



EXISTING FEATURES - GENERAL
SCALE 1:2 mm



WEST CARLETON QUARRY EXTENSION
PART OF LOT 15, CONCESSION 11
FORMER GEOGRAPHIC TOWNSHIP OF HUNTLEY,
CITY OF OTTAWA

APPLICANT:
THOMAS CAVANAGH CONSTRUCTION LIMITED
9094 CAVANAGH ROAD
ASHTON, ONTARIO
K0A 1B0

QUARRY LICENSE NO. _____

- NOTE(S)**
- LICENCED AREA, WEST CARLETON QUARRY EXTENSION 18.2 HECTARES.
 - AREA OF OPERATION, WEST CARLETON QUARRY EXTENSION 16.5 HECTARES.
 - THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES AND FORESTRY IN CONJUNCTION WITH AN APPLICATION FOR A CLASS 'A', CATEGORY 2 QUARRY BELOW WATER UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.
 - THIS PLAN WAS PREPARED USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS.
 - LOT, CONCESSION AND BOUNDARY LINES ON THIS PLAN ARE APPROXIMATE.
 - THIS IS NOT A LEGAL SURVEY DRAWING IN ACCORDANCE WITH THE PROVINCE OF ONTARIO SURVEYORS ACT 1987. THIS DRAWING WAS PRODUCED USING STANDARD PHOTOGRAMMETRIC PRACTICES.

- LEGEND**
- BOUNDARY OF AREA TO BE LICENCED
 - LIMIT OF EXTRACTION
 - 120-METRE SURROUND
 - BOREHOLE / MONITORING WELL
 - PRIVATE WELL (AS PER MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS WATER WELL INFORMATION SYSTEM)
 - CON 12, LOT 15
CON 12, LOT 14
LOTS AND CONCESSION LINES
 - ME[725r] LAND ZONING BY-LAW
 - BUILDING; S-SILO, H-HOUSE, G-GARAGE, B-BARN, S-SHED, O-OFFICE, SC-SCALE HOUSE, A-AUTO
 - PAGE WIRE FENCE/GATE
 - UTILITY POLE
 - PRIMARY ENTRANCE
 - PRIMARY EXIT

- REFERENCE(S)**
- KEY PLAN: Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.
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 - CITY OF OTTAWA 2012 TOPO LIDAR TILES.
 - MAPPING AND GROUND CONTROL FOR THE SITE PLAN COMES FROM LAND INFORMATION ONTARIO (LIO) DATA AVAILABLE FROM THE MINISTRY OF NATURAL RESOURCES AND FORESTRY, CITY OF OTTAWA 2012 TOPO LIDAR TILES AND A GROUND SURVEY CONDUCTED BY CAVANAGH IN NOVEMBER 2019. THE BACKGROUND AERIAL IMAGE ON PLAN 1 OF 5 (EXISTING FEATURES - GENERAL) IS FROM THE CITY OF OTTAWA 2017 AERIAL MAPPING AND WAS EXPORTED FROM GEOOTTAWA.
 - PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28.

EXISTING FEATURES - GENERAL (PAGE 1 OF 5)

NOTE: THE NUMBERS BELOW REFER TO AGGREGATE RESOURCES OF ONTARIO: SITE PLAN STANDARDS (AUGUST 2020)

16 EXISTING ZONING

THE EXISTING ZONING OF LAND ON AND WITHIN 120 METRES OF THE SITE IS SHOWN ON THIS PLAN (PAGE 1 OF 5).

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
WEST CARLETON QUARRY EXTENSION

TITLE
EXISTING FEATURES - GENERAL

APPLICANT	YYYY-MM-DD	2021-02-17
DESIGNED	----	----
PREPARED	JM	----
REVIEWED	JPAO	----
APPROVED	KAM	----

PROJECT NO. 1899975 CONTROL 0009 REV. 0 FIGURE 1 OF 5

LAND USE / ZONING CITY OF OTTAWA BY-LAW NO. 2008-250 CONSOLIDATION	ENVIRONMENTAL PROTECTION ZONE SUBZONE 3
EP3	MINERAL EXTRACTION ZONE RURAL EXCEPTION 725
ME[725r]	

AMENDMENTS	DATE	APPROVAL DATE
SITE PLANS APPROVED BY THE MINISTRY OF NATURAL RESOURCES AND FORESTRY.		
SIGNATURE		DATE



2021-08-26
DATE

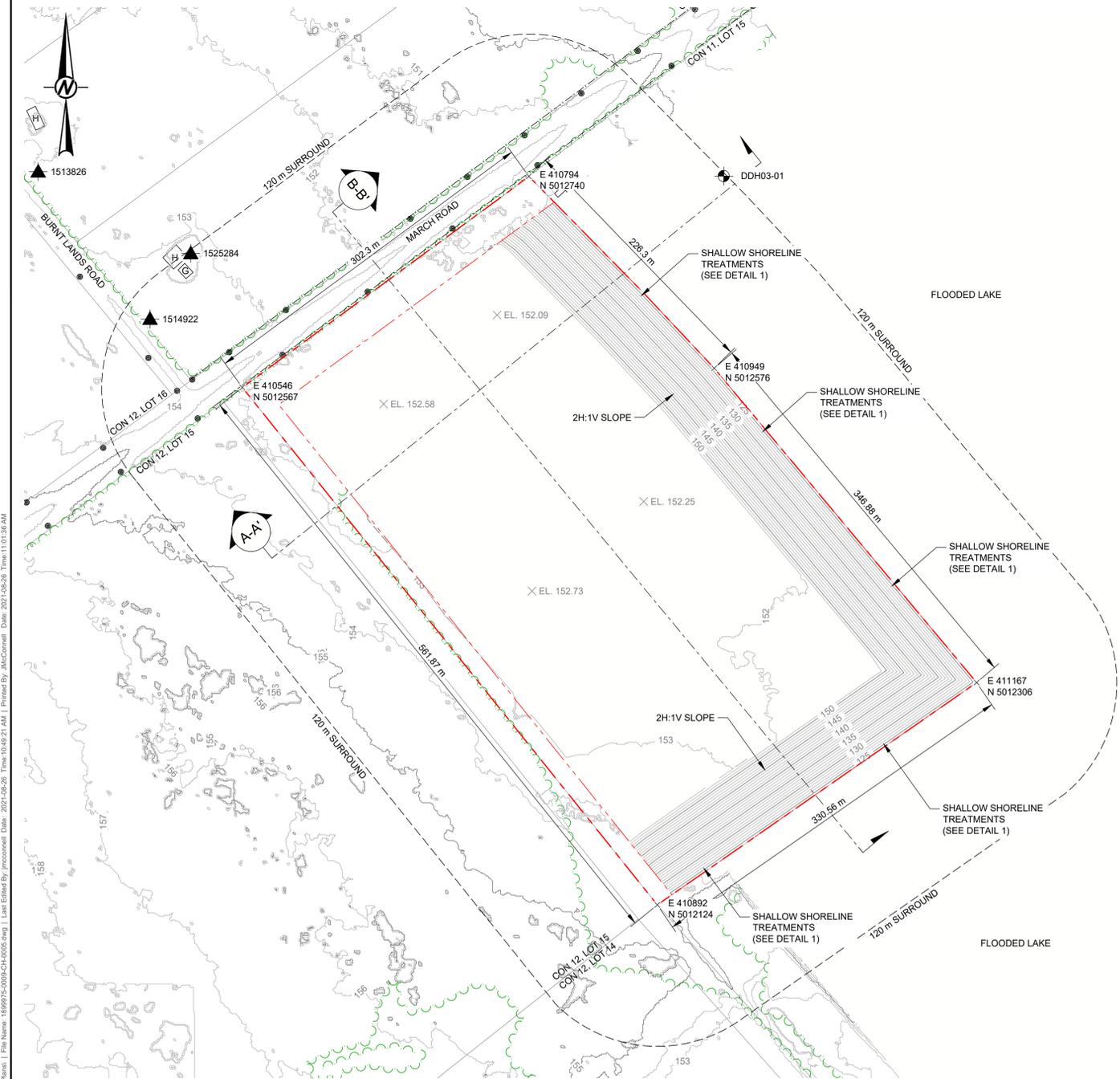
SIGNATURE OF APPLICANT/LICENSEE

2021-08-26
DATE

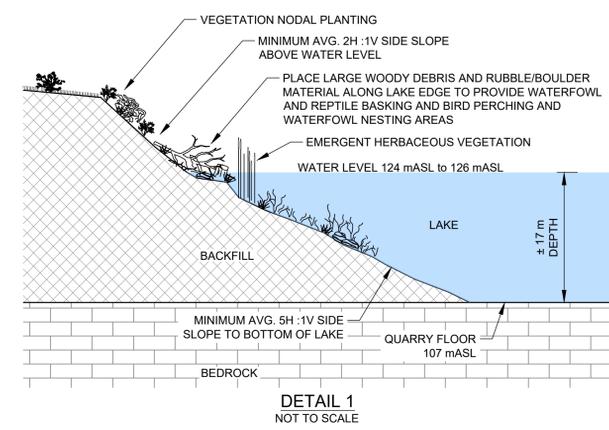
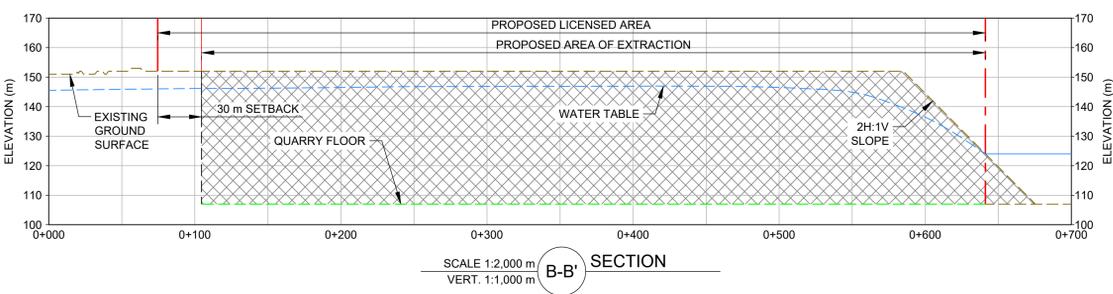
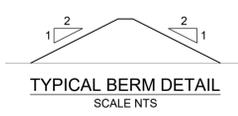
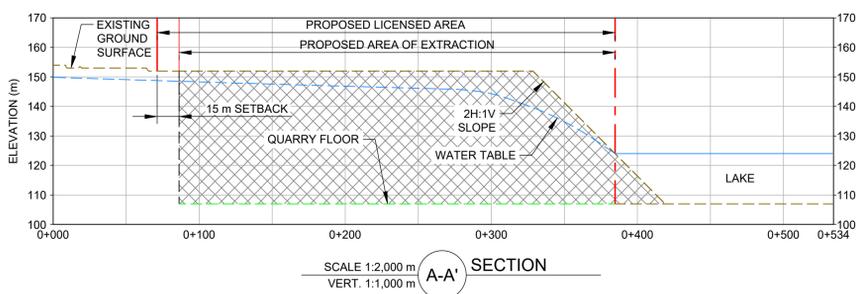
PREPARED UNDER THE DIRECTION OF:
JAIME OXTOBEE

THOMAS CAVANAGH CONSTRUCTION LIMITED





OPERATIONS PLAN
SCALE 1:2,000 m



REHABILITATION PLAN - (PAGE 5 OF 5)

NOTE: THE NUMBERS BELOW REFER TO AGGREGATE RESOURCES OF ONTARIO: SITE PLAN STANDARDS (AUGUST 2020)

59 PROPOSED REHABILITATION OF THE SITE

THE PROPOSED FINAL REHABILITATION OF THE SITE INVOLVES BACKFILLING TO EXISTING GROUND SURFACE. TO THE EAST AND SOUTH OF THE SITE, THE EXISTING WEST CARLETON QUARRY (LICENSE NUMBER 4085) WILL BE REHABILITATED AS A LAKE. ALONG THESE SIDES, TYPICAL 2:1 (HORIZONTAL:VERTICAL) SLOPES WILL BE CONSTRUCTED ALONG THE MAJORITY OF THE BOUNDARIES WITH SELECTED AREAS HAVING SHALLOWER SLOPES AT THE LAKE LEVEL (I.E. 5:1 HORIZONTAL:VERTICAL) TO CREATE SHALLOW LITTORAL ZONES FOR INCREASED HABITAT DIVERSITY.

60 SEQUENCE AND DIRECTION OF PROGRESSIVE REHABILITATION

PROGRESSIVE REHABILITATION WILL BE COMPLETED IN DIRECT CORRELATION TO THE DEVELOPMENT OF THE QUARRY AS THE EXTRACTION LIMITS ARE REACHED AND ENOUGH AREA IS AVAILABLE TO ENSURE THAT THE PRODUCTION, STOCKPILING AND PROCESSING OF AGGREGATE MATERIALS WILL NOT INTERFERE WITH REHABILITATION ACTIVITIES.

61 USE OF OVERBURDEN IN PROGRESSIVE AND FINAL REHABILITATION

OVERBURDEN WILL BE USED IN REHABILITATION TO COVER THE BACKFILLED PORTIONS OF THE REHABILITATED QUARRY AND THE ABOVE WATER SLOPES APPROACHING THE ADJACENT QUARRY LAKE. ALL TOPSOIL OR OVERBURDEN STRIPPED IN THE OPERATION OF THE SITE WILL BE USED IN THE REHABILITATION OF THE SITE.

62 PROPOSED IMPORTATION OF MATERIAL TO FACILITATE REHABILITATION

ALL TOPSOIL AND OVERBURDEN STRIPPED IN THE OPERATION OF THE SITE WILL BE USED IN THE REHABILITATION OF THE SITE. AS THERE WILL BE INSUFFICIENT QUANTITIES OF NATIVE TOPSOIL AND/OR OVERBURDEN AVAILABLE FOR THE PROPOSED REHABILITATION, SOIL AND ROCK MAY BE IMPORTED FOR USE IN THE ESTABLISHMENT OF THE FINAL REHABILITATION CONTOURS OUTLINED IN THIS PLAN (PAGE 5 OF 5).

- EXCESS SOIL, AS DEFINED IN ONTARIO REGULATION 406/19 UNDER THE ENVIRONMENTAL PROTECTION ACT, MAY BE IMPORTED TO THIS SITE FOR THE FOLLOWING REHABILITATION PURPOSES:
 - CREATION OF 2:1 SLOPES
 - TOP DRESSING TO ESTABLISH VEGETATION
 - BACKFILLING SITE TO ORIGINAL GROUND SURFACE AS DEPICTED ON THE REHABILITATION PLAN
- EXCESS SOIL IMPORTED FOR THE REHABILITATION PURPOSES DESCRIBED ABOVE SHALL MEET THE SOIL QUALITY STANDARDS SET OUT IN TABLE 1: "FULL DEPTH BACKGROUND SITE CONDITION STANDARDS", OF THE RULES FOR SOIL MANAGEMENT AND EXCESS SOIL QUALITY STANDARDS PUBLISHED BY THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS, AS AMENDED FROM TIME TO TIME, OR MEET THE APPROPRIATE STANDARD AS DETERMINED BY A QUALIFIED PERSON (QP) BASED ON THE EXCESS SOIL STANDARDS.
- THE MAXIMUM TOTAL AMOUNT OF EXCESS SOIL THAT MAY BE IMPORTED TO THIS SITE FOR REHABILITATION PURPOSES IS 7,200,000 m³.
- THE LICENSEE SHALL ENSURE THAT THE ACCEPTANCE AND REUSE OF EXCESS SOIL IMPORTED FOR REHABILITATION PURPOSES IS COMPLIANT WITH PART I: RULES FOR SOIL MANAGEMENT OF THE "RULES FOR SOIL MANAGEMENT AND EXCESS SOIL QUALITY STANDARDS PUBLISHED BY THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARK AND AS AMENDED FROM TIME TO TIME.

63 VEGETATION TO BE ESTABLISHED DURING PROGRESSIVE AND FINAL REHABILITATION

DURING PROGRESSIVE AND FINAL REHABILITATION, ABOVE WATER SLOPES WILL BE SEEDED WITH A MIX OF GRASSES AND FORBS CONSISTING OF NON-INVASIVE SPECIES TO PREVENT EROSION. EXAMPLES OF SUITABLE SPECIES OF GRASSES AND FORBS INCLUDE, BUT ARE NOT LIMITED TO, KENTUCKY BLUEGRASS, CREEPING RED FESCUE, PERENNIAL RYEGRASS AND WHITE CLOVER. NATIVE SPECIES WILL ALSO BE INCLUDED IN THE SEED MIX, SUCH AS BLACK-EYED SUSAN, NEW ENGLAND ASTER, CANADA WILD RYE AND LITTLE BLUESTEM (AS AVAILABLE FROM SUPPLIERS).

FINAL REHABILITATION WILL ALSO INCLUDE THE CREATION OF SHALLOW LITTORAL ZONES AT SELECT LOCATIONS WHERE THE SLOPES FROM SITE MEET THE REHABILITATED LAKE LEVEL IN THE EXISTING WEST CARLETON QUARRY (LICENSE NUMBER 4085) TO CREATE MORE DIVERSE AQUATIC HABITAT. SHALLOW EMERGENT MARSH VEGETATION WILL BE PLANTED IN WATER +/- 0.15 METRES DEEP AND EXTEND +/-5 METRES FROM THE SHORE AND WILL BE INTERSPERSED WITH COVER STRUCTURES (E.G. BOULDERS AND ROOT WADS). IN ADDITION, BASKING LOGS, WOODY DEBRIS AND NESTING PLATFORMS WILL BE INSTALLED FOR WILDLIFE HABITAT, SUCH AS TURTLES, WATERFOWL AND FISH. A CONCEPTUALIZATION OF THE SHALLOW SHORELINE TREATMENTS IS SHOWN ON DETAIL 1 INCLUDED ON THIS PLAN.

NODAL PLANTINGS WILL ALSO BE COMPLETED WITHIN SELECTED AREAS AROUND THE LAKE AND WILL INCLUDE EDGE, SUBMERGENT AND EMERGENT SPECIES SUCH AS RED OSIER DOGWOOD, SLENDER WILLOW AND HERBACEOUS PLANTS SUCH AS WATER PLANTAIN, LAKE SEDGE, SWAMP MILKWEED, SOFTSTEM BULRUSH AND COMMON CATTAIL.

THE FINAL DETAILS OF THE REHABILITATION PLANTING PROGRAM WILL BE ESTABLISHED IN CONSULTATION WITH MINISTRY OF NATURAL RESOURCES AND FORESTRY STAFF JUST PRIOR TO FINAL REHABILITATION TO ENSURE THAT THE PLAN IS APPROPRIATE FOR CONDITIONS AT THAT TIME.

64 QUARRY SLOPING

THE SITE WILL BE BACKFILLED TO PROVIDE AN AREA THAT IS SUITABLE FOR FUTURE DEVELOPMENT, SUBJECT TO ANY FUTURE PLANNING POLICIES AND LAND USE DESIGNATION. IN MOST CASES, 2:1 (HORIZONTAL:VERTICAL) SLOPES WILL BE CONSTRUCTED ON THE EAST AND SOUTH SIDES OF THE QUARRY WHERE THE ADJACENT QUARRY EXCAVATION WILL BE REHABILITATED AS A LAKE. SELECTED AREAS DESIGNATED FOR SHALLOW SHORELINE TREATMENTS (LITTORAL ZONES) AT THE LAKE LEVEL WILL BE SLOPED ACCORDINGLY (APPROXIMATELY 5:1 HORIZONTAL:VERTICAL). A CONCEPTUALIZATION OF THE SHALLOW SHORELINE TREATMENTS IS SHOWN ON DETAIL 1 INCLUDED ON THIS PLAN (PAGE 5 OF 5).

65 ANY BUILDINGS OR STRUCTURES TO REMAIN ON SITE

THERE ARE NO BUILDINGS OR STRUCTURES ON SITE. INTERNAL HAUL ROADS WILL BE REMOVED.

66 FINAL SURFACE WATER DRAINAGE

SURFACE DRAINAGE FROM THE SITE WILL BE REINSTATED TO APPROXIMATE PREDEVELOPMENT CONDITIONS WITHIN THE BACKFILLED PORTION OF THE SITE. BASED ON TOPOGRAPHY AND SITE OBSERVATIONS, UNDER EXISTING CONDITIONS DRAINAGE FROM THE SITE FLOWS TOWARDS THE EXISTING ADJACENT QUARRY (LICENSE NUMBER 4085). FOLLOWING REHABILITATION OF THE SITE, SURFACE WATER WILL CONTINUE TO DRAIN TOWARDS THE ADJACENT QUARRY.

67 FINAL ELEVATIONS OF REHABILITATED AREA

THE FINAL ELEVATIONS OF THE REHABILITATED AREAS OF THE SITE EXPRESSED AS METRES ABOVE SEA LEVEL ARE SHOWN ON THE DRAWING ON REHABILITATION PLAN (PAGE 5 OF 5)

REHABILITATION CROSS-SECTIONS

69 LOCATION OF CROSS-SECTIONS

REFER TO DRAWING (THIS PLAN) FOR LOCATION OF REHABILITATION CROSS-SECTIONS.

70 HORIZONTAL AND VERTICAL SCALES

APPROPRIATE HORIZONTAL AND VERTICAL SCALES ARE MARKED ON THE CROSS-SECTIONS.

71 REHABILITATION CROSS-SECTIONS

TWO REHABILITATION CROSS-SECTIONS ARE PROVIDED ON THE REHABILITATION PLAN (PAGE 5 OF 5).

72 PREDICTED WATER TABLE UNDER REHABILITATED CONDITIONS

THE GROUNDWATER TABLE WITHIN THE BACKFILLED PORTION OF THE SITE IS EXPECTED TO BE BETWEEN 144 MASL AND 149 MASL AND WILL SLOPE DOWN TO APPROXIMATELY 124 MASL TO 126 MASL AT THE EDGE OF THE LAKE (I.E. APPROXIMATELY EQUAL TO THE REHABILITATED LAKE LEVEL IN THE ADJACENT QUARRY). THE PREDICTED WATER TABLE DURING REHABILITATION IS SHOWN ON THE CROSS-SECTIONS ON THIS PLAN (PAGE 5 OF 5).

73 TYPICAL BERM DESIGN

A CROSS-SECTION OF A TYPICAL BERM DESIGN IS SHOWN ADJACENT TO THE REHABILITATION CROSS-SECTIONS (PAGE 5 OF 5).



WEST CARLETON QUARRY EXTENSION
PART OF LOT 15, CONCESSION 11
FORMER GEOGRAPHIC TOWNSHIP OF HUNTLEY,
CITY OF OTTAWA

APPLICANT:
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9094 CAVANAGH ROAD
ASHTON, ONTARIO
K0A 1B0

QUARRY LICENSE NO. _____

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LEGEND

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- LIMIT OF EXTRACTION
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- PRIVATE WELL (AS PER MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS WATER WELL INFORMATION SYSTEM)
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- CON 12, LOT 14
- LOTS AND CONCESSION LINES
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- PAGE WIRE FENCE/GATE
- UTILITY POLE
- ROADSIDE DITCH
- WOODED AREA
- 137
- CONTOURS/INDEX CONTOURS
- CROSS-SECTIONS
- EL 152.25
- PROPOSED SPOT ELEVATION, mASL

REFERENCE(S)

- KEY PLAN: Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.
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Signature of Applicant/Licensee: *Jaime Oxtobee* DATE: 2021-08-26

PREPARED UNDER THE DIRECTION OF: *Jaime Oxtobee* DATE: 2021-08-26

THOMAS CAVANAGH CONSTRUCTION LIMITED

PROFESSIONAL GEOLOGIST
JAIME P. A. OXTOBBE
FRANCHISEE MEMBER
1095
2021-08-26
ONTARIO

AMENDMENTS	DATE	APPROVAL DATE

SITE PLANS APPROVED BY THE MINISTRY OF NATURAL RESOURCES AND FORESTRY.

SIGNATURE _____ DATE _____

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
WEST CARLETON QUARRY EXTENSION

TITLE
REHABILITATION PLAN

APPLICANT
THOMAS CAVANAGH CONSTRUCTION LIMITED

YYYY-MM-DD	2021-02-17
DESIGNED	JPAO
PREPARED	JM
REVIEWED	JPAO
APPROVED	KAM

PROJECT NO. 1899975 CONTROL 0009 REV. 0 FIGURE 5 OF 5

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