Report on the Agricultural Capability of 3110 Mathews Road, Kelowna, BC

Prepared for: Mr. Troy Turton
Trojan Contracting Ltd.
3110 Mathews Road
Kelowna BC

Prepared by: Mr. Michael Molloy
BCIA Registered Professional Agrologist #2544
6127 Aitkens Road
Peachland BC V0H1X7

December 16th, 2015

## [1] OVERVIEW

This report establishes the agricultural capability of the property at 3110 Mathews Road. This report is limited in scope to assessing to what degree the site fulfills the broad minimum requirements for soil, slope, drainage and the site attributes for agricultural production.

Consideration has also been given to neighbouring land use, road frontage, the Kelowna OCP and ALR regulations, landscape buffers, and dust mitigation measures.

## [2] LEGAL DESCRIPTION

Lot III, Section 3, Township 26, Osoyoos Division Of Yale District, Plan 1247

## [3] CIVIC ADDRESS

3110 Mathews Road Kelowna BC

## [4] LAND OWNERSHIP AND AREA

Troy and Laurie Turton purchased this property in 2003.

Area: 12.6 ac

Zoned: A1 within the ALR

## [5] BACKGROUND

Three generations of the Turton family have been actively involved in agriculture in this part of Kelowna. They have made a significant contribution to the industry and acquired a substantial amount of expertise. Trojan Contracting Ltd. is owned and operated by Troy Turton and is well recognized as a leading exponent of contouring land and enhancing its agricultural capability.

The applicant proposes the extraction of up to 40,000 cubic meters of gravel from portions of the property totaling 7 acres as identified in this report. The applicant proposes to remove the material in three phases (Attachment #1), and would like to import heavier, more arable soils to compliment the existing topsoil. In its natural condition, the land slopes to the north and east, and the contours (Attachment #2) are broken by a series of transverse ridges. These ridges are sufficient, if left unaltered, to disrupt cold air drainage and precipitate severe localized frost pockets. In the spring and fall frost pockets can cause injury and death to sensitive plant tissue and adversely affect the viability of some crops. The alternative might involve the installation of a wind machine and its attendant problems.

## [6] SITE CONTEXT

The subject property is located on Mathews Road in East Kelowna. It is lightly forested, has some pasture improvement, but is not currently farmed. The surrounding area is predominantly in the Agricultural Land Reserve (ALR) and is used for agricultural purposes. There is one single family dwelling on the property and two accessory buildings. Water services to the property are supplied by the South East Kelowna Irrigation District (SEKID).

## [7] AGRICULTURAL CAPABILITY

With reference to the BCLI Land Capability Classification, the unimproved land classification for the subject area is 8:5A - 2:4A. With improvements, primarily through irrigation, topsoil amendment, slope and air drainage the land capability rating increases to 4:3 - 4:3AP - 2:2A (Land Capability Map and Classification, Attachment #3).

## [8] SOIL CLASSIFICATION

| % | Soil Type | Description |
|---|---|---|
| 50 | GAMMIL | Glacial fluvial elnviated entric brunisol |
| 30 | PARADISE | As for Gammil but leached with limited buffering capacity |
| 20 | HAERLAND | Aeolian over till, same soil type from different parent material |

## [9] LAND USE ON ADJACENT PROPERTIES

| Direction | Primary Land Use Type | Specific Activity |
|---|---|---|
| North | Agriculture/Farm | Cultivated pasture and irrigated orchard |
| South | Agriculture/Farm Lot and Rural residential | Irrigated pasture livestock grazing |
| East | Agricultural | Several houses and large pasture |
| West | Agricultural | Several houses, some with pasture |

(Google Earth image Attachment #4)

## [10] CONCLUSION

The applicant is aware of, and in compliance with, the relevant provincial regulations. A Notice Of Work (Attachment #5) has been submitted to the BC Ministry of Energy and Mines. A Farm Protection Development Permit submission has been made to the City Of Kelowna (Attachment #6). A Notice Of Intent to Remove Soil and Place Fill For A Specified Farm Use was submitted to the Agricultural Land Commission in 2015 (Attachment #7, ALC reply June 11, 2015).

The applicant also recognizes that the City of Kelowna has a soil movement bylaw and an application permit for soil deposit or removal will be filed (Attachment #8). The development of land within the ALR and the City of Kelowna that involves the extraction of gravel as a component that improves agricultural capability has been, and continues to be, a quite common practice. The removal of up to 40,000 cubic meters of gravel from this property will contribute to the local economy and enhance the agricultural potential of the property.

In preparing this report, consideration was also given to the following issues:

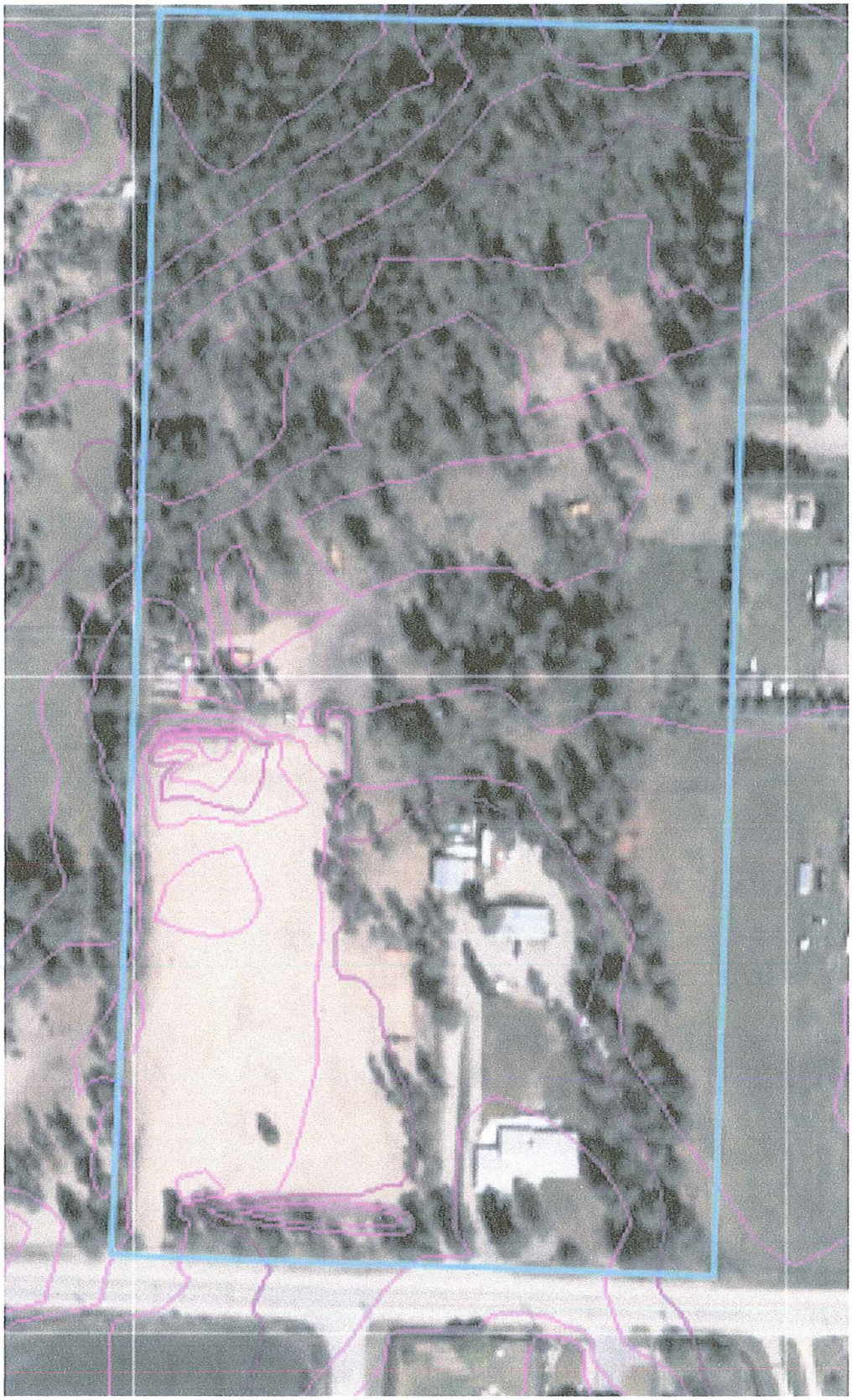
- Activities ancillary to the extraction of gravel
- Land use on the surrounding properties
- Mitigation measures for dust control
- The impact on traffic flow on Mathews Road
- Drainage and the local water table
- Buffer requirement on frontages
- The City of Kelowna OCP

## [11] ATTACHMENTS

1. Site Plan
2. Contour Map
3. Land Capability Map and Classification
4. Google Earth Image
5. Notice Of Work
6. Farm Protection Development Permit
7. ALC Letter, June 11, 2015
8. Application permit for soil deposit/removal
9. ALC Report Landscape Buffer Specifications, ALC 1993
    a. Schedule A: Buffer Types
10. Advanced Surveying Ltd. Cross Section Plans, 6 images

**Site Plan:**

Shown below is a topographic picture of the purposed site plan. Out lined in blue is the area of the property that we wish to remove soil from. The proposed area is also spilt into sections for the purpose of doing the soil removal in phases. The first phase will be the lower section of the property that is already cleared of trees.



2 #

#3
+Map

# AGRICULTURAL CAPABILITY CLASSIFICATION IN BC

## LAND CAPABILITY CLASSES FOR MINERAL SOILS

The seven land capability classes for mineral soils are defined and described as follows:

**CLASS 1** LAND IN THIS CLASS EITHER HAS NO OR ONLY VERY SLIGHT LIMITATIONS THAT RESTRICT ITS USE FOR THE PRODUCTION OF COMMON AGRICULTURAL CROPS.

Land in Class 1 is level or nearly level. The soils are deep, well to imperfectly drained under natural conditions, or have good artificial water table control, and hold moisture well. They can be managed and cropped without difficulty. Productivity is easily maintained for a wide range of field crops.

**CLASS 2** LAND IN THIS CLASS HAS MINOR LIMITATIONS THAT REQUIRE GOOD ONGOING MANAGEMENT PRACTISES OR SLIGHTLY RESTRICT THE RANGE OF CROPS, OR BOTH.

Land in class 2 has limitations which constitute a continuous minor management problem or may cause lower crop yields compared to Class 1 land but which does not pose a threat of crop loss under good management. The soils in Class 2 are deep, hold moisture well and can be managed and cropped with little difficulty.

**CLASS 3** LAND IN THIS CLASS HAS LIMITATIONS THAT REQUIRE MODERATELY INTENSIVE MANAGEMENT PRACTISES OR MODERATELY RESTRICT THE RANGE OF CROPS, OR BOTH.

The limitations are more severe than for Class 2 land and management practises are more difficult to apply and maintain. The limitations may restrict the choice of suitable crops or affect one or more of the following practises: timing and ease of tillage, planting and harvesting, and methods of soil conservation.

**CLASS 4** LAND IN THIS CLASS HAS LIMITATIONS THAT REQUIRE SPECIAL MANAGEMENT PRACTISES OR SEVERELY RESTRICT THE RANGE OF CROPS, OR BOTH.

Land in Class 4 has limitations which make it suitable for only a few crops, or the yield for a wide range of crops is low, or the risk of crop failure is high, or soil conditions are such that special development and management practises are required. The limitations may seriously affect one or more of the following practises: timing and ease of tillage, planting and harvesting, and methods of soil conservation.

**CLASS 5** LAND IN THIS CLASS HAS LIMITATIONS THAT RESTRICT ITS CAPABILITY TO PRODUCING PERENNIAL FORAGE CROPS OR OTHER SPECIALLY ADAPTED CROPS.

Land in Class 5 is generally limited to the production of perennial crops or other specially adapted crops. Productivity of these suited crops may be high. Class 5 lands can be cultivated and some may be used for cultivated field crops provided unusually intensive management is employed and/or the crop is particularly adapted to the conditions peculiar to these lands. Cultivated field crops may be grown on some Class 5 land where adverse climate is the main limitation, but crop failure can be expected under average conditions. Note that in areas which are climatically suitable for growing tree fruits and grapes the limitations of stoniness and/or topography on some Class 5 lands are not significant limitations to these crops.

**CLASS 6** LAND IN THIS CLASS IS NONARABLE BUT IS CAPABLE OF PRODUCING NATIVE AND OR UNCULTIVATED PERENNIAL FORAGE CROPS.

Land in Class 6 provides sustained natural grazing for domestic livestock and is not arable in its present condition. Land is placed in this class because of severe climate, or the terrain is unsuitable for

# AGRICULTURAL CAPABILITY CLASSIFICATION IN BC

cultivation or use of farm machinery, or the soils do not respond to intensive improvement practises. Some unimproved Class 6 lands can be improved by draining and/or diking.

**CLASS 7** LAND IN THIS CLASS HAS NO CAPAPBILITY FOR ARABLE OR SUSTAINED NATURAL GRAZING.

All classified areas not included in Classes 1 to 6 inclusive are placed in this class. Class 7 land may have limitations equivalent to Class 6 land but they do not provide natural sustained grazing by domestic livestock due to climate and resulting unsuitable natural vegetation. Also included are rockland, other nonsoil areas, and small water-bodies not shown on maps. Some unimproved Class 7 land can be improved by draining or diking.

## Agriculture Capability Subclasses

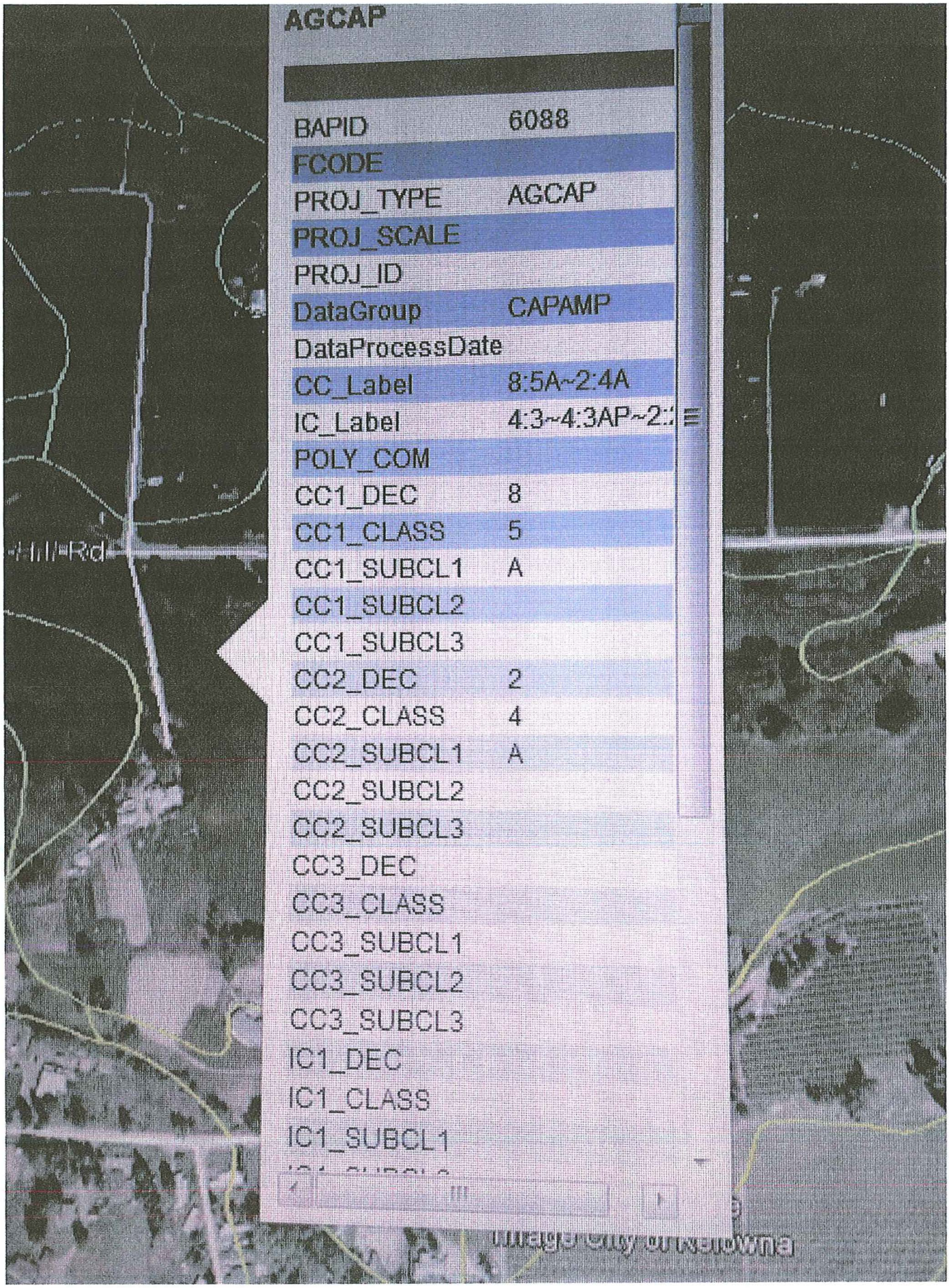
The subclass indicates lands with similar kinds but varying intensities of limitations and hazards. It provides information on the kind of management problem or use limitation. Except for Class 1 lands, which have no significant limitations, the capability classes are divided by subclasses on the basis of type of limitation to agricultural use. Each class can include many different kinds of soil, similar with respect to degree of limitation: but soils in any class may require unlike management and treatment as indicated by the subclasses shown.

| | | | |
|---|---|---|---|
| A & M | Soil moisture deficiency | N | Salinity |
| C | Adverse climate (excluding precipitation) | P | Stoniness |
| D | Undesirable soil structure | R | Shallow soil over bedrock and/or bedrock outcroppings |
| E | Erosion | T | Topography |
| F | Low fertility | W | Excess water (groundwater) |
| I | Inundation (flooding by streams, etc.) | S & X | Cumulative and minor adverse conditions |

Google earth

feet 2000

meters 800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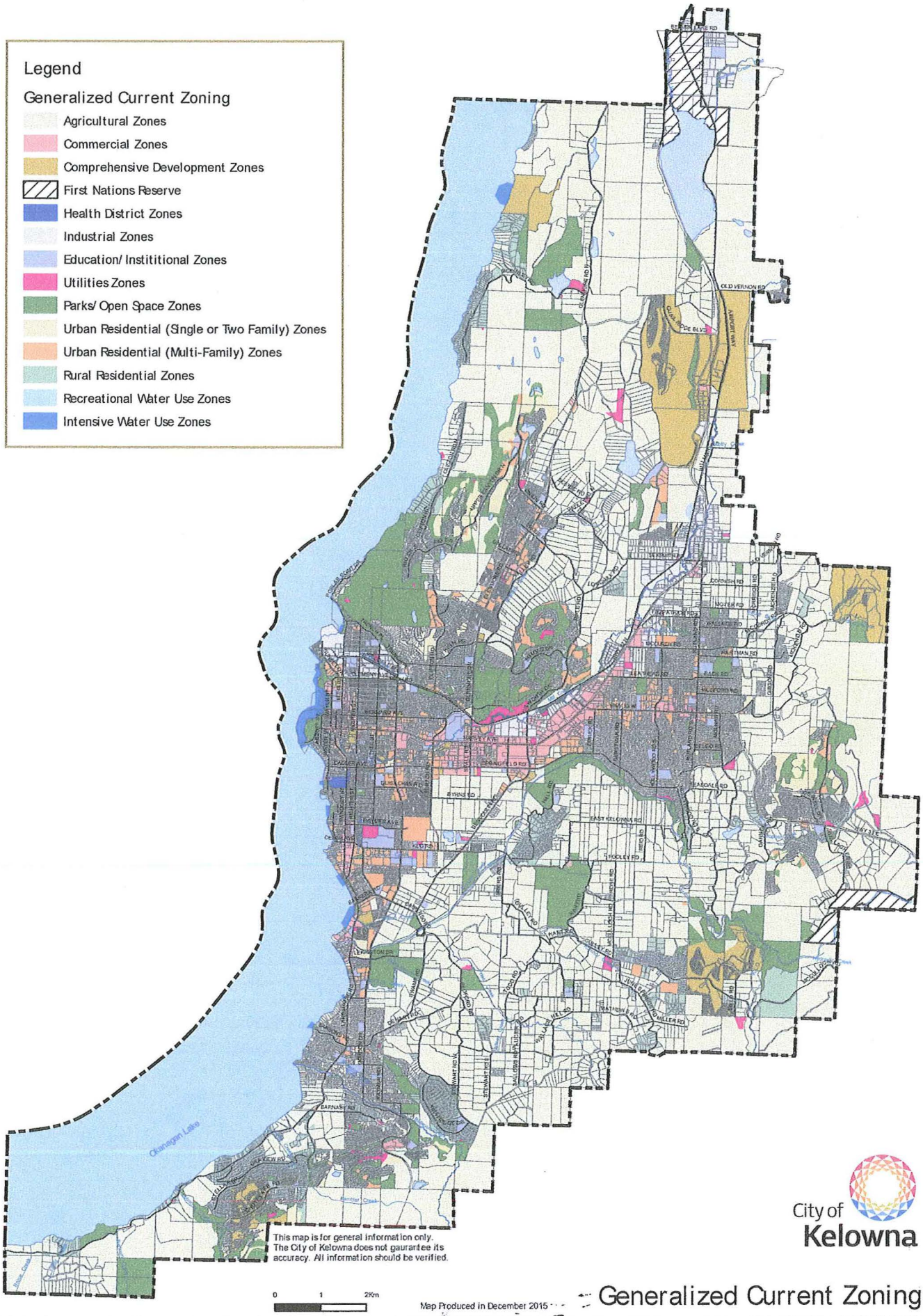



Generalized Current Zoning

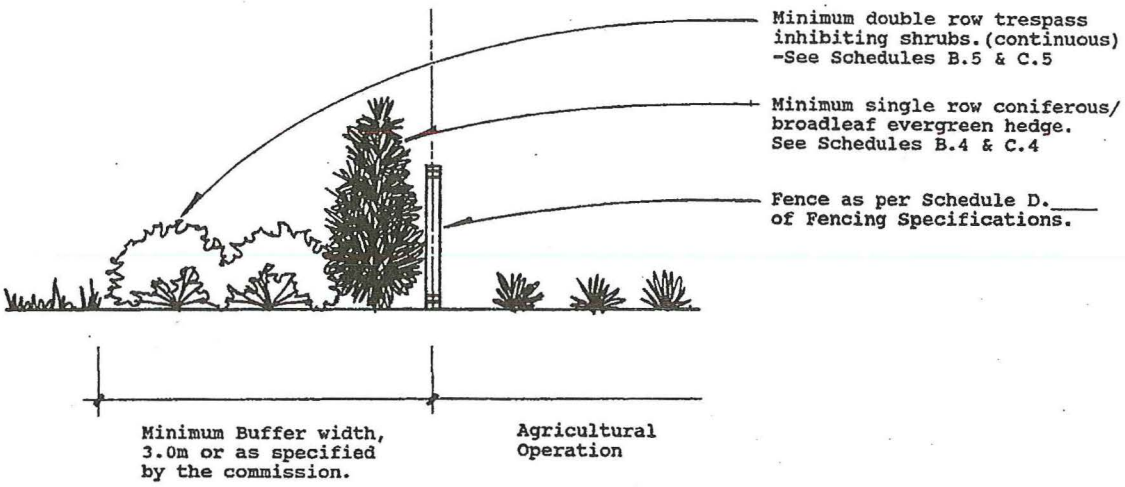
Google earth

feet 1000
meters 400

## SCHEDULE A: BUFFER TYPES

### A.1: Minimum Vegetative Screen (Evergreen Hedge)

Minimum visual screening and protection of farmland from trespass and vandalism.

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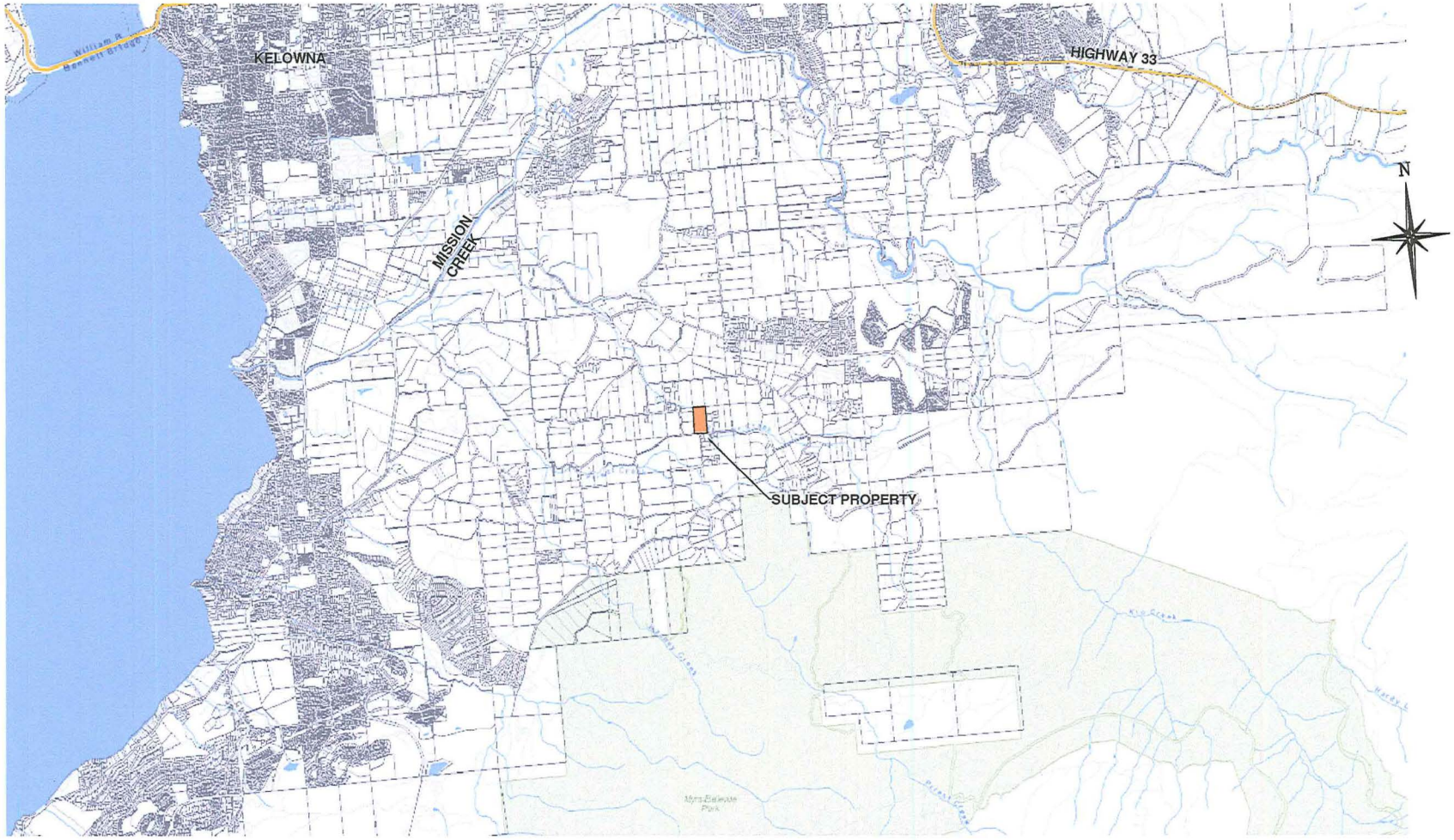


LEGEND

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|---|---|---|
| CABLE TV | CAP | SAN # SANITARY MH (EXISTING OR FUTURE) |
| GAS | CATCH BASIN | SAN # SANITARY MH (PROPOSED) |
| SAN. SEWER | ELECTRICAL BOX | STM # STORM MH (EXISTING OR FUTURE) |
| STORM SEWER | HYDRANT | STM # STORM MH (PROPOSED) |
| U.G. ELECTRICAL | VALVE | TRANSFORMER |
| U.G. TELEPHONE | LAMP STANDARD | UTILITY JUNCTION BOX |
| WATER | | |

| No. | MM/DD/YY DATE | BY | REVISION | Chk'd |
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LEGAL:
LOT 111, SECTION 3, TOWNSHIP 26, O.D.Y.D.,
PLAN 1247
PID NO. 011-703-172
3110 MATHEWS ROAD, KELOWNA, BC

| | |
|---|---|
| DRAWN | BMC |
| JOB NO. | 15-157 |
| FILE | 15-157.DWG |
| DATE | JUNE 2015 |
| SCALE | 1:50000 |

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# TROY TURTON
# 3110 MATHEWS ROAD
# LOCATION PLAN

DRAWING NO. 15157-01

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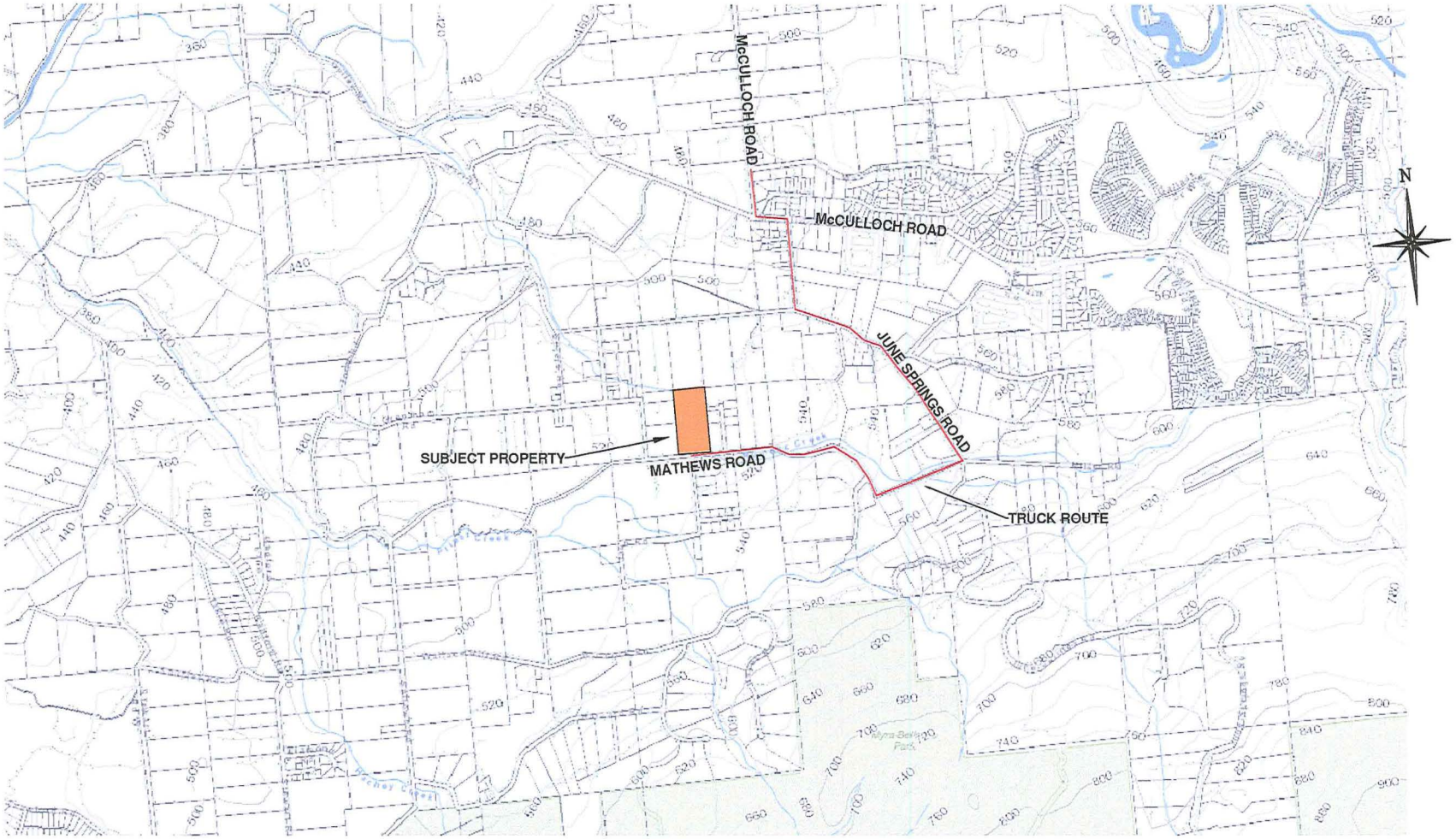


LEGEND

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| CABLE TV | CAP |
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| SAN. SEWER | ELECTRICAL BOX |
| STORM SEWER | HYDRANT |
| U.G. ELECTRICAL | VALVE |
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UTILITY JUNCTION BOX

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# TROY TURTON
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# LOCAL FEATURES

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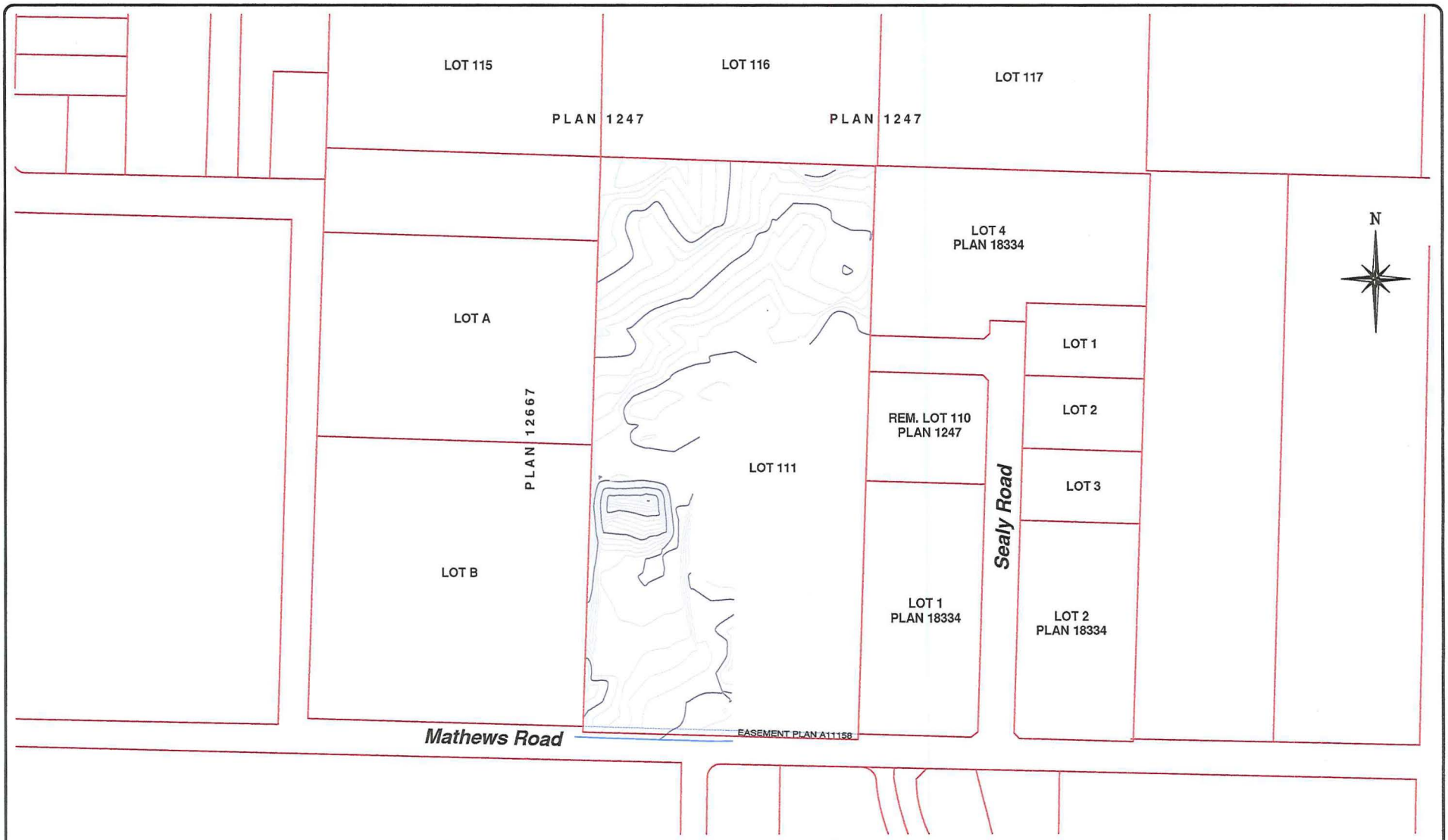


LEGEND

CABLE TV
GAS
SAN. SEWER
STORM SEWER
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WATER

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ELECTRICAL BOX
HYDRANT
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LAMP STANDARD

SAN # SANITARY MH (EXISTING OR FUTURE)
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TRANSFORMER
UTILITY JUNCTION BOX

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| DATE | JUNE 2015 |
| SCALE | 1:2000 |

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**TROY TURTON**
**3110 MATHEWS ROAD**
**LEGAL**

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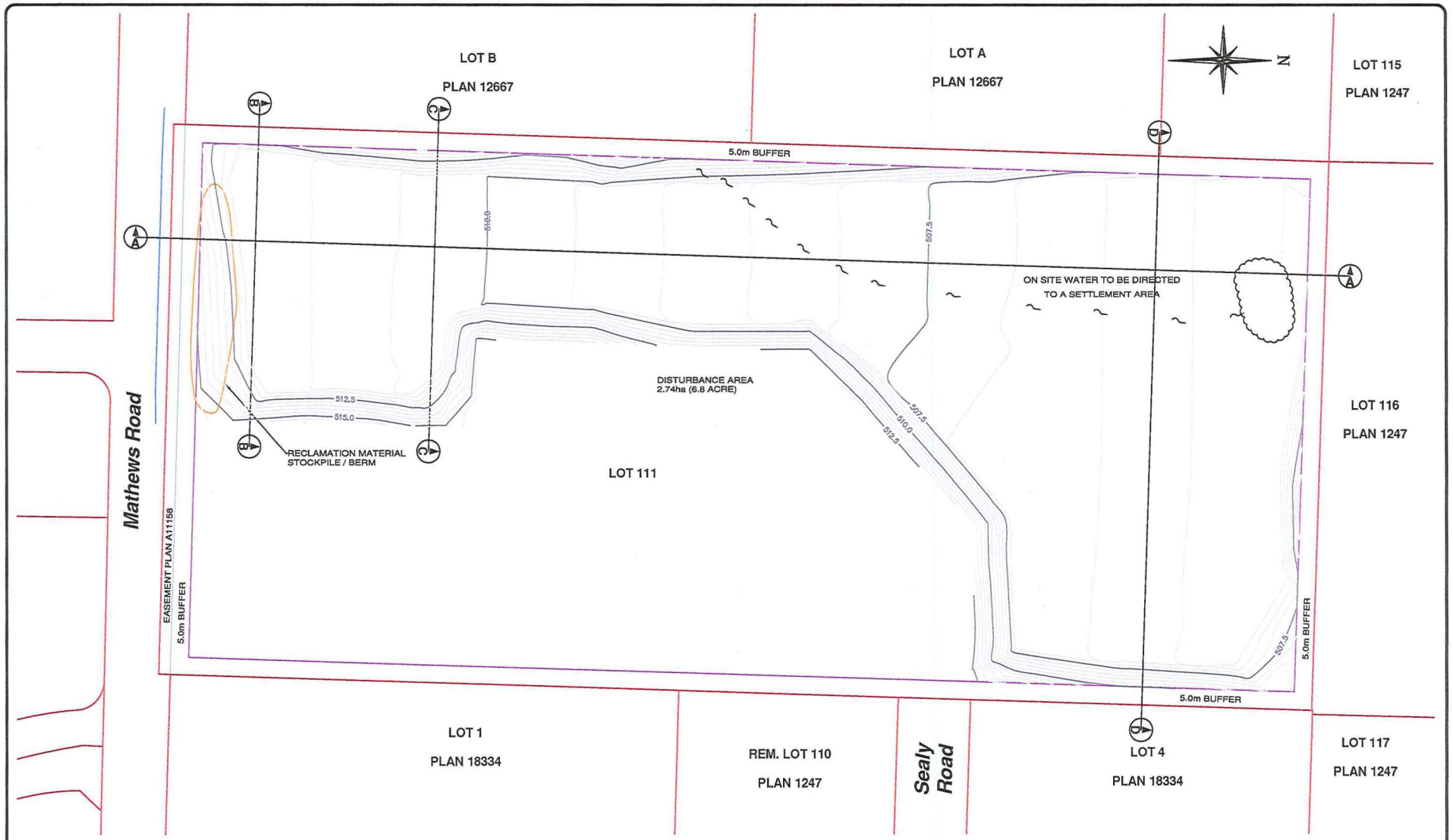


LEGEND

CABLE TV
GAS
SAN. SEWER
STORM SEWER
U.G. ELECTRICAL
U.G. TELEPHONE
WATER

CAP
CATCH BASIN
ELECTRICAL BOX
HYDRANT
VALVE
LAMP STANDARD

SAN Ø SANITARY MH (EXISTING OR FUTURE)
SAN Ø SANITARY MH (PROPOSED)
STM Ø STORM MH (EXISTING OR FUTURE)
STM Ø STORM MH (PROPOSED)
TRANSFORMER
UTILITY JUNCTION BOX

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| 01 | 11/02/15 | BMC | REVISED SITE BOUNDARIES | |
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# TROY TURTON
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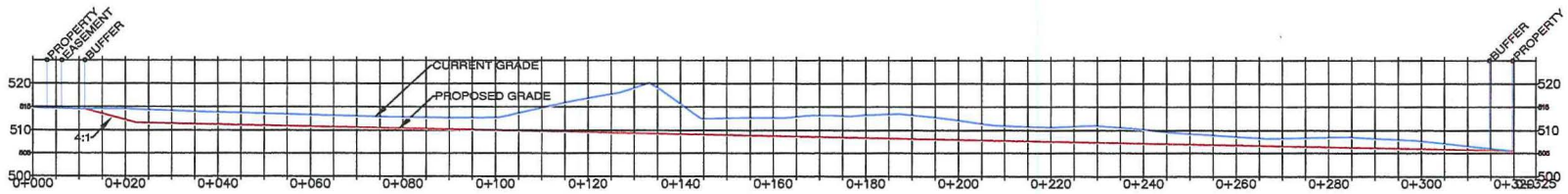
# MINING PLAN

DRAWING NO. 15157-04

REV. NO. 01




SECTION A-A

LEGEND

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|---|---|
| CABLE TV | CAP |
| GAS | CATCH BASIN |
| SAN. SEWER | ELECTRICAL BOX |
| STORM SEWER | HYDRANT |
| U.G. ELECTRICAL | VALVE |
| U.G. TELEPHONE | LAMP STANDARD |
| WATER | |

SAN ø SANITARY MH (EXISTING OR FUTURE)
SAN ø SANITARY MH (PROPOSED)
STM ø STORM MH (EXISTING OR FUTURE)
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TRANSFORMER
UTILITY JUNCTION BOX

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3110 MATHEWS ROAD, KELOWNA, BC

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| DRAWN | BMC |
| JOB NO. | 15-157 |
| FILE | 15-157.DWG |
| DATE | JUNE 2015 |
| SCALE | 1:1000 |

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# TROY TURTON
# 3110 MATHEWS ROAD
## SECTIONS

DRAWING NO. 15157-05

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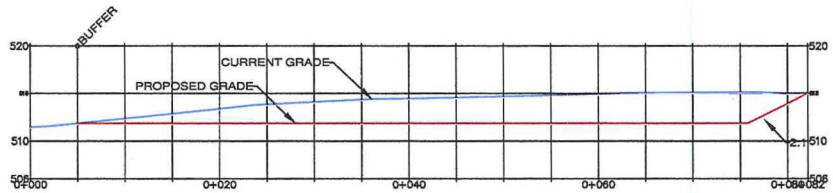
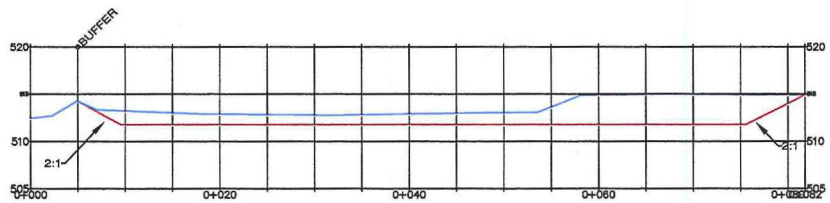



SECTION B-B

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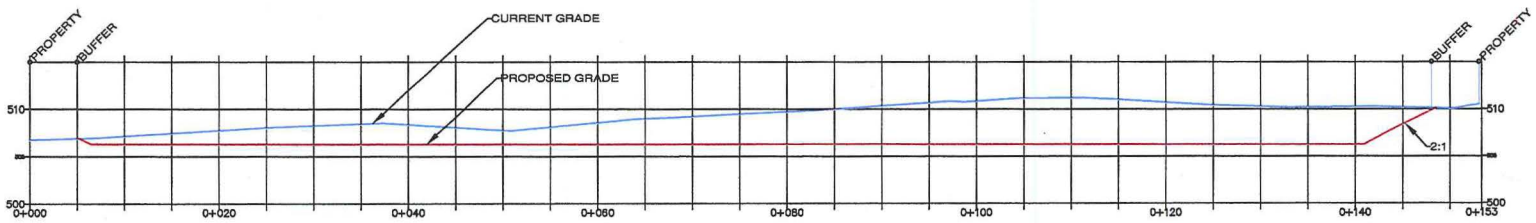


SECTION D-D

LEGEND

- CABLE TV
- GAS
- SAN. SEWER
- STORM SEWER
- U.G. ELECTRICAL
- U.G. TELEPHONE
- WATER
- CAP
- CATCH BASIN
- ELECTRICAL BOX
- HYDRANT
- VALVE
- LAMP STANDARD
- SANITARY MH (EXISTING OR FUTURE)
- SANITARY MH (PROPOSED)
- STORM MH (EXISTING OR FUTURE)
- STORM MH (PROPOSED)
- TRANSFORMER
- UTILITY JUNCTION BOX

| No. | MM/DD/YY DATE | BY | REVISION | Chk'd |
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| 00 | 06/19/15 | BMC | ISSUED TO CLIENT | |

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PLAN 1247
PID NO. 011-703-172
3110 MATHEWS ROAD, KELOWNA, BC

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TROY TURTON
3110 MATHEWS ROAD
SECTIONS

DRAWING NO. 15157-06

REV. NO. 01

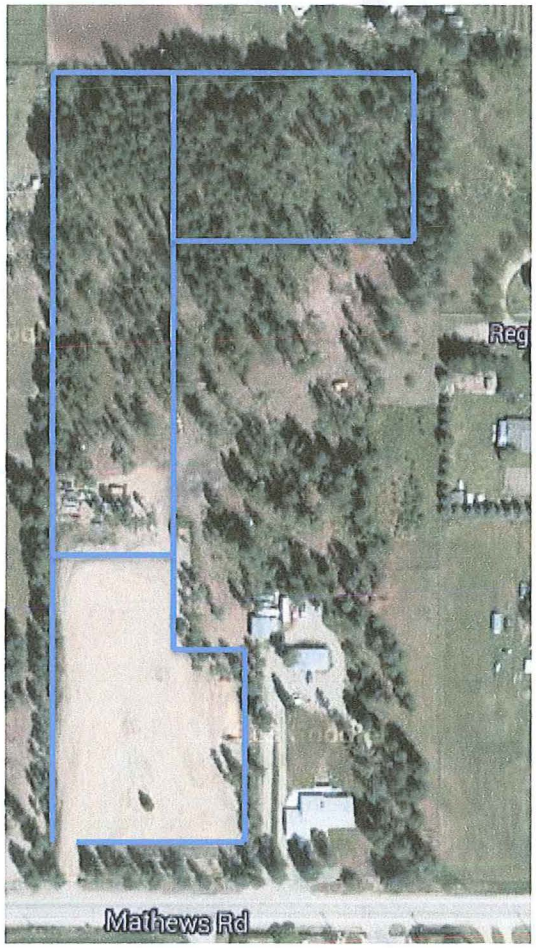
Application for Non Farm Use Development

**Justification:**

I am submitting this application for the removal of soil in order to enhance our lands agricultural ability. As the property sits the land is unusable due to an undulating surface. The removal of the soil will diminish the undulating surface as well as get rid of frost pockets for both our property and the neighboring properties. The estimated amount of soil to be removed is between 30,000-40,000 cubic meters. As the gravel is removed, we would like to import heavier, more arable soils.

**Site Plan:**

Shown below is a topographic picture of the purposed site plan. Out lined in blue is the area of the property that we wish to remove soil from. The proposed area is also spilt into sections for the purpose of doing the soil removal in phases. The first phase will be the lower section of the property that is already cleared of trees.



The below picture is a smaller section of the property to be able to properly show the pertinent structures:

A – House
B – Shop/Garage
C – Barn

There are no watercourses that run through the proposed area. The only road that the property is adjacent to is Mathews Road, which is along the front of the property, as well Regina Road ends at the edge of our property. There are several trees that line the proposed area including:

1. Neighbors property to the west, section (1) – see figure
2. Row of tress on the south side of the area along the road, section (6)
3. Few tress along section (3) of the area
4. Row of tress along section (5) of the proposed area

As is it shown in the larger scale picture there are many trees in the back half of the property that are within the proposed area. Many of these trees will have to be removed not only because they are in the proposed area but as well because a vast amount of the trees are dead due to Pine Beetle Kill.

**Proposed methods of access to the site during removal:**

The proposed method of access to the site during the removal of the soil is shown by the two lines connecting with section (6) and the road, which already has an access gate and road way.

**Proposed methods of noise and dust control during the removal operation:**

The method of noise control during the removal operation will be to operate during city bylaw construction operational hours: 7 am to 7 pm (BYLAW 6674, 2012). Also there will be an Earth berm along section (1) to reduce noise of our neighbors. To avoid major dust creation there will be a water truck to reduce dust on the driving paths and machine routes in the area.

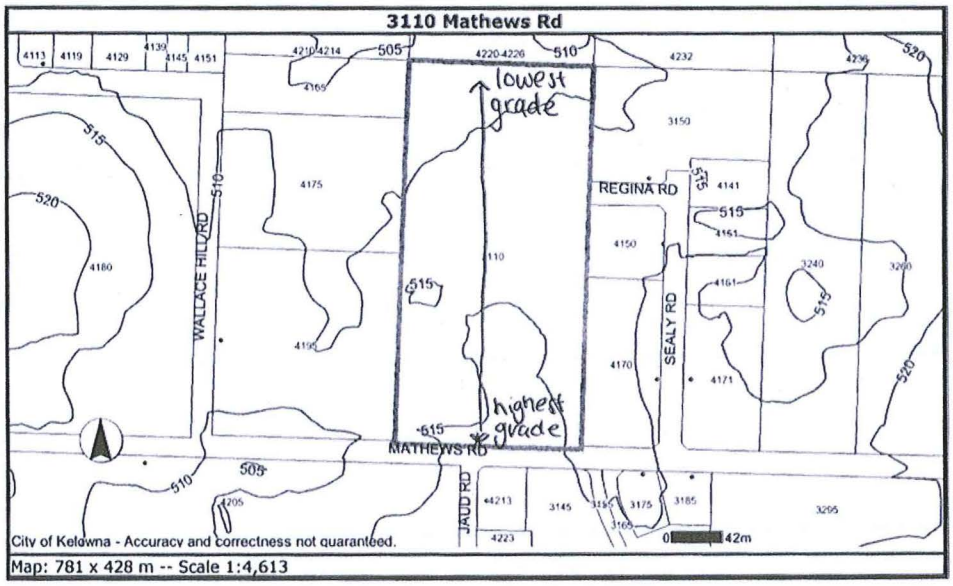
**Methods proposed for drainage and erosion control:**

The proposed methods for drainage will be contained by earth berms, and containing it to our own property. For erosion control, during each phase of the gravel extraction there will be compaction work done to ensure there is no erosion in the future.

## Site grading plan:

As shown in the picture below our proposed site grade plan is to go from the highest elevation of the property from Mathews Road to the lowest elevation of the property. It will be a consistent grade.

Map Output Page 1 of 1




*This map is for general information only. The City of Kelowna does not guarantee its accuracy. All information should be verified.*

## Conclusion:

Our plan for this development is to enhance both our property and neighboring properties. By removing the excess gravel from the proposed areas it will allow shaping to be done to remove undulating surfaces and frost pockets. Once the property is to grade we will spread the heavier imported materials, the area will be ripped and disced in preparation for planting. Subgrade irrigation pipes will then be installed. The original stockpiled topsoil will be spread. We will then plant cider apple trees on the property. Trickle irrigation will be used to water the trees. When we harvest the apples they will shipped to our existing family cidery.

**Heather Benmore**

RECEIVED
JUL 22 2015
City of Kelowna
Subdivision, Agriculture & Environmen

Corey

**From:** Forbes, Jim AGRI:EX [Jim.Forbes@gov.bc.ca]
**Sent:** Wednesday, July 22, 2015 10:09 AM
**To:** Current Developments
**Cc:** Trisa Brandt
**Subject:** FW: A15-0008 3110 Matthews Rd

Howdy!

I have been asked to comment on this referral on behalf of the Ministry of Agriculture. After reading through the application and looking at aerial photos I note that:

- From aerial photos it appears that this is an existing gravel pit that has yet to be properly reclaimed. From the available pictures of the topsoil berm it appears that the A and B soil horizons were admixed and some of the original topsoil was lost {or perhaps sold}.
- The application does not specify what crop(s) the proponents intend to plant. {The intended crop(s) can affect the optimum choices for reclamation activities}.
- The extensive disturbance of soils in gravel pits creates a high potential for the introduction and spread of invasive plants (noxious weeds). This is a concern even if it is not ALR/agricultural land as any established reservoirs of these invasive plants increases the likelihood of further infestations as people, animals, wind and flowing water will unintentionally spread the seeds around from that site. The *B.C. Weed Control Act* imposes a duty on all land occupiers to control designated noxious plants.
  This concern can be addressed through an effective "Invasive Plant Prevention and Control Plan" that outlines simple prevention actions like steam cleaning all machinery before it is transported to the site (includes the transport truck) as well as control actions in the case that the prevention activities were unsuccessful. Other potential actions can be found at: http://www.weedsbc.ca/resources.html

Provided that:

a) the proposed gravel extraction is accomplished according to the surveyor's drawings,
b) sufficient weed prevention and control measures are in place & effective,
c) the subsoil is properly prepared prior to replacing topsoil (e.g. subsoil ripped prior to replacing topsoil in order to reduce compaction and prevent creation of a barrier to rooting and water infiltration), and
d) the topsoil (horizons A & B) is properly replaced & augmented to an adequate depth,

the project has the potential to return the site to a productivity level similar to the soils nearby. While it may be simple to get a bit of grass to grow on the site, the restoration of the agricultural capability is significantly more complex. Consultation with a Professional Agrologist with a soils background to develop a reclamation plan prior to further gravel extraction would assist in achieving the proposed benefits in a cost effective manner.

Failure to follow the provisions above will decrease the likelihood of success and are likely to increase the costs to return this ALR land to an acceptable agricultural capability as required by the Agricultural Land Commission.

Sincerely,

*Jim Forbes*
Regional Agrologist

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