

- A. General**
- This Site Plan is prepared under the Aggregate Resources Act for a Class A Licence for a quarry below the ground water table.
 - Areas to be licensed
103.6 ha. (±256.0 ac.)
Areas to be extracted
89.1 ha. (±220.2 ac.)
- B. References**
- Contour information was obtained from a topographic survey prepared by TEC Engineering (formerly Renshaw (Canada) Limited) using October 2016 and February 2017 aerial photography and are displayed in one metre intervals. Elevations shown are in metres above sea level (masl).
 - Topographic information was obtained from numerous sources including Ontario GeoInfo (Land Information Ontario), Google Earth Pro aerial photography captured on July 18, 2018 and field investigations for technical reports.
 - All topographic features and structures are shown to scale in Universal Transverse Mercator (UTM) with North American Datum 1983 (NAD83), Zone 17 (metre), Central Meridian 81 degrees west coordinate system.
 - Property boundaries were obtained from a Plan of Survey prepared by Matthew, Cameron, Heywood-Kerry T. Howe Surveying Ltd. dated April 5, 2012. Other property boundaries were established using Municipal Property Assessment Corporation (MPAC) parcel fabric data.
 - Zoning categories on or within 120 metres of the licence boundary are from the City of Niagara Falls Zoning By-law No. ZB-200 (Schedules A3 and A4 - Consolidation April 2015).
 - Land use information on or within 120 metres of the licence boundary has been compiled from October 2016 orthophotography, site visits and water well survey data.

- C. Groundwater**
- The maximum predicted water table is 184.9 masl and the contact aquifer potentiometric contours ranges between 176.0 and 184.9 masl (as per WSP's "Proposed Upper's Quarry - Maximum Predicted Water Table Report", dated October 2021).

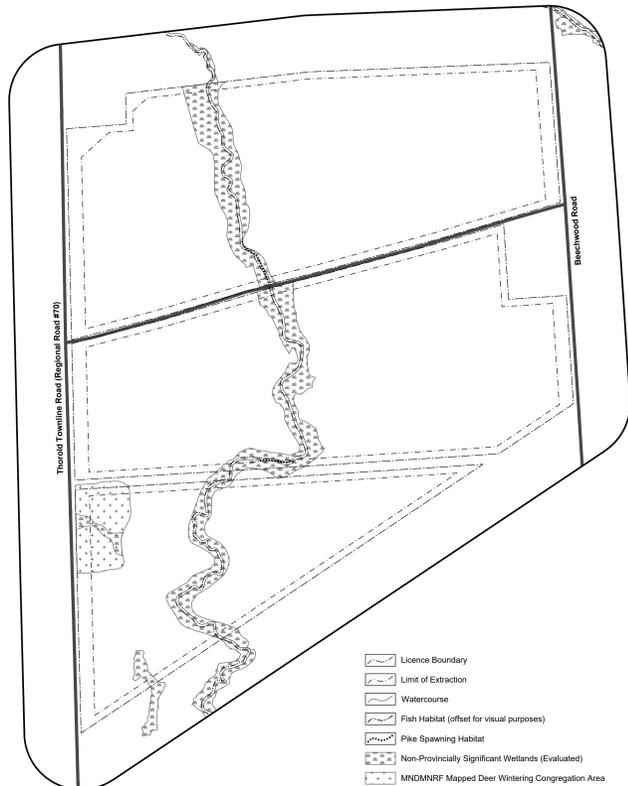
- D. Drainage**
- Existing surface water drainage on and within 120 metres of the licence boundaries are by overland flow in the direction shown by arrows on the plan view.

- E. Site Access and Fencing**
- There are two (2) existing site accesses on Thorold Townline Road, six (6) existing site accesses on Upper's Lane, and three (3) existing site accesses on Beechwood Road.
 - Post and wire fencing (unless otherwise noted) exists in the locations shown on the plan view.

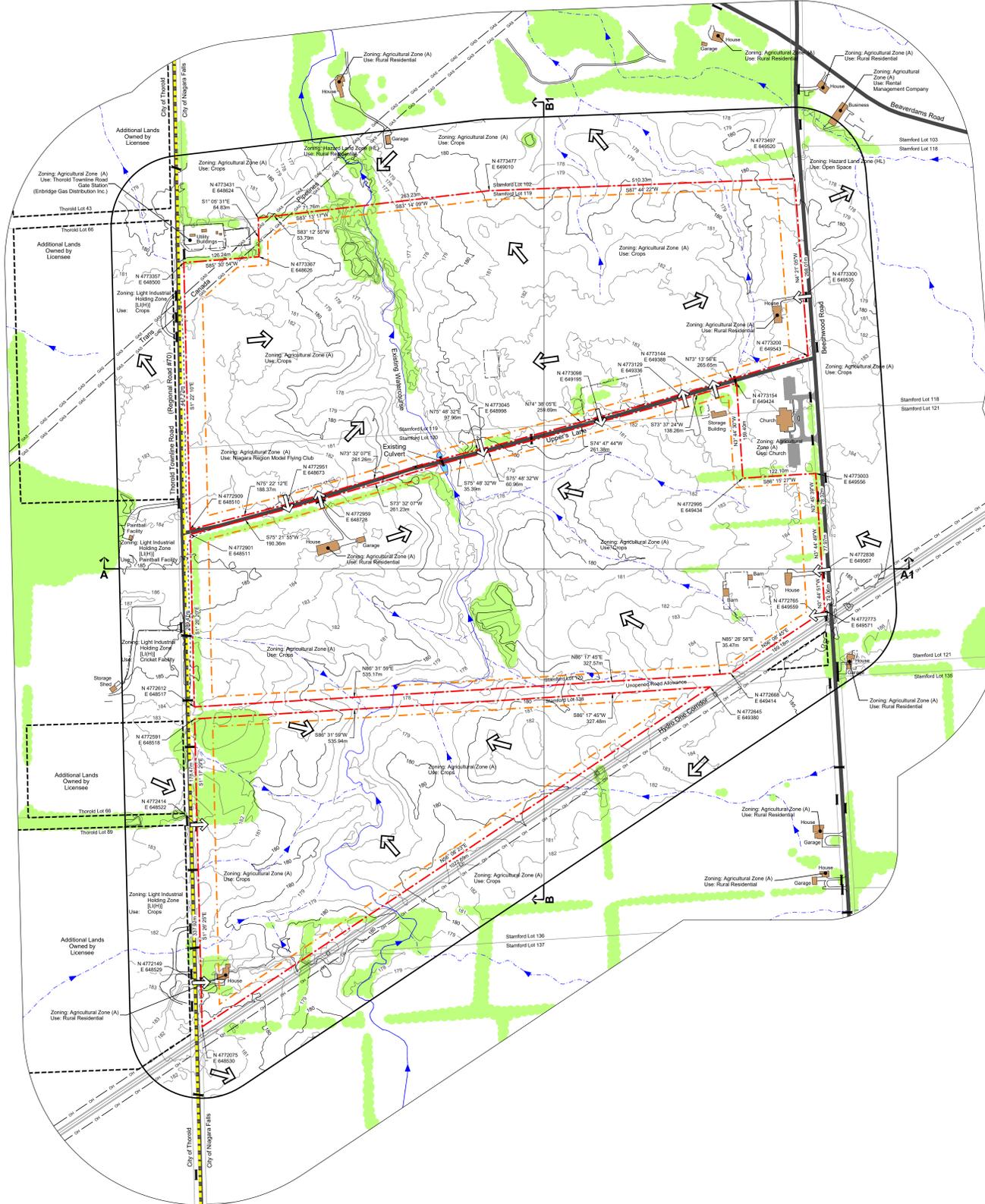
- F. Significant Features**
- All significant natural features on and within 120 metres of the licence boundary are shown on the Key Natural Heritage Features Schematic on this drawing.
 - All significant human-made features on and within 120 metres of the licence boundary are shown on the plan view.

- G. Aggregate Related Site Features**
- There are no existing aggregate operations or features within the licence boundaries such as stationary or portable equipment, stockpiles, recyclable materials, scrap, fuel storage, haul roads, berms or excavation faces.
- G. Technical Reports - References**
- Upper's Quarry: Acoustic Assessment Report, RWDI, October 2021.
 - Agricultural Impact Assessment for Upper's Quarry, Colville Consulting Inc., October 2021.
 - Upper's Quarry: Air Quality Assessment, RWDI Air Inc., October 2021.
 - Archaeological Assessments:
 - Stage 1 Archeological Resource Assessment of Walker Aggregates Proposed South Niagara Quarry, Part of Lots 102, 119, 120, 136 & 137, Archeological Services Inc., December 2008.
 - Stage 1-2 Archeological Assessment of Part 9764 Upper's Lane, Part of Lots 119 & 120, Archeological Assessments Ltd., November 3, 2005.
 - Stage 2-3 Archeological Assessment, Part of Lots 102, 119, 120, 136 & 137, Archeological Assessments Ltd., November 21, 2012.
 - Stage 1-2 Archeological Assessments, Upper's Quarry Additional Lands, Part of Lots 1188, 120, Archeological Research Associates Ltd., April 20, 2020.
 - Stage 3 Mitigation of Development Impacts, Final Excavation Report, Walker XI (AgGT-411), Upper's Quarry, Archeological Research Associates Ltd., May 28, 2021.
 - Stage 4 Mitigation of Development Impacts, Final Excavation Report, Walker XI (AgGT-178), Upper's Quarry, Archeological Research Associates Ltd., July 22, 2021.
 - Blast Impact Analysis, Upper's Quarry, Explochex, October 2021.
 - Cultural Heritage Impact Assessment Report, Proposed Upper's Quarry, MHBC, October 2021.
 - Economic Benefits Analysis, Prism, October 2021.
 - Level 2 Water Study Report, WSP, October 2021.
 - Maximum Predicted Water Table Report, WSP, October 2021.
 - Upper's Quarry, Niagara: Level 1 and Level 2 Natural Environment Technical Report and Environmental Impact Study, Stantec, October 2021.
 - Planning Justification Report and Summary Statement, MHBC, October 2021.
 - Traffic Impact Study, Upper's Quarry, TMIG, October 2021.
 - Visual Impact Assessment, Proposed Upper's Quarry, MHBC, October 2021.

Key Natural Heritage Features Schematic



- Licence Boundary
- Limit of Extraction
- Watercourse
- Fish Habitat (offset for visual purposes)
- Pike Spawning Habitat
- Non-Provincially Significant Wetlands (Evaluated)
- MNDMNR Mapped Deer Wintering Congregation Area



- Legal Description**
- Part of Lots 119, 120, 136 & 137
City of Niagara Falls (Geographic Township of Stamford)
Regional Municipality of Niagara
- Licence Boundary
 - Limit of Extraction
 - Additional Lands Owned by Licensee
 - Municipal Boundary
 - Contours with Elevation
Metres above sea level (MASL)
 - Public Road
 - Fence
1.2m post & wire fence unless otherwise noted
 - Watercourse
Direction of flow indicated by arrows
 - Surface Drainage Feature
Direction of flow indicated by arrows
 - Water Feature
 - Wooded Area
 - 120m Offset From Licence Boundary
 - Parcel Fabric
 - Trans Canada Pipeline Easement
 - Hydro One Easement
 - Existing Site Access
 - Direction of Surface Drainage
 - Existing Culvert
 - Building/Structure
 - Cross Sections

- Site Plan Acronyms**
- ARA - Aggregate Resources Act
 - MNDMNR - Ministry of Northern Development, Mines, Natural Resources and Forestry
 - MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries
 - MECP - Ministry of the Environment, Conservation and Parks
 - MGCS - Ministry of Government and Consumer Services
 - DFO - Department of Fisheries and Oceans Canada
 - ECA - Environmental Compliance Approval
 - BMPP - Best Management Practices Plan
 - PTTW - Permit to Take Water
 - MASL - Metres above sea level
 - ROW - Right of way
 - HMA - Hot mix asphalt

No.	Date	Description	By

No.	Date	Description	By
1	January 2022	Add Key Natural Heritage Features Schematic and Section F' to the site plan notes	C.P.

MHBC Stamp

MHBC Stamp

Debra Walker
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(9) of Ontario Regulation 244/97 to prepare and certify site plans.

Christopher Poole
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(1) of Ontario Regulation 244/97 to prepare and certify site plans.

PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
113 COLLIER STREET, BARRE, ON, L4M 1H2 | P: 705.728.0945 F: 705.728.2010 | WWW.MHBCPLAN.COM

walker aggregates

Walker Aggregates Inc.
2800 Thorold Townline Road
P.O. Box 100
Thorold, Ontario
L2V 3Y8

Project
Upper's Quarry

MNDMNR Licence Reference No.

Applicant's Signature

Plan Scale: 1:3000 (Arch E)

Date: October 2021

Drawn By: C.P. **File No.:** 9811V

Checked By: D.W.

File Name: Existing Features

Drawing No.: 1 of 6

File Path: N:\8849811V - Walker Upper's Quarry\Drawings\Site Plan\CAD\811V - Site Plan - Proposed Scenario.dwg

A. General

- 1. Area to be licensed 103.6 ha (±256.0 ac.)
Area to be extracted 89.1 ha (±220.2 ac.)
2. The maximum amount of aggregate to be removed from this site in any calendar year is 1,800,000 tonnes.
3. In the event that Walker obtains permission from the City of Niagara Falls to extract the road allowance(s), the licensee may apply to the MNDMNRFP to amend the licence and site plan to expand the licence boundary to include the road allowance directly adjacent to the licence boundary (i.e. Upper's Lane and/or the road allowance between Lots 120 and 136). An expansion to the licence boundary for this purpose will not require a new licence under Section 7 of the Aggregate Resources Act (ARA).

B. Hours of Operation

Table with 4 columns: Activity, Monday to Friday, Saturday, Sunday. Rows include: Proposed quarry with the following hours of operation, Blasting, Aggregate processing at mobile crusher plant, Asphalt plant operations, Internal hauling of aggregate and/or recycled material, From working face (shot rock) to mobile crusher plant, From mobile crusher plant/stockpiles to asphalt plant, Aggregate and recycled shipping to and/or from the quarry, Aggregate and hot mix asphalt shipping from quarry and receiving recycled asphalt to quarry, Maintenance.

C. Proposed Entrances/Exits and Fencing

- 1. For the Mid Extraction Area:
a. All traffic for operations will enter and exit the Mid Extraction Area from Upper's Lane using a main entrance/exit in the location generally shown on the plan view.
b. If an entrance/exit off Upper's Lane is not permitted, traffic for operations will enter and exit the Mid Extraction Area from Thorold Townline Road.
2. For the South Extraction Area:
a. Material will be transported to the Mid Extraction Area for processing via a conveyor over the unopened road allowance between Lots 120 and 136. Limited traffic required for operations will enter and exit the South Extraction Area via a crossing over the unopened road allowance between Lots 120 and 136, subject to approval from the City, in the location generally shown on the plan view.
b. If permission to cross the unopened road allowance is not granted, traffic for operations will enter and exit the South Extraction Area from Thorold Townline Road.
3. For the North Extraction Area:
a. All traffic for operations will enter and exit the North Extraction Area from Upper's Lane using a main entrance/exit in the locations generally shown on the plan view.
b. If an entrance/exit off Upper's Lane is not permitted, traffic for operations will enter and exit the North Extraction Area from Thorold Townline Road.
4. Only one operational entrance/exit will be utilized at any one time.
5. Once established, each operational entrance/exit shall be gated. All gates shall be kept closed during hours of non-operation and shall be maintained throughout the life of the licence.
6. The licence boundaries shall be fenced in the locations shown on the plan view (prior to the commencement of operations) and shall be maintained for the life of the licence with upkeep during periodic inspections (see Section N Variations from Control and Operation Standards on this drawing).

D. Drainage and Siltation Control

- 1. Silt fencing/sediment control measures will be installed within the Watercourse Realignment Transition Area prior to extraction in each extraction area and along the easterly and northerly limits of Phase 1B after the watercourse realignment is completed.

E. Site Preparation

- 1. All existing structures within the licence boundary shall be demolished or removed prior to extraction in each extraction area.
2. Timber resources (if any) will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Stumps and brush cleared will be burned (with applicable permits), used for shoreline habitat enhancement or mulched for use in progressive rehabilitation.
3. Areas of the site will be stripped of topsoil/overburden in stages in accordance with the phases. Topsoil and overburden will be stripped and stored in berms and/or stockpiles wherever feasible.
4. Topsoil and overburden shall be placed in perimeter acoustic/visual berms, pond construction, watercourse realignment or used immediately for progressive rehabilitation in this licence or existing Licence Numbers 11175 and 4437 (see Section N Variations from Control and Operation Standards on this drawing).
5. Excess topsoil and overburden not required for immediate use in berms or rehabilitation may be temporarily stockpiled on the quarry floor. Topsoil and overburden stockpiles shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary and 90 metres from a property with a residential use.
6. 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.
7. Recycled aggregate shall be removed on an on-going basis.

F. Setbacks, Berms and Screening

- 1. Setbacks are shown on the plan view. Excavation will occur within the extraction setback area along the west and northwest area of the licensed boundary to accommodate grading required for the realignment of the existing watercourse. Furthermore, areas within the setbacks will be accessed as necessary to perform general site servicing, maintenance (berming, fencing etc.) and progressive rehabilitation. See Section N Variations from Control and Operation Standards on drawing 2 of 6.
2. Locations and heights for all acoustic/visual berms are provided on the plan view. All proposed berms shall be constructed in accordance with the "Typical Acoustic Berm Detail" (on this drawing), "Typical Visual Berm Detail" (on drawing 4 of 6) and, more specifically, berms adjacent to Beechwood Road will be constructed in accordance with "Typical Berm - Adjacent to Beechwood Road Detail" (on this drawing). Where the proposed berm transects the existing watercourse along the north perimeter, a culvert shall be installed in accordance with DFO requirements. Culverts will also be installed under berms, where necessary, to maintain existing drainage to and from off-site and to the existing watercourse. All proposed berms and will be vegetated and maintained to control erosion. Temporary erosion control will be implemented as required.
3. Perimeter acoustic berms may be removed for final rehabilitation in the final Phase when they are no longer required for noise attenuation.
4. Any natural tree buffer areas in the setbacks will be maintained where feasible subject to berm requirements.

G. Site Dewatering

- 1. Surface water will be discharged from the sump areas to the existing watercourse until the watercourse is realigned to the location of Phases 1B and 2B. Once the watercourse realignment has been completed, surface water will be discharged from the sump to the realigned watercourse in Phase 1B.
2. Sump: During quarry development, a portable submersible pump will be installed in each Initial Sinking Cut Area for the purpose of dewatering to maintain a dry working area and/or aggregate washing. Water will be pumped from the sump to a pond where it is either used for aggregate washing or discharged to the existing watercourse. The sump shall be relocated (as required) within each extraction area during the operational life of the quarry.

H. Extraction Details

- 1. The extraction sequence is outlined on drawing 3 of 6.
2. The proposed maximum depth of extraction is indicated by the spot elevations shown on the plan view. Extraction shall proceed to a maximum depth of approximately 4.2 m below ground surface (ranging in elevation from 141 m in the southwest to 145 m in the northeast portions of the site), corresponding to the geologic base of the Gasport dolostone of the Lockport Group.
3. For the "Watercourse Realignment Transition Area", the maximum depth of extraction is approximately 1 metre (down an elevation of 174 m) and any extraction in the "Watercourse Realignment Transition Area" shall be completed as part of site preparation (construction of compensatory ponds). No drilling or blasting shall be permitted in the "Watercourse Realignment Transition Area".
4. Internal haul roads shall vary as extraction progresses and will be located on the quarry floor with the exception of grade crossings.
5. Blasted aggregate will be transported back to the mobile crusher plant and processing area on the quarry floor for processing and shipping.
6. An office/scale house and weigh scale will be established on site. A maintenance shop and shed(s) may be constructed on site. Portable off-storage trailers and structures associated with fuel storage may be brought onto the site for temporary periods for uses associated with quarry activity. All structures shall remain 30 metres from the licence boundary / Trans Canada Pipelines easement or 90 metres from the licence boundary if the boundary abuts land that is used for residential use or is restricted to residential use by the Zoning By-law at the time the licence is issued.
7. Aggregate stockpiles (including recyclable material) shall be located within the limits of extraction and remain a minimum of 30 metres from the licence boundaries (except where the licence boundaries abut Upper's Lane and the unopened road allowance - See Section N Variations from Control and Operation Standards on this drawing) and 90 metres from a property with a residential use.

I. Equipment and Processing

- 1. A portable processing plant (including primary, secondary and tertiary crushing and screening units) will be permitted within the North and Mid Extraction Areas including:
2. Processing shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary and 90 metres from a property with a residential use.
3. During the sinking cuts and early phases of operation, the primary crusher will be integrated into a single processing plant located near the working face. In later phases, the primary crusher will split from the single integrated plant and start to follow the working face. The processing plant, which contains the secondary and tertiary crushers, will remain close to the quarry entrance. The processing plant will be located at varying elevations, beginning at the top of rock during the sinking cut portions of operations, and moving to the first bench and then the final quarry floor as space becomes available.
4. Once processing has progressed to Phase 2A, a hot mix asphalt (HMA) batch plant facility shall be established on the quarry floor (in the location shown on the plan view) in Phase 1A. The HMA batch plant shall remain in the location shown on the plan view for the life of the quarry.
5. In Phase 4, the portable processing plant shall require additional shielding in accordance with note A.5 on drawing 4 of 6.
6. A wash plant and temporary wash ponds may be established and located to move together with the portable processing plant, subject to permit approval from MECP.
7. Equipment to be used onsite may include, but shall not be limited to:
a. Working Face - 1 silenced rock drill; 1 loader;
b. Processing - 1 portable processing plant including crushers, screeners, and stackers; 2 loaders (at stockpiles);
c. Asphalt - 1 asphalt plant; 2 loaders; 1 compressor vent; 1 dust controller blower (motor and stack); elevator motor, conveyor motor, oven motor, pug mill (door and motor);
d. Conveyor(s);
e. Generator(s) (diesel-fueled); and
f. Rock trucks, haul trucks, shipment trucks and fuel trucks.
8. If required, an Environmental Compliance Approval will be obtained for processing equipment to be used on-site.
9. Wash ponds(s) and sump(s) may be permitted in accordance with Environmental Compliance Approval or Permit to Take Water Requirements. The pond(s) and sump(s) will move throughout operations and as extraction progresses horizontally and vertically.
10. Equipment used for construction of the perimeter berms/barriers, overburden stripping, rehabilitation, the new watercourse corridor, as well as other quarry related construction projects will be utilized on site.

J. Frequency / Timing of Blasts

- 1. Prior to blasting being permitted within the 100 m setback of the TransCanada Pipeline, identified as 'TransCanada Blasting Buffer Area' on this Plan, the licensee shall address the requirements of notes D.5 on drawing 4 of 6.
2. All blast monitoring reports shall be retained by the licensee for a period of seven years after each blast and made available upon request for audit purposes. See Section D on drawing 4 of 6 for detailed blasting requirements.

K. Fuel Storage

- 1. Fuel storage tanks will be located in close proximity to the main processing plant (or in an alternative location subject to approval by the MNDMNRFP). Fuel storage tanks shall be installed and maintained in accordance with Technical Standards and Safety Act, 2000, Liquid Fuels Handling Code, 2000 and Liquid Fuels Regulation Reg. 21701.
2. All fuel tanks shall be doubled sided or placed in containment facilities large enough to hold the tanks maximum volume.
3. Fuel trucks shall be used to transfer fuel to on-site equipment in accordance with the Liquid Fuels Handling Code, 2000.
4. A Spills Contingency Plan shall be prepared and implemented prior to site preparation. The Spills Contingency Plan shall be available on site and all employees and contractors shall be informed and required to comply with this plan.

L. Spills Plan

- 1. In case of an accidental spill of petroleum products, the following contingency plan will be activated:
a. The Ministry of Environment, Conservation and Parks (MECP) (see address and phone number below) and surrounding landowners will be notified.
b. For a leakage or spill, immediate action will be taken to stop it. At the same, measures will be taken to prevent spreading. These measures may include building a berm or construction of a dike, for instance.
c. The quarry operator shall commence recovery procedures by collecting the spilled substance into containers.
d. The soil in the area affected by the spill or leak shall be removed and disposed of at a location prescribed by the MECP.

Ministry of Environment, Conservation and Parks
Niagara District Office
Garden City Tower 9th Floor Suite 15
801 St. Paul Street
St. Catharines, Ontario
L2R 7R4
Spills Action Centre: 1-800-268-6000

M. Scrap and Recycling

- 1. Scrap may be stored on-site and shall be removed on an on-going basis.
2. Scrap shall only include material generated directly as a result of the aggregate operation such as refuse, debris, scrap metal, lumber, discarded machinery, equipment and motor vehicles.
3. All fluids shall be drained from any discarded equipment, machinery or motor vehicle prior to storage and disposed of in accordance with the Environmental Protection Act.
4. Scrap shall not be stored within 30 metres of any body of water or the licence boundary and shall be kept in close proximity to the main processing plant.
5. Recycling of asphalt, concrete, porcelain and glass shall be permitted on-site.
6. Recyclable asphalt materials shall not be stockpiled within:
6.1. 30 metres of any groundwater or man-made pond; or
6.2. 2 metres of the water table or.
7. Recyclable material shall be kept in close proximity to the main processing plant.
8. Rebar or other structural metal shall be separated from recyclable aggregate material during processing and placed in a designated scrap pile on-site which shall be removed on an on-going basis.
9. Recycled aggregate shall be removed on an on-going basis.
10. Recycling activities shall not interfere with the operational phases of the site or with rehabilitation.
11. Once the site is depleted, no further importation of recyclable material shall be permitted.
12. Once final rehabilitation has been completed and approved in accordance with the site plan, all recycling operations shall cease.
13. The site shall be kept in an orderly condition.

N. Variations from Control and Operation Standards

Table with 3 columns: No., Variation, Standard (0.13). Rows include: Extraction shall occur within 30 metres but no closer than 15 metres from the Upper's Lane road allowance and the unopened road allowance between Lots 120 and 136; In addition, as part of construction of any access shown on the Site Plan and the existing watercourse realignment, extraction may occur; Overburden may be removed from the excavation setback area to permit; Overburden and aggregate may be removed from the excavation setback areas to permit the construction of any access or to implement the existing watercourse realignment as follows; Blasted aggregate will be transported back to the mobile crusher plant and processing area on the quarry floor for processing and shipping; An office/scale house and weigh scale will be established on site.

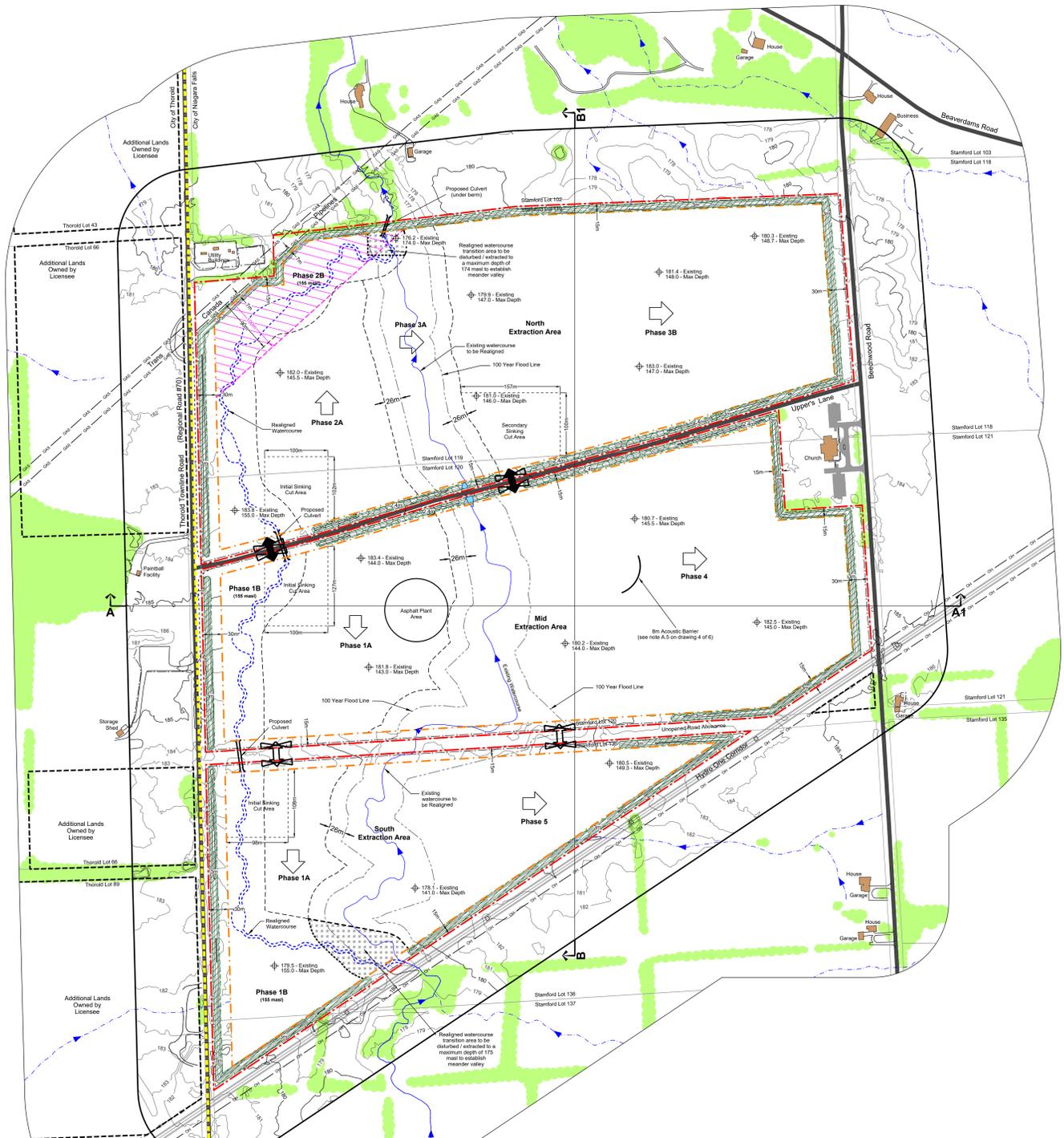
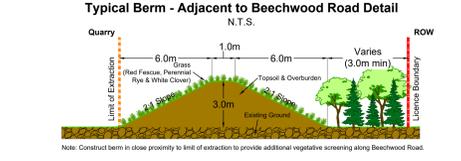


Table 1: Receptors Within 500m of Licence Boundary. Columns: Receptor, Address, Distance, Receptor, Address, Distance, Receptor, Address, Distance, Receptor, Address, Distance. Lists various street addresses and their distances from the site boundary.



Legal Description: Part of Lots 119, 120, 136 & 137 City of Niagara Falls (Geographic Township of Stamford) Regional Municipality of Niagara. Legend: Licence Boundary, Limit of Extraction, Additional Lands Owned by Licensee, Municipal Boundary, Contours with Elevation, Public Road, Fence, Watercourse, Surface Drainage Feature, Watercourse - Re-aligned, Water Feature, Wooded Area, Watercourse Realignment Transition Area, 120m Offset From Licence Boundary, Trans Canada Blasting Buffer Area, Parcel Fabric, Trans Canada Pipeline Easement, Hydro One Easement, Entrance / Exit, Limited Surface Access, Gate, Culvert, General Direction of Excavation & Boundary, Berm, Building/Structure, Spot Elevation, Cross Sections.

- Site Plan Acronyms:
1. ARA - Aggregate Resources Act
2. MNDMNRFP - Ministry of Northern Development, Mines, Natural Resources and Forestry
3. MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries
4. MECP - Ministry of the Environment, Conservation and Parks
5. MGCS - Ministry of Government and Consumer Services
6. DFO - Department of Fisheries and Oceans Canada
7. ECA - Environmental Compliance Approval
8. BMPP - Best Management Practices Plan
9. PTTW - Permit to Take Water
10. MASL - Metres above sea level
11. ROW - Right of way
12. HMA - Hot mix asphalt

Site Plan Amendments table with columns: No., Date, Description, By.

Site Plan Revisions (Pre-Licensing) table with columns: No., Date, Description, By.

MHBC Stamp: PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE. 113 COLLIER STREET, BARRE, ON, LAM 1H2. Includes logos for MHBC and Walker Aggregates.

Project: Upper's Quarry. MNDMNRFP Licence Reference No., Applicant's Signature, Date: October 2021, Plan Scale: 1:3000 (Arch'E), Drawn By: C.P., Checked By: D.W., File No.: 9811V. Operational Plan 2 of 6.

A. General

- This plan depicts a schematic operations sequence for the property based on the best information available at the time of preparation.
- Phases do not represent any specific or equal time period.
- The direction of extraction will generally be in accordance with the General Direction of Excavation (shown on the plan view). Notwithstanding the operational and rehabilitation notes, demand for certain products, blending of materials or Water Study Contingency measures may require minor deviations in the extraction and rehabilitation sequence.
- Progressive and final rehabilitation will be completed in direct correlation to the development of the quarry as the extraction limits are reached and enough area is available to ensure that rehabilitation activities will not interfere with the production, stockpiling and processing of aggregate materials.

B. Initial Site Preparation

- Generally, site preparation in Phases 1 and 2 to include but not limited to:
 - Constructing the main entrance and cross over(s) in accordance with entrance permit approvals
 - Establishing fencing around licensed boundary (see Section N Variations from Control and Operation Standards on drawing 2 of 6)
 - Removal of trees and existing buildings (in accordance with all site plan requirements and applicable regulations)
 - Proceed with stripping of overburden/topsoil from Phase 1 and, if necessary, Phase 2
 - Construction of berms/acoustic barriers within the perimeter setback of the licence boundary (as shown on the plan view)
- Install water management and erosion and sediment control measures (silt fencing) in accordance with note D.1 on this drawing and note E.1.c on drawing 4 of 6.
- Commence portable crushing/screening plant set up. The plant shall operate in accordance with Section A on drawing 4 of 6 for all Phases.

C. Phase 1 (1A and 1B)

- Commence extraction in the 'Initial Sinking Cut Area' identified in the Mid and South Extraction Area (see plan view for location).
- Phase 1A shall be extracted in up to three (3) lifts to a depth ranging between 140 masl and 145 masl.
- Phase 1B shall be extracted in one (1) to two (2) lifts to a depth of 155 masl.
- A portable pump shall be utilized as necessary in the Mid Extraction Area and the South Extraction Area to discharge water to a man-made pond for aggregate washing or to a sediment forebay before being discharged to the existing watercourse. During heavy rainfall events (25 mm or more), the pump will be deactivated as necessary to prevent flooding along the watercourse downstream of the site. The discharge pond and forebay locations will move with the quarry face until the final quarry depth is reached in each extraction area. At this point, a permanent sump will be established in each extraction area.
- During Phase 1, a new watercourse channel shall be constructed along the east side of Thorold Townline Road (within Phase 1B) for the eventual realignment of the existing watercourse. As resource extraction is completed in Phase 1B, this area will be filled with clay overburden material from on-site to an elevation ranging between 173 to 175 masl. The new watercourse and riparian wetland channel shall be constructed, designed and vegetated in accordance with DFO's authorization and this Rehabilitation Plan (drawing 5 of 6).
- As extraction reaches the final quarry floor, and there is sufficient separation from the quarry floor working areas in Phase 1A, a 2:1 sideslope along the easterly and northerly limit of Phase 1B shall be backfilled with either: (i) overburden stockpiled on-site; (ii) overburden in Phase 2; or (iii) material imported from Licence Numbers 11175 and 4437.
- Commence site preparation of Phase 2.

D. Phase 2 (2A & 2B)

- Commence extraction in the 'Initial Sinking Cut Area' identified in the North Extraction Area (see plan view for location).
- Phase 2A shall be extracted in up to three (3) lifts to a depth ranging between 141 masl to 145 masl.
- Phase 2B shall be extracted in one (1) to two (2) lifts to a depth of 155 masl.

- A portable pump shall be utilized as necessary to discharge water to a man-made pond for aggregate washing or to a sediment forebay before being discharged to the existing watercourse. During heavy rainfall events (25 mm or more), the pump will be deactivated as necessary to prevent flooding along the watercourse downstream of the site. The discharge pond and forebay locations will move with the quarry face until the final quarry depth is reached. At this point, a permanent sump will be established.
- Similar to Phase 1, the new watercourse channel shall be constructed within Phase 2 running along the east side of Thorold Townline Road (Phase 2B) for the eventual realignment of the existing watercourse. As resource extraction is completed in Phase 2B, this area will be filled with clay overburden material from on-site to an elevation ranging between 173 to 175 masl. The new watercourse and riparian wetland channel will be constructed, designed and vegetated in accordance with DFO authorization and Rehabilitation Plan (drawing 5 of 6).
- As extraction reaches the final quarry floor, and there is sufficient separation from the quarry floor working areas in Phase 2A, a 2:1 sideslope along the easterly and northerly limit of Phase 2B shall be backfilled with either: (i) overburden stockpiled on-site; (ii) overburden in Phase 3B; or (iii) material imported from Licence Numbers 11175 and 4437.
- Commence site preparation of Phase 3.

E. Phase 3 (3A & 3B)

- Proceed with stripping of overburden/topsoil.
- Prior to undertaking any works within Phase 3A that may result in any serious harm to fish, according to 35(1) of the Fisheries Act, the Licensee shall obtain a Fisheries Act Authorization from the Department of Fisheries and Oceans (DFO) and shall fulfill any other conditions required by the DFO as stated on its authorization. Once the watercourse has been realigned to the satisfaction of DFO, stripping of overburden and topsoil can proceed in Phase 3A.
- In the event that watercourse relocation has not been approved or completed, extraction in Phase 3B may proceed before extraction in Phase 3A.
- In the event that Phase 3B is extracted before Phase 3A, a portable pump shall be utilized as necessary to discharge water to a man-made pond for aggregate washing or to a sediment forebay before being discharged to the existing watercourse. During heavy rainfall events (25 mm or more), the pump will be deactivated as necessary to prevent flooding along the watercourse downstream of the site. The discharge pond and forebay locations will move with the quarry face until the final quarry depth is reached. At this point, a permanent sump will be established.
- Phase 3A and 3B shall be extracted in up to three (3) lifts to a depth ranging between 145 masl to 149 masl. Extraction will proceed in an easterly direction, moving gradually from north to south.
- Once the existing watercourse has been realigned, extraction in Phase 3A may proceed.
- Continue progressive rehabilitation of the quarry perimeter where limits of extraction have been reached and there is sufficient separation from the quarry floor working areas.
- Commence site preparation of Phase 4.

F. Phase 4

- Proceed with stripping of overburden/topsoil.
- Commence Phase 4 extraction in an easterly direction, moving gradually from north to south.
- Phase 4 shall be extracted in up to three (3) lifts to a depth ranging between 142 masl and 147 masl.
- Continue progressive rehabilitation of the quarry perimeter where limits of extraction have been reached and there is sufficient separation from the quarry floor working areas.

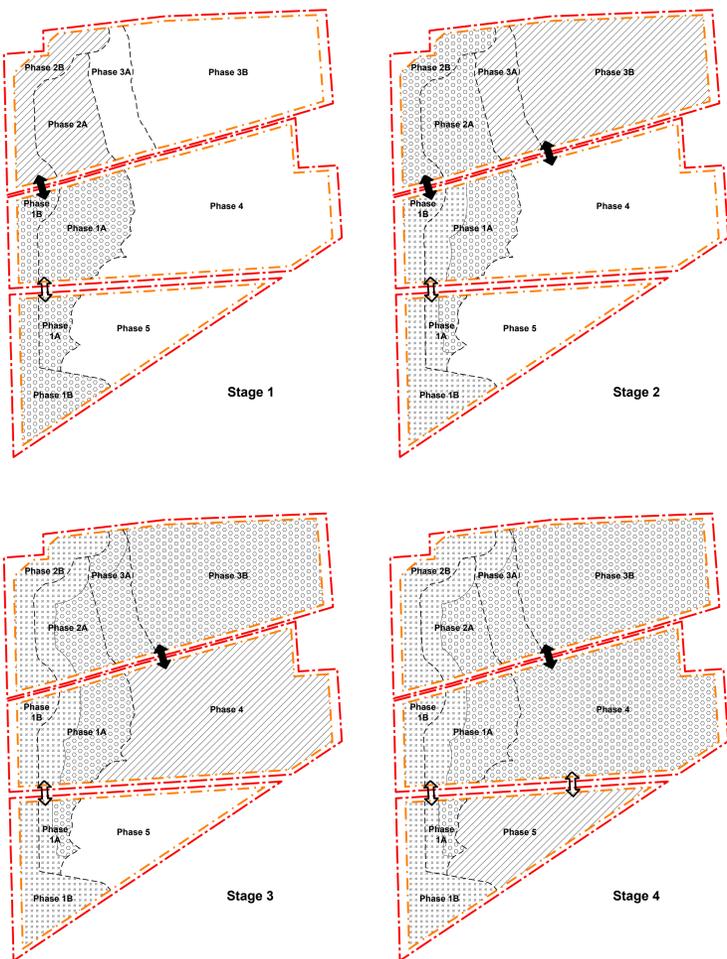
G. Phase 5

- Proceed with stripping of overburden/topsoil.
- Commence Phase 5 extraction in an easterly direction, moving gradually from north to south.
- Phase 5 shall be extracted in up to three (3) lifts to a depth ranging between 140 masl and 143 masl.
- Continue progressive rehabilitation of the quarry perimeter where limits of extraction have been reached and there is sufficient separation from the quarry floor working areas.

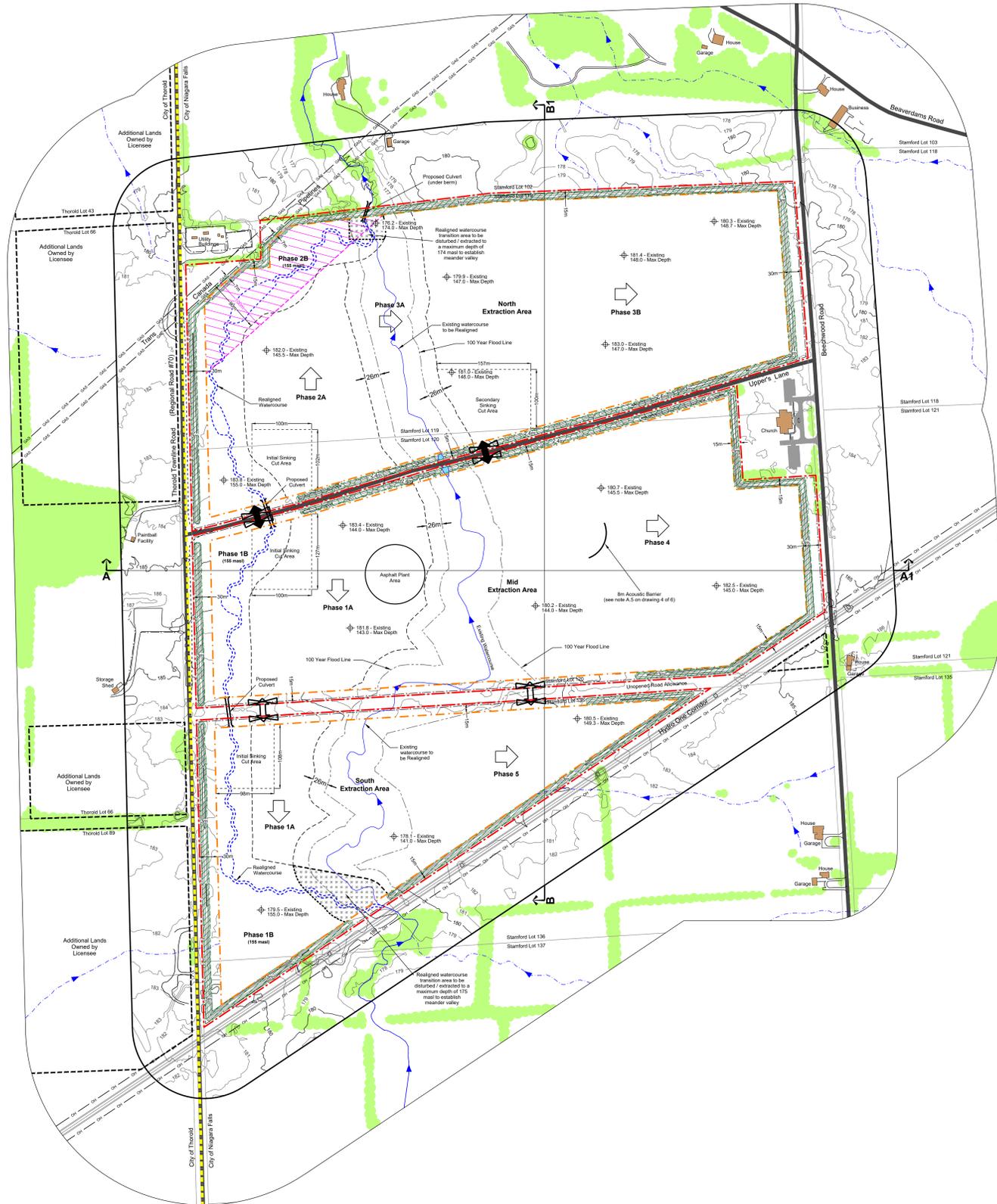
H. Final Phase

- Complete extraction of any remaining resource in the extraction limit near the entrance in Phase 1A and 1B (e.g. ramp).
- As part of the final operations of the site, remove official/scale house and scales and any other equipment and scrap from the site.
- Continue with final rehabilitation of the site. Complete quarry face backfilling on the remaining quarry faces as identified on drawing 5 of 6.

Extraction Sequence Schematic
Scale 1:7500



Undisturbed Site Preparation Under Extraction Progressive and Final Rehabilitation



Legal Description

Part of Lots 119, 120, 136 & 137
City of Niagara Falls (Geographic Township of Stamford)
Regional Municipality of Niagara

Legend

- Licence Boundary
- Limit of Extraction
- Additional Lands Owned by Licensee
- Municipal Boundary
- Contours with Elevation (Metres above sea level (MASL))
- Public Road
- Fence (1.2m post & wire fence unless otherwise noted)
- Watercourse (Direction of flow indicated by arrows)
- Surface Drainage Feature (Direction of flow indicated by arrows)
- Watercourse - Realigned (Status: 2023)
- Water Feature
- Wooded Area
- Watercourse Realignment Transition Area
- 120m Offset From Licence Boundary
- Trans Canada Blasting Buffer Area (See Note D.3 on drawing 4 of 6)
- Parcel Fabric
- Trans Canada Pipeline Easement
- Hydro One Easement
- Entrance / Exit
- Limited Service Access (For Phases 1A, 1B and 5 in South Extraction Area)
- Gate
- Culvert
- General Direction of Excavation & Boundary
- Berm (Top - House Allocation Berm, Bottom - Visual Berm)
- Building/Structure
- Spot Elevation (Top - Existing, Bottom - Maximum Depth of Extraction)
- Cross Sections (A1)

Site Plan Acronyms

- ARA - Aggregate Resources Act
- MNDMRF - Ministry of Northern Development, Mines, Natural Resources and Forestry
- MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries
- MECP - Ministry of the Environment, Conservation and Parks
- MGCS - Ministry of Government and Consumer Services
- DFO - Department of Fisheries and Oceans Canada
- ECA - Environmental Compliance Approval
- BMP - Best Management Practices Plan
- PTTW - Permit to Take Water
- MASL - Metres above sea level
- ROW - Right of way
- HMA - Hot mix asphalt

Site Plan Amendments

No.	Date	Description	By

Site Plan Revisions (Pre-Licensing)

No.	Date	Description	By
1	January 2022	Revised note C.1 and hatched watercourse realignment area.	C.P.

MHBC
PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE
113 COLLIER STREET, BARRE, ON, L4M 1H2 | P: 705.728.0495 | F: 705.728.2010 | WWW.MHBCA1.COM

MHBC Stamp

Debra Walker
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(a) of Ontario Regulation 244/97 to prepare and certify site plans.

MHBC Stamp

Christopher Poole
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(b) of Ontario Regulation 244/97 to prepare and certify site plans.

Applicant

walker aggregates
Walker Aggregates Inc.
2800 Thorold Townline Road
P.O. Box 100
Thorold, Ontario
L2V 3Y8

Project

Upper's Quarry

MNDMRF Licence Reference No.

Applicant's Signature
Date: October 2021
Drawn By: C.P. File No.: 9811V
Checked By: D.W.

File Name

Extraction Sequence

Drawing No.

3 of 6

File Path: N:\08\9811V - Walker Upper's Quarry\Drawings\Site Plan\CAD\9811V - Site Plan - Proposed Scenario.dwg

A. Acoustic Assessment

- 1. Minimum 3 metre tall acoustic berms shall be constructed in the locations shown on the plan view.
2. The acoustic berms shall be constructed during site preparation and prior to extraction.
3. The primary crusher shall stay within 30 metres of the working face to maximize shielding effect of the quarry terrain.
4. Material extracted from the South Extraction Area shall be processed in the Mid Extraction Area.
5. While processing in Phase 4, the licensee shall maintain an 8 metre tall barrier at a radius of 40 metres to the southeast of the processing plant's secondary crushers...
6. All construction equipment shall meet the sound emission standards defined in MECP Publication NPC-115.
7. The following best practice measures shall be undertaken to minimize the potential for construction noise impacts related to site preparation, berm creation and rehabilitation but not related to extraction and processing activities:
a. Construction will be limited to time periods allowed by the City's applicable by-laws.
b. All internal combustion engines will be fitted with appropriate muffler systems.
c. The licensee's operating procedures will contain a provision that any initial complaint will trigger verification that the general noise control measures agreed to on this Plan are in effect.
d. In the presence of persistent noise complaints, all construction equipment will be verified to comply with MECP's NPC-115 guidelines.
e. In the event of verified noise complaints, alternative noise control measures may be required where reasonably available. In selecting appropriate noise control and mitigation measures, consideration will be given to the technical, administrative and economic feasibility of the various alternatives.

B. Air Quality

- 1. The licensee shall apply water or another provincially approved dust suppressant to internal haul roads and processing areas, as necessary to mitigate dust.
2. Processing equipment shall be equipped with dust suppressing or collection devices, where the equipment creates dust and is operating within 300 metres of an air quality sensitive receptor (as set out in the Air Quality Impact Assessment).
3. The licensee shall obtain an environmental compliance approval under the Environmental Protection Act...
4. The site will operate in accordance with the Best Management Practices Plan (BMP) for Fugitive Dust Emissions.
5. The following mitigation measures shall be incorporated into the BMP:
a. Blasting operations occurring within 300 metres of a residential receptor shall have a smaller blast area, not exceeding 200 m² in area.
b. Aggregate extraction, processing and shipping does not exceed 9,000 tonnes per day.

C. Archaeology

- 1. Areas identified as "Archaeological Site - Protected Areas Requiring Further Archaeological Assessment" on this drawing reflect areas that require further archaeological assessment and are protected by a 20 to 30 metre protective buffer.
2. No ground alterations including overburden stripping and excavation, or development of any kind shall occur within areas identified as "Archaeological Site - Protected Areas Requiring Further Archaeological Assessment" and their respective protective buffers until:
a. the required investigations are completed in accordance with the Stage 1 and 2 Archaeological Assessment prepared by Archaeological Research Associates Ltd. (April 2023).
b. any recommendations that the respective site(s) has no further cultural heritage value or interest are made as a result of completing further investigations, and,
c. the associated reports are entered into the Ontario Public Register of Archaeological Reports.
3. A temporary barrier shall be established around the perimeter of each "Archaeological Site - Protected Areas Requiring Further Archaeological Assessment" identified on this drawing as part of site preparation and in advance of extraction.
4. All soil disturbing activities within the 50 metres monitoring buffers shall be monitored by a licensed archaeologist to ensure the effectiveness of the avoidance strategy.
5. Immediately upon issuance of the Licence, and once the construction schedule has been finalized, a licensed archaeologist will be retained by the licensee so that monitoring can occur where required.
6. Should deeply buried archaeology remains be found during site preparation and/or extraction related activities, the MHSTCI shall be notified.
7. In the event that human remains are encountered during construction or extraction activities, the licensee shall immediately contact both the MHSTCI and Registrar or Deputy Registrar of the Centuries Regulation Unit of the Ministry of Government and Consumer Services (MGCS).

D. Blasting

- 1. An alteration study shall be undertaken by an independent blasting consultant during the first 12 months of operation in order to obtain sufficient data to confirm the initial guideline parameters assist in refining future blast designs.
2. All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptors adjacent to the site, or closer, with a minimum of two (2) instruments - one installed in front of the blast and one installed behind the blast.
3. Blasts shall be designed to maintain vibrations below 13mm/s at the location of the closest identified active spanning beam as per DFO guidelines.
4. The guideline limits for vibration and water overpressure shall adhere to standards as outlined in the Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (1998) or any such document, regulation or guideline which supersedes this standard.
5. All blasts shall be monitored for ground vibration at the adjacent Trans Canada Energy High Pressure Natural Gas Pipeline when blasting within 100m of the pipeline or when calculations suggest vibrations in excess of 35mm/s.
6. Blasts shall be designed to maintain vibrations at the transmission towers in the Hydro One Corridor below 50mm/s or any such document, regulation or guideline which supersedes this standard.
7. Blasts shall be designed to maintain vibrations at the 4832 Thorold Townline Road utility buildings below 50mm/s.
8. The guideline limits for ground vibration and air overpressure shall adhere to standards as outlined in the Model Municipal Noise Control By-law publication NPC 119 (1978) or any such document, regulation or guideline which supersedes this standard.
9. Orientation of the aggregate extraction operation shall be designed and maintained so that the direction of the overpressure propagation will be away from structures as much as possible.
10. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to maintain compliance with applicable guidelines and regulations.
11. Detailed blast records shall be maintained in accordance with current industry best practices.

E. Natural Heritage

- 1. General
a. Existing vegetation within the setbacks shall be maintained except where berms, haul roads and conveyors are required.
b. New vegetation shall be maintained in accordance with note G.5 on this drawing.
c. Silt fencing shall be installed at the easterly limit of Phases 1A and 2A where field drainage enters the existing watercourse.
d. Stockpiling of all excavated material shall be in accordance with note H.7 on drawing 2 of 6.
e. Topsoil and overburden stockpiles shall be maintained in accordance with the Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNR 2017).
f. Dust control will be implemented in accordance with Section B on this drawing.
g. Fuel storage shall be in accordance with the notes under Section K on drawing 2 of 6.
2. Natural Channel Design
a. The existing watercourse will remain open (not culverted) where it enters the south limit of the South Extraction Area.
b. Where the watercourse exits the North Extraction Area, a culvert will be installed to maintain the watercourse while allowing an acoustic berm to be constructed.
c. As part of site preparation, a compensation pond will be constructed in the Watercourse Realignment Transition Area within Phase 2B.
d. As extraction is completed in Phases 1B and 2B, these areas will be filled with clay overburden material to an elevation ranging between 173 to 178 masl.
3. Floodplain Wetlands
a. Fish habitat ponds, including new pipe spawning habitat as well as foraging, spawning and rearing habitat for other fish species
b. Creek sections
c. Wood debris toe protection and wood reinforced banks
d. Log jams
e. Augmented riffle.
c. Culverts will be installed under Upper's Lane and the unopened road allowance.
d. 21 side slopes shall be established on the east side of the new watercourse channel down to the quarry floor.
e. Once the realigned watercourse channel has been constructed in Phases 1B and 2B and adequate vegetation has been established (as confirmed by an ecologist), water from the existing watercourse will be diverted to the realigned watercourse in consultation with regulatory authorities.

Woodland and Terrestrial Habitat Enhancement

- 1. The 2.0 ha woodland situated on the east side of Thorold Townline Road shall be removed during the advancement of operations in Phase 1A/1B.
2. The lands identified off-site as "Woodland Compensation Area" on this drawing, an area of 4.7 ha, shall be planted in accordance with the Rehabilitation Plan (drawing 5 of 6).

F. Wetlands

- 1. Wetlands along the existing watercourse will be maintained until the watercourse has been diverted to the watercourse realignment channel.
2. Once the watercourse has been diverted, the created wetlands in the watercourse realignment channel shall be maintained.
3. A monitoring plan shall be prepared in consultation with regulatory authorities to assess the performance of the watercourse realignment channel and to confirm that impacts to off-site wetlands are not occurring as a result of dewatering.
4. A monitoring program of compensation planting shall be prepared in consultation with regulatory authorities to confirm stable conditions have been established.
5. A trigger mechanism and contingency plan, as detailed in WSP's Water Study Report, shall be implemented upon licence approval to proactively ensure natural heritage features and their functions are maintained.
6. WSP's Water Study Report confirms that drawdown impacts do not extend to areas identified in the Niagara Peninsula Source Protection Plan as Intake Protection Zones.

G. Visual

- 1. Where possible and to the extent to which it is present, existing vegetation located along the site perimeter within the setback area shall be retained.
2. 3.0 metre high acoustic berms and 2.4 metre high visual berms shall be established in the locations shown on the plan view.
3. Within the "Extended Planting Areas" (as shown on this drawing), trees shall be planted at a spacing of 5 to 10 metres on centre, depending on species.
4. To ensure survival and positive growth rate, the vegetative screening shall be maintained as an effective visual screen over time.
5. During the first year, planted trees shall be watered and monitored until established.
6. A mortality rate of up to 15% of all trees planted over the course of the five year maintenance period is expected.

H. Water Study

- 1. A long-term monitoring program will be implemented during the quarry operational and rehabilitation phases, until stable conditions are observed after quarry decommissioning.
2. In the event a water interference claim is received, the licensee shall implement the following mitigation plan to protect the local groundwater/water table.
a. Prior to extraction, landowners shall be provided with a copy of the water well interference plan as well as the contact information for the licensee and MECP.
b. If a water well interference claim is received by the licensee the following actions shall be taken:
b.1. The licensee shall immediately notify MNDMNR and MECP of the complaint.
b.2. The licensee shall contact a well contractor in the event of a water malfunction and residents will be provided a temporary water supply within 24 hours.
c. The well contractor shall contact the resident with the supply issue to rectify the problem as expeditiously as possible, providing landowner authorization of the work.
d. If the issue raised by the landowner is related to loss of water supply, the licensee shall have a qualified hydrogeologist / well contractor determine the likely causes of the loss of water supply, which can result from a number of factors, including pump failure (owner's expense), extended overuse of the well (owner's expense), lack of well maintenance / well cleaning (owner's expense) or lowering of the water level in the well from the quarry development (licensee's expense).
e. If it has been determined that the quarry caused the water supply interference (i.e., lowering of the water level), the licensee shall continue to supply water at their expense until the problem is rectified.
f. If the issue raised by the landowner is related to water quality, the licensee shall have a qualified hydrogeologist / well contractor determine the likely causes of the change in water quality, and review monitoring results at the quarry and background monitoring results from the baseline well survey to determine if there is any potential correlation with the quarry.
g. If it has been determined that the quarry caused a water quality issue, the licensee shall continue to supply water at their expense until the problem is rectified.
h. The licensee shall be responsible for restoring the water supply by replacing the well or providing a water treatment system.
i. The licensee is responsible for the expense to restore the water quality.

I. Fish and Fish Habitat

- 1. Implement notes D.3 and D.4 on this drawing.
2. Water shall be discharged from the sump area to the existing watercourse until water flow is diverted to the watercourse realignment channel.
3. Water collected from the sump area shall be directed to a holding pond for storage to allow for settling of suspended solids and dewatering of other constituents such as hydrogen sulfide and ammonia.
4. Water from the holding pond shall be discharged to the existing watercourse until water flow is diverted to the watercourse realignment channel.
5. Water from the holding pond to the realigned watercourse. Pumping and discharge shall occur as required to support fish habitat.

J. Traffic

- 1. Prior to commencement of extraction operations, the required entrance improvements, road improvements and road widening (to Thorold Townline Road) shall be completed to the satisfaction of the applicable road authorities and in general accordance with the figures titled "Upper's Lane Conceptual Intersection Design" and "Upper's Lane Vehicle Movement Diagram" provided on this drawing.

K. Woodland and Terrestrial Habitat Compensation Plan

- 1. A woodland and wildlife habitat compensation plan shall be prepared in consultation with regulatory authorities to:
a. allow practices and management to respond to changing forest dynamics in the Woodland Compensation Areas such as pest infestations, climatic conditions (e.g. species selection) and restoration ecology; and
b. achieve a net gain in the ecological functions of the local and regional landscape through:
a.1. Increasing the total area of woodland cover in the regional landscape;
a.2. Improving associated landscape functions such as vegetative linkages and interior forest areas
a.3. Improving forest ecological characteristics such as species diversity, age class distribution and structural diversity, while retaining native genetics through seed collection and replanting.
c.3.1. Tree seeds and nuts will be gathered from the woodland for direct planting in the Woodland Compensation Area to promote the continuity of local genetic stock and a similar community composition to the removed vegetation community (FOD).
c.3.2. Leaf litter and soils containing native understory vegetation will be translocated to promote rapid establishment of a healthy forest soil microbiome.
c.3.3. Transplanting of native saplings and small shrubs from the woodland to the compensation planting area, where feasible.
a.4. Incorporating specific wildlife habitat features for bats, deer and other wildlife, such as bat roosting structures (bat boxes or condos), coniferous tree clusters for cover, browse-tolerant shrubs and mast producing trees;
a.5. Incorporating specific planting in setbacks and the watercourse realignment channel. For example, plantings that provide habitat for monarch including common milkweed (Asclepias syriaca), swamp milkweed (Asclepias incarnata) and nectar producing plants.

L. Landscaping

- 1. The lands identified on-site as Deciduous Woodland, Tree Deciduous Swamp and Swamp Thicket / Marsh Meadow on drawing 5 of 6, an area of 4.0 ha, shall be planted in accordance with the Rehabilitation Plan.
2. Planting for the off-site woodland compensation will commence in the appropriate planting season following licence approval.

M. Planting

- 1. Vegetation clearing where milkweed plants are present will proceed when monarch larvae are absent (September 30 to April 1).
2. The setbacks along Thorold Townline Road and Beechwood Road shall be planted with a mix of deciduous and coniferous trees and shrubs with a range of sizes. Native plant materials that are complementary to the regional and local landscape shall be used.
3. Tree seeds and nuts will be gathered from the woodland for direct planting in the Woodland Compensation Area to promote the continuity of local genetic stock and a similar community composition to the removed vegetation community (FOD).
4. Leaf litter and soils containing native understory vegetation will be translocated to promote rapid establishment of a healthy forest soil microbiome.
5. Transplanting of native saplings and small shrubs from the woodland to the compensation planting area, where feasible.
6. Incorporating specific wildlife habitat features for bats, deer and other wildlife, such as bat roosting structures (bat boxes or condos), coniferous tree clusters for cover, browse-tolerant shrubs and mast producing trees;
7. Incorporating specific planting in setbacks and the watercourse realignment channel. For example, plantings that provide habitat for monarch including common milkweed (Asclepias syriaca), swamp milkweed (Asclepias incarnata) and nectar producing plants.

N. Trees

- 1. White Pine
2. Common Hackberry
3. Chokecherry
4. Paper Birch
5. Pin Oak
6. Trembling Aspen
7. Basswood
8. White Spruce
9. White Cedar

O. Shrubs

- 1. Staghorn Sumac
2. Nannyberry
3. Common Nettle
4. American Elder
5. Dogwood
6. Highbush Cranberry

P. Plant Species for Berms

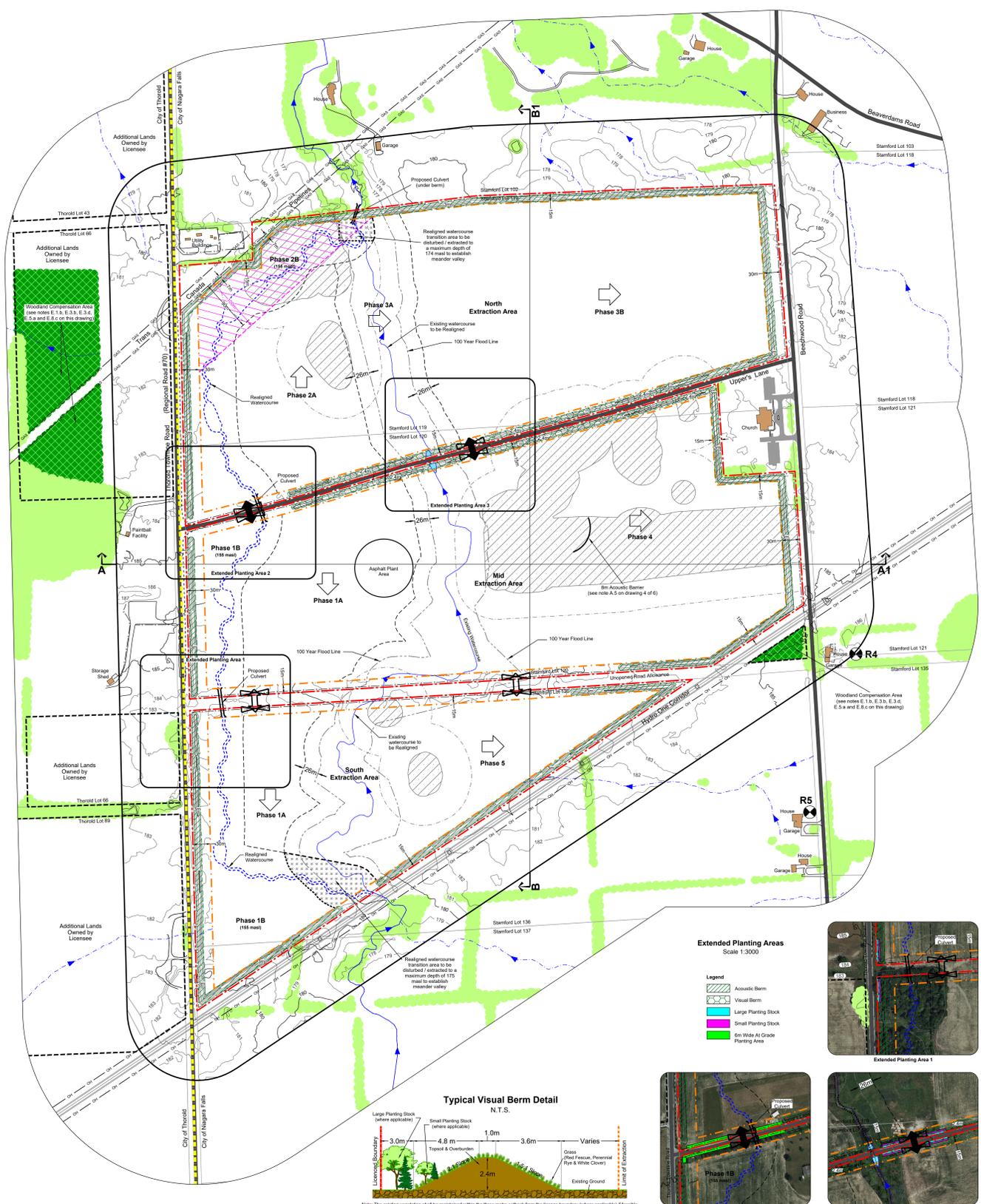
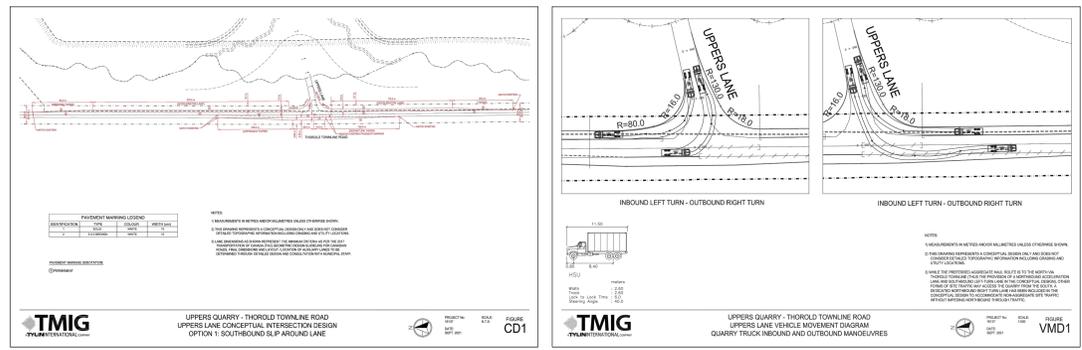
- 1. Adjust pump pressure;
2. Lowering of the pump to take advantage of existing water storage within the well;
3. Deepening of the well to increase the available drawdown, if the well deepening changes the water quality a water treatment shall be provided;
4. Widening of the well to increase the available storage of water;
5. Relocation of the well to another area on the property; or
6. Drilling multiple wells.

Q. Spill Action Plan

- 1. A spill action plan shall be carried out in accordance with the notes in Section N Spills Plan on drawing 2 of 3.
2. A trigger mechanism and contingency plan as set out in WSP's Level 2 Water Study Report shall be implemented.

R. WSP's Water Study Report

- 1. WSP's Water Study Report confirms that drawdown impacts do not extend to areas identified in the Niagara Peninsula Source Protection Plan as Intake Protection Zones.



Legal Description: Part of Lots 119, 120, 136 & 137 City of Niagara Falls (Geographic Township of Stamford) Regional Municipality of Niagara. Legend: Licence Boundary, Limit of Extraction, Additional Lands Owned by Licensee, Municipal Boundary, Contours with Elevation, Public Road, Fence, Watercourse, Surface Drainage Feature, Watercourse - Re-aligned, Water Feature, Wooded Area, Watercourse Realignment Transition Area, Woodland Compensation Area (Off-site), Archaeological Site, Archaeological Offset, 120m Offset From Licence Boundary, Trans Canada Blasting Buffer Area, Parcel Fabric, Trans Canada Pipeline Easement, Hydro One Easement, Entrance / Exit, Limited Access Area, Gate, Culvert, General Direction of Excavation & Boundary, Berm, Building/Structure, Noise Receptor, Cross Sections.

Site Plan Acronyms table listing various regulatory bodies and standards such as ARA - Aggregate Resources Act, MNDMNR - Ministry of Northern Development, Mines, Natural Resources and Forestry, MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries, MECP - Ministry of the Environment, Conservation and Parks, MGCS - Ministry of Government and Consumer Services, DFO - Department of Fisheries and Oceans Canada, ECA - Environmental Compliance Approval, BMPP - Best Management Practices Plan, PTTW - Permit to Take Water, MASL - Metres above sea level, R12 - Row - Right of way, HMA - Hot mix asphalt.

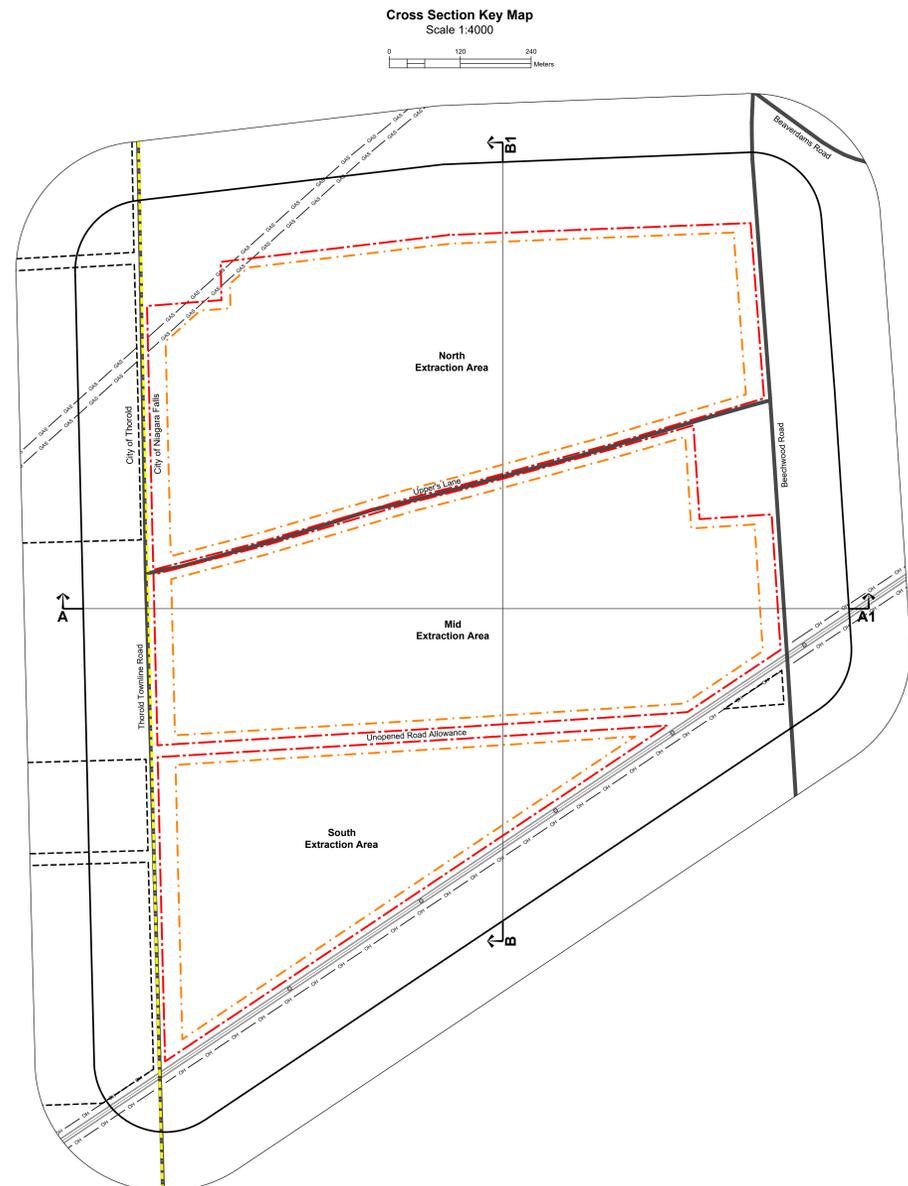
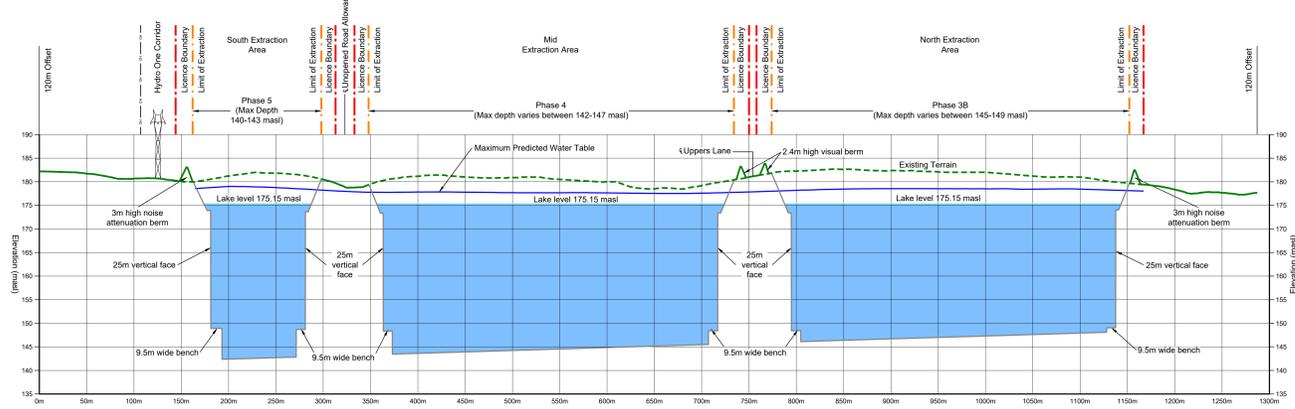
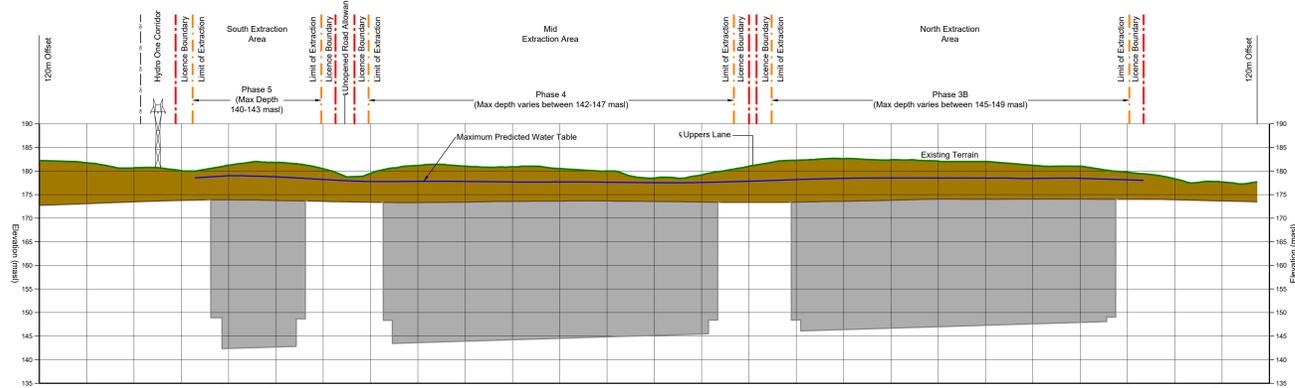
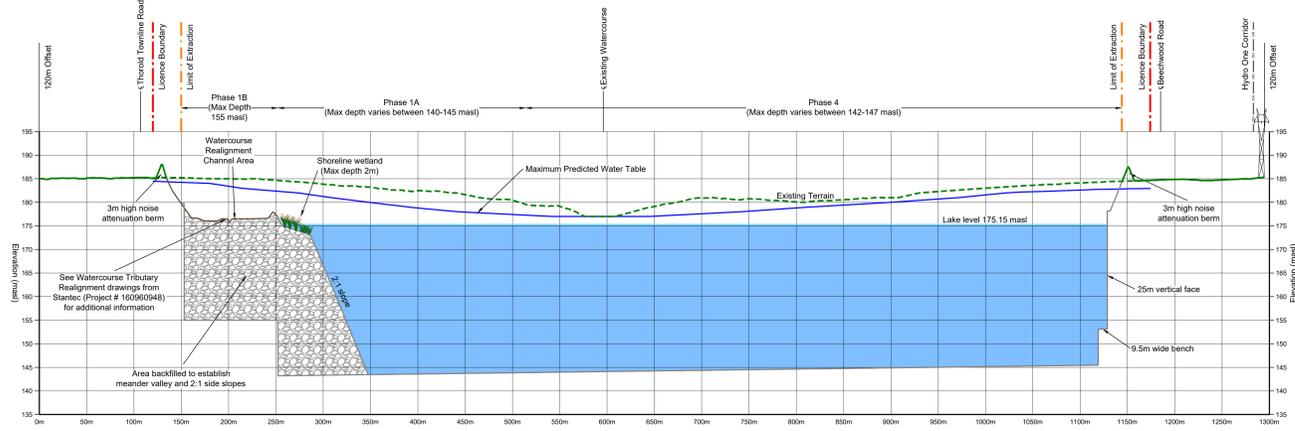
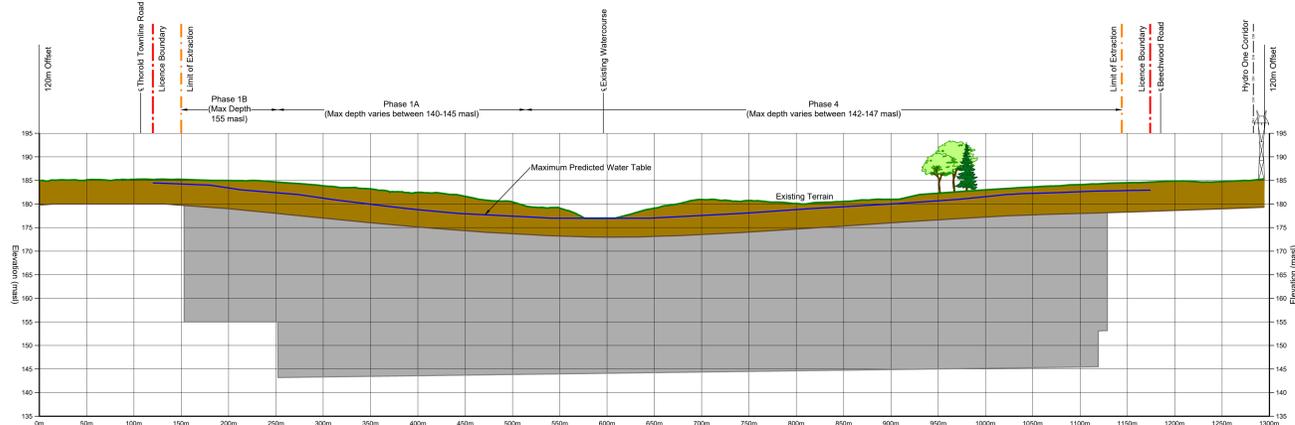
Site Plan Amendments and Site Plan Revisions (Pre-Licensing) tables showing dates, descriptions, and responsible parties for plan changes.

MHBC logo and contact information for MHBC Stamp and MHBC Stamp holders: Debra Walker and Christopher Poole.

Walker Aggregates Inc. logo and contact information for the Applicant.

Project information: Upper's Quarry, MNDMNR Licence Reference No., Applicant's Signature, Date (October 2021), Plan Scale (1:3000), File No. (9811V), File Name (Report Recommendations), Drawing No. (4 of 6), File Path.

Note: The existing vegetation shall be maintained within the three metre setback from the licence boundary (where applicable) if feasible.



- Legal Description**
Part of Lots 119, 120, 136 & 137
City of Niagara Falls (Geographic Township of Stamford)
Regional Municipality of Niagara
- Legend**
- Licence Boundary
 - Limit of Extraction
 - Additional Lands Owned by Licensee
 - Municipal Boundary
 - 120m Offset From Licence Boundary
 - Public Road
 - Trans Canada Pipeline Easement
 - Hydro One Easement
 - Cross Sections

- Legend - Cross Sections**
- Licence Boundary
 - Limit of Extraction
 - Existing Grade - Undisturbed
 - Existing Grade - Removed / Altered
 - Berm
 - Maximum Predicted Water Table (See note A.2 on drawing 5 of 6)
 - Quarry Floor / Face
 - Topsoil and/or Overburden
 - Aggregate Available for Extraction
 - Backfilled
 - Lake or Pond
 - Hydro Corridor

Site Plan Amendments

No.	Date	Description	By

Site Plan Revisions (Pre-Licensing)

No.	Date	Description	By
1	January 2022	Updated site plan per feedback from MNDMRF and completed minor housekeeping	C.P.

MHBC
PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
113 COLLIER STREET, BARRE, ON, L4M 1H2 | P: 705.728.0040 F: 705.728.2010 | WWW.MHBCPLAN.COM

MHBC Stamp
Debra Walker
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(a) of Ontario Regulation 244/97 to prepare and certify site plans.

MHBC Stamp
Christopher Poole
Is authorized by the Ministry of Northern Development, Mines, Natural Resources and Forestry pursuant to Subsection 0.2(3)(b) of Ontario Regulation 244/97 to prepare and certify site plans.

Applicant
Walker Aggregates Inc.
2800 Thorold Townline Road
P.O. Box 100
Thorold, Ontario
L2V 3Y8

Project
Upper's Quarry

MNDMRF Licence Reference No.

Applicant's Signature
Debra Walker

Plan Scale: (Arch E)
Horizontal 1:2500
Vertical 1:500

Date October 2021
Drawn By C.P. **File No.** 9811V
Checked By D.W.

File Name Cross Sections
Drawing No. 6 of 6
File Path N:\8849811V - Walker Upper's Quarry Drawings\Site Plan\CAD\9811V - Site Plan - Proposed Scenario.dwg