

#### A. General

- This site plan is prepared under the Aggregate Resources Act (ARA) for a Class 'A' Licence for a pit above the ground water table.
- Area Calculations:
  - Licence Area 44.3 hectares
  - Limit of Extraction 35.2 hectares

#### B. References

- Contours were derived from a November 2020 drone survey by Point of Interest Aerial and are displayed in one metre intervals. Elevations shown are in metres above mean sea level (masl).
- Topographic information was obtained from numerous sources including Ontario Geohub (Land Information Ontario), Point of Interest Aerial's November 2020 drone survey and field investigations for technical reports.
- All topographic features and structures are shown to scale in Universal Mercator (UTM) with North American Datum 1983 (NAD83), Zone 17 (metre), Central Meridian 81 degrees west coordinate system.
- The licence boundary was established using parcel fabric information from the Municipal Property Assessment Corporation, Environmental Constraint Areas from the Township of North Dumfries Official Plan (Consolidated November 2018) Map 5B and topographic features from Point of Interest Aerial's November 2020 drone survey.
- Existing land use designations on and within 120 metres of the licence was obtained from Township of North Dumfries By-law 689-83, South-Central Zoning Map, dated July 2019. The licence area is currently zoned "Z1" Agriculture.
- Land use information and structures identified on or within 120 metres of the licence boundary was determined using aerial photography captured by Point of Interest Aerial's November 2020 drone survey.

#### C. Drainage

- Surface drainage on and within 120 metres of the licence boundary is by overland flow in the directions shown by arrows on the plan view, or by infiltration.
- There are no existing surface water diversions or discharge locations on-site.

#### D. Groundwater

- The maximum predicted water table within the limit of extraction is 307.75 masl and is shown in each cross section on this drawing and drawing 3 of 3.

#### E. Site Access and Fencing

- Three field accesses exist in the locations shown on the plan view. Two of the field accesses are from Shoudice Side Road to the west while one is from Greenfield Road in the southeast. None of the accesses are gated.
- Post and wire fencing (unless otherwise noted) exists in the locations shown on the plan view.

#### F. Significant Natural and Human-Made Features on and Within 120 Metres

- ANTHONY TO PROVIDE DETAIL LIST OF NATURAL HERITAGE FEATURES.
- There are no existing buildings or structures within the licence boundary.
- All existing buildings and structures within 120 metres of the licence boundary are identified on the plan view. The house located at 1262 Greenfield Road, which is situated outside of the licence boundary, is identified as having significant cultural heritage or value.
- An existing pit operation (Licence #625482) is located east of Spragues Road. Human-made features include stockpiles and a berm.

#### G. Aggregate Related Site Features

- There are no existing aggregate operations or features on-site such as processing areas with stationary or portable equipment, stockpiles, recyclable materials, scrap, haul roads, fuel storage, berms or excavation faces.

#### H. Cross Sections

- Cross sections depicting existing conditions are shown on this drawing.
- Cross sections depicting post rehabilitation conditions are shown on drawing 3 of 3.
- Cross section locations are identified on the plan view of each drawing.

#### I. Technical Report - References

- Maximum Predicted Water Table Report, MTE Consultants Inc., June 30, 2022.
- Natural Environment Report, Goodman Ecological Consulting Inc., January 2023.
- Noise Impact Study, Aeroustics, November 11, 2022.
- Air Quality Assessment, RWDI, August 4, 2022.
- Stage 1-2 Archaeological Property Assessment, Edworthy West, AMICK Consultants Ltd., June 2020.
- Stage 1-2 Archaeological Property Assessment, Edworthy West Additional Lands, AMICK Consultants, April 2021.
- Agricultural Impact Assessment, MHBC, December 2022.
- Sightline Review for Spragues Road, Paradigm Transportation Solutions, February 2022.
- Slope Stability Report, MTE Consultants Inc., July 21, 2022.
- Draft Cultural Heritage Impact Assessment, MHBC, December 2022.

#### Official Plan Land Use Designation



#### Zoning By-law 689-83



**Legal Description**  
Part of Lots 16, 17 and 18, Concession 9  
(former geographic Township of Dumfries)  
Township of North Dumfries  
Regional Municipality of Waterloo

#### Legend

- |  |  |  |  |
|--|--|--|--|
|  | Licence Boundary   |  | Existing Licence Boundary<br>Licence # 625482          |
|  | Limit of Extraction  |  | 120m Offset From<br>Licence Boundary                   |
|  | Contours with Elevation<br>Metres above sea level (MASL)       |  | Parcel Fabric<br>Lot and Concession<br>Priority        |
|  | Public Road  |  | Overhead Hydro   |
|  | Driveway   |  | Fence<br>1.2m post & wire fence unless otherwise noted |
|  | Wooded Area  |  | Entrance / Exit  |
|  | Core Environmental<br>Feature - Goodborn Ecological Consulting |  | Direction of Surface<br>Drainage                       |
|  | Berm   |  | Building/Structure                                     |
|  | Monitoring Well  |  | Cross Sections   |

#### Legend - Cross Sections

- |  |   |
|--|---|
|  | Licence Boundary                              |
|  | Limit of Extraction                           |
|  | Existing Licence Boundary<br>Licence # 625482 |
|  | Existing Grade                                |
|  | Maximum Predicted Water Table<br>308 masl     |
|  | Maximum Depth of Excavation                   |
|  | Topsoil and/or Overburden                     |
|  | Aggregate Available for Extraction            |

#### Site Plan Acronyms

- ARA - Aggregate Resources Act
- MASL - Metres Above Mean Sea Level
- MNRF - Ministry of Natural Resources and Forestry
- MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries
- MGCS - Ministry of Government and Consumer Services
- MECP - Ministry of Environment, Conservation and Parks
- CEF - Core Environmental Feature
- EEP - Ecological Enhancement Plan
- CLI - Canada Land Inventory
- MTG - Ministry of Transportation - Ontario

#### Site Plan Amendments

No.	Date	Description	By

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

No.	Date	Description	By

**PLANNING  
URBAN DESIGN  
& LANDSCAPE  
ARCHITECTURE**

113 COLLIER STREET, BARRE, ON, L4M 1P2 | P. 705.728.0045 F. 705.728.2010 | WWW.MHBCPLAN.COM

#### MHBC Stamp



#### MHBC Stamp

Is authorized by the Ministry of  
Natural Resources and Forestry  
pursuant to Subsection 0.2(3)(f)  
of Ontario Regulation 244/07 to  
prepare and certify site plans.

*Christopher Poole*

#### Applicant

Hanson Ready Mix Incorporated  
1182 Alps Road  
Cambridge, Ontario  
N1R 5S5

#### Project

### Edworthy West Pit

1262 Greenfield Road and 1354 Spragues Road, Cambridge, Ontario

#### MNRF Licence Reference No.

#### Applicant's Signature

#### Plan Scale: 1:2000 (Arch E)

#### Date

January 2023

#### Drawn By

C.P.

#### Checked By

C.P.

1896C

#### Drawing Name

### Existing Features & Cross Sections

#### Drawing No.

1 of 3

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#### A. General

- Area calculations:
  - Licence Area 44.3 hectares
  - Limit of Extraction 35.2 hectares
- The maximum annual tonnage is 1,000,000.
- The maximum predicted water table on-site is 307.75 masl. The maximum predicted water table is shown in each cross section drawings 1 of 3 and 3 of 3.
- Agricultural production may continue in areas not currently under extraction and progressively rehabilitated.

#### B. Hours of Operation

- Shipping is permitted Monday to Friday from 6:00 am to 5:00 pm excluding statutory holidays.
- Extraction and loading is permitted Monday to Friday from 7:00 am to 5:00 pm excluding statutory holidays.

#### C. Site Access and Fencing

- An operational entrance/text is proposed in close proximity to the northeast corner of Phase 1 on Spragues Road, as shown on the plan view, and will require a Region of Waterloo Entrance Permit.
- The two existing field accesses on Shoudice Side Road may be utilized for agricultural purposes until site preparation commences in Phase 2. Aggregate and highway trucks shall not be permitted to access the site in these locations.
- The field access at the intersection of Greenfield Road and Spragues Road shall be removed once the operational entrance/text is established.
- Field access point(s) which are to remain and the operational access point shall be gated, kept closed during hours of non-operation and maintained throughout the life of the licence.
- Portions of the licence boundary that are not currently fenced shall be fenced with post and wire fencing at least 1.2 metres in height.
- Fencing shall occur in a phased approach (see Section M Variations from Control and Operational Standards), Phases 1 and 2, as well as the north and west limit of Phase 3, shall be fenced prior to site preparation commencing in Phase 1. The eastern extent of Phase 3 shall be fenced prior to the removal of the existing fencing that transects that Phase. The licence boundary along the eastern extent of Phase 3 shall be delineated with marker posts every 30 metres until the fencing is erected.
- Fencing shall be maintained for the life of the extraction operation.
- A sign of at least 0.5 metres by 0.5 metres in size shall be erected and maintained at the operational entrance/text that says in legible words "This site is licensed under the Aggregate Resources Act licence # \_\_\_\_\_".

#### D. Drainage and Siltation Control

- Drainage of undisturbed areas will continue in the directions shown on drawing 1 of 3.
- Erosion and sediment control fencing shall be installed in the locations shown on the plan view.
- Sediment and erosion control fencing shall be inspected prior to site preparation activities to ensure it was installed correctly and during pit operations to ensure that the fencing is being maintained and functioning properly. Any issues that are identified shall be rectified immediately.

#### E. Site Preparation

- Prior to site preparation occurring in each phase, the limit of extraction shall be demarcated with marker posts (e.g., metal T-bars or equivalent) every 30 metres, or less, to ensure visibility is maintained from one marker post to the next. See Natural Environment note N.5.1 in this drawing for the required spacing of marker posts adjacent to the Core Environmental Feature and Ecological Enhancement Plan units.
- No tree clearing shall occur between April 1<sup>st</sup> and October 31<sup>st</sup> (see Natural Environment note N.5.4).
- Timber resources will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Non-merchantable timber, stumps, root wads and brush will be mulched for use in progressive rehabilitation. Excess material not required for use mentioned above will be removed or burned (with applicable permits).
- Topsoil and overburden shall be stripped and stored separately.
- Topsoil and overburden shall be placed in the acoustical/visual berms and/or used immediately for progressive rehabilitation.
- Excess topsoil and overburden not required for immediate use in berm construction or rehabilitation may be temporarily stockpiled on the pit 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.
- Topsoil and overburden stockpiles shall comply with Agriculture note N.1.3.

#### F. Acoustical / Visual Berms and Screens

- The required acoustical berms for Phase 1 (Berm 'A') shall be constructed to a minimum elevation of 333.0 masl in the locations shown on the plan view prior to extraction in Phase 1.
- Visual berms adjacent to Spragues Road shall be constructed to a minimum height of 3.0 metres above existing grade in the locations shown on the plan view prior to extraction in Phase 1.
- The required acoustical berms for Phase 2 (Berms 'B' and 'C') shall be constructed to a minimum elevation of 335.0 masl in the locations shown on the plan view prior to extraction in Phase 2.
- The required acoustical berm for Phase 3 (Berm 'D') shall be constructed to a minimum elevation of 328.0 masl in the location shown on the plan view prior to extraction in Phase 3.
- All acoustical/visual berms:
  - Shall not have side slopes steeper than 2:1 (horizontal to vertical).
  - Shall not be located within three metres of the licence boundary.
  - Shall be seeded immediately with a naturalizing mix of wildflowers and grasses to stabilize slopes and minimize mowing and maintenance.
  - Shall be maintained throughout the operational life of the pit.
  - Shall be removed and used for progressive rehabilitation once Phase 3 is depleted.
- Existing vegetation within the setbacks shall be maintained except where acoustical/visual berms are required.

#### G. Site Dewatering

- No drainage facilities, water diversion or discharge points to any surface water bodies or courses are proposed.

#### H. Extraction Sequence

- This drawing depicts a schematic of operations for the site based on the best information available at the time of preparation.
- Extraction shall occur in 3 phases (Phases 1, 2 and 3) as shown on the plan view.
- Notwithstanding the operation and rehabilitation notes, demand for certain products or blending of materials may require minor deviations in the extraction and rehabilitation sequence. Any major deviations from the operation sequence shown shall require approval from the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNRF).
- Phase 1
  - Prepare Phase 1 for extraction and ensure all the requirements in Sections 'C' through 'F' of this drawing are met.
  - Strip Phase 1 and use the material to construct acoustical Berm 'A' (see Noise note N.6.6 on this drawing) and the visual berms adjacent to Spragues Road or stockpile material on the pit floor. Should there be an abundance of topsoil and overburden in this phase, the remaining acoustical and visual berms may be constructed in the sequence they are required (see Noise notes N.6.7 and N.6.8 on this drawing).
  - Extract Phase 1 in a southerly direction.
  - Extraction may occur to a maximum depth of 309.25 masl.
  - Prepare Phase 2 for extraction and ensure all the requirements in Sections 'C' through 'F' of this drawing are met.
- Phase 2
  - Strip Phase 2 and use the material to construct acoustical Berms 'B' and 'C' if not already completed (see Noise note N.6.7 on this drawing), progressively rehabilitate or stockpile material on the pit floor.
  - Extract Phase 2 in a westerly direction from Phase 1 before proceeding in a southwesterly/southerly direction.
  - Within 200 metres of the west extraction limit for Phase 2:
    - Equipment shall be limited to a single Extraction Loader and Excavator
    - Shipping shall not occur between 6:00am and 7:00am
  - Extraction may occur to a maximum depth of 309.25 masl.
  - Prepare Phase 3 for extraction and ensure all the requirements in Sections 'C' through 'F' of this drawing are met.
- Phase 3
  - Prior to stripping, locales shall be completed through Ontario One Call Limited at 1-800-400-2255 to confirm the location of the Enbridge Gas Inc. gas line.
  - Strip Phase 3 and use the material to construct acoustical Berm 'D' if not already completed (see Noise note N.6.8 on this drawing), progressively rehabilitate or stockpile for future rehabilitation.
  - Extract Phase 3 in a northerly and/or easterly direction from Phase 1.
  - Extraction shall not occur within five metres of the Enbridge Gas Inc. easement.
  - Extraction may occur to a maximum depth of 309.25 masl.

#### I. Extraction Details

- The maximum existing elevation on-site is 338.0 masl while the maximum depth of extraction is 309.25 masl (as shown by spot elevations on the plan view). Therefore, the maximum depth of the pit is approximately 29 metres.
- The maximum height of a lift is 15 metres while the maximum number of lifts is two.
- Aggregate 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.
- Portions of 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.
- Internal haul road locations depicted on the plan view are schematic only and will vary as extraction progresses.

#### J. Equipment, Processing and Structures

- Equipment used on-site may include an extraction excavator, extraction loader, shipment loader, water truck, fuel truck and highway trucks. See Noise notes under Section N. Technical recommendations for additional information.
- No processing shall occur on-site. Material shall be hauled to Licence # 607701 for processing.
- Temporary structures on-site may include construction trailers, shipping containers (for storage), a scale and scale house. These structures will be located in close proximity to the site entrance.
- All structures shall remain 30 metres from the licence boundary and 90 metres from a property with a residential use.

#### K. Fuel Storage

- A portable horizontal double walled steel fuel storage tank may be placed in close proximity to the scale house in accordance with the Liquid Fuels Handling Code.
- Fuel trucks may be used to transfer fuel to on-site equipment in accordance with the Liquid Fuels Handling Code.
- No mobile refueling or fuel storage shall occur in the location shown on the plan view.

#### L. Recycling and Scrap

- No recycling shall occur on-site.
- No scrap shall be stored on-site.

#### M. Variations from Control and Operational Standards

Section 6.13 Standard	Variation	Rationale
(1) 19.	The final rehabilitated side slopes shall be 2:1 (horizontal : vertical)	This will maximize the area of the pit floor that can be utilized for agricultural purposes.
(3) a	Fencing shall be installed in a phased approach.	This will enable existing agricultural production to continue with minimal disruption.

#### N. Technical Recommendations

1. **Extraction**
  - Extraction shall occur in three sequential phases to minimize the amount of disturbed area. Later phases of the operation that are not currently in extraction shall remain in agricultural production for as long as realistically possible.
  - Agricultural rehabilitation shall be in accordance with the agricultural rehabilitation sequence schematic on drawing 3 of 3 to ensure best practices are followed throughout the progressive rehabilitation of the pit.
  - Progressive rehabilitation procedures that avoid substantial storage of topsoil and minimize the storage of subsoil shall be implemented. Where possible, stripped soils not required for berm construction shall be moved directly to depleted areas where they will be immediately used for agricultural rehabilitation. If storage is required, the agricultural soils shall be stored in low profile stockpiles and appropriate erosion protection shall be implemented. The intent is to avoid storage of material and where storage is required, it shall be minimized to the extent possible. Stripping areas shall be limited to what is required for the season of operation.
  - During pit operations, access to the agricultural rehabilitation areas and undisturbed areas used for agricultural purposes will be maintained.
  - For the areas that are being returned to an agricultural condition, topsoil and subsoil shall be replaced at the same pre-extraction depth which is approximately 25 centimetres for topsoil and 50 centimetres for subsoil, in accordance with the agricultural rehabilitation schematic on drawing 3 of 3.
  - Soil material for agricultural rehabilitation shall not be handled during frozen conditions. The soil shall only be handled under dry conditions and a wet weather shut down procedure shall be put in place. Travel over soils and rehabilitated areas shall be minimized to reduce compaction. Ripping / tilling the soil shall occur, where necessary, to alleviate soil compaction and shall avoid the mixing of soil materials / layers during the process.
  - Once grading is completed, a vegetation cover (such as perennial crops) shall be immediately established within the agricultural rehabilitation area in order to reduce erosion, add organic matter to the soil and improve soil structure. A grass-legume cover crop shall be established throughout rehabilitation and maintained for up to five years and ploughed under annually in order to promote and increase organic matter. Alternatively, field crops (e.g. wheat, soy, corn, hay) shall be established immediately following rehabilitation grading.
  - Once progressive rehabilitation has been completed in each Phase, random soil testing shall be completed at the beginning of each growing season by a qualified professional to analyze soil conditions, using an accredited lab for any analytical testing. Soil inspections shall be conducted at a density to allow for sufficient coverage of the area. The parameters for the soil testing shall be determined by a qualified professional and shall include items such as: soil macro and microconstituents, soil chemistry (e.g. pH, etc), organic matter, soil texture and structure and bulk density to analyze soil fertility, structure and drainage. Adjustments to cropping practices and/or soil amendments may be required based on the results of the soil testing and shall be undertaken in consultation with the property owner. Soil testing shall no longer be required for a progressively rehabilitated phase once the soil testing results indicate the pre-extraction soil capability has been restored.
  - An Agricultural Rehabilitation Monitoring Program Report shall be submitted annually by a qualified professional once progressive agricultural rehabilitation efforts have commenced and shall continue until it can be demonstrated that the agricultural area in each Phase has been rehabilitated back to the pre-extraction soil capability and the final landform is completed as shown on drawing 3 of 3. The report shall document the stages of the rehabilitation process and include details on matters such as the following:
    - Evaluate the rehabilitated agricultural condition and soil capability relative to the baseline soil conditions documented. The baseline soil conditions shall be included as an appendix in the annual monitoring report;
    - An overview of the course of the current extraction and progressive rehabilitation phases;
    - Description of annual soil removal and storage methods;
    - Description of any land that has been progressively rehabilitated;
    - Documentation on the alleviation of any soil compaction, drainage provisions, erosion control, etc.;
    - Description of how the soil has been replaced and any amendments added (fertilizer, organic matter);
    - Description of any seeding or planting that has occurred;
    - A review of previous rehabilitation management activities and observations regarding field conditions;
    - Report of agricultural activity (crops grown, annual yields) and any anecdotal feedback from the farmer;
    - Review of drainage issues and recommended mitigation measures as necessary;
    - Summary of soil test results (if required) and post rehabilitation soil capability;
    - Summary of monitoring data; and
    - Make recommendations on future agricultural rehabilitation activities and any needed adjustments to best management practices.
2. **Archaeology**
  - Should deeply buried archeology remains be found during the course of site preparation and/or extraction related activities, the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) shall be notified.
  - In the event that human remains are encountered during construction or extraction activities, the licensee shall immediately contact both the MHSTCI and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services (MGCS).

The report shall include observational documentation, records of activity and quantitative information on soil conditions. These reports shall be appended as part of annual ARA Compliance Assessment Reports. The purpose of the annual monitoring report is to ensure the site will be rehabilitated to a condition in which substantially the same area and the same average soil capability for agriculture, relative to the baseline conditions, are restored and gather data on average soil capabilities to ensure the recommended rehabilitation sequence is implemented and documented.

- Best management practices shall be implemented with respect to the storage and application of organic material, fertilizers and pesticides.

#### O. Air Quality

- The licensee shall apply water or another provincially approved dust suppressant to internal haul roads, as necessary, to mitigate dust.
- The licensee shall obtain an environmental compliance approval under the Environmental Protection Act, where required, to carry out operations at the pit.
- The site shall operate in accordance with a Best Management Practices Plan (BMP) for fugitive dust, which may be amended from time to time, considering actual impacts and operational considerations. The recommendations in the BMP are based on the maximum daily production rates. At lower production rates, the control measures specified in the BMP may be reduced accordingly, provided dust remains mitigated on-site.

#### P. Hydrogeology

- Manual water levels shall be collected on a seasonal basis, three times per year, once in the spring, summer and fall, at all on-site monitoring wells and participating domestic wells.
- An annual groundwater monitoring program shall extend throughout the life of the operation so that confirmatory water table elevations can be obtained as the pit develops.
- The results of the groundwater monitoring program shall be retained on-file by Cambridge Aggregates so that it can be made available upon request by agencies such as the MNRF, MECP, Region of Waterloo or Township of North Dumfries.
- Monitoring wells that may be destroyed by extraction activities shall be decommissioned according to the Wells Regulation (O Reg. 903) and subsequently replaced with the exception of MW102-20 and MW105-20) at a location that will ensure the new monitoring well will remain intact to allow groundwater monitoring to continue.
- Well Interference Complaint Procedure
  - Owners of domestic and farm water supplies experiencing disruption or quality problems shall immediately notify Cambridge Aggregates Inc.
  - Cambridge Aggregates Inc., upon receipt of any water supply disruption complaint, shall retain the services of an independent qualified professional (i.e. Professional Geoscientist or Professional Engineer) to investigate the cause of the interference complaint.
  - If, through the investigation, it is determined that pit operations have caused an adverse effect at the well in question, Cambridge Aggregates Inc. shall, at their expense, either restore or replace the affected water supply.
  - If, through the investigation, it is determined that pit operations have not caused an adverse effect to the well in question, Cambridge Aggregates Inc. shall provide a report documenting the results of the investigation to the well owner and retain a copy on-file so that it can be made available upon request by agencies such as the MNRF or MECP.

#### Q. Spill Contingency Plan

- Cambridge Aggregates shall implement the Spill Contingency Plan for the site and retain a qualified professional in the unlikely event of a spill.

#### R. Natural Environment

- The limit of extraction shall be clearly demarcated with marker posts (e.g., metal T-bars or equivalent). In proximity to the Core Environmental Feature (CEF) and Ecological Enhancement Plan (EEP) Units, the maximum spacing between monument markers shall be 15 m and signage stating "Ecological Area - No Disturbance" or equivalent wording shall be installed. Marker posts shall be installed following the final crop harvest in a particular area, prior to site preparation for extraction.
- Silt/exclusion fencing shall be installed in the locations shown on the plan view. Silt/exclusion fencing shall be installed following the final crop harvest in a particular area, prior to site preparation for extraction.
- Silt/exclusion fencing shall be heavy-duty silt fencing, Animex Wildlife Fencing or equivalent. The condition of the fencing shall be monitored on a regular basis and it must be promptly repaired as necessary.
- Tree-clearing shall not occur during the active period for bats and the bird breeding season, i.e., no tree-clearing between April 1<sup>st</sup> and October 31<sup>st</sup>. This will avoid potential contraventions of the Migratory Bird Convention Act, Fish and Wildlife Conservation Act and the Endangered Species Act.
- Boulders, rocks and cobbles shall be salvaged from landfills and stone piles within the extraction area. Rocky material may also be salvaged during stripping operations. This material shall be stockpiled within the extraction area and/or yard area for use as part of the EEP and future pit rehabilitation.
- Logs, stumps, root wads and branches shall be salvaged during clearing and grubbing operations. Tree tops may be chipped. The salvaged woody material and wood chips shall be stockpiled within the extraction area for use as part of the EEP and future pit rehabilitation.

#### S. Noise

- Hours of operation identified in Section B on this drawing shall be adhered to.
- Extraction, loading and shipping equipment operating in the pit shall be limited to:
  - Extraction Excavator
  - Extraction or Shipment Loaders
  - 20 Highway Truck trips per hour (40 passes per hour)
- Equipment shall satisfy the noise emission levels listed in the table below:

Equipment	Reference Sound Pressure Level at 30 Metres (dBA)
Extraction Loader or Excavator	70
Shipment Loader	67*
Highway truck - 25 kilometres per hour	65

\* Shipment loaders were assumed to operate at a 50% duty cycle
- The sound emissions of all construction equipment involved in site preparation and rehabilitation activities shall comply with the sound level limits specified in the MECP publication NPC-115 "Construction Equipment".
- 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 extraction in Phase 1, acoustic Berm 'A' (with a minimum top-of-berm elevation of 333 masl) shall be installed to the east of Phase 1 as shown on the plan view. Where the site entrance bisects the berm, a staggered berm configuration shall be used to form an effectively continuous barrier between the Phase 1 area and receptors R12 and R13, as shown on the plan view. Berm 'A' shall remain in place for the lifetime of the pit.
  - Acoustic Berm 'B' (with a minimum top-of-berm elevation of 335 masl) shall be installed northwest of Phase 2 as shown on the plan view.
  - Acoustic Berm 'C' (with a minimum top-of-berm elevation of 333 masl) shall be installed south of Phase 2 as shown on the plan view.
- Prior to extraction in Phase 3, acoustic Berm 'D' (with a minimum top-of-berm elevation of 328 masl) shall be installed east of Phase 3 as shown on the plan view. Berm 'D' shall remain in place for the lifetime of the pit.
- During extraction in Phase 2 within 200 metres of the west extraction limit, equipment is limited to a single Extraction Loader or Excavator (see plan view for location).
- Shipping operations during nighttime hours 6:00 am to 7:00 am are not permitted within 200 m of the west extraction limit (see plan view for location).
- Shipping operations during nighttime hours 6:00 am to 7:00 am are limited to one Shipment Loader in all phases.

#### Legal Description

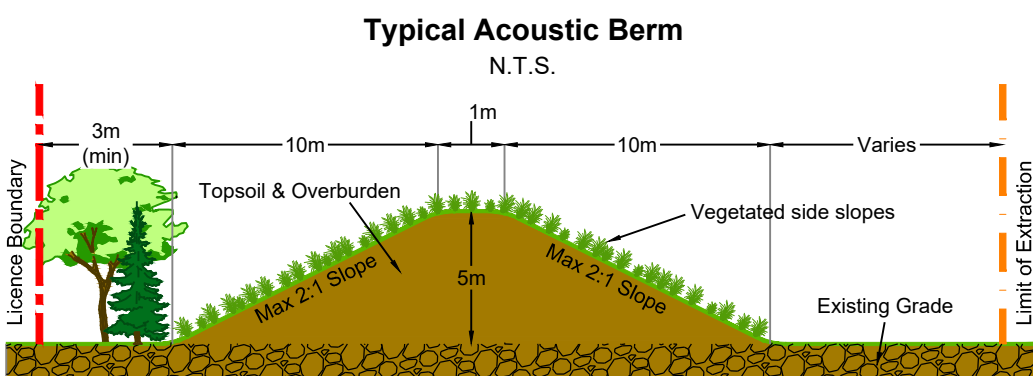
Part of Lots 16, 17 and 18, Concession 9 (former geographic Township of Dumfries) Township of North Dumfries Regional Municipality of Waterloo

#### Legend

	Licence Boundary		Existing Licence Boundary Licence # 625482
	Limit of Extraction		120m Offset From Licence Boundary
	Contours with Elevation		Parcel Fabric Lot and Concession Priority
	Public Road		Overhead Hydro
	Internal Haul Road Locations Schematic Only		Fence 1.2m post & wire fence unless otherwise noted
	Driveway		Silt / Exclusion Fence
	Wooded Area		Entrance / Exit Field Access - Solid Operational Access - Hollow
	Core Environmental Feature - Goodson Ecological Consulting		Gate
	Special Noise Provisions See Noise notes N.6.9 & N.6.10		General Direction of Extraction & Boundary
	Mobile Refueling & Fuel Storage Prohibited		Receptor
	Berm - Acoustic Minimum height in metres above mean sea level		Building/Structure
	Berm - Visual Minimum height 3.0 Metres		Spot Elevation Top - Existing (MASL) / Middle - Maximum Depth of Extraction (MASL) / Bottom - Water Table (MASL)
	Berm - Existing		Cross Sections

#### Site Plan Acronyms

- ARA - Aggregate Resources Act
- MASL - Metres Above Mean Sea Level
- MNRF - Ministry of Natural Resources and Forestry
- MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries
- MGCS - Ministry of Government and Consumer Services
- MECP - Ministry of Environment, Conservation and Parks
- CEF - Core Environmental Feature
- EEP - Ecological Enhancement Plan
- CLI - Canada Land Inventory
- MTO - Ministry of Transportation - Ontario

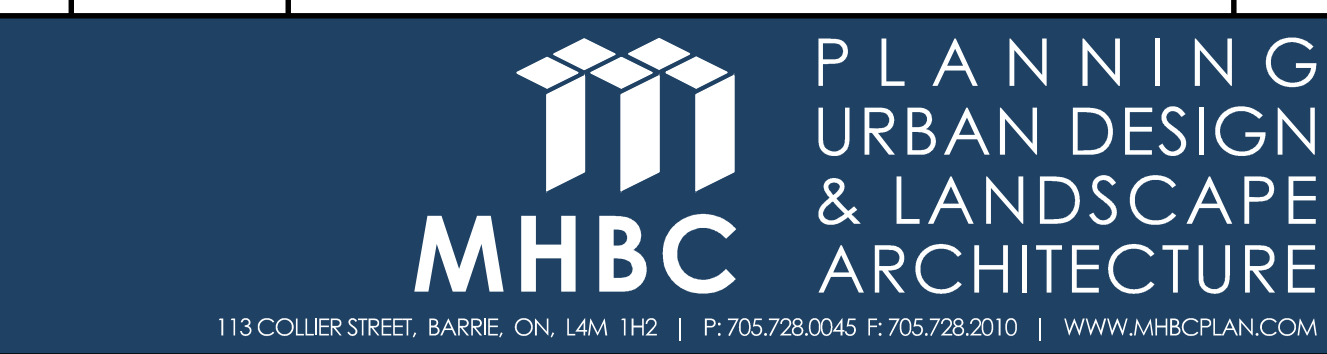


#### Site Plan Amendments

No.	Date	Description	By

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

No.	Date	Description	By



#### MHBC Stamp



#### Applicant

Hanson Ready Mix Incorporated  
1182 Alps Road  
Cambridge, Ontario  
N1R 5S5

#### Project

### Edworthy West Pit

1262 Greenfield Road and 1354 Spragues Road, Cambridge, Ontario

#### MNRF Licence Reference No.

#### Applicant's Signature

#### Plan Scale: 1:2000 (Arch E)

#### Date

January 2023

#### Drawn By

C.P.

#### File No.

1896C

#### Checked By

C.P.

#### Drawing Name

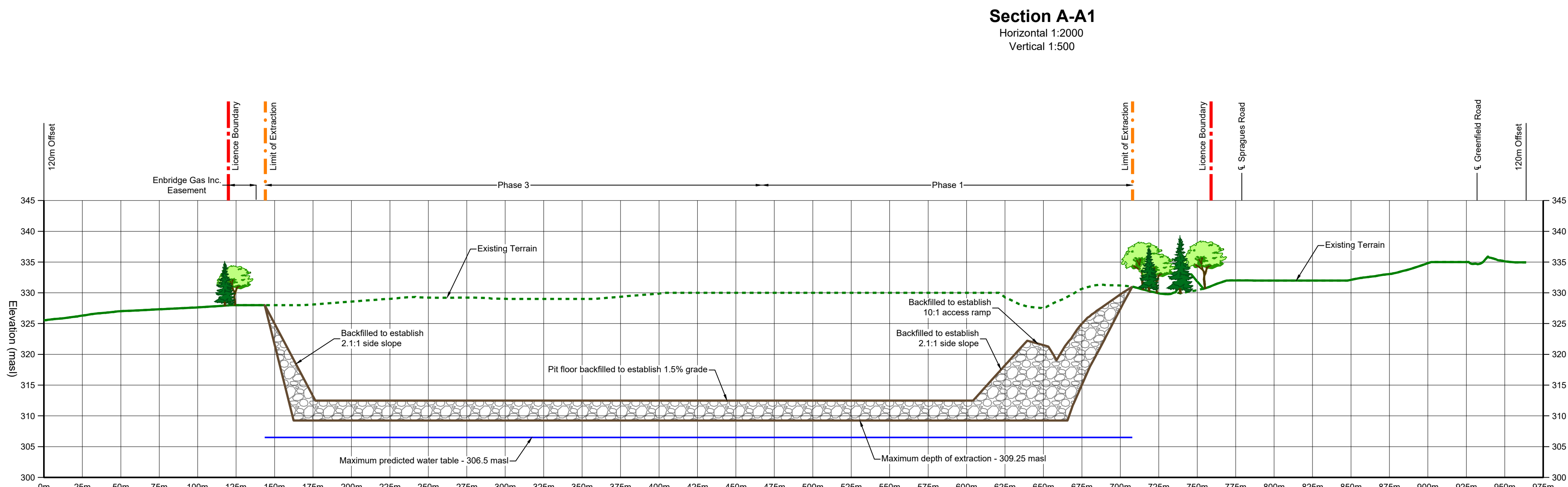
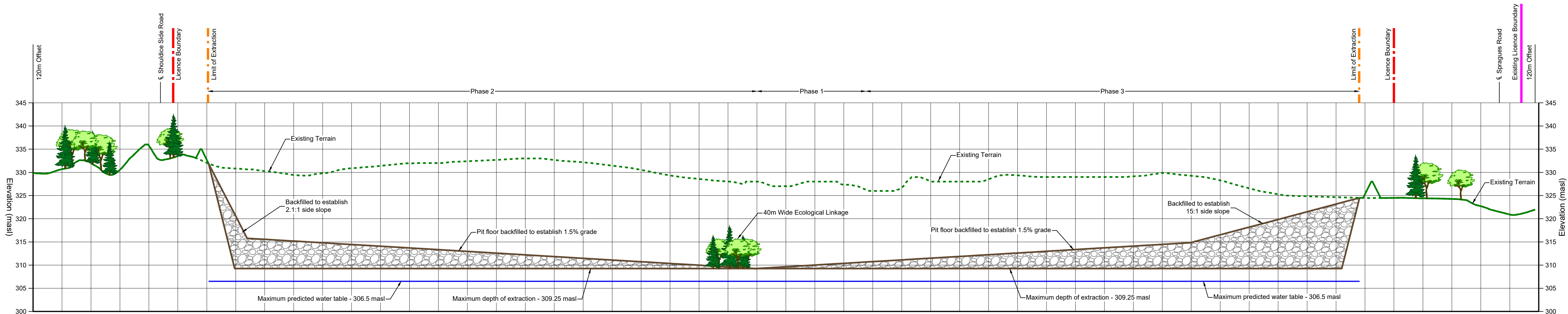
## Operational Plan

#### Drawing No.

## 2 of 3

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#### Progressive Rehabilitation

##### A. General

- Area calculations:
  - Licence Area 44.3 hectares
  - Limit of Extraction 35.2 hectares

##### B. Phasing

- As excavation reaches the limit of extraction and/or maximum depth in each phase, progressive rehabilitation shall commence.
- Progressive rehabilitation will follow the general direction and sequence of extraction identified on the plan view and described in the notes on drawing 2 of 3 as well as illustrated in the Progressive Rehabilitation Sequence schematic on this drawing.
- Minor deviations/variations in operational and rehabilitation sequence shall be permitted in order to adjust for any variable resource and market conditions.
- Each Phase of extraction shall undergo progressive rehabilitation, prior to proceeding to the next phase of extraction.
- Progressive rehabilitation shall commence in the south end of Phase 1 and shall closely follow the westerly/southwesterly direction of extraction in Phase 2. In Phase 3, progressive rehabilitation shall closely follow the northerly/easterly direction of extraction.
- Progressive rehabilitation activities will include grading and sloping, placement of overburden and topsoil, agricultural rehabilitation activities, tree and shrub planting and the establishment of ecological linkages where identified on the plan view.

##### C. Slopes and Grading

- Progressive rehabilitation will utilize a variety of rehabilitation techniques including:
  - Backfilling extraction faces;
  - Cut and filling extraction faces; and
  - Backfilling the pit floor.
- Side slopes shall not exceed 2:1 (horizontal to vertical). See Section M Variations from Control and Operational Standards on drawing 2 of 3.
- Access ramps shall be incorporated into the side slopes in the locations shown on the plan view. Ramps shall not exceed a 10:1 (horizontal to vertical) slope.
- Excess soil, as defined in Ontario Regulation 244/97, may be imported to this site to facilitate the following rehabilitation:
  - Establishing 2:1, 3:1, 10:1 and 15:1 side slopes
  - Establishing access ramps
  - Restoring the southwest corner of Phase 2 to existing grade with 2% slope
  - Top dressing to establish vegetation / agricultural crops
- Liquid soil, as defined in Ontario Regulation 406/19 under the Environmental Protection Act, is not authorized for importation to the site.
- The quality of excess soil imported to the site for final placement must be equivalent to or more stringent than the applicable excess soil quality standards as determined in accordance with Ontario Regulation 244/97 as amended from time to time and must be consistent with the site conditions and the end use identified in the approved rehabilitation plan.
- Where a qualified person is retained or required to be retained in accordance with Ontario Regulation 244/97, the quality, storage, and final placement of excess soils shall be done according to the advice of the qualified person.
- Excess soil imported to facilitate rehabilitation as described on this site plan shall be undertaken in accordance with Ontario Regulation 244/97 under the Aggregate Resources Act, as amended from time to time.
- The cumulative total amount of excess soil that may be imported to this site for rehabilitation purposes is 1,950,000 m<sup>3</sup>.
- Approximately 30,000 m<sup>3</sup> of silt may be imported from Licence #607701 annually for rehabilitation purposes. The volume of silt imported shall be deducted from the maximum total amount of excess soil that may be imported for rehabilitation purposes (see note C.6 on this drawing and Section M Variations from Control and Operational Standards on drawing 2 of 3).
- The final rehabilitated landforms established using the rehabilitation techniques mentioned above will consist of side slopes, a relatively flat floor and a portion restored to existing grade.

##### D. Topsoil and Overburden

- Refer to Agriculture notes under Section N Report Recommendations on drawing 2 of 3 for details regarding the handling and placement of topsoil and overburden.

##### E. Seeding

- Side slopes shall be top-dressed with 10-15 centimetres of topsoil. Hydroseeding application shall be used to establish groundcover on rehabilitated side slopes. Slopes shall be seeded with the Ministry of Transportation - Ontario (MTO) Standard Roadside Mix (CPSS/MJN/104) to establish vegetation quickly and reduce the potential for erosion. The MTO Standard Roadside Mix is comprised of 50% Creeping Red Fescue (*Festuca rubra*), 35% Perennial Ryegrass (*Lolium perenne*), 10% Kentucky Bluegrass (*Poa pratensis*) and 5% White Clover (*Trifolium repens*). The MTO Standard Roadside Mix shall be applied at an application rate of 130 kilograms per hectare.

##### F. Drainage

- The final surface drainage will follow the rehabilitation contours and directional arrows shown on the plan view.

##### G. Agricultural Rehabilitation

- Within the extraction area, 23.4 hectares shall be returned to an agricultural condition (in accordance with the "Pit Floor Agricultural Rehabilitation Sequence" detail on this drawing) with an average soil capability classification of CL Class 2.

##### H. Ecological Enhancements

- Detailed prescriptions for the EEP and Rehabilitation Plan (Natural Environment) Units are provided in Tables 1 and 2 of the Natural Environment Technical Report & EIS (Goodman Ecological Consulting Inc. [GEC] 2023).
- Wood chip mulch and/or COCODISC weed control mats/disks (minimum 50 centimetres diameter) shall be installed to control herbaceous competition around planted seedlings and to improve moisture retention.
- Where suitable site access is available, during the first year of establishment, plantings will be watered during dry periods, defined as when less than 25 millimetres of precipitation occurs within a 14-day period between late April and early October.
- An annual ecological monitoring program shall be undertaken in order to verify that the components of the Ecological Enhancement Plan & Rehabilitation Plan are being successfully implemented.
- A network of fixed-point photo-monitoring stations shall be established and monitoring shall occur several times each year, following commencement of EEP activities (e.g., tree-planting). Percent survivorship in the various planting areas shall be generally assessed as part of the annual ecological monitoring program. Ecological Enhancement units and Rehabilitation units that experience high mortality of plantings shall be replanted as necessary. If certain species exhibit high mortality, they shall be substituted with species that are performing better at this site.
- EEP Units and Rehabilitation Units shall be monitored for invasive plant species and management strategies shall be developed and implemented as necessary.
- Upon commencement of ecological enhancement activities, a biennial ecological monitoring report shall be completed and kept on file. The ecological monitoring report shall be made available to the MNRF, Regional Municipality of Waterloo, Township of North Dumfries and Grand River Conservation Authority upon request. The monitoring report shall document the ecological enhancement and rehabilitation activities completed during the two preceding calendar years and demonstrate that the components of the Ecological Enhancement Plan & Rehabilitation Plan are being successfully implemented. The monitoring report shall also include any recommendations that may increase the success of enhancement and rehabilitation measures in subsequent years.

##### I. Ecological Linkages

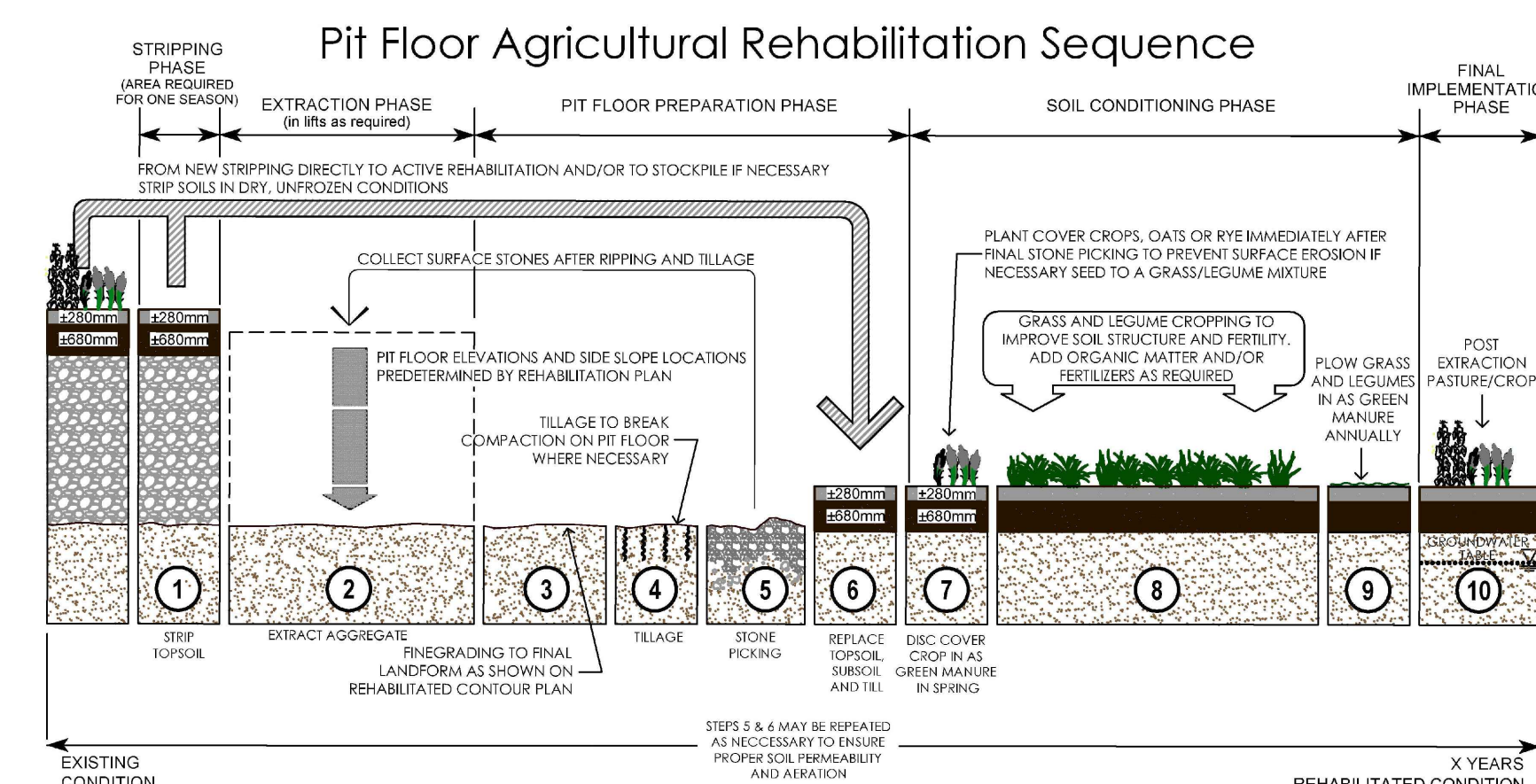
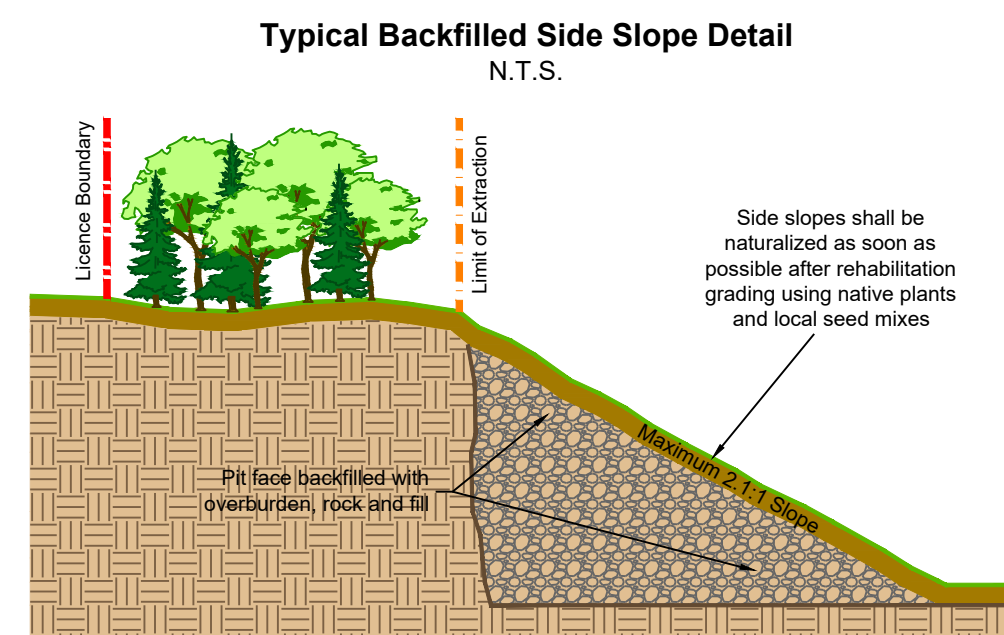
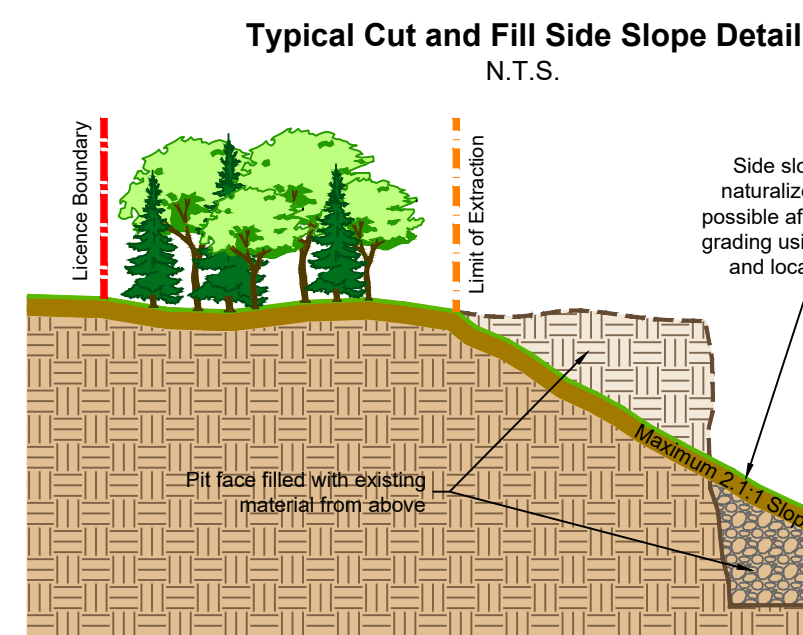
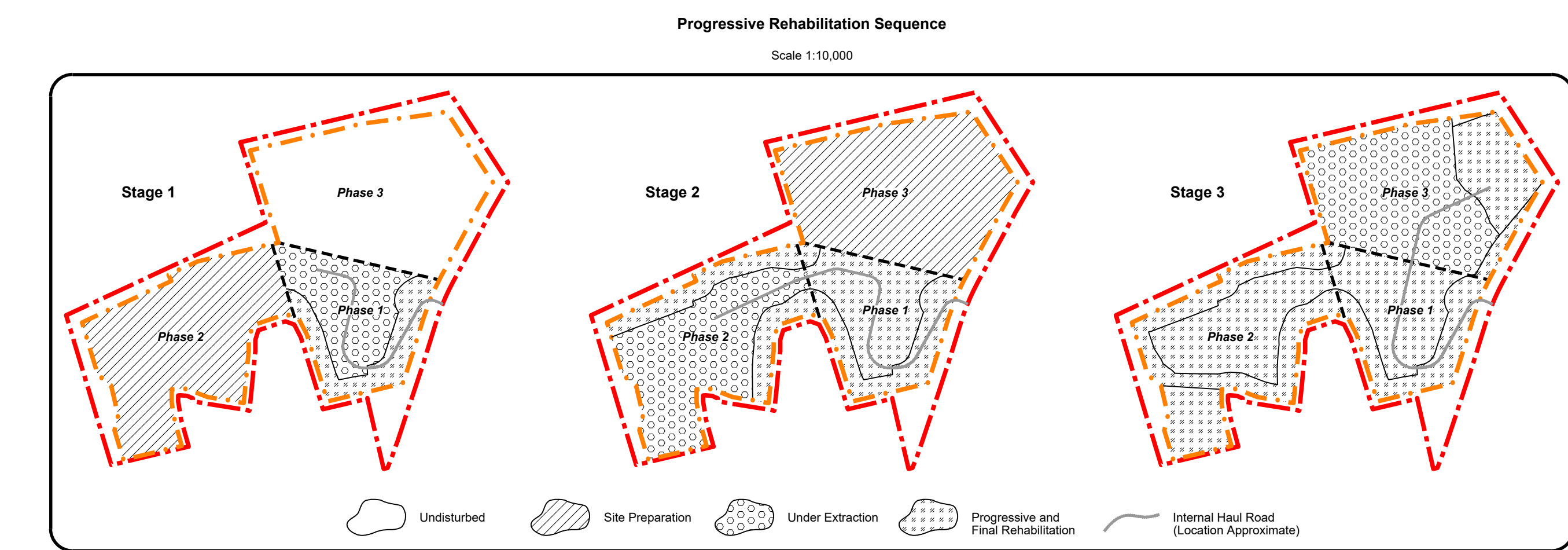
- A 40 metre wide ecological linkage shall be established on the common boundary for Lots 17 and 18, Concession 9 as depicted on the plan view.
- The 40 metre wide ecological linkage shall include a five metre wide farm access land comprised of crushed stone for the road base with shoulders for drainage purposes.
- On both sides of the farm access land, a five metre wide strip shall not be planted with woody species and shall be planted with native grasses and wildflowers. This will provide a 15 metre wide clearance zone for farm equipment.
- T-bars or fence posts shall be installed every 8-10 metres along the outer edge of the 15 metre wide clearance zone.

##### Final Rehabilitation

##### J. General

- All equipment shall be removed from the site.
- Access ramps shall remain to access the rehabilitated floor.
- The final maximum predicted water table on-site is 307.75 masl. The maximum predicted water table is shown in each cross section drawing 1 of 3 and this drawing.
- The anticipated final end-use is agricultural with ecological linkages.

Ecological Enhancement & Pit Rehabilitation - Unit Summary		
Unit	Feature	Area (hectares)
Ecological Enhancements - for land that will not be extracted		
SP-PS1	Shrub-planting - Property Setback	0.27
TP-N11	Tree-planting - No Touch Buffer	0.26
TP-N12	Tree-planting - No Touch Buffer	0.30
TP-N13	Tree-planting - No Touch Buffer	0.49
TP-N14	Tree-planting - No Touch Buffer	0.31
TP-N15	Tree-planting - No Touch Buffer	0.43
TP-PS6	Tree-planting - Property Setback	0.43
TP-PS7	Tree-planting - Property Setback	0.13
TP-PS8	Tree-planting - Property Setback	0.17
CEP1	Core Environmental Feature - Enhancement Area	0.11
CEP2	Core Environmental Feature - Enhancement Area	0.78
CEP3	Core Environmental Feature - Enhancement Area	0.11
Total Area (hectares) for Ecological Enhancements		3.79
Pit Rehabilitation (Natural Environment) - for land that will be extracted		
EL1	Ecological Linkage - At Original Grade	1.25
EL2	Ecological Linkage - Rehabilitation Side Slope	0.29
EL3	Ecological Linkage - Pit Floor	0.09
EL4	Ecological Linkage - Pit Floor	0.06
EL5	Ecological Linkage - Rehabilitation Side Slope	0.22
Total Area (hectares) for Pit Rehabilitation (Natural Environment)		1.91
Overall Total (hectares) Ecological Enhancements and Pit Rehabilitation (Natural Environment)		5.70



#### Legal Description

Part of Lots 16, 17 and 18, Concession 9  
(former geographic Township of Dumfries)  
Township of North Dumfries  
Regional Municipality of Waterloo

#### Legend

- |  |   |  |  |
|--|---|--|--|
|  | Licence Boundary  |  | Existing Licence Boundary<br>Licence # 625482          |
|  | Limit of Extraction   |  | 120m Offset From<br>Licence Boundary                   |
|  | Contours with Elevation                                       |  | Parcel Fabric<br>Lot and Concession<br>Priority        |
|  | Public Road   |  | Overhead Hydro   |
|  | Driveway  |  | Fence<br>1.2m post & wire fence unless otherwise noted |
|  | Wooded Area   |  | Entrance / Exit  |
|  | Ecological Linkage  |  | Gate   |
|  | Tree Planting   |  | Building/Structure                                     |
|  | Shrub Planting  |  | Direction of Surface<br>Drainage                       |
|  | Core Environmental<br>Feature - Enhancement Area              |  | Proposed Floor Elevation<br>(horizontal - vertical)    |
|  | Core Environmental<br>Feature - Goodban Ecological Consulting |  | Proposed Final Grade<br>(horizontal - vertical)        |
|  |   |  | Proposed Final Slope<br>(horizontal - vertical)        |
|  |   |  | Cross Sections<br>A1                                   |

#### Legend - Cross Sections

- |  |   |
|--|---|
|  | Licence Boundary                              |
|  | Limit of Extraction                           |
|  | Existing Licence Boundary<br>Licence # 625482 |
|  | Existing Grade - Removed / Altered            |
|  | Existing Grade - Undisturbed                  |
|  | Maximum Predicted Water Table<br>306 masl     |
|  | Pit Floor                                     |
|  | Backfilled                                    |

#### Site Plan Acronyms

- ARA - Aggregate Resources Act
- MASL - Metres Above Mean Sea Level
- MNRF - Ministry of Natural Resources and Forestry
- MHSTCI - Ministry of Heritage, Sport, Tourism and Culture Industries
- MGCS - Ministry of Government and Consumer Services
- MECP - Ministry of Environment, Conservation and Parks
- CEF - Core Environmental Feature
- EEP - Ecological Enhancement Plan
- CLI - Canada Land Inventory
- MTO - Ministry of Transportation - Ontario

#### Site Plan Amendments

No.	Date	Description	By

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#### MHBC Stamp



#### Applicant

Hanson Ready Mix Incorporated  
1182 Alps Road  
Cambridge, Ontario  
N1R 5S5

#### Project

**Edworthy West Pit**  
1262 Greenfield Road and 1354 Spragues Road, Cambridge, Ontario

#### MNRF Licence Reference No.

Applicant's Signature	Date	January 2023
Drawn By	C.P.	File No.
Checked By	C.P.	1896C

#### Drawing Name

**Rehabilitation Plan**

#### Drawing No.

**3 of 3**

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