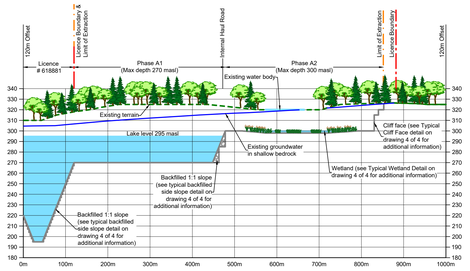
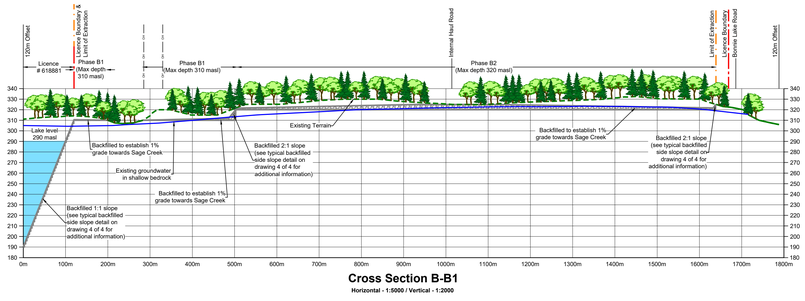


Cross Section A-A1

Horizontal - 1:5000 / Vertical - 1:2000



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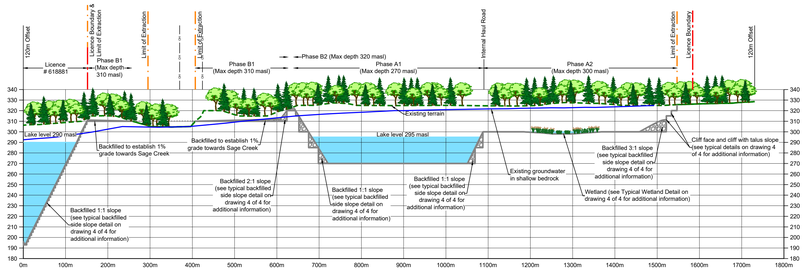
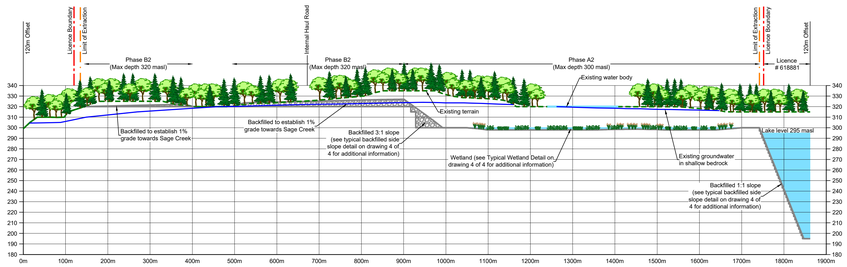


Cross Section C-C1

Horizontal - 1:5000 / Vertical - 1:2000

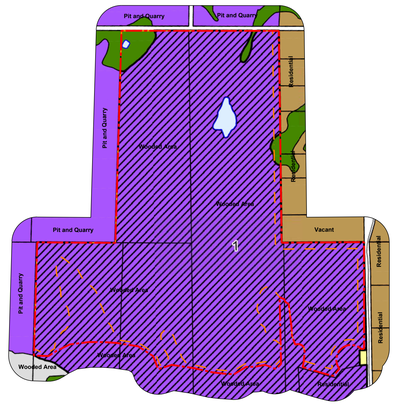


Cross Section D-D1

Horizontal - 1:5000 / Vertical - 1:2000

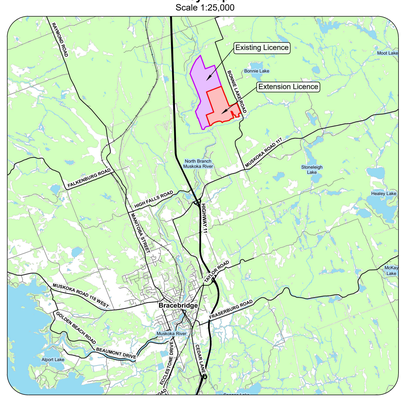
Existing Zoning and Land Uses

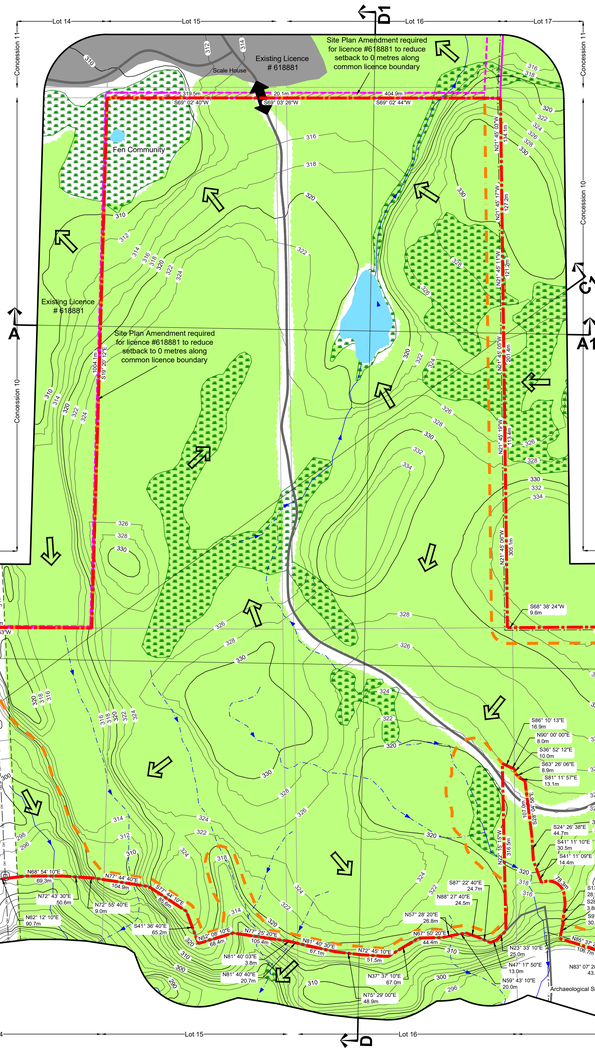
Scale 1:10,000



Key Map

Scale 1:25,000





A. General

1. This site plan is prepared under the Aggregate Resources Act (ARA) for a Class 'A' Licence, Category 1 & 2.
2. Area Calculations:
   a. Licence Area 160.3 hectares

B. References

1. Contours were obtained from Ontario GeoHub (Land Information Ontario) and are displayed in two metre intervals. Elevations shown are in metres above sea level (masl).
2. Topographic information was obtained from numerous sources including Ontario GeoHub, Google Earth Pro aerial photography captured on October 8, 2019 and field investigations for technical reports.
3. All topographic features and structures are shown to scale in Universal Transverse Mercator (UTM) with North American Datum 1983 (NAD83), Zone 17 (metre), Central Meridian 81 degrees west coordinate system.
4. The licence boundary was established using Lot & Concession data from Ontario GeoHub, Registered Plan of Surveys 35R-15640, 35R-22033, 35R-22850, 35R-23040 and a Plan of Survey by T.A. Bunker Surveying Ltd. completed January 24, 2020.
5. Existing zoning on and within 120 metres of the licence is from Town of Bracebridge Zoning By-law 2016-088, Schedule C - Macaulay Ward, last updated in 2016. The site is currently zoned Extractive Industrial Quarry - Exception One (M3Q-1) and Environmental Protection One - Wetland (EPW1).
6. Land use information and structures identified on or within 120 metres of the licence boundary was determined using Google Earth Pro aerial photography captured on October 8, 2019.

C. Drainage

1. Surface drainage on and within 120 metres of the licence boundary is by overland flow in the directions shown by arrows on the plan view, or by infiltration.

D. Groundwater

1. Based on available water level data, the water table elevation on site ranges from 285 masl in the southwest corner to 325 masl in the northeast corner. The existing groundwater in shallow bedrock elevations are shown in each cross section on this drawing.

E. Site Access and Fencing

1. Two site accesses exist on-site. The first access is on Bonnie Lake Road and the second access is on the north common boundary with adjacent licence #618881 as shown on the plan view. The site access on Bonnie Lake Road is gated.
2. Post and wire fencing (unless noted otherwise) exists in the locations shown on the plan view.

F. Aggregate Related Site Features

1. A haul road used to access licence #618881 exists in the location shown on the plan view. There are no additional existing aggregate operations or features on site such as processing, stockpiles, scrap, fuel storage, berms or excavation faces.

G. Cross Sections

1. As shown on this drawing.
2. Cross section locations are identified on the plan view for each drawing.

H. Technical Reports - References

1. Blast Impact Analysis, Proposed Childs Pit and Quarry Expansion, Explotech Engineering Ltd, May 27, 2020.
2. Level 1 and Level 2 Hydrogeological and Hydrological Assessments in Support of Aggregate Resources Act Applications for the Childs Pit and Quarry Extension, Golder Associates Ltd., June 2020.
3. Natural Environment Report - Level 1 and 2 Assessment, Childs Pit and Quarry, RiverStone Environmental Solutions Inc., June 2020.
4. Noise Impact Assessment, Childs Pit and Quarry Extension, Howe Gastmeier Chapnik (HGC) Engineering Limited, June 2020.
5. Stage 1 Archaeological Assessment of the Childs Pit and Quarry Expansion, Concession 9 Part Lots 14-16 & Concession 10 Lots 15-16, Kinickinick Heritage Consulting, September 15, 2015.
6. Stage 2 Archaeological Assessment of the Childs Pit and Quarry Expansion, Concession 9 Part Lots 14-16 & Concession 10 Lots 15-16, Kinickinick Heritage Consulting, September 15, 2015.
7. Stage 1 and 2 Archaeological Assessment for Proposed Child's Pit & Quarry Extension, Concession 9 Part Lot 17, Kinickinick Heritage Consulting and Cameron Heritage Consulting, December 18, 2020.
8. Traffic Review, Childs Pit and Quarry Extension, Tatham Engineering, June 2020.

Legal Description

Lots 15 & 16, Concession 10 and Part of Lots 14-17, Concession 9
Road Allowance Between Lots 15 & 16, Concession 10
Part of Road Allowance Between Lots 15 & 16, Concession 9
Town of Bracebridge (Geographic Township of Macaulay), District of Muskoka

Legend - Plan View

- Licence Boundary
- Limit of Extraction
- Contours with Elevation — Metres above sea level (MASL)
- Public Road
- Internal Haul Road
- Fence — 1.2m post & wire fence unless otherwise noted
- Watercourse — Permanent - solid; Intermittent - dash with dot
- Disturbed Area
- Waterbody
- Wooded Area
- Wetland (Non PSW) — Provided by RiverStone June 2020
- 120m Offset From Licence Boundary
- Existing Licence — Existing Licenced Boundary - solid line; Existing Limit of Extraction - dash line
- Lots and Concessions
- Hydro Corridor
- Entrance / Exit
- Gate
- Direction of Surface Drainage
- Building/Structure
- Cross Sections (A1)

Legend - Cross Sections

- Licence Boundary
- Limit of Extraction
- Existing Grade - Removed / Altered
- Existing Grade - Undisturbed
- Existing Groundwater in Shallow Bedrock
- Quarry Floor / Face
- Backfilled
- Lake or Pond
- Hydro Corridor

Site Plan Amendments

No.	Date	Description	By

Site Plan Revisions (Pre-Licencing)

No.	Date	Description	By
1	November 2020	Added Archaeological Site BgGt-4 and Archaeological Potential areas to plan view. Updated note H.6 and added notes H.5 and H.7. Adjusted limit of extraction in southeast corner to remain outside of Archaeological Site.	C.P.
2	December 2020	Updated notes A.2.a and H.7. Adjusted licence boundary and limit of extraction in southeast corner to remain outside of archaeological areas.	C.P.

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
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MNRF Approval Stamp

MHBC Stamp

Applicant

Fowler Construction Company Limited
1206 Rosewarne Drive
Bracebridge, Ontario
P1L 1T9

Project

Child's Pit & Quarry Extension

1235 Bonnie Lake Road, Bracebridge, Ontario

MNRF Licence Reference No.

Pre-approval review:

Plan Scale: 1:4000 (Arch E)

0 125 250 Meters

Date June 2020
Drawn By C.P.
Checked By B.Z.
File No. 1515C

File Name

Existing Features & Cross Sections

Drawing No.

1 of 4

File Path N:\Brian\1515C - Fowler - Childs Quarry\Drawings\Site Plan\1515C - Site Plan.dwg

A. General

1. Area Calculations:
   - a. Licence Area — 160.3 hectares
   - b. Limit of Extraction — 142.3 hectares
     - b.a. To be extracted — 128.7 hectares
     - b.b. Undisturbed — 13.6 hectares
2. The maximum annual tonnage is 2,000,000.
3. A scale and scale house may be constructed on site and may be located within 90m of the licence boundary at the existing or relocated entrance/exit on Bonnie Lake Road (see Section P. Variations from Provincial Standards).
4. Based on available water level data, the water table elevation on-site ranges from 285 masl in the southwest corner to 325 masl in the northeast corner. The existing groundwater in shallow bedrock elevations are shown in each cross section on drawing 1 of 4.

B. Hours of Operation

1. Hours of operation are Monday to Sunday, 24 hours per day, excluding statutory holidays (see noise control requirements on drawing 3 of 4 for additional detail and restrictions on hours and location of equipment).
2. Blasting is permitted Monday to Friday between 8:00am to 6:00pm excluding statutory holidays. Blasting will typically occur once per week if the operation produces the maximum annual tonnage, however, blasting will typically be less frequent.

C. Site Access and Fencing

1. A gated entrance/exit on Bonnie Lake Road provides access to this licence and adjacent licence #618881. The gate shall be kept closed during hours of non-operation and maintained throughout the life of this licence and licence #618881.
2. The entrance/exit shall be shifted 75 metres south prior to truck volumes exceeding 35 trucks per hour during day time hours (7:00am to 7:00pm) or 12 trucks per hour during night-time hours (7:00pm to 7:00am). Prior to relocating the entrance/exit, the licensee shall obtain an entrance permit from the District of Muskoka.
3. Existing licence #618881 shall be accessed through the common licence boundary with this licence. The entrance/exit for licence #618881 (as shown on the plan view) may differ to coincide with extraction operations in licence #618881 (see Section P. Variations from Provincial Standards).
4. The east and south boundary of the licence shall be fenced with post and wire fencing, at least 1.2 metres in height, within 12 months of the licence being issued.
5. Fencing shall not be required where the licence abuts existing licence #618881 (see Section P. Variations from Provincial Standards) and will be delineated with marker posts every 30 metres.
6. There are two locations in the southeast corner where the fencing will be located outside of the licence boundary (see plan view and Section P. Variations from Provincial Standards). The licence boundary shall be delineated with marker posts every 30 metres in these two locations.
7. All fencing shall be maintained for the life of the extraction operation.

D. Drainage and Siltation Control

1. Drainage of undisturbed areas will continue in the directions shown on drawing 1 of 4.
2. Prior to site preparation, an Erosion and Sedimentation Control (ESC) Plan will be prepared and implemented.

E. Site Preparation

1. Prior to site preparation, a Spills Contingency Plan shall be prepared and implemented.
2. Each Phase shall be fenced with specialized reptile fencing (see Reptile Fencing Detail on this drawing) as extraction progresses (see Natural Environment notes 's', 't' and 'ab' under Section O. Report Recommendations).
3. Removal of trees within the limit of extraction shall only occur between October 15th and April 15th.
4. Timber resources will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Stumps and brush cleared will be burned (with applicable permits), used for aquatic habitat enhancement or mulched for use in progressive rehabilitation.
5. Prior to commencing extraction activities in Phase A, removal of wetlands within the proposed extraction area shall occur in two stages to minimize impacts on species using the features.
   - a. Stage 1 shall occur in the month of July and involves the draining of the wetland feature only (i.e., mechanical clearing of vegetation, grubbing, stripping etc. should not occur until Stage 2). Draining the wetland first will remove the function of this community for turtles at a time that allows for turtles within the wetland to move to alternative habitats prior to the fall hibernation season. Every effort should be made to collect and relocate any turtles found in the wetland feature, as some turtles may choose to remain.
   - b. Stage 2 involves the mechanical clearing of vegetation, grubbing, stripping, etc. and shall commence after the wetland has been maintained in a dry state for one hibernation season (one winter) and shall begin no earlier than June of the following year after completing Stage 1.
6. Wetland removal within the limit of extraction shall not occur during the turtle hibernation season between October 1st and May 15th.
7. Prior to removing any portion of the fen community in the northwest corner on drawing 1 of 4 (including alterations to the water balance in that community), a new 4.2 ha wetland shall be created adjacent to the Muskoka River (see Proposed Offsite Wetland Detail on this drawing for proposed location).
8. Baseline monitoring in Sage Creek and its tributaries must commence three (3) years prior to site clearing in Phase B.
9. Prior to extraction commencing in Phase B, a Brook Trout monitoring plan shall be developed for Sage Creek. The plan should include electrofishing surveys with a standard effort to assess population stability as well as fall spawning surveys. Details of this plan should be prepared by a qualified professional at a later date once extraction has approached the Sage Creek and Tributary catchment areas.
10. Topsoil and overburden shall be stripped and stored separately wherever feasible (see Section P. Variations from Provincial Standards).
11. Topsoil and overburden shall be placed in noise attenuation berms or used immediately for progressive rehabilitation in this licence or adjacent licence #618881 (see Section P. Variations from Provincial Standards).
12. Excess topsoil and overburden not required for immediate use in berms or rehabilitation may be temporarily stockpiled on the pit and quarry floor. Topsoil and overburden stockpiles shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts existing licence #618881 - see Section P. Variations from Provincial Standards) and 90 metres from a property with a residential use.
13. Temporary topsoil and overburden stockpiles which remain for more than one year shall have their slopes vegetated to control erosion. Seeding shall not be required if these stockpiles have vegetated naturally in the first year.

F. Berms and Screening

1. Noise attenuation berms shall be constructed to the height specified in the locations shown on the plan view (see Noise note 'b' under Section O. Report Recommendations for details regarding timing of berm construction).
2. Berm side slopes shall not exceed 2:1.
3. Berms shall not be located within three metres of the licence boundary.
4. Berms shall be vegetated to control erosion.
5. Once required, noise attenuation berms shall be maintained throughout the operational life of the pit and quarry and may remain as part of the rehabilitated landform.
6. Existing vegetation within the setbacks shall be maintained except where the relocated entrance and noise attenuation berms are required.

G. Site Dewatering

1. The licensee shall operate in accordance with Environmental Compliance Approval (ECA) and Permit to Take Water (PTTW).

H. Extraction Sequence

1. Phase A1
   - a. Prepare Phase A1 for extraction and ensure all requirements in Sections 'C' through 'G' of this drawing are met.
   - b. Strip Phase A1 and use material for berm construction or store the material for future rehabilitation and berm construction.
   - c. Extract Phase A1 by commencing at the common boundary with existing licence #618881 and proceeding in a southerly and/or easterly direction.
   - d. Undertake attenuation study for blasting with the first 12 months of operation (see Blasting note "a" under Section O. Report Recommendations for additional information).
   - e. Phase A1 may be extracted to a maximum depth of 270 masl.
   - f. Prepare Phase A2 for extraction and ensure all requirements in Sections 'C' through 'G' of this drawing are met.
2. Phase A2
   - a. Strip Phase A2 and use the material for progressive rehabilitation in Phase A1 and/or existing licence #618881 or to construct any required berms.
   - b. Extract Phase A2 in a southerly direction from the common licence boundary with existing licence #618881 and/or easterly from Phase A1.
   - c. Phase A2 may be extracted to a maximum depth of 300 masl. In certain areas, selective blasting and excavation may occur to an elevation of 298 masl to create wetland habitat for rehabilitation purposes (see drawing 4 of 4).
   - d. Prepare Phase B1 for extraction and ensure all requirements in Sections 'C' through 'G' of this drawing are met.
3. Phase B1
   - a. Strip Phase B1 and use the material for progressive rehabilitation in this licence and/or existing licence #618881.
   - b. On the west side of the hydro corridor, extract Phase B1 by commencing at the common boundary with existing licence #618881 and proceeding in an easterly direction before heading in a southerly direction.
   - c. In and east of the hydro corridor, extract Phase B1 by commencing at the common boundary with existing licence #618881 and proceeding in a southerly direction.
   - d. Phase B1 may be extracted to a maximum depth of 310 masl. There are portions of Phase B1 which include elevations lower than 310 masl and extraction shall not occur in these areas, however, regrading is permitted to establish the rehabilitated landform.
   - e. At all times, access to the hydro corridor shall be maintained. There are no hydro towers within the limit of extraction.
   - f. Prepare Phase B2 for extraction and ensure all requirements in Sections 'C' through 'G' of this drawing are met.
4. Phase B2
   - a. Strip Phase B2 and use the material for progressive rehabilitation in this licence and/or existing licence #618881.
   - b. Extract Phase B2 in a southerly direction from Phases A1 and A2 before proceeding in an easterly direction.
   - c. Phase B2 may be extracted to a maximum depth of 320 masl. There are portions of Phase B2 which include elevations lower than 320 masl and extraction shall not occur in these areas, however, regrading is permitted to establish the rehabilitated landform.

I. Extraction Details

1. All trees within five metres of the excavation face inside the limit of extraction shall be removed.
2. Lifts will typically be 15 metres in height. The maximum height of a lift shall be 20 metres.
3. The maximum depth of material in Phase A1 is approximately 60 metres and shall be extracted in four lifts.
4. The maximum depth of material in Phase A2 is approximately 35 metres and shall be extracted in two lifts.
5. The maximum depth of material in Phase B1 is approximately 14 metres and shall be extracted in one lift.
6. The maximum depth of material in Phase B2 is approximately 15 metres and shall be extracted in one lift.
7. Extraction shall be permitted in two Phases simultaneously to allow for transition between Phases.
8. Extraction may occur concurrently in Phases A1 and A2.
9. Extraction shall occur concurrently with existing licence #618881.
10. Aggregate stockpiles (including recyclable material) shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts existing licence #618881 - see Section P. Variations from Provincial Standards) and 90 metres from a property with a residential use.
11. Internal haul road locations will vary as extraction progresses and will be located on the pit and quarry floor.

J. Equipment and Processing

1. Equipment used on-site may include but shall not be limited to drills, scrapers, excavators, front-end loaders, feed bin, crushing plant, screening plant, wash plant, conveyors and haul trucks.
2. All primary processing equipment will be portable and move with the extraction operation.
3. If required, an ECA will be obtained for processing equipment to be used on-site.
4. Aggregate may be processed at the main processing plant (which includes a wash plant) located on existing licence #618881 and/or in the alternate location in the southern extent of Phase A1 as shown on the plan view (see Noise note "c" under Section O. Report Recommendations and drawing 3 of 4 for additional information).
5. Processing shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts existing licence #618881 - see Section P. Variations from Provincial Standards) and 90 metres from a property with a residential use. See noise mitigation measures on drawing 3 of 4 for additional restrictions on the location of processing equipment.
6. Material from this licence or existing licence # 618881 shall be processed in either licence.

K. Wash Pond and Sump

1. Wash ponds and a sump may be permitted on the quarry floor in accordance with ECA and PTTW requirements. The pond and sump will move throughout the life of the operation as extraction progresses horizontally and vertically.

L. Fuel Storage

1. Fuel storage tanks may be installed in close proximity to the main processing plant and shall be maintained in accordance with the Liquid Fuels Handling Code.
2. Fuel trucks may be used to transfer fuel to on-site equipment in accordance with the Liquid Fuels Handling Code.
3. Prior to site preparation, a Spills Contingency Plan shall be prepared and implemented.

M. Dust

1. Dust shall be mitigated on-site.
2. Water or another provincially approved dust suppressant shall be applied to internal haul roads as often as required to mitigate dust.
3. Processing equipment will be equipped with dust suppressing or collection devices, where the equipment creates dust and is being operated within 300 metres of a sensitive receptor.

N. Scrap and Recycling

1. Scrap may be stored on-site and shall be removed on an on-going basis.
2. Scrap shall not be stored within 30 metres of any body of water or the licence boundary and shall be kept in close proximity to the main processing plant in this licence or existing licence #618881 (see Section P. Variations from Provincial Standards).
3. Recycling of asphalt and concrete shall be permitted on-site.
4. Recyclable asphalt materials shall not be stockpiled within:
   - a. 30 metres of any waterbody or man-made pond; or
   - b. 2 metres of the surface of the established groundwater table
5. Recyclable material shall be kept in close proximity to the main processing plant in this licence or existing licence #618881.
6. Any rebar and other structural material shall be removed from the recycled material during processing and placed in a designated scrap pile on site and shall be removed on an on-going basis.
7. Recycled aggregate shall be removed on an on-going basis.
8. Once the site is depleted, no further importation of recyclable material shall be permitted.
9. Once final rehabilitation has been completed and approved in accordance with the site plan, all recycling operations shall cease.

O. Report Recommendations

1. Noise
   - a. See drawing 3 of 4 for noise control requirements by phase and lift.
   - b. Operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view.
   - c. The main processing plant can operate within the alternative area shown on the plan view within Phase A1 when the plant is located on the floor of the second, third, or fourth lift (at 300 masl or lower).
   - d. All mobile construction used for site preparation and rehabilitation on site shall produce sound levels which comply with the Ministry of Environment, Conservation and Parks (MECP) Guideline NPC-115.
   - e. It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures may be permitted provided that the revision still meets MECP guidelines as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MECP.
2. Traffic
   - a. Based on noise requirements, operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view.
   - b. The new access shall be constructed to satisfy District requirements with all applicable permits.
   - c. Prior to extraction exceeding 1,000,000 tonnes per year, an eastbound left turn lane shall be constructed to provide 30 metres of storage on Muskoka Road 117, satisfying District requirements with all applicable permits.
3. Blasting
   - a. An attenuation study shall be undertaken by an independent blasting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. Blast designs and parameters implemented during the study period shall be representative of typical production blasts anticipated for the quarry. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
   - b. All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptors adjacent to the site, or closer, with a minimum of two (2) instruments - one installed in front of the blast and one installed behind the blast.
   - c. Blasts shall be designed to maintain vibrations below 13mm/s at the location of the closest identified active spawning bed as per the Department of Fisheries and Oceans Canada (DFO) guidelines. When blasting during active spawning season, a minimum of one supplemental vibration monitor shall be installed on the shoreline adjacent to the closest spawning bed to confirm the vibration levels.
   - d. The guideline limits for vibration and water overpressure shall adhere to standards as outlined in the publications Guidelines For the Use of Explosives In or Near Canadian Fisheries Waters (1998) or any such document, regulation or guideline which supersedes this standard.
   - e. The guideline limits for ground vibration and air overpressure shall adhere to standards as outlined in the Model Municipal Noise Control By-law publication NPC 119 (1978) or any such document, regulation or guideline which supersedes this standard.
   - f. In the event of an exceedance of NPC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and protocol shall be reviewed prior to any subsequent blasts and revised accordingly in order to return the operations to compliant levels.
   - g. Blasts shall be designed to maintain vibrations at the transmission towers in the Hydro One Corridor below 50mm/s or any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the towers may exceed 35mm/s, the closest tower shall be monitored for ground vibration.
   - h. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the face will be away from structures as much as possible.
   - i. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to maintain compliance with current applicable guidelines and regulations.
   - j. Detailed blast records shall be maintained in accordance with current industry best practices.
4. Hydrology and Hydrogeology
   - a. Prior to the start of water taking and/or water discharge, a PTTW and an ECA for Industrial Sewage Work shall be obtained and the licensee shall operate in compliance with these approval instruments, including the associated monitoring and reporting. The proposed groundwater and surface water monitoring programs in Sections 12.1 and 12.2 of the Level 1 and Level 2 Hydrogeological and Hydrological Assessment report shall be considered for inclusion in these instruments.
   - b. If a water well complaint is received by the licensee the following actions shall be taken:
     - b.a. A representative of the licensee or their agent will visit the site to make an initial assessment within three days of receiving the complaint. This will include a well/system inspection (where accessible) by a licensed pump maintenance contractor to determine the groundwater level, pump depth setting and condition of the well system. The available groundwater level data from the existing on-site monitoring well network will be reviewed by a licensed professional hydrogeologist/engineer to develop an estimate of the potential groundwater level drawdown at the potentially affected well that is the subject of the complaint response.
     - b.b. The information obtained by the contractor from the well/well system inspection and the review of the available groundwater level data will be used by the professional hydrogeologist/engineer to prepare an opinion on the likelihood that the well interference complaint is attributed to quarry dewatering.
     - b.c. If it is concluded that the well interference complaint is most likely attributable to quarry dewatering activities at the site and the water supply is at risk, then a temporary supply shall immediately be arranged and a water supply restoration program shall be implemented. The decision as to whether to proceed with the water supply restoration program will be based on a review of groundwater level information by the professional hydrogeologist/engineer and well construction and performance information from the licensed pump maintenance contractor as noted above.
     - b.d. The water supply restoration program consists of the following measures which are applicable for local water supply wells where the operation of the water supply wells may have been compromised by quarry excavation or, based on the analysis of all monitoring data, are assessed to likely be compromised in the near future:
       - b.d.a. Well System Rehabilitation - The well system could be rehabilitated by replacement or lowering of pumps, pump lines flushing, well deepening, etc. to improve performance. Where water is unavailable in the shallow bedrock and a well in deeper bedrock is being considered, a water sample(s) would be taken from the existing well for chemical, physical and bacteriological analyses prior to deepening the well to provide a basis of comparison. If the groundwater in the deeper bedrock is found to be of acceptable quality by the homeowner, either directly from the well or with treatment, it will be developed as the domestic supply. Any modifications to a well would be conducted in accordance with *Ontario Regulation 903*.
       - b.d.b. Well Replacement or Additional Well(s) - The well could be replaced or augmented with a new well(s) that could be located further from the quarry excavation. The feasibility of well replacement would be based on a test drilling program that could include more than one test well. Where water is unavailable in the shallow bedrock and a well in deeper bedrock (compared to the original water supply well) is being considered, a water sample(s) would be taken from the existing well for chemical, physical and bacteriological analyses to provide a basis of comparison. If the groundwater in the deeper bedrock is found to be of acceptable quality by the homeowner, either directly from the well or with treatment, it will be developed as the domestic supply. Construction of a new well(s) would be conducted in accordance with *Ontario Regulation 903*.
       - b.d.c. Trickle Wells and Storage - Where feasible, the existing well(s) could be converted to a low yield pumping system, or installation of an additional well(s), along with non-pressurized water storage to augment water supplies, if required.
       - b.d.d. Water Treatment Considerations - Appropriate water treatment will be incorporated into any restored water supply as discussed above.
     - b.e. The licensee shall be responsible for all costs associated with the water supply restoration program. Water supply restoration activities undertaken to address an adverse effect would be done so in consultation with the affected property owner in order to ensure a mutually agreeable solution is implemented.
5. Natural Environment

Water Quality and Quantity

- a. The ECA (see Section 9.3.2 of the Level 1 and Level 2 Hydrogeological and Hydrological Assessment Report) be designed to protect the quality and quantity of water discharged to Muskoka River North (MR-North) to protect fish and fish habitat.
- b. As shown on the plan view, the identified tributaries to Sage Creek and the associated wetlands and the buffer/catchment shall be excluded from the extraction area. The buffer/catchment area should be well-marked prior to commencement of extraction in Phase B and the buffer should remain in its natural state.
- c. Quarry discharge outlets, stormwater management ponds, and/or mitigation measures must be designed to maintain the chemical and thermal water quality properties supporting Brook Trout spawning and summer refugia habitat identified in Sage Creek and its tributaries through the Brook Trout Monitoring Program. The design and monitoring of these elements will be approved through a PTTW or an ECA for Industrial Sewage Works from MECP.
- d. Appropriate sediment and erosion control measures should be used to prevent the erosion of unstable soils and the movement of sediment into watercourses. These measures should be in place prior to soil exposure and should be maintained whenever exposed soils are present.
- e. All stockpiled aggregates should be stored in a location that will prevent the movement of sediment laden runoff into the buffers, watercourses, and wetlands.
- f. All stockpiled topsoil/overburden should be stabilized as quickly as possible to minimize the potential for runoff (see note E.13 on this drawing).
- g. A qualified person should be retained to certify the adequacy of sedimentation and erosion controls for all Phases of pit and quarrying, and to inspect and ensure necessary repairs following winter thaws, spring freshets, and heavy rainfall events.
- h. The surface/ground water monitoring program be implemented as per the *Level 1 and 2 Hydrogeological and Hydrological Assessment Report, Golder 2020*.
- i. Vegetated catchment areas/buffers surrounding tributaries and Sage Creek shall be protected from rock shatter and/or physical disruption through proper blast design, blast orientation, and monitoring.

Floodback and Post-Rehabilitation Conditions

- j. The final design of the quarry lakes shall provide for overflow channels directed towards Sage Creek and the MR-North tributary. The final design of the channels should be developed with the assistance of a qualified professional and should provide end uses for fish and wildlife.
- k. Analysis of monitoring data shall be undertaken prior to cessation of extraction to establish ecologically based flow requirements for the MR-North tributary between the limit of extraction and the North Branch of the Muskoka River to ensure adequate flow during the flood back period.

Fish and Fish Habitat

- l. Baseflow shall be maintained to the downstream portions of the MR-North tributary located downstream of the existing licence.
- m. The DFO shall be notified immediately if a situation occurs or if there is imminent danger of an occurrence that could cause serious harm to fish. If there is an occurrence, corrective measures shall be implemented.
- n. Prior to extraction commencing in Phase B, a Brook Trout monitoring plan shall be developed for Sage Creek. The plan should include electrofishing surveys with a standard effort to assess population stability as well as fall spawning surveys. Details of this plan should be prepared by a qualified professional once extraction has approached the Sage Creek and tributary catchment areas.
- o. Updated baseline monitoring in Sage Creek and its tributaries must commence three (3) years prior to site clearing in Phase B. The baseline monitoring program is to be comprised of three (3) years of fish population monitoring (i.e., spawning surveys, fish population surveys) and a minimum of three longitudinal temperature and (electrical) conductivity surveys along Sage Creek.
- p. Based on the results of the baseline monitoring program, an appropriate long-term ecological monitoring program is to be developed for the purpose of demonstrating that no significant negative effects on fish habitat take place during the operational period of the quarry.
- q. Blast designs should be in accordance with Fisheries and Oceans Canada Guidelines for the use of explosives in or near Canadian fisheries waters provided in Appendix 9.
- r. A qualified professional should be retained to prepare a blasting plan that is compliant with DFO regulations.

Habitat of Endangered and Threatened Species

- s. Specialized barrier fencing for reptiles must be erected at the limit of extraction for each Phase. This fencing is to be consistent with provincial guidance documents.
- t. The specialized barrier fencing for reptiles is to be installed to match the proposed phasing. Clearing and stripping should be completed for a given phase followed by the installation of the barrier fencing around the new perimeter. This fencing should be removed and re-installed as extraction progresses to match the proposed phasing.
- u. Removal of trees within the extraction limit should only occur between October 15th and April 15th to avoid the active season for Endangered Bat species.
- v. Removal of vegetation should occur in a phased manner that matches the phasing plan.

Significant Wildlife Habitat

- w. A wetland community of no less than 14.9 hectares must be provided on the Rehabilitation Plan (see rehabilitation recommendations on this drawing and the plan view on drawing 4 of 4).
- x. Water depths within a portion of the created wetland should be variable and include deep pockets of sufficient depth to prevent freezing completely to the bottom (these areas will have the potential to function as turtle hibernation habitat). Substrates within these deep pockets should be primarily comprised of muck and other fine sediments.
- y. Wetland removal within the proposed extraction area must not occur during the turtle hibernation season (October 1st to May 15th).
- z. Prior to commencing extraction activities in Phase A, removal of wetlands within the proposed extraction area should occur in two stages to minimize impacts on species using the features. Stage 1 is to occur in July and involves the draining of the wetland feature only (i.e., mechanical clearing of vegetation, grubbing, stripping etc. should not occur until Stage 2). Draining the wetland first will remove the function of this community for turtles at a time that allows for turtles within the wetland to move to alternative habitats prior to the fall hibernation season. The wetland must be maintained in a dry state for one hibernation season (one winter) prior to proceeding to Stage 2. Stage 2 should begin no earlier than June of the year following the completion of Stage 1.
- aa. Following the Stage 1 drawdown described above, every effort should be made to collect and relocate any turtles found in the wetland feature, as some turtles may choose to remain.
- ab. The specialized barrier fencing for reptiles is to be installed to match the proposed Phasing. Clearing and stripping should be completed for a given Phase followed by the installation of the barrier fencing around the new perimeter. This fencing should be removed and re-installed as extraction progresses to match the proposed Phasing.
- ac. Tree removal within the licence should proceed in a phased manner to minimize the extent of vegetation removal to the extent possible.
- ad. Removal of trees within the extraction limit should only occur between October 15th and April 15th.

Other Natural Features and Functions

- ae. As shown on the plan view, the identified tributaries to Sage Creek and the associated wetlands and the buffer/catchment shall be excluded from the extraction area. The buffer/catchment area should be well-marked prior to commencement of extraction in Phase B and the buffer should remain in its natural state. Generally, this buffer will be 30 metres with the exception of the area adjacent to the existing internal haul road. Barriers delineating the features and buffer should be installed. Should extraction activities require the relocation of the existing road, the section of the road located within the buffer setback shall be restored to a natural state.
- af. Buffers should be protected from rock shatter and/or physical disruption through proper blast design, blast orientation, and monitoring.

Rehabilitation - Offsite Wetland

- ag. Prior to removing any portion of the fen community in the northwest corner (see drawing 1 of 4), including alterations to the water balance in that community, a new 4.2 hectare wetland shall be created adjacent to the Muskoka River (see Proposed Offsite Wetland Detail on this drawing for proposed location).
- ah. Approximately 50% of the wetland shall have a maximum depth of 2.5 metres (wet depth) during average water levels and contain a minimum sustained water depth of 1.0 metre during annual low water conditions.
- ai. Slopes surrounding the wetland shall vary to permit access by a variety of species and shall not exceed 3:1.
- aj. Basking structures constructed from natural features (e.g., rock piles, logs, rootwads, etc.) shall be placed in the wetland and along its edges. The diameter of logs should vary to permit use by small and large turtles.
- ak. Where used, logs and rootballs should be placed at a variety of angles and water depths. The majority of these features shall extend from the wetland edge into the open water areas. Only a small number of logs or rootballs shall be placed parallel to the shoreline.
- al. Where possible, logs features that are installed, should contain limbs. Where available, full trees (canopy and root ball) should be used as basking structures.
- am. Substrates within the wetland should be dominated by 'muck' organics, especially in the deeper sections of the wetland.
- an. The wetland shall be planted with a variety of aquatic and emergent vegetation. Where possible, species that will produce floating mats of vegetation should be prioritized. A list of suitable wetland vegetation is provided in Table 1 on drawing 4 of 4.

Rehabilitation - On Site Wetland

- ao. A wetland community of no less than 14.9 hectares be provided on the Rehabilitation Plan in Phase A2 (see drawing 4 of 4).
- ap. The edge of the created wetland should be variable.
- aq. Water depths within the wetland shall be variable; however, a minimum of 25% of the area shall be constructed to provide minimum water depths of 1 metre during low water conditions.
- ar. Slopes, substrates, and basking structures shall be included in the 14.9 hectare rehabilitation wetland (see Natural Environment notes 'ai' and 'an' under Section O. Report Recommendations on this drawing).

Rehabilitation - Terrestrial

- as. Terrestrial rehabilitation shall be established in the areas identified on drawing 4 of 4. The list of plant species for progressive rehabilitation is provided in Table 2 on drawing 4 of 4 to allow for naturalization that blends with the adjacent natural features buffers.
- at. Rehabilitation of the terrestrial portions of the quarry shall include the creation of cliff and talus slope along the eastern edge of the extraction area in Phase A2.
- au. Rehabilitation of Phase A2 shall include both wetland and terrestrial communities.
- av. Where possible, terrestrial communities within the Phase A2 shall be rehabilitated using fines and other organic material available on site to provide variations in the topography and therefore encourage growth of new plant life.
- aw. Where planting is to occur within the rehabilitation plan, terrestrial species outlined in Table 2 on drawing 4 of 4 should be used.
- ax. To permit wildlife to access both the restored terrestrial communities and wetlands located in Phase A, areas of no more than 3:1 slope should be included along the eastern boundary of the extraction limit as well as along the boundary between Phase A2 and Phase B2.

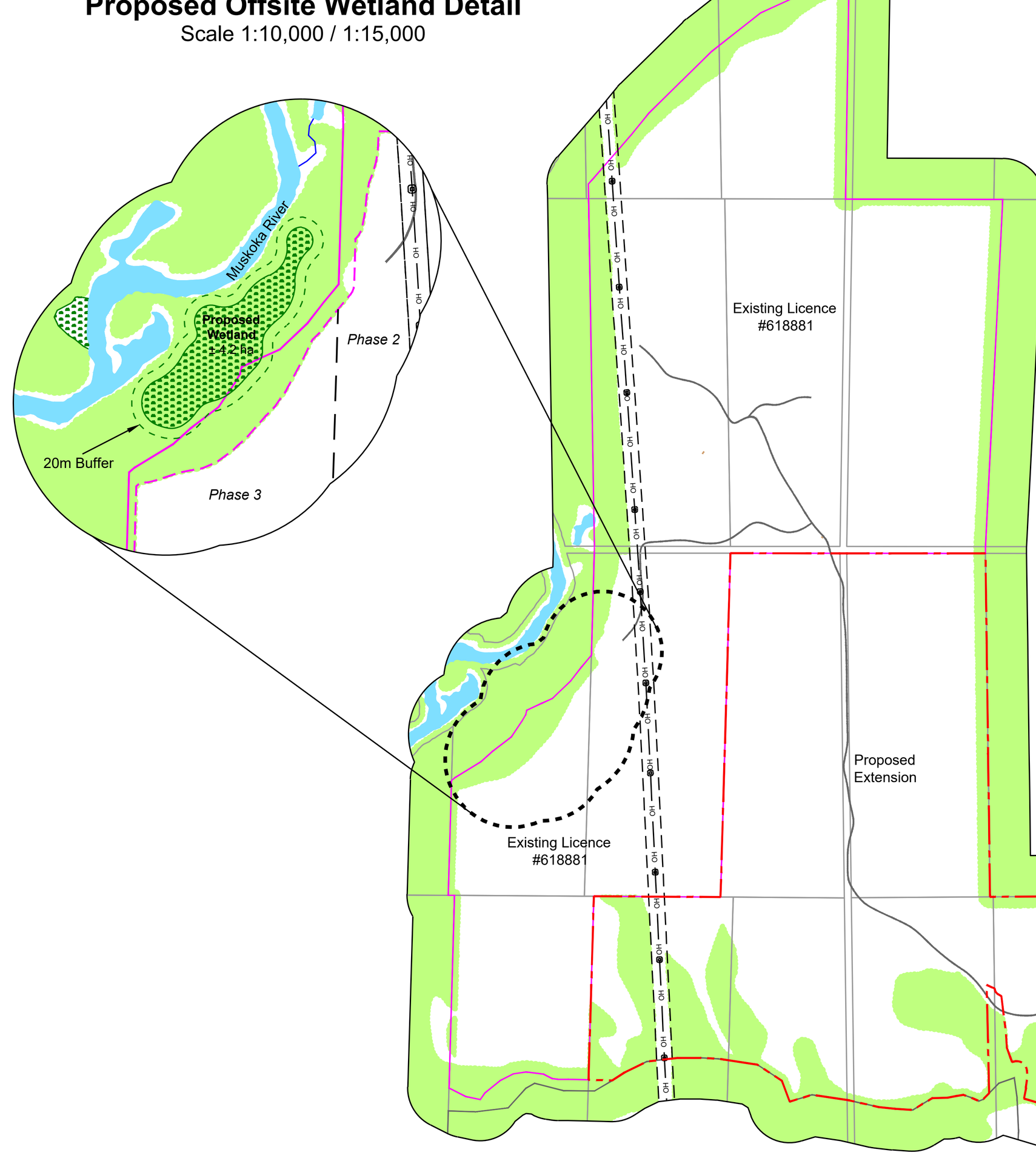
6. Archaeology
   - a. Should deeply buried archaeology remains be found during the course of site preparation and/or extraction related activities, the MHSTCI shall be notified.
   - b. In the event that human remains are encountered during construction or extraction activities associated with the development proposal, the licensee shall immediately contact both the MHSTCI and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services (MGCS).

P. Variations from Provincial Standards

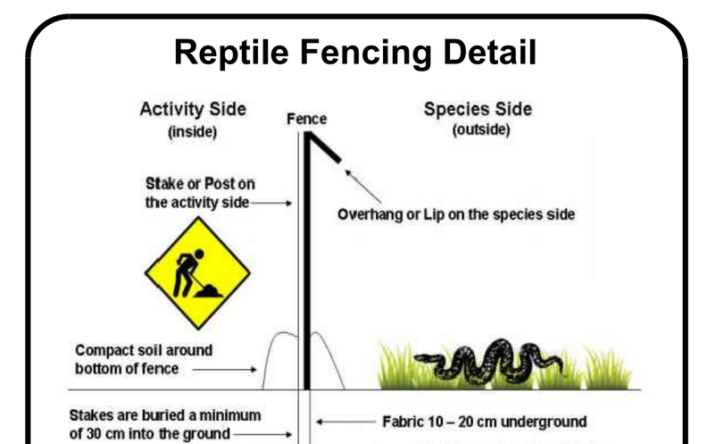
Provincial Standard	Variation	Rational
5.1	The common boundary with existing licence #618881 shall not be fenced. There are two locations in the southeast corner where fencing will be located outside of the licence boundary.	Unfenced portions of the licence boundary shall be demarcated with marker posts every 30 metres.
5.2	Gates will not be required where haul roads cross the common boundary with Licence #618881.	This will eliminate constraints to the movement of equipment between licences owned by the same licensee.
5.6	Depending on site conditions, topsoil and overburden may not be stored separately.	Wherever there are no distinguishable layers and sufficient thickness to allow separate handling, topsoil and overburden will not be stored separately.
5.9	Scrap may be stored within 30 metres of the common boundary with existing licence #618881 in close proximity to the main processing plant.	The adjacent licence #618881 is owned by the same licensee.
5.10	A 0 metre setback will be provided where the licence boundary abuts existing licence #618881. A 0 metre setback will be provided along a portion of the licence boundary in the southeast corner.	This will enable material to be extracted along the common boundary and for rehabilitation to transition between licences. A site plan amendment for existing licence #618881 is required. The land adjacent to the 0 metre setback in the southeast corner is owned by the licensee.
5.10.3	Portions of the extraction limit are within 30 metres of an intermittent and permanent watercourse for tributaries that flow to Sage Creek.	The extraction area is based on the setback recommended by the technical reports.
5.13	Aggregate, recycled aggregate, topsoil and overburden stockpiles as well as processing equipment may be located within 30 metres of the common boundary with existing licence #618881. A scale and scale house may be located within 90 metres of a residential use near the existing or relocated entrance/exit on Bonnie Lake Road or within 30 metres of the licence boundary.	The adjacent licence #618881 is owned by the same licensee. Locating the scale and scale house within 90 metres of a residential use (located on the east side of Bonnie Lake Road) or 30 metres within the licence boundary, will enable the licensee to maximize the material they can access on site.
5.16	Topsoil and/or overburden may be transferred between this licence and existing licence #618881.	This will allow stripped material from site preparation to be used for berm construction and/or progressive rehabilitation in other parts of this licence and the existing licence.
5.19	Side slopes in Phase A1 shall be backfilled to establish a 1:1 slope, consistent with the sloping approved for licence #618881. Portions of the quarry face shall remain vertical.	The 1:1 side slopes are to be consistent with the rehabilitation plan for existing licence #618881. Vertical faces will create a more diverse habitat and visually appealing rehabilitated landform.

Proposed Offsite Wetland Detail

Scale 1:10,000 / 1:15,000

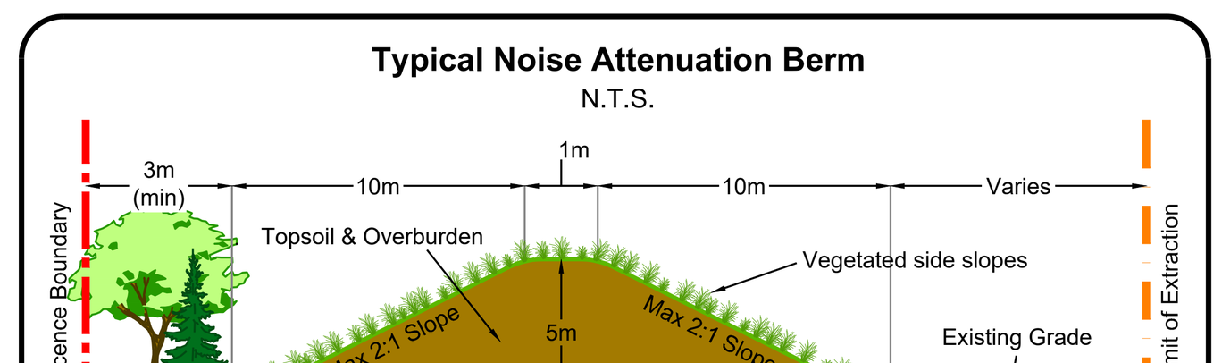


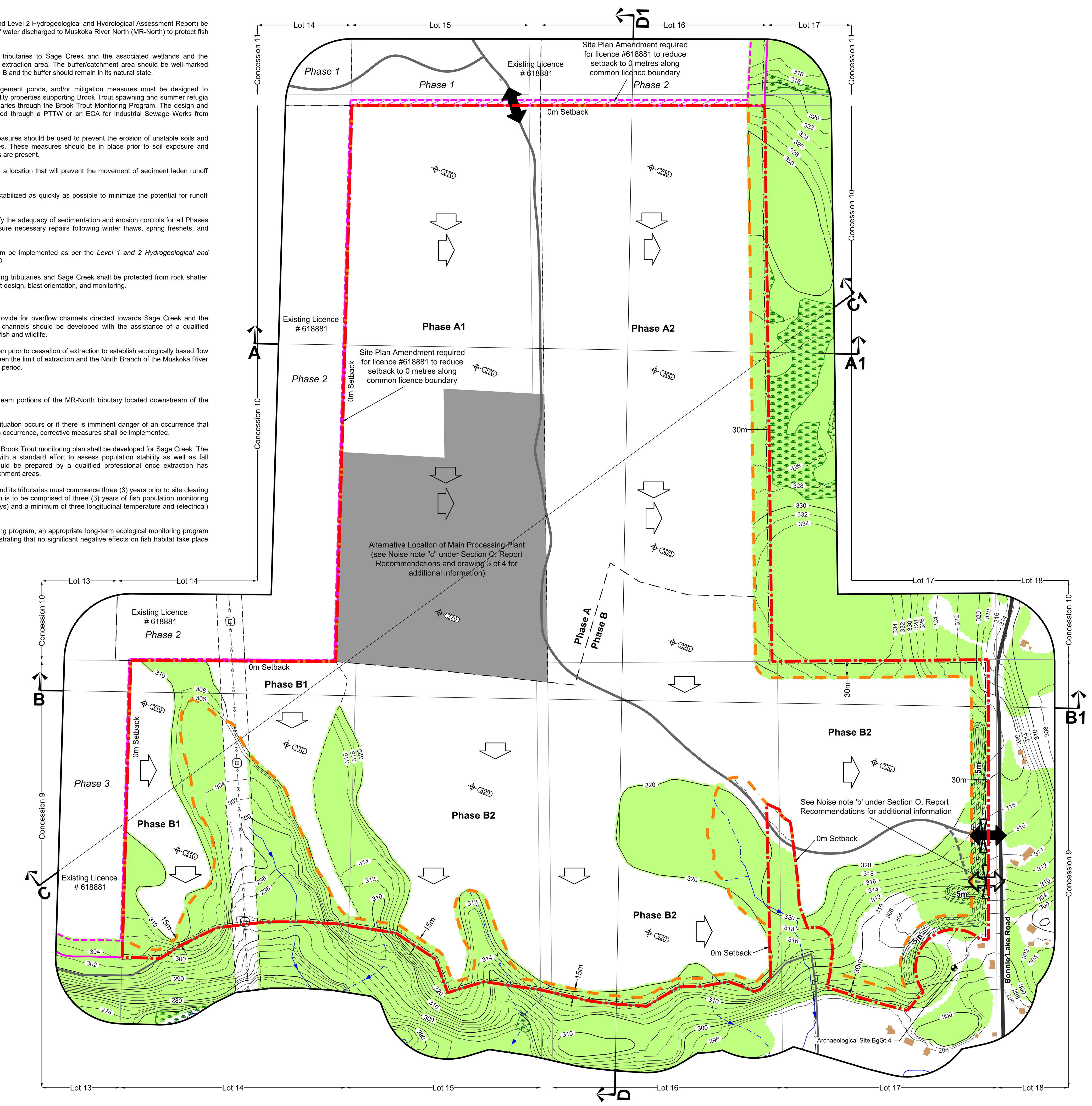
Reptile Fencing Detail



Typical Noise Attenuation Berm

N.T.S.





Legal Description

Lots 15 & 16, Concession 10 and Part of Lots 14-17, Concession 9
Road Allowance Between Lots 15 & 16, Concession 10
Part of Road Allowance Between Lots 15 & 16, Concession 9
Town of Bracebridge (Geographic Township of Macaulay), District of Muskoka

Legend

- Licence Boundary
- Limit of Extraction
- Contours with Elevation — Metres above sea level (MASL)
- Public Road
- Internal Haul Road
- Fence — 1.2m post & wire fence unless otherwise noted
- Watercourse — Permanent - solid; Intermittent - dash with dot
- Waterbody
- Wooded Area
- Wetland
- Alternative Location of Main Processing Plant
- 120m Offset From Licence Boundary
- Existing Licence — Existing Licenced Boundary - solid line; Existing Limit of Extraction - dash line
- Lots and Concessions
- Hydro Corridor
- Entrance / Exit
- Gate
- Direction of Extraction
- Extraction Boundaries — Phase Boundary - large dash; Sub Phase Boundary - small dash
- Berm — Noise attenuation
- Building/Structure
- Max. Depth of Extraction — Metres above sea level (MASL)
- Cross Sections

Site Plan Amendments

No.	Date	Description	By

Site Plan Revisions (Pre-Licencing)

No.	Date	Description	By
1	November 2020	Added Archaeological Site BgGt-4 and Archaeological Potential areas to plan view and notes O.6.a, O.6.b & O.6.c. Adjusted limit of extraction in southeast corner to remain outside of Archaeological Site. Updated notes A.1.b, A.1.b.b. and F.3.	C.P.
2	December 2020	Updated notes A.1.a & F.3, added note C.6. and removed notes O.6.a, O.6.b & O.6.c. Updated Section P. Variations from Provincial Standards row 5.1 and 5.10. Adjusted licence boundary and limit of extraction in southeast corner to remain outside of archaeological areas.	C.P.

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
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MNRF Approval Stamp

MHBC Stamp

BRIAN ZEMAN — CANADIAN INSTITUTE OF PLANNERS / INSTITUT CANADIEN DES URBANISTES — MCIP MICU

Applicant

Fowler Construction Company Limited
1206 Rosewarne Drive
Bracebridge, Ontario
P1L 1T9

Project Child's Pit & Quarry Extension

1235 Bonnie Lake Road, Bracebridge, Ontario

MNRF Licence Reference No.

Pre-approval review:

Plan Scale: 1:4000 (Arch E) — 0, 125, 250 Meters

Date June 2020

Drawn By C.P. **Checked By** B.Z. **File No.** 1515C

File Name Operational Plan

Drawing No. 2 of 4

File Path N:\Brian\1515C - Fowler - Childs Quarry\Drawings\Site Plan\1515C - Site Plan.dwg

Daytime (7:00am to 7:00pm) Physical Noise Control Measures - Phase A, Lifts 1 - 4

Rock Drill Option 1
- Localized barrier with eight 40-foot shipping containers stacked two high and four long, in a "D" shape, providing shielding to north, east and south.

Rock Drill Option 2
- Use quieter drill with maximum sound power level of 110 dBA.

Primary Crusher & Loader
- Localized shielding to north, east and south. Can be achieved by working face or supplemental noise barriers with a height of 15 metres, located within 40 metres of the primary crusher.

Existing Main Processing Plant Location
- Localized shielding with 17 metre high stockpile on the east side of the processing area as shown on the plan view.

Alternative Main Processing Plant Location - Lifts 2 to 4 Only
- Localized shielding in the form of a working face or stockpile with a height of 17 metres to the north, east and south of the processing plant. The processing plant shall be constructed at an elevation of 300 masl or lower, in the southern extent of Phase A1 as shown below.

Loading & Shipping
- When more than 35 trucks visit the site per hour, the site entrance shall be relocated and a 5 metre high noise berm shall be constructed along the southeast licence boundary as shown on drawing 2 of 4.
- Loading and shipping activities can operate simultaneously with any other operation.

Daytime (7:00am to 7:00pm) Physical Noise Control Measures - Phase B

Rock Drill: Phase B1
- Localized barrier with eight 40 foot shipping containers stacked two high and four long, in a "D" shape, providing shielding to north, east and south.

Rock Drill: Phase B2
- Twelve 40 foot shipping containers stacked two high and six long, with equal-length sections providing shielding to north, east and south. Drill with maximum sound power level of 110 dBA in addition to localized barrier.

Primary Crusher & Loader
- Localized shielding to north, east and south. Can be achieved by working face or supplemental noise barriers with a height of 12 metres, located within 20 metres of the primary crusher.

Existing Main Processing Plant Location
- Localized shielding with 17 metre high stockpile on the east side of the processing area as shown on the plan view.

Alternative Main Processing Plant Location
- Localized shielding in the form of a working face or stockpile with a height of 17 metres to the north, east and south of the processing plant. The processing plant shall be constructed at an elevation of 300 masl or lower, in the southern extent of Phase A1 as shown below.

Loading & Shipping
- When more than 35 trucks visit the site per hour, the site entrance shall be relocated and a 5 metre high noise berm shall be constructed along the southeast licence boundary as shown on drawing 2 of 4.
- Loading and shipping activities can operate simultaneously with any other operation.

Night-time (7:00pm to 7:00am) Physical Noise Control Measures - Phase A, Lifts 1 - 4

Primary Crusher & Loader
- Localized shielding to north, east and south. Can be achieved by working face or supplemental noise barriers with a height of 15 metres, located within 40 metres of the primary crusher.

Existing Main Processing Plant Location
- Localized shielding with 17 metre high stockpile on the east side of the processing area as shown on the plan view.

Alternative Main Processing Plant Location - Lifts 2 to 4 Only
- Localized shielding in the form of a working face or stockpile with a height of 17 metres to the north, east and south of the processing plant. The processing plant shall be constructed at an elevation of 300 masl or lower, in the southern extent of Phase A1 as shown below.

Loading & Shipping
- When more than 12 trucks visit the site per hour, the site entrance shall be relocated and a 5 metre high noise berm shall be constructed along the southeast licence boundary as shown on drawing 2 of 4.

Drilling
- No drilling during night-time hours

Night-time (7:00pm to 7:00am) Physical Control Measures - Phase B

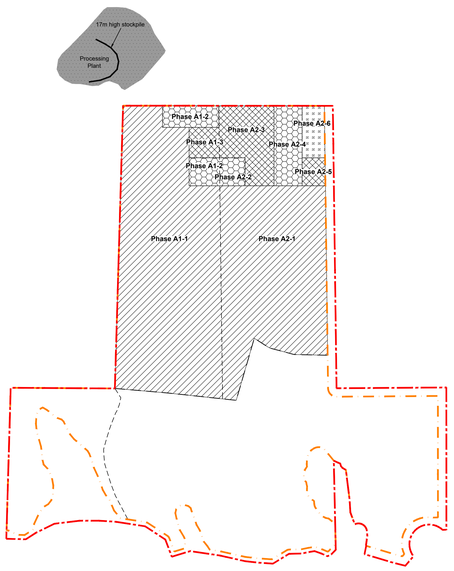
Primary Crusher & Loader
- Localized shielding north, east and south. Can be achieved by working face or supplemental noise barriers with a height of 12 metres, located within 20 metres of the primary crusher.

Existing Main Processing Plant Location
- Localized shielding with 17 metre high stockpile on the east side of the processing area as shown on the plan view.

Alternative Main Processing Plant Location
- Localized shielding in the form of a working face or stockpile with a height of 17 metres to the north, east and south of the processing plant. The processing plant shall be constructed at an elevation of 300 masl or lower, in the southern extent of Phase A1 as shown below.

Loading & Shipping
- When more than 12 trucks visit the site per hour, the site entrance shall be relocated and a 5 metre high noise berm shall be constructed along the southeast licence boundary as shown on drawing 2 of 4.

Drilling
- No drilling during night-time hours.



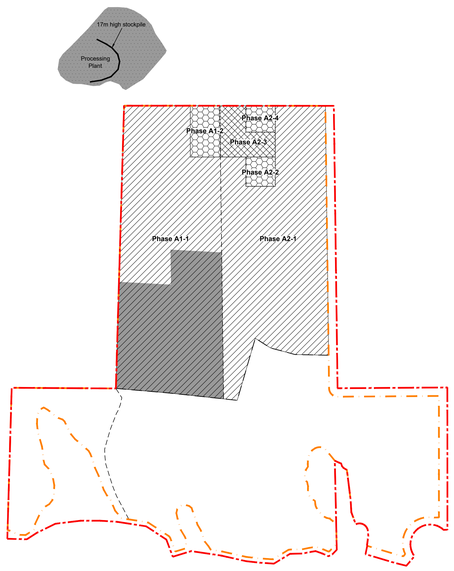
Operating Restrictions - Phase A - Lift 1
Day-Time Hours (7:00am to 7:00pm)

Phase A1-1 & A2-1
- No restrictions, any equipment can operate.

Phase A1-2, A2-2 & A2-4
- Option 1: Primary crusher and main processing plant only;
- Option 2: Main processing plant and drill only; or
- Option 3: Primary crusher and drill only.

Phase A1-3, A2-3 & A2-5
- Option 1: Primary crusher and main processing plant only; or
- Option 2: Main processing plant and drill only.

Phase A2-6
- Option 1: Primary crusher and main processing plant only; or
- Option 2: Drilling only, using quieter drill and localized noise barrier.

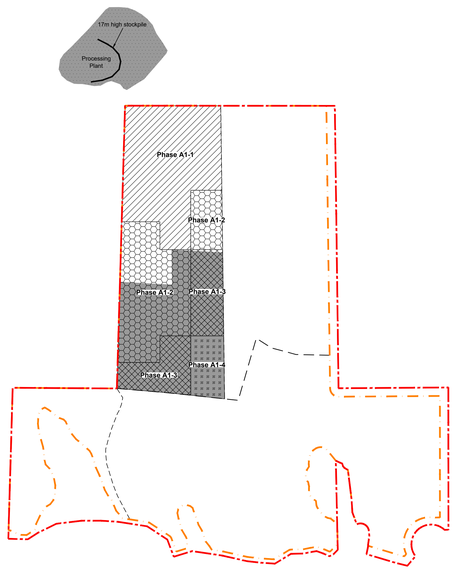


Operating Restrictions - Phase A - Lift 2
Day-Time Hours (7:00am to 7:00pm)

Phase A1-1 & A2-1
- No restrictions, any equipment can operate.

Phase A1-2, A2-2 & A2-4
- Option 1: Primary crusher and main processing plant only;
- Option 2: Main processing plant and drill only; or
- Option 3: Primary crusher and drill only.

Phase A2-3
- Option 1: Primary crusher and main processing plant only; or
- Option 2: Main processing plant and drill only.



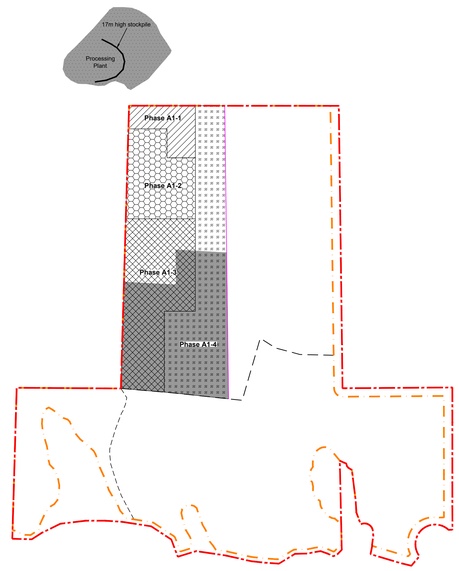
Operating Restrictions - Phase A - Lift 3
Day-Time Hours (7:00am to 7:00pm)

Phase A1-1
- No restrictions, any equipment can operate with physical measures in place.

Phase A1-2
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
- Option 2: No physical measures required when drill operates only.

Phase A1-3
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
- Option 2: No physical measures for drill required when drill and main plant operate only.

Phase A1-4
- Option 1: No restrictions, any equipment can operate with physical measures in place;
- Option 2: No physical measures required when drill and main plant operate only; or
- Option 3: No physical measures for drill required when drill and primary crusher operate only



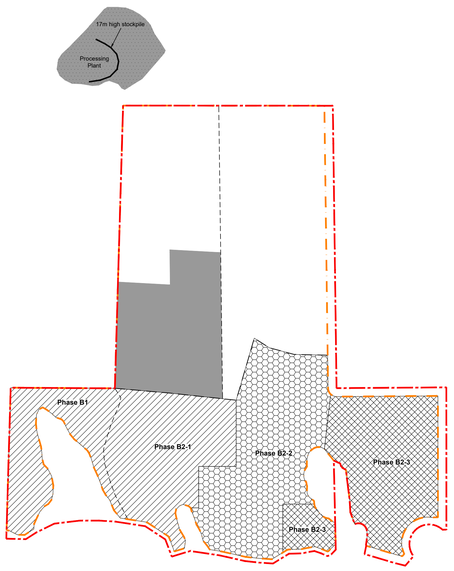
Operating Restrictions - Phase A - Lift 4
Day-Time Hours (7:00am to 7:00pm)

Phase A1-1
- No restrictions, any equipment can operate with physical measures in place.

Phase A1-2
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
- Option 2: No physical measures required when drill operates only.

Phase A1-3
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
- Option 2: No physical measures for drill required when drill and main plant operate only.

Phase A1-4
- Option 1: No restrictions, any equipment can operate with physical measures in place;
- Option 2: No physical measures for drill required when drill and main plant operate only; or
- Option 3: No physical measures for drill required when drill and primary crusher operate only

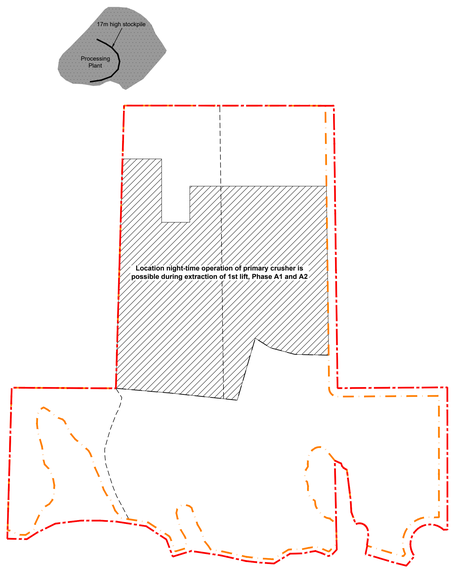


Operating Restrictions - Phase B
Day-Time Hours (7:00am to 7:00pm)

Phase B1 & B2-1
- No restrictions, any equipment can operate.

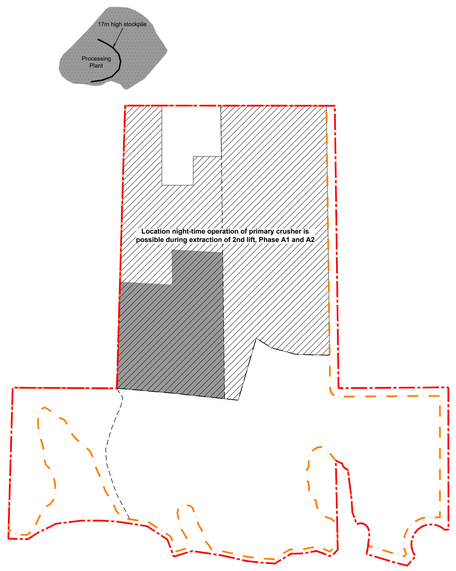
Phase B2-2
- Option 1: Main processing plant and drill only; or
- Option 2: Main processing plant and primary crusher only

Phase B2-3
- Main processing plant and drill only



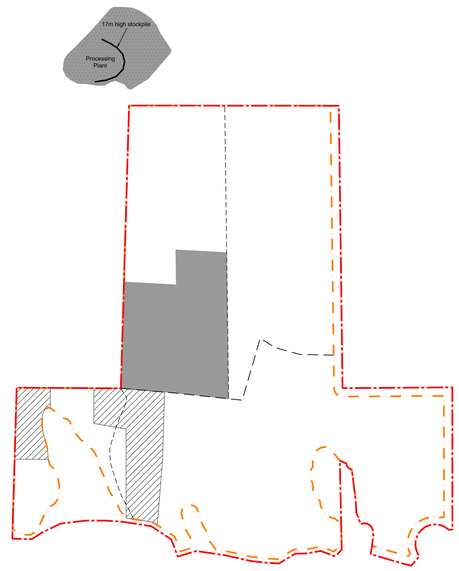
Operating Restrictions - Phase A - Lift 1
Night-Time Hours (7:00pm to 7:00am)

Option 1: Operation of main processing plant and shipping only; or
Option 2: Operation of primary crusher only in areas shown above.



Operating Restrictions - Phase A - Lift 2
Night-Time Hours (7:00pm to 7:00am)

Option 1: Operation of main processing plant and shipping only; or
Option 2: Operation of primary crusher only in areas shown above.



Operating Restrictions - Phase A - Lifts 3 & 4 and Phase B
Night-Time Hours (7:00pm to 7:00am)

Phase A
- Option 1: Operation of main processing plant and shipping only; or
- Option 2: Operation of primary crusher only, no area restrictions apply.

Phase B
- Option 1: Operation of main processing plant and shipping only; or
- Option 2: Operation of primary crusher only in areas shown on Site Plans.

Legal Description

Lots 15 & 16, Concession 10 and Part of Lots 14-17, Concession 9
Road Allowance Between Lots 15 & 16, Concession 10
Part of Road Allowance Between Lots 15 & 16, Concession 9
Town of Bracebridge (Geographic Township of Macaulay), District of Muskoka

Legend

- Licence Boundary
- Limit of Extraction
- Phase Boundary
- Sub Phase Boundary
- Existing Main Processing Area
- Alternative Location of Main Processing Plant

Site Plan Amendments

No.	Date	Description	By

Site Plan Revisions (Pre-Licencing)

No.	Date	Description	By
1	November 2020	Adjusted limit of extraction in southeast corner to remain outside of Archaeological Site.	C.P.
2	December 2020	Adjusted licence boundary and limit of extraction in southeast corner to remain outside of archaeological areas.	C.P.

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MNRF Approval Stamp

MHBC Stamp

Applicant

Fowler Construction Company Limited
1206 Rosewarne Drive
Bracebridge, Ontario
P1L 1T9

Project ***Child's Pit & Quarry Extension***

1235 Bonnie Lake Road, Bracebridge, Ontario

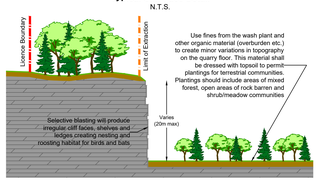
MNRF Licence Reference No.	**Pre-approval review:**
Plan Scale: 1:7,500 (Arch E) 0 250 500 Meters	**Date** June 2020
	Drawn By C.P.
	Checked By B.Z.
	File No. 1515C

File Name **Operational Plan - Noise Attenuation**

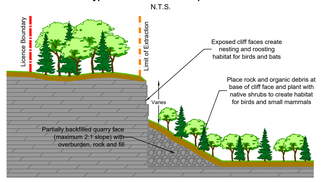
Drawing No. **3 of 4**

File Path N:\Brian\1515C - Fowler - Childs Quarry\Drawings\Site Plan\1515C - Site Plan.dwg

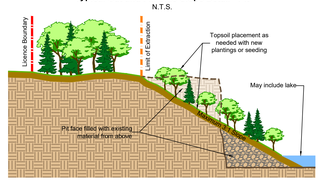
Typical Cliff Face Detail
N.T.S.



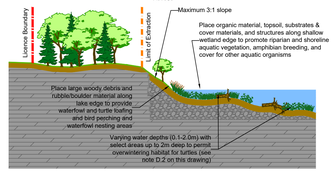
Typical Cliff and Talus Slope Detail
N.T.S.



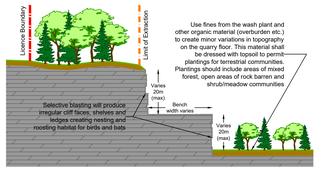
Typical Cut and Fill Side Slope Detail - Pit
N.T.S.



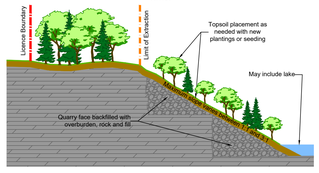
Typical Wetland Detail
N.T.S.



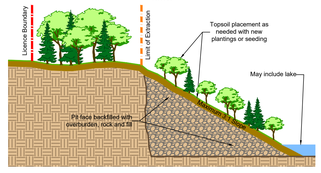
Stepped Cliff Face Detail
N.T.S.



Typical Backfilled Side Slope Detail - Quarry
N.T.S.



Typical Backfilled Side Slope Detail - Pit
N.T.S.



Progressive Rehabilitation

A. General

1. Area Calculations:
   - a. Licence Area 160.3 hectares
   - b. Limit of Extraction 142.3 hectares
   - b.a. To be rehabilitated 128.7 hectares
   - b.b. Undisturbed 13.6 hectares

B. Phasing

1. As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence.
2. Progressive rehabilitation shall follow the direction and sequence of extraction identified on the plan view and described in the notes on drawing 2 of 4.

C. Slopes and Grading

1. Progressive rehabilitation will utilize a variety of rehabilitation techniques including:
   - Backfilling extraction faces and pit & quarry floors;
   - Partially backfilling extraction faces to create a cliff with talus slope; or
   - Leaving extraction faces vertical.
2. The final rehabilitated landforms established using the rehabilitation techniques will consist of a lake, wetland, and terrestrial habitat. Side sloping on-site will range from vertical face, 1:1, 2:1 and 3:1 side slopes as shown on the plan view.
3. In order to permit wildlife access to the wetland and terrestrial communities in Phase A2, the south and east boundary of Phase A2 shall be backfilled to create a 3:1 side slope except where cliff faces and cliff with talus slopes are required.
4. Clean inert fill may be imported to facilitate the establishment of the rehabilitated landform. The licensee shall ensure that the material is tested at the source, before it is deposited on-site, to ensure that the material meets the MECP's criteria under Table 1 of MECP's Soils, Ground Water and Sediment Standards for use under Part XV.1 of the *Environmental Protection Act*. Sampling results shall be provided to the MNRF upon request.
5. Notwithstanding Condition 1, where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium absorption ratio and electrical conductivity do not have to be met.

D. Wetland Creation

1. A 15.0 hectare wetland shall be established in Phase A2 at the location and elevations shown on the plan view.
2. The remaining 25% of the wetland in Phase A2 shall be constructed to provide minimum water depths of 1.0 metres during low water conditions, while the remainder of the wetland will range in depth between 0.1 metre and 1.0 metres.
3. Basking structures constructed from natural features (e.g., rock piles, logs, rootwads, etc.) shall be placed in the wetland and along its edges. The diameter of logs should vary to permit use by small and large turtles.
4. Where used, logs and rootballs should be placed at a variety of angles and water depths. Only a small number of logs or rootballs shall be placed parallel to the shoreline.
5. Where possible, logs features that are installed, should contain limbs. Where available, full trees (canopy and root ball) should be used as basking structures.
6. Substrates within the wetland should be dominated by 'muck' organics, especially in the deeper sections of the wetland.
7. The wetland shall be planted with a variety of aquatic and emergent vegetation. Where possible, species that will produce floating mats of vegetation should be prioritized. A list of suitable wetland vegetation is provided in Table 1 - Vegetation Species Suitable for Wetland Creation and Rehabilitation below.

Table 1: Vegetation Species Suitable for Wetland Creation and Rehabilitation

Floating / Submerged	*Emergent*	*Riparian*
White Water Lily (Nymphaea Odorata)	Broadleaf Cattail (Typha latifolia)	Tamarack (Larix laricina)
Yellow Pond Lily (Nuphar lutea ssp. Vinegata)	Harlequin Blue Flag (Iris versicolor)	Black Spruce (Picea mariana)
American Eel-grass (Vallisneria americana)	Canada Blue-joint (Calamagrostis canadensis)	Speckled Alder (Alnus incana)
	Narrow-leaved Burreed (parganium emersum)	Mountain Holly (Ilex mucronatus)
	Pickerelweed (Pontederia cordata)	Northern Wild Russian (Viburnum cassinoides)
		Common Elderberry (Sambucus canadensis)
		Leatherleaf (Chamaedaphne calyculata)
		Sweet Gale Myrica gale)
		White Meadowsweet (Spiraea alba)
		Sensitive Fern (Onoclea sensibilis)

E. Terrestrial Habitat

1. Terrestrial rehabilitation shall be established in the areas identified on the plan view. The list of plant species for progressive rehabilitation is provided in Table 2 - Vegetation Species Suitable for Pit and Quarry Rehabilitation below to allow for naturalization that blends with the buffers for the adjacent natural features.

Table 2: Vegetation Species Suitable for Pit and Quarry Rehabilitation

Trees and Shrubs	*Herbaceous Species*
White Spruce (Picea glauca)	Canada Bluegrass (Poa compressa)
Eastern White Cedar (Thuja occidentalis)	Timothy (Phleum pratense)
Tamarack (Larix laricina)	Perennial Rye (Lolium perenne)
Largetooth Aspen (Populus grandidentata)	Alfalfa (Medicago sativa)
Trembling Aspen (Populus tremuloides)	Red Clover (Trifolium pratense)
Pin Cherry (Prunus pensylvanica)	Rough Hair Grass (Agrostis scabra)
Red Maple (Acer rubrum)	Poverty Oat Grass (Danthonia spicata)
White Birch (Betula papyrifera)	Little Bluestem (Schizachyrium scoparium)
Choke Cherry (Prunus virginiana)	Sideoats Grama (Bouteloua curtipendula)
Red-osier Dogwood (Cornus stolonifera)	New England Aster (Aster novae-angliae)
Staghorn Sumac (Rhus typhina)	Lanceleaf Coreopsis (Coreopsis lanceolata)
Narrow-leaved Meadowsweet (Spirea alba)	Flat Topped White Aster (Aster umbellatus var. umbellatus)
Red Raspberry (Rubus idaeus)	Philadelphia Fleabane (Erigeron philadelphicus ssp. philadelphicus)
Smooth Serviceberry (Amelanchier laevis)	Black-eyed Susan (Rudbeckia hirta)
Common Blackberry (Rubus allegheniensis)	Canada Goldenrod (Solidago canadensis)
	Gray Goldenrod (Solidago nemoralis ssp. Nemoralis)
	Canada Milkvetch (Astragalus canadensis)

2. Rehabilitation of the terrestrial portions of the quarry shall include the creation of cliff and talus slope along portions of the eastern limit of extraction for Phase A2.
3. Where possible, terrestrial communities within Phase A2 shall be created using fines and other organic material available on-site to provide variations in the topography and therefore encourage growth of new plant life.

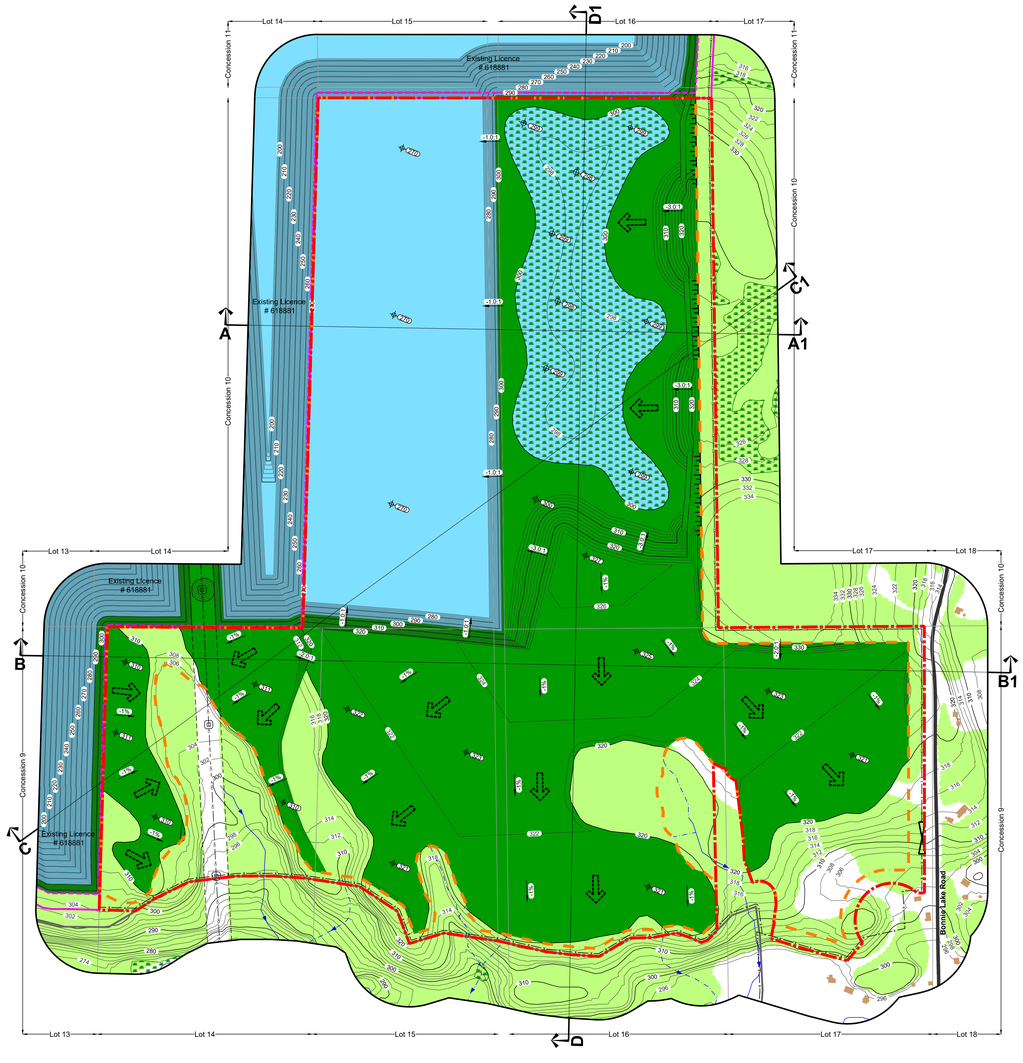
F. Drainage

1. Final surface drainage will follow the rehabilitated contours and directional arrows shown on the plan view.
2. The final design of the quarry lakes shall provide for overflow channels directed towards Sage Creek and the MR-North tributary. The final design of the channels should be developed with the assistance of a qualified professional and should provide end uses for fish and wildlife.
3. Analysis of monitoring data shall be undertaken prior to cessation of extraction to establish ecologically based flow requirements for the MR-North tributary between the limit of extraction and the North Branch of the Muskoka River to ensure adequate flow during the flood back period.

Final Rehabilitation

A. General

1. All equipment and buildings/structures shall be removed from the site.
2. No internal haul roads shall remain.
3. The established groundwater table is approximately 295 masl.



Legend

- Licence Boundary
- Limit of Extraction
- Contours with Elevation (Metres above sea level (MASL))
- Public Road
- Fence (1.2m post & wire fence unless otherwise noted)
- Extraction Face
- Watercourse (Permanent - solid; Intermittent - dash with dot)
- Waterbody
- Wetland (15.0 hectares)
- Terrestrial Habitat
- Wooded Area
- 120m Offset From Licence Boundary
- Existing Licence (Existing Licenced Boundary - solid line; Existing Limit of Extraction - dash line)
- Lots and Concessions
- Hydro Corridor
- Gate
- Final Direction of Surface Drainage
- Building/Structure
- Proposed Floor Elevation (Metres above sea level (MASL))
- Proposed Final Grade and Slope
- Cross Sections

Legal Description

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Road Allowance Between Lots 15 & 16, Concession 10
Part of Road Allowance Between Lots 15 & 16, Concession 9
Town of Bracebridge (Geographic Township of Macaulay), District of Muskoka

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No.	Date	Description	By

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MNRF Approval Stamp

MHBC Stamp

Applicant

Fowler Construction Company Limited
1206 Rosewarne Drive
Bracebridge, Ontario
P1L 1T9

Project

Child's Pit & Quarry Extension

1235 Bonnie Lake Road, Bracebridge, Ontario

MNRF Licence Reference No.

Pre-approval review:

Plan Scale: 1:4000 (Arch E)

0 125 250 Meters

Date June 2020

Drawn By C.P.

Checked By B.Z.

File No. 1515C

File Name

Rehabilitation Plan

Drawing No.

4 of 4

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