

**Legend**

|  |   |  |   |
|--|---|--|---|
|  | Licence Boundary  |  | 120m Offset From Licence Boundary   |
|  | Limit of Extraction   |  | Existing Licence<br>Existing Licence Boundary (solid line)<br>Existing Line of Extraction (dashed line) |
|  | Contours with Elevation<br>Metres above sea level (MASL)  |  | Parcel Fabric   |
|  | Public Road   |  | Discharge Pipe  |
|  | Fence<br>1.2m post & wire fence unless otherwise noted  |  | Discharge Location  |
|  | Water Feature   |  | Jefferson Salamander Regulatory Boundary  |
|  | Irrigation Pond   |  | Fish Habitat<br>Direct - solid<br>Indirect - dash   |
|  | Significant Woodlands   |  | Sun-Canadian Pipe Line<br>Pipe line location and easement   |
|  | Woodlands   |  | Entrance / Exit<br>Existing   |
|  | Wooded Feature  |  | Direction of Surface Drainage   |
|  | Dripline<br>Based December 3, 2021 by Savanta and Region of Halton                                      |  | Building/Structure  |
|  | Wetland<br>Surveyed by Savanta/MNRF in Accordance with OWES - Assumed Significant for Planning Purposes |  | Cross Sections<br>A1  |
|  | Wetland<br>MNRF Evaluated - Provincially Significant  |  | ANSI - Earth Science<br>(Area of Natural and Scientific Interest)<br>Lake Mead Wetlands Channel         |
|  | Wetland<br>MNRF Evaluated - Other<br>(Non Provincially Significant)                                     |  | ANSI - Life Science<br>(Area of Natural and Scientific Interest)<br>Medal Valley                        |
|  | Wetland<br>MNRF - Un-evaluated<br>(Assumed Significant for Planning Purposes)                           |  |   |

**Significant Wildlife Habitat**

|  |                               |  |                                 |
|--|-------------------------------|--|---------------------------------|
|  | Amphibian Breeding (Woodland) |  | Species of Conservation Concern |
|  | Assumed Bat Maternity Colony  |  | Unicorn Clubtail                |
|  | Turtle Wintering Area         |  | Eastern Wood-pewee              |
|  | Rare Vegetation Community     |  | Large Toothwort Community       |

**Species at Risk**

|  |   |  |                               |
|--|---|--|-------------------------------|
|  | Butternut Category 1                                |  | Bobolink                      |
|  | Butternut Category 2                                |  | Barn Swallow Nest Observation |
|  | Bat Habitat<br>(5 to 6m Myotis and Tricoloured Bat) |  |                               |

**Site Plan Amendments**

| No. | Date | Description | By |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |

**Site Plan Revisions (Pre-Licensing)**

| No. | Date           | Description   | By  |
|-----|----------------|---|-----|
| 1.  | September 2020 | Updated date of Archaeological Assessment Report in Section H.  | CAP |
| 2.  | April 2021     | Included MNRF wetlands for South Extension. Added Significant Wildlife Habitat, Species of Conservation Concern and Species at Risk. Updates legend.        | CAP |
| 3.  | January 2022   | Updated to address agency comments.   | CAP |
| 4.  | February 2022  | Updated to address agency comments.   | CAP |
| 5.  | March 2022     | Updated limit of extraction in the West Extension. Added dripline and setback dimensions from the dripline to the plan view. Revised notes H.1, H.8 & H.15. | CAP |
| 6.  | September 2022 | Added additional assumed bat maternity colony. Revised notes H.1, H.8 & H.15.   | CAP |
| 7.  | June 2023      | Remove diversion channel along Colling Road from BIND Line on plan view. Update legend. Remove note H.14.   | CAP |
| 8.  | September 2024 | Updated drawings 3 and 4 of 4.  | CAP |

**MHBC**  
 PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE  
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MNRF Approval Stamp: **DRAFT**

MHBC Stamp:

Applicant: **NELSON AGGREGATE CO.**  
 2433 No. 2 Street  
 P.O. Box 1077 Burlington Ont. L7R 4L8  
 phone: (905) 335-5250

Project: **Burlington Quarry Extension**

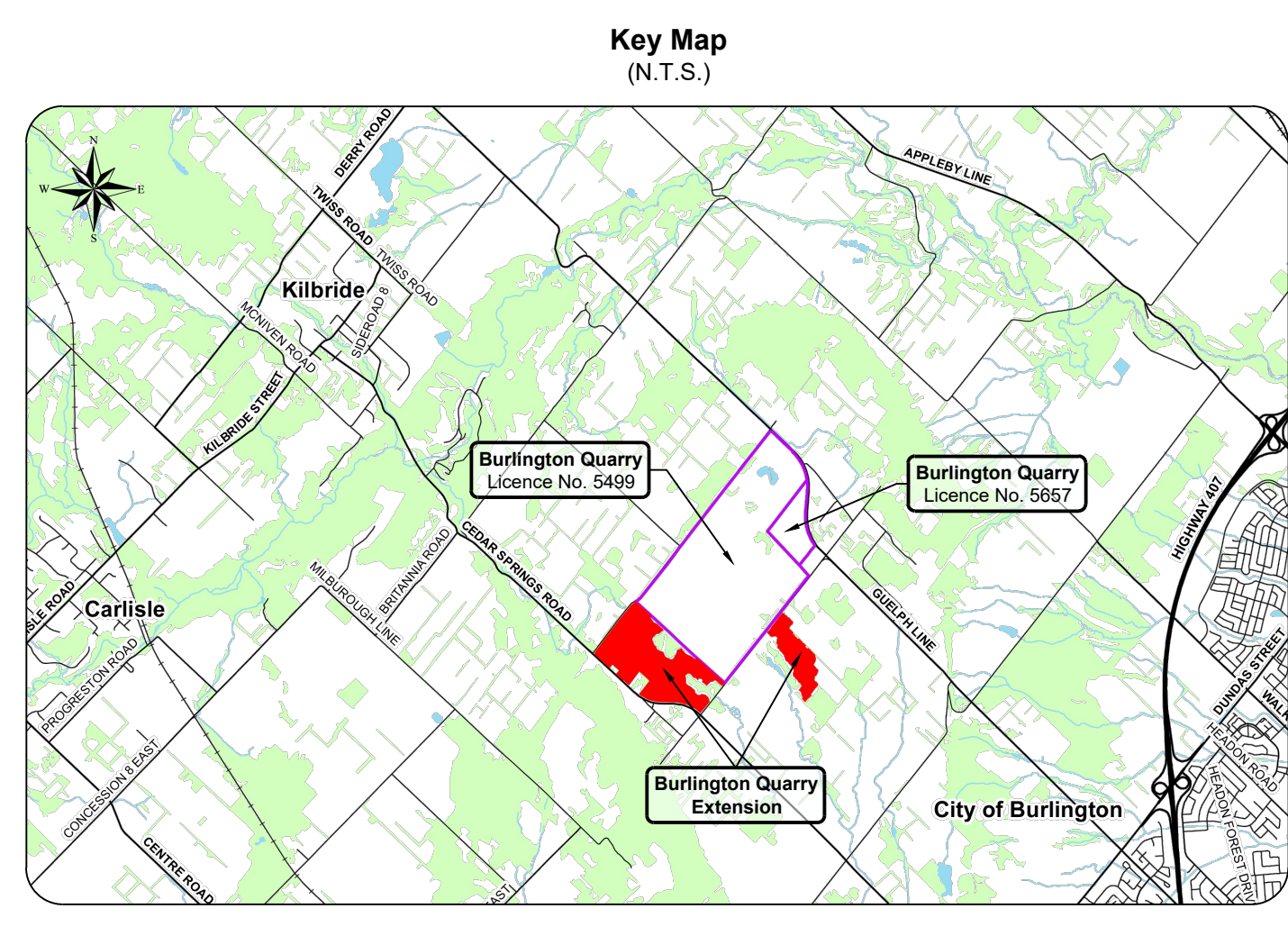
|                                      |                      |
|--------------------------------------|----------------------|
| MNRF Licence Reference No.<br>626477 | Pre-approval review: |
|--------------------------------------|----------------------|

|                             |                                       |
|-----------------------------|---------------------------------------|
| Plan Scale: 1:3000 (Arch E) | Date: <b>September 2024 June 2023</b> |
| 0 100 200 Meters            | Drawn By: C.P. File No.: 9135D        |
|                             | Checked By: B.Z.                      |

File Name: **Existing Features**

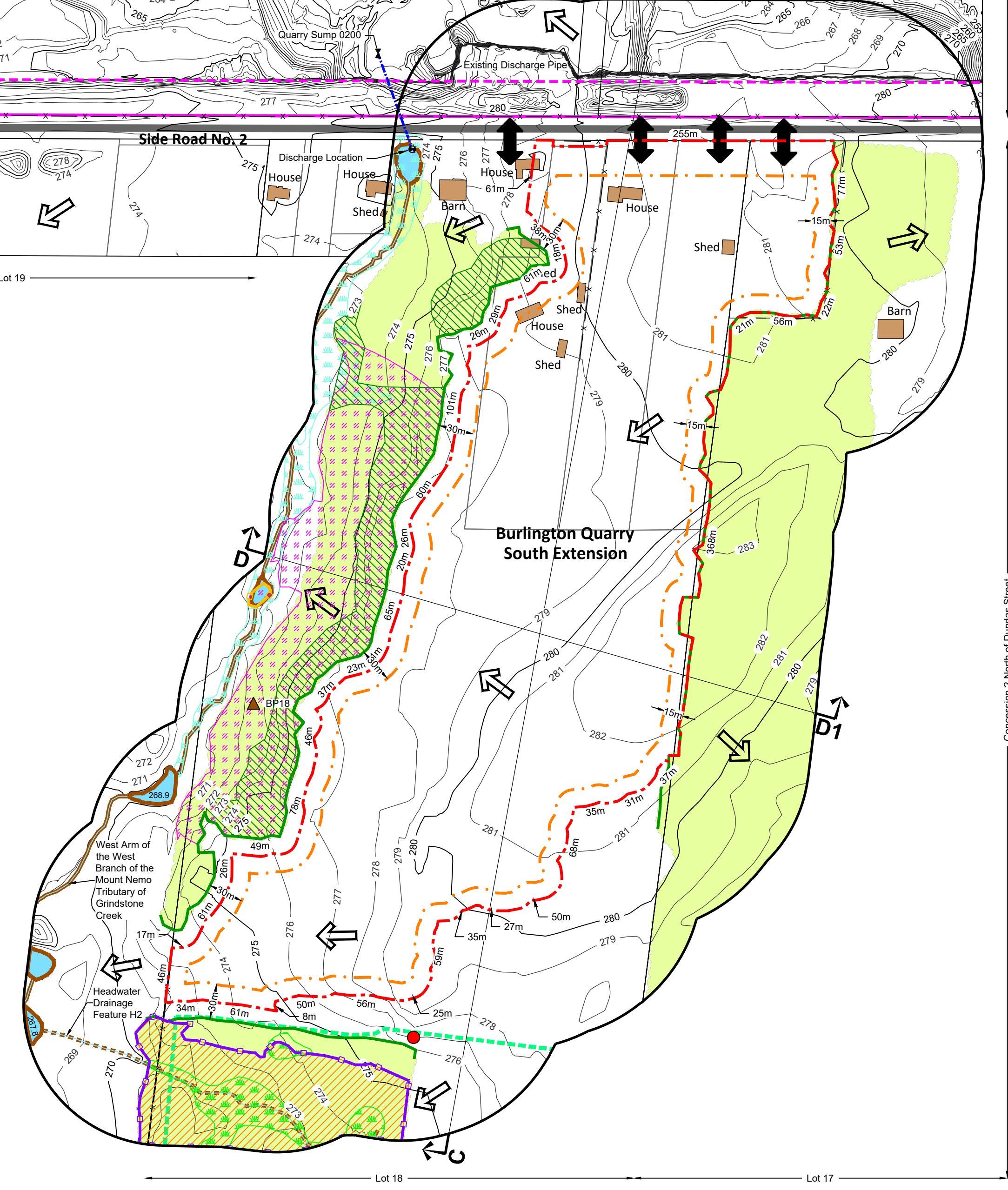
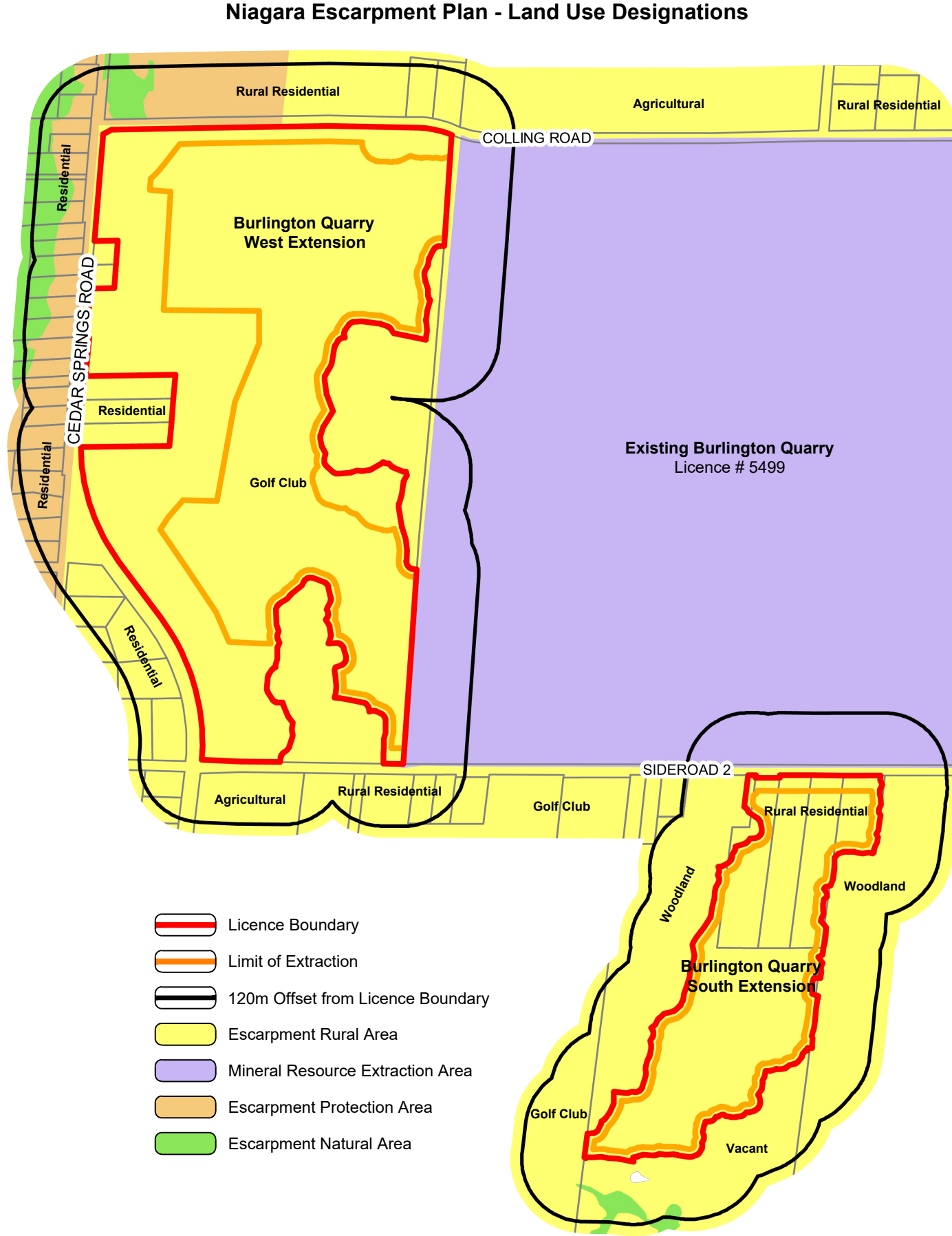
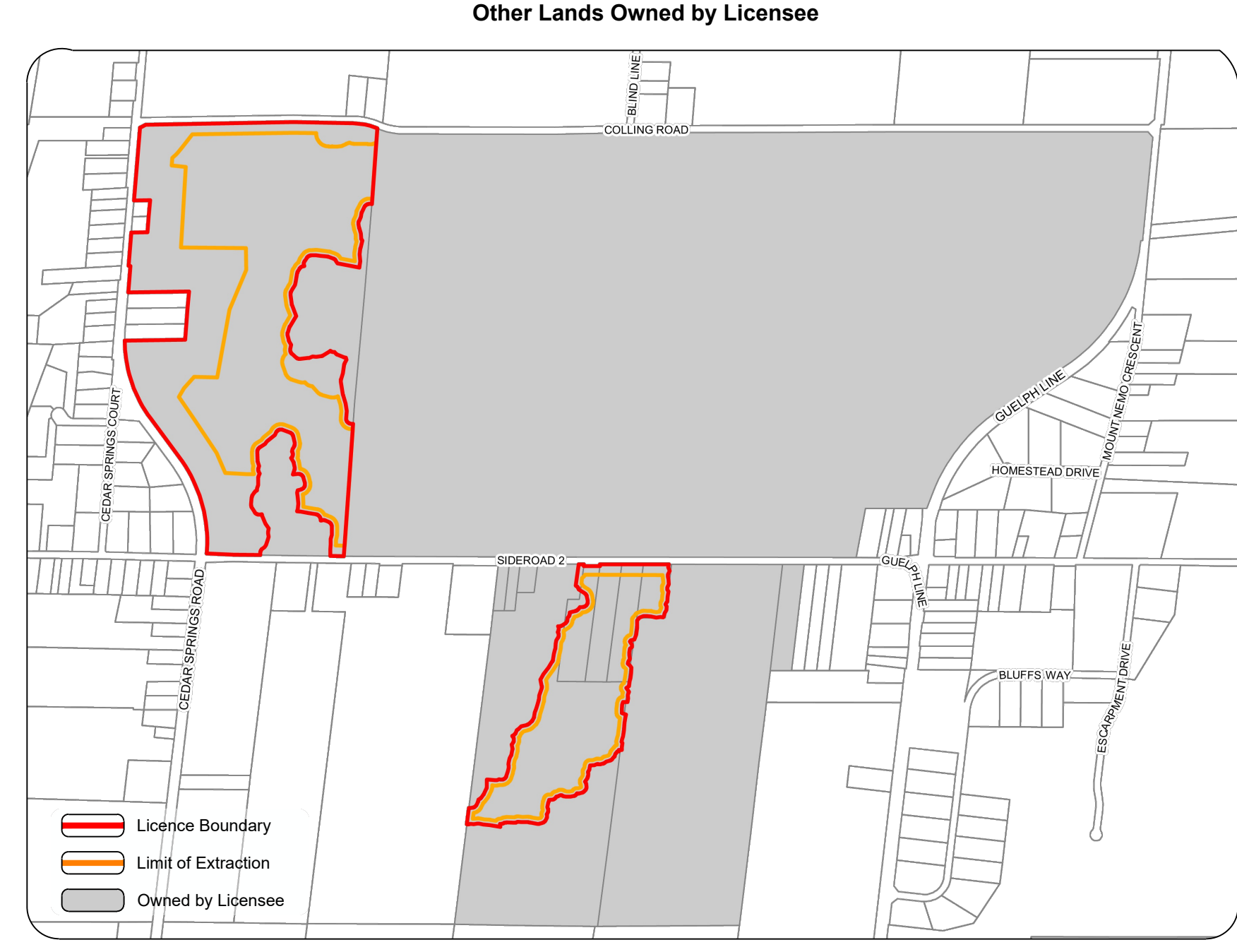
Drawing No.: **1 of 4**

File Path: N:\b\19155D-Nelson - Project Sideway\Drawings\ARA Site Plans\Extension Site Plan\CAD\135D - Site Plan.dwg



- A. General**
- This site plan is prepared under the Aggregate Resources Act (ARA) for a Class 'A' Licence, Category 2.
  - Area Calculations:
 

|                      |         |
|----------------------|---------|
| Licence Area (total) | 76.9 ha |
| • South Extension    | 18.1 ha |
| • West Extension     | 58.8 ha |
- B. References**
- 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).
  - 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 test investigations for technical reports.
  - 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.
  - 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.
  - 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**
- 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**
- 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**
- There are four existing site accesses on Side Road No. 2 and a single existing site access on Cedar Springs Road.
  - 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**
- See drawing 4 of 4.
- H. Technical Reports - References**
- Adaptive Management Plan, Proposed Burlington Quarry Extension, EarthFX Inc., Savanta, and Tatham Engineering, June 2022.
  - Agricultural Impact Assessment, Nelson Aggregate Co. Burlington Quarry Extension, April 2020.
  - Air Quality Study for Nelson Aggregate Co., Burlington Quarry Extension, BCX Environmental Consulting, March 2020.
  - Archaeological Assessment (Stages 1, 2 & 3), Nelson Aggregates Quarry Expansion, Archaeologic Inc., August 2003.
  - Archaeological Assessment (Stage 4), Nelson Aggregates Quarry Expansion, Archaeologic Inc., August 2004.
  - Stage 1-2 Archaeological Assessment, Proposed West Extension of the Burlington Quarry, Golder Associates, September 2022.
  - Bluff Impact Analysis, Burlington Quarry Extension, Ecliptech Engineering Ltd. June 16, 2021.
  - Cultural Heritage Impact Assessment Report, Burlington Quarry Extension, MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), May 2022.
  - Financial Impact Study, Proposed Burlington Quarry Extension, Nelson Aggregates Co., September 30, 2021.
  - Level 1 and 2 Hydrogeological and Hydrological Impact Assessment Report, Proposed Burlington Quarry Extension, EarthFX Incorporated, April 2020.
  - Level 1 and 2 Natural Environment Technical Report, Proposed Burlington Quarry Extension, Savanta, April 2020.
  - Noise Impact Assessment, Nelson Aggregate Quarry Extension, Howe Gastmeier Chapnik Limited, November 15, 2021.
  - Nelson Aggregate Company, Burlington Quarry Extension Traffic Report, Paradigm Transportation Solutions Limited, February 2020.
  - Surface Water Assessment, Burlington Quarry Extension, Tatham Engineering, June 23, 2023.
  - Visual Impact Assessment Report, Proposed Extension of the Burlington Quarry, MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), May 2022.
  - Safety Review of the Proposed Access Plan for a Proposed Quarry Extension, True North Safety Group, June 2021.





**A. General**

- Area Category:
  - Licence Area (Total): 78.9 ha
  - South Extension: 58.1 ha
  - West Extension: 20.8 ha
- Maximum annual storage: 2,000,000.
- Existing golf course use in the West Extension may continue to operate until site preparation for that Extension commences.

**B. Hours of Operation**

- Blasting is permitted Monday to Friday between 6:00am to 6:00pm excluding statutory holidays. Blasting will typically occur once per week but may occur more often between seasonal peaks.

**C. Site Access and Fencing**

- 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 full duration of the extraction and property boundaries. Fencing of the West Extension license boundary shall be exempt from this requirement (see Section C. Variations from Provincial Standards). Where the license boundary is not fenced, it will be constructed with rustic post and rail fencing.
- Where the license boundary adjoins significant woodlands, fencing shall be in accordance with the Tree Protection Zone detail on this drawing.
- Prior to extraction in the South Extension, extraction fencing (see MNRP 2012 Species at Risk Branch Best Practices Technical Note Fencing and Ancillary Excavation Fencing Version 1.1) shall be installed around the perimeter of the license boundary per plan view for appropriate locations.
- Prior to installation in the West Extension, inclusion fencing (see MNRP 2012 Species at Risk Branch Best Practices Technical Note Fencing and Ancillary Excavation Fencing Version 1.1) shall be installed around the perimeter of the license boundary per plan view for appropriate locations.
- A new extraction unit for the South Extension shall be established in the location shown on the plan view (see Section N. Report Recommendations for additional information). The extraction unit shall be established along the southern limit of the license boundary (see Section C. Variations from Provincial Standards) shall occur through an on-grade roadway crossing on Slide Road No. 2 in this location.
- A gate shall be installed at the operational entrance of the West Extension on Slide Road No. 2, kept closed during hours of non-operation, and maintained throughout the life of that Extension.
- A gate shall not be required for the firefighting access located at 2200 Slide Road No. 2 (see Section C. Variations from Provincial Standards).
- The West Extension shall be accessed through the common licence boundary with existing Licence #5499 in Phases 3 and 5. The location for this access shall be as shown on this drawing.
- Access for all equipment shall be provided from the site operational entrance in the South Extension. During operation, the existing extraction access shall be used to transport farm equipment to the areas that have not been extracted to facilitate ongoing agricultural operations in the West Extension.

**D. Drainage and Erosion Control**

- Drainage of undisturbed areas will continue in the directions shown on drawing 1 of 4.
- Prior to site preparation, an Erosion and Sedimentation Control (ESC) Plan will be prepared and implemented to prevent erosion or sedimentation impacts to the natural environment from operation and rehabilitation of the quarry extension (see Section N. Report Recommendations - Natural Environment note "C").
- Prior to extraction in the West Extension, the infiltration pond located in the west setback (including the diversion/discharge pipe and the pond located adjacent to the infiltration pond) shall be installed in the location shown on the plan view. The pond and the infiltration pond in the west setback will be utilized for the collection of acidotic and visual runoff in the West Extension. For the purposes of this plan view, the infiltration pond in the west setback will be provided to the infiltration pond in the northwest corner of the site.
- Within the West Extension, the diversion and discharge pipes shall be placed in the location shown on the plan view (see Section N. Report Recommendations - Natural Environment note "C") for being to install the diversion pipe within the west pond. The collection of the diversion pipe along the south boundary of Phase 5 shall remain a minimum of 7.5 metres from the licence boundary (see Section N. Report Recommendations for additional information). The diversion pipe shall be installed prior to constructing the berm in this vicinity.
- Prior to removal of the irrigation ponds and irrigation channel in the West Extension, the downstream end of the golf course channel shall be removed to isolate surface water. Water will be pumped from the feature to facilitate site preparation. It shall be directed to the existing pump for discharge in accordance with MCEP, ECA and PTFW requirements.

**E. Site Preparation**

- All existing structures within the South Extension including the house and barn located at 2200 Slide Road No. 2 and West Extension including the house and barn located at 2010 Slide Road No. 2 shall be demolished prior to extraction in the West Extension in accordance with all applicable regulations (see Section N. Report Recommendations - Natural Environment note "C" as well as note "D" regarding removal of trees and structures within the West Extension).
- No new buildings are proposed for either Extension.
- Tree removal shall not occur in the West Extension during the active season for Eastern Small-footed Myrtle between March 15<sup>th</sup> and November 30<sup>th</sup> (see Section N. Report Recommendations - Natural Environment note "C").
- Timber resources (if any) will be salvaged to use as saw logs, fence posts and fuel wood where appropriate. Stumps, trees, shrubs and stumps shall be used for rehabilitation of this site and Licence #5499 to provide coarse and fine wood products to enhance biodiversity create habitats during site rehabilitation.
- Prior to the commencement of siting in the South Extension, agricultural baseline conditions shall be established by a qualified professional for the entire extraction area using an accredited soil or any analytical testing. Soil profiles shall be conducted at a minimum of 15m x 15m grid across the site. The parameters to be baseline conditions soil testing shall be determined by the qualified professional and shall include items such as soil texture and macronutrients, and chemistry (e.g. pH, organic matter, soil texture and soil bulk density).
- In the South Extension, topsoil and subsoil for agricultural rehabilitation shall be stripped separately and stored for agricultural rehabilitation in Licence #5499 in accordance with the agricultural rehabilitation notes on this page (see Section N. Agricultural and Section O. Variations from Provincial Standards). The remaining topsoil in the South Extension for agricultural rehabilitation will be stripped separately and used for the construction of acidotic/visual berms and rehabilitation in the south extension. In the west extension, topsoil and subsoil shall be stripped and stored separately wherever feasible (see Section N. Report Recommendations).
- With the exception of topsoil and subsoil from the South Extension that will be used for agricultural rehabilitation in Licence #5499, the remaining topsoil and subsoil shall be placed in perimeter agricultural berms, post construction to occur immediately for progressive rehabilitation of the Extension or existing Licence #5499 (see Section O. Variations from Provincial Standards).
- With the exception of topsoil and subsoil from the South Extension that will be used for agricultural rehabilitation in Licence #5499, excess topsoil and subsoil shall be provided to the licensee in the form of topsoil and subsoil for agricultural rehabilitation in Licence #5499. Topsoil and subsoil shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (see Section N. Report Recommendations for additional information). Topsoil and subsoil shall be stored in a properly used a residential use (see Section C. Variations from Provincial Standards).
- With the exception of topsoil and subsoil from the South Extension that will be used for agricultural rehabilitation in Licence #5499, topsoil and subsoil shall be provided to the licensee in the form of topsoil and subsoil for agricultural rehabilitation in Licence #5499.

**F. Berms and Screening**

- 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 and the Typical Acoustic & Visual Berm on drawing 1 of 4 for additional information.
- Berms adjacent to key natural heritage features shall be constructed in accordance with Section N. Report Recommendations - Natural Environment note "C".
- Berm site slopes shall not be less than the following minimums:
  - South Extension:
    - Northeast, north and northeast setbacks: 1:5.1
    - Southeast setbacks: 2:1
    - West Extension:
      - North and west setbacks: 2:1
      - Southeast setbacks: 1:5.1
- Berms in the South Extension shall be constructed prior to extraction in that extension.
- Berms in the West Extension shall be constructed prior to extraction in that extension.
- The north face of the berm for the West Extension shall be constructed with a maximum height of 1 metre of the Sun-Canadian Pipe Line easement.
- Berms shall be vegetated with a native mix of wildflowers and grasses to stabilize slopes and minimize erosion and maintenance. The vegetation on the berms shall be maintained until the berms are removed for rehabilitation.
- 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). Barbed wire shall be installed with a native mix of wildflowers and grasses to restore areas and minimize erosion and maintenance. A portion of the setback areas, as shown on the construction details, will also be located in accordance with Section N. Report Recommendations - Natural Environment note "C".
- Setbacks identified as forested setbacks on the plan view shall be forested (see Section N. Report Recommendations - Natural Environment note "C" and "D" for additional information).

**G. Site Dewatering**

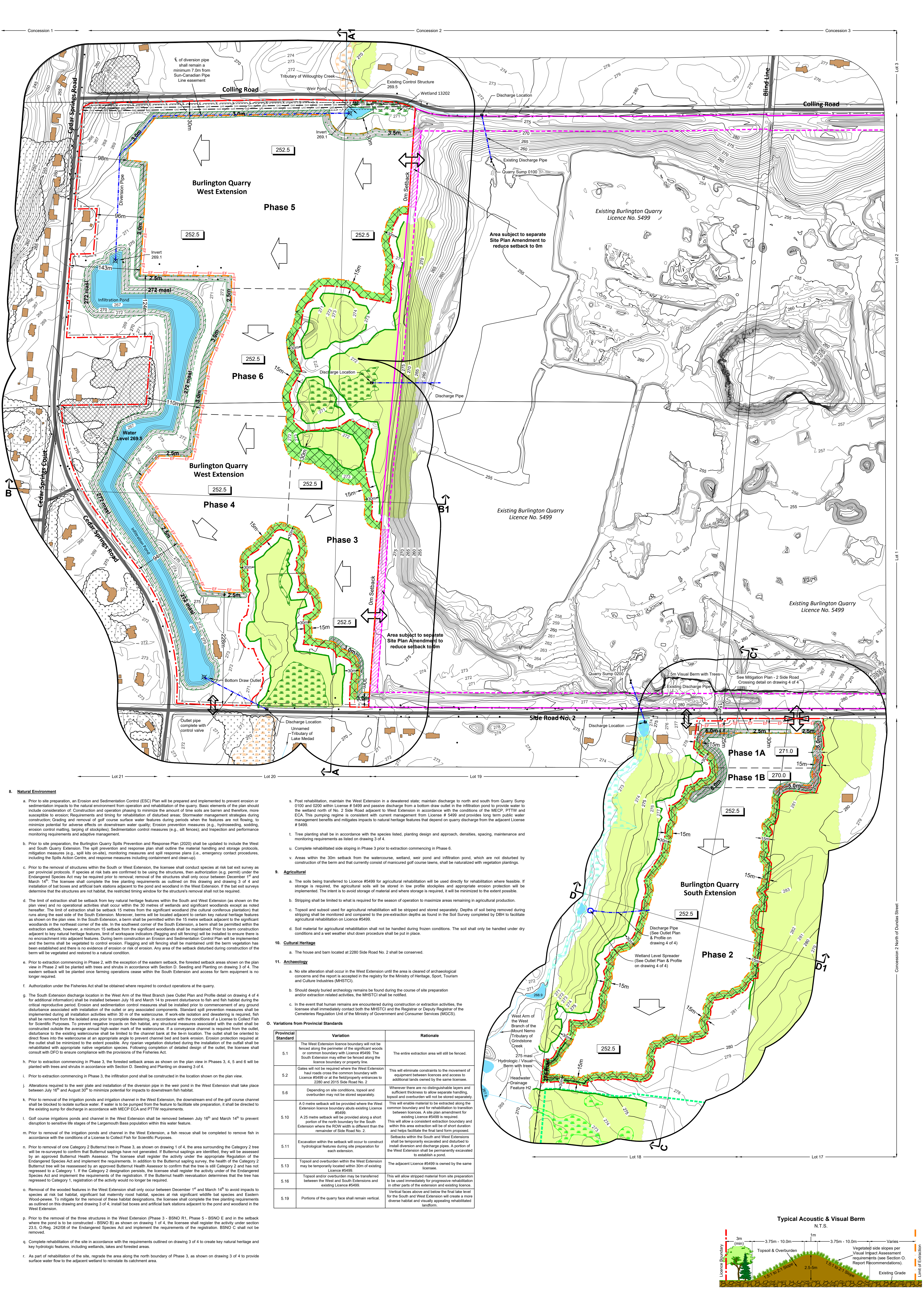
- During the initial stages of extraction within the South Extension, a temporary settling pond will be constructed within the quarry area (see Phase 2). Once sufficient extraction has occurred in Phase 2, the pump and settling pond will be constructed on the quarry floor. See Section N. Report Recommendations for additional information.
- The discharge location for the South Quarry Extension shall be constructed in accordance with Section N. Report Recommendations - Natural Environment note "C".
- For the West Extension, the water will be diverted to existing Licence #5499 and discharged from the existing pumps and discharge locations.
- The licensee shall operate in accordance with Environmental Compliance Authority (ECA) and Permit to Take Water (PTTW) requirements.

**H. Extraction Sequence**

- General:
  - Prior to site preparation in phases, ensure all requirements contained in Section C through G are met.
- Phase 1:
  - Phase 1 (South Extension) extraction and ensure all requirements pertaining to the Extension in Sections C through G of this drawing are met.
  - Site Preparation:
    - In accordance with Site Preparation notes (see Section E) and Agricultural Rehabilitation notes (see Section N), any overburden not used for agricultural rehabilitation shall be used to construct perimeter berms. Should there be insufficient overburden in Phase 1, additional berms, riprap areas and concrete perimeter berms shall be constructed.
    - Create settling ponds in a southerly direction to capture and collect a noise abatement site meeting MCEP Noise Guidelines at the nearest residence. Noise audit records shall be kept by the licensee and made available to agencies upon request.
    - Phase 1 shall be extracted to a maximum depth of 22.5m.
    - Phase 2:
      - Phase 2 in accordance with the West Extension notes (see Section E) and Agricultural Rehabilitation notes (see Section N) in accordance with extraction progression in a southerly direction. Dipping shall be limited to what is required for the reason of operation to maintain access to the quarry floor. The licensee shall be permitted to extract the quarry floor to a maximum depth of 22.5m.
      - Extract Phase 2 in a southerly direction from Phase 1 and complete a noise audit to ensure the site is meeting MCEP Noise Guidelines at the nearest residence. Noise audit records shall be kept by the licensee and made available to agencies upon request.
      - Phase 2 may be extracted to a maximum depth of 22.5 m.
  - Phase 2:
    - Phase 2 in accordance with the West Extension notes (see Section E) and Agricultural Rehabilitation notes (see Section N) in accordance with extraction progression in a southerly direction. Dipping shall be limited to what is required for the reason of operation to maintain access to the quarry floor. The licensee shall be permitted to extract the quarry floor to a maximum depth of 22.5m.
    - Extract Phase 2 in a southerly direction from Phase 1 and complete a noise audit to ensure the site is meeting MCEP Noise Guidelines at the nearest residence. Noise audit records shall be kept by the licensee and made available to agencies upon request.
    - Phase 2 may be extracted to a maximum depth of 22.5 m.
  - Phase 3:
    - Phase 3 in accordance with the West Extension notes (see Section E) and Agricultural Rehabilitation notes (see Section N) in accordance with extraction progression in a southerly direction. Dipping shall be limited to what is required for the reason of operation to maintain access to the quarry floor. The licensee shall be permitted to extract the quarry floor to a maximum depth of 22.5m.
    - Extract Phase 3 in a southerly direction from Phase 2 and complete a noise audit to ensure the site is meeting MCEP Noise Guidelines at the nearest residence. Noise audit records shall be kept by the licensee and made available to agencies upon request.
    - Phase 3 may be extracted to a maximum depth of 22.5 m.
  - Phase 4:
    - Phase 4 in accordance with the West Extension notes (see Section E) and Agricultural Rehabilitation notes (see Section N) in accordance with extraction progression in a southerly direction. Dipping shall be limited to what is required for the reason of operation to maintain access to the quarry floor. The licensee shall be permitted to extract the quarry floor to a maximum depth of 22.5m.
    - Extract Phase 4 in a southerly direction from Phase 3 and complete a noise audit to ensure the site is meeting MCEP Noise Guidelines at the nearest residence. Noise audit records shall be kept by the licensee and made available to agencies upon request.
    - Phase 4 may be extracted to a maximum depth of 22.5 m.
  - Phase 5:
    - Phase 5 in accordance with the West Extension notes (see Section E) and Agricultural Rehabilitation notes (see Section N) in accordance with extraction progression in a southerly direction. Dipping shall be limited to what is required for the reason of operation to maintain access to the quarry floor. The licensee shall be permitted to extract the quarry floor to a maximum depth of 22.5m.
    - Extract Phase 5 in a southerly direction from Phase 4 and complete a noise audit to ensure the site is meeting MCEP Noise Guidelines at the nearest residence. Noise audit records shall be kept by the licensee and made available to agencies upon request.
    - Phase 5 may be extracted to a maximum depth of 22.5 m.

**I. Extraction Details**

- The maximum height of a wall shall be 25 metres.
- The maximum depth of extraction for the South Extension is 29.5 metres. Phase 1 shall be extracted in one lift and Phase 2 shall be extracted in a maximum of 2 lifts.
- The maximum depth of extraction for the West Extension is 22.5 metres and the maximum number of lifts is two.
- Extraction shall be permitted in two Phases simultaneously to allow for transition between phases.
- Internal haul road locations will vary as extraction progresses and will be located on the quarry floor with the exception of the grade roadway running between the South Extension and existing Licence #5499.
- Blasted aggregate will be transported back to existing Licence #5499 for processing and shipping.



**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
- Contours with Elevation
- Public Road
- Fence
- Exclusion Fence
- Water Feature
- Significant Woodlands
- Woodlands
- Wooded Feature
- Dripline
- Wetland
- Wetland
- Wetland
- Wetland
- Forested Setbacks
- 120m Offset From Licence Boundary
- Existing Licence
- Parcel Fabric
- Diversion or Discharge Pipe
- Discharge Location
- Jefferson Salamander Regulatory Boundary
- Sun-Canadian Pipe Line
- Entrance / Exit
- Gate
- General Direction of Excavation & Boundary
- Berm - Acoustic
- Berm - Hydrologic
- Berm - Visual
- Building/Structure
- Quarry Floor
- Cross Sections

**Tree Protection Zone Detail**

1. The Tree Protection Zone (TPZ) for woodlands extends the length of the woodland dripline of significant woodlots.

2. Prior to site preparation in the South and West Extension, tree fencing shall be erected along the licence boundary and in the locations shown on the "Additional Tree Protection Fencing" detail on drawing 4 of 4. The area between the licence boundary and the tree line of the significant woodlots in the TPZ. The TPZ is to prevent damage and soil compaction within the TPZ.

3. Fencing material shall consist of orange plastic with one facing and/or orange plastic with reflective tape.

4. Fencing material shall be installed a minimum 1.2 metres in height above grade.

5. Signage shall be posted in visible locations along the perimeter of each TPZ area and be a minimum 20cm x 30cm. Each sign shall clearly state the tree protection zone.

6. The TPZ shall remain fully intact and existing grade shall not be altered or disturbed. The TPZ shall not be used for storage of fill, topsoil, building materials, or equipment. There shall be no storage of materials, equipment, or vehicles within the TPZ.

7. Where encroachment into the TPZ is necessary to facilitate construction of the discharge location, the licensee shall be required to ensure that the discharge location shall be located within this area.

**Site Plan Amendments**

| No. | Date           | Description   | By  |
|-----|----------------|---|-----|
| 1.  | September 2020 | Adjust pond adjacent to dwelling in the southwest corner of the West Extension  | CAP |
| 2.  | April 2021     | Updated notes per MNRP 2012 Species at Risk Branch Best Practices Technical Note Fencing detail on drawing 4 of 4. The area between the licence boundary and the tree line of the significant woodlots in the TPZ. The TPZ is to prevent damage and soil compaction within the TPZ. | CAP |
| 3.  | January 2022   | Updated to address agency comments.   | CAP |
| 4.  | February 2022  | Updated to address agency comments.   | CAP |
| 5.  | March 2022     | Updated limit of extraction in the West Extension. Added acoustic and setback dimensions from the dripline to the plan view. Revised notes A.1, N.4 and N.8.d.  | CAP |
| 6.  | September 2022 | Adjusted discharge pipe location and added additional tree spreader. Added additional setbacks for the extension. Added notes A.1, N.4, N.8.d and N.8.e.  | CAP |
| 7.  | June 2023      | Remove diversion channel along Colling Road from Blind Line on plan view.   | CAP |
| 8.  | September 2024 | Updated drawing 3 and 4 of 4.   | CAP |

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**MNRF Approval Stamp**      **MHBC Stamp**

**MHBC**  
PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE  
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**DRAFT**

**Applcant**      **NELSON AGGREGATE CO.**  
2432 No. 2 Street  
P.O. Box 3071, Burlington, Ont. L7R 4L8  
phone: (905) 335-2520

**Project**      **Burlington Quarry Extension**

**MNRF Licence Reference No.**      **Pre-approval review:**  
626477

**Plan Scale:** 1:3000 (Arch E)      **Date:** September 2024 June 2023  
Drawn by: C.P.      File No.: 9135D  
Checked By: B.Z.

**File Name**      **Operational Plan**  
**Drawing No.**      **2 of 4**

**File Path**      N:\08\9135D-Nelson - Project Sideway\Drawings\A\Site Plan\Extension Site Plan\CAD\9135D - Site Plan.dwg



**Legend**

|  |   |  |   |
|--|---|--|---|
|  | Licence Boundary  |  | 120m Offset From Licence Boundary           |
|  | Limit of Extraction   |  | Existing Licence                            |
|  | Contours with Elevation   |  | Parcel Fabric                               |
|  | Public Road   |  | Diversion or Discharge Pipe                 |
|  | Fence   |  | Discharge Location                          |
|  | Water Feature   |  | Sun-Canadian Pipe Line                      |
|  | Lake / Pond Licence # 5499  |  | Jefferson Salamander Regulatory Boundary    |
|  | Significant Woodlands   |  | Entrance / Exit                             |
|  | Woodlands   |  | Gate  |
|  | Wooded Feature  |  | Building/Structure                          |
|  | Wetland MNR Evaluated - Priority Significant                      |  | Proposed Final Grade and Slope              |
|  | Wetland MNR Evaluated - Other (Non Priority Significant)          |  | Final Elevation of Land and Lake (M.A.S.L.) |
|  | Wetland MNR - Unrated (Assumed Significant for Planning Purposes) |  | Cross Sections                              |

**Rehabilitated Landform**

|  |   |
|--|---|
|  | Beach   |
|  | Swamp   |
|  | Gm swm area Shallow lake  |
|  | Lake  |
|  | Wetland / shoreline wetland                                     |
|  | Vertical face   |
|  | 4:1 slope - sculpted stepped edges (see detail on this drawing) |
|  | 3:1 slope (tree planting)                                       |
|  | 2:1 slope (tree planting)                                       |
|  | Setback - grassland & existing trees                            |
|  | Setback - forested - planted during operations                  |
|  | Setback - forested - planted when berm is removed               |
|  | Restored catchment area with ecological linkage (tree planting) |
|  | Gradual grade (tree planting & vernal pools) or islands         |
|  | Gravel area   |
|  | Internal road - 6 m wide  |
|  | Limestone screening trail - 3 m wide                            |

**Site Plan Amendments**

| No. | Date | Description | By |
|-----|------|-------------|----|
|     |      |             |    |

**Site Plan Revisions (Pre-Licensing)**

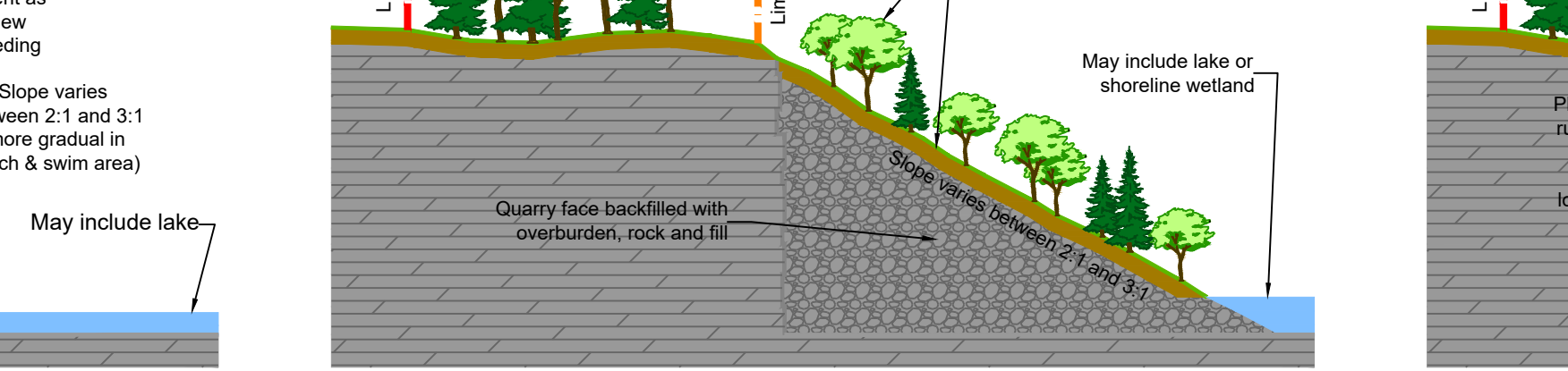
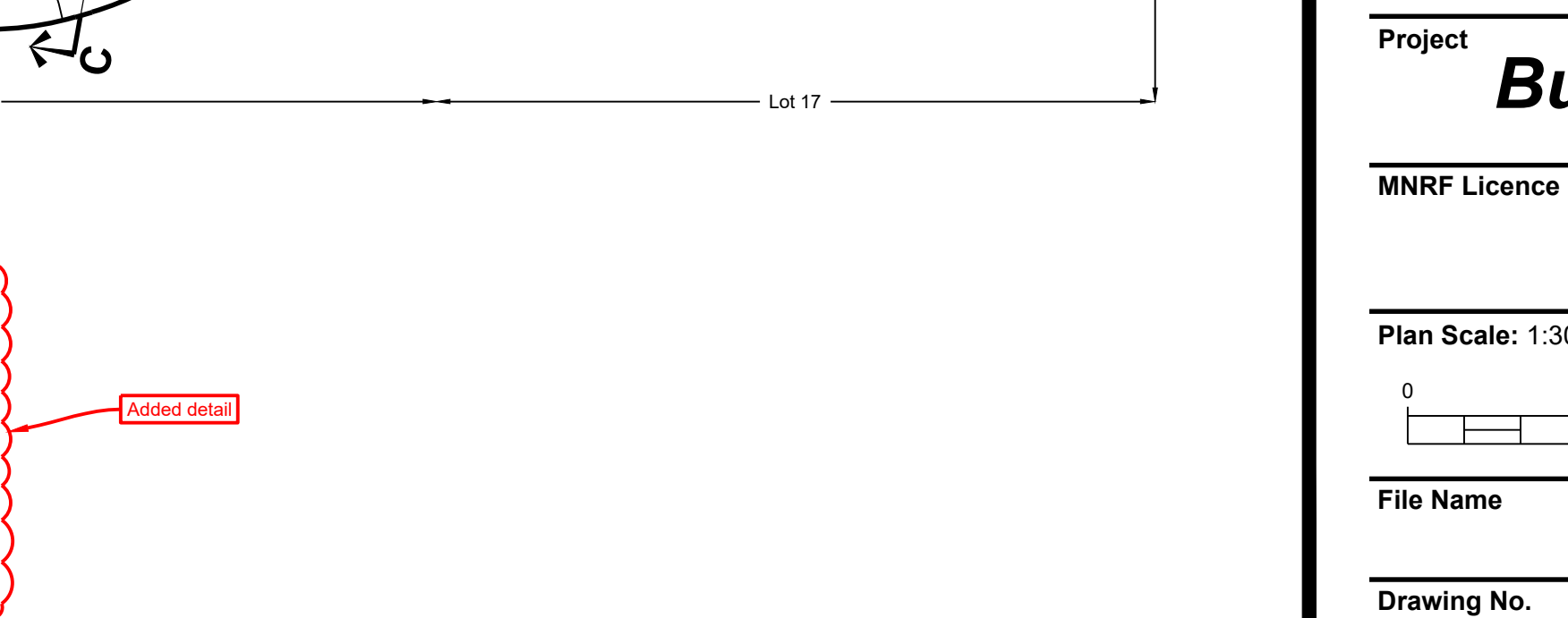
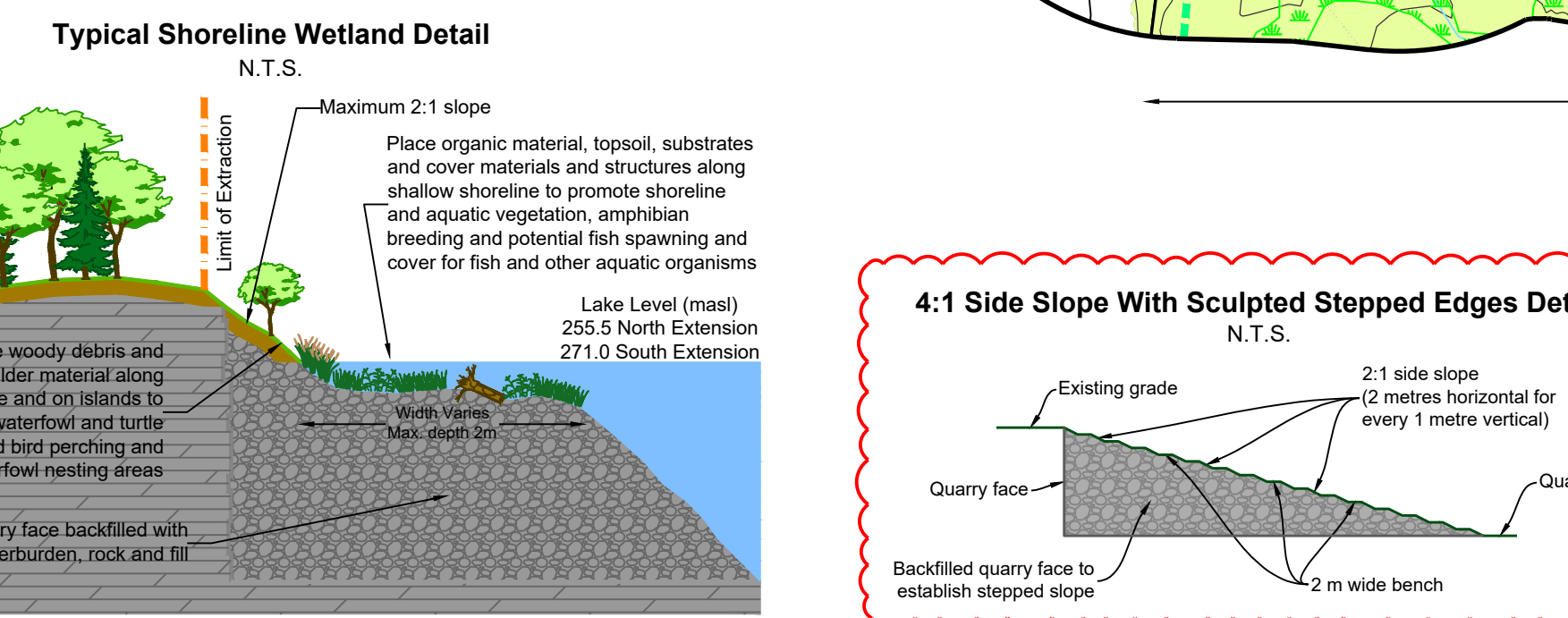
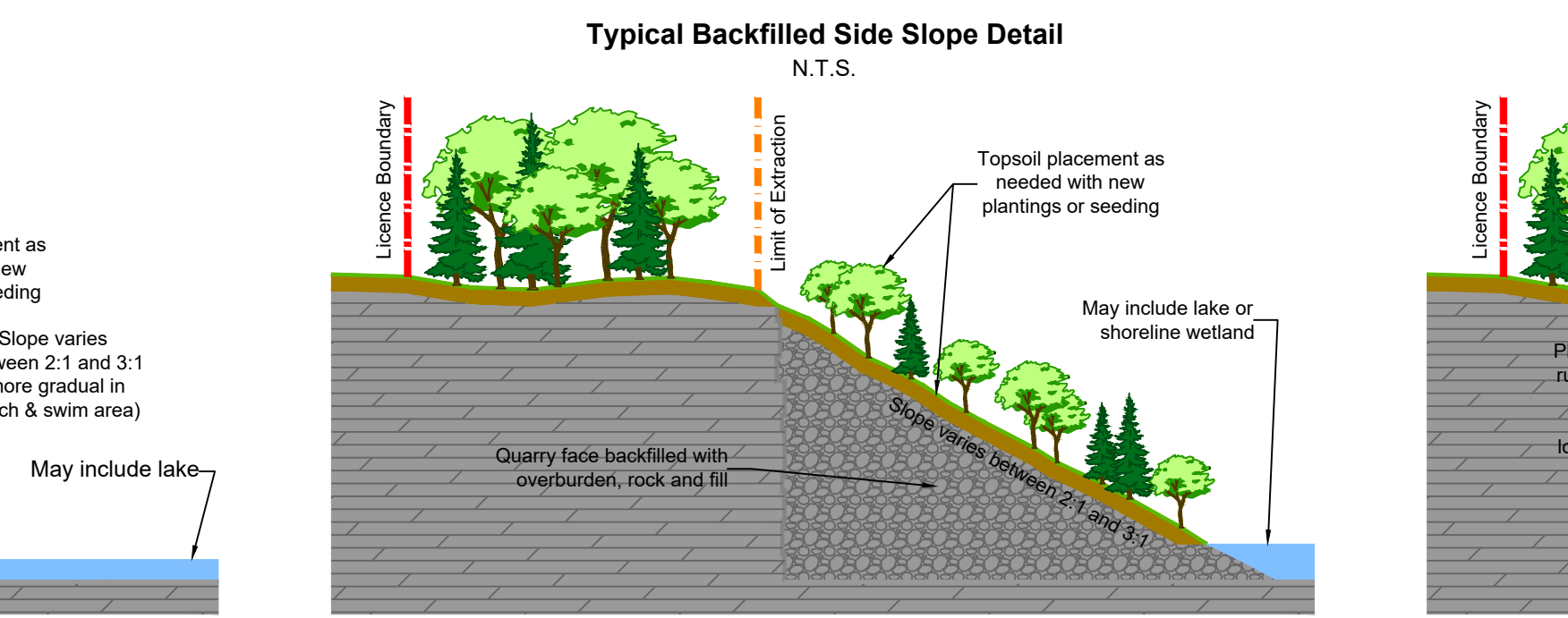
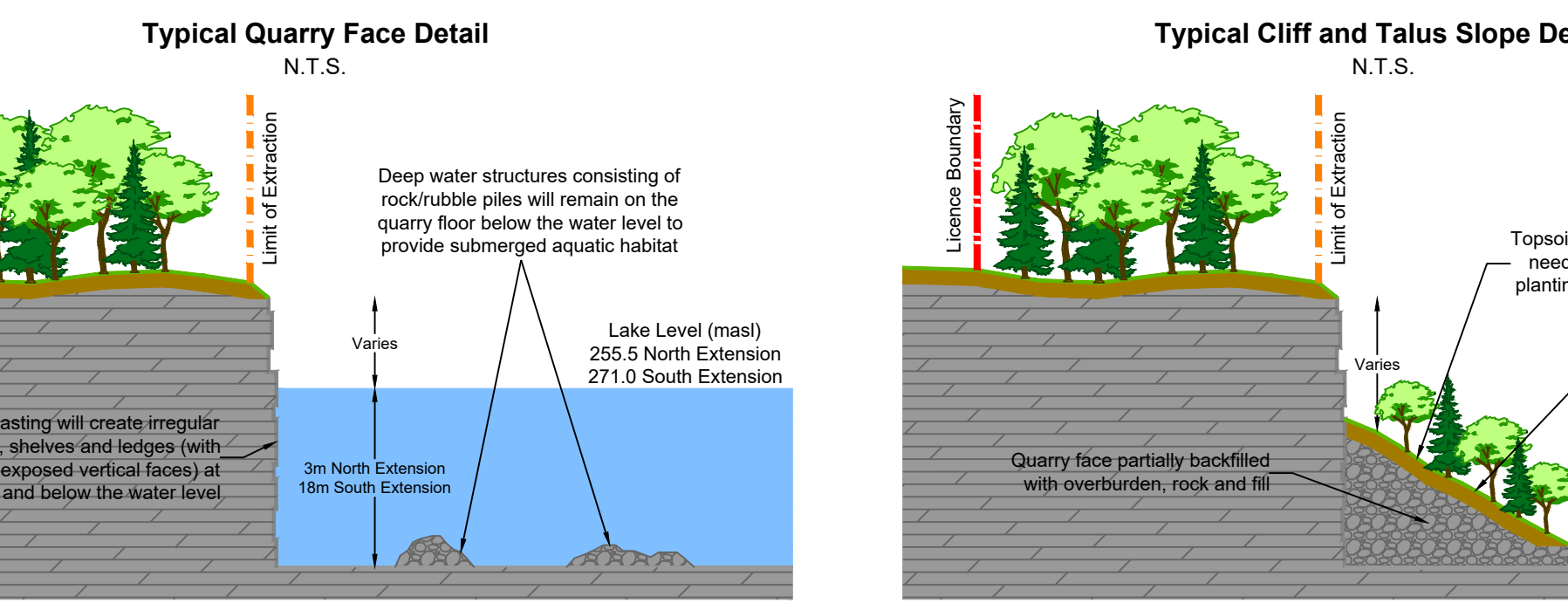
| No. | Date           | Description   | By  |
|-----|----------------|---|-----|
| 1.  | September 2020 | Adjust pond alignment to dwelling in the southwest corner of the West Extension.        | CAP |
| 2.  | April 2021     | Included "new" features for South Extension. Updated notes per MNR feedback.            | CAP |
| 3.  | January 2022   | Updated to address agency comments.   | CAP |
| 4.  | February 2022  | Updated to address agency comments.   | CAP |
| 5.  | March 2022     | Updated limit of extraction in the West Extension.                                      | CAP |
| 6.  | September 2022 | Added signs to the Existing Features and Operational Plan. Revised notes A.1.1 and F.1. | CAP |
| 7.  | June 2023      | Remove diversion channel along Colling Road from Blind Line on plan view.               | CAP |
| 8.  | September 2024 | Updated the final rehabilitation location to accommodate future potential uses.         | CAP |

**Table 1: Rehabilitation Plant List**

| Location | LATIN NAME                | COMMON NAME         | CORRESPONDING CROCODRICATION | WETLAND INDICATOR | OWES WETLAND SPICES | PROVINCIAL PLANT RANK | LOCAL STATUS (100m) |
|----------|---------------------------|---------------------|------------------------------|-------------------|---------------------|-----------------------|---------------------|
| F18, REG | <i>Sophora japonica</i>   | Red Elderberry      | 5                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Coma arvensis</i>      | Shoreland Goldenrod | 5                            | 1                 | 1                   | 35                    | X                   |
| F18, REG | <i>Coma arvensis</i>      | Shoreland Goldenrod | 2                            | 5                 | 1                   | 35                    | X                   |
|          | <i>Coma arvensis</i>      | Shoreland Goldenrod | 4                            | 1                 | 1                   | 35                    | X                   |
| F18, REG | <i>Alnus incana</i>       | Hopbush             | 2                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Alnus glutinosa</i>    | Black Alder         | 2                            | 1                 | 1                   | 35                    | X                   |
| F18, REG | <i>Salix discolor</i>     | Princess Willow     | 3                            | -1                | 1                   | 35                    | X                   |
|          | <i>Salix alba</i>         | White Willow        | 3                            | -1                | 1                   | 35                    | X                   |
| F18, REG | <i>Salix nigricans</i>    | Black Willow        | 2                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Salix humilis</i>      | Hamamelis Willow    | 3                            | -1                | 1                   | 35                    | X                   |
| F18, REG | <i>Rhus typhina</i>       | Flowering Dogwood   | 3                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Rhus glabra</i>        | Smooth Dogwood      | 3                            | 1                 | 1                   | 35                    | X                   |
| F18, REG | <i>Fraxinus americana</i> | White Ash           | 3                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Fraxinus nigra</i>     | Black Ash           | 3                            | 1                 | 1                   | 35                    | X                   |
| F18, REG | <i>Thuja occidentalis</i> | Eastern White Pine  | 4                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Thuja occidentalis</i> | White Pine          | 4                            | 1                 | 1                   | 35                    | X                   |
| F18, REG | <i>Thuja occidentalis</i> | White Pine          | 4                            | 1                 | 1                   | 35                    | X                   |
|          | <i>Thuja occidentalis</i> | White Pine          | 4                            | 1                 | 1                   | 35                    | X                   |

- Progressive Rehabilitation**
- A. General**
- Area Calculations:
    - To be extracted (total) **47.4 ha**
      - South Extension 44.3 ha
      - West Extension 3.1 ha
    - To be rehabilitated (total) **47.4 ha**
      - South Extension 44.3 ha
      - West Extension 3.1 ha
  - The final rehabilitated land 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 extension area.
- B. Phasing**
- As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence.
  - Progressive rehabilitation shall follow the direction and sequence of extraction identified on the plan view and described in the notes on drawing 2.
  - Prior to extraction commencing in Phase 6, side sloping within Phase 3 shall be completed.
- C. Slopes and Grading**
- Progressive rehabilitation will utilize a variety of rehabilitation techniques including:
    - Backfilling extraction faces and quarry faces.
    - Partially backfilling extraction faces to create a cliff with talus slope, or
    - Leaving extraction faces vertical.
  - Grades shall, 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.
    - Creation of 4:1 slopes with sculpted stepped edges.
    - Top dressing to establish vegetation.
    - To establish the final elevations and grades described on the plan view.
  - Excess soil imported for the rehabilitation purposes described above shall meet the soil quality standards set out in Table 1, Final Depth Background 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.
  - The South and West Extension contains approximately 1,180,000 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, 830,000 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 2,830,000 m³.
  - The licensee shall ensure that the acceptance and reuse of excess soil imported for rehabilitation purposes is compliant with Part 1: Rules for Soil Management and Excess Soil Quality Standards published by the Ministry of Environment, Conservation and Parks and as amended from time to time.
  - The final rehabilitated landforms established in the South and West Extension using the rehabilitation techniques will consist of talus slopes, shoreline wetlands, vernal pools, weirs, ponds, woodlands, gradually sloping grades, 2:1 and 3:1 side slopes, 4:1 side slopes with sculpted stepped edges, etc. with talus slopes, and vertical faces as shown on the plan view.
    - Dead sand may be imported to establish the beach area in the South Extension.
  - As part of rehabilitation of the site, the licensee shall ensure that the final boundary of Phase 3, as shown on this drawing to provide surface water flow to the adjacent wetland to reestablish its catchment area.
- D. Seeding and Planting**
- The site slopes and backfilled portions of the quarry face 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.
  - 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 as part of the rehabilitation plan.
  - The planting design and approach will be guided by the Conservation Halton Landscaping and Tree Preservation Guidelines (2010).
  - Planting details 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 reestablish a woodland, and meet the definitions of woodland under the Forestry Act, but may be reduced (within 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).
  - 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.
  - Where the restoration objective is the establishment of a setback adjacent to a natural feature, planting densities will be dependent on the features that 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 riparian 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 species. 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 - five 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 planting 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.
  - For planting in areas not extracted, plantings shall be monitored and evaluated by a qualified professional annually until "tree-grow" conditions have been achieved. "Tree-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 "tree-to-grow" condition.
  - For plantings in areas extracted, plantings shall be monitored and evaluated by a qualified professional annually until "tree-grow" conditions have been achieved. "Tree-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 "tree-to-grow" condition.
- E. Drainage**
- Final surface drainage will follow the rehabilitated contours and directional arrows shown on the plan view.
  - Once the South Extension is depleted, pumping will cease and portions of the site below the ground water table will fill with water.
  - Runoff within the South Extension will drain into the lake.
  - Construct overflow outlet in the southwest corner of the South Extension.
  - 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.
  - During rehabilitation the licensee shall maintain discharge to fish habitat to the north and south from Quarry Sump #1000 and 2000 within Licence #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.
  - During rehabilitation the licensee shall operate in accordance with the conditions of the MECP, PPTW and ICA for the ongoing dewatering of the site. This pumping regime is consistent with current management from Licence #5499 and provides long term public water management benefits and mitigates impacts to natural heritage features that depend on quarry discharge from the adjacent Licence #5499.
  - The licensee has entered into an agreement with Conservation Halton to convey the site into public ownership and to maintain the West Extension in a dewatered state by maintaining the pumping regime from Licence #5499 to provide long-term public water management benefits and mitigate impacts on natural heritage features which depend on quarry discharge from the adjacent Licence #5499.
- F. Adaptive Management Plan**
- During progressive rehabilitation, until surrendering the licence, the licensee is required to operate in accordance with the Adaptive Management Plan, prepared by EarthFX Inc., Savarita and Tatham Engineering, dated March 2022, as may be amended from time to time with approval from MNR/1, in consultation with MNR/1, Region of Halton, City of Burlington and Conservation Halton.

- Final Rehabilitation**
- A. General**
- The final rehabilitation of the site is to create a landform for ecological conservation, water management, aquaculture and recreation.
  - All equipment shall be removed from the South and West Extension.
  - No internal aggregate haul roads shall remain in either Extension. Two internal access roads shall remain as part of the final landform.
  - The residence and dam at 2280 Side Road No. 2 in the South Extension shall remain.
  - The residence and dam located at 2015 Side Road No. 2 in the southwest corner of the West Extension shall remain.
  - All the field property access entrances identified on the plan view of this drawing shall remain to access the residence and dam located at 2280 and 2015 Side Road No. 2 as well as the gravel and limestone screening trails.
  - The groundwater table post-rehabilitation varies between 283.5 msl to 271 msl in the South Extension and 255.5 msl to 265 msl in the West Extension (EarthFX 2020) or 269 msl if the West Extension is not maintained in a dewatered state.
  - 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.
  - As the owner of the site at the time of the licence surrender, the licensee will be responsible to maintain the site in the condition specified in the approved record of site condition. The licensee will be responsible to maintain the site in the condition specified in the approved record of site condition.
  - The licensee has entered into an agreement with Conservation Halton for the conveyance of this site following surrender of the licence. Prior to surrender of the Aggregate Reclamation Act licence the licensee shall define the location of the site to Conservation Halton and the prerequisite for licence surrender to the satisfaction of the MNR.



**MNR Approval Stamp** | **MHBC Stamp**

DRAFT

Applicant: **NELSON AGGREGATE CO.**  
 2432 No. 2 St. Road  
 P.O. Box 1079 Burlington, Ont. L7R 4L8  
 phone: (905) 335-5250

Project: **Burlington Quarry Extension**

|                                  |                 |                             |                          |
|----------------------------------|-----------------|-----------------------------|--------------------------|
| <b>MNR Licence Reference No.</b> | 626477          | <b>Pre-approval review:</b> |                          |
| <b>Plan Scale:</b>               | 1:3000 (Arch E) | <b>Date</b>                 | September 2024 June 2023 |
| <b>File No.</b>                  | 9135D           | <b>Checked By:</b>          | B.Z.                     |

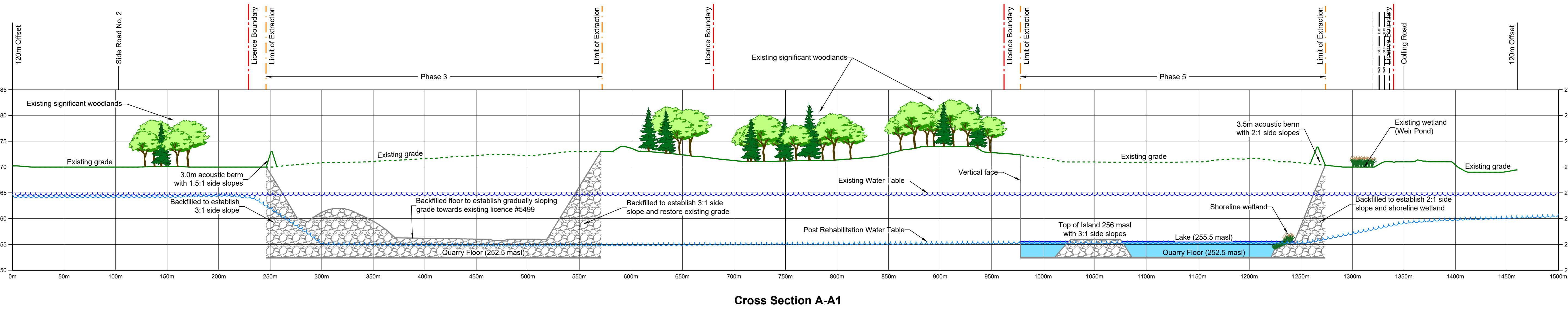
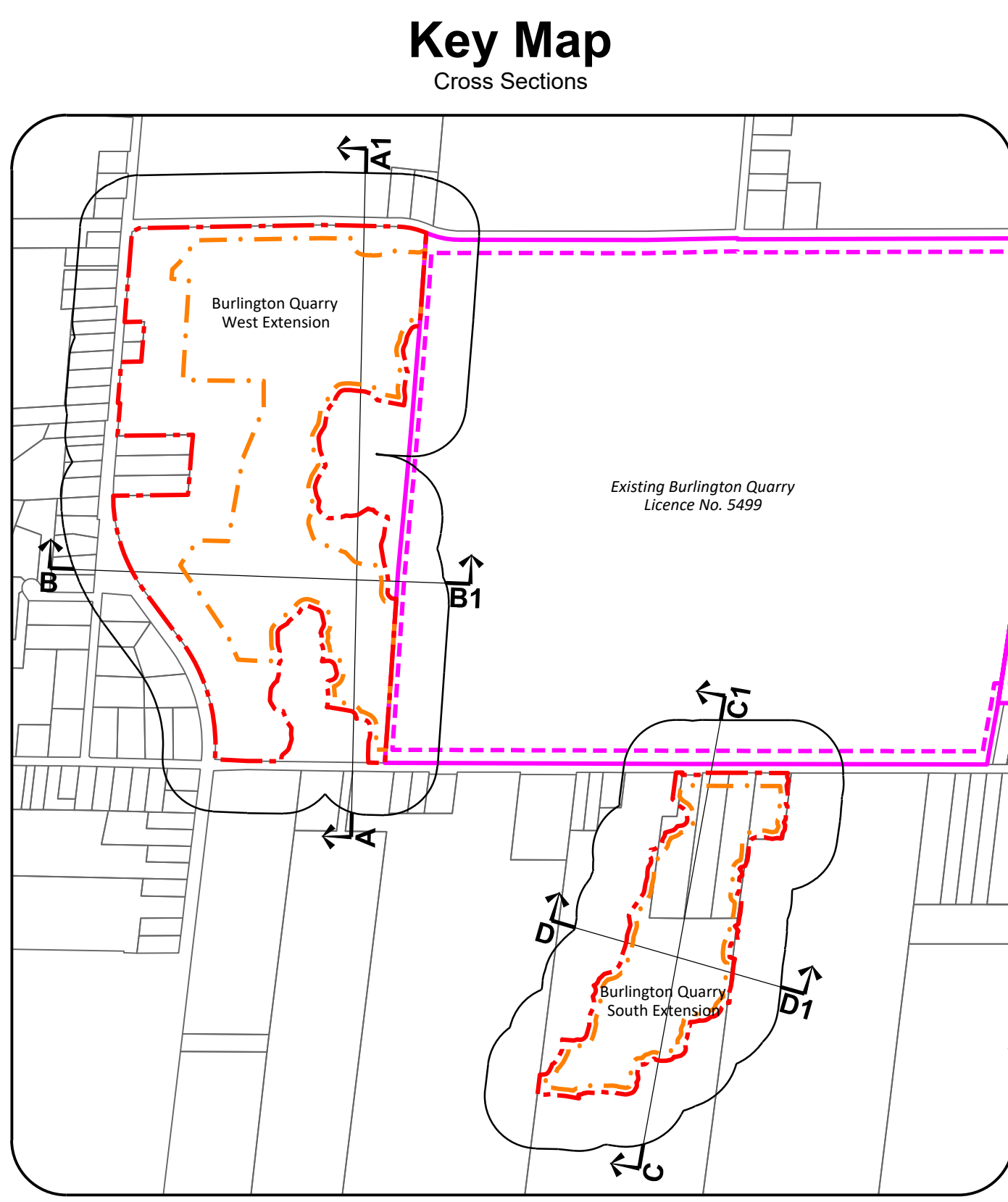
**Rehabilitation Plan**

**3 of 4**

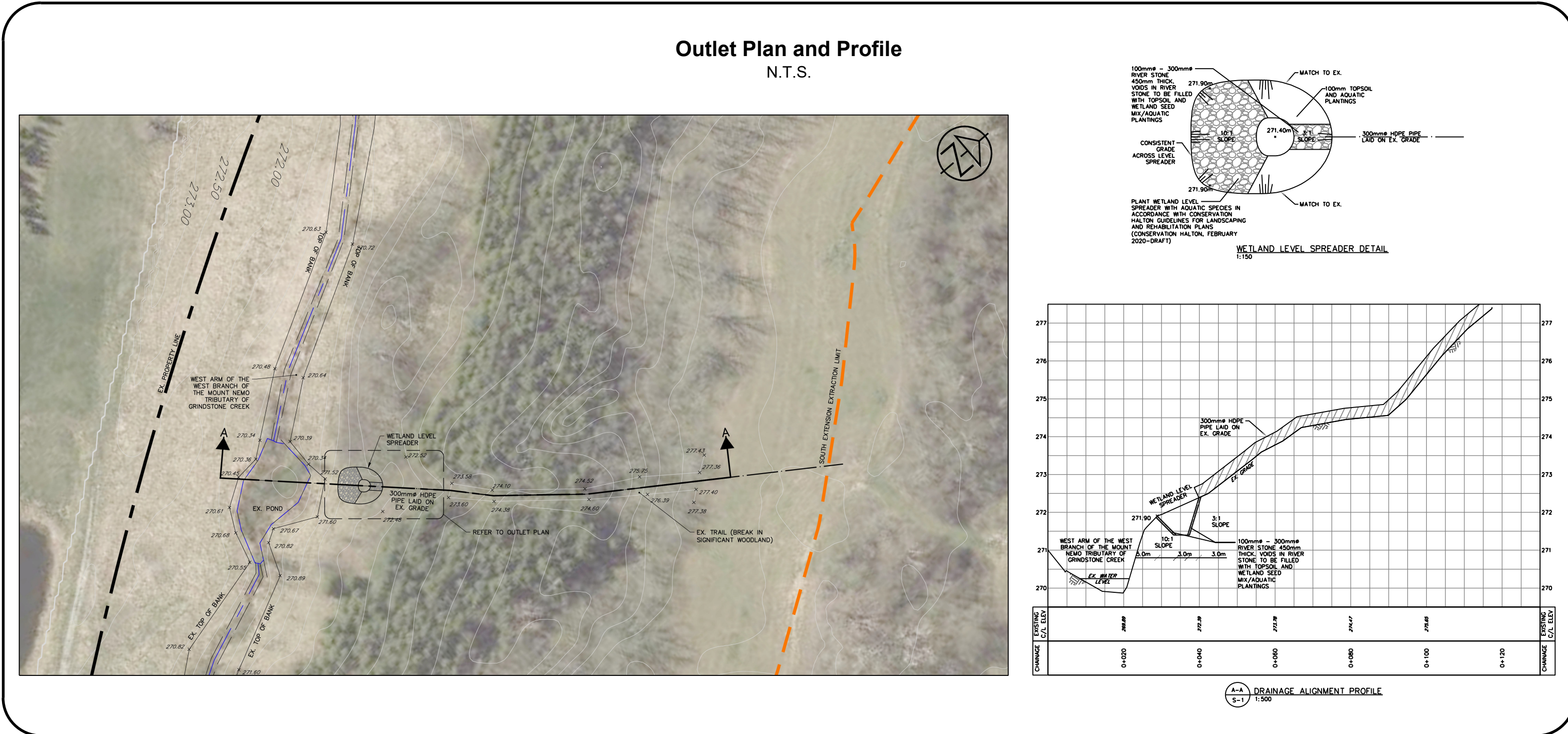


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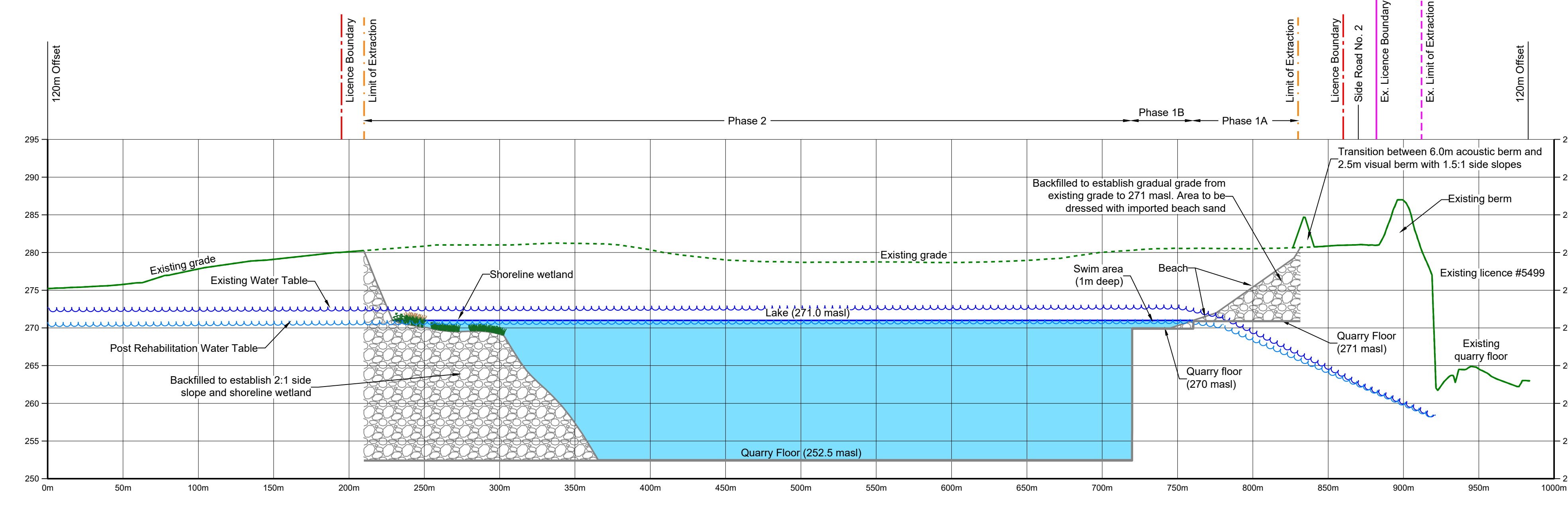
- Licence Boundary
- Limit of Extraction
- Existing Licence
- Existing Limit of Extraction
- 120m Offset From Licence Boundary
- Existing Grade - Removed / Altered
- Existing Grade - Undisturbed
- Quarry Floor / Face
- Berm
- Existing Water Table
- Post Rehabilitation Water Table
- Backfilled
- Lake or Pond



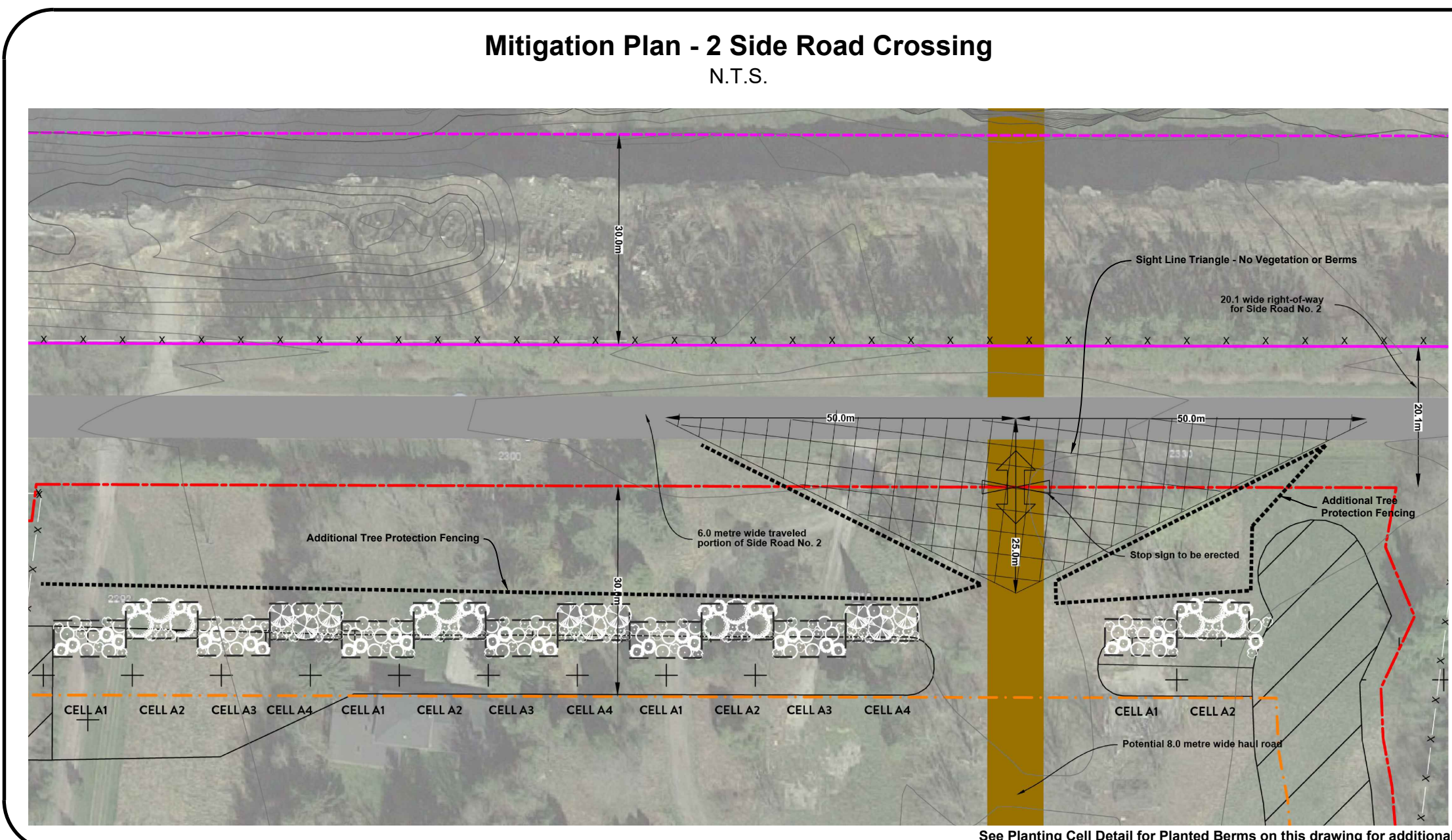
Cross Section A-A1



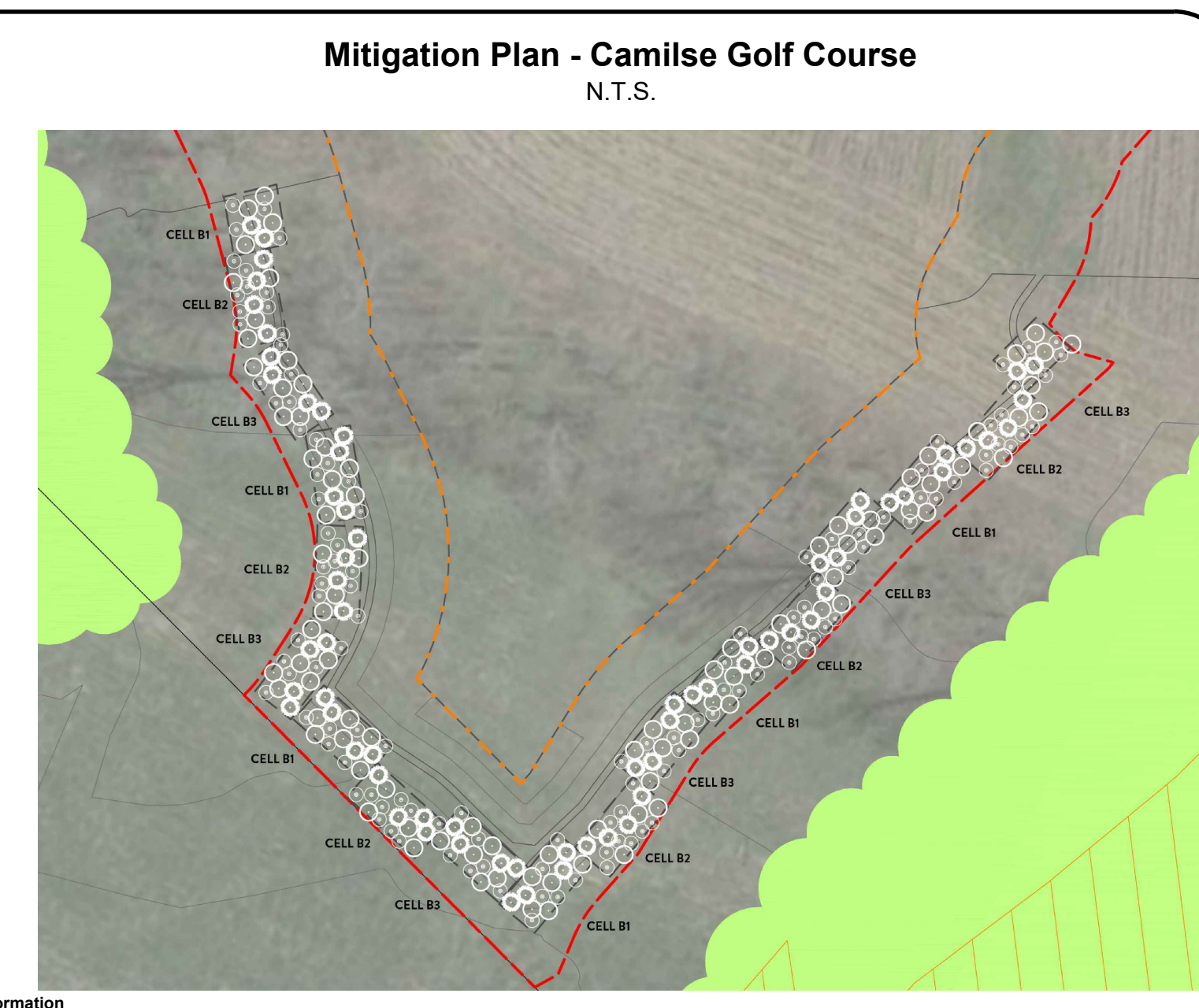
Outlet Plan and Profile  
N.T.S.



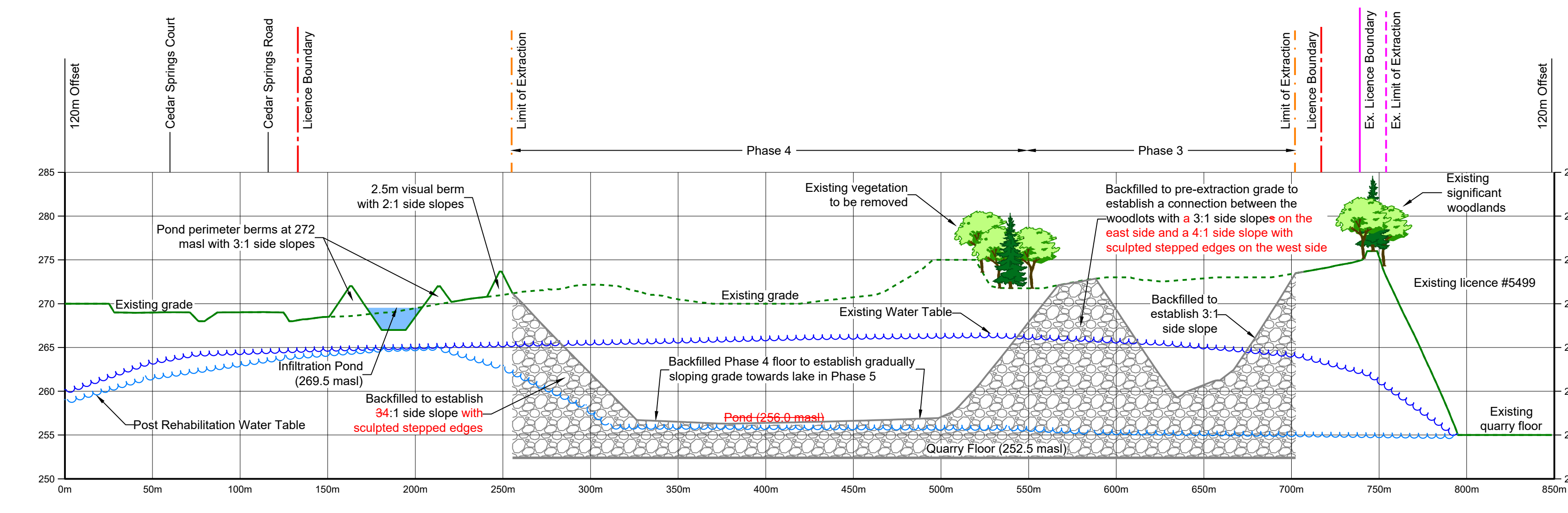
Cross Section C-C1



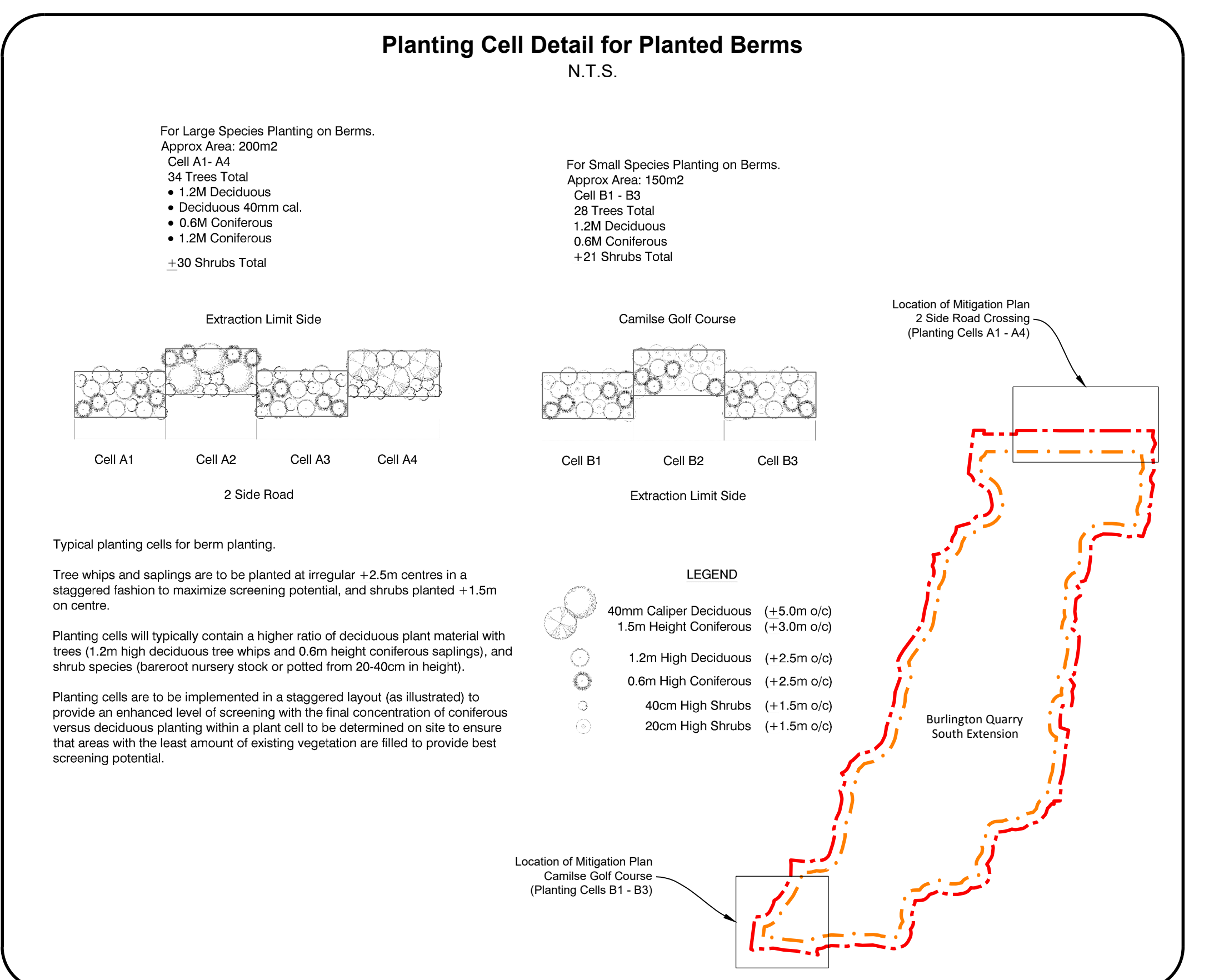
Mitigation Plan - 2 Side Road Crossing  
N.T.S.



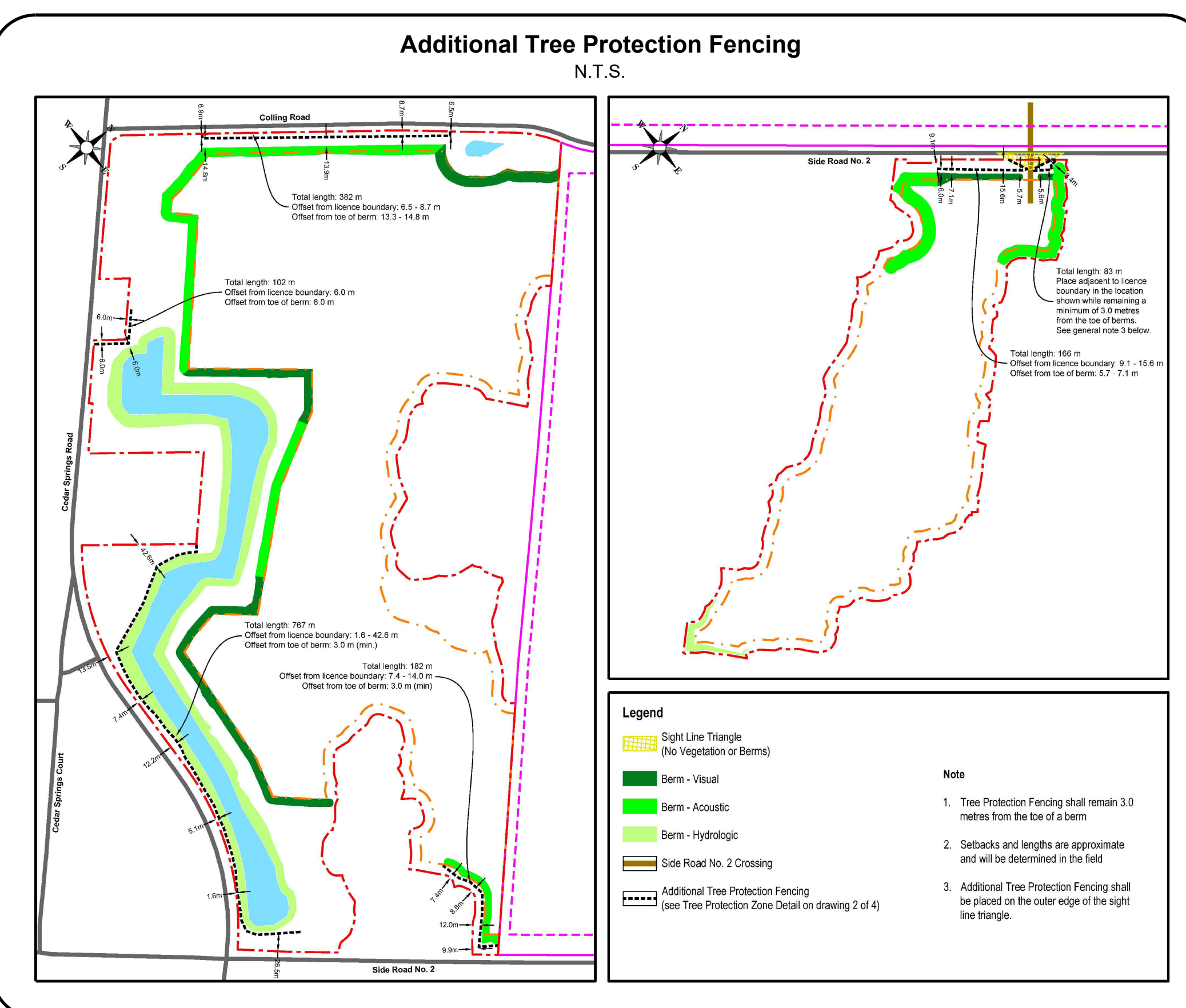
Mitigation Plan - Camisee Golf Course  
N.T.S.



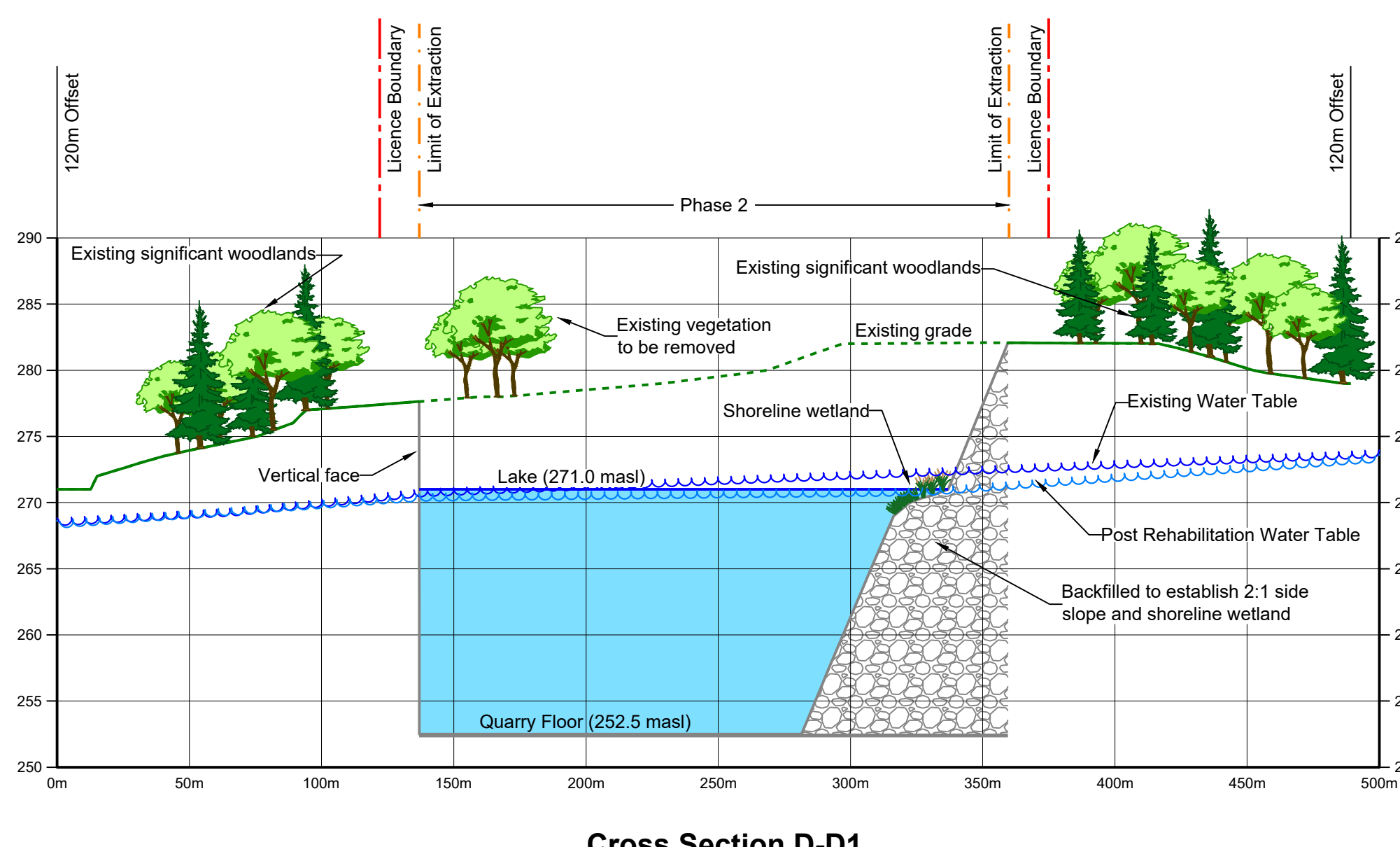
Cross Section B-B1



Planting Cell Detail for Planted Berms  
N.T.S.



Additional Tree Protection Fencing  
N.T.S.



Cross Section D-D1

**Site Plan Amendments**

| No. | Date           | Description   | By  |
|-----|----------------|---|-----|
| 1.  | April 2021     | Added additional cross section labels for clarity.  | CAP |
| 2.  | January 2022   | Updated to address agency comments.   | CAP |
| 3.  | February 2022  | Updated drawings 1, 2 and 3 of 4 to address agency comments.  | CAP |
| 4.  | March 2022     | Updated limit of extraction in the West Extension. Added dipline to the Existing Features and Operational Plan.   | CAP |
| 5.  | September 2022 | Added Outlet Plan and Profile, Mitigation Plan - 2 Side Road Crossing, Mitigation Plan - Camisee Golf Course, Planting Cell Detail for Planted Berms, and Additional Tree Protection Fencing Details. | CAP |
| 6.  | June 2023      | Remove diversion channel along Colling Road from Blind Line on plan view for drawings 1, 2 and 3.   | CAP |
| 7.  | September 2024 | Updated section B-B1 to reflect the final rehabilitation condition which accommodates future potential after care.  | CAP |

**Site Plan Revisions (Pre-Licensing)**

| No. | Date           | Description   | By  |
|-----|----------------|---|-----|
| 1.  | April 2021     | Added additional cross section labels for clarity.  | CAP |
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**MHBC**  
 PLANNING  
 URBAN DESIGN  
 & LANDSCAPE  
 ARCHITECTURE  
 113 COLLIER STREET, BARRE, ON, CANADA L4R 1H2 | P: 705.728.2010 | WWW.MHBCPLAN.COM

MNRF Approval Stamp:

MHBC Stamp:

**DRAFT**

Applicant: **NELSON AGGREGATE CO.**  
 2432 No. 2 St. Road  
 P.O. Box 1070, Burlington, Ont. L7R 4L8  
 phone: (905) 335-5250

Project: **Burlington Quarry Extension**

MNRF Licence Reference No.: 626477

Pre-approval review:

Plan Scale: Horizontal 1:2000, Vertical 1:400

Date: September 2024 June 2023

Drawn By: C.P., Checked By: B.Z., File No.: 9135D

File Name: **Cross Sections**

Drawing No.: **4 of 4**

File Path: N:\Burlington Quarry Extension - Project Sideways\Drawings\ARA Site Plan\Extension Site Plan\CAD\9135D - Site Plan.dwg