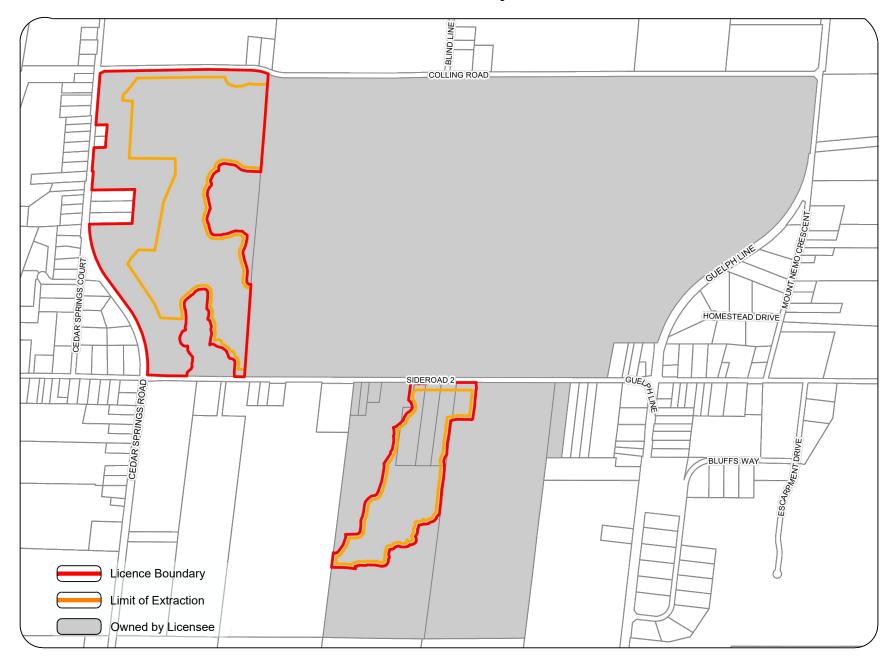


A. General

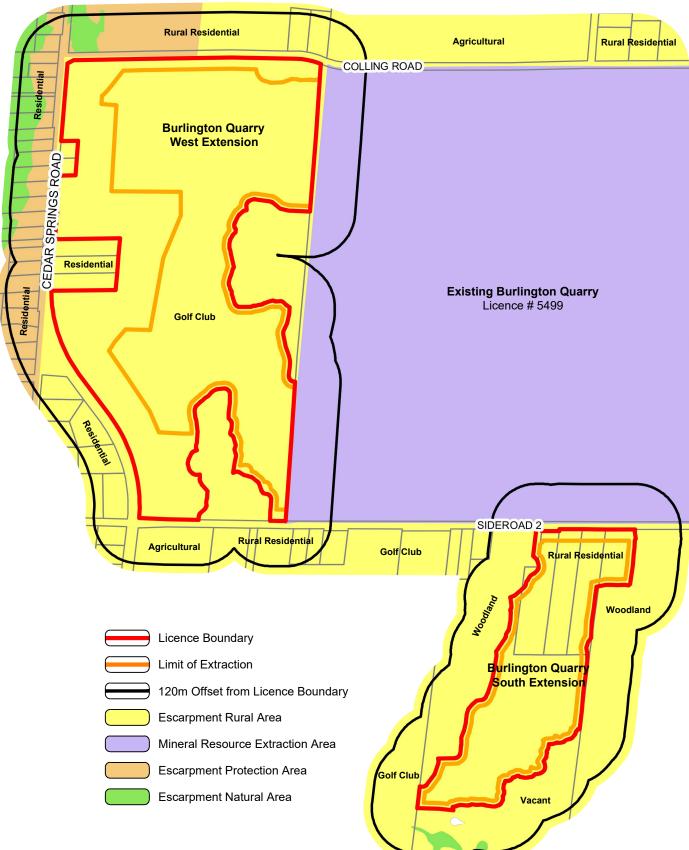
2. Area Calculations:

- 1. This site plan is prepared under the Aggregate Resources Act (ARA) for a Class 'A' Licence, Category 2.
- i. Licence Area (total) 78.4 ha South Extension 18.3 ha West Extension 60.1 ha
- B. References
- 1. Contours were obtained from the City of Burlington's Open Data Catalogue based on 2017 data and are displayed in one metre intervals. Elevations shown are in metres above sea level (masl). 2. Topographic information was obtained from numerous sources including Ontario GeoHub (Land Information Ontario), City of Burlington's Open Data Catalogue, Google Earth Pro aerial photography captured on May 7, 2018 and field
- investigations for technical reports. 3. All topographic features and structures are shown to scale in Universal Transverse Mercator (UTM) with North
- American Datum 1983 (NAD83), Zone 17 (metre), Central Meridian 81 degrees west coordinate system.
- 4. The licence boundaries were established using Municipal Property Assessment Corporation (MPAC) parcel fabric data. Distances are approximate and for reference purposes only.
- Land use designations on and within 120 metres of the licences are from the Niagara Escarpment Plan, Map 3 -Regional Municipality of Halton, approved June 1, 2017. The Burlington Quarry Extension lands are designated
- Escarpment Rural Area. 6. Land use information and structures identified on or within 120 metres of the licence boundaries were determined using Google Earth Pro aerial photography captured on May 7, 2018.
- C. Drainage 1. Surface drainage on and within 120 metres of the licence boundaries are by overland flow in the directions shown by arrows on the plan view, or by infiltration.
- D. Groundwater
- 1. The established groundwater table varies between 264 masl to 273 masl in the South Extension and 263 masl to 265 masl in the West Extension (EarthFX 2020). E. Site Access and Fencing
- 1. There are four existing site accesses on Side Road No. 2 and a single existing site access on Cedar Springs Road. 2. Post and wire fencing (unless noted otherwise) exists in the locations shown on the plan view.
- F. Aggregate Related Site Features
- There are no existing aggregate operations or features on either Extension such as internal haul roads, processing, stockpiles, scrap, fuel storage, berms or excavation faces. G. Cross Sections
- 1. See drawing 4 of 4.
- H. Technical Reports References
- 1. Adaptive Management Plan, Proposed Burlington Quarry Extension, EarthFX Inc., Savanta, and Tatham Engineering, April 2020.
- 2. Agricultural Impact Assessment, Nelson Aggregate Co. Burlington Quarry Expansion, April 2020.
- 3. Air Quality Study for Nelson Aggregate Co., Burlington Quarry Extension, BCX Environmental Consulting, March 2020.
- 4. Archaeological Assessment (Stages 1, 2 & 3), Nelson Aggregates Quarry Expansion, Archaeologix Inc., August 2003.
- 5. Archaeological Assessment (Stage 4), Nelson Aggregates Quarry Expansion, Archaeologix Inc., August 2004. 6. Stage 1-2 Archaeological Assessment, Proposed West Extension of the Burlington Quarry, Golder Associates, September 2020.
- 7. Blast Impact Analysis, Burlington Quarry Extension, Explotech Engineering Ltd, April 23, 2020.
- 8. Cultural Heritage Impact Assessment Report, Burlington Quarry Extension, MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), April 2020.
- 9. Financial Impact Study, Proposed Burlington Quarry Extension, Nelson Aggregates Co., April, 2020.
- 10. Level 1 and 2 Hydrogeological and Hydrological Impact Assessment Report, Proposed Burlington Quarry Extension, EarthFX Incorporated, April 2020.
- 11. Level 1 and 2 Natural Environment Technical Report, Proposed Burlington Quarry Extension, Savanta, April 2020.
- 12. Noise Impact Assessment, Nelson Aggregate Quarry Extension, Howe Gastmeier Chapnik Limited, April 22, 2020. Nelson Aggregate Company, Burlington Quarry Extension Traffic Report, Paradigm Transportation Solutions Limited, February 2020.
- 14. Surface Water Assessment, Burlington Quarry Extension, Tatham Engineering, April 2020.
- Visual Impact Assessment Report, Proposed Extension of the Burlington Quarry, MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), April 2020.



Other Lands Owned by Licensee





This site plan identifies all of the drawing chan from the previous version dated September 2020. site plan note changes, please refer to the Word dated April 2021 which shows the changes in track

3	Legal Description Part Lot 1 & 2, Concession 2 and Part Lot 17 & 18, Concession 2 NDS (former geographic Township of Nelson) City of Burlington Region of Halton
	Legend Licence Boundary Imit of Extraction Existing Licence Boundary Imit of Extraction Existing Licence Boundary Imit of Extraction Imit of Extraction Imit of Extrac
	Significant Wildlife Habitat Species of Conservation Concern Image:
Concession 2 North of Dundas Street	Site Plan Amendments
nges in red . To see the d document ck changes.	Applicant
	Eile Path Ni/Brian/0425D Nalaan Brainet Sidawaya/Drawinga/ARA Site Diape/Extension Site Diap/CAD/0425D Site Diap dug

 File Path
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A. General 1. Area Calculations:	 K. Fuel Storage 1. No fuel shall be stored in the South or West Extension.
i. Licence Area (total) 78.4 ha	 Fuel trucks will be used to transfer fuel to on-site equipment in accordance with the Liquid Fuels Handling Code.
 South Extension 18.3 ha West Extension 60.1 ha 	3. A Spills Contingency Program will be developed prior to site preparation.
ii. Limit of Extraction (total) 50.2 ha • South Extension 14.5 ha	L. Dust
West Extension 35.7 ha2. The maximum annual tonnage is 2,000,000.	 Dust shall be mitigated on-site. Water or another provincially approved dust suppressant shall be applied to internal haul roads as often as required
3. The existing golf course use in the West Extension may continue to operate until site preparation for that Extension	to mitigate dust.
commences. B. Hours of Operation	 The licensee shall implement all air quality recommendations outlined in Section N. Report Recommendations. M. Scrap and Recycling
1. Hours of operation are Monday to Friday from 7:00am to 7:00pm excluding statutory holidays.	 No scrap shall be stored in the South and West Extension.
 Blasting is permitted Monday to Friday between 8:00am to 6:00pm excluding statutory holidays. Blasting will typically occur once per week but may occur more often based on operational needs. 	2. No recycling shall occur in the South and West Extension.
C. Site Access and Fencing	N. Report Recommendations 1. Air Quality
1. Prior to extraction within the South or West Extension, post and wire fencing (at least 1.2 metres in height) shall be erected and maintained (for the life of that extension) along the licence or property boundary. Portions of the West	a. The Licensee shall implement their Best Management Practices Plan (BMPP) for the Control of Fugitive Dust
Extension licence boundary shall be exempt from this requirement (see Section O. Variations from Provincial Standards). Where the licence boundary is not fenced, it will be delineated with marker posts every 30 metres.	dated March 2020, as may be amended from time to time to reflect current best management practices.b. The Licensee shall construct the acoustic berms as shown on the operational plan. See Section F for
 A new operational entrance/exit for the South Extension shall be established in the location shown on the plan view (see Section N. Report Recommendations for additional details under Traffic). Material being transferred from the 	additional detail.
South Extension to existing Licence # 5499 (see Section O. Variations from Provincial Standards) shall occur through an at grade roadway crossing on Side Road No. 2 in this location.	 Blasting All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned
 A gate shall be installed at the operational entrance/exit of the South Extension on Side Road No. 2, kept closed during hours of non-operation, and maintained throughout the life of that Extension. 	sensitive receptors adjacent the site, or closer, with a minimum of two (2) instruments - one installed in front of the blast and one installed behind the blast.
 A gate shall not be required for the field/property access located at 2280 and 2015 Side Road No. 2 (see Section O. Variations from Provincial Standards). 	b. In order to safeguard the structural integrity of the structures located at 2280 No 2 Side Road, ground vibrations shall be maintained below 50mm/s (>40Hz) in accordance with research performed by the United
5. The West Extension shall be accessed through the common licence boundary with existing Licence #5499 in Phases	States Bureau of Mines (USBM RI8507). The closest structure located at 2280 No 2 Side Road shall be monitored for ground vibration and overpressure when vibration calculations suggest vibrations in excess of
3 and 5. The locations shown on the plan view are approximate only. D. Drainage and Siltation Control	35mm/s. c. All blasts within 60m of the adjacent Sun-Canadian High Pressure Oil Pipeline will be designed and monitored
 Drainage of undisturbed areas will continue in the directions shown on drawing 1 of 4. 	by a registered engineer, licensed in the province of Ontario or any distance specified in later revisions of the Sun-Canadian guidelines or when vibration calculations suggest vibrations in excess of 35mm/s at the
 Prior to site preparation, an Erosion and Sedimentation Control (ESC) Plan shall be prepared and implemented to minimize the potential for erosion and sedimentation from the operation of the quarry (see Section N. Report 	pipeline. d. To protect adjacent fish habitat, the Department of Fisheries and Oceans (DFO) has established limits for water overpressure and ground vibrations. Water overpressures are to be limited to 100kPa (year round), and
Recommendations - Natural Environment note "a").	in the presence of active spawning beds (March 15 - July 15), ground vibrations at the bed are to be limited to 13mm/s. Fish habitat and assumed spawning beds are present in the Unnamed Tributary of Willoughby
3. Prior to extraction in the West Extension, the infiltration pond located in the west setback (including the diversion/discharge pipe and bottom draw outlet) shall be constructed. The pond shall be excavated to an elevation of ±267 masl into bedrock. For the portions of the pond located above bedrock, 3:1 slopes shall be established. The	Creek, the Unnamed Tributary of Lake Medad and the East and West Arms of the West Branch of the Mount Nemo Tributary of Grindstone Creek. The utilization of shallower blast holes, decks, smaller hole diameters and/or changes in blasting patterns, along with hydrophone sensor monitoring, are necessary when blasting
purpose of the diversion pipe is to convey water from the weir pond to the infiltration pond in the west setback and to provide the diffuse discharge in the northwest corner of the site.	adjacent to fish habitat at any time of year. These mitigation measures, in addition to vibration monitoring, would also apply, when adjacent to spawning beds from March 15 - July 15.
4. Within the West Extension, the diversion and discharge pipes shall be placed in the locations shown on the plan view (see Section N. Report Recommendations -Natural Environment note "h" for timing to install the diversion pipe within	e. The guideline limits for vibration and overpressure shall adhere to standards as outlined in the MECP Model Municipal Noise Control By-law publication NPC 119 (1978) or any such document, regulation or guideline
the weir pond). The centreline of the diversion pipe along the north boundary of Phase 5 shall remain a minimum of 7.0 metres from the Sun-Canadian Pipe Line easement and be installed prior to constructing the berm in this vicinity.	which supersedes this standard.
5. Prior to removal of the irrigation ponds and irrigation channel in the West Extension, the downstream end of the golf course channel shall be blocked to isolate surface water. If water is to be pumped from the feature to facilitate site	f. In the event of an exceedance of NPC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and protocol shall be reviewed prior to any subsequent blasts and revised accordingly in order to return the operations to compliant levels.
preparation, it shall be directed to the existing sump for discharge in accordance with MECP, ECA and PTTW requirements.	g. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation will be away from structures as much as possible.
E. Site Preparation	h. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure.
 All existing structures within the South Extension (excluding the house and barn located at 2280 Side Road No. 2) and West Extension (excluding the house and barn located at 2015 Side Road No. 2) shall be demolished prior to extraction in each Extension, in accordance with all applicable regulations (see Section N. Report Recommendations 	Blast designs shall be modified as required to ensure compliance with current applicable guidelines and regulations.
extraction in each Extension, in accordance with all applicable regulations (see Section N. Report Recommendations - Natural Environment note "o" regarding removal of three structures within the West Extension that contain Barn Swallow habitat).	 Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as required to ensure compliance with industry standards.
2. No new buildings are proposed for either Extension.	j. Detailed blast records shall be maintained in accordance with current industry best practices.
3. Timber resources (if any) will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Stumps, trees, shrubs and brush cleared will be used for rehabilitation of this site and License #5499 to provide coarse and	3. <u>Noise</u>
fine wood debris to enhance soils and create habitats during site rehabilitation.4. Topsoil and overburden shall be stripped and stored separately wherever feasible (see Section O. Variations from	 Site preparation, pond construction, rehabilitation, drilling, extraction activities, and transporting material to the existing quarry for processing and shipping may only occur Monday to Friday during daytime hours (7:00 - 19:00).
Provincial Standards).	b. Prior to extraction in the South Extension, all berms in this Extension shall be constructed to the heights
 Topsoil and overburden shall be placed in perimeter acoustic/visual berms, pond construction or used immediately for progressive rehabilitation in either Extension or existing Licence #5499 (see Section O. Variations from Provincial Standards). 	specified in the locations shown on the plan view. Berms shall not be required in the West Extension until prior to extraction in that Extension.
6. Excess topsoil and overburden not required for immediate use in berms or rehabilitation may be temporarily	c. Prior to extraction in the West Extension, all berms in this Extension shall be constructed to the heights specified in the locations shown on the plan view.
stockpiled on the quarry floor. Topsoil and overburden stockpiles shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (except where the West Extension licence boundary abuts existing Licence #5499) and 90 metres from a property with a residential use (see Section O. Variations from	d. Equipment used on-site shall operate within the sound power levels specified below:
Provincial Standards).	 drills - 110 dBA front-end loaders - 101 dBA hould truel(a - 114 dBA
 Temporary topsoil and overburden stockpiles which remain for more than one year shall have their slopes vegetated to control erosion. 	 haul trucks - 114 dBA Up to three haul trucks will be used to transport material from this site to the processing area in License
F. Berms and Screening	#5499, with a posted speed limit of 35 km/hr along this route.
 Acoustic and visual berms shall be constructed to the heights or elevations specified in the locations shown on the plan view. See Section N. Report Recommendations - Visual Impact Assessment notes and the Typical Acoustic & Visual Berm detail on this drawing for additional information. 	 Equipment used for site preparation, pond construction and rehabilitation shall satisfy the noise emission levels of MOE - 115, "Noise Construction Equipment".
2. Berm side slopes shall not exceed the following maximums:	4. <u>Visual Impact Assessment</u>
 South Extension Northwest, north and northeast setback = 1.5:1 Southwest setback = 2:1 	a. For both Extension areas, existing vegetation located along the site perimeter and within the setback area will be retained where possible. Berms will be laid out in a way that favours the retention of existing vegetation where possible.
ii. West ExtensionNorth and west setback = 2:1	b. Visual and acoustic berms are to be installed in the location shown on the plan view and berm elevation details (on drawing 4 of 4) and to the requirements outlined below.
 Southeast setback = 1.5:1 3. Berms in the South Extension shall be constructed prior to extraction in that extension. 	c. Where berms are deemed to be required, they are to only be constructed where shown on the plan view.
4. Berms in the West Extension shall be constructed prior to extraction in that extension.	Berms are to be constructed in a smooth, rolling manner with varying highpoints (respecting minimum height requirements), and variations along the berm frontage to create a more natural appearance. Berms should be seeded with a native mix of wildflowers and grasses to stabilize slopes and minimize mowing and
 The north toe of the perimeter berm in the West Extension shall not be located within 1 metre of the Sun-Canadian Pipe Line easement. 	maintenance. d. The existing deciduous trees and shrubs located within 15 metres of No. 2 Side road and in front of the
6. Berms shall be vegetated with a native mix of wildflowers and grasses to stabilize slopes and minimize mowing and maintenance. The vegetation on the berms shall be maintained until the berms are removed for rehabilitation.	proposed southern noise berm in the West Extension are to be retained.
 Existing vegetation within the setbacks shall be maintained except where acoustic berms, visual berms, ponds or diversion/discharge pipes are required (see Section O. Variations from Provincial Standards). Setbacks disturbed will 	e. Visual berms proposed for the South Extension are to be planted with trees (see plan view for berm locations). Trees will be planted at a spacing of 5 to 10 m on centre, depending on species. Plantings are to be randomly spaced and staggered up on the berm up to one third of its maximum height to appear more
be vegetated with a native mix of wildflowers and grasses to restore areas and minimize mowing and maintenance. A portion of the setback areas, as shown on the operations schematic, will also be forested in accordance with Section	natural, where possible. All vegetation is to be selected for wind and salt tolerance hardiness. Native species that complement the existing surroundings are to be utilized wherever possible.
 N. Report Recommendations - Natural Environment note "s". 8. Setbacks identified as forested setbacks on the plan view shall be forested (see Section N. Report Recommendations 	f. For the visual berm adjacent to Side Road No. 2, deciduous trees of minimum 40mm caliper, coniferous trees of minimum 1.2m height, and shrub species of minimum 40cm height shall be planted.
- Natural Environment notes "d" and "f" for additional information).	g. For the visual berm in the southwest corner of the South Extension, deciduous tree whips of minimum 1.2m height, coniferous trees of minimum 0.6m height, and shrub species of minimum 20cm height (or bare root
 G. Site Dewatering 1. During the initial stages of extraction within the South Extension, a temporary settling pond will be constructed within 	stock when in season) shall be planted.
the extraction area (eg. Phase 2). Once sufficient extraction has occurred in Phase 2, the sump and settling pond will be constructed on the quarry floor. See Adaptive Management Plan for additional details.	 Plant species for the visual berm planting referenced in note 4e, f, and g may include, but are not limited to the following trees (White Pine, Common Hackberry, Chokecherry, White Spruce, Paper Birch, Pin Oak Sugar / Silver Maple, Trembling Aspen, Basswood, White Pine, White Spruce or White Cedar) and shrubs
 The discharge location for the South Quarry Extension shall be constructed in accordance with Section N. Report Recommendations - Natural Environment note "e". 	(Nannyberry, Common Ninebark, American Elder, Dogwood, or Highbush Cranberry).
 For the West Extension, the water will be diverted to existing Licence #5499 and discharged from the existing sumps and discharge locations. 	 To ensure survival and positive growth rate, the vegetative screening is to be maintained and managed appropriately so that it remains an effective visual screen over time. Allowance of natural succession to occur is encouraged, in keeping with restoration objectives.
4. The licensee shall operate in accordance with Environmental Compliance Approval (ECA) and Permit to Take Water	j. During the first year of quarry operations, the planted trees will be watered and monitored until established. After the first year, the trees will be inspected twice each year. Once in spring after leaf break, and once in fall
(PTTW) requirements. H. Extraction Sequence	prior to leaf drop, to ensure any trees which are in poor condition at the time, are fertilized, watered and monitored, as needed, to improve their health and vigor.
1. Phase 1	k. If any of the planted trees die, they will be replaced yearly, and will be planted in spring or late summer. With annual maintenance and monitoring, the trees will have the best chance of survival, and overall, it is
 a. Prepare Phase 1 (South Extension) for extraction and ensure all requirements pertaining to this Extension in Sections C through G of this drawing are met. b. Strip Phase 1 and construct perimeter berms. Should there be insufficient topsoil and overburden in Phase 1 	anticipated that the need for tree replacements during the life of the operation will be reduced.
to construct berms, only the amount of material required to complete the perimeter berms and the temporary settling pond may be stripped from Phase 2.	 <u>Traffic</u> a. The northbound and southbound approaches to Side Road No. 2 shall be controlled by stop sign control.
 Commence extraction in a southerly direction and complete a noise audit to ensure the site is meeting NPC 300 Noise Guidelines at the nearest sensitive receptors. 	b. The new roadway crossing will be located on the crest on Side Road No. 2 (in the location shown on the plan
 e. Phase 1A may be extracted to a maximum depth of 271 masl. f. Phase 1B may be extracted to a maximum depth of 270 masl. g. Prepare Phase 2 for extraction. 	view) with a clear sight distance of at least 215 metres in each direction along Side Road No. 2 for both the northbound and southbound approaches.
2. Phase 2	c. The roadway geometry and road bed structure will be designed to accommodate the rock trucks that the licensee plans to operate.
 a. Strip Phase 2 in sequence as extraction progresses in a southerly direction. b. Extract Phase 2 in a southerly direction from Phase 1 and complete a noise audit to ensure the site is meeting NPC 300 Noise Guidelines at the nearest sensitive receptors. 	d. Prior to extraction commencing in the South Extension, the licensee will be responsible to upgrade the crossing on Side Road No. 2 to municipal standards. During operations in the South Extension, the licensee
c. Phase 2 may be extracted to a maximum depth of 252.5 masl.d. As extraction advances, complete progressive rehabilitation of Phase 2.	will be responsible for maintaining this crossing. The licensee is responsible for all costs associated with the crossing, including any signage at the crossing. (Financial Report)
 Prepare Phase 3 (West Extension) for extraction and ensure all requirements pertaining to this Extension in Sections C through G and Archaeology note "a", under Section N. Report Recommendations, of this drawing are met. 	6. <u>Water Resources and Natural Environment</u>
 f. Remove wooded features in Phase 3 (see Section N. Report Recommendations - Natural Environment note "m"). 	a. The licensee is required to operate in accordance with the Adaptive Management Plan, prepared by EarthFX Inc., Tatham Engineering and Savanta dated April 2020, as may be amended from time to time with approval from MNRF, in consultation with NEC, Region of Halton, City of Burlington and Conservation Halton.
 Phase 3 a. Strip Phase 3 and a portion of Phase 4 (if required) to construct perimeter berms in West Extension. 	Trom MINRF, in consultation with NEC, Region of Haiton, City of Burlington and Conservation Haiton.
b. Extract Phase 3 by commencing at the common boundary with existing Licence #5499 and proceeding westerly before heading in a northwesterly direction. At the commencement of extraction, complete a noise	a. Based on current approvals for the existing quarry, the water discharge pumping at both locations will cease once extraction is complete, which would have a negative impact on flow and associated fish habitat in both
audit to ensure the site is meeting NPC 300 Noise Guidelines at the nearest sensitive receptors.c. Phase 3 may be extracted to a maximum depth of 252.5 masl.d. Complete progressive and final rehabilitation in Phases 1 and 2.	watercourses (Savanta, 2020). The proposed revised rehabilitation plan would stipulate that dewatering and pumping will continue at the same locations and in the same manner to ensure there are no negative impacts
e. Prepare Phase 4 for extraction. 4. Phase 4	to any of the hydrological features that rely on this water input. This will result in long-term enhancements to downstream fish habitat compared to the existing approved post-extraction water management plan.
a. Strip Phase 4 and use the material for progressive rehabilitation in Phase 3 and existing Licence #5499.b. Extract Phase 4 in a westerly and southwesterly direction from Phase 3. At the commencement of extraction,	b. Post rehabilitation, the West Extension is to be maintained in a dewatered state using the main discharge points to the north and south from Quarry Sump 0100 and 0200 in licence #5499 in accordance with the conditions of the PTTW and ECA to provide public water management benefits
complete a noise audit to ensure the site is meeting NPC 300 Noise Guidelines at the nearest sensitive receptors.c. Phase 4 may be extracted to a maximum depth of 252.5 masl.	conditions of the PTTW and ECA to provide public water management benefits. c. Prior to extraction commencing in each of the South and West Extensions, the licensee shall complete a
d. Prepare Phase 5 for extraction.	residential well survey for properties within one kilometre of the extraction area.
 5. Phase 5 a. Strip Phase 5 and use the material for progressive rehabilitation in Phase 5 and existing Licence #5499. b. Continue progressive rehabilitation in Phases 3 and 4. 	d. If a water well complaint is received by the licensee the following actions will be taken:d.a. The licensee will notify MNRF and MECP of the complaint.
c. Extract Phase 5 by commencing at the common boundary with existing Licence #5499 and proceeding in a westerly direction. At the commencement of extraction, complete a noise audit to ensure the site is meeting	d.b. The licensee will contact a well contractor in the event of a well malfunction and residents will be provided a temporary water supply within 24 hours, if the issue cannot be easily determined and
 NPC 300 Noise Guidelines at the nearest sensitive receptors. d. Refer to Section N. Report Recommendations - Blasting for additional requirements regarding the Sun-Canadian Pipe Line easement. 	rectified.
e. Phase 5 may be extracted to a maximum depth of 252.5 masl.f. Prepare Phase 6 for extraction.	d.c. The well contractor will contact the resident with the supply issue and rectify the problem as expediently as possible, provided the landowner gives authorization for the work. If the issue raised by the landowner is related to loss of water supply, the licensee will have a consultant/contractor
"i").	determine the likely causes of the loss of water supply, which can result from a number of factors, including pump failure (owner's expense), extended overuse of the well (owner's expense) or lowering
 6. Phase 6 a. Strip Phase 6 and use the material for progressive rehabilitation in Phases 4, 5 and existing Licence #5499. b. Prior to extraction commencing in Phase 6, side sloping within Phase 3 shall be completed. 	of the water level in the well from potential quarry interference (licensee expense). This assessment process would be carried out at the expense of the licensee and the results provided to the homeowner.
c. Extract Phase 6 in a southerly direction from Phase 5. At the commencement of extraction, complete a noise audit to ensure the site is meeting NPC 300 Noise Guidelines at the nearest sensitive receptors.	d.d. If it has been determined that the quarry caused the water supply interference, the quarry shall continue to supply water at the licensee's expense until the problem is rectified. The following
d. Phase 6 may be extracted to a maximum depth of 252.5 masl.e. Complete progressive and final rehabilitation of the West Extension.	continue to supply water at the licensee's expense until the problem is rectified. The following mitigation measures shall be considered and the appropriate measure(s) implemented at the expense of the licensee:
 Extraction Details The maximum height of a lift shall be 25 metres. 	adjust pump pressure;lowering of the pump to take advantage of existing water storage within the well;
2. The maximum depth of extraction for the South Extension is 29.5 metres. Phase 1 shall be extracted in one lift and	 deepening of the well to increase the available water column; widening of the well to increase the available storage of water;
Phase 2 shall be extracted in a maximum of two lifts.3. The maximum depth of extraction for the West Extension is 23.5 metres and the maximum number of lifts is two.	 relocation of the well to another area on the property; drilling multiple wells; and only at the request of a landowner would a cistern be installed.
 Extraction shall be permitted in two Phases simultaneously to allow for transition between Phases. 	e. If the issue raised by the land owner is related to water quality, the licensee will have a consultant/contractor determine the likely causes of the change in water quality, and review monitoring results at the quarry and
 Internal haul road locations will vary as extraction progresses and will be located on the quarry floor with the exception of the at grade roadway crossing between the South Extension and existing Licence #5499. 	background monitoring results from the baseline well survey to determine if there is any potential correlation with the quarry. If it has been determined that the quarry caused a water quality issue, the quarry shall
 Blasted aggregate will be transported back to existing Licence #5499 for processing and shipping. 	continue to supply water at the licensee's expense until the problem is rectified. The licensee shall be responsible for restoring the water supply by replacing the well or providing a water treatment system. Only at the request of a landowner would a cistern be supplied. The licensee is responsible for the expense to restore
 Berms that encroach within the limit of extraction shall be removed, and the underlying aggregate may be extracted, as part of final extraction for each Extension. 	the water quality.
J. Equipment and Processing	 8. <u>Natural Environment</u> a. Prior to site preparation an Erosion and Sedimentation Control (ESC) Plan will be prepared and implemented
 Equipment used for site preparation, extraction, pond construction, and site rehabilitation includes drills, front-end loaders, graders, bulldozers, backhoes, conveyors, water trucks, fuel trucks and haul trucks. See Section N. Report 	to minimize the potential for erosion and sedimentation from the operation of the quarry. Basic elements of the plan should include consideration of: Construction and operation phasing to minimize the amount of time

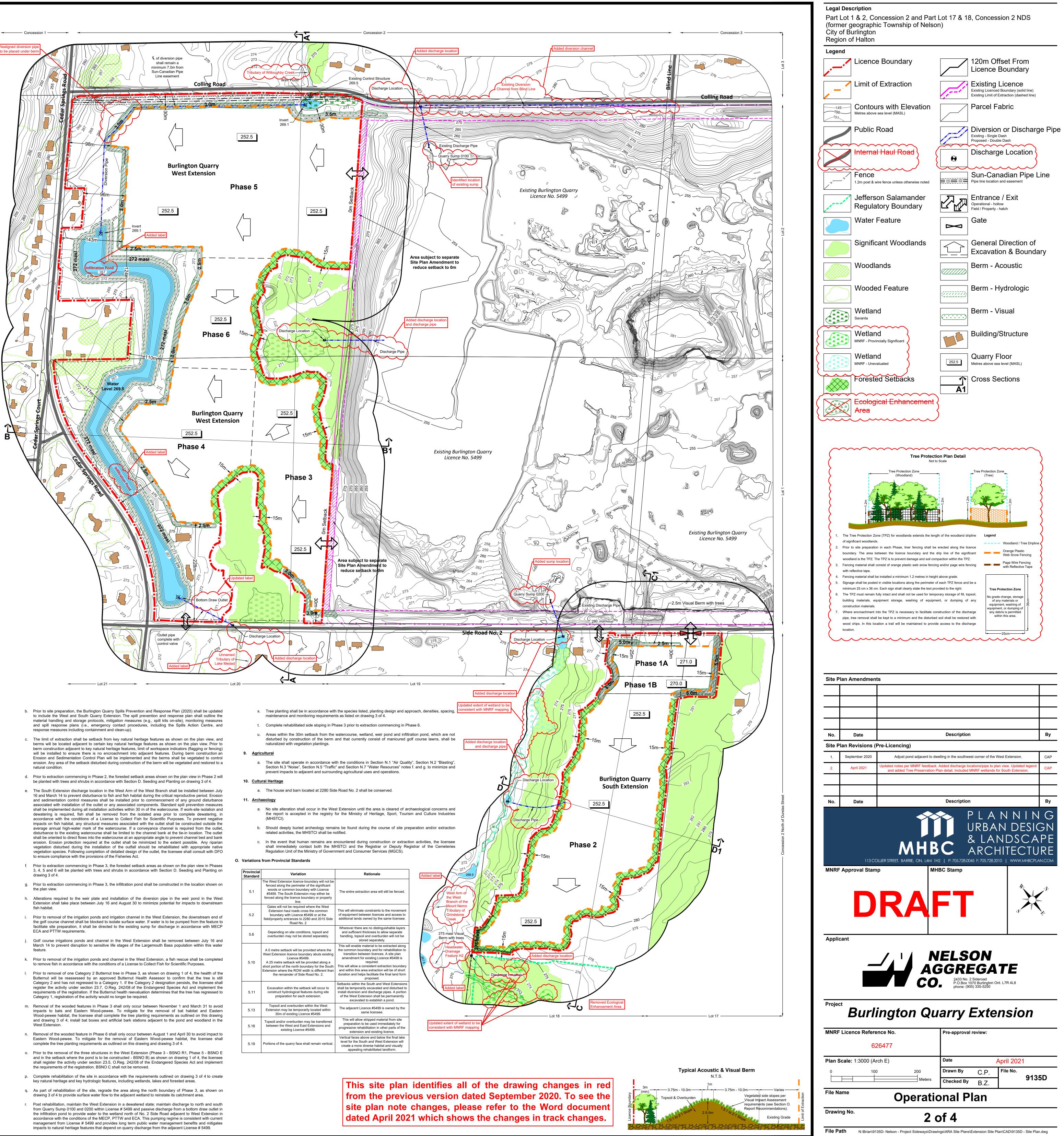
1. Equipment used for site preparation, extraction, pond construction, and site rehabilitation includes drills, front-end loaders, graders, bulldozers, backhoes, conveyors, water trucks, fuel trucks and haul trucks. See Section N. Report Recommendations for additional details from the Noise report regarding equipment. 2. No processing shall occur in the South or West Extension. Aggregate extracted in the South and West Extension shall

be hauled to existing Licence #5499 for processing.

overpressure at the closest privately owned n of two (2) instruments - one installed in front es located at 2280 No 2 Side Road, ground ordance with research performed by the United ure located at 2280 No 2 Side Road shall be

performance monitoring requirements and adaptive management.

I (ESC) Plan will be prepared and implemented to minimize the potential for erosion and sedimentation from the operation of the quarry. Basic elements of the plan should include consideration of: Construction and operation phasing to minimize the amount of time soils are barren and therefore, more susceptible to erosion; Requirements and timing for rehabilitation of disturbed areas; Stormwater management strategies during construction; Grading and removal of golf course surface water features during periods when the features are not flowing, to minimize potential for adverse effects on downstream water quality; Erosion prevention measures (e.g., hydroseeding, sodding, erosion control matting, tarping of stockpiles); Sedimentation control measures (e.g., silt fences); and Inspection and



Provincial Standard	Variation		
5.1	The West Extension licence boundary will fenced along the perimeter of the signific woods or common boundary with Licen #5499. The South Extension may either fenced along the licence boundary or pro line.		
5.2	Gates will not be required where the W Extension haul roads cross the commo boundary with Licence #5499 or at the field/property entrances to 2280 and 2015 Road No. 2		
5.6	Depending on site conditions, topsoil a overburden may not be stored separate		
5.10	A 0 metre setback will be provided where West Extension licence boundary abuts ex Licence #5499. A 25 metre setback will be provided alor short portion of the north boundary for the Extension where the ROW width is differer the remainder of Side Road No. 2.		
5.11	Excavation within the setback will occur construct hydrological features during s preparation for each extension.		
5.13	Topsoil and overburden within the We Extension may be temporarily located w 30m of existing Licence #5499.		
5.16	Topsoil and/or overburden may be transfo between the West and East Extensions existing Licence #5499.		
5.19	Portions of the quarry face shall remain ve		

Progressive Rehabilitation

A. General 1. Area Calculations:



West Extension 35.7 ha

- B. Phasing
- 1. As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence. 2. Progressive rehabilitation shall follow the direction and sequence of extraction identified on the plan view and described in the notes on
- drawing 2 of 4. 3. Prior to extraction commencing in Phase 6, side sloping within Phase 3 shall be completed.
- C. Slopes and Grading
- 1. Progressive rehabilitation will utilize a variety of rehabilitation techniques including: i. Backfilling extraction faces and quarry floors;
- ii. Partially backfilling extraction faces to create a cliff with talus slope; or iii. Leaving extraction faces vertical
- 2. Excess soil, in accordance with MECP "Excess Soil Regulation (O. Reg 406/19), as may be amended from time to time, may be imported to facilitate the establishment of 3:1 and 2:1 (horizontal: vertical) slopes on the guarry faces and/or applied to the guarry floors to achieve the final contour elevations shown on the plan view. The licensee must ensure that the material is tested at the source, before it is deposited on-site, to ensure that the material meets the MECP's criteria under Table 1 of MECP's Soils, Ground Water and Sediment Standards for use under Part XV.1 of the *Environmental Protection Act*. Sampling results will be provided to the MNRF upon request. 3. Notwithstanding Condition 1, where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1
- for sodium absorption ratio and electrical conductivity do not have to be met. 4. The final rehabilitated landforms established in the South and/or West Extension using the rehabilitation techniques will consist of lakes, islands, shoreline wetlands, vernal pools, beach, pond, woodlands, gradually sloping grades, 2:1 and 3:1 side slopes, cliff with talus slopes, and vertical faces as shown on the plan view.
- 5. Beach sand may be imported to establish the beach area in the South Extension. 6. As part of rehabilitation of the site, regrade the area along the north boundary of Phase 3, as shown on this drawing to provide surface
- water flow to the adjacent wetland to reinstate its catchment area. D. Seeding and Planting
- 1. The side slopes and backfilled portions of the quarry floor will be seeded with the Ministry of Transportation's (MTO) Ontario Roadside Seed Mix (Creeping Red Fescue, Kentucky Bluegrass, Perennial Ryegrass and White Clover) or equivalent. 2. Ponds, wetlands, and tree planting areas identified in the plan view shall be planted in accordance with Table 1: Rehabilitation Plant List
- Recommendations on this drawing. 3. The planting design and approach will be guided by the Conservation Halton Landscaping and Tree Preservation Guidelines (2010).
- 4. Planting densities shall be determined based on the restoration objectives and presence/absence of existing natural features. For example, planting densities will be highest where the objective is to restore/establish a woodland, and meet the definition of woodland under the Forestry Act, but may be reduced if/when objective is to establish a buffer adjacent to a naturalized area. The type of species planted will also be dependent on adjacent habitat (e.g., greater reliance on shrub plantings when restoration occurs adjacent to a meadow, and tree plantings when planting next to woodland).
- 5. Where the restoration objective is the establishment of a woodland, trees will be planted at a minimum density of 10 trees per 100 m², in order to account for competition, stress or wildlife damage and to meet the definition of woodland under the Forestry Act. Within this area, the shrub to tree ratio will be 5:1, with trees planted no closer than 2.5 m on centre and shrubs planted between 0.75 m and 1.5 m apart.
- 6. Where the restoration objective is the establishment of a setback adjacent to a natural feature, planting densities will be dependent on the features they abut (e.g., densities will be higher when planting next to an existing forest relative to the densities when planting next to an anthropogenic or cultural feature). The planting design of a proposed setback adjacent to a natural feature will follow a 3-band approach, where woody planting densities will be highest within Band 1 (closest to the existing adjacent feature) and reduced in Band 2. No woody species will be planted in Band 3, which will be seeded with a soil and moisture-appropriate native seed mix. Where trees will be planted, the following planting densities will be applied: Band 1 - five trees per 100 m². Where shrubs are also being proposed, these will be planted at a shrub to tree ratio of 5:1; Band 2 - three trees per 100 m². Where shrubs are also being proposed, these will be planted at a shrub to tree ratio of 5:1.
- Competing herbaceous vegetation will be controlled by placing mulch around each planted tree or shrub (50 cm radius of mulch around each planting). Rodent protection will be installed as necessary. Where access permits, planting will be watered during periods of drought (defined as a 30 day period between May and September with less than 25mm of precipitation) until establishment has occurred.
- 8. For planting in areas not extracted, plantings shall be monitored at least annually until "free-to-grow" conditions have been achieved. "Free-to-grow" is a condition in which the plantings are considered established based on a minimum stocking standard, a minimum height and freedom from competition that could impede growth. At the "free-to-grow condition", the survival (stocking standard) of planted trees shall be a minimum of 1000 trees per hectare. If survival is less than 1000 "free-to-grow" condition trees per hectare, additional planting will take place.
- 9. For plantings in areas extracted, plantings shall be monitored at least annually until "free-to-grow" conditions have been achieved. "Free-to-grow" is considered established based on a minimum stocking standard, a minimum height and freedom from competition that could impede growth. At the "free-to-grow" condition, the survival (stocking standard) of planted trees shall be a minimum of 1000 trees per hectare. If survival is less than 1000 "free-to-grow" condition trees per hectare, additional planting will take place.
- E. Drainage
- 1. Final surface drainage will follow the rehabilitated contours and directional arrows shown on the plan view. 2. Once the South Extension is depleted, pumping will cease and portions of the site below the ground water table will fill with water.
- 3. Runoff within the South Extension will drain into the lake.
- 4. Construct overflow outlet in the southwest corner of the South Extension.
- 5. Once the West Extension is depleted, the West Extension will remain in a dewatered state. Runoff within the West Extension will either drain north towards the lake or southeast into existing Licence #5499.
- 6. During rehabilitation the licensee shall maintain discharge to fish habitat to the north and south from Quarry Sump 0100 and 0200 within License #5499 and passive discharge from a bottom draw outlet in the infiltration pond to provide water to the wetland north of No. 2 Side Road adjacent to West Extension.
- 7. During rehabilitation the licensee shall operate in accordance with the conditions of the MECP, PTTW and ECA for the ongoing dewatering of the site. This pumping regime is consistent with current management from License #5499 and provides long term public water management benefits and mitigates impacts to natural heritage features that depend on quarry discharge from the adjacent License
- 8. The licensee has committed to: conveying the site into public ownership and to maintain the West Extension in a dewatered state by maintaining the pumping regime from License #5499 to provide long-term public water management benefits and mitigate impacts on natural heritage features which depend on quarry discharge from the adjacent License #5499.

F. Adaptive Management Plan 1. During progressive rehabilitation, until surrendering the licence, the licensee is required to operate in accordance with the Adaptive Management Plan, prepared by EarthFX Inc., Savanta and Tatham Engineering, dated April 2020, as may be amended from the time to time with approval from MNRF, in consultation with NEC, Region of Halton, City of Burlington and Conservation Halton.

Final Rehabilitation A. General

- 1. All equipment shall be removed from the South and West Extension.
- 2. No internal haul roads shall remain in either Extension.
- 3. The residence and barn at 2280 Side Road No. 2 in the South Extension shall remain.
- 4. The residence and barn located at 2015 Side Road No. 2 in the southwest corner of the West Extension shall remain.
- 5. A field/property access entrance shall remain to access the residence and barn located at 2280 and 2015 Side Road No. 2. 6. The groundwater table post rehabilitation varies between 263.5 masl to 271 masl in the South Extension and 255.5 masl to 265 masl in
- the West Extension (EarthFX 2020) or ±269 masl if the West Extension is not maintained in a dewatered state. 7. The licensee, prior to the surrender of the licence, shall complete a Record of Site Condition for the Extensions in accordance with the
- Environmental Protection Act. 8. Prior to the surrender of the Aggregate Resource Act Licence, the licensee shall define the transition of the site to another party and the

Table 1: Rehabilitation Plant List Recommendations

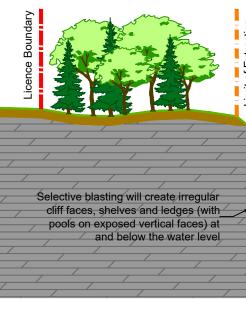
pre-requisite for license surrender to the satisfaction of the MNRF.

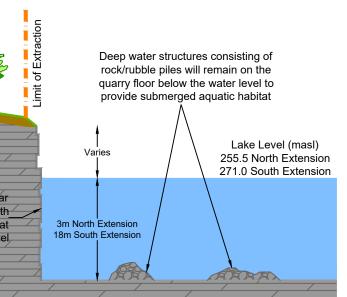
Pond/Wetland (PW) Grassland and Existing Trees (GL) Gradual Grade/Side Slope with Trees (GG)

Forested Setback During Operation (FSO) Forested Setback Post Berm (FSB)

Location	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	OWES WETLAND SPECIES	PROVINCIAL STATUS (S- RANK)	LOCAL STATUS HALTOI (Varga 2005)
FSB, REG	Sambucus racemosa ssp. pubens	Red Elderberry	5	3		S5	Х
FSB, REG	Cornus alternifolia	Alternate-Leaved Dogwood	6	3		S5	Х
FSB, REG	Cornus racemosa	Grey Dogwood	2	0	Т	S5	Х
PW, FSB, REG	Cornus sericea	Red-Osier Dogwood	2	-3	*	S5	Х
FSB, REG	Ribes cynosbati	Eastern Prickly Gooseberry	4	3		S5	Х
FSB, REG	Prunus virginiana var. virginiana	Chokecherry	2	3		S5	Х
FSB, REG	Rubus allegheniensis	Alleghany Blackberry	2	3		S5	Х
FSB, REG	Rubus occidentalis	Black Raspberry	2	5		S5	Х
PW	Salix discolor	Pussy Willow	3	-3	I	S5	Х
PW, FSB, REG	Salix eriocephala	Cottony Willow	4	-3	Т	S5	Х
PW, FSB, REG	Salix interior	Sandbar Willow	1	-3	Т	S5	U
PW	Salix petiolaris	Meadow Willow	3	-3	I	S5	Х
GG, FSB, REG	Betula alleghaniensis	Yellow Birch	6	0	Т	S5	Х
GG, FSO, FSB, REG	Betula papyrifera	Paper Birch	2	3	Т	S5	Х
GG, FSB, REG	Carpinus caroliniana ssp. virginiana	Blue-Beech	6	0	Т	S5	Х
GL, GG, FSO, FSB, REG	Ostrya virginiana	Eastern Hop-Hornbeam	4	3		S5	Х
GL, GG, FSO, FSB, REG	Fagus grandifolia	American Beech	6	3		S4	Х
GL, GG, FSO, FSB, REG	Quercus macrocarpa	Burr Oak	5	3	Т	S5	Х
GL, GG, FSO, FSB, REG	Quercus rubra	Northern Red Oak	6	3		S5	Х
GL, GG, FSB, REG	Carya cordiformis	Bitternut Hickory	6	0		S5	Х
GL, GG, FSO, FSB, REG	Tilia americana	Basswood	4	3		S5	Х
GL, GG, FSO, FSB, REG	Prunus serotina var. serotina	Black Cherry	3	3		S5	Х
GG, FSB, REG	Populus balsamifera	Balsam Poplar	4	-3	Т	S5	Х
GL, GG, FSO, FSB, REG	Populus deltoides ssp. deltoides	Eastern Cottonwood	4	0	Т	S5	U
GL, GG, FSO, FSB, REG	Populus tremuloides	Trembling Aspen	2	0	Т	S5	Х
PW, GG, FSB, REG	Salix amygdaloides	Peach-Leaved Willow	6	-3	Т	S5	U
GL, GG, FSO, FSB, REG	Acer nigrum	Black Maple	7	3		S4?	Х
GG, FSB, REG	Acer saccharinum	Silver Maple	5	-3	I	S5	х
GL, GG, FSO, FSB, REG	Acer saccharum	Sugar Maple	4	3		S5	Х
GG, FSB, REG	Thuja occidentalis	Eastern White Cedar	4	-3	Т	S5	Х
GG, FSB, REG	Abies balsamea	Balsam Fir	5	-3	Т	S5	U
GL, GG, FSO, FSB, REG	Picea glauca	White Spruce	6	3	Т	S5	U
GL, GG, FSO, FSB, REG	Pinus strobus	Eastern White Pine	4	3	Т	S5	х
GL, GG, FSO, FSB, REG		Eastern Hemlock	7	3	T	S5	Х

Typical Quarry Face Detail

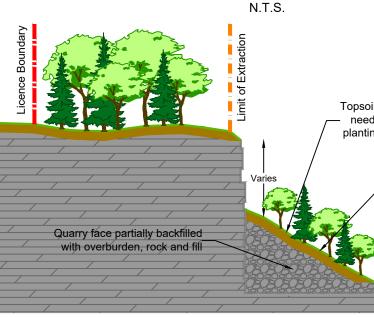




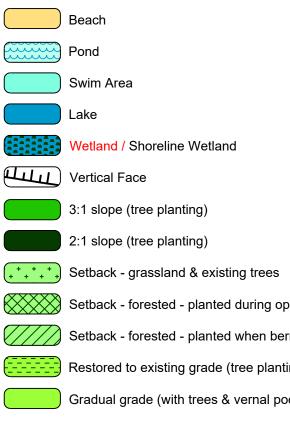
Meadow Mix, Early Succession/Riparian Mix, and Meadow Marsh Mix, following Conservation Halton guidelines.

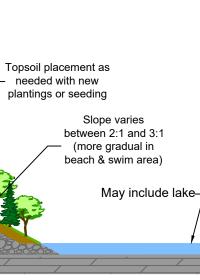
A nurse crop will be applied to exposed soil, the species of which will depend on season of application but will follow Conservation Halton guidelines.

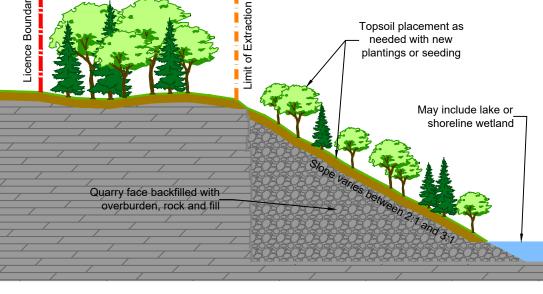
Typical Cliff and Talus Slope Detail



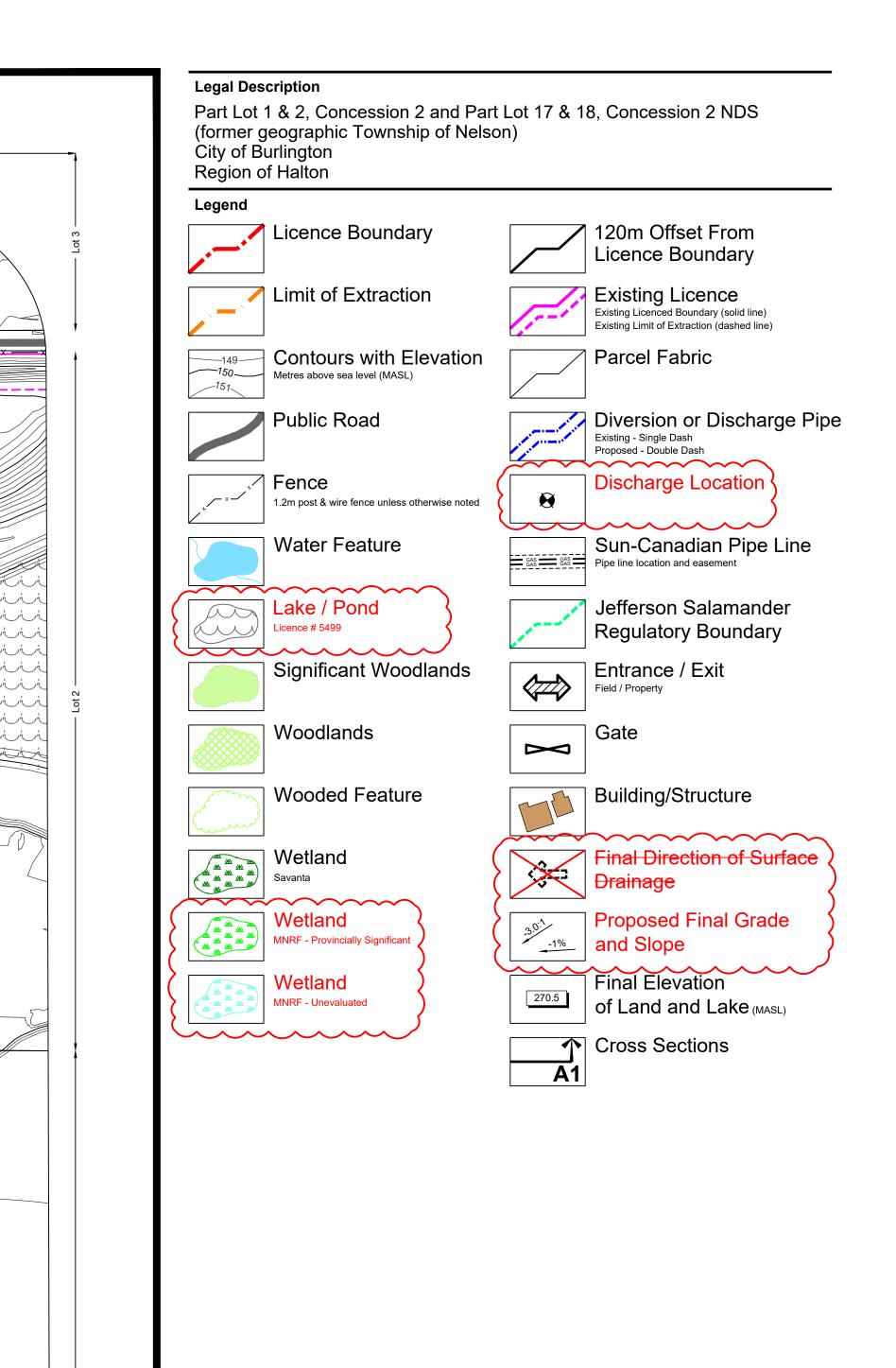




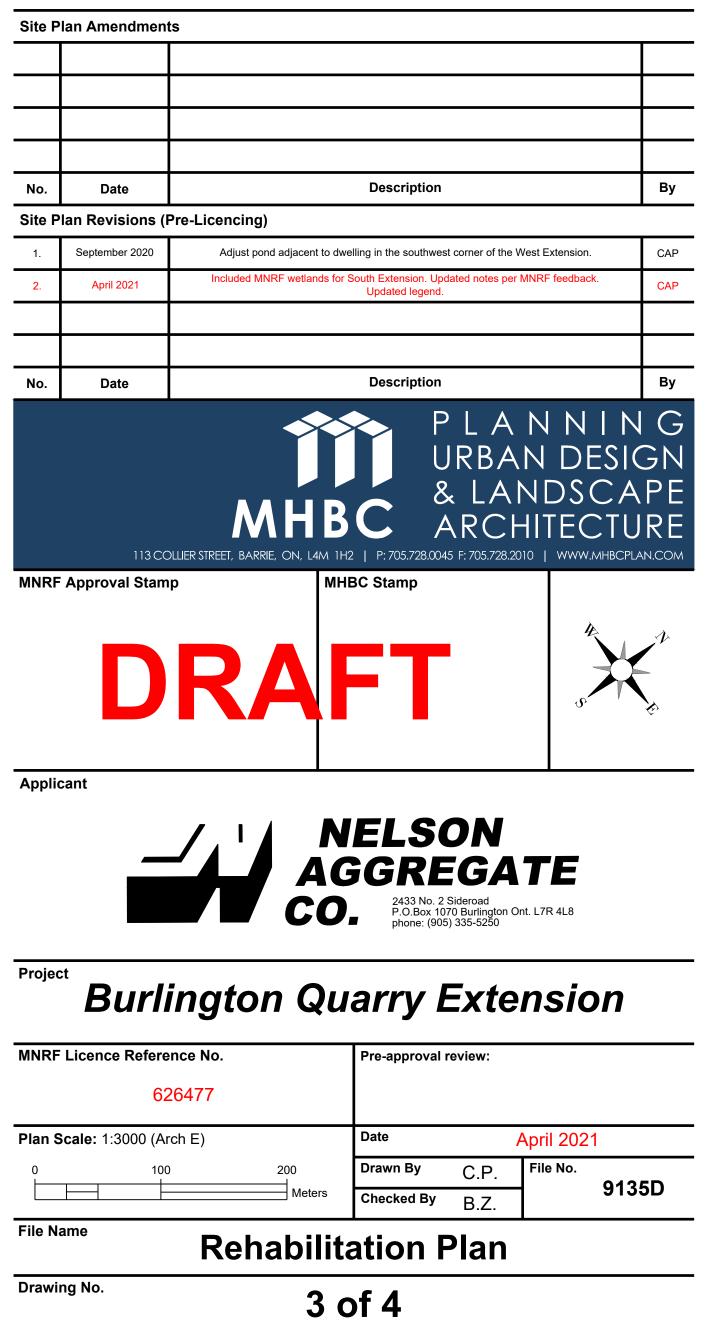




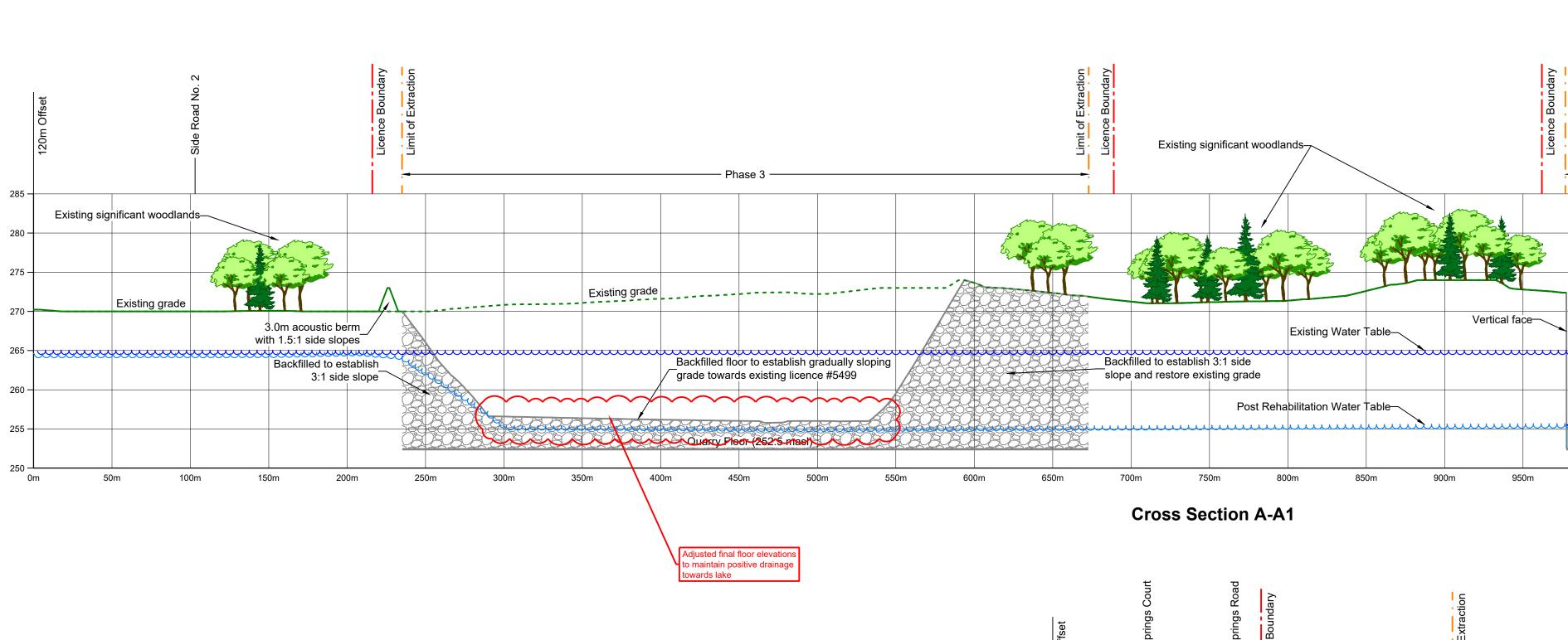


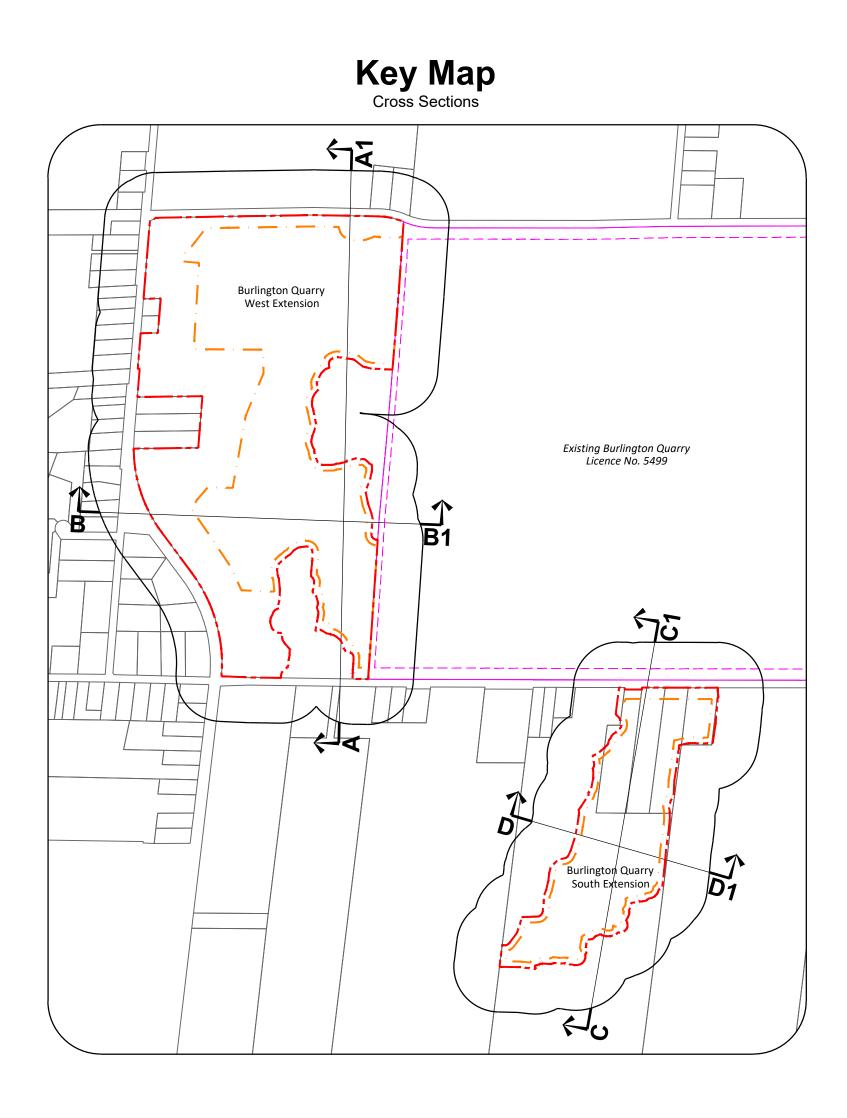


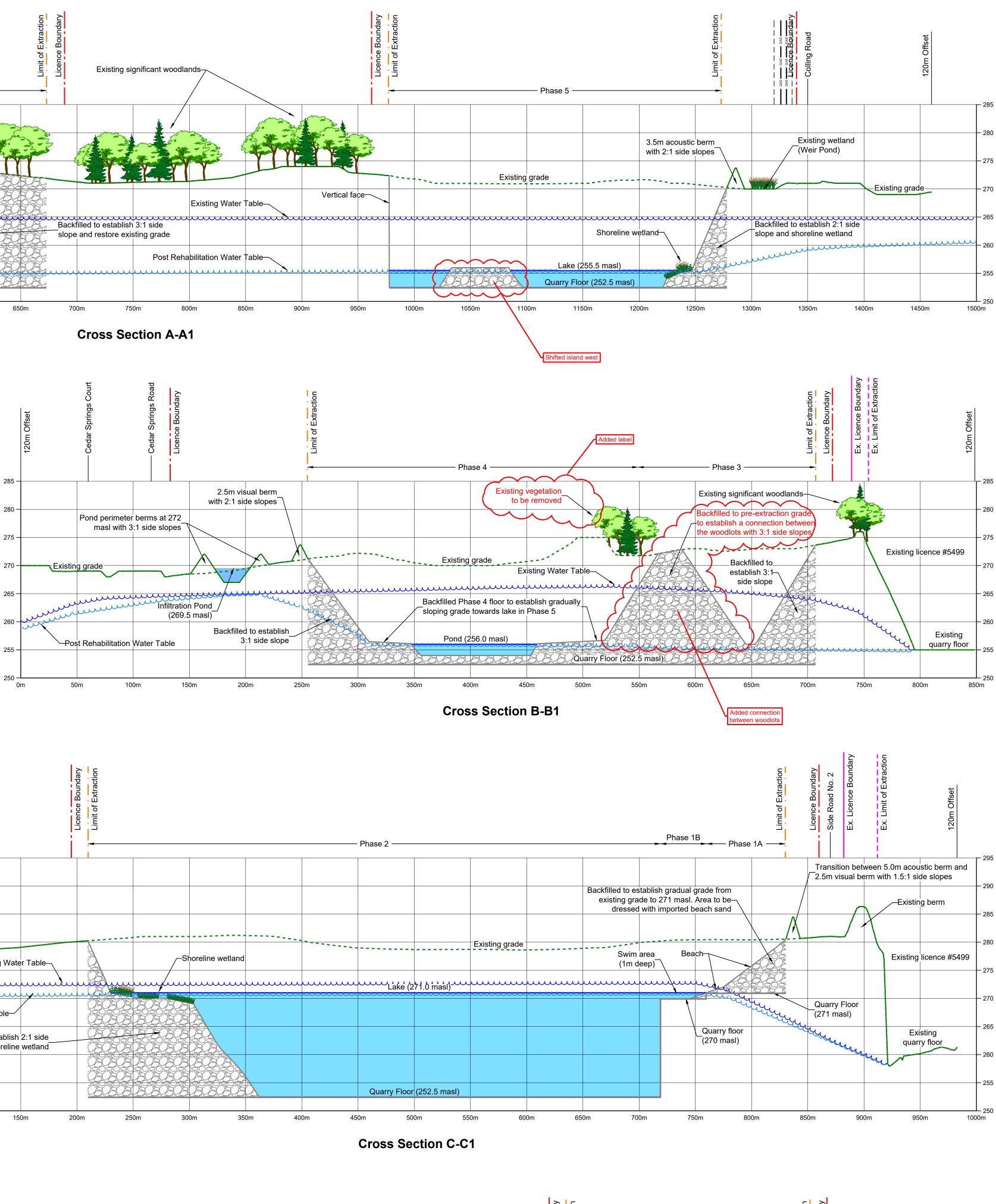
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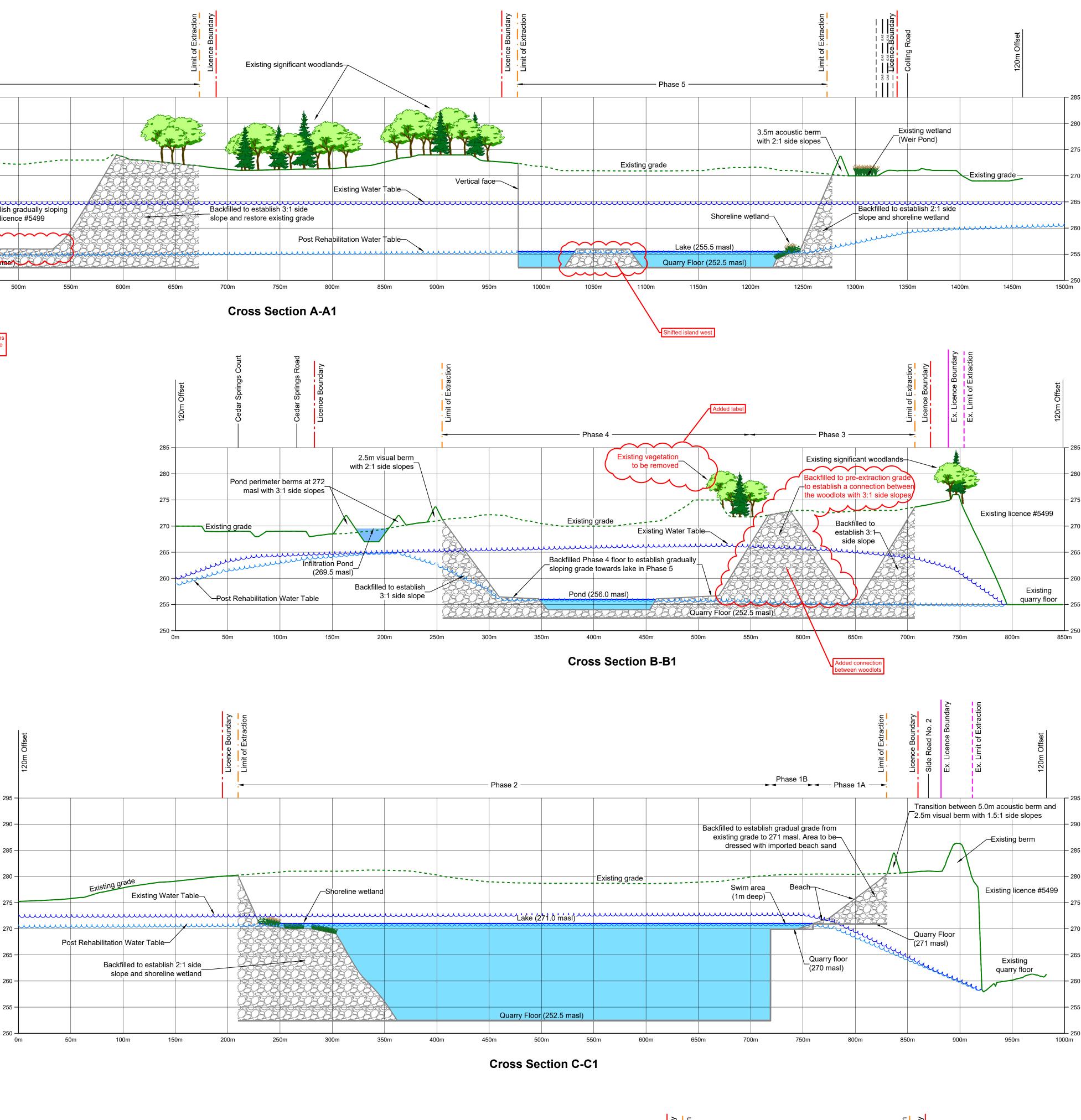


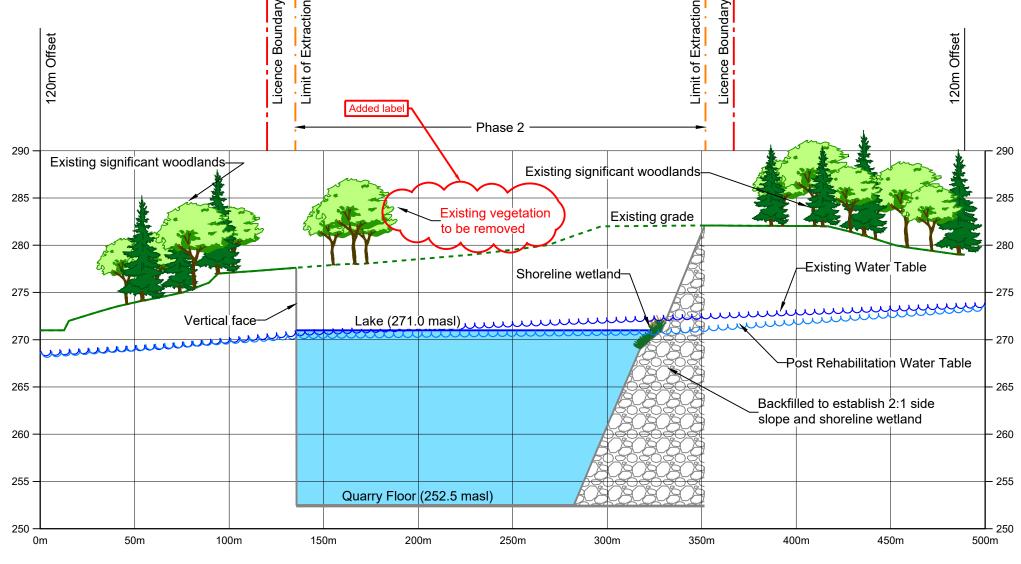
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Cross Section D-D1

This site plan identifies all of the drawing changes in red from the previous version dated September 2020. To see the site plan note changes, please refer to the Word document dated April 2021 which shows the changes in track changes.

Legal Description				
Part Lot 1 & 2, Concession 2 and Part Lot 17 & 18, Concession 2 NDS (former geographic Township of Nelson) City of Burlington Region of Halton				
Legend				
Licence Boundary				
Limit of Extraction				
Existing Licence				
Existing Limit of Extraction				
120m Offset From Licence Boundary				
Existing Grade - Removed / Altered				
Existing Grade - Undisturbed				
Quarry Floor / Face				
Berm				
Existing Water Table				
Post Rehabilitation Water Table				
Backfilled				
Lake or Pond				

Site P	Plan Amendments			
No.	Date		Description	Ву
	Plan Revisions (Pre-Lico	•		
1.	April 2021	Added add	litional cross section labels for clarity	CAP
No.	Date		Description	Ву
NO.	Date		-	
				DESIGN
		MHB		DSCAPE
				TECTURE
MNRE	TT3 COLLER STRE Approval Stamp		12 P: 705.728.0045 F: 705.728.2010	WWW.MHBCPLAN.COM
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Applic	cant			
Арріі				
			LESON CORECAS 2433 No. 2 Sideroad P.O.Box 1070 Burlington Ont. L phone: (905) 335-5250	
			GGREGA	E
			2433 No. 2 Sideroad P.O.Box 1070 Burlington Ont. L	.7R 4L8
			■ phone: (905) 335-5250	
Projec	ct			
-	Burling	ton Qu	arry Exten	sion
MNRF	Licence Reference No		Pre-approval review:	
	626477			
Plan S	Scale:		Date Ap	ril 2021
	Horizontal	1:2000		ile No.
	Vertical	1:400	Checked By B.Z.	9135D
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