



PROGRESSIVE REHABILITATION

- A. General**
- Area Calculations:
 - 1.1. Licence (total): **262.0 hectares**
 - Main Area: 152.3 hectares
 - North Area: 30.3 hectares
 - South Area: 79.4 hectares
 - 1.2. Limit of Extraction (total): **206.0 hectares**
 - Main Area: 128.0 hectares
 - North Area: 16.0 hectares
 - South Area: 62.0 hectares
 - 1.3. Final rehabilitation within licence (total): **262.0 hectares**
 - Grassland or island: 7.9 hectares
 - Classland: 15.0 hectares
 - Lake: 159.3 hectares
 - Meadow: 7.8 hectares
 - Woodland: 4.8 hectares
 - Woodland: 52.2 hectares
 - Existing conditions: 15.4 hectares
 - Phasing:
 - As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence.
 - Progressive rehabilitation shall follow the general direction and sequence of extraction identified on the plan view and described in the notes on drawing 2 of 3.
 - Minor deviations in operational and rehabilitation sequence shall be permitted in order to adjust for any variable resource or market conditions.
 - Each phase of extraction shall undergo progressive rehabilitation, prior to proceeding to the next phase of extraction.
 - Progressive rehabilitation activities shall include sloping and grading, placement of overburden and topsoil, tree and shrub planting.
 - Slopes and Grading:
 - Progressive rehabilitation shall consist of backfilling the excavation faces, tunnels and quarry floors to establish the final elevations and grades detailed on the plan view of this drawing using topsoil and overburden available on-site.
 - Slope staking shall range from 2:1 to 4:1 as well as gradual grades (see Section N Variations from Control and Operation Standards on drawing 2 of 3).
 - No excess soil shall be imported on-site for rehabilitation purposes.
 - Prior to the placement of subsoil and topsoil in locations where the quarry floor has been backfilled to establish gradual grades, islands and wetlands, the quarry floor shall be ripped and filled to adequate compaction, if required.
 - Drainage:
 - Final surface drainage will follow the rehabilitated contours and directional arrows shown on the plan view of this drawing.
 - Once operations in the North Area, South Area and Main Area have been completed and the rehabilitated landscape has been established, pumping shall cease, and the land allowed to flood and form the Main, North and South ponds. The Main, North and South pond water levels post-rehabilitation are provided to reach a level of approximately -40.0, -39.0 and -38.0 msl, respectively.
 - The South pond will be self-contained and not require an overflow outlet.
 - The Main pond overflow shall be directed via a culvert under Main Street to the North pond with its outlet invert at -40.0 msl.
 - The North pond overflow shall be directed via a man outlet to the Credit River with its outlet invert at -39.9 msl.
 - All rehabilitated pond levels and outlets will be passive and not require pumping.
 - Natural Environment:
 - Lake Shoreline - Main, North and South Area:
 - The shoreline of the lakes shall be contoured, where possible to create convoluted or irregular shoreline gradients.
 - Where sloping and excavation depths allow, shoals or islets shall be created to increase habitat diversity.
 - Stumps and logs shall be placed along the shoreline as wildlife habitat structure. Boulders and rock rubble from the extraction shall also be used for wildlife habitat structure.
 - Woodland - Main Area:
 - The woodland in the Main Area, as shown on the plan view, shall be planted with tree species representative of the woodland communities that will be removed, such as sugar maple, American beech, paper birch, white pine, white cedar, balsam fir, eastern hemlock, red maple, trembling aspen, black cherry, alternate-leaved dogwood, gray dogwood, red-osier dogwood.
 - Trees shall be planted at approximately 2.5 m spacing to achieve a density of 1600 seedlings per hectare. Two years after planting the target density shall be 1200 seedlings per hectare with a survival rate of 75%. Full plantings shall be completed 1 year after planting.
 - Habitat for eastern small-footed myotis and little brown myotis - Main Area:
 - Rock piles shall be placed in the locations shown on the plan view to create habitat for eastern small-footed myotis. Rock piles shall vary in size and height between 0.5 m and 2 m. Creevices shall be created through stacking of flat rock varying in size from several centimetres to one meter long.
 - Bat boxes shall be installed in the same location as the rock piles to provide habitat for little brown myotis.

- Setback areas / Slopes - Main, North and South Area:
 - All slopes located above the final water level shall be seeded with an appropriate native, non-invasive seed mix to prevent erosion during operations.
 - Nodul plantings shall be expanded naturally through seed rain.
 - Along the setback to significant Woodland B, as shown on drawing 1 of 3, plant species representative of the existing woodland, such as sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), paper birch (*Betula papyrifera*), American elm (*Ulmus americana*), white cedar (*Thuja occidentalis*), balsam fir (*Abies balsamea*), eastern hemlock (*Thuja canadensis*), red maple (*Acer rubrum*), trembling aspen (*Populus tremuloides*), black cherry (*Prunus serotina*), alternate-leaved dogwood (*Cornus alternifolia*), gray dogwood (*Cornus rostrata*), red-osier dogwood (*Cornus serotina*), shall be planted.
 - Along the setback to significant Woodland D, as shown on drawing 1 of 3, plant species representative of the existing woodland, such as sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), red oak (*Quercus rubra*), paper birch (*Betula papyrifera*), black walnut (*Juglans nigra*), American elm (*Ulmus americana*), alternate-leaved dogwood (*Cornus alternifolia*), shall be planted.
 - On north-facing slopes and setbacks which are expected to be cooler and moister, plant species such as white cedar (*Thuja occidentalis*), white spruce (*Picea glauca*), Norway spruce (*Picea abies*), red maple (*Acer rubrum*), paper birch (*Betula papyrifera*), American beechwood (*Fagus americana*), shall be planted.
 - On the east-facing slopes and setbacks, plant species such as white pine (*Pinus strobus*), white cedar (*Thuja occidentalis*), white spruce (*Picea glauca*), European larch (*Larix laricina*), trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), red oak (*Quercus rubra*), bur oak (*Quercus macrocarpa*), shall be planted.
 - Within the setback and slope areas shrubs shall also be planted to add diversity and increase wildlife/pollinator diversity, such as: serotinous cholla (*Opuntia* spp.), nannyberry (*Viburnum lentago*), redbud (*Physocarpus opulifolius*), dogwood (*Cornus* spp.), highbush cranberry (*Viburnum opulus*), elderberry (*Sambucus* spp.), choke cherry (*Prunus virginiana*).
- Shoreline Wetland - Main, North and South Areas:
 - Organic material shall be placed in shallow water areas to promote the establishment of shoreline and aquatic vegetation and to create habitat for aquatic fauna and amphibians. Stumps and trees of non-commercial value shall be stockpiled during clearing operations and used as habitat structure. Boulders and rock rubble from the extraction operation shall also be used to increase habitat diversity along the shoreline area, where possible.
 - In the shoreline wetland areas, shallow emergent marsh vegetation shall be planted in the water with species that may consist of, but are not limited to: red-osier dogwood (*Cornus serotina*), slender willow (*Salix pedicellaris*), and herbaceous plants such as white cedar (*Thuja occidentalis*), white spruce (*Picea glauca*), European larch (*Larix laricina*), trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), red oak (*Quercus rubra*), bur oak (*Quercus macrocarpa*), shall be planted.
- Riparian Plantings - Main Area:
 - Riparian plantings along Tributary #1, as shown on drawing 2 of 3, shall include a variety of native species including, but not limited to: white cedar (*Thuja occidentalis*), balsam poplar (*Populus balsamifera*), pussy willow (*Salix discolor*), slender willow (*Salix pedicellaris*), red-osier dogwood (*Cornus serotina*), nannyberry (*Viburnum lentago*), elderberry (*Sambucus canadensis*), meadowswamp (*Sagittaria* sp.), boat bluegrass (*Poa patens*), lake sedge (*Carex lasiocarpa*), sedge (*Carex villosostris*), blue vervain (*Veronica hastata*), and oak root spruce (*Eleocharis* spp.).
 - Turtle habitat - North Area:
 - Turtle habitat shall be created in the North Area in the location shown on the plan view.
 - The turtle habitat pond shall include sediment on the pond bottom to provide a growing medium for plants, and provide habitat for turtles (e.g., overwintering).
 - Plant emergent macrophytes shall include species such as pickereweed (*Potamogeton nodosus*), broad-leaved arrowhead (*Sagittaria latifolia*), water plantain species (*Alisma* spp.), cattail (*Typha* spp.), common arrowhead (*Sagittaria latifolia*), and greater water dock (*Rumex hydrocynosu*).
 - Plant submergent macrophytes shall include species such as watergrass (*Zostera marina*), broad waterweed (*Elodea canadensis*), slender stargrass (*Stipa flexilis*), common hornwort (*Ceratophyllum demersum*).
 - Banking features such as logs or rocks shall be placed throughout the shallow shoreline areas.
 - Areas of suitable nesting substrate shall be constructed along or adjacent to the shoreline.
- Meadow in North Area:
 - Meadow habitat for eastern meadowlark and boblink shall be created in the North Area outside of the extraction at the location shown on the plan view.
 - A minimum of 60.0% of the meadow shall be covered by at least three different grass species, such as: poverty oatgrass (*Danthonia spicata*), bottlebrush grass (*Pharus spicata*), common panic grass (*Pharus capillaris*), big bluestem (*Andropogon gerardii*), Canada wild rye (*Elymus canadensis*), switch grass (*Panicum virgatum*), wood-grass (*Sorghum opycarpus*), Virginia wild rye (*Elymus virginicus*).
 - At least one of the grass species shall be taller than 20 cm, which shall include at least one of the following: bottlebrush grass (1.3 m), big bluestem (1.0-1.2 m), Canada wild rye (1.2 m), switch grass (1.1 m).
 - Remaining 20-40% shall be covered by forbs or legumes such as Canada anemone (*Anemone canadensis*), black-eyed susan (*Rudbeckia hirta*), common evening primrose (*Oenothera biennis*), common milkweed (*Asclepias syriaca*), yellow (*Achillea millefolium*), New England aster (*Symphyotrichum novae-angliae*), and wild bergamot (*Monarda fistulosa*).
 - Meadow seed mixes shall be sown at a rate of 25kg/ha.

FINAL REHABILITATION

- A. General**
- All equipment and buildings/structures shall be removed from the site.
 - No internal haul roads shall remain.
 - The anticipated final use will be naturalized open spaces with the creation of lakes, vegetated shorelines, islands, wetlands, upland forested areas, riparian plantings adjacent to the existing watercourse, road, shrub and tree planting on cleared areas, grassland meadows and specialized habitat features for bats and turtles.
 - The long term average lake levels are:
 - Main - 40.0 msl
 - North - 39.0 msl
 - South - 38.3 msl

- Site Plan Acronyms**
- ARA - Aggregate Resources Act
 - MECP - Ministry of the Environment, Conservation and Parks
 - MGCS - Ministry of Government and Consumer Services
 - DFO - Department of Fisheries and Oceans Canada
 - MNR - Ministry of Natural Resources and Forestry
 - TSSA - Technical Standards and Safety Authority
 - MTCS - Ministry of Tourism, Culture and Sport
 - ECA - Environmental Compliance Approval
 - BMPP - Best Management Practices Plan
 - WWIS - Water Well Information System
 - HIA - Heritage Impact Assessment
 - CV - Credit Valley Conservation
 - MASL - Metres above sea level
 - PTTW - Permit to Take Water
 - NTS - Not to Scale

Legal Description
Part of Lots 15-18, Concession 4 WSCR and Part of Lot 16, Concession 3 WSCR
(former geographic Township of Caledon)
Township of Caledon
Region of Peel

Legend

- Licence Boundary
- Limit of Extraction
- Contours with Elevation (Metres above sea level (MASL))
- Watercourse (Perennial (Direction of flow indicated by arrows))
- Watercourse (Intermittent (Direction of flow indicated by arrows))
- Water Feature
- Wooded Area
- Wetland (MNR Evaluated - Other)
- Wetland (MNR Evaluated)
- Gradual Grade / Island
- Grassland
- Woodland
- Wetland
- Lake
- Meadow
- Rock Pile & Bat Box Locations (Approximate)

Additional Land Owned by Licensee

- 120m Offset From Licence Boundary
- Pipeline (Enbridge Gas Inc.)
- Fence (1.2 m post & wire fence unless otherwise noted)
- Public Road
- Driveway
- Railway
- Entrance / Exit
- Gate
- Building/Structure
- Proposed Floor Elevation (Metres above sea level (MASL))
- Proposed Final Grade (Horizontal / Vertical)
- Cross Sections

TOWN OF CALEDON PLANNING RECEIVED December 16, 2022

Legend - Cross Sections

- Licence Boundary
- Limit of Extraction
- Existing Grade - Removed / Altered
- Existing Grade - Undisturbed
- Maximum Predicted Water Table
- Quarry Floor
- Backfilled
- Lake

Site Plan Amendments

No.	Date	Description	By

Site Plan Revisions (Pre-Licensing)

No.	Date	Description	By

MHBC Stamp

Brian Zeman
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(9) of Ontario Regulation 244/97 to prepare and certify site plans.

Christopher Poole
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(1) of Ontario Regulation 244/97 to prepare and certify site plans.

MHBC
113 COLLIER STREET, BARRE, ON, LAM 1H2 | P: 705.728.0405 F: 705.728.2010 | WWW.MHBC.PA.COM

PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

Applicant

cbm CBM Aggregates a Division of St. Marys Cement Inc. (Canada)
55 Industrial Street
Toronto, Ontario
M4G 3W9

Project
Caledon Pit & Quarry
18722 Main Street, Caledon, Ontario

MNR Licence Reference No.

Applicant's Signature

Plan Scale: 1:5000 (Arch E)

Date: December 2022

Drawn By: C.P. **File No.:** 8816AF

Checked By: B.Z.

File Name: **Rehabilitation Plan**

Drawing No.: **3 of 3**

File Path: