

Site Plan Amendments

No.	Date	Description	By

Notes

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. Also, this site plan follows the Aggregate Resources of Ontario, Site Plan Standards August 2020.
- Area Calculations:
Licence Area: 72.3 hectares (178.7 acres)
Limit of Extraction: 51.2 hectares (126.5 acres)
- All measurements shown are in metres unless specified otherwise.

B. References

- Topographic information provided by GeoOptic. Base data was digitized using ARCGIS 10.2 and the newly acquired ortho imagery. The drone flight took place on November 15, 2016 and was undertaken with an Aerohawk Hawkkey platform at 800ft agl, cleared with both Transport Canada and NavCan. Ground control was placed in a network of 20 points across the site and surveyed in with a Spectra Epoch50 DK GPS system with sub-centimetre precision. All coordinates are in NAD83 UTM17 / HTV21NE. The contour interval is 1m.
- Property boundaries compiled from vMap (First Base Solutions) online mapping service, Teranet parcel fabric layer.
- Subject site is zoned 'A4' (rural) in the Township of Wainfleet Comprehensive Zoning By-law 034-2014 (September 2014).
- Land use information and structures identified on or within 120 metres of the site boundary was determined using aerial imagery and 2019/2021 site visits.

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 groundwater table elevation on site ranges between ±170 masl in the southeast portion of the site to ±180 masl in the west portion of the site. The existing water table elevations are shown on each cross section on page 5 of 5. Groundwater table elevations provided by WSP (March 2022).

E. Site Access and Fencing

- There are several existing field accesses to the site. There is one from Highway #3, a couple from Biederman Road and one at the northwest portion of the site.
- 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-site such as processing areas with stationary or portable equipment, stockpiles, recyclable materials, scrap, haul roads, fuel storage, berms or excavation faces.

G. 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.

H. Technical Reports - References

- Hydrogeology: "Law Quarry Extension Level 1 and 2 Water Study Report" and "Law Quarry Extension Maximum Predicted Water Table Report", March 2022 (Source: WSP Canada Inc.)
- Natural Environment: "Natural Environment Report Level 1 and 2 Assessment, Law Crushed Stone Quarry", June 2022 (Source: Riverstone Environmental Solutions Inc.)
- Noise: "Noise Impact Study - Project 17132.02" May 26, 2022 (Source: Aerocoustics Engineering Ltd.)
- Slating: "Slating Impact Analysis, Waterford Sand & Gravel Limited Law Quarry Extension", June 2022 (Source: Explotech Engineering Ltd.)
- Archaeology: "Stage 1 Archaeological Assessment of the Law Crushed Stone Quarry Extension, Part of Lots 6 and 7, Concession 2, Geographic Township of Wainfleet, Welland County, Township of Wainfleet, Regional Municipality of Niagara" - Revised Report and Supplementary Documentation, August 6, 2021 (Source: ASI)
- "Stage 1 and 2 Archaeological Assessment of the Law Crushed Stone Extension, Part of Lots 6 and 7 Concession 2, Geographic Township of Wainfleet, Welland County, Township of Wainfleet, Regional Municipality of Niagara" - Original Report and Supplementary Documentation, August 6, 2021 (Source: ASI)
- "Stage 1-2 Archaeological Assessment of Additional Lands at Waterford's Law Quarry Extension, Part of Lot 6 Concession 2, Geographic Township of Wainfleet, Welland County, Township of Wainfleet, Regional Municipality of Niagara" - Original Report and Supplementary Documentation, August 6, 2021 (Source: ASI)
- "Stage 3 Archaeological Assessment of AIGI-289 and AIGI-290, Law Crushed Stone Extension, Part of Lot 6, Concession 2, Geographic Township of Wainfleet, Welland County, Township of Wainfleet, Regional Municipality of Niagara, Ontario" - Record of Indigenous Engagement, Original Report and Supplementary Documentation, August 24, 2021 (Source: ASI)

I. Other Reports - References

- Air Quality Assessment: "Law Quarry Extension - Port Colborne, Ontario, Air Quality Assessment" February 3, 2022 (Source: RWDI Air Inc.)
- Agricultural Impact Assessment: "Scoped Agricultural Impact Assessment, Waterford Sand and Gravel Law Quarry Crushed Stone Extension" May 2022 (Source: MHBC Planning)
- Cultural Heritage: "Cultural Heritage Evaluation Report" May 2022 (Source: MHBC Planning)
- Traffic: "Traffic Impact Study for Waterford Sand & Gravel Limited" April 26, 2022 (Source: JD Northcoote Engineering Inc.)

Legal Description
Part of Lots 6 & 7, Concession 2 and Part of Road Allowance Between Lots 5 & 6, Concession 2 (geographic Township of Wainfleet) Township of Wainfleet, Region of Niagara

Legend

- Boundary of Area to be Licensed
- Existing Licensed Boundary (LAW QUARRY - LICENCE #4464)
- Contour with Elevation (METRES ABOVE SEA LEVEL)
- Lot and Concession
- Existing Field Access
- Monitoring Well (WSP 2021)
- Existing Vegetation (APPROXIMATE LOCATION)
- Wainfleet Bog Provincially Significant Wetland Complex (RIVERSTONE 2020)
- Onondaga Escarpment Brow (RIVERSTONE 2020)
- Significant Wildlife Habitat (RIVERSTONE 2020)
- Permanent Exclusion Archaeological Sites (SEE NOTE M "ARCHAEOLOGY" ON PAGE 3 OF 5)
- Temporary Avoidance Archaeological Sites (SEE NOTE M "ARCHAEOLOGY" ON PAGE 3 OF 5)
- Cross Sections (SEE PAGE 5 OF 5 FOR EXISTING AND REHABILITATED CROSS SECTIONS)
- Limit of Extraction (ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELLED DISTANCES)
- Additional Lands Owned by Applicant
- Existing Limit of Extraction (LAW QUARRY - LICENCE #4464)
- Private Lanesway/Roadway
- Public Road (Paved)
- Public Road (Gravel)
- Existing Fence (1.2m POST & WIRE FARM FENCE UNLESS OTHERWISE NOTED)
- Building/Structure (LOCATION AND USE FOR BUILDINGS ON-SITE AND WITHIN 120m OF SITE)
- Direction of Surface Drainage (IF ANY)
- Hydro Poles
- Spoon-leaved Moss (SEE NOTE M "NATURAL ENVIRONMENT" ON PAGE 3 OF 5)
- Whip-poor-will Category 1 Habitat (SEE NOTE M "NATURAL ENVIRONMENT" ON PAGE 3 OF 5)
- 120m Zone

PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
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NDMNR Approval Stamp **MHBC Stamp**

Applicant
Waterford Sand & Gravel Limited
70 Ewart Avenue
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Tel: (519) 752-1300

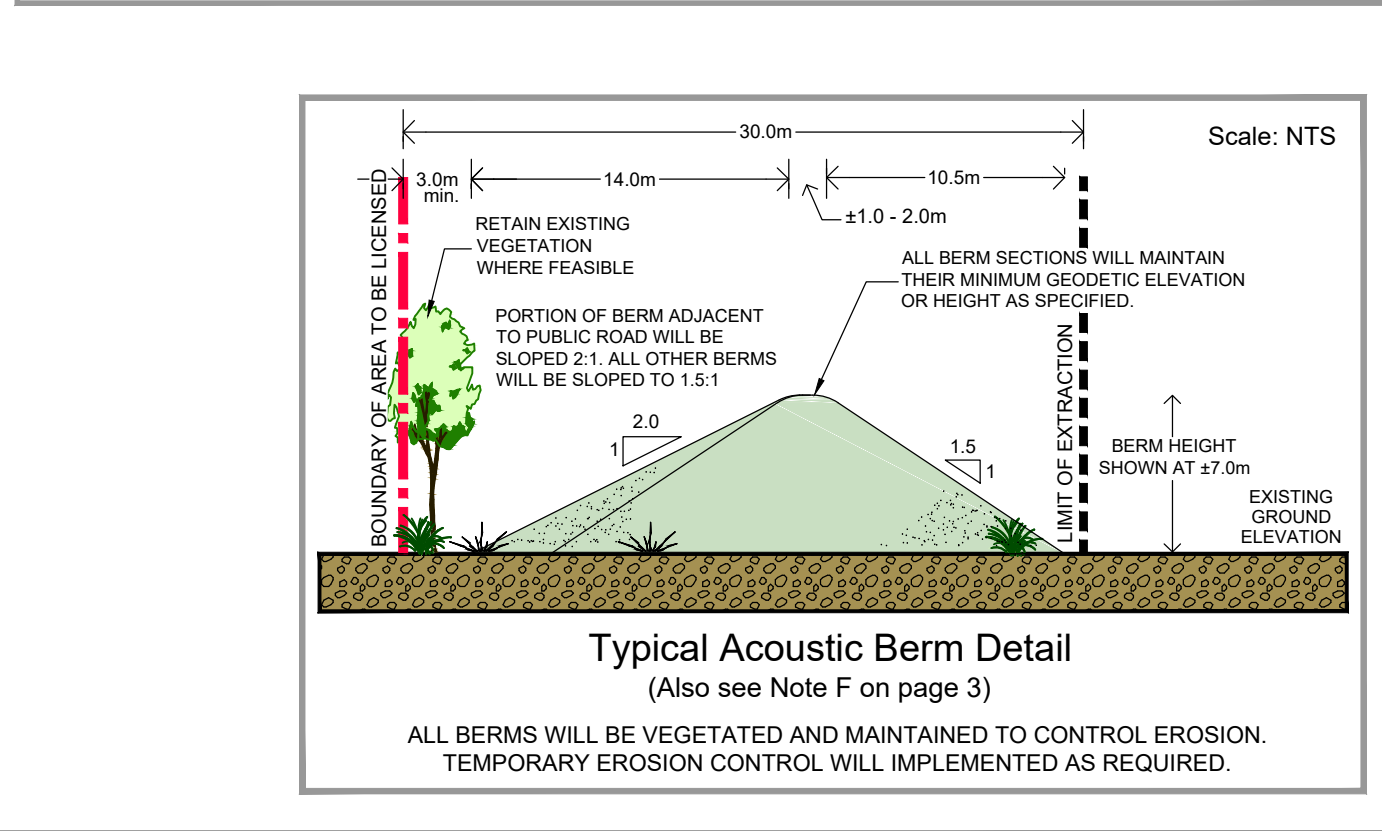
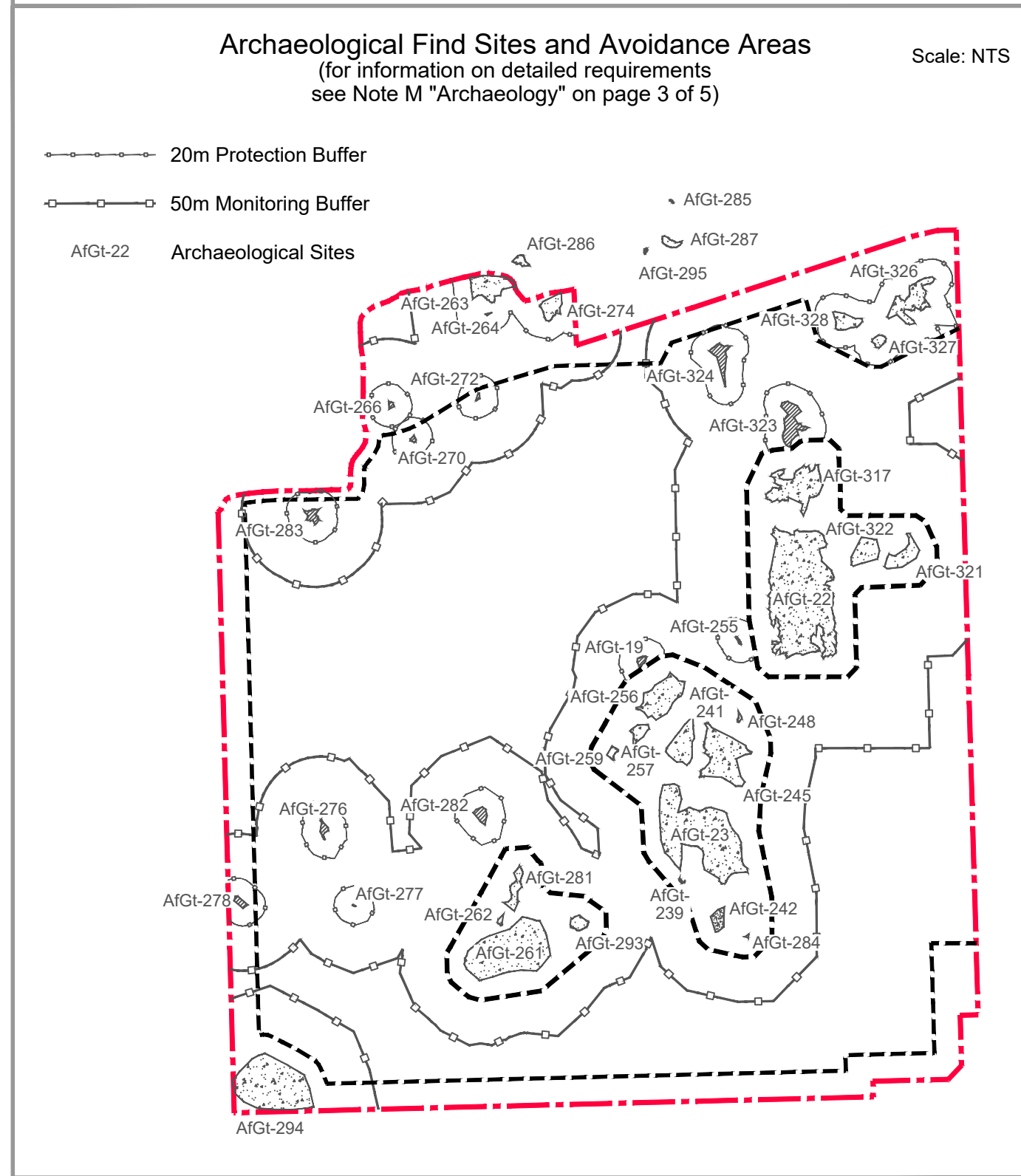
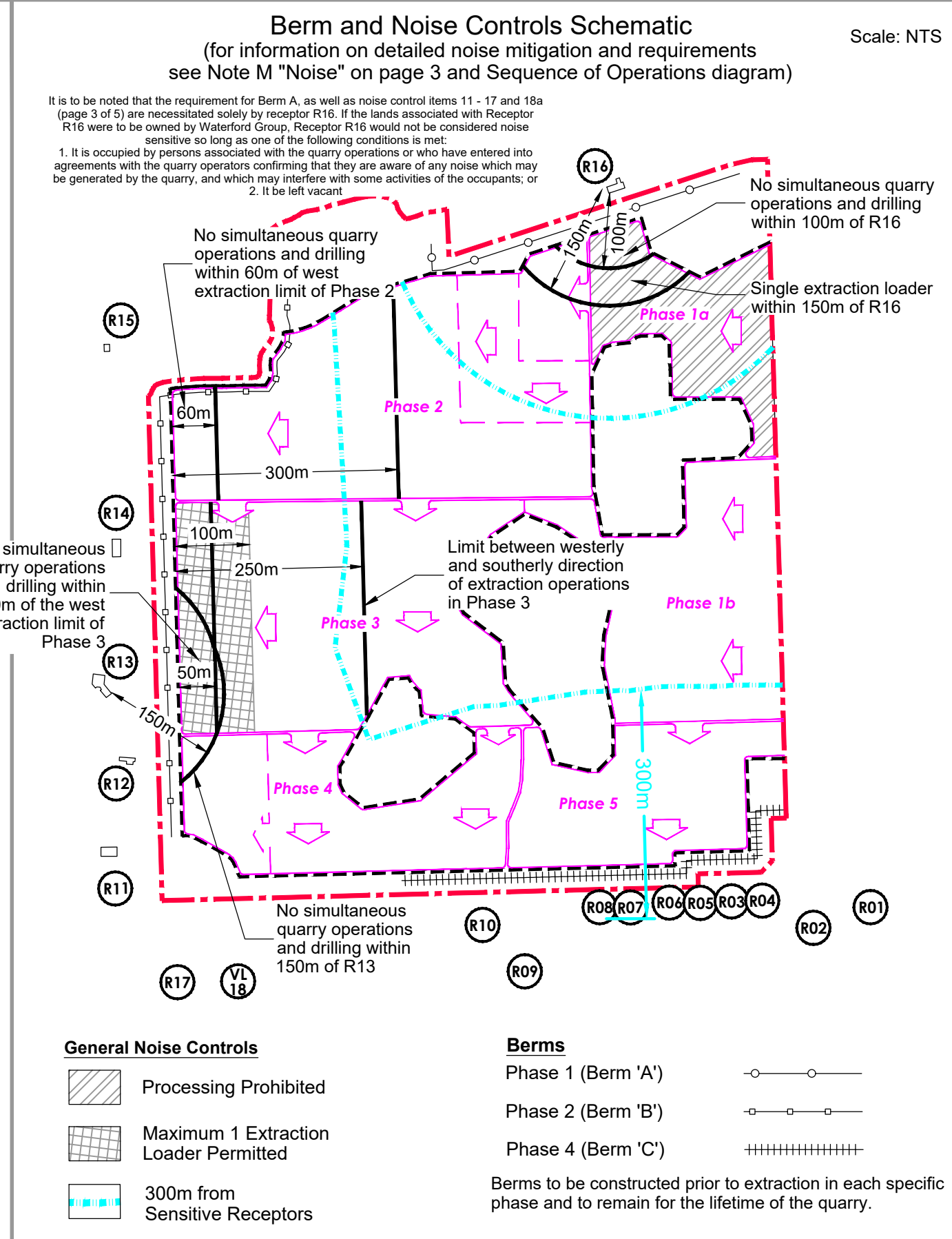
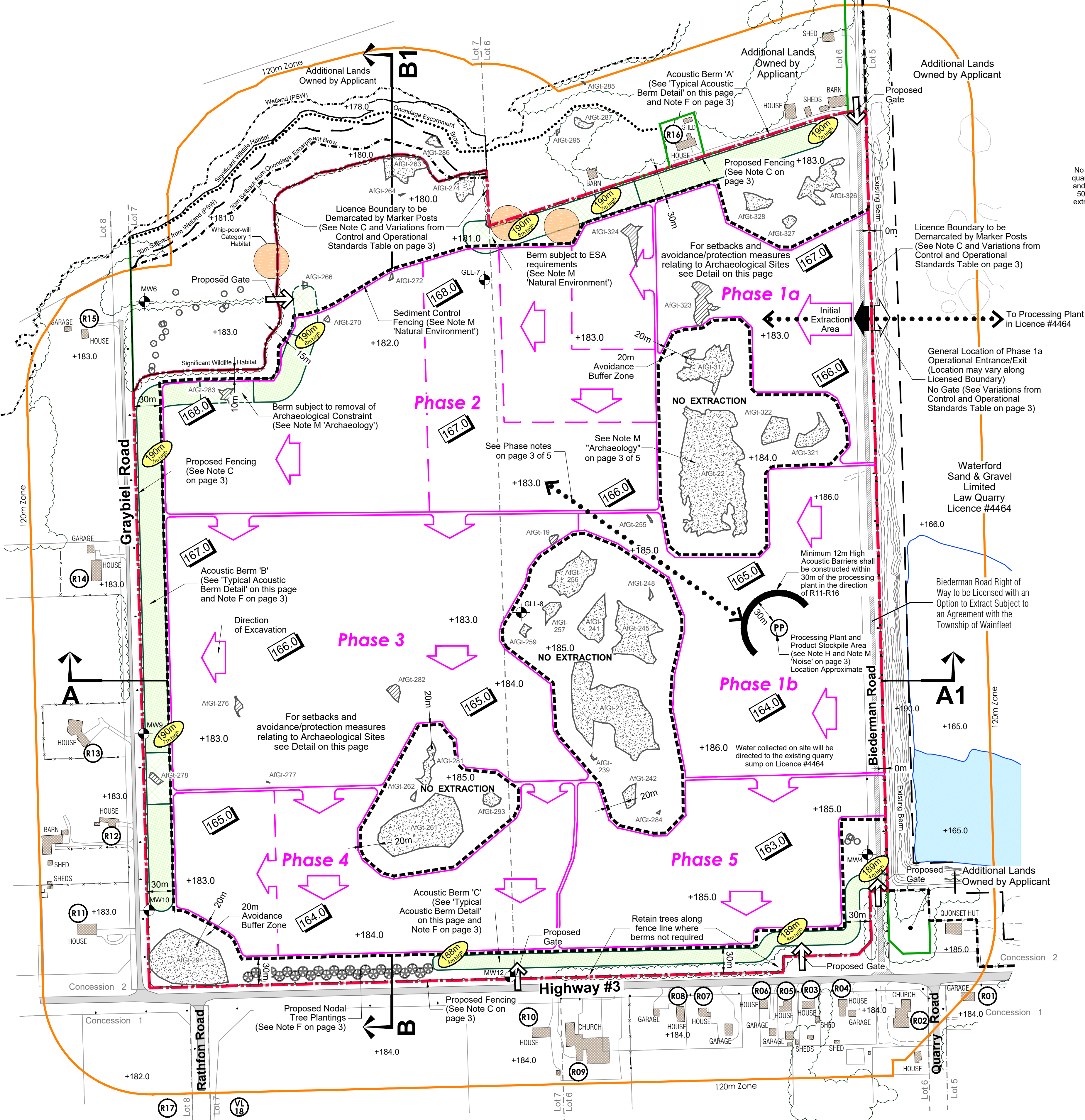
Applicant's Signature
Ed Lamb
VP/GM Construction Materials

Project
Law Quarry Extension
Part of Lots 6 & 7, Concession 2
Part of Road Allowance Between Lots 5 & 6, Concession 2
(Geographic Township of Wainfleet) Township of Wainfleet, Regional Municipality of Niagara

ARA Licence Reference No.	Pre-approval review:
Plan Scale 1:2,500 (Arch D)	For Submission to NDMNR - June 2022
SCALE 50 0 50 100 METRES	Plot Scale 1:2.5 [1mm = 2.5 units] MODEL
	Drawn By D.G.S. File No. 0956B
	Checked By C.P.

EXISTING FEATURES PLAN
1 OF 5

SEQUENCE OF OPERATIONS



Legal Description

Part of Lots 6 & 7, Concession 2 and Part of Road Allowance Between Lots 5 & 6, Concession 2 (geographic Township of Wainfleet) Township of Wainfleet, Region of Niagara

Legend

- Boundary of Area to be Licensed
- Existing Licensed Boundary
- Existing Spot Elevation
- Existing Fence
- Building/Structure
- Existing Field Access
- Monitoring Well
- Existing Vegetation
- Permanent Exclusion Archaeological Sites
- Temporary Avoidance Archaeological Sites
- Cross Sections
- Limit of Extraction
- Additional Lands Owned by Applicant
- Operational Entrance
- General Direction of Excavation
- Proposed Acoustic Berm
- Proposed Fence
- Proposed Spot Elevation
- Noise Receptor
- Internal Haul Road
- Tree Plantings
- Spoon-leaved Moss
- Whip-poor-will Category 1 Habitat

Site Plan Amendments

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Plan Scale 1:2,500 (Arch D) Plot Scale 1:2.5 [1mm = 2.5 units] MODEL

Drawn By D.G.S. File No. _____
 Checked By C.P. 0956B

OPERATIONAL PLAN

2 OF 5

K:\0956C-WATERFORD SAND AND GRAVEL LIMITED-LAW QUARRY EXTENSION\A\OPERPLAN 2OF5 JUNE2022.DWG

A. General

- Area Calculations:**
Licence Area: 72.3 hectares (178.7 acres) Limit of Extraction: 51.2 hectares (126.5 acres)
The maximum number of tonnes of aggregate to be removed from this site, in combination with Licence #4464 and Licence #607541 is 800,000 tonnes in any calendar year.
- No buildings or structures (including a scale and scale house) are proposed.
- The ground/water table elevation on site ranges between ±170 masl in the southeast portion of the site to ±180 masl in the west 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). See Section N 'Variations from Control and Operation Standards' for further details.
- Agricultural production may continue in areas not under extraction.
- Source Water Protection:** The site is located in the Niagara Peninsula Source Protection Area. The site is not mapped as being located in a Well Head Protection Area (WHPA), but is located in a Significant Groundwater Recharge Area and a Highly Vulnerable Aquifer Area. Mitigation measures are outlined in the Hydrogeology notes under Section M Report Recommendations.
- Location of sensitive receptors that are located within 500m of the boundary of this site are listed in Table 1 of Blasting Impact Assessment.

B. Hours of Operation/Blasting Hours

- Hours of Operation are as described in the notes under Section M 'Noise'.
- It is anticipated there will be 2 blasts per week between the hours of 10:00 am and 4:00 pm, Monday to Friday. No blasting will occur on Holidays.

C. Site Access and Fencing

- The existing field accesses may be utilized for monitoring, setback maintenance and agricultural access. The accesses shall be gated, kept closed during hours of non-operation and shall be maintained throughout the life of the licence. Aggregate trucks shall not be permitted to access the site at these locations.
- The site shall be accessed through the common licence boundary with existing Licence #4464 and no gate shall be required (see Section N 'Variations from Control and Operation Standards'). The location shown on the plan view (page 2 of 5) is approximate only and may occur anywhere on the common licence boundary during the life of the operation.
- Portions of the northeast, west and south licence boundary that are not currently fenced shall be fenced with post and wire fencing, at least 1.2 metres in height, prior to site preparation commencing. Fencing shall not be required where the licence abuts existing Licence #4464 (see Section N 'Variations from Control and Operation Standards') and in these locations, the boundary will be demarcated by 1.2m high marker posts that are visible from one to the other. If conditions in or around the licensed property change or if either licensed site is surrendered or sold, a 1.2m high fence will be installed. All fencing shall be maintained for the life of the extraction operation.
- Sediment fencing shall be installed along the north portion of the limit of extraction between the area to be disturbed and the wetlands to the north, prior to operations commencing.

D. Drainage

- Drainage of undisturbed areas will continue and generally in the directions shown on the Existing Features drawing on page 1 of 5.

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 O.12 (3) 2).
- Timber resources (if any) will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Non-mechanizable timber, stumps and brush will be used in for aquatic habitat enhancement or mulched for use in progressive rehabilitation in this licence or existing Licence #4464. 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.
- Topsoil and overburden shall be placed in berms or used immediately for progressive rehabilitation in this licence or adjacent Licence #4464 (see Section N 'Variations from Control and Operation Standards').
- Excess topsoil and overburden not required for immediate use in berms or rehabilitation may be temporarily stockpiled inside the licensed area or in Licence #4464. Topsoil and overburden stockpiles shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (existing Licence #4464) (see Section N 'Variations from Control and Operation Standards') and 90 metres from a property with residential use.
- 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.

F. Berms and Screening

- Berms shall be constructed to the elevation specified in the locations shown on the plan view prior to extraction/processing operations in each Phase. Locations and heights for all berms are provided on Sequence of Operations diagram, page 2 of 5. The heights/elevations shown are minimum required.
- Berm side slopes shall not exceed 1.5:1 on the interior (extraction) side and 2:1 on the exterior side facing a public road. Berms that are not adjacent to a public road shall have side slopes not exceeding 1.5:1. See 'Typical Berm Detail' on page 2 of 5.
- Berms shall not be located within three (3.0) metres of the licence boundary except where adjacent to existing Licence #4464 (see Section N 'Variations from Control and Operation Standards').
- All proposed berms will be constructed in accordance with the 'Typical Berm Detail' on page 2 of 5 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.
- Berms shall be maintained (vegetated to prevent erosion) throughout the operational life of the quarry.
- Trees will be planted along the south boundary of the site (Highway #3) where berms are not required and where outside the 20m avoidance zone of archaeological site AFGI-294. The trees will be planted in 2 rows of 1.2m diameter/2.0m high (at planting) coniferous trees (White Spruce, White Pine, Red Pine) planted 5m on centre.
- These trees are to be established within one (1) year of licence issuance. Trees will be maintained and/or replaced if required, throughout the operation of the pit.
- Existing vegetation within the setbacks shall be maintained except where noise attenuation berms are required.
- Berms that encroach within the limit of extraction shall be removed, and the underlying aggregate may be extracted, as part of final extraction/rehabilitation of the site.

G. Site Dewatering

- In areas where quarrying is taking place, all of the runoff within the limit of extraction will be directed via an internal drainage network to the sump within the existing quarry (Licence #4464) footprint where water is discharged to the Eagle Marsh Drain.

H. Extraction Sequence

- This 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 Section M 'Noise' Report Recommendations.
- Rehabilitation will be progressive and proceed as limits of extraction (area and depth) are reached. Notwithstanding the operation and rehabilitation notes, sediment fencing shall be installed along the north portion of the limit of extraction prior to operations commencing; removal of vegetation within limit of extraction and where noise attenuation berms are required; initial stripping of overburden/topsoil and construct berms as shown on Sequence of Operations drawing.
- Continue with stripping of overburden/topsoil as shown. Store any excess material in optional storage berms in areas within the limit of extraction or as shown on the Sequence of Operations.
- Begin Phase 1 extraction in an easterly direction and to the elevations as shown.
- Phase 1 may be extracted to a depth of 166.0 masl (south portion of Phase) to 167.0 masl (north portion of Phase).
- Processing for Phase 1a will occur in existing Licence #4464. No processing is permitted in Phase 1a. Phase 1b processing will occur in existing licence or when sufficient room is available in that phase.
- Progressive rehabilitation in the northeastern portion of the above water table side slopes in Phase 1a may be initiated once the extent of extraction has occurred in this area.
- Prepare Phase 2 for extraction

I. Phase 2

- Strip overburden/topsoil and construct Phase 2 berm (Berm 'B'). Excess material shall be used for progressive rehabilitation in existing licence #4464 or stockpiled in this licence for future rehabilitation.
 - Initially processing may occur in Phase 1b. When sufficient room is available in Phase 2, the processing plant may be relocated to this Phase. Haul road location is subject to change.
 - Begin Phase 2 extraction in an easterly (and southerly) direction and to the elevations as shown.
 - Continue progressive rehabilitation of side slope along north boundary of Phase 1a and commence progressive rehabilitation in Phase 2.
 - Phase 2 may be extracted to a depth of 166.0 masl (southeast portion of Phase) to 168.0 masl (northwest portion of Phase).
- Phase 3**
a. The above water table side slope along the portion of the north limit of extraction (where noise attenuation berms are not located) in Phase 1a and 2 will be completed prior to commencement of Phase 3.
- Strip overburden/topsoil. Excess material shall be used for progressive rehabilitation in existing licence #4464 or stockpiled in this licence for future rehabilitation.
 - Begin Phase 3 extraction in an southerly (and westerly) direction and to the elevations as shown.
 - Phase 3 may be extracted to a depth of 165.0 masl (southeast portion of Phase) to 167.0 masl (northwest portion of Phase).
- Progressive rehabilitation of the northwest corner of Phase 2 will continue.

J. Phase 4

- Prior to the extraction of Phase 4, rehabilitation of the northwest corner of Phase 2 will be completed.
 - Strip overburden/topsoil and construct Phase 4 berm (Berm 'C'). Excess material shall be used for progressive rehabilitation in existing licence #4464 or stockpiled in this licence for future rehabilitation.
 - Begin Phase 4 extraction in a southerly (and westerly) direction and to the elevations as shown.
 - Phase 4 may be extracted to a depth of 163.0 masl (southeast portion of Phase) to 165.0 masl (northwest portion of Phase).
- Phase 5
a. Phase 4 above water side slope rehabilitation will be initiated and Phase 3 side slope rehabilitation will be completed prior to Phase 5 being stripped for extraction.
 - Overburden/topsoil will be stripped and used for progressive rehabilitation.
 - Extraction in Phase 5 to proceed in a southerly direction.
 - Phase 5 may be extracted to a depth of 163.0 masl (southeast portion of Phase) to 164.0 masl (northwest portion of Phase).

K. Phase 6 (not shown)

- Complete extraction activities.
- Complete rehabilitation of the site.
- Remove all machinery, scrap and internal haul roads from site.
- Cease dewatering activities associated with quarry.

L. Extraction Details

- The maximum depth of extraction is as shown as spot elevations and extraction will occur in 3 lifts (maximum) through the five phases as shown on the Sequence of Operations Diagram on page 2 of 5 and in accordance with the Ministry of Labour requirements. The proposed quarry floor will be located at an elevation of 163-168 masl or 13 m to 22 m below the existing ground surface. The proposed quarry floor is an extension of the existing Law Quarry to the east.
- Extraction shall be permitted in two Phases simultaneously to allow for transition between Phases.
- Aggregate stockpiles will be located on the quarry floor (interim and final elevations) and will move throughout the life of the operations of the quarry. Stockpiles will not be located within 30m of the Licensed boundary, except along the eastern shared licence boundary with Licence #4464, as outlined in the Variations from Control and Operation Standards table on this page.
- Internal haul road locations will vary as extraction progresses and will be located on the quarry floor.

M. Equipment and Processing

- The equipment used on site for aggregate operations is listed in Note M 'Noise' Report Recommendations, Table A and may include: One (1) Portable Processing Plant, One (1) Quiet Rock Drill, Two (2) Extraction Loaders, Two (2) Shipment Loaders, One (1) Wash Plant, One (1) Wash Plant Loader, Highway Trucks and Conveyors.
- All processing equipment will be portable (crusher and screener), subject to the noise controls and located in close proximity to the extraction face and located below grade on the quarry floor in these Phases in order to maximize acoustic shielding. Within this area, the processing equipment shall remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts existing Licence #4464 - see Section N 'Variations from Control and Operation Standards'). Also see Note M 'Noise', the Sequence of Operations diagram and 'Berm and Noise Control Schematic' for location of processing plant and applicable noise restrictions.
- All processing equipment is subject to applicable permitting under MOE Environmental Compliance Approvals.

N. Fuel Storage

- No fuel or associated products will be stored on site. Mobile fueling will occur in accordance with the Gasoline Handling Act, as amended, the Gasoline Handling Code and regulations, as amended, and Liquid Fuels Handling Code.

O. Scrap and Recycling

- Temporary stockpiles will be located within the active portable processing plant area(s). Scrap will only include materials derived from the operation of the quarry 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 Variations from Control and Operational Standards. All scrap will be removed on an ongoing basis. The property will be kept in an orderly condition.
- No recycling activities will occur.

P. Report Recommendations

- Blasting: "Blast Impact Analysis, Waterford Sand & Gravel Limited Law Quarry Extension", June 20, 2022 (Source: Exploctech Engineering Ltd.)**
1. All blasts shall be monitored for both ground vibration and overpressure by an independent Blast Consultant 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.
- 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 other 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 protocol 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 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.

2. Noise: "Noise Impact Study - Project 17132.02" May 26, 2022 (Source: Aeroacoustics Engineering Ltd.)

General:

- The proposed hours of extraction, processing, and shipping operations shall be limited to the daytime hours only (07:00 – 19:00)
- The extraction, processing, and shipping equipment operating in the quarry is limited to:
 - One (1) Quiet Rock Drill
 - Two (2) Extraction Loaders
 - Two (2) Shipment Loaders
 - One (1) Processing Plant

- The aggregate quarry equipment shall satisfy the noise emission levels listed in Table A:

Equipment	Reference Sound Pressure Level at 30m (dBA)
Portable Processing Plant (crushing, screening & washing)	87
Quiet Rock Drill	73
Shipping Loader	67 ¹
Extraction Loader	70
Highway Truck - 25 kmh	65
Off-Road Truck - 30 kmh	75

¹-The shipment loaders were assumed to operate at a 50% duty cycle.

- The sound emissions of all construction equipment involved in site preparation and rehabilitation activities shall comply with the sound level limits specified in the MECP publication NPC-115 "Construction Equipment"

Report Recommendations (cont'd)

2. Noise (cont'd)

- New equipment technology or different configurations may allow proposed changes to any portion of the extraction and processing operations including additional equipment to operate on the site, equipment to be substituted, and/or different berm heights, while still meeting the applicable sound level limits. Changes may be permitted to the site operations and noise controls provided that the changes still meet the sound level limits, as confirmed through documentation prepared by a Professional Engineer specializing in noise control.
- An acoustic barrier is required to be solid, with no gaps or openings, and shall satisfy a minimum area density of 20 kg/m². It could take the form of a quarry face, stockpile, acoustic fence, ISO containers, a combination of these, or any construction satisfying the requirements of an acoustic barrier.
- The operation shall proceed in three tandem lifts. The total height of the working face, across all lifts, shall be a minimum of 17 m above the quarry floor on which the processing plant is situated. The plant shall be located a maximum of 60 m from the top of rock, unless otherwise noted, and shall be located on the quarry floor as soon as practical in Phase 1b. Extraction shall proceed in the directions outlined on the Operational Plan.
- Prior to extraction in Phase 1a, an acoustic barrier with a minimum top-of-barrier elevation of 190 m a.s.l. shall be installed along the north boundary of the property as shown (Berm A) on the Operation Plan. This barrier shall remain in place for the lifetime of the quarry.
- Prior to extraction in Phase 2, an acoustic barrier with a minimum top-of-barrier elevation of 190 m a.s.l. shall be installed along the west boundary of the property as shown (Berm B) on the Operation Plan. This barrier shall remain in place for the lifetime of the quarry.
- Prior to extraction in Phase 4, an acoustic barrier with a minimum top-of-barrier height of 4 m above existing grade shall be installed along the south boundary of the property as shown (Berm C) in the Operation Plan. This barrier shall remain in place for the lifetime of the quarry.

Phase 1a

- Processing within the bounds of Phase 1a is prohibited during the extraction of Phase 1a.
- During operations in Phase 1a, the line of sight between the Processing Plant and Receptor R16 must be broken by either:
 - Unextracted land with a minimum height of 17 m at a maximum distance of 60 m from the processing plant; or
 - An acoustic barrier with a minimum height of 12 m at a maximum distance of 30 m from the Processing Plant.
- During operations in Phase 1a, an acoustical barrier with a minimum height of 4 m and a minimum length of 15 m shall be erected within 10 m of the rock drill blocking the line of sight between the drill and receptor R16. This may be achieved using a truck trailer with plywood boards blocking any gaps.
- Extraction within 150 m of R16 in Phase 1a shall be limited to a single extraction loader.
- During extraction within 100 m of R16, the Quiet Rock Drill shall not operate at-grade or at the first bench elevation simultaneously with any extraction or processing operations.

Phase 1b

- During extraction of Phase 1b the line of sight between the Processing Plant and Receptor R16 shall be blocked by either:
 - Unextracted land with a minimum height of 17 m at a maximum distance of 60 m from the processing plant; or
 - An acoustical barrier with a minimum height of 12 m at a maximum distance of 30m from the Processing Plant

Phase 2

- During extraction operations in Phase 2, the Processing Plant shall be located such that the line of sight to Receptor R16 is broken by either:
 - An acoustic barrier with a minimum height of 12 m within 30 m of the Processing plant; or
 - Intervening unextracted land with a minimum height of 17 m within 60 m of the processing plant.
- When the Quiet Rock Drill is operating at-grade in Phase 2, an acoustical barrier with a minimum height of 4 m and a minimum length of 15 m shall be erected within 10 m of the Quiet Rock Drill blocking the line of sight between the drill and receptors, as follows:
 - More than 300 m of Phase 2 west extraction limit: Receptor R16
 - Less than 300 m of Phase 2 west extraction limit: Receptor R14, R15

Phase 3

20. Extraction Operations within 250 m of the west extraction limit in Phase 3 shall proceed in a westerly direction. Extraction operations greater than 250 m of the west extraction limit shall proceed in a southerly direction.
- Prior to westward extraction in Phase 3, the Processing Plant shall be located between the sections of unextracted land as shown in the Operation Plan and shall remain there for the duration of Phase 3 extraction. During processing operations in Phase 3, the line of sight to receptors R11 to R16 shall be broken by either:
 - An acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant; or
 - Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant.
- Extraction Operations within 100 m of the west extraction limit of Phase 3 shall be limited to one extraction loader.
- Once the working face is within 50 m of the west extraction limit of Phase 3, the Quiet Rock Drill may not be operated simultaneously with any processing or extraction activities.
- When the Quiet Rock Drill is operating at-grade in Phase 3, an acoustical barrier with a minimum height of 4 m and a minimum length of 15 m shall be erected within 10 m of the Quiet Rock Drill blocking the line of sight between the drill and receptors R11 to R15.

Phase 4

25. When the Quiet Rock Drill is operating at-grade in Phase 4, an acoustical barrier with a minimum height of 4 m and a minimum length of 15 m shall be erected within 10 m of the rock drill blocking the line of sight between the drill and receptors R11 to R14.
- During extraction of Phase 4, the Processing Plant shall be located between the sections of unextracted land as shown on the Operation Plan and shall remain there for the duration of Phase 4 extraction. The line of sight between the Processing Plant and any of Receptors R11 to R16 shall be broken by either:
 - An acoustic barrier with a minimum height of 12 m within 30 m of the Processing plant; or
 - Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant.

Phase 5

29. During extraction operations in Phase 5, the Processing Plant shall be located such that the line of sight to Receptors R01 through R14 is broken by either:
 - An acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant; or
 - Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant.

3. Hydrogeology: "Law Quarry Extension Level 1 and 2 Water Study Report" and "Law Quarry Extension Maximum Predicted Water Table Report", March 2022 (Source: WSP Canada Inc.)

- The proposed long-term monitoring program outlined in Table 1 and shown in Figure 18 of the report, to be completed during the quarry extension operational and rehabilitation phases, until stable conditions are observed after quarry decommissioning.
- A well interference mitigation plan; and
- A Spills Contingency Program in compliance with the prescribed conditions for a Class A licence under the ARA [O.Reg 244/97 Section O.12 (3) 2].

Key findings of the Maximum Predicted Water Table Report:

- The proposed quarry extension will be developed below the natural groundwater table up to a maximum depth of approximately 20m below ground surface (approximately 165 masl), corresponding to the base of the Berea member dolostone.
- The maximum water table at the site is inferred to occur within the shallow bedrock aquifer. The maximum shallow bedrock aquifer groundwater elevations within the Site boundary are consistently observed at GLL-9, in the western portion of the Site adjacent to Graybiel Road. The maximum groundwater elevation at GLL-9 observed during the baseline monitoring period is about 183.0 masl.

4. Natural Environment: "Natural Environment Report, Level 1 & 2 Assessment, Law Crushed Stone Quarry" June 2022 (Source: RiverStone Environmental Solutions Inc.)

- Principally Significant Wetlands**
- Proposed extraction activities shall be setback a minimum of 30 m from the boundary of the PSW as shown on Figure 6. The 30 m setback should be well-marked prior to the onset of site preparation.
- The 30 m PSW setback area shall be undisturbed and remain as natural self-sustaining vegetation.
- Sediment and erosion control measures shall be employed along the extraction limit to prevent the erosion of unstable soils and the movement of sediment and/or other deleterious substances into the adjacent PSW. These measures shall be in place prior to the onset of site preparation.
- Sediment fencing must be constructed of heavy material and solid posts and be properly installed (trenched in) to maintain its integrity during inclement weather events.
- Once installed, sediment fencing should be routinely monitored and maintained.
- All stockpiled aggregates should be stored in a location that will prevent the movement of sediment-laden runoff into the PSW units (and other identified wetlands) and their setbacks.
- A detailed groundwater monitoring program has been recommended in the Hydrogeological Assessment Report (WSP 2022), which includes continuous water level measurements using dataloggers at the site groundwater monitoring wells. The water level data will be summarized in an annual monitoring report submitted to the NDMNRF or MECP.

Report Recommendations (cont'd)

4. Natural Environment (cont'd)

- Habitat for Endangered and Threatened Species**
- No vegetation clearing or site alteration occur in the ecological communities occupied by Spoon-leaved Moss, unless the required approvals under the ESA are secured that would permit such activities.
- Water balance be maintained to the portions of the lands adjacent to the proposed licence that contain Spoon-leaved Moss.
- Prior to site alteration activities occurring within identified Whip-poor-will habitat, obtain necessary ESA authorizations or determine that none are required.

Significant Woodlands

- A 30 m protective buffer be placed along the edge of the significant woodland (Figure 5). The buffer is to be left in its current state.
- The recommendations offered herein to protect the PSW (Section 5.2) must be implemented in full as they will also serve to protect the significant woodland.

Significant Wildlife Habitat

- Proposed extraction area not be located within 30 m of the Onondaga Escarpment Brow (Figure 6). Vegetation within the 30 m setback is to remain as natural self-sustaining vegetation.
- The recommendations offered herein to protect significant woodland (Section 5.4) must be implemented in full as they will also serve to protect Eastern Wood-pewee and Wood Thrush breeding and foraging habitat adjacent to the site.
- The recommendations offered herein to protect Migratory Birds (Section 5.6) must be implemented in full as they will also serve to protect Eastern Wood-pewee and Wood Thrush.

Other Natural Features and Functions

- All necessary removal of natural vegetation (e.g., tree/shrub clearing, fallow fields, etc.) within the proposed quarry extraction area should be completed outside of the primary breeding bird nesting window (i.e., between April 1 and August 31). If limited vegetation removal must occur early in this period (i.e., between April 1-April 15), a nest survey should be conducted by a qualified biologist within 5 days of commencement of vegetation removal activities to identify and locate active nests of bird species (where present) protected by the federal *Migratory Bird Convention Act, 1994* or provincial *Fish and Wildlife Conservation Act, 1997*. If a nest is located or evidence of breeding noted, a mitigation plan should be developed to avoid any potential impacts on birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.

5. Archaeology:

- No extraction, alterations or soil disturbance may be carried out within the limits of the following archaeological sites: AFGI-255, AFGI-266, AFGI-272, AFGI-276, AFGI-277, AFGI-19, AFGI-20, AFGI-278, AFGI-282, AFGI-283, AFGI-323 and AFGI-324 or the associated 20 metre protection buffers until:

- Stage 3 and, if necessary, Stage 4 archaeological assessments have been completed and clearances have been issued by the Ministry of Heritage, Sport, Tourism and Culture Industries (MSTC) and
- Approval has been obtained from the Ministry of Northern Development Mines Natural Resources and Forestry (MNDMNRFF) following review of MHSTC clearances and additional further consultations and consultation considered necessary by MNDMNRFF including, but not limited to, the Crown's Duty to Consult.

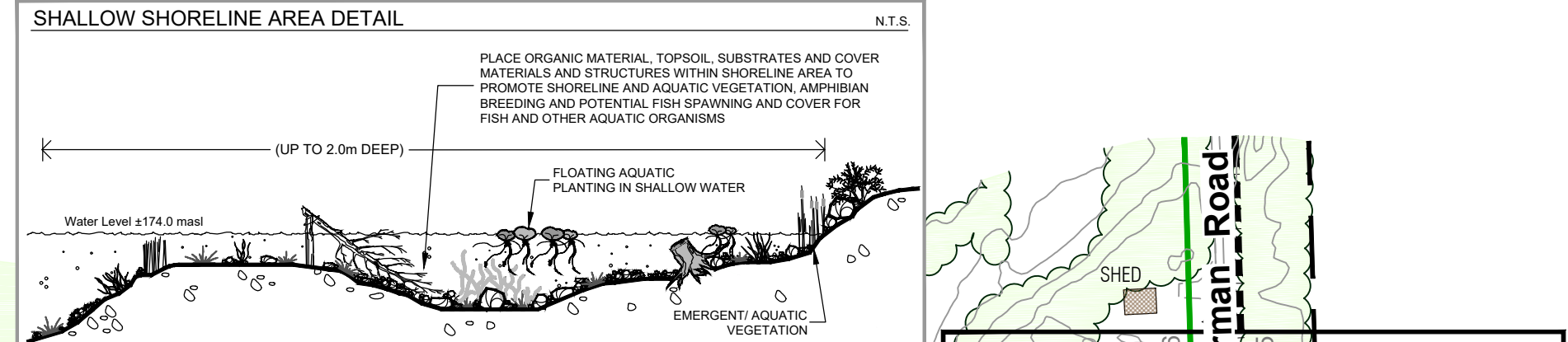
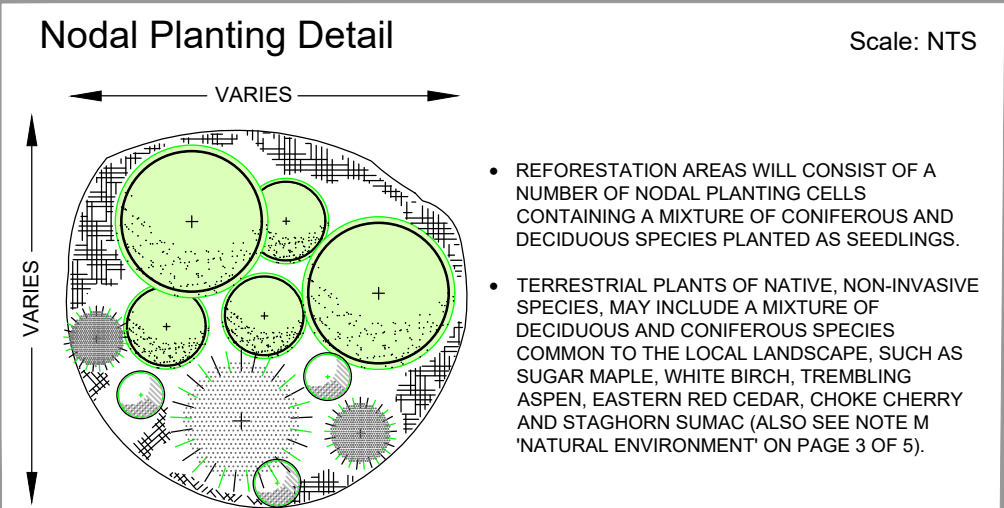
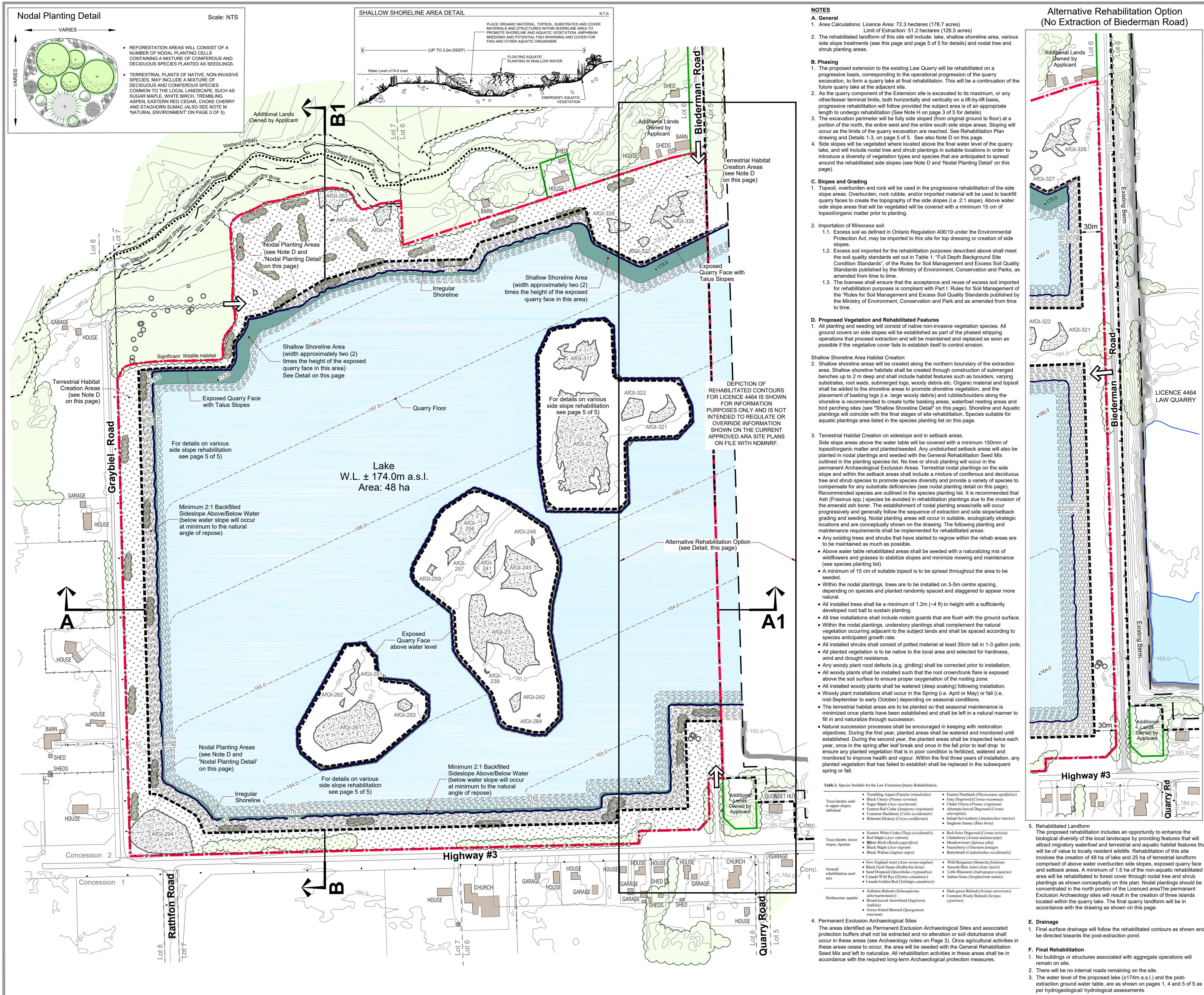
Additional requirements relating to the interim protection measures and future work are as follows:

"Stage 1 Archaeological Assessment of the Law Crushed Stone Quarry Extension, Part of Lots 6 and 7, Concession 2, Geographic Township of Wainfleet, Welland County, Township of Wainfleet, Regional Municipality of Niagara, May 2022 (Source: Archaeological Services Inc.)

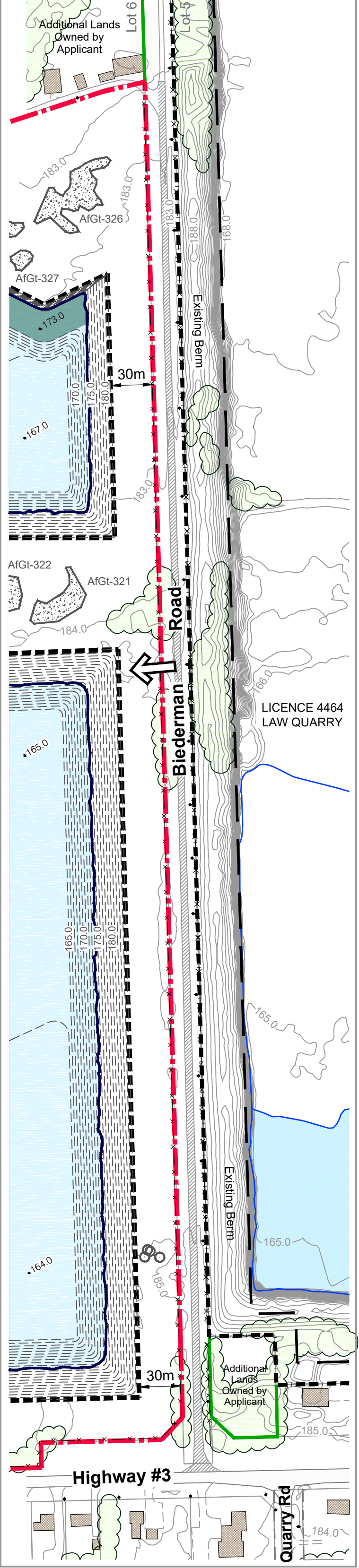
- Indigenous diagnostic sites AFGI-255, AFGI-266, AFGI-272, AFGI-276, AFGI-277 and Indigenous non-diagnostic sites AFGI-19, AFGI-20, AFGI-278, AFGI-282, AFGI-283, AFGI-323 and AFGI-324 are considered to be archaeological resources of cultural heritage value or interest for which it is not clear that Stage 4 mitigation will be required. As these sites cannot be avoided within the proposed limit of extraction, it is recommended that the sites be subject to a comprehensive Stage 3 Archaeological Assessment in order to more fully identify the character, extent and significance of the archaeological deposit, in accordance with the Standards.
- The protected areas of these archaeological sites, including the associated 20 metre protection buffers, must be shown on the Aggregate Resource Act site plan accompanying the licence application. These protected site areas correspond to those as shown on Figures 8 and 9 in the Supplementary Documentation to this report.
- A condition must be placed on the Aggregate Resources Act licence stating that archaeological sites AFGI-255, AFGI-266, AFGI-272, AFGI-276, AFGI-277, AFGI-19, AFGI-20, AFGI-278, AFGI-282, AFGI-283, AFGI-323 and AFGI-324 are present as shown on the Aggregate Resources Act site plan; that no extraction, alterations or soil disturbance may be carried out within the limits of the protected area of the archaeological sites; that post and wire fencing will be erected along the limits of the 20-metre protection buffers under the direction of the licensed consultant archaeologist; and that archaeological monitoring is required within the further 50-metre construction monitoring buffers should extraction approach their vicinities.
- A letter is provided by the Aggregate Resources Act licensee stating that they are aware of the presence of the archaeological sites within the limits of the Aggregate Resources Act licence and that that they are aware of the restrictions on alteration of an archaeological site of further cultural heritage value or interest as per the condition on their Aggregate Resources Act licence and as per Section 48 of the Ontario Heritage Act.
- As extraction activities approach site vicinities, Stage 3 assessments should commence with the creation of a recording grid on a fixed datum, the position of which has been recorded using a GPS. Then, a controlled surface collection must be conducted to precisely define the nature and extent of the sites found within a ploughed context. This work will require that the site areas be re-ploughed and allowed to weather for at least one substantial rainfall prior to commencing this work. The location of each artifact should be mapped with the aid of a tape measure and transit, and a surface map produced of each site.
- A series of one-metre-square test units will then be excavated across the site areas at five-metre intervals within an established grid in order to determine the nature and extent of the cultural deposits. An additional 20% of the total number of units excavated on the grids will be strategically excavated at five-metre intervals throughout the sites, around units of high artifact counts or other significant areas of the sites. The test units should be excavated five centimetres into the sterile subsoil and soil fills screened through six-millimetre wire mesh to facilitate artifact recovery. The sterile subsoil should be troweled and all soil profiles examined for undisturbed cultural deposits; and
- The results of the Stage 3 assessment will be used to evaluate the significance of each site and to develop a series of recommendations concerning any further mitigative options that may be necessary.

- The proponent will proceed with an application for a licence under the Aggregate Resources Act which includes the following archaeological sites: AFGI-294, AFGI-261, AFGI-262, AFGI-281, AFGI-293, AFGI-284, AFGI-242, AFGI-239, AFGI-23, AFGI-245, AFGI-248, AFGI-241, AFGI-256, AFGI-257, AFGI-259, AFGI-22, AFGI-321, AFGI-322, AFGI-317, AFGI-327, AFGI-326, AFGI-263, AFGI-264 and AFGI-274, that are to remain protected within the licensed limits. The long-term avoidance and protection measures comprise the following:

- The protected areas of these archaeological sites, including the associated 20 metre protection buffers, must be shown on the Aggregate Resource Act site plan accompanying the licence application. These protected site areas correspond to those as shown on Figures 8 and 9 in the Supplementary Documentation to this report.
- A condition must be placed on the Aggregate Resources Act licence stating that archaeological sites AFGI-294, AFGI-261, AFGI-262, AFGI-281, AFGI-293, AFGI-284, AFGI-242, AFGI-239, AFGI-23, AFGI-245, AFGI-248, AFGI-241, AFGI-256, AFGI-257, AFGI-259, AFGI-22, AFGI-321, AFGI-322, AFGI-317, AFGI-327, AFGI-326, AFGI-263, AFGI-264 and AFGI-274 are present as shown on the Aggregate Resources Act site plan; that no extraction, alterations or soil disturbance may be carried out within the limits of the protected area of the archaeological sites; that post and wire fencing will be erected along the limits of the 20-metre protection buffers under the direction of the licensed consultant archaeologist; that monitoring is required within the further 50-metre construction monitoring buffers; and, that if the archaeological sites are still present when the Aggregate Resources Act licence is surrendered that a restrictive covenant will be placed on title to continue the protection of the archaeological site.
- A letter is provided by the Aggregate Resources Act licensee stating that they are aware of the presence of the archaeological site within the limits of the Aggregate Resources Act licence and that that they are aware of the restrictions on alteration of an archaeological site of



**Alternative Rehabilitation Option
(No Extraction of Biederman Road)**



- NOTES**
- General**
 - Area Calculations: Licence Area: 72.3 hectares (178.7 acres)
Limit of Extraction: 51.2 hectares (126.5 acres)
 - The rehabilitated landform of this site will include: lake, shallow shoreline area, various side slope treatments (see this page and page 5 of 5 for details) and nodal tree and shrub planting areas.
 - Phasing**
 - The proposed extension to the existing Law Quarry will be rehabilitated on a progressive basis, corresponding to the operational progression of the quarry excavation, to form a quarry lake at final rehabilitation. This will be a continuation of the future quarry lake at the adjacent site.
 - As the quarry component of the Extension site is excavated to its maximum, or any other/lesser terminal limits, both horizontally and vertically on a lift-by-lift basis, progressive rehabilitation will follow provided the subject area is of an appropriate length to undergo rehabilitation (See Note H on page 3 of 5 for details)
 - The excavation perimeter will be fully side sloped (from original ground to floor) at a portion of the north, the entire west and the entire south side slope areas. Sloping will occur as the limits of the quarry excavation are reached. See Rehabilitation Plan drawing and Details 1-3, on page 5 of 5. See also Note D on this page.
 - Side slopes will be vegetated where located above the final water level of the quarry lake, and will include nodal tree and shrub plantings in suitable locations in order to introduce a diversity of vegetation types and species that are anticipated to spread around the rehabilitated side slopes (see Note D and 'Nodal Planting Detail' on this page).
 - Slopes and Grading**
 - Topsoil, overburden and rock will be used in the progressive rehabilitation of the side slope areas. Overburden, rock rubble, and/or imported material will be used to backfill quarry faces to create the topography of the side slopes (i.e. 2:1 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 fill/excess soil:
 - Excess soil as defined in Ontario Regulation 406/19 under the Environmental Protection Act, may be imported to this site for top dressing or creation of side slopes.
 - Excess soil imported for the rehabilitation purposes described above shall meet the soil quality standards set out in Table 1: "Full Depth Background Site Condition Standards", of the Rules for Soil Management and Excess Soil Quality Standards published by the Ministry of Environment, Conservation and Parks, as amended from time to time.
 - 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 of the "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.
 - Proposed Vegetation and Rehabilitation Features**
 - All planting and seeding will consist of native non-invasive vegetation species. All ground covers on side slopes will be established as part of the phased striping 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.
 - Shallow Shoreline Area Habitat Creation
 - Shallow shoreline areas will be created along the northern boundary of the extraction area. Shallow shoreline habitats shall be created through construction of submerged benches up to 2 m deep and shall include habitat features such as boulders, varying substrates, root wads and woody debris etc. Organic material and topsoil shall be added to the shoreline areas to promote shoreline vegetation, and the placement of basking logs (i.e. large woody debris) and rubble/boulders along the shoreline is recommended to create turtle basking areas, waterfowl nesting areas and bird perching sites (see "Shallow Shoreline Detail" on this page). Shoreline and Aquatic plantings will coincide with the final stages of site rehabilitation. Species suitable for aquatic plantings area listed in the species planting list on this page.
 - Terrestrial Habitat Creation on sideslope and in setback areas.
 - Side slope areas above the water table will be covered with a minimum 150mm of topsoil/organic matter and planted/seeded. Any undisturbed setback areas will also be planted in nodal plantings and seeded with the General Rehabilitation Seed Mix outlined in the planting species list. No tree or shrub planting will occur in the permanent Archaeological Exclusion Areas. Terrestrial nodal plantings on the side slope and within the setback 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. It is recommended that Ash (*Fraxinus* spp.) species be avoided in rehabilitation plantings due to the invasion of the emerald ash borer. The establishment of nodal planting areas/cells will occur progressively and generally follow the sequence of extraction and side slope/setback grading and seeding. Nodal planting areas will occur in suitable, ecologically strategic locations and are conceptually shown on the drawing. The following planting and maintenance requirements shall be implemented for rehabilitated areas:
 - Any existing trees and shrubs that have started to regrow within the rehab areas are to be maintained as much as possible.
 - Above water table rehabilitated areas shall be seeded with a naturalizing mix of wildflowers and grasses to stabilize slopes and minimize mowing and maintenance (see species planting list)
 - A minimum of 15 cm of suitable topsoil is to be spread throughout the area to be seeded.
 - Within the nodal plantings, trees are to be installed on 3-5m centre spacing, depending on species and planted randomly spaced and staggered to appear more natural.
 - All installed trees shall be a minimum of 1.2m (~4 ft) in height with a sufficiently developed root ball to sustain planting.
 - All tree installations shall include rodent guards that are flush with the ground surface.
 - Within the nodal plantings, understory plantings shall complement the natural vegetation occurring adjacent to the subject lands and shall be spaced according to species anticipated growth rate.
 - All installed shrubs shall consist of potted material at least 30cm tall in 1-3 gallon pots.
 - All planted vegetation is to be native to the local area and selected for hardiness, wind and drought resistance.
 - Any woody plant root defects (e.g. girdling) shall be corrected prior to installation.
 - All woody plants shall be installed such that the root crown/trunk flare is exposed above the soil surface to ensure proper oxygenation of the rooting zone.
 - All installed woody plants shall be watered (deep soaking) following installation.
 - Woody plant installations shall occur in the Spring (i.e. April or May) or fall (i.e. mid-September to early October) depending on seasonal conditions.
 - The terrestrial habitat areas are to be planted so that seasonal maintenance is minimized once plants have been established and shall be left in a natural manner to fill in and naturalize through succession.
 - Natural succession processes shall be encouraged in keeping with restoration objectives. During the first year, planted areas shall be watered and monitored until established. During the second year, the planted areas shall be inspected twice each year, once in the spring after leaf break and once in the fall prior to leaf drop, to ensure any planted vegetation that is in poor condition is fertilized, watered and monitored to improve health and vigour. Within the first three years of installation, any planted vegetation that has failed to establish shall be replaced in the subsequent spring or fall.
 - Permanent Exclusion Archaeological Sites**

The areas identified as Permanent Exclusion Archaeological Sites and associated protection buffers shall not be extracted and no alteration or disturbance shall occur in these areas (see Archaeology notes on Page 3). Once agricultural activities in these areas cease to occur, the area will be seeded with the General Rehabilitation Seed Mix and left to naturalize. All rehabilitation activities in these areas shall be in accordance with the required long-term Archaeological protection measures.

- 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 wildlife. Rehabilitation of this site involves the creation of 48 ha of lake and 25 ha of terrestrial landform comprised of above water overburden side slopes, exposed quarry face and setback areas. A minimum of 1.5 ha of the non-aquatic rehabilitated area will be rehabilitated to forest cover through nodal tree and shrub plantings as shown conceptually on this plan. Nodal plantings should be concentrated in the north portion of the Licence area. The permanent Exclusion Archaeology sites will result in the creation of three islands located within the quarry lake. The final quarry landform will be in accordance with the drawing as shown on this page.
- Drainage**
 - Final surface drainage will follow the rehabilitated contours as shown and be directed towards the post-extraction pond.
- Final Rehabilitation**
 - No buildings or structures associated with aggregate operations will remain on site.
 - There will be no internal roads remaining on the site.
 - The water level of the proposed lake (±174m a.s.l.) and the post-extraction ground water table, are as shown on pages 1, 4 and 5 of 5 as per hydrogeological hydrological assessments.

Legal Description
Part of Lots 6 & 7, Concession 2 and Part of Road Allowance Between Lots 5 & 6, Concession 2 (Geographic Township of Wainfleet) Township of Wainfleet Region of Niagara

Legend

- Boundary of Area to be Licensed
- Existing Licensed Boundary
- Contour with Elevation
- Existing Fence
- Building/Structure
- Field Access
- Existing Vegetation
- Permanent Exclusion Archaeological Sites
- Cross Sections
- Limit of Extraction
- Additional Lands Owned by Applicant
- Proposed Contour
- Proposed Elevation
- Nodal Planting Areas
- Post Extraction Lake
- Shallow Shoreline Area
- Terrestrial Habitat Creation Areas

Site Plan Amendments

No.	Date	Description	By

PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
MHBC
200 - 540 BINGEMANS CENTRE DR., KITCHENER, ON, N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

NDMRF Approval Stamp **MHBC Stamp**

Applicant
Waterford Sand & Gravel Limited
70 Ewart Avenue
Brantford, Ontario
N3T 5M1
Tel: (519) 752-1300

Applicant's Signature
Ed Lamb
VP/GM Construction Materials

Project
Law Quarry Extension
Part of Lots 6 & 7, Concession 2
(Geographic Township of Wainfleet) Township of Wainfleet, Regional Municipality of Niagara

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

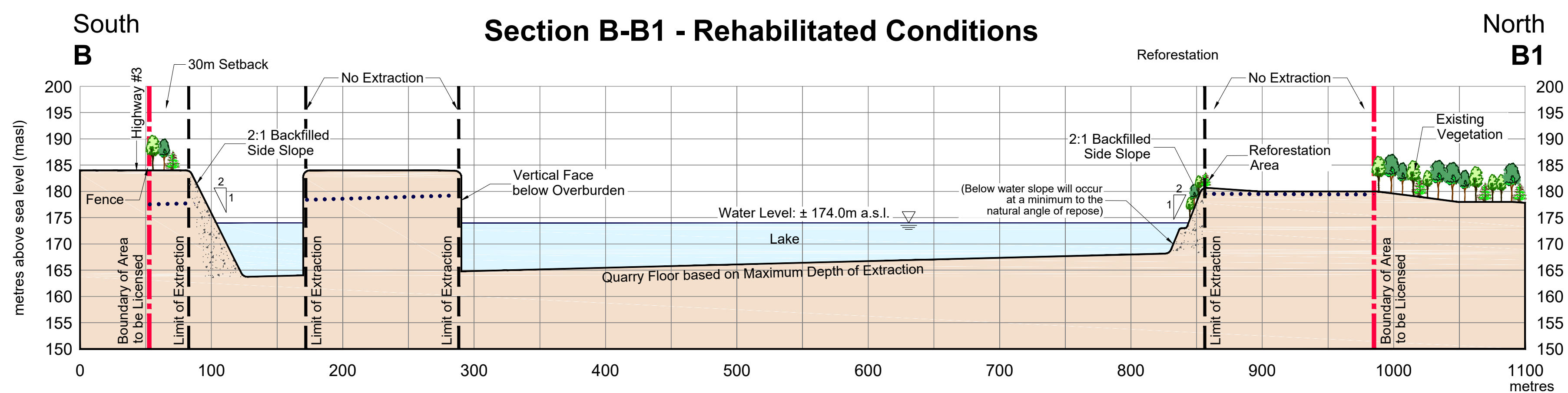
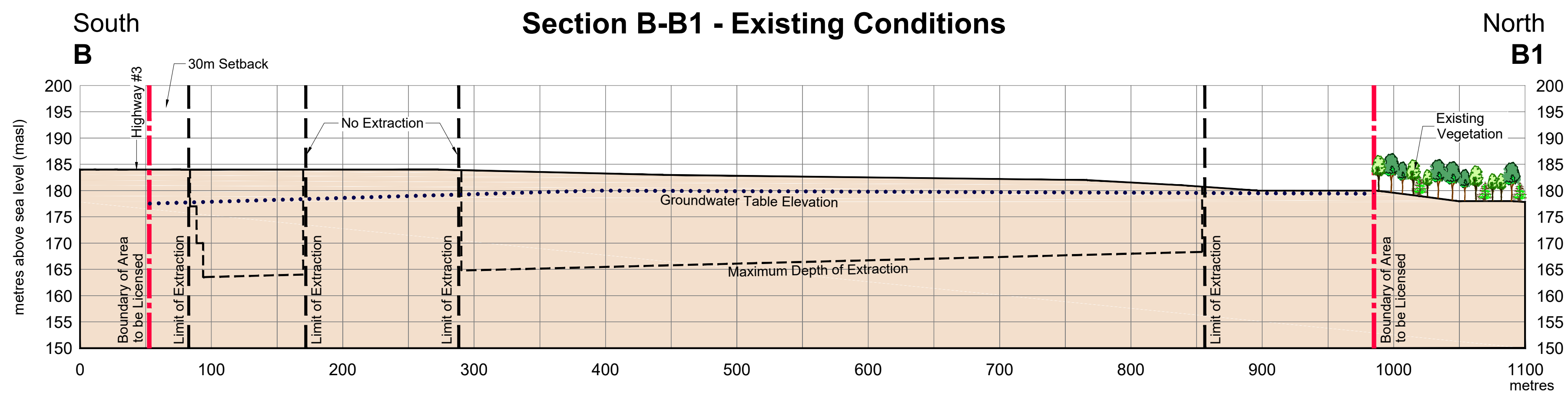
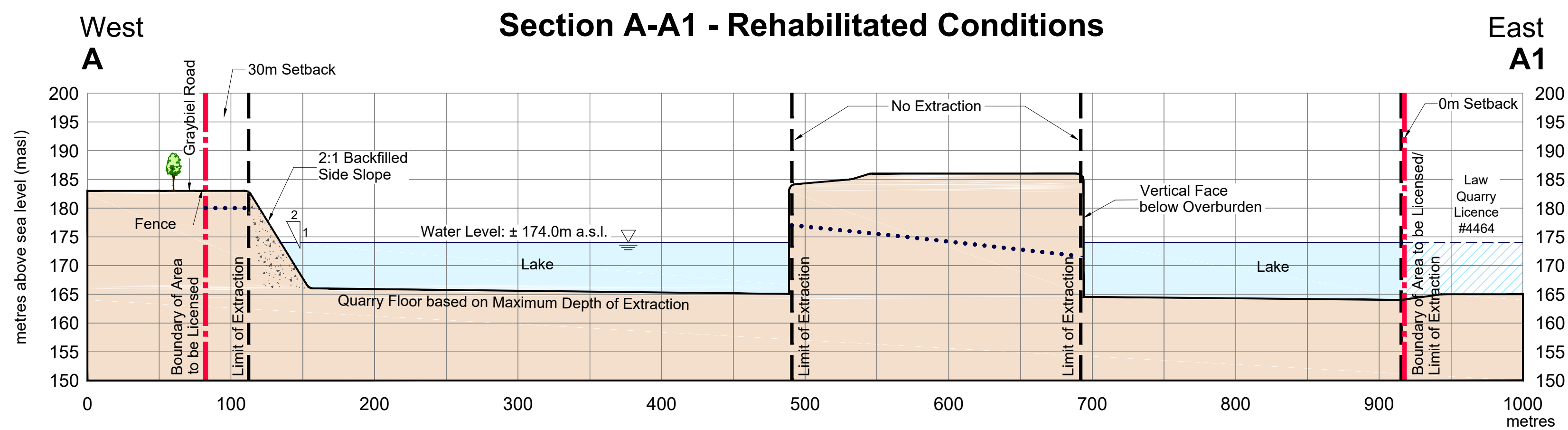
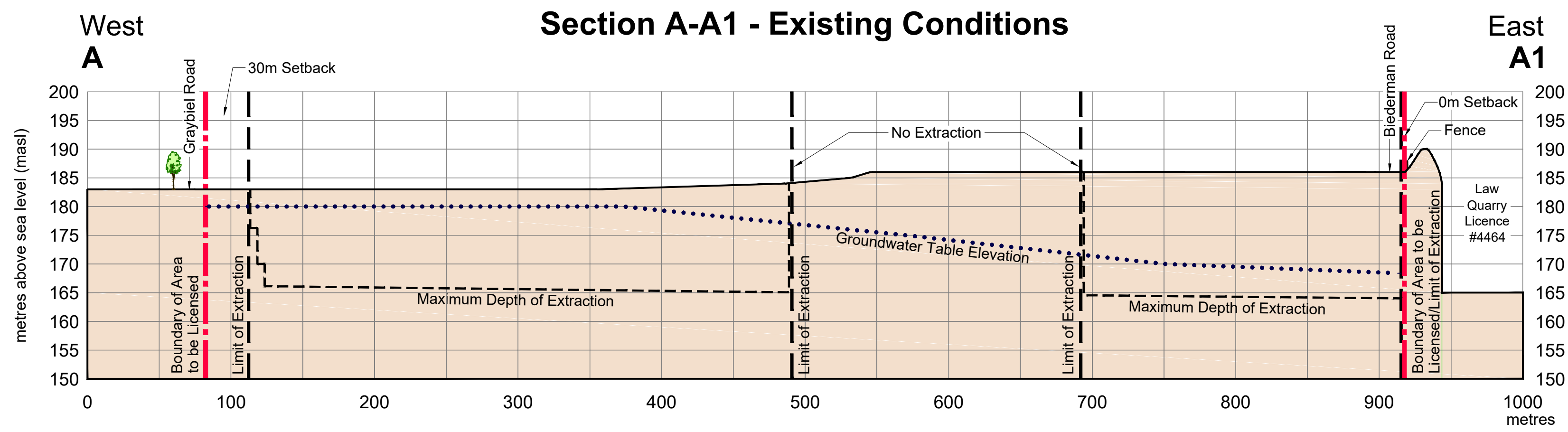
Plan Scale 1:2,500 (Arch D) **Plot Scale 1:2.5 [1mm = 2.5 units] MODEL**

SCALE
0 50 100 METRES

File Name **Drawing No.**

REHABILITATION PLAN
4 OF 5

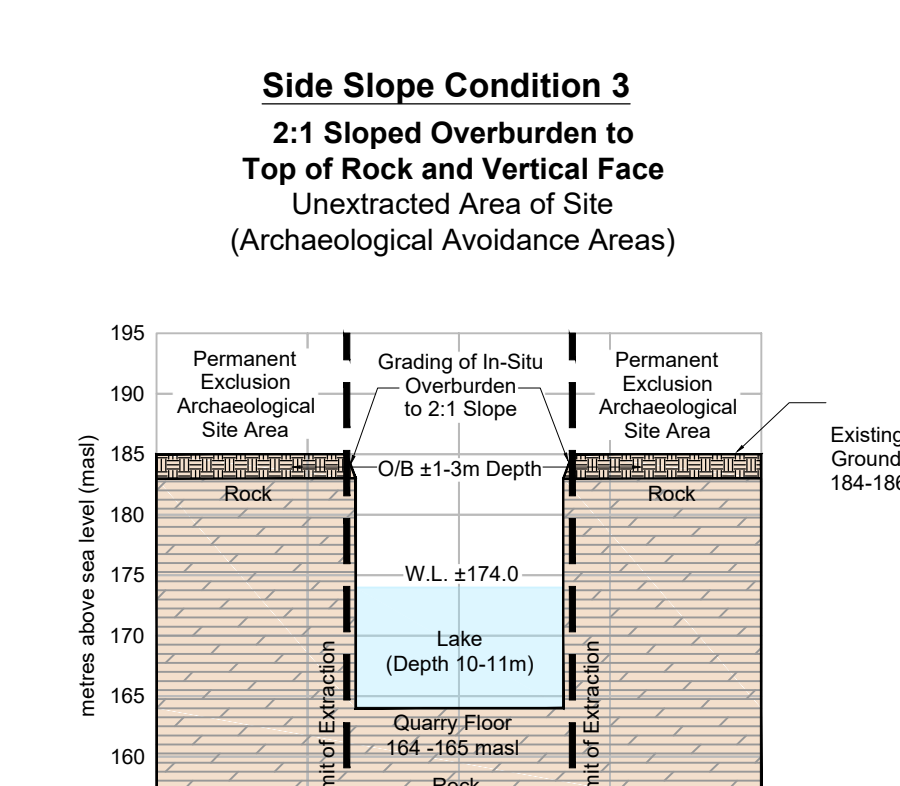
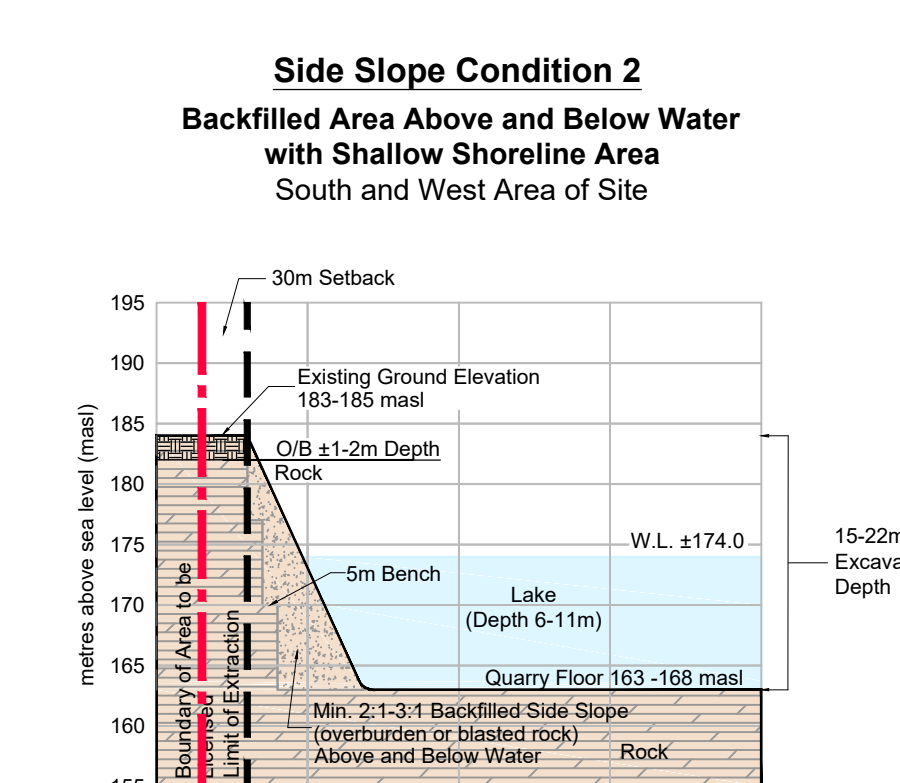
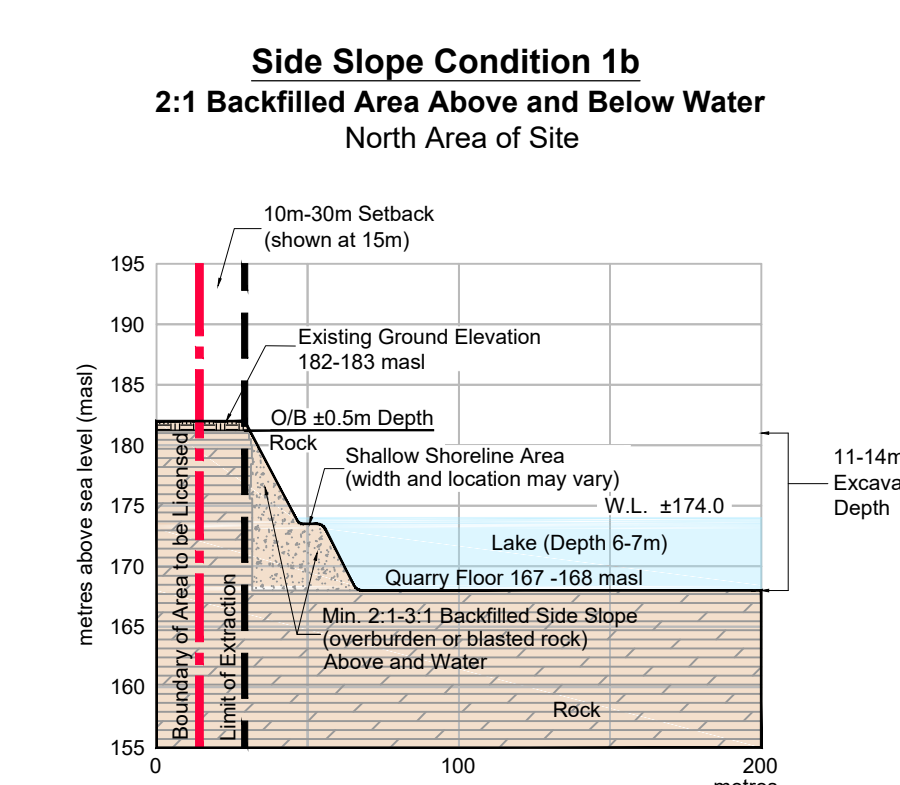
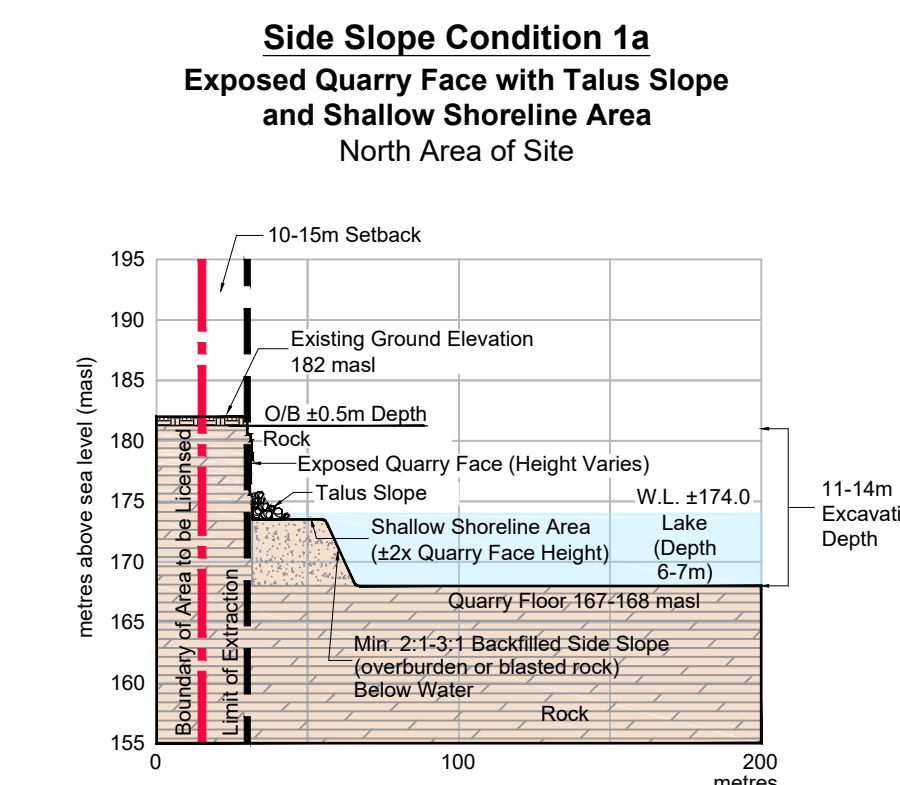
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Depiction of rehabilitation for Licence #4464 is shown for information purposes only and is not intended to regulate or override information shown on the current approved site plans on file with NDMNRF.

Rehabilitation Options

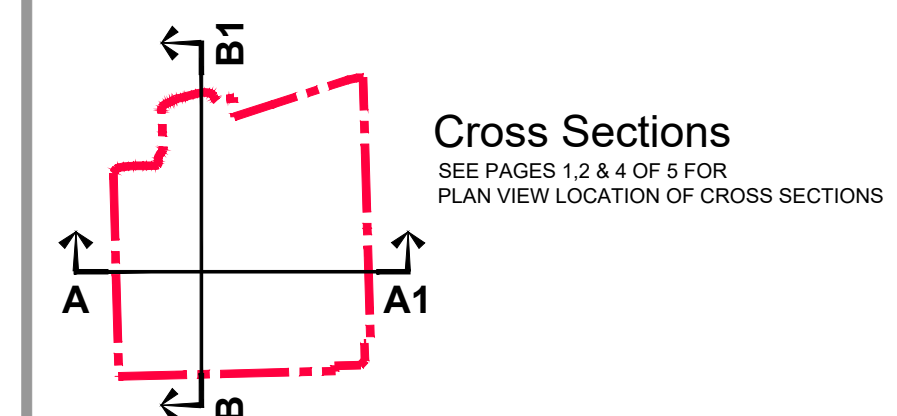
(see Rehabilitation Plan page 4 of 5)



Legal Description
Part of Lots 6 & 7, Concession 2 and Part of Road Allowance Between Lots 5 & 6, Concession 2 (geographic Township of Wainfleet) Township of Wainfleet Region of Niagara

Legend

- Boundary of Area to be Licensed
- Limit of Extraction
- Groundwater Table
- Maximum Depth of Extraction
- Existing Vegetation/Trees



- 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. ALSO, THIS SITE PLAN FOLLOWS THE AGGREGATE RESOURCES OF ONTARIO: SITE PLAN STANDARDS AUGUST 2020.
 - THE ELEVATION OF THE EXISTING GROUNDWATER TABLE VARIES FROM ±170 MASL IN THE SOUTHEAST PORTION OF THE SITE TO ±180 MASL IN THE WEST PORTION OF THE SITE. GROUNDWATER ELEVATIONS PROVIDED BY WSP (MARCH 2022).
 - AREA TO BE LICENSED 72.3 HA (178.7 AC)
AREA TO BE EXTRACTED 51.2 HA (126.5 AC)
 - ALL MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES.

Site Plan Amendments

No.	Date	Description	By

NDMNRF Approval Stamp

MHBC Stamp

Applicant

Waterford Sand & Gravel Limited
70 Ewart Avenue
Brantford, Ontario
N3T 5M1
Tel: (519) 752-1300

Applicant's Signature
Ed Lamb
VP/GM Construction Materials

Project

Law Quarry Extension

Part of Lots 6 & 7, Concession 2
Part of Road Allowance Between Lots 5 & 6, Concession 2
(Geographic Township of Wainfleet) Township of Wainfleet, Regional Municipality of Niagara

ARA Licence Reference No.	Pre-approval review:
Plan Scale 1:2,500 (Horizontal) 4x Exaggeration (Vertical)	Plot Scale 1:2.5 [1mm = 2.5 units] MODEL
Drawn By D.G.S.	File No. 0956B
Checked By C.P.	

CROSS SECTION PLAN

5 OF 5