



SUPPLEMENTARY DOCUMENTATION

Stage 1 and 2 Archaeological Assessment

*Port Colborne Quarry Expansion, part of Lots 17, 18 and 19, Concession 2,
Geographic Township of Humberstone, former County of Welland, City of Port
Colborne, Regional Municipality of Niagara, Ontario*

Licensee: Nimal Ragavan Nithiyantham (P390), MA, CAHP

PIF Number: P390-0316-2018

Submitted to:

Rankin Construction Inc.

Shawn Tylee, CET
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Submitted by:

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1771656-5000-R-Rev0

November 24, 2020

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1.0 DETAILED SITE LOCATION INFORMATION

Table 1: Location information for all sites

GPS Device	Garmin HC Venture
Datum	WGS 1984 CSRS
Accuracy	Less than 3 m
Fixed Reference Landmark	17T 646935.27 4750917.28 (Hydro pole on the north side of Main Street East)

Table 2: Location 1 (AfGt-296)

North	17T 646614.62 4751915.03
East	17T 646647.84 4751841.48
South	17T 646620.21 4751792.26
West	17T 646556.98 4751844.54
Centre	17T 646574.23 4751825.95

Table 3: Location 2 (AfGt-297)

North	17T 646635.08 4751625.78
East	17T 646641.77 4751597.08
South	17T 646612.41 4751582.74
West	17T 646599.05 4751597.76
Centre	17T 646635.00 4751600.00

Table 4: Location 3 (AfGt-298)

North	17T 646611.43 4751705.64
East	17T 646643.08 4751680.77
South	17T 646611.36 4751639.98
West	17T 646598.33 4751672.70
Centre	17T 646604.09 4751666.49

Table 5: Location 4 (AfGt-299)

North	17T 646686.99 4751644.71
East	17T 646686.99 4751644.71
South	17T 646680.68 4751628.69
West	17T 646679.31 4751636.99
Centre	17T 646684.68 4751638.36

Table 6: Location 5 (AfGt-300)

North	17T 646687.26 4751696.74
East	17T 646694.21 4751678.79
South	17T 646686.48 4751665.53
West	17T 646679.88 4751678.99
Centre	17T 646687.55 4751680.67

Table 7: Location 6

Centre	17T 646646.00 4751231.00
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Table 8: Location 7

Centre	17T 646636.00 4751169.00
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Table 9: Location 8

Centre	17T 646902.59 4751937.86
--------	--------------------------

Table 10: Location 9 (AfGt-301)

North	17T 646893.96 4751853.89
East	17T 646905.64 4751853.69
South	17T 646899.42 4751850.56
West	17T 646889.82 4751848.69
Centre	17T 646896.79 4751852.15

Table 11: Location 10 (AfGt-302)

North	17T 646911.69 4751758.10
East	17T 646915.22 4751753.43
South	17T 646919.02 4751746.31
West	17T 646907.38 4751754.37
Centre	17T 646911.11 4751753.86

Table 12: Location 11 (AfGt-303)

North	17T 646675.32 4751774.15
East	17T 646675.73 4751766.71
South	17T 646674.86 4751754.91
West	17T 646671.65 4751766.80
Centre	17T 646673.73 4751766.84

Table 13: Location 12 (AfGt-304)

North	17T 646798.38 4751757.99
East	17T 646796.78 4751748.34
South	17T 646789.63 4751737.14
West	17T 646784.80 4751748.09
Centre	17T 646791.65 4751748.14

Table 14: Location 13

Centre	17T 646809.00 4751704.00
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Table 15: Location 14

Centre	17T 646830.00 4751237.00
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Table 16: Location 15

Centre	17T 646634.00 4751720.00
--------	--------------------------

Table 17: Location 16

Centre	17T 646609.34 4751543.13
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Table 18: Location 17 (AfGt-305)

North	17T 646476.98 4751851.36
East	17T 646512.97 4751775.51
South	17T 646430.56 4751705.25
West	17T 646406.74 4751764.78
Centre	17T 646442.79 4751776.83

Table 19: Location 18

Centre	17T 646408.00 4751705.00
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Table 20: Location 19

Centre	17T 646516.90 4751749.18
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Table 21: Location 20 (AfGt-306)

Centre	17T 646612.00 4751208.00
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Table 22: Location 21

Centre	17T 646556.12 4751089.96
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Table 23: Location 22

Centre	17T 646454.68 4751108.58
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Table 24: Location 23

Centre	17T 646454.60 4751142.79
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Table 25: Location 24

Centre	17T 646536.16 4751152.42
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Table 26: Location 25 (AfGt-307)

North	17T 646315.55 4751387.18
East	17T 646445.72 4751253.83
South	17T 646333.01 4751087.14
West	17T 646206.80 4751257.80
Centre	17T 646327.45 4751250.66

Table 27: Location 26 (AfGt-310)

North	17T 646485.59 4751242.70
East	17T 646491.06 4751236.71
South	17T 646491.91 4751229.40
West	17T 646485.64 4751236.50
Centre	17T 646487.53 4751238.11

Table 28: Location 27

Centre	17T 646515.00 4751477.00
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Table 29: Location 28

Centre	17T 646450.00 4751705.00
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Table 30: Location 29

Centre	17T 646427.00 4751359.00
--------	--------------------------

Table 31: Location 30 (AfGt-308)

North	17T 646504.78 4751635.82
East	17T 646510.17 4751632.04
South	17T 646504.62 4751627.81
West	17T 646495.49 4751634.51
Centre	17T 646505.49 4751633.06

Table 32: Location 31 (AfGt-309)

North	17T 646461.15 4751404.42
East	17T 646484.63 4751367.48
South	17T 646463.74 4751317.20
West	17T 646429.39 4751383.56
Centre	17T 646469.05 4751379.71

Table 33: Location 32 (AfGt-312)

North	17T 647119.00 4751235.85
East	17T 647126.53 4751235.01
South	17T 647126.24 4751235.18
West	17T 647119.72 4751235.35
Centre	17T 647122.58 4751235.53

Table 34: Location 33 (AfGt-313)

North	17T 647135.27 4751324.96
East	17T 647151.14 4751316.23
South	17T 647135.27 4751301.94
West	17T 647115.42 4751316.23
Centre	17T 647135.27 4751317.03

Table 35: Location 34

Centre	17T 647142.00 4751184.00
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Table 36: Location 35 (AfGt-314)

North	17T 647120.59 4751386.67
East	17T 647125.34 4751380.58
South	17T 647119.59 4751374.22
West	17T 647117.49 4751381.56
Centre	17T 647121.34 4751380.14

Table 37: Location 36 (AfGt-315)

North	17T 647193.72 4751227.64
East	17T 647228.72 4751190.64
South	17T 647194.64 4751151.91
West	17T 647157.64 4751192.91
Centre	17T 647193.18 4751189.77

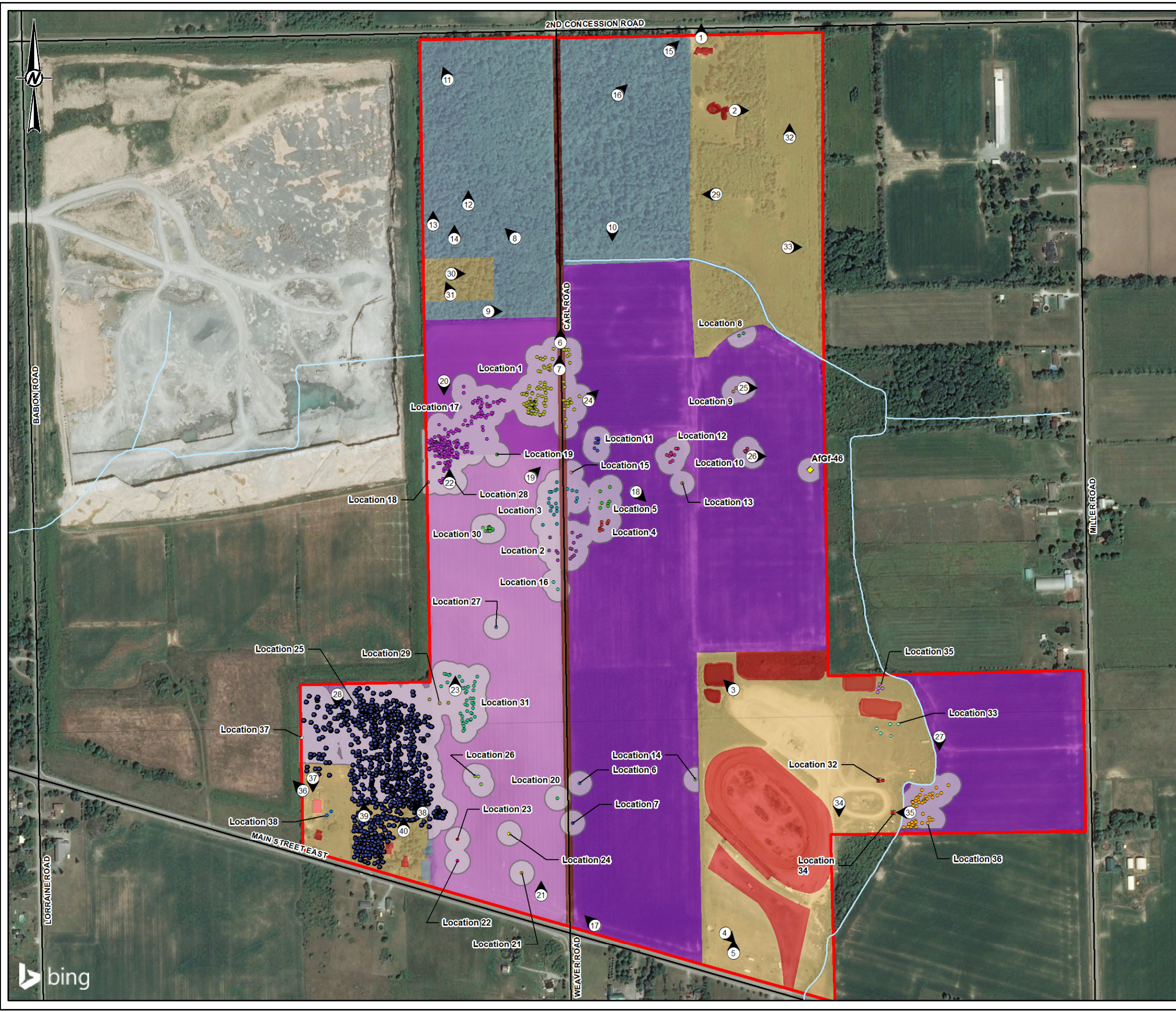
Table 38: Location 37

Centre	17T 646210.00 4751302.00
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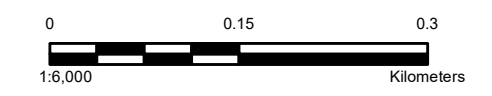
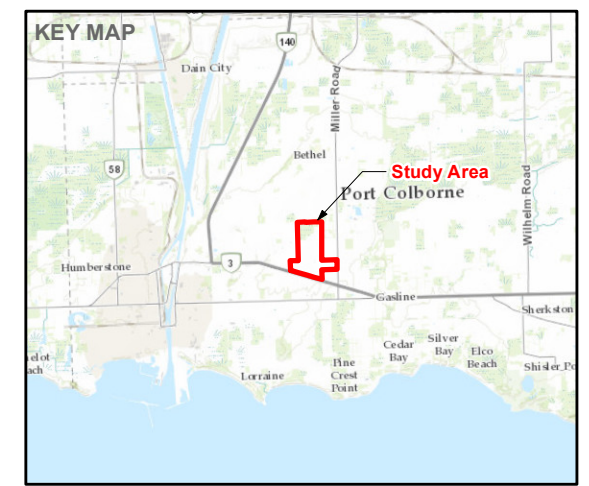
Table 39: Location 38 (AfGt-316)

Centre	17T 646252.00 4751183.00
--------	--------------------------

2.0 DETAILED SITE LOCATION MAPS



- LEGEND
- Photo Location
 - Roads
 - Watercourse
 - 1x1m Test Unit
 - Previously Identified AfGt-46
 - Findspot
 - Intensified Pedestrian Survey at 1 m Intervals
 - Disturbed
 - Test Pit Surveyed at 5m – Disturbed
 - Permanently Wet
 - Test Pit Surveyed at 5m
 - Pedestrian Surveyed at 1-2m
 - Pedestrian Surveyed at 5m
 - Study Area



NOTE(S)

REFERENCE(S)
 1. BASE DATA: MNR LIO 2016
 2. IMAGERY: SOURCES: ESRI, HERE, DELORME, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
 3. PROJECTION: TRANSVERSE MERCATOR NAD 1983 UTM ZONE 17N

CLIENT
RANKIN CONSTRUCTION INC.

PROJECT
PROPOSED PORT COLBORNE QUARRY EXTENSION

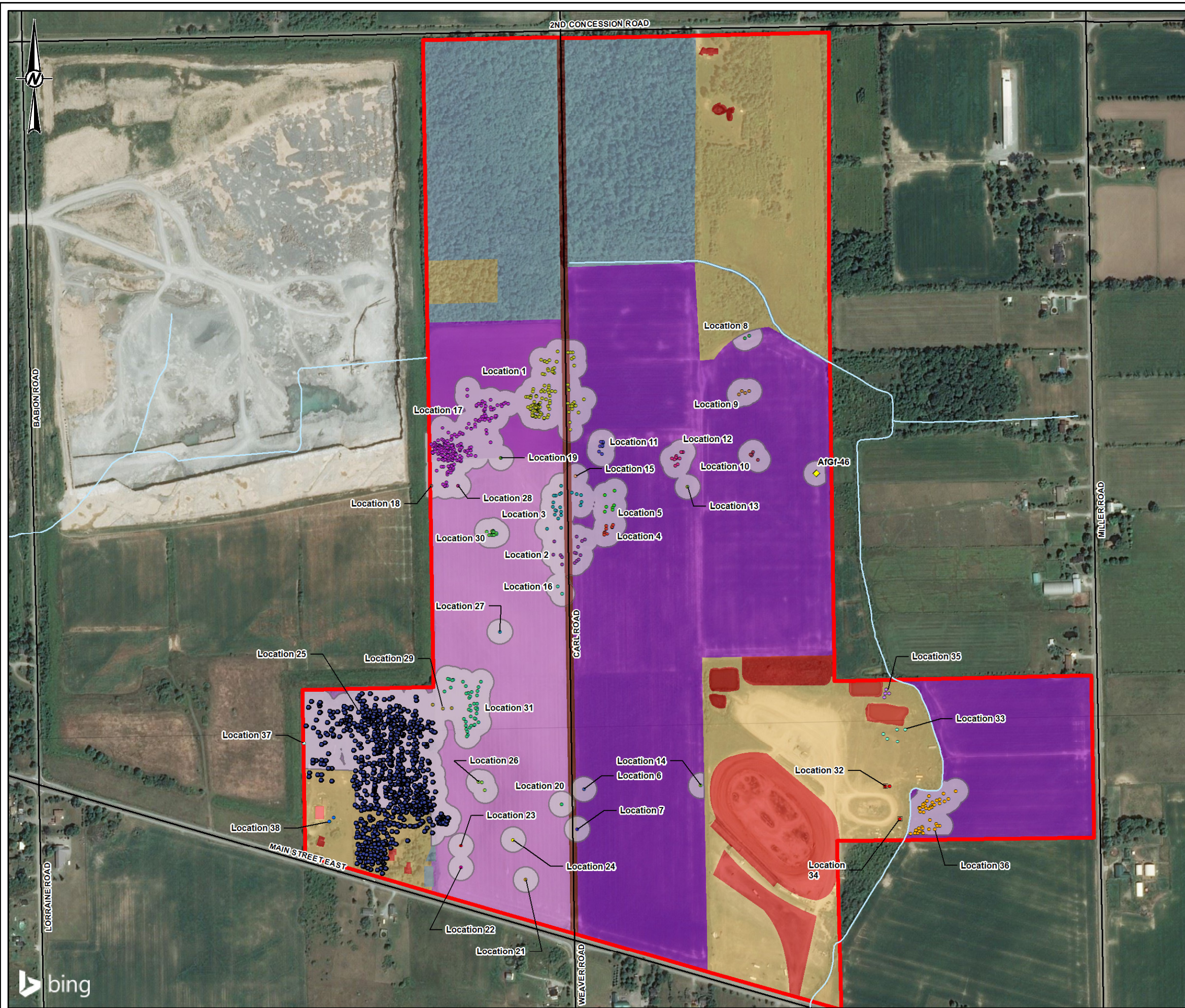
TITLE
STAGE 1 AND 2 ARCHAEOLOGY ASSESSMENT WITH FINDSPOTS AND PHOTO KEY

CONSULTANT	YYYY-MM-DD	2020-11-25
DESIGNED	LMM	
PREPARED	LMM	
REVIEWED	AMM	
APPROVED	MT	

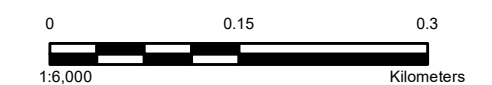
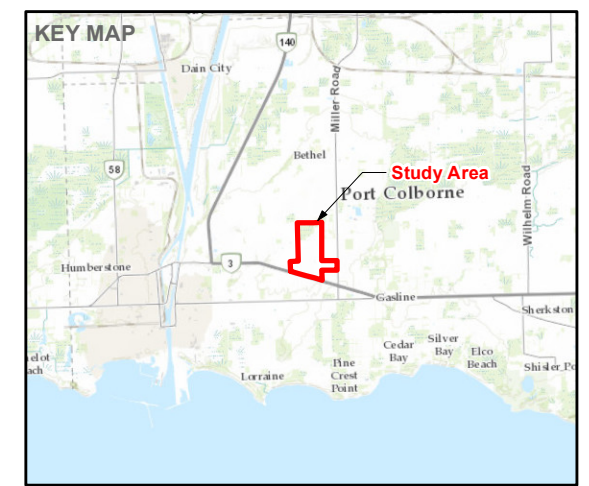
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 26mm





- LEGEND**
- Roads
 - Watercourse
 - 1x1m Test Unit
 - ◆ Previously Identified AfGt-46
 - Findspot
 - Intensified Pedestrian Survey at 1 m Intervals
 - Disturbed
 - Test Pit Surveyed at 5m – Disturbed
 - Permanently Wet
 - Test Pit Surveyed at 5m
 - Pedestrian Surveyed at 1-2m
 - Pedestrian Surveyed at 5m
 - Study Area



NOTE(S)

- REFERENCE(S)**
1. BASE DATA: MNR LIO 2016
 2. IMAGERY: SOURCES: ESRI, HERE, DELORME, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
 3. PROJECTION: TRANSVERSE MERCATOR NAD 1983 UTM ZONE 17N

CLIENT
RANKIN CONSTRUCTION INC.

PROJECT
PROPOSED PORT COLBORNE QUARRY EXTENSION

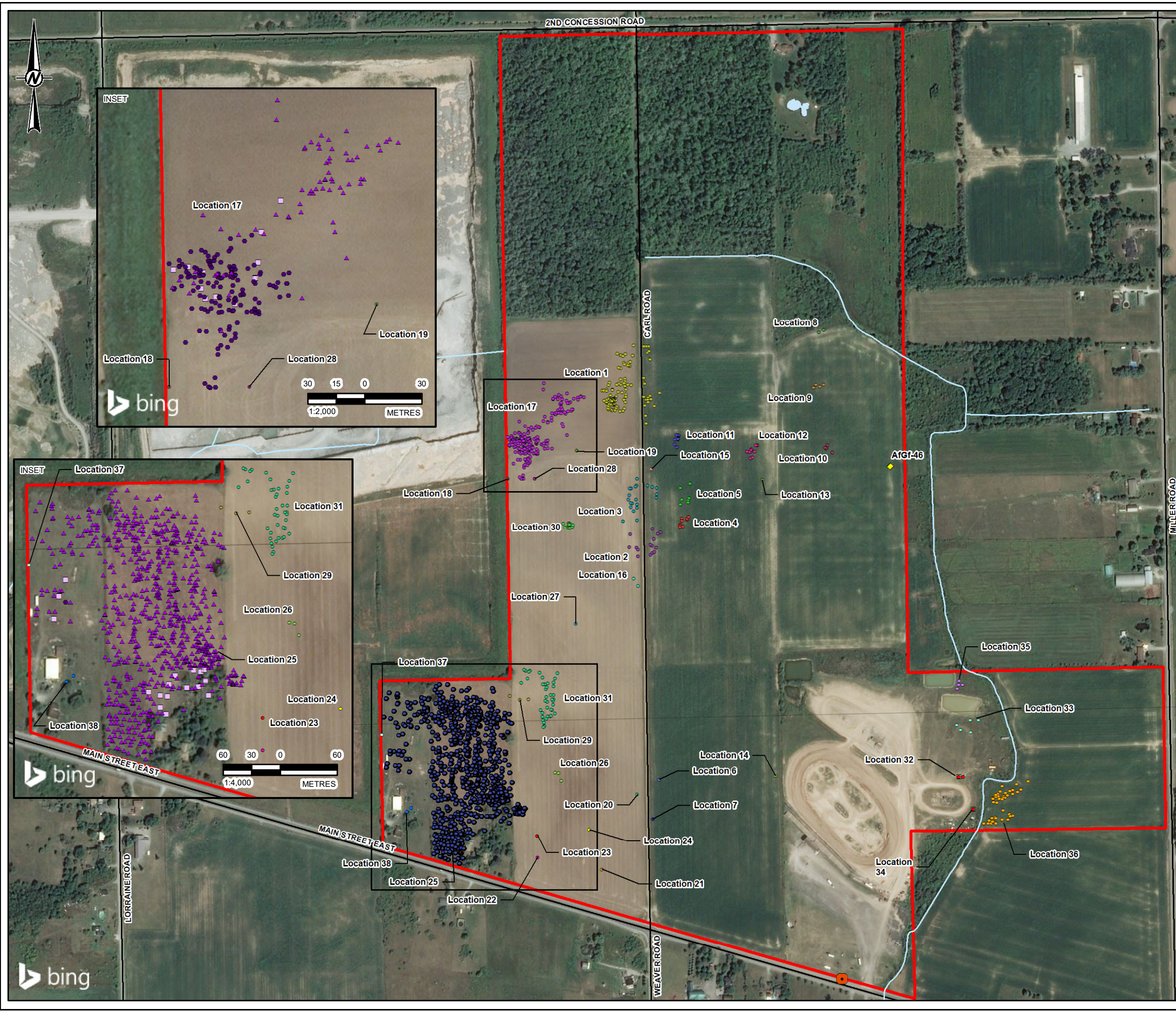
TITLE
STAGE 1 AND 2 ARCHAEOLOGY ASSESSMENT WITH FINDSPOTS

CONSULTANT	YYYY-MM-DD	2020-11-25
DESIGNED	LMM	
PREPARED	LMM	
REVIEWED	AMM	
APPROVED	MT	

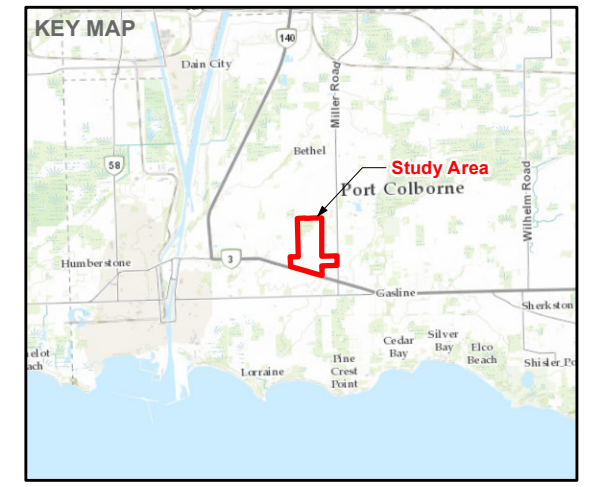
PATH: S:\Client\Rankin_Construction\Port_Colborne_Quarry\99_PROJ\1771656_1970065_Canada_ESRI\GPR\PROJ\0008_Archaeology\1771656_0008_CH_0009.mxd PRINTED ON: 2020-11-26 AT: 4:58:14 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 26mm





- LEGEND**
- Fix Reference Landmark
 - ◆ Previously Identified AfGt-46
 - Findspot
- Locations 17 and 25 Artifact Types**
- Historical Euro-Canadian Findspots
 - ▲ Pre-Contact Indigenous Findspots
 - Pre-Contact Indigenous and Historical Euro-Canadian Findspots
- Roads
 - Watercourse
 - ▭ Study Area



NOTE(S)

REFERENCE(S)

1. BASE DATA: MNR LIO 2016
2. IMAGERY: SOURCES: ESRI, HERE, DELORME, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
3. PROJECTION: TRANSVERSE MERCATOR NAD 1983 UTM ZONE 17N

CLIENT
RANKIN CONSTRUCTION INC.

PROJECT
PROPOSED PORT COLBORNE QUARRY EXTENSION

TITLE
FINDSPOTS ILLUSTRATED ON 2018 SATELLITE IMAGERY

CONSULTANT	YYYY-MM-DD	2020-11-25
DESIGNED	LMM	
PREPARED	LMM	
REVIEWED	AMM	
APPROVED	MT	

PATH: S:\Client\Rankin_Construction\Port_Colborne_Quarry\99_PROJECT\1771656_ESRI\1771656_1070065_Cadastre_ESRI\1771656_CH_0007.mxd PRINTED ON: 2020-11-25 AT: 4:51:47 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 26mm

3.0 MHSTCI CORRESPONDENCE

From: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>

Sent: July 7, 2020 9:41 AM

To: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>

Cc: Archaeology (MHSTCI) <archaeology@ontario.ca>; Teal, Michael <Michael_Teal@golder.com>; 1771656, Rankin License App Port Colborne <1771656@golder.com>; Mohamed, Alisha <Alisha_Mohamed@golder.com>

Subject: RE: Advice re Wording of Recommendations for Stage 1-2 Report, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

EXTERNAL EMAIL

Hi, Ragavan. That statement will conform with the requirements in the S&Gs for Stage 2 pedestrian survey and delineation of sites. If the delineation of all the sites followed that approach, there should not be any concerns.

Please include a PDF copy of this advice as supplementary documentation to your project report package.

As a standard part of all advice provided to licensees, please note that this advice has been provided by MHSTCI under the assumption that the information submitted by the licensed archaeologist is complete and accurate. The advice provided applies only to the project in question and is not to be used as a precedent for future projects. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or if the information provided by the licensed archaeologist is otherwise found to be inaccurate, incomplete, misleading, or fraudulent.

Sincerely,

Malcolm Horne
Archaeology Review Officer
Archaeology Program Unit
Ministry of Heritage, Sport, Tourism and Culture Industries
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel. 416-314-7146
Fax 416-314-7175
Email: Malcolm.Horne@ontario.ca

From: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>
Sent: July 7, 2020 9:19 AM
To: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>
Cc: Archaeology (MHSTCI) <archaeology@ontario.ca>; Teal, Michael <Michael_Teal@golder.com>; 1771656, Rankin License App Port Colborne <1771656@golder.com>; Mohamed, Alisha <Alisha_Mohamed@golder.com>
Subject: Re: Advice re Wording of Recommendations for Stage 1-2 Report, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

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Good morning Malcolm!

Just wanted to follow-up the below. Did you have an further comment to the below?

Thank you,

Ragavan Nithiyantham (MA, CAHP)
Archaeologist and Cultural Heritage Specialist
Golder Associates Ltd.
100 Scotia Court, Whitby, Ontario, Canada L1N 8Y6
T: +1 905 723 2727 | D: +1 (905) 723-2727 x6665 | C: +1 (905) 244-3748 | golder.com
[LinkedIn](#) | [Facebook](#) | [Twitter](#)

From: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>
Sent: Tuesday, June 30, 2020, 4:53 p.m.
To: Horne, Malcolm (MHSTCI)
Cc: Archaeology (MHSTCI); Teal, Michael; 1771656, Rankin License App Port Colborne; Mohamed, Alisha
Subject: RE: Advice re Wording of Recommendations for Stage 1-2 Report, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

Hi Malcolm, thank you very much for your response!

With regard to your comment about site delineation, all sites found through pedestrian survey were delineated based on Section 2.1.1, Standard 7 of the *Standards and Guidelines*. When archaeological resources are found, intensified survey was conducted over a 20 m radius around each find. Archaeological resources located greater than 20 m from one another were considered as a separate site. This approach was consistently applied to all archaeological resource found through pedestrian survey.

We will include the statement similar to the above in our reporting to address any concerns being raised about the delineation of archaeological sites. Should you have any further comments to the above, please do not hesitate to reach out to us.

Have a great Canada Day!

Ragavan Nithiyantham (MA, CAHP)*Cultural Heritage Specialist/ Archaeologist*

Golder Associates Ltd.

100 Scotia Court, Whitby, Ontario, Canada L1N 8Y6

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From: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>

Sent: June 29, 2020 3:33 PM

To: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>

Cc: Archaeology (MHSTCI) <archaeology@ontario.ca>

Subject: Advice re Wording of Recommendations for Stage 1-2 Report, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

EXTERNAL EMAIL

Hi, Ragavan. Thank you for your patience. As previously stated, this advice is based on the assumption that all other elements of the Stage 1-2 assessment will be found to be compliant and in agreement with the S&Gs. That includes such matters as appropriate Stage 2 field methods and appropriate evaluation of the CHVI of each archaeological site.

Since I have only seen the attached map, I cannot comment on the degree of further CHVI for any of these archaeological sites. Based on the attached map, there is the possibility of concerns being raised regarding the differentiation between archaeological sites, or in other words the definition of the limits of the various sites. Where that is a possibility, for example where artifacts in one defined site are widely distributed, or in another example where two (or more) defined sites are in close proximity, please ensure that a detailed explanation is provided for definition of the site or sites.

Given the above, I do not see any concerns based on the wording of the recommendations in the below email. The wording of the proposed Recommendation 12 will be satisfactory in order to address the temporary avoidance and protection of the archaeological sites recommended to have further CHVI.

Please include a PDF copy of this advice as supplementary documentation to your project report package.

As a standard part of all advice provided to licensees, please note that this advice has been provided by MHSTCI under the assumption that the information submitted by the licensed archaeologist is complete and accurate. The advice provided applies only to the project in question and is not to be used as a precedent for future projects. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or if the information provided by the licensed archaeologist is otherwise found to be inaccurate, incomplete, misleading, or fraudulent.

Sincerely,

Malcolm Horne
Archaeology Review Officer
Archaeology Program Unit
Ministry of Heritage, Sport, Tourism and Culture Industries
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel. 416-314-7146
Fax 416-314-7175
Email: Malcolm.Horne@ontario.ca

From: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>

Sent: June 17, 2020 4:41 PM

To: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>

Cc: Archaeology (MHSTCI) <archaeology@ontario.ca>; Teal, Michael <Michael_Teal@golder.com>; Mohamed, Alisha <Alisha_Mohamed@golder.com>; 1771656, Rankin License App Port Colborne <1771656@golder.com>

Subject: RE: Advice re Avoidance and Protection Strategies, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

NOTE: This email chain appears to contain email from outside Golder

Hi Malcolm, hope this email finds you well!

Further to our previous discussions related to P390-0316-2018, we would like to propose the below recommendations for your review and consideration. Primarily, your review and advice with respect to Item 12 of our recommendations, which recommends avoidance and protection measures (70 m buffer) per your email from February 20, 2019 (see below), would be appreciated.

To provide some context, 38 archaeological sites/ collections were found within the study area (see attached map). Stage 3 AAs are recommended for Locations 1, 17, 25, 30, 31, 32, 33, 35, 36, and 38 per the MHSTCI *Standards and Guidelines for Consultant Archaeologists*.

RECOMMENDATIONS

Given the results of the Stage 1 and 2 archaeological assessment of the Study Area, the following recommendations are made:

1. **Location 1 (AfGt-296):** Given the presence of at least 10 non-diagnostic artifacts within a 10 m by 10 m pedestrian survey area, as per *Section 2.2, Standard 1.a.i.(3)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. A Stage 3 controlled surface pick-up (CSP) is not necessary since the intensified Stage 2 CPS survey with GPS recording meets the requirements of *Section 3.2.1* of the MHSTCI (2011). Therefore, the Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for plough-disturbed, large, single-component lithic scatters. Place multiple grids over areas of artifact concentration and excavate 1 m square test units across those grids at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, MHSTCI 2011*). Place and excavate further additional units, amounting to 10% of the initial grid unit total, on the periphery of the surface scatter to determine the site extent and sample the site periphery (*Section 3.2.3, Table 3.1, Standard 7, MHSTCI 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

2. **Location 2 (AfGt-297), Location 3 (AfGt-298), Location 4 (AfGt-299), Location 5 (AfGt-300), Location 6, Location 7, Location 8, Location 9 (AfGt-301), Location 10 (AfGt-302), Location 11 (AfGt-303), Location 12 (AfGt-304), Location 13, Location 14, Location 15, Location 16, Location 18, Location 19, Location 20 (AfGt-306), Location 21, Location 22, Location 23, Location 24, Location 26 (AfGt-310), Location 27, Location 28, Location 29, Location 34 and Location 37:** As per *Section 2.2, Standard 1* (MHSTCI 2011), are not consider to have further cultural heritage value or interest; Stage 3 archaeological assessments are not recommended.

3. **Location 17 (AfGt-305):** Given the pre-contact Indigenous component consists of at least 10 non-diagnostic pre-contact Indigenous artifacts within a 10 m by 10 m pedestrian survey area, as per *Section 2.2, Standard 1.a.i.(3)* of the MHSTCI (2011), and given the historical Euro-Canadian component consists of at least 20 artifacts that date the period of use to before 1900, as per *Section 2.2, Standard 1.c.* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest. A Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. A Stage 3 controlled surface pick-up (CSP) is not necessary since the intensified Stage 2 CPS survey with GPS recording meets the requirements of *Section 3.2.1* of the MHSTCI (2011). Therefore, the Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for plough-disturbed, large, multi-component lithic scatters. Place multiple grids over areas of artifact concentration and excavate 1 m square test units across those grids at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, MHSTCI 2011*). Place and excavate further additional units, amounting to 10% of the initial grid unit total, on the periphery of the surface scatter to determine the site extent and sample the site periphery (*Section 3.2.3, Table 3.1, Standard 7, MHSTCI 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

4. **Location 25 (AfGt-307):** Given the pre-contact Indigenous component consists of at least 10 non-diagnostic pre-contact Indigenous artifacts within a 10 m by 10 m pedestrian survey area and at least five pre-contact non-diagnostic artifacts within a 10 m by 10 m test pit survey area, as per *Section 2.2, Standards 1.a.i.(3);ii.(2)* of the MHSTCI (2011), and given the historical Euro-Canadian component consists of at least 20 artifacts that date the period of use to before 1900, as per *Section 2.2, Standard 1.c.* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest. A Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. A Stage 3 controlled surface pick-up (CSP) is not necessary since the intensified Stage 2 CPS survey with GPS recording meets the requirements of *Section 3.2.1* of the MHSTCI (2011). Therefore, the Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for plough-disturbed, large, single-component lithic scatters. Place multiple grids over areas of artifact concentration and excavate 1 m square test units across those grids at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, MHSTCI 2011*). Place and excavate further additional units, amounting to 10% of the initial grid unit total, on the periphery of the surface scatter to determine the site extent and sample the site periphery (*Section 3.2.3, Table 3.1, Standard 7, MHSTCI 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

- 5. Location 30 (AfGt-308):** Given the presence of at least 10 non-diagnostic artifacts within a 10 m by 10 m pedestrian survey area, as per *Section 2.2, Standard 1.a.i.(3)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. A Stage 3 controlled surface pick-up (CSP) is not necessary since the intensified Stage 2 CPS survey with GPS recording meets the requirements of *Section 3.2.1* of the MHSTCI (2011). Therefore, the Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for small pre-contact sites where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4. Place multiple 1 m square test units in a 5 m grid across the site (*Section 3.2.3, Table 3.1, Standard 1, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid

unit total, focusing on areas of interest within the site extent (*Section 3.2.3, Table 3.1, Standard 2, MHSTCI 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

6. **Location 31 (AfGt-309):** Given the presence of at least 10 non-diagnostic artifacts within a 10 m by 10 m pedestrian survey area, as per *Section 2.2, Standard 1.a.i.(3)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. A Stage 3 controlled surface pick-up (CSP) is not necessary since the intensified Stage 2 CPS survey with GPS recording meets the requirements of *Section 3.2.1* of the MHSTCI (2011). Therefore, the Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for plough-disturbed, large, single-component lithic scatters. Place multiple grids over areas of artifact concentration and excavate 1 m square test units across those grids at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, MHSTCI 2011*). Place and excavate further additional units, amounting to 10% of the initial grid unit total, on the periphery of the surface scatter to determine the site extent and sample the site periphery (*Section 3.2.3, Table 3.1, Standard 7, MHSTCI 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

7. **Location 32 (AfGt-312):** Given the presence of at least five non-diagnostic artifacts within a 10 m by 10 m test pit survey area, as per *Section 2.2, Standard 1.a.ii.(2)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. The Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for small pre-contact Indigenous site where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4. Place multiple 1 m square test units in a 5 m grid across the site (*Section 3.2.3, Table 3.1, Standard 1, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, focusing on areas of interest within the site extent (*Section 3.2.3, Table 3.1, Standard 2, MTCS 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

8. **Location 33 (AfGt-313):** Given the presence of at least five non-diagnostic artifacts within a 10 m by 10 m test pit survey area, as per *Section 2.2, Standard 1.a.ii.(2)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. The Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for small pre-contact Indigenous site where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4. Place multiple 1 m square test units in a 5 m grid across the site (*Section 3.2.3, Table 3.1, Standard 1, MHSTCI 2011*). Place and excavate additional test units, amounting to

20% of the initial grid unit total, focusing on areas of interest within the site extent (*Section 3.2.3, Table 3.1, Standard 2, MTCS 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

9. **Location 35 (AfGt-314):** Given the presence of at least five non-diagnostic artifacts within a 10 m by 10 m test pit survey area, as per *Section 2.2, Standard 1.a.i.(2)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. The Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for small pre-contact Indigenous site where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4. Place multiple 1 m square test units in a 5 m grid across the site (*Section 3.2.3, Table 3.1, Standard 1, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, focusing on areas of interest within the site extent (*Section 3.2.3, Table 3.1, Standard 2, MTCS 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

10. **Location 36 (AfGt-315):** Given the presence of at least 10 non-diagnostic artifacts within a 10 m by 10 m pedestrian survey area, as per *Section 2.2, Standard 1.a.i.(3)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in

accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. A Stage 3 controlled surface pick-up (CSP) is not necessary since the intensified Stage 2 CPS survey with GPS recording meets the requirements of *Section 3.2.1* of the MHSTCI (2011). Therefore, the Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for plough-disturbed, large, single-component lithic scatters. Place multiple grids over areas of artifact concentration and excavate 1 m square test units across those grids at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, MHSTCI 2011*). Place and excavate additional test units, amounting to 20% of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, MHSTCI 2011*). Place and excavate further additional units, amounting to 10% of the initial grid unit total, on the periphery of the surface scatter to determine the site extent and sample the site periphery (*Section 3.2.3, Table 3.1, Standard 7, MHSTCI 2011*).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

11. **Location 38 (AfGt-316):** Given the presence of at least five non-diagnostic artifacts within a 10 m by 10 m test pit survey area, as per *Section 2.2, Standard 1.a.ii.(2)* of the MHSTCI (2011), this site is considered to have further cultural heritage value and interest; a Stage 3 archaeological assessment is recommended in accordance with the MHSTCI (2011) prior to any intrusive activity that may result in the destruction or disturbance to the archaeological site documented in this assessment. The Stage 3 archaeological assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

The primary goal is to determine any patterning within the site, to ensure that a larger site sample is generated, and to determine site extent. The Stage 3 archaeological assessment must commence with the establishment of a site datum at the centre of the site (or the centres of any localities or concentrations identified from the Stage 2 CSP), followed by test unit excavation.

The Stage 3 archaeological assessment should follow the excavation strategy for small pre-contact Indigenous site where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4. Place multiple 1 m square test units in a 5 m grid across the site

(Section 3.2.3, Table 3.1, Standard 1, MHSTCI 2011). Place and excavate additional test units, amounting to 20% of the initial grid unit total, focusing on areas of interest within the site extent (Section 3.2.3, Table 3.1, Standard 2, MTCS 2011).

All test units must be excavated into 5 cm of subsoil, unless cultural features are encountered, and all excavated soil will be screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits. If test unit excavation uncovers a cultural feature, the exposed plan of the feature must be recorded, and geotextile fabric is to be placed over the unit floor prior to backfilling the unit.

A thorough photographic record of on-site investigations must be maintained. Finally, a report documenting the methods and results of excavation and laboratory analysis, together with an artifact inventory, all necessary cartographic and photographic documentation must be produced in accordance with the licensing requirements of the MHSTCI.

12. Until such time that Location 1 (AfGt-296), Location 17 (AfGt-305), Location 25 (AfGt-307), Location 30 (AfGt-308), Location 31 (AfGt-309), Location 32 (AfGt-312), Location 33 (AfGt-313), Location 35 (AfGt-314), Location 36 (AfGt-315), and Location 38 (AfGt-316) can undergo the recommended Stage 3 assessments, the sites should be avoided and protected by establishing a “no-go” zones consisting of the sites plus a 70 m protective buffer.

Draft license mapping must show the limits of the protected areas and include conditions that reference:

1. The need for recommended Stage 3 assessment of each site.
2. Clear instructions that alterations are prohibited within the limits of the protected areas of the sites until such time that the MHSTCI has entered a report(s) in the Ontario Public Register of Archaeological Reports where the report(s) recommends that the archaeological site is of no further cultural heritage value or interest.
3. Any archaeological site that is of further cultural heritage value or interest that remains within the licensed area at the time of surrender of the license will be protected through a restrictive covenant on title.
4. The protected sites must be fenced (post and wire) prior to commencing extraction.

In addition to license mapping and the conditions above, the license proponent must provide a letter acknowledging the presence of the protected sites, that they have only undergone Stage 2 archaeological assessment, they still require Stage 3 archaeological assessment and possibly Stage 4 mitigation and that no alterations of any kind are allowed within the protected limits of the archaeological sites. The letter must also confirm that a licensed archaeologist will review and confirm the notes and mapping on the license, including the location of the fencing and confirm that the fencing has been correctly placed following its installation.

Written confirmation must be provided by the relevant MNR/aggregates licensing office that the site plan and notes and conditions relating to the archaeological sites will be incorporated as part of the final approval.

13. **AfGt-46:** Despite intensified pedestrian survey within a 20 m buffer around AfGt-46, the site was not identified within the Study Area of this Stage 2 assessment. As such, no further assessment of site AfGt-46

within the extent of the Study Area documented in this report is recommended. However, despite not being identified within the Study Area of the Stage 2 assessment, evidence of site AfGt-46 may still be found in the property immediately to the east beyond the eastern boundary of the Study Area.

Thank you,

Ragavan Nithiyantham (MA, CAHP)

Cultural Heritage Specialist/ Archaeologist



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Work Safe, Home Safe

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Please consider the environment before printing this email.

From: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>

Sent: May 14, 2020 11:46 AM

To: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>

Cc: Archaeology (MHSTCI) <archaeology@ontario.ca>; Teal, Michael <Michael_Teal@golder.com>; Mohamed, Alisha <Alisha_Mohamed@golder.com>; 1771656, Rankin License App Port Colborne <1771656@golder.com>

Subject: Advice re Avoidance and Protection Strategies, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

EXTERNAL EMAIL

Hi, Ragavan. Apologies for the delay in responding. First of all, I notice that you are referring to extraction limits. For any aggregate licence, we consider the licensed area (not the limits of extraction) to be the area for which all archaeological concerns must be addressed. Any archaeological site (or part of a site) within the licensed area, even if it is outside (or partly outside) the extraction limits, must be fully addressed under the S&Gs, i.e., assessed and mitigated through to the end of Stage 4 if the site is of a sufficient degree of CHVI. This was discussed in our previous attached advice email ('Advice re Avoidance and Protection...').

We assume that you are working toward completing Stage 3 fieldwork that will allow for more precise limits and lesser protected areas for the archaeological sites in question. And, that this would then form the basis for the formulation of Stage 4 strategies of avoidance and protection (combined with possibly a small amount of Stage 4 excavation) for these archaeological sites. As per our previous advice, there are three options for proceeding once site limits have been established.

Since you will be formulating Stage 4 strategies, and since an Indigenous community has identified an interest in this project (and thus these archaeological sites), Indigenous engagement will be required in the formulation of these Stage 4 strategies. We advise engaging them sooner than later in order to ensure that they are fully informed and support the strategies. We further note that they may not agree with our advice below and may ask for more work or have higher expectations than stated below. Please note that we do not consider our expectations, standards and advice to take precedent over the expectations of the Indigenous community but rather that the expectations of all parties will be addressed.

As you know, we do not have standards for the number or placement of test units for this specific situation. However, as a general rule we are looking to see that the applicable objectives under Section 3.2.3 Guideline 1 are met, in this case either through the achievement of sterile test units or through repetitive low yields on the periphery of the site. In this situation, the intent is to establish limits for only a part of the site and to not carry out any work along the remainder of the site limits or through the interior of the site. Given that we will not gain as full an understanding of the site as we would normally obtain from carrying out a complete Stage 3, we therefore must take a conservative position and ask for an intensive set of test units within the limited part of the site that will be tested.

All that said, we agree with the initial approach of excavating a line of test units at 10 metre intervals along the limit of the revised extraction limits or along the site's 20 m buffer, whichever is greater, as the initial baseline for establishing the site limit.

In working through this process, it is important to establish 'What is a low yield'? We will accept any test unit as being low yield where that yield corresponds to the criteria under Section 2.2 Standard 1ai, i.e., 9 or less non-diagnostic artifacts or one diagnostic artifact and no more than one non-diagnostic artifact.

Depending on the results of that initial 10 metre interval baseline, continue as follows:

If that initial baseline has units with higher yields, excavate another line further out from the core of the site (5 or 10 metres at your discretion). Continue until a line is excavated that achieves all units with either sterile or low yields.

Once a line has been achieved with either sterile or low yields, then fill in that line to achieve 5 metre intervals to confirm the sterile or low yields. If at any point, a line is achieved of units at 5 metre intervals with entirely sterile yields then that line can serve as the site limit and no further excavation is required for the purpose of achieving site limits. Otherwise, if low yields are achieved, or a mix of sterile and low yields, excavate a further line parallel to the initial baseline and 5 metres further in or out in the most 'useful' direction and at 5 metre intervals within that line. When two lines of low yield units at 5 metre intervals are achieved, with those two lines separated by 5 metres, then repetitive yields will be considered to have been achieved and the site limit will be considered to be established.

Please include a PDF copy of this advice as supplementary documentation to your project report package.

As a standard part of all advice provided to licensees, please note that this advice has been provided by MHSTCI under the assumption that the information submitted by the licensed archaeologist is complete and accurate. The advice provided applies only to the project in question and is not to be used as a precedent for future projects. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or if the information provided by the licensed archaeologist is otherwise found to be inaccurate, incomplete, misleading, or fraudulent.

Sincerely,

Malcolm Horne
Archaeology Review Officer
Archaeology Program Unit
Ministry of Heritage, Sport, Tourism and Culture Industries
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel. 416-314-7146
Fax 416-314-7175
Email: Malcolm.Horne@ontario.ca

From: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>
Sent: May 6, 2020 1:11 PM
To: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>
Cc: Teal, Michael <Michael_Teal@golder.com>; Mohamed, Alisha <Alisha_Mohamed@golder.com>; 1771656, Rankin License App Port Colborne <1771656@golder.com>
Subject: RE: Advice re Avoidance and Protection Strategies, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

NOTE: This email chain appears to contain email from outside Golder

Hi Malcolm,

Thanks for the update and looking into our request.

Regards,

Ragavan Nithiyantham (MA, CAHP)

Cultural Heritage Specialist/ Archaeologist

 Golder Associates Ltd.
100 Scotia Court, Whitby, Ontario, Canada L1N 8Y6
T: +1 905 723 2727 | **C:** +1 905-244-3748 | golder.com
[LinkedIn](#) | [Instagram](#) | [Facebook](#) | [Twitter](#)

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Please consider the environment before printing this email.

From: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>
Sent: May 6, 2020 1:00 PM
To: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>
Subject: FW: Advice re Avoidance and Protection Strategies, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

EXTERNAL EMAIL

Hi, Ragavan. I am checking with other staff on your question to ensure that the advice is consistent with past practice. This may take a little longer than it might have in the past so my apologies for the delay. It shouldn't take more than a couple of days (hopefully less).

Sincerely,

Malcolm Horne
Archaeology Review Officer
Archaeology Program Unit
Ministry of Heritage, Sport, Tourism and Culture Industries
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel. 416-314-7146
Fax 416-314-7175
Email: Malcolm.Horne@ontario.ca

From: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>
Sent: May 4, 2020 4:21 PM
To: Horne, Malcolm (MHSTCI) <Malcolm.Horne@ontario.ca>
Cc: 1771656, Rankin License App Port Colborne <1771656@golder.com>; Teal, Michael <Michael_Teal@golder.com>; Mohamed, Alisha <Alisha_Mohamed@golder.com>
Subject: FW: Advice re Avoidance and Protection Strategies, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

NOTE: This email chain appears to contain email from outside Golder

Good afternoon Malcolm, hope you are well!

I am writing to seek further advise on this project related to the avoidance and protection of sites. Golder has completed the Stage 1-2 archaeological assessment on this project, which has resulted in the discovery of 38 sites and the following sites were determined to have further CHVI:

1. Location 1 (AfGt-297)
2. Location 17 (AfGt-305)
3. Location 25 (AfGt-307)

4. Location 30 (AfGt-308)
5. Location 31 (AfGt-309)
6. Location 32 (AfGt-312)
7. Location 33 (AfGt-313)
8. Location 35 (AfGt-314)
9. Location 36 (AfGt-315)
10. Location 38 (AfGt-316)

All sites that were found through pedestrian survey were subjected to an intensified survey (CSP) at 1 metre intervals and recorded by GPS.

Following the Stage 1-2 archaeological assessment, Golder has commenced Stage 3 assessments on Locations 1, 17, 25, 30 and 31. During the course of the Stage 3 assessments, the proponent revised the extraction area to avoid and protect Location 1, Location 17, Location 25, and Location 31 (see attached – yellow line represents extraction area; white buffer represents 20 m intensified survey area). Locations 30, 32, 33, 35, 36 and 38 will be impacted and subjected to complete Stage 3 assessments.

Given the revised extraction limits, could you please advise if there is an opportunity to limit the amount of Stage 3 assessment for Locations 1, 17, 25 and 31? It is understood that avoidance and protection at the end of a Stage 2 assessment includes the site and its 70 m buffer. However, for Locations 1, 17, 25 and 31, is there an opportunity to excavate a row of test units on a 10 m grid along the limit of the revised extraction limits or along the site's 20 m buffer, whichever is greater, to determine site limits, and, if high counts are encountered than excavation would extend another 10 m out, but if low counts are encountered than excavations would be halted and site limits (in the excavated area) established? Portions of Locations 1, 17, 25, and 31 that extend into the extraction limit, will be subjected to complete Stage 3 assessment and Stage 4 excavation, and the remainder of the site will be avoided and protected.

We welcome feedback and assistance from the Ministry regarding this strategy and look forward to working through this process to achieve a successful conclusion. Please do not hesitate to call or email the undersigned with any questions, comments or concerns.

Thank you,

Ragavan Nithiyantham (MA, CAHP)

Cultural Heritage Specialist/ Archaeologist



Golder Associates Ltd.

100 Scotia Court, Whitby, Ontario, Canada L1N 8Y6

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Please consider the environment before printing this email.

From: Horne, Malcolm (MTCS) <Malcolm.Horne@ontario.ca>

Sent: February 20, 2019 1:40 PM

To: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>

Cc: Archaeology (MTCS) <archaeology@ontario.ca>

Subject: Advice re Avoidance and Protection Strategies, Rankin Quarry, Port Colborne, P390-0316-2018, MTCS File 0008944

EXTERNAL EMAIL

Hi, Ragavan. This advice is based on the assumption that all other elements of the Stage 1-2 assessment will be found to be compliant and in agreement with the S&Gs.

The only option provided by the S&Gs for avoidance and protection after Stage 2 is partial clearance (Section 7.8.5). As we have learned from past experience with other aggregates licences, this is not a viable option under that licensing regime since there is no 'partial' or 'conditional' aggregates licence. The partial clearance option was developed to work with short-term (one to two years at most) situations under the Planning Act where the intent was Stage 4 excavation and the proponent wished to move ahead more quickly than the Stage 4 excavation would allow. Our expectation is that a Stage 3 assessment will be carried out where a long-term protection strategy is to be employed. However, we have now had experience with aggregates licensing situations where avoidance and protection strategies have been worked out to our satisfaction based on only Stage 2 assessment, especially with larger properties such as this.

Some possible options:

-Exclude the area of the archaeological site(s) from the area proposed to be licensed. This will require a revision of the limits of the area to be licensed in order to completely exclude the protected area (archaeological site plus buffer) of each archaeological site. Obviously, this will only be a viable strategy where the proponent is willing to never excavate these areas. It is usually only applied where the archaeological sites are along the edges of a large application area and/or where environmental concerns are already reducing the limits in that direction. If all archaeological sites are excluded, this option eliminates any need for MNRF to place conditions or include the archaeological sites on licence mapping.

-Use a phasing approach. For large aggregates applications such as this, it is not uncommon to phase the excavation of aggregates from the property, i.e., for reasons that have nothing to do with archaeology the proponent excavates the property one phase at a time. Some proponents have chosen to re-structure their phasing or set up the phasing to allow for the archaeological site(s) to be addressed prior to later phases in the project; this could mean addressing the archaeological sites at a point that is 10 to 20 years in the future. Given that the phasing limits are well beyond the limits of the archaeological site(s) (i.e., the limits are beyond 70 metres), no further involvement by an archaeologist (including monitoring) will be required until just prior (e.g., one

to two years prior) to such time as the next phase is to be implemented. This strategy will require conditions on the licence, including language that makes it clear that those phases cannot be entered (other than for existing agricultural uses) until archaeological concerns are addressed.

-Establish protected areas within the licence. These will be typically be more tightly delimited than the phasing areas. Consequently, as part of an avoidance and protection strategy for an aggregates licence, they must provide us with:

- A CSP from a 1 metre interval pedestrian survey recorded by GPS. This could go in a Stage 1-2 report. This is the intensified survey required by Section 2.1.1 Standard 7.
- Draft licence mapping showing the limits of the protected area for the archaeological site on that mapping. The protected area must include both the distribution of the artifacts and a 70 metre no-go buffer
- The conditions on licence must reference the report(s) containing the recommendations that apply to the project area (i.e., the Stage 1-2 report)
- A condition must be placed on licence clearly stating that any entry or alterations are prohibited within the limits of the protected area of the archaeological site(s) until such time that MTCS has entered a report in the Ontario Public Register of Archaeological Reports where that report recommends that the archaeological site(s) are of no further cultural heritage value or interest
- A condition must be placed on licence that any archaeological site that is of further cultural heritage value or interest that remains within the licensed area at the time of surrender of the licence will be protected through a restrictive covenant on title
- A separate note must be provided that states that the archaeological site must be fenced (post and wire) prior to commencing extraction
- Letter from the proponent acknowledging the presence of the archaeological site(s), that it (they) has only undergone Stage 2 archaeological assessment, that it (they) still requires Stage 3 archaeological assessment and possibly Stage 4 mitigation, and that no entry or alterations of any kind are allowed within the protected limits of the archaeological site(s). This letter will also confirm that a licensed consultant archaeologist will review and confirm the notes and mapping on the licence, identify the location for the fencing, and confirm that the fencing has been correctly placed following its installation
- Confirmation in writing must be provided by the relevant MNRF aggregates licensing officer that the site plan, Notes and Conditions on Schedule as attached will be incorporated as part of the final approval

We will not require excavation of test units in any of these options.

Further note that ongoing monitoring by an archaeologist is not assumed in any of these scenarios. The intent in each case is for there to be a sufficient degree of protections in combination to ensure that the archaeological sites remain unaltered either indefinitely or until such time as the proponent wants to move into an area and commence alterations.

In any of these options, there is always the possibility of proceeding with the Stage 3 assessment, and possibly Stage 4 mitigation by excavation, for some of the archaeological sites while carrying out a strategy of long-term protection for other archaeological sites. For example, for this application, if access is from Main Street East, it might work to address Location 25 and Location 31 while avoiding and protecting the Location 1/17/30 complex to the north.

Any of these options can be combined with others. One could choose to combine phasing, excavation and exclusion.

Based on the information provided, none of these archaeological sites meet the criteria under Section 3.5 Standard 1a-e that would require Indigenous engagement. However, Stage 3 assessment has not been completed and therefore the character of the archaeological sites has not been fully assessed. Therefore, long-term protection strategies may be implemented for sites of interest without Indigenous engagement. We will not require engagement on the basis of Section 3.5 Standard 1a-e. However, if Indigenous community(ies) have at any time indicated that this project is of interest to them (Section 3.5 Standard 1f) then we will expect to see that they have been engaged regarding the avoidance and protection strategy and that they have agreed in writing (e.g., email, letter) to the proposed strategy.

Please don't hesitate to contact me further for advice or review of proposed avoidance and protection strategies for this project.

Please include a PDF copy of this advice as supplementary documentation to your project report package.

As a standard part of all advice provided to licensees, please note that this advice has been provided by MTCS under the assumption that the information submitted by the licensed archaeologist is complete and accurate. The advice provided applies only to the project in question and is not to be used as a precedent for future projects. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or if the information provided by the licensed archaeologist is otherwise found to be inaccurate, incomplete, misleading, or fraudulent.

Sincerely,

Malcolm Horne
Archaeology Review Officer
Archaeology Program Unit
Ministry of Tourism, Culture and Sport
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel. 416-314-7146
Fax 416-314-7175
Email: Malcolm.Horne@ontario.ca

From: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>

Sent: February 15, 2019 2:06 PM

To: Archaeology (MTCS) <archaeology@ontario.ca>; Horne, Malcolm (MTCS) <Malcolm.Horne@ontario.ca>

Subject: P390-0316-2018: Options for Avoidance and Project

Good afternoon Malcolm,

I am writing to seek your advice on the avoidance and protection of sites following a Stage 2 archaeological assessment for a quarry project under the Aggregates Act in Port Colborne. In total, 31 collections were encountered during the Stage 2 assessment, and one site was previously identified within the project limits. Five of these sites (Locations 1, 17, 20, 25 and 31) were determined to have CHVI as per the S&G and were recommended for Stage 3 assessment (see attached maps).

The cultural affiliation of the five sites with CHVI are as follows:

Location 1 – Indigenous lithic scatter

Location 17 – Multi-component Euro-Canadian and Indigenous lithic scatter (Middle Archaic projectile point found)

Location 20 – Indigenous lithic scatter

Location 25 – Indigenous lithic scatter

Location 17 – Indigenous lithic scatter

We would like to present our client with all options to mitigate the archaeological concerns on this project. Other than excavation, is there an option to completely avoid and protect the sites with CHVI, while progressing with pit excavations for the remainder of the project area beyond the 50m monitoring buffers? If complete avoidance and protection is an option, would there be any hinderances to obtaining an aggregate licence or permit?

I will give you a call shortly to discuss our options to mitigate the archaeological concerns on this project.

Thank you,

Ragavan Nithiyantham (MA, CAHP)

Archaeologist



Golder Associates Ltd.

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From:Hember, Ian (MTCS) <Ian.Hember@ontario.ca>

Sent:August 24, 2018 10:38 AM

To:Nithiyantham, Ragavan

Subject:RE: P390-0316-2018

Thanks for the followup. I'm glad that the adapted methodology seems to be working! That's a relief.

Cheers

Ian

From: Nithiyantham, Ragavan [mailto:Ragavan_Nithiyantham@golder.com]
Sent: August 23, 2018 4:32 PM
To: Hember, Ian (MTCS) <Ian.Hember@ontario.ca>
Cc: Dunlop, John (MTCS) <John.Dunlop@ontario.ca>; Archaeology (MTCS) <archaeology@ontario.ca>
Subject: RE: P390-0316-2018

Hi Ian,

Just to confirm, this methodology works well for the field conditions discussed. We located a lithic scatter with approximately 40 artifacts. This was just within a 20m area that we surveyed this evening. We will complete the remainder of the survey tomorrow.

Have a great evening,

Ragavan Nithiyantham (MA, CAHP)
Archaeologist

Golder Associates Ltd.
100 Scotia Court, Whitby, Ontario, Canada L1N 8Y6
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Please consider the environment before printing this email.

From: Hember, Ian (MTCS) <Ian.Hember@ontario.ca>
Sent: August 23, 2018 1:27 PM
To: Nithiyantham, Ragavan <Ragavan_Nithiyantham@golder.com>
Cc: Dunlop, John (MTCS) <John.Dunlop@ontario.ca>; Archaeology (MTCS) <archaeology@ontario.ca>
Subject: P390-0316-2018

Hi Ragavan,

Thanks for speaking to me today. As I understand it, Stage 2 has been completed across the majority of

the property (outlines in red on the map you e-mailed), but before it could be complete in one area (shaded blue on the same map), the property was struck by some torrential rain that reduced the visibility. We discussed how there are some constraints and timing challenges, and that the Stage 2 was already well underway. We also discussed how sites had been found elsewhere on the property, and that a modified strategy near those sites would be appropriate.

Given the above, using a reduced interval to increase the visibility to 80% is appropriate for the area shaded blue on the map. I'll leave it to your crew to determine if a 1m or 2m interval works best. In the areas near the sites mentioned above, we agreed to 1m intervals. If you feel that the visibility can't be brought up to 80% even with a reduced interval, and therefore that the survey results are unreliable, then the field would need to be reploughed. If that comes to pass, please document that you made an attempt in the report, and that you returned after reploughing. You won't face licensing questions about doing so: we like people to be upfront about what they're doing, and rectifying an issue after trying an experiment shows good professional judgment.

If you find any sites, and are able to complete a CSP, you'd not need to do another CSP prior to Stage 3 unit excavation.

I think that covers it, but if I've remembered incorrectly, or if you have any other questions, let me know. Please remember to include a PDF copy of this e-mail when you submit the report package.

Thanks

Ian

Ian Hember
Archaeology Licensing and Information Officer (Acting)
Ministry of Tourism, Culture and Sport
416-314-7691 | Ian.Hember@ontario.ca
www.ontario.ca/archaeology

This advice has been provided by MTCS under the assumption that the information submitted by the licensed archaeologist is complete and accurate. The advice provided applies only to the project in question and is not to be used as a precedent for future projects.

Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or if the information provided by the licensed archaeologist is otherwise found to be inaccurate, incomplete, misleading, or fraudulent.

Please include a PDF copy of this advice as supplementary documentation to your project report package.

4.0 SUPPORT LETTER AND SITE PLAN



Rankin Construction Inc.

CONTRACTORS & ENGINEERS

Archaeology Review Officer
Ministry of Tourism, Culture and Sport
Culture Programs Unit, Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, Ontario
M7A 0A7

MHSTCI PIF NO. P390-0316-2018

**ORIGINAL REPORT – STAGE 1 and 2 ARCHAEOLOGICAL ASSESSMENT
PORT COLBORNE QUARRY EXPANSION, PART OF LOTS 17, 18, AND 19,
CONCESSION 2, GEOGRAPHIC TOWNSHIP OF HUMBERSTONE, FORMER
COUNTY OF WELLAND, CITY OF PORT COLBORNE, REGIONAL MUNICIPALITY
OF NIAGARA, ONTARIO**

Dear Sir/Madam:

In addition to the attached license mapping with conditions regarding associated archaeological sites, please accept this letter as confirmation that Rankin Construction Inc. will adhere to the avoidance and protection recommendations provided for Location 1 (AfGt-296), Location 17 (AfGt-305), Location 25 (AfGt-307), Location 30 (AfGt-308), Location 31 (AfGt-309), Location 32 (AfGt-312), Location 33 (AfGt-313), Location 35 (AfGt-314), Location 36 (AfGt-315), and Location 38 (AfGt-316), as outlined in the above noted Stage 1 and 2 Archaeological Assessment report completed by Golder Associates Ltd.

Rankin Construction Inc. acknowledges that prior to the submission of Golder's Stage 1 and 2 Archaeological Assessment report that Stage 3 fieldwork commenced for Location 1 (AfGt-296), Location 17 (AfGt-305), Location 25 (AfGt-307), Location 30 (AfGt-308), Location 31 (AfGt-309), Location 32 (AfGt-312), Location 33 (AfGt-313), Location 35 (AfGt-314), and Location 36 (AfGt-315), but artifacts analysis and reporting have yet to be completed. It is understood that Stage 4 mitigation may still be needed for some or all of these sites, and until such time that the MHSTCI has entered a report(s) in the Ontario Public Register of Archaeological Reports where the report(s) recommends that the archaeological site is of no further cultural heritage value or interest, no alterations of any kind are allowed within the protected limits of the archaeological sites as shown in the attached license mapping.

We trust this is satisfactory for your current requirements; however, should you have any questions or concerns, or require additional information or clarification, please do not hesitate to contact the undersigned.

Sincerely,

Rankin Construction Inc.


Shawn Tylee C.E.T. MBA

Rankin Construction Inc.

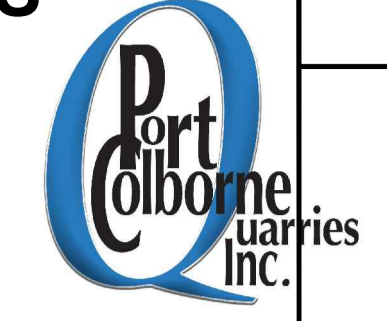
222 Martindale Road, PO Box 1116, St. Catharines, ON L2R 7A3

stylee@rankinconstruction.ca | T 905-684-1111 | F 905-684-2260 | C 905-357-8547

PIT 3 EXTENSION

SURROUNDING LAND USES

SHEET 1 OF 8

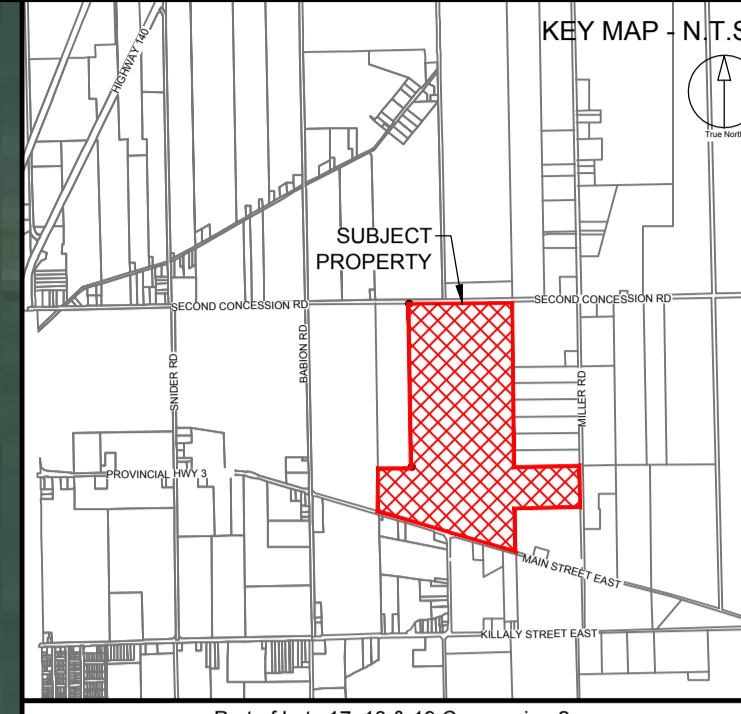


APPLICANT
PORT COLBORNE QUARRIES INC.

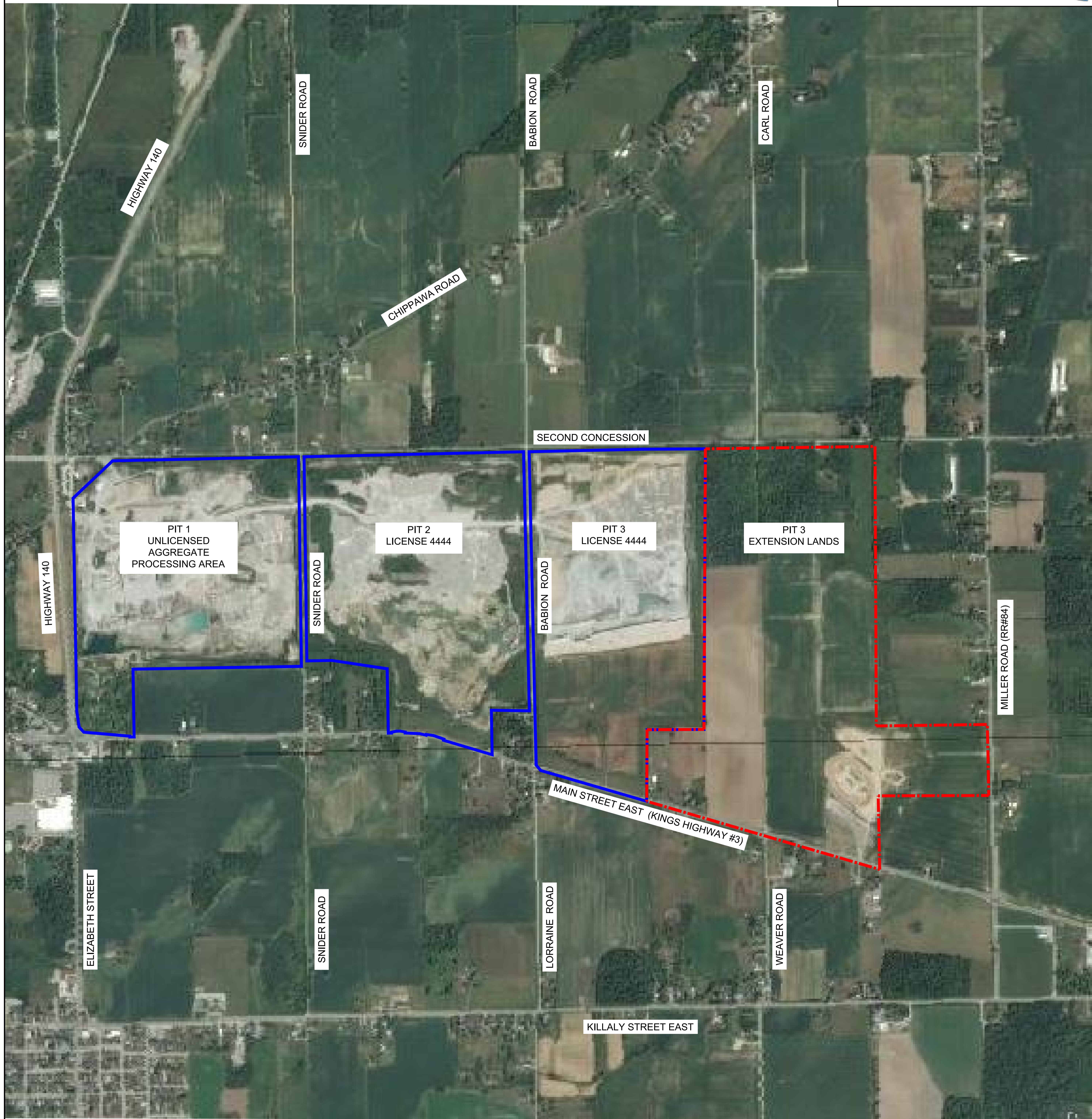
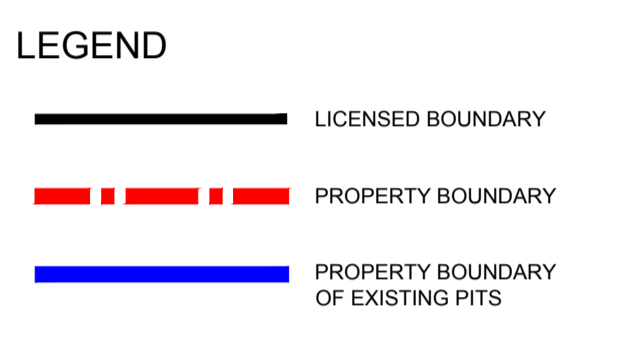
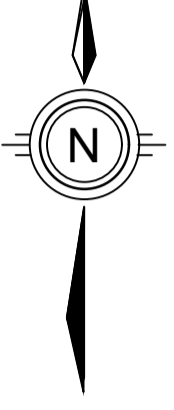
222 MARTINDALE ROAD, P.O. BOX 1116
ST. CATERINES, ON, L2R 7A3

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THESE SITE PLANS HAVE PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENSE, CATEGORY 2. THEY HAVE BEEN PREPARED BY THE UNDERSIGNED BY THE AUTHORITY OF MINSTERIAL APPROVAL AS SPECIFIED IN THE AREA SECTION 8 (4).

DATE: _____

IBI GROUP
Suite 101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
Tel: 519 565 2255
ibigroup.com

PORT COLBORNE QUARRIES INC.
PIT 3 EXTENSION

SCALE: 1 : 5,000
0m 50 100 150 200

PROJECT NO: 115774	CHECKED BY: D.S.
DRAWN BY: E.T.	APPROVED BY:
PROJECT MGR: D.S.	

SHEET TITLE
SURROUNDING LAND USES

SHEET NUMBER
1 of 8

File Location: J:\15774_PortColborne\3-Drawing\p3\pit3-EXTNS\sheet1-3-EXTNS\sheet1-3-EXTNS.dwg Last Saved: November 10, 2020 2:32:31 PM by Emma Terry

PIT 3 EXTENSION

EXISTING CONDITIONS PLAN

SHEET 2 OF 8

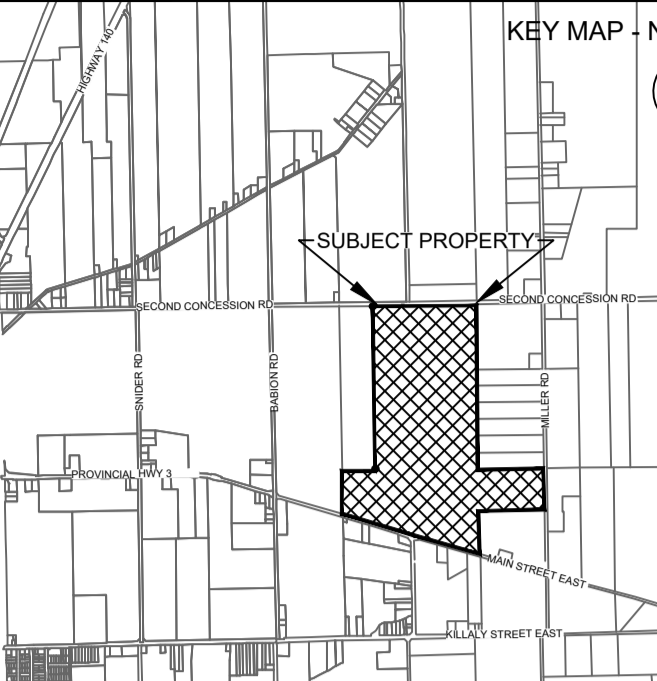


APPLICANT
PORT COLBORNE
QUARRIES INC.

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Part of Lots 17, 18 & 19 Concession 2 and R.P. 59R-16702 Part of Road Allowance between Lot 18 & 19 Concession 2 in former Township of Humberstone, the City of Port Colborne, Region of Niagara

LEGEND

- LOT & CONCESSION
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- EXISTING POST & WIRE FENCE
- MUNICIPAL DRAIN
- LOCATION OF CROSS-SECTION (SEE SHEET 6 OF 8)
- MW17-30, MW17-35: MONITORING WELL - EXISTING
- MW F2: MONITORING WELL - TO BE DRILLED PRIOR TO QUARRING
- ARCHAEOLOGICAL SURFACE FIND - INDIVIDUAL
- ARCHAEOLOGICAL SURFACE FIND - GROUPING
- 70m BUFFER FROM ARCHAEOLOGICAL FIND SPOTS (SEE ARCH. NOTE 2)
- EXISTING ACCESS
- EXISTING TREE LINE
- EXISTING BUILDING / STRUCTURE - OFF-SITE
- EXISTING BUILDING / STRUCTURE - ON-SITE
- EXISTING POND
- SURFACE DRAINAGE DIRECTION
- EXISTING ZONING BY-LAW BOUNDARY
- 120m A.R.A. OFFSET
- EXISTING CONTOUR (1m INTERVAL)

DATE	BY	DESCRIPTION
		SITE PLAN AMENDMENTS
		REVISIONS PRIOR TO APPROVAL
		5.13 REMOVAL OF SETBACKS ADJACENT TO LICENSE 4444
		SITE PLAN OVERRIDES

SITE DATA

AREA TO BE LICENSED	± 106.29 ha
AREA TO BE EXTRACTED	± 71.12 ha
EX. DISTURBED AREA	Nil
TOTAL LAND PARCEL	± 106.29 ha

THESE SITE PLANS HAVE PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENSE, CATEGORY 2. THEY HAVE BEEN PREPARED BY THE ENGINEERED BY THE AUTHORITY OF MINISTRIAL APPROVAL AS SPECIFIED IN THE ARA SECTION 6 (4).

Sources Used For The Preparation Of The Site Plans:

- The City of Port Colborne Official Plan.
- The Region of Niagara Official Plan.
- Niagara Region Navigator, Interactive Mapping Portal.
- The City of Port Colborne Zoning By-Law 6575/30/18.
- Topographic information obtained from Lanthier & Gilmore Surveying Ltd. 2019.
- Property Legal Boundary Information obtained from Plan 59R-8010 prepared by Andrew Cameron, OLS, dated April 8th/1992 and Plan 59R-16702 prepared by Lanthier & Gilmore May 2020.
- Boreholes and monitoring wells location has been provided by the Level 1 / Level 2 Hydrogeological Assessment Report prepared by Golder Associates Ltd., dated October 2020.
- Ecological Land Classification information has been provided by Level 1 and Level 2 Natural Environment Report prepared by Golder Associates Ltd., dated Oct 2020.
- Archaeological Find Spots have been provided by the Stage 2 Archaeological Assessment prepared by Golder Associates Ltd., dated July 2020.
- Site visits conducted 2018, 2019 and 2020 and the location of site features was augmented by Google Maps (2018).

DATE



PORT COLBORNE QUARRIES INC.

PIT 3 EXTENSION

SCALE: 1:2,500

PROJECT NO: 115774

DRAWN BY: E.T.

PROJECT MGR: D.R.S.

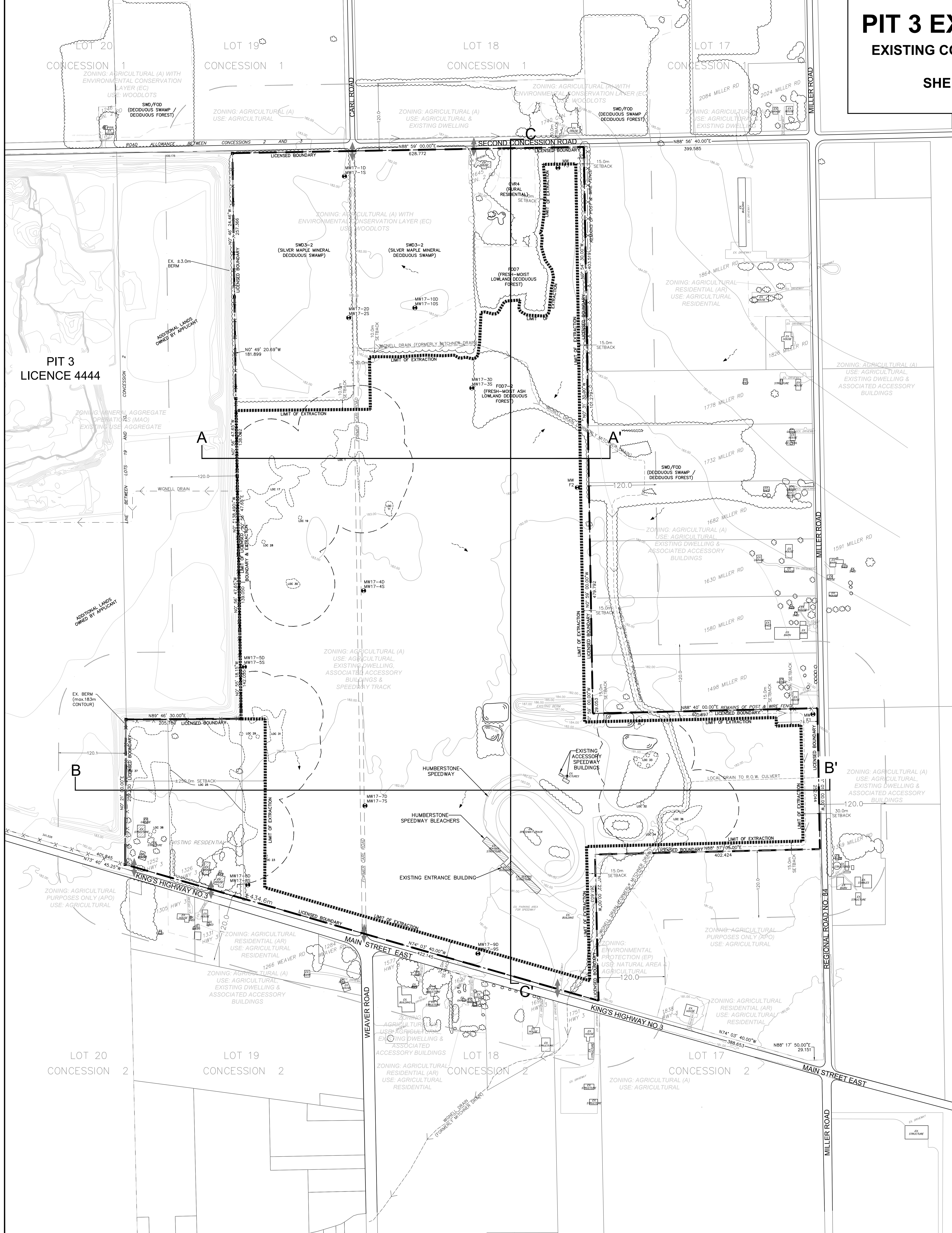
CHECKED BY: D.R.S.

APPROVED BY: D.R.S.

SHEET TITLE: EXISTING CONDITIONS

SHEET NUMBER: 2 of 8

Notes:
The groundwater elevation across the site has been determined by Golder Associates Ltd. to be 178.0 masl.



PIT 3 EXTENSION

OPERATIONAL PLAN

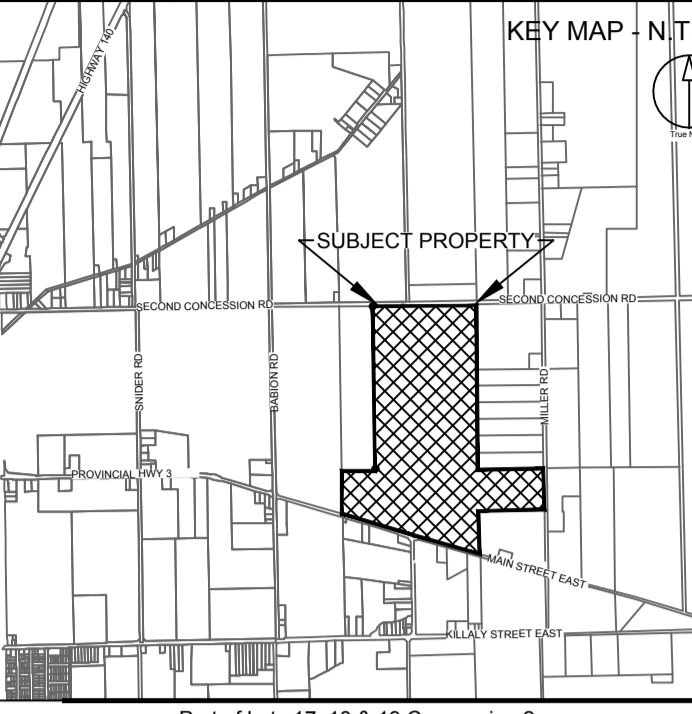
SHEET 3 OF 8



APPLICANT
PORT COLBORNE QUARRIES INC.

222 MARTINDALE ROAD, P.O. BOX 1116
ST. CATHERINES, ON, L2R 7A3

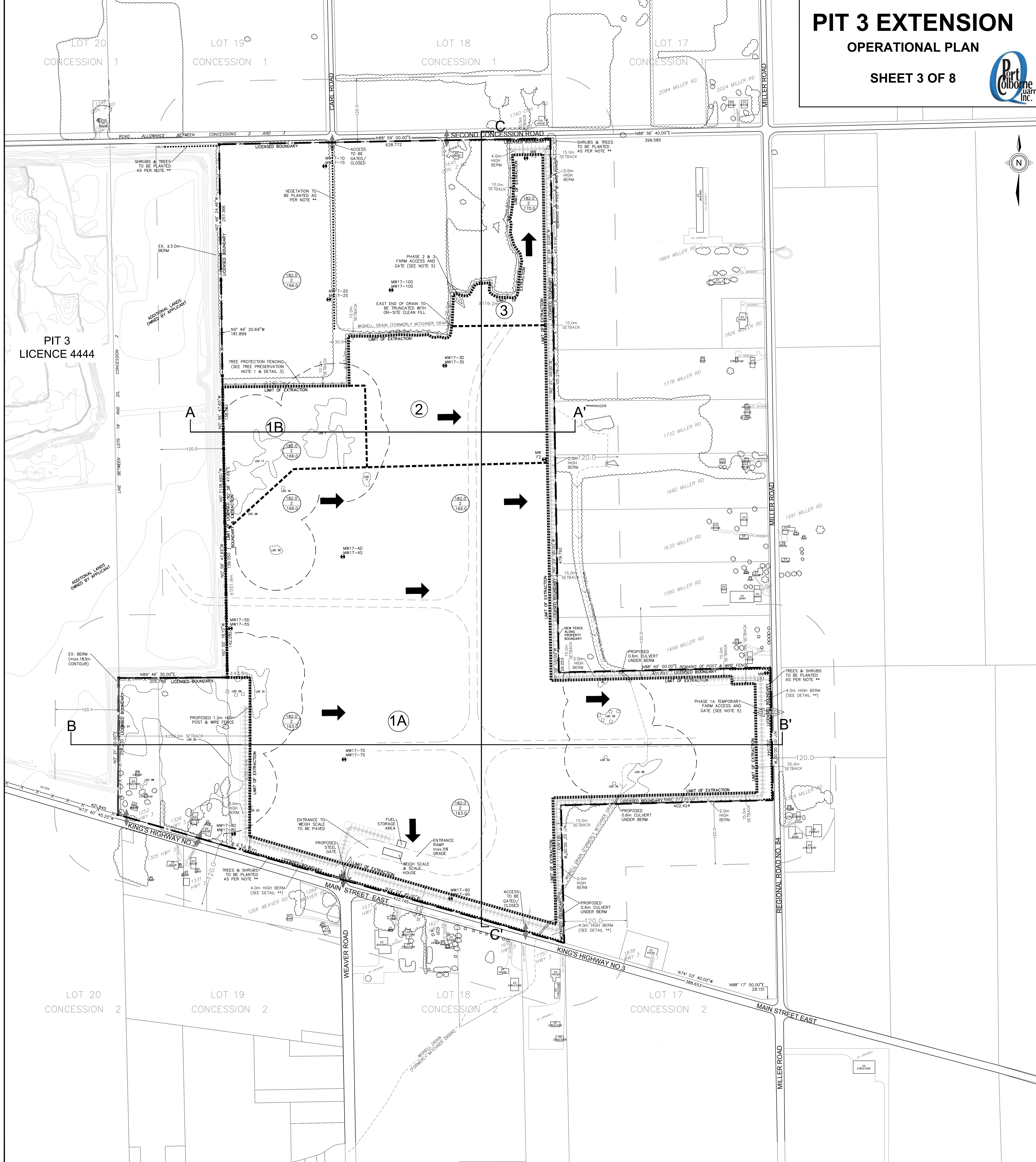
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Part of Lots 17, 18 & 19 Concession 2 and P.P. 599-16702 Part of Road Allowance between Lot 18 & 19 Concession 2, in former Township of Humberstone, the City of Port Colborne, Region of Niagara

LEGEND

- LOT & CONCESSION
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- PROPOSED 1.2m HIGH POST & WIRE FENCE
- TREE PROTECTION FENCING
- MUNICIPAL DRAIN
- LOCATION OF CROSS-SECTION (SEE SHEET 6 OF 8)
- MW17-30, MW17-35 MONITORING WELL - EXISTING
- MW F2 MONITORING WELL - TO BE DRILLED PRIOR TO QUARRING
- ARCHAEOLOGICAL SURFACE FIND - INDIVIDUAL
- ARCHAEOLOGICAL SURFACE FIND - GROUPING
- 70m BUFFER FROM ARCHAEOLOGICAL FIND SPOTS (SEE ARCH. NOTE 2)
- ↑ EXISTING ACCESS
- ↔ PROPOSED ACCESS
- EXISTING TREE LINE
- EXISTING BUILDING / STRUCTURE - OFF-SITE
- ▨ EXISTING BUILDING / STRUCTURE - ON-SITE
- PHASING BOUNDARY
- ② PHASING SEQUENCE
- INTERNAL HAUL ROUTE
- ➔ DIRECTION OF EXTRACTION
- 182.0 / 166.0 EXISTING ELEVATION / NUMBER OF LIFTS / FINAL EXTRACTED ELEVATION
- PROPOSED 0.6m CULVERT UNDER BERM
- NEW STEEL ENTRANCE GATE



DATE	BY	DESCRIPTION
SITE PLAN AMENDMENTS		
REVISIONS PRIOR TO APPROVAL		

SITE DATA

AREA TO BE LICENSED	± 106.29 ha
AREA TO BE EXTRACTED	± 71.12 ha
EX. DISTURBED AREA	N/A
TOTAL LAND PARCEL	± 106.29 ha

THESE SITE PLANS HAVE PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENSE, CATEGORY 2. THEY HAVE BEEN PREPARED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTRIAL APPROVAL AS SPECIFIED IN THE ARA SECTION 6 (4).

DATE: _____

IBI GROUP
Suite 101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
Tel: 519 885 2555
ibigroup.com

PORT COLBORNE QUARRIES INC.

PIT 3 EXTENSION

SCALE: 1 : 2,500

PROJECT NO: 115774

DRAWN BY: E.T.	CHECKED BY: D.R.S.
PROJECT MGR: D.R.S.	APPROVED BY: D.R.S.

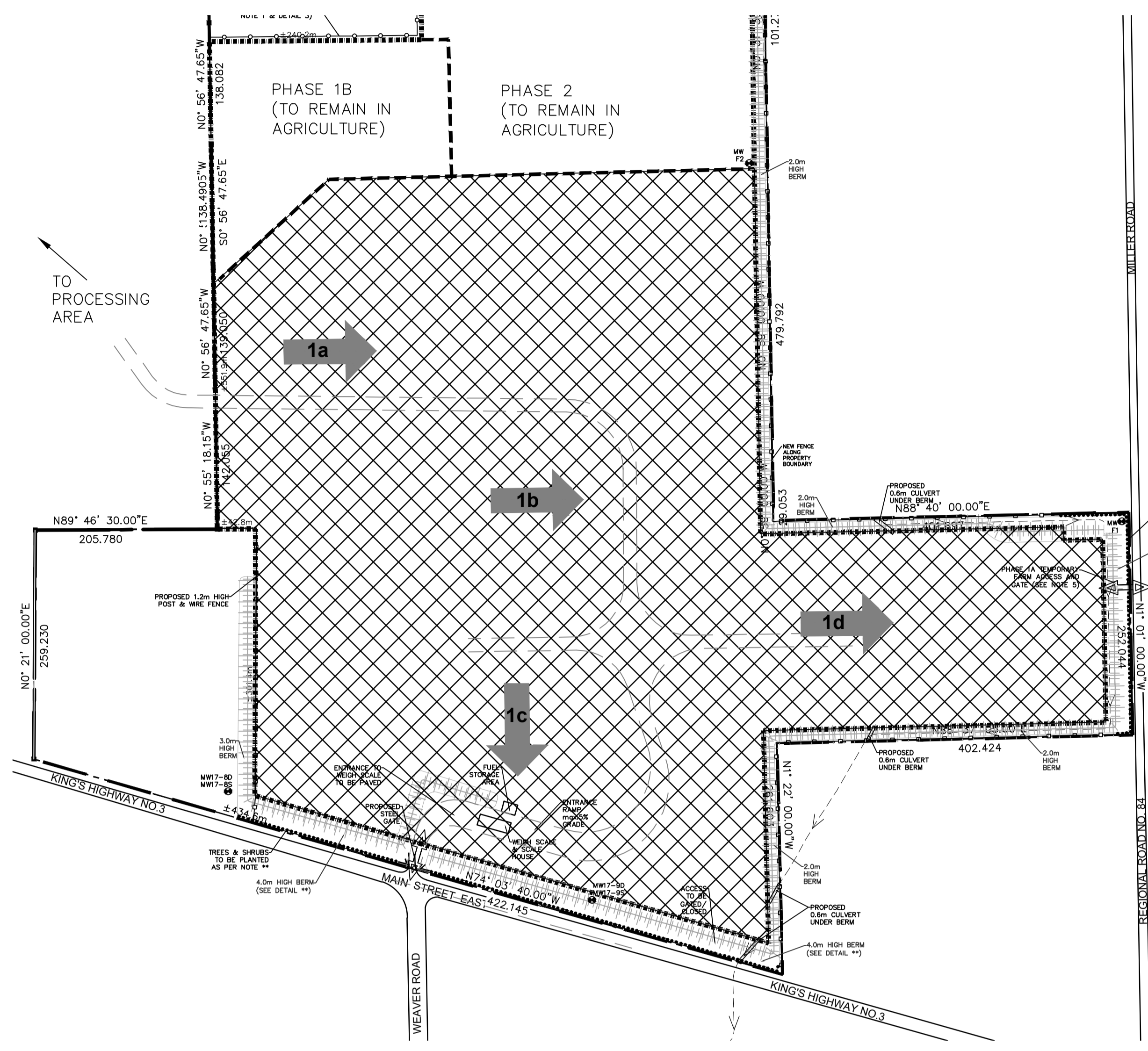
SHEET TITLE: **OPERATIONAL PLAN**

SHEET NUMBER: **3 of 8**

ISSUE

Phase 1A (Subphases a - d)

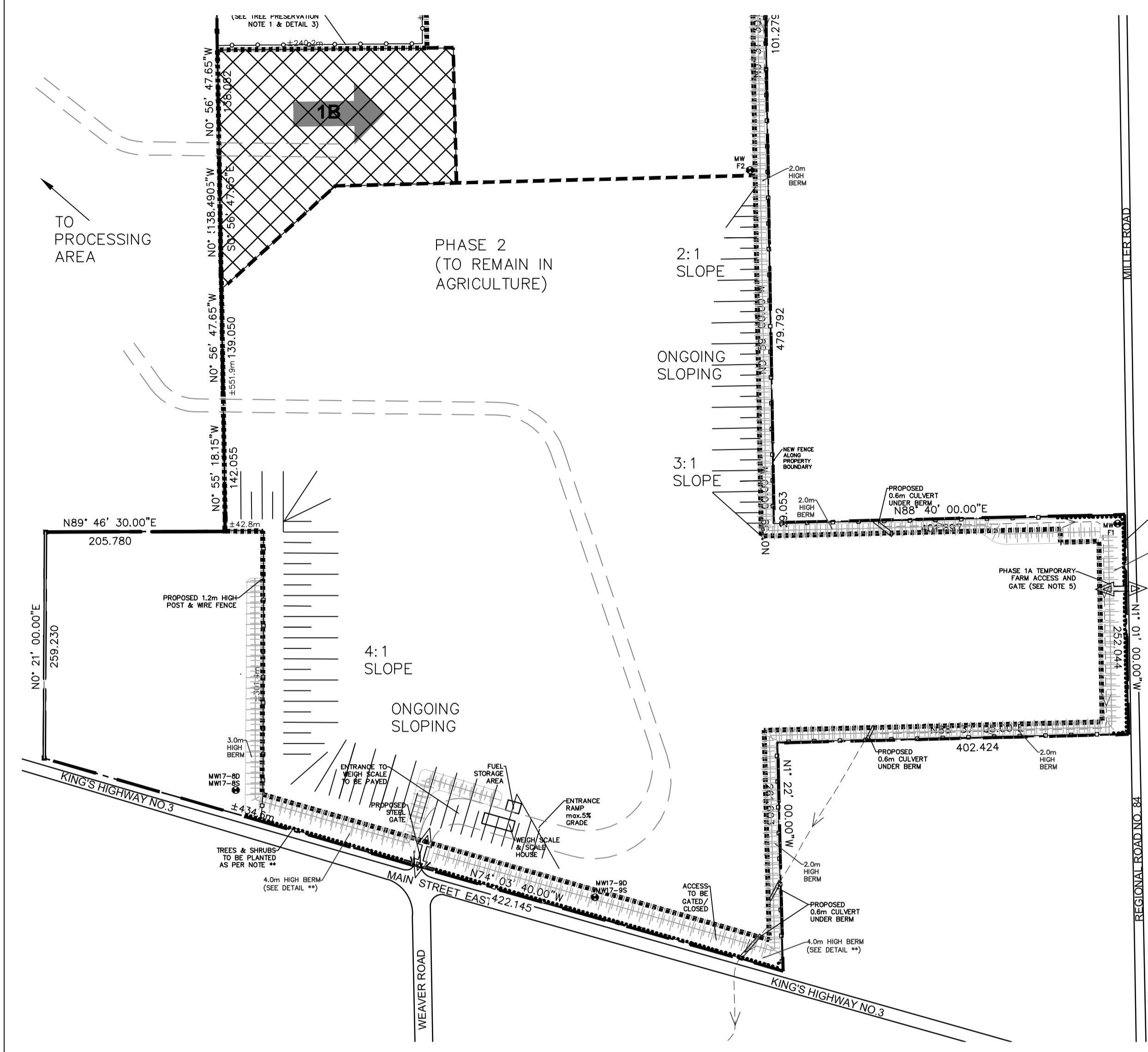
- a) Stripping: Prior to stripping any agricultural fields or other vegetation, refer to NEL 1 - 2 note 2 re: breeding bird habitat. The area to be stripped in advance of extraction will reflect approximately 2-3 years of anticipated extraction. The stripped topsoil and subsoil will be placed within the quarry setbacks to be used for perimeter berms and future rehabilitation of the quarry side slopes.
- b) Extraction: Extraction will commence eastward from the Pit 3 face (Licence 4444) and extend to the eastern setback limit. The extraction depth will vary from 162.0 to 166.0 masl generally following the resource which is deepest in the southwest portion of the site. Extraction occur primarily in two lifts / benches each not exceeding 8.0 metres in depth. A third partial lift may be required in the deepest portions of the quarry.
- c) Berms Construction: All berms will be constructed prior to any active extraction at the site. All berms will be constructed with a core of onsite clay overburden and be covered with a veneer of on-site subsoil and topsoil. Berm heights are noted on Sheet 3 of 8 and berm design detail sketches are shown on Sheet 5 of 8.
- d) Berm Vegetation: All perimeter berms constructed must be immediately vegetated with a native, non-invasive grass/legume to help prevent erosion, (refer also to General Operational Note 13 and NEL 1 - 2 Note 7) to augment fugitive dust and noise and to support grassland bird habitat.
- e) Processing Equipment: Although the majority of the processing equipment will be located off-site, any in-quarry portable processing equipment must be located on the lowest quarry floor or at a minimum elevation of 171.10 masl, whichever is lowest.



- f) Shipping off-site: Aggregate from Phase 1A will be initially hauled westward to the Port Colborne Quarries Inc. - Pit 1 for processing via an intra-pit road network through the Pit 2 and Pit 3 lands. Once processed, (crushed, screened, blended, washed and stockpiled), the material will be shipped to the market via Second Concession Road to Highway 140. Eventually that processing plant is planned to be relocated / rebuilt within the Port Colborne Quarries Inc. - Pit 3 lands, (Licence 4444), subject to MNRF approval. Once that occurs, aggregate from Phase 1A will be processed within Phase 3 then shipped to the market via a new entrance/exit onto Highway 3. To accommodate this, an access road from the quarry floor to the 'at grade' portion of Phase 1A will be constructed.
- g) Progressive Rehabilitation: As full extraction is progressively completed of portions of Phase 1A, the creation of side slopes will begin. Side slopes will range from the steepest permitted by the ARA being 2(v) : 1(h) to a shallower slope of 4(v) : 1(h) and will be designed generally as shown on the Final Rehabilitation Plan but subject to site conditions. To create the side slopes, the Licensee shall use:
 - i) Angled blasting,
 - ii) Broken shale,
 - iii) On-site overburden,
 - iv) Clean inert fill may be imported but the Licensee must ensure that the material is tested at the source before it is deposited on-site, to ensure that the material meets the MECP criteria under Table 1 of MECP's Soils, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act. Sampling results will be provided to MNRF upon request.
- h) Once the sideslopes are created, on-site subsoil and topsoil will be reapplied and vegetated as per General Operational Note 13 and additional vegetation will be planted as per NEL 1/2 note 7 and as shown on the Final Rehabilitation Plan.

Phase 1B

- a) Stripping: Prior to stripping any agricultural fields or other vegetation, refer to NEL 1 - 2 note 2 re: breeding bird habitat. The area to be stripped in advance of extraction will reflect approximately 2-3 years of anticipated extraction. The stripped topsoil and subsoil will be used immediately for progressive rehabilitation of the quarry side slopes.
- b) Extraction: Extraction will commence northward from Phase 1A and extend north to the northern setback limit. The extraction depth will extend to 166.0 masl and generally following the resource depth and occur in two lifts / benches each not exceeding 8.0 metres in depth. As detailed in Archaeological Note 1 and 2, portions of Phase 1B include 'no-go zone' buffers which require Stage 3 archaeological assessments to be completed and which recommend that no further archaeological assessment is required, and then extraction may commence.
- c) Processing Equipment: Although the majority of the processing equipment will be located off-site, any in-quarry portable processing equipment must be located on the lowest quarry floor or at a minimum elevation of 171.10 masl, whichever is lowest.
- d) Shipping off-site: Aggregate from Phase 1B will be processed within Pit 3 then shipped to the market via the entrance/exit directly onto Highway 3.
- e) Progressive Rehabilitation: As progressive extraction is completed, the creation of side slopes will continue. Side slopes will range from the steepest permitted by the ARA being 2(v) : 1(h) to a shallower slope of 4(v) : 1(h) and will be generally as shown on the Final Rehabilitation Plan. To create the side slopes, the Licensee shall use:
 - i) Angled blasting,
 - ii) Broken shale,
 - iii) On-site overburden,
 - iv) Clean inert fill may be imported but the Licensee must ensure that the material is tested at the source before it is deposited on-site, to ensure that the material meets the MECP criteria under Table 1



PIT 3 EXTENSION

PROGRESSIVE REHABILITATION

DETAILS PLAN

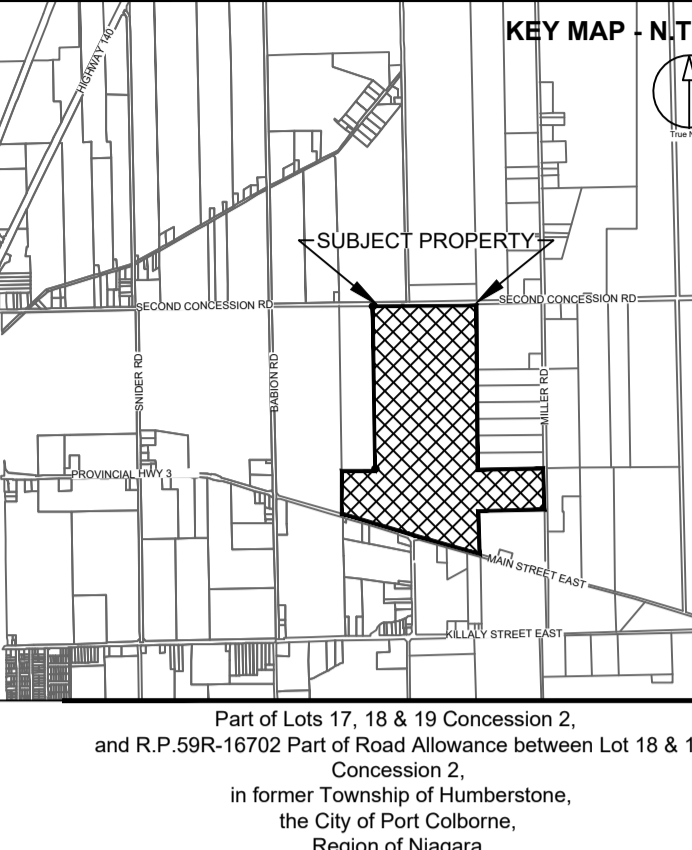
SHEET 5 OF 8

APPLICANT
PORT COLBORNE QUARRIES INC.

222 MARTINDALE ROAD, P.O. BOX 1116
ST. CATHERINES, ON, L2R 7A3

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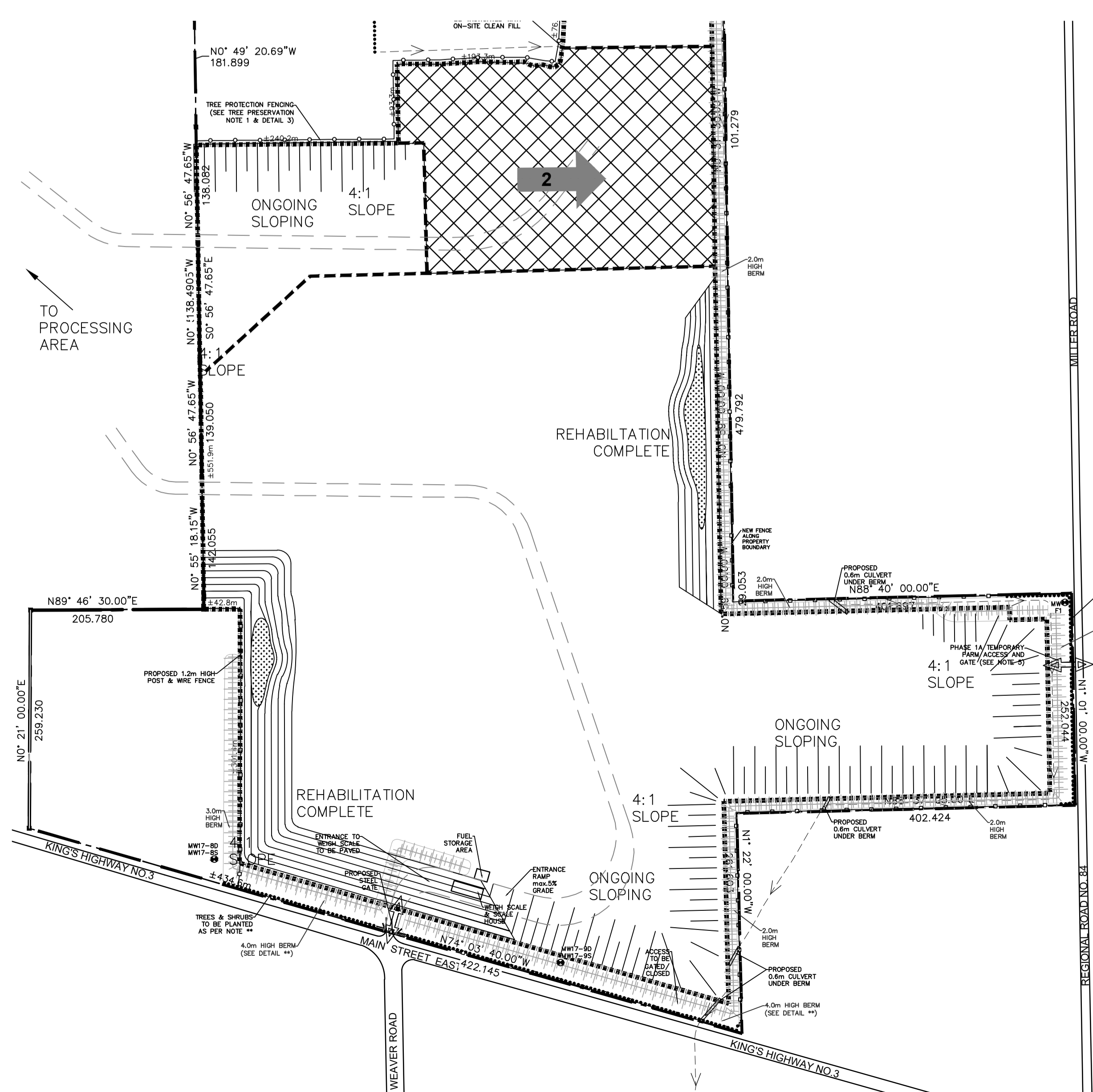
of MECP's Soils, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act. Sampling results will be provided to MNRF upon request. f) Once the side slopes are created, on-site subsoil and topsoil will be reapplied and vegetated as per General Operational Note 13 and additional vegetation will be planted as per NEL 1/2 note 7 and as shown on the Final Rehabilitation Plan.

LEGEND

- LOT & CONCESSION
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- EXISTING POST & WIRE FENCE
- MUNICIPAL DRAIN
- MONITORING WELL - EXISTING
- MONITORING WELL - TO BE DRILLED PRIOR TO QUARRYING
- EXISTING ACCESS
- PROPOSED ACCESS
- EXISTING TREE LINE
- EXISTING BUILDING / STRUCTURE - OFF-SITE
- EXISTING BUILDING / STRUCTURE - ON-SITE
- PHASING BOUNDARY
- PHASING SEQUENCE
- INTERNAL HAUL ROUTE
- DIRECTION OF EXTRACTION
- EXISTING ELEVATION NUMBER OF LIFTS
- FINAL EXTRACTED ELEVATION
- PHASED EXTENT OF EXTRACTION
- PHASED BACK FILL
- FINAL REHABILITATION CONTOUR
- FUTURE AQUATIC HABITAT

Phase 2

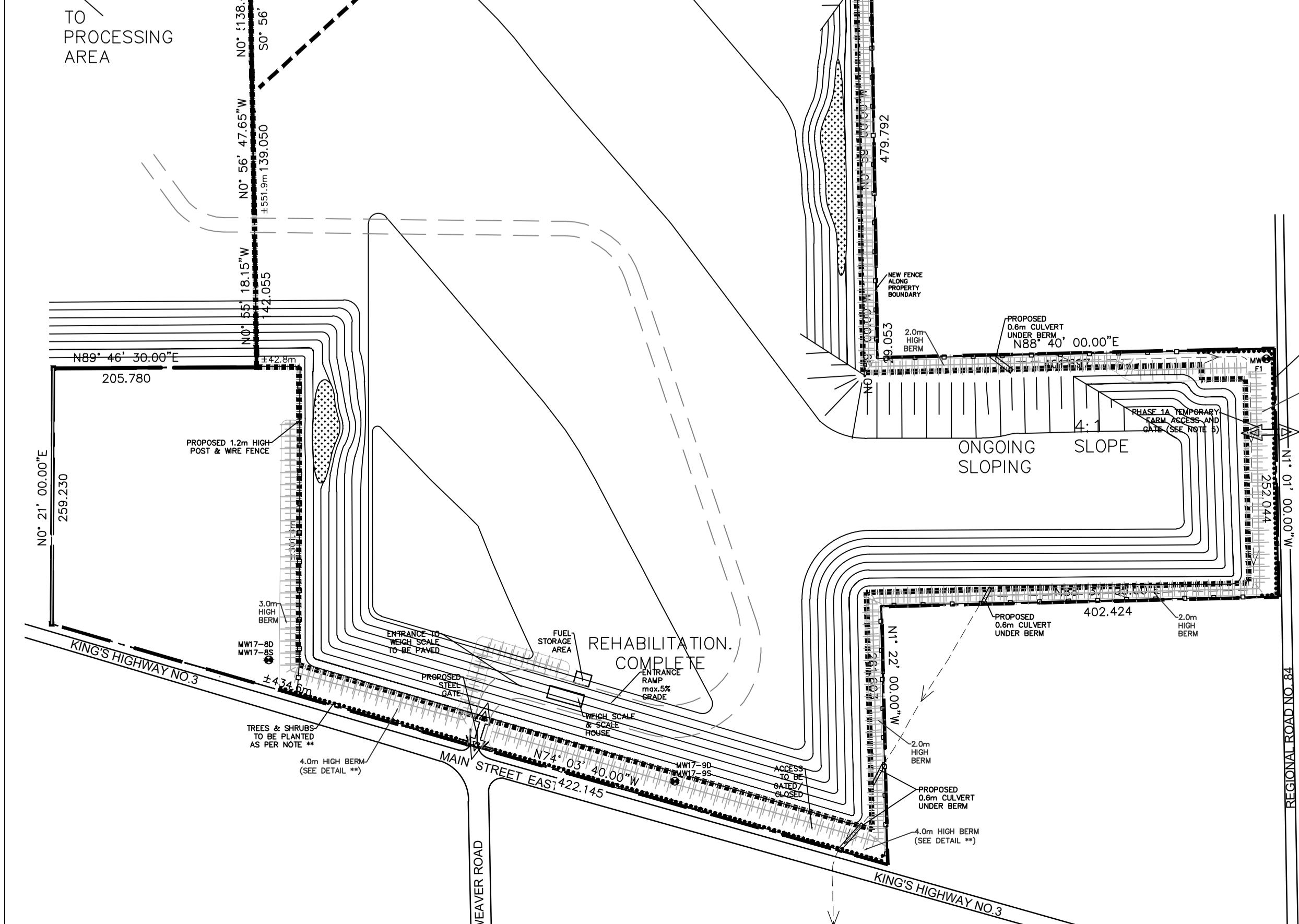
- a) Stripping: Prior to stripping any agricultural fields or other vegetation, refer to NEL 1 - 2 note 2 re: breeding bird habitat. The area to be stripped in advance of extraction will reflect approximately 2-3 years of anticipated extraction. The stripped topsoil and subsoil will be used immediately for progressive rehabilitation of the quarry side slopes.
- b) Extraction: Extraction will commence eastward from Phase 1B and extend east to the eastern setback limit. The extraction depth will extend to 166.0 masl and generally following the resource depth and occur in two lifts / benches each not exceeding 8.0 metres in depth.
- c) Processing Equipment: Although the majority of the processing equipment will be located off-site, any in-quarry portable processing equipment must be located on the lowest quarry floor or at a minimum elevation of 171.10 masl, whichever is lowest.
- d) Shipping off-site: Aggregate from Phase 2 will be processed within Pit 3 then shipped to the market via the entrance/exit onto Highway 3.



- e) Progressive Rehabilitation: As extraction is progressively completed, the creation of side slopes will continue. Side slopes will range from the steepest permitted by the ARA being 2(v) : 1(h) to a shallower slope of 4(v) : 1(h) and will be generally as shown on the Final Rehabilitation Plan. To create the side slopes, the Licensee shall use:
 - i) Angled blasting,
 - ii) Broken shale,
 - iii) On-site overburden,
 - iv) Clean inert fill may be imported but the Licensee must ensure that the material is tested at the source before it is deposited on-site, to ensure that the material meets the MECP criteria under Table 1 of MECP's Soils, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act. Sampling results will be provided to MNRF upon request.
- f) Once the side slopes are created, on-site subsoil and topsoil will be reapplied and vegetated as per General Operational Note 13 and additional vegetation will be planted as per NEL 1 - 2 note 7 and as shown on the Final Rehabilitation Plan.

Phase 3:

- a) Stripping: Prior to stripping any agricultural fields or other vegetation, refer to NEL 1/2 note 2 re: breeding bird habitat. The area to be stripped in advance of extraction will reflect approximately 2-3 years of anticipated extraction. The stripped topsoil and subsoil will be used immediately for progressive rehabilitation of the quarry side slopes.
- b) Extraction: Extraction will commence northward from Phase 2 and extend north to the northern setback limit at Second Concession Road. The extraction depth will extend to 166.0 masl and generally following the resource depth and occur in two lifts / benches each not exceeding 8.0 metres in depth.
- c) Processing Equipment: Although the majority of the processing equipment will be located off-site, any in-quarry portable processing equipment must be located on the lowest quarry floor or at a minimum elevation of 171.10 masl, whichever is lowest.
- d) Shipping off-site: Aggregate from Phase 3 will be processed within Pit 3 then shipped to the market via the entrance/exit onto Highway 3.
- e) Progressive Rehabilitation: As extraction is progressively completed, the creation of side slopes will continue. Side slopes will range from the steepest permitted by the ARA being 2(v) : 1(h) to a shallower slope of 4(v) : 1(h) and will be generally as shown on the Final Rehabilitation Plan. To create the side slopes, the Licensee shall use:
 - i) Angled blasting,
 - ii) Broken shale,
 - iii) On-site overburden,
 - iv) Clean inert fill may be imported but the Licensee must ensure that the material is tested at the source before it is deposited on-site, to ensure that the material meets the MECP criteria under Table 1 of MECP's Soils, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act. Sampling results will be provided to MNRF upon request.
- f) Once the side slopes are created, on-site subsoil and topsoil will be reapplied and vegetated as per General Operational Note 13 and additional vegetation will be planted as per NEL 1 - 2 note 7 and as shown on the Final Rehabilitation Plan.



DATE	BY	DESCRIPTION
		SITE PLAN AMENDMENTS
		REVISIONS PRIOR TO APPROVAL

SITE DATA

AREA TO BE LICENSED ±106.29 ha
 AREA TO BE EXTRACTED ± 71.12 ha
 EX. DISTURBED AREA Nil
 TOTAL LAND PARCEL ± 106.29 ha

THESE SITE PLANS HAVE PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS LICENSE, CATEGORY 2. THEY HAVE BEEN PREPARED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTRIAL APPROVAL AS SPECIFIED IN THE AREA SECTION 6 (4).

DATE

IBI GROUP
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 Tel: 519 585 2555
 ibigroup.com

PORT COLBORNE QUARRIES INC.

PIT 3 EXTENSION

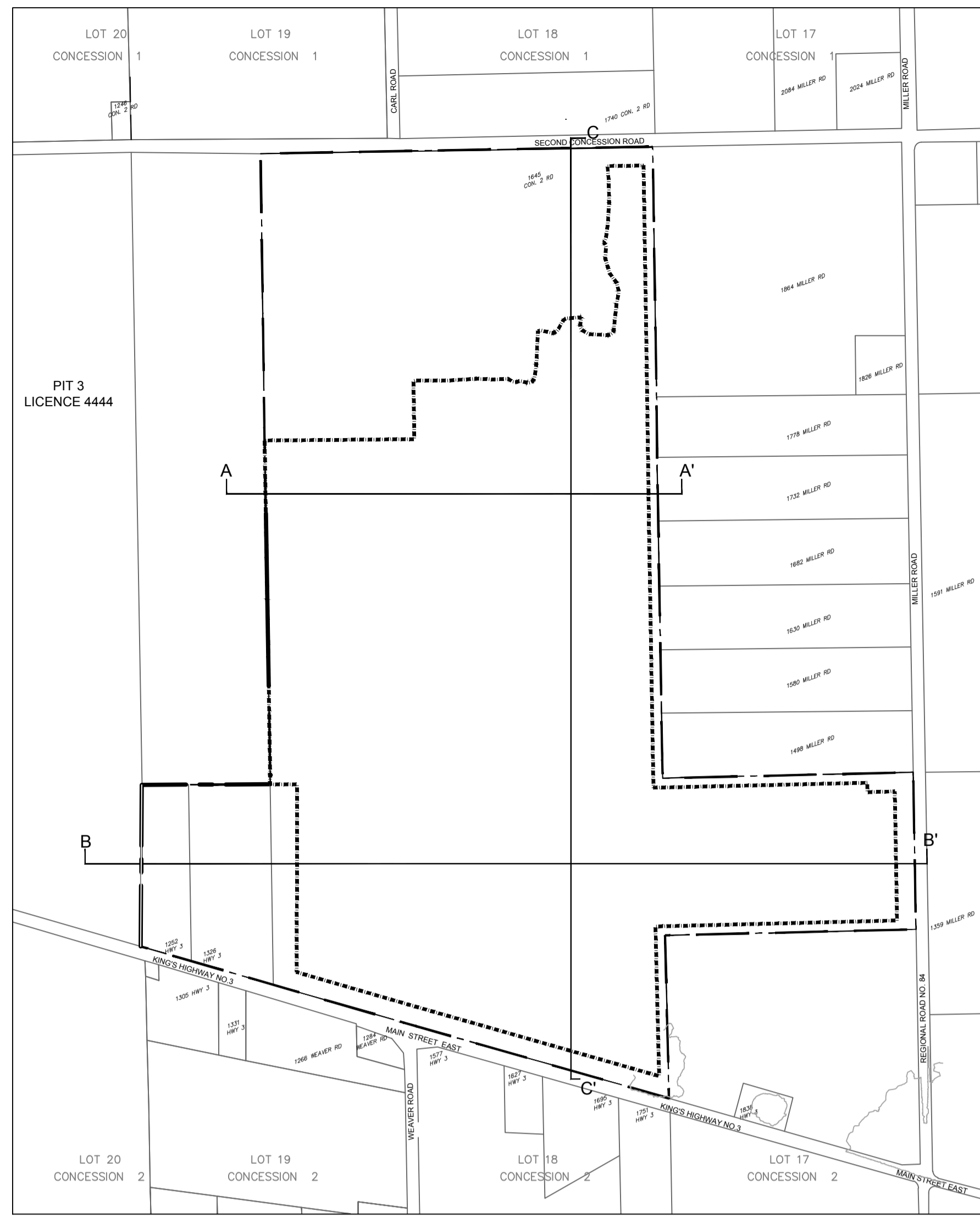
SCALE: 1:4,000

PROJECT NO: 115774
 DRAWN BY: D.R.S.
 PROJECT MGR: D.R.S.
 CHECKED BY: D.R.S.
 APPROVED BY: D.R.S.

SHEET TITLE
PHASING DETAILS PLAN

SHEET NUMBER **5 of 8** ISSUE

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PIT 3 EXTENSION

EXISTING CONDITIONS
CROSS-SECTION PLAN

SHEET 6 OF 8

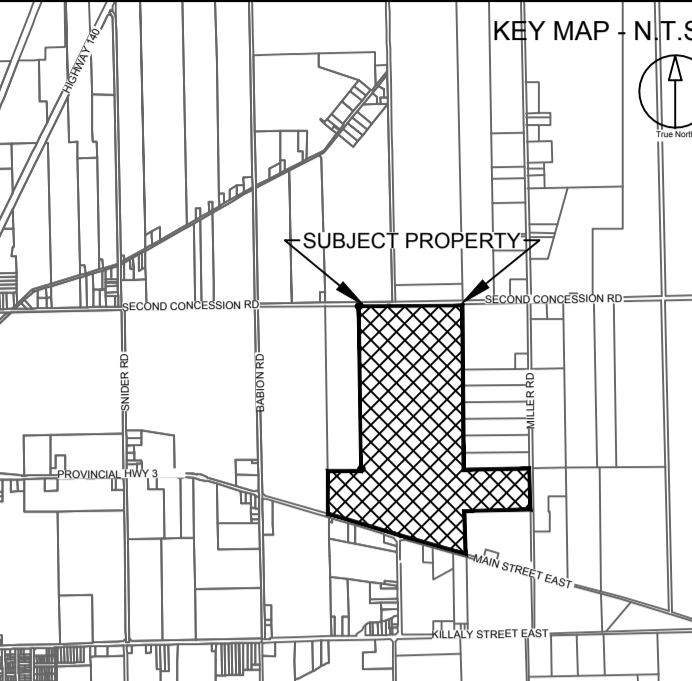


APPLICANT
**PORT COLBORNE
QUARRIES INC.**

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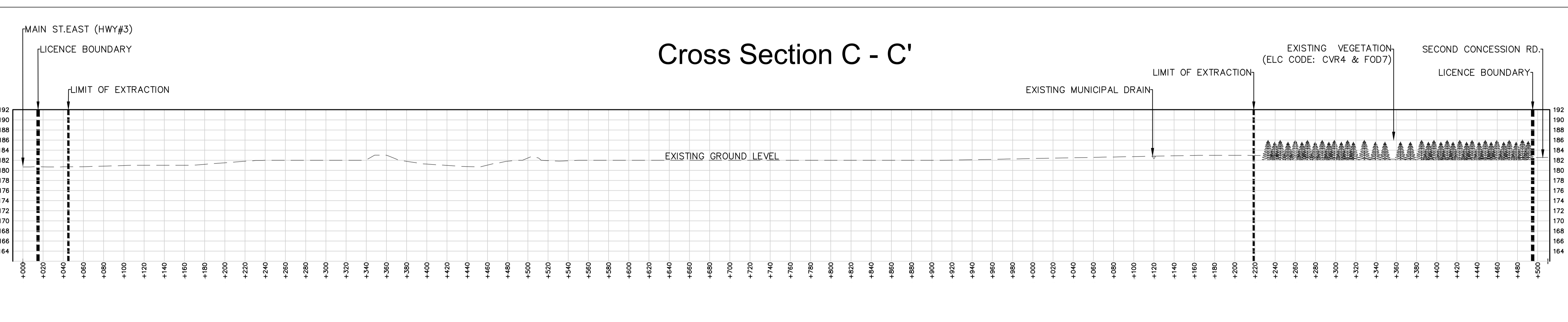
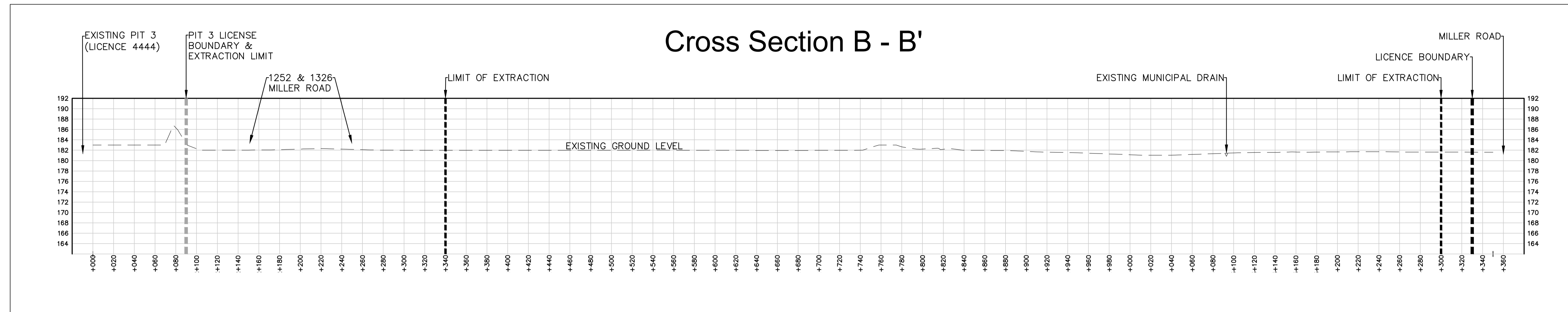
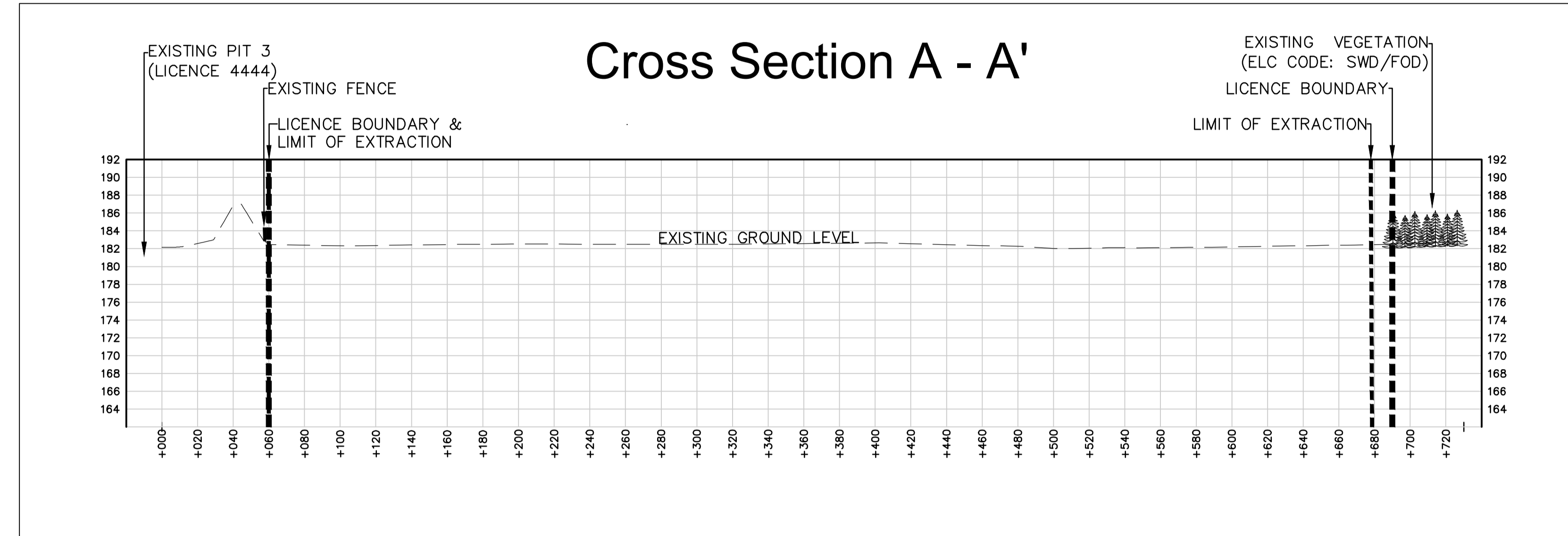


Part of Lots 17, 18 & 19 Concession 2,
and R.P. 59R-16702 Part of Road Allowance between Lot 18 & 19
Concession 2,
in former Township of Hamberstone,
the City of Port Colborne,
Region of Niagara

LEGEND
 - - - - - LICENSED BOUNDARY
 - - - - - LIMIT OF EXTRACTION
 - - - - - EXISTING GROUND LEVEL

VERTICAL SCALE
1:400
0 5 10 15 20m

HORIZONTAL SCALE
1:2,000
0 25 50 75 100m



DATE	BY	DESCRIPTION
		SITE PLAN AMENDMENTS

DATE	BY	DESCRIPTION
		REVISIONS PRIOR TO APPROVAL

SITE DATA
 AREA TO BE LICENSED ±106.29 ha
 AREA TO BE EXTRACTED ± 71.12 ha
 EX. DISTURBED AREA Nil
 TOTAL LAND PARCEL ± 106.29 ha

THESE SITE PLANS HAVE BEEN PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS LICENSE, CATEGORY 2. THEY HAVE BEEN PREPARED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTRIAL APPROVAL AS SPECIFIED IN THE ASA SECTION 6 (4).
 DATE _____



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Suite 101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 885 2255
ibigroup.com

PORT COLBORNE QUARRIES INC.
PIT 3 EXTENSION

SCALE: VERTICAL: 1:400
HORIZONTAL: 1:2,000

PROJECT NO:
115774
DRAWN BY:
E.T.
PROJECT MGR:
D.R.S.

CHECKED BY:
D.R.S.
APPROVED BY:
D.R.S.

SHEET TITLE
**EXISTING CONDITIONS
CROSS-SECTIONS**
 SHEET NUMBER
6 of 8
 ISSUE

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PIT 3 EXTENSION REHABILITATION PLAN

SHEET 8 OF 8



APPLICANT
**PORT COLBORNE
QUARRIES INC.**

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LEGEND

- LOT & CONCESSION
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- POST & WIRE FENCE
- MUNICIPAL DRAIN
- LOCATION OF CROSS SECTION (SEE SHEET 7 OF 8)
- FUTURE AQUATIC HABITAT
- VEGETATION SCREENING

PROGRESSIVE REHABILITATION NOTES

1. General: The subject lands will operate by dewatering in the same manner as the existing Pit 3 (Licence 4444) to allow for dry extraction. The depth of the existing quarry and the Extension will be approximately 8.0 to 16.0 metres below the groundwater level. Upon final quarrying, dewatering will cease and the entire property (Licence 4444 and the extension lands) will gradually fill with water and become 177 hectare lake.
2. Side Slopes: The side slopes of the extraction area will be created as per General Operational Note 16 and generally as shown on the Site Plans, but by varying depending on site conditions. The depth of topsoil and subsoil that is to be re-applied to the final quarry side slopes will be generally equal to the depth removed which ranges 20 to 50 cm.
3. Proposed Vegetation:
 - a) Wetland and aquatic plants that may be planted in the final rehabilitated nearshore or shoreline areas will include shrubs such as red-osier dogwood (*Cornus sericea*) and slender willow (*Salix petiolaris*), and herbaceous plants such as water plantain (*Alisma plantago-aquatica*), lake sedge (*Carex lacustris*), swamp milkweed (*Asclepias incarnata*), softstem bulrush (*Schoenoplectus tabernaemontani*), and common cattail (*Typha* spp.). Shallow wetland habitats will be created through construction of submerged benches, approximately 0.25 to 0.75 metres deep. Shallow emergent marsh vegetation (i.e., herbaceous species listed above) will be planted in water \pm 15 metres deep and extend \pm 5 metres from the shore and be interspersed with cover structures (e.g., boulders and root wads) in the shallow shoreline wetland areas. Organic material and topsoil will be added to the shoreline areas to promote shoreline vegetation. Basking logs, nesting platforms and boxes will be created for turtle, waterfowl and swallows respectively. This habitat will be designed to be suitable as snapping turtle aquatic habitat and bullfrog breeding habitat.
 - b) Final rehabilitation of the upland areas will be seeded with a mix of grasses and legumes consisting of native, non-invasive species. It is recommended that common milkweed be planted in upland areas to provide host plants for monarch caterpillars. Where terrestrial nodal plantings are included on the side slopes, they will include a mixture of coniferous and deciduous tree species to promote species diversity and provide a variety of species to compensate for any substrate deficiencies. The species may include white pine, sugar maple, red oak, trembling aspen, and white birch, with a secondary focus on species such as choke cherry (*Prunus virginiana*), alternate-leaved dogwood (*Cornus alternifolia*), highbush cranberry (*Viburnum opulus*), nannyberry (*Viburnum lentago*) and serviceberry (*Ameiarcher* spp.). It is recommended that ash (*Fraxinus* spp.) species in rehabilitation plantings be avoided due to the invasion of emerald ash borer.
 - c) Invasive shrub species including multiflora rose, common buckthorn, and Tartarian honeysuckle have become established in this area and may prevent the successful establishment of the native plantings. These invasive shrubs should be removed prior to the planting of Carl Road.
 - d) All plantings (i.e., nodal plantings) included in the rehabilitation plan will be locally native, non-invasive species that create habitat in the short term and promote natural succession processes. The sourcing of plantings should consider the regionally adapted genetics of the species. Plantings from local sources are likely to be well adapted to the local climate and growing conditions and may have a higher likelihood of successful establishment. Therefore, plantings will be procured from local sources to the extent possible.
 - e) All rehabilitated side slopes are to be vegetated with a seed mixture capable of:
 - Rapid germination and growth,
 - Controlling erosion,
 - Maintaining or enhancing soil fertility.The seeding is to be established in a timely manner and if necessary, facilitated by the application of fertilizer, water and/or additional seeding.
4. During the ongoing extraction of the site and during the progressive rehabilitation phase, the Licensee will continue to monitor and maintain all site vegetation, and if any dies, it will be replaced immediately (during the proper planting season).
5. As much of the on-site berms as possible will be to be removed once quarrying is complete with the subsoil and topsoil used to rehabilitate the final quarry side slopes above the final water limit (178.0 masl). However, where planted vegetation has grown and become mature on the exterior side of the berms, those portions of the berms may be retained.
6. All existing fencing and gates are to remain after quarrying is complete.
7. All existing internal haul routes will remain as the quarry floor will be flooded.
8. Upon the completion of the quarry, the dewatering pumps will be removed and the final land use is proposed to be a passive lake in conjunction with the Pit 3 lands, totaling \pm 177.0 hectares.
9. Final contours are interpolated from available geologic information at the time of preparation and actual grades may vary.
10. The final water elevation for the lake has been determined to be \pm 178.0 masl.

Final Rehabilitation

1. Once extraction ceases and the final quarry slopes are established, the dewatering pumps will be removed and the final land use will be an 177 hectare lake in conjunction with Licence 4444.
2. The final surface water on the final lake will be 178.0 masl.
3. The total area to be rehabilitated will be 71.1 hectares.

Site Plan Variances:

- 5.1 No fence will exist along the eastern boundary of the quarry adjacent to Licence 4444.
- 5.2 No gates will exist along the eastern boundary of the quarry adjacent to Licence 4444.
- 5.10 The 15.0 metre setback between the eastern boundary of the quarry and Licence 4444 will not be required.
- 5.13 Stockpiles may be placed within 15.0 metres of the property boundary adjacent to Licence 4444.
- 5.16 Displaced topsoil stripped from the site may be used on the abutting Licence 4444.
- 5.17 Displaced topsoil stripped from the site which is used on abutting Licence 4444, will not be used for on-site rehabilitation.

DATE	BY	DESCRIPTION
		SITE PLAN AMENDMENTS
		REVISIONS PRIOR TO APPROVAL

SITE DATA	
AREA TO BE LICENSED	\pm 106.29 ha
AREA TO BE EXTRACTION	\pm 71.12 ha
EX. DISTURBED AREA	Nil
TOTAL LAND PARCEL	\pm 106.29 ha

THESE SITE PLANS HAVE PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS LICENSE, CATEGORY 2. THEY HAVE BEEN PREPARED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTRIAL APPROVAL AS SPECIFIED IN THE ARA SECTION 6 (4).

DATE

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PORT COLBORNE QUARRIES INC.
PIT 3 EXTENSION

SCALE: 1 : 2,500

PROJECT NO:
115774

DRAWN BY:
E.T.

CHECKED BY:
D.S.

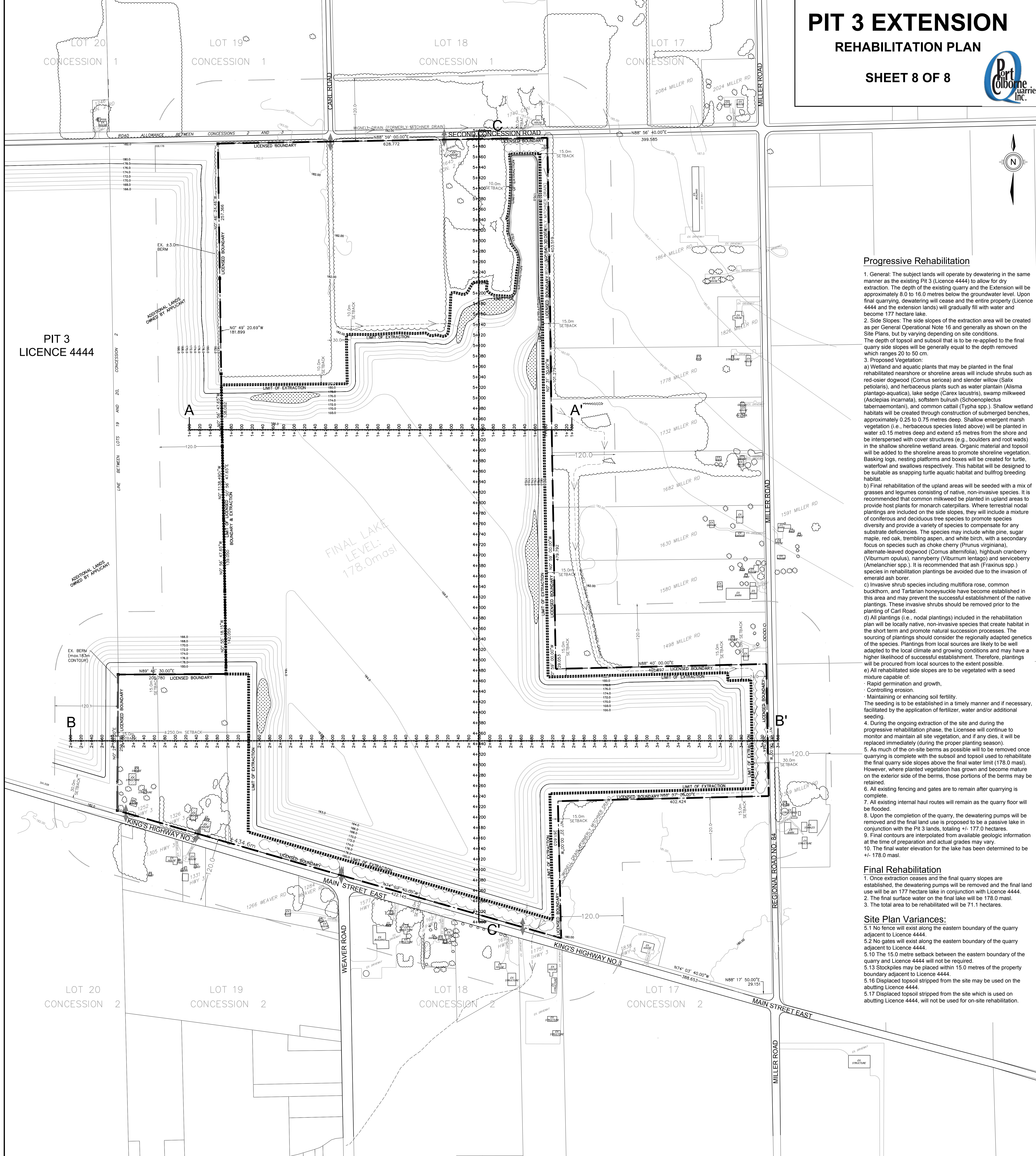
PROJECT MGR:
D.S.

APPROVED BY:

SHEET TITLE
REHABILITATION PLAN

SHEET NUMBER
8 of 8

ISSUE



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Signature Page

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