



December 15, 2020

**Duivenvoorden Haulage Limited
Aggregate Pit Expansion – Stormwater Management Brief
WMI File No.: 20-636
NVCA ID #: 42204**

Duivenvoorden Haulage Ltd. is proposing to apply for a Class 'A' License (Category 3 – Pit Above Water) under the Aggregate Resources Act, for a pit expansion. The license would permit aggregate extraction to expand north onto the 437202 4th Line, Township of Melancthon property and include a strip of 437138 4th Line between the municipal right-of-way and the existing pit. The area subject for the pit expansion (licensed area) is 45 hectares (111.1 acres), with a proposed extraction area of 34.5 hectares (85.2 acres). The proposed pit expansion area is referred to as the “site” in the context of this brief.

As required by the Nottawasaga Valley Conservation Authority (NVCA) pre-consultation comments, dated June 23, 2020, and through continued correspondence with the NVCA (email dated Nov. 11, 2020), this letter has been prepared by WMI & Associates Limited in support of the proposed aggregate pit expansion from a stormwater management perspective.

The proposed expansion of the pit does not include an increase in impervious area as it is simply the expansion of an existing earthworks operation.

Upon investigation of the existing drainage conditions associated with the site (pit expansion area), it was determined that there is no existing stormwater outlet due to existing topography. As indicated on the attached **Drainage Plan, FIG1**, all contributing runoff from external lands, enters the site from the west and north with the majority of the runoff being in the form of concentrated flow from the southwest and northwest corners. All internal and external runoff ultimately concentrates and infiltrates into the native soils at the low point of the property which is located just east and north of the middle of 437202 4th Line.

As indicated by Dufferin County's GIS mapping, aerial imagery clearly illustrates the low area (surfacing ponding visible) while Google Maps imagery taken at a different time shows the same area as being cropped, further suggesting that all site runoff ultimately infiltrates into the native soils.

In the proposed condition, existing drainage patterns and infiltration will remain as in the existing condition. In order to extract the aggregate on-site while maintaining existing drainage patterns, all earthworks will ensure sufficient conveyance to and space for, stormwater ponding and infiltration as in the existing condition.

Ultimately the aggregate extraction activities will be determined by the proponent but we provide the following as a potential means of dealing with stormwater during the on-site earthworks activities:

- Construct perimeter cut-off swales along the west and north limits of the site (pit expansion area) to intercept overland sheet flow as well as the existing concentrated flow inlets from all external lands.
- Cut-off swales can both be directed to the existing low point of the site OR the north cut-off swale can be directed to the existing low point and the west cut-off swale can be directed to the existing pit to the south of the site (437138 4th Line) once it has been completely extracted of all aggregate.
- Complete the aggregate extraction in the northwest portion of the site. Once completed, direct all external runoff into the new cut to be stored and infiltrated. This would manage the external drainage as it enters the property leaving the residual lands uninfluenced during the remainder of the aggregate extraction activities.
- At all times, both internal and external drainage will be directed away from the current extraction area and towards a low point/points to be temporarily stored and infiltrated as in the existing condition.

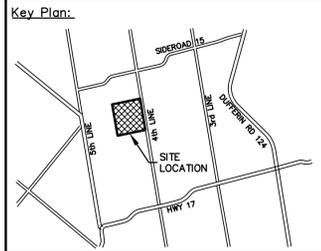
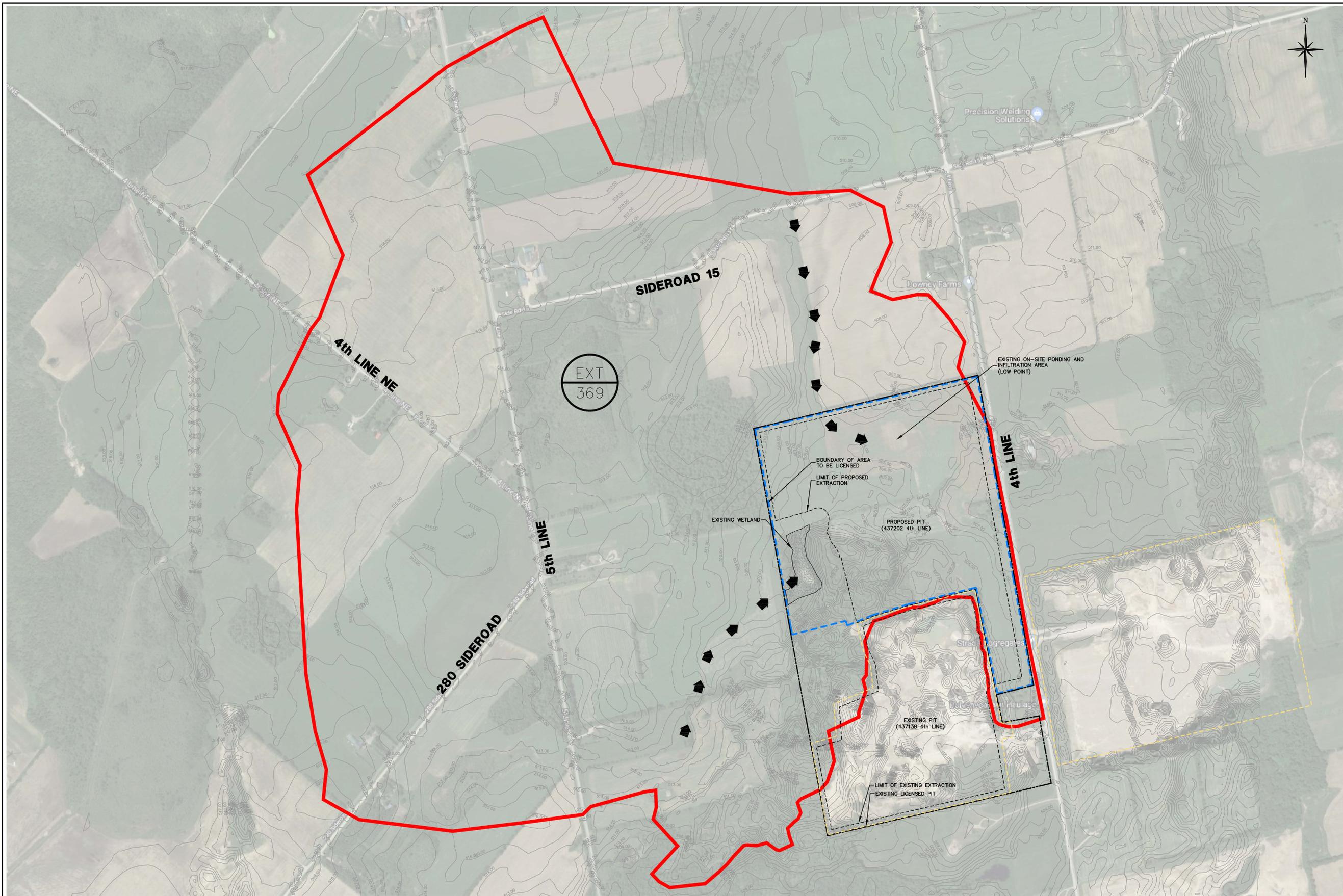
Based on the above, we request that this letter be received by the NVCA in support of the proposed expansion of DHL's existing aggregate pit located on the 4th Line in the Township of Melancthon.

Respectfully submitted,

WMI & Associates Limited



Jeremy W. Lighthouse, P. Eng.



- Legend:**
- CATCHMENT IDENTIFICATION
 - CATCHMENT AREA (HA)
 - CONCENTRATED EXTERNAL FLOW
 - LIMITS OF CATCHMENT AREA
 - BOUNDARY OF AREA TO BE LICENSED
 - LIMIT OF PROPOSED EXTRACTION
 - EXISTING LICENSED PIT
 - PROPERTY LINE

CAUTION
CONTRACTOR TO DETERMINE
LOCATION OF EXISTING UTILITIES
PRIOR TO CONSTRUCTION.

- Notes:**
- Unless noted otherwise, the measurements and distances shown on this drawing are shown in meters.
 - Do not scale drawings.
 - It is the contractor's responsibility to verify all dimensions, levels and datums on site and report any discrepancies or omissions to WMI & Associates Ltd. prior to construction.
 - This drawing is to be read and understood in conjunction with all other relevant documents applicable to this project.
 - This drawing is the exclusive property of WMI & Associates Ltd. and the reproduction of any part of this document without prior written consent is strictly prohibited.

No.	Issue / Revision	Date
1	1ST SUBMISSION	DEC. 15, 2020

**DHL PIT
DRAINAGE PLAN**

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Drawn By AW	Checked By JWL	Drawing No. FIG1
Scale 1:5000	Project No. 20-636	