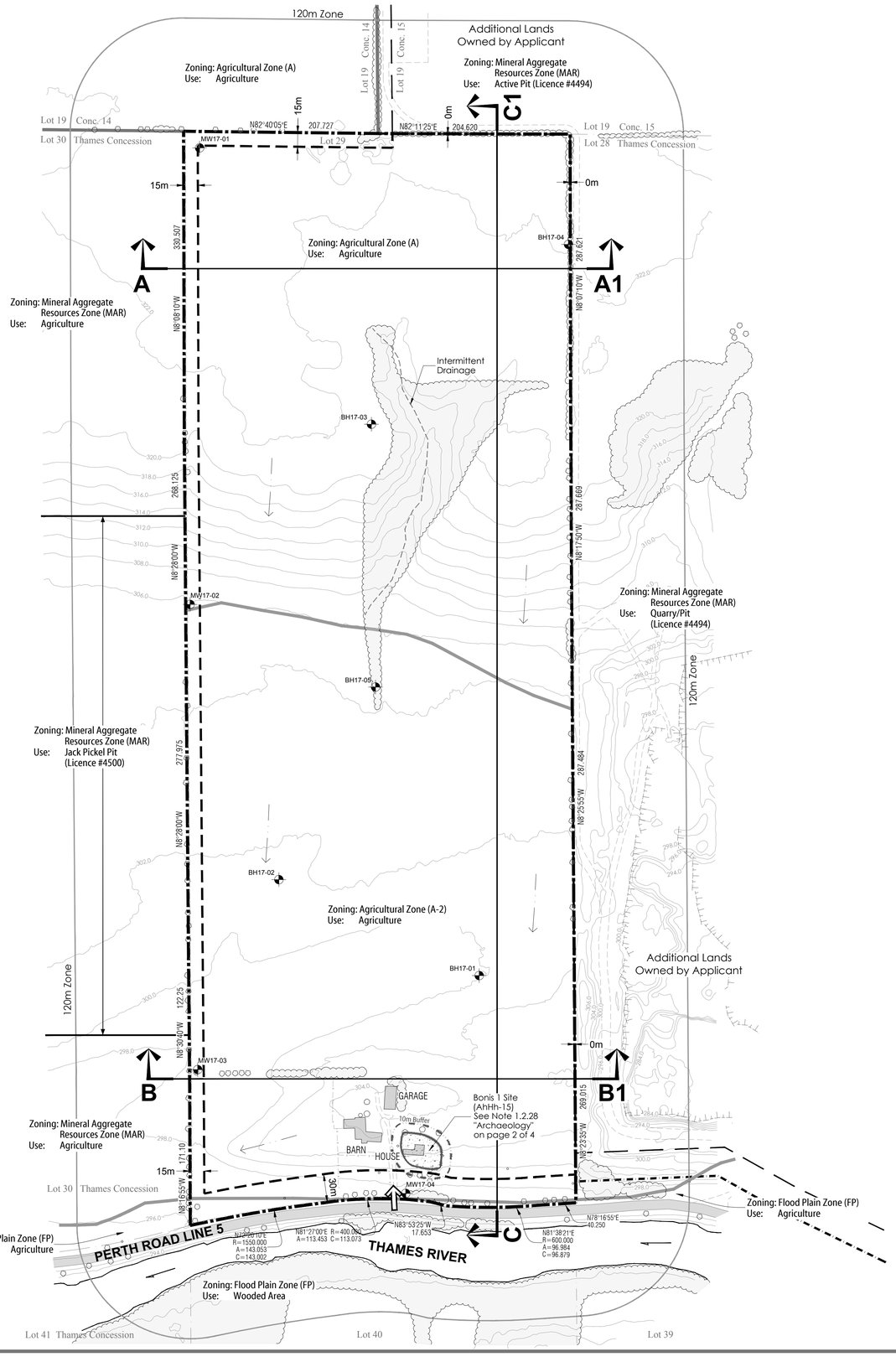
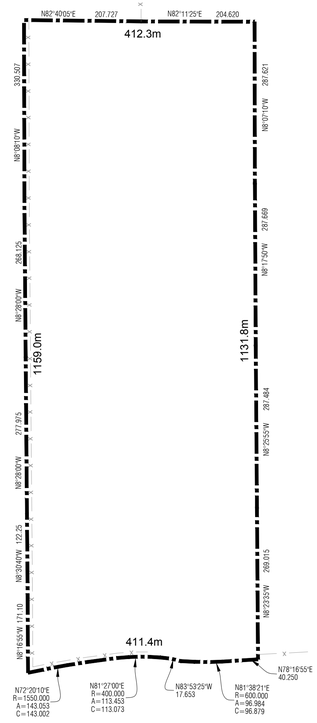


Nominal Boundary Dimensions and Fencing Detail

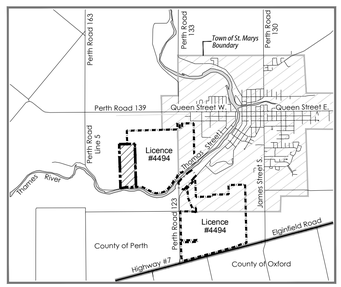
Scale 1:5,000



Notes

1. THIS SITE PLAN IS PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENCE, CATEGORY 1 AND 2.
2. TOPOGRAPHIC INFORMATION COMPILED FROM DRONE IMAGERY FLOWN OCTOBER 2017 AND GOOGLE SATELLITE IMAGERY. MAPPING IS PRODUCED IN REAL WORLD SCALE AND COORDINATES (NAD 83 UTM ZONE 17N). CONTOURS FROM SWOOP 2015 DATA AND THE CONTOUR INTERVAL IS 1m.
3. PROPERTY BOUNDARY FROM PLAN 44R-5481 PREPARED BY CALLON DIETZ INCORPORATED, JANUARY 30, 2018.
4. THE SUBJECT SITE IS ZONED AGRICULTURAL (A AND A-2) AND FLOODPLAIN (FP) IN THE CORPORATION OF THE TOWNSHIP OF SOUTH PERTH ZONING BY-LAW 4-1999 (OFFICE CONSOLIDATION JANUARY 1, 2016).
5. THERE ARE A RANGE OF GROUNDWATER TABLE ELEVATIONS ACROSS THE SITE. THE BEDROCK AQUIFER WATER LEVELS RANGE FROM APPROXIMATELY 275-291MASL. PLEASE REFER TO 'HYDROGEOLOGY AND HYDROLOGY LEVEL 1 AND 2 STUDY' JUNE 2020 (GOLDER ASSOCIATES) FOR COMPLETE WATER TABLE INFORMATION. SEE ALSO HYDROGEOLOGY AND HYDROLOGY STUDY RECOMMENDATIONS, NOTE 1.2.28 ON PAGE 2, FOR SPECIFIC GROUNDWATER REPORTING, MONITORING AND CONTINGENCY PLANS, AS RECOMMENDED BY GOLDER.
6. LAND USE INFORMATION COMPILED FROM 2017 DRONE ORTHO PHOTO AND SITE VISITS IN 2018 AND 2019.
7. AREA TO BE LICENSED ± 46.5 ha. (± 114.9 ac.)
   AREA TO BE EXTRACTED ± 43.2 ha. (± 106.7 ac.)
8. ALL MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES.
9. THERE IS/ARE CURRENTLY, ON-SITE, NO EXISTING PIT OR QUARRY RELATED;
   - STOCKPILES OF TOPSOIL OR OVERBURDEN.
   - STOCKPILES OF AGGREGATE OR RECYCLABLE MATERIAL.
   - SCRAP.
   - PERMANENT FUEL STORAGE.
   - AGGREGATE PROCESSING.
   - BERMS.

Key Plan



Subject Lands

Additional Licensed Lands Owned by Applicant

Legal Description

LOT 29
THAMES CONCESSION
(geographic township of Blanshard)
TOWNSHIP OF PERTH SOUTH
COUNTY OF PERTH

Legend

- Boundary of Area to be Licensed
- Additional Licensed Lands Owned By Applicant
- Existing Fence — POST & WIRE FENCE UNLESS OTHERWISE NOTED
- Public Road
- Private Laneway/ Roadway
- Farm/Residential Access
- Hydro Pole
- Site Groundwater Monitor Locations — BH17-01, MW17-02 — GOLDER 2020
- Cross Sections — A1 — SEE PAGE 4 OF 4 FOR EXISTING AND REHABILITATED CROSS SECTIONS
- Limit of Extraction — ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELED DISTANCES
- Contour with Elevation — METRES ABOVE SEA LEVEL
- Building/Structure — LOCATION AND USE FOR BUILDINGS ON-SITE AND WITHIN 120m ARE SHOWN ON THIS PAGE.
- Existing Vegetation
- Existing Pit/Quarry Face
- Direction of Surface Drainage (IF ANY)
- Drainage Feature — ARROW INDICATES DIRECTION OF FLOW (IF ANY)
- Archaeological Site — Bonis 1 Site (AhHh-15) — SITE RECOMMENDED FOR FURTHER ARCHAEOLOGICAL FIELD WORK (SEE NOTE 1.2.28 "ARCHAEOLOGY")
- Zone Boundary — SEE NOTE 4 THIS PAGE

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. P. PERKIN — LICENSED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

north

Applicant

ST. MARYS

ST. MARYS CEMENT INC. (CANADA)
55 Industrial St. 4th Floor
Toronto, Ontario M4G 3W9
Telephone: (416) 696-4411

Applicant's Signature

David Hanratty
Votorantim Cimentos - North American Aggregates
Director of Land & Resources

Project

Thomas Street Pit/Quarry Expansion

MNRF Application Reference No.

626490

Pre-approval review:

ARA Complete - December 10, 2020

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.

Checked By J.P.

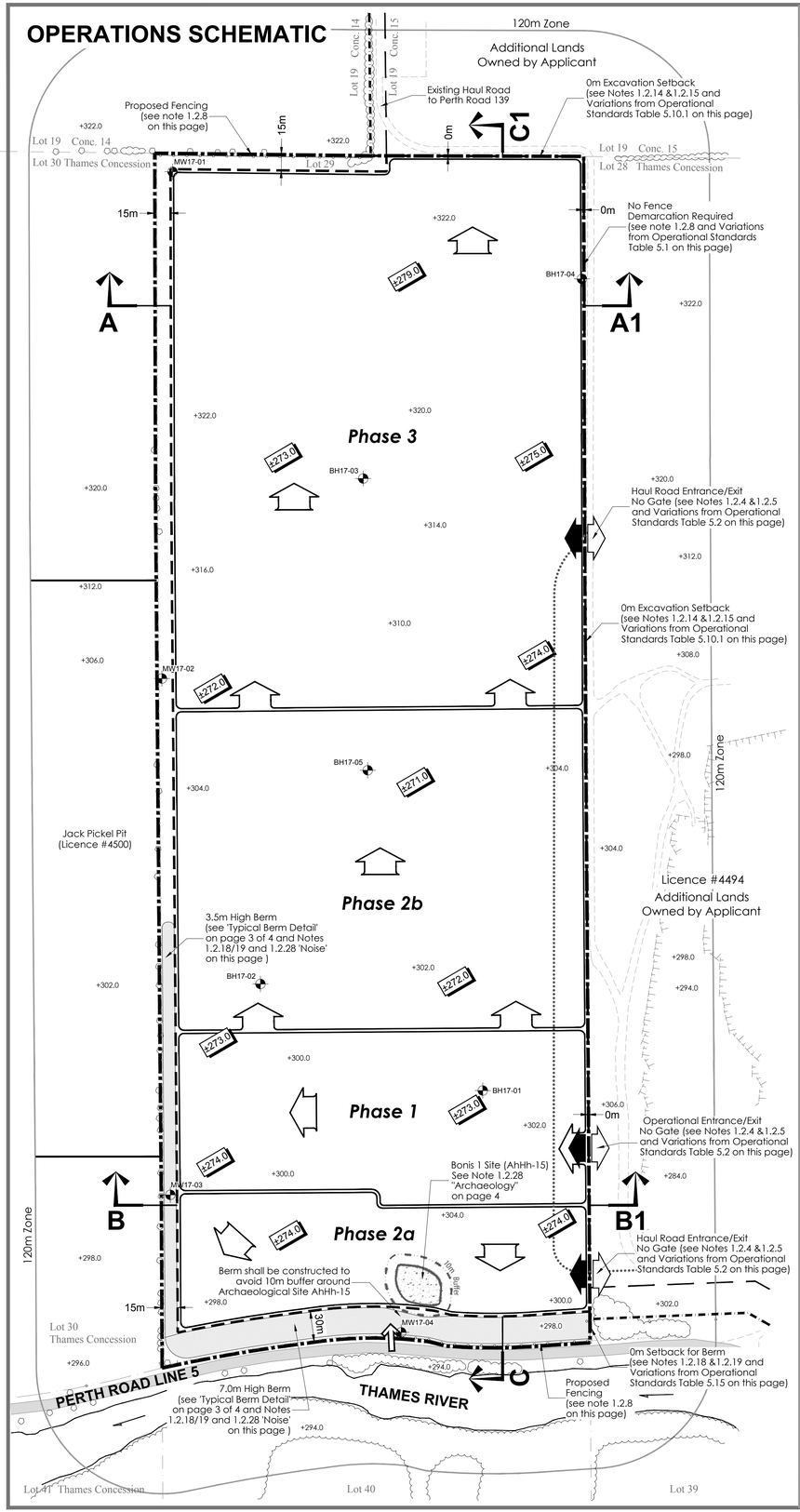
File No. **Y321X**

File Name **EXISTING FEATURES PLAN**

Drawing No. **1 OF 4**

K:\Y321X-CBM Aggregates-Bonis Property-St.Marys\A\ARA Complete\Exfeplan 1of4 ARA Complete December2020.dwg

OPERATIONS SCHEMATIC



NUMBERING SCHEME USED FOR OPERATIONAL NOTES REFERS TO A COMBINATION OF AGGREGATE RESOURCES OF ONTARIO PROVINCIAL STANDARDS (AROPS) FOR A CLASS 'A' LICENCE APPLICATION SITE PLAN - PIT BELOW WATER (CATEGORY '1') AND QUARRY BELOW WATER (CATEGORY '2').

1.2.1 - Sequence and Direction
See Operations Schematic, this page, which depicts a generalized sequence and direction of extractive operations for the Thomas Street Pit/Quarry Expansion (the 'Site'). The Schematic is based on the best information available at the time of preparation, including economic and geologic considerations, technical report recommendations, and corporate operational factors such as the progression of operations from the existing ARA Licence ID #4494. Any major deviations from the Schematic will require approval from MNRF.
The Site is subdivided into Phase 1, 2a, 2b and 3. Phase 1 depicts the general area where Site operations will be initiated, which will progress southerly and northerly into Phase 2a and 2b, respectively. Phases 1, 2a and 2b may be operated concurrently. Phase 3 generally represents the area of thicker overburden, to be extracted as a progression of Phase 2b and subject to economic viability at the time.
Pit operations involve the extraction/processing of sand and gravel. Quarry operations involve the extraction/processing of sedimentary bedrock, which material predominantly lies below the established groundwater table. Pit and quarry operations occur using different methods and equipment. Given that sand and gravel overly bedrock at the southern half of the Site, pit and quarry operations will occur independently and concurrently.
Pit operations will be initiated first, by a westward progression of extraction into the Site from the ID #4494 site, in the general area as depicted in the Schematic. Pit extraction will then continue generally in a southwesterly direction and southerly direction, and in a northerly direction.
Quarry extraction will occur after pit extraction has been initiated and will follow a similar direction as the pit operation.

1.2.2 and 10 - Topsoil and Overburden Stripping and Stockpiling
Overburden is that non-aggregate material which generally lies above the aggregate materials of sand and gravel and bedrock, but may also be interspersed with sand and gravel. Overburden stripping will initially occur for purposes of berm construction and thereafter occur in discrete areas in advance of aggregate extraction.
At the Site, overburden generally consists of topsoil and subsoil with organic content. Due to the nature of these soils, they shall be stripped as one unit and used in the construction of berms at the south and portion of west licensed boundaries, as required for noise mitigation purposes (see Note 1.2.25 - Variations to Operational Standards, this page). The berms will be constructed in their entirety prior to aggregate extraction.
Overburden may also be temporarily stored in other berms or stockpiles throughout the extraction area, including within 30m of any boundary that is common with the ID #4494 site (see Note 1.2.25 - Variations to Operational Standards, this page).
Overburden in excess of what is required for berm construction and on-Site rehabilitation requirements will be transferred to the adjacent ID #4494 site for purposes of rehabilitation.
Areas of the Site where overburden is not necessary to be removed for berm construction will remain undisturbed and in use for agricultural farm purposes. Farming will continue until such time as portions of the site are removed from farming as a result of site preparation for aggregate extraction. Remaining portions of the site not needed for aggregate extraction at that time, will continue to be farmed.

1.2.3 - Lifts
Pit extraction will occur in a lift of varying height subject to the thickness of sand and gravel being extracted. In general, a lift height of approximately 8 m has been assumed. Quarry extraction will occur in two lifts, with the upper lift being approximately 14 m high and the lower lift being approximately 11 m high.

1.2.4 - Main Internal Haul Roads
Locations of internal haul roads may vary depending on areas of extraction, processing/stockpiling, backfilling/rehabilitation; and, inter-transfer of materials between the Site and the ID #4494 site for processing or rehabilitation.

1.2.5 - Entrance and Exit
Haul truck access to/from the Site will occur across the length of the common boundary segments with the ID #4494 site. Entrance/exit points along the common boundary will not be gated (see Note 1.2.25 - Variations to Operational Standards, this page).

1.2.6 - Groundwater Table
There are a range of groundwater table elevations across the site. The bedrock aquifer water levels range from approximately 275-291masl. Please refer to 'Hydrogeology and Hydrology Level 1 and 2 Study (Golder Associates, June 2020)' for complete water table information.
See also Hydrogeology and Hydrology Study Recommendations, note 1.2.28 on page 2, for specific groundwater reporting, monitoring and contingency plans, as recommended by Golder.

1.2.7 - Water Diversion and Discharge
No diversions of watercourses are required. Discharges to the Thames River, of water that accumulates in the pit/quarry excavation, will occur through use of passive drainage and pumping from sump pond(s).

1.2.8 - Fencing
Fencing will be installed or repaired at all licensed boundaries not common with the adjacent ID #4494 site within 1 year of licensing of the Site. Fencing will not be required at other licensed boundaries, i.e. where common with the ID #4494 site (see Note 1.2.25 - Variations to Operational Standards, this page).

1.2.9 - Buildings and Structures
No permanent stand-alone buildings/structures are proposed. Portable office/equipment storage trailers may be brought onto the Site for temporary periods for uses associated with pit or quarry operations.

1.2.10 - Topsoil and Overburden Stockpiles
See note 1.2.2

1.2.11 - Aggregate and Recyclable Material Stockpiles
Stockpiles of aggregate material, in raw and processed form, will be located within the extraction area. Aggregate materials may also be imported to the Site and stockpiled for blending with Site generated aggregate or other imported aggregate.
Stockpiles will be located throughout the extraction area including within 30m of any boundary that is common with the ID #4494 site (see Note 1.2.25 - Variations to Operational Standards, this page). There shall be no stockpiles of recyclable material located on-site.

1.2.12 - Scrap Storage
All scrap, such as used machinery, generated through Site operations will be stored in discrete locations a minimum of 30m from the boundary of the site that is not common with the ID #4494 site (see Note 1.2.25 - Variations to Operational Standards, this page). Scrap will be disposed of on an ongoing basis. Upon completion of excavation, all scrap and used machinery shall be removed.

1.2.13 - Fuel Storage
Fuel trucks will be used as the primary method for refueling of Site equipment. There shall be no permanent storage of fuel on-site. Portable fuel tanks may be located on-site from time to time for fueling of on-site equipment, with such activity to occur in accordance with the Technical Standards and Safety Act (TSSA).

1.2.14 - Area to be Extracted
The maximum area to be extracted is +/- 43.2 ha (+/- 106.7 ac).

1.2.15 - Excavation Setbacks
Setbacks are as shown on the Operations Schematic (this page).
ARA regulatory excavation setbacks will apply except where licensed boundary is common with the adjacent ID #4494 site. See also Note 1.2.25 - Variations from Operational Standards, this page.

1.2.16 - Extraction Elevations
The proposed maximum depth of extraction varies across the Site, as indicated by the spot elevations on the Operations Schematic, this page. The maximum depth of excavation is to the 271m (above sea level) elevation. The total depth of excavation, including overburden, sand/gravel, and bedrock, ranges from approximately 50m to 25m from north to south across the Site.

1.2.17 - Processing Equipment
On-Site processing will occur as part of both pit and quarry operations, through the use of:
- one portable crushing/screening plant, comprised of various types of crushing and screening units, and associated power generation.
- one wash plant, and associated power generation.

Subject to requirements of the Noise Impact Assessment (Golder, May 2020), processing will occur throughout the extraction area including within 30m of any boundary that is common with the ID #4494 site (see Note 1.2.25 - Variations to Operational Standards, this page). See also Noise Impact Assessment (Golder, May 2020) Recommendations, note 1.2.28 (this page), for further details on processing equipment.

1.2.18 and 19 - Berms
Berms required for noise mitigation purposes will be constructed using stripped overburden. Berms will be built along the entire south boundary of minimum height 7m above ground, with a length (minimum) of 436 m which includes approximately 25 m of length on the adjacent ARA Licence ID #4494 site; and, at the southern portion of the west boundary of minimum height 3.5m above ground, with a length (minimum) of 395 m. Noise mitigation berms will be constructed prior to aggregate extraction, and will remain in place for the duration of extraction operations.
See Operations Schematic and Noise Impact Assessment (Golder, May 2020) Recommendations (note 1.2.28, this page).
Other berms of varying height may also be constructed within other setback areas of the Site for purposes of overburden storage.
All berms will be constructed in accordance with 'Typical Berm Detail' on page 3 of 4, and will be vegetated using a grass/legume mixture of native, non-invasive seed species to establish vegetative ground cover and maintained to control erosion. Temporary erosion control will be implemented as required.

1.2.20 - Equipment
Main equipment normally to be used on Site may include, but is not limited to:
- one rock drill,
- one portable crushing/screening plant, comprised of various types of crushing and screening units, and associated power generation.
- one wash plant, and associated power generation,
- excavators and loaders,
- highway shipping trucks,
- internal haul trucks,
- various service vehicles for general operations and maintenance.

See also Noise Impact Assessment (Golder, May 2020) Recommendations, note 1.2.28 (this page), for further details on processing equipment.

1.2.21 - Tree Screen
No planting of tree screens is proposed.

1.2.22 - Hours of Operation
Operations on the subject property may occur during the daytime (07:00 to19:00), evening (19:00 to 23:00) and nighttime (23:00 to 07:00). The specific time-period categories relate to different noise level criteria and mitigation requirements.
The types of Site operations will be subject to specific controls and limitations as specified on this site plan - see Noise Impact Assessment (Golder, May 2020) Recommendations, note 1.2.28 (this page), for details.
Blasting will not occur on a holiday or between the hours of 6 p.m. on any day and 8 a.m. on the following day.
No drilling will occur during evening and nighttime hours.

1.2.23 - Tree and Stump Disposal/Use
Trees to be removed from the extraction area will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Stumps and brush cleared during site preparation may remain on-Site for future progressive rehabilitation, or may be transferred to the adjacent ID #4494 site.

1.2.24 - Cross Sections
Locations of Cross Sections are as shown on pages 1 and 3. Cross Sections are provided on page 4.

1.2.25 - Variations to Operational Standards
Regulatory Operational Standards (Section 5.0 of ARA Provincial Standards) will be varied by this site plan as shown on the Variations to Operational Standards table (see Title Block, this page).

1.2.26 - Frequency / Timing of Blasts
See Note 1.2.28, Blast Impact Assessment, this page.

1.2.27 - Annual Tonnage Limit
The maximum amount of aggregate to be removed from this Site in any calendar year is 3.25 million tonnes in combination with the Applicant's adjacent site under ARA Licence ID#4494.

1.2.28 - Technical Report Recommendations/Monitoring Requirements
Hydrogeology and Hydrology Level 1 and 2 Study (Golder, June 2020)
It is recommended that the following notes be put on the Site Plans:
1. The Site and Thomas St. Quarry water monitoring activities shall be merged into one program with a singular annual report.
2. The most current Spill Prevention and Contingency Plan for Thomas St. Quarry shall be adopted.
3. Quarry dewatering rates shall be monitored and documented under the future Permit To Take Water. Discharge management and monitoring shall be managed and documented under the current or future amended Environmental Compliance Approval.
4. Site water level and water quality monitoring shall be conducted during Operations and for two years following the cessation of Operations.
5. Site groundwater level monitoring shall occur at: MW17-01, MW17-02, MW17-03, MW17-04, BH17-01, BH17-02, BH17-03, BH17-04 and BH17-05. Dataloggers shall be maintained in each borehole to provide a continuous record. Monitoring events shall occur quarterly and will include manual measurements and data uploads. Monitoring of BH-series boreholes shall continue until they are mined out.
6. Site water quality monitoring shall occur annually at MW17-01, MW17-02, MW17-03 and MW17-04. The analytical suite shall include general chemistry, metals, petroleum hydrocarbons, BTEX, and bacteria.
7. A Water Well Complaint and Response Action Plan shall be adopted as outlined in the Hydrogeology and Hydrology Level 1 and 2 Study report (Golder, 2020). The Licensee shall restore water supplies to affected wells if the quarry is determined to have caused a loss of supply.

1.2.28 - Technical Report Recommendations/Monitoring Requirements (cont'd)
Hydrogeology and Hydrology Level 1 and 2 Study (Golder, June 2020)

WATER WELL COMPLAINT AND RESPONSE ACTION PLAN
1. A representative from SMC will meet with the landowner and discuss the complaint. If warranted, SMC will contact local well contractors in the event of a well malfunction and those within this zone will be immediately supplied a temporary water supply if the issue cannot be easily determined and rectified (see steps below).
2. The available contractor will then respond to the resident with the supply issue and rectify the problem as expedientl as possible provided the landowner authorizes the work.
3. If the issue raised by the landowner is related to loss of water supply, SMC will have a consultant/contractor determine the likely causes of the loss of water supply, which can result from a number of factors, including pump failure (owners expense), extended overuse of the well (owners expense) or lowering of the water level in the well from potential quarry interference (quarry expense). This assessment process would be carried out at the expense of the quarry operator and the results provided to the homeowner.
4. The consultant/contractor will be able to readily determine if pump failure is the problem and, should the landowner choose to have the plump repaired or replaced at their expense, the contractor would correct the situation for the landowner.
5. If, however, the well interference is determined to be caused by SMC quarry activities then water well supply mitigation will be considered. If the water level in the well is lowered to a point where it has interfered with pumping, there are a few initial steps that the consultant/contractor will determine the feasibility of, including adjusting the pump pressure or lowering the pump level in the well. In the event that the well is incapable of providing water (i.e., the water level is too low in comparison to the depth of the well), or the repair to the pumping system will be more than a day, the consultant/contractor will continue to supply a potable water source for the residence (until restoration of the well is complete). These actions would be carried out at the expense of the quarry operator. In extreme cases where the water level in the well has been lowered significantly, the well may have to be deepened, widened or relocated.
6. In summary, mitigation for affected wells could include the following measures: lowering of the pump to take advantage of existing storage within the well; deepening of the well to increase the available water column; widening of the well to increase the available storage of water; relocation of the well to another area on the property; drilling of multiple low yield wells; installing a cistern at the request of the property owner, and implementation of additional storage that can be filled with water from the existing well on a low yield setting.

Noise Impact Assessment (Golder, June 2020)
A) General
1. Site operations shall take place during daytime (07:00 to19:00), evening (19:00 to 23:00) and nighttime (23:00 to 07:00). The types of Site operations shall be subject to specific controls and limitations as specified below.
2. No drilling shall occur during evening and nighttime hours.
3. On-Site road-ways shall be maintained to limit noise resulting from trucks driving over ruts and pot-holes, and haul trucks will typically travel at speeds less than 25 km/h.
4. Extraction shall initially occur as a pit operation in the sand/gravel layer in an east-to-west direction from the existing pit/quarry site and will then proceed in a southwesterly and southerly direction and then a northerly direction. Height of stripping face and/or pit face will change throughout the Site (approximately 8m assumed). Processing equipment will be located on the pit floor below the stripping face.
5. Extraction of the quarry will follow a similar pattern as the pit operation. The uppermost quarry lift height will be approximately 14m.
6. Quarry operations can occur concurrent with pit extraction and any processing associated with it. A separation distance of approximately 100m from the quarry face to the pit face shall be maintained. Processing equipment will operate within 30m of the working pit or quarry face.

B) Operational Controls and Shielding
Highest permissible sound levels of primary noise sources are detailed in the Noise Impact Assessment.
1. Daytime (07:00 to 19:00)

The following berms (or acoustically equivalent measures) shall be required prior to on-Site extraction and processing:
- A 3.5 m high (above existing grade) part of west property line barrier; and,
- A 7 m high (above existing grade) south property line barrier.

The location of the property barriers are shown on the Operations Schematic, on this page of the ARA Site Plans.

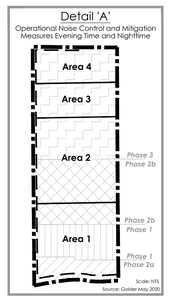
2. Evening (19:00 to 23:00) and Nighttime (23:00 to 07:00)

i) No drilling shall occur during evening and nighttime hours.
ii) In addition to the daytime controls, equipment noise controls in the form of local barriers (or acoustically equivalent) shall be required to reduce noise emissions from the equipment on the identified PORs for operations during the evening and nighttime period, as follows:
- two-sided barrier (i.e., L-shaped) to the south and west of the majority of the equipment located in the Areas 1 through 3;
- three-sided barrier (i.e., C-shaped) to the south, west and north direction for the secondary screen located within the Area 1 (i.e., near receptor POR01); and,
- one-sided barrier to the south for the secondary screen when located in Area 4.

iii) Noise mitigation shall be applied to the primary and the secondary screen and the wash plant generator. The applicable required noise controls could include a local barrier or acoustically equivalent treatment.
iv) Areas requiring a specific equipment noise control (i.e. local barriers or acoustically equivalent) during the evening and nighttime period are as shown on the ARA site plans (see Detail 'A' on this page).
v) The below table presents the barrier height or alternative control (i.e. limiting the sound pressure level of specific equipment) needed to achieve noise compliance at the relevant noise limits at the identified sensitive PORs. Either a local barrier or limiting noise emissions (i.e. acoustically equivalent) are required for a given area (i.e. Area 1 through Area 4). Both sets of controls are not required concurrently.

Proposed Equipment Evening and Nighttime Noise Control

Area Requiring Noise Control	Equipment Specific Noise Control or Proposed Acoustically Equivalent(1)	
	Local Barrier Required Height	Required Equipment Noise Level (2)
1	Primary Screen - 7 m high local barrier, Secondary Screen - 7m high local barrier, and Washplant Generator - 5 m high local barrier	Primary Screen - 59 dBA at 60 m, Secondary Screen - 60 dBA at 60 m and Washplant Generator - 60 dBA at 60 m
2	Primary Screen - 7 m high local barrier, and Secondary Screen -7 m high local barrier	Primary Screen - 59 dBA at 60 m and Secondary Screen - 60 dBA at 60 m
3	Primary Screen - 6 m high local barrier, and Secondary Screen - 6 m high local barrier	Primary Screen - 62 dBA at 60 m and Secondary Screen - 63 dBA at 60 m
4	Secondary Screen - 6 m high local barrier	Secondary Screen - 63 dBA at 60 m



Blast Impact Assessment (Golder, June 3, 2020)
In keeping with the blasting practices that have already been established within the Thomas Street Quarry, Golder recommends that the procedures be continued during the extraction of the Site:
1. Monitor all quarry blasts at the closest residences for ground and air vibration effects to ensure compliance with the current MECP guideline limits. The vibration monitoring shall be carried out by an independent third-party engineering firm with expertise in blasting and monitoring.
2. Blasting shall be carried out by persons experienced, trained and qualified to conduct blasting operations.
3. Blasting should be scheduled so that it occurs routinely during a specific period of time each day where possible.
4. Prohibit drilling and blasting on Sundays and all Statutory holidays.
5. When blasting within approximately 370 m of adjacent residences, the quarry shall regularly review their blast procedures in conjunction with the blast monitoring results to assess if it is necessary to modify blast design parameters of the blasts. If there are regular exceedances of the vibration limits, blast design parameters will be modified to reduce the maximum explosive weight detonated (MIC) per delay period. Any one or combination of the following operations would achieve this:
   - Reduce the borehole diameter with a corresponding reduction in the drill pattern parameters.
   - Introduce additional decked charges within each borehole.
   - Reduce the borehole length (depth) by reducing the bench height.
6. Blasting procedures such as drilling and loading shall be reviewed annually and modified as required to ensure compliance with industry standards.
7. Maintain a record of all blasting details including a seismic record of the ground and air vibration monitoring results. The blast details and monitoring results should be made available to the MNRF and the MECP, upon written request. The MECP (1985) recommended that the body of the blast reports should include the following information:
   - Location, date and time of the blast;
   - Dimensioned sketch including photographs, if necessary, of the location of the blasting operation, and nearest point of reception;
   - Physical and topographical description of the ground between the source and the receptor location.
   - Type of material being blasted;
   - Sub-soil conditions, if known;
   - Prevailing meteorological conditions including wind speed in m/s, wind direction, air temperature in °C, relative humidity, degree of cloud cover and ground moisture content;
   - Number of drill holes;
   - Pattern and pitch of drill holes;
   - Size of holes;
   - Depth of drilling;
   - Depth of collar (or stemming);
   - Depth of toe-load;
   - Weight of charge per delay;
   - Number and times of delays;
   - The result and calculated value of Peak Pressure Level in dBL and Peak Vibration Velocity in mm/s;
   - Applicable limits; and
   - The excess, if any, over the prescribed limit.
8. The initial series of regular production blasts at the start of extraction/blasting within the Site boundaries should be monitored at a minimum of five locations at varying distances from each blast to refine the ground and air vibration attenuation characteristics are within the estimated levels discussed in this report. This would entail establishing monitoring stations between the blast site and neighbouring receptors (residents). The site-specific attenuation data developed during this monitoring period should then be used to better define ground and air vibration effects at the nearest receptors.

Natural Environment Level 1/2 Report (Golder, April 2020)
The following notes are recommended for inclusion on the Site Plan:
1. To be in compliance with the MBCA, avoid removal of vegetation during the active season for breeding birds (April 15 – August 15) unless construction disturbance is preceded by a nesting survey conducted by a qualified biologist. If any active nests are found during the nesting survey, a buffer will be installed around the nest to protect against disturbance. Vegetation within the protection buffer cannot be removed until the young have fledged the nest.
2. Remove the barn and the cultural thicket 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/feature.
3. All mitigation and monitoring requirements under 0. Reg. 242/08, s. 23.5 for removal of barn swallow habitat will be followed.
4. The site will be rehabilitated in accordance with the requirements of the rehabilitation plan developed with ecological concepts from this report.

Stage 3 Archaeological Assessment, Heritage Impact Assessment (HIA) and Heritage Documentation Report (HDR) Recommendations are provided on page 4 of the Site Plan.

Site Plan Notes
1. Prior to disturbance and ultimate extraction, a Stage 4 excavation shall be carried out on the Bonis 1 Site (AhHh-15) as identified on the Site Plan.
2. The Stage 4 excavation shall follow Section 4.2.7 Standard 2 of the Standards and Guidelines for Consultant Archaeologists for 19th century domestic archaeological sites dating after 1830 (Government of Ontario, 2011).
3. Until such time that the Bonis 1 Site (AhHh-15) can undergo a Stage 4 excavation, the site shall be avoided and protected by establishing a "no-go" zone consisting of the site and a 10 m protective buffer as identified on the Site Plan.

Legal Description
LOT 29, THAMES CONCESSION
(geographic township of Blanshard)
TOWNSHIP OF PERTH SOUTH
COUNTY OF PERTH

Legend

- Boundary of Area to be Licensed
- Additional Licensed Lands Owned By Applicant
- Limit of Extraction — ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELED DISTANCES
- BH17-01 / MW17-02 — Site Groundwater Monitor Locations — GOLDER 2020
- +302.0 — Existing Spot Elevation — METRES ABOVE SEA LEVEL
- Entrance/Exit — INITIAL TYPICAL LOCATION. LOCATION TO VARY AS OPERATIONS PROGRESS
- Building/Structure — LOCATION AND USE FOR BUILDINGS ON–SITE AND WITHIN 120m ARE SHOWN ON THIS PAGE.
- General Direction of Excavation — (SEE NOTES ON PAGE 2 OF 4)
- Existing Vegetation
- Acoustic Berm — (SEE ADDITIONAL DETAILS AND NOTES ON THIS PAGE)
- Existing Fence — POST & WIRE FENCE UNLESS OTHERWISE NOTED
- Proposed Fence — 1.2m HIGH POST & WIRE FENCE UNLESS OTHERWISE NOTED
- Public Road
- +275.0 — Proposed Spot Elevation — QUARRY FLOOR
- Farm Access
- Internal Haul Route — INITIAL TYPICAL LOCATION. LOCATION TO VARY AS OPERATIONS PROGRESS
- Existing Pit/Quarry Face
- A1 — Cross Sections — SEE PAGE 4 OF 4 FOR EXISTING AND REHABILITATED CROSS SECTIONS

VARIATIONS FROM OPERATIONAL STANDARDS TABLE

OPERATIONAL STANDARD (OS)	VARIATION
5.1 fence at licensed boundary. 5.2 a gate at each entrance/exit. 5.9 no scrap within 30m from site boundary. 5.10 excavation setback areas. 5.13.1 no aggregate, topsoil or overburden pile; or, processing plant; or, building or structure within 30m from site boundary. 5.15 berms shall be located at least 3m away from site boundary.	Subject OS requirements do not apply at boundary segments common with ARA Licence ID #4494. Re: OS 5.1 - unfenced boundary segments will be demarcated such that the length of the boundary is identifiable, where possible under operating conditions.
5.6 stripped topsoil or overburden to be stored separately. 5.16 no removal of topsoil. 5.17 all stripped topsoil or overburden is used in on-site rehabilitation.	On-site storage of topsoil and overburden may be combined. Topsoil and overburden may be transferred to adjacent ARA Licence ID #4494.
5.19.1 at final rehabilitation, pit faces are sloped to at least three (3) horizontal metres for every vertical metre.	Pit faces will be sloped to at least two (2) horizontal metres for every vertical metre.
5.19.2 at final rehabilitation, quarry faces are sloped to at least two (2) horizontal metres for every vertical metre.	Quarry face at south perimeter of excavation will not be sloped.
5.22 ARA ID Sign at main entrance/exit.	Sign/ID wording will be located at off-site entrance/exit onto Perth Road 139.

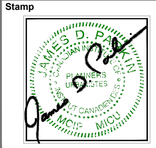
Site Plan Amendments

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



north

Applicant
ST. MARYS
ST. MARYS CEMENT INC. (CANADA)
55 Industrial St. 4th Floor
Toronto, Ontario M4G 3W9
Telephone: (416) 696-4411

Applicant's Signature
David Hanratty
Votorantim Cimentos - North American Aggregates
Director of Land & Resources

Project
Thomas Street Pit/Quarry Expansion

MNRF Application Reference No.
626490

Pre-approval review:

ARA Complete - December 10, 2020

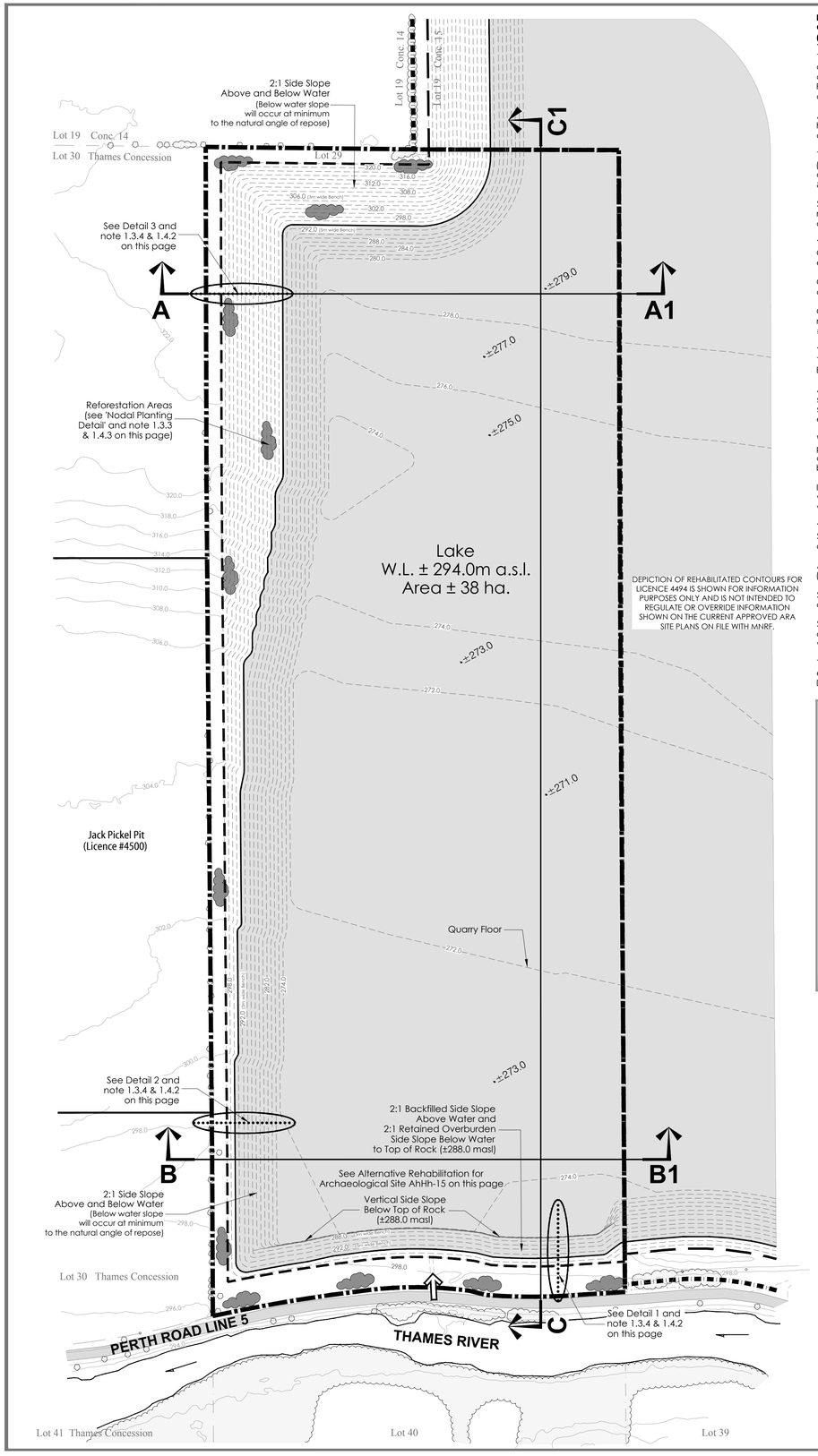
Plan Scale **1:2,500 (Arch D)**
SCALE
50 0 50 100
METRES

Plot Scale 1:2.5 [1mm = 2.5 units] MODEL
Drawn By D.G.S.
Checked By J.P.
File No. **Y321X**

File Name
OPERATIONAL PLAN

Drawing No.
2 OF 4

K:\Y321X-CBM Aggregates-Bonis Property-St.Marys\A\ARA Complete\Operplan 2of4 ARA Complete December2020.dwg



DEPICTION OF REHABILITATED CONTOURS FOR LICENCE 4494 IS SHOWN FOR INFORMATION PURPOSES ONLY AND IS NOT INTENDED TO REGULATE OR OVERRIDE INFORMATION SHOWN ON THE CURRENT APPROVED ARA SITE PLANS ON FILE WITH MNRF.

NUMBERING SCHEME USED FOR REHABILITATION NOTES REFERS TO A COMBINATION OF AGGREGATE RESOURCES OF ONTARIO PROVINCIAL STANDARDS (AROPS) FOR A CLASS 'A' LICENCE APPLICATION SITE PLAN - PIT BELOW WATER (CATEGORY '1') AND QUARRY BELOW WATER (CATEGORY '2').

1.3.1 & 1.3.5 - Progressive Rehabilitation
The proposed Thomas Street Pit/Quarry Expansion will be rehabilitated on a progressive basis, corresponding to the operational progression of the pit/quarry excavation, to form a quarry lake at final rehabilitation. This will be a continuation of the future quarry lake at the adjacent site (see 'Thomas Street Pit/Quarry Expansion and St. Marys Pit/Quarry Rehabilitation Schematic', this page). This Rehabilitation Plan has been developed to be integrated and consistent with the rehabilitation plan for ARA Licence ID #4494.

As the quarry component of the Expansion site is excavated to its maximum, or any other/lesser terminal limits, both horizontally and vertically on a lift-by-lift basis, progressive rehabilitation will follow provided the subject area is of an appropriate length to undergo rehabilitation.

The excavation perimeter will be fully side-sloped (from original ground to floor) at the north and west. Only the upper (non-bedrock) portion of the south excavation perimeter will be side-sloped. Sloping will occur as the limits of the quarry excavation are reached. See Rehabilitation Plan drawing and Details 1, 2 and 3, this page. See also Note 1.3.4 & 1.4.2 - Establishment of Slopes and Floor, this page.

Side-slopes will be vegetated where located above the final water level of the quarry lake, and will include reforestation areas at discrete locations order to introduce a diversity of vegetation types and species that is anticipated to spread around the rehabilitated side-slopes (see Note 1.3.3 & 1.4.3 - Vegetation, this page).

1.3.2 - Use of Topsoil/Overburden
Overburden, including topsoil, will be used to backfill or create the on-site side-slopes at the perimeter of the excavation.

Overburden/topsoil will also be moved between sites to facilitate progressive rehabilitation at the Expansion site and to create a peninsula landform in the existing ID #4494 site.

Overburden/topsoil for on-site rehabilitation will be sourced from material previously stripped and retained; and/or, material retained in-situ adjacent to the terminal location of an extraction face; and/or imported from the adjacent ID #4494 site.

1.3.3 & 1.4.3 - Vegetation
The Expansion site will be rehabilitated in accordance with the ecological concepts discussed in the Natural Environment Level 1/2 Report by Golder Associates.

A grass/legume mixture of native, non-invasive seed species will be used to establish vegetative ground cover on sloped areas, at appropriate times of the year, as the side-slopes are established. No re-vegetation will occur on sloped areas located below the elevation of the quarry lake (expected to be 294 masl) and the floor of the excavation (quarry) which will be under water.

Where reforestation is to occur on discrete areas of the established side-slopes (see Rehabilitation Plan drawing, this page, for typical locations), terrestrial plants of native, non-invasive species, may include a mixture of deciduous and coniferous species common to the local landscape, such as sugar maple, white pine, trembling aspen, American basswood, American beech, white cedar, white elm, and black cherry.

In areas of the slopes proximal to the final water level of the quarry lake, aquatic plants of native, non-invasive species, will be used and may include shrubs such as red-osier dogwood and slender willow, and herbaceous plants such as water plantain, lake sedge, swamp milkweed, softstem bulrush, and cattail.

1.3.4 & 1.4.2 - Establishment of Slopes and Floor
Slopes will be established from the top of the excavation to the ultimate quarry floor, at the north and west perimeter of the excavation, where faces will occur in the stripping face, pit face or quarry face (subject to geologic conditions).

At the south perimeter, sloping will be established at the stripping and pit face only, with no slope at the quarry face (i.e. a vertical face will exist).

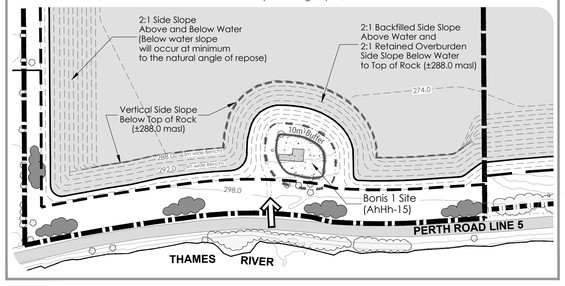
Side-slopes will include horizontal benches, created on the basis of stripping face and extraction lift configurations/elevations, to provide for slope stability.

Slopes which will remain above the quarry lake water surface elevation of 294 masl, will be constructed at a gradient of 2:1 (horizontal:vertical) - see Note 1.2.25 .Variations to Operational Standards, page 2. Slopes below the lake surface will establish at the natural angle of repose.

The slope at the south excavation perimeter will be created by backfilling at the upper-most lift, and through specific excavation techniques at the interface between retained overburden or sand/gravel and the extraction face. See Detail 1, this page.

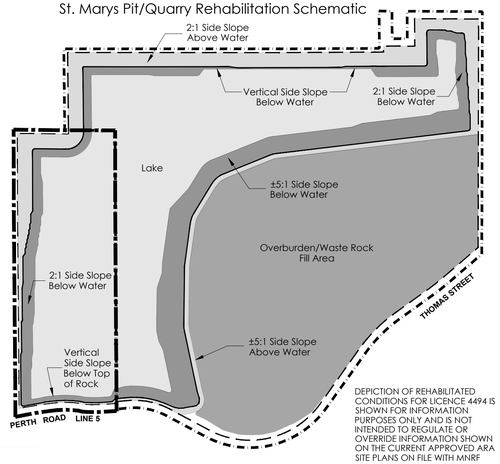
Alternative Rehabilitation for Archaeological Site AhHh-15

This drawing shows the rehabilitation requirement for this area if the Stage 4 excavation is not completed and clearance is not obtained from Ministry of Heritage, Sport, Tourism and Culture Industries



Thomas Street Pit/Quarry Expansion and St. Marys Pit/Quarry Rehabilitation Schematic

Scale: NTS



DEPICTION OF REHABILITATED CONDITIONS FOR LICENCE 4494 IS SHOWN FOR INFORMATION PURPOSES ONLY AND IS NOT INTENDED TO REGULATE OR OVERRIDE INFORMATION SHOWN ON THE CURRENT APPROVED ARA SITE PLANS ON FILE WITH MNRF

1.3.4 & 1.4.2 - Establishment of Slopes and Floor (cont'd)
Slopes at the north and west excavation perimeter will be created through backfilling. See Details 2 and 3, this page.

The remaining site boundaries (part of north and all of east), are common with extraction in the adjacent ARA Licence ID #4494 and no extraction face will exist.

No rehabilitation of the quarry floor will be undertaken as it will be below water. All equipment, scrap and structures will be removed from the quarry floor as part of final rehabilitation.

The rehabilitated condition of the Thomas Street Pit/Quarry Expansion will be compatible with the surrounding land uses including the rehabilitated existing ARA Licence ID #4494 and agricultural uses.

1.3.6 & 1.4.1 - Importation of Material for Rehabilitation
Overburden, including topsoil, may be imported from the adjacent ARA Licence ID #4494 site to facilitate progressive rehabilitation at the Expansion site - see Note 1.2.25, Variations to Operational Standards, page 2.

1.4.4 - Buildings / Structures
No buildings / structures will remain.

1.4.5 - Anticipated Elevation of Groundwater Table
As per the Hydrogeology and Hydrology Level 1 and 2 Study by Golder Associates, the groundwater table elevation following cessation of dewatering is anticipated to equilibrate at +/- 294 masl. This elevation will be located within the sand/gravel to the south or overburden layer, and above the pre-extraction bedrock surface.

1.4.6 - Internal Roads
No roads will remain.

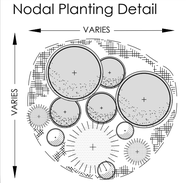
1.4.7 - Surface Water Drainage
During normal climatic conditions during most of the year, there will be no direct off-site surface drainage from the quarry lake. During higher water level periods, there may be some surface seepage from the lake along the overburden face. The potential for this occurrence will be confirmed through future monitoring and appropriate storm water drainage management type procedures undertaken accordingly.

1.4.8 - Final Elevations
See Drawing this page.

1.4.9 - Cross-Sections
Locations of Cross Sections are as shown on the drawings at pages 1 and 3. Cross Sections are provided on page 4.

Nodal Planting Detail

Scale: NTS

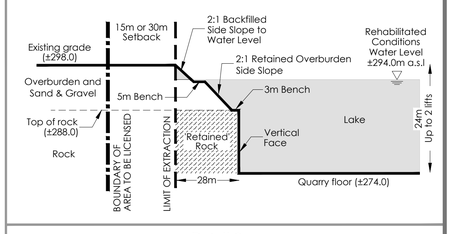


- REFORESTATION AREAS WILL CONSIST OF A NUMBER OF NODAL PLANTING CELLS CONTAINING A MIXTURE OF CONIFEROUS AND DECIDUOUS SPECIES PLANTED AS SEEDLINGS.
- TERRESTRIAL PLANTS OF NATIVE, NON-INVASIVE SPECIES, MAY INCLUDE A MIXTURE OF DECIDUOUS AND CONIFEROUS SPECIES COMMON TO THE LOCAL LANDSCAPE, SUCH AS SUGAR MAPLE, WHITE PINE, TREMBLING ASPEN, AMERICAN BASSWOOD, AMERICAN BEECH, WHITE CEDAR, WHITE ELM, AND BLACK CHERRY.

Detail 1

Scale: NTS

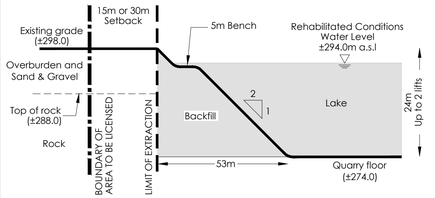
South Quarry Face
(2:1 backfilled and retained side slope above water and 2:1 overburden side slope below water to top of rock)



Detail 2

Scale: NTS

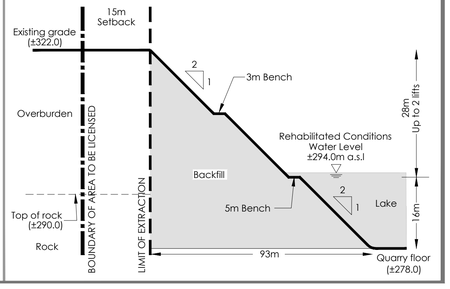
South Portion of West Quarry Face
(2:1 backfilled side slope above and below water)



Detail 3

Scale: NTS

North Portion of West Quarry Face
(2:1 backfilled side slope above and below water)



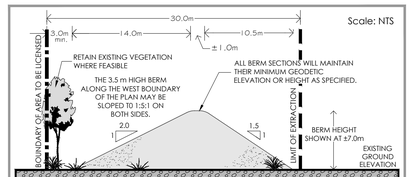
Legal Description

LOT 29
THAMES CONCESSION
(geographic township of Blanshard)
TOWNSHIP OF PERTH SOUTH
COUNTY OF PERTH

Legend

- Boundary of Area to be Licensed
- Additional Licensed Lands Owned By Applicant
- Contour with Elevation — METRES ABOVE SEA LEVEL
- Existing Fence — POST & WIRE FENCE UNLESS OTHERWISE NOTED
- Public Road
- Access
- Existing Vegetation
- Limit of Extraction — ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELED DISTANCES
- Proposed Contour — METRES ABOVE SEA LEVEL (m A.S.L.)
- Proposed Elevation — REHABILITATED ELEVATION
- Reforestation Areas — LOCATION APPROXIMATE
- Post Extraction Lake
- Cross Sections — SEE PAGE 4 OF 4 FOR EXISTING AND REHABILITATED CROSS SECTIONS

Scale: NTS



Typical Acoustic Berm Detail (Public Road Frontage)
(See note 1.2.18 & 1.2.19 on page 2 of 4)

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

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

north

Applicant

ST. MARYS

ST. MARYS CEMENT INC. (CANADA)
55 Industrial St. 4th Floor
Toronto, Ontario M4G 3W9
Telephone: (416) 696-4411

Applicant's Signature

David Hanratty
Votorantim Cimentos - North American Aggregates
Director of Land & Resources

Project

Thomas Street Pit/Quarry Expansion

MNRF Application Reference No.

626490

Pre-approval review:

ARA Complete - December 10, 2020

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.

Checked By J.P.

File No. **Y321X**

File Name

REHABILITATION PLAN

Drawing No.

3 OF 4

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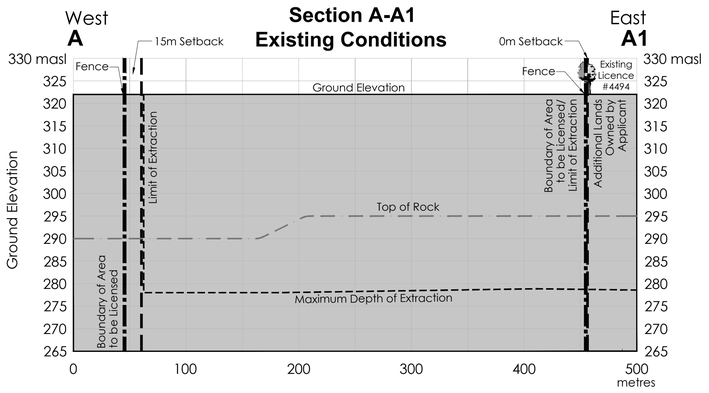
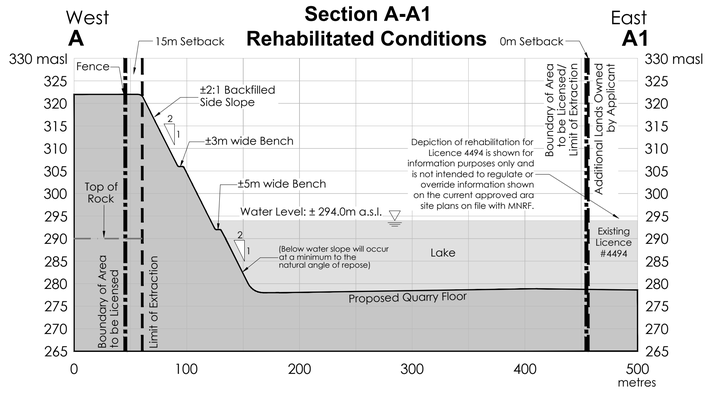
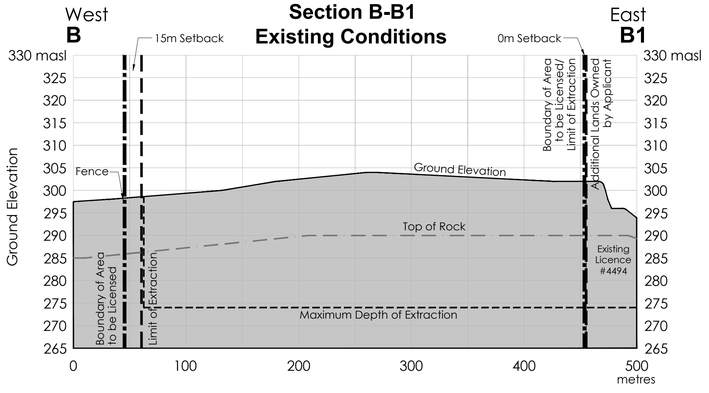
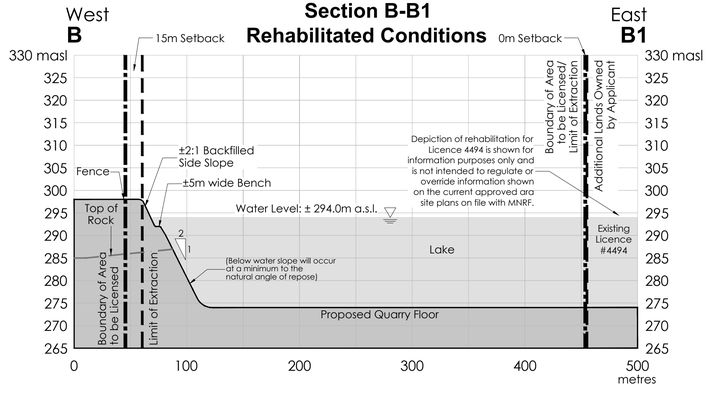
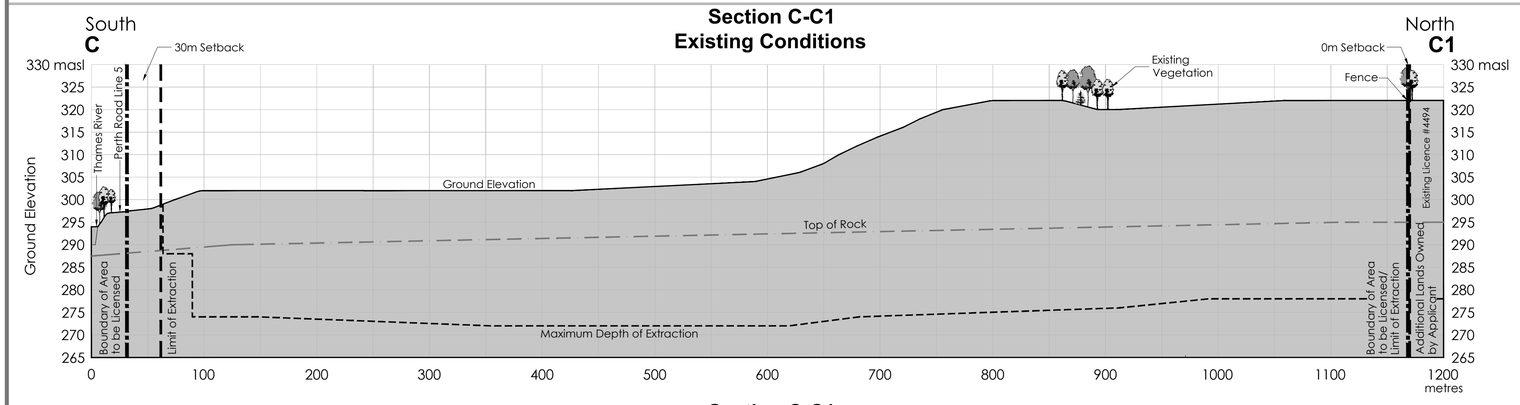
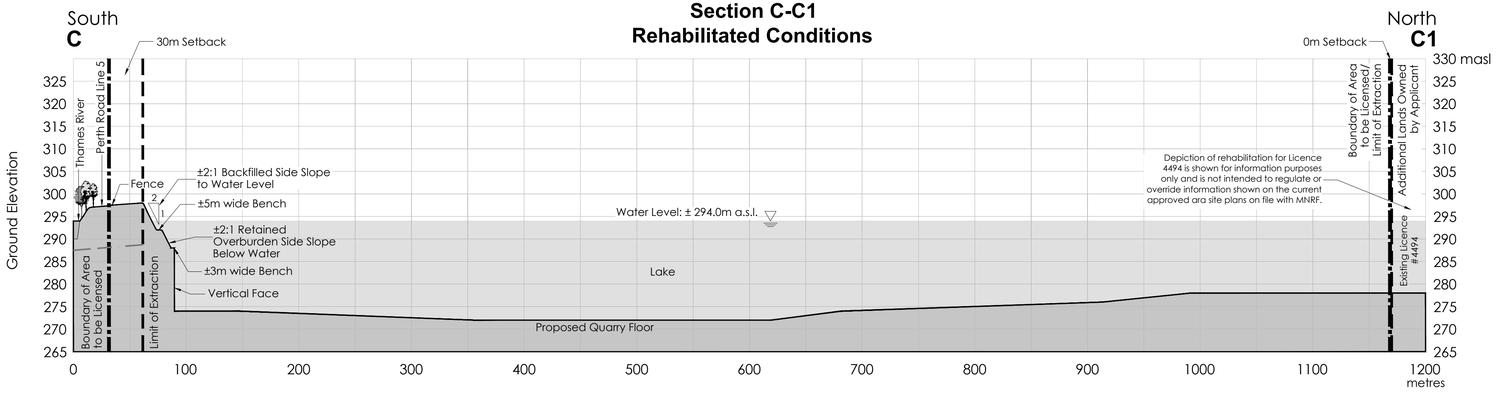












1.2.28 - Technical Report Recommendations/Monitoring Requirements (continued from page 2).
Stage 3 Archaeological Assessment (Golder, June 2020)
The results of the Stage 3 Archaeological Assessment of the Bonis 1 Site (AhHh-15) and the analysis and conclusions presented in Section 5.0, provide the basis for the following recommendations:

1. The pre-contact Indigenous component of the Bonis 1 Site (AhHh-15), has been sufficiently assessed and documented, and no further archaeological assessment is required for this component.
2. The historical Euro-Canadian component identified at Bonis 1 Site (AhHh-15) shall be subject to Stage 4 mitigation prior to proposed impacts. Specifically, the Stage 4 mitigation should focus on the mid- to late 19th century occupation associated with the Oddy family. Through discussions with the proponent, it has been determined that the Bonis 1 Site (AhHh-15) cannot be avoided, and, as such, the site should be mitigated through Stage 4 excavation prior to any proposed impacts. As well, the Bonis Site 1 (AhHh-15) should be identified on the Site Plan with a note that indicates, "prior to disturbance and ultimate extraction, a Stage 4 excavation shall be carried out on the Bonis Site 1 (AhHh-15) archaeological site as identified on the Site Plan" (see Section 6.1.)
3. The Stage 4 excavation should follow Section 4.2.7 Standard 2 of the Standards and Guidelines for Consultant Archaeologists for 19th century domestic archaeological sites dating after 1830 (Government of Ontario 2011). Specifically, hand excavation should focus on the possible midden areas relating to the earlier occupation identified above in Stage 3 test units 420E 855N: 1, 420E 850N: 1, 425E 850N: 1, 420E 845N:13, and 425E 845N: 1, as well as Stage 3 test unit 430E 825N: 1. All test units should be excavated into the first 5 cm of subsoil, or until a cultural feature is uncovered. Should subsurface cultural features be uncovered, they should be fully exposed, photographed, mapped and excavated stratigraphically with artifacts bagged and tagged by context. All soil excavated from the test units should be screened through 6 mm hardware cloth to facilitate the recovery of artifacts that may be present. The recovered artifacts should be tagged in the field by their provenience unit and returned to the laboratory for washing, cataloguing and analysis. Following hand excavation, the core surrounding Features 21 and 2 should be subject to mechanical topsoil removal to expose the remainder of the cobblestone foundation.
4. Until such time that the Bonis 1 Site (AhHh-15) can undergo the recommended Stage 4 excavation, the site shall be avoided and protected by establishing, a "no-go" zone consisting of the site and a 10 m protective buffer (Map 5). The proposed protected area must be shown on all contract drawings, when applicable, and be labeled as a "no-go" zone. Instructions should be provided to all construction staff to stay outside of this area (see Site Plan Notes below). Any ground alterations to the Bonis 1 Site (AhHh-15) and its protective buffer area should be avoided. This includes but is not necessarily limited to impacts from aggregate extraction, aggregate processing, vegetation clearance, and the construction of access roads or berms over the site. It also includes minor forms of soil disturbance, such as tree removal, minor landscaping, and utilities installation. If grading or other soil disturbing activities are anticipated to extend to the edge of the area to be avoided, then a temporary barrier must be erected around the Bonis 1 Site (AhHh-15) and its 10 m protective buffer. No-go instructions must be given to all on site extraction crew and others involved in the day-to-day decisions on site, and a licensed archaeologist should be contracted to inspect and monitor the effectiveness of the avoidance strategy. After completion of these activities, a report will be prepared on the effectiveness of the strategy.
   A letter from the Ontario Ministry of Natural Resources and Forestry, as the Approval Authority for aggregate licences, confirming supporting of this avoidance strategy, and a letter from St. Marys Cement Inc. (Canada), as the aggregate licence proponent, confirming they will adhere to this strategy is provided in the Supplementary Documentation that accompanies this report under separate cover.
   The Ontario Ministry of Heritage, Sport, Tourism and Culture Industries is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licensing.

Site Plan Notes

1. Prior to disturbance and ultimate extraction, a Stage 4 excavation shall be carried out on the Bonis 1 Site (AhHh-15) as identified on the Site Plan.
2. The Stage 4 excavation shall follow Section 4.2.7 Standard 2 of the Standards and Guidelines for Consultant Archaeologists for 19th century domestic archaeological sites dating after 1830 (Government of Ontario, 2011).
3. Until such time that the Bonis 1 Site (AhHh-15) can undergo a Stage 4 excavation, the site shall be avoided and protected by establishing a "no-go" zone consisting of the site and a 10 m protective buffer as identified on the Site Plan.
4. If Stage 4 archaeological excavation and clearances are not obtained, no extraction of Site AhHh-15 or the 10 metre 'no go' area is allowed and the 'Alternative Rehabilitation for Archaeological Site AhHh-15' shown on page 3 of 4 will apply.

Heritage Impact Assessment (Golder, November 2018)

- Conduct a Heritage Documentation Report to fully record and 'preserve by record' the property's heritage attributes prior to demolition; and,
- Deposit the Heritage Documentation Report in a locally accessible archive in the Township of Perth South.

Heritage Documentation Report (Golder, January 2019)

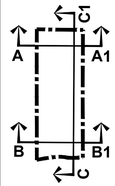
- This HDR be deposited in a permanent, publicly accessible archive in the Township of Perth South; and,
- The Main Block and West Wing, and Connected Barns can be demolished without further recording or analysis.

Legal Description

LOT 29
THAMES CONCESSION
(geographic township of Blanshard)
TOWNSHIP OF PERTH SOUTH
COUNTY OF PERTH

Legend

- Boundary of Area to be Licensed
- Limit of Extraction
  ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELED DISTANCES
- Additional Licensed Lands Owned By Applicant
- Maximum Depth of Extraction
- Top of Rock Elevation
  ST MARYS CEMENT MINING PLAN 2019
- Existing Vegetation/Trees



Cross Sections
SEE PAGES 1, 2 & 3 OF 4 FOR PLAN VIEW LOCATION OF CROSS SECTIONS

1. THIS SITE PLAN IS PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENCE, CATEGORY 1 AND 2.
2. THERE ARE A RANGE OF GROUNDWATER TABLE ELEVATIONS ACROSS THE SITE. THE BEDROCK AQUIFER WATER LEVELS RANGE FROM APPROXIMATELY 275-291MASL, PLEASE REFER TO 'HYDROGEOLOGY AND HYDROLOGY LEVEL 1 AND 2 STUDY' JUNE 2020 (GOLDER ASSOCIATES) FOR COMPLETE WATER TABLE INFORMATION.
   SEE ALSO HYDROGEOLOGY AND HYDROLOGY STUDY RECOMMENDATIONS, NOTE 1.2.28 ON PAGE 2, FOR SPECIFIC GROUNDWATER REPORTING, MONITORING AND CONTINGENCY PLANS, AS RECOMMENDED BY GOLDER.
3. AREA TO BE LICENSED ± 46.5 ha. (± 114.9 ac.)
   AREA TO BE EXTRACTED ± 43.2 ha. (± 106.7 ac.)
4. ALL MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES.

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

north

Applicant

ST. MARYS

ST. MARYS CEMENT INC. (CANADA)
55 Industrial St. 4th Floor
Toronto, Ontario M4G 3W9
Telephone: (416) 696-4411

Applicant's Signature

David Hanratty
Votorantim Cimentos - North American Aggregates
Director of Land & Resources

Project

Thomas Street Pit/Quarry Expansion

MNRF Application Reference No.
626490

Pre-approval review:

ARA Complete - December 10, 2020

Plan Scale: **1:2,500 (Horizontal) / 4x Exaggeration (Vertical)**
SCALE
50 0 50 100 METRES

Plot Scale 1:2.5 [1mm = 2.5 units] MODEL
Drawn By D.G.S.
Checked By J.P.
File No. **Y321X**

File Name
CROSS SECTION PLAN

Drawing No.
4 OF 4

K:\Y321X-CBM Aggregates-Bonis Property-St.Marys\A\ARA Complete\Xsecplan 4of4 ARA Complete December2020.dwg