



Noise (cont'd):

NUMBERING SCHEME USED FOR OPERATIONAL NOTES REFERS TO AGGREGATE RESOURCES ACT PROVINCIAL STANDARDS FOR A CLASS "A" CATEGORY 3 LICENCE.

#### Sequence and Direction 1.2.1 The proposed extraction area is divided into four Phases over two properties. The approximate Phase limits and generalized directions of extraction are indicated on the

Operational Plan. Extraction will generally proceed in a northerly direction from Phase 4 through Dust will be controlled from this operation. Dust control measures will include the application of water and/or other approved dust suppressants to internal haul roads, stockpiles, processing areas and equipment, as required. Slopes and areas of the pit which are not required for pit operations, will be seeded to maintain vegetation cover.

# Topsoil and Overburden Stripping and Stockpiling

1.2.2 Topsoil and organic material will be stripped and transported directly to areas that have been graded and are being prepared for final rehabilitation wherever feasible. Overburden material stripped from each phase will be used in the construction of acoustic berms (see Typical Acoustic Berm Detail' this page for additional details) and/or placed directly within that phase or the previous phases as general backfill for side slopes and to bring areas up to desired finished grade.

Stripping operations within each Phase will incrementally precede extraction/excavation. This will minimize the actual disturbed area and the need for temporarily stockpiling of overburden or topsoil materials. Temporary stockpiling of topsoil or overburden may occur if pit faces and/or floor areas are not immediately available for progressive rehabilitation. Long term soil stockpiling should be kept to a minimum. If material in stockpiles is required to be stored for longer than one year the licensee will ensure adequate vegetation is established to control erosion.

1.2.3 Excavation will generally occur in a single lift across the site wherever feasible. Where the depth of the deposit exceeds operational limits and/or Ministry of Labour requirements, excavation will occur in 2 lifts in close succession with the first lift having a minimum height of 7m. The maximum expected depth of excavation is to an elevation of between ±488m and 498m a.s.l. Excavation will remain a minimum of 1.5m above the established groundwater table.

# Main Internal Haul Roads

.2.4 Access to pit face and stockpile/processing areas will be by internal haul roads located as needed within the excavation area. The location of haul roads will vary depending on location of the working face.

1.2.5 The entrance/exit to these licensed sites (Prince property and Bonnefield property) will be through the common boundary with the adjacent licensed sites. There will be no new operational entrance/exits onto 4th Line. Product will be shipped through existing entrances in the existing licences (Licence 625155 and 129167). Property/service entrances for occasional access to the setbacks/perimeter for maintenance, berm construction, monitoring etc. are also shown. The existing entrance associated with the retained farm house in Lot 14, Concession 3 will be maintained.

## Ground Water Table

1.2.6 Hydrogeological information prepared by Whitewater Hydrogeology Ltd. and taken from 'Combined Level 1 and 2 Hydrogeological Assessment Proposed Bonnefield and Prince Pits (May 2017) identifies that the elevation of the existing groundwater table varies from  $\pm$ 498.5 masl in the northeast portion to  $\pm$  482.2 masl in the southeast portion of the Prince property. On the Bonnefield property, the groundwater table elevation ranges from ±500.3 masl in the northwest corner to 489.5 masl in the northeast corner of the site.

## Surface Water Diversion/Discharge Points

.2.7 No discharges to or diversions of surface water features are proposed. Post extraction drainage will be internal and percolate through the rehabilitated pit floor.

#### 1.2.8 Portions of the Boundary of the Area to be Licensed that will be fenced are as shown on the Sequence of Operations Diagram. Fencing will not be required or repaired along the portions of the common boundary with adjacent licences or within the woodlots on site. In these locations the boundary will be demarcated by 1.8m high marker posts in sufficient numbers to adequately delineate the location of the Boundary of Area to be Licensed with each post visible from the next. All fencing shall be maintained. See Variations from Operational Standards Table (O.S. 5.1) this page for

# Proposed Buildings and Structures

additional explanation.

1.2.9 No new scale/scale house is proposed (existing scale/scale house in Licence #129167 and #625155 will be used). The onsite farm house in Lot 14 will remain. All other residential and farm buildings may be removed prior to extraction in the applicable phase. From time to time, office trailers will be brought onto the site for the use of workers during operational hours. These portable structures will be located on the pit floor as required by site operations.

## Topsoil and Overburden Stockpiles

1.2.10 Temporary stockpiling of topsoil or overburden may occur if pit faces and/or floor areas are not immediately available for progressive rehabilitation. Long term soil stockpiling should be kept to a minimum. If material in stockpiles is required to be stored for longer than one year, the licensee/ operator will ensure adequate vegetation is established to control erosion. Topsoil/overburden may be stockpiled temporarily in adjacent Melancthon Pit 1 (Licence #129167) and Melancthon Pit 2 (Licence #625155) until required for progressive rehabilitation/backfilling.

Aggregate Stockpiles 1.2.11 Aggregate stockpiles will be located on the pit floor within the current phase and adjacent to portable processing equipment, no closer than 30m from the licensed boundary (see Variations from Operational Standards Table 5.13.1) this page. Aggregate materials may be prought onto site for the purposes of resale and blending. Aggregate materials and finished products may be imported and stored on site. The maximum stockpile height is 15m (50 ft).

### emporary Scrap Storage .2.12 Any scrap generated on site will be stored within an area no larger than 50m x 50m, within

the current phase. All scrap will be removed from the site on an ongoing basis.

<u>Fuel Storage</u> 1.2.13 There will be no fuel storage within these extension lands.

Area to be Extracted  $\overline{1.2.14}$  The maximum area to be extracted is ±48.4 ha. (±119.6 ac).

1.2.15 Setbacks will be as shown and labelled on the Sequence of Operations Diagram, this page and page 1 of 4 (see Variations from Operational Standards Table O.S. 5.10.1)

# 1.2.16 The maximum depth of extraction is 1.5m above the established water table and

estimated by the proposed spot elevations on the Sequence of Operations Diagram, this page. The established water table elevation will be confirmed as extraction proceeds through the monitoring program (see Note 1.2.27 "Hydrogeology") and temporary test pits on the pit floor. to 22m in the southeast corner of the Prince property.

## ocessing Areas\_ 2.17 Processing of on site aggregate material will occur on the pit floor, adjacent to the active pit face within the respective phases and will include portable processing/screening plants. Material may be processed in adjacent licences. Areas where processing is permitted is shown on the Sequence of Operations drawing, this page.

#### 1.2.18/1.2.19 Berms are to be constructed prior to extraction and/or processing on-site. Soil and overburden may be stored in storage berms. Berms are to be covered with 50mm (2") minimum topsoil, graded, seeded & maintained. Inspect and maintain vegetation on berms and slopes on a regular basis throughout the growing season. Remove and replace any areas which become damaged or diseased, as required. All proposed berms will be vegetated and naintained to control erosion. Temporary erosion control will be implemented as required (See 'Typical Acoustic Berm Detail', this page).

1.2.20 Within Phase 4 the extraction and processing equipment operating in the extension will be limited to: One crusher with extraction loader

• One screening plant with extraction loader; and • One shipping loader.

Concurrent processing allowed for Licence #625155 in accordance with the existing noise conditions has been assumed, but never more than a total of two crushers, two screeners, one wash plant and five loaders can operate at the same time between Phase 4 and Licence

#### Within Phases 5-7, the extraction and equipment operating in the extension will be limited to: One crusher with extraction loader; One screening plant with extraction loader;

- One shipping loader; and the potential to relocate the wash plant from the existing
- Concurrent processing allowed for Licence #129167, Licence #625155 and Phase 4 has been assumed but never more than a total of two crushers, two screeners, one wash plant and 5

1.2.21 A coniferous tree screen will be planted along the boundary of area to be licensed/4th Line frontage of these extensions.

#### lours of Operatior 1.2.22 The hours of operation will be 6:00 am to 7:00 pm Monday to Friday for shipping and 7:00

am to 7:00 pm Monday to Saturday for loading, shipping, crushing and processing. The following restrictions apply to the hours of operation at the site: • No operations on Holidays as defined in the Employment Standards Act. • The pit will not operate Sundays except as required by a specific contract.

# Tree and Stump Disposal

1.2.23 Timber resources (if any) will be salvaged for use as saw logs, fence posts and fuel wood where appropriate. Stumps and brush cleared during site preparation will be burned (subject to necessary local approvals) or mulched for use in the progressive rehabilitation of the site.

## Cross Sections

1.2.24 Location of cross sections are as shown. Cross sections are provided on page 4 of 4. Variations from Operational Standards

### 1.2.25 See table this page for Operational Standards (Section 5.0 of ARA Provincial Standards) that will be varied by this site plan.

(Licence #129167 and Licence #615155) will not exceed 1,250,000 tonnes.

1.2.26 Annual production from the site in conjunction with the existing Strada Melancthon Pits

# 1.2.27 Technical Recommendations

publication NPC-115 "Construction Equipment".

"Melancthon Pits Extension Noise Study Part of West Half of Lots 12 and 14, Concession 3 O.S. Township of Melancthon, County of Dufferin" (Aercoustics Engineering Ltd. May 25, 2017). 1. The sound emissions of all construction equipment involved in site preparation and rehabilitation activities shall comply with the sound level limits specified in MOECC

## 2. It is understood that the existing Licence No. 129167 (Pit 1) and Licence 625155 (Pit 2) will continue subject to all existing mitigation requirements for that site, with the exception of: a. The berm along the common north boundary of Licence 129167 can be removed; and

b. The berm along the common north boundary of Licence 625611 can be removed.



Proposed Groundwater Monitorina Network 3. Within Phase 4, except where further restrictions apply as outlined below, the extraction and Water Quality Water Levels Water Levels Vell ID Monthly Manual Water Vell ID Monthly Manual Water Semi-Annual | An )W2-A Х )W13-A Note: Concurrent processing allowed in Pit No. 2 in accordance with existing noise conditions, but never more than a total of two (2) crushers, two (2) screeners, one (1) wash W14-B 4. Within Phase 5-7, except where further restrictions apply as outlined below, the extraction and )W4-R OW16-B OW5-A OW17-A OW5-B OW18-A X OW18-B d. The potential to relocate the Wash Plant from the exiting licences to this extension. Х Note: Concurrent processing allowed in Pit No. 1, Pit No. 2, Phase 4 but never more than a )W7-B OW19-A total of two (2) crushers, two (2) screeners, one (1) wash plant and five (5) loaders. OW19-B DW8-A 5. The reference sound emission levels of the equipment on these extensions shall not

and mir sta ove apj wh	d subsoil. The side slopes sho nimize potential for erosion. bilize the slopes. Subsoil and erburden on the side slope p proximately 10 to 15 cm to e ere possible and subject to
Ani rep gro ani agi strip tes	nual reporting of all stages of ported. Random soil testing s wing season to analyze soil d / or soil amendments may nual rehabilitation practices ricultural rehabilitation activ oping, handling and storage ts; and, post rehabilitation so
Cu	ltural Heritage Assessment
"Cu Pla	ultural Heritage Study Part of nning, May 2017)
In c	order to help ensure that the nserved, the following recor
1.	The potential for the use of explored. This could occur
2.	A conservation plan for the ensure that the heritage a that this occur at the com
3.	Site rehabilitation as shown additional context and ya

Water Quality

Semi-Annual Annu

Х

Х

Х

Х

Proposed Water Quality Parameters

)W9-A

W10-A

W11-A

W12-A

Annual Groundwater Quality Semi-Annual Groundwater Quality Parameters Parameters eneral Water Quality Parameters: pH, Conductivity, Alkalinity, Bicarbonate, Chloride, Calcium, Total Petroleum Hydrocarbons (F1-F4) Magnesium, Potassium, Sodium, Sulphate, Nitrate, BTEX, Total Oil and Grease

Note: The collection of continuous water levels at selected groundwater monitoring locations is recommended

- It is recommended that a single annual groundwater monitoring report for the Melancthon Pits #1 and 2, as well as the proposed Bonnefield and Prince Pits be prepared and submitted to the MNRF prior to March 31st of each year and include the monitoring data for the 12 -month period ending December 31st of the previous year. The report shall include, but not be limited to, the following: 1. Monitoring data collected as per Proposed Groundwater Monitoring Network and

OW20-B

OW21-B

OW22-B

OW23-B

2. Proposed Water Quality Parameters; 3. Data in tabulated and graphical formats;

Phosphorous, and Metals (dissolved)

- Interpretation of the collected data including discussions of any observed trends in groundwater levels and groundwater quality (analytical) results; 5. Recommendations on and justification for the need for make changes to monitoring
- for mitigation, and 6. Summary and documentation of any water well complaint(s) and their resolution(s).

- Prince and Bonnefield Properties, 4th Line, Melancthon Township Level 1/2 Natural Environment Assessment and Environmental Impact Study " (Natural Resource Solutions Inc., May 2017). The following is a summary of recommendations and mitigation measures that are to be incorporated into the Operational Plan for the proposed Prince and Bonnefield property pits: • Implement 10m buffers from the retained woodland edges, which will be allowed to renaturalized and supplemented with targeted native species plantings. Machinery and
- materials must be maintained outside of the woodland buffers. Complete updated habitat assessments for the Species at Risk Barn Swallow, Bobolink and Eastern Meadowlark prior to site alteration. If it is determined that there is habitat for these species, habitat removal activities must be registered with the MNRF through a Notice of Activity and Mitigation Plans must be prepared according to the Regulation. The Mitigation Plans must identify the means by which impacts to the species will be effectively mitigated and describe the strategy for habitat compensation, management and monitoring that is required by the Regulation.
- All vegetation clearing shall occur outside of the bird nesting period April 15-August 15. Identified cavity trees shall be removed outside the bat active season (April 30 - September 1) or as determined by the MNRF.
- Structures that may provide bat habitat shall be removed outside the bat active season (April 30 - September 1) or as determined by the MNRF.
- Truck haul routes, and materials and soils stockpiling shall not be located immediately adjacent to the retained woodland features or their buffers.
- Dust impacts will be mitigated according to standard measures. • Artificial lighting shall be shielded or directed away from adjacent natural features.
- Silt fencing shall be established along the limits of the 10m woodland buffers in accordance with an Erosion Sediment Control Plan.
- Inspect all Erosion Sediment Control measures according to an Erosion Sediment Control Plan and complete repairs when required.
- Operate and store all materials and equipment in a manner that prevents any deleterious ubstance from leaving the site.
- Vehicles and equipment must be re-fueled in the designated area away from the retained natural features and buffers. Develop and implement a Spill Response Plan as required under the Aggregate Resource Act.
- Develop and implement a monitoring program, pre and during extraction operations, that includes the following components: Groundwater monitoring in conjunction with ongoing monitoring at the Melancthon Pit #1
- and #2 sites; - Surface water level monitoring and amphibian breeding monitoring within the Bonnefield property wetland, in conjunction with ongoing monitoring at Melancthon Pit #2; Inspect the woodland buffers during pit operation to ensure disturbances are not occurring; and, - Inspect the health and survival of buffer plantings.

6. Hours of operation for these extensions shall be restricted to the following time periods for the following activities:

processing equipment operating in the extension shall be limited to:

plant and five (5) loaders between Phase 4 and Pit No. 2

b. One (1) Screening Plant with extraction loader;

b. One (1) Screening Plant with extraction loader;

a. One (1) crusher with extraction loader

a. One (1) crusher with extraction loader;

Equipment

Crusher

Screener

Loader (each

Wash Plant

Shipping Truck (each)

c. One (1) shipping loader; and

c. One (1) shipping loader

Activity	Hours of Operation
Shipping	06:00 - 19:00 (Mon-Fri)
Loading, Shipping, Crushing and Processing	07:00 - 19:00 (Mon-Sat)

7. Perimeter acoustical berms shall be constructed as indicated on the site plans. The minimum heights are specified. The phasing of berm construction shall be as indicated on the

Reference Sound Level (dBA

[one hour LEQ @ 30 metres]

site plans. a. For Phase 4, a berm shall be constructed along the west perimeter, such that the

berm is 4.0m high. b. Within Phase 5-7, a berm shall be constructed along the entire north perimeter, and partially along the entire west perimeter, such that the berm is 5.0m high.

- 8. The phasing and direction of extraction shall be as indicated on the site plans. a. Within Phase 4, i. the processing equipment (crushing or screening) shall not operate within 75m of
- the west perimeter; ii. the processing equipment (crushing or screening) must operate within 50m of the west extraction face, if within 250m of the west licence boundary; and iii. the processing equipment (crushing or screening) must operate within 50m of the east extraction face, if within 300m of the east licence boundary; b. Within Phase 5-7,
- i. the processing equipment (crushing and screening) shall not operate within 150m of the west perimeter; ii. the processing equipment (crushing and screening) must operate within 50m of
- the west extraction face, if within 250m of the west licence boundary; iii. the processing equipment (crushing and screening) shall not operate within 100m of the east perimeter; iv. the processing equipment (crushing and screening) must operate within 50m of
- the east extraction face, if within 200m of the east licence boundary; and v. the processing equipment (crushing and screening) shall not operate within 150m of the north perimeter; 9. The depth of each lift shall where possible be a minimum of 7 metres. If this
- requirement cannot be met for the 2nd (or 3rd) lift, the lifts shall be extracted in close succession such that the combined face height is a minimum of 7 metres. 10. Any proposed changes to the aspects of the extraction and processing operations dealt with above as relating to noise control shall be reviewed by a qualified acoustical consultant for compliance with the relevant noise criteria.

Combined Level 1 and 2 Hydrogeological Assessment Proposed Bonnefield and Prince Pits" Whitewater Hydrogeology Ltd., May 2017). Although there are no anticipated impacts associated with the proposed extraction of aggregate, which will occur at least 1.5 m above the established water table, there are preventative operational practices that are recommended to further protect groundwater

 Refuelling of machinery should not be conducted in areas of the excavation that are within 1.5 m of the water table (i.e., on the pit floor). • Operator training should include understanding and ability to implement the preventative measures provided above, in addition to Strada's corporate Spill Contingency Plan (as per prescribed conditions).

- locations, monitoring frequency, type of monitoring, pumping patterns and/or the need

# Natural Environmen

	Legal Descr	iption			
Om I O.Om varies 3.0 m Om RETAIN EXISTING VEGETATION WHEREVER POSSIBLE UN UN	Part of V Concess Townshi	Vest Half of Lots 12 and 14 sion 3 O.S. p of Melancthon			
BERM SECTIONS ADJACENT TO PUBLIC ROADS WILL BE GRADED TO A MINIMUM 2:1 SLOPE 2.0	County	of Dufferin			
1.5 EXISTING GROUND ELEVATION	Legend	Boundary of Area		Limit of Extr	<b>action</b> DRAWN TO SCALE
Typical Acoustic Berm Detail       Scale 1:200         IAINTAINED TO CONTROL EROSION. TEMPORARY EROSION CONTROL WILL IMPLEMENTED AS REQUIRED         Variations from Operational Standards         Description		Existing Licensed Boundary	<b> </b>	AND SHOW LABELLE Existing Ext MELANCTHON PITS N (OWNED BY APPLICA	D DISTANCES raction Limit IOS. 1 & 2 NT)
0 FENCE ALONG NORTH BOUNDARY OF AREA TO BE LICENSED, COMMON BOUNDARY       5.1         0 ITH LICENCE #129167 AND LICENCE # 625155 OR WOODLOT AREAS. THE BOUNDARY       5.1         0 GATE AT NORTHERN MOST ACCESS OF AREA TO BE LICENSED WHERE HOUSE IS TO BE       5.2         0 RETAINED.       5.2	× 510.0 × 75.0	(OWNED BY APPLICANT) <b>Existing Spot Elevation</b> METRES ABOVE SEA LEVEL (masl)		NET NOTE 1.2.18/1 ACOUSTIC BERM' DE	2.19 AND 'TYPICAL TAIL THIS PAGE
LICENSED PITS ADJACENT TO THIS SITE.       5.9         LICENSED PITS ADJACENT TO THIS SITE.       5.10.1         TBACK REDUCED TO 0m ALONG BOUNDARY OF AREA TO BE LICENSED ADJACENT TO EXISTING LICENSED LANDS (LICENCE #129167, #625155 AND #3512).       5.10.1         OCKPILES MAY BE LOCATED CLOSER THAN 30m FROM THE BOUNDARY OF THE AREA TO E LICENSED WHERE IT IS ADJACENT TO EXISTING LICENSED LANDS (LICENCE #129167, 5.13.1       5.13.1		Existing Fence		Proposed V SEE NOTE 1.2.18/1	<b>isual Berm</b> 2.19 THIS PAGE
#625155 AND #3512).         ERE BERMS ARE TO BE LOCATED ADJACENT TO COMMON BOUNDARIES WITH EXISTING LICENCES, THE SETBACK WILL BE LESS THAN 3 METRES.       5.15         TOPSOIL AND OVERBURDEN MAY BE STORED TEMPORARILY ON ADJACENT LICENCE (9167 AND LICENCE #625155 UNTIL REQUIRED FOR REHABILITATION PURPOSES. TOPSOIL LOCATED WITHIN THIS STE (ANEL ANGTHON) BIT EXTENSION AMAY BE USED IN THE       5.16		Building/Structure		Proposed F 1.2m HIGH POST & UNLESS OTHERWISE	<b>ENCE</b> WIRE FENCE NOTED
LOCATED WITHIN THIS SITE (MELANCTHOIN FIT EXTENSION) MAY BE USED IN THE         PROGRESSIVE REHABILITATION OF ADJACENT LICENCE #129167 AND #625155.         CESS OVERBURDEN WITHIN THIS SITE (MELANCTHON PIT EXTENSION) MAY BE USED IN THE         PROGRESSIVE REHABILITATION/BACKFILLING OF ADJACENT LICENCE #129167 AND         5.17         #625155.		Field/Residential Access		Operational Maintained by A G. BE CLOSED WHEN F OPERATION	Entrance
rom the woodlot and boundary demarcation will be established prior to site preparation as shown. se 4 following the completion of Phase 3 in Pit #2. The common boundary between Pit #2 and the Pit #1	$\sum_{i=1}^{n}$	Existing Vegetation		General Dir of Excavation REFER TO NOTES (1 ADDITIONAL DETAILS	ection On THIS PAGE) FOR
arm along the west perimeter. Store any excess soil material in a stockpile(s) within the limit of the common boundary with Pit #2. Product will be shipped through the existing entrance and exit to existing entrance and exit to 4th Line within Pit #1 during later stages of Phase 4. Then operating in the extension will be limited to a crusher, screening plant and associated loaders. (See		Existing Berm		Internal Hau Location Approxim Location May Vary	<b>II Road</b>
ast and west limits of the property. processing area, scale, scale house and entrance/exit will be complete during extraction of Phase 4. In setback from the woodlot and boundary demarcation, will be established prior to site preparation as limit of the property following the completion of Pit #1. The common boundary between Pit #1 and		Monitoring Well whitewater hydrogeology Ltd. 2017	1494.0	Proposed Sp Above Water MAXIMUM DEPTH OF	<b>ot Elevation</b> (masl) EXTRACTION
ection towards the northern limit of the property. erm along the entire north and west perimeters. A 4.5m high berm will also be constructed on the rth. rough the common boundary with Pit #1. Product will be shipped through the existing entrance and poment operating in the extension will be limited to: a crusher, screening plant, associated loaders, and a		Cross Sections see page 4 of 4 for existing and rehabilitated cross sections	RI9	Noise Rece see note 1.2.27 'N additional details	<b>ptor</b> Ioise' for
). It topsoil and subsoil strippings will be used to progressively rehabilitate sides slopes/pit floor at the east he processing area, scale, scale house and entrance/exit will be completed during extraction of Agricultural Impact Assocrement			┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍ ┍	Tree Plantir	igs
"Agricultural Impact Assessment Strada Aggregates, Township of Melancthon County of Dufferin" (MHBC Planning, May 2017) The side slopes should be graded to the desired slope prior to the replacement of topsoil and subsoil. The side slopes should be ripped/tilled to alleviate any compaction and to minimize potential for erosion. A permanent vegetative cover should be provided to stabilize the slopes. Subsoil and topsoil can be placed directly over the top the	Site Plan Am	nendments			
overburden on the side slope provided the topsoil is uniformly placed at a depth of approximately 10 to 15 cm to ensure the establishment of a perennial vegetative cover where possible and subject to material availability. Annual reporting of all stages of the rehabilitation process should be documented and reported. Random soil testing should also be completed at the beginning of each					
and / or soil amendments may be required based on the results of the soil testing. An annual rehabilitation practices report should be submitted in order to documents agricultural rehabilitation activities and demonstrate compliance in relation to soil stripping, handling and storage; rehabilitation progress, methods and best practices; soil tests; and, post rehabilitation soil capability and farming activity.	No.	Date	Description		Ву
Cultural Heritage Assessment         "Cultural Heritage Study Part of Lots 12 & 13, Concession 3, Melancthon Township" (MHBC Planning, May 2017)         In order to help ensure that the applicable cultural heritage resources are appropriately conserved, the following recommendations are made:         1.       The potential for the use of the barn and outbuildings as salvage materials should be			P U	LANN IRBAN D	NING Design
<ul> <li>explored. This could occur as part of onsite activities or through other means.</li> <li>A conservation plan for the house is recommended to be prepared in order to ensure that the heritage attributes of the house are retained. It is recommended that this occur at the commencement of site operations on the Prince property.</li> <li>Site rehabilitation as shown in Page 3 of 4 is recommended in order to provide additional context and yard area surrounding the house. This will assist in a viable</li> </ul>		MHB	C 8		SCAPE CTURE
Iong-term after-use for the house. Archaeology: "Stage 1 and 2 Archaeological Assessment of the Garner / Bonnefield Property, 437101 Fourth Line Part of Lot 12, Concession 3 Old Survey, Township of Melancthon, Dufferin Country Optatic and "Stapp 1 and Stapp 2 Arebagological Assessment of the Prince	200 - 540 BIN MNRF Appr	IGEMANS CENTRE DR. KITCHENER, ON, N2B 3X5	P   P: 519.576.365	0 F: 519.576.0121   WM	W.MHBCPLAN.COM
Property, 437213 Fourth Line, Part Lot 14, Concession 3 Old Survey, Township of Melancthon, Dufferin County, Ontario" (ASI Archaeological & Cultural Heritage Services, January 27, 2017 and February 2, 2017). The Garner/Bonnefield Property 1. The Madill site (BaHb-17) represents a mid-nineteenth occupation of the property. As			D. P.		
such, this site represents an archaeological resource where the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4 mitigation. Therefore, it is recommended that the site be subject to comprehensive Stage 3 assessment in order to more fully identify the character, extent and significance of the archaeological deposits, in accordance with the Ministry of Tourism, Culture and Sport's 2011 Standards and Guidelines for Consultant Archaeologists. Given that there are no further concerns for impacts to archaeological sites within the majority of the project.			URSANSTES		
<ul> <li>lands, ASI also makes recommendation for partial clearance.</li> <li>No grading or other activities that may result in the destruction or disturbance of the BaHb-17 site documented in the Stage 1 and 2 Archaeological Assessment are permitted until notice of Ministry of Tourism, Culture and Sport approval has been received. Should there be proposed grading or other impacts to the subject property the following musicance provide the subject property the following</li> </ul>	Applicant		<b>?</b> <i>TC</i>		1
<ul> <li>a. That the protection strategy is required.</li> <li>a. That the protected area at BaHb-17, comprising the site extent and a 20m protective buffer, be marked by a temporary barrier prior to the commencement of construction/extraction;</li> <li>b. That soil disturbing activities within 50 m of the protected areas be monitored by a licensed archaeologist to ensure that unintentional project impacts do not occur.</li> </ul>			G G R E	<b>FDF</b> <b>G</b> A T E	S
The MTCS should be notified immediately if any alterations to the sites are observed; c. That 'no go' instructions be issued to all on-site construction crews and engineers for the protected areas, and that the location of these areas be shown on appropriate contract drawings; and		30 Floral Parkwa Phone: 905-669-	y, Concord ( 5400 Fax: 9	ON, L4K 4R1 05-669-2296	
<ul> <li>a. Indif the protected areas be inspected by a licensed archaeologist after the completion of soil disturbing activities, and that the effectiveness of the avoidance and protection strategy is reported to the MTCS</li> <li><b>3.</b> Should the limit of extraction change for any reason, then further Stage 2 Archaeological Assessment must be conducted on the remaining 20% of the subject property (wooded areas along the east limit which retain potential for archaeological</li> </ul>	Project	Melancthon Part of West Half of Lots 12	Pit Ext	tension ncession 3 O.S.	
<ul> <li>A. Should previously undocumented 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</li> </ul>	MNR Licence	Township of Melancth Reference No.	On, County Pre-approval re ARA Complete -	of Dufferin eview: June 6/2017	
to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act. The Prince Property 1. Approximately 15% of the subject property, within the limit of extraction, has not been	Plan Scale 1:4	I000 (Arch D) SCALE	Plot Scale 1:	4 [1mm = 4 un	its] MODEL
subject to Stage 2 Archaeological Assessment. The unassessed areas comprise a cattle paddock to the east of the large barn and the pine plantation in the southeast corner of the property. Prior to any land disturbing activities within the subject property, a Stage 2 Archaeological Assessment must be conducted in accordance with the Ministry of Tourism, Culture and Sport's 2011 Standards and Guidelines for Consultant Archaeologists.	50	0 100 200 METRES	Drawn By Checked By	D.S. <sup>File No.</sup> J.P.	Y349G
2. Should the limit of extraction change for any reason, then further Stage 2 Archaeological Assessment must be conducted on the remaining 15% of the subject property (wooded area in the northeast corner) which retain potential for archaeological resources) prior to any land-disturbing activities in accordance with the Ministry of Tourism, Culture and Sport's 2011 Standards and Guidelines for Consultant Archaeologists	File Name	OPERATIO	NAL	PLAN	
3. Should previously undocumented 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	Drawing No.	2 C	<b>F</b> 4		
to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.		K:\y349G Strada Dufferin County propertie	es\A\ARA Complete\Ope	rplan 2of4.DWG	



1.3.2 Topsoil and overburden will be stripped, stored and replaced separately. Topsoil and subsoil shall be replaced in the appropriate sequence on all pit slopes and the pit floor to a minimum depth of 0.5m, graded and cultivated in preparation for seeding. All excavation faces shall be sloped and graded to no steeper than 3:1. This may be accomplished by backfilling with clean fill material obtained from within the area to be excavated where the deposit is of unsuitable quality. Where there is a deficiency of fill for slope rehabilitation, clean fill may be imported (see note 1.3.6/1.4.1 page 3). Soil compaction within areas returning to agricultural/pasture use shall be alleviated by ripping to a minimum depth of 0.5m, or by cultivating and/or discing (see "Pit Floor Agricultural Rehabilitation Sequence" this page).

## Proposed Vegetation

1.3.3 & 1.4.3 The majority of the extraction area (± 48.4 ha.) will be returned to agricultural/pasture use in accordance with the "Pit Floor Agricultural Rehabilitation Sequence". Rehabilitated slopes and non agricultural areas of the pit floor shall be seeded with a grass/legume seed mixture comprising white clover, timothy and perennial ryegrass. All vegetation planted on areas undergoing rehabilitation shall be replanted, if required, to ensure successful establishment and prevent erosion. Fertilizer (5-20-20) or equal will then be applied on the areas to be seeded. Create a post rehabilitation management plan program in accordance with the "Pit Floor Agricultural Rehabilitation Sequence" to accommodate a five year plan for the restoration of the soils. Use best management agricultural practices as are appropriate for the area, climate and conditions.

provided to stabilize the slopes. Subsoil and topsoil can be placed directly over the top the overburden on the side slope provided the topsoil is uniformly placed at a depth of approximately 10 to 15 cm to ensure the establishment of a perennial vegetative cover where possible and subject to material availability.

### Progressive Rehabilitation 1.3.5 Progressive rehabilitation shall follow the Sequence of Operations diagram/notes and Phase notes on page 2 of 4.

# Importation of Fill

1.3.6 & 1.4.1 Clean inert fill (e.g. topsoil, overburden) may be imported to facilitate pit rehabilitation. Only sufficient material to create a 3:1 (horizontal: vertical) grade may be imported. At the request of MNRF, the licensee will conduct random sampling of the imported material to ensure that it meets the Ministry of the Environment and Climate Change's (MOEEC) criteria under Table 1 of MOEEC's "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act". Sampling results will be provided to MNRF upon request.

# Buildings & Structures

1.4.4 No buildings or structures associated with aggregate operations will remain on site. The farm house located within the setback along 4th Line in Lot 14 Concession 3 will be retained.

# Internal Haul Roads

1.4.5 No internal haul roads will remain onsite. Agricultural field accesses will generally be from the existing entrances off 4th Line by ramp and laneway as shown.

# Surface Water Drainage & Discharge

1.4.6 Final surface drainage will follow the rehabilitated contours as shown and generally be directed to the north and east and infiltrate the rehabilitated pit floor through vertical seepage.



30 Floral Parkway, Concord ON, L4K 4R1 Phone: 905-669-5400 Fax: 905-669-2296

# Melancthon Pit Extension

Part of West Half of Lots 12 and 14 Concession 3 O.S. Township of Melancthon, County of Dufferin

Drawing No. <b>3 OF 4</b>							
File Name REHABILITATION PLAN							
50	0 50 METRES	100	Checked By	J.P.	1349G		
	SCALE		Drawn By	D.S.			
Plan Scale 1:3000 (Arch D)			Plot Scale 1:3 [1mm = 3 units] MODEL				
			ARA Complete - June 6/2017				
MNR Licence Reference No.			Pre-approval rev	Pre-approval review:			

K:\y349G Strada Dufferin County properties\A\ARA Complete\Rehaplan 3of4.DWG

SOIL CONDITIONING PHASE >< > TEST SOIL FOR FERTILITY PRIOR TO PLANTING; PLANT COVER CROPS, OATS OR RYE IMMEDIATELY AFTER FINAL STONE PICKING TO PREVENT SUBFACE EROSION IF NECESSARY SEED TO A GRASS/LEGUME MIXTURE  $(\mathfrak{I})$ (10) (11) X YEARS X YEARS REHABILITATED CONDITION CONTINUE DOCUMENTATION AND MONITORING OF RESULTS

Project







**Section A-A1 Rehabilitated Conditions** 













# South 525m a.s.l.

480m a.s.l

# South

525m a.s.l.

480m a.s.l.

East 525m a.s.l. 180m a.s



Part of West Half of Lots 12 and 14 Concession 3 O.S. Township of Melancthon County of Dufferin

# Legend



- Notes 1. CROSS SECTIONS PLOTTED FROM TOPOGRAPHIC INFORMATION COMPILED BY GEOOPTIC (A DIVISION OF AEON EGMOND LTD.) PRODUCED FROM AERIAL PHOTOGRAPHY FLOWN MAY 9, 2016. MAPPING IS PRODUCED IN REAL WORLD SCALE AND COORDINATES (NAD83 UTM ZONE 17N). CONTOUR INTERVAL IS 2m. ALL ELEVATIONS ARE GEODETIC.
- PROPERTY BOUNDARIES COMPILED FROM SURVEYOR'S REAL PROPERTY REPORT PREPARED BY P.J.WILLIAMS, ONTARIO LAND SURVEYOR (MAY 21, 2016) AND EXISTING ARA SITE PLANS PREPARED BY MHBC PLANNING (MARCH 28, 2012).
- THE ELEVATION OF THE EXISTING GROUNDWATER TABLE VARIES FROM ±498.5 masl IN THE NORTHEAST PORTION TO ± 482.2 masl IN THE SOUTHEAST PORTION OF THE PRINCE PROPERTY, ON THE BONNEFIELD PROPERTY, THE GROUNDWATER TABLE ELEVATION RANGES FROM ±500.3 masl IN THE NORTHWEST CORNER TO 489.5 masl IN THE NORTHEAST CORNER OF THE SITE. GROUNDWATER TABLE INFORMATION PROVIDED BY WHITEWATER HYDROGEOLOGY (May 2017)
- 4. ALL MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES.

Site Plan Amendments						
No.	Date	Description	Ву			



Applicant

Project



30 Floral Parkway, Concord ON, L4K 4R1 Phone: 905-669-5400 Fax: 905-669-2296

# **Melancthon Pit Extension**

Part of West Half of Lots 12 and 14 Concession 3 O.S. Township of Melancthon, County of Dufferin

Drawing No.	Drawing No.					
File Name CROSS SECTIONS						
50	0 <sub>METRES</sub> 50	100	Checked By	′ J.P.	1 3490	
	SCALE		Drawn By	D.S.		
Plan Scale Horizontal 1:3000 (Arch D)			Plot Scale 1:3 [1mm = 3 units] MODEL			
			ARA Complete - June 6/2017			
MNR Licence Reference No.			Pre-approval review:			

4 OF 4

K:\y349G Strada Dufferin County properties\A\ARA Complete\Xsecplan 4of4.DWG

800 metres