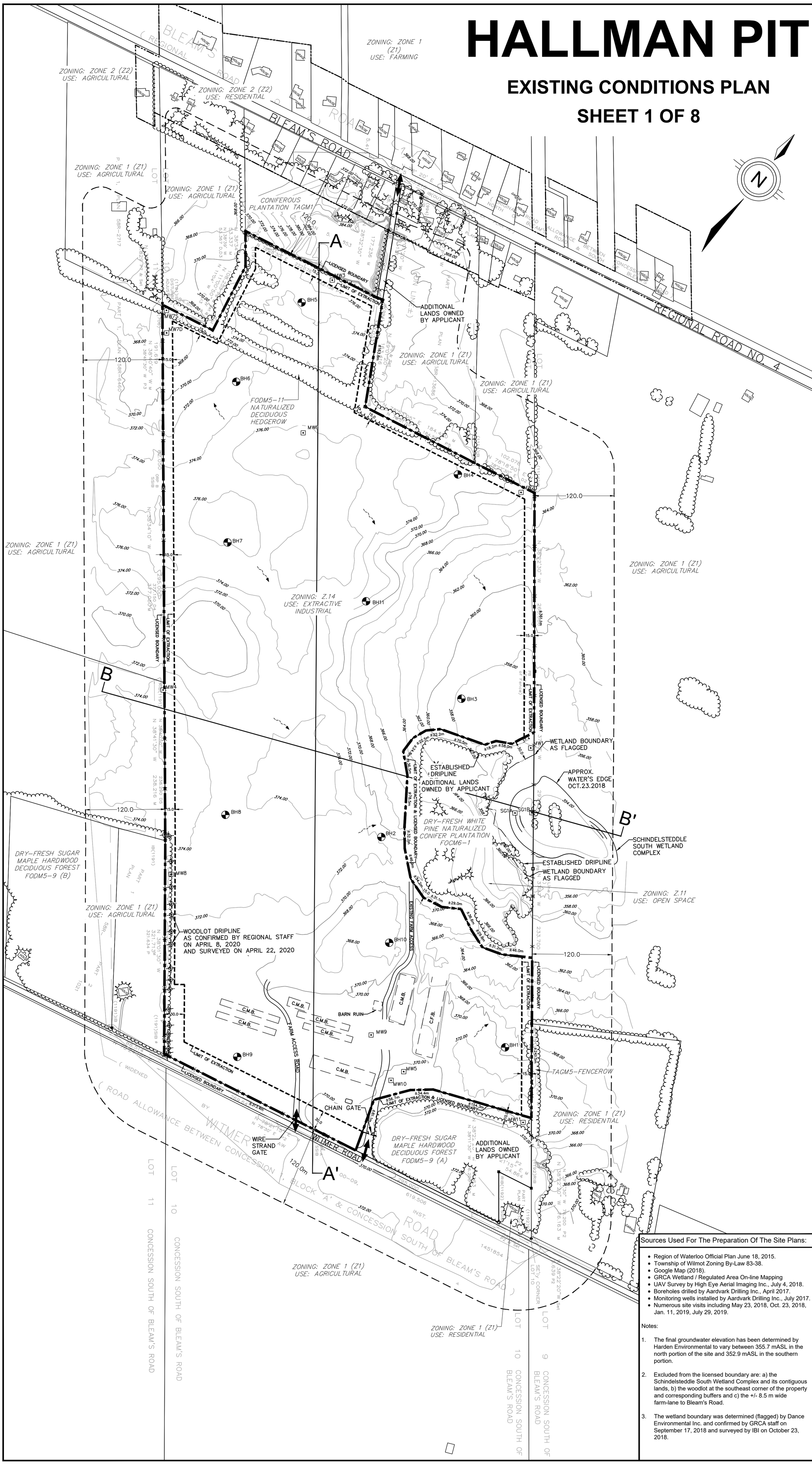
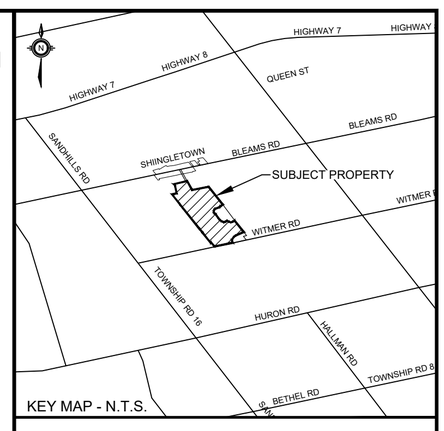
Attachment H ARA plans

HALLMAN PIT

EXISTING CONDITIONS PLAN

SHEET 1 OF 8





LEGEND

- PROPERTY BOUNDARY
- EXISTING POST & WIRE FENCE
- LICENSED AREA
- LIMIT OF EXTRACTION
- LIMIT OF 120m SETBACK
- FLAGGED WETLAND BOUNDARY
- EXISTING TREELINE
- EXISTING BUILDING
- EXISTING POND
- EXISTING ENTRANCE/EXIT
- EXISTING FARM GATE
- 370.0 — EXISTING CONTOUR (2m INTERVAL)
- SURFACE DRAINAGE DIRECTION
- C.M.B — CONCRETE MANURE BUNKER RUIN
- C.F.B. — CONCRETE FEED BUNKER RUIN
- BARN RUIN
- BH1 — BOREHOLE
- MW1 — MONITORING WELL/ SURFACE GAUGE
- SHINGLETOWN SETTLEMENT AREA
- WOODLOT DRIPLINE AS CONFIRMED BY REGIONAL STAFF ON APRIL 8, 2020 & SURVEYED ON APRIL 22, 2020

SITE DATA

AREA TO BE LICENSED	57.27 ha
AREA TO BE EXTRACTED	52.27 ha
EX. DISTURBED AREA	Nil
TOTAL LAND PARCEL	66.2 ha

REVISIONS PRIOR TO APPROVAL

2019/10/16	Revisions as per MNRF notes & details
2020/04/24	Woodlot Dripline added from survey on April 22, 2020
2020/07/14	Revisions following updated survey & reports
2021/10/06	Note changes as per comments from NDMNRF
2022/01/13	Revised notes as per GRCA and Region comments

SITE PLAN AMENDMENTS

No.	DATE	BY	DESCRIPTION

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 17, 2019
DATE

DAVID R. SISCO, RPP, MCIP

30 15 0 25 50 100
1:2500 (m)

Sources Used For The Preparation Of The Site Plans:

- Region of Waterloo Official Plan June 18, 2015.
- Township of Wilmot Zoning By-Law 83-38.
- Google Map (2018).
- GRCA Wetland / Regulated Area On-line Mapping
- UAV Survey by High Eye Aerial Imaging Inc., July 4, 2018.
- Boreholes drilled by Aardvark Drilling Inc., April 2017.
- Monitoring wells installed by Aardvark Drilling Inc., July 2017.
- Numerous site visits including May 23, 2018, Oct. 23, 2018, Jan. 11, 2019, July 29, 2019.

Notes:

1. The final groundwater elevation has been determined by Harden Environmental to vary between 355.7 mASL in the north portion of the site and 352.9 mASL in the southern portion.
2. Excluded from the licensed boundary are: a) the Schindelsteddle South Wetland Complex and its contiguous lands, b) the woodlot at the southeast corner of the property and corresponding buffers and c) the +/- 8.5 m wide farm-lane to Bleam's Road.
3. The wetland boundary was determined (flagged) by Dance Environmental Inc. and confirmed by GRCA staff on September 17, 2018 and surveyed by IBI on October 23, 2018.

IBI GROUP
101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

PART LOT 10 CONCESSION SOUTH OF BLEAM'S ROAD,
PART 1 58R19981
TOWNSHIP OF WILMOT
REGIONAL MUNICIPALITY OF WATERLOO

JACKSON HARVEST FARMS LTD.

2879 HERRGOTT ROAD
ST.CLEMENTS, ON, N0B 2M0

EXISTING CONDITIONS PLAN

DESIGNED BY:	JS	SCALE:	1:1250
DRAWN BY:	JS/PR	FILE NUMBER:	115985
CHECKED BY:	DS	SHEET NUMBER:	1 OF 8
DATE:	2019-09-17		

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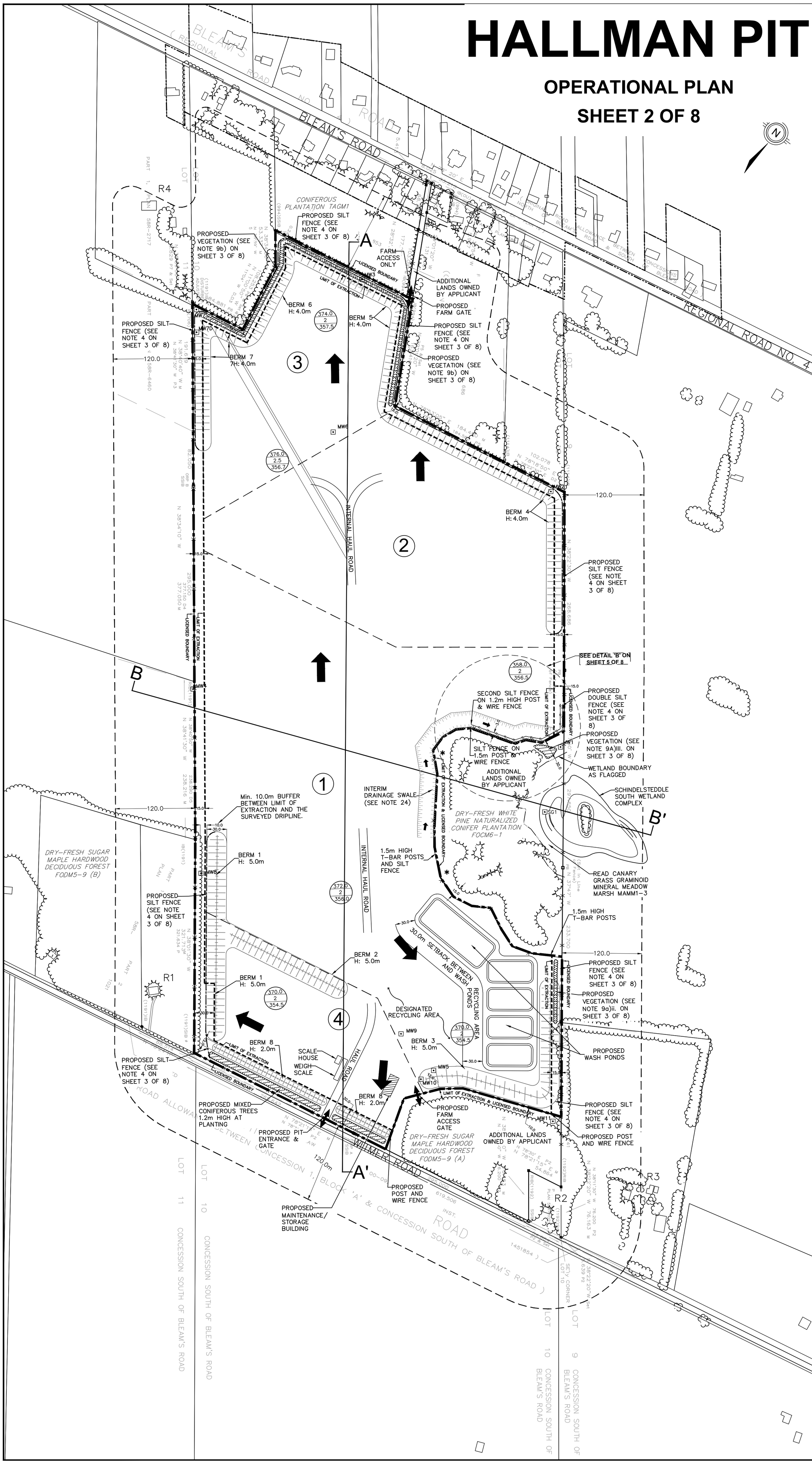
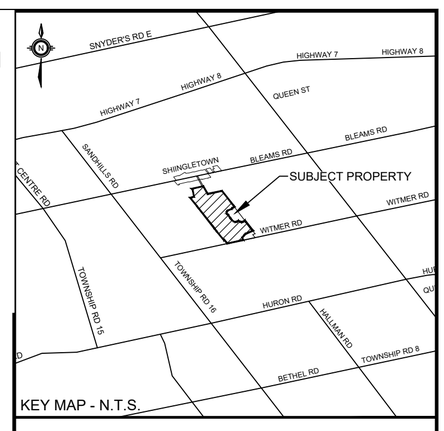
HALLMAN PIT

OPERATIONAL PLAN

SHEET 2 OF 8





LEGEND

- PROPERTY BOUNDARY
- POST & WIRE FENCE
- PHASING LINES
- LICENSED AREA
- LIMIT OF EXTRACTION
- LIMIT OF 120m SETBACK
- FLAGGED WETLAND BOUNDARY
- 1.5m HIGH T-BAR POSTS
- PROPOSED SILT FENCE
- EXISTING TREELINE
- PROPOSED VEGETATION
- EXISTING BUILDING
- EXISTING POND
- PHASING NUMBER
- DIRECTION OF EXTRACTION
- ENTRANCE/EXIT
- FARM GATE
- 376.0 / 2 / 357.0 — EXISTING ELEVATION / NUMBER OF LIFTS / FINAL EXTRACTED ELEVATION
- MW1 — MONITORING WELL/ SURFACE GAUGE
- PROPOSED WASH POND
- PROPOSED BERM
- SHINGLETOWN SETTLEMENT AREA (WILMOT O.P.)
- * — PROPOSED BAT BOXES (SEE NOTE 2 UNDER POSSIBLE BAT HABITAT UNDER NATURAL ENVIRONMENT RECOMMENDATIONS)

SITE DATA

AREA TO BE LICENSED	57.27 ha
AREA TO BE EXTRACTED	52.27 ha
EX. DISTURBED AREA	Nil
TOTAL LAND PARCEL	66.2 ha

NOTE: REFER TO SHEET 2 OF 7 AND 3 OF 7 FOR OPERATIONAL NOTES

VARIATIONS TO THE OPERATIONAL STANDARDS

0.13(3)a	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.
0.13(1)10-i	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary
0.13(1)10-i	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.

REVISIONS PRIOR TO APPROVAL

2019/10/16	Revisions as per MNRF notes & details
2020/06/29	Revisions as per GRCA discussions 2019-12-19
2020/07/14	Revisions following updated survey & reports
2021/05/06	Revisions to Notes for Re-Submission
2021/06/26	Note changes as per MNRF comments

SITE PLAN AMENDMENTS

No.	DATE	BY	DESCRIPTION

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 24, 2019
DATE

DAVID R. SISCO, RPP, MCIP

30 15 0 25 50 100
1:2500 (m)

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PART LOT 10 CONCESSION SOUTH OF BLEAM'S ROAD, PART 1 58R19981
TOWNSHIP OF WILMOT
REGIONAL MUNICIPALITY OF WATERLOO

JACKSON HARVEST FARMS LTD.
2879 HERRGOTT ROAD
ST.CLEMENTS, ON, N0B 2M0

OPERATIONAL PLAN

DESIGNED BY:	JFMS	SCALE:	1:2500
DRAWN BY:	JFMSPR	FILE NUMBER:	115985
CHECKED BY:	DS	SHEET NUMBER:	2 OF 8
DATE:	2019-09-24		

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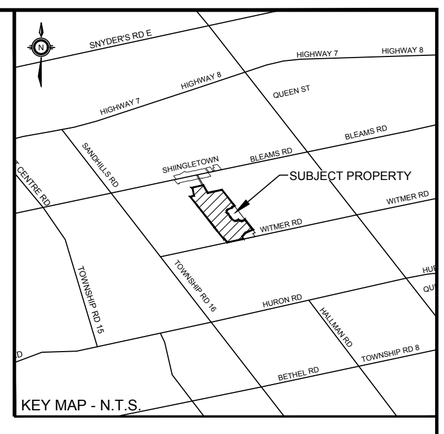
HALLMAN PIT

OPERATIONAL PLAN NOTES A

SHEET 3 OF 8



GENERAL OPERATIONAL NOTES

1. Tonnage Limit: It is a condition of this licence that no more than 750,000 tonnes of aggregate material shall be removed from this licensed property annually. The area to be extracted is 57.27 hectares.

2. Access:

a) The only pit entrance/exit will be directly onto Witmer Road with the access located approximately 220 metres east of the property's west boundary and coinciding with a former farm access point. A steel bar gate (or equivalent) shall be installed at this access point and it shall be secured after hours when the pit is not operational. The pit entrance will be paved into the pit to the furthest distance of either the front-edge of the weigh scale or 30.0 metres.

b) At the site exit, a sign must be posted to state: Attention Drivers: Left turn exit only! Caution: Witmer Road is also used by; pedestrians, cyclists, children and slow-moving vehicles!

c) Additional access points will be gated with a farm-type gate (or equivalent) and restricted to pit staff and/or farm equipment and include: i) access to the +/-8.5 metre wide farm lane to Bleams Road and ii) the off-site Dry-Fresh Sugar Maple Hardwood Deciduous Forest [FODM5-9 (A)].

3. Fencing:

a) The majority of the site is fenced with 1.2 metre high post and wire fencing, however, during the pit start-up stage, it shall be inspected and any portions that are in disrepair will be replaced. New fencing (1.2 metre high paige wire) will be constructed along the southern limit of the pit adjacent to the Dry-Fresh Sugar Hardwood Deciduous Forest [FODM5-9 (A)].

b) No fencing will be required next to the Dry-Fresh White Pine Naturalized Conifer Plantation [FOCM6-1] since the abutting lands are owned by the Licensee and the eastern property boundary is fenced (refer to Note 3a) up to the edge of the Schindelsteddle Wetland, [note: the wetland designation also applies to the Meadow Marsh (MAMM1-3) community that surrounds the open water] and/or site access is restricted. To demark the extraction boundary next to the plantation (including the identified buffer), 1.5 metre high T-bar posts (or equivalent) will be placed every 7.5 metres and remain in place for the pit life.

4. Silt Fencing: A single row of light-duty silt fence barrier (as per OPSD 219.110) shall be erected;

a) On the toe of the slope on the external side of all berms prior to berm construction and remain in place until the berm ground cover has established and/or there is minimal potential of soil erosion from the berm.

b) For Berm 1, the silt fencing must be installed 10.0 metres from the surveyed dripline of the abutting woodlot [FODM-9 (B)] in advance of the berm construction.

c) On the perimeter of the conifer plantation [FOCM6-1] on the outside of the T-bars for a minimum of one year or until there is no risk of erosion into the plantation, but no removal of the silt fence shall occur until approved by NDMNRF.

A double row silt fence shall be erected along the extraction limit nearest the northern entry point of surface water entering the Schindelsteddle Wetland, (as shown) and be installed as per OPSD 219.110 for Light-Duty Silt Fence Barrier and specifically include being buried 200 mm (refer to Detail B). The off-set between the two silt fences shall not exceed 3.0 metres. The second silt fence furthest from the extraction area) will be secured/attached to a 1.2 metre high paige wire fence. Ongoing weekly checks of the effectiveness and condition of silt fences shall occur with maintenance to rectify any impairment as required.

The double row silt fence shall remain in place until the abutting lands to the northwest have been rehabilitated with topsoil, a vegetation crop planted (i.e., native perennial herbs/grasses) and sufficiently established to ensure siltation will be minimized.

5. Site Buildings: The weigh scale and scale house facilities shall be located near the main entrance/ exit at Witmer Road. A maintenance/storage shed for on-site equipment may be located in proximity to the weight scale, within Phase 4.

6. Fuel Storage: Above-ground fuel storage with 100% containment facilities will be located near the front entrance/exit and located on a concrete pad. Semi-portable equipment used on-site (i.e., crushers, screeners, generators, etc.) will be refueled by a mobile fuel truck and follow the necessary requirements under the provincial Liquid Fuels Handling Code. In the unlikely event of any fuel spill, it must be reported to the MECP immediately and the Spill Response Plan must be posted on-site at all times (i.e., scale house/admin office).

7. Groundwater: The final groundwater elevation has been determined by Harden Environmental to vary from the north portion at 355.2 masl to 353.2 masl in the south portion. The surface water elevation in the Schindelsteddle South Wetland Complex is +/-355.3 masl.

8. Berms:

a) Numerous berms are required and their locations are shown on the Operational Plan – Sheet 2 of 7 and include:

Berm	Min. Height	Timing
1	5.0	Prior to Phase 1
2	5.0	Prior to Phase 1
3	5.0	Prior to Phase 1
4	4.0	Prior to Phase 2
5	4.0	Prior to Phase 3
6	4.0	Prior to Phase 3
7	4.0	Prior to Phase 3
8	2.0	Prior to Phase 1

b) All berms will be constructed as per the Berm Design Sketch as shown on Sheet 4 of 7, constructed of on-site overburden, subsoil or topsoil and vegetated with a native perennial herbs /grass seed mix to control erosion. A consulting ecologist will provide the specifics of a recommended native meadow seed mix for approval by Regional staff, prior to seeding. Refer to General Operational Note 9c) regarding vegetation maintenance. The only berm which the Licensee will be required to maintain (cut regularly) is Berm 8 and only the front (Witmer Road) side.

c) Berms 3 – 7 shall be constructed between September 1 and April 15.

d) Berm 1 must be constructed a minimum 10.0 metres from the dripline of the abutting Dry-Fresh Sugar Hardwood Deciduous Forest [FODM5-9 (B)].

e) Berm 8 will be constructed at the rear limit of the 30.0 metre setback along Witmer Road and all others will be constructed a minimum 3.0 metres from the abutting fence line, where applicable.

f) All berms will be removed as part of the progressive rehabilitation of the pit except the rear portion of the lower slopes of berms 5, 6 & 7 where shrubs have been planted (see Note 9b).

9. Vegetation:

a) Vegetation to be planted prior to extraction of Phase 1 shall include:

i. Along the Witmer Road pit frontage, a row of mixed coniferous trees to include 35% Eastern White Cedar, 30% White Spruce and 35% Eastern White Pine, being a minimum 1.2 metres in height at planting and spaced 4.0 – 5.0 metres apart. If available and practical, the trees may be transplanted from FODM5-9 (A).

ii. Between the toe of the slope of Berm 3 and the eastern boundary fence, ten (10) Gray Dogwoods and ten (10) Ninebark shrubs shall be planted in clumps on 3.0 metre centres and be 1.0 metres in height at time of planting.

iii. Between i) the double silt fence (within Phase 1) and ii) the Wetland Boundary (outside the Licensed Boundary); three (3) Red-Osier Dogwood and five (5) Eastern White Cedars to augment as a visual barrier and be 1.0 metres in height at time of planting.

iv. Within all setback areas where berms are not present and not planted in annual row crops, these areas shall be allowed to passively naturalize as this will increase the area available for Common Milkweed and nectar plant growth (i.e., Monarch habitat), provide preservation of Eastern Cottonwood seedlings, provide protection of retained fencerows and hedgerows to specifically protect White Spruce around the margins of the conifer plantation, increase insect populations as a greater food sources for the three regionally rare birds, enhance conditions for grassland and shrub habitat bird species and enhance conditions for insect pollinators.

Specifically the setback between Berm 1 and the western boundary shall be allowed to naturalize to woodland herbs and shrubs.

b) Vegetation to be planted prior to extraction of Phase 3 shall be between the outside portion of Berms 5, 6 and 7 and the boundary fence and partially up the side slopes of these berms. Species to be planted total seventy-five (75) Gray Dogwoods and fifty-five (55) Ninebark, being a minimum of 1.0 metres in height at planting and planted in clumps on 3.0 metre centers.

c) Maintenance of the berms, proposed pit slopes, and rehabilitated areas shall be carried out throughout the life of the pit. If significant areas of vegetation die, they shall be replaced immediately during the next appropriate planting season. As well, if significant areas of erosion occurs on any berms or within a rehabilitated area, it shall be repaired immediately and reseeded during the next appropriate planting season.

10. Tree Removal: Any trees and/or stumps that are removed to accommodate the extraction operation may be; a) buried on-site, b) burned on-site but subject to a Township of Wilmot Burn Permit being issued, and/or c) removed from the site.

11. Stripping: Topsoil, subsoil and overburden shall be stripped and used for the construction of temporary berms until needed for final rehabilitation. Additional stripped material will either be placed directly onto the final pit floor/side slopes for progressive and final rehabilitation, or, if necessary, stored in separate stockpiles on the floor and eventually used for progressive and final rehabilitation. No topsoil or subsoil will be removed from the site.

12. Extraction Depth: Excavation shall be carried out in 2 to 3 lifts (each lift not exceeding 8.0 metres in depth), with a final pit floor elevation being 354.7 masl at the south (i.e., Phase 1) and 356.7 masl at the north (i.e., Phase 3) and shall provide a minimum buffer of 1.5 metres above the identified water table.

13. Direction of Extraction: The direction of extraction for each phase is shown on Sheet 2 of 7.

14. Stockpile Heights / Locations: Aggregate stockpiles may be located within any of the Phases (1-4) but shall be located on the lowest pit floor elevation where possible and not exceed 20.0 metres in height. The stockpiles will be primarily located within the Processing Area noted on the Operational Plan.

15. Hours of Operation:

Site Preparation:	7:00 a.m. to 7:00 p.m. Monday to Friday
Extraction / Processing:	7:00 a.m. to 7:00 p.m. Monday to Friday
	7:00 a.m. to 6:00 p.m. Saturdays
Shipping:	6:00 a.m. to 7:00 p.m. Monday to Friday
	6:00 a.m. to 6:00 p.m. Saturdays

There shall be no extraction, processing or shipping on Sundays or any Statutory Holiday. Maintenance and repair of on-site equipment as required from time to time, may occur beyond these hours.

Occasionally, public construction project contracts require night time delivery of aggregate. Night time deliveries will require municipal notification and approval in advance of night work and be restricted to loading and shipping only and no other site work (i.e., crushing, screening, extraction, recycling, washing) will be permitted.

16. Equipment: Proposed equipment to be used on-site may include, but not limited to; scrapers, bull dozers, power shovels, excavators, and dump trucks for stripping and rehabilitation and front-end loaders, dump trucks, conveyor belts and portable processing equipment (crushing and screening as per the Noise Recommendations) during extraction.

17. Processing: Screening, blending and crushing will occur within; a) the 'Processing Area', b) the 'Recycling Area', and c) with some limited activity at or near the pit face (subject to the Noise Recommendations) and processing shall be located at the lowest pit floor elevation or as specified by the Noise Recommendations.

18. Aggregate Washing: The wash plant will be located within Phase 1 with water derived from the wash ponds constructed into the water table; subject to approval by MECP, including (if necessary) a Permit to Take Water.

19. Aggregate Recycling:

a) Recycling of concrete and asphalt for recycling and resale will be permitted on this site.

b) Recyclable asphalt materials will not be stockpiled within:

- 30m of any water body or man-made pond; or
- 2m of the surface of the established water table.

c) Any rebar and other structural metal must be removed from the recycled material during processing and placed in a designated scrap pile on site which will be removed on an on-going basis.

d) Removal of recycled aggregate is to be on-going.

e) Once the aggregate on site has been depleted there will be no further importation of recyclable materials permitted.

f) Once final rehabilitation has been completed and approved in accordance with the site plan, all recycling operations must cease.

● Importation of Fill - Note 20 of the Site Plan: The conditions laid out by policy A.R. 6.00.03 have been recently updated to the following:

20. Importation of Fill:

a) Excess soil, as defined in Ontario Regulation 406/19 under the *Environmental Protection Act,* may be imported to this site for the following rehabilitation purposes:

i) creation of 3:1 slopes

ii) top dressing to establish vegetation

b) Excess soil imported for the rehabilitation purposes described above shall meet the soil quality standards set out in Table 1: "Full Depth Background Site Condition Standards", of the Rules for Soil Management and Excess Soil Quality Standards published by the Ministry of Environment, Conservation and Parks, as amended from time to time.

c) The maximum total amount of excess soil that may be imported to this site for rehabilitation purposes is 750,000 m³.

d) The licensee shall ensure that the acceptance and reuse of excess soil imported for rehabilitation purposes is compliant with Part I: Rules for Soil Management of the "Rules for Soil Management and Excess Soil Quality Standards" published by the Ministry of Environment, Conservation and Parks, as amended from time to time.

e) No infill material shall be permitted on any portion of the licensed site north of the Schindelsteddle South Wetland Complex, (corresponding with the Region of Waterloo's Issues Contributing Area, and as denoted on Sheet 8 of 8).

21. Scrap: Scrap material that is generated on-site is to be stored in the vicinity of the scale house or maintenance/storage building and removed from the site on an ongoing basis (i.e., annually).

22. Dust Mitigation: Dust shall be mitigated on-site. Water or any other MECP approved dust suppressant shall be used to control dust on internal roads as often as required and as stipulated in the Best Management Practices Plan for Control of Fugitive Dust Emissions (BMPP) dated April 2020. When calcium chloride is used, it will be applied at the manufacturer's recommended rate but subject to Dust Recommendation Note 4. Refer also to Recommendations from Technical Studies regarding Dust.

23. Internal Roads: Internal roads within the extraction area will be constructed and disbanded as required. When extraction is completed, all areas which have been subjected to compaction from heavy equipment will be cross-ripped to a minimum depth of 0.5 metres to ensure effective drainage.

24. Surface Drainage: In order to ensure surface water flows are maintained toward the Schindelsteddle Wetland Complex during the extraction of Phase 1, an interim drainage swale will be established along the western/northern limit of the conifer plantation (generally as shown). The balance of the surface water drainage will be maintained on-site and allowed to percolate through the pit floor into the groundwater system.

25. Area to be Extracted: The total area to be extracted is 57.27 hectares.

26. Final Land Use: The final land use for the subject lands will be agricultural. Restrictions to the agricultural use on portions of the lands are cited in the Risk Management Plan 2019 on file with the Region of Waterloo.

Spill Response Plan: The Spills Response Plan must be posted on-site at all times in the scale house or administration office/trailer.

RECOMMENDATIONS FROM TECHNICAL STUDIES

Hydrogeology: (Harden Environmental Ltd. dated Sept 2019)

1. On-site monitoring of MW1 and SG1 by data-loggers (hourly) shall continue for the duration of the pit life. A report will be prepared annually prior to April 30th (for the previous year's data) by a qualified hydrogeologist and submitted to NDMNRF and the Region of Waterloo. The Report will document the monitoring results and provide analysis of the year over year data and whether any modification to the operation are recommended, but any such modifications shall be reviewed and approved by NDMNRF and the Region of Waterloo prior to implementation. Annual reports are to continue for the operational life of the pit and for two years after completion of rehabilitation.

The following is the monitoring program.

PARAMETER	LOCATION	FREQUENCY
Water Levels	SG1, MW1, MW2, MW3, MW5, MW7S, MW8, MW11	Once daily at 6 pm with data logger
Water Quality (general chemistry, anions, ICP metals, nutrients, PAH, TPH), BTEX, PHC's	MW5 Note: In the event that PAH, TPH, BTEX or PHC's are detected in MW5, MW11 will be added to the water quality sampling program.	Annually

2. A Spills Management Plan is detailed on Sheet 4 of 8 (Spills Management Plan).

3. The final pit floor elevations as shown on the Rehabilitation Plan (Sheet 8 of 8) shall remain a minimum 1.5 metres above the groundwater. The final pit floor must be adjustment higher, if required to address impacts from climate change.

4. Nutrient applications shall be restricted or eliminated in the Issue Contributing Area of the Region of Waterloo wells (K50, K51 K52) as per the agricultural Risk Management Plan on file with the Region of Waterloo and also identified on the Rehabilitation Plan.

5. The siting of all asphalt recycling material must be placed on a low permeable soil liner, and that runoff be captured in the recycling area.

6. If any asphalt recycling occurs on-site, a future groundwater monitor (MW12) will be installed to monitor for potential impacts related to that activity.

Water Well Complaint Protocol

If the licensee receives a complaint regarding any water well issues arising as a result of aggregate extraction activities, the protocol listed below will be followed. Complaints regarding water well issues will be received any time at (519) 588-2884 or by e-mail messages sent to rickesbaugh@gmail.com. Any updated contact information will be provided to local landowners as necessary.

1. In the event of a complaint regarding an adverse impact on water supply or quality, which, in the opinion of the licensee and its hydrogeological consultants, may reasonably be attributed to aggregate extractive activities;

i) A supply of bottled water for drinking/cooking shall be delivered to the well owner within 12 hours of the complaint and,

ii) As necessary, an alternative water supply shall be delivered within 24 hours of the complaint being received.

The same commitment is made for industrial and / or agricultural operations and includes, as necessary, sufficient water supply for relevant industrial and farm requirements.

2. Within 48 hours, the licensee shall initiate a hydrogeological investigation conducted by a qualified hydrogeologist or engineer to determine whether the water issue is attributable to aggregate extraction activities. The investigation may include but not be limited to the following actions:

- Confirmation of water levels in on-site groundwater monitoring wells
- Review of historical trends in groundwater levels and groundwater quality obtained in on-site groundwater monitoring wells, and surrounding domestic wells
- Review of historical measured precipitation rates
- Scheduling an interview with resident regarding well complaint
- Investigation of subject well including flow testing, water level measurements and water quality testing if necessary
- Review of construction activities in the vicinity of the subject well
- Written report summarizing the findings

3. In the event that the activities related to the aggregate extractive activities are determined to be the cause of the complaint, the licensee shall undertake appropriate mitigation measures such as:

- Provision of the alternate water supply until water clarity/quality or water level issues abate
- Lowering the level of the pump within the impacted well
- Deepening the resident's well
- Replacing the resident's well
- Treating the resident's well water

Noise: (HGC Engineering Limited, dated September, 2019)

Initial Start-Up Phase

1. Prior to extraction, the licence shall construct a designated recycling area, washing area and an initial portable processing crusher area, in the general location shown on Sheet 2 of 8 – Operational Plan, at the final pit floor elevation of 356.0 masl.

2. Processing and recycling equipment may be used during the initial start-up phase to construct these working areas.

3. During continued operations in this phase, processing equipment may be relocated to follow the pit working face. The recycling equipment shall remain in the designated recycling area at the final pit floor elevation.

4. Activities used to prepare the site for extraction, such as the stripping of topsoil and construction of berms, or activities related to the remediation of the site after the extraction is completed are considered to be construction activities. They are regulated under municipal by-laws and NPC-115 "Sound Level Limits for Motorized Construction Equipment".

5. At the time of licensing the Hallman Pit, two existing ARA licensed pits exist in close proximity, south of Witmer Road. Future extraction in specific phases of these two licensed pits combined with extraction within Phase 4 of the Hallman Pit may result in cumulative noise impacts. To address this possible scenario; Jackson Harvest Farms Ltd. (Licensee) shall be required to undertake a noise audit to ensure MECP noise guidelines continue to be met subject to the following circumstances;

i) Hallman Pit extracting with Phase 4 and,

ii) Active extraction occurring within any part of Phases 8, 9 and/or 10 of the Cattleland Pit (ARA License 10600), and/or

iii) Active extraction occurring within any part of Phase 2 of the Voisin Pit (ARA License 608502).

The noise audit shall be undertaken by a qualified acoustical engineer with the results submitted to NDMNRF, the Region of Waterloo and the Township of Wilmot. Should MECP guidelines be found to be breached, the Licensee shall undertake operational design changes to ensure compliance.

Extraction Phases 1 Through 4

Refer to the Operational Notes and Details Plan (Sheet 4 of 8) for the Noise Recommendations for each extraction phase.

Natural Environment (Dance Environmental Inc., dated September, 2019)

General Recommendations

1. Clearing of any vegetation within the limit of extraction shall

a) Not occur during the bird breeding season in compliance with the Migratory Birds Convention Act, unless it can be ascertained by a qualified expert that no birds covered by the Act are observed to be breeding in or adjacent to the affected area;

b) Occur between November 1 and April 1 to prevent any destruction of birds, eggs or nests.

2. Effective dust control shall be maintained along the access road and in the pit so that dust does not impact adjacent vegetation and wildlife.

3. Adequate undisturbed setbacks shall be established between the limit of extraction and the Level 1 features including Habitat for Barn Swallow and Bank Swallow, Fish Habitat, turtle wintering area for Midland Painted Turtle, Eastern Wood-Peewee and Monarch and the Significant Woodland (FODM5-9 (B).

4. Setback areas shall be allowed to naturalize to wild vegetation cover, be seeded to a grass/legume mix or planted with shrubs.

5. Progressive rehabilitation shall be undertaken.

6. Equipment fueling, maintenance and fuel storage shall be located on the portion of the site recommended by the hydrogeologist, away from the wetland feature.

7. Extraction shall be kept 1.5 metres above the shallow groundwater elevation so that there are no impacts on the wetland feature.

8. Silt control fence shall be installed to protect the wetland.

9. The limits of extraction shall be fenced with post and wire fencing or other posts to prevent equipment from impacting the significant natural features.

10. If Bank Swallows begin to nest in the new pit margins, pertinent regulatory requirements shall be followed to avoid impacts on this species.

11. Undisturbed setbacks will be provided to protect Level 1 features namely:

(a) fish habitat and turtle wintering habitat for Midland Painted Turtle and Common Snapping Turtle will be separated from extraction by 60 metres or more of undisturbed vegetated buffer;

(b) the closest (eastern) margin of the Eastern Wood-Pewee territory will be setback from the closest extraction 65 metres or more – forest and meadow habitat (on a berm) will vegetate the width of the setback;

(c) the most extensive areas of Monarch habitat are located in openings within the FOCM6-1 (coniferous plantation) and the MAMM1-3 meadow marsh within the wetland. These areas are to remain as naturally vegetated setbacks, with most of this habitat being 30 metres to over 100 metres from the closest extraction; and

(d) The FODM5-9(b) Significant Woodland will have a 10 metres to 30 metres wide naturalized setback separating the drip line of the woodland from the closest extraction.

Wetland Trigger Levels and Contingency Plan

1. Water levels from Station SG1 will be used to trigger contingency measures for the wetland. Trigger levels and warning levels have been determined for three periods as follows:

- Winter Warning Level - lowest water level observed between December 1 and March 1: 353.90 masl.
- Spring Warning Level - lowest water level observed between March 2 and June 15: 354.20 masl.
- Summer/Fall Warning Level - lowest water level observed between June 16 and November 30; 353.97 masl.
- High: ±355.25 masl (recommended based on the hydrograph for SG1)

A trigger level is established 0.10 metres lower than the warning level and the warning and trigger levels are relative to historical water levels.

2. Seasonal water levels at SG1 will continue to be reviewed and that if any new seasonal lows occur prior to commencement of extraction at this site, the seasonal warning and trigger elevations will be adjusted.

3. The Automatic Water Level Recorder (AWLR) at SG1 shall be downloaded during the first 2 weeks of May and an internal memo on conditions at SG1 relative to warning and trigger levels for the spring season shall be circulated to the licensee and consulting ecologist by May 20. The Consulting Ecologist shall review the SG1 water level findings relative to ecological conditions observed during amphibian call surveys.

4. The annual hydrogeological report shall address any exceedances of triggers.

5. If any trigger level is breached, the following measures will be taken:

i) Confirmation of water level within 24 hours. Increase monitoring to weekly until source of the trigger level exceedance is identified. Data from automatic water level recorders (AWLR) will be downloaded and reviewed on a weekly basis.

ii) Within seven days complete an evaluation of precipitation, groundwater monitoring data and pit activities to determine if pit activities are responsible for the low water level observed. The water level data from the AWLR's will be plotted and the water level trends analyzed so that the time it will take for the water level to recover above the trigger level can be predicted.

iii) If pit activities are found to be responsible, the licensee shall undertake one of the following contingency measures and a response will be presented to the NDMNRF and GRCA.

- Cease water taking for the aggregate washing operation,
- Alter extraction configuration or extraction extent
- Alter timing of extraction activities

iv) If the pit activity is not found to be the cause or contributor to the trigger level breach, then pit activity will continue and monitoring frequency will return to normal.

6. Water levels around the perimeter of the pit will be documented for identification of trends in the position of the high-water table, and the final pit floor level will be adjusted accordingly in consultation with the GRCA if the high-water table exceed those stipulated on the site plans and as per the Water Monitoring Program.

7. The GRCA is to be contacted if there is a significant change in the hydroperiod of the wetland to determine if operational adjustments are warranted.

Habitat Specific Recommendations:

Monarch

1. The native seed mix that will be applied to berms shall contain seed of Common Milkweed and flowering herbs which are nectar sources for Monarchs and other insects.

Significant Woodland [FODM5-9 (B)]

1. The western margin of Berm 1 shall be 10 metres or more from the dripline of the woodland.

2. Before the berm is constructed the paige wire fence demarking the licence boundary shall be repaired and/or reconstructed.

3. Prior to Berm 1 being constructed, a silt fence shall be installed 10 metres from the dripline of the Significant Woodland and inspected at weekly intervals and be repaired as soon as practical and remain in place until the berm ground cover has established and/or there is minimal potential of soil erosion from the berm.

4. Berm 1 construction shall occur between September 1 and April 15, to accommodate grassland / shrubland birds and be vegetated with a legume/grass mix to stabilize the berm surface.

5. Extraction of Phase 1 shall not occur closer than 10.0 metres from the eastern dripline of the Significant Woodland.

6. Dust control shall occur on a regular, ongoing basis to ensure that dust does not leave the pit and accumulate in the Significant Woodland.

Meadow Marsh and Wetland [MAMM1-3 and OAO]

1. The entire conifer plantation, which is located upslope of the wetland, shall be retained and extraction shall remain 15.0 metres away from the edge of the plantation.

2. T-bar fence posts (or equivalent), shall define the licence boundary and extraction limit 15.0 metres away from the conifer plantation.

3. Silt fence is to be installed along the outside of the T-Posts before any topsoil stripping occurs. The silt fence is to be inspected and maintained for a minimum of one year and beyond until there is minimal potential of soil erosion toward the confer plantation.

4. Routine dust control shall occur so that the plantation, wetland and associated vegetation are not impacted by dust.

5. Three (3) Red-Osier Dogwoods and five (5) Eastern White Cedars shall be planted to provide a visual barrier between the pit and the wetland where there is currently a gap in vegetation between the wetland edge and the extraction and these shrubs shall be 1.0 metre tall when planted.

6. A double row silt fence shall be erected along the extraction limit nearest the northern entry point of surface water entering the Schindelsteddle Wetland, as per General Note 4.

7. Amphibian Chorus Monitoring: A Marsh Monitoring Protocol shall be implemented to document the strength of amphibian choruses at one station adjacent to the wetland on three nights during the breeding season. The monitoring shall occur for 5 consecutive years, to begin once extraction has begun in Phase 1. A minimum of three anuran surveys shall be done between late March/early April and the end of July to ensure detection of all expected species.

Additional factors that will be documented shall include:

- any sediment transport into the wetland;
- width and health of the wetland vegetation;
- any other pertinent facts about wetland conditions that are observed; and
- water depth on a staff gauge placed in the pond.

An annual report on monitoring results will be provided to the Township of Wilmot, Region of Waterloo, GRCA, and NDMNRF. The amphibian chorus results will be interpreted relative to the 2018 and 2021 baseline results and the water table monitoring results from the hydrogeologist at stations MW1 and SG1 will also be considered. This report is to be provided by June 30th of the following year. After 5 years of reporting, the need for continuing the monitoring will be reviewed with the Region of Waterloo, GRCA and NDMNRF.

Readings from the wetland staff-gauge will be undertaken three (3) times annually with these visits occurring during the late March to mid-July period. This timing coincides with key ecological activities and key times for potential wetland level flux and to document amphibian choruses, turtle basking and turtle nesting. The water levels observed by the Consulting Ecologist will be compared with the seasonal warning and trigger levels, immediately following each site visit.

8. Turtle Monitoring: Numbers and species of sunning turtles shall to be counted on three sunny days between April 5 and May 30 during Years 1, 3 and 5, following the initiation of extraction. During these same years, searches for turtle nests are to be conducted on 3 dates between June 10 and July 10. Locations of nests are to be mapped and GPS locations are to be recorded. Numbers of turtle nest attempts, nests, eggs and egg fragments are to be recorded, along with the turtle species. Results of the turtle monitoring will be documented in the report prepared on amphibian monitoring results (see Note 7 above).

NDMNRF requires one monitoring report be submitted at the end of the fifth year of monitoring. The report shall be submitted to NDMNRF Guelph District, c/o the Resource Operations Supervisor or the District Manager.

All annual compliance forms submitted to NDMNRF Guelph District during the 5-year monitoring period shall include a description of any biological monitoring undertaken that year.

The final 5 year monitoring report shall include, at a minimum:

- a description of each survey undertaken along with the location of the monitoring (UTM, lat./long.), full names of the people completing the monitoring, date, duration (start and end times), temperature (start and end), a description of the sky and approximate wind speed;
- the results of all monitoring completed over the five years; and
- a conclusion on whether further biological monitoring is recommended.

After NDMNRF has communicated acceptance of the report, it shall be circulated to other agencies for review. The receiving agencies shall be provided the option of providing comments to NDMNRF Guelph District (c/o the Resource Operations Supervisor or the District Manager). The comments may include an opinion on whether the objectives of the monitoring have been achieved and is complete or whether it is incomplete and should be continued. The comments should be provided to the NDMNRF Guelph District Resource Operations Supervisor or District Manager within 60 days of receipt of the report, unless an extension has been granted by NDMNRF.

The NDMNRF shall be the sole decision maker on whether additional monitoring is required. This decision will be based on the conclusions of the report and any comments received from other agencies.

9. Vegetation plot monitoring shall be conducted during Years 1, 3 and 5 following initiation of extraction to help establish baseline ecological conditions and to provide a basis for assessing ecological changes during the extraction period.

10. Breeding bird sightings for all SAR and Regionally Rare birds shall be recorded during all monitoring site visits during the 5 years of frog monitoring, that begins once extraction has begun in Phase 1. During Years 1, 3, and 5, following initiation of extraction, special attention shall be given to Sora, Virginia Rail, and Least Bittern, including the use of the Marsh Monitoring Program (MMP) protocol, using the broadcast methods to survey marsh areas. This shall also include the completion of two dedicated early morning breeding bird surveys, a minimum of 10 days apart. If available, the data can be contributed to the 3rd Ontario Breeding Bird Atlas project

VARIATIONS TO THE OPERATIONAL STANDARDS

0.13(3)a	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.
0.13(1)10-i	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary
0.13(1)10-i	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.

REVISIONS PRIOR TO APPROVAL

2019/10/16	Revisions as per MNRF notes & details
2020/07/14	Revisions following updated survey & reports
2021/02/24	Revisions following updated Spill Management Plan
2021/05/06	Note changes as per agency comments
2021/06/26	Note changes as per MNRF comments
2022/01/13	Revised notes as per GRCA and Region comments

SITE PLAN AMENDMENTS

No.	DATE	BY	DESCRIPTION

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 24, 2019
DATE

DAVID R. SISCO, RPP, MCIP

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PART LOT 10 CONCESSION SOUTH OF BLEAM'S ROAD, PART 1 58R19981
TOWNSHIP OF WILMOT
REGIONAL MUNICIPALITY OF WATERLOO

JACKSON HARVEST FARMS LTD.
2879 HERRGOTT ROAD
ST.CLEMENTS, ON, N0B 2M0

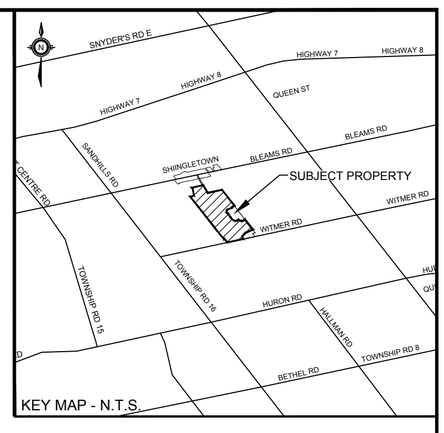
OPERATIONAL PLAN NOTES A

DESIGNED BY:	JS	SCALE:	N.T.S
DRAWN BY:	JS/PR	FILE NUMBER:	115985
CHECKED BY:	DS	SHEET NUMBER:	3 OF 8
DATE:	2019-09-24		

HALLMAN PIT

OPERATIONAL PLAN NOTES B

SHEET 4 OF 8



Southeastern Woodland [FODM5-9 (A)]

1. Silt fencing shall be placed along the southern margin of the berm to prevent sediment transport from Berm 3 toward the woodland.
2. The 15.0 metre setback between the woodland and the licence boundary shall be allowed to naturalize as woodland herbs, shrubs and trees will quickly colonize this area.
3. Berm 3 shall be planted with a legume/grass mix to prevent erosion of the berm surface.
4. Routine dust control shall occur so that the woodland is not impacted by dust.
5. Vegetation in the existing hedgerow which connects this woodland to the marsh/wetland to the north shall remain along the property boundary so that this corridor is maintained.

Regionally Significant Bird Breeding Habitat

Pied-billed Grebe

1. A 50.0 metre wide undisturbed wild vegetation buffer shall separate the extraction limit from the closest margin of the wetland habitat.
2. Paige wire fence and/or fence posts and temporary silt control fence will be placed at the limit of extraction to prevent machinery and sedimentation damage to the conifer plantation and other buffer vegetation.
3. A double row silt fence shall be erected along the extraction limit nearest the northern entry point of surface water entering the Schindelsteddle Wetland, as per General Note 4.
4. Dogwoods and cedars shall be planted between the margin of the conifer plantation and the eastern property boundary.
5. The conifer plantation (TAGM1), wetland and associated buffer lands should be zoned Open Space Z.11.

Eastern Bluebird, Brown Thrasher and Vesper Sparrow

1. Construction of the noise berms located east of the wash ponds and in the northern sector of the pit shall occur between September 1 and April 15 to avoid impacts on nesting birds.
2. A silt fence shall be installed along the outer margins of the berm footprints before berm construction begins, so that adjacent natural features including the fencerow vegetation are protected from sedimentation;
3. The berms shall be seeded with a grass/legume mix to stabilize the berm surface against erosion.
4. Gray Dogwoods and Ninebark shrubs shall be planted in clumps on 3.0 metre centers along the eastern half of Berm 3. Similarly, Gray Dogwood and Ninebark shrubs shall be planted in clumps on 3.0 metre centers along the outside slopes of Berms 5, 6 and 7.

Regionally Significant Plant Species

1. Black Walnut is widespread in the Region and retained fencerows and the two upland deciduous forests will protect most specimens of Black Walnut that are present.

Possible Bat Habitat

1. Removal of any hedgerow trees and constructing of portions of Berm 4, 5, 6 and 7 adjacent to hedgerows, shall occur between September 1 and April 15.
2. During the initial start-up stage, two (2) bat boxes shall be erected on the western margins of the conifer plantation, as shown on Sheet 2 of 8.

GRCA Regulated Area (Wetland feature)

The wetland feature shall be protected by the following:

1. An undisturbed setback of 50.0 metres or more from the wetland margin and 30.0 metres from the flagged wetland.
2. 1.5 metre high T-bar posts and temporary silt fence.
3. New shrub plantings.
4. Extraction shall not be within 1.5 metres of the water table.
5. Open Space Z.11 zoning on the buffer/wetland lands.
6. A double row silt fence shall be erected along the extraction limit nearest the northern entry point of surface water entering the Schindelsteddle Wetland, as per General Note 4.

Agriculture / Soils (DBH Soil Services Ltd., December 21, 2018)

1. To reduce trespassing and potential vandalism:
   a. Use natural heritage features or a road to separate agriculture from non-agricultural land uses to create a defined boundary.
   b. The creation of a berm or vegetated feature between the different types and intensities of land.
   c. Use adequate fencing.
   d. The use of signage to indicate No Trespassing or Private Property.
2. The use of plantings/vegetation as buffers to reduce visual impacts and sounds.
3. The use of reduced speed limits in the agricultural areas.
4. Implementation of surface and/or groundwater monitoring in areas where agricultural operations make use of surface or groundwater as part of their normal farm practices. Specifically, this monitoring is referenced on Sheet 3 of 8 under Hydrogeology Recommendations: (Harden Environmental Ltd. dated September, 2019) as Note 1.

Rehabilitation Recommendations:

1. Strip and store topsoil, subsoil and overburden separately, under appropriate weather conditions. Surface soils are easily damaged when wet.
2. Strip in small areas as necessary in advance of extraction.
3. Apply progressive rehabilitation to prevent degradation of the topsoil material, without intermediate stockpiling. Where stockpiling is necessary, use it as longer term berm material.
4. The pit floor should be deep chisel ploughed or ripped to release compaction from heavy equipment.
5. Re-establish the overburden, subsoil and topsoil in the appropriate sequence for a minimum of 0.5 metres to ensure 2.0 metres of soil over the water table.
6. Chisel plough each horizon of replacement soil, prior to the placement on the next horizon, to release soil compaction.
7. Use best management agricultural practices as are appropriate for the area.

Archaeology: (Timmins- Martelle Ltd. dated September 2019)

1. Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*. Further, archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.
2. The Funeral, *Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must notify; a) the police or coroner and b) the Registrar of Burial Sites, War Graves, Abandoned Cemeteries and Cemetery Closures, Ontario Ministry of Government and Consumer Services at (416) 212-7499

Dust: (GHD Limited dated April 2020)

1. A Best Management Practices Plan for Control of Fugitive Dust Emissions (BMPP) revision dated April 7, 2020 was prepared by GHD Limited. A copy of the BMPP and any addendums must be kept on-site (i.e., scale house/ administration office) at all times.
2. All components of the BMPP shall be in effect at all times including a) Control Measures, b) Inspection, Maintenance and Documentation, c) Training, d) Dust BMPP Review and Continuous Improvement.
3. All BMPP related records must be retained and available upon request to MECP and/or NDMNRF.
4. The maximum annual volume of a 30% CaCl2 solution to be used as a dust suppressant on the internal haul route is 45,000 litres";

Spills Management Plan

1. Purpose

The purpose of this Spill Management Plan ("SMP") is to detail spill prevention, preparedness, and response requirements to support the safe response to accidental spills, leaks, or releases of both hazardous and non-hazardous materials to the environment (i.e., releases to land and/or water); to eliminate or minimize the adverse effects should a spill occur; and, to protect the health and safety of employees.

The SMP was prepared for the Jackson Harvest Farms Ltd. pit located at 1922 Witmer Road, Petersburg, Ontario (the "Site").

2. Scope

This SMP applies to the Site managers (i.e., Spill Response Coordinator and Alternate Spill Response Coordinator), Site Personnel (i.e., employees) and contractors at the Site.

The Site consists of a 57.27 hectares parcel of land. The Site consists of a contractor yard and maintenance shop, which includes a scale house.

Table 1: Site Information

Category	Information
Owner	Jackson Harvest Farms Ltd., Hallman Pit
Site Location	Part of Lot 10, Concession South of Bleams Road, being Part 1 on Plan 58R-19981, Township of Wilmot, Region of Waterloo
Mailing Address	1922 Witmer Road, Petersburg, Ontario Phone: 519-588-2884 Email: rickesbaugh@gmail.com
Site Surroundings and Access	The surrounding area includes residential and agricultural property uses. Access to the Site is from Witmer Road.

A Site plan identifying the key areas of the Site is presented in Figure 1.

3. Roles and Responsibilities

The **Spill Response Coordinator** (or designated **Alternate**) has the following responsibilities:

- In case of a spill, responding to the spill location and taking charge or ensuring someone takes charge of containing the spill and ensuring the safe handling, clean-up, and proper disposal of spill residues and clean-up materials.
- Reporting the spill internally (to the Environmental Manager, Plant Manager and Senior Management) and externally (Ministry of Environment, Conservation and Parks Spills Action Centre ("MECP SAC"), Township of Wilmot, and Regional Municipality of Waterloo), as required; and, ensuring a Spill Investigation Form (provided as Appendix B) is completed including an investigation of the causes of the spill and evaluation of actions taken to respond to the spill event;
- Ensuring Safety Data Sheets ("SDSs") are readily available and kept current for all hazardous materials used and in contact with on Site, including flammable and combustible liquids;
- Establishing availability/contracts with specialized spill response/clean-up contractors;
- Ensuring spill response equipment is readily available at critical points of use at all times; and,
- Ensuring that all employees are trained and knowledgeable of this SMP, and that the SMP is updated as needed.

Site Personnel (employees) must:

- Participate in spill training including general response procedures and notification requirements. Personnel, and their supervisors, will be trained on techniques to effectively contain a spill (i.e. spills of fuels and chemicals) as well as how and when to notify the Spill Response Coordinator; and,
- Immediately notify their Supervisor, the Spill Response Coordinator or, in their absence, the Alternate Spill Response Coordinator in the event of a spill.

Contractors must:

- Review and understand their obligations under this SMP, including general response procedures and notification requirements, prior to commencing work at the Site; and,
- Immediately notify the Spill Response Coordinator or, in their absence, the Alternate Spill Response Coordinator in the event of a spill.

4. Definitions

Term	Definition
Adverse Effect	Section 1(1) of the Environmental Protection Act ("EPA") defines adverse effect as one or more of the following: (a) impairment of the quality of the natural environment for any use that can be made of it; (b) injury or damage to property or to plant or animal life; (c) harm or material discomfort to any person; (d) an adverse effect on the health of any person; (e) impairment of the safety of any person; (f) rendering any property, water, plant or animal life unfit for human use; (g) loss of enjoyment of normal use of property; and, (h) interference with the normal conduct of business.
Contaminant	Any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that causes or may cause an adverse effect.
Hazard	With regards to spills, the release of a hazardous material (liquid of solid) that: (a) may occur at the site or relate to the operations of the site; (b) are reasonably foreseeable; and (c) have the potential to cause adverse effects.
Reportable Spill	A reportable spill is a release, (a) into the natural environment, (b) from or out of a structure, vehicle or other container, and (c) that is abnormal in quality or quantity in light of all the circumstances of the discharge. A reportable spill includes: - any spill that has the potential to cause an adverse effect to the environment, other than those which can be readily remediated through clean-up and restoration of paved, graveled or sodded surfaces. Remediation must be carried out immediately; and - any spill that enter waters or is likely to enter waters directly or through drainage structures.
Natural Environment	The air, land and water or any combination or part thereof.
Non-Reportable Spills	Non-reportable spills include: - spills that occur indoors, that are contained by impervious surfaces; - spills that do not release to the outdoors (to air, water, ground) and do not reach a waterbody and do not have the potential to cause an adverse effect. Reporting to external agencies is not required.
Pollutant	A contaminant other than heat, sounds, vibration or radiation, and includes any substance from which a pollutant is derived [s. 91(1) of the EPA].
Spills	When used with reference to a pollutant, means a discharge into the natural environment, from or out of a structure vehicle or container, and that is abnormal in quality or quantity in light of all the circumstances of the discharge.
Spills Action Centre ("SAC")	The Spills Action Centre (SAC), under the Ontario Ministry of Environment, Conservation and Parks, responds to spills and other urgent environmental concerns. SAC can be contacted at 1-800-268-6060, and is available 24 hours a day, 365 days a year.

5. Spill Management Plan

5.1 Possible Potential Sources of Spills

The purpose of spill management planning is to document and assess the risk of potential spills in order to identify appropriate procedures and mitigating actions to respond to a spill. Potential spill sources/areas are described below:

i) Fuel / Oil Storage and Hauling. The following table identifies the fuels / oils stored on-Site.

PRODUCT	CONTAINER	USE / PURPOSE	CONTROLS
Diesel, Clear and Coloured	Two 4,540 L double-walled above ground storage tank ("AST")	The AST and fueling area are used to fuel an on-Site loader and dump trucks.	· The AST is situated on a concrete pad equipped with vehicle impact protection (concrete-filled bollards) . · Drip trays are placed at fueling connection points to capture any releases. · A Fueling Procedure is in place and Site Personnel responsible for fueling have received appropriate procedural training. · The Fueling Procedure and Spill Response Procedure are (see Section 6 – Spill Response Procedure) posted in the fueling area. · The diesel AST and Fueling Area are subject to weekly inspections.
Hydraulic Oil	Approximately two 205 L drum	The hydraulic oil drum is maintained for maintenance of the equipment.	· The hydraulic oil drum is stored in the Maintenance Shop. · The drum is stored on a spill containment pallet.
Propane	Two 15 kg cylinders	The propane is used for heating steel and forklifts.	· The propane cylinders are stored in a locked cage adjacent to the Maintenance Shop.
Oxygen and Acetylene	Two 20 kg cylinders	The oxygen and acetylene are used for maintenance related welding.	· The oxygen and acetylene cylinders are stored in a locked cage adjacent to the Maintenance Shop.

Vehicles (i.e. highway trucks) delivering raw materials (i.e. various aggregates, and small quantities of various oils and chemicals), excess fill, and shipping finished products enter and exit the Site via Witmer Road. The Site also maintains two on-Site loaders which serves the screening plant. These vehicles have also been identified as a potential source of fuel/oil spills.

The locations of the following potential spill sources / areas are shown in Figure 1 – Site Plan:

- 2 x 4,540 L double-walled diesel AST and fueling area
- Maintenance Shop – 2 x 205 5W-40 Motor Oil, 2 x 205L drum of hydraulic oil
- Propane storage cage
- Oxygen / acetylene storage cage
- Potential vehicle spill areas

ii. Chemical Storage and Handling

On-Site chemical storage and handling is limited to the Maintenance Shop, the Utility Shed. The following table identifies the chemicals stored and handled on-Site:

PRODUCT	CONTAINER	USE / PURPOSE	CONTROLS
Paint, Solvents, Antifreeze, Cleaners, Aerosols (i.e. paints, electrical contact cleaners, or cleaners and degreasers)	Small quantities	Used in the Maintenance Shop.	· Stored in the maintenance shop.

The locations of the following potential spill sources/areas are shown in Figure 1 – Site Plan:

A Maintenance Shop is also located on-Site which is used to store machinery and supplies.

5.2 Identified Receiving Bodies of Concern

There is a wetland located on the property located outside of the licenced boundary, but adjacent to the Site. Spills to the driveway area and to the internal roadways of the Site would likely not reach the wetland area. In general, storm water infiltrates the ground surface and any surface drainage flows towards to a low-lying area located near the center of the Site where it infiltrates the ground surface. The ground surface at this low-lying area is inferred to be approximately 1.5 metres above the local water table and therefore represents a potential risk for potential environmental impact.

Two water wells and ten monitoring wells are reported to be present at the Site. (See attached map for locations).

5.3 Preventive Measures

Appropriate measures should be taken to prevent the occurrence of a spill. Assigned Site Personnel are responsible for conducting regular inspections of the preventive measures implemented on-Site. All Site Personnel and contractors are responsible for following training, operating procedures, and work instructions set out and required by Jackson Harvest Farms Ltd.

On-Site re-fueling of equipment is only conducted by Site personnel who have received appropriate training. The Fuelling Area (adjacent to the maintenance shop) and is located greater than 30 m away from any surface watercourses, water bodies, wells, or other sensitive areas (i.e. the low-lying area located near the center of the Site). Site personnel follow a documented Fueling Procedure which is posted in the fuelling area along with a copy of the Spill Response Procedure. Drip trays are placed at fuelling connection points to capture any releases.

Drums and containers of oil and chemicals on Site should be stored indoors, where possible, and be provided with secondary containment. Drums/containers should be kept away from vehicular traffic and heavy equipment and/or collision protection (i.e., bollards or jersey barriers) should be provided, if necessary.

Spill kits are located in high risk areas and regular documented inspections are conducted to ensure the spill kits are fully stocked.

Up to date Safety Data Sheets ("SDS") are maintained on-Site for all applicable materials. This SMP and the Spill Response Procedure are also posted in the Maintenance Shop.

6 Spill Response Procedure

The primary steps to take in the event of a spill are as follows:

a) Assess the spill. Protect the health and safety of Site personnel and the public (in the event of immediate public safety or health risk, i.e., explosion or fire contact 9-1-1 immediately).

b) Notify the Spill Response Coordinator of the spill. All Site personnel shall immediately notify the Spill Response Coordinator or in their absence, the Alternate Spill Response Coordinator, or on-Site Supervisor, of any spill situation. The Spill Response Coordinator, or Alternate, will direct all aspects of any spill incident.

c) Identify the material. Wear appropriate personal protective equipment (refer to the appropriate SDS) before proceeding with spill response activities.

d) Evaluate the size of the response to be initiated. Determine if the spill response and clean-up can be handled by Site personnel or whether the assistance of a spill response contractor is required. Refer to **Appendix A** - Emergency Contact Information for applicable contact numbers.

e) Decide whether or not Site personnel need to be evacuated from the area. If evacuation is required, the Spill Response Coordinator, or Alternate, is responsible for ensuring that all Site personnel are safely evacuated from the building / area. Should the Spill Response Coordinator, or Alternate, not be available, an on-Site Supervisor may take the lead on evacuation, if required.

f) Stop/contain the spill, only if safe to do so. Stop and contain the spill if possible and only if it is safe to do so in order to prevent further release. If possible, plug the leak from the drum, tank, or pipe with plugging compound. Deploy sorbent socks around the spill then dike the spill to prevent it from spreading. Turn off engines and other sources of ignition (i.e. cigarettes), if applicable.

g) Prevent the spill from entering nearby watercourses. Use all available materials to contain the spill to prevent it from reaching the low-lying area on-Site and away from any watercourse. Cover/block all drains, ditches, etc. with drain covers, booms or diking materials.

h) Protect the affected area. Protect the spill area as necessary, including the equipment and materials exposed to the spill. (Do not drive equipment through the spill and around the Site, this just increases the area requiring clean-up).

i) Report the spill as soon as possible. Only the Spill Response Coordinator, or alternate, will notify the appropriate internal and external parties (i.e. MECP SAC, Township of Wilmot and Regional Municipality of Waterloo, Technical Safety and Standards Authority, etc.). The MECP SAC must be notified **as soon as possible.** Refer to **Appendix A** - Emergency Contact Information for applicable contact numbers. Refer also to Section 6.2, Reporting Requirements.

j) Clean up the spill. When the spill is contained, place sorbent on the ground at the outer edge of the spill. Then work your way with the sorbents towards the center of the spill.

k) Have back-up absorbent available. If the spill is larger than the available sorbent capacity within the spill kit, obtain back up absorbents from other spill kits. Sand that may be available on-Site can also be utilized as sorbent for larger spills.

l) Complete the Spill Investigation Form. Complete the Spill Investigation Form (**Appendix B**) and distribute to the Environmental Manager, Plant Manager (Alternate Spill Response Coordinator) and Senior Management. Include photos if possible.

m) Dispose of all spilled material and spent absorbent. Collect spilled material/spent absorbent/impacted soil in drums or in a lugger bin, if applicable, properly label the contents and date of the drum/lugger bin; and, place it in a secure storage area. All waste is to be handled and disposed of in accordance to the MECP requirements. Refer also to **Section 6.3**, Disposal of Spilled Materials.

n) Replenish spill kits. Take an inventory of all on-Site spill kits and replace all used sorbents.

6.1 Spill Response Equipment and Safety Considerations

a) Spill response equipment must be maintained and readily available on-Site. Absorbent materials must be stored in high risk areas (i.e. Fueling Area, Maintenance Shop) or provided by contractors delivering fuels / chemicals (i.e. maintained in their trucks). Where liquid transfers occur within the vicinity of on-Site ditches, booms must be available for placement in the ditch before the bulk transfer begins.

b) Depending on nature of the potential spill sources/areas (i.e. quantity, physical and chemical characteristics), the spill kits may contain the following:

- Absorbent pads, pillows, socks;
- Hydrophobic spill booms, of suitable size and length, to contain the spill in the ditch;
- Absorbent material (i.e. clay absorbent) to absorb spills to the ground;
- Dust pan/brooms;
- Non-sparking shovel;
- Neoprene drain cover(s);
- Spilled material container/drum/bags;
- Neoprene gloves; and,
- Warning tape.

A loader in also available on-Site to facilitate spill response and clean-up if required.

c) At minimum, the following personal protective equipment ("PPE") is kept within or in the vicinity of the spill kits, to assist with spill clean-up:

- Safety goggles;
- Neoprene gloves;
- Respirators with appropriate filters, if required (as identified in SDS); and,
- Neoprene coveralls and/or aprons, if required (as identified in SDS).

The Spill Response Coordinator must ensure that regular inspections of spill response equipment / kits are completed to verify availability and whether maintenance / replacement of any equipment is warranted.

Spill kits are maintained on Site in the following areas:

- Main office / scale house;
- Maintenance Shop;
- Fueling Area;
- On-board heavy equipment (i.e., loader); and
- Maintenance Trucks.

The locations of the on-Site spill kits are shown in Figure 1 - Site Plan.

6.2 Reporting Requirements

In the event of a spill, employees and contractors (if applicable) are required to immediately notify the Spill Response Coordinator, or Alternate, who are then required to notify the Environmental Manager, Plant Manager (Alternate Spill Response Coordinator) and Senior Management.

The Spill Response Coordinator, or Alternate, will notify the MECP and other external parties (i.e. Township of Wilmot and The Regional Municipality of Waterloo), if required, **as soon as possible**. Internal and external contact numbers are available in **Appendix A** - Emergency Contact Information. Reporting to the MECP is accomplished by calling the 1-800-268-6060 . The following information must be provided when reporting a spill. Make sure you prepare and keep a record of the telephone call when making a spill report, documenting what you say, and any instructions provided by SAC.

i. Your name and phone number;
ii. Nature of release (i.e. spill, leak, fire or explosion);
iii. Impact on people, property, and environment;
iv. Date / time / location of spill;
v. Type / quantity of substance released;
vi. Brief description of site and surrounding area;
vii. Circumstances leading up to the event;
viii. Resulting contamination; and,
ix. Remedial action being taken/required.

Notification of the MECP/SAC **MUST** occur **as soon as possible** after the spill occurs (or is discovered).

A **reportable spill** is a release,

(a) into the natural environment;
(b) from or out of a structure, vehicle or other container; and,
(c) that is abnormal in quality or quantity in light of all the circumstances of the discharge.

A reportable spill includes:

- Any spill that has the potential to cause an adverse effect to the environment, other than those which can be readily remediated through clean-up and restoration of paved, graveled or sodded surfaces. Remediation must be carried out immediately; and,
- any spill that enter waters or is likely to enter waters directly or through drainage structures.

By law, in accordance with the Environmental Protection Act: Every person having control of a pollutant that is spilled and every person who spills or causes or permits a spill of a **pollutant that causes or is likely to cause an adverse effect** shall forthwith notify appropriate persons of the spill. *EPA* Sec 92(1)

The following persons shall be notified by Jackson Harvest Farms Ltd. in the event of a reportable spill:

c) The MECP;
d) The Township Of Wilmot, and the Region of Waterloo;
e) The Technical Standards & Safety Authority ("TSSA") for spills of fuel and from fuel tanks;
f) Where the person is not the owner of the pollutant and knows or is able to ascertain readily the identity of the owner of the pollutant, the owner of the pollutant; and,
g) Where the person is not the person having control of the pollutant and knows or is able to ascertain readily the person having control of the pollutant, the person having control of the pollutant.

6.3 Disposal of Spilled Materials

Free standing liquids are usually removed by vacuum truck.

Spilled material, spent absorbent, and/or impacted soil should be placed into labelled, poly-lined drums, lugger bins, or other sealed containers. Lugger bins should be tarped to keep storm water out.

Larger quantities of impacted soil should be placed on a hard surface, if possible, tarped (both over and under the stockpile) and secured with sand bags or other ballast to keep storm water out.

Spilled material, spent absorbent, and/or impacted soil should be stored in a secure storage area until removed for disposal.

Spilled material, spent absorbent, and/or impacted soils will need to be sampled and analyzed using the toxicity characteristic leaching procedure ("TCLP") by a CALA accredited laboratory prior to disposal at a licensed landfill (non-hazardous or hazardous). The landfill will require the results of the TCLP analysis prior to accepting the waste. If the TCLP analysis confirms the waste is not hazardous, it may be disposed of at a landfill approved to accept non-hazardous waste. Hazardous waste and must be disposed of at a landfill licensed to accept hazardous waste.

Depending on the spilled material, additional testing may be required (i.e. corrosivity, ignitability, reactivity).

6.4 Training Requirements

All employees are expected to be fully aware of Jackson Harvest Farms Ltd.'s policies and emergency procedures.

Within three months of being hired, new employees will be trained on spill response as part of their new hire orientation. The orientation will include, but will not be limited to, an overview of this SMP document with emphasis on reporting requirements and spill prevention techniques, location and use of emergency equipment such as relevant PPE, fire extinguishers, spill kits, etc.

After the initial orientation, all employees will be retrained on spill response and pollution prevention every six months thereafter, as required by the Ontario Fire Code.

The Plant Manager is responsible for scheduling and arranging for both the orientation and semi-annual spill response training. Records of training will be retained including the trainees name and signature, the date on which training was provided and the name of the trainer.

6.5 Plan Review Requirements

This SMP will be reviewed, at a minimum, on an annual basis and revised as required. The SMP will also be reviewed following each spill for which MECP notification is required and revised as necessary. A record of these reviews/revisions will be maintained as required under **Section 7**, Document Revision History.

7. Document Revision History

REVISION	REVISION REASON	DATE
1.0	Draft Submission for review	April 2020

VARIATIONS TO THE OPERATIONAL STANDARDS	
0.13(3)a	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.
0.13(1)10-i	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary
0.13(1)10-i	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.

REVISIONS PRIOR TO APPROVAL	
2019/10/16	Revisions as per MNRF notes & details
2020/07/14	Revisions following updated survey & reports
2021/02/24	Revisions following updated Spill Management Plan
2021/03/15	Note changes as per agency comments
2021/06/26	Note changes as per MNRF comments
2022/01/13	Revised notes as per GRCA and Region comments

SITE PLAN AMENDMENTS

No.	DATE	BY	DESCRIPTION

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 24, 2019
DATE

DAVID R. SISCO, RPP, MCIP

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PART LOT 10 CONCESSION SOUTH OF BLEAM'S ROAD, PART 1 58R19981
TOWNSHIP OF WILMOT
REGIONAL MUNICIPALITY OF WATERLOO

JACKSON HARVEST FARMS LTD.
2879 HERRGOTT ROAD
ST.CLEMENTS, ON, N0B 2M0

OPERATIONAL PLAN NOTES B

DESIGNED BY:	JS	SCALE:	N.T.S
DRAWN BY:	JS/PR	FILE NUMBER:	115985
CHECKED BY:	DS	SHEET NUMBER:	4 OF 8
DATE:	2019-09-24		

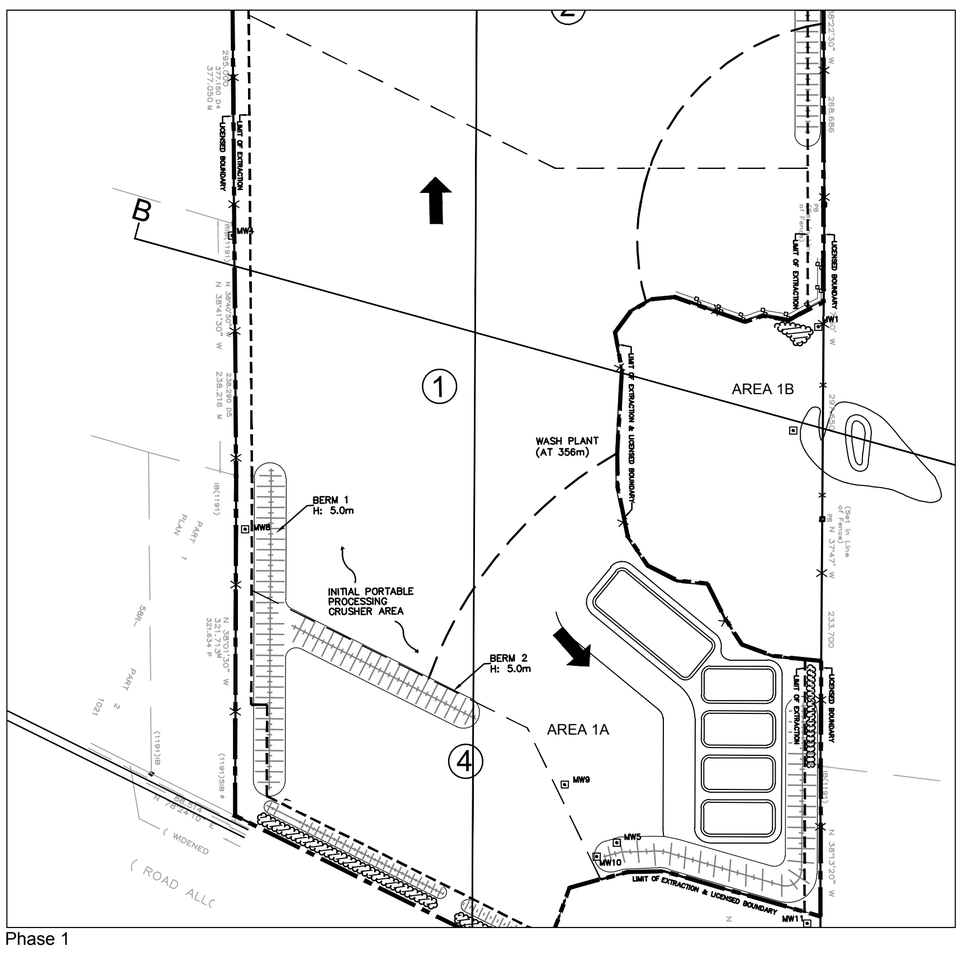
FILE: J:\115985_JacksnHarvest\5.9 Drawings\59pln\current\115985-OPERATIONAL LAYOUT:OP NOTES(4) CTB: AIA Standard.ctb SAVED BY: Joanne.mccallum, 2022-Jan-18 3:14 PM

HALLMAN PIT

OPERATIONAL NOTES & DETAILS

SHEET 5 OF 8

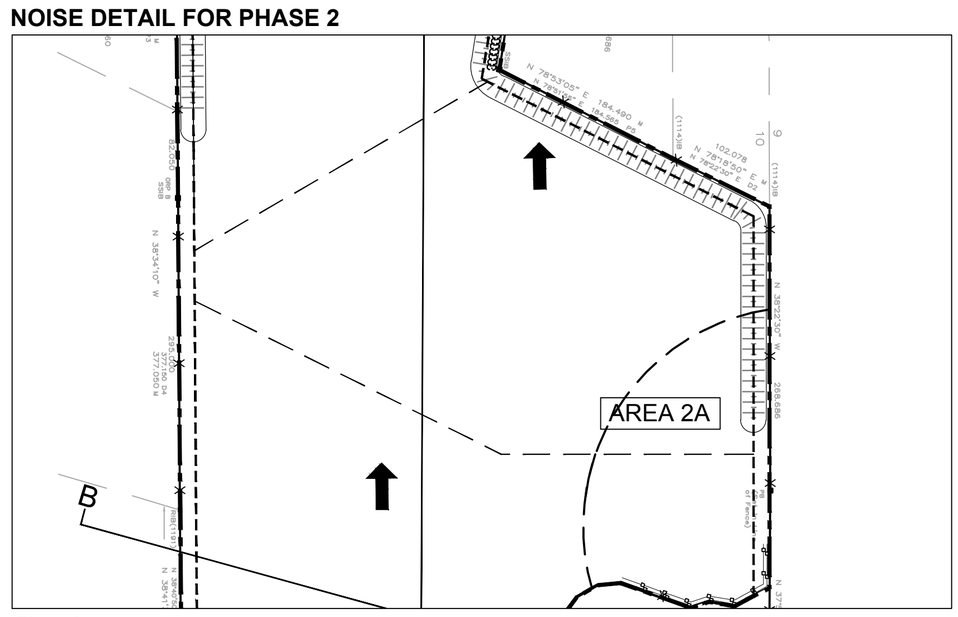
NOISE DETAIL FOR PHASE 1



Phase 1

1. Prior to extraction in Phase 1, the Licensee shall;
   a. Construct Berms 1, 2 and 3 which shall be at a minimum height of 5.0 metres above existing grade.
   b. Construct the interim drainage swale along the west and north edge of the conifer plantation to allow runoff to continue toward the wetland as per General Note 24.
2. During Phase 1 extraction operations, the portable processing crusher shall remain on the final pit floor, at an elevation of 356.0 masl. Screening equipment may be located anywhere on the first lift floor or lower.
3. During extraction in Phase 1, the general direction of extraction will be northward and southeast.
4. When the portable processing crusher is operating in areas 1(a) and 1(b) it shall be surrounded by acoustical barriers, minimum 8.0 metres high along the south and east side of the equipment to provide supplementary noise shielding.

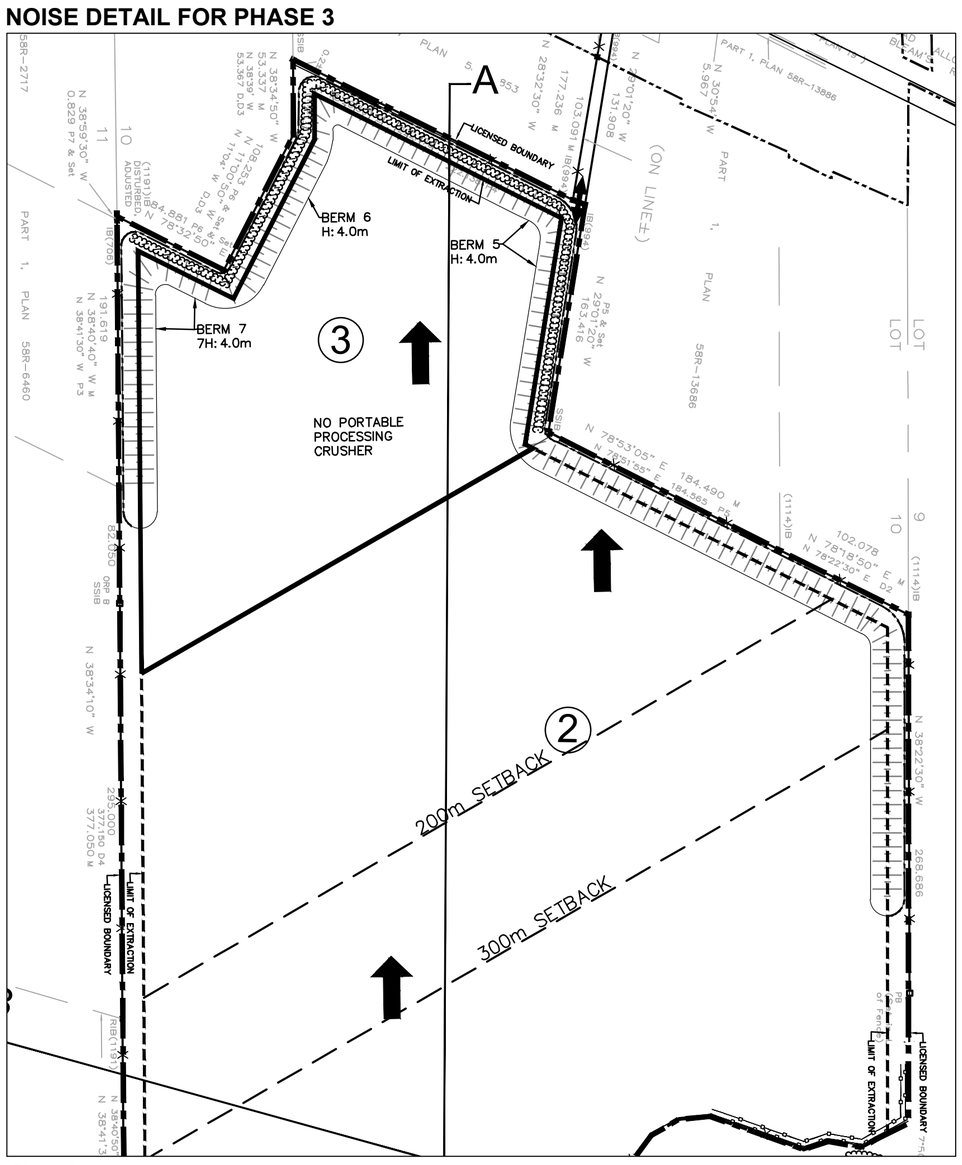
NOISE DETAIL FOR PHASE 2



Phase 2

1. Prior to the extraction of Phase 2, the Licensee shall construct Berm 4, which shall be at a minimum height of 4.0 metres above existing grade.
2. During the extraction of Phase 2, the portable processing crusher must remain on the final pit floor, at an elevation of 356.0 masl. Screening equipment may be located anywhere on the first lift floor or lower.
3. During extraction in Phase 2 the general direction of extraction will be northward.
4. When the portable processing crusher is operating in Area 2(a) it shall be surrounded by acoustical barriers, minimum 8.0 metres high along the south and east side of the equipment to provide supplementary noise shielding.

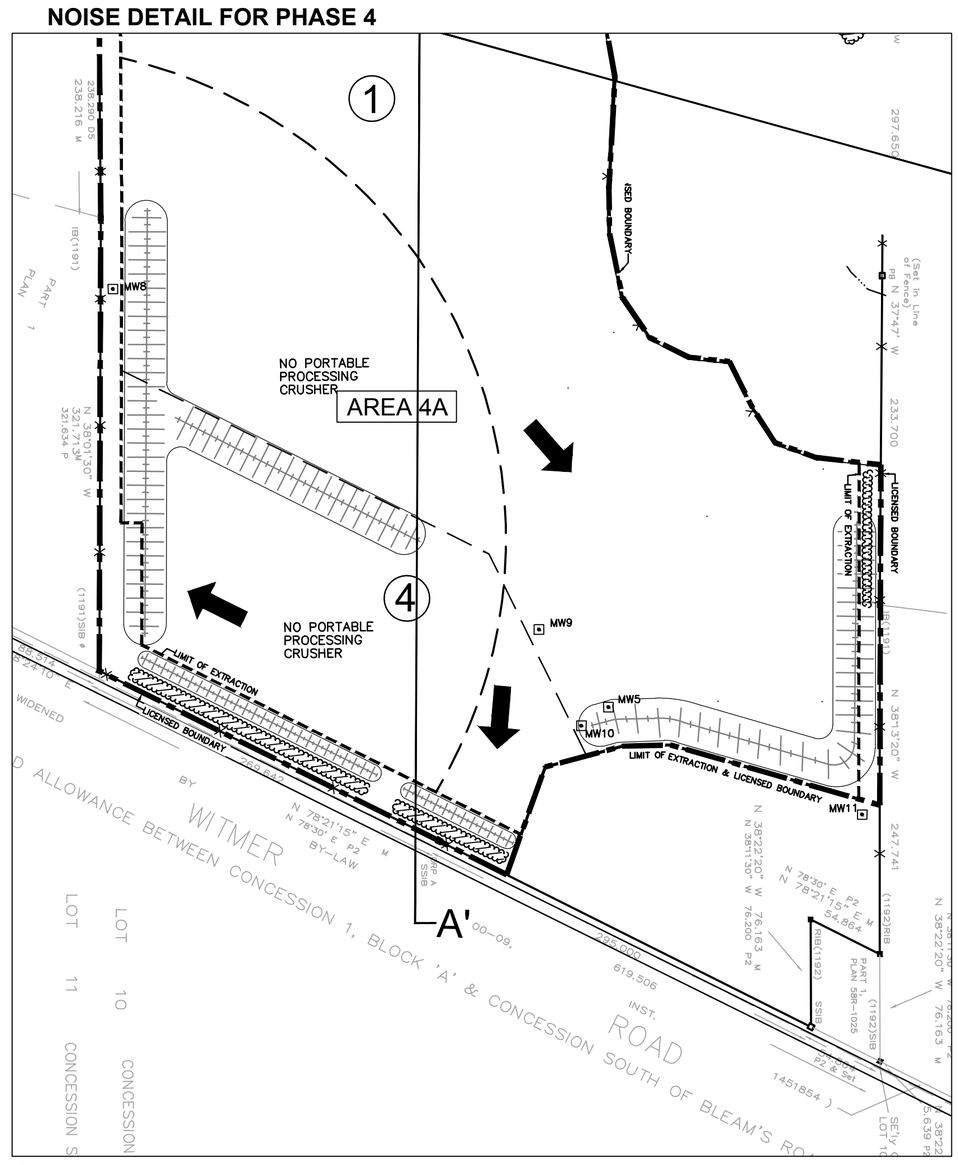
NOISE DETAIL FOR PHASE 3



Phase 3

1. Prior to the extraction of Phase 3, the Licensee shall construct Berms 5, 6 and 7, which shall be at a minimum height of 4.0 metres above the existing grade.
2. During the extraction of Phase 3, the portable processing crusher shall remain outside the Phase 3 boundary at the final pit floor elevation of 356.0 masl. Screening equipment may be located anywhere on the first lift floor elevation of 364.0 masl or lower.
3. When the portable processing crusher is operating within 200 metres of the Phase 3 boundary, it must be surrounded by acoustical barriers that are a minimum 8.0 metres high, along the north, west and east side of the equipment to provide supplementary noise shielding.
4. When the portable processing crusher is operating between 200 and 300 metres of the Phase 3 boundary, acoustical barriers are not required if the screener is located at the final pit floor elevation.
5. When the portable processing crusher is operating further than 300 metres from the Phase 3 boundary, no acoustical barriers are required for shielding purposes.
6. During extraction in Phase 3 the general direction of extraction will be northward.

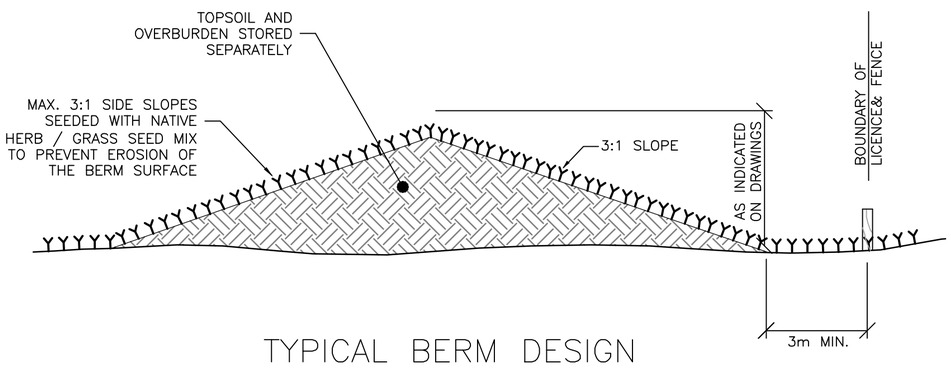
NOISE DETAIL FOR PHASE 4



Phase 4

1. Extraction of Phase 4 shall start in the eastern portion of the Phase and proceed westward.
2. Direction of extraction in the eastern portion of the Phase will initially be in a southward direction then westward.
3. During the extraction of Phase 4, recycling equipment must not operate simultaneously with processing equipment or washing equipment.
4. Once Berm 2 is removed, the portable processing crusher must remain outside the No Crusher Zone surrounded by minimum 10.0 metre high stockpiles located on the east and west.
5. During the extraction of Phase 4 all processing equipment must be located at the final pit floor elevation of 356.0 masl.
6. The acoustical barriers mentioned above could be comprised of an earth berm, a noise wall, aggregate stockpiles or any other construction with a minimum surface density of 20 kg/m^2.

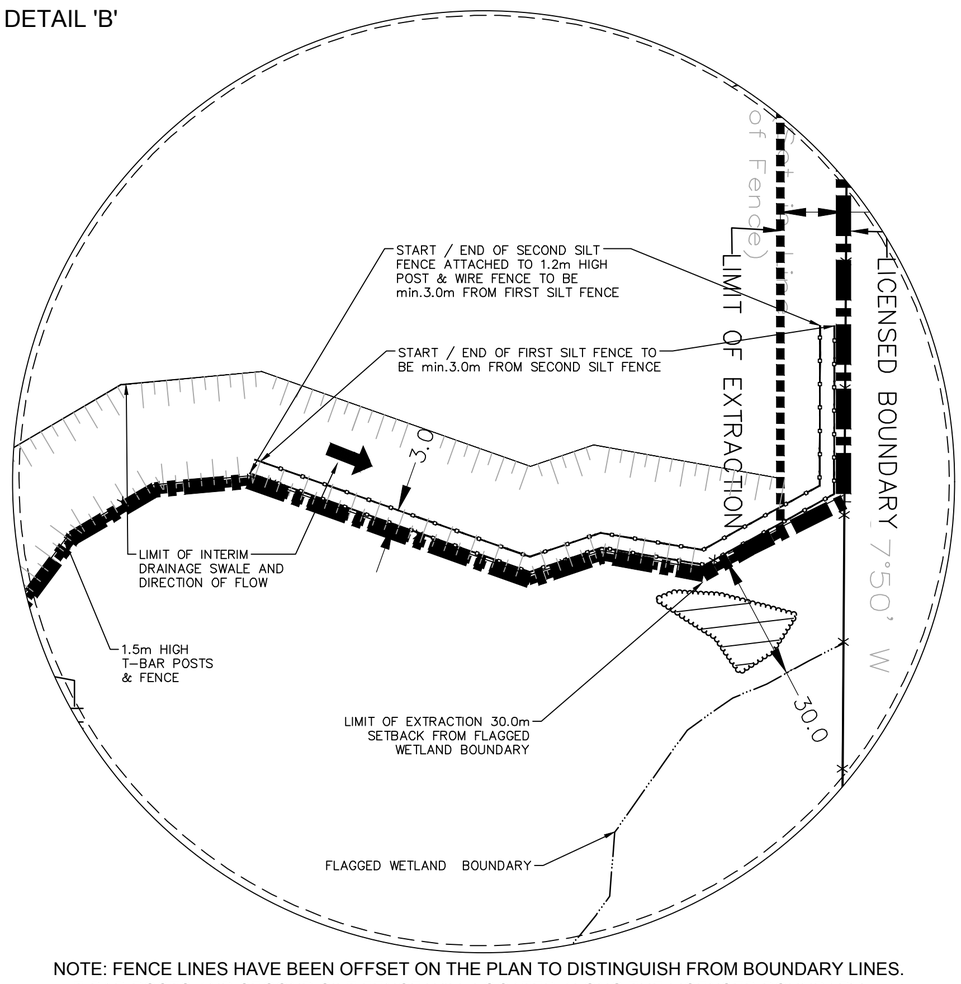
DETAIL 'A'



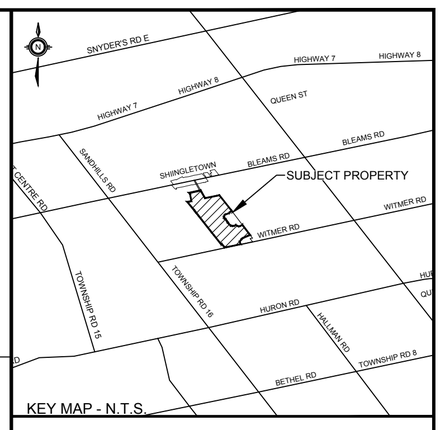
TYPICAL BERM DESIGN

SCALE : N.T.S.

DETAIL 'B'



NOTE: FENCE LINES HAVE BEEN OFFSET ON THE PLAN TO DISTINGUISH FROM BOUNDARY LINES.
T-BAR POSTS AND SECOND SILT FENCE WILL LOCATED ALONG THE LICENSED BOUNDARY.



KEY MAP - N.T.S.

LEGEND

	PROPERTY BOUNDARY
	LICENSED AREA
	LIMIT OF EXTRACTION
	PHASE BOUNDARY
2	PHASING NUMBER
	CRUSHING RESTRICTION ZONE
AREA 1B	CRUSHING RESTRICTION AREA
	DIRECTION OF EXTRACTION
	PROPOSED BERM

VARIATIONS TO THE OPERATIONAL STANDARDS

0.13(3)a	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.
0.13(1)10-i	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary
0.13(1)10-i	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.

REVISIONS PRIOR TO APPROVAL

2019/10/16	Revisions as per MNRF notes & details
2020/07/14	Revisions following updated survey & reports
2021/06/26	Note changes as per MNRF comments
2022/01/13	Revised notes as per GRCA and Region comments

SITE PLAN AMENDMENTS

No.	DATE	BY	DESCRIPTION

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 23, 2019
DATE

DAVID R. SISCO, RPP, MCIP

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TOWNSHIP OF WILMOT
REGIONAL MUNICIPALITY OF WATERLOO

JACKSON HARVEST FARMS LTD.
2879 HERRGOTT ROAD
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OPERATIONAL NOTES & DETAILS

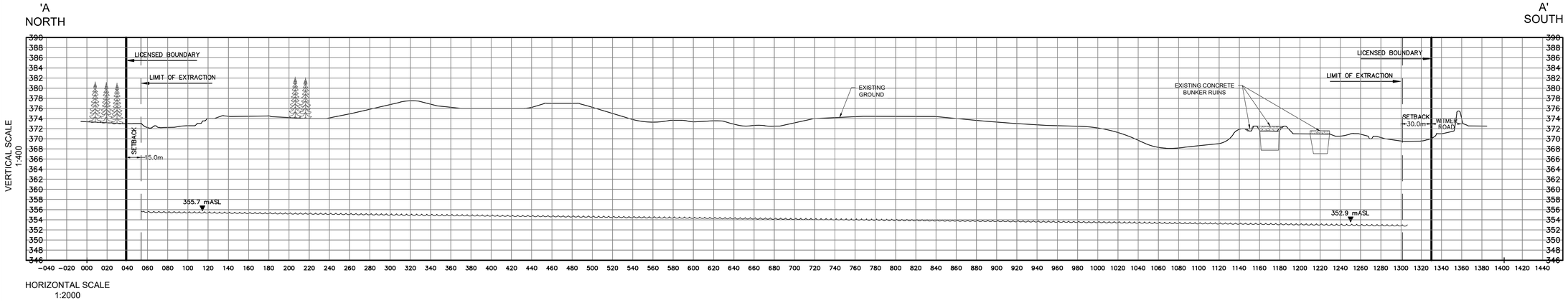
DESIGNED BY:	JS	SCALE:	N.T.S
DRAWN BY:	JS/PR	FILE NUMBER:	115985
CHECKED BY:	DS	SHEET NUMBER:	5 OF 8
DATE:	2019-09-23		

FILE: J:\115985_JacksnHarvest\5.9 Drawings\59pln\current\115985-OPERATIONAL LAYOUT:OP NOTES+DETAILS(5) CTB: AIA Standard.ctb SAVED BY:Joanne.mccallum, 2022-Jan-18 4:12 PM

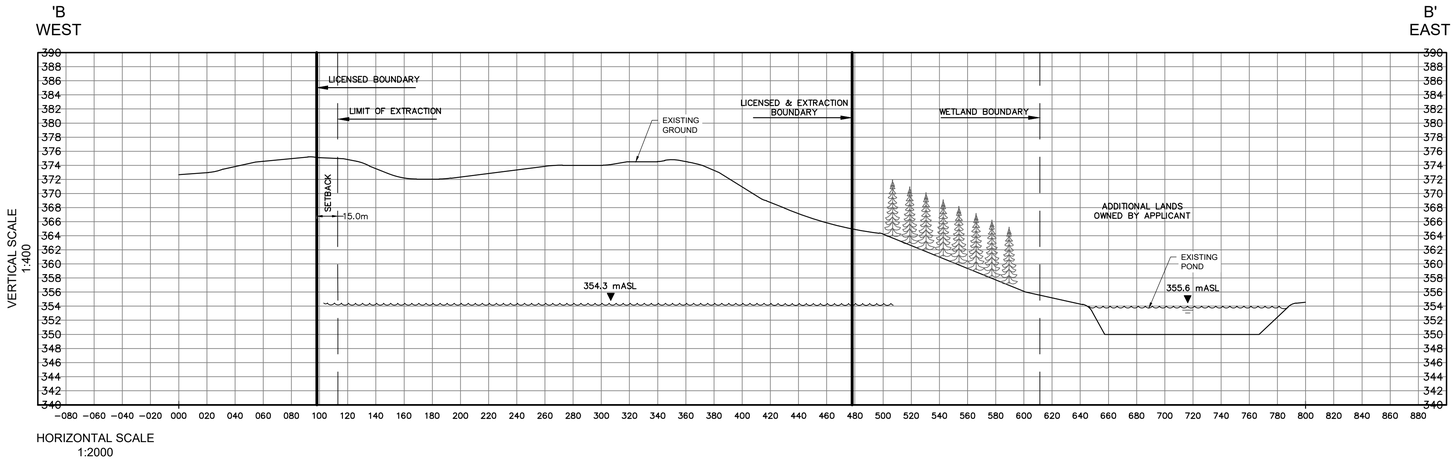
HALLMAN PIT

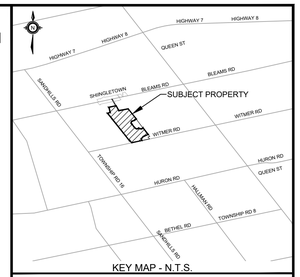
EXISTING CONDITIONS
CROSS-SECTIONS
SHEET 6 OF 8

CROSS SECTION A-A'



CROSS SECTION B-B'





KEY MAP - N.T.S.

LEGEND

SITE PLAN AMENDMENTS

1	2021.10.06	E.T.	AS PER COMMENTS FROM NDMNRF

REVISIONS PRIOR TO APPROVAL

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 19, 2019
DATE

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EXISTING CROSS-SECTIONS

DESIGNED BY:	PR	HORIZ. SCALE:	1:2000
DRAWN BY:	MB	VERT. SCALE:	1:400
CHECKED BY:	DS	FILE NUMBER:	115985
DATE:	2019-09-19	SHEET NUMBER:	6 OF 8

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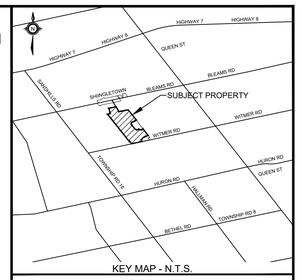
HALLMAN PIT

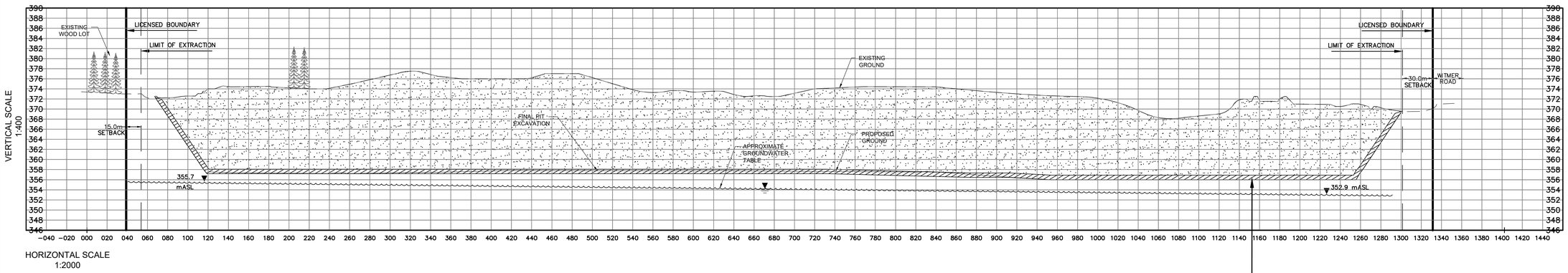
REHABILITATION
CROSS-SECTIONS
SHEET 7 OF 8



KEY MAP - N.T.S.

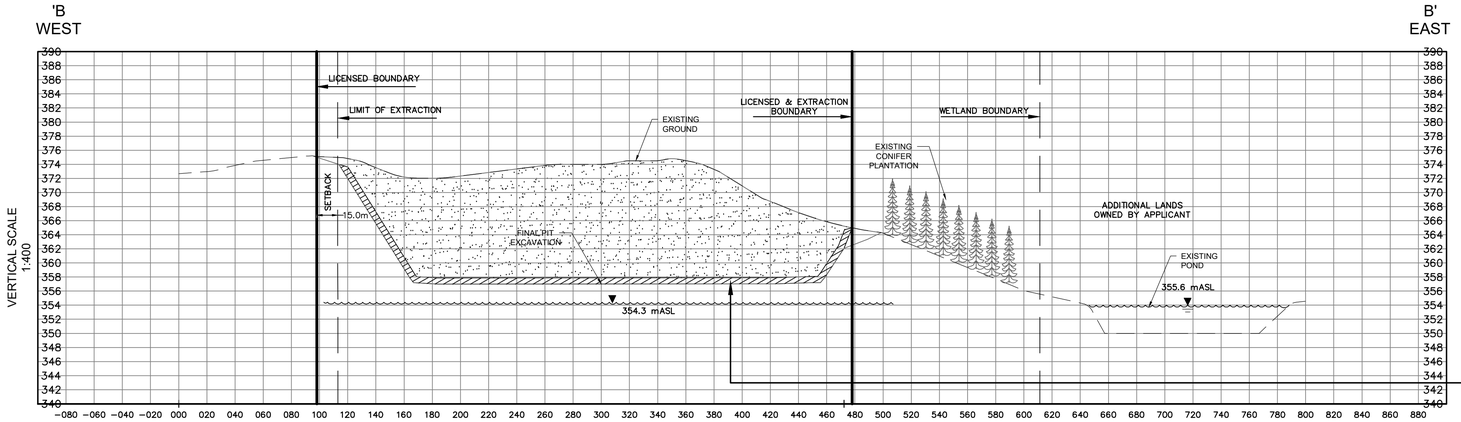
LEGEND

CROSS SECTION A-A'

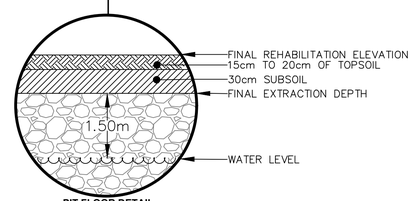


HORIZONTAL SCALE
1:2000

CROSS SECTION B-B'



HORIZONTAL SCALE
1:2000



PIT FLOOR DETAIL

SITE PLAN AMENDMENTS

1	2021.10.06	E.T.	AS PER COMMENTS FROM NDMNRF

REVISIONS PRIOR TO APPROVAL

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 19, 2019
DATE

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PART 1 58R19981
TOWNSHIP OF WILMOT

JACKSON HARVEST FARMS LTD.
C/O RICK ESBAUGH
2879 HERRGOTT ROAD
ST.CLEMENTS, ON, N0B 2M0

REHABILITATION CROSS-SECTIONS

DESIGNED BY:	PR	HORIZ. SCALE:	1:2000
DRAWN BY:	MB	VERT. SCALE:	1:400
CHECKED BY:	DS	FILE NUMBER:	115985
DATE:	2019-09-19	SHEET NUMBER:	7 OF 8

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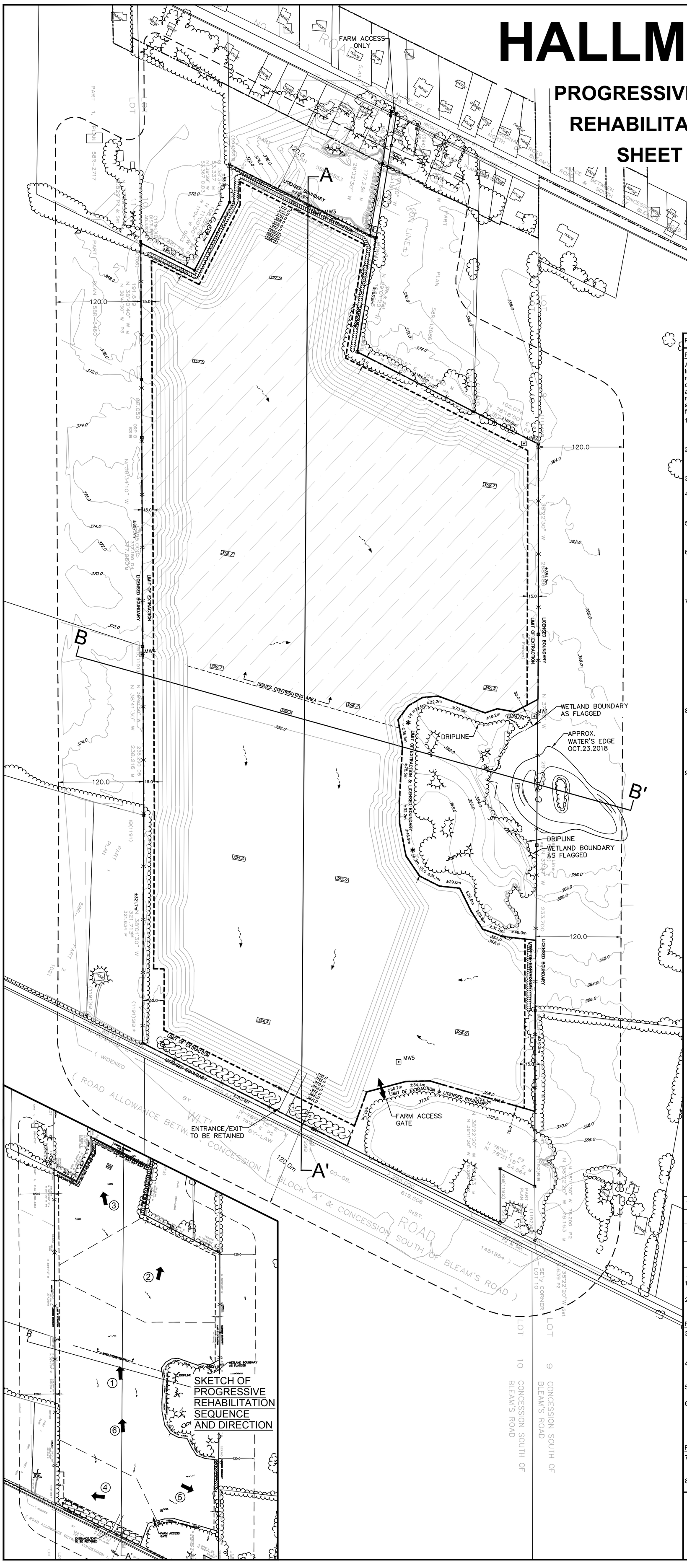
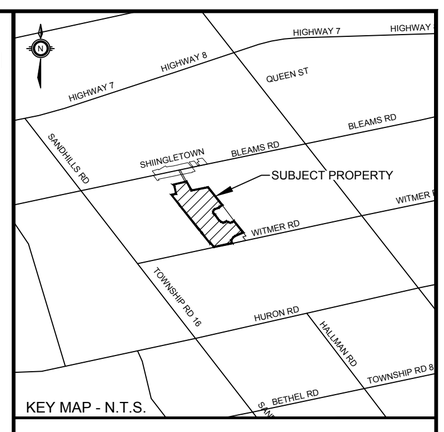
HALLMAN PIT

PROGRESSIVE AND FINAL REHABILITATION PLAN

SHEET 8 OF 8





KEY MAP - N.T.S.

LEGEND

- PROPERTY BOUNDARY
- EXISTING POST & WIRE FENCE
- LICENSED AREA
- LIMIT OF EXTRACTION
- LIMIT OF 120m SETBACK
- FLAGGED WETLAND BOUNDARY
- ISSUES CONTRIBUTING AREA
- EXISTING TREELINE
- PROPOSED VEGETATION
- EXISTING BUILDING
- EXISTING POND
- EXISTING ENTRANCE/EXIT
- EXISTING FARM GATE
- 370.0 — EXISTING CONTOUR (2m INTERVAL)
- SURFACE DRAINAGE DIRECTION
- MW1 — MONITORING WELL/ SURFACE GAUGE
- SHINGLETOWN SETTLEMENT AREA
- 354.5 — FINAL REHABILITATION SPOT ELEVATION mASL
- BAT BOXES
- ISSUES CONTRIBUTING AREA

PROGRESSIVE AND FINAL REHABILITATION NOTES

Progressive Rehabilitation:

A progressive' rehabilitation plan is proposed for the Hallman Pit. In general terms, this type of rehabilitation involves the sequential removal of topsoil and subsoil materials from the developing areas of the pit and reestablishing these same soil materials (in the appropriate sequence) into the excavated areas. Successful rehabilitation of the pit areas to agriculture after uses can shall be accomplished by following a series of established steps as follows:

1) Strip the topsoil, subsoil and overburden separately. Each soil material should be stripped, moved and stored separately. Intermixing of the soil materials should not occur or be kept to a minimum.
2) Strip small areas as necessary for the advancement of the extraction operations. The stripping of the ground cover and surface soil materials leaves the exposed area prone to erosion.
3) Soil materials should be moved under appropriate weather conditions. Surface soils are easily damaged when wet.
4) Apply a progressive rehabilitation strategy to prevent the degradation of the topsoil materials. Progressive rehabilitation allows for direct movement of soil from the natural state to an area of restoration, without the intermediate stockpiling step.
5) Grade and contour the pit floor as part of the progressive rehabilitation. The pit floor should be deep chisel plowed or ripped to release compaction from the extraction heavy equipment.
6) Reestablish the overburden, subsoil and topsoil in the appropriate sequence. There should be a minimum of 2.0 m (1.5 m left above water table plus 0.5 m of replacement soil) of soil over the ground water levels to provide for adequate plant growth. During the restoration of the soil profile, each horizon should be chisel plowed to release soil compaction prior to the placement of the next horizon.
7) Use best management agricultural practices as are appropriate for the area, climate and conditions. The most critical step to the success of rehabilitation to agriculture is the conservation of the topsoil material. The main reason for topsoil conservation is that these materials are high in organic matter (when compared to the underlying soil horizons/layers) which relates to higher natural fertility and water holding capacity. In an ideal progressive restoration plan, the topsoil materials are stripped from a natural area and moved directly to an area of rehabilitation, without a significant time spent in stockpile formation. The quality of topsoil materials deteriorates over time in storage, due to changes in soil organisms (fungal and bacterial). It is noted that in the initial stages of the pit start up and operation there are limited opportunities for soil rehabilitation. As a result, in the early stages of pit start up, soil materials will be used for longer term berm material.
8) The reapplication of soil materials should be accomplished in dry soil conditions and through the use of equipment that does not cause excessive soil compaction. Ideally, the soil materials should be reapplied with wide tracked crawler bulldozers. Rubber tired equipment should be avoided as it causes significant soil compaction as compared to tracked equipment. Once the soil materials have been replaced, it may be necessary to chisel plow and stone pick the field prior to seeding the first crops.
9) As illustrated on the 'Sketch of Progressive Rehabilitation Sequence and Direction' (Sheet 8 of 8), as extraction is completed in each phase, the following progressive rehabilitation actions will occur:
   i) Side slopes shall be backfilled using on-site overburden or imported clean inert fill. The side slopes will be created at a minimum slope of 3:1.
   ii) Where clean inert fill is used, it shall only be for the purpose to facilitate the side slopes and any other final agricultural land-use as required and not placed within the Region of Waterloo - Issues Contributing Area as denoted on Sheet 8 of 8. Specifically, clean inert fill will be used to backfill all of the wash pond and the recycling area as shown on Sheet 2 of 8

v) Excess soil, as defined in Ontario Regulation 406/19 under the *Environmental Protection Act*, may be imported to this site for the following rehabilitation purposes:
   i) Creation of 3:1 slopes
   ii) top dressing to establish vegetation

Excess soil imported for the rehabilitation purposes described above shall meet the soil quality standards set out in Table 1: "Full Depth Background Site Condition Standards", of the Rules for Soil Management and Excess Soil Quality Standards published by the Ministry of Environment, Conservation and Parks, as amended from time to time.

The maximum total amount of excess soil that may be imported to this site for rehabilitation purposes is 750,000 m^3.

The licensee shall ensure that the acceptance and reuse of excess soil imported for rehabilitation purposes is compliant with Part I: Rules for Soil Management of the "Rules for Soil Management and Excess Soil Quality Standards published by the Ministry of Environment, Conservation and Park and as amended from time to time.

vi) No infill material shall be permitted on any portion of the licensed site north of the Schindelsteddle South Wetland Complex, (corresponding with the Region of Waterloo's Issues Contributing Area, and as denoted on Sheet 8 of 8).

vii) On-site topsoil/subsoil/overburden shall be placed across the prepared pit floor and side slopes. The material may be stripped material from the next extraction phase or depending on location and timing, from the perimeter berms. Material replaced shall be similar in depth to that removed (i.e., 0.15 - 0.2 metres topsoil and 0.3 metres subsoil) thereby providing a minimum final depth of 2.0 metre cover above the high groundwater table and generally as shown on the Progressive and Final Rehabilitation Plan, Sheet 8 of 8.

viii) Earth scrapers, bulldozers, excavators and trucks shall be used to replace the on-site subsoil and topsoil, subject to Note 8 above.

ix) Once the pit floor has been rehabilitated, the lands will be seeded to a cover crop of oats and rye grasses to control surface erosion. Cover crops will be disc plowed in the spring to add organic matter. A grass/legume mixture will be established to improve soil structure and add fertility. Grass and legume cropping should continue for several based on the following cropping sequence:

Time Frame	Crop	Comments
Year 1	Cover Crops (Oats or Rye Grass)	Control of erosion
Year 2-4	Legume or legume/grass mixture	Improve general soil conditions
Year 5+	Row crops in rotation with legume, legume/grass mixture	

Maintenance:

1. If any significant portions of the planted vegetation die out, it will be replaced immediately during the proper planting season.
2. If any significant erosion or gullying occurs at any time during the progressive and final rehabilitation, the Licensee will repair the area and re-seed as necessary.

Final Rehabilitation

3. Fencing: Once the site has been fully rehabilitated, the perimeter post and wire fence may be retained but the 1.5 metre high T-bar posts surrounding the pine plantation shall be removed.
4. Internal Haul Routes: Once the site has been fully rehabilitated, all internal haul roads will be removed except the Witmer Road entrance/exit.
5. Farm Access: The farm related access to Bleams Road will be retained.
6. Final Contours: Final contours are interpolated from available information at the time of preparation of these Site Plans and actual post-extraction slopes may vary, however, the final pit floor elevations as noted by the spot elevations should be achieved, but the final direction of surface water flow as shown, shall be met.

Final Land Use

7. The final land use for the subject lands shall be agriculture and be subject to all restrictions of the Risk Management Plan filed with the Region of Waterloo.
8. The total area to be rehabilitated is 57.27 hectares.

SITE DATA

AREA TO BE LICENSED	57.27 ha
AREA TO BE EXTRACTED	52.27 ha
EX. DISTURBED AREA	Nil
TOTAL LAND PARCEL	66.2 ha

VARIATIONS TO THE OPERATIONAL STANDARDS

0.13(3)a	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.
0.13(1)10-i	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary
0.13(1)10-i	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.

REVISIONS PRIOR TO APPROVAL

2019/10/16	Revisions as per MNRF notes & details
2020/06/29	Revisions as per GRCA discussions 2019-12-19
2020/07/14	Revisions following updated survey & reports
2021/10/06	Note changes as per comments from NDMNRF
2022/01/13	Revised notes as per GRCA and Region comments

SITE PLAN AMENDMENTS

No.	DATE	BY	DESCRIPTION

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.

SEPTEMBER 24, 2019
DATE

DAVID R. SISCO, RPP, MCIP

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PROGRESSIVE AND FINAL REHABILITATION PLAN

DESIGNED BY:	JS	SCALE:	1:2500
DRAWN BY:	JS/PR	FILE NUMBER:	115985
CHECKED BY:	DS	SHEET NUMBER:	8 OF 8
DATE:	2019-09-24		