NUMBERING SCHEME USED FOR OPERATIONAL NOTES REFERS TO AGGREGATE RESOURCES ACT PROVINCIAL STANDARDS FOR A CLASS "A" CATEGORY 1 LICENCE.

Sequence and Direction
1.2.1 This plan depicts a schematic operations sequence for this property based on the best information available at the time of preparation. Extraction, stripping and rehabilitation areas shown are schematic and may vary. Phases do not represent any specific or equal time period. The direction of extraction will generally be in accordance with the Sequence of Operations diagram shown on this page. Rehabilitation will be progressive and proceed as limits of extraction (area and depth) are reached. Notwithstanding the operation and rehabilitation notes, demand for certain products or blending of materials may require minor deviations in the extraction and rehabilitation sequence. Any major deviations from the operations sequence shown will require approval from MNRF.

Description of Operational Phasing:
Phase 1:
- Site preparation
- Concurrent above and below water extraction of Phase 1 in the general direction indicated
- Site preparation of Phase 2

Phase 2:
- Concurrent above and below water extraction of Phase 2 in the general direction indicated
- Progresive rehabilitation of Phase 1 side slopes and areas above the water table
- Site preparation of Phase 3

Phase 3:
- Concurrent above and below water extraction of Phase 3 in the general direction indicated
- Progressive rehabilitation of Phase 2 side slopes and areas above the water table. Complete rehabilitation of Phase 1.
- Final extraction of Phase 3
- Final rehabilitation (See Progressive Rehabilitation Sequence, page 3 of 3)

Topsoil and Overburden Stripping and Stockpiling
1.2.2 Areas within the Limit of Extraction will be stripped of topsoil, subsoil, and overburden in stages and in accordance with the Sequence of Operations diagram. Where there is a distinguishable layer- topsoil shall be stripped and stored separately from overburden. Topsoil and overburden will be stored in perimeter berms or stockpiles. Berms and stockpiles of topsoil and overburden shall be graded to stable slopes and seeded with a grass/legume mixture to prevent erosion and minimize dust. Topsoil and overburden will be used in the progressive rehabilitation of the side slope areas as outlined on the Rehabilitation Plan page 3 of 3. Topsoil and overburden materials will be moved between this site and the adjacent licence. (See variations from operational standards Table O.S. 5.1, this page)

Lifts
1.2.3 Above water extraction will occur in one lift (where above water resources are present) with a maximum height of ±12m and a minimum height of 7m from the pit floor. Below water extraction will occur through the use of a dragline or an excavator.

Main Internal Haul Roads
1.2.4 All traffic for operations will enter and exit the site through the existing Brantford Pit (Licence #5515) as shown on the Sequence of Operations Diagram and will not be gated (see variations from operational standards table O.S. 5.2, this page). The farm/ emergency access off of Colborne Street will be used as a farm/ maintenance/ emergency entrance and exit only and will remain gated and locked.

Ground Water Table
1.2.6 Hydrogeological information including the groundwater elevation, prepared by MTE and taken from "Level 1 and Level 2 Hydrogeological Investigation" (July, 2020) identifies the interpreted groundwater table on-site is generally located at ~238 mAMSL or approximately seven metres below ground surface.

Surface Water Diversion/Discharge Points
1.2.7 No existing or proposed surface water diversions or discharge has and/or will occur on the proposed extraction area. There will be no dewatering or pumping of water in the extraction area as ponds are included in the final rehabilitation plan.

Fencing
1.2.8 Boundaries of the licensed area that are presently fenced are shown on drawing 1 of 3, Existing Features Plan. Prior to any stripping or preparation, fencing on the licensed boundaries will be upgraded with 1.2m high post & wire fence to comply with the Aggregate Resources Act where required. The common licence boundary along the east of the property that is shared with Licence #5515 will not be fenced and will be demarcated with 1.2, high marker posts at corners of the common boundary between the existing licence and proposed licence (See variations from operational standards Table O.S. 5.1, this page).

Proposed Buildings and Structures
1.2.9 There are no proposed permanent buildings and/ or structures. The existing house may be retained until commencement of Phase 2. Farm buildings may be removed subject to ESA requirements for barn swallow mitigation. The building identified as barn swallow habitat on "Existing Features" drawing 1 of 3 shall be removed in accordance with the rules and regulations under Ontario Regulation 242/08.

Topsoil and Overburden Stockpiles
1.2.10 Topsoil and overburden shall be stripped and stored separately in berms or stockpiles. Overburden and topsoil not required for immediate use in berm construction or progressive rehabilitation of this site may be temporarily stockpiled throughout the extraction area. Any stockpile to be stored for longer than 1 year will be vegetated to control erosion. Excess topsoil/ overburden may also be stored in an optional berm along the west boundary.

Aggregate Stockpiles and Recyclable Material
1.2.11 Aggregate stockpiles will be located on the pit floor (interim and final elevations) and on original ground elevations and will move throughout the life of the operations of the pit. Stockpiles will not be located within 30m of the Licensed boundary, except along the eastern shared licence boundary with Licence #5515, as outlined in the Variations to Operational Standards table O.S.5.13.1, this page. No recyclable material will be stored on site.

Temporary Scrap Storage
1.2.12 There will be no on-site scrap storage. Trees to be removed within the extraction area will be utilized for firewood or their best use. Stumps, logs and oversize rock may remain on site for future progressive rehabilitation.

Fuel Storage
1.2.13 There will be no on-site fuel storage. Mobile fueling will occur in accordance with the Gasoline Handling Act, as amended and the gasoline handling code and regulations, as amended, and liquid fuels handling code.

Area to be Extracted
1.2.14 The area to be extracted is ±16.8 ha. (±41ac).

Setbacks
1.2.15 Setbacks will be as shown and labelled on the Sequence of Operations Diagram on this page and page 1 of 3. There will be a 0m setback along the eastern property boundary adjacent to Licence #5515 (see Variations from Operational Standards Table O.S. 5.10.1).

Extraction Depth
1.2.16 The proposed maximum depth of extraction will not exceed 223 mAMSL.

Processing Areas
1.2.17 No permanent processing areas are proposed on site. Portable processing equipment may be used on site and will be located below grade on the pit floor adjacent to the active pit face. As detailed in note 1.2.27.10 there will be no processing in Phase 3.

Berms
1.2.18 Locations and heights for all berms are provided on the Sequence of Operations diagram, this page. The heights shown are the minimum required.

1.2.19 All proposed berms will be constructed in accordance with the "Typical Berm Detail', this page, and will be vegetated and maintained to control erosion. Berm phasing is outlined under 1.2.27 Technical Recommendations- "Noise Impact Study- Project: 18327 Brantford Pit Extension, Brant County, Ontario", this page. Temporary erosion control will be implemented as required.

Equipment
1.2.20 The equipment used on site may include: One Processing Plant, One Dragline or Excavator, Two Extraction Loaders, Two Shipment Loaders, Conveyors, and haul trucks. Other equipment will be used for stripping and rehabilitation activities for intermittent and short periods of time.

Tree Screens
1.2.21 No tree screens are proposed for this site. Existing trees along Colborne Street will be retained where possible.

Hours of Operation
1.2.22 Shipping and loading operations only (6:00 am to 7:00 am Monday to Saturday). Full operation- extraction, processing, loading and shipping (7:00 am to 7:00 pm Monday to Saturday).

Tree and Stump Disposal
1.2.23 Any timber resources will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Stumps, logs, and brush cleared during site preparation will be burned (subject to necessary local approvals), mulched, or used in the progressive rehabilitation of the site.

Cross Sections
1.2.24 Location of cross sections are as shown. Cross sections are provided on Existing Features Plan page 1 of 3 and Rehabilitation Plan page 3 of 3.

Variations from Operational Standards
1.2.25 See table this page for Operational Standards (Section 5.0 of ARA Provincial Standards) that will be varied by this site plan.

Tonnage Limit
1.2.26 The total tonnage to be excavated annually from this site will not exceed 1,000,000 tonnes.

1.2.27 Technical Recommendations

Noise: "Noise Impact Study - Project: 18327 Brantford Pit Extension, Brant County, Ontario" June 25, 2020 (Source: Aercoustics Engineering Ltd.)

The following noise controls are recommended:
General Controls
1. The Hours of operation shall be as described in Note 1.2.22 (this page). There will be no operations on Sundays and Holidays. On occasion, in order to meet specific contract requirements, shipping of materials outside the regular hours of operation is permitted. A response to emergencies is not limited by the hours of operation shown on Note 1.2.22 (this page).

2. The extraction, processing and shipment equipment operating in the proposed pit is limited to:
   - One(1) Processing plant
   - One(1) Dragline or Excavator
   - Two(2) Extraction Loaders
   - Two(2) Shipment Loaders
   - Conveyors
   - 20 Off-Road Truck trips/hr (40 passes/hr)
   - 20 Highway Truck trips/hr (40 passes/hr)

3. The aggregate pit equipment shall satisfy the noise emissions levels listed in Table B (below). If desired, a regular Extraction Loader (maximum 74 dBA) may be replaced with two Quiet Extraction Loaders (maximum 70 dBA) wherever a regular Extraction Loader is permitted.

Table B: Reference Sound Pressure Levels of Aggregate Pit Equipment

Equipment	Reference Sound Pressure Level @ 30m (dBA)
Processing Plant	84
Extraction Loader	74
Quiet Extraction Loader	70
Dragline or Excavator	74
Shipment Loader	67[1]
Conveyors	44[2]
Off-Road Truck- 30km/hr	75
Off-Highway Truck- 25km/hr	65

[1] Shipment loaders were assumed to operate at a 50% duty cycle.
[2] Reference sound level for conveyors is reported in dBA per metre at a distance of 30m.

4. The sound emissions of all construction equipment involved in site preparation and rehabilitation activities shall comply with the sound level limits specified in the MECP publication NPC-115 "Construction Equipment".

5. New equipment technology or different configurations may allow proposed changes to any portion of the extraction and processing operations including additional equipment to operate on the site, equipment to be substituted, and/or different berm heights, while still meeting the applicable sound level limits. Changes may be permitted to the site operations and noise controls provided that the changes still meet the sound level limits, as confirmed through documentation prepared by a Professional Engineer specializing in noise control.

6. An acoustic barrier is required to be solid, with no gaps or openings, and shall satisfy a minimum area density of 20kg/m². It could take the form of a pit face, stockpile, acoustic fence, ISO containers, a combination of these, or any other construction satisfying the requirements of an acoustic barrier.

7. Above water extraction shall proceed in a northerly direction and the working face shall have a minimum height of 7m from the pit floor. All extraction and processing equipment shall operate on the pit floor only.

8. The processing plant shall be located at a pit floor elevation of 239 m a.s.l. or lower.

9. During below water extraction, only a single Quiet Extraction Loader shall operate at the dragline or Excavator stockpile, or at the working face.

10. No processing shall occur in the lands located within 250m of the north property line, also described as the Phase 3 area.

Phase 1
11. During operations in Phase 1, an 8m high acoustic barrier shall be located within 80m of the Processing Plant, between the plant and Receptors R08 and R09. This can be satisfied by a working face or stockpiles.

Phase 2
12.
Prior to extraction in Phase 2, an acoustic barrier with a minimum top of barrier elevation of 253 m a.s.l. shall be installed along the north, west, and east boundary of Phase 3 as shown on the Operational Plan. An approximately 10 m wide gap is permitted in the north section at the location of the existing driveway as shown on the Operational Plan. A slope of 3:1 or steeper is required on either side of this access point. This barrier shall remain in place during all operations in Phase 2 and Phase 3.

13. During operations in Phase 2, an 8m high acoustic barrier shall be located within 40m of the Processing Plant, between the plant and Receptors R01 to R10. This can be satisfied by a working face or stockpiles.

Phase 3
14. During operations in Phase 3, an 8m high acoustic barrier shall be located within 40m of the Processing Plant, between the plant and Receptors R01 to R10. This can be satisfied by a working face or stockpiles.

15. During operations in Phase 3, only one Quiet Extraction Loader along with a Dragline or Excavator are permitted. Off-road Trucks or Conveyors may be used to transport material from the extraction area to the processing area outside of the Phase 3 lands.

16. No processing shall occur anywhere on site while above water extraction is occurring within 150m of the north extraction limit.

17. No processing shall occur anywhere on site while below water extraction is occurring within the Phase 3 area. (See Sequence of Operations Diagram, this page).

Hydrogeology: "Lafarge Brantford West Pit- Hydrogeological Investigation" July 14, 2020 (Prepared by MTE Consultants Inc.)

- The data loggers installed in MW1-18, MW2-18, MW3-18, and PW1 remain in place to collect a water level every hour.
- Manual groundwater levels be collected from MW1-18, MW2-18, MW3-18, and PW1 on a seasonal basis (Spring Summer, and Fall) to calibrate the data logger data and ensure they are functioning as intended.
- An annual groundwater monitoring report be prepared by a Qualified Professional (Professional Geoscientist or exempted Professional Engineer) that at a minimum summarizes the groundwater monitoring data and assesses effects (if any) from the proposed below-water-table extraction.
- Groundwater monitoring continues for the first two years of below-water-table operations. If after this two-year period, below-water-table extraction is not causing any well interferences, then the monitoring frequency can be re-evaluated by a Qualified Professional (Professional Geoscientist or exempted Professional Engineer).

Hydrogeology cont'd:

- Lafarge develop a Best Management Plan (BMP) for on-Site fuel handling in order to minimize the risk of contaminant release. Fuels, oils, and all potentially hazardous materials will be stored in approved above ground containment facilities in accordance with the BMP and current regulatory requirements. The quantity of stored materials will be kept to a minimum and on-Site personnel will be trained in the required actions in the event of accidental release.
- Monitoring wells that may be destroyed by below-water-table extraction activities shall be decommissioned according to O.Reg. 903.
- Monitoring wells that may be damaged by non-extraction activities should be replaced according to O.Reg.903.
- Prior to extraction, Lafarge completes a private well inventory within 500 m of the Site with results being included in the first annual monitoring report along with recommendations for monitoring.

Natural Environment: "Natural Environment Level 1 and 2 Report- Proposed Lafarge Brantford West Extension" July, 2020 (Prepared by Golder Associates Ltd.)

1. Remove the barn on the Site outside of the bat maternity roosting period (May 1 to July 31) to minimize adverse impacts on non-SAR roosting bats that may be roosting in the structure.

2. The Project will be registered with the MECP through the online Notice of Activity process for removal of barn swallow habitat and all the requirements outlined in O. Reg. 242/08, s. 23.5 will be implemented, including:
   - Remove the barn outside of the barn swallow active season (May 1- August 15). If the barn must be removed during the active season, steps must be taken to prevent barn swallow from entering the structure and building nests (e.g., install a tarp or netting) prior to the start of that active season (i.e., before May 1).
   - Compensation structure(s) will be constructed and available prior to the next active season following removal of the barn.
   - Monitoring of compensation structures in accordance with O. Reg. 242/08, s.23.5

3. General best management practices will be implemented, including:
   - To be in compliance with the MBCA, avoid removal of vegetation (excluding agricultural fields planted in annual row crop, such as corn) during the active season for breeding birds (April 15-August 15).
   - Implement standard best management practices, including sediment and erosion controls, spill prevention, etc. during the construction phase of the project.

4. The site will be rehabilitated in accordance with the requirements of the rehabilitation plan developed with ecological concepts from this report, as shown on Page 3.

Archaeology: "Stage 1 and 2 Archaeological Assessments" January, 2019 (Prepared by Stantec Consulting Ltd.)

1. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act.

2. The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, C33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Dust: "Air Quality Study Brantford Pit Expansion, Brant County, ON" July, 2020 (Prepared by R.J. Burnside & Associated Ltd.)

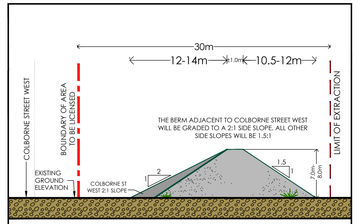
- Paved portion of the road at the Site entry/exit should be cleaned periodically to minimize mud tracking onto Colborne Street West and reduce dust generation.
- Reduced speeds should be enforced on-site, and signs posted at the Site entrance.
- Watering of on-site unpaved roads (up to 1.5L/m² per hour) when visible dust is observed behind the trucks. Other commercial dust suppresants can be considered if required.
- Regular washing of extraction, processing and transport equipment.
- Wetting material prior to processing or loading on very dry days.
- Monitor on-site dust through visual site inspections and apply additional water when needed.
- Installing berms around excavation area to reduce windblown dust onto neighboring properties.
- Re-vegetating disturbed areas as soon as possible to minimize dust from these areas.
- During very dry and windy conditions resulting in dust plumes travelling off-site, activities at the Site should be temporarily suspended.

Agricultural Impact Assessment: "Agricultural Impact Assessment" July, 2020 (Prepared by MHBC)

1. Extraction should occur in phases to minimize the amount of disturbed area. Later phases of the operation that are not currently in extraction should remain in agricultural production for as long as realistically possible.

2. All of the recommendations of the technical reports should be implemented to minimize and prevent impacts to adjacent and surrounding agricultural uses and operations.

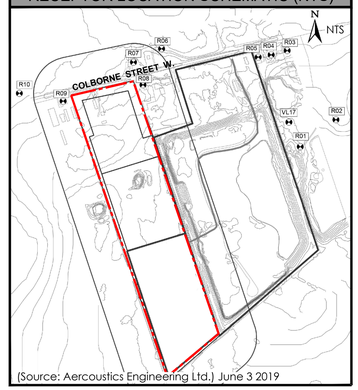
3. If during extraction, the material below the water table is found to be of insufficient quality or quantity to warrant extraction, then the operator should consider revising the rehabilitation plan to implement agricultural rehabilitation of the property, where feasible.



Typical Berm Detail

ALL BERMS WILL BE VEGETATED AND MAINTAINED TO CONTROL EROSION. TEMPORARY EROSION CONTROL WILL BE IMPLEMENTED AS REQUIRED

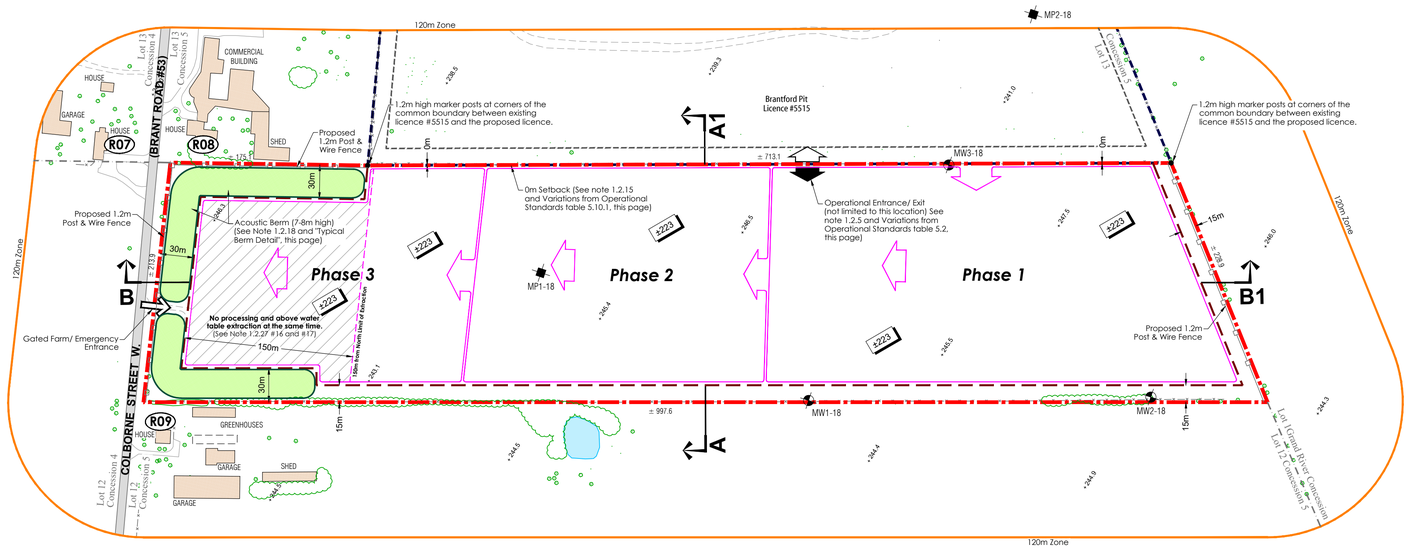
RECEPTOR LOCATION SCHEMATIC (NTS)



(Source: Aercoustics Engineering Ltd.) June 3 2019

VARIATIONS FROM OPERATIONAL STANDARDS

OPERATIONAL STANDARD	VARIATION
O.S. 5.1	A portion of the proposed eastern Licence boundary adjacent to Licence #5515 which is owned and operated by Lafarge will not be fenced. The boundary will be demarcated with 1.2m high marker posts at corners of the common boundary between the existing licence and the proposed licence.
O.S. 5.2	No gate(s) will be required at the internal access point(s) along the common boundary between this site and Licence #5515.
O.S. 5.10.1	0m excavation area setback along common boundary with existing pit #5515.
O.S. 5.13.1	Stockpiles may be located within 30m of the licensed boundary along the eastern shared licence boundary with Licence #5515
O.S. 5.17	Topsoil and overburden materials from this site and the adjacent existing Lafarge Pit (#5575) will be shared to optimize progressive rehabilitation of both sites.
O.S. 5.19.1	To allow for 2:1 slopes below water to maximize resource extraction and/or allow slopes gentler than 3:1 below water to enhance site restoration.



Sequence of Operations

Legal Description

PART OF LOT 12
CONCESSION 5
(former geographic township of Brantford)
COUNTY OF BRANT

Legend

- Boundary of Area to be Licensed
- Additional Lands Owned by Applicant — LAFARGE BRANTFORD PIT–LIC.#5515
- Existing Fence — 1.2m POST & WIRE FARM FENCE UNLESS OTHERWISE NOTED
- Public Road
- Private Driveway/ Laneway
- Farm/ Emergency Access
- Operational Entrance — NO GATE, SEE VARIATIONS FROM OPERATIONAL STANDARDS TABLE 5.2, THIS PAGE
- General Direction of Excavation — REFER TO NOTES (THIS PAGE) FOR ADDITIONAL DETAILS
- No Processing Area — (PHASE 3: SEE NOTE 1.2.27 NOISE #15)
- MW1-18 — Monitoring Well (FROM MTE JULY, 2020)
- MP1-18 — Mini Piezometer (FROM MTE JULY, 2020)
- Limit of Extraction — ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELED DISTANCES
- Existing Extraction Limit — LAFARGE BRANTFORD PIT–LIC.#5515
- ±223 — Proposed Spot Elevation — MAXIMUM DEPTH OF BELOW WATER EXTRACTION
- ±248.5 — Existing Spot Height Elevation — METRES ABOVE SEA LEVEL
- Building/Structure — LOCATION AND USE FOR BUILDINGS ON–SITE AND WITHIN 120m ARE SHOWN ON THIS PAGE.
- Existing Vegetation
- Proposed Acoustic Berm — (SEE NOTE 1.2.27 NOISE)
- Proposed Fence — 1.2m POST & WIRE FARM FENCE UNLESS OTHERWISE NOTED
- A1 — Cross Sections — SEE PAGE 1 AND 3 OF 3 FOR EXISTING AND REHABILITATED CROSS SECTIONS
- R07 — Noise Receptor — LOCATION APPROXIMATE– SEE SEQUENCE OF OPERATIONS & RECEPTOR LOCATION SCHEMATIC, THIS PAGE (AERCOUSTICS ENGINEERING LTD.) JULY, 2020

Site Plan Amendments

No.	Date	Description	By

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200 - 540 BINGEMANS CENTRE DR. KITCHENER, ON. N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

MNRF Approval Stamp

Stamp

JAMES D. PARKIN — PLANNERS — LAND ECONOMISTS — 1977 CANADIAN INSTITUTE OF PLANNERS — MCIP — MICU

north

LAFARGE Building better cities™

Applicant's Signature

Carol Siemiginowski, P.Eng
Land Manager, Southwest Ontario & Atlantic
Lafarge Canada Inc.

Project

Brantford Pit Expansion

Lafarge Canada Inc.
6509 Airport Road, Mississauga Ontario, L4V 1S7
Tel: (905) 738-7070 Fax: (905) 738-7092

MNRF Licence Reference No.

Pre-approval review:
For Client Review - November 2019

Plan Scale **1:2,500 (Arch D)**

SCALE
50 0 50 100
METRES

Plot Scale 1:2.5 [1mm = 2.5 units] MODEL

Drawn By D.G.S. / G.C.

Checked By J.P.

File No. **9526FU**

File Name

OPERATIONAL PLAN

Drawing No.

2 OF 3

K:\9526FU-Lafarge-Ginseng Farm Property-County of Brant\A\Operations 2of3.dwg