

Legal Description
PART OF LOTS 14, 15 and 16
CONCESSION 11
(geographic township of Goulbourn)
CITY OF OTTAWA

Legend

- Boundary of Area to be Licensed
- Limit of Excavation
- Existing Fence
- Public Road (Paved)
- Private Laneway
- Existing Operational Access
- Existing Vegetation
- Provincially Significant Wetland
- Evaluated Wetland
- Monitoring Well Locations
- Borehole Locations
- Surface Water or Effluent Monitor Locations
- Staff Gauge
- Excavation Face
- Cross Sections

Site Plan Amendments

No.	Date	Description	By

MNRF Approval Stamp

Applicant
TOMLINSON
R. W. Tomlinson Limited
100 CitiGate Drive, Ottawa Ontario, K2J 6K7
Tel: (613) 822-1867 Fax: (613) 822-6844

Project
Stittsville 2 Quarry

ARA Licence Reference No. _____ Pre-approval review: _____

Plan Scale 1:4,000 (Arch D) SCALE 1:4 [1mm = 4 units] MODEL

50 0 100 200 METRES

Drawn By D.G.S./GC File No. 9137AI
Checked By N.D.

File Name **EXISTING FEATURES PLAN**
Drawing No. **1 OF 5**

K:\9137AI-Tomlinson-Stittsville Quarry 2\AI\Exfeplan 1of5 November2023.dwg

A. General

- This site plan is prepared under the Aggregate Resources Act (ARA) for a Class A licence for a quarry below the ground water table and follows the Aggregate Resources of Ontario: Site Plan Standards August 2020, specifically Existing Features for all sites (Numbers 1-26 in the standards).
- Area Calculations:
Licence Area: 121.7 hectares (300 acres)
Limit of Excavation: 108.7 hectares (268 acres)
- All measurements shown are in metres unless specified otherwise.

B. References

- Contour data compiled by Tomlinson from drone imagery flown April 2021. Mapping is produced in real world scale and coordinates (NAD 83, UTM Zone 18N). Contour interval is 1m. All elevations are geodetic.
- City of Ottawa Open Data.
- Ontario Geohub (contains information licensed under the Open Government Licence – Ontario).
- Plan of Survey Plan prepared by H.A. Ken Shipman Surveying Ltd. (Dec. 2019 and Nov. 2022).
- The subject site is zoned the following (City of Ottawa Zoning By-law 2008-250):
 - Mineral Extraction (ME)
 - Mineral Extraction Hold (ME(1r)-h)
 - Rural Countryside (RU)
 - Environmental Protection (EP3)

Refer to Zoning Inset on this page.

4. Land use information compiled from drone survey (2020), satellite imagery and client input.

C. Drainage

- Surface drainage on and within 120 metres of the licence boundary is by overland flow in the directions shown by arrows on the plan view or by infiltration.

D. Groundwater

- The maximum predicted water table elevation on site ranges between 140.5 masl in the western portion of the site to 134.5 masl in the eastern portion of the site. These elevations are shown on the cross sections on page 5 of 5. Groundwater table elevations provided by WSP (March 2023)

E. Site Access and Fencing

- There are several existing operational accesses to the site in the locations shown on the plan view.
- Post and wire fencing (unless noted otherwise) exists along the Jinkinson Road frontage in the locations shown on the drawing.

F. Aggregate Related Site Features

- The following exists on-site: concrete and asphalt plants and associated stockpiling, a berm along Jinkinson Road, recyclable materials, scrap, haul roads and fuel storage. Some of these features are related to operations of the existing Stittsville Quarry (Licence #39958) to the west.

G. Significant Natural Features

- On-site: Provincially Significant Wetland, Non-Provincially Significant Wetland, significant woodlands, endangered and threatened species habitat (whip-poor-will, banding's turtle, western chorus frog), significant wildlife habitat (amphibian breeding, prairie dropseed, deer yard).
- Off-site within 120m: Provincially Significant Wetland, significant woodlands, endangered and threatened species habitat (whip-poor-will, banding's turtle, western chorus frog), significant wildlife habitat (amphibian breeding, deer yard), potential fish spawning habitat.

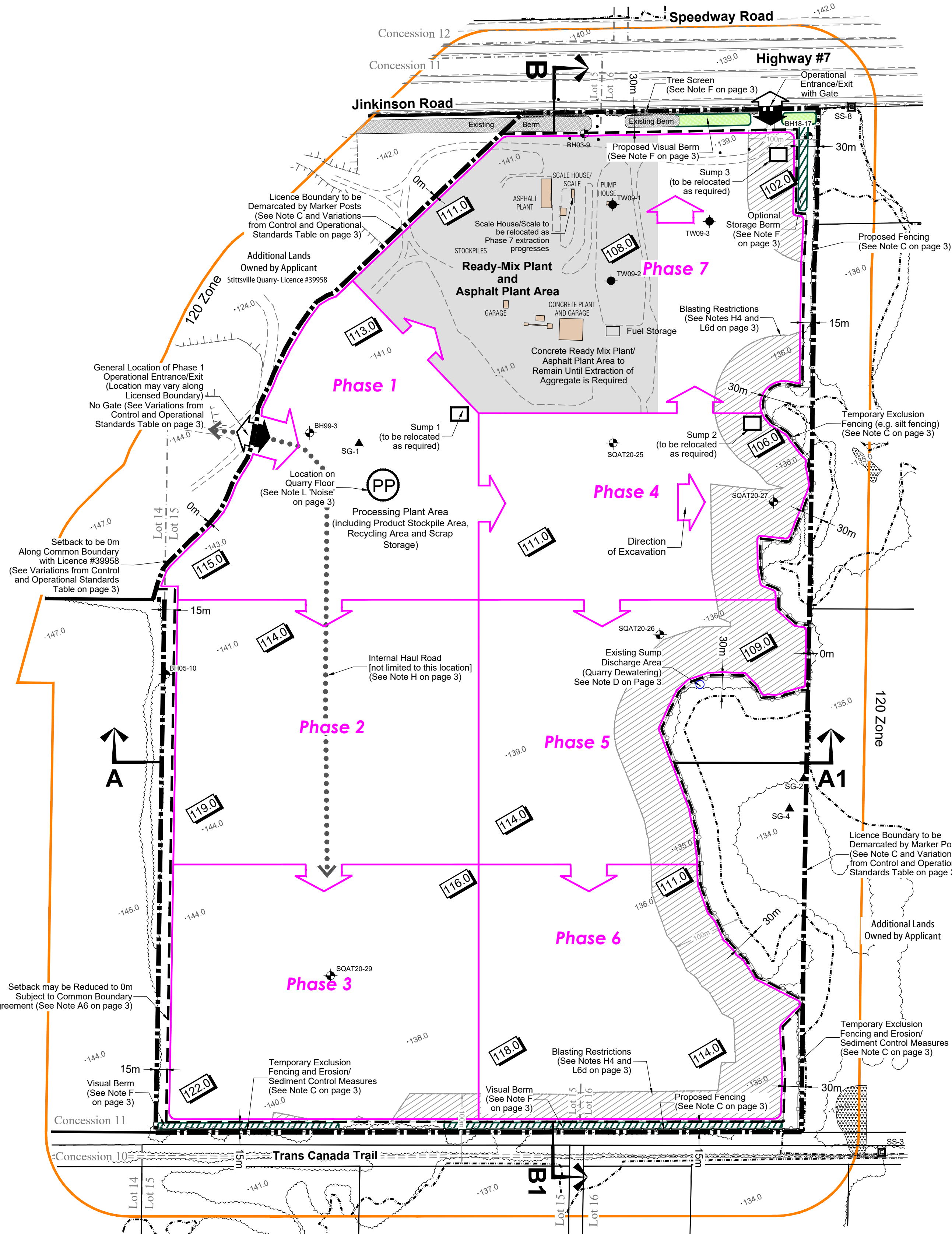
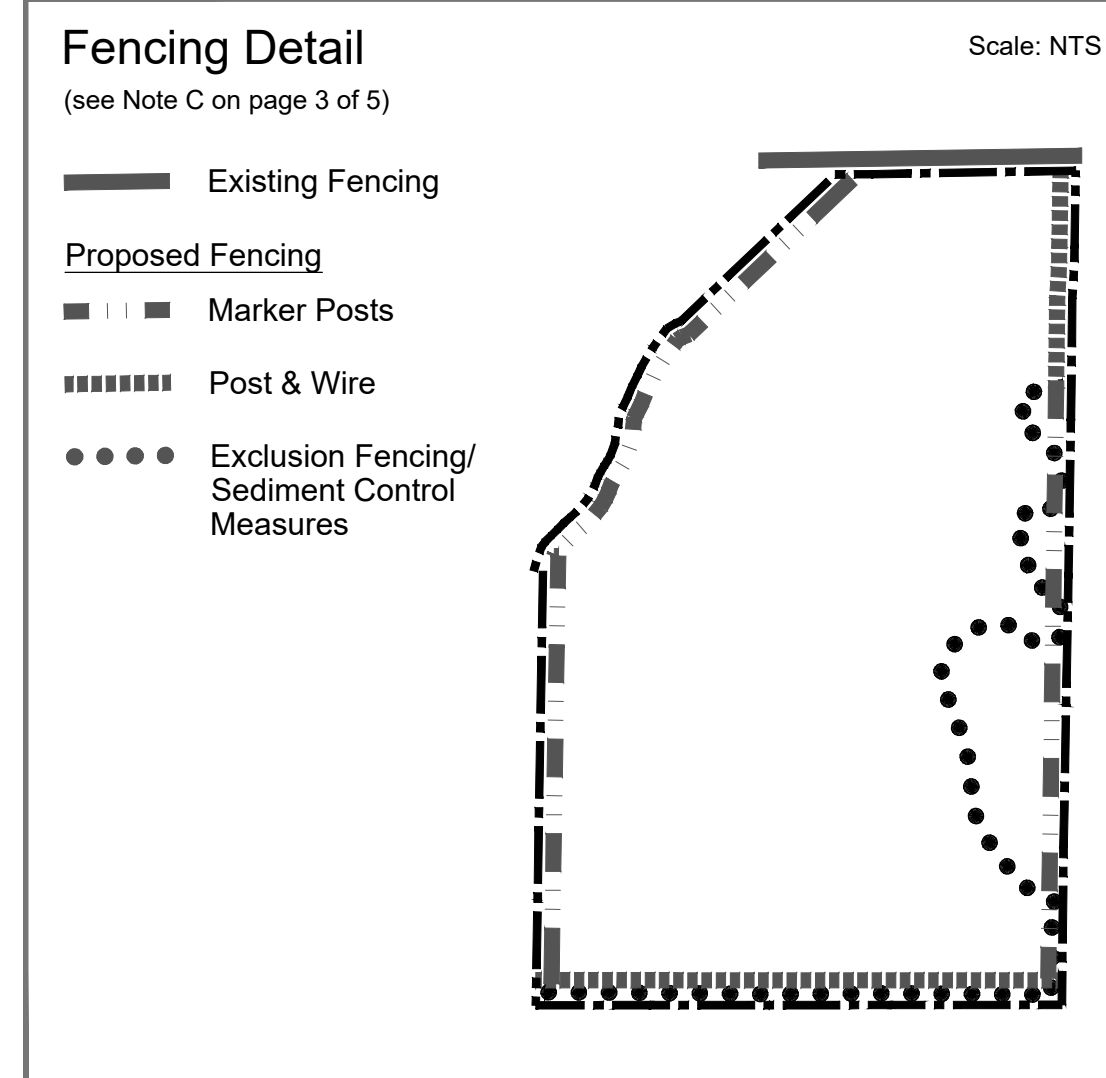
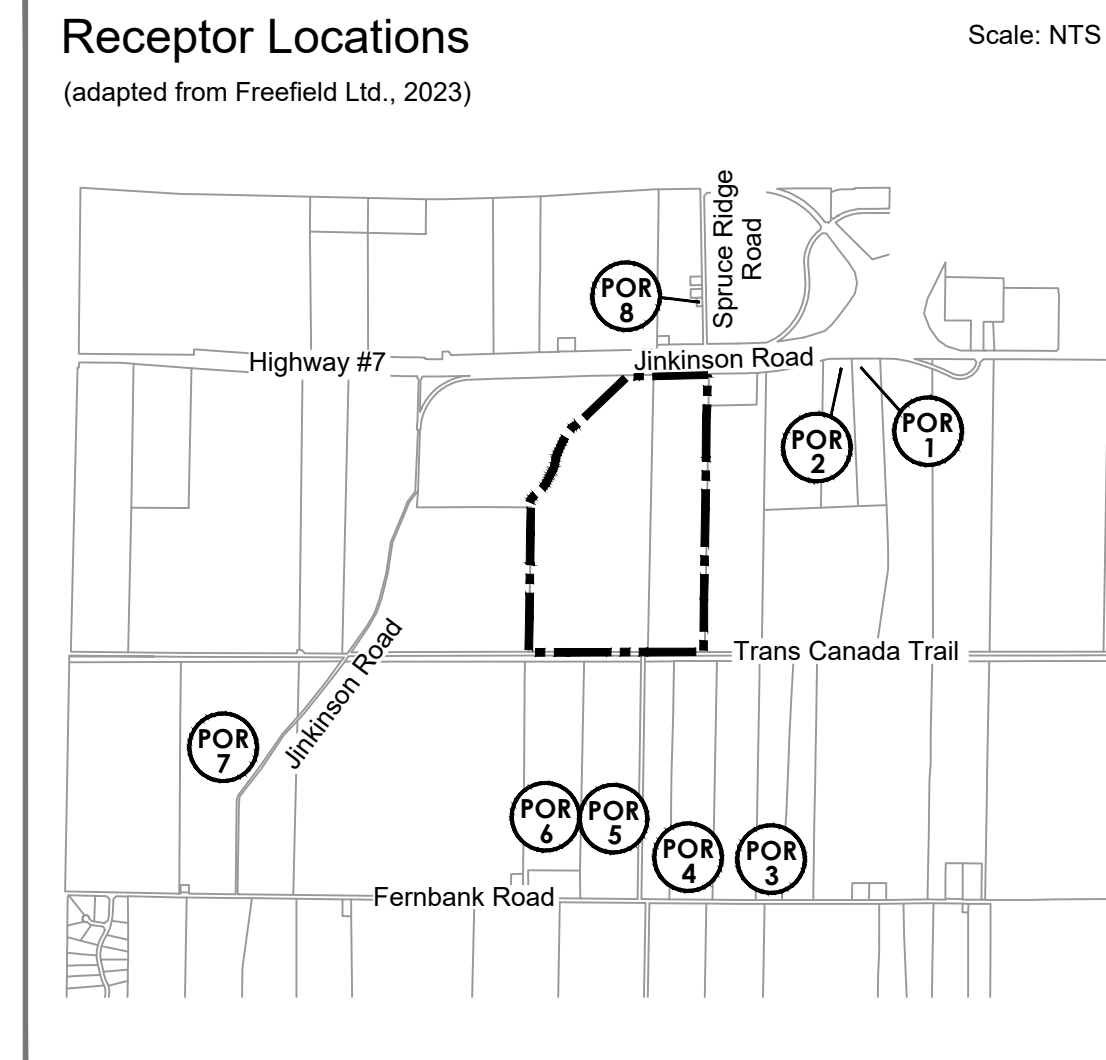
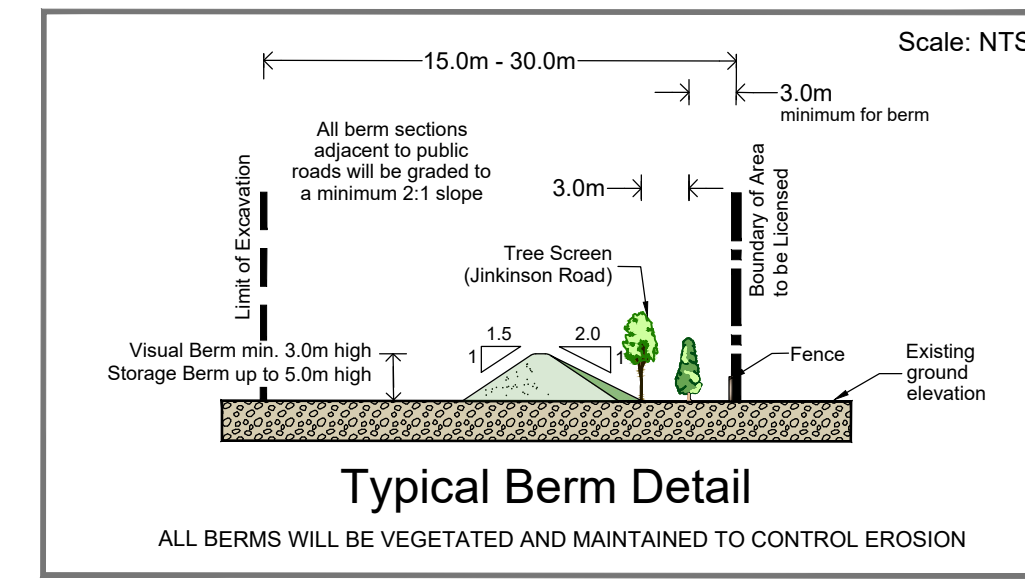
H. Cross Sections

- As shown on this page. Detailed sections are shown on page 5 of 5.
- Cross section locations are identified on the plan view for each drawing.

I. Report References

- Noise: "Acoustic Assessment Report for the Proposed Stittsville II Quarry" October 30, 2023 (Source: Freefield Ltd.)
- Natural Environment: "Natural Environment Report and Environmental Impact Study - Proposed Stittsville 2 Quarry" October 2, 2023 (Source: WSP)
- Archaeology: "Stage 1 Archaeological Assessment of Proposed Quarry Site on Lots 14 and 15, Concession XI Goulbourn Township, Regional Municipality of Ottawa, Carleton" November 29, 1999 (Heritage Quest Inc.) and "Stage 1 Archaeological Assessment: Stittsville Quarry 2 Part Lots 15 and 16, Concession 11, Geographic Township of Goulbourn, Carleton County, City of Ottawa, Ontario" January 2023 (Source: Matrix Heritage Inc.)
- Hydrogeology: "Level 1 and Level 2 Water Report" October 2023 (Source: WSP)
- Maximum Predicted Water Table Report: "Proposed Stittsville 2 Quarry" October 25, 2023 (Source: WSP)
- Traffic: "R.W. Tomlinson Stittsville II Proposed Quarry Expansion Traffic Impact Study" October 10, 2023 (Source: Castleglen Consultants Ltd.)
- Blasting: "Blast Impact Analysis" October 26, 2023 (Source: Explotech Engineering Ltd.)
- Stormwater Management: "Stormwater Management Brief and Sediment and Erosion Control Plan" October 26, 2023 (Source: WSP).

SEQUENCE OF OPERATIONS



Phase Notes:

- A. Phase 1**
- Site preparation in Phase 1 to include: establishing fencing/marker posts around the licensed boundary prior to extraction (subject to overrides); temporary turtle exclusion fencing (e.g. silt fencing) shall be installed along the western, eastern and southern portions of the limit of extraction where it abuts natural areas prior to site clearing; removal of vegetation within 5m of limit of extraction where applicable; initial stripping of overburden/topsoil and construct visual berms along Jinkinson Road as shown on Sequence of Operations drawing.
 - Continue with stripping of overburden as shown. Store any excess material in berms.
 - Locate quarry sump and sump outlet to capture and redistribute accumulated water.
 - Construct tree screen in the locations shown on Sequence of Operations.
 - Begin Phase 1 extraction in an easterly direction and to the elevations (maximum depth of extraction) as shown (see Note F on page 3).
 - Phase 1 may be extracted to a maximum depth of 115.0 masl (west portion of Phase) to 107.0 masl (east portion of Phase).
 - Processing for Phase 1 will initially occur in the existing Licence #39958 or when sufficient room is available in this site.
 - Progressive rehabilitation along the east limit of this Phase (1st Lift) may be initiated once the extent of extraction has occurred in this area. Rehabilitation will consist of backfilling of the quarry face to the bench of the next lift.
 - Prepare Phase 2 for extraction.
- B. Phase 2**
- Strip overburden/topsoil. Store any excess material in berms within the limit of extraction.
 - Commence extraction in a southerly direction and to the elevations (maximum depth of extraction) as shown.
 - Phase 2 may be extracted to a maximum depth of 119.0 masl (southwest portion of Phase) to 113.0 masl (northeast portion of Phase).
 - Progressive rehabilitation along the west limit and a portion of the east limit of this Phase (1st Lift) may be initiated once the extent of extraction has occurred in this area. Rehabilitation will consist of backfilling of the quarry face to the bench of the next lift.
 - Prepare Phase 3 for extraction.
- C. Phase 3**
- Continue with stripping of overburden/topsoil following the direction of excavation. Store any excess material in berms.
 - Construct visual berm along south boundary of property with strippings.
 - Begin Phase 3 extraction in an southerly direction and to the elevations (maximum depth of extraction) as shown.
 - Phase 3 may be extracted to a maximum depth of 122.0 masl (southwest portion of Phase) to 116.0 masl (northeast portion of Phase).
 - Initiate progressive rehabilitation along the west and east limit of this Phase (1st Lift) once the extent of extraction has progressed to allow for side slope rehabilitation. Progressive rehabilitation will consist of backfilling of the quarry face to the bench of the next lift.
 - Continue with progressive rehabilitation in Phase 2.
 - Prepare Phase 4 for extraction.

- D. Phase 4**
- Strip overburden/topsoil. Store any excess material in berms or use in progressive rehabilitation of previous Phase(s).
 - Commence extraction in an easterly direction and to the elevations (maximum depth of extraction) as shown.
 - Phase 4 may be extracted to a maximum depth of 111.0 masl (west portion of Phase) to 106.0 masl (east portion of Phase).
 - Progressive rehabilitation along the east limit of this Phase (1st Lift) may be initiated once the extent of extraction has occurred in this area. Rehabilitation will consist of backfilling of the quarry face to the bench of the next lift.
 - Continue with progressive rehabilitation in Phase 3.
 - Sump may be relocated from Phase 1 to this Phase once sufficient room is available.
 - Prepare Phase 5 for extraction.
- E. Phase 5**
- Strip overburden/topsoil. Store any excess material in berms or use in progressive rehabilitation of previous Phase(s).
 - The direction of extraction will be southerly.
 - Extraction may occur to a maximum depth of 114.0 masl in the southwest portion of the Phase to 109.0 masl in the northeast portion of the Phase.
 - Progressive rehabilitation along the east limit of this Phase (1st Lift) may be initiated once the extent of extraction has occurred in this area. Rehabilitation will consist of backfilling of the quarry face to the bench of the next lift.
 - Continue with progressive rehabilitation in Phase 4.
 - Prepare Phase 6 for extraction.
- F. Phase 6**
- Strip overburden/topsoil. Store any excess material in berms or use in progressive rehabilitation of previous Phase(s).
 - The direction of extraction will be southerly.
 - Extraction may occur to a maximum depth of 118.0 masl in the southwest portion of the Phase to 111.0 masl in the northeast portion of the Phase.
 - Progressive rehabilitation along the east limit of this Phase (1st Lift) may be initiated once the extent of extraction has occurred in this area. Rehabilitation will consist of backfilling of the quarry face to the bench of the next lift.
 - Continue with progressive rehabilitation in Phase 5.
 - Prepare Phase 7 for extraction.
- G. Phase 7**
- Initiate stripping of overburden/topsoil. Store any excess material in berms or use in progressive rehabilitation of previous Phase(s).
 - Buildings/Plants and associated infrastructure to be relocated as extraction progresses within Phase 7.
 - Sump may be relocated from Phase 4 to this Phase once sufficient room is available.
 - Continue with progressive rehabilitation in Phase 6.
- H. Not Shown on Sequence of Operations**
- The concrete ready mix plant, asphalt plant and associated structures will remain on site until the encroachment of extraction in Phase 7 requires the removal of the plants.
 - Remove any equipment, scrap, haul roads and buildings on site.
 - Finalize rehabilitation of site (see Rehabilitation Plan on page 4 for details).

Legal Description	
PART OF LOTS 14, 15 and 16 CONCESSION 11 (geographic township of Goulbourn) CITY OF OTTAWA	
Legend	
	Boundary of Area to be Licensed
	Limit of Excavation ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELLED DISTANCES
	Existing Fence PAGE WIRE FENCE UNLESS OTHERWISE NOTED
	Building/Structure LOCATION AND USE FOR BUILDINGS ON-SITE AND WITHIN 120m ARE SHOWN ON THIS PAGE
	Existing Spot Elevation METRES ABOVE SEA LEVEL
	Operational Access MAINTAINED BY A GATE WHICH WILL BE CLOSED WHEN PIT IS NOT IN OPERATION
	Existing Vegetation
	Provincially Significant Wetland (WSP/ONTARIO GECHUB)
	Monitoring Well Locations Borehole Locations Surface Water or Effluent Monitor Locations Staff Gauge (WSP)
	Existing Berm
	Potential Fish Spawning Habitat (WSP)
	Blasting Restrictions SEE NOTES ON PAGE 3 OF 5 (EXPLOTECH)
	Limit of Excavation ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELLED DISTANCES
	Existing Licensed Boundary
	Drainage Feature AS LABELLED
	General Direction of Excavation (SEE NOTES ON THIS PAGE)
	Visual Berm SEE 'TYPICAL BERM DETAIL' AND NOTES ON THIS PAGE/PAGE 3 OF 5
	Optional Storage Berm SEE 'TYPICAL BERM DETAIL' AND NOTES ON THIS PAGE/PAGE 3 OF 5
	Proposed Fence 1.2m HIGH POST & WIRE FENCE UNLESS OTHERWISE NOTED
	Sediment/Erosion Control Measures
	Tree Screen
	Proposed Spot Elevation QUARRY FLOOR (METRES ABOVE SEA LEVEL) BOTTOM OF BOB/CAYE/GEN FORMATION
	Internal Haul Road LOCATION TO VARY AS OPERATIONS PROGRESS
	Cross Sections SEE PAGE 5 OF 5 FOR EXISTING AND REHABILITATED CROSS SECTIONS

Site Plan Amendments			
No.	Date	Description	By

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
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Rob Pierce
R.W. Tomlinson Limited
Vice President Planning and Development

Project
Stittsville 2 Quarry

ARA Licence Reference No.	Pre-approval review:
Plan Scale 1:4,000 (Arch D)	For Application Submission - November 2023
SCALE 50 0 100 200 METRES	Plot Scale 1:4 [1mm = 4 units] MODEL
	Drawn By D.G.S./GC File No. 9137AI
	Checked By N.D.
File Name	OPERATIONAL PLAN
Drawing No.	2 OF 5

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A. General

- This site plan is prepared under the Aggregate Resources Act for a Class A Licence, Quarry Below Water. The notes and drawing on this page reflect the *Aggregate resources of Ontario: Site plan standards (August 2020)*, specifically Operations for all sites (Numbers 33-56 in the standards).
- Area Calculations:
 - Licence Area: 121.7 hectares (300 acres) Limit of Excavation: 108.7 hectares (268 acres)
- No more than 3,000,000 tonnes of aggregate shall be removed from this site in any calendar year. Furthermore, if aggregate is removed from the site of Licence #39958 in the same calendar year as material is removed from this licence, no more than 3,000,000 tonnes of aggregate shall be removed from the two sites combined in the calendar year.
- An office/scale house and scale may be located on the site as shown on the Sequence of Operations drawing on page 2 of 5.
- The elevation of the on-site groundwater table ranges from 140.5 masl in the western portion of the site to 134.5 masl in the eastern portion of the site. The existing water table elevations are shown on each cross section on page 5 of 5.
- Setbacks will be as shown and labelled on the Sequence of Operations Diagram (page 2 of 5) and on the Existing Features Plan (page 1 of 5). The 15m setback adjacent to Licence #4189 may be reduced to 0m subject to a common boundary agreement with the adjacent licensee. Prior to reducing the setback, the common boundary agreement and amended site plan shall be provided to MNRF. This change will not be considered a major amendment.
- Source Water Protection: The site is located in the Rideau Valley Source Water Protection Area. The site is not mapped as being located in a Wellhead Protection Area (WHPA), Significant Groundwater Recharge Area but is located within a Highly Vulnerable Aquifer Area. Mitigation measures are outlined in the Hydrogeology notes under Section L Report Recommendations.

B. Hours of Operation

- The ready-mix concrete plant and asphalt plant operations may occur on a 24-hour basis (24 hours) with limited operations permitted during the evening and nighttime period (7 pm to 7 am). Quarry operations are as follows: rock drill (7am-7pm), portable crusher and screening plant (24 hours), loaders (24 hours), loading and shipping of product for off site delivery (24 hours). See also Section L 'Noise' for further details.

C. Site Access and Fencing

- The site shall be accessed through the existing operational entrance/exit which is located along the north boundary of the property off Jinkinson Road. This entrance/exit is gated. Other points of access along the common boundary with adjacent Licence #39958 will be utilized. Internal haul routes and access points to Licence #39958 may be relocated as needed.
- The north boundary of the site along Jinkinson Road is fenced. The south boundary of the site will be fenced. Portions of the east licence boundary within the existing wetland/woodlot and the common boundary with adjacent Licence #39958 will not be fenced (see Note M 'Variations from Control and Operation Standards'). Where there is no fencing, 1.2m marker posts will be installed that are visible from one to the other.
- Temporary turtle exclusion fencing and soil and erosion control measures are described in Note L 'Natural Environment'.

D. Drainage

- Drainage of undisturbed areas will continue and be in the directions shown on the Existing Features drawing on page 1 of 5. Dewatering will occur via discharge from sump to the location(s) along the eastern portion of the site as shown on the Sequence of Operations drawing.

E. Site Preparation

- Prior to site preparation, a Spills Contingency Plan shall be developed to address any potential spills from equipment on-site [O.Reg 244/ 97 Section 0.12 (3) 2].
- Timber resources will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Non-merchantable timber, stumps and brush may be mulched for use in progressive rehabilitation. Excess material not required for uses mentioned above will be burned (with applicable permits).
- Topsoil and overburden shall be stripped and stored separately in accordance with the Sequence of Operations diagram and associated notes on page 3 of 5.
- Excess topsoil and overburden not required for immediate use in the construction of visual berms or rehabilitation, may be temporarily stockpiled inside the extraction area. Topsoil and overburden stockpiles shall be located within the limit of excavation and remain a minimum of 30 metres from the licence boundary (subject to O.Reg 244/ 97 Section 0.13 (1) 13i). Stockpiles will not exceed 20m in height above the original ground level.
- Temporary topsoil and overburden stockpiles which remain for more than one year shall have their slopes vegetated to control erosion. Seeding shall not be required if these stockpiles have vegetated naturally in the first year.
- Silt fences will be properly installed and maintained as required. (see also 'Fencing Detail' on page 2 of 5 for further details).

F. Berms and Screening

- Visual berms shall be constructed at the the frontage of the site along Jinkinson Road as a continuation of the berms already in place and along the Trans Canada Trail (see Phase Notes on page 2 of 5 for details).
- Optional storage berms may be located on site. Locations may be on the quarry floor or within the setbacks as shown on the Sequence of Operations diagram on page 2 of 5.
- See 'Typical Visual Berm/ Tree Screen Detail' on page 2 of 5 for details relating to berm construction and will be vegetated and maintained to control erosion using a low maintenance grass/legume seed mixture (e.g. MTO Seed Mix) composed of Creeping red Fescue, Perennial Ryegrass, Kentucky Bluegrass and White Clover. Temporary erosion control will be implemented as required.
- Existing vegetation within the setbacks shall be maintained to the extent possible where any visual berms are to be located.
- A tree screen shall be located along the Jinkinson Road frontage to augment the existing and proposed visual berms.

G. Extraction Sequence

- The operational plan depicts a schematic operations sequence for this property. Phases do not represent any specific or equal time period. The direction of extraction will be in accordance with the Sequence of Operations diagram shown on page 2 of 5. All extraction, processing and transportation equipment operating within these Phases shall comply with the restrictions identified in Note L 'Noise'.
- Rehabilitation will be progressive and proceed as limits of extraction (area and depth) are reached. Any deviations from the operations sequence shown (extraction, stripping and rehabilitation areas) will require the approval of MNRF.
- See Phase Notes on page 2 of 5 for details.

H. Extraction Details

- The maximum depth of extraction is as shown as spot elevations and extraction will occur in up to 3 lifts through the seven phases as shown on the Sequence of Operations Diagram on page 2 of 5 and in accordance with the Ministry of Labour requirements. The maximum lift height shall be 12m. The proposed quarry floor will range in elevation from 102 to 122 masl (18 m to 37 m below the existing ground surface).
- Aggregate stockpiles will be located on the active quarry floor and will move throughout the life of the operations of the quarry. Stockpiles will be a maximum of 20m high and will not be located within 30m of the Licensed boundary, except where adjacent to Licences #39958 and #4149.
- Internal haul road locations will vary as extraction progresses.
- Blasting will take place up to 3 times per week. No blasting shall occur on a holiday, or between 6 pm and 8 am.

I. Equipment and Processing

- The equipment used on site for extraction and aggregate processing may include:
 - Extraction and Aggregate Processing - Rock Drill, Stationary Crushing Plant, Loaders, Excavators, Haulage Trucks, Highway Trucks.
 - Asphalt Plant - Mixer, Screen, Conveyors, Loader, Highway Trucks
 - Ready-Mix Plant - Loader, Haulage Trucks, Highway Trucks, Conveyors (there is an existing Asphalt Plant and Ready-Mix Plant on-site and will continue to be used).

- Processing equipment shall remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts adjacent licences - see Section M 'Variations from Control and Operation Standards').
- All processing equipment is subject to applicable permitting under MECP Environmental Compliance Approvals.

J. Fuel Storage

- Fuel or associated products may be stored on site. See Sequence of Operations drawing on page 2 of 5 for location. The licensee or permittee shall ensure that fuel storage tanks are installed and maintained in accordance with the *Technical Standards and Safety Act, 2000* [O.Reg 244/ 97 Section 0.12 (3) 1].

K. Scrap and Recycling

- Temporary scrap storage will be located within the processing plant area. Initially this storage area will be in the existing Licence #39958, but will be located on site once the processing plant has been relocated into Phase 1. Scrap will only include materials derived from the operation of the pit such as scrap metal or lumber, discarded machinery and equipment. Scrap will not be located within 30m of any body of water or within 30m of the boundary of the site, subject to where there is a common boundary with the adjacent Licence #39958 [O.Reg 244/ 97 Section 0.13 (1) 24/25]. All scrap will be removed on an ongoing basis. The property will be kept in an orderly condition.
- Recycling activities:
 - may occur on site and will be in close proximity to the processing plant.
 - recycling activities shall remain accessory to the quarry operation and once extraction ceases, recycling activities will be no longer permitted
 - shall not interfere with the operational phases of the site or rehabilitation of the site [O.Reg 244/ 97 Section 0.13 (1) 32]

L. Report Recommendations

- Noise: "Acoustic Assessment Report for the Proposed Stittsville II Quarry" October 30, 2023 (Source: Freefield Ltd.)**
 - Quarry Operations**
 - The operation of a standard hydraulic rock drill may take place only during the daytime period (07:00 - 19:00), anywhere in the extraction, area above or below grade.
 - The operation of the portable crushing and screening plant (crusher) may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - The crusher is to be located on the quarry floor, one or more lifts down, a minimum 10 m below grade.
 - The operation of the loaders may take place on a twenty-four-hour basis (24-hour), anywhere in the extraction area, above or below grade, and shall comply with the following:
 - When operating during the daytime period (07:00 - 19:00):
 - A maximum of three (3) loaders may be in operation concurrently carrying out extraction, loading and stockpiling operations.
 - When operating during the evening or nighttime period (19:00 - 07:00):
 - A maximum of two (2) loaders may be in operation concurrently carrying out extraction, loading and stockpiling operations.
 - The loading and shipping of product using trucks may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - When operating on-site, trucks shall not exceed 20 km/h and shall not use compression braking (Jake Brakes).
 - Asphalt Plant**
 - The operation of the asphalt plant and associated equipment, may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - The asphalt plant is to remain in its existing location shown on Figure 2 and 14 or relocated to the alternative location shown on Figure 9.
 - The dust silo blower (source: AP_Baghouse_Fan) is to be fitted with air intake silencer, spec: Stoddard F64-5 or similar, constructed of minimum 16-gauge weather resistant metal and shall have a high transmission loss casing. The minimum dynamic insertion loss of the silencer is to meet minimum attenuation requirements noted in Table 7. The maximum outdoor sound power of the dust silo blower, at the point of emissions into the atmosphere, after installation of the silencer, is not to exceed the level listed in Table 2.
 - The operation of the loader may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - During the daytime, evening and nighttime period (24-hour) a maximum of one loader may be in operation at the asphalt plant.
 - The loading and shipping of product using trucks may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - When operating on-site, trucks shall not exceed 20 km/h and shall not use compression braking (Jake Brakes).
 - Ready Mix Concrete Plant Operations:**
 - The ready-mix concrete plant may operate on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - The ready-mix concrete plant is to remain in its existing location shown on Figure 2 and 15 or relocated to the alternative location shown on Figure 9.
 - The operation of the loader may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - During the daytime, evening and nighttime period (24-hour) a maximum of one loader may be in operation at the ready-mix concrete plant.
 - The loading and shipping of product using trucks may take place on a twenty-four-hour basis (24-hour) and shall comply with the following:
 - When operating on-site, trucks shall not exceed 20 km/h and shall not use compression braking (Jake Brakes).
 - Testing and routine maintenance operations of the emergency generator shall take place only during the daytime period (07:00 - 19:00). The existing silencer installed on the standby generator exhaust is to be maintained.
 - Portable Construction Equipment**
 - Portable construction equipment used for site preparation (e.g. land clearing and construction of berms) and rehabilitation shall comply with MECP Publication NPC-115, Construction Equipment, August 1978. (This publication gives noise standards to be met by construction equipment in Ontario.) Site preparation and rehabilitation activities shall take place only during daytime hours (07:00 - 19:00).
 - New Process**
 - If a new process is introduced to the site, or the layout of the existing asphalt plant or existing ready-mix concrete plant is altered, then this new or modified process shall be assessed by a qualified acoustical consultant prior to commissioning. Noise mitigation measures shall be reviewed, and altered, if necessary, to ensure that MECP sound level limits are met at all points of reception.
- Natural Environment: "Natural Environment Report and Environmental Impact Study, Proposed Stittsville 2 Quarry" October 2, 2023 (Source: WSP)**
 - Establish a 15 m setback along the south boundary of the Site, a 0-15 m setback along the eastern boundary of the Site except where a 30 m setback has been applied to the Goulbourn Wetland Complex PSW, and a 30m setback along Jinkinson Road. These setbacks are to be clearly demarcated and respected. Existing natural vegetation communities will be retained within the 30 m wetland setbacks and all other portions of the eastern and southern setbacks where forests occur.
 - Prairie dropseed plants on the Site shall be moved to the Goulbourn Wetland Complex PSW buffer prior to site preparation.
 - Implement sediment and erosion control measures along the limit of disturbance prior to Site clearing.
 - No clearing of vegetation shall occur within the core breeding bird season (April 1 – August 31) unless a nesting survey has been completed by a qualified biologist within 24 hours of the clearing, and no active nests were observed.
 - No tree clearing shall occur within the active season for bats (April 1 - September 30).
 - To mitigate any potential impacts from blasting, blasting shall be completed in accordance with DFO standards as outlined in Explotech (2023).
 - Prepare an Information Gathering Form for eastern whip-poor-will and Blanding's turtle for submission to the MECP to initiate authorizations under the ESA.

- To mitigate the potential for turtles, especially Blanding's turtle, to be harmed on the Site during extraction, the following mitigation shall be undertaken:
 - Encounter Protocol: The protocol shall include information on how to identify Blanding's turtle, how to protect a nest, how to report sightings to the NHIC, and instructions on what to do in the event that a turtle or nest is found on-Site.
 - All on-Site staff shall be familiar with and trained on the components of the Encounter Protocol described above.
 - If Blanding's turtle is identified on the Site, all work shall stop and the species shall be protected from harm. MECP shall be notified immediately to seek guidance on ways to avoid impacts under the ESA prior to resuming work.
 - Fencing shall be installed along the eastern and southern boundaries of the extraction limit, and along the western boundary of extraction where adjacent to natural areas to deter turtles from entering the Site. Exclusion fencing should be designed and installed according to MNRF recommendations (MNRF 2013b). Fencing along the western boundary will be temporary until such time as the adjacent lands approved for aggregate extraction are developed.
- An Awareness Package, SAR Encounter Protocol and SAR Training Program shall be prepared that lists the SAR that may be present on the Site or in the local landscape, and identify what to do if one is observed on the Site. The Awareness Package shall include:
 - Information / training on identifying SAR.
 - What to do if a SAR is observed (moving, injured, dead or nesting).
 - How to protect a turtle or bird nest.
 - Information on how to report a SAR sighting to the NHIC.
 - Instructions that if a SAR is found on the Site, all work must stop and the species shall be protected from harm. MECP shall be notified immediately to seek guidance on ways to avoid impacts under the ESA prior to resuming work.
- Undertake rehabilitation as outlined in the rehabilitation plan
- Archaeology: "Stage 1 Archaeological Assessment of Proposed Quarry Site on Lots 14 and 15, Concession XI Goulbourn Township, Regional Municipality of Ottawa, Carleton November 29, 1999 (Heritage Quest Inc.) and "Stage 1 Archaeological Assessment: Stittsville Quarry 2 Part Lots 15 and 16, Concession 11, Geographic Township of Goulbourn, Carleton County, City of Ottawa, Ontario" January 2023 (Source: Matrix Heritage Inc.)**
 - Based on the results of this investigation it is recommended that: No further archaeological study is required for the subject property as delineated in Map 1 of report.
- Hydrogeology: "Level 1 and Level 2 Water Report " October 2023 (Source: WSP)**

A comprehensive complaints response program has been developed for the purpose of responding to well interference complaints from local water supply well users. Each complaint will be dealt with on a case-by-case basis in accordance with the response program outlined in Section 9 of the Report.

The groundwater and surface water monitoring programs defined on the existing PTTW and the ECA for the Stittsville Quarry (Licence #39958) shall be continued during the development of the Stittsville 2 Quarry, except where an existing monitoring component will be removed as the quarry is developed (e.g. biological monitoring program). The following additional components shall be added to the existing monitoring programs:

 - Monthly Groundwater Level monitoring (during Operational periods) in monitoring wells BH05-10A, BH05- 10B, BH05-10C, BH05-11, BH05-12A', BH05-12B', BH05-12C", SQAT20-25, SQAT20-26, SQAT20-27 and SQAT20-29. Monitoring frequency reverts to quarterly during non-operational periods at the Stittsville and Stittsville 2 Quarries. *Monitoring wells installed in BH05-12 shall either be repaired or replaced prior to operations commencing at the Stittsville 2 Quarry.
 - Monthly staff gauge and continuous surface water level measurements (during ice-free conditions) at a background station upstream of the proposed quarry discharge for Stittsville 2 Quarry (i.e., SS-8), at the convergence of the proposed quarry discharge and the Goulbourn Wetland Complex (e.g. SS-6 but subject to changes during operational conditions), at the rail trail (i.e., SS-3), and at Fernbank Road (i.e., SW-A).
 - Water quality sampling at the above locations, as required by the ECA.

An annual report shall continue to be prepared that provides an assessment and interpretation of the groundwater level data that is collected in accordance with the monitoring program defined on the amended PTTW.
- Maximum Predicted Water Table Report: "Proposed Stittsville 2 Quarry" October 25, 2023 (Source: WSP)**
 - Based on the available groundwater elevation data, the maximum predicted water table was estimated using the data collected from 2020 to 2022 at the shallow monitoring wells (99-1, BH99-3D, BH03-9C, BH05-10C, BH05-11, BH05-13C, BH13-16D, BH18-17D, SQAT20-25, SQAT20-26, SQAT20-27 and SQAT20-29). The data from December 13, 2021 was used to estimate the maximum predicted groundwater table since water levels in the shallow monitoring wells was generally higher during this session as compared to the other sessions. The water table generally slopes down from the western side of the site at BH99-3D (140.5 metres asl) to the eastern side of the site at SQAT20-27 (134.5 metres asl).
- Blasting: "Blast Impact Analysis" October 26, 2023 (Explotech Engineering Ltd.)**
 - All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned 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.
 - Blasts shall be designed to maintain vibrations at the TC Energy pipeline below 50mm/s or any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the pipeline may exceed 35mm/s, the pipeline shall be monitored for ground vibration.
 - Blasts shall be designed to maintain vibrations at the Enbridge pipeline below 50mm/s or any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the pipeline may exceed 35mm/s, the pipeline shall be monitored for ground vibration.
 - Blasts shall be designed to maintain water overpressure below 100kPa at the location of the closest fish habitat as per DFO guidelines. While blasting encroaches within 100m of the fish habitat, water overpressure monitoring will be conducted. The results will be reviewed by a qualified engineering firm and confirm compliance with the 100kPa guideline limit, and determine whether additional hydrophone monitoring is required.
 - Blasts shall be designed to maintain vibrations below 13mm/s at the location of the closest identified active spawning bed as per DFO guidelines. When blasting during active spawning season (March 15 to July 15), a minimum of one supplemental vibration monitor shall be installed on the shoreline closest to the spawning bed to confirm the vibration levels.
 - The guideline limits for vibration and water overpressure shall adhere to standards as outlined in the Guidelines For the Use of Explosives In or Near Canadian Fisheries Waters (1998) or any such document, regulation or guideline which supersedes this standard.
 - Blasts shall be designed to maintain vibrations at the closest non-sensitive receptors below 50mm/s. When vibration calculations suggest vibrations may exceed 35mm/s, the buildings shall be monitored for ground vibration.
 - 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 which supersedes this standard.
 - In the event of an exceedance of NPC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and protocols shall be reviewed prior to any subsequent blasts and revised accordingly in order to return the operations to compliant levels.
 - Orientation of the aggregate extraction operation and will be designed and maintained so that the direction of the overpressure propagation will be away from structures as much as possible.
 - Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to ensure compliance with current applicable guidelines and regulations.
 - Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as required to ensure compliance with industry standards.
 - Detailed blast records shall be maintained in accordance with current industry best practices.

Legal Description

PART OF LOTS 14, 15 and 16
CONCESSION 11
(geographic township of Goulbourn)
CITY OF OTTAWA

M. Variations from Control and Operation Standards

No	O.Reg 244/97 Section 0.13	Variation	Rationale
1	(1)10.i	0m excavation setback along common boundary with existing quarry (Licence #39958).	Adjacent property to the northwest is owned and operated by Tomlinson.
2	(1)13.i	Overburden materials may be stored within 30m of licence boundary, next to adjacent Licences #39958 and #4149. Stockpiling of aggregate, topsoil, and operation of portable plant may occur within 30m of common boundary with existing Licence #39958	Adjacent properties to the west are licensed quarries.
3	(1)16	Berms may be located within 3m of the boundary of adjacent Licence #39958.	Adjacent property to the west is a licensed quarry owned and operated by Tomlinson.
4	(1)18	Overburden material may be used to rehabilitate areas in the existing Licence #39958.	Adjacent property to the west is a licensed quarry owned and operated by Tomlinson.
5	(3)(a)	Fencing is not required along a portion of the eastern boundary that runs through Provincially Significant Wetlands. Fencing along the northwest boundary adjacent to Licence #39958 is not required.	These boundaries will be demarcated by 1.2m high marker posts that are visible from one to the other. Adjacent property to the northwest is a licensed quarry owned and operated by Tomlinson. If conditions in or around the licensed property change or if licensed site is surrendered, a 1.2m high fence will be installed.

Site Plan Amendments

No.	Date	Description	By

MNRF Approval Stamp

Stamp

Applicant

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R. W. Tomlinson Limited
100 CitiGate Drive, Ottawa Ontario, K2J 6K7
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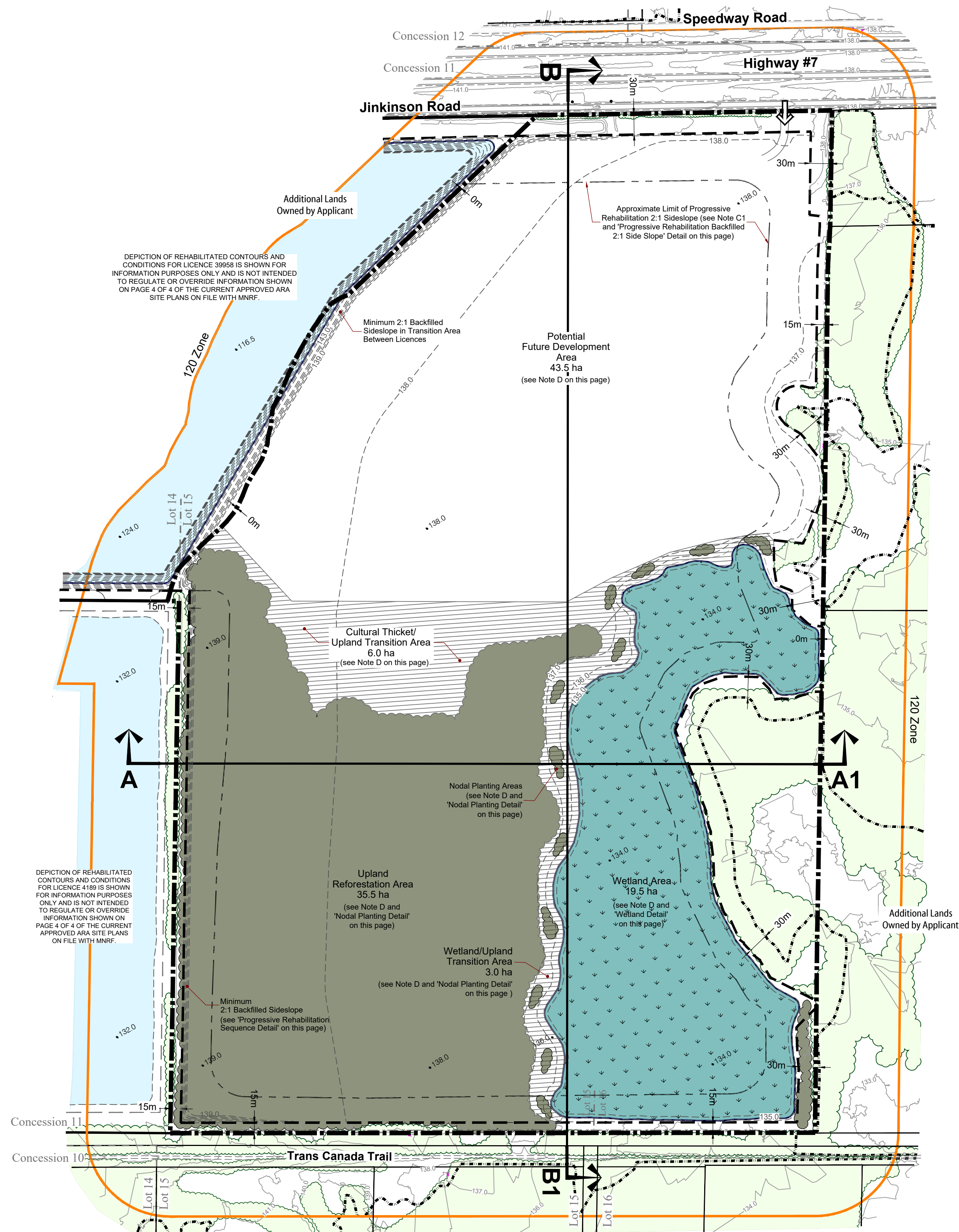
Rob Pierce
R.W. Tomlinson Limited
Vice President Planning and Development

Project

Stittsville 2 Quarry

ARA Licence Reference No.	Pre-approval review:		
Plan Scale: NTS	Plot Scale	1:4 [1mm = 4 units] MODEL	
	Drawn By	D.G.S.	File No.
	Checked By	N.D.	9137W
File Name	OPERATIONAL NOTES PLAN		
Drawing No.	3 OF 5		

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- A. General**
- Area Calculations: Licence Area: 121.7 hectares (300 acres)
Limit of Excavation: 108.7 hectares (268 acres)
 - The rehabilitated landform of this site will include: upland reforestation area, wetland area, wetland/upland transition area, cultural thicket/upland transition area and future development area.
- B. Phasing**
- The proposed quarry will be rehabilitated on a progressive basis, corresponding to the operational progression of the quarry excavation, to form landforms shown at final rehabilitation.
 - Progressive and final rehabilitation will be completed in direct correlation to the development of the quarry as the extraction limits are reached and enough area is available to ensure that rehabilitation activities will not interfere with the production, stockpiling and processing of aggregate materials. Progressive rehabilitation will commence along the east limit of Phase 1 of the site. Perimeter slopes will be established following the completion of extraction of the lift(s) in each phase. The perimeter slope will be established 'on-grade' (floor of the same lift) before the following lift reaches the limit of extraction (see Schematic). Therefore, the minimum rehabilitation treatments for the perimeter of the quarry will be completed prior to the completion of the final (bottom) lift. The sequence is further described in Note G on page 3 of 5 and as shown on the 'Progressive Rehabilitation Sequence' on this page. The ultimate rehabilitation plan will see the quarry backfilled to a grade of 138.0-139.0 msl, except in the areas of the wetland.
 - Side slopes will be vegetated and will include nodal tree and shrub plantings in suitable locations in order to introduce a diversity of native vegetation types and species that are anticipated to spread around the rehabilitated side slopes (see Note C and 'Nodal Planting Detail' on this page).
- C. Slopes and Grading**
- As extraction of the lifts are completed, backfill material, including overburden and excess soils will be placed along the perimeter of the limit of extraction to create a 2:1 side slope. This will be completed as extraction proceeds across the site and prior to extraction of the bottom lift as illustrated on the 'Progressive Rehabilitation Sequence' on this page. Final quarry landform will be in accordance with the drawing as shown on this page. The proposed rehabilitated landform would allow for the future redevelopment and use of the site in a manner that is consistent with planning direction at the time.
 - Topsoil and overburden will be used in the progressive rehabilitation of the side slope areas. Overburden and/or imported material will be used to backfill quarry faces to create the topography of the side slopes (i.e. 3:1 slope). Above water side slope areas that will be vegetated will be covered with a minimum 15 cm of topsoil/organic matter prior to planting.
 - Importation of excess soil is planned for this site to facilitate progressive and final rehabilitation.
 - Importation of excess soil:
 - Excess soil, as defined in Ontario Regulation 244/97 may be imported to this site to facilitate the following rehabilitation:
 - Establish final grades
 - Top dressing to establish vegetation
 - Liquid soil, as defined in Ontario Regulation 406/19 under the Environmental Protection Act, is not authorized for importation to the site.
 - The quality of excess soil imported to the site for final placement must be equivalent to or more stringent than the applicable excess soil quality standards as determined in accordance with Ontario Regulation 244/97 as amended from time to time and must be consistent with the site conditions and the end use identified in the approved rehabilitation plan.
 - Where a qualified person is retained or required to be retained in accordance with Ontario Regulation 244/97, the quality, storage, and final placement of excess soils shall be done according to the advice of the qualified person.
 - Excess soil imported to facilitate rehabilitation as described on this site plan shall be undertaken in accordance with Ontario Regulation 244/97 under the Aggregate Resources Act, as amended from time to time.
 - The cumulative total amount of excess soil that may be imported to this site for rehabilitation purposes is 30,000,000 m³.
- D. Proposed Vegetation and Rehabilitated Features**
- Rehabilitation of this site involves the creation of 43.5 ha of potential development area, 44.5 ha of reforested area (consisting of 35.5 ha of upland forest, 6.0 ha of cultural thicket/upland transition area and 3.0 ha of wetland/upland transition area)(Upland/Upland Transition Areas) and 19.5 ha of wetland.
 - A measurable ecological trajectory shall be developed as part of the rehabilitation plan that provides specific quantifiable indicators and temporal targets to measure the success of the restoration activities over time. The ecological trajectories should aim towards climax communities comparable to current conditions (i.e. FOD3-1/FOD5-1 for upland areas; FOC1-2/FOC2-2 for the wetland/upland transition area; and CUT1B for the upland/cultural meadow transition area).

- All planting and seeding will consist of native species. All ground covers on side slopes will be established as part of the phased stripping operations that proceed extraction and will be maintained and replaced as soon as possible if the vegetative cover fails to establish itself to control erosion
 - Wetland Area**
A 19.5 ha wetland area will be created in the southeast part of the rehabilitated landform. This area will be backfilled to the desired elevations and plants shall be established by broadcast seeding an Ontario Native Wetland/Riparian Restoration Seed Mix (see 'Wetland Detail' on this page).
In order to improve ecological functions, the wetland area:
a. will be hydrologically connected to the eastern wetland;
b. will have substrate that is conducive to groundwater recharge;
c. will have vegetation communities in the open water area along the wetland edges that is conducive to flood attenuation; and
d. will provide the necessary characteristics to encourage wildlife use of this feature
 - Sideslope and Setback Areas**
Sideslopes in the transition area between the rehabilitated landforms of the two licences will be covered with a minimum 15 cm of topsoil/organic matter and planted/seeded. Any undisturbed setback areas not subject to reforestation will also be seeded with Ontario Native Grassland Seed Mix.
 - Upland Reforestation and Nodal Plantings**
 - Terrestrial nodal plantings in the upland reforestation areas shall include a mixture of coniferous and deciduous tree and shrub species to promote species diversity and provide a variety of species to compensate for any substrate deficiencies (see 'Nodal Planting Detail' on this page). Recommended species are outlined in the species planting list. The establishment of nodal planting areas will occur progressively and follow the rehabilitation sequence and side slope/setback grading and seeding. Nodal planting areas are conceptually shown on the drawing.
 - Soil movement and duration of storage should be kept to a minimum to maintain viability of the soils to be used for reforestation;
 - Restored woodlands should be located adjacent to the restored wetland and retained/enhanced setbacks along the east and southern Site boundaries as a means of re-establishing the proximity and linkage functions of the woodlands and enhance these functions for the portion of woodland that will be removed;
 - Planting strategies shall be developed whereby the water protection function of the removed woodlands will be replicated. This would include "pit-and-mound" to assist in establishing groundwater infiltration, as well as planning for transition areas between wetland to upland forest communities, and upland forest to cultural meadow communities.
 - Prior to reforestation, a detailed planting plan will be developed by a rehabilitation/reforestation specialist or a forester.
 - Cultural Thicket and Wetland/Upland Transition Areas**
These areas will provide a transition between the potential future development areas and the reforestation and wetland areas. Terrestrial nodal plantings in the upland reforestation areas shall include a mixture of coniferous and deciduous tree and shrub species to promote species diversity and provide a variety of species to compensate for any substrate deficiencies (see 'Nodal Planting Detail' on this page). The establishment of nodal planting areas will occur progressively and follow the rehabilitation sequence and side slope/setback grading and seeding. Nodal planting areas are conceptually shown on the drawing.
 - Future Potential Development**
These areas shall be restored to cultural meadows (i.e. CUM1-1 communities) until such time as they will be developed.
 - Rehabilitated Landform**
The proposed rehabilitation includes an opportunity to enhance the biological diversity of the local landscape by providing features that will attract migratory waterfowl and terrestrial and aquatic habitat features that will be of value to locally resident and migratory wildlife. Rehabilitation of this site involves the creation of a 19.5 ha wetland and 44.5 ha terrestrial landform comprised of reforested uplands and transition areas as well as setback areas. The final landform will be in accordance with the drawing as shown on this page.
- E. Drainage**
- Final surface drainage will follow the rehabilitated contours as shown and be directed towards the post-extraction wetland area.
- F. Final Rehabilitation**
- No buildings or structures will remain on site.
 - The post-extraction ground water table, as shown on pages 1, 4 and 5 of 5 as per hydrogeological/ hydrological assessment.

Legal Description
PART OF LOTS 14, 15 and 16
CONCESSION 11
(geographic township of Goulbourn)
CITY OF OTTAWA

Legend

- Boundary of Area to be Licensed
- Limit of Excavation
- Contour with Elevation
- Existing Licensed Boundary
- Existing Fence
- Proposed Contour
- Public Road (Paved)
- Proposed Elevation
- Private Laneway
- Nodal Planting Areas
- Site Access
- Proposed Wetland Area
- Vegetation
- Provincially Significant Wetland
- Cross Sections

SEE PAGE 5 OF 5 FOR EXISTING AND REHABILITATED CROSS SECTIONS

Site Plan Amendments

No.	Date	Description	By

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
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MNRF Approval Stamp

Stamp

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Rob Pierce
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Vice President Planning and Development

Project
Stittsville 2 Quarry

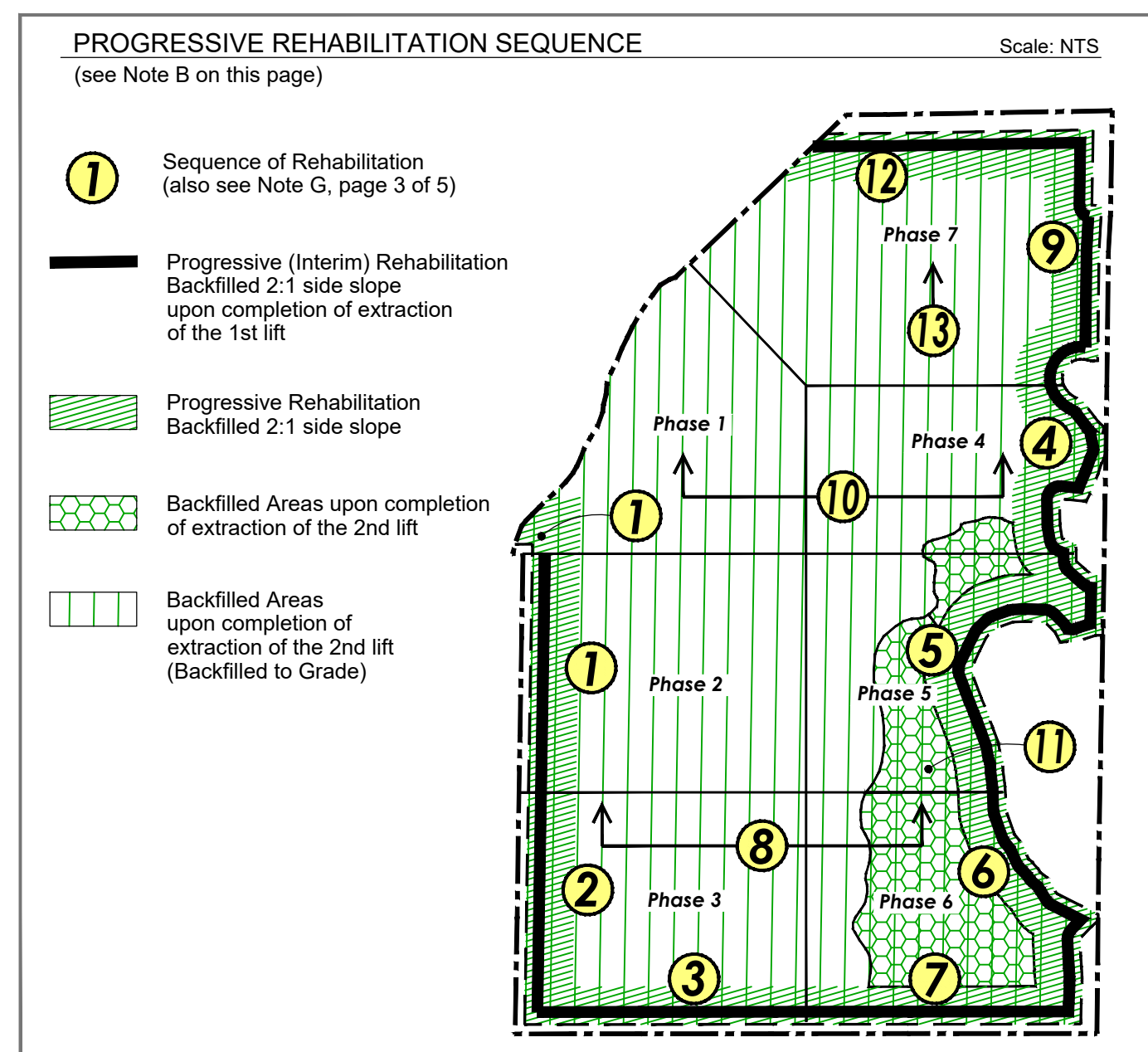
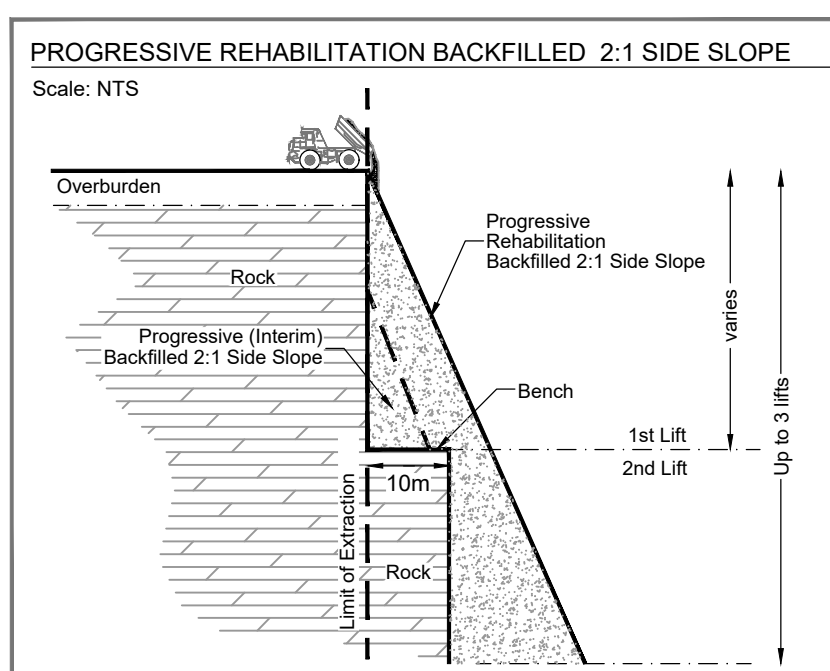
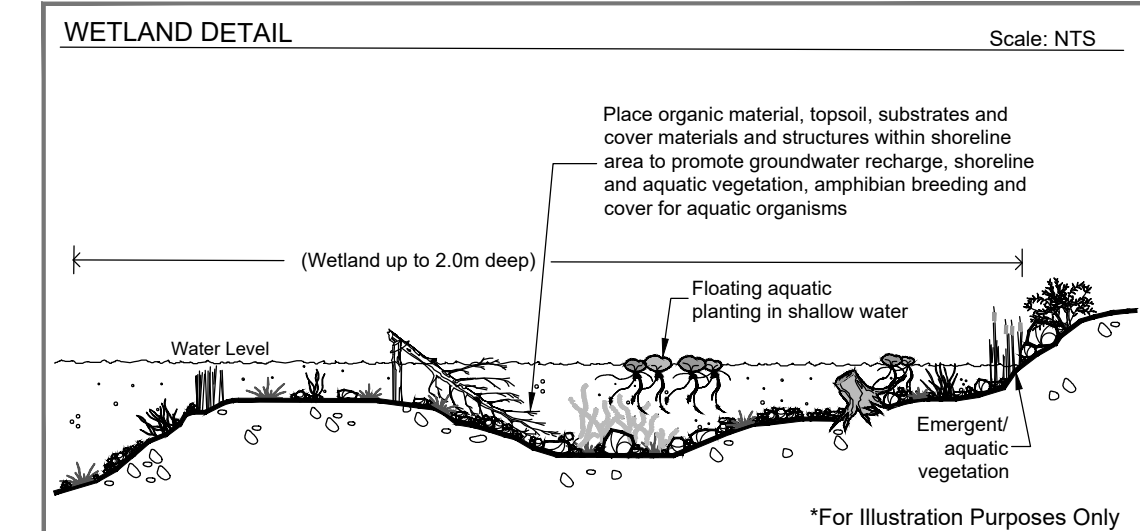
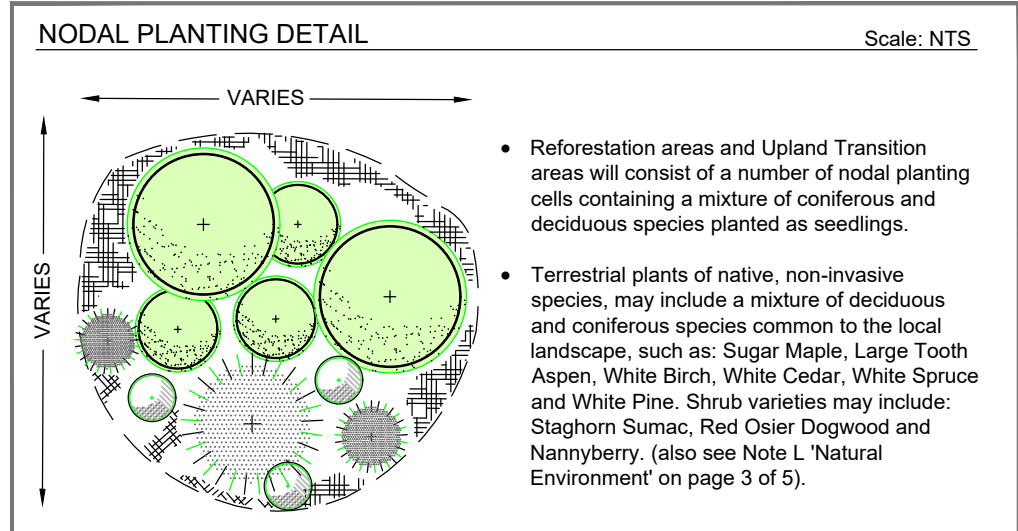
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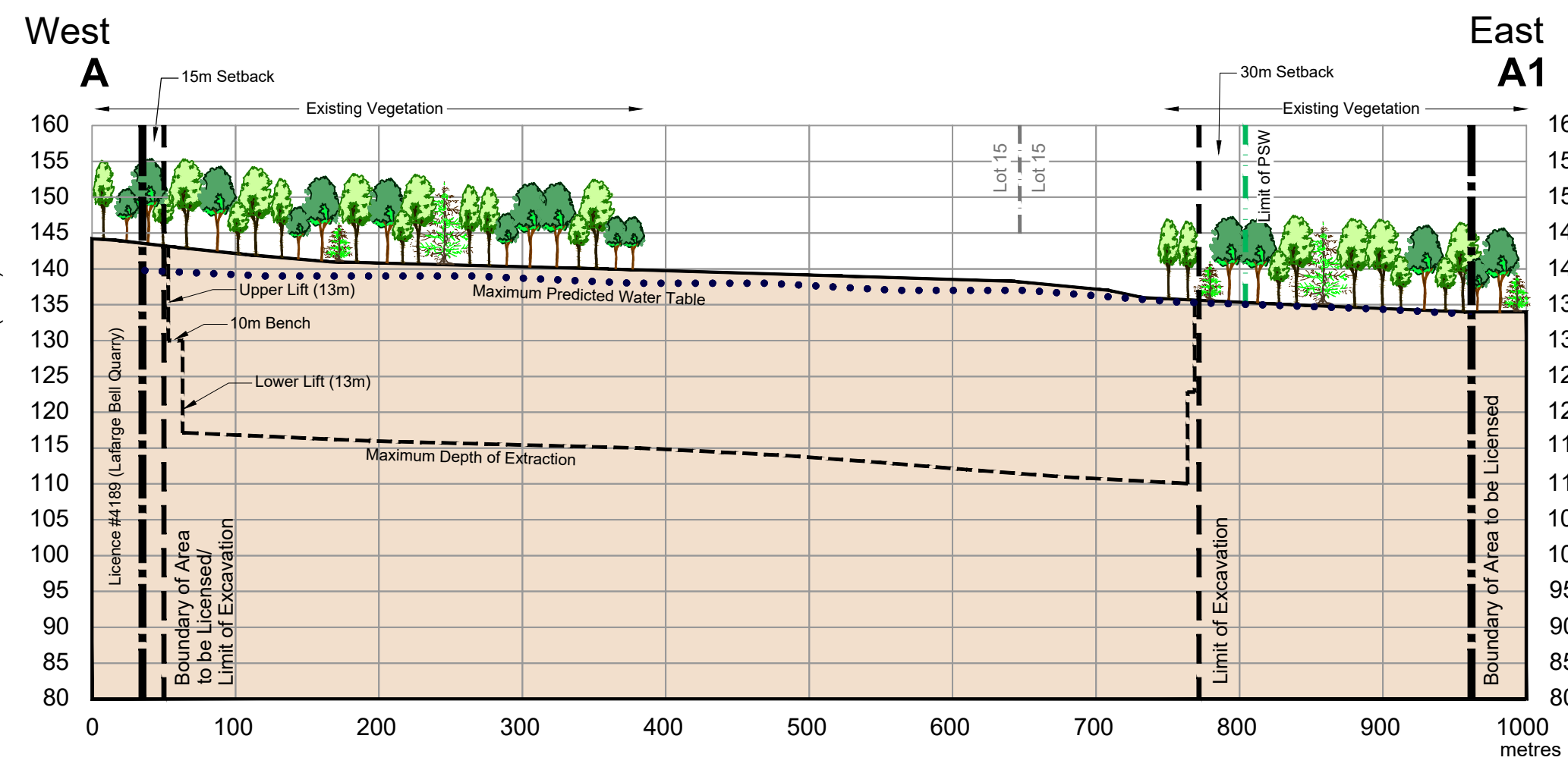
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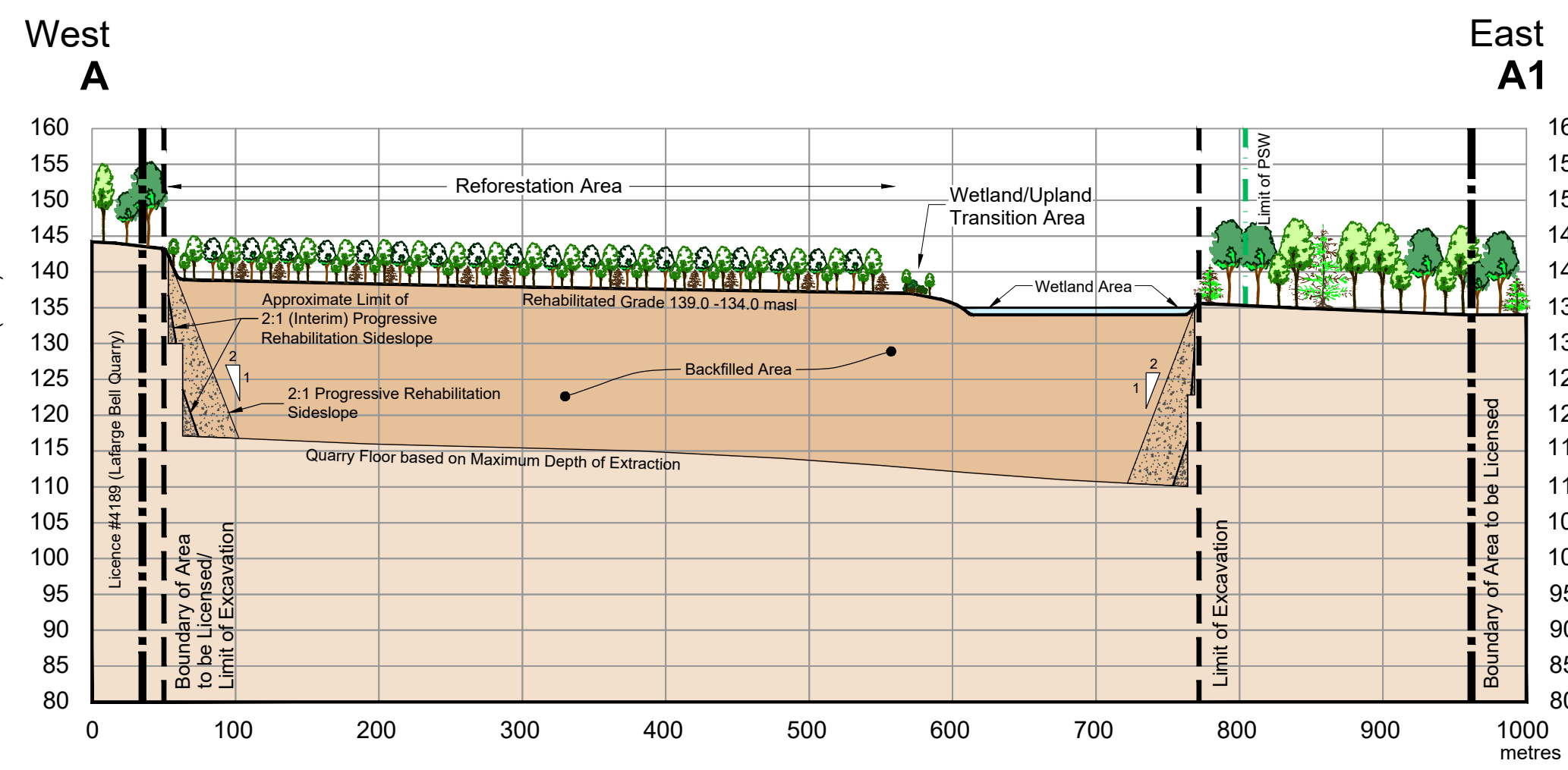
Drawn By D.G.S. File No. 9137AI
Checked By N.D.

File Name **REHABILITATION PLAN**
Drawing No. **4 OF 5**

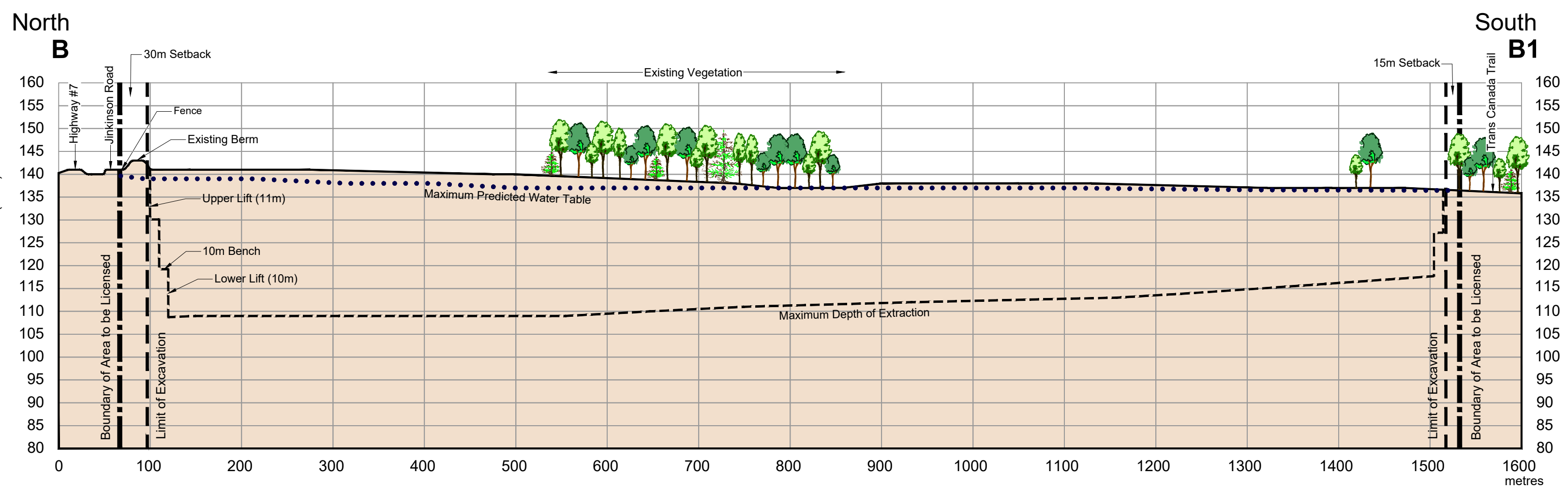




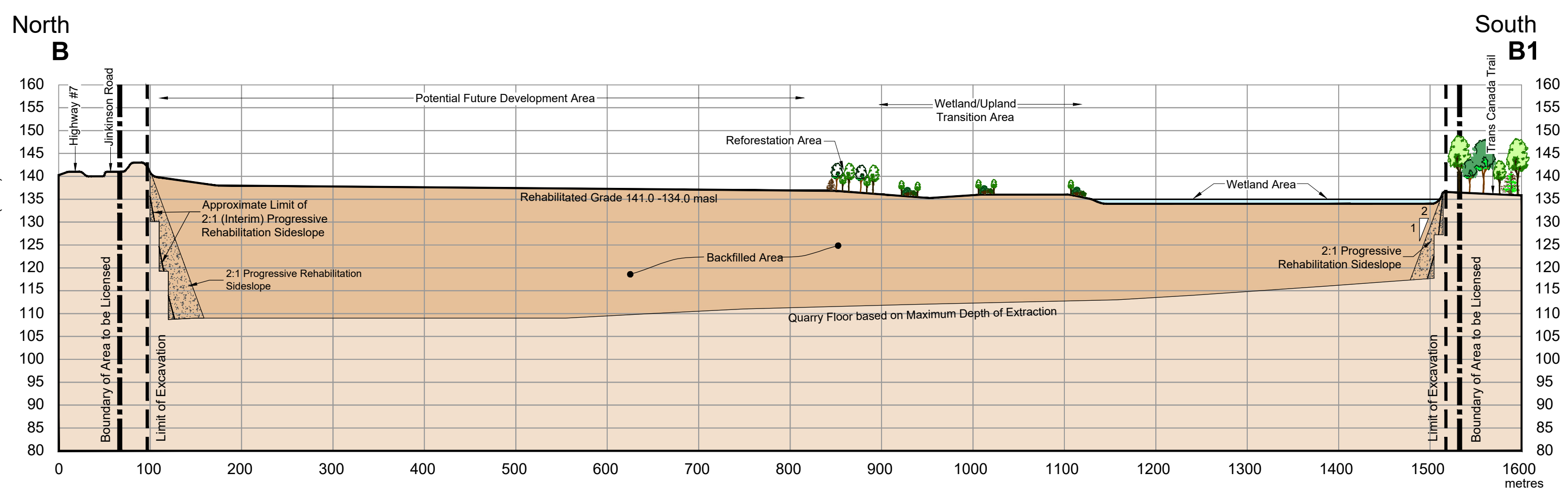
Section A-A1 - Existing Conditions



Section A-A1 - Rehabilitated Conditions



Section B-B1 - Existing Conditions

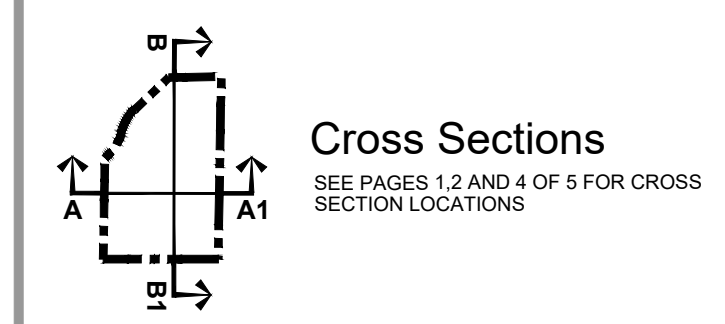


Section B-B1 - Rehabilitated Conditions

Legal Description
 PART OF LOTS 14, 15 and 16
 CONCESSION 11
 (geographic township of Goulbourn)
 CITY OF OTTAWA

Legend

- Boundary of Area to be Licensed
- Existing Licensed Boundary
- Limit of Excavation
ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELLED DISTANCES
- Maximum Depth of Extraction
- Progressive Rehabilitation
- Vegetation/Trees
EXISTING AND/OR PROPOSED AS INDICATED ON CROSS SECTIONS
- Maximum Predicted Water Table
(SEE NOTE 2, THIS PAGE)



- General Notes**
- This site plan is prepared under the Aggregate Resources Act (ARA) for a Class A licence for a quarry below the ground water table and follows the Aggregate Resources of Ontario: Site Plan Standards August 2020, specifically Cross Sections for all sites (Numbers 70-73 in the standards).
 - The maximum predicted water table elevation on site ranges between 140.5 masl in the western portion of the site to 134.5 masl in the eastern portion of the site. Groundwater table elevations provided by WSP (March 2023).
 - Licence Area: 121.7 hectares (300 acres)
 Limit of Extraction: 108.7 hectares (268 acres)
 - All measurements shown on this plan are in metres.

Site Plan Amendments

No.	Date	Description	By

MHBC
 PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
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Rob Pierce
 R.W. Tomlinson Limited
 Vice President Planning and Development

Project
Stittsville 2 Quarry

ARA Licence Reference No. _____ Pre-approval review: _____

Plan Scale 1:4,000 Horizontal (Arch D)
 5x Exaggeration (Vertical)
HORIZONTAL SCALE
 50 0 100 200 METRES

Plot Scale 1:4 [1mm = 4 units] MODEL

Drawn By D.G.S. File No. 9137A1
 Checked By N.D.

File Name **CROSS SECTION PLAN**
 Drawing No. **5 OF 5**