

#### A. General 1. Area Calculations:

- Licence Area: 72.3 hectares (178.7 acres) Limit of Extraction: 51.2 hectares (126.5 acres) 2. 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. 3. No buildings or structures (including a scale and scale house) are proposed.
- 4. 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. 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.
- 6. Agricultural production may continue in areas not under extraction. 7. 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.
- 8. Location of sensitive receptors that are located within 500m of the boundary of this site are listed in Table 1 of Blasting Impact Assessment. 9. The Licensed Boundary and Limit of Extraction shall be surveyed and staked prior to any site
- disturbance.

## B. Hours of Operation/Blasting Hours

1. Hours of Operation are as described in the notes under Section M 'Noise'. 2. 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

- 1. The existing field accesses may be utilized for monitoring, setback maintenance, agricultural access and rehabilitation activities. 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 Highway #3 field accesses shall no longer be used after the Phase 4 herm is installed
- 2. 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.
- 3. Portions of the north, 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.
- 4. 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
- 5. 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.
- 6. All required post and wire fencing and erosion and sediment control fencing, shall be maintained for the life of the extraction operations.

### D. Drainage

1. 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

- 1. 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]. 2. Timber resources (if any) will be salvaged for use as saw logs, fence posts and fuel wood where
- appropriate. Non-merchantable 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
- 3. Topsoil and overburden shall be stripped and stored separately in accordance with the Sequence of Operations diagram.
- 4. 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').
- 5. 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 (see Section N 'Variations from Control and Operation Standards'). Adequate vegetation shall be established and maintained on all berms and stockpiles of topsoil and
- overburden to control erosion.

## F. Berms and Screening

- 1. 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. 2. 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. 3. Berms shall not be located within three (3.0) metres of the licence boundary except where adjacent to existing Licence #4464 (see Section N).
- 4. 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.
- 5. Berms shall be maintained (vegetated to prevent erosion) throughout the operational life of the quarry. 6. Trees will be planted along the south boundary of the site (Highway #3) where berms are not required and where outside of the 20m avoidance zone of archaeological site AfGt-294. The trees will be planted in 2 rows of ±2.0m diameter/ 2.0m high (at planting) coniferous trees (White Spruce, White Pine, Red Pine) planted 5m on centre.
- 7. 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.
- 8. Existing vegetation within the setbacks shall be maintained except where noise attenuation berms are required.
- 9. 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

1. 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 footprint (Licence #4464 and #607541) where water is then discharged, via existing drainage features, into the Eagle Marsh Drain. The location of the internal drainage network to the sump will vary based on the progression of extraction activities and will be subject to MECP approvals.

# H. Extraction Sequence

1. 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.

#### 2. Extraction and Progressive Rehabilitation shall occur in five (5) Phases as shown on page 2 of 5. 3. Rehabilitation will be progressive and proceed as limits of extraction (area and depth) are reached as outlined for each of the Phases below.

- 4. Phase 1a
- a. Prior to disturbance, ensure all requirements under Note M4 'Natural Environment' and Note M5 'Archaeology' have been completed as required;
- b. Prepare Phase 1a for extraction and ensure all the requirements in Sections 'C' through 'F' on this page are met for site preparation and fencing activities;
- c. Undertake the rehabilitation requirements outlined in note F3c on page 4 of 5 to establish
- grassland vegetation in the "quarry island" areas; d. Strip Phase 1a and store/utilize material as outlined in Notes E and F;
- e. Extract Phase 1a in an in a westerly direction and to the elevations as shown on the drawing. Extraction shall occur to a depth of 166.0 masl (south portion of Phase 1a) to 167.0 masl (north portion of Phase 1a).
- f. Processing for Phase 1a shall occur in existing Licence #4464. g. Progressive rehabilitation in the northeastern portion of the above water table side slopes in Phase 1a shall be initiated once the extent of extraction has occurred in this area. The side-slopes of the "no extraction/no disturbance" area shall be to a vertical face as shown in Side Slope Condition 3 on page 5 of 5.
- h. Begin to prepare Phase 1b for extraction as outlined below.

## 5. Phase 1b

- a. Prior to disturbance, ensure all requirements under Note M4 'Natural 'Archaeology' have been completed as required; b. Ensure all the requirements in Sections 'C' through 'F' of this page are met for site preparation
- and fencing activities; c. Strip Phase 1b and store/utilize material as outlined in Notes E and F;
- a. Extract Phase 1b in a westerly direction and to the elevations as shown on the drawing. Extraction shall occur to a depth of 164.0 masl (south portion of Phase 1b) to 165.0 masl (north portion of Phase 1a).
- b. Processing for Phase 1b shall occur in existing Licence #4464 or when sufficient room is available in Phase 1b and shall be in accordance with the Noise notes in Section M. c. The sideslopes of the "no extraction/no disturbance" area shall be to a vertical face as shown in
- Side Slope Condition 3 on page 5 of 5. d. Complete progressive rehabilitation of northeastern above-water-table sideslopes in Phase 1a. 6. <u>Phase 2</u>
- a. Prior to disturbance, ensure all requirements under Note M4 'Natural Environment' and Note M5 'Archaeology' have been completed as required. b. Ensure all the requirements in Sections 'C' through 'F' of this drawing are met for site
- preparation and fencing activities. c. Strip Phase 2 and store/utilize material as outlined in Notes E and F. d. Prior to extraction, install acoustic barrier (Berm A) as outlined in Noise notes in Section M and as shown on page 2 of 5.
- e. Implement additional Phase 2 Noise requirements for the operation of the Quite Rock Drill as outlined in Noise notes in Section M and 'Berm and Noise Controls Schematic' on page 2 of 5. f. Equip any processing equipment that creates dust with dust suppressing or collection devices if it is located within 300 metres of a sensitive receptor. See 'Berm and Noise Controls Schematic'
- on page 2 of 5 for location of 300m from a sensitive receptor. g. Extract Phase 2 in an in a westerly and south-westerly direction and to the elevations as shown on the drawing. Extraction shall occur to a depth of 166.0 to 167 masl (south portion of Phase
- 2) to 168.0 masl (north portion of Phase 2). h. Progressive rehabilitation along the northern and western portion of the above water table side slopes in Phase 2 shall be initiated once the extent of extraction has occurred in this area. The
- side-slopes of the "no extraction/no disturbance" area shall be to a vertical face as shown in Side Slope Condition 3 on page 5 of 5. . Complete the progressive rehabilitation of above-water-table side-slopes in Phase 1a.
- . Begin to prepare Phase 3 for extraction as outlined below. 7. <u>Phase 3</u>
- a. Prior to disturbance, ensure all requirements under Note M4 'Natural Environment' and Note M5 'Archaeology' have been completed as required; b. Ensure all the requirements in Sections 'C' through 'F' of this drawing are met for site
- preparation and fencing activities c. Strip Phase 3 and store/utilize material as outlined in Notes E and F;
- d. Implement Noise notes as outlined in Section M and as shown on the 'Berm and Noise Controls Schematic' on page 2 of 5
- e. Equip any processing equipment that creates dust with dust suppressing or collection devices if it is located within 300 metres of a sensitive receptor. See 'Berm and Noise Control Schematic' on page 2 of 5 for location of 300m from a sensitive receptor.
- f. Extract Phase 3 in an in a south and westerly direction and to the elevations as shown on the drawing. Extraction shall occur to a depth of 165 masl (south portion of Phase 3) to 167.0 masl (north portion of Phase 3).
- g. Progressive rehabilitation along the western portion of the above water table side slopes in Phase 3 shall be initiated once the extent of extraction has occurred in this area. The side-slopes of the "no extraction/no disturbance" area shall be to a vertical face as shown in
- Side Slope Condition 3 on page 5 of 5. h. Complete the progressive rehabilitation of northern above-water-table sideslopes in Phase 2 and continue progressive rehabilitation of western above-water-table sideslopes in Phase 2.

#### i. Begin to prepare Phase 4 for extraction as outlined below. 8. Phase 4

- a. Prior to disturbance, ensure all requirements under Note M4 'Natural Environment' and Note M5 'Archaeology' have been completed as required; b. Ensure all the requirements in Sections 'C' through 'F' on this page are met for site preparation
- and fencing activities c. Strip Phase 4 and store/utilize material as outlined in Notes E and F:
- d. Prior to extraction in Phase 4, install acoustic barrier (Berm B) as outlined in Noise notes in Section M and shown on page 2 of 5. e. Implement additional Noise notes as outlined in Section M and as shown on the 'Berm and
- Noise Controls Schematic' on page 2 of 5. f. Equip any processing equipment that creates dust with dust suppressing or collection devices if
- it is located within 300 metres of a sensitive receptor. See 'Berm and Noise Controls Schematic' on page 2 of 5 for location of 300m from a sensitive receptor.
- Extract Phase 4 in an in a south and west drawing. Extraction shall occur to a depth of 164 masl (south portion of Phase 3) to 165.0 masl (north portion of Phase 3). h. Progressive rehabilitation along the western portion and southern portion of the above water
- table side slopes in Phase 4 shall be initiated once the extent of extraction has occurred in this area. The side-slopes of the "no extraction/no disturbance" area shall be to a vertical face as shown in Side Slope Condition 3 on page 5 of 5.
- i. Complete the progressive rehabilitation of western above-water-table sideslopes in Phase 2 and continue progressive rehabilitation of western above-water-table sideslopes in Phase 3. . Begin to prepare Phase 5 for extraction as outlined below.

# 9. <u>Phase 5</u>

- a. Prior to disturbance, ensure all requirements under Note M4 'Natural Environment' and Note M5 'Archaeology' have been completed as required;
- b. Ensure all the requirements in Sections 'C' through 'F' on this drawing are met for site preparation and fencing activities. c. Strip Phase 5 and store/utilize material as outlined in Notes E and F;
- d. Implement Noise notes as outlined in Section M and as shown on the 'Berm and Noise Controls Schematic' on page 2 of 5
- e. Equip any processing equipment that creates dust with dust suppressing or collection devices if it is located within 300 metres of a sensitive receptor. See 'Berm and Noise Controls Schematic' on page 2 of 5 for location of 300m from a sensitive receptor.
- f. Extract Phase 5 in an in a southerly direction and to the elevations as shown on the drawing. Extraction shall occur to a depth of 163 masl (south portion of Phase 3) to 165.0 masl (north portion of Phase 3).
- g. Initiate and complete progressive rehabilitation along the southern and eastern portions of the above water table side slopes in Phase 5 once the extent of extraction has occurred in this area. The side-slopes of the "no extraction/no disturbance" area shall be to a vertical face as shown in Side Slope Condition 3 on Page 5 of 5.
- h. Complete the progressive rehabilitation of western above-water-table sideslopes in Phase 3 and Phase 4. i. Once extraction activities are completed in Phase 5, all machinery, scrap and internal haul
- roads will be removed.
- j. Cease dewatering activities associated with the quarry and complete final rehabilitation activities as outlined on page 4 of 5.

## I. Extraction Details

- a. 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 is an extension of the existing Law Quarry to the east. b. Extraction shall be permitted in two Phases simultaneously to allow for transition between
- Phases.
- c. 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. d. Internal haul road locations will vary as extraction progresses and will be located on the quarry
- floor.

# J. Equipment and Processing

- 1. 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.
- 2. All processing equipment will be portable (crusher and screener), subject to the noise controls and be located in close proximity to the extraction face and located below grade on the quarry floor in these Phases in order to maximize acoustical 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. 3. All processing equipment is subject to applicable permitting under MOE Environmental Compliance
- Approvals.

Environment' and Note M5	

- K. Fuel Storage 1. No fuel or associated products will be stored on site. Mobile fuelling will occur in accordance with the Gasoline Handling Act, as amended, the Gasoline Handling Code and regulations, as amended, and
- L. Scrap and Recycling

Liquid Fuels Handling Code.

- 1. Scrap may only be stored on site on a temporary basis and shall be removed from the site on an ongoing basis. A scrap storage area shall not be located within 30 metres of a body of water or of the boundary of the site. Only scrap generated directly as a result of the aggregate operation may be stored on the site. "scrap" includes refuse, debris, scrap metal, lumber, and discarded machinery, equipment and motor vehicles [O. Reg. 466/20, s. 2 (1)] 2. No aggregate recycling activities will occur.
- M. Report Recommendations
- 1. Blasting: "Blast Impact Analysis, Waterford Sand & Gravel Limited Law Quarry Extension", March 2023 (Source: Explotech Engineering Ltd.) a. 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. b. 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. c. 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. d. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation will be away from structures as much as possible. e. 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. f. Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as
- required to ensure compliance with industry standards. g. Detailed blast records shall be maintained in accordance with current industry best practices.
- h. Licensee shall take all reasonable measures to prevent fly rock from leaving the site during blasting.
- 2. Noise: "Law Quarry Extension Noise Impact Study" July 6, 2023 (Source: Aercoustics Engineering Ltd.) General:
- a. The proposed hours of extraction, processing, and shipping operations shall be limited to the daytime hours only (07:00 -19:00) from Monday through Sunday b. The extraction, processing, and shipping equipment operating in the quarry is limited to:
- One (1) Quiet Rock Drill -Highway trucks
- -Two (2) Extraction Loaders -Off-Road trucks
- -Two (2) Shipment Loaders. -One (1) Processing Plant
- c. The aggregate quarry equipment shall satisfy the noise emission levels listed in Table A: Table A: Reference Sound Pressure Levels of Aggregate Quarry Equipment Equipment

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

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

e. 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. Prior to any modification, the Licensee will confirm with MNRF whether a site plan amendment is required to permit the proposed changes.

f. The Licensee will retain ownership or control of and will vacate houses within additional lands owned or controlled by applicant for the duration of the extraction operation. If the houses are occupied or the properties sold the licensee shall notify MNRF immediately and provide mitigation necessary to ensure provincial noise, air, and ground vibration and dust limits are satisfied.

. 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. h. 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.

i. 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 A) 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 B) in the Operation Plan. This barrier shall remain in place for the lifetime of the quarry.

## Phase 2

- k. 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 R14 and R15. . When the Quiet Rock Drill is operating at-grade or at the first bench elevation within 60 m of west
- Phase 2 extraction limit, the Quiet Rock Drill shall not operate simultaneously with extraction or processing operations.

- m. 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.
- n. 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 R15 shall be broken by either:
- i. An acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant; or ii. Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant. o. Extraction Operations within 100 m of the west extraction limit of Phase 3 shall be limited to one extraction loader.
- p. 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.
- q. 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.

- : 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.
- s. 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 R15 shall be
- broken by either: i. An acoustic barrier with a minimum height of 12 m within 30 m of the Processing plant; or
- ii. Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant . During extraction operations in Phase 4, the Extraction Loaders shall operate behind the working face such that line of sight from the extraction loaders to Receptors R11 to R14 is broken. If the line of sight
- between extraction loaders and Receptors R11 to R14 is not broken by the working face, the extraction operations shall be limited to a single Extraction Loader. u. When the Quiet Rock Drill is operating at-grade within 150 m of R13, the Quiet Rock Drill may not be
- operated simultaneously with any processing or extraction activities.
- Phase 5 v. 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:
- i. An acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant; or ii. 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.) a. The proposed long-term monitoring program outlined in Table 1 (on this page) 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;
- b. A well interference mitigation plan; and c. A Spills Contingency Program in compliance with the prescribed conditions for a Class A licence under
- the ARA [O.Reg 244/ 97 Section 0.12 (3) 2]. Key findings of the Maximum Predicted Water Table Report: d. The proposed quarry extension will be developed below the natural groundwater table up to a maximum
- of the Bertie formation, Falkirk member dolostone. e. 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 MW9, in the western portion of the Site adjacent to Graybiel Road. The maximum

#### 4. Natural Environment: "Natural Environment Report, Level 1 & 2 Assessment, Law Crushed Stone Quarry" June 2023 (Source: RiverStone Environmental Solutions Inc.) A. Provincially Significant Wetlands

- i. Proposed extraction activities shall be setback a minimum of 30 m from the boundary of the PSW. ii. The 30m PSW setback area shall be undisturbed and remain as natural self-sustaining vegetation. iii. 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. iv. 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. v. Once installed, sediment fencing should be routinely monitored and maintained. vi. 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. vii. 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 MNRF or MECP.
- B. Habitat for Endangered and Threatened Species i. Prior to any development or site alteration occurring within the identified Whip-poor-will Category 2 habitat and within 50m of the outer limit of the identified spoon leaved moss colonies, the Licensee shall consult with the MECP and obtain an authorization under the Endangered Species
- Act. if required ii. On an annual basis, the Licensee will review the requirements of the Endangered Species Act and associated Regulations to ensure that the operation is in compliance with all required species at risk protection requirements. This review will be documented in the Annual Compliance Assessment Report. Any applicable changes required to note B.i. or other components of the operation will be noted in the Annual Compliance Assessment Report and MNRF/MECP will be notified and consulted to confirm if any site plan amendments and/or authorizations under the Endangered Species Act are required.
- iii. Sediment and erosion control fencing shall be installed along the southeastern setback area adjacent to the spoon-leaved moss colony, as shown on Page 2. These measures shall be in place prior to the onset of site preparation. The sediment and erosion control fencing shall be maintained in accordance with Note 4A iv and v. C. Significant Woodlands

5. Archaeology:

- Significant Woodland. The 30m Significant Woodland setback is the same as the 30m PSW setback. ii. The recommendations to protect the PSW (Notes 4A) must be implemented in full as they will also serve to protect the significant woodland. D. Significant Wildlife Habitat
- i. Proposed extraction activities shall be setback a minimum of 30m of the Onondaga Escarpment Brow Vegetation within the 30m setback is to remain as natural self-sustaining vegetation. The recommendations protecting significant woodland (Note 4C) 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.
- ii. The recommendations offered herein to protect Migratory Birds (Note 4E) must be implemented in full as they will also serve to protect Eastern Wood-pewee and Wood Thrush. E. Other Natural Features and Functions

d. General Archeological Site Protection notes:

shall remain in place until such time that:

including, but not limited to, the Crown's Duty to Consult.

Archaeological Sites AfGt-266, AfGt-283, AfGt-278.

e. Archaeological Site Buffer and Fencing requirements:

f. License Surrender and Archaeological Site Protection:

ownership to a public body etc.)

shall be maintained and repaired or replaced as needed.

Ontario Heritage Act; and,

drawing.

Delivery Registrar.

Reports.

depth of approximately 20m below ground surface (approximately 165 masl), corresponding to the base

groundwater elevation at MW9 observed during the baseline monitoring period is about 183.0 masl.

i. Proposed extraction activities shall be setback a minimum of 30m from the boundary of the

i. 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 during 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.

a. No extraction, alterations or soil disturbance may be carried out within the limits of the following archaeological sites: AfGt-255, AfGt-266, AfGt-272, AfGt-276, AfGt-277, AfGt-19, AfGt-270, AfGt-278, AfGt-282, AfGt-283, AfGt-323 and AfGt-324 or the associated 20 metre protection buffers until: b. 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 (MHSTCI) and c. Approval has been obtained from the Ministry of Northern Development Mines Natural Resources and Forestry (MNRF) following review of MHSTCI clearances and additional further considerations and consultation considered necessary by MNRF including, but not limited to, the Crown's Duty to Consult. Additional requirements related 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.)

i. There shall be no alteration, excavation, disturbance, interference with, destruction, removal or modification of the land or the soil situated thereon and therein by any person other than by prior agreement with the Ministry of Citizenship and Multiculturalism (MCM) for the following archaeological sites, or their associated 70 metre buffers, that are identified as having further Cultural Heritage Value or Interest, including: AfGt-19, AfGt-22, AfGt-23, AfGt-239, AfGt-241, AfGt-242, AfGt-245, AfGt-248, AfGt-255, AfGt-256, , AfGt-259, AfGt-261, AfGt-263, AfGt-264, AfGt-266, AfGt-270, AfGt-272, AfGt-274, AfGt-276, AfGt-277, AfGt-278, AfGt-282, AfGt-283, AfGt-284, AfGt-289, AfGt-290, AfGt-293, AfGt-294, AfGt-317, AfGt-321, AfGt-322, AfGt-323, AfGt-324, AfGt-326, AfGt-327, and AfGt-328. This restriction

ii. A licensed consultant archaeologist has recommended in a report that the archaeological sites have no further cultural heritage value or interest, and MCM has stated its satisfaction with the report and entered it into the Ontario Public Register of Archaeological Reports according to section 48(3) of the

iii. Approval has first been obtained from the Ministry of Natural Resources and Forestry (MNRF) following review by MCM and the entry of the report into the Ontario Public Register of Archaeological Reports and additional further considerations and consultation considered necessary by MNRF

iv. Should the completed Archaeological Assessments for the Archaeological Sites identified in note 5a result in a change to the Quarry Operations Plan or Rehabilitation Plan, than an Aggregate Resources Act Site Plan Amendment shall be required to update the Site Plan. An ARA Site Plan Amendment shall be required for any changes to the limit of extraction as shown on the Site Plan

iv. Any additional mitigation measures required as a result of the completion of additional Archaeological Assessments for the Archaeological Sites identified in Note 1. a) shall be implemented. v. No ground disturbance related to the installation of acoustical berms shall be completed until the required Archaeological Assessments are completed and Ministry Clearance is issued for

vi. During any further archaeological assessments within the Licensed area, meaningful engagement with Indigenous communities shall be conducted as required by the archaeology Standards and

Guidelines in place at the time and any other Provincial Duty to Consult requirements. vii. Notwithstanding the completion of the Archaeological Assessments for the Archaeological Sites identified in Note 5a, should deeply buried archaeology remains be found during the course of ground disturbance activities, the MCM shall be notified. In the event that human remains are encountered during ground disturbance or any activities associated with the quarry, the licensee shall immediately contact both the MCM and the Registrar, Burials Unit, of the Ministry of Public and Business Service

i. Until such a time that further Archaeological Assessments are completed for the Archaeological sites identified as having further Cultural Heritage Value and Interest (see Note 5a), a 70m buffer will be established around these sites and no ground disturbance activities shall be permitted within this 70m buffer area. The 70m buffer area shall be fenced with post and wire fencing. The post and wire fencing

ii. As the required Archaeological Assessments are completed for the Archaeological Sites determined to have cultural heritage value or interest in Note 5a, the 70m buffer and post and wire fencing shown in Page 2, Schematic B may be reduced or removed for a given archaeological site subject to recommendations as found in a report entered into the Ontario Public Register of Archaeological

i. Prior to surrendering the Licence, and to the satisfaction of MCM and MNRF, the Licensee shall ensure that the appropriate protection measures are put place for any remaining Archaeological Sites that have further Cultural Heritage Value or interest (e.g. restrictive covenant, zoning, transfer of

Drawing No.

# Report Recommendations (cont'd)

6. Dust: "Law Quarry Extension, Port Colborne Ontario, Air Quality Assessment " February 3, 2022 (Source: RWDI The Quarry must operate in accordance with the operating standards pertaining to dust outlined in section 0.12 (2) Ontario Regulation 244/97, which include:

a. The licensee or permittee shall apply water or another provincially approved dust suppressant to internal haul roads and processing areas, as necessary to mitigate dust, if the pit or quarry is located within 1,000 metres of a sensitive receptor. b. The licensee or permittee shall equip any processing equipment that creates dust with dust suppressing or collection devices if it is located within 300 metres of a sensitive receptor.

c. The licensee or permittee shall obtain an environmental compliance approval under the Environmental Protection Act where required to carry out operations at the pit or quarry. The site will operate in accordance with a Best Management Practices Plan for fugitive dust (BMPP), which may be amended from time to time, considering actual impacts and operational considerations. The recommendations in the BMPP are based on the maximum daily production rates. At lower production rates, the control measures specified in the BMPP can be reduced accordingly, provided dust remains mitigated on site.

Agricultural Impact Assessment: "Scoped Agricultural Impact Assessment, Waterford Sand and Gravel Law Quarry Crushed Stone Extension" May 2022 (Source: MHBC Planning) a. Extraction shall occur in phases to minimize the amount of disturbed area. To the extent feasible, later phases of the

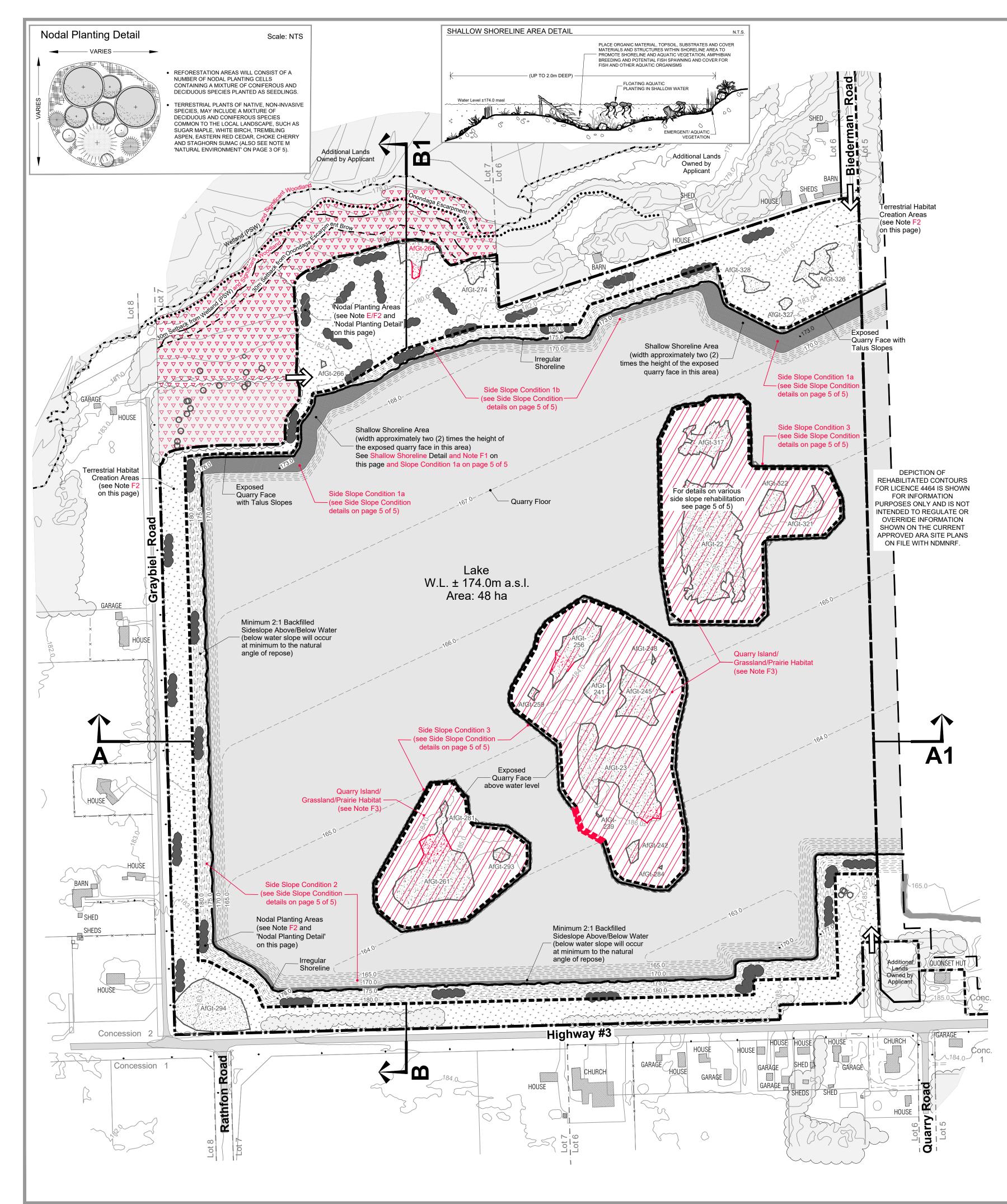
operation that are not currently in extraction should remain in agricultural production for as long as realistically possible. b. All of the recommended mitigation measures from the technical reports (noise, dust, blasting etc.) shall be included on the Site Plan and implemented by the quarry operator/Licensee to prevent impacts to adjacent and surrounding agricultural

c. If during extraction, the material below the water table is found to be of insufficient quality or quantity to warrant extraction, then the operator should consider revising the rehabilitation plan to implement agricultural rehabilitation of the property, where feasible

	-		Program	n (see note M3a) Analysis / Measurement	]				
Groundw Groundw Level	water Monitoring vater Shallow Bedrock GLL-1, GLL-3, GLI		Semi- Annually	Water level measurement and logger download. Check logger condition.	Surface W Surface Wa Sampling	ter Monitoring Quarry Sump Discharge (1): SW2	Quarterly Surface Water List Field measurements: pH, conductivity,		
Monitorii	Falkirk Member (5 MW1-III, MW4-II, MW9-III, MW10-III Oatka / Salina Co MW1-II, MW4-II, M MW10-II, MW11-I, Deep Salina (3): MW1-I, MW5-I, M Quarry Sump (1): Sump Residential Wells	<ul> <li>a):</li> <li>GLL-5, GLL-8, GLL-8, GLL-11-1, MW12-11</li> <li>GLL-11-1, MW12-11</li> <li>MK5-11, MW8-11, MW8-11, MW9-11, MW9-1</li></ul>				Eagle Marsh Drain (2): SW1, SW3	Test Interact Interact, Spr. Joc. Actionsy, temperature, Jascived oxygen General Parameters: TSS, turbidity, sulphit un-dissociated hydrogen sulphide (calculate Major Ions: alkalinity, chloride, sulphate, calcium, magnesium, sodium, potassium Nutrients/Organic Indicators: nitrate, nitrit TKN, ammonia, un-ionized ammonia (calculated), TOC, total phosphonia Total Metals: aluminum, arsenic, banum, boron, total chronium, cobalt, copper, Iron, lead, manganese, molybdenum, nickel, strontum, urainum, xanadium, zinc		
Well	20246 Youngs Roa	ad, 722 Highway 3	Semi- Annually	Visual inspection for well integrity.			Organics: Total Oil & Grease		
N. V	ariations fr	om Contro	ol and (	Operation Standard	ds				
	O.Reg 244/97 Section 0.13			Variation		Rat	ionale		
1	(1)10.i			ack along common bour (Licence #4464).	ndary		ed along the common boundary transition between licences.		
2	(1)10.i		vation setback along a portion of northern			Adjacent lands are own	ed by Waterford.		
3	(1)13.i	licence bour Stockpiling of screening pl	ndary (ne of aggreg lant may	Is may be stored within ext to adjacent Licence a gate, topsoil, and opera occur within 30m of col ng Licence #4464.	#4464). tion of	Adjacent property to the owned by Waterford.	e east is a licensed quarry		
4	(1)16	-	be locate	ed within 3m of the bour	ndary		e east is a licensed quarry		
5	(1)17	Topsoil and	/or overb	urden materials may be adjacent Licence #446		owned by Waterford. During initial phases of quarry operation, stockpiling in adjacent property to the east may occur (licensed			
6	(1)18			ourden materials may be ljacent Licence #4464.	e used		ford). tion on both licences may be operty to the east is a licensed		
				pes may vary from a slo ntal metres for every ve		quarry owned by Waterford.			
7	(1)19.i	metre (2:1). natural angle	These w e of repo	vill slope at minimum to ose.	the				
8	(3)(a)	northern bou wildlife habi Fencing alor	undary th tat/wood ng the ea	ast boundary adjacent to	ant	visible from one to the of Adjacent property to the	gh marker posts that are		
	Licence #4464 is not req			t required.	quired.		owned by Waterford. 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.		
Site	Plan Amen	dments							
MNF	200 RF Approva		ANS CEN			URBA & LA ARC	ANNING ANDESIGN ANDSCAPE HITECTURE 76.0121   WWW.MHBCPLAN.COM		
	Vate	rford		Waterfor 70 Ewart Avenu Brantford, Onta N3T 5M1 Tel: (519) 752-1	ie nrio	Ed Lamb	rel Limited		
Proje		Parto	of Roa	Part of Lots 6 8 d Allowance Betv	k 7, Co ween L	ots 5 & 6, Conces			
ARA	Licence Refe	erence No.			Pre-ap	proval review:			
					<u> </u>	Revs. as per MNRF comments - June 2023			
						vs. as per MCM comments - April 2023			
			For Su Plot Sc						
Plan Scale: NTS (Arch D)			1-101.30	1:2.5 [1mm	= 2.5 units] MODEL				
					D.	Det	Ella N.		
					Drawn Check	· D.0.0.	File No. <b>0956B</b>		

3 OF 5

K:\0956C-WATERFORD SAND AND GRAVEL LIMITED-LAW QUARRY EXTENSION\A\NOTESPLAN 30F5 JUNE2023.DWG



#### NOTES A. General

1. Area Calculations: Licence Area: 72.3 hectares (178.7 acres)

## B. Final Rehabilitated Landform and Land Use

1. The proposed rehabilitation includes an opportunity to enhance the biological diversity of the local landscape by providing features that will attract migratory waterfowl and local wildlife through the creation of high value terrestrial and aquatic habitat features. Rehabilitation of this site involves the creation of 48 ha of lake and 25 ha of terrestrial landform comprised of above water side slopes, exposed quarry face with cliff and talus slopes, and undisturbed 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 Licensed area adjacent to off-site natural heritage features. The protection of 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.

Limit of Extraction: 51.2 hectares (126.5 acres)

#### C. Phasing

- 1. The quarry will be rehabilitated on a progressive basis, corresponding to the operational progression of the quarry excavation, to form a guarry lake at final rehabilitation. This will be a continuation of the future guarry lake at the adjacent site (Licence #4464). 2. As the quarry 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 -
- Extraction Sequence on page 3 of 5 for details) 3. The excavation perimeter will be side sloped (from original ground to floor) along portions of the north, the entire west and the entire south side slope areas. Side-sloping will occur as the limits of the quarry excavation are reached. Some areas along the north portion of the extraction areas and the No Extraction or Disturbance Areas located in the central area of the quarry (e.g. quarry islands) will include vertical faces and will not include any side-sloping. See Rehabilitation Plan drawing and Details 1-3, on page 5 of 5. See also Note D and F on this page.

#### D. Slopes and Grading

- 1. Topsoil, overburden and rock will be used in the progressive rehabilitation of the side slope areas. Overburden, rock rubble, and/or excess soil will be used to backfill quarry faces to create the topography of the side slopes (i.e. 2:1 or 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.
- 2. Importation of fill/excess soil: a. Excess soil, as defined in Ontario Regulation 244/97 may be imported to this site to facilitate the following rehabilitation:
- i. Creation of 2:1 and 3:1 slopes ii. Top dressing to establish vegetation
- b. Liquid soil, as defined in Ontario Regulation 406/19 under the Environmental Protection Act, is not authorized for importation to
- c. The quality of excess soil imported to the site for final placement must be equivalent to or more stringent than the applicable excess soil guality 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. d. 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.
- e. 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.
- f. The cumulative total amount of excess soil that may be imported to this site for rehabilitation purposes is 750,000 m<sup>3</sup>.

## E. Proposed Vegetation

1. All planting and seeding will consist of native, non-invasive vegetation species as outlined in Note F and the Species Planting List. All ground covers on side slopes will be established as soon as grading is completed and will be maintained until self-sustaining vegetation is established. Vegetation and groundcovers on side-slopes shall be replaced if the vegetative cover fails to establish itself to control erosion. Additional vegetation maintenance requirements are outlined in Note F.

#### F. Habitat Creation and Rehabilitated Features 1. Shallow Shoreline/Cliff and Talus Habitat Features

- a. Shallow Shoreline and Cliff and Talus Habitat Features will be created along the northern extraction boundary. See Side-Slope Condition 1a and 1b on Page 5
- b. Shallow shoreline areas will be created along the northern boundary of the extraction area. Shallow shoreline habitats shall be created through the construction of submerged benches up to 2 m deep and shall include habitat features such as boulders, varying substrates, root wads, submerged logs, woody debris etc. Organic material and topsoil shall be added to the shoreline areas to promote shoreline vegetation, and basking logs (i.e. large woody debris) and rubble/boulders shall be placed along the shoreline to create turtle basking areas, waterfowl nesting areas and bird perching sites (see "Shallow Shoreline Detail" on this
- c. Aquatic plantings will occur when the area becomes submerged with water as part of the later stages of rehabilitation. d. Species suitable for the shoreline, aquatic, and cliff and talus plantings area listed in the Species Planting List on this page.

#### 2. Terrestrial Side-Slope and Undisturbed Setback Habitat Features

- a. Rehabilitated side-slope areas above the water table will be covered with a minimum 150mm of topsoil/organic matter and seeded with the General Rehabilitation Seed Mix that will consists of native wildflowers and grasses, as outlined in the Species Planting List. The establishment of side-slopes will occur progressively and generally follow the sequence of extraction and side slope/setback grading and seeding.
- b. As part of the establishment of progressively rehabilitated side-slopes above the water table, any undisturbed setback areas will be tilled, seeded with the General Rehabilitation Seed Mix, and planted with nodal/tree shrub plantings. c. The rehabilitated side-slope and undisturbed setback areas are to be planted so that seasonal maintenance is minimized once
- plants have been established to naturalize through succession. d. No nodal tree or shrub planting will occur within any fenced Archaeological Site Areas
- e. Any existing native trees and shrubs that have started to regrow within the rehabilitated side-slope and setback areas are to be maintained, where possible, unless they are invasive or in poor condition. For the nodal tree/shrup plantings the following installation and maintenance specifications shall be imp
- i. Nodal planting areas will occur in suitable, ecologically strategic locations and are conceptually shown on the drawing. ii. Nodal shrub/tree 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.
- iii. 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.
- iv. All installed trees shall be a minimum of 1.2m (~4 ft) in height with a sufficiently developed root ball to sustain planting. v. All tree installations shall include rodent guards that are flush with the ground surface. Rodent guards should be removed after 3-5 years to avoid future trunk damage.
- vi. 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. vii. All planted vegetation is to be native to the local area and selected for hardiness, wind and drought resistance. viii. Any woody plant rood 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. ix. All installed woody plants shall be watered (deep soaking) following installation.
- x. 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. xi. During the first year, nodal plantings 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.

## 3. Quarry Islands and Grassland/Prairie Habitat Features

- a. The 'No Extraction' and 'No Disturbance Archaeological Site' areas located in the central quarry area shall not be extracted or disturbed (see Archaeology notes on Page 3). b. Through final rehabilitation, the protection of these areas will result in the creation of three islands with vertical faces (see
- side-slope condition 3 on Page 5) that will be surrounded by a lake with a water depth of 7 to 11m.
- to establish Grassland/Prairie Habitat early in the life of the quarry operation. See Species Planting List on this page.
- d. These areas will be managed and maintained using grassland/prairie habitat best management practices to ensure that these communities are mature and self-sustaining prior to final quarry rehabilitation.
- e. All rehabilitation activities in these areas shall be in accordance with the required Archaeological protection measures outlined on Page 3.

## G. Drainage

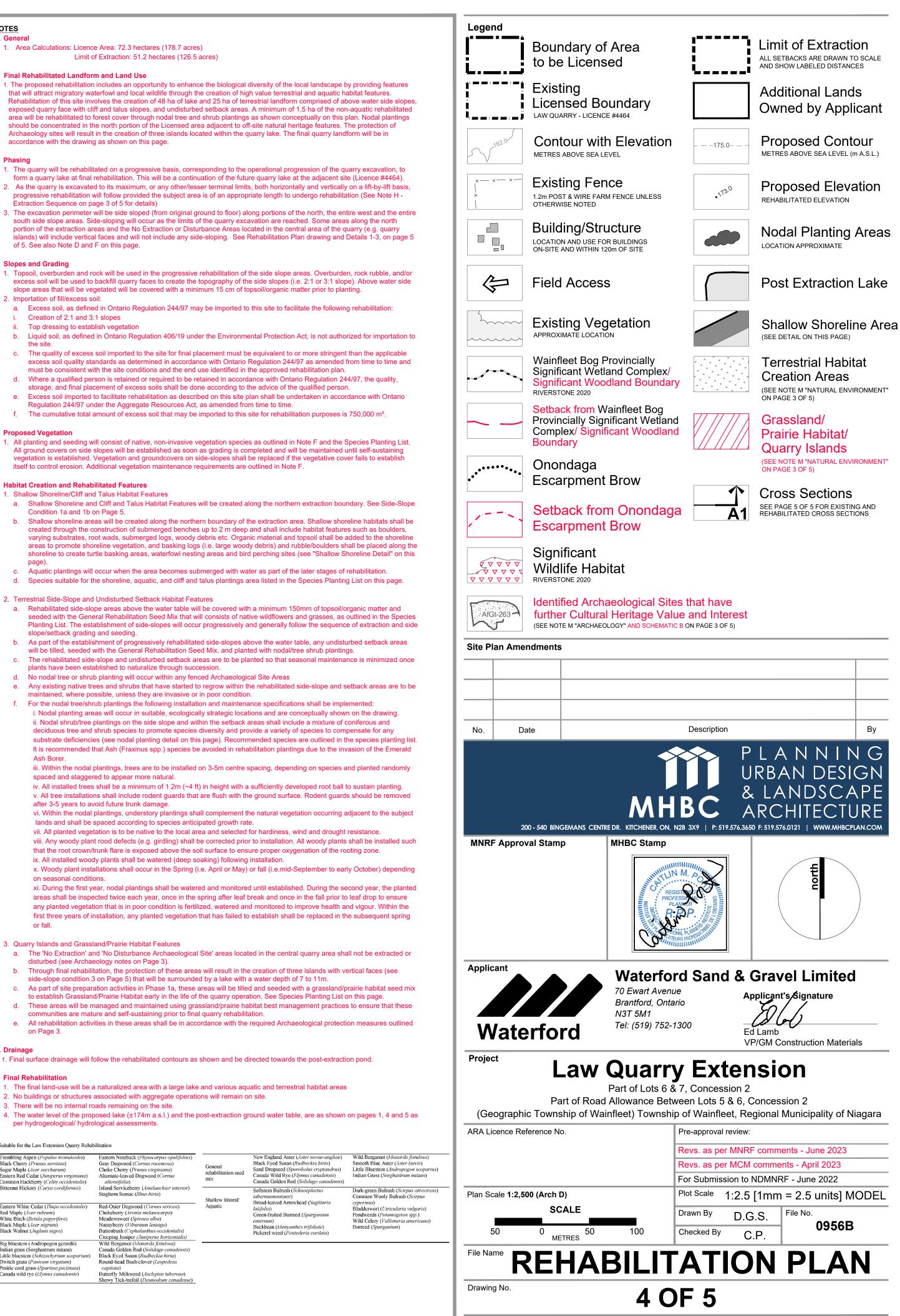
1. Final surface drainage will follow the rehabilitated contours as shown and be directed towards the post-extraction pond. F. Final Rehabilitation

# 1. The final land-use will be a naturalized area with a large lake and various aquatic and terrestrial habitat areas

- 2. No buildings or structures associated with aggregate operations will remain on site.
- 3. There will be no internal roads remaining on the site.
- per hydrogeological/ hydrological assessments.

## Planting List: Species Suitable for the Law Extension Quarry Rehabilitation

Black Cherry (Prunus serotina) Sugar Maple (Acer saccharum) Eastern Red Cedar (Juniperus virginiana) Common Hackberry (Celtis occidentalis)	Eastern Nineback (Physocarpus opulifolius) Gray Dogwood (Cornus racenosa) Choke Chery (Prunus virginiana) Alternate-leaved Dogwood (Cornus alternifolia)	General rehabilitation seed mix	New En Black E Sand Dr Canada Canada	
Bitternut Hickory (Carya cordiformis)	Inland Serviceberry (Amelanchier interior) Staghorn Sumac (Rhus hirta)	Shallow littoral/	Softster taberna Broad-l	
Eastern White Cedar ( <i>Thuja occidentalis</i> ) Red Maple ( <i>Acer rubrum</i> ) White Birch ( <i>Betula papyrifera</i> ) Black Maple ( <i>Acer nigrum</i> ) Black Walnut ( <i>Juglans nigra</i> )	Red-Osier Dogwood (Cornus sericea) Chokeberry (Aronia melanocarpa) Meadowsweet (Spiraea alba) Nannyberry (Viburnum lentago) Buttonbush (Cephalanthus occidentalis) Creeping Juniper (Juniperus horizontalis)	Aquatic	latifolia Green-f emersui Buckbe Pickere	
Big bluestem (Andropogon gerardii) Indian grass (Sorghastrum nutans) Little bluestem (Schizachyrium scoparium) Dwitch grass (Panicum virgatum) Prairie cord grass (Spartina pectinata) Canada wild rve (Ehmus canadensis)	Wild Bergamot (Monarda fistulosa) Canada Golden Rod (Solidago canadensis) Black Eyed Susan (Rudbeckia hirta) Round-head Bush-clover (Lespedeza capitata) Butterffv Milkweed (Asclenias tuberosa)			
	Eastern Red Čedar (Juniperus virginiana) Common Hackberry (Celtis occidentalis) Bitternut Hickory (Carya cordiformis) Eastern White Cedar (Thuja occidentalis) Red Maple (Acer rubrum) White Birch (Betula papyrifera) Black Maple (Acer nigrum) Black Walnut (Juglans nigra) Big bluestem (Andropogon gerardii) Indian grass (Sorghastrum nutans) Little bluestem (Schizachyrium scoparium) Dwitch grass (Panicum virgatum)	Eastern Red Cedar (Juniperus virginiana)       Alternate-leaved Dogwood (Corrus         Common Hackberry (Celtis occidentalis)       Inland Serviceberry (Amelanchier interior)         Bitternut Hickory (Carya cordiformis)       Inland Serviceberry (Amelanchier interior)         Staghorn Sumac (Rhus hirta)       Red-Osier Dogwood (Corrus sericea)         Eastern White Cedar (Thuja occidentalis)       Red-Osier Dogwood (Corrus sericea)         Ked Maple (Acer rubrum)       Meadowsweet (Spiraea alba)         Black Maple (Acer nigrum)       Nannyberry (Viburnum lentago)         Black Walnut (Juglans nigra)       Buttonbush (Cephalanthus occidentalis)         Big bluestem (Andropogon gerardii)       Wild Bergamot (Monarda fistulosa)         Indian grass (Sorghastrum nutans)       Canada Golden Rod (Solidago canadensis)         Little bluestem (Paricum virgatum)       Black Eyed Susan (Rudbeckia hirta)         Paritie cord grass (Sparina peclinala)       Round-head Bush-clover (Lespedeza	Eastern Red Cedar (Juniperus virginiana)       Alternate-leaved Dogwood (Cornus       rehabilitation seed         Common Hackberry (Celfis occidentalis)       alternifolia)       mix         Bitternut Hickory (Carya cordiformis)       Inland Serviceberry (Amelanchier interior)       mix         Staghorn Sumac (Rhus hirta)       Shallow littoral/         Eastern White Cedar (Thuja occidentalis)       Red-Osier Dogwood (Cornus sericea)       Aquatic         Red Maple (Acer rubrum)       Chokeberry (Aronia melanocarpa)       Meadowsweet (Spiraea alba)         Black Maple (Acer nigrum)       Namyberry (Viburnum lentago)       Black Walnut (Juglans nigra)         Big bluestem (Andropogon gcrardii)       Wild Bergamot (Monarda fistulosa)       Canada Golden Rod (Solidago canadensis)         Little bluestem (Schizachyrium scoparium)       Black Eyed Susan (Rudbeckia hirta)       Round-head Bush-clover (Lespedeza         Prairie cord grass (Spartina pectinata)       capitata)       Round-head Bush-clover (Lespedeza         Prairie (ord grass (Spartina pectinata)       Butterfly Milkweed (Asclepias tuberosa)       Canada wild rye (Lymus canadensis)	



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