
A survey plan showing the entire lot with all hardscape surfaces included = 49.7% which is within the 50% hard surface coverage allowed is attached.



The only other item that was mis interpreted after the first application was the heights of the retaining walls. All the concrete retaining walls are 2 meters in height with the exception of the boat lift/dock storage area (shown on the original plan) and the new fire pit area on tier 2. As the fire pit area was recessed within the original concrete walls, the height is 2.4m. However when looking at the lot from the lake view you cannot see this difference in height. See the pic below.

Although modifications have been made to suit the escarpment landscaping to accommodate the slope of the lot, we are submitting a new application with this revised plan. We look forward to meeting with MPC to discuss any questions they may have in person and coming to a final resolution that is acceptable by all parties.

Thank you,
Jodi Neish

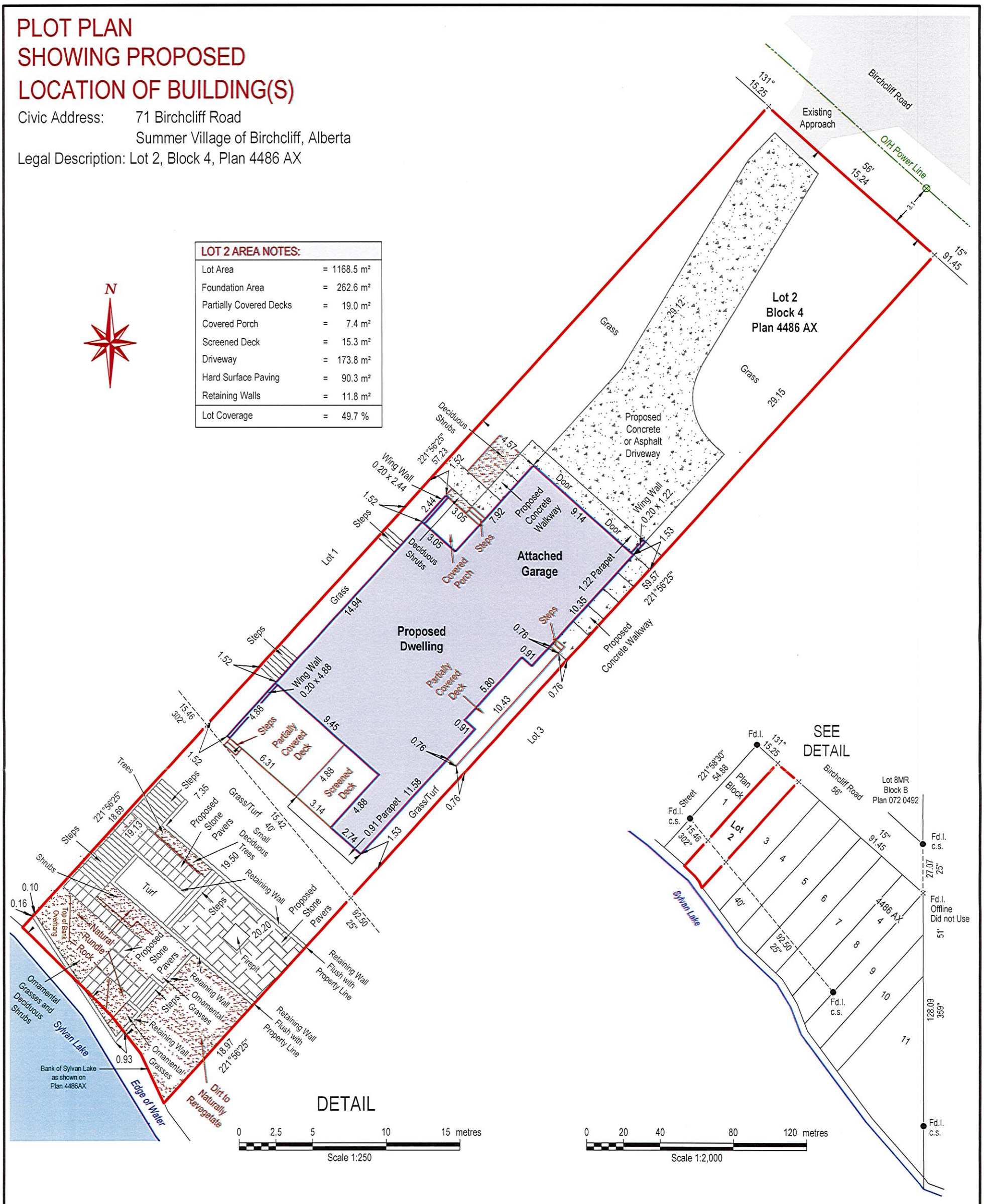

Both concrete retaining walls are the same height across the lot as viewed from the lake

PLOT PLAN
SHOWING PROPOSED
LOCATION OF BUILDING(S)

Civic Address: 71 Birchcliff Road
Summer Village of Birchcliff, Alberta

Legal Description: Lot 2, Block 4, Plan 4486 AX

LOT 2 AREA NOTES:	
Lot Area	= 1168.5 m²
Foundation Area	= 262.6 m²
Partially Covered Decks	= 19.0 m²
Covered Porch	= 7.4 m²
Screened Deck	= 15.3 m²
Driveway	= 173.8 m²
Hard Surface Paving	= 90.3 m²
Retaining Walls	= 11.8 m²
Lot Coverage	= 49.7 %



DETAIL

NOTES:

-Distances are in metres and decimals thereof. Measurements are shown to the outside face of the proposed building foundation wall at ground level.
-The above ground and buried facilities have not been located and are not shown on this plan. It is the responsibility of the owner(s) and contractor to have the facilities located prior to construction.
-Lot boundaries have been calculated from located survey evidence.
-Steps and Concrete Walkways are scaled from house drawings and actual dimensions need to be verified by builder.

COMPASS Geomatics Ltd.
11-4608 62nd Street
Red Deer, Alberta T4N 6T3
Office (403) 356-0111 Fax (403) 356-0114
www.compassgeomatics.ca

ALBERTA LAND SURVEYORS' ASSOCIATION
PERMIT NUMBER
P266
Compass Geomatics Ltd.

COMPASS DWG: 00574-20-PP1-R1 SURVEYED BY: CN

APPROVED BY:

Print Name & Signature

LAND USE DISTRICT

R1 -Lakeshore Residential District

REVISION SUMMARY

1 Revised Landscaping (11/10/21) PC/JW
0 Original Issue (10/28/21) PC/JW

CLIENT

Square Structures

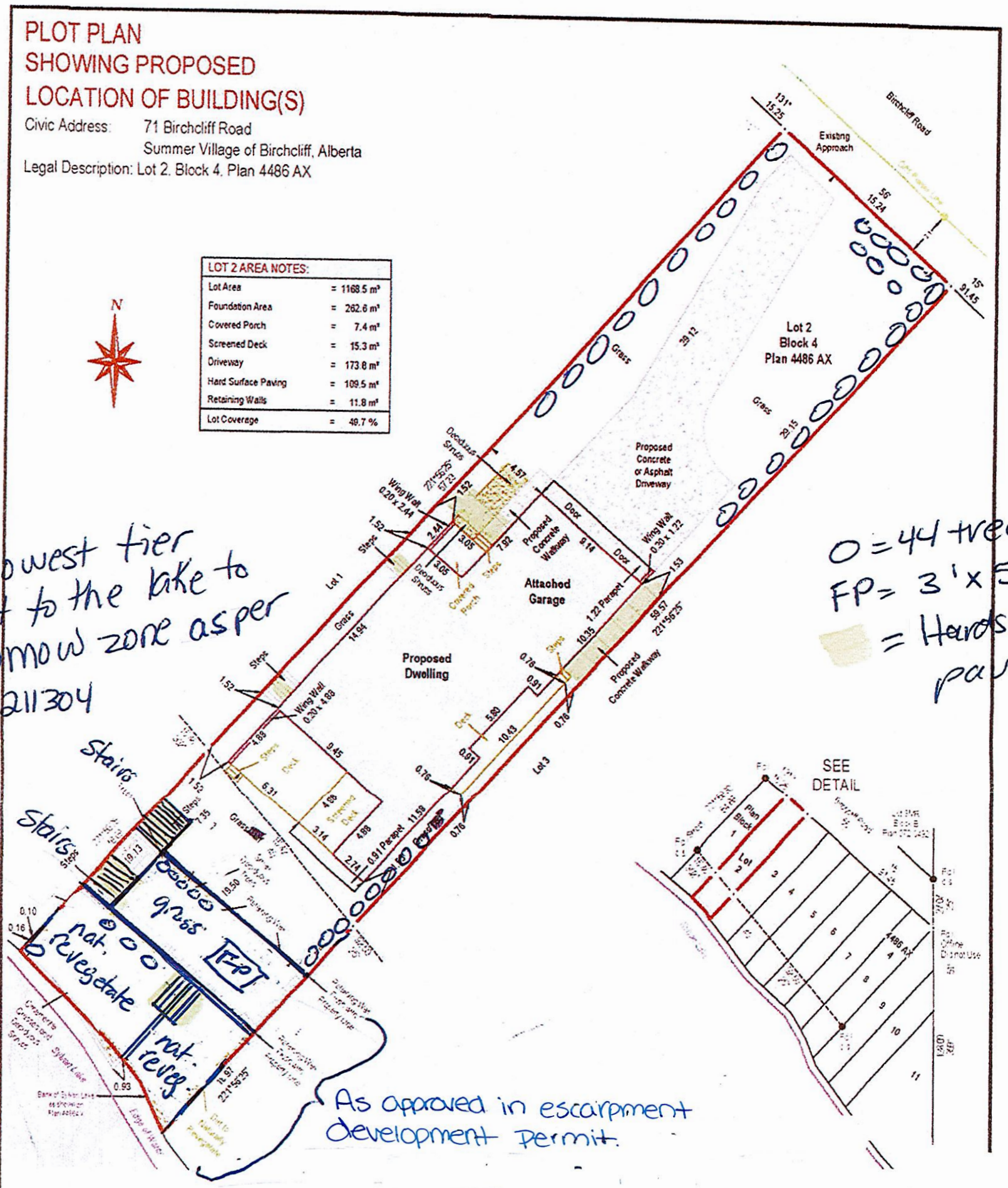
REV. 1 | PAGE 1 of 1

APPROVED LANDSCAPING PLAN AT THE TIME OF DWELLING APPROVAL. DECEMBER 3, 2021

PLOT PLAN SHOWING PROPOSED LOCATION OF BUILDING(S)

Civic Address: 71 Birchcliff Road
Summer Village of Birchcliff, Alberta
Legal Description: Lot 2, Block 4, Plan 4486 AX

LOT 2 AREA NOTES:	
Lot Area	= 1168.5 m²
Foundation Area	= 262.6 m²
Covered Porch	= 7.4 m²
Screened Deck	= 15.3 m²
Driveway	= 173.6 m²
Hard Surface Paving	= 109.5 m²
Retaining Walls	= 11.8 m²
Lot Coverage	= 49.7 %



Entire lowest tier adjacent to the lake to be a Narrow zone as per permit 211304

O = 44 trees to be planted
FP = 3' x 5'
= Hardsurface paving

As approved in escarpment development permit.

NOTES:
- Distances are in metres and decimals thereof. Measurements are given to the outside face of the concrete building foundation wall at ground level.
- The above ground and buried facilities have not been located and are not shown on this plan. It is the responsibility of the owners and contractors to have the facilities located prior to construction.
- Lot boundaries have been calculated from recorded survey evidence.
- Steps and Concrete Walkways are scaled from house drawings and actual dimensions need to be verified by owner.

COMPASS Geomatics Ltd.

ALBERTA LAND SURVEYORS' ASSOCIATION PERMIT NUMBER P266 Compass Geomatics Ltd.

COMPASS DWG

APPROVED BY:

Print Name & Signature

LAND USE DISTRICT
R1 Lakeshore Residential District

REVISION SUMMARY

CLIENT
Eclipse Structures

REF. 2 | PAGE 1 of 1

Summer Village of Birchcliff
Bay 8, 14 Thevenaz Industrial Trail
Sylvan Lake, AB T4S 2J5

DEVELOPMENT PERMIT

Permit Number: 211304

Municipal Address: 71 Birchcliff Road **Lot:** 2 **Block:** 4 **Plan:** 4486AX

Applicant: [redacted] **On Behalf Of:** -

The Development Involving: *Landscaping/Mechanized Excavation*

Has Been Approved Subject to the Following Conditions:

1) The payment of all outstanding property taxes or the making of arrangements, satisfactory to the Council, for the payment thereof, prior to the commencement of the development.
2) The development commences and continues in the manner applied for and that all development complies with the regulations and specifications of the Land Use By-Law under which this permit was issued.
3) The construction shall be completed within 12 months and the landscaping shall be completed within 2 years of the date of permit issuance.
4) The payment of a $3,000.00 completions deposit to ensure all conditions of this development permit have been met, including the completion of building construction within a one-year period, landscaping completed with two years, and any or all road damage repaired.
5) Shoreline erosion control measures are prohibited unless prior written approval has been received from the appropriate provincial authorities and the Municipality.
6) All parcels shall be graded to ensure that storm water is directed to a drainage ditch without crossing adjacent land, except as permitted by the Development Authority. All maintenance and upkeep shall be the responsibility of the property owner.
7) Any damage to public roads due to the construction shall be repaired immediately at the expense of the permit holder.
8) Copies of all applicable Building, Electrical, and Plumbing & Gas permits shall be provided to the administration office to be kept on file.
9) At minimum, the same number of trees removed from the escarpment to be replaced anywhere on the lot.
10) Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.
11) Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit.
12) Obtain a recommendation from Alberta Environment and Parks regarding the use of the existing piles, if they should be removed or remain in place, and follow that recommendation.
13) Future dwelling plans are to comply with the geotechnical report recommendations to ensure that the bank is protected, and the development is safe.
14) Land located below the top of bank/land with slope areas of a gradient of 15% or more, area to retain in its natural state. Variance was granted by the Municipal Planning Commission.
15) Sewer curb stop must remain accessible at all times, during and after construction.
16) Any development commenced prior to March 24, 2021 (21-day appeal period), is at the applicant's own risk.

You are hereby authorized to proceed with the development specified, provided that any stated conditions are complied with, that the development is in accordance with any approved plans and applications, and that construction conforms with any provincial and federal requirements relative to this development.

Date of Decision: March 1, 2021
Date of Issuance of Development Permit: March 3, 2021

Development Authority

Note:
1) The issuance of a development permit in accordance with the notice of decision is subject to the condition that it does not become effective until 21 days after the date that the development permit is issued.
2) This permit is valid for a period of 12 months from the date of its issue, or the date of the decision of the Council confirming it. If at the expiry of this period, the development has not been commenced or carried out with reasonable diligence as determined by the development officer, this permit shall be null and void, unless an extension to this period, being no longer than an additional 12 months, has been previously granted.
3) Development Authority may carry out on-site inspections of the development at any time.

DEVELOPMENT PERMIT

NO: 211304

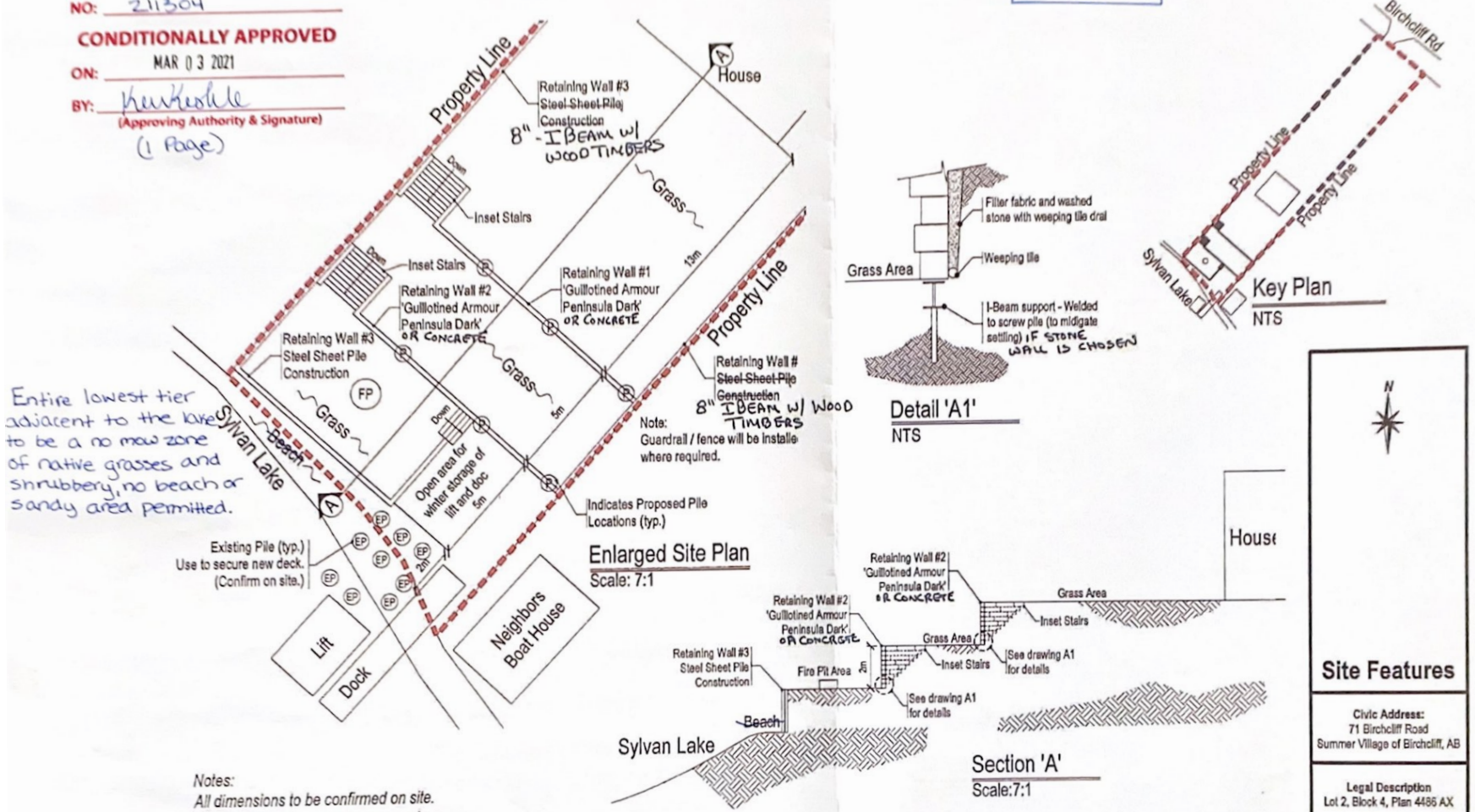
CONDITIONALLY APPROVED

ON: MAR 0 3 2021

BY: _____
(Approving Authority & Signature)

(1 Page)

RECEIVED



Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

Lowest Tier

Condition #10 on DP.

SCHEDULE B

DEVELOPMENT PERMIT

NO: 211304

CONDITIONALLY APPROVED

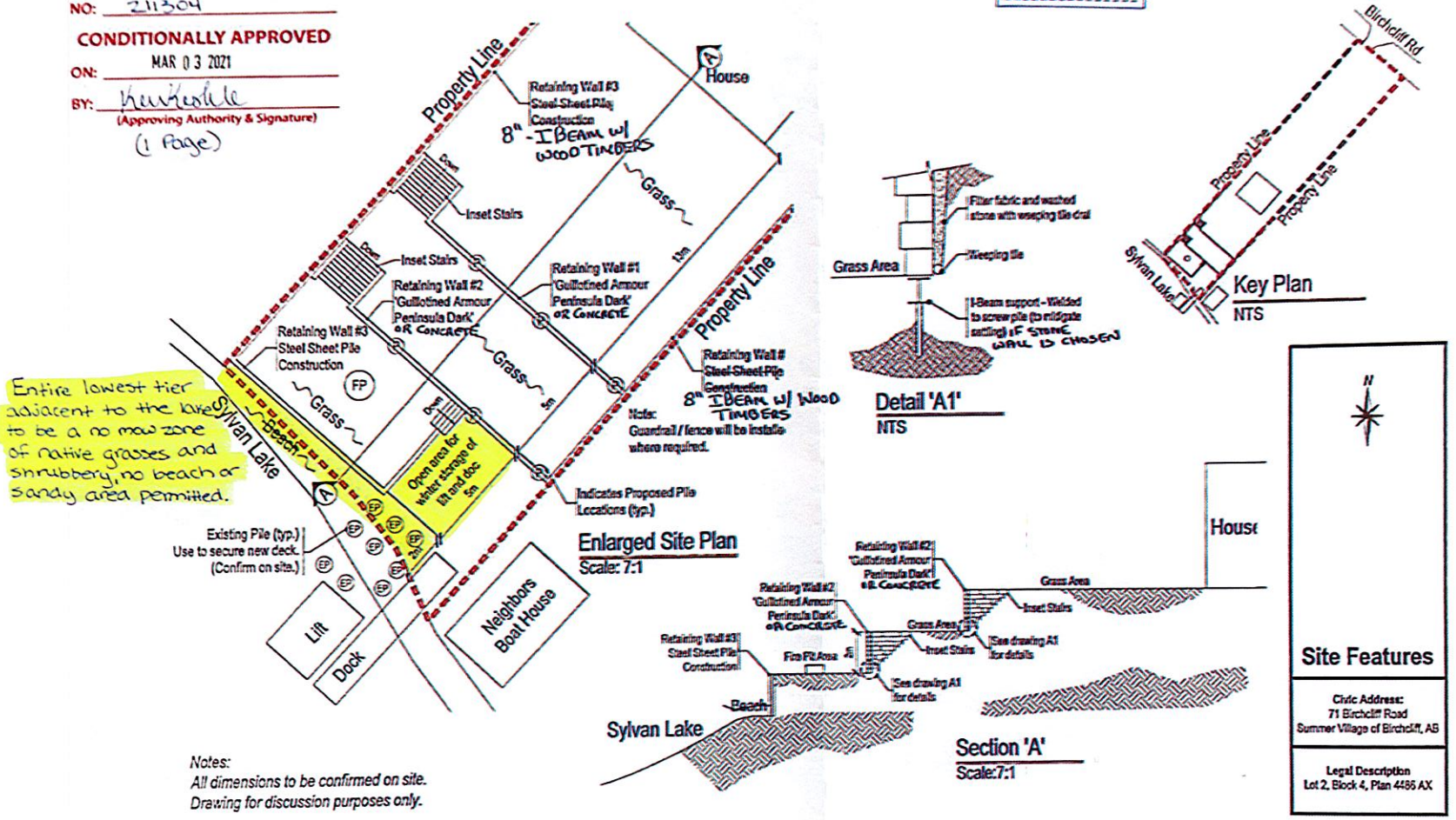
ON: MAR 03 2021

BY: [signature]

(Approving Authority & Signature)

(1 Page)

RECEIVED



Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.

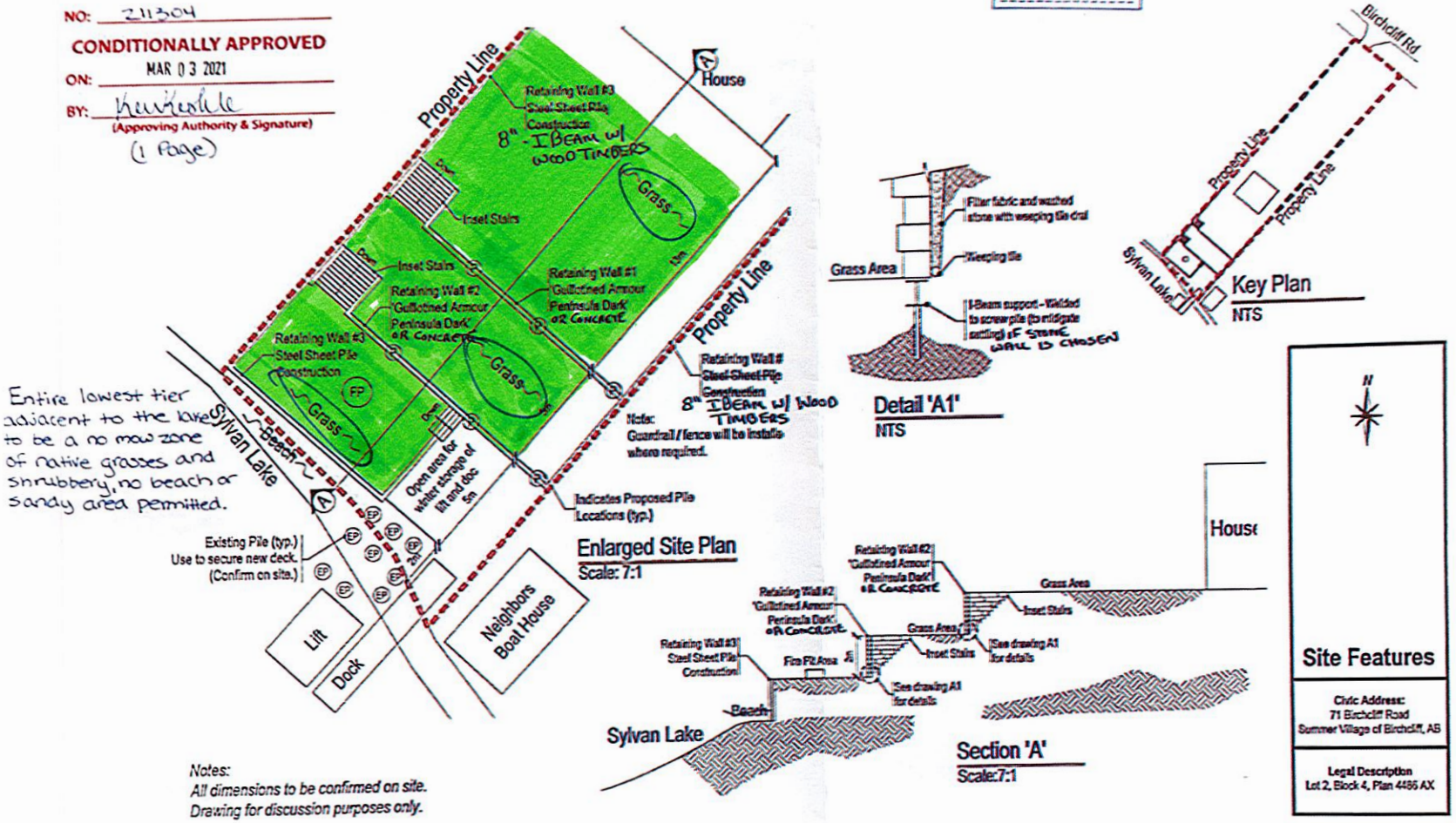
Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

SCHEDULE C

Other tiers
Condition #11 on DP.

DEVELOPMENT PERMIT
NO: 211304
CONDITIONALLY APPROVED
ON: MAR 03 2021
BY: [signature]
(Approving Authority & Signature)
(1 Page)

RECEIVED

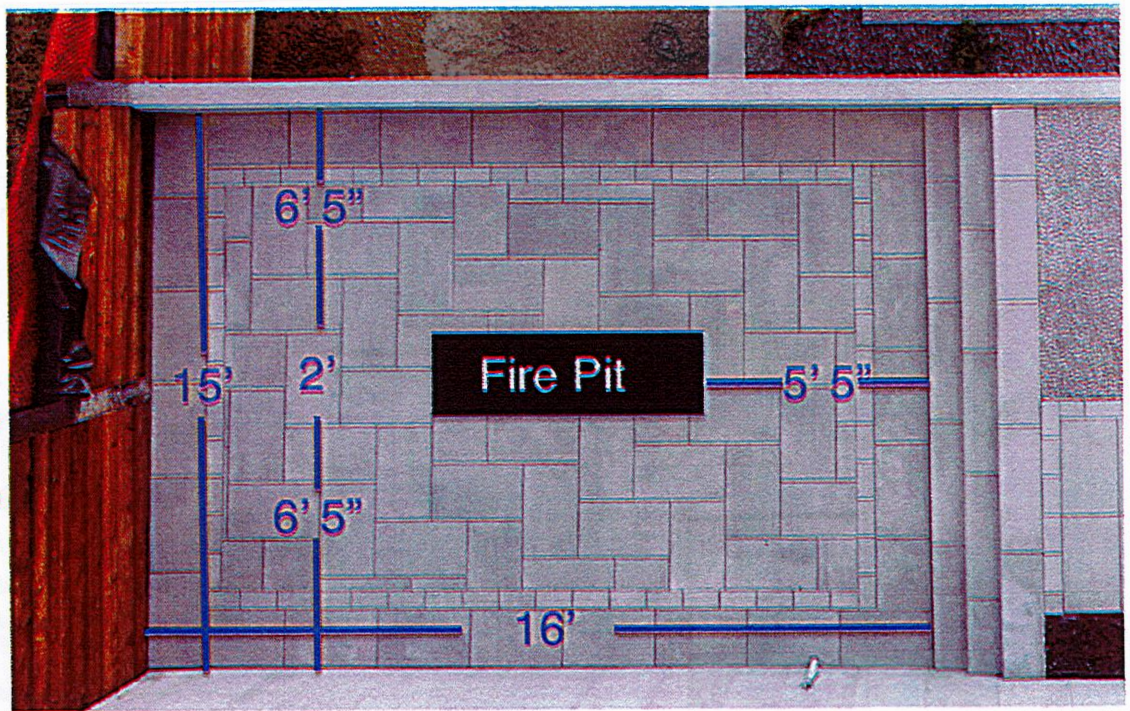


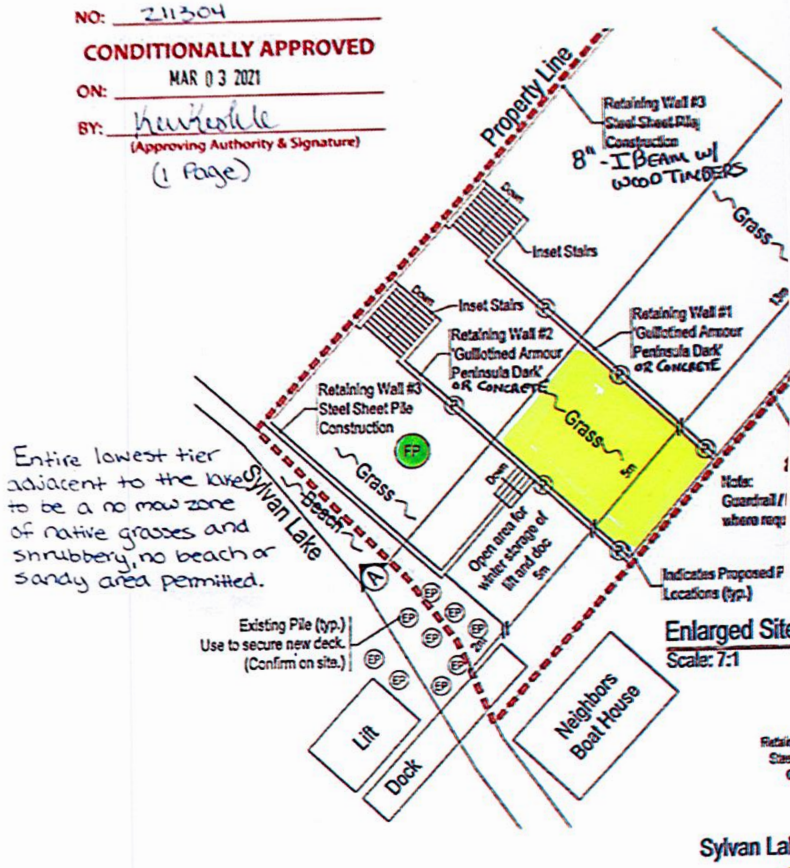
Firepit area proposed

Constructed

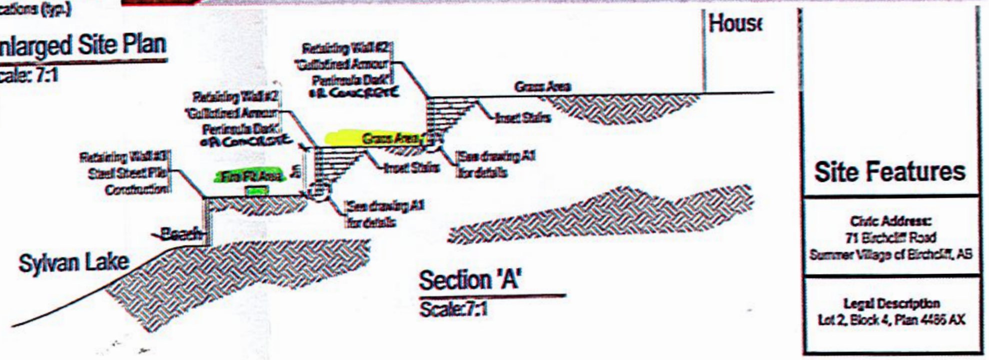
SCHEDULE D

DEVELOPMENT PERMIT
NO: 211304
CONDITIONALLY APPROVED
ON: MAR 03 2021
BY: [signature]
(Approving Authority & Signature)
(1 Page)





Property Line
Retaining Wall #3
Steel Sheet Pile
Construction
8" - I BEAM w/ WOOD TIMBERS
Grass
Down
Inset Stairs
Inset Stairs
Retaining Wall #1
'Guillotined Armour
Peninsula Dark'
OR CONCRETE
Retaining Wall #2
'Guillotined Armour
Peninsula Dark'
OR CONCRETE
Retaining Wall #3
Steel Sheet Pile
Construction
FP
Grass
Grass
Down
Open area for winter storage of lift and doc
5m
Sylvan Lake
Beach
A
Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.
Existing Pile (typ.)
Use to secure new deck.
(Confirm on site.)
EP
Lift
Dock
Neighbors Boat House
Indicates Proposed Pile Locations (typ.)
Enlarged Site Plan
Scale: 7:1



House
Retaining Wall #2
'Guillotined Armour
Peninsula Dark'
OR CONCRETE
Grass Area
Inset Stairs
Retaining Wall #2
'Guillotined Armour
Peninsula Dark'
OR CONCRETE
Grass Area
Retaining Wall #3
Steel Sheet Pile
Construction
Fire Pit Area
Inset Stairs
See drawing A1 for details
See drawing A1 for details
Beach
Sylvan Lake
Section 'A'
Scale: 7:1
Site Features
Civic Address:
71 Birchcliff Road
Summer Village of Birchcliff, AB
Legal Description
Lot 2, Block 4, Plan 4486 AX

Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

Location retaining wall exceeds maximum

SCHEDULE E

DEVELOPMENT PERMIT

NO: 211304

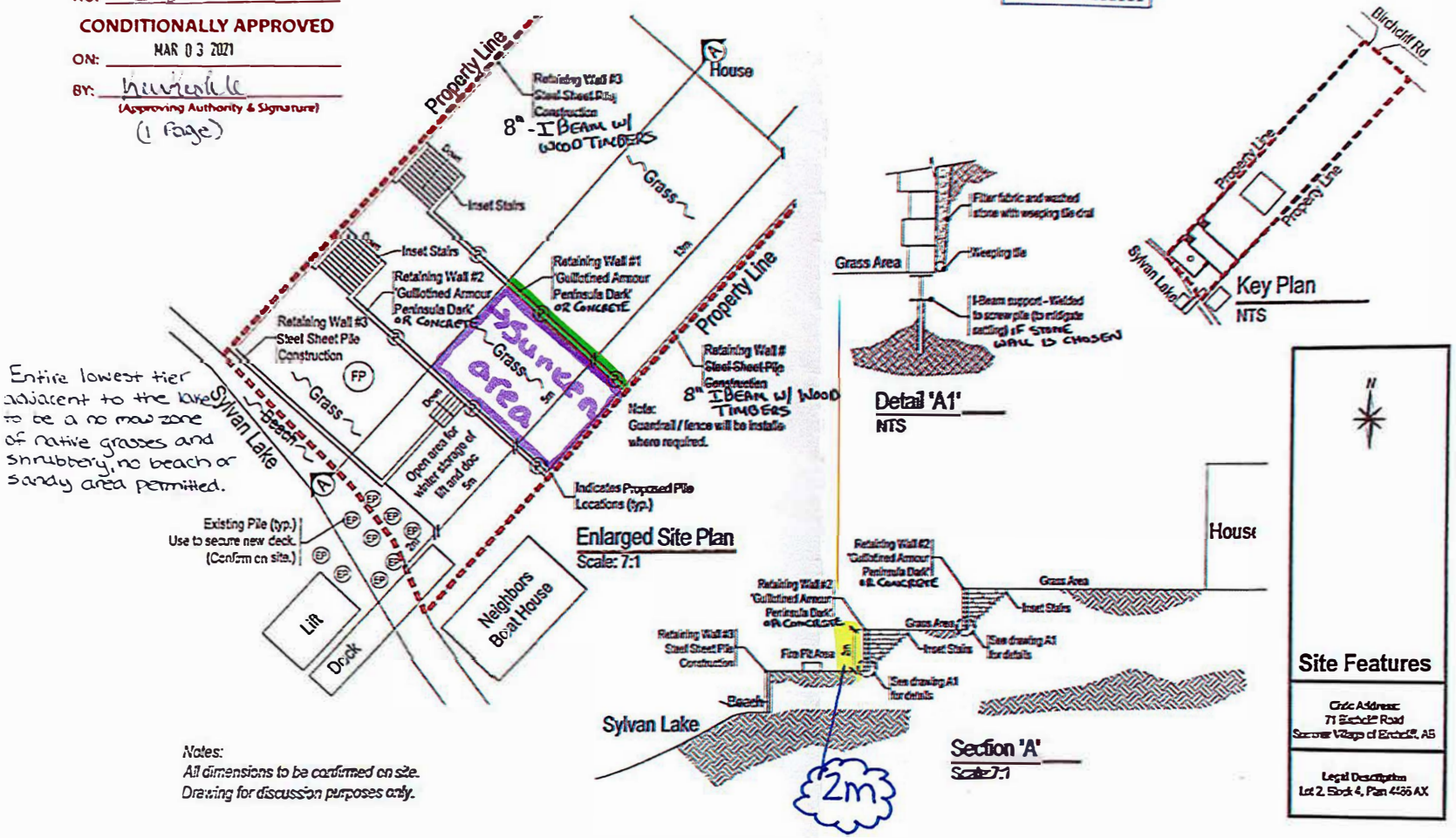
CONDITIONALLY APPROVED

ON: MAR 03 2021

BY: _____
(Approving Authority & Signature)

(1 page)

RECEIVED



Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

Minutes of a Municipal Planning Commission Meeting of the Summer Village of Birchcliff, Province of Alberta, held May 18, 2023, at the Summer Villages on Sylvan Lake Administration Office in Sylvan Lake, Alberta.

PRESENT:	Chair:	Ann Zacharias
	Councillor:	Frank Tirpak
	Member at Large:	Jonathan Paulgaard via zoom
	CAO:	Tanner Evans
	Development Officer:	Kara Hubbard
	Recording Secretary:	Teri Musseau
	Applicant(s):	Jodi Neish
		Ryan Neish

CALL TO ORDER Chair Zacharias called the meeting to order at 1:00 p.m.

AGENDA:

MPC-23- 004 Moved by Councillor Tirpak that the agenda be approved as presented.
CARRIED

DEVELOPMENT APPLICATIONS

1. 71 Birchcliff Road

Application for landscaping revisions/mechanized excavation on the escarpment at 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff.

Kara Hubbard and applicants left the meeting at 1:36 p.m.

MPC-23-005 Moved by Jonathan Paulgaard that the Municipal Planning Commission deny the application for landscaping revisions/mechanized excavation on the escarpment at 71 Birchcliff Road for the following reasons:

- Birchcliff's Land Use Bylaw part 3, section 4.1, subsection 4(5) states that the escarpment or slope areas with a gradient of fifteen (15) percent or greater shall be retained in their natural state.
- Section 6.3.4 of Birchcliff's Municipal Development Plan states that while recognizing that remedial actions may be necessary from time to time, the Summer Village still strongly desires that banks abutting the shoreline remain as natural as possible to retain natural ecosystems. The proposed development does not reflect an effort to keep the escarpment area natural.
- The fact that the proposal shows the entire parcel coverage below the 50% threshold is not relevant in this situation as it does not address the need for the escarpment to remain as natural as possible. It was clear in the initial approval that remedial actions were necessary as shown in the geotechnical report, which is why retaining walls were approved. However, the rest of the proposed development is not considered to be natural. The lands will have to return to what was originally approved, which is:

- winter storage area labeled as "tier 1 (lower) is to be entirely a no-mow zone, consisting of native grasses and shrubbery with no sandy area permitted, as indicated on the originally approved drawings. A no-mow zone is a vegetative buffer strip above the high-water mark on the shoreline and allows native plants to seed and re-establish.
- Areas labeled on this application as "tier 1" (upper), and "tier 2", along with the entire yard above the highest retaining wall are to be entirely grass. Paving stones, rocks, gravel, and any other material must be removed prior to filling with topsoil and sodding. Nothing other than grass, trees, shrubs, or plants shall remain. The stairs between each tier may remain but any walkway or paving stones connecting them on top of each tier must be removed and replaced by grass. The firepit area within what is labeled "tier 2" must be removed entirely with the sunken area backfilled to match the rest of tier 2 and covered in grass.
- The firepit area originally approved on the scaled drawing appears to be 1.5m and can remain at that size on either tier.
- The drawings submitted for this application seem to show the lowest retaining wall encroaching past the property line, which was not shown on the originally approved drawing. Please ensure that all development takes place within your property lines.

- Should Superior Safety Codes require a railing, the proposed design of the railing must be submitted to the Municipal Planning Commission for approval prior to installation.

CARRIED

ADJOURNMENT:

MPC-23-006 Moved by Chair Zacharias that the Municipal Planning Commission meeting be adjourned at 2:52 p.m.

CARRIED

_____
ANN ZACHARIAS, CHAIR

_____
TANNER EVANS, CAO

Summer Villages Administration Office
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
(403) 887-2822

NOTICE OF DECISION

MUNICIPAL PLANNING COMMISSION

May 24, 2023

Jodi & Ryan Neish
Box 8986
Sylvan Lake, AB T4S 1S6

RE: DEVELOPMENT APPLICATION FOR 71 BIRCHCLIFF ROAD

An application was submitted for landscaping revisions/mechanized excavation on the escarpment at 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff. This application went before the Municipal Planning Commission as a discretionary use and for variance requests.

Finding of Fact:

Upon hearing and considering the representations and the evidence of the parties concerned, the Commission find the facts in the matter to be as follows:

1. Land located below the top of bank/top of escarpment should be in a natural state, a variance is required. (LUB Part Three: 4.1 4(5)).
2. Mechanized Excavation, Stripping and Grading is listed as a discretionary use, and retaining walls greater than 1m (3.28ft) in height above any adjoining grade requires a development permit, therefore MPC approval is required. (LUB Part Three: 4.1 4(4)(f)).

Decision of the Municipal Planning Commission:

Birchcliff's Land Use Bylaw part 3, section 4.1, subsection 4(5) states that the escarpment or slope areas with a gradient of fifteen (15) percent or greater shall be retained in their natural state. Section 6.3.4 of Birchcliff's Municipal Development Plan states that while recognizing that remedial actions may be necessary from time to time, the Summer Village still strongly desires that banks abutting the shoreline remain as natural as possible to retain natural ecosystems. The proposed development does not reflect an effort to keep the escarpment area natural.

The fact that the proposal shows the entire parcel coverage below the 50% threshold is not relevant in this situation as it does not address the need for the escarpment to remain as natural as possible. It was clear in the initial approval that remedial actions were necessary as shown in the geotechnical report, which is why retaining walls were approved. However, the rest of the proposed development is not considered to be natural. Therefore, the application is denied, and the lands will have to return to what was originally approved, which is:

- Winter storage area labeled as "tier 1 (lower)" is to be entirely a no-mow zone, consisting of native grasses and shrubbery with no sandy area permitted, as indicated on the originally approved drawings. A no-mow zone is a vegetative buffer strip above the high-water mark on the shoreline and allows native plants to seed and re-establish.
- Areas labeled on this application as "tier 1 (upper)", and "tier 2", along with the entire yard above the highest retaining wall are to be entirely grass. Paving stones, rocks, gravel, and any other material must be removed prior to filling with topsoil and sodding. Nothing other than grass, trees, shrubs, or plants shall remain. The stairs between each tier may remain but any walkway or paving stones connecting them on top of each tier must be removed and replaced by grass. The firepit area within what is labeled "tier 2" must be removed entirely with the sunken area backfilled to match the rest of tier 2 and covered in grass.
- The firepit area originally approved on the scaled drawing appears to be 1.5m and can remain at that size on either tier.
- The drawings submitted for this application seem to show the lowest retaining wall encroaching past the property line, which was not shown on the originally approved drawing. Please ensure that all development takes place within your property lines.

As discussed during the meeting, a railing or guard system installed on the retaining walls was not part of the original design plans. While the requirement for a railing is governed by the building code and would be required by Superior Safety Codes, any development on the escarpment requires a variance from the Municipal Planning Commission. Should Superior Safety Codes require a railing, the proposed design of the railing must be submitted to the Municipal Planning Commission for approval prior to installation.

Appeal:

Discretionary Use/Variance Request Applications are appealable to the Subdivision and Development Appeal Board, as provided for in Part 17, of the Municipal Government Act. Written statements relevant to the development and reasons for appeal along with a $400.00 appeal fee should be submitted to the Secretary of the Subdivision and Development Appeal Board of the Summer Village of Birchcliff, #2 Erickson Drive, Sylvan Lake, Alberta T4S 1P5, within 21 days following the date of this notice.

Summer Villages Administration Office
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
(403) 887-2822

For further information contact the Secretary of the Subdivision and Development Appeal Board at 403-887-2822.

Sincerely,

Kara Hubbard
Development Officer

June 12, 2023

Secretary of the Subdivision and Development Appeal Board of the Summer Villages of Birchcliff
#2 Ericson Drive
Sylvan Lake, Alberta
T4S 1P5

Subdivision and Development Appeal Board;

This is an appeal letter of the Notice of Decision by the MPC on May 24, 2023 for landscaping revisions on the escarpment at 71 Birchcliff Road in the Summer Village of Birchcliff.

A development permit was approved for Landscaping/Mechanized excavation of the escarpment due to bank instability as per the geotechnical report. The escarpment landscape plan was submitted before house plans were initiated, so we had no idea of total hardscape coverage.

Over many months of discussions with the Development Officer it was determined that there was a misinterpretation of what had been approved. The majority of the construction was completed as per our understanding and interpretation, however the Summer Village Development officer noted that there were some discrepancies on what was approved vs what we interpreted could be constructed. After many months of emails and in person conversations with no conclusions, it was decided that we submit a revised landscape plan to get in front of MPC and finalize the landscape plan.

Our proposed revision to the escarpment went to MPC On May 23, 2023 and the application was denied. We appeal the following decisions by MPC (in red) with our reasons why we disagree:

1) Areas labeled on this application as "tier 1(upper)", and "tier 2", along with the entire yard above the highest retaining wall are to be entirely grass. Paving stones, rocks, gravel, and any other material must be removed prior to filling with topsoil and sodding. Nothing other than grass, trees, shrubs, or plants shall remain. The stairs between each tier may remain but any walkway or paving stones connecting them on top of each tier must be removed and replaced by grass. The firepit area within what is labeled "tier 2" must be removed entirely with the sunken area backfilled to match the rest of tier 2 and covered in grass.

MPC denied our application on the merits that the development is not considered natural, however in the permit #14 states that a variance is granted to change the slope of the bank and for it to retain its natural state - which means they are approving us to change it. The original and the revised landscape plan is not natural. We had to install 3 engineered retaining walls to stabilize the subsiding bank. This was done as per the geotechnical report. Once the 3 retaining walls were installed all you can see from the lake are the 3 retaining walls. From the lake view you cannot visually see what medium (grass or rock) is on each of the tiers therefore Im not sure who is benefiting from grass on these tiers. Not anyone on the lake. The only people that can see these tiers are the residents and the adjacent neighbours and we have received no complaints or objections from them. As it currently is constructed the entire lot coverage is under 50% hard surfacing.

Tier 1 (upper) consists of pavers from the stairs for direct access to the dock and dock storage area, perimeter filled with shrubs, trees and grasses and the remaining area is covered in a natural rundle rock. MPC is asking for us to remove the pathway of pavers and the rundle rock and plant grass. We have to have accessible access to the boat dock as our elderly parents will be staying with us and we need to provide them with safe access to the lake. Planting grass around the pavers could be done however **as per the geotechnical report automatic sprinklers are prohibited on the bank** and due to a south facing back yard, it would be difficult for sod to live. It would die and weeds would grow….which is not a desirable aesthetic or environmentally responsible.

Tier 2 consists of a path made of individual pavers from the stairs to the fire pit area, a small turfed area and a sunken fire pit area with pavers surrounding it. The path required to provide safe access to this tier.
If its a natural look the MPC is looking for, why would they want us to remove the turf? Its green, natural looking and permeable as grass? We would like to keep it, again since its so hot on the bank, it would be difficult for sod to grow successfully.

MCP also wants us to backfill the sunken fire pit area with dirt to keep it one level. There is no physical access for equipment to get any material in there. A track hoe would not reach this tier from the lake, making it impossible. Again we are unsure how filling in a 20" sunken area with soil would make the bank more natural. We could plant grass or lay sod in this sunken area but again, without a lot of watering would be very difficult to establish and maintain. **Plus as stated in the geotechnical report sprinklers are prohibited and wooden decks and paved patios are permitted.**

2) The firepit area originally approved on the scaled drawing appears to be 1.5m and can remain at that size on either tier.

We have purchased a stone firepit which is 70" long and 30" wide and don't understand why there is a restriction for the size of fire pit that can be constructed.

3) As discussed during the meeting, a railing or guard system installed on the retaining walls was not part of the original design plans. While the requirement for a railing is governed by the building code and would berequired by Superior Safety Codes, any development on the escarpment requires a variance from the Municipal Planning Commission. Should Superior Safety Codes require a railing, the proposed design of the railing must be submitted to the Municipal Planning Commission for approval prior to installation.

A railing will definitely be required for safety reason on each of the 2 concrete retaining walls. MPC is requesting that we submit for approval of the safety railing that will be installed. According to Alberta Building Code, 9.8.8.6 (2) guards/ safety railing must meet the following criteria - design, style etc does not require approval from MPC as it must meet the requirements of the ABC.

occupancy, where children are unlikely to be present except under strict supervision.

A-9.8.8.6.(2) Horizontal and Vertical Clearances in Guards so as to not Facilitate Climbing. Compliance with Sentence 9.8.8.6.(1) can be achieved by satisfying one of the Clauses in Sentence 9.8.8.6.(2).

Clause 9.8.8.6.(2)(a) allows guards with protrusions that are greater than 450 mm apart horizontally and vertically as the distance between the protrusions will be great enough to reduce the likelihood that young children will be able to get a handhold or toehold on the protrusions and climb the guard.

In conclusion we do the following:

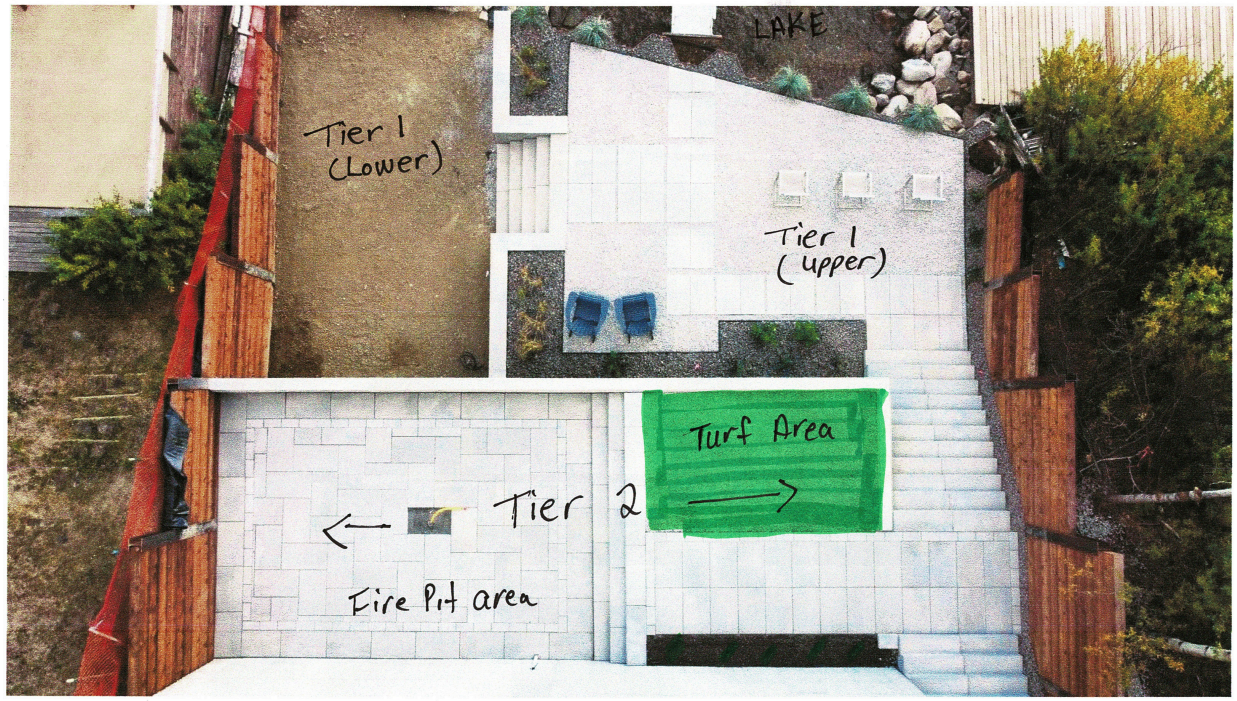
1) Leave existing pathway pavers in place to access the fire pit, on tier 2 and path to boat dock and boat storage. Pavers are noted on the geotechnical report as permitted on the escarpment.
2) We will remove the rundle rock on upper Tier 1 if absolutely necessary and plant grass, however we have no way of watering the grass and due to it being south facing it will not grow well. Also indicated on the Geotechnical report automatic sprinklers are prohibited.
3) We will not backfill the fireplace area to raise it up to the height of the rest of tier 2. This is physically impossible and will not change the look of the landscaping to natural as requested by MPC. We will however remove some of the pavers around the fire pit area and plant grass.

4) We do not want to remove the turf area. If its a natural look the MPC wants, this looks, feels and is permeable exactly like grass.
5) If Superior Safety codes notes that we have to install railing on top of the two existing retaining walls for safety reasons, we do not feel that the style or design is required to be submitted for approval. This is an Alberta Building Code requirement not jurisdiction of the Summer Village. The summer Village does not approve the style or design of any railings/guards on a deck or fence, so unsure why they would want or have authority to do this now.

Thank you

Jodi and Ryan Neish

PHOTOS
1) Aerial photo of what is existing.



2) View of lot from the lake. You cannot see what is on each tier whether it be grass or pavers.

3) Aerial photo showing what we propose to keep and propose to change if required. The only people that can see what is on each tier is the adjacent neighbours.

F) General Slope Recommendations

The following general recommendations apply to residential development at this site.

1) In order to reduce the possibility of surficial sloughing, the slopes must be kept well vegetated at all times. The factor of safety of a slope will increase slightly as vegetation is maintained on the slope surface to protect the subgrade soil from weathering.

2) The native soil could be susceptible to erosion. Surface drainage and roof water must be discharged on the ground surface and kept away from the developed slope and the new building. No water is permitted to discharge below grade as that could cause erosion and potential slope failure.

3) All underground services should be installed to the highest standards to minimize the risk of seepage infiltration into the slope area due to leaking water.

4) No fill or excavated material from the building site (basement etc.) may be placed at the top of the slope.

5) Construction of such items as wooden decks and paved patios would be permitted.

6) Automatic sprinkler system, ornamental fountains, other water retaining structure are prohibited.

7) The finished site grade should be properly sloped to direct all surface water from the house and sloped areas. A minimum grade slope of 3% is advised at this site.

NOTICE OF APPEAL

This is to advise that an appeal has been received, on June 13, 2023, from the applicants, appealing the denial of a development permit from the Municipal Planning Commission for landscaping revisions/mechanized excavation on the escarpment, for the property located at 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff.

The Development Appeal Board Hearing will be held as follows:

DATE: **Tuesday, July 11th, 2023**

TIME: **10:00 a.m.**

LOCATION: **Summer Villages on Sylvan Lake**
2 Erickson Drive
Sylvan Lake, AB T4S 1P5

Documents regarding the development permit, and the notice of appeal are available for public inspection on the Summer Village Administration Office website. The Subdivision and Development Appeal Board will hear the appellant or any person acting on behalf of the appellant; the development authority or a person acting on behalf of the development authority; any person who received this notice and wishes to be heard or a person acting on behalf of that person; and any other person who claims to be affected by the decision.

Written submissions addressed to the Subdivision and Development Appeal Board Secretary and received at the Administration office prior to 4:00 p.m. on July 10, 2023, will be submitted to the Board at the Hearing.

Teri Musseau
Secretary
Subdivision and Development Appeal Board

Subdivision & Development Appeal Board
Submissions of the Development Authority for the Summer Village of Birchcliff
July 11, 2023 @ 10:00 A.M.

Appellants:	Jodi & Ryan Neish
Appeal:	Decision of the Municipal Planning Commission dated May 24, 2023
Legal Description of Lands:	Lot 2, Block 4, Plan 4486AX
Municipal Address:	71 Birchcliff Road
District:	R1 (Lakeshore Residential) District (the "R1 District").

1. Introduction:

a) The appellants are appealing the decision of the Municipal Planning Commission ("The MPC") issued on May 24, 2023 denying an application for a development permit for landscaping revisions/mechanized excavation on the escarpment on the Lands. (the "MPC Decision").
b) The Summer Village of Birchcliff (the "Municipality") submits the Subdivision and Development Appeal Board (the "SDAB") should uphold the decision of the MPC.
c) For clarity, the landscaping revisions/mechanized excavation has already been constructed on the Lands.

2. Background:

d) The registered owners of the Lands are the Appellants.
e) The history of this matter is as follows:
    I. March 2021 – The Appellants applied to the MPC to obtain permission for development on the escarpment of the Lands, the application was approved by MPC. The Development Authority issued DP#211304 (the "2021 DP"). **TAB 1**
    II. October 6, 2021 – The Development Authority conducted a site inspection and found that the landscaping constructed was not done in accordance with the approved plans.
    III. After many conversations, the Development Authority notified the developer that either the landscaping would have to be removed and changed back to what was approved, or approval for what had been constructed would need to be granted by the MPC. The appellants then applied to the MPC for approval of a different DP. **TAB 2**
    IV. May 18, 2023 – The MPC issued a decision denying the application for a development permit for the landscaping revisions/mechanized excavation on the escarpment of the Lands. **TAB 3**
    V. June 12, 2023 – The Appellants filed a Notice of Appeal.

3. Relevant Legislative Documents:

f) Municipal Government Act (The "MGA")

I. In determining an appeal, the SDAB, among other things, must comply with applicable statutory plans and must comply with the Land Use Bylaw (s 687(3)). In addition, the SDAB may do the following:

687(3) In determining an appeal, the board hearing the appeal referred to in subsection (1) …

(c) may confirm, revoke or vary the order, decision or development permit or any condition attached to any of them or make or substitute an order, decision or permit of its own;

(d) may make an order or decision or issue or confirm the issue of a development permit even though the proposed development does not comply with the Land Use Bylaw, it its opinion,

(i) the proposed development would not

(A) unduly interfere with the amenities of the neighbourhood, or

(B) materially interfere with or affect the use, enjoyment or value of neighbouring parcels of land. And

(iii) the proposed development conforms with the use prescribed for that land or building in the Land Use Bylaw.

<u>Land Use Bylaw No.170/13 (The "LUB")</u>

g) All developments in the Municipality require a development permit, unless specifically exempted (Part 2, ss 2.1 and 2.2).

h) The LUB landscaping requirements provide the following:

Part 3:4.1

4(5) Landscaping, Environmental Conservation and Development

The following standard of landscaping shall be required for all areas of the parcel not covered by buildings, driveways, storage and display areas:

(a) The conservations of existing trees and/or shrubs to the maximum extent possible;

(b) The retention, in their natural state of:

a. Swamps, gullies and natural drainage courses;
b. Unstable land;
c. Land subject to flooding and/or located within a 1:100 year floodway or flood fringe area as determined by an engineer or flood study;
d. Escarpment or slope areas with a gradient of fifteen (15) percent or greater; and
e. Land located below the top of the bank of any water body or water course.

i) The Municipal Planning Commission (the "MPC") may grant a variance or approve an application for a permit even though the proposed development does not comply with the bylaw based on the following:

Part Two: Development Permits, Contravention & Appeal
2.4 Variances

(2) The Municipal Planning Commission may approve an application for Development Permit even though the proposed development does not comply with this bylaw or is a non-conforming building if, in the opinion of the Municipal Planning Commission:

(a) The proposed development would not;

(i) Unduly interfere with the amenities of the neighbourhood; or

(ii) Materially interfere with or affect the use, enjoyment or value of neighbouring parcels of land;

And

(b) The proposed development conforms with the use prescribed for that land or building in this bylaw.

(3) In approving an application for development pursuant to subsections (2)(a) and (2)(b), the Municipal Planning Commission shall adhere to the following:

(a) A variance shall be considered only where warranted by the merits of the proposed development and in response to irregular parcel lines, parcel shapes or site characteristics which create difficulties in siting structures within the required setback or in meeting the usual bylaw requirements;

(i) Except as otherwise provided in this bylaw, there shall be no variance from the following:

i. Parcel Coverage; and

ii. Building Height

Municipal Development Plan Bylaw 172-12 (The "MDP").

j) The MDP speaks to the conservation of the environment. In particular it says "Lake water quality and the retention of sensitive environments, including the immediate shoreline contact zones and riparian areas along the lake are essentially important" (s 6.1).
k) The MDP notes "While remedial actions may be necessary from time to time, the Summer Village strongly desires the banks abutting the shoreline to remain as natural as possible to retain natural ecosystems. All development, including but not limited to the clearing of vegetation and the building of staircases and platforms shall require a development permit" (Policy 6.3.4).
l) The MDP also notes that development along the lake shoreline, including any abutting bank, is to be consistent with the provisions of Section 6 (Policy 5.3.8).

Intermunicipal Development Plan (the "IDP")

m) The IDP includes objectives to create a unified approach to environmental management, to protect long-term health of the watersheds and waterbodies, and to balance environmental protection with appropriate development.
n) 6.2.14 states a development design plan shall be developed that includes minimum requirements to demonstrate how the design will mitigate negative watershed impacts through:
    - A planting plan including native vegetation.

- Sediment control plan.
- Drainage plan
- Parcel Coverage.
- Any other criteria at the discretion of the approving authority.

Other.

o) Aside from the Municipality's statutory documents, there are a number of publications from Alberta Environment that support the notion of leaving banks abutting the shoreline as natural as possible, including:
   I. "Respect Our Lakes: Aquatic Vegetation and Lake Health"
   II. "Respect Our Lakes: Responsible Lake Living"
   III. "Stepping Back From the Water"
   IV. Alberta Environment discusses shorelines and riparian areas noting they are "among the most productive and valuable of all landscape types". It references the "Stepping Back from Water" Guidelines.

4. Submissions:

p) The Municipality's LUB and MDP align with the municipal purposes of the MGA and set out a regulatory scheme that aims to preserve and conserve both Sylvan Lake and its shoreline for the enjoyment of all. The Municipality has adopted the current LUB and MDP to regulate and restrict development as presented in effort to limit environmental impact.

   I. Landscaping approved in the DP was not met.

q) The LUB provides that areas of a parcel not covered by buildings, driveways, storage or display areas shall conserve existing trees and shrubs to the maximum extent possible and that the escarpment or slope areas with a gradient of 15% or greater and land located below the top of bank shall be retaining in their natural state. While remedial actions were required for the bank and it is an understanding that the bank will no longer be entirely natural, any remedial actions should include substantial replacing and replanting of vegetation, as outlined in the approved landscaping plan.

r) The landscaping specified in the landscaping plan showed each tier covered in nearly 100% grass and vegetation, other than a small firepit area. This landscaping plan should have been followed as there is no development permit granted that includes concrete, turf, or large firepit areas.

s) Development Permit Condition #14 (DP#211304) is referred to in the appellant's submission. The submission argues that the variance granted by the MPC to allow development on the bank essentially allowed the bank to no longer remain in natural state. While it is true that the MPC granted a variance to the regulation in the Land Use Bylaw in order to allow retaining walls to stabilize the slope, the development permit is still required to conform with the landscaping plans approved during that decision, as noted in 4(q) above.

t) The appellant's submission mentions the fact that with the existing, unapproved landscaping, the parcel coverage would remain under the allowable 50%. It is true that a maximum of 50% parcel coverage is a requirement of the development permit. Regardless of the site's total parcel coverage, the approved permit does not allow for escarpment areas to be altered outside of the approved landscaping requirements, and the LUB restrictions listed above still apply.

u) Firepit – Condition #11 (DP#211304) states "Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit". The proposed and approved drawings show a small circular firepit that is approximately 1.5m across and the

rest of the area was to remain grass. There are no fire code regulations or regulations in the Municipality's bylaws that require a larger, more substantial firepit perimeter.

v) The appellant's submission states that the no-mow zone was not defined until a second development permit for the construction of the house was obtained, after rundle rock was installed. However, on the originally approved March 3, 2021 landscaping plan it states "entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted".

5. Conclusion:

w) In conclusion, the Municipality submits the decision of the MPC should be upheld and no development permit should be granted. Ultimately the original landscaping plan was approved given the natural aspects of the plan and was in accordance with the legislative requirements provided in this report.

TAB 1

Summer Village of Birchcliff
Bay 8, 14 Thevenaz Industrial Trail
Sylvan Lake, AB T4S 2J5

DEVELOPMENT PERMIT

Permit Number: 211304

Municipal Address: 71 Birchcliff Road **Lot:** 2 **Block:** 4 **Plan:** 4486AX

Applicant: Ryan & Jodi Neish [redacted] **On Behalf Of:** -

The Development Involving: *Landscaping/Mechanized Excavation*

Has Been Approved Subject to the Following Conditions:

1) The payment of all outstanding property taxes or the making of arrangements, satisfactory to the Council, for the payment thereof, prior to the commencement of the development.
2) The development commences and continues in the manner applied for and that all development complies with the regulations and specifications of the Land Use By-Law under which this permit was issued.
3) The construction shall be completed within 12 months and the landscaping shall be completed within 2 years of the date of permit issuance.
4) The payment of a $3,000.00 completions deposit to ensure all conditions of this development permit have been met, including the completion of building construction within a one-year period, landscaping completed with two years, and any or all road damage repaired.
5) Shoreline erosion control measures are prohibited unless prior written approval has been received from the appropriate provincial authorities and the Municipality.
6) All parcels shall be graded to ensure that storm water is directed to a drainage ditch without crossing adjacent land, except as permitted by the Development Authority. All maintenance and upkeep shall be the responsibility of the property owner.
7) Any damage to public roads due to the construction shall be repaired immediately at the expense of the permit holder.
8) Copies of all applicable Building, Electrical, and Plumbing & Gas permits shall be provided to the administration office to be kept on file.
9) At minimum, the same number of trees removed from the escarpment to be replaced anywhere on the lot.
10) Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.
11) Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit.
12) Obtain a recommendation from Alberta Environment and Parks regarding the use of the existing piles, if they should be removed or remain in place, and follow that recommendation.
13) Future dwelling plans are to comply with the geotechnical report recommendations to ensure that the bank is protected, and the development is safe.
14) Land located below the top of bank/land with slope areas of a gradient of 15% or more, area to retain in its natural state. Variance was granted by the Municipal Planning Commission.
15) Sewer curb stop must remain accessible at all times, during and after construction.
16) Any development commenced prior to March 24, 2021 (21-day appeal period), is at the applicant's own risk.

You are hereby authorized to proceed with the development specified, provided that any stated conditions are complied with, that the development is in accordance with any approved plans and applications, and that construction conforms with any provincial and federal requirements relative to this development.

Date of Decision: March 1, 2021
Date of Issuance of Development Permit: March 3, 2021

Ken Kroll
Development Authority

Note:
1) The issuance of a development permit in accordance with the notice of decision is subject to the condition that it does not become effective until 21 days after the date that the development permit is issued.
2) This permit is valid for a period of 12 months from the date of its issue, or the date of the decision of the Council confirming it. If at the expiry of this period, the development has not been commenced or carried out with reasonable diligence as determined by the development officer, this permit shall be null and void, unless an extension to this period, being no longer than an additional 12 months, has been previously granted.
3) Development Authority may carry out on-site inspections of the development at any time.

DEVELOPMENT PERMIT

NO: 211304

CONDITIONALLY APPROVED

ON: MAR 0 3 2021

BY: _____
(Approving Authority & Signature)

(1 Page)

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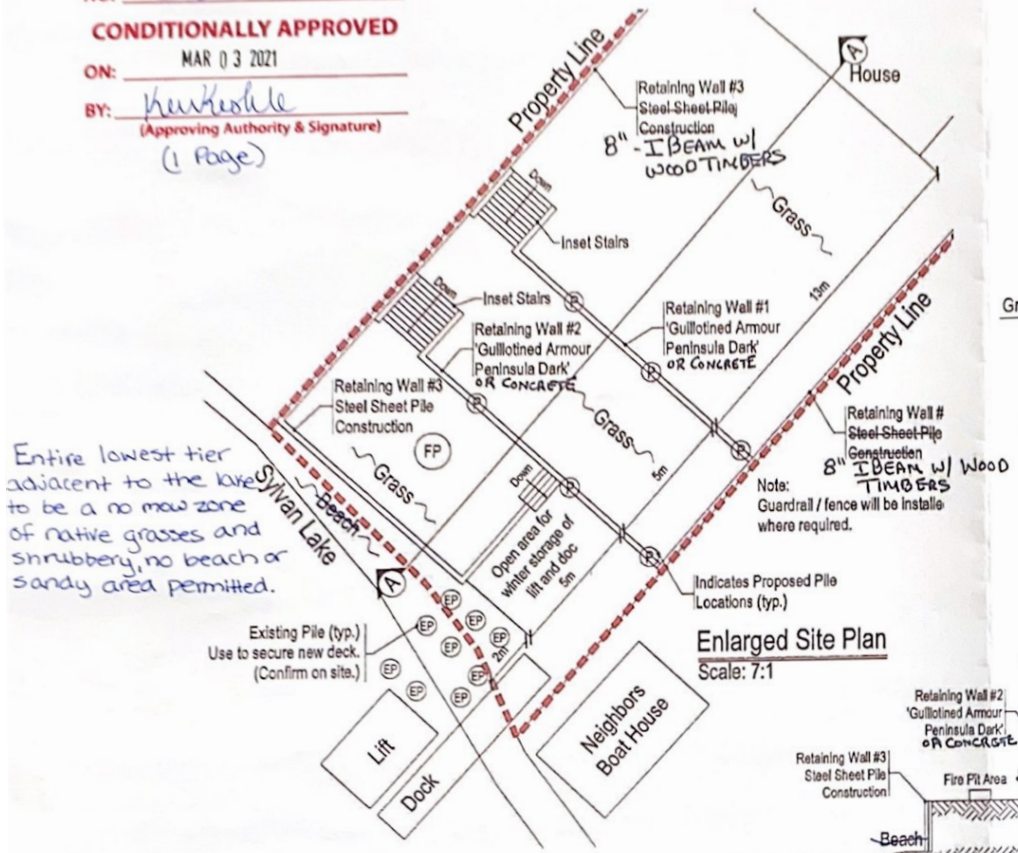
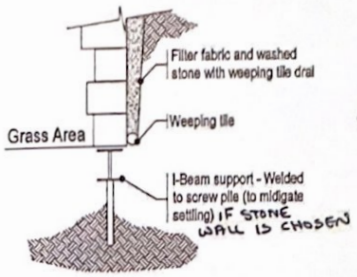
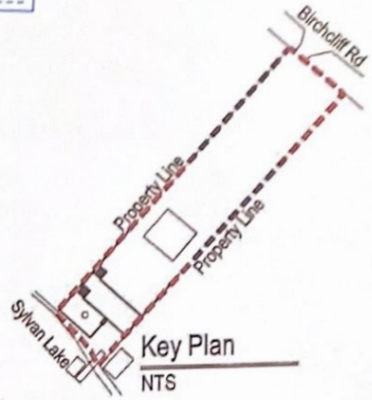


Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.

Enlarged Site Plan
Scale: 7:1



Detail 'A1'
NTS



Key Plan
NTS

Section 'A'
Scale:7:1

Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

N

Site Features

Civic Address:
71 Birchcliff Road
Summer Village of Birchcliff, AB

Legal Description
Lot 2, Block 4, Plan 4486 AX

TAB 2

MUNICIPAL PLANNING COMMISSION AGENDA
SUMMER VILLAGE OF BIRCHCLIFF
SUMMER VILLAGES ADMINISTRATION OFFICE
MAY 18, 2023 @ 1:00 P.M.

A. CALL TO ORDER

B. ADOPTION OF AGENDA

C. DEVELOPMENT ITEMS

1) 71 Birchcliff Road

D. ADJOURNMENT

Summer Village of Birchcliff – Municipal Planning Commission

Agenda Item

May 18, 2023

71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX)

Development Permit Application

Background:

An application was submitted by the homeowners of 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff for landscaping revisions/ mechanized excavation on the escarpment. This property is in the R1 District (Lakeshore Residential). There is currently a dwelling development permit for this property as well.

Previously In March of 2021, the applicants applied to the Municipal Planning Commission to obtain permission for work on the escarpment, and the application was approved by the MPC. (Schedule A - approved development documents).

On October 6, 2021, a site inspection was completed, it was found that the landscaping was not complete in accordance with the approved plans. It was found that the landscaping constructed was very unlike the approved landscaping plans, with the majority of the escarpment area covered in hard landscaping. The firepit area had also been relocated, expanded, and lowered, meaning one of the sections of retaining wall measures at 2.4m (7.87ft.) and is exceeding the approved 2m (6.56ft.).

In many conversations with the developer over several months, it became clear that there appeared to be a misinterpretation or difference of opinion over what had been approved. The application before the MPC today shows the approved landscaping plan with additional comments added by the developer. Administration does not agree with how the developer is interpretating the approved drawings and what has been constructed is in our opinion not what was approved by the MPC. Those reasons are as follows:

- **Tier levels** - On the original drawing (Schedule B) it appears the winter storage area is on the same level as the beach, there is no elevation difference shown. This was all considered the lowest tier and as it was shown on the drawings as “beach”. MPC referenced beach in the condition as that is what was proposed in the area (Schedule A).

  The current application before MPC notes a tier 1 (lower) and (upper) which was never shown on the original drawings. As referenced in the applicant’s current

submission, what is classified as tier 1 (lower) was approved to be a now mow zone and tier 1 (upper) was approved to be grass only. It appears that the applicant is referring to both tier 1 (upper) and (lower) as a now mow zone. However, a no mow zone is a buffer strip or area of vegetation that includes native plantings that let aquatic vegetation grow to maintain a stable natural state. A no mow zone allows native plants to seed and re-establish and is not to be maintained. As noted on the original approved drawings, it is meant to be filled with native grasses and shrubs. What is currently in place is not what we would consider a no mow zone, however, tier 1 (upper) was approved to have grass in the original application.

- **Landscaping** – The approved documents show grass on every tier except the lowest winter storage and beach area which was to be a no mow zone (Schedule C). Condition #11 in the development permit also states, *"Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit"*. This is clear that the tiers are to be entirely grass as shown in the proposed/approved drawings.

- **Firepit area** – (Schedule D) Condition #11 of the development permit states *"Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit"*. The proposed and approved drawings show a small circular firepit location that the MPC gave permission to have a permitter around. In our opinion, the perimeter would be only as significant as the small circle shown on the drawings.

  The developer's current application is stating that a 2m perimeter is required by the National Fire Code. However, administration was unable to find this stipulation in the Fire Code. We also reached out to Lacombe County Fire Chief and Lacombe Regional Emergency Management Partnership member Drayton Bussier who confirmed there is no code requirements for fire pits. Birchcliff does have a Fire Pit Bylaw which states that *"firepits should follow the recommendation that there should be a minimum of 3.4 meters (10') clearance from buildings, property lines, and combustible materials"*.

  The area around the firepit was approved as grass. We do not consider grass to be a combustible material, so the above listed regulation from the Fire Pit Bylaw would not apply. It was also confirmed with the Town of Sylvan Lake Fire Chief and Lacombe County Fire Chief that grass and manicured lawn is not considered to be a combustible material. According to the NFPA (National Fire Protection Agency) a combustible material is *"any material that, in the from which is used and under the conditions anticipated, will ignite, and burn or will add heat to an ambient fire".*

What was originally approved was a small circular firepit area. What was constructed appears to be a 240ft^2 stone patio that is not required by Fire Code or the Birchcliff Fire Pit Bylaw. While the relocating of the fire pit to another tier may be an acceptable minor amendment, the substantial enlargement of the hard landscaped area is not.

- **Retaining Walls** – The proposed and approved drawing shows a cross section of the tiers (Schedule E). The cross section shows each of the walls are the same height, with the exception of the wall along the winter storage area as there are stairs going down to that lower area.

  As the currently constructed firepit area was recessed, the height of that retaining wall is now 2.4m.

Discussion:

This application is before MPC for the following reasons:

- Land located below the top of the bank/top of the escarpment should be in a natural state, a variance is required. (LUB Part Three: 4.1 4(5))
- Mechanized Excavation, Stripping and Grading is listed as a discretionary use, and Retaining walls greater than 1m (3.28ft) in height above any adjoining grade requires a development permit, therefore MPC approval is required. (LUB Part Three: 4.1 4(4)(f))

What was constructed on site was not approved in the original landscaping plan. Therefore, the developer has two options. Option one would be to remove what was constructed and replace it with what was approved in the original application. Option 2 would be to apply to the MPC for approval of a different landscaping plan, which is what is before the board today.

Recommendation:

After reviewing the application, all relevant planning documents, and the previous decision of the application, it is administration's opinion to deny the application with the proposed revisions. The drawings approved were clear that landscaping was to be in place, that the tiers were indicated as grass and the no mow zone/natural vegetation was labeled by administration and by the applicant on drawings. It was our understanding of the MPC's decision that the firepit perimeter was approved small in scale as shown on the drawing. The constructed development compared to the approved plans is drastically different. Birchcliff's planning documents state the desire for shorelines and escarpments to be as natural as possible, to replant areas with native shrubs where vegetation was removed. Occasionally retaining walls are needed to stabilize the bank so development can take place, as is the case with this property. While the retaining walls are necessary, there are ways to ensure that the rest of the landscaping is done with lots of vegetation to keep the bank as natural as possible.

Adjacent landowners have been notified and no response has been received.

Conditions:

If approved, Administration would recommend the following conditions:

- Completions Deposit of $3,000.00 to be carried over from current development permit.
- There shall be no further alterations to the escarpment.

Authorities:

For a discretionary use in any district:

- The Municipal Planning Commission may approve an application for a Development Permit:
    - With or without conditions;
    - Based on the merits of the proposed development, including its relationship to any approved statutory plan, non-statutory plan, or approved policy, affecting the site;
    - Where the proposed development conforms in every respect to this Land Use Bylaw; or
- May refuse an application for a development permit based on the merits of the proposed development, even though it meets the requirements of the Land Use Bylaw; or
- Subject to provisions of section 2.4 (2), the Municipal Planning Commission shall refuse an application for a development permit if the proposed development does not conform in every respect to the Land Use Bylaw.

The MPC may:

- Grant a variance to reduce the requirements of any use of the LUB and that use will be deemed to comply with LUB.
- Approve application even though the proposed development does not comply or is a non-conforming building if:
    - It would not unduly interfere with the amenities of the neighborhood, or
    - Materially interfere with or affect the use, enjoyment, or value of neighboring parcels of land, And
    - It conforms with the use prescribed for that land or building in the bylaw.
- Consider a Variance only where warranted by the merits or the proposed development and in response to irregular lot lines, parcel shapes or site characteristics which create difficulties in siting structures within the required setback or in meeting the usual bylaw requirements, except there shall be no

variance for Parcel Coverage or Building Height.

Decision:

In order to retain transparency of the Commission, Administration recommends one of the following:

1. Approve the application with or without conditions *(Section 642 of the MGA),* or
2. Deny the application stating reasons why *(Section 642(4) of the MGA).*

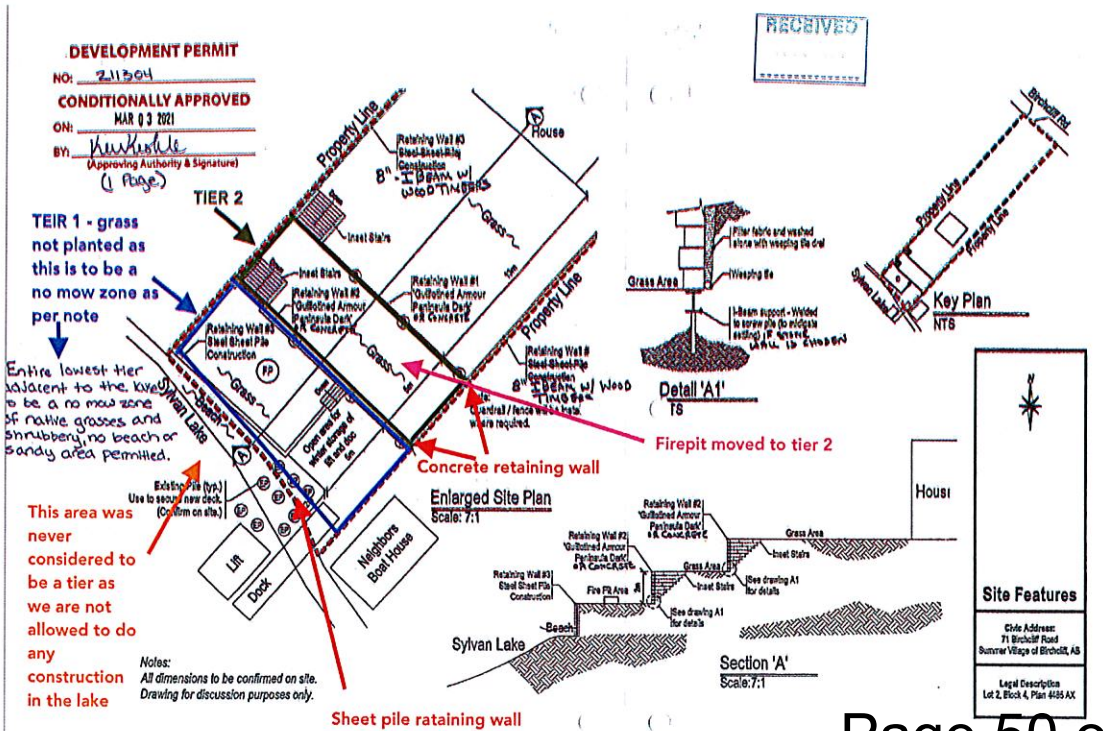
February 10, 2023

Kara Hubbard
SV of Birchcliff

Re: Development Permit #211304 Landscaping/Mechanized Excavation Amendment Application at 71 Birchcliff Road (Revised Plan)

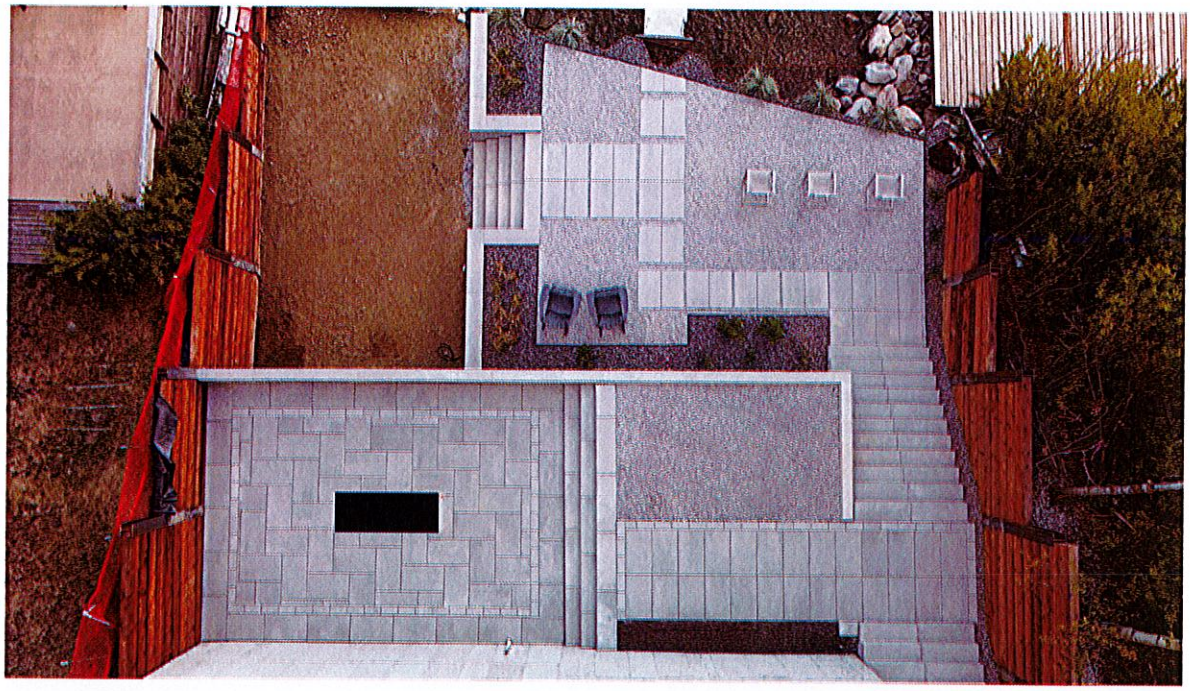
Kara, as per our email correspondence regarding the landscaping permit for 71 Birchcliff Road, this is a new application for the landscaping on the escarpment with a revised landscape plan. This application is being submitted due to the fact that both the Summer Village and the applicant identified different understanding and or interpretation of the wording in the permit and what was discussed at the MPC (zoom meeting) on March 1, 2021. It was decided that we provide a detailed outline of these items and how we interpreted them to become what was constructed so that we can meet with MPC and discuss each item in detail in a letter of intent. This was done however we were told that we could not meet with MPC and the best way to move forward would be with a New or Revised application and application fee. Here is the details and description of what was originally approved and the new/revised application.

This is what was originally approved by MPC.



The landscape work completed to date is slightly different than what was proposed and approved however in concept things were just moved around a bit and are determined by the natural slope of the bank on the properties adjacent to this lot.

Here a aerial photo of what has been constructed to date along with a plot plan (attached to email) that was submitted to the SV for the development application.

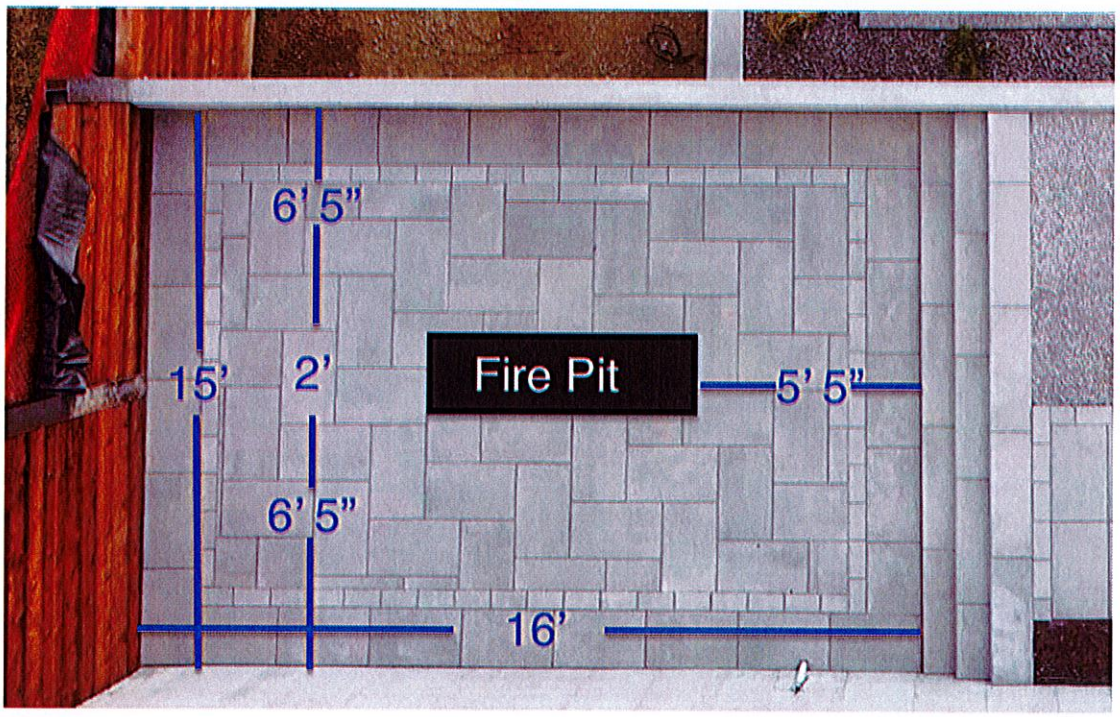


To better understand which areas we are discussing I have labeled them for discussion purposes.

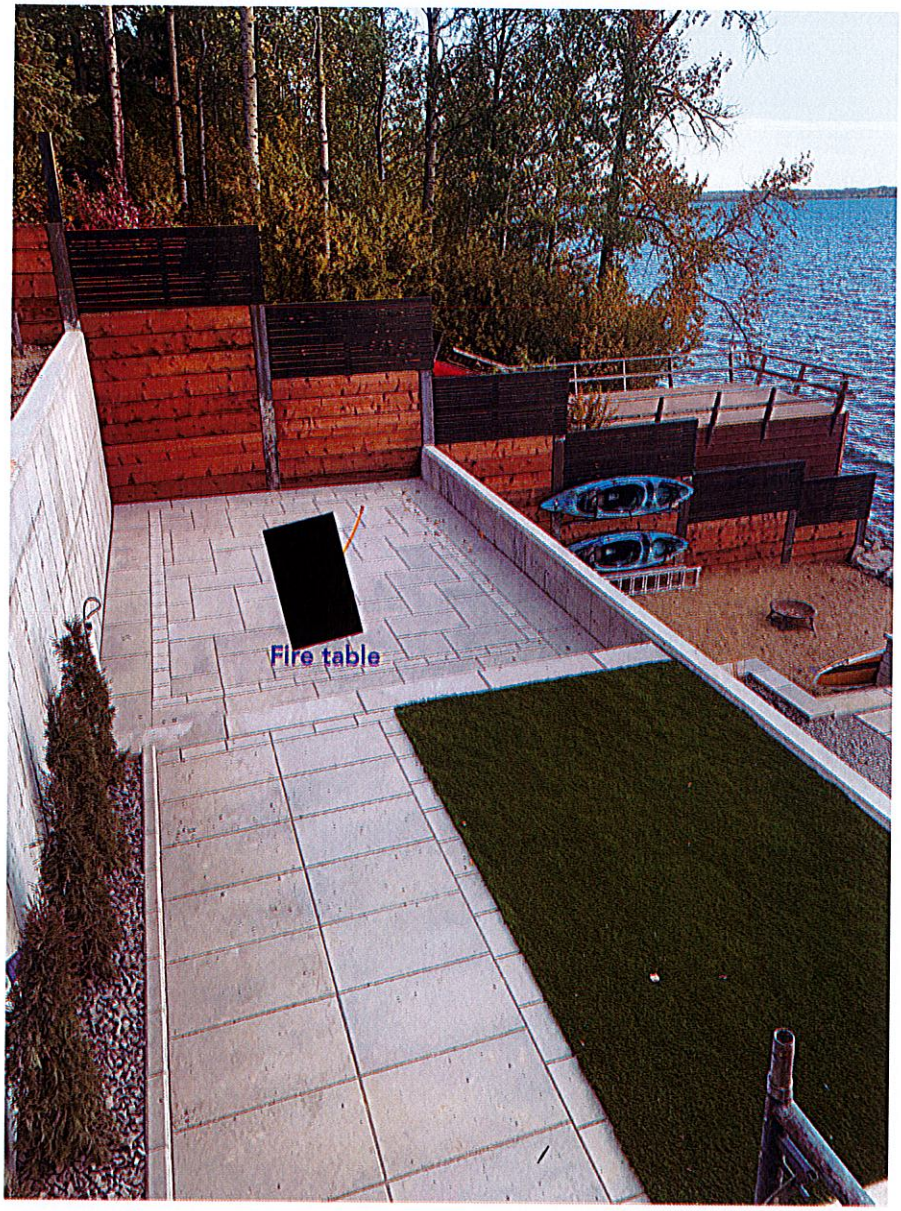
Tier 1 (Lower). This is the boat lift/dock storage area. The approved permit indicates that "*The entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted*". This area will be a no mow zone and left to naturally revegetate.

Tier 1 (Upper) This tier has a combination of paving stones and natural rundle stone. The pavers serve as a walk way from the stairs to access the dock and the dock/lift storage area. We have elderly parents that spend a lot of time with us and require accessible access to the lake. We planted 32 shrubs and grasses on the perimeter of this tier. Natural vegetation can also grow in the areas amongst the rundle rock.

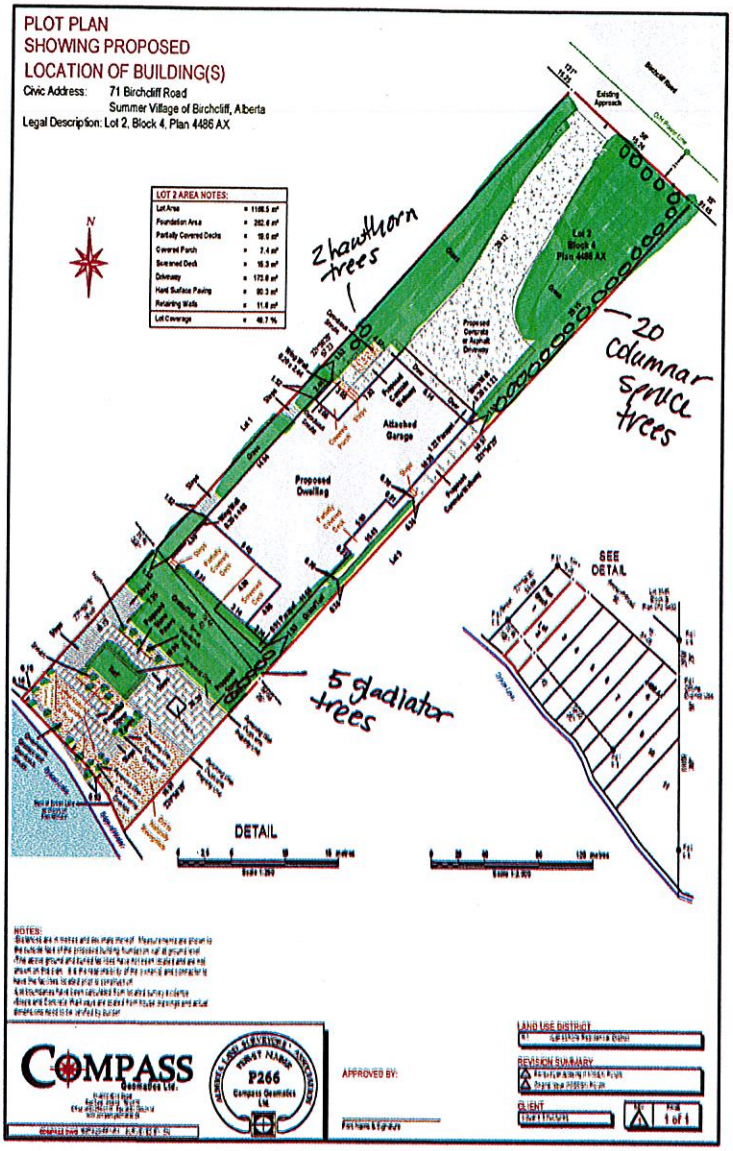
Tier 2 This tier is a combination of a lowered fire pit area and a turfed lounging area. The fire pit area was recessed 2' for protection from the wind. The size of the wood burning fire pit is approx 2' x 4'. Permeable paving stones were installed surrounding the fire pit as per the National Fire Code which states that a 2 meter stone perimeter is a safe flame protective perimeter.



The lounging area of Tier 2 includes stone pavers that access the fire pit area, a turfed area for lounge chairs and perimeter planting of 5 shrubs.



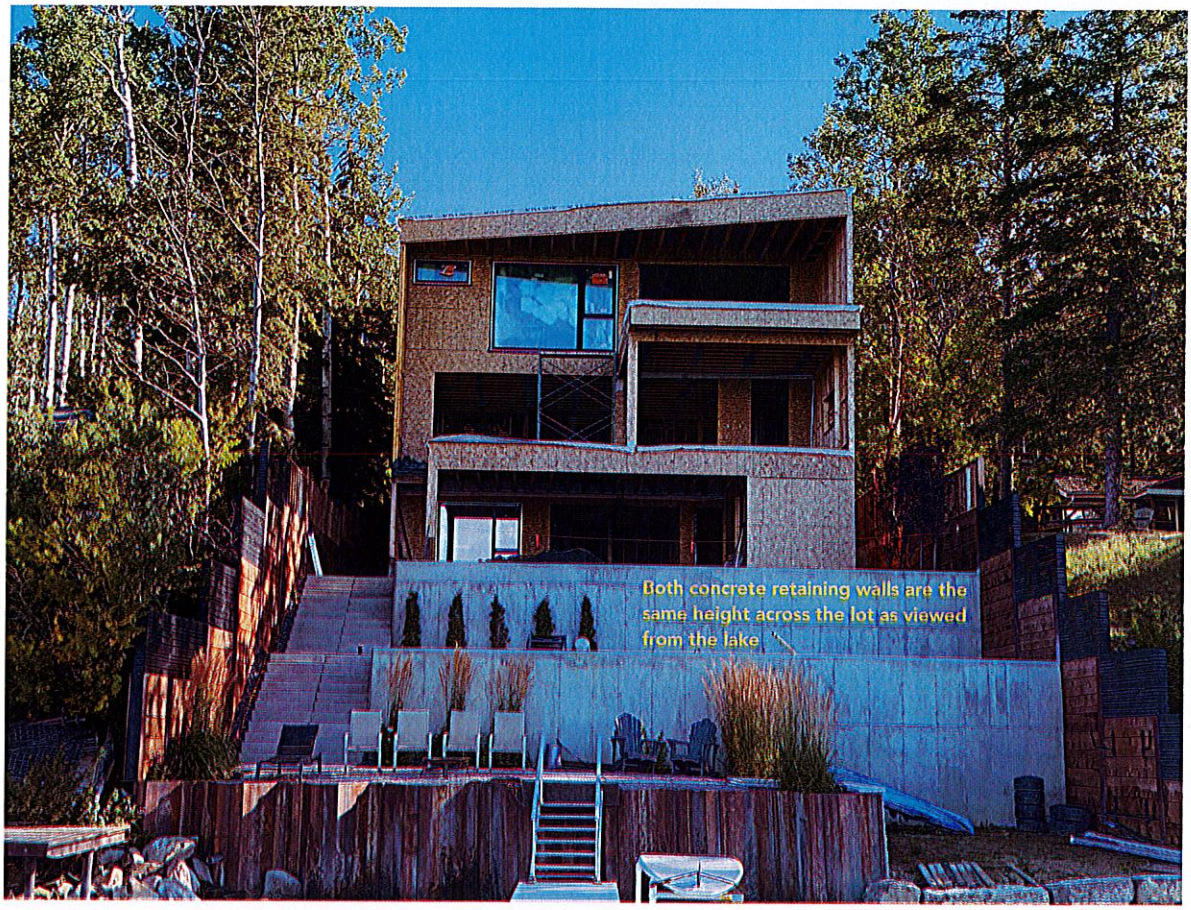
A survey plan showing the entire lot with all hardscape surfaces included = 49.7% which is within the 50% hard surface coverage allowed is attached.



The only other item that was mis interpreted after the first application was the heights of the retaining walls. All the concrete retaining walls are 2 meters in height with the exception of the boat lift/dock storage area (shown on the original plan) and the new fire pit area on tier 2. As the fire pit area was recessed within the original concrete walls, the height is 2.4m. However when looking at the lot from the lake view you cannot see this difference in height. See the pic below.

Although modifications have been made to suit the escarpment landscaping to accommodate the slope of the lot, we are submitting a new application with this revised plan. We look forward to meeting with MPC to discuss any questions they may have in person and coming to a final resolution that is acceptable by all parties.

Thank you,
Jodi Neish

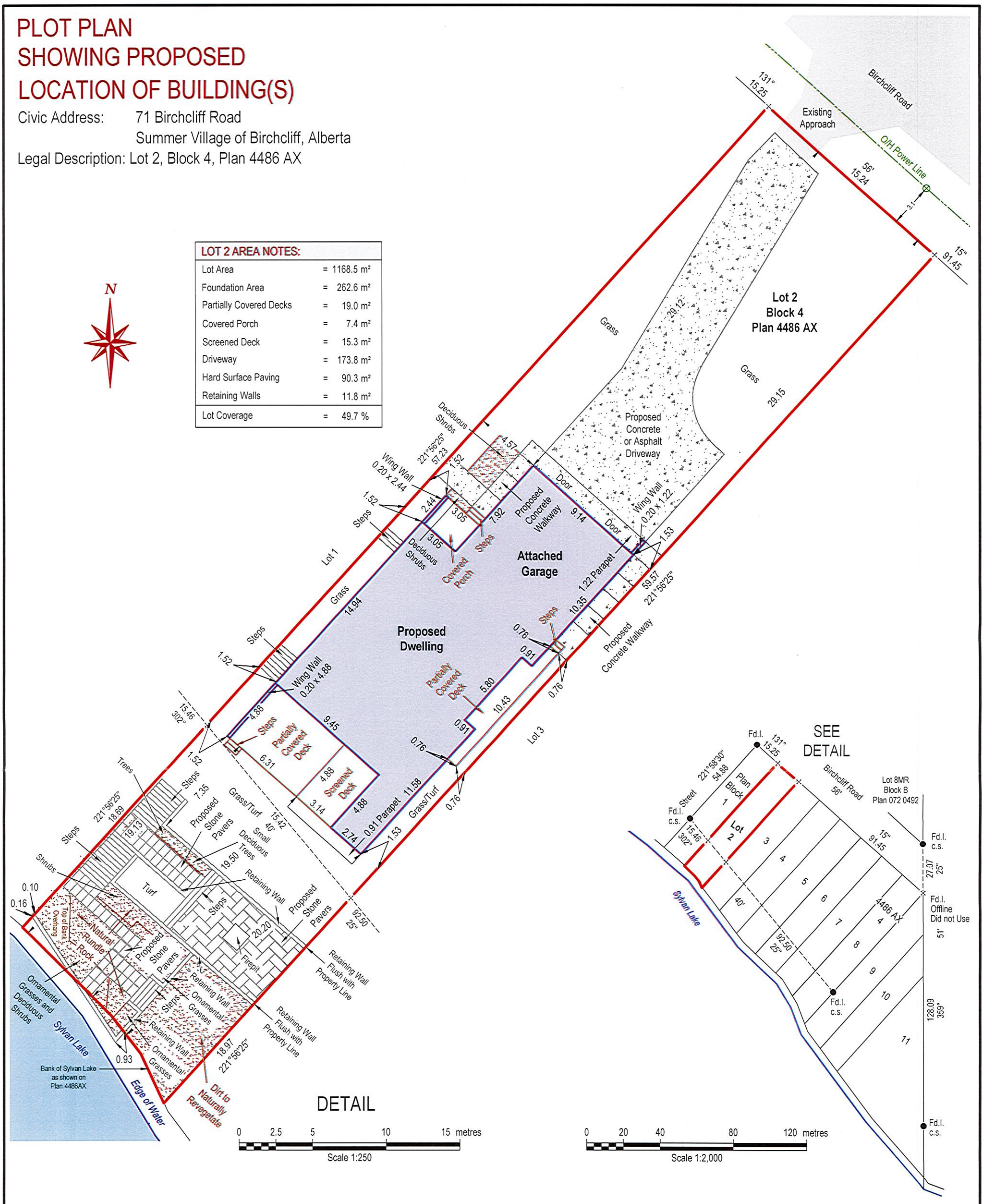

Both concrete retaining walls are the same height across the lot as viewed from the lake

PLOT PLAN
SHOWING PROPOSED
LOCATION OF BUILDING(S)

Civic Address: 71 Birchcliff Road
Summer Village of Birchcliff, Alberta

Legal Description: Lot 2, Block 4, Plan 4486 AX

LOT 2 AREA NOTES:	
Lot Area	= 1168.5 m²
Foundation Area	= 262.6 m²
Partially Covered Decks	= 19.0 m²
Covered Porch	= 7.4 m²
Screened Deck	= 15.3 m²
Driveway	= 173.8 m²
Hard Surface Paving	= 90.3 m²
Retaining Walls	= 11.8 m²
Lot Coverage	= 49.7 %



NOTES:

-Distances are in metres and decimals thereof. Measurements are shown to the outside face of the proposed building foundation wall at ground level.
-The above ground and buried facilities have not been located and are not shown on this plan. It is the responsibility of the owner(s) and contractor to have the facilities located prior to construction.
-Lot boundaries have been calculated from located survey evidence.
-Steps and Concrete Walkways are scaled from house drawings and actual dimensions need to be verified by builder.

COMPASS Geomatics Ltd.
11-4608 62nd Street
Red Deer, Alberta T4N 6T3
Office (403) 356-0111 Fax (403) 356-0114
www.compassgeomatics.ca

ALBERTA LAND SURVEYORS' ASSOCIATION
PERMIT NUMBER
P266
Compass Geomatics Ltd.

COMPASS DWG: 00574-20-PP1-R1 SURVEYED BY: CN

APPROVED BY:

Print Name & Signature

LAND USE DISTRICT

R1 -Lakeshore Residential District

REVISION SUMMARY

1 Revised Landscaping (11/10/21) PC/JW
0 Original Issue (10/28/21) PC/JW

CLIENT

Square Structures

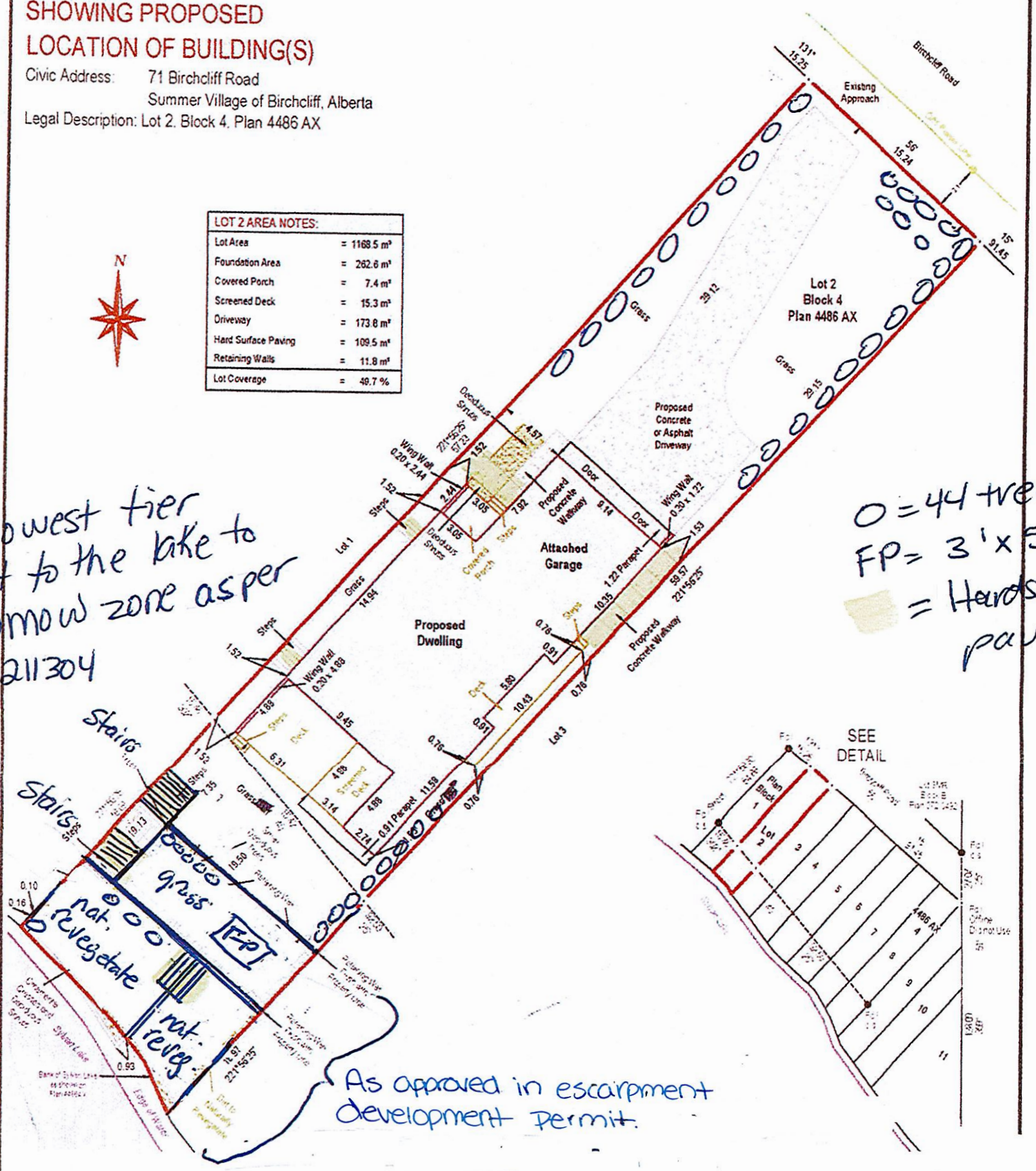
REV. 1 | PAGE 1 of 1

APPROVED LANDSCAPING PLAN AT THE TIME OF DWELLING APPROVAL. DECEMBER 3, 2021

PLOT PLAN SHOWING PROPOSED LOCATION OF BUILDING(S)

Civic Address: 71 Birchcliff Road
Summer Village of Birchcliff, Alberta
Legal Description: Lot 2, Block 4, Plan 4486 AX

LOT 2 AREA NOTES:	
Lot Area	= 1168.5 m²
Foundation Area	= 262.6 m²
Covered Porch	= 7.4 m²
Screened Deck	= 15.3 m²
Driveway	= 173.6 m²
Hard Surface Paving	= 109.5 m²
Retaining Walls	= 11.8 m²
Lot Coverage	= 49.7 %



Entire lowest tier adjacent to the lake to be a Narrow zone as per permit 211304

O = 44 trees to be planted
FP = 3' x 5'
= Hardsurface paving

NOTES:
- Distances are in metres and decimal thereof. Measurements are given to the outside face of the concrete building foundation wall at ground level.
- The above ground and buried facilities have not been located and are not shown on this plan. It is the responsibility of the owners and contractors to have the facilities located prior to construction.
- Lot boundaries have been calculated from records and by ties only.
- Steps and Concrete Walkways are scaled from house drawings and actual dimensions need to be verified by owner.

COMPASS Geomatics Ltd.

ALBERTA LAND SURVEYORS' ASSOCIATION PERMIT NUMBER P266 Compass Geomatics Ltd.

COMPASS DWG [illegible]

APPROVED BY:

Print Name & Signature

LAND USE DISTRICT
R1 Lakeshore Residential District

REVISION SUMMARY
1. Revised per new site plan
2. Revised per new site plan
3. Digital seal added per AUMA

CLIENT
Eclipse Structures

REV: 2 PAGE: 1 of 1

Summer Village of Birchcliff
Bay 8, 14 Thevenaz Industrial Trail
Sylvan Lake, AB T4S 2J5

DEVELOPMENT PERMIT

Permit Number: 211304

Municipal Address: 71 Birchcliff Road **Lot:** 2 **Block:** 4 **Plan:** 4486AX

Applicant: [redacted] **On Behalf Of:** -

The Development Involving: *Landscaping/Mechanized Excavation*

Has Been Approved Subject to the Following Conditions:

1) The payment of all outstanding property taxes or the making of arrangements, satisfactory to the Council, for the payment thereof, prior to the commencement of the development.
2) The development commences and continues in the manner applied for and that all development complies with the regulations and specifications of the Land Use By-Law under which this permit was issued.
3) The construction shall be completed within 12 months and the landscaping shall be completed within 2 years of the date of permit issuance.
4) The payment of a $3,000.00 completions deposit to ensure all conditions of this development permit have been met, including the completion of building construction within a one-year period, landscaping completed with two years, and any or all road damage repaired.
5) Shoreline erosion control measures are prohibited unless prior written approval has been received from the appropriate provincial authorities and the Municipality.
6) All parcels shall be graded to ensure that storm water is directed to a drainage ditch without crossing adjacent land, except as permitted by the Development Authority. All maintenance and upkeep shall be the responsibility of the property owner.
7) Any damage to public roads due to the construction shall be repaired immediately at the expense of the permit holder.
8) Copies of all applicable Building, Electrical, and Plumbing & Gas permits shall be provided to the administration office to be kept on file.
9) At minimum, the same number of trees removed from the escarpment to be replaced anywhere on the lot.
10) Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.
11) Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit.
12) Obtain a recommendation from Alberta Environment and Parks regarding the use of the existing piles, if they should be removed or remain in place, and follow that recommendation.
13) Future dwelling plans are to comply with the geotechnical report recommendations to ensure that the bank is protected, and the development is safe.
14) Land located below the top of bank/land with slope areas of a gradient of 15% or more, area to retain in its natural state. Variance was granted by the Municipal Planning Commission.
15) Sewer curb stop must remain accessible at all times, during and after construction.
16) Any development commenced prior to March 24, 2021 (21-day appeal period), is at the applicant's own risk.

You are hereby authorized to proceed with the development specified, provided that any stated conditions are complied with, that the development is in accordance with any approved plans and applications, and that construction conforms with any provincial and federal requirements relative to this development.

Date of Decision: March 1, 2021
Date of Issuance of Development Permit: March 3, 2021

Ken Kroll
Development Authority

Note:
1) The issuance of a development permit in accordance with the notice of decision is subject to the condition that it does not become effective until 21 days after the date that the development permit is issued.
2) This permit is valid for a period of 12 months from the date of its issue, or the date of the decision of the Council confirming it. If at the expiry of this period, the development has not been commenced or carried out with reasonable diligence as determined by the development officer, this permit shall be null and void, unless an extension to this period, being no longer than an additional 12 months, has been previously granted.
3) Development Authority may carry out on-site inspections of the development at any time.

DEVELOPMENT PERMIT

NO: 211304

CONDITIONALLY APPROVED

ON: MAR 0 3 2021

BY: _____
(Approving Authority & Signature)

(1 Page)

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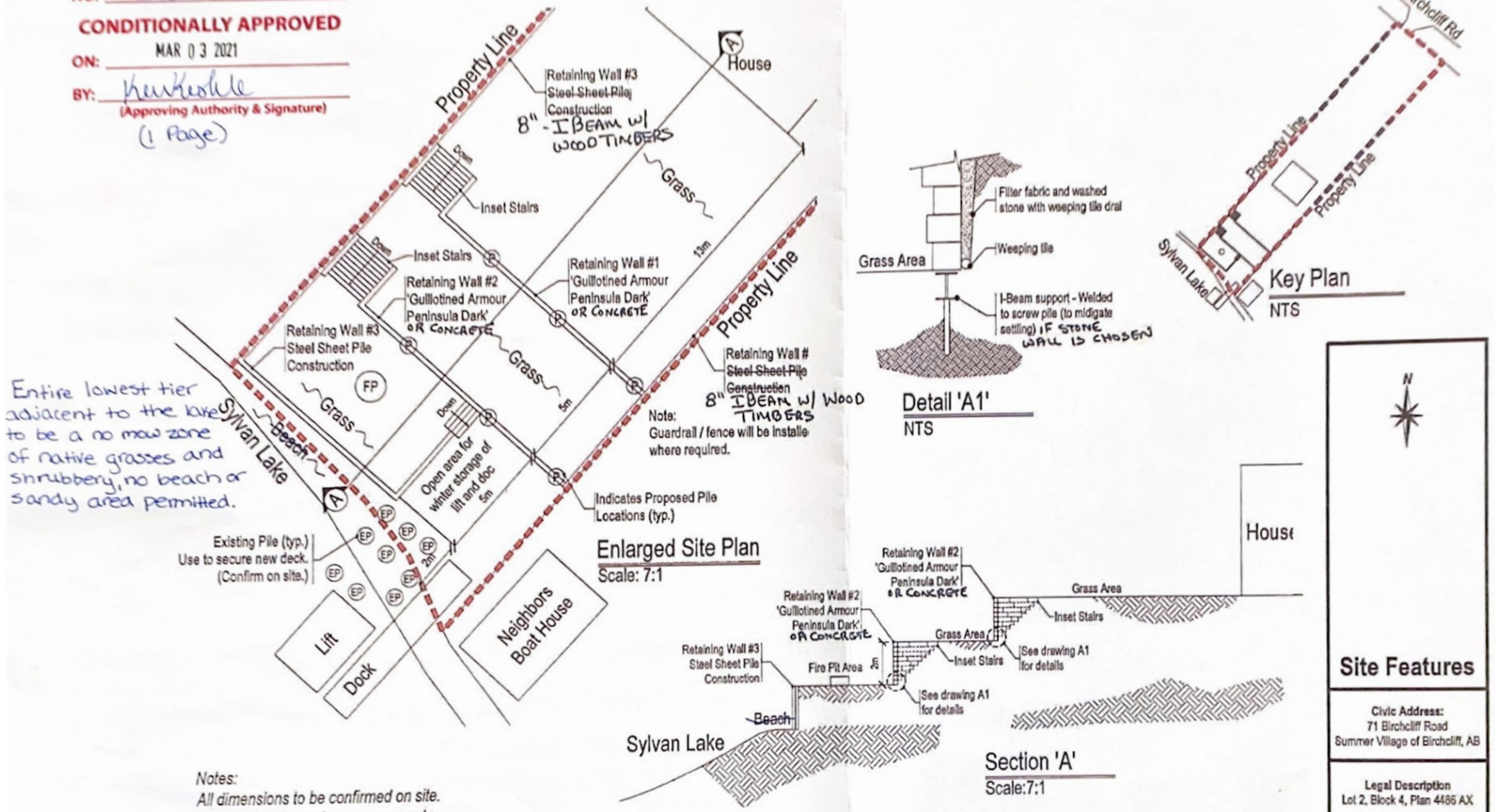

Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

Lowest Tier

Condition #10 on DP.

SCHEDULE B

DEVELOPMENT PERMIT

NO: 211304

CONDITIONALLY APPROVED

ON: MAR 03 2021

BY: [signature]

(Approving Authority & Signature)

(1 Page)

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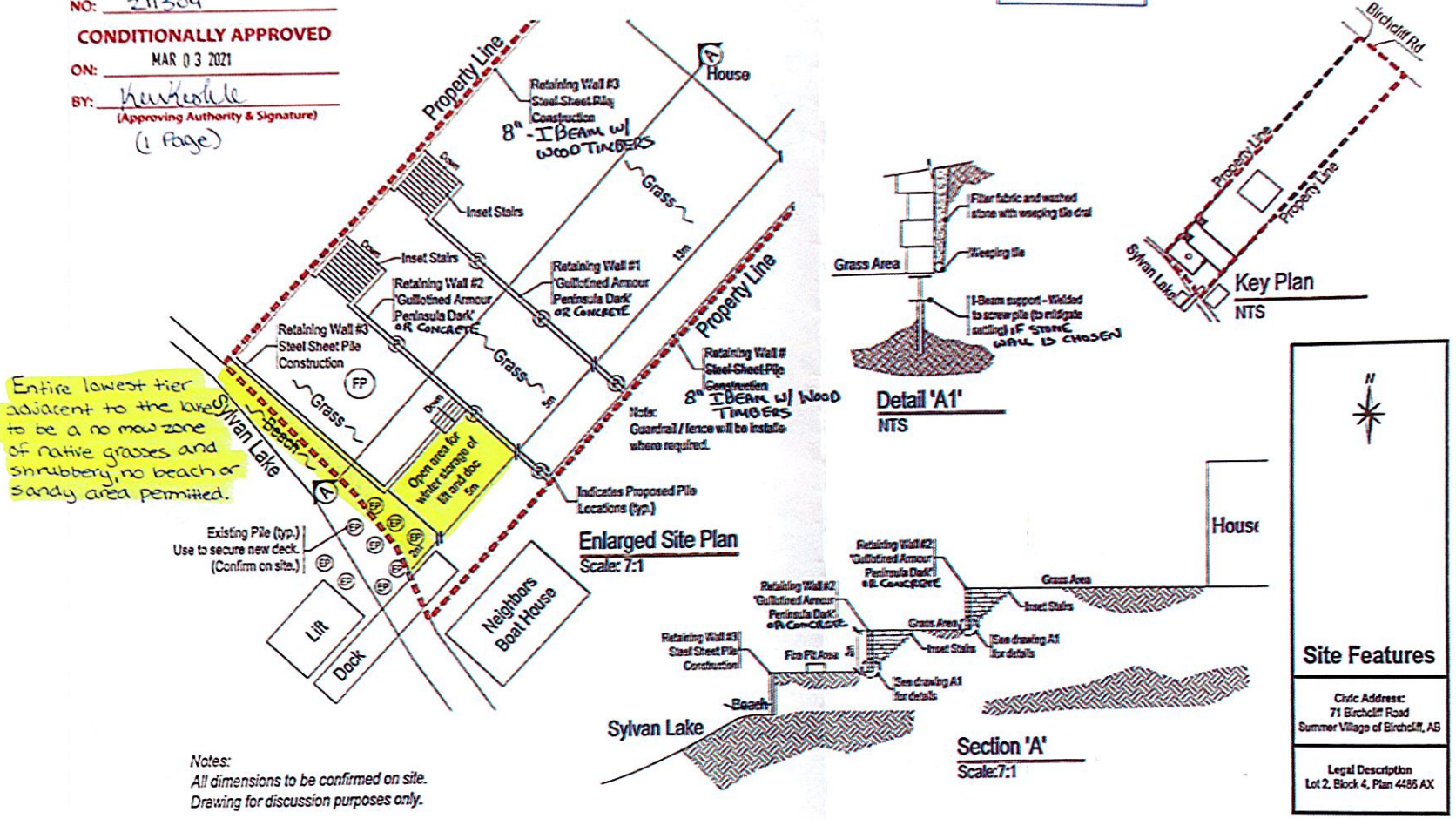

Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

SCHEDULE C

Other tiers
Condition #11 on DP.

DEVELOPMENT PERMIT
NO: 211304
CONDITIONALLY APPROVED
ON: MAR 03 2021
BY: [signature]
(Approving Authority & Signature)
(1 Page)

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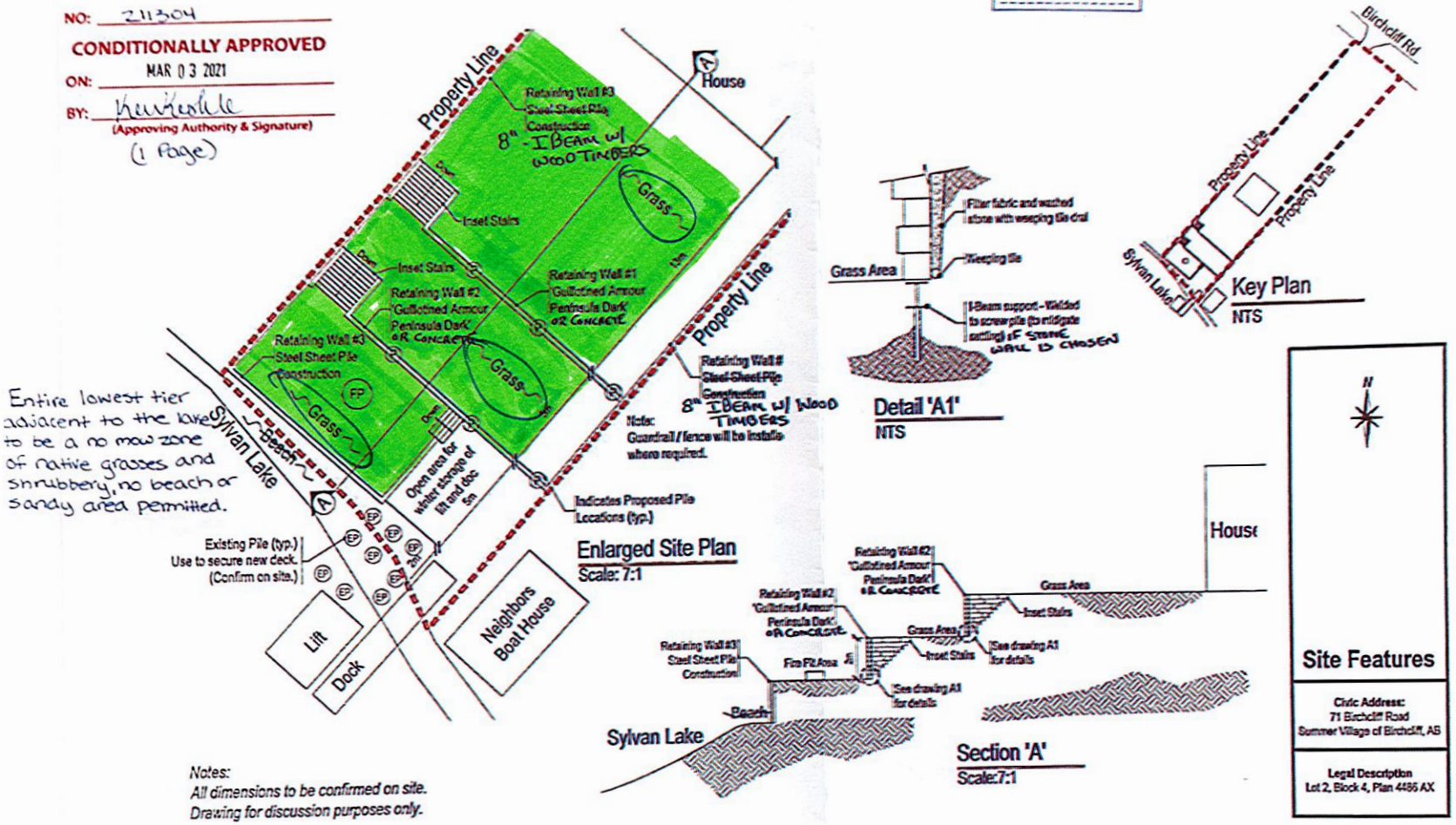
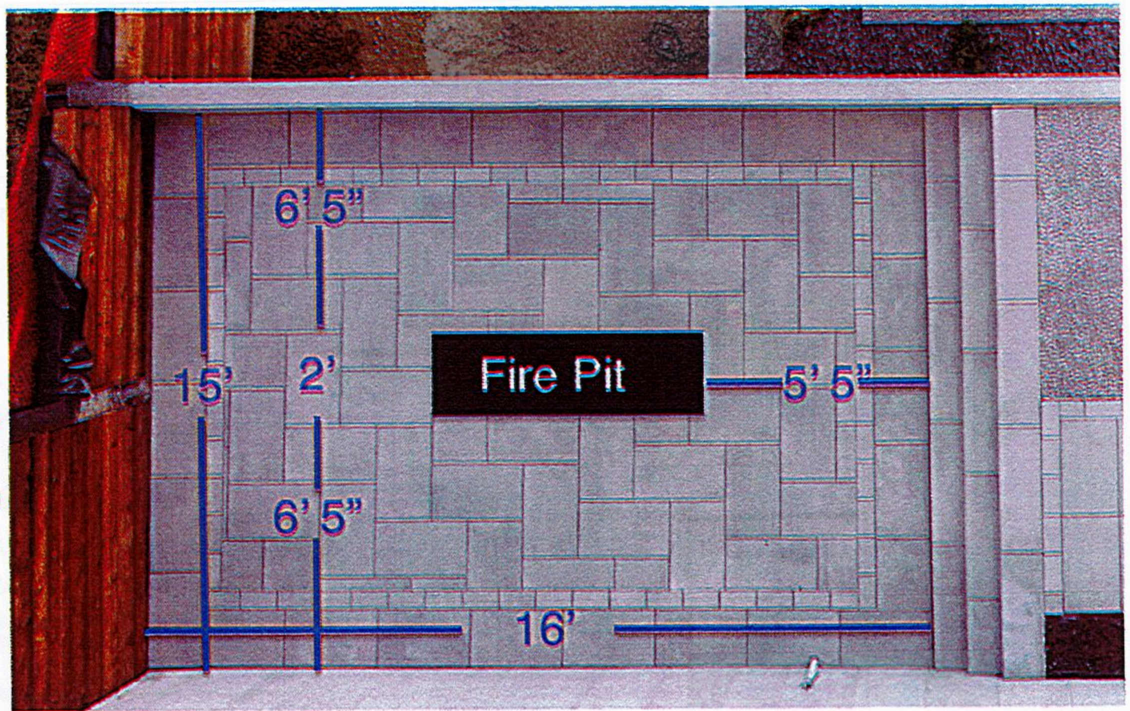


Firepit area proposed

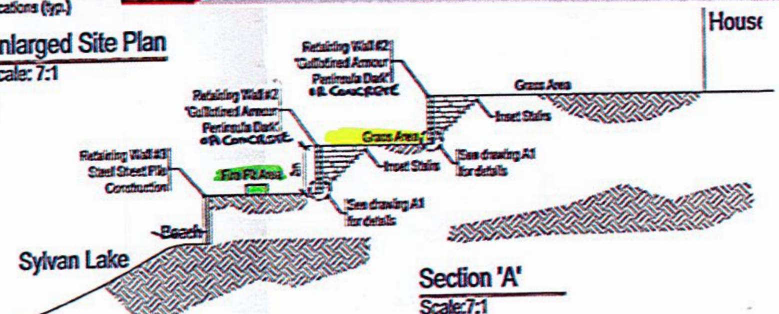
Constructed

SCHEDULE D

DEVELOPMENT PERMIT
NO: 211304
CONDITIONALLY APPROVED
ON: MAR 03 2021
BY: [signature]
(Approving Authority & Signature)
(1 Page)



Enlarged Site Plan
Scale: 7:1



Section 'A'
Scale: 7:1

Site Features

Civic Address:
71 Birchcliff Road
Summer Village of Birchcliff, AB

Legal Description
Lot 2, Block 4, Plan 4486 AX

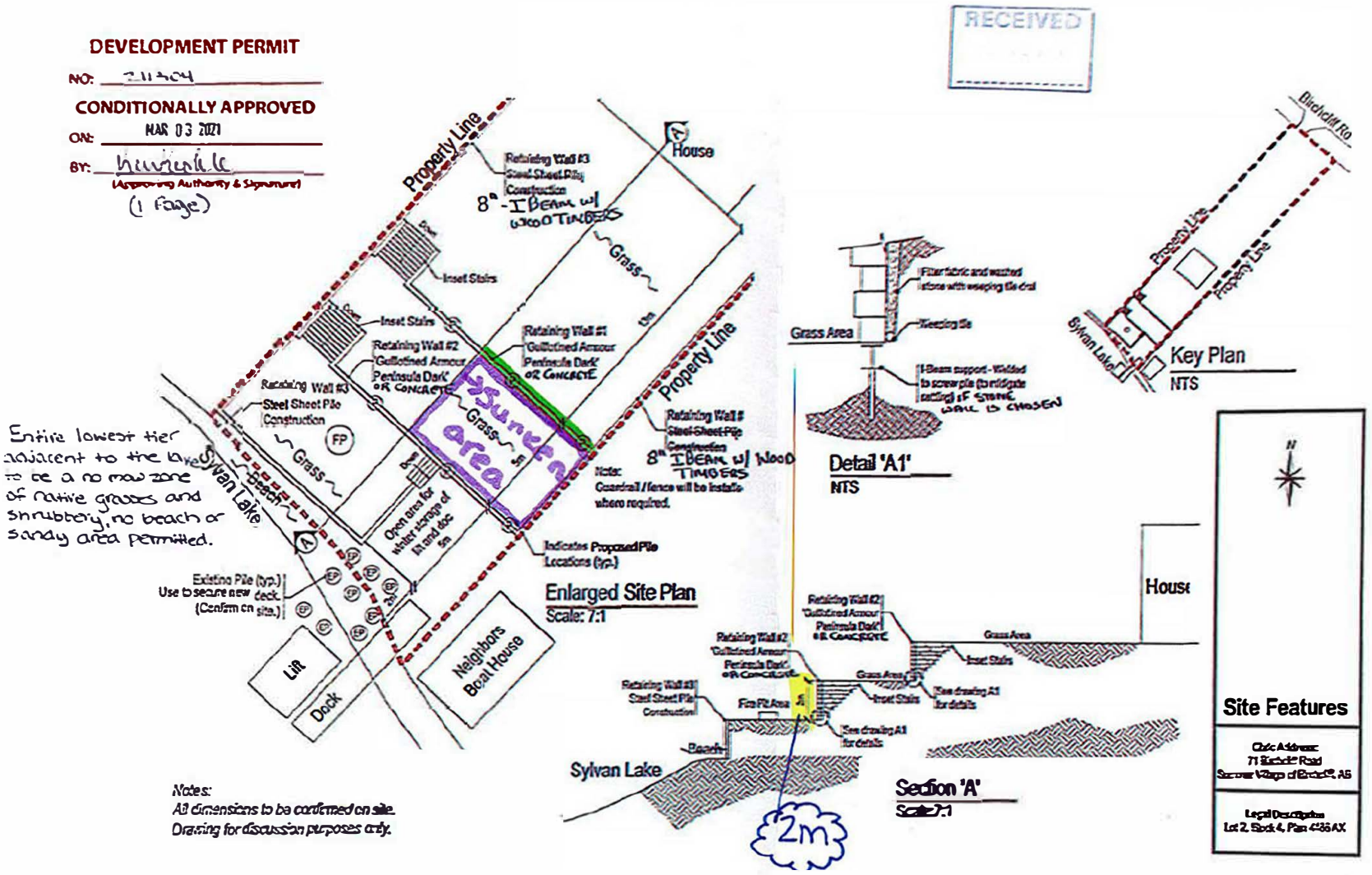
Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

Location retaining wall exceeds maximum

SCHEDULE E

DEVELOPMENT PERMIT
NO: 21-104
CONDITIONALLY APPROVED
ON: MAR 03 2021
BY: [signature]
(Approving Authority & Signature)
(1 Page)

RECEIVED



TAB 3

Summer Villages Administration Office
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
(403) 887-2822

NOTICE OF DECISION

MUNICIPAL PLANNING COMMISSION

May 24, 2023

[redacted]

RE: DEVELOPMENT APPLICATION FOR 71 BIRCHCLIFF ROAD

An application was submitted for landscaping revisions/mechanized excavation on the escarpment at 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff. This application went before the Municipal Planning Commission as a discretionary use and for variance requests.

Finding of Fact:

Upon hearing and considering the representations and the evidence of the parties concerned, the Commission find the facts in the matter to be as follows:

1. Land located below the top of bank/top of escarpment should be in a natural state, a variance is required. (LUB Part Three: 4.1 4(5)).
2. Mechanized Excavation, Stripping and Grading is listed as a discretionary use, and retaining walls greater than 1m (3.28ft) in height above any adjoining grade requires a development permit, therefore MPC approval is required. (LUB Part Three: 4.1 4(4)(f)).

Decision of the Municipal Planning Commission:

Birchcliff's Land Use Bylaw part 3, section 4.1, subsection 4(5) states that the escarpment or slope areas with a gradient of fifteen (15) percent or greater shall be retained in their natural state. Section 6.3.4 of Birchcliff's Municipal Development Plan states that while recognizing that remedial actions may be necessary from time to time, the Summer Village still strongly desires that banks abutting the shoreline remain as natural as possible to retain natural ecosystems. The proposed development does not reflect an effort to keep the escarpment area natural.

The fact that the proposal shows the entire parcel coverage below the 50% threshold is not relevant in this situation as it does not address the need for the escarpment to remain as natural as possible. It was clear in the initial approval that remedial actions were necessary as shown in the geotechnical report, which is why retaining walls were approved. However, the rest of the proposed development is not considered to be natural. Therefore, the application is denied, and the lands will have to return to what was originally approved, which is:

- Winter storage area labeled as "tier 1 (lower)" is to be entirely a no-mow zone, consisting of native grasses and shrubbery with no sandy area permitted, as indicated on the originally approved drawings. A no-mow zone is a vegetative buffer strip above the high-water mark on the shoreline and allows native plants to seed and re-establish.
- Areas labeled on this application as "tier 1 (upper)", and "tier 2", along with the entire yard above the highest retaining wall are to be entirely grass. Paving stones, rocks, gravel, and any other material must be removed prior to filling with topsoil and sodding. Nothing other than grass, trees, shrubs, or plants shall remain. The stairs between each tier may remain but any walkway or paving stones connecting them on top of each tier must be removed and replaced by grass. The firepit area within what is labeled "tier 2" must be removed entirely with the sunken area backfilled to match the rest of tier 2 and covered in grass.
- The firepit area originally approved on the scaled drawing appears to be 1.5m and can remain at that size on either tier.
- The drawings submitted for this application seem to show the lowest retaining wall encroaching past the property line, which was not shown on the originally approved drawing. Please ensure that all development takes place within your property lines.

As discussed during the meeting, a railing or guard system installed on the retaining walls was not part of the original design plans. While the requirement for a railing is governed by the building code and would be required by Superior Safety Codes, any development on the escarpment requires a variance from the Municipal Planning Commission. Should Superior Safety Codes require a railing, the proposed design of the railing must be submitted to the Municipal Planning Commission for approval prior to installation.

Appeal:

Discretionary Use/Variance Request Applications are appealable to the Subdivision and Development Appeal Board, as provided for in Part 17, of the Municipal Government Act. Written statements relevant to the development and reasons for appeal along with a $400.00 appeal fee should be submitted to the Secretary of the Subdivision and Development Appeal Board of the Summer Village of Birchcliff, #2 Erickson Drive, Sylvan Lake, Alberta T4S 1P5, within 21 days following the date of this notice.

Summer Villages Administration Office
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
(403) 887-2822

For further information contact the Secretary of the Subdivision and Development Appeal Board at 403-887-2822.

Sincerely,

Kara Hubbard
Development Officer

For More Information

For more information about lake health, lake stewardship or the authorization process:

Environment and Parks

aep.alberta.ca (search 'Respect our Lakes')
ESRD.Info-Centre@gov.ab.ca

Or call: 310-3773

For environmental complaints/emergencies call the 24-hour environmental hotline:

1-800-222-6514

ISBN 978-1-4601-2251-8 (Print)
ISBN 978-1-4601-2252-5 (PDF)

Alberta Government

Respect Our Lakes

Aquatic Vegetation and Lake Health

Alberta Government

Aquatic Plants and Lake Ecosystems

Aquatic plants along lake shorelines are important for maintaining healthy lake ecosystems. They provide habitat for fish spawning, nesting habitat for waterfowl and shorebirds, rearing sites for young fish and wildlife, and they protect shorelines from wave and wind erosion. Aquatic vegetation also performs many important biological functions that maintain lake water quality, such as filtering runoff water that enters the lake.

Lakeshore residents may wish to remove aquatic vegetation to make it easier to put in docks and piers, or to improve swimming and boating conditions. Some people think that removing aquatic plants helps to "clean up" the lake, however this is not true. Lakes that have lost significant aquatic vegetation are especially vulnerable to water quality problems including blue-green algal (cyanobacterial) blooms due to excess nutrient availability. Maintaining a natural shoreline with abundant native aquatic vegetation species is one of the best ways to ensure a healthy lake environment for everyone to enjoy.

Unauthorized Aquatic Vegetation Removal Is Illegal

Removing aquatic vegetation requires prior approval by the Government of Alberta, Department of Environment and Parks. Unauthorized removal could be subject to fines and penalties. Here's what the law says:

- Under the *Public Lands Act*, it is prohibited to disturb the bed and shore of a water body without prior authorization
- Under the *Water Act*, an approval is required for an activity which affects a water body such as aquatic vegetation removal

Aquatic vegetation removal may be permitted for individual use, public use or commercial purposes. Restrictions apply to ensure impact to the aquatic environment including fisheries and wildlife habitat are minimized. Application forms and guidelines can be found at aep.alberta.ca (search 'Water Act Forms').

Lake Stewardship and Aquatic Vegetation

Maintaining the health of Alberta's lakes is everyone's responsibility. Actions of individual lakeshore residents, decision makers and land users around the lake add up to make a huge difference! Here's how you can do your part:

- As much as possible, leave the lake in its natural condition; let aquatic vegetation grow and enjoy the many benefits they provide
- Consider sharing docks, piers and boat lanes within your community to minimize shoreline disturbance, as well as save time and money
- Remember that general beach clean-up involving picking up plant debris that has washed up on shore is ok, but be sure to apply for an approval for any other activities involving aquatic vegetation removal
- Get involved with your local lake stewardship group to help promote beneficial management practices

The more natural you keep your property the healthier your lake will be.

Report it! For environmental complaints or emergencies, call the environmental hotline at 1-800-222-6514

For more information:

Search 'Respect our Lakes' on Alberta.ca
Contact us at rol@gov.ab.ca
Call 310-3773

Alberta

Respect Our Lakes

Responsible Lake Living

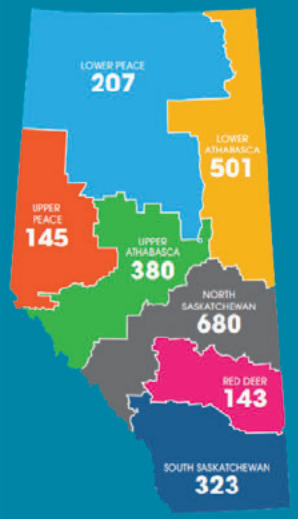
Alberta

Keeping Alberta's Lakes Healthy

Lakeside land owners understand the value of healthy lakes for lake residents and visitors, and are environmental stewards committed to passing the legacy on to future generations.

The lakes of Alberta range from deep, clear and cold in the mountains to shallow, warm and green on the prairies. All play an essential role in maintaining local biodiversity, and for safeguarding the water quality and quantity for those living, working and playing nearby.

As Alberta's population continues to grow, there is increasing human use of the lake watershed, the land that drains into the lake. This, together with climatic variability, means that Albertans must consider new ways to protect our lakes to ensure they stay healthy for years to come.



Approximate number of lakes and reservoirs in each land use region.

Stewardship in the watershed

Anyone who lives within a lake watershed can take these steps to improve the health of the lake and watershed!

- Maintain natural vegetation such as native trees and shrubs–they are much easier to care for than a lawn and will filter out pollutants and nutrients.
- Don't use lawn fertilizers because they add excess nutrients that feed nuisance algae. If needed, use organic, slow-release fertilizers for other gardening uses.
- Plant native plants and shrubs on your property in places where soil is exposed. Watch for invasive species and report invaders to EDDmaps.alberta.ca.
- Prevent rainwater and snow melt from washing pollutants into the lake. Reduce non-permeable surfaces like pavement and redirect runoff towards vegetation or a rain barrel.
- Have your septic system inspected regularly and empty septic tanks as recommended, or connect to municipal sewer system.
- Keep your "wheels out of water"— off-highway vehicles are prohibited on the bed and shore of waterbodies.

Stewardship on the shore

Actions of individual shoreline residents add up to make a huge difference!

- Leave the shoreline in its natural condition — shoreline vegetation provides habitat for fish and wildlife, maintains water quality by filtering runoff and protects the shoreline against erosion. It is illegal to do any shoreline modification below the bank without written authorization from Environment and Parks.
- Aquatic plants are not "weeds" — let them grow! Submerged aquatic vegetation compete with algae for nutrients and light, trap sediment and provide important wildlife habitat. Removal requires written authorization.
- Consider sharing docks, piers and boat lanes within your community to minimize shoreline disturbance.
- Keep your beach natural, don't plow it or add sand.
- Pick up dog poop and flush it or throw it in the garbage. This will help prevent harmful bacteria and phosphorus from entering the lake.

Everything that happens within the lake watershed will have an impact on water quality and quantity.

Stewardship in the water

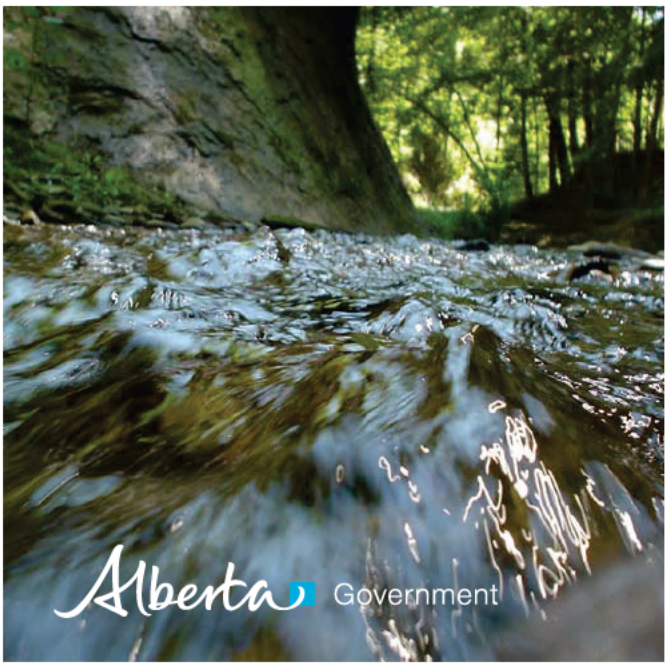
It's time to get out on the water! Responsible recreation will help keep our lakes healthy for everyone to enjoy.

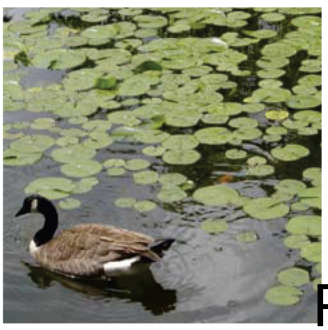
- Watch your wake! Keep motorized sports far from shore to prevent erosion and protect bird nests.
- Obey the law—keep boat speeds under 10km/hr within 30m of the shoreline and follow posted speed limits.
- Keep music and boat noise to a minimum.
- Clean Drain Dry Your Gear to prevent the spread of aquatic invasive species and diseases.
- Dispose of waste properly and remove ice fishing huts.
- Wash your pets, vehicles and off-highway vehicles at designated wash stations away from the lake.

Learn more about your lake and beneficial management practices! Get involved with your local lake stewardship group to help promote responsible lake living.

Stepping Back from the Water

A BENEFICIAL MANAGEMENT PRACTICES GUIDE FOR NEW DEVELOPMENT NEAR WATER BODIES IN ALBERTA'S SETTLED REGION





Disclaimer

The contents of this document have been prepared with funds from Alberta Environment and Sustainable Resource Development but do not necessarily reflect the Ministry's views or policies. Any mention of trade names or commercial products does not constitute an endorsement or recommendation for use.

Any comments, questions or suggestions on the content of this document may be directed to:

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Alberta Environment and Sustainable Resource Development
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Tel: 780-427-2700 (Outside of Edmonton dial 310-0000 for toll-free connection)
Fax: 780-422-4086
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This report can be cited as: *Stepping Back from the Water: A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region*.

ISBN: 978-1-4601-0058-5 (Printed Edition)
ISBN: 978-1-4601-0059-2 (On-line Edition)

Foreword

INTENDED USERS OF THIS DOCUMENT

This handbook is for anyone with an interest in minimizing the impacts and risks associated with development[1] near water bodies. The emphasis is on conserving riparian areas, the lush strips of land adjacent to lakes, rivers, streams and wetlands.

WHAT IS THE PURPOSE OF THE DOCUMENT?

The question often arises: what is the minimum setback needed to protect aquatic ecosystems from development such as buildings, roads and other permanent structures? This handbook answers this question by providing decision makers with information for determining setback widths and designing effective buffers adjacent to water bodies.

Scientific studies from around the world have shown that healthy riparian areas provide essential ecological functions. Albertans recognize the need to protect and conserve water resources and aquatic ecosystems, along with their shorelines and unique landscapes including floodplains, ravines and valleys[2]. But, construction activities in riparian areas can lead to erosion and sedimentation, flooding, slope failure, surface and groundwater pollution, and loss of valuable fish and wildlife habitat. This handbook can help avoid these and other problems by ensuring adequate setbacks and managing erosion and pollutants at source.

WHAT'S IN THIS DOCUMENT?

This publication contains the following information:

- An introduction to riparian areas;
- Recommendations for setback widths and buffers;
- An overview of riparian areas and how they function;
- Measures for protecting and conserving riparian areas;
- A listing of legislation and policy affecting riparian areas in Alberta;
- Examples of riparian guidelines from other jurisdictions;
- Managing runoff from new development; and,
- A resource list for further reading.

This document deals with setbacks only for new development adjacent to water bodies in Alberta's settled region. There are several types of setbacks for protecting water bodies in Alberta, affecting activities such as agriculture, timber operations, and oil and gas. These are beyond the scope of this document. Appendix 1 contains additional information about setback requirements in Alberta and the legislation that governs them.

[1]As defined in the *Municipal Government Act*, development may consist of a building, excavation or stockpile. See the glossary in this report for a complete definition.

[2]Sections 5 and 6.3 of the provincial Land Use polices encourage municipalities to identify unique and sensitive landscapes and take measures to minimize possible negative impacts of subdivision development.

ACKNOWLEDGEMENTS

This document was prepared by Alberta Environment and Sustainable Resource Development with assistance from AMEC Earth and Environmental and the Alberta Riparian Habitat Management Society (Cows and Fish). It is based on an extensive review of scientific studies and accepted beneficial management practices. Valuable input was received through consultation with various Government of Alberta departments, municipal officials, land-use planners, academic researchers and watershed groups. The document follows on several key recommendations and conclusions of a report[3] prepared in 2007 by a multi-stakeholder working group chaired by Alberta Environment, namely:

- Healthy intact riparian lands deliver broad benefits to society;
- Riparian lands are transition zones between the land and water. Their unique and dynamic nature present special challenges for their delineation and management;
- Riparian management is a shared responsibility of governments, communities and landowners. Within this management system, it is the role of governments to assure environmental quality;
- The best tools to achieve riparian land protection are those that help achieve outcomes and fit local environmental, social and economic conditions.

[3] *Riparian Land Conservation and Management Project: Phase One Final Report.* 2007. Prepared by Alberta Environment for Riparian Land Conservation and Management Project Members.

Table of Contents

Executive Summary

BACKGROUND

As the Ministry responsible for the *Water Act* and implementing *Water for Life*, Alberta Environment and Sustainable Resource Development has a strong interest in maintaining the integrity of riparian areas. Fundamental to the *Water Act* is the recognition that the protection of the aquatic environment[4] is essential to sustainable water management. The health of rivers, streams, lakes and wetlands involves more than managing water quantity and quality. Activities on lands near water bodies can also have a profound effect on aquatic ecosystem health and sustainability. Maintaining healthy aquatic ecosystems is one of three goals identified in Alberta's *Water for Life* strategy, which recognizes that healthy aquatic ecosystems are vital to a high quality of life for Albertans. Riparian areas, the strips of land adjacent to water bodies, have an important role in the natural regulation of water quantity and improvement of water quality. They provide many other important benefits to society including flood water conveyance and storage, groundwater recharge, shoreline protection, forage for livestock, and habitat.

The impacts and risks associated with development of riparian lands are well documented, but provincial direction on how to reduce and minimize the impacts and risks in Alberta's settled region is needed. As Alberta's population and economy continue to grow, pressure on riparian lands is increasing and the benefits they provide are being compromised. Currently, subdividing authorities have the ability to establish building development setbacks, or dedicate environmental reserve strips, for the purpose of preventing pollution. However, guidance has been lacking on exactly how wide an effective filter strip should be. In response to these and other concerns, Alberta Environment and Sustainable Resource Development has prepared this handbook to help minimize the impact of new development on water bodies in Alberta's settled region. By keeping permanent developments an appropriate distance from the water, maintaining riparian areas in a healthy state, and managing sources of pollution in our watersheds, the ecosystem services provided by riparian areas can be maintained and enjoyed for generations to come.

CONTENT AND SCOPE

The *Stepping Back from the Water* handbook is designed to assist municipalities, watershed groups, developers and landowners in Alberta's settled region determine appropriate water body setbacks for development around our lakes, rivers and wetlands. It will also encourage new policies for achieving riparian environmental outcomes. The handbook will help users with the following:

1. Identifying riparian lands, and understanding key riparian area functions;
2. Understanding how setbacks can be applied to create effective riparian buffers;
3. Conserving and managing riparian land;
4. Managing erosion and pollutants associated with new development.

The *Stepping Back from the Water* document contains recommendations for development setbacks and riparian buffer management based on a review of the scientific literature, published monographs, and regulatory and planning documents from various jurisdictions in Canada and the USA. Buffer strip recommendations for water quality functions were made using only the scientific literature, whereas a variety of sources were used relative to other core riparian functions including flood water conveyance and storage, bank stability, and habitat. In these cases, existing policies and beneficial management practices supplemented the scientific literature and offered practical guidance.

The *Stepping Back from the Water* handbook also provides guidance on watershed-scale approaches for protecting water bodies, sensitive areas, wetlands, shorelines and water quality, recognizing that riparian buffer strips alone are unlikely to reduce runoff and nutrient loading into surface waters. The importance of working together, and using a broad suite of tools and approaches to manage human impact on our natural environment, cannot be overemphasized. Later sections and the report's appendices contain information and links for land and water management beyond riparian areas.

[4]The aquatic environment is a complex system that is influenced by many factors such as climate, weather patterns, landscape and geology. It includes naturally occurring features, such as rivers, streams, creeks, riparian areas, lakes, wetlands and groundwater. Each water body is associated with a unique variety of plant and animal life as well as a riparian area.

HOW DO *STEPPING BACK FROM THE WATER'S* RECOMMENDATIONS COMPLY WITH EXISTING ALBERTA GUIDELINES AND REQUIREMENTS FOR SETBACKS ADJACENT TO WATER BODIES?

The recommendations for water body setbacks and riparian filter-strip widths in *Stepping Back from the Water* are discretionary. They are intended to assist local authorities and watershed groups in Alberta's White Area[5] with policy creation, decision making and watershed management relative to structural development near water bodies. Alberta Environment and Sustainable Resource Development provides municipalities with guidelines for minimum environmental reserve/easement widths; however, *Stepping Back from the Water's* recommendations can be used to supplement those guidelines. When timber is cleared under a timber disposition, the Alberta Timber Harvest Planning and Operational Ground Rules will provide direction for the removal of the timber and the buffers (setbacks) required. Appendix 1 contains additional information about setback requirements in Alberta and the legislation that governs them.

STEPPING BACK FROM THE WATER HANDBOOK HIGHLIGHTS

- Setback recommendations are made with the following factors in mind:
  - » water quality functions of riparian areas,
  - » effect of slope on effectiveness of vegetated filter strips,
  - » risk of shallow groundwater contamination,
  - » flooding,
  - » shoreline migration, and
  - » bank stability.
- The 1:100 flood is recommended for determining setbacks relative to flood water conveyance and storage,
- Appropriate environmental assessments are recommended for protecting shallow groundwater and avoiding unstable ground,
- Additional buffer considerations are recommended for protecting aquatic and terrestrial habitat, wildlife travel corridors, and rare species,
- An appendix contains a summary of federal and provincial legislation, regulations, policies and guidelines that affect water body or riparian area management in Alberta,
- Examples from various Alberta municipalities and other jurisdictions are included to illustrate how others have approached riparian area management.

Alberta's Settled (White) Area

[5]Alberta's White Area was set aside as land primarily suited for agriculture and settlement. It covers about 39 per cent of Alberta (see map).

Water is the most critical resource issue of our lifetime and our children's lifetime. The health of our waters is the principal measure of how we live on the land. LUNA LEOPOLD

Setbacks and Buffers

INTRODUCING YOU TO RIPARIAN AREAS

You have likely walked in or crossed over a riparian area. You may live, work or play in one. As Alberta was settled, pioneers were attracted to agricultural land that was partly covered by woods and water. Sought-after lands often included riparian areas along rivers and streams or around wetlands and lakes. Towns and cities have since evolved from these early settlement patterns and many Albertans still live next to or in riparian areas. Over time, residential developments, recreational amenities, roads and industrial activities have encroached more and more on these attractive areas. Our current demands on riparian areas now compromise their ability to provide the environmental, aesthetic, and economic benefits that attracted settlers in the first place.

Let's Talk About Water

Albertans are concerned about water since our lives are intertwined with fresh water from surface and groundwater sources. Many of us live in areas of the province where water supplies are not abundant. The limiting factor to us isn't space, it's water. Water is essential for life and commerce; a finite amount means our care of it should be paramount.

Albertans have identified water quality and quantity as priorities. What influences water quality and quantity? In many cases it is how we treat the landscape (and watershed) and the areas that adjoin water – riparian areas. What can we do better and smarter around water bodies to improve and maintain them? To start we need to be able to identify those pieces of the landscape essential for our attention and management.

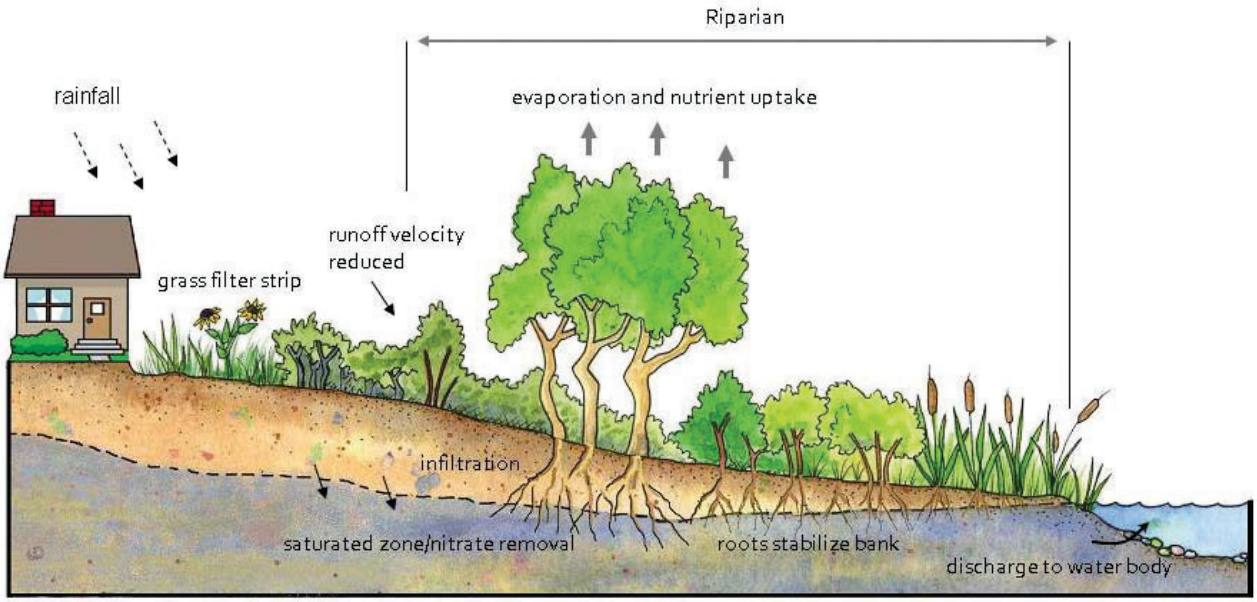
Credit: Alberta Riparian Habitat Management Society (Cows and Fish)

What are Riparian Areas?

If we get back to the basics, riparian areas are the place where water and land meet and interact. It is the interaction part that best defines a riparian area. They usually are distinctly different from surrounding lands because of unique soil and vegetation characteristics that are influenced by the presence of water above the ground and below the surface. Riparian areas occupy a small part of the landscape, but are important ecologically, socially and economically. They are the "thin green lines" between all we do in uplands and the effect of that use on aquatic ecosystems.

Riparian areas are created and maintained by water. A lot of water is present, seasonally or regularly, on the surface or close to the surface. Native riparian vegetation requires and survives well with abundant supplies of water. Soils have been modified by water, the deposition of sediment and by lush vegetation. Typical native riparian plants in Alberta's settled region include sedge, cattail, willow, cottonwood and poplar. Topographically, the riparian area can have variable widths and can be sloped or flat. Groundwater generally flows along the topographical gradient, or where the riparian area is level to gently sloping, flow direction is influenced by the surface water level. When your eye has been trained to recognize these unique areas, the distinctions between riparian and upland boundaries become clear. In some cases, because of developments that encroach into riparian areas, that distinction is lost. Only when riparian areas are inundated by high water, from a flood for example, are we reminded that these areas are created and maintained by water.

Figure 1
Illustration Showing a Riparian Area and Some of Its Interactions with Water



What Makes Riparian Areas Special?

As our understanding about the role of riparian land grows, so does our appreciation of how important these areas are to us. Healthy riparian areas possess several unique functions and provide important ecosystem services and benefits to society including:

Water Quality Functions (sediment, nutrients, flows and temperature)

- Improve water quality by trapping sediment, sediment-bound nutrients and other contaminants from surface runoff before they reach the water and downstream water users
- Reduce the velocity of sediment-bearing storm flows, allowing sediments to settle out of water and be deposited on land instead of being carried downstream
- Contribute large woody debris (snags) to streams that can trap large amounts of sediment
- Remove nutrients from groundwater via uptake in vegetation and by denitrification
- Help prevent eutrophication of aquatic ecosystems
- Shade and cover provided by riparian vegetation can moderate water temperature in small (low order) streams

Flood Water Conveyance and Storage

- Riparian areas reduce peak flows and downstream flooding. As flood water flows through a vegetated area, the plants resist the flow and dissipate the energy, increasing the time available for water to infiltrate into the soil and be stored for use by plants.
- The water that is stored in shallow groundwater (alluvial) aquifers helps maintain stream flow (and water quality) during low flow periods.

Bank and Shoreline Stabilization

- Deep-rooted, native plants protect shorelines by reducing bank erosion, bank failure, sediment transport, and loss of valuable lands

Habitat and Biodiversity

- Capture organic matter that is a source of food and energy for the aquatic ecosystem
- Support an exceptional level of biodiversity due to natural disturbance regimes, a diversity of habitats, and small-scale climatic variations
- Support species at risk
- Provide undercut banks, shade, food and woody debris to aquatic ecosystems
- Facilitate plant and animal dispersal along green corridors

Finally, naturally functioning riparian areas provide a range of social and economic benefits through their provision of water quality functions and other processes:

- Provide public access, recreational and educational opportunities in an aesthetically pleasing landscape
- Capture and slow flood waters, thereby decreasing damage to property
- Provide an important source of grazing land and forage for managed livestock grazing
- Provide green space that can increase property values
- Reduce the need to combat flooding, repair eroding stream banks, and replace damaged property

Other sections of this handbook contain more information about riparian areas and the benefits they provide to property owners, communities and to society.

DRAWING THE LINE: SETBACK WIDTHS

Setbacks identify the minimum distance required between water bodies and development, separating those areas where we want to work and live from what we want to conserve and protect. The strip of land created is generally called a buffer. Buffers are sometimes described as the boundary between the natural and the man-made world. Buffers can be comprised of a vegetated filter strip[6] consisting of riparian and upland vegetation, a slope allowance, and in some cases can include a wildlife corridor as well.

To function effectively, riparian areas must be healthy. Placing permanent structures in riparian areas not only compromises riparian function, but puts people and property at risk from flooding, ice damage, unstable ground and other dangers. Development of riparian lands can have many undesirable consequences including: altered drainage and sedimentation processes, decreased bank stability and increased erosion and pollutants, introduction of invasive species, habitat loss, and visual impacts. In many cases, development near water will be constrained by an active flood plain and topographic factors such as steep slopes and unstable ground. Keeping development back from such hazards will in most cases be sufficient for avoiding riparian areas. In others, it may be necessary to maintain a vegetated filter strip as a buffer. This chapter explains how setbacks can be determined for different types of water bodies found in Alberta's White Area, and how setbacks can be used to create effective riparian buffers.

The approach described in this document can be used for most types of permanent developments including the following:

- Urban subdivisions
- Country residential developments
- Cottages
- Farm buildings
- Golf courses (buildings)
- Commercial buildings
- Stormwater ponds
- Roads and dikes, and
- Temporary land uses such as sand and gravel pits.

Scientific studies have found that the effectiveness of riparian buffers as water quality filters varies from location to location. The size, topography and geology of the watershed determine the amount and quality of surface water and groundwater that passes through a buffer. Site characteristics such as slope, soils and substrate can determine the amount of pollutants that are filtered out before they reach the water body. Although the type and health of vegetation can affect sediment removal effectiveness, nitrate removal in riparian areas is influenced mainly by hydrogeological characteristics, for example see Vidon and Hill (2004, 2006).

The large number of variables that control the effectiveness of riparian buffers in filtering pollutants underlines the importance of maintaining riparian areas in a natural state and in so doing, maintaining ecological processes. For example, studies suggest that the quantity and quality of the organic carbon in subsurface sediments in riparian areas regulate the removal of nitrogen (Hill and Cardaci 2004), and zones of high biological activity and groundwater flow are more effective at removing this nutrient (Maitre et al. 2003). Although prescribing a minimum setback distance is difficult, scientific studies generally agree that wider, forested riparian strips are more effective at removing pollutants. The setback needed to maintain other important functions including water storage and flood control, bank stabilization, and aquatic and terrestrial habitat depend more on hydrological and landscape factors than width alone.

Setbacks should be determined on a case-by-case basis by a person or persons qualified to make these assessments. This may involve a report certified by a professional biologist, engineer, geologist or geophysicist, as defined in the appropriate legislation governing these professions.

[6]A vegetated filter strip is land left in a natural, preferably undisturbed state, usually consisting of riparian soils and native or planted vegetation, situated between development and a water body.

Thinking About Objectives

Organizing objectives according to the water body classification used in this document is recommended. The classification includes: 1) Lakes and Class III, IV, V, VI & VII Wetlands; 2) Rivers and Streams; 3) Ephemeral/intermittent streams; 4) Class I & II Wetlands, Seeps and Springs. Ephemeral streams are streams that flow only during and immediately after rainstorms. Intermittent streams flow for part of each year.

Setbacks are only one tool for achieving desired environmental outcomes for riparian lands and aquatic environments. Managing development and agricultural and industrial land uses throughout the watershed play an integral role in protecting sensitive landscapes and managing sources of pollution. Later sections and the appendices of this report contain information on policies, legislation and resource management strategies for achieving environmental outcomes.

Policy and Legislation Affecting Riparian Areas

Working knowledge of relevant policy and legislation and how they affect development adjacent to water bodies is a prerequisite for ensuring that any proposed or new setback widths complement and do not conflict with existing sets of rules. For example, municipalities may have addressed riparian and wetland protection in their plans and polices, or may have created guidelines for setbacks in their Area Structure Plans. Alternatively, watershed management plans may provide additional guidance for riparian conservation and management.

There are several important pieces of legislation affecting land development on or adjacent to shorelines and riparian areas in Alberta, including the following:

- *Municipal Government Act* – Alberta Municipal Affairs
- *Fisheries Act* – Fisheries and Oceans Canada (DFO)
- *Migratory Birds Convention Act* – Environment Canada, Canadian Wildlife Service
- *Navigable Waters Protection Act* – Transport Canada
- *Public Lands Act* – Alberta Environment and Sustainable Resource Development
- *Water Act* – Alberta Environment and Sustainable Resource Development
- *Forest Act* – Alberta Environment and Sustainable Resource Development

Appendix 1 contains a complete list of policy and legislation affecting riparian areas along with a brief summary of each policy or act.

Technical Information Needs for Determining Setback Widths

The more detailed information that is collected and used in this process, the more likely the buffer will provide desired ecosystem services and benefits. This section describes the technical information needed for determining setbacks, along with recommended data sources (Table 1). At a minimum, information assembly should support the determination of filter strip width, unstable ground, erosion-prone areas, and the flood plain.

The retention of full-width buffers to protect habitat and biodiversity may not always be practical; however, emphasis should be placed on protecting environmentally significant areas, sensitive wildlife habitats, and rare species. In the absence of recent data for the specific site or area that is being considered, a qualified environmental professional may be needed to identify and collect relevant information.

Mapping the Legal Bank of a Water Body

The legal bank[7] of a water body should be determined as defined in the *Surveys Act*. Setbacks should be measured from this line, except for ephemeral/intermittent streams where the middle axis of the channel can be used. Aerial photographs and Alberta hydro-net data can be used to map the legal bank; however, using a LiDAR-derived Digital Elevation Model (where available) will give a much more accurate representation of stream networks and wetlands, and water body boundaries. The actual legal bank will have to be determined for each individual water body in the field at time of survey. Marshland or wetland vegetation such as cattails and sedges form part of the bed and shore of a water body.

[7]Under Section 3 of the *Public Lands Act*, the Crown claims title to the beds and shores of all permanent and naturally occurring bodies of water including rivers, streams, watercourses and lakes.

Table 1
Recommended Data and Sources, by Function

Type of Data	Data Source
Water Quality Functions	
Topography and Slope[8] • Topographic slope from the legal bank extending out to adjacent uplands, including floodplains and valley escarpments.	**Maps** Alberta Geological Survey; Alberta Soil Information Viewer (AGRASID); Canadian Soil Information System (CanSIS) **DEMs** AltaLIS: Spatial Data Warehouse Ltd.; DEMs using LiDAR: Alberta Environment and Sustainable Resource Development
Parent Material • Glacial till or water/wind deposited substrate.	**Maps** Alberta Geological Survey; Alberta Soil Information Viewer (AGRASID); Canadian Soil Information System (CanSIS)
Groundwater • Surficial aquifers/alluvial aquifers (areas of high hydraulic connectivity between surface water and groundwater and vulnerable to surface contamination)	**Maps and Records** • Agri-Environment Services Branch (AESB); Alberta Environment and Sustainable Resource Development: Groundwater Information Centre, Groundwater Observation Well Network; Groundwater Centre (www.tgwc.com); Watershed Management Plans
• Shallow groundwater (< 1.8 m)	• Geotechnical studies.
• Springs, seeps	• Topographic land surveys; geotechnical studies.
Flood Water Conveyance & Storage	
Floodplains (Rivers and Streams) • Floodway and flood fringe • 1:100 year floodplain	**Flood Hazard Maps** • Alberta Environment and Sustainable Resource Development **Areas Without Flood Hazard Maps** • Use the most recent topographic maps to evaluate land contours & elevations, named water bodies, and wet areas. Choose at least four aerial photos between 1960 (or earlier) and the present to determine if the site is subject to periodic inundation by water. Photos taken during the months of April-June have a higher chance of showing flooded areas; flood photography is also available from Alberta Environment and Sustainable Resource Development. The use of satellite and LiDAR imagery is acceptable for determining flood prone areas.
Flood Water Conveyance & Storage	
Flood Levels (Lakes) • 1:100 year level	**Maps** • Alberta Environment and Sustainable Resource Development
Bank/Shoreline Stability	
Erosion Prone Lands, Undercut Banks • such as the outside bends of rivers having dynamic channels, including highly erodible soils & areas subject to channel migration	**Soil Maps** • Alberta Geological Soil Survey; Alberta Soil Information Viewer (AGRASID); Alberta Agriculture and Rural Development: Water Erosion Risk Map of the Agricultural Areas of Alberta; Canadian Soil Information System (CanSIS); geotechnical studies.

[8]There is a direct relationship between slope and erosion potential, conversion of nutrients, and retention of nutrients. A steeper slope usually results in higher erosion potential and lower nutrient conversion and retention. Slopes with grades of 15 per cent or over are steep. If disturbed, these areas can yield heavy sediment loads on streams. Very steep slopes, over 25 per cent grade, produce heavy soil erosion and sediment loading.

Type of Data	Data Source
Bank/Shoreline Stability (continued)	
Sloping Ground • including slopes more than 25%. Slope constraint maps, if available.	**See "Topography and Slope"** • Some municipalities may have slope constraint maps for areas with approved area structure plans. Note: gathering of these data can be coordinated with preparation of Master and Overland Drainage Plans.
Unstable Ground • such as the base and top of steep banks, or close to seeps and springs	• Geotechnical studies
Habitat/Biodiversity	
Environmentally Significant Areas (ESAs) • includes some riparian areas of major rivers	**Maps and Records** • Alberta Conservation Information Management System (Alberta Tourism, Parks and Recreation). Municipalities also may house updated information.
Wildlife Sensitivity Maps • includes migration corridors, critical wildlife summer or winter range(s), traditional nesting, calving, fawning, or birthing sites, endangered and threatened plants ranges, colonial nesting birds, sensitive amphibian ranges.	**Maps and Data** • available through Alberta Environment and Sustainable Resource Development Landscape Analysis Tool used by the Government of Alberta's Enhanced Approval Process. • See also: Ducks Unlimited Canada; Hinterlands Who's Who and Canadian Important Bird Areas (IBA).
Rare Species • Includes wildlife species at risk that rely on or use riparian areas, including northern leopard frog, peregrine falcon, prairie falcon, bald eagle, great blue heron, and other species. • Includes rare plant species or rare plant communities.	**Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta** • Alberta Environment and Sustainable Resource Development ***Species at Risk Act*** • www.sararegistry.gc.ca **Contacts** • Alberta Conservation Information Management System (Alberta Tourism, Parks and Recreation). If the proposed development is in a natural landscape, a rare plant survey should be considered. • Alberta Environment and Sustainable Resource Development – Fish and Wildlife Division.
Vegetation • Cover type & composition	**Aerial Photos/Imagery** • Government of Alberta Aerial Photo Distribution Centre **Inventories** • Alberta Grassland Vegetation Inventory, Alberta Vegetation Inventory (Alberta Environment and Sustainable Resource Development)

Why Are Riparian Buffers Needed in Urban Areas?

Nitrogen export from urban watersheds generally is a major contributor of water quality degradation and eutrophication of receiving water bodies (McLeod et al. 2006, Massal et al., 2007, Shields et al. 2008). Low density suburbs served by septic systems can be major contributors to downstream nitrogen loading, while more heavily urbanized, impervious areas tend to have a greater nitrogen export under high-flow conditions. Phosphorus export from non-point sources in urban areas is generally less than from agricultural land, except for urban commercial developments where it can be higher. Studies generally show that undisturbed riparian buffers can help ensure proper filtration and maintenance of water quality in urban areas.

Even though urban stormwater systems direct large amounts of stormwater away from riparian areas, substantial amounts of stormwater still reach riparian areas in urban environments, especially during high-flow storm events. Nitrogen and phosphorus loadings in runoff from urban lands are generally higher than from native grass and parkland, and are similar to loadings from pasture and cropland (Table 2). For these reasons, vegetated filter strips adjacent to water bodies are strongly recommended as a beneficial management practice in urban areas, and minimum effective widths for removing pollutants are provided in the following section (Table 3). The recommended widths for vegetated filter strips in Table 3 are based on a thorough review of the scientific literature. Developers wishing to use narrower filter strips should be able to demonstrate that narrower strips are adequate for preventing pollution.

Table 2
Selected Export Coefficients for Various Land Use Categories (kg/ha/yr)

Land Use Category	Total Phosphorus	Total Nitrogen	Author, Location
Urban, residential	0.03-1.90	0.17-0.79	USEPA (2002); Oberts (1989); MDEP (2000); McLeod (2006), Various
Urban, commercial	0.48 1.70-3.00	2.18	McLeod et al. (2006), Saskatchewan Oberts et al. (1989), Minnesota
Lawns, golf courses	0.51 0.19	1.43 1.52	King et al. (2007), Texas Reckhow et al. (1980), Pennsylvania
Parkland	0.03-0.08	0.20-0.82	Jeji (2004), Alberta
Forest	0.18	0.45-2.50	USEPA (2002); MDEQ (2001), Montana
Pasture	0.20-1.42	5.10	Mitchell & Trew (1982), Alberta
Cropland	0.01-0.63	0.010-2.13	Ontkean et al. (2000), Alberta

What is the Appropriate Setback Width?

This section contains a step-by-step approach for determining setbacks for all types of water bodies and various types of development. A checklist, recommendations by function, a table (Effective Widths for Vegetated Filter Strips), and diagrams are provided to help determine what the setback should be for any particular situation.

Checklist

1. **Define scenario**
   Assemble background information. What type of water body is affected? What type(s) of lands are being buffered (e.g., urban, country residential, agricultural)? Are large industrial spills a possibility?
2. **Summarize key information**
   What type of substrate is adjacent to the water body? What is the slope profile of the bank and backshore? Is there unstable ground, and what is its location? Where is the 1:100 year floodplain? Is there shallow groundwater and what is its location?
3. **Determine width of vegetated filter strip**
   The width of a vegetated filter strip needed for removing pollutants will depend mainly on the type of substrate (i.e., glacial tills or sands/gravels).
4. **Determine setbacks relative to site constraints**
   Consider unstable ground, slopes, shallow groundwater, and floodplain.
5. **Additional considerations**
   Adjust setback for other needs including habitat/biodiversity.

Setback Recommendations (By Function)

Water Quality Functions

- Table 3 lists effective widths for vegetated filter strips for removing nitrate, and trapping other contaminants including sediment and phosphorus. For sites that contain both till and alluvial sediments, refer to Table 4 to determine the appropriate widths.
- The risk of contacting shallow groundwater should be assessed, and where necessary, setbacks should be increased to prevent contacting shallow groundwater. Alternatively, measures should be taken to protect against its contamination in accordance with current legislation and guidelines.
- Siting of sewage disposal systems will follow standard Alberta septic system management practices (Appendix 1 contains a list of policies and legislation governing septic systems).
- Siting and maintenance of aggregate extraction pits will follow Alberta's *Code of Practice for Pits*, and *A Guide to the Code of Practice for Pits* (Alberta Environment and Sustainable Resource Development). A setback of at least 50 metres is recommended along rivers whose channels consist of coarse, alluvial sediments (Table 3). Appendix 1 contains information about the *A Guide for Code of Practice for Pits*.

Bank and Shoreline Stability

- Appropriate setbacks should be used to keep development back from areas that may be susceptible to slope movement and erosion. A geotechnical assessment should be carried out using accepted engineering principles with regard to slope stability, toe erosion and shoreline migration.

Flood Water Conveyance and Storage

Lakes, and Class III - VII Wetlands:

- Setbacks should encompass the 100-year water level, plus an allowance for wave action and, if necessary, an allowance for other water-related hazards such as ice piling.

Rivers and Streams:

- If the flood fringe and floodway have been mapped, the setback should encompass the floodway. In general, new development within the floodway is not permitted. Within the flood fringe area, development may be permitted when certain design conditions are met.
- If the flood hazard area has not been mapped, a qualified environmental professional (e.g., hydrologist) should be retained to properly assess flood hazard risk and provide setback recommendations, using the following criteria:
  - » Flood risk assessments should be conducted within 100m of all named rivers and streams, or wherever flood hazard is believed to exist. Table 1 contains information sources for identifying flood risk areas.
  - » The scope of the assessment will depend on the nature of the development relative to flood hazard. Proponents are encouraged to discuss proposed assessments with Alberta Environment and Sustainable Resource Development to clarify matters of scope.
  - » To minimize the risk from floods, developments are frequently restricted to outside the generally accepted 1-in-100-year flood elevation line. A 1-in-100-year flood is a flood having a 1 per cent chance of being equalled or exceeded in any given year. Based on the expected floodwater level data (defined by monitoring gauges or geomorphic indicators), a predicted area of inundation can be mapped out.

For more information on flood hazard mapping, go to the Alberta Environment and Sustainable Resource Development website: www.environment.alberta.ca/01655.html.

Habitat and Biodiversity

- The setbacks for other core functions will in most cases protect aquatic and terrestrial habitat including: undercut banks, shade, food, woody debris, facilitate plant and animal dispersal, and help conserve riparian-dependent species.
- Setbacks should be extended to encompass environmentally sensitive areas, sensitive wildlife areas, and rare species. Each situation should receive an assessment and recommendation by appropriate qualified environmental professionals (e.g., wildlife biologist, botanist, rare plants specialist).
- Appendix 3 contains corridor widths for various species of wildlife and species at risk.

Table 3
Effective Widths for Vegetated Filter Strips

Type of Water Body	Substrate	Width	Modifiers	Notes
Permanent Water Bodies Lakes, Rivers, Streams, Seeps, Springs Class III - VII Wetlands	Glacial till	20m[9]	If the average slope of the strip is more than 5%, increase the width of the strip by 1.5 m for every 1% of slope over 5%	Slopes > 25% are not credited toward the filter strip
	Coarse textured sands & gravels, alluvial sediments	50m[10]	None	Conserve native riparian vegetation and natural flood regimes
Ephemeral and Intermittent Streams, Gullies	Not specified	6m strip of native vegetation or perennial grasses adjacent to the stream channel crest[11]	If the average slope of the strip is more than 5%, increase the width of the strip by 1.5 m for every 1% of slope over 5%	Maintain continuous native vegetation cover along channels and slopes
Class I & II Wetlands	Not specified	10m strip of willow and perennial grasses adjacent to water body[12]	None	Maintain and conserve native wetland or marshland plants on legal bed and shore

In situations where the land near a water body consists of a combination of alluvial or coarse-grained sediments adjacent to the legal bank and glacial till further inland, use Table 4 to determine how wide a vegetated filter strip should be.

[9] Vidon and Hill 2006 (See Appendix 2 for additional supporting references)

[10] Vidon and Hill 2006 (See Appendix 2 for additional supporting references)

[11] Gharabaghi et al. 2006 (minimum width of strip required for capturing sediment > 40 µm)

[12] Liu et al. 2008 (optimal width of strip for capturing sediment)

Table 4
Width Combinations of Vegetated Filter Strips Situated on Both Till & Alluvium (metres)

Alluvium	Till	VFS Width
0	20	20
5	18	23
10	16	26
15	14	29
20	12	32
25	10	35
30	8	38
35	6	41
40	4	44
45	2	47
50	0	50

To use Table 4, first determine the average width of the alluvial sediments that are adjacent to the target water body, and find that width in the "alluvium" column in the table. Then, find the corresponding width of till in the adjacent "till" column. This will determine how wide the alluvium and till strips will be, along with the total width of the strip, for areas with an average slope of less than five per cent.

Example:

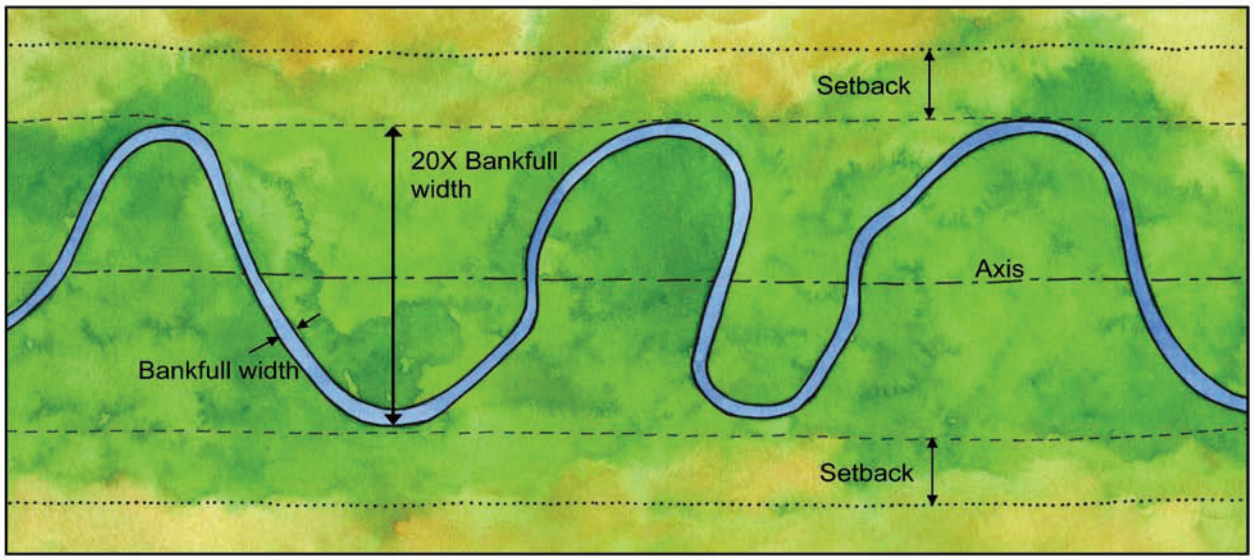
- Average width of alluvium from map or field measurements = 10 metres
- Corresponding width of glacial till = 16 metres
- Total width of vegetated filter strip = 26 metres

Figure 5 contains another example of how to determine filter strip width on sites that consist of both till and alluvium.

Additional Considerations

- Riparian areas that are currently in a natural state, especially filter strips adjacent to a drinking water source, should be maintained free of any development or impervious surfaces that may increase the chances of polluted runoff entering the water body.
- Riparian areas that are already disturbed should be reclaimed to a natural state. This may be done as compensation under *Fisheries Act* authorizations.
- The most effective filter strips contain healthy, native forest vegetation and perennial grasses to improve diffuse flow and trap sediment. In general, the wider the filter strip the better it will perform; however, the first five metres are critical for the removal of suspended sediments (Gharabaghi et al. 2006). More than 95 per cent of the aggregates larger than 40 μm in diameter (coarser silt fraction plus sand) can be captured within the five metres of a grass strip.
- Regular harvesting of buffer vegetation may reduce export of phosphorus.
- Revegetate cleared areas and bare ground by planting perennial grasses, trees and shrubs.
- Remediate concentrated flow paths where possible and install additional grass buffer strips or grassed swales.
- For medium-sized and smaller watercourses that have actively moving channels through the active processes of bank erosion and bank building, consider using the width of the meander belt (Figure 2). For such streams, aerial photos often show the existence of abandoned channels or oxbows and other associated features, and can help in mapping the meander belt. The meander belt is determined by multiplying bank full width by 20 for each reach, and is split equally on either side of the channel along its axis. Setbacks are measured from the edge of the meander belt as opposed to the legal bank of the watercourse.
- Use a minimum 30 metre buffer if the water body is fish bearing or where the riparian vegetation is dominated by trees. This would enhance shading and overhang by trees, important elements on fish-bearing streams.

Figure 2
Schematic Diagram of a Meander Belt



Reservoirs

Note:
Alberta Environment and Sustainable Resource Development requires a certain amount of land around reservoirs. This area is often referred to as the reservoir right-of-way or buffer zone. The reservoir right-of-way is determined after consideration of geotechnical data on soil and slope stability, potential flood levels, and mitigation requirements. Generally, the criteria used to determine the amount of right-of-way is the top-of-dam contour elevation with a minimum distance of 30 metres from the reservoir full supply level. Where the top-of-dam contour elevation falls across a slope, additional land is acquired to ensure stability.

Industrial Development and Transportation

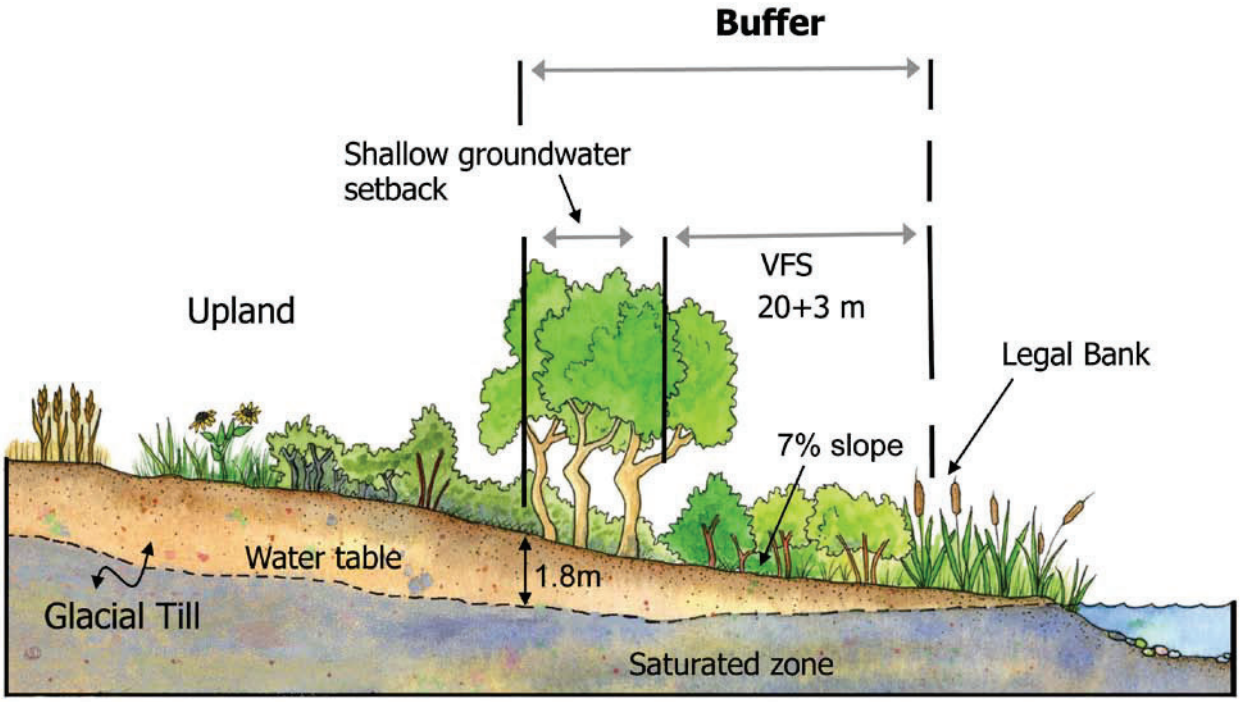
- All new proposed industrial developments will follow Alberta Environment and Sustainable Resource Development's *A Guide To Content of Industrial Approval Applications*.
- All new and upgraded rural watercourse crossings will follow Alberta Transportation's best practice *Guideline for Stormwater Management at Rural Stream Crossings*.

Buffer Diagrams

This section contains some diagrammatic examples of how setbacks can be applied to create buffer strips on various water bodies using the rules described above. The relative setback widths shown are only examples. Actual setback widths will depend on local conditions. The diagrams are drawn not to scale.

Note:
The total buffer should be wide enough to achieve all desired functions, but it should be no less than the calculated width of the vegetated filter strip (i.e., 20 metres + slope factor for glacial till; 50 metres for alluvial sands/gravels), where contaminant removal is a priority.

Figure 3
A lake or wetland buffer on glacial till, comprised of a vegetated filter strip (VFS), and setback for shallow groundwater.

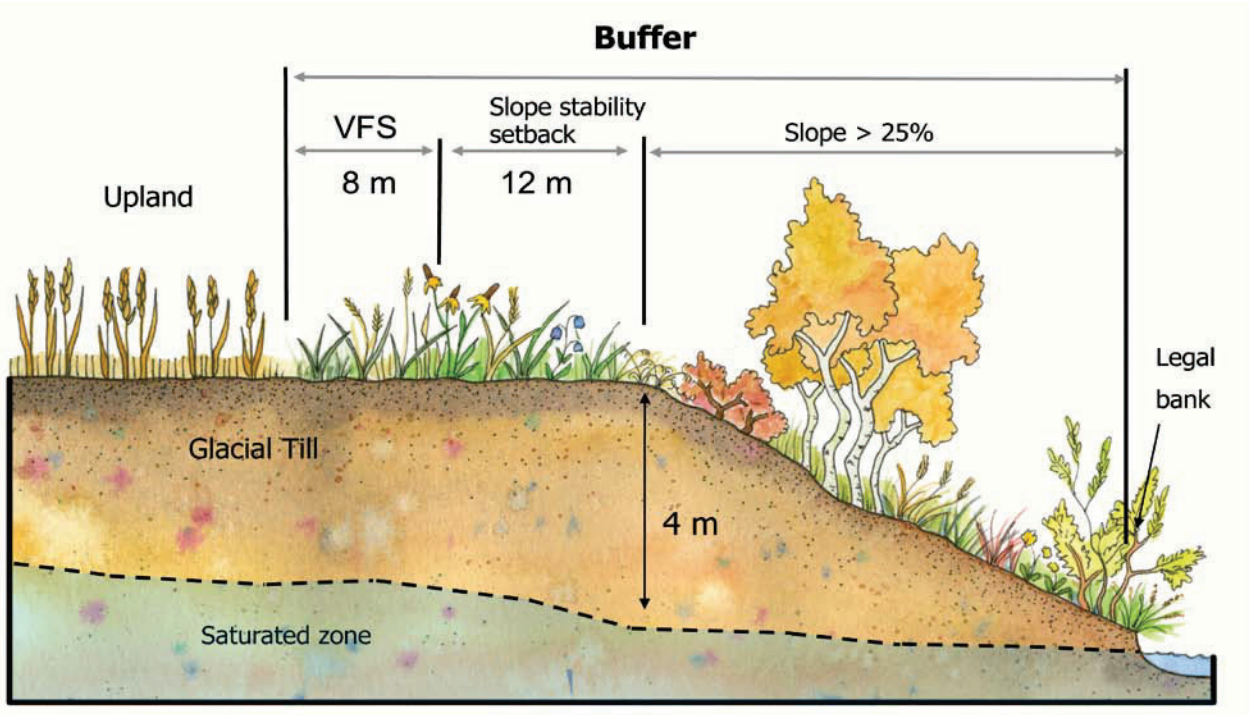


Buffer width calculation for Figure 3

Setback	*Width (metres)*
Vegetated filter strip (glacial till)	20
Slope factor, glacial till (7 - 5) x 1.5	3
Setback to avoid shallow groundwater[13]	10
Total buffer width	33

[13] The setback to avoid contacting shallow groundwater will vary depending on local conditions. Alternatives to a setback can be taken to avoid contacting shallow groundwater.

Figure 4
A stream buffer on glacial till, comprised of a steep slope, slope stability setback, and a vegetated filter strip. The steep slope does not count toward the vegetated filter strip.

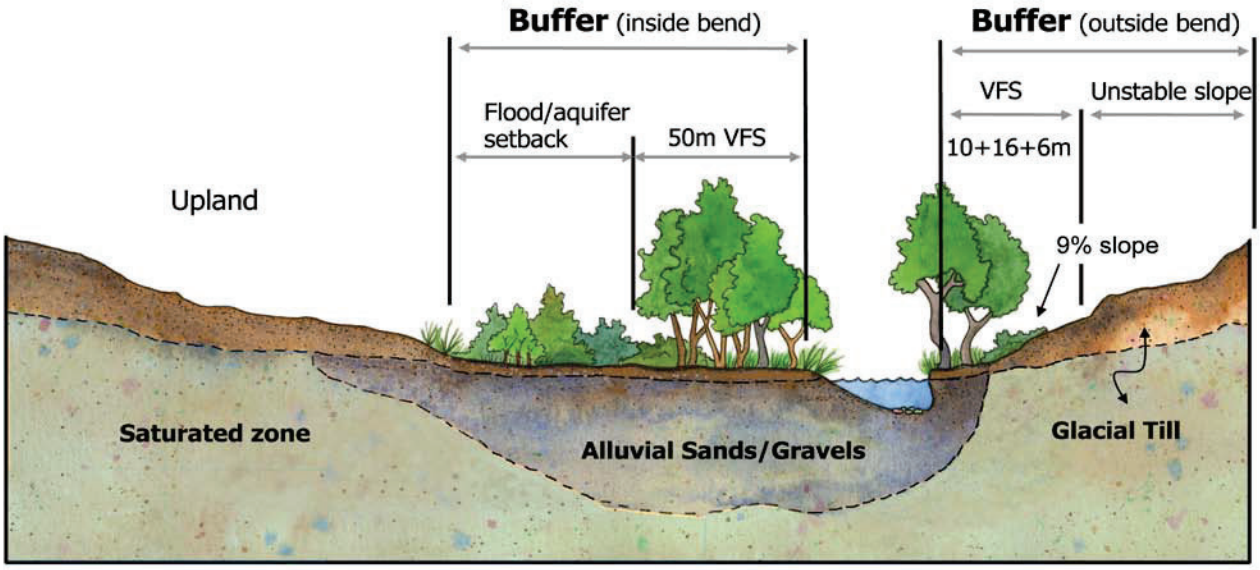


Buffer width calculation for Figure 4

Setback	*Width (metres)*
Steep slope > 25%	16
Slope stability setback[14]	12
Vegetated filter strip	8
Total buffer width	36

[14] The width of the slope stability setback will vary depending on local conditions and the geotechnical method used.

Figure 5
River buffers on glacial till and alluvial sands/gravels, comprised of vegetated filter strips, a flood/aquifer setback, and a slope stability setback.



Buffer width calculation for Figure 5

Setback (Inside Bend)	*Width (metres)*
Vegetated filter strip (alluvium)	50
Flood/aquifer setback (site dependent)	50
Total buffer width	100

Setback (Outside Bend)	*Width (metres)*
Vegetated filter strip (alluvium)	10
Vegetated filter strip (glacial till, Table 4)	16
Slope factor, glacial till (9% – 5%) x 1.5	6
Unstable slope setback (site dependent)	20
Total buffer width	52

ESTABLISHING RIPARIAN BUFFERS

Riparian buffers created through development setbacks as described above may be legally designated in accordance with the *Municipal Government Act* by various methods. These include:

- Environmental reserve or environmental reserve easement: recommended for dedicating a vegetated filter strip adjacent to a water body to prevent non-point source pollution,
- Municipal reserve: recommended where land may be used for a public park, a public recreation area adjacent to or near a vegetated filter strip.
- Conservation easement: recommended where the landowner can benefit by retaining ownership of the land or some property tax reductions, and the municipality can benefit by not having to manage small parcels of land.

Municipalities may also create defacto buffers through the creation of land-use bylaws. Section 640 of the *Municipal Government Act* enables building development setback land use bylaw provisions on land subject to flooding or subsidence or that is low lying, marshy or unstable or on land adjacent to or within a specified distance of the bed and shore of any lake, river, stream or other body of water. A "building" includes anything constructed or placed on, in over or under lands, but does not include a highway or road or a bridge that forms part of a highway or road.

Other options for landowners include the Government of Canada's Ecological Gifts program in which private and corporate landowners can make donations of ecologically sensitive land (e.g. wetland areas), or interests in these lands, and receive tax benefits.

Developers are strongly encouraged to establish riparian buffers together with other environmental features associated with water bodies, with the purpose of protecting sensitive lands or providing public access for enjoyment of natural features. For example, section 664(1) of the MGA: Subject to section 663, a subdivision authority may require the owner of a parcel of land that is the subject of a proposed subdivision to provide part of that parcel of land as environmental reserve if it consists of:

- a swamp, gully, ravine, coulee or natural drainage course,
- land that is subject to flooding or is, in the opinion of the subdivision authority, unstable, or
- a strip of land, not less than six metres in width, abutting the bed and shore of any lake, river, stream or other body of water for the purpose of
  - » preventing pollution, or
  - » providing public access to and beside the bed and shore.

Riparian buffer boundaries should be clearly marked and signed in the field and on appropriate maps and drawings prior to commencement of any subdivision site work. Temporary boundary markers should be maintained until construction of buildings, roads and other subdivision amenities are completed. Once construction is finished, permanent boundary markers and signage should be installed. Fencing may have to be considered to keep unauthorized vehicles from entering buffer strips, or properly managing livestock within the buffer area.

Riparian buffers may also be required in areas where timber clearing is subject to forestry legislation (i.e., the *Forests Act* and *Timber Management Regulation*). The Alberta Timber Harvest Planning and Operation Ground Rules set out buffer requirements for timber harvesting in these areas. Agricultural producers wishing to establish appropriate buffers adjacent to water bodies are encouraged to contact their local agricultural office for information. Setbacks for feedlots are regulated by Alberta's Natural Resources Conservation Board.

Finally, provision should be made for ongoing protection and management of riparian buffers. For example, regular access may be needed for emergencies, to manage recreational activities, and resource management purposes including vegetation management. However, road construction should be avoided, and access routes should be left in a natural state such as grass to allow infiltration. Wetland vegetation and unstable areas should be left undisturbed. The appendices in this report contain resource lists and links for further information. Development of management plans for riparian land is strongly encouraged to help ensure that conservation objectives are achieved. The "Choices – Common Sense for Managing Riparian Areas" section of this document also contains helpful information for managing riparian buffers.

Shorelands – Riparian areas

The province protects riparian areas – the productive and valuable vegetated lands beside water features.

On this page:

Overview

Riparian areas:

- are lush vegetated lands beside streams, rivers, lakes and wetlands
- have vegetation and soils strongly influenced by the presence of water
- make up only a small fraction of the land
- are among the most productive and valuable of all landscape types

Alberta's settled region

Private land generally borders rivers, streams, lakes and wetlands in settled areas of Alberta.

Public land may also border the water body and may be leased for grazing. Public land managers work with private landowners and leaseholders to maintain the landscape and ecology of riparian areas.

Cows and Fish Program

This partnership program with the Alberta Riparian Habitat Management Society:

- promotes sustainable riparian land management
- helps landowners by providing tools and information
- aims to maintain or restore healthy riparian areas
- see the Cows and Fish Program for details

Riparian health assessment

This assessment was developed by the Rangeland Management Branch and the Cows and Fish Program. It provides tools to assess the general health of riparian areas on public rangelands.

Alberta's forested region

The Crown owns the forested regions of Alberta, including the beds and shores of all water features. Approved land uses usually require a riparian buffer between operational areas and the banks and shores of water bodies.

Guidelines

The province has a number of guidance documents related to riparian management.

- Forest management standards and guidelines
  See Timber Harvest Planning and Operating Ground Rules
- Stepping back from the water

We purchased the lot with old cabin on it in September 2020. We applied for a demo permit to remove the cabin. This was completed.

We applied for a landscape permit for the escarpment march 2021, which was approved and attached. We were approved for this large undertaking of installing retaining walls as we had a geotechnical report completed and stated that the bank was unstable and needed to be retained (Smith Dow report attached). However we acknowledge that we didn't built the escarpment exactly as we showed in our plan. This was for TWO main reasons. 1) Misinterpretation of the what the summer village considered "the entire lowest tier adjacent to the lake" was. 2) we did not have house plans drawn up at the time and we did not know what we needed to do for hardscape to stay under the LUB of 50%.

Essentially the layout is the same with side yard retaining walls making the lot a walk out, as well as 3 retaining walls perpendicular on the lot creating 3 tiers, the lowest tier (two levels), the middle tier and the upper tier where the home sits. The modifications we made were minor and really didnt think it mattered exactly where the fire pit would be, etc. We moved the fire pit to the middle tier into a sunken level (not shown on original plans) for wind protection with pavers around it. We added a small area of turf on the second tier and we added a walk way with pavers on the middle tier to access the fire pit and pavers on the lowest tier to access the boat dock and boat dock storage areas.

Condition 10 of the development permit states that the "**entire** lowest tier adjacent to be a no mow zone of native grasses and shrubbery" We interpreted this to be the entire tier adjacent to the lake which was the boat storage area and the original area where the fire pit was shown. So instead on putting grass in this area we covered it with natural rundle rock around the walk way pavers and surrounded it with 6 trees and 15 grasses - to meet condition 10.

Condition 11 of the development plan states that "tiered areas between the retiring wall storage be grass which could include a rock/stone perimeter around the fire pit" Since we moved the location of the firepit to the second tier, we added paving stones around it and added an area of turf as it would be difficult to mow grass on this tier.

In the summer of 2022, the SV did an inspection of the lot (because of a complaint they apparently received wandering why our retaining walls were so big). They didnt like that we modified the layout and design of the tiers and lack of grass. They interpreted that just the boat storage area would be a no mow zone but not the original fire pit area….which was not clear in the permit as it states the ENTIRE lowest tier to be a no mow zone.

We spent the next 10 months going back and forth with about 100 emails between myself, Kara Hubbard and Tanner Evans regarding the interpretation. This did not get us anywhere.

In September of 2022 the SV advised me that I should write a letter of intent to them stating why we constructed what we did - mainly because of the misinterpretation of what the no mow zone would be, and why the fire pit stone surrounding was so much larger than what showed on the plans. They also didn't like that we moved the fire pit to the middle tier and made it sunken (lowered by 16"). All really irrelevant. I submitted my letter of intent and got a response back from Tanner Evans stating that they could not provide this letter to MPC for clarification and that my

only option would be to a) put the landscaping back to how they interpret it to be OR b) submit a revised application for the landscaping on the escarpment explaining what was approved, what was built and why along with our interpretation as well explaining that in the end the entire lot will meet the 50% hard surface coverage by law which is super important to the SV. This REVISED development permit was submitted February 10, 2023 (attached).

We received a letter from Kara on March 1, 2023 stating that they require further information (attached) - this was provided.
We received another letter from Kara on March 9, 2023 stating that they still require more information (attached). This was provided.
We received another email from Kara on March 13, 2023 stating that although I provided them with the info they asked for they wanted a written confirmation from Superior Safety coded on the guard heights (which isn't in the SV jurisdiction). I provided an email to Kara from Superior Safety codes stating that the guards we installed on the retaining walls meet the Alberta Building Codes. They still didnt accept this and requested an on site meeting with Superior Safety codes….which did happen and again they told them that we followed the Alberta building codes and wasted my time and the inspectors time and SV administration time which is paid by our tax payer dollars.
We finally received a date for the MPC meeting for the revised landscape plan on May 18, 2023 - here is the link to the agenda package
provided. http://www.sylvansummervillages.ca/agenda4.html

We met with MPC and stated our case, however it was clear from the minute we walked in to the room that they had made their decision and did not ask us any questions other than why didnt we construct what the original plans show? We got their Notice of decisions back on May 24, 2023 (attached). It states that they did not accept our revised plan and that we have to remove what we constructed and put it back to what was originally approved.

On June 12, 2023, I submitted an appeal letter to the SDAB (attached) and that meeting is scheduled for July 11, 2023 at 10 am. Here we are today.

MPC granted us a variance in the landscape permit, condition #14 to change the slope of the banking for it to retain it natural state - which means they are allowing us to change it from a natural state to being secured by 3 retaining walls approved by mpc.

We are objecting to remove the walkway access to between the stairs, to the fire pit, to the dock and dock storage area. It is everyone's right to be able to access and enjoy the lake and with elderly parents and small grandchildren having a walkable pathway is very important to everyone safety.

We are objecting to backfill the sunken fire pit area (16") as doing this does not change the look of the escarpment from the lake as all you can see if the retaining walls. It would be absolutely impossible to backfill this area unless you are doing it by hand as you cannot get any mechanical excavation equipment to the back yard.

We are objecting to remove the small section of turf as this was installed by a professional landscaper with proper drainage and we are not permitted to have a sprinkler system on the bank to water and maintain. This property is now worth millions of dollars and installing sod or grass that cannot be watered to grow and look good is not good for resale or attractive by neighbours or people boating on the lake. If it truly is the intent of MPC to keep the bank looking as natural and green as possible why would they want us to remove the turf?

We are objecting to to remove the rundle rock on upper tier 1 unless absolutely necessary. if we have to we can remove the rock and leave the tier to naturally vegetate like the boat dock storage area. Again we feel that we met the condition #10 in the landscape permit, keeping the ENTIRE lowest tier adjacent to the lake a no mow zone.

We are objecting to installing a smaller fire pit as per MPC. We have purchased a 70" x 30" fire pit and intend on installing it on sunken tier 2. Although the SV may not have a firepit bylaw, it was recommended by the Sylvan Lake fire chief that a 2 m stone perimeter is recommended to be installed around a fire pit.

See conclusions in original letter.

During this time we applied for a development permit for the dwelling which was approved and attached. However administration added condition #13 stating "Dwelling shall comply with the geotechnical report recommendations to ensure that the bank is protected, and the development is safe". and Condition #14 "planting of shrubs and trees to be done according to the landscaping plan. Minimum of 44 trees to be replanted. The no mow zones on the escarpment shall be a buffer strip of vegetation that includes native planting aquatic vegetation grow to maintain a stable natural state, a no mow zone allows native plants to seed and reestablish.".

So by adding these conditions they now tied both the landscape permit and the dwelling permit together, which I did not like as they are 2 totally separate and independent permits but they would not change it.

However condition #13 in the dwelling permit states that we need to follow the recommendations of the geotechnical report which are listed on page 15 of the geotechnical report (attached). Three of the recommendations that are relevant to this appeal are the following:
#1) *In order to reduce the possibility of surgical sloughing, the slopes must be kept well vegetated at all time. The fact of safely of a slope will increase slightly as vegetation is maintained on the slope surface to protect the subgrade soil from weathering.*
Since we have removed all slopes creating 3 level tiers this is not applicable as the retaining walls now stabilize the bank.
#5) *Construction of such items as wooden decks and paved patios would be permitted.*
This is why we added a walkway of pavers on each tier to access each area such as fire pit, boat dock and dock storage area.
#6) *Automatic sprinkler system, ornamental fountains, and other water retaining structures are prohibited. This bank is SW facing and super hot, grass would not grow very well without watering and this is not permitted according to the recommendations of the engineer in the geotechnical report.*

Although a pathway of pavers down to the lake was not originally shown on the landscape plan, it is clear in the Geotechnical report that they recommend wooden and paved patios. This will help stabilize the bank not impede it.
Currently all shrubs and grasses that are planted on each tier are watered by hand. It does not make sense to plant grass on a south west facing bank with no way to water it. Plus it would be very difficult to mow it.

We feel that overall with the dwelling permit and landscape permit the overall goal is to meet the 50% hardscape LUB, which we are. The MPC states that they want the bank to look natural, however when you remove the bank as we did and install massive retaining walls, it's not natural

any more. It really doesn't matter what is sitting on each tier whether it is grass or pavers, the only people that can see them are us and the adjacent neighbours. Spectator from the lake cannot see what is on each tier, they just see the retaining walls and the home.

During this entire process we have not had one letter of complaint submitted to us or the SV stating an objection to the work completed on the bank. We have actually received multiple compliments on the work completed and how user friendly and accessible it is to the lake.This development is adding significant value to the SV and to Sylvan Lake and it would be a disservice to let weeds grow on such a beautiful property.

All attachments will be send in following emails as they are too big to send in one.

Thank you,

Jodi and Ryan Neish

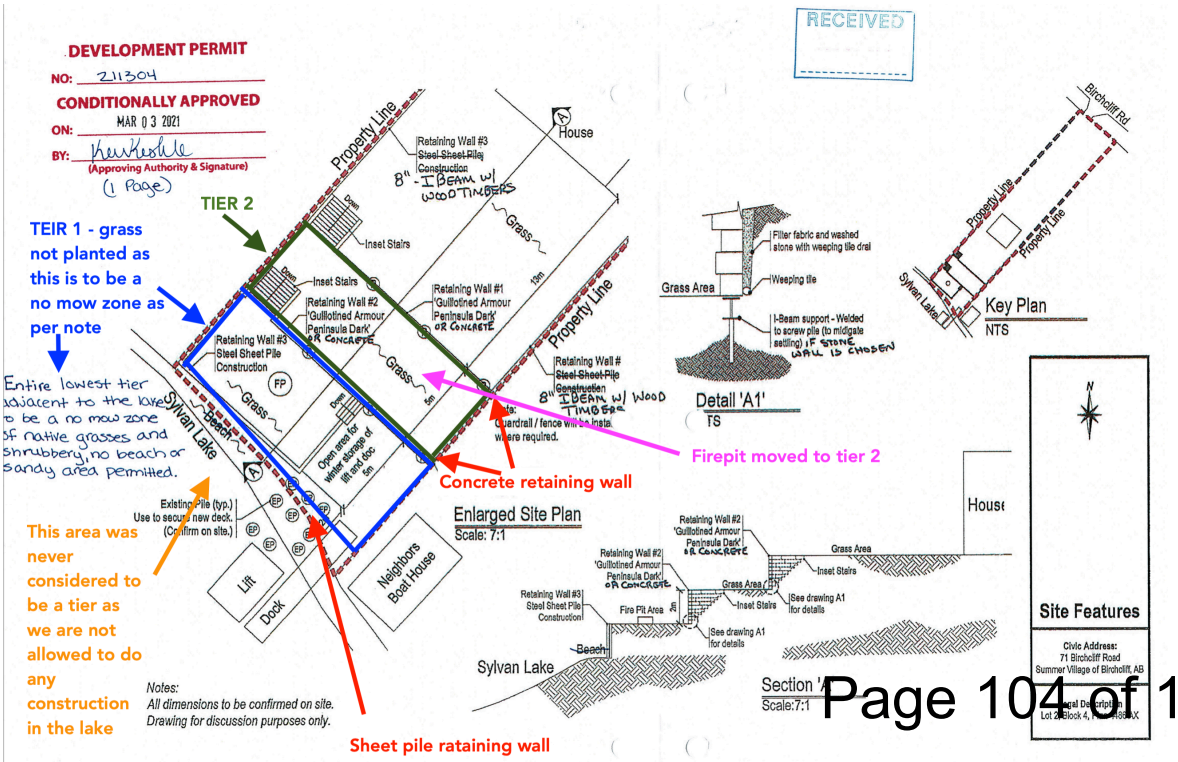
February 10, 2023

Kara Hubbard
SV of Birchcliff

Re: Development Permit #211304 Landscaping/Mechanized Excavation Amendment Application at 71 Birchcliff Road (Revised Plan)

Kara, as per our email correspondence regarding the landscaping permit for 71 Birchcliff Road, this is a new application for the landscaping on the escarpment with a revised landscape plan. This application is being submitted due to the fact that both the Summer Village and the applicant identified different understanding and or interpretation of the wording in the permit and what was discussed at the MPC (zoom meeting) on March 1, 2021. It was decided that we provide a detailed outline of these items and how we interpreted them to become what was constructed so that we can meet with MPC and discuss each item in detail in a letter of intent. This was done however we were told that we could not meet with MPC and the best way to move forward would be with a New or Revised application and application fee. Here is the details and description of what was originally approved and the new/revised application.

This is what was originally approved by MPC.



The landscape work completed to date is slightly different than what was proposed and approved however in concept things were just moved around a bit and are determined by the natural slope of the bank on the properties adjacent to this lot.

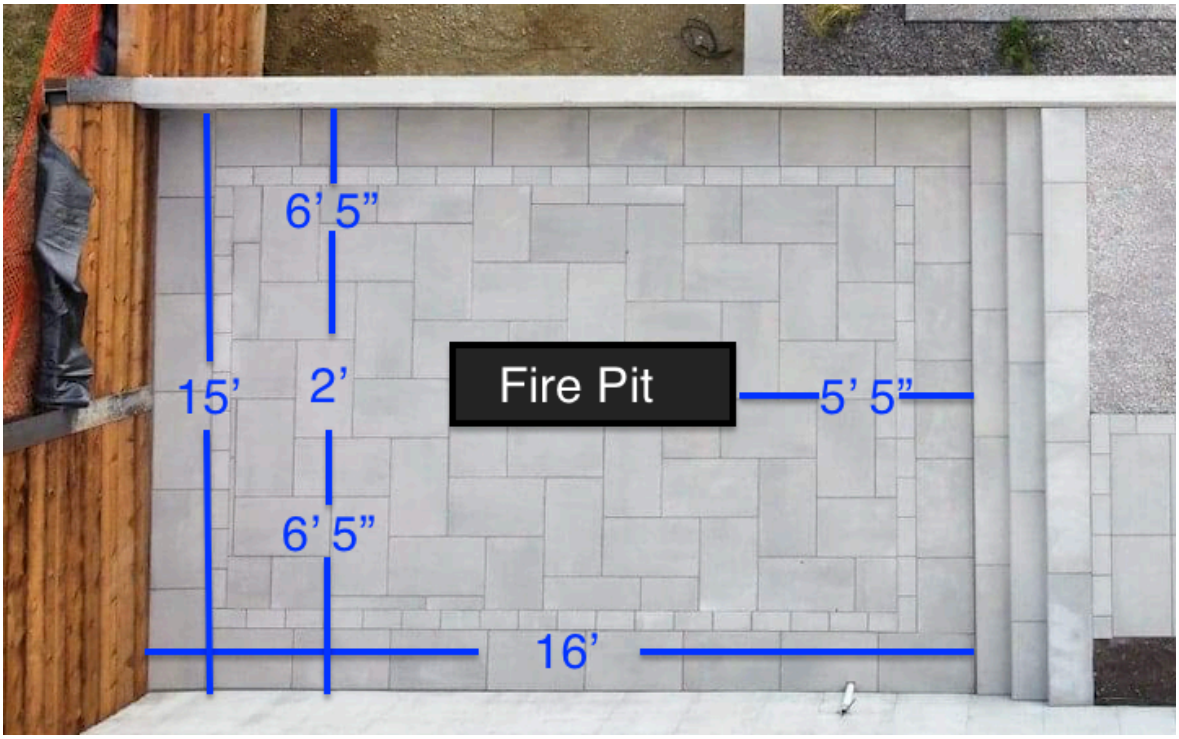
Here a aerial photo of what has been constructed to date along with a plot plan (attached to email) that was submitted to the SV for the development application.

To better understand which areas we are discussing I have labeled them for discussion purposes.

Tier 1 (Lower). This is the boat lift/dock storage area. The approved permit indicates that "*The entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted*". This area will be a no mow zone and left to naturally revegetate.

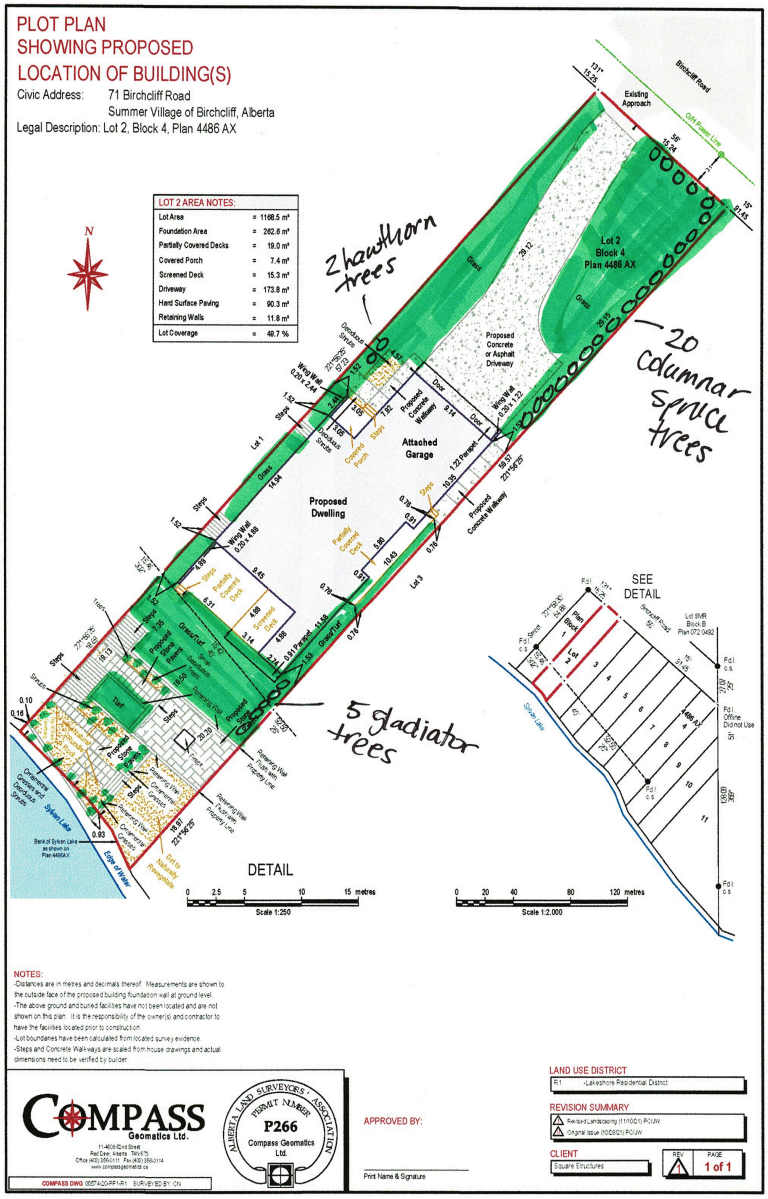
Tier 1 (Upper) This tier has a combination of paving stones and natural rundle stone. The pavers serve as a walk way from the stairs to access the dock and the dock/lift storage area. We have elderly parents that spend a lot of time with us and require accessible access to the lake. We planted 32 shrubs and grasses on the perimeter of this tier. Natural vegetation can also grow in the areas amongst the rundle rock.

Tier 2 This tier is a combination of a lowered fire pit area and a turfed lounging area. The fire pit area was recessed 2' for protection from the wind. The size of the wood burning fire pit is approx 2' x 4'. Permeable paving stones were installed surrounding the fire pit as per the National Fire Code which states that a 2 meter stone perimeter is a safe flame protective perimeter.



The lounging area of Tier 2 includes stone pavers that access the fire pit area, a turfed area for lounge chairs and perimeter planting of 5 shrubs.

A survey plan showing the entire lot with all hardscape surfaces included = 49.7% which is within the 50% hard surface coverage allowed is attached.



The only other item that was mis interpreted after the first application was the heights of the retaining walls. All the concrete retaining walls are 2 meters in height with the exception of the boat lift/dock storage area (shown on the original plan) and the new fire pit area on tier 2. As the fire pit area was recessed within the original concrete walls, the height is 2.4m. However when looking at the lot from the lake view you cannot see this difference in height. See the pic below.

Although modifications have been made to suit the escarpment landscaping to accommodate the slope of the lot, we are submitting a new application with this revised plan. We look forward to meeting with MPC to discuss any questions they may have in person and coming to a final resolution that is acceptable by all parties.

Thank you,
Jodi Neish


Both concrete retaining walls are the same height across the lot as viewed from the lake

Summer Villages Administration Office
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
(403) 887-2822

NOTICE OF DECISION

MUNICIPAL PLANNING COMMISSION

May 24, 2023

Jodi & Ryan Neish
Box 8986
Sylvan Lake, AB T4S 1S6

RE: DEVELOPMENT APPLICATION FOR 71 BIRCHCLIFF ROAD

An application was submitted for landscaping revisions/mechanized excavation on the escarpment at 71 Birchcliff Road (Lot 2, Block 4, Plan 4486AX) in the Summer Village of Birchcliff. This application went before the Municipal Planning Commission as a discretionary use and for variance requests.

Finding of Fact:

Upon hearing and considering the representations and the evidence of the parties concerned, the Commission find the facts in the matter to be as follows:

1. Land located below the top of bank/top of escarpment should be in a natural state, a variance is required. (LUB Part Three: 4.1 4(5)).
2. Mechanized Excavation, Stripping and Grading is listed as a discretionary use, and retaining walls greater than 1m (3.28ft) in height above any adjoining grade requires a development permit, therefore MPC approval is required. (LUB Part Three: 4.1 4(4)(f)).

Decision of the Municipal Planning Commission:

Birchcliff's Land Use Bylaw part 3, section 4.1, subsection 4(5) states that the escarpment or slope areas with a gradient of fifteen (15) percent or greater shall be retained in their natural state. Section 6.3.4 of Birchcliff's Municipal Development Plan states that while recognizing that remedial actions may be necessary from time to time, the Summer Village still strongly desires that banks abutting the shoreline remain as natural as possible to retain natural ecosystems. The proposed development does not reflect an effort to keep the escarpment area natural.

The fact that the proposal shows the entire parcel coverage below the 50% threshold is not relevant in this situation as it does not address the need for the escarpment to remain as natural as possible. It was clear in the initial approval that remedial actions were necessary as shown in the geotechnical report, which is why retaining walls were approved. However, the rest of the proposed development is not considered to be natural. Therefore, the application is denied, and the lands will have to return to what was originally approved, which is:

- Winter storage area labeled as "tier 1 (lower)" is to be entirely a no-mow zone, consisting of native grasses and shrubbery with no sandy area permitted, as indicated on the originally approved drawings. A no-mow zone is a vegetative buffer strip above the high-water mark on the shoreline and allows native plants to seed and re-establish.
- Areas labeled on this application as "tier 1 (upper)", and "tier 2", along with the entire yard above the highest retaining wall are to be entirely grass. Paving stones, rocks, gravel, and any other material must be removed prior to filling with topsoil and sodding. Nothing other than grass, trees, shrubs, or plants shall remain. The stairs between each tier may remain but any walkway or paving stones connecting them on top of each tier must be removed and replaced by grass. The firepit area within what is labeled "tier 2" must be removed entirely with the sunken area backfilled to match the rest of tier 2 and covered in grass.
- The firepit area originally approved on the scaled drawing appears to be 1.5m and can remain at that size on either tier.
- The drawings submitted for this application seem to show the lowest retaining wall encroaching past the property line, which was not shown on the originally approved drawing. Please ensure that all development takes place within your property lines.

As discussed during the meeting, a railing or guard system installed on the retaining walls was not part of the original design plans. While the requirement for a railing is governed by the building code and would be required by Superior Safety Codes, any development on the escarpment requires a variance from the Municipal Planning Commission. Should Superior Safety Codes require a railing, the proposed design of the railing must be submitted to the Municipal Planning Commission for approval prior to installation.

Appeal:

Discretionary Use/Variance Request Applications are appealable to the Subdivision and Development Appeal Board, as provided for in Part 17, of the Municipal Government Act. Written statements relevant to the development and reasons for appeal along with a $400.00 appeal fee should be submitted to the Secretary of the Subdivision and Development Appeal Board of the Summer Village of Birchcliff, #2 Erickson Drive, Sylvan Lake, Alberta T4S 1P5, within 21 days following the date of this notice.

Summer Villages Administration Office
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
(403) 887-2822

For further information contact the Secretary of the Subdivision and Development Appeal Board at 403-887-2822.

Sincerely,

Kara Hubbard
Development Officer

Summer Villages on Sylvan Lake
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
403-887-2822

~~March 1, 2023~~
March 9, 2023

Via email: jodi@squarestructures.ca

Jodi & Ryan Neish
Box 8986
Sylvan Lake, AB
T4S 1S6

Dear Jodi & Ryan:

Re: Development Permit Application for Escarpment Landscaping
71 Birchcliff Road (Plan 4486AX, Block 4, Lot 2) (R1 Lakeshore Residential)

It has been determined that the application our office received on February 10, 2023 (further documents March 3rd, 2023) is incomplete and we require the following information to be submitted no later than ~~March 15th, 2023~~, March 23rd, 2023:

1. Provide any approved/final Provincial approvals required if applicable. – The area we are specifically wondering about is the steel looking wall along the shore, please provide something in writing from the province that no approvals are required for any of the development taken place. The wall appears to be encroaching past the property line as well.

2. For the fence that has been installed along the side yard, can you please provide an explanation of the height and how it is measured. – Please provide your explanation on the fence to add to your submission documents. The fence will be discussed during MPC as it was not on the first approved/submitted drawings.

3. Please provide the section of the National Fire Codes stating the 2m stone perimeter so we can refer to it. Thank you for providing the source of this information. Please note that the Summer Village of Birchcliff has a Burning and Fire pit Bylaw which also states that *"firepits should follow the recommendation that there should be a minimum of 3.4 meters (10') clearance from buildings, property lines, and combustible materials."* However, we do not consider grass (which was what the area is supposed to be) to be combustible so this regulation would not apply. We do not require any further information on this point.

If you are unable to meet the ~~March 15th, 2023~~, March 23rd, 2023 deadline, a written request for a time extension is required and must indicate the date by which you will submit the outstanding information.

Summer Villages on Sylvan Lake
#2 Erickson Drive
Sylvan Lake, AB T4S 1P5
403-887-2822

Failure to submit the required information or request a written extension on or before ~~March 15th, 2023~~, March 23rd, 2023 will result in your application being deemed refused. Should the application be deemed refused, we will issue a notice of the refusal stating the reason for refusal.

Should you have any questions please contact the undersigned.

Respectfully,

Kara Hubbard
Development Officer

Summer Village of Birchcliff
Bay 8, 14 Thevenaz Industrial Trail
Sylvan Lake, AB T4S 2J5

DEVELOPMENT PERMIT

Permit Number: 211304

Municipal Address: 71 Birchcliff Road **Lot:** 2 **Block:** 4 **Plan:** 4486AX

Applicant: Ryan & Jodi Neish
Box 8986
Sylvan Lake, AB T4S 1S6

On Behalf Of: -

The Development Involving: *Landscaping/Mechanized Excavation*

Has Been Approved Subject to the Following Conditions:

1) The payment of all outstanding property taxes or the making of arrangements, satisfactory to the Council, for the payment thereof, prior to the commencement of the development.
2) The development commences and continues in the manner applied for and that all development complies with the regulations and specifications of the Land Use By-Law under which this permit was issued.
3) The construction shall be completed within 12 months and the landscaping shall be completed within 2 years of the date of permit issuance.
4) The payment of a $3,000.00 completions deposit to ensure all conditions of this development permit have been met, including the completion of building construction within a one-year period, landscaping completed with two years, and any or all road damage repaired.
5) Shoreline erosion control measures are prohibited unless prior written approval has been received from the appropriate provincial authorities and the Municipality.
6) All parcels shall be graded to ensure that storm water is directed to a drainage ditch without crossing adjacent land, except as permitted by the Development Authority. All maintenance and upkeep shall be the responsibility of the property owner.
7) Any damage to public roads due to the construction shall be repaired immediately at the expense of the permit holder.
8) Copies of all applicable Building, Electrical, and Plumbing & Gas permits shall be provided to the administration office to be kept on file.
9) At minimum, the same number of trees removed from the escarpment to be replaced anywhere on the lot.
10) Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.
11) Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit.
12) Obtain a recommendation from Alberta Environment and Parks regarding the use of the existing piles, if they should be removed or remain in place, and follow that recommendation.
13) Future dwelling plans are to comply with the geotechnical report recommendations to ensure that the bank is protected, and the development is safe.
14) Land located below the top of bank/land with slope areas of a gradient of 15% or more, area to retain in its natural state. Variance was granted by the Municipal Planning Commission.
15) Sewer curb stop must remain accessible at all times, during and after construction.
16) Any development commenced prior to March 24, 2021 (21-day appeal period), is at the applicant's own risk.

You are hereby authorized to proceed with the development specified, provided that any stated conditions are complied with, that the development is in accordance with any approved plans and applications, and that construction conforms with any provincial and federal requirements relative to this development.

Date of Decision: March 1, 2021
Date of Issuance of Development Permit: March 3, 2021

Development Authority

Note:

1) The issuance of a development permit in accordance with the notice of decision is subject to the condition that it does not become effective until 21 days after the date that the

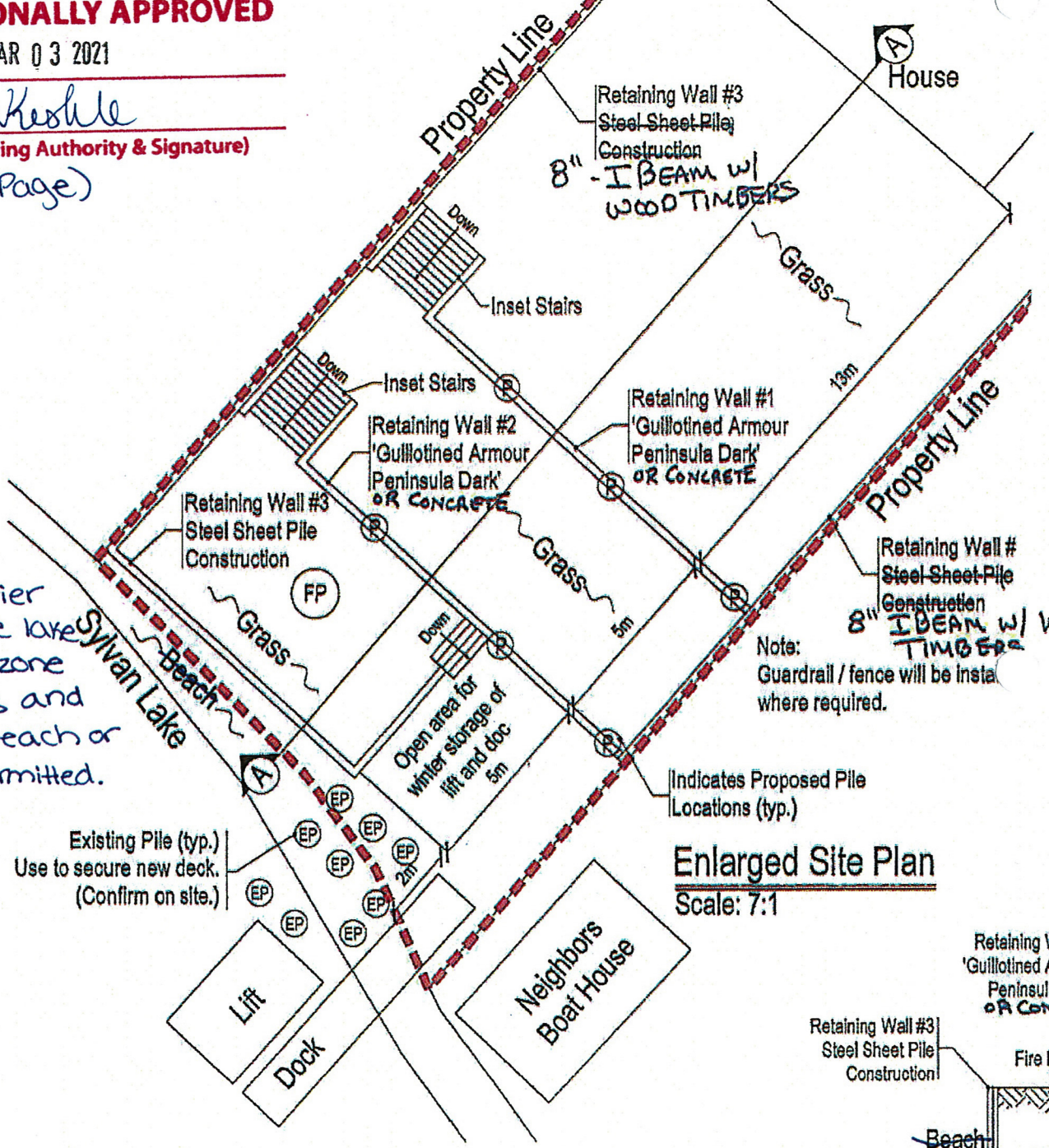
CONDITIONALLY APPROVED

ON: MAR 0 3 2021

BY: [signature]

(Approving Authority & Signature)

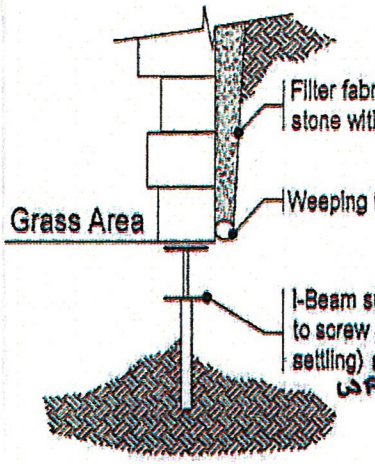
(1 Page)



Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.

Enlarged Site Plan

Scale: 7:1



Detail 'A1'

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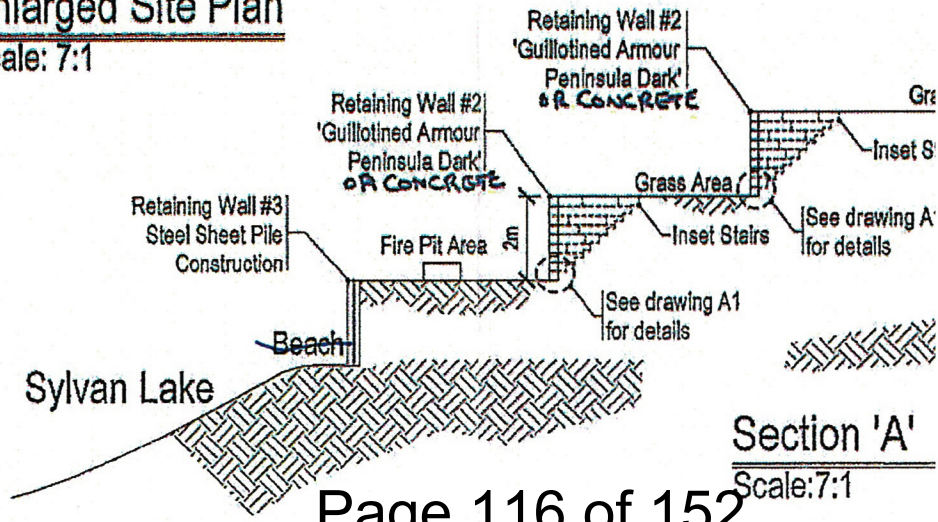


Section 'A'

Scale:7:1

Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

Summer Village of Birchcliff
Bay 8, 14 Thevenaz Industrial Trail
Sylvan Lake, AB T4S 2J5

DEVELOPMENT PERMIT

Permit Number: 211304

Municipal Address: 71 Birchcliff Road **Lot:** 2 **Block:** 4 **Plan:** 4486AX

Applicant: Ryan & Jodi Neish
Box 8986
Sylvan Lake, AB T4S 1S6

On Behalf Of: -

The Development Involving: *Landscaping/Mechanized Excavation*

Has Been Approved Subject to the Following Conditions:

1) The payment of all outstanding property taxes or the making of arrangements, satisfactory to the Council, for the payment thereof, prior to the commencement of the development.
2) The development commences and continues in the manner applied for and that all development complies with the regulations and specifications of the Land Use By-Law under which this permit was issued.
3) The construction shall be completed within 12 months and the landscaping shall be completed within 2 years of the date of permit issuance.
4) The payment of a $3,000.00 completions deposit to ensure all conditions of this development permit have been met, including the completion of building construction within a one-year period, landscaping completed with two years, and any or all road damage repaired.
5) Shoreline erosion control measures are prohibited unless prior written approval has been received from the appropriate provincial authorities and the Municipality.
6) All parcels shall be graded to ensure that storm water is directed to a drainage ditch without crossing adjacent land, except as permitted by the Development Authority. All maintenance and upkeep shall be the responsibility of the property owner.
7) Any damage to public roads due to the construction shall be repaired immediately at the expense of the permit holder.
8) Copies of all applicable Building, Electrical, and Plumbing & Gas permits shall be provided to the administration office to be kept on file.
9) At minimum, the same number of trees removed from the escarpment to be replaced anywhere on the lot.
10) Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.
11) Tiered areas between retaining walls to be grass which could include a rock/stone perimeter around the firepit.
12) Obtain a recommendation from Alberta Environment and Parks regarding the use of the existing piles, if they should be removed or remain in place, and follow that recommendation.
13) Future dwelling plans are to comply with the geotechnical report recommendations to ensure that the bank is protected, and the development is safe.
14) Land located below the top of bank/land with slope areas of a gradient of 15% or more, area to retain in its natural state. Variance was granted by the Municipal Planning Commission.
15) Sewer curb stop must remain accessible at all times, during and after construction.
16) Any development commenced prior to March 24, 2021 (21-day appeal period), is at the applicant's own risk.

You are hereby authorized to proceed with the development specified, provided that any stated conditions are complied with, that the development is in accordance with any approved plans and applications, and that construction conforms with any provincial and federal requirements relative to this development.

Date of Decision: March 1, 2021
Date of Issuance of Development Permit: March 3, 2021

Development Authority

Note:

1) The issuance of a development permit in accordance with the notice of decision is subject to the condition that it does not become effective until 21 days after the date that the

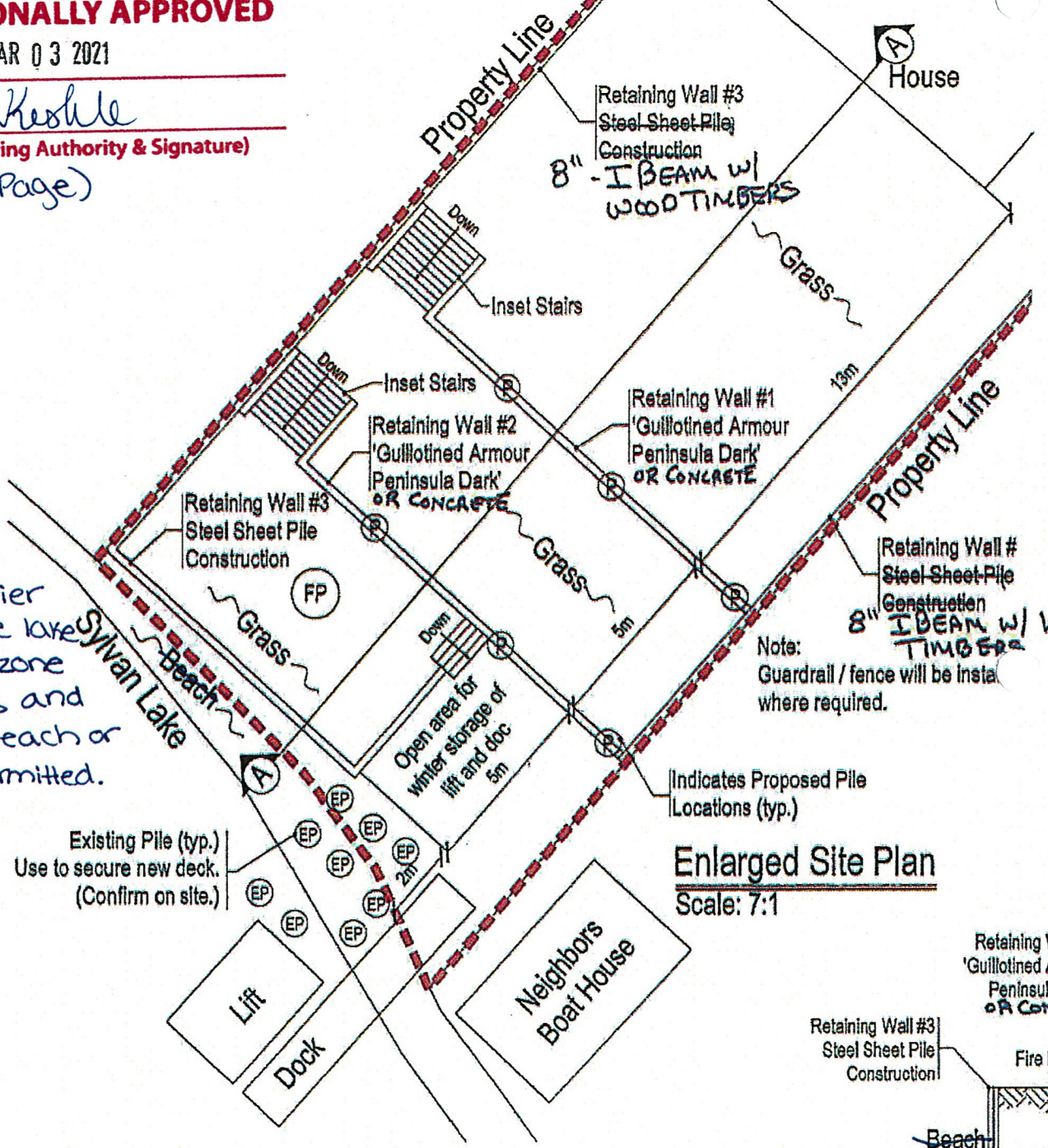
CONDITIONALLY APPROVED

ON: MAR 0 3 2021

BY: [signature]

(Approving Authority & Signature)

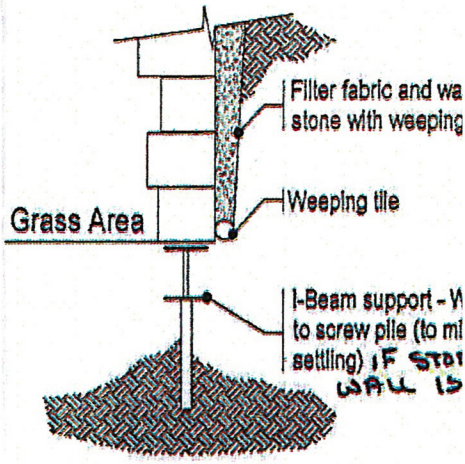
(1 Page)



Entire lowest tier adjacent to the lake to be a no mow zone of native grasses and shrubbery, no beach or sandy area permitted.

Enlarged Site Plan

Scale: 7:1



Detail 'A1'

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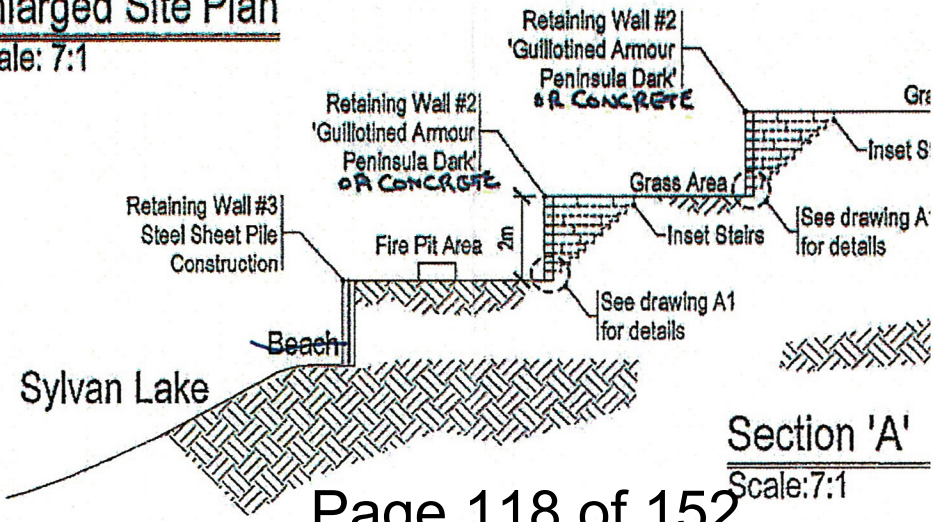


Section 'A'

Scale:7:1

Notes:
All dimensions to be confirmed on site.
Drawing for discussion purposes only.

June 12, 2023

Secretary of the Subdivision and Development Appeal Board of the Summer Villages of Birchcliff
#2 Ericson Drive
Sylvan Lake, Alberta
T4S 1P5

Subdivision and Development Appeal Board;

This is an appeal letter of the Notice of Decision by the MPC on May 24, 2023 for landscaping revisions on the escarpment at 71 Birchcliff Road in the Summer Village of Birchcliff.

A development permit was approved for Landscaping/Mechanized excavation of the escarpment due to bank instability as per the geotechnical report. The escarpment landscape plan was submitted before house plans were initiated, so we had no idea of total hardscape coverage.

Over many months of discussions with the Development Officer it was determined that there was a misinterpretation of what had been approved. The majority of the construction was completed as per our understanding and interpretation, however the Summer Village Development officer noted that there were some discrepancies on what was approved vs what we interpreted could be constructed. After many months of emails and in person conversations with no conclusions, it was decided that we submit a revised landscape plan to get in front of MPC and finalize the landscape plan.

Our proposed revision to the escarpment went to MPC On May 23, 2023 and the application was denied. We appeal the following decisions by MPC (in red) with our reasons why we disagree:

1) Areas labeled on this application as "tier 1(upper)", and "tier 2", along with the entire yard above the highest retaining wall are to be entirely grass. Paving stones, rocks, gravel, and any other material must be removed prior to filling with topsoil and sodding. Nothing other than grass, trees, shrubs, or plants shall remain. The stairs between each tier may remain but any walkway or paving stones connecting them on top of each tier must be removed and replaced by grass. The firepit area within what is labeled "tier 2" must be removed entirely with the sunken area backfilled to match the rest of tier 2 and covered in grass.

MPC denied our application on the merits that the development is not considered natural, however in the permit #14 states that a variance is granted to change the slope of the bank and for it to retain its natural state - which means they are approving us to change it. The original and the revised landscape plan is not natural. We had to install 3 engineered retaining walls to stabilize the subsiding bank. This was done as per the geotechnical report. Once the 3 retaining walls were installed all you can see from the lake are the 3 retaining walls. From the lake view you cannot visually see what medium (grass or rock) is on each of the tiers therefore Im not sure who is benefiting from grass on these tiers. Not anyone on the lake. The only people that can see these tiers are the residents and the adjacent neighbours and we have received no complaints or objections from them. As it currently is constructed the entire lot coverage is under 50% hard surfacing.

Tier 1 (upper) consists of pavers from the stairs for direct access to the dock and dock storage area, perimeter filled with shrubs, trees and grasses and the remaining area is covered in a natural rundle rock. MPC is asking for us to remove the pathway of pavers and the rundle rock and plant grass. We have to have accessible access to the boat dock as our elderly parents will be staying with us and we need to provide them with safe access to the lake. Planting grass around the pavers could be done however **as per the geotechnical report automatic sprinklers are prohibited on the bank** and due to a south facing back yard, it would be difficult for sod to live. It would die and weeds would grow….which is not a desirable aesthetic or environmentally responsible.

Tier 2 consists of a path made of individual pavers from the stairs to the fire pit area, a small turfed area and a sunken fire pit area with pavers surrounding it. The path required to provide safe access to this tier.
If its a natural look the MPC is looking for, why would they want us to remove the turf? Its green, natural looking and permeable as grass? We would like to keep it, again since its so hot on the bank, it would be difficult for sod to grow successfully.

MCP also wants us to backfill the sunken fire pit area with dirt to keep it one level. There is no physical access for equipment to get any material in there. A track hoe would not reach this tier from the lake, making it impossible. Again we are unsure how filling in a 20" sunken area with soil would make the bank more natural. We could plant grass or lay sod in this sunken area but again, without a lot of watering would be very difficult to establish and maintain. **Plus as stated in the geotechnical report sprinklers are prohibited and wooden decks and paved patios are permitted.**

2) The firepit area originally approved on the scaled drawing appears to be 1.5m and can remain at that size on either tier.

We have purchased a stone firepit which is 70" long and 30" wide and don't understand why there is a restriction for the size of fire pit that can be constructed.

3) As discussed during the meeting, a railing or guard system installed on the retaining walls was not part of the original design plans. While the requirement for a railing is governed by the building code and would berequired by Superior Safety Codes, any development on the escarpment requires a variance from the Municipal Planning Commission. Should Superior Safety Codes require a railing, the proposed design of the railing must be submitted to the Municipal Planning Commission for approval prior to installation.

A railing will definitely be required for safety reason on each of the 2 concrete retaining walls. MPC is requesting that we submit for approval of the safety railing that will be installed. According to Alberta Building Code, 9.8.8.6 (2) guards/ safety railing must meet the following criteria - design, style etc does not require approval from MPC as it must meet the requirements of the ABC.

occupancy, where children are unlikely to be present except under strict supervision.

A-9.8.8.6.(2) Horizontal and Vertical Clearances in Guards so as to not Facilitate Climbing. Compliance with Sentence 9.8.8.6.(1) can be achieved by satisfying one of the Clauses in Sentence 9.8.8.6.(2).

Clause 9.8.8.6.(2)(a) allows guards with protrusions that are greater than 450 mm apart horizontally and vertically as the distance between the protrusions will be great enough to reduce the likelihood that young children will be able to get a handhold or toehold on the protrusions and climb the guard.

In conclusion we do the following:

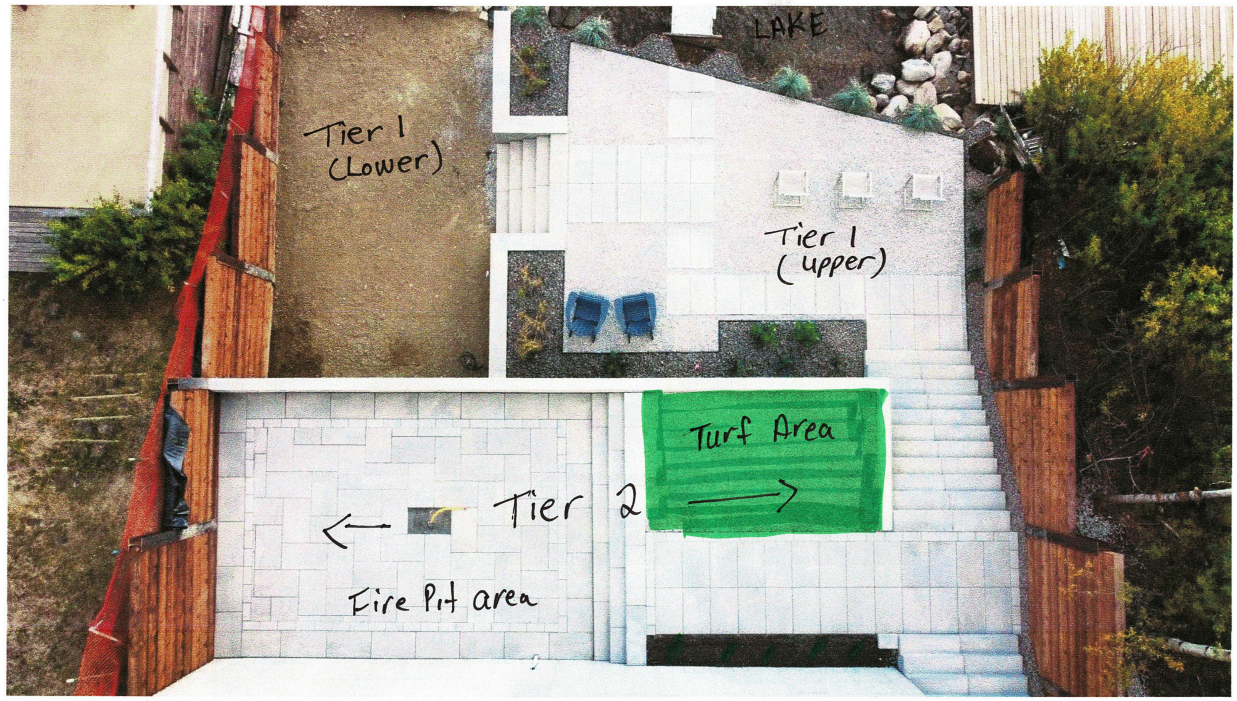
1) Leave existing pathway pavers in place to access the fire pit, on tier 2 and path to boat dock and boat storage. Pavers are noted on the geotechnical report as permitted on the escarpment.
2) We will remove the rundle rock on upper Tier 1 if absolutely necessary and plant grass, however we have no way of watering the grass and due to it being south facing it will not grow well. Also indicated on the Geotechnical report automatic sprinklers are prohibited.
3) We will not backfill the fireplace area to raise it up to the height of the rest of tier 2. This is physically impossible and will not change the look of the landscaping to natural as requested by MPC. We will however remove some of the pavers around the fire pit area and plant grass.

4) We do not want to remove the turf area. If its a natural look the MPC wants, this looks, feels and is permeable exactly like grass.
5) If Superior Safety codes notes that we have to install railing on top of the two existing retaining walls for safety reasons, we do not feel that the style or design is required to be submitted for approval. This is an Alberta Building Code requirement not jurisdiction of the Summer Village. The summer Village does not approve the style or design of any railings/guards on a deck or fence, so unsure why they would want or have authority to do this now.

Thank you

Jodi and Ryan Neish

PHOTOS
1) Aerial photo of what is existing.



2) View of lot from the lake. You cannot see what is on each tier whether it be grass or pavers.

3) Aerial photo showing what we propose to keep and propose to change if required. The only people that can see what is on each tier is the adjacent neighbours.

Smith Dow & Associates Ltd.

- Foundation and Geotechnical Engineering
- Soil Investigation and Site Assessment
- Slope Stability Reports
- Environmental Audits
- Material Testing: Soil, Asphalt, and Concrete

71 Birchcliff Road
Summer Village of Birchcliff, Alberta

File No: 71 Birchcliff Road

November 3, 2020

4632 - 62 Street, Red Deer, Alberta T4N 6T3 Phone : (403) 343 - 6888 Fax: (403) 341 - 4710

November 3, 2020

Square Structures
Red Deer, AB.

File: 71 Birchcliff Road

Attn: Jodi Neish

Re: 71 Birchcliff Road
Summer Village of Birchcliff , Alberta

At your request, we conducted a geotechnical investigation for the suggested residence home at the above referenced location on October 7, 2020.

The existing site sloped from the northeast to the southwest. A small cabin was present on the property at the time of site drilling. It is our understanding that the proposed new development will consist of a two storey structure with a walkout basement and an attached garage. The subject slope to the south was covered with mixed vegetation. The south-west facing downward slant contained various gradients as per the provided cross-sectional drawing.

The south-west facing slope was primarily flat to gentle, starting from Birchcliff Road. The slope began to decline at a steady gradient from the slope crest to the toe of the slope. A sharp slope drop off near the vicinity of the water's edge was noted. The existing structure will be removed to allow for the new house construction.

The existing rock retaining walls on the slope were deemed unsuitable and must be removed and reconstructed with professionally designed rock retaining walls. Once design of the new rock retaining walls are completed, we can review the new design and provide our comments.

The observed localized erosional features associated with the slope were considered part of a very slow process and posed no immediate threat to the existing slopes. Visible evidence of current or previous slope erosion was observed near the lake end of the property. This soil in the toe area of the slope is to be stabilized with a rip-rap system placed on geotextile filter cloth to minimize slope toe erosion and to maintain the slope stability.

The purpose of this investigation was to determine the general extent and nature of the subsurface materials encountered along with some basic engineering properties of the subsurface soil. Environmental studies are beyond the scope of this report.

Field Investigation

Two (2) bore holes were required at this site. The test holes were opened near the vicinity of the suggested building footprint. A drilling rig with continuous flight auger was utilized to drill the test holes. The approximate locations of the test holes are shown on drawing #1.

The holes were advanced incrementally by auguring approximately 1.6 meters into the ground and withdrawing soil on the auger vanes. All samples retained were carefully sealed to prevent moisture loss and subsequently taken to our Soil Mechanics Laboratory for further analysis.

The in-situ strength of the soil was determined in the field by conducting a series of standard penetration tests and obtaining the corresponding blow count - N values. Where cohesive materials were encountered, pocket penetrometer tests were performed.

Subsurface Features

A) Subsoil Conditions

The soil profiles, as logged at the borehole locations, are shown on drawing No.'s 2 through 3 inclusive, Appendix A. Results of field and laboratory tests are shown on the borehole logs.

The soil profile at the test hole areas consisted of fill material and native clay till. The geotechnical report should be read in conjunction with information provided in the attached soil logs.

Fill

Fill material thickness of approximately 100 millimeters was encountered at both test holes locations. The fill material was a mixture of grass, topsoil, silt and clay. One should be noted that the thickness and characteristics of the fill material may vary across the site. This is especially significant along the slope area and near the existing structures.

The fill material is unsuitable as foundation material to support any structural load. Exterior flatworks, brick / stoneworks, etc. resting on the on-site fill soil could experience some differential movement. Any fill material placed near the slope crest or along the slope will reduce the stability of the slope. All excavated soil during construction should be moved from the property.

Clay Till

Underlying the fill material was a native silty clay till deposit. The brown / olive brown colored native clayey soil was firm to stiff in consistency. The silty clay till was encountered at all borehole locations.

As drilled depth increased, the native clay till transitioned into a greyish color, and remained firm to stiff in consistency. The native silty clay till was characterized with stones, pebbles, rusting, coal fragments and bedrock fragments. Damp interlayers were noted at occasional elevations within the native clay deposit.

The on-site clayey soil with a plastic index of about 14.0% can be classified as inorganic clay with medium plasticity. It could have a low to medium potential to swell when in contact with water. It is imperative penetration of surface and subsurface water (such as pipe leakage) into the native clay subgrade soil should be prohibited. All subsurface plumbing work must be completed to the highest standard to prevent leaking. Any leakage could cause undesirable movement of the slab or exterior flatworks and reduce the stability of the slope.

B) Groundwater

No underground water was detected in each of the boreholes in the midst of site testing on October 7, 2020. Two (2) slotted PVC standpipes were installed in boreholes #1, and #2 locations for monitoring the groundwater levels. On October 27, 2020 the watertable measurement was recorded and summarized as follows in the table below.

Hole	Water Table Measurement Below Existing Grade
1	Dry
2	Dry

It should be noted that the water conditions were observed in a relatively short term and may not represent stabilized ground water readings. The groundwater table has the potential for short term upward fluctuations during periods of snow melt or precipitation. These seasonal fluctuations will impact subgrade support conditions and excavations.

C) Stability of Slope

Field observation revealed the south-west facing slope appeared to have no apparent signs of slope movement within the subject property with the exception of the erosion near the toe of the slope in the lake area. Though groundwater or seepage was not noticed on the slope surface neighboring the building site, the potential of seepage or springs cannot be wholly discounted of under all circumstances.

Slope stability analyses was carried out using the slope computer program (Geostudio) to evaluate the stability of the existing south-west facing slope angle with the construction of a residential structure. The slope stability analyses were to determine the factors of safety (FS) for various slip planes through compelling development features.

The slope factors of safety (FS) based on the new house constructed near the slope crest were analyzed.

The following conservatively assumed soil parameters were used:

Soil Type	Unit Weight (kN/m3)	Cohesive Strength (kPa)	Angle of Internal Friction (degree)
Fill / Topsoil	15	0	10
Native Clay Till	22	10	32

Essentially, a factor of safety (FS) of less than 1 indicates that failure is expected. Given the possibility of soil variation, groundwater fluctuation, erosion and other factors, slopes with FS ranging between 1.0 and 1.3 are considered to be marginally stable. A "long term" stable slope to have a calculated FS of at least 1.5 is required for structures constructed at or near the slope.

On account of the present slope configuration, vegetation and a proposed new residence constructed a minimum from 5 meters from the slope crest, the stability of the single slope profile were analyzed under the following conditions.

a) Under "normal" groundwater and existing slope conditions.

   This first stage of the slope stability analysis of the existing slope confirms a long-term factor of safety (F.S.) of 3.460. This means the construction of the new building at a minimum of 5 meters from the slope crest is deemed stable. The F.S. of 3.460 exceed the minimum required FS of 1.5.

b) The second stage of slope stability analysis was under the assumption of simulated high groundwater level at the single cross-section area.

   The second stage of the slope stability assessment also confirmed a long-term factor of safety (FS) of 2.627 can be achieved. This F.S. of 2.627 also exceeds the minimum required FS = 1.5.

In order to maintain the stability of the slope, it is imperative the following should be adhered to:

a) The erosion of the slope toe must be addressed and prevented.

b) New rock retaining walls replacing the existing rock retaining walls should be properly designed and installed.

c) Proper drainage and site grading must be maintained in order to maintain the stability of the slope.

d) Confirmation of the exact building setback distance from the slope crest is required by our personnel during site preparation.

The following sections regarding recommendations for foundation construction, slab construction, soil compaction, the slope developments, slope toe erosion control, site grading, subsurface drainage, and different stages of site inspections as required must also be adhered to for maintaining the stability of the slope during and after construction.

Recommendations

A) Footings

1) All fill / organic material must be removed to expose the underlying natural clay till deposit. The exposed over-excavated area must be inspected and approved by our personnel.

2) All footings must be directly supported by the firm native clay till deposit.

3) Footing founded on the firm to stiff native clay till soil may be designed based on the factored resistance or serviceability bearing resistance values given in the following table:

BEARING RESTANCE FOR FOOTINGS

Soil Type	ULS (kPa)		SLS (kPa)
	Ultimate Resistance	Factored Resistance	
Native Silty Clay Till	250	125	90

The ultimate resistance values in this table are only based on semi-empirical data, therefore the factored resistance or serviceability bearing resistance should be used for the footing design. The "factored" resistance has been calculated by reducing the ultimate resistance values above by a geotechnical resistance factor of 0.5, in accordance with the building code.

4) Any fill material encountered within the footing zone must be completely removed to expose the underlying native clay. The exposed native clay must be inspected and approved by our personnel in writing. Replacement material should be concrete.

5) If construction is carried out during the winter, the foundation excavation must be protected against freezing of the subsoil at the footing grade. Under no circumstances shall concrete be placed on frozen soil.

6) For protection against frost action, exterior footing in continuously heated structures should be provided with a minimum depth of ground cover 1.5m. Insulation should be placed on the exterior of the footing wall. Isolated footing and exterior footing in unheated structures will require 2.5m of ground cover. Styrofoam insulation may be used to prevent frost penetration where adequate depths of ground cover cannot be economically provided.

7) Site classification for seismic site response is E for this specific site.

8) All exposed footing bases must be inspected and approved by our personnel to confirm the soil bearing strength (factored resistance or serviceability bearing resistance) prior to footing construction.

B) Concrete Floor Slab

1) A reinforced grade-supported slab should be received by a prepared subgrade soil and base gravel or radon rocks.

2) Proper preparation of the subgrade soil for the floor slab includes the following:

- removal of all vegetation, organic soil, fill material, and construction debris to expose the firm to stiff native clay subgrade soil. The exposed excavation must be inspected by our representative for approval prior to proof-rolling.

- re-compacting the exposed and approved native subgrade soil to at least 95% Standard Proctor Maximum Dry Density (S.P.M.D.D). Any soft subgrade soil encountered should be sub-excavated and replaced with low plastic clay. All replacement soil has to be compacted to at least 95% S.P.M.D.D.

3) A minimum of 200 millimeters of crushed gravel (minus 20 mm) or radon rock as required must be placed directly beneath the entire slab and above the re-compacted subgrade soil. The gravel must be uniformly compacted to at least 98% S.P.M.D.D.

4) Compaction tests should be conducted on replacement soil and slab base gravel or radon rocks to confirm adequate and uniform compaction has been achieved. Improper and non-uniform soil compaction could cause differential movement, deflection and cracking of the concrete slab.

5) All utility trenches must be backfilled with inorganic suitable soil. The inorganic acceptable soil must be compacted to at least 95% Standard Proctor Maximum Dry Density.

6) The slab base gravel, radon rocks, and subgrade soil must be protected from snow, freezing, excessive drying, rain and ingress of free water, during and after the construction to prevent any foundation movement.

7) It is imperative penetration of surface and subsurface water (such as pipe leakage) into the native subgrade soil must be prohibited. Water leaking below the concrete slab could soften the footing soil and affect the slope stability. It is imperative all subsurface plumbing work has to be completed to the highest standards.

8) Adequate perimeter and interior subsurface drainage must be provided to discharge all subslab water away from the building and towards positive outlets.

9) The above recommendations are for a continuously heated building with light floor loading.

C) Erosion Near Lake Area

Erosion was present near the slope toe of the lake side property at the time of site visit (see attached photos). Below is a general procedural guideline for the detected erosion near the slope toe.

1) Removal of all unstable soil to expose the suitable material. The removal of unstable soil has to be under our direct supervision to ensure all unsuitable soils are removed without affecting the slope integrity.

2) Upon removal of unsuitable soil and our approval, immediately cover the exposed area with geotextile filter cloth or burlap material and place a thick layer of rip rap gravel to replace the eroded area. The rip rap gravel should maintain a gentle slope and follow close to the existing slope contour to minimize further erosion.

3) Remove the concrete and wood debris near the toe areas and replace with rip rap.

4) It is imperative that the repaired eroded areas should be checked periodically and provide proper maintenance as needed to prevent further erosion.

5) All erosion control measures and repair work must be approved by the appropriate government departments.

D) Retaining Wall

1) All retaining walls must be properly designed by a qualified structural engineer to ensure they can withstand the following anticipated soil lateral pressures and over-burden load.

2) The lateral pressures are dependent on the soil type behind the wall, the wall orientation, exposure to frost action, the slope of the backfill away from the wall, and compactive effort used.

3) For the general case of a permanent vertical wall with horizontal backfill, lateral earth pressures may be computed using the following equation:

$$P = KQ + KrH$$

Where:

P = Lateral earth pressure at depth H below ground level(kPa)
Q = Surcharge loading at the ground surface (kPa.)
K = Coefficient of lateral earth pressure
r = Total unit weight of soil backfill compacted to at least 95% Standard Proctor Maximum Dry Density (KN/m^3)
H = depth below ground level (meters)

3) Recommended designed values for these parameters will depend on the type of backfill used. Recommended designed values are given below:

Lateral Earth Pressure Parameter		
Type of Backfill	**Total Unit Weight (KN/m^3)**	**Coefficient of Lateral Earth Pressure K**
Inorganic clay	19	0.6
Free draining granular material	21	0.4

The values given above are for backfill compacted to 95 % Standard Proctor Maximum Dry Density. If the density of the backfill is increased, the lateral pressures acting on the wall should be reviewed.

The following should also be considered in the wall design:

1) All backfill material should be moderately compacted to 90 % Standard Proctor Maximum Dry Density. Compaction tests should be conducted to confirm the percentage of compaction achieved.
2) Applicable surcharge loading should be applied if applicable.
3) It is imperative that proper steps be taken to prevent any water that infiltrates the backfill soil from accumulating behind the wall. If water is allowed to permeate the soil behind the wall, large additional pressures will be applied to the wall. Therefore, proper site grading must be provided to shed all surface water from the retaining area.
4) It is our understanding that two rock retaining walls are to be constructed above and near the erosion area to replace the two existing failing rock retaining walls.
5) The bottom rock retaining wall (nearest to the lake) shall maintain a minimum horizontal distance about 2 meters from the toe crest or 3 meters from the lake water edge.

E) Ground Water- Drainage

a) Around House Perimeters

A permanent subdrainage system (weeping tile drain) is recommended for the residential structure. The weeping tile should be placed around the outside perimeter of the basement walls to allow drainage of local groundwater and water trapped in backfill; and to reduce the hydrostatic pressures against foundation walls and floor slabs.

The weeping drain should be surrounded with granular material to minimize fine grained native soil migration into the drain. The drains shall be of a minimum 150 millimeter diameter, connected to sump pumps and provided with back flushing facilities and clean outs.

Infiltration flows into the weeping tile drains will depend on the surficial soil around the house. The largest flows will occur during periods of heavy precipitation and will be greatest for basements within sand or silt soils that are perched on top of lower permeable clay soils. Except for seepage through loose backfill, flows will not be instantaneous with precipitation. Groundwater infiltration flows can be significantly increased by poor site drainage around houses, improperly directed roof leaders and poorly compacted backfill.

b) Backfill Soil Compaction

In general, compaction of backfill soil in the following areas are advised to minimize seepage from the surface and surrounding areas.

1) All backfill soil along the perimeters of the foundation walls must be uniformly compacted in 0.3 meter lifts. This is especially important in the frost wall in the walkout basement area where groundwater can be trapped and soften the footing foundation soil. Each lift should be moderately compacted to 95% S.P.M.D.D. During compaction, caution must be exercised to prevent any damage to the foundation walls.

2) All backfill soil within the utility trenches must be properly compacted in 0.3 meter lifts to 95% S.P.M.D.D. As well, proper measures must be provided to prevent water from the surrounding areas seeping into the building and the subject property.

3) All surface areas outside the gravel trench drains in the lower plateau area should also be compacted to 95% S.P.M.D.D.

4) Any other excavated areas must also be properly re-compacted to 95% S.P.M.D.D.

c) Compaction Tests

Compaction tests must be conducted at each lift of backfill soil of about 300 millimeter lifts to ensure proper compaction has been achieved and warrant if additional compaction testing is required.

d) Site Grading

Proper site grading must be provided to direct all surface away from the buildings and the property.

In providing subsurface drainage and soil compaction, one should note these will only minimize on-site fill soil differential movement. Any exterior flatworks, brick works, fences, etc. supported by the on-site fill material could still experience some differential movement, deflection, or crackings. These are due to the thickness, quality, and compactness of the fill material will vary across the site. As well, the potential presence of undetected organic fill material within the on-site fill soil could be a factor.

F) General Slope Recommendations

The following general recommendations apply to residential development at this site.

1) In order to reduce the possibility of surficial sloughing, the slopes must be kept well vegetated at all times. The factor of safety of a slope will increase slightly as vegetation is maintained on the slope surface to protect the subgrade soil from weathering.

2) The native soil could be susceptible to erosion. Surface drainage and roof water must be discharged on the ground surface and kept away from the developed slope and the new building. No water is permitted to discharge below grade as that could cause erosion and potential slope failure.

3) All underground services should be installed to the highest standards to minimize the risk of seepage infiltration into the slope area due to leaking water.

4) No fill or excavated material from the building site (basement etc.) may be placed at the top of the slope.

5) Construction of such items as wooden decks and paved patios would be permitted.

6) Automatic sprinkler system, ornamental fountains, other water retaining structure are prohibited.

7) The finished site grade should be properly sloped to direct all surface water from the house and sloped areas. A minimum grade slope of 3% is advised at this site.

G) Foundation Concrete

Water soluble sulphate concentration tests were completed on two soil samples randomly collected from selected borehole locations indicated a water soluble concentration between 0.059% to 0.067%. In accordance with current CSA standards, the degree of sulphate exposure may be considered negligible and the use of sulphate resistant hydraulic cement is not required for concrete in contact with local soil. It is advisable water soluble sulphate concentration tests should be completed on any imported fill to verify the sulphate resistant requirements for concrete elements in contact with fill material.

Concrete element exposed to de-icing salts or other substances containing chlorides should be designed in accordance with an exposed concrete classification pertaining to concrete exposed to chloride attack. As well, subsurface concrete could be subject in seasonal saturated conditions. Air-entrainment should be incorporated into any concrete elements that are exposed to freeze-thaw to enhance its durability. In accordance with Clause 4.1.1.1 of CSA A23.1-19, where more than one exposure condition applies to concrete elements, the concrete shall be designed to meet the highest specified 28 day compressive strength, the lowest water-to-cementing materials ratio, the highest range in air content, and the most stringent cement type requirement.

H) Construction Monitoring

The engineering design recommendations presented in this report are based on the assumption that an adequate level of inspection will be provided during construction and that all construction will be carried out by a qualified contractor experienced in concrete and earthworks construction.

- for footing foundation -confirm the recommended soil bearing strength can be achieved at the footing elevation.
- for slab and flatworks -confirm all subgrade soil is acceptable prior to construction of the slab and exterior flatworks.
- for earthworks: -full time monitoring of soil compaction and testing.
- for concrete construction - testing of plastic and hardened concrete in accordance with CSA A23.1-19 and A23.3-19.

Closure

This report is based on the findings at the borehole locations. Should conditions encountered during construction appear to be different from those shown by the test holes, this office should be notified immediately so that we may reassess our recommendations on the basis of the new findings. Recommendations presented herein may not be valid if an adequate level of inspection is not provided during construction or if relevant building code requirements are not met.

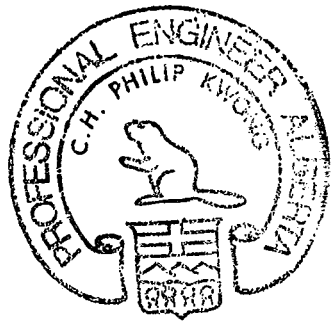
Soil conditions, by their nature, can be highly variable across a construction site. The placement of fill during and prior to construction activities on a site can contribute to variable near surface soil conditions. A contingency should be included in the construction budget to allow for the possibility of variations in soil conditions, which may result in modification of the design, and / or changes in construction procedures.

This report has been prepared for the exclusive use of Jodi Neish of Square Structures and her agents, for specific application to the development at 71 Birchcliff Road, Summer Village of Birchcliff, Alberta. Any use that a third party makes of this report, or any reliance or decisions based on this report, are the sole responsibility of those parties. It has been prepared in accordance with generally accepted soil and foundation engineering practices. No other warranty is made, either expressed or implied.

Sincerely,
Smith Dow and Associates Ltd. (Red Deer)

Philip Kwong

Philip Kwong (P.Eng)



APPENDIX-A

SKETCH PLAN

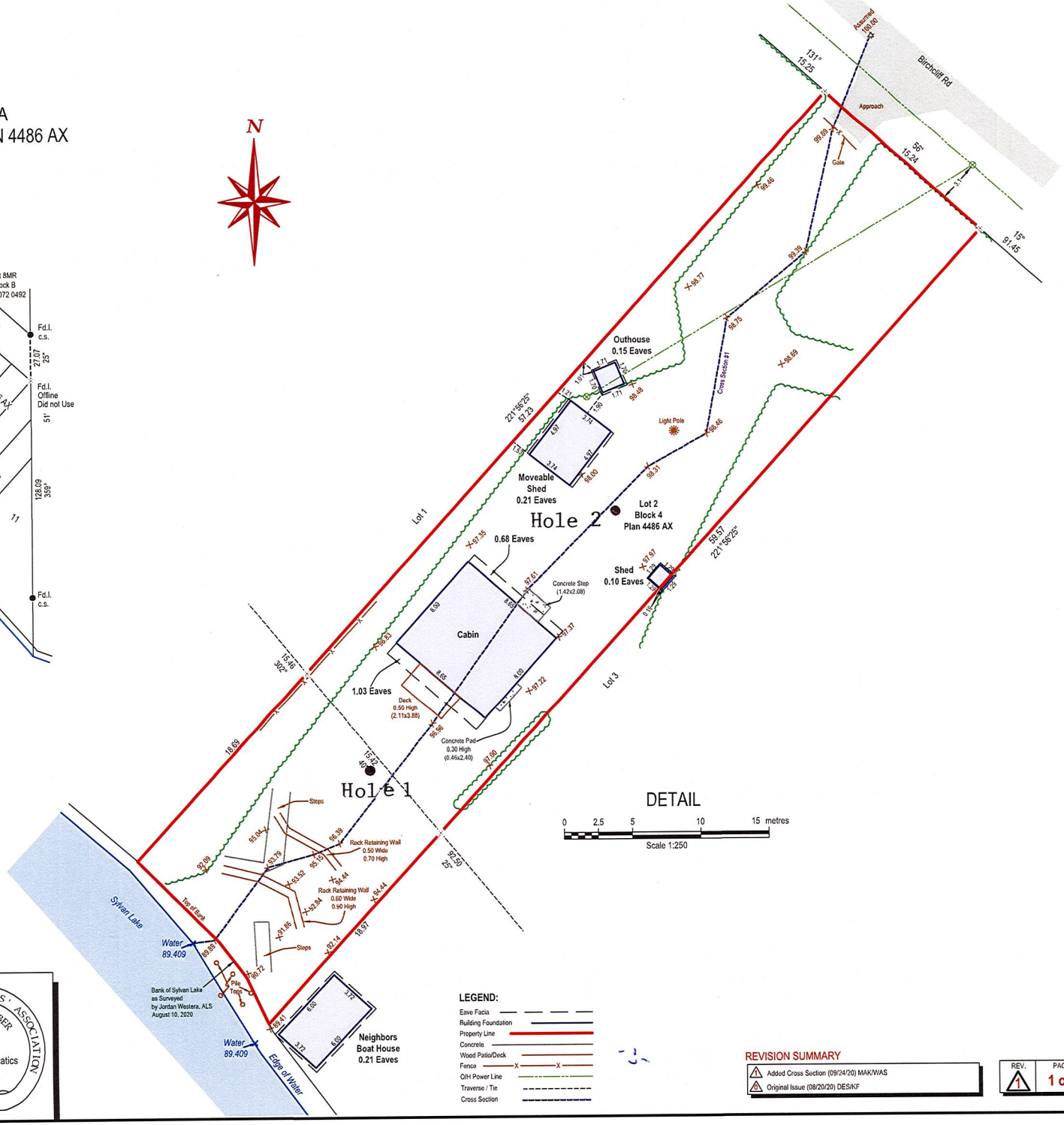
SHOWING

SITE FEATURES

CIVIC ADDRESS: 71 BIRCHCLIFF ROAD

SUMMER VILLAGE OF BIRCHCLIFF, ALBERTA

LEGAL DESCRIPTION: LOT 2, BLOCK 4, PLAN 4486 AX



NOTES:

Distances shown are in metres and decimals thereof.

The area affected by registration of this plan is denoted thus: ——

And contains 0.117 ha (1 Lot)

LEGEND:

- Eave Facia
- Building Foundation
- Property Line
- Concrete
- Wood Patio/Deck
- Fence — X — X —
- O/H Power Line
- Traverse / Tie
- Cross Section

COMPASS Geomatics Ltd.

11-4608 62nd Street
Red Deer, Alberta T4N 6T3
Office (403) 356-0111 Fax (403) 356-0114
www.compassgeomatics.ca

ALBERTA LAND SURVEYORS' ASSOCIATION
PERMIT NUMBER
P266
Compass Geomatics Ltd.

COMPASS DWG: 00574-20-SP-R1 SURVEYED BY: __

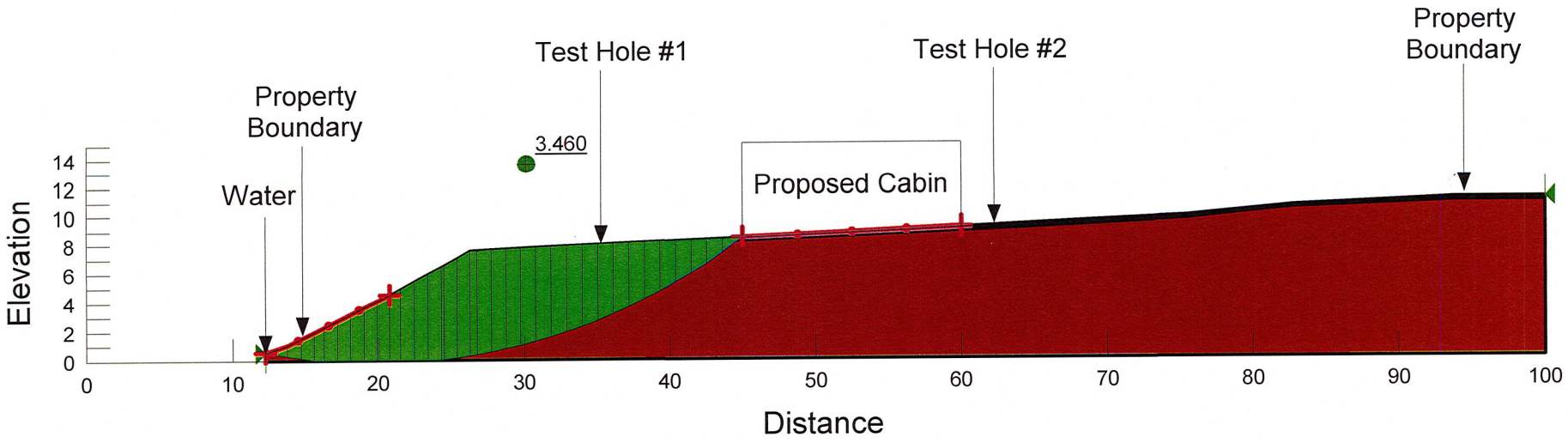
REVISION SUMMARY

1 Added Cross Section (09/24/20) MAK/WAS

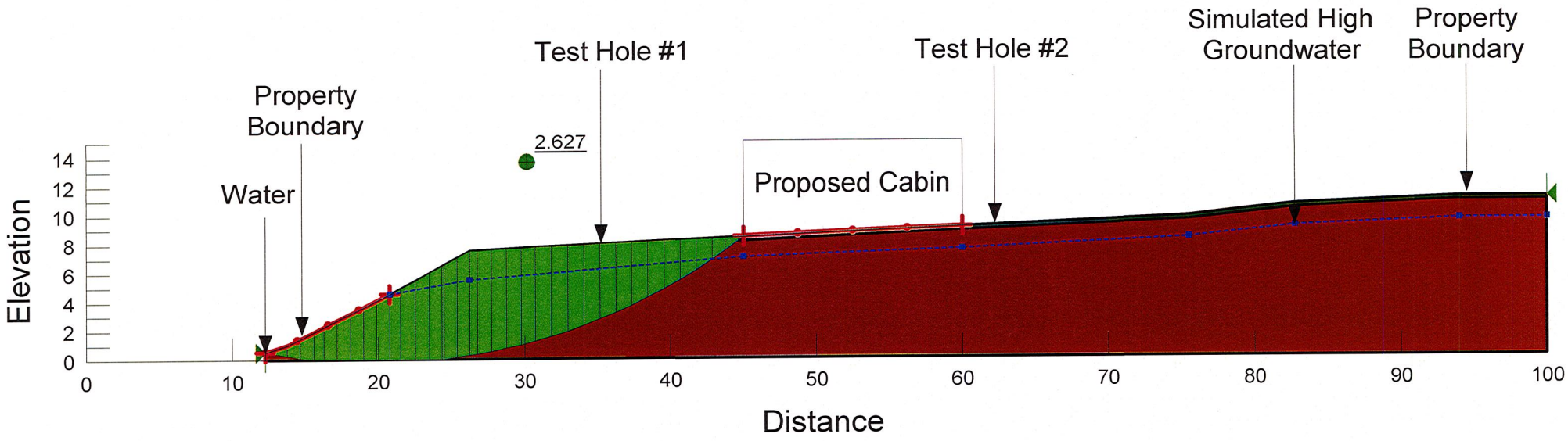
0 Original Issue (08/20/20) DES/KF

REV. 1 PAGE 1 of 2

71 Birchcliff Road
Summer Village of Birchcliff, Alberta
Cross Section #1



71 Birchcliff Road
Summer Village of Birchcliff, Alberta
Cross Section #1
Simulate High Groundwater



SMITH DOW & ASSOCIATES LTD.
-------Engineering Consultants-------

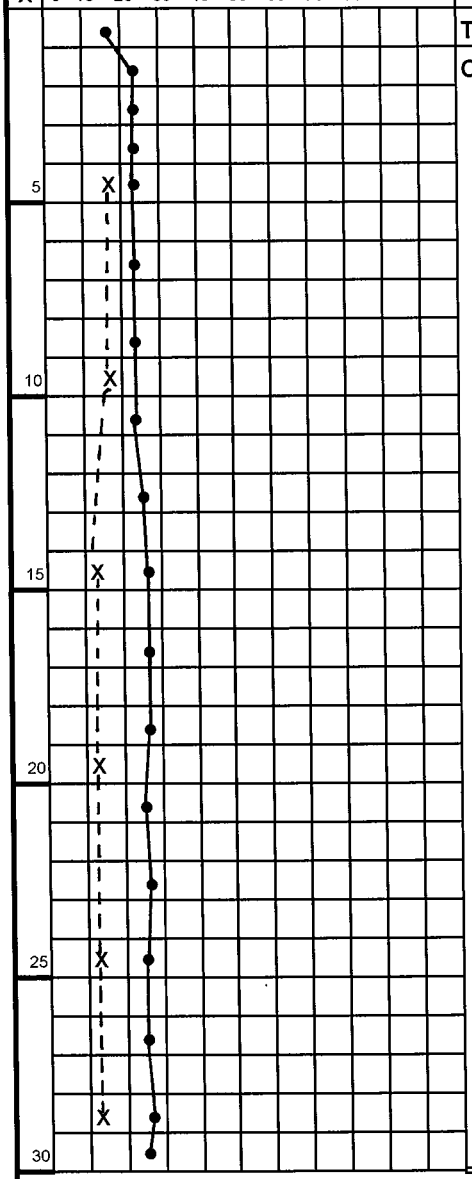
Project: **71 Birchcliff Road**
SV of Birchcliff, Alberta

DWN HB	CKD AK	DATE October 7, 2020	FILE #	HOLE 1

STRENGTH----------
MOISTURE----------
PENETRATION----------

▲ DATUM
● GROUND ELEV-

▲ 100 200 300 400 500
● 10 20 30 40 50
X 0 10 20 30 40 50 60 70 80 90 100



CLASSIFICATION		SYMBOL	TEST DATA	SAMPLE	Depth feet	Depth meters
Topsoil	75mm, black, organic, grass, rootlets				1	
Clay Till	roots,, brown, silty				2	
	stones, low plastic, sand/silt specks				3	
	rusting, coal fragments, tan				4	1
	stiff to medium dense, iron nodules				5	
	small roots, bedrock fragments		N=20	X	6	
	sand lenses, low to non-plastic				7	2
	olive/tan, coal & bedrock fragments				8	
	white mineral deposits				9	
	silt/sand specks				10	3
	low plastic, slightly clayey		N=17	X	11	
	carbonates, stiff				12	
	moist, pebbles to stones				13	4
	low plastic, coal & bedrock fragment				14	
	white mineral traces				15	
	olive/brown		N=10	X	16	5
	low plastic				17	
	firm to stiff				18	
	sand lenses to specks				19	6
	low plastic				20	
	stiff, sand lenses, stones		N=10	X	21	
	low to non-plastic, silt/sand				22	7
	low to medium plastic, coal specks				23	
	damp, bedrock fragments, stones				24	
	firm to stiff				25	
	greyish olive, rust stains		N=13	X	26	8
	various sizes bedrock fragments				27	
	greyish/olive				28	
	stones, coal & sand specks				29	
	olive grey, bedrock fragments		N=12	X	30	9
	End of Hole (Standpipe In)					

FILL	CLAY	TILL	Q - Unconfirmed Strength, kN/m2
TOPSOIL	PEAT	COAL	d - Dry Unit Weight, kN/m3
SAND	GRAVEL	WATER	S - Sulphate Concentration, %
SILT	SILTSTONE	LIMITS	N - Penetration Resistance, blows

Tube	/
Penetrometer	X
No Recovery	■

TEST HOLE LOG AND LAB DATA

DWG # 2

SMITH DOW & ASSOCIATES LTD.

-------Engineering Consultants-------

Project: **71 Birchcliff Road**
SV of Birchcliff, Alberta

DWN HB	CKD AK	DATE October 7, 2020	FILE #	HOLE 2

STRENGTH----------
MOISTURE----------
PENETRATION----------

▲ 100 200 300 400 500
● 10 20 30 40 50
X 0 10 20 30 40 50 60 70 80 90 100

DATUM
GROUND ELEV-

CLASSIFICATION		SYMBOL	TEST DATA	SAMPLE	Depth feet	Depth meters
Topsoil	75mm, organic silt, rootlets, grass				1	
Clay Till	silty, toupe/tan				2	
	pebbles, low plastic				3	
	tan/golden brown, white mineral traces				4	1
	rust & sand specks, silty				5	
	small boulder/rock, medium dense		N=20	X	6	
	coal & bedrock fragments				7	2
	low plastic, rust specks				8	
	firm, silty, coal fragments				9	
	varying size bedrock fragments				10	3
	rust stains		N=11	X	11	
	low to medium plastic				12	
	olive brown				13	4
	bedrock & coal fragments				14	
	firm				15	
	olive/brown		N=8	X	16	5
	moist, white mineral traces				17	
	low to medium plastic, bedrock frag				18	
	firm to stiff				19	6
	rust specks & coal fragments				20	
	grey mottles, sand/silt speck, stiff		N=9	X	21	
					22	7
	End of Hole				23	
	(Standpipe In)				24	
					25	
					26	8
					27	
					28	
					29	
					30	9

FILL	CLAY	TILL	Q - Unconfirmed Strength, kN/m2
TOPSOIL	PEAT	COAL	d - Dry Unit Weight, kN/m3
SAND	GRAVEL	WATER	S - Sulphate Concentration, %
SILT	SILTSTONE	LIMITS	N - Penetration Resistance, blows

Tube	/
Penetrometer	X
No Recovery	■

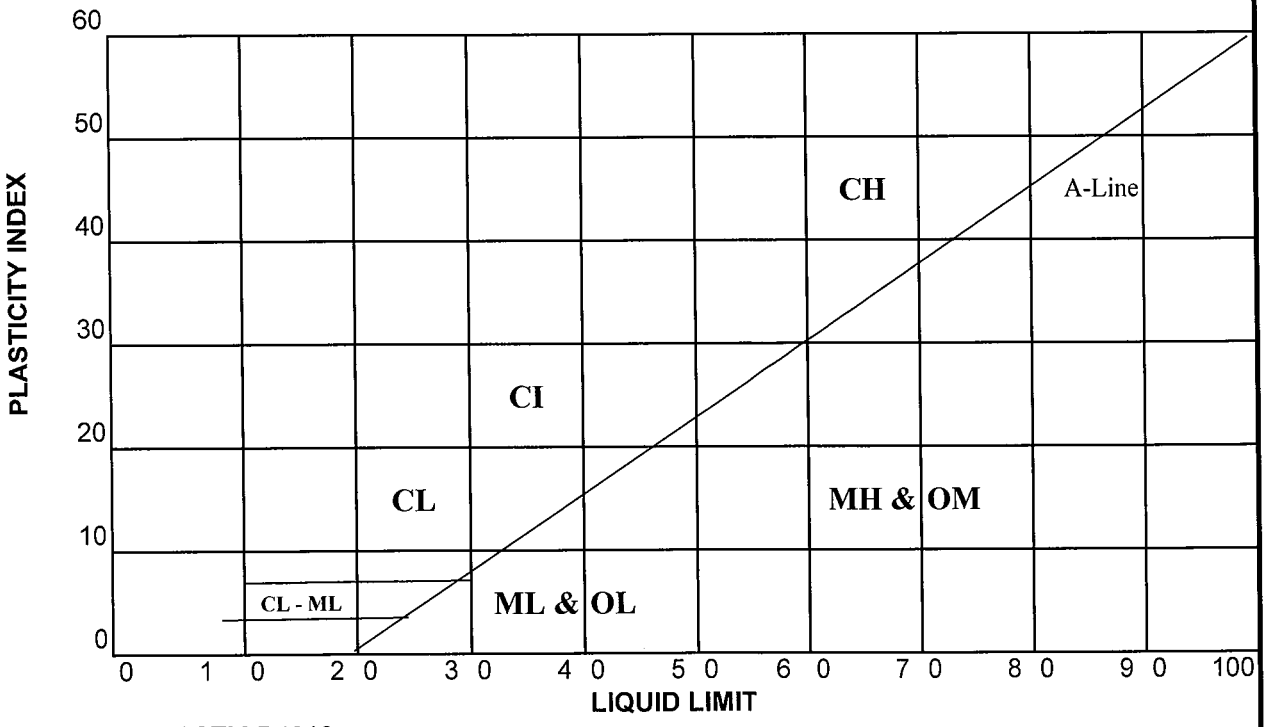
TEST HOLE LOG AND LAB DATA

DWG # 4

Smith Dow & Associates Ltd. 4632-62Street Red Deer, Alberta Phone 403-343-6888 Fax 403-341-4710	Client	Jodi Neish
	Project #	71 Birchcliff Road
	Date	08-Oct-20
	Location	Summer Village of Birchcliff, Alberta

Location	Depth (meters)	Liquid Limit	Plastic Limit	Plasticity Index	Flow Index
Hole #1	0.9	36.9	22.9	14.0	7.3

Location	Depth (meters)	Inherent Swelling Capacity	Soil Classification
Hole #1	0.9	Low/Medium	Inorganic Clay, Medium Plasticity



ATTERBERG LIMIT TEST - ASTM D4318