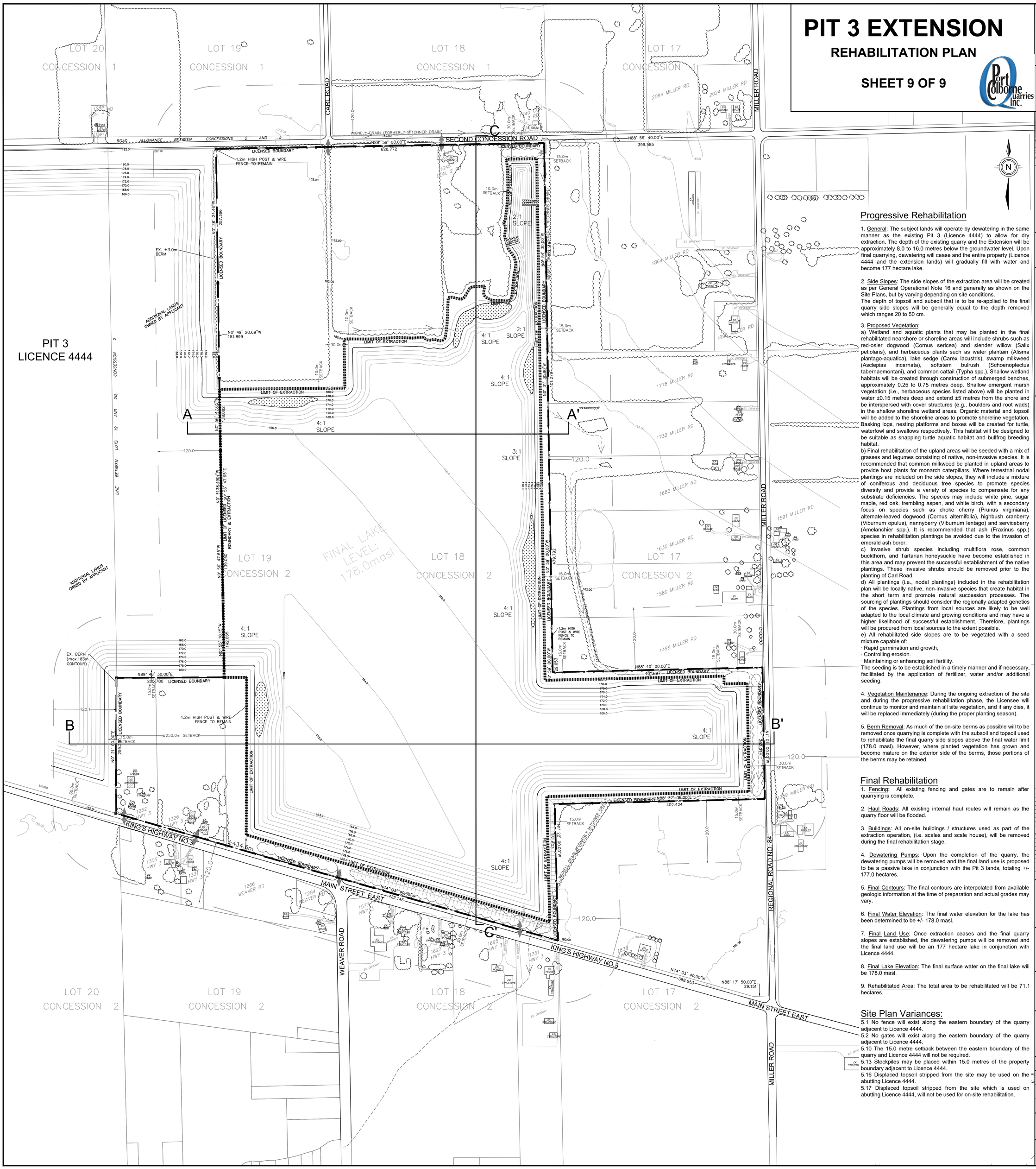
PIT 3 EXTENSION

REHABILITATION PLAN

SHEET 9 OF 9



Progressive Rehabilitation

1. General: The subject lands will operate by dewatering in the same manner as the existing Pit 3 (Licence 4444) to allow for dry extraction. The depth of the existing quarry and the Extension will be approximately 8.0 to 16.0 metres below the groundwater level. Upon final quarrying, dewatering will cease and the entire property (Licence 4444 and the extension lands) will gradually fill with water and become 177 hectare lake.

2. Side Slopes: The side slopes of the extraction area will be created as per General Operational Note 16 and generally as shown on the Site Plans, but by varying depending on site conditions.
The depth of topsoil and subsoil that is to be re-applied to the final quarry side slopes will be generally equal to the depth removed which ranges 20 to 50 cm.

3. Proposed Vegetation:
a) Wetland and aquatic plants that may be planted in the final rehabilitated nearshore or shoreline areas will include shrubs such as red-osier dogwood (Cornus sericea) and slender willow (Salix petiolaris), and herbaceous plants such as water plantain (Alisma plantago-aquatica), lake sedge (Carex lacustris), swamp milkweed (Asclepias incarnata), softstem bulrush (Schoenoplectus tabernaemontani), and common cattail (Typha spp.). Shallow wetland habitats will be created through construction of submerged benches, approximately 0.25 to 0.75 metres deep. Shallow emergent marsh vegetation (i.e., herbaceous species listed above) will be planted in water ±0.15 metres deep and extend ±5 metres from the shore and be interspersed with cover structures (e.g., boulders and root wads) in the shallow shoreline wetland areas. Organic material and topsoil will be added to the shoreline areas to promote shoreline vegetation. Basking logs, nesting platforms and boxes will be created for turtle, waterfowl and swallows respectively. This habitat will be designed to be suitable as snapping turtle aquatic habitat and bullfrog breeding habitat.
b) Final rehabilitation of the upland areas will be seeded with a mix of grasses and legumes consisting of native, non-invasive species. It is recommended that common milkweed be planted in upland areas to provide host plants for monarch caterpillars. Where terrestrial nodal plantings are included on the side slopes, they will include a mixture of coniferous and deciduous tree species to promote species diversity and provide a variety of species to compensate for any substrate deficiencies. The species may include white pine, sugar maple, red oak, trembling aspen, and white birch, with a secondary focus on species such as choke cherry (Prunus virginiana), alternate-leaved dogwood (Cornus alternifolia), highbush cranberry (Viburnum opulus), nannyberry (Viburnum lentago) and serviceberry (Amelanchier spp.). It is recommended that ash (Fraxinus spp.) species in rehabilitation plantings be avoided due to the invasion of emerald ash borer.
c) Invasive shrub species including multiflora rose, common buckthorn, and Tartarian honeysuckle have become established in this area and may prevent the successful establishment of the native plantings. These invasive shrubs should be removed prior to the planting of Carl Road.
d) All plantings (i.e., nodal plantings) included in the rehabilitation plan will be locally native, non-invasive species that create habitat in the short term and promote natural succession processes. The sourcing of plantings should consider the regionally adapted genetics of the species. Plantings from local sources are likely to be well adapted to the local climate and growing conditions and may have a higher likelihood of successful establishment. Therefore, plantings will be procured from local sources to the extent possible.
e) All rehabilitated side slopes are to be vegetated with a seed mixture capable of:
· Rapid germination and growth,
· Controlling erosion.
· Maintaining or enhancing soil fertility.
The seeding is to be established in a timely manner and if necessary, facilitated by the application of fertilizer, water and/or additional seeding.

4. Vegetation Maintenance: During the ongoing extraction of the site and during the progressive rehabilitation phase, the Licensee will continue to monitor and maintain all site vegetation, and if any dies, it will be replaced immediately (during the proper planting season).

5. Berm Removal: As much of the on-site berms as possible will to be removed once quarrying is complete with the subsoil and topsoil used to rehabilitate the final quarry side slopes above the final water limit (178.0 masl). However, where planted vegetation has grown and become mature on the exterior side of the berms, those portions of the berms may be retained.

Final Rehabilitation

1. Fencing: All existing fencing and gates are to remain after quarrying is complete.

2. Haul Roads: All existing internal haul routes will remain as the quarry floor will be flooded.

3. Buildings: All on-site buildings / structures used as part of the extraction operation, (i.e. scales and scale house), will be removed during the final rehabilitation stage.

4. Dewatering Pumps: Upon the completion of the quarry, the dewatering pumps will be removed and the final land use is proposed to be a passive lake in conjunction with the Pit 3 lands, totaling +/- 177.0 hectares.

5. Final Contours: The final contours are interpolated from available geologic information at the time of preparation and actual grades may vary.

6. Final Water Elevation: The final water elevation for the lake has been determined to be +/- 178.0 masl.

7. Final Land Use: Once extraction ceases and the final quarry slopes are established, the dewatering pumps will be removed and the final land use will be an 177 hectare lake in conjunction with Licence 4444.

8. Final Lake Elevation: The final surface water on the final lake will be 178.0 masl.

9. Rehabilitated Area: The total area to be rehabilitated will be 71.1 hectares.

Site Plan Variances:

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

APPLICANT
PORT COLBORNE QUARRIES INC.

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

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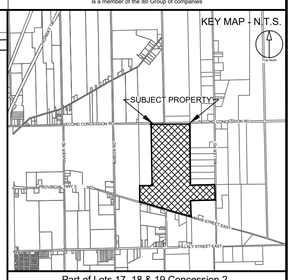
KEY MAP - N.T.S.



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

LEGEND
- LOT & CONCESSION
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- 1.2m POST & WIRE FENCE TO REMAIN
- MUNICIPAL DRAIN
- B' — B" LOCATION OF CROSS-SECTION (SEE SHEETS 7 OF 9 & 8 OF 9)
- FUTURE AQUATIC HABITAT
- VEGETATION SCREENING

#	DATE	BY	DESCRIPTION
			SITE PLAN AMENDMENTS
1	2021.02.09	E.T.	AS PER MNRF PRELIMINARY REVIEW COMMENTS
			REVISIONS PRIOR TO APPROVAL

SITE DATA

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

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

DATE: Jan.15, 2021

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PORT COLBORNE QUARRIES INC.

PIT 3 EXTENSION

SCALE: 1 : 2,500 (0 25 50 75 100m)

PROJECT NO: 115774

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

SHEET TITLE
REHABILITATION PLAN

SHEET NUMBER
9 of 9

ISSUE

File Location: J:\115774_PortColborneQ\9 Drawings\09pln\PIT-3-EXT\N\SHEETS\115774-Title_Blk.dwg Last Saved: February 16, 2021, by emma.tillery Plotted: Tuesday, February 16, 2021 9:59:02 PM by Emma Tillery

SCALE CHECK 1 in