

1. This site plan is prepared under the Aggregate Resources Act (ARA) for a Class 'A' Licence, Category 2.

i. Licence Area (total) 76.9 ha South Extension 18.1 ha West Extension 58.8 ha

masl in the West Extension (EarthFX 2020).

B. References

Area Calculations:

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.

5. 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

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

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.

1. 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

F. Aggregate Related Site Features

1. Adaptive Management Plan, Proposed Burlington Quarry Extension, EarthFX Inc., Savanta, and Tatham Engineering,

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,

7. Blast Impact Analysis, Burlington Quarry Extension, Explotech Engineering Ltd, June 16, 2021.

8. Cultural Heritage Impact Assessment Report, Burlington Quarry Extension, MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), May 2022. 9. Financial Impact Study, Proposed Burlington Quarry Extension, Nelson Aggregates Co., September 30, 2021.

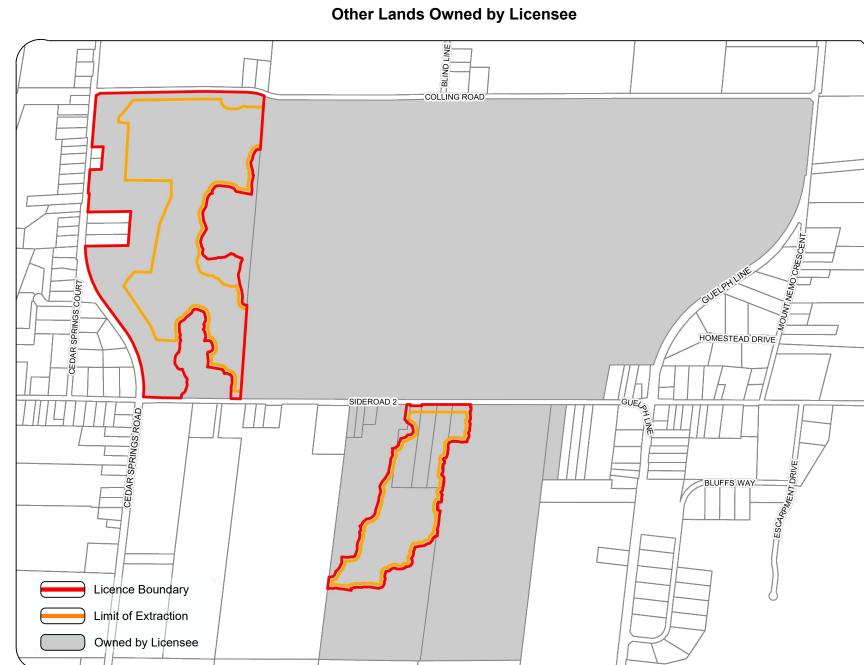
10. Level 1 and 2 Hydrogeological and Hydrological Impact Assessment Report, Proposed Burlington Quarry Extension, EarthFX Incorporated, April 2020.

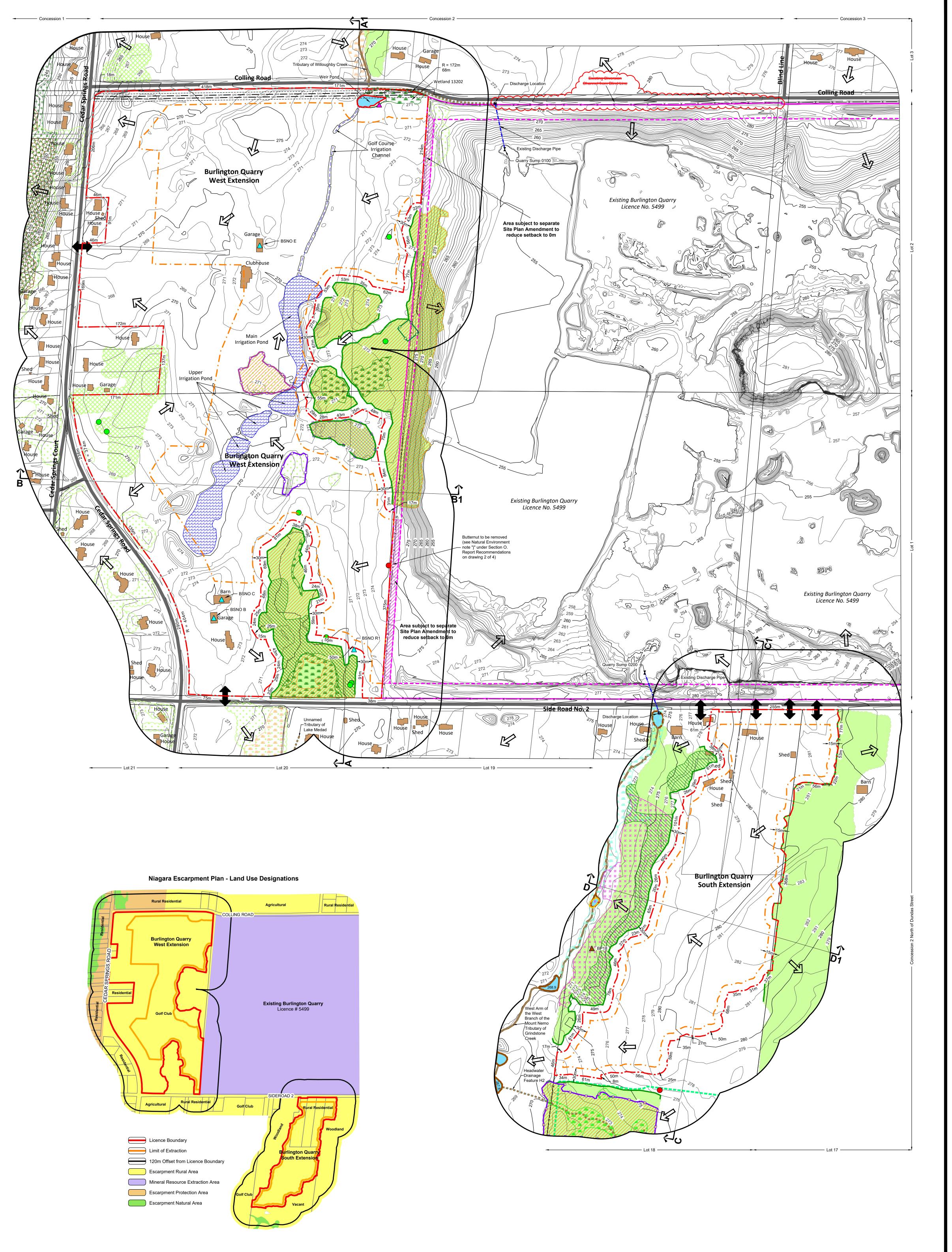
11. Level 1 and 2 Natural Environment Technical Report, Proposed Burlington Quarry Extension, Savanta, April 2020. 12. Noise Impact Assessment, Nelson Aggregate Quarry Extension, Howe Gastmeier Chapnik Limited, November 15, 2021.

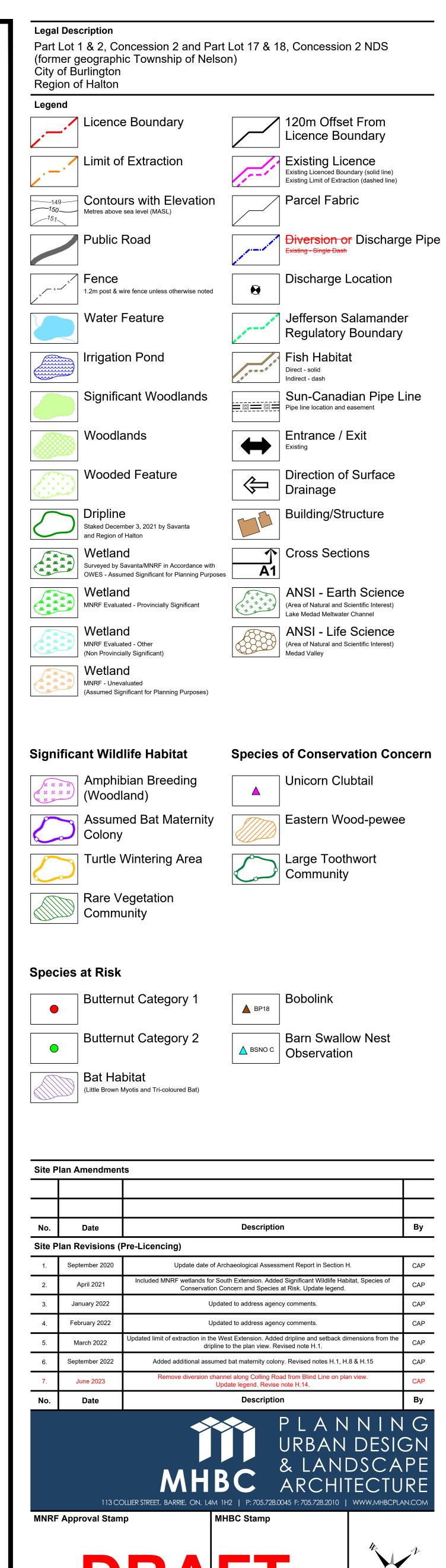
13. Nelson Aggregate Company, Burlington Quarry Extension Traffic Report, Paradigm Transportation Solutions Limited, February 2020. 14. Surface Water Assessment, Burlington Quarry Extension, Tatham Engineering, April 2020 June 23, 2023.

15. Visual Impact Assessment Report, Proposed Extension of the Burlington Quarry, MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), May 2022.

16. Safety Review of the Proposed Access Plan for a Proposed Quarry Extension, True North Safety Group, June 2021.





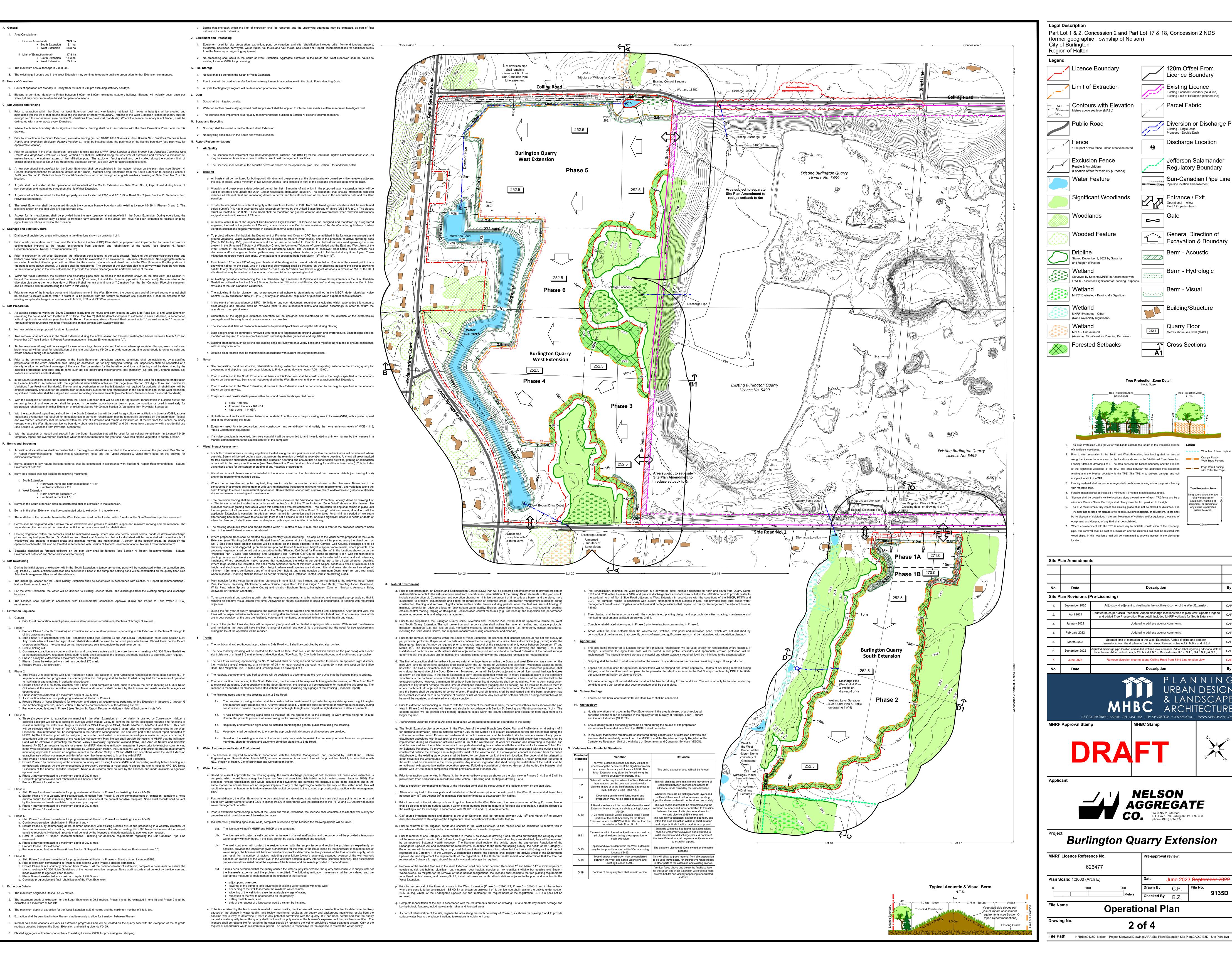






## Burlington Quarry Extension

Pre-approval review:
Date June 2023 September 2022
Drawn By C.P. File No.
Checked By B.Z. 9135D
Features
of 4



Existing Licence

Parcel Fabric

Existing - Single Dash Proposed - Double Dash

= GAS = GAS = Pipe line location and easement

Operational - hollow

Field / Property - hatch

Entrance / Exi

Existing Licenced Boundary (solid line)

Existing Limit of Extraction (dashed line)

Discharge Location

Jefferson Salamandeı

Regulatory Boundary

General Direction o

Berm - Acousti

Berm - Hydrologi

Quarry Floor

Metres above sea level (MAS

any debris is permitted

Updated to address agency comments.

Updated to address agency comments

MHBC Stamp

Pre-approval review:

within this area.

Excavation & Boundary

Sun-Canadian Pipe Line

Diversion or Discharge Pipe

## **Progressive Rehabilitation** A. General Area Calculations: i. To be extracted (total) 47.4 ha South Extension 14.3 ha West Extension ii. To be rehabilitated (total) 47.4 ha South Extension 14.3 ha West Extension 33.1 ha 2. The final rehabilitated land form will include the creation of 6.4 hectares of woodland located in the setback area not proposed to be extracted and 22.3 hectares of woodland located within the rehabilitated extraction area. 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 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: Backfilling extraction faces and quarry floors; Partially backfilling extraction faces to create a cliff with talus slope; or Leaving extraction faces vertical 2. 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 3:1 and 2:1 slopes Top dressing to establish vegetation To establish the final elevations and grades depicted on the plan view 3. 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. 4. The South and West Extension contains approximately 1,190,000 m³ of topsoil and overburden that can be used for rehabilitation. It is assumed that 350,000 m³ will be transferred to the existing quarry for agricultural rehabilitation and some rehabilitation directly adjacent to the West Extension. As a result, 840,000 m³ of on-site materials will be utilized and the maximum total amount of excess soil that may be imported to this site for rehabilitation purposes is 2,160,000 m³. 5. 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. 6. 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. 7. Beach sand may be imported to establish the beach area in the South Extension. 8. 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. 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 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. Open areas (such as gradually sloping grades) can provide important habitat for pollinator insect species. Therefore, pollinator plant species will be incorporated into appropriate areas 3. The planting design and approach will be guided by the Conservation Halton Landscaping and Tree Preservation 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 m<sup>2</sup>, 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 7. 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 and evaluated by a qualified professional 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. Monitoring, tending and additional planting shall occur until 1000 trees per hectare have reached "free-to-grow" condition. 9. For plantings in areas extracted, plantings shall be monitored and evaluated by a qualified professional 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. Monitoring, tending and additional planting shall occur until 1000 trees per hectare have reached "free-to-grow" condition. 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 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 #5499. 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 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 March 2022, 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. 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. In the event that a third-party agreement is not arranged prior to site surrender, the licensee will be responsible to maintain the site in the condition consistent with this approved rehabilitation plan.

Deep water structures consisting of

rock/rubble piles will remain on the

quarry floor below the water level to

provide submerged aquatic habitat

3m North Extension 18m South Extension

Selective blasting will create irregular

cliff faces, shelves and ledges (with\_

pools on exposed vertical faces) at

and below the water level

Lake Level (masl)

255.5 North Extension

271.0 South Extension

Quarry face partially backfilled

with overburden, rock and fill

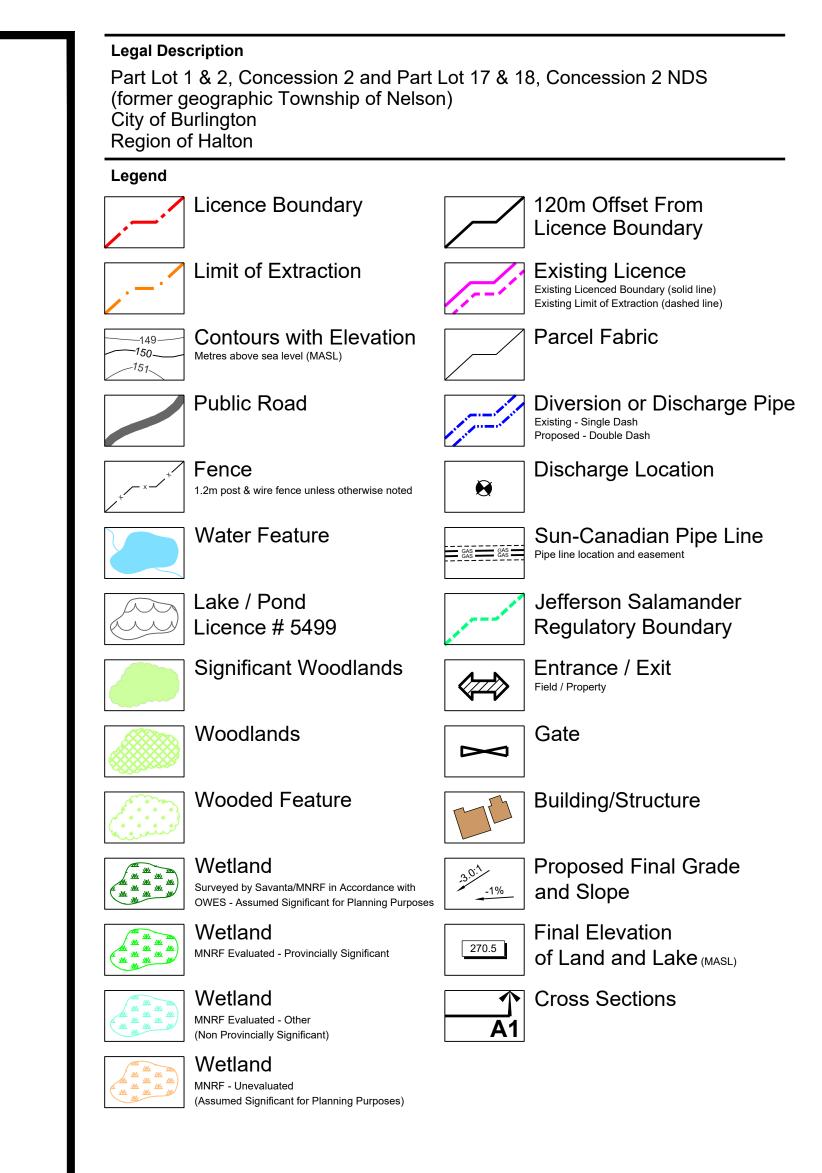
Mav include lake

overburden, rock and fill



loafing and bird perching and

Quarry face backfilled with overburden, rock and fill





Licence No. 5499



## Burlington Quarry Extension

Pre-approval review:	
Date June 2023 September 2022	
Drawn By C.P. File No.	
Checked By B.Z. 9135D	
ation Plan	

Drawing No.

3 of 4 File Path

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