



PLANNING REPORT for the TOWNSHIP OF PUSLINCH

Prepared by the County of Wellington Planning and Development Department

DATE: October 11, 2017
TO: Kelly Patzer, Development Coordinator
Township of Puslinch
FROM: Sarah Wilhelm, Manager of Development Planning
County of Wellington
SUBJECT: **D14/UNI – Mill Creek Pit Expansion (Phase 6)**
Zoning By-law Amendment and Official Plan Amendment
7115 Concession 2 (Rear Lot 24, Concession 1), Puslinch

SUMMARY

The purpose of the planning applications before the County of Wellington and Township of Puslinch are to consider a proposed extension of the Dufferin Aggregates aggregate extraction operation (Mill Creek Pit Phase 6). The area subject to the proposed official plan and zoning by-law amendments is approximately 6.8 ha in size. This report provides a general review of the applicable planning policies, purpose for the requested official plan and zone changes, summary of peer review and agency comments. A public meeting to consider the planning applications is scheduled for October 19, 2017.

In response to the notice of public meeting for the above-noted planning applications, we provide Council with the following preliminary comments.

INTRODUCTION

The entire Mill Creek Pit aggregate operation is approximately 188 ha in size and includes the lands both north (phases 1, 3, 4 & 5) and south of Concession Road 2 (phase 2) which together are described as Part of Lots 21, 22, 23 and 24, Concession 2 and Part Lot 24, Concession 1 in the Township of Puslinch. The land is bordered on the north by Highway 401 and has frontage on both sides of Concession 2. The property is owned by the University of Guelph and the pit is operated by Dufferin Aggregates, a division of CRH Canada Group Inc.

The land subject to the proposed zoning by-law and official plan amendments is on the south side of Concession Road 2 (known as Phase 2), described as Part Lot 24, Concession 1. This 42.1 ha parcel is licenced, but only 25 ha are included in the area to be extracted. The amendments would constitute phase 6 of the aggregate operation, which seek to expand the area to be extracted by 6.8 ha which contains approximately 2.2 million tonnes of aggregate. Other aspects of the expansion include the following:

- entire licenced site has a maximum tonnage limit of 2 million tonnes per annum, which will not change with the addition of the proposed Phase 6;
- extraction would be above and below the water table;
- extracted material would be transported to the existing plant north of Concession Road 2 using a conveyor system;
- proposed haul route would follow the same haul route as the existing Mill Creek Pit.

SURROUNDING AREA

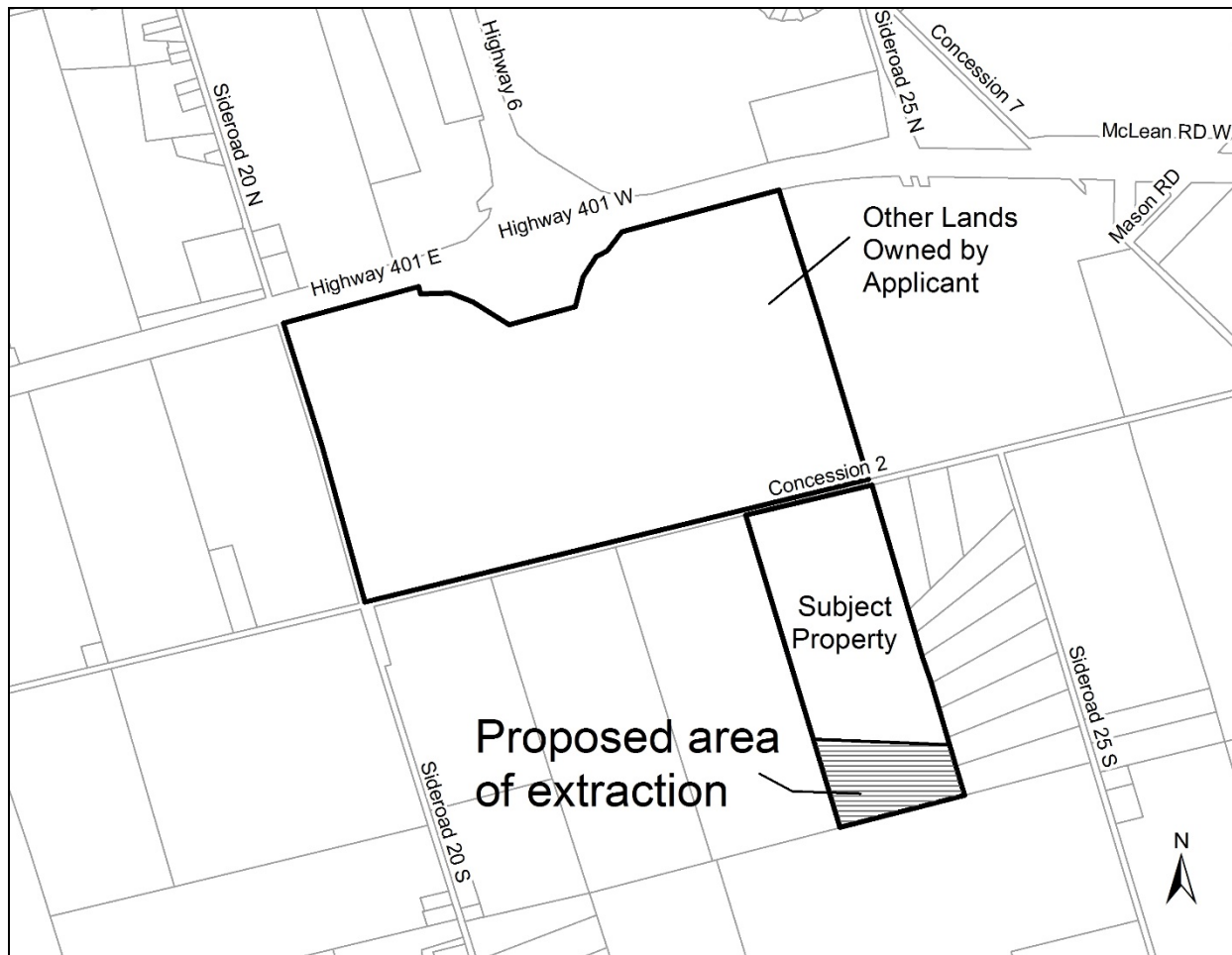
The area of proposed extraction is surrounded by:

- Mineral aggregate extraction to the north
- Rural residential uses to the east
- The Crieff Hills Community* operated by the Presbyterian Church of Canada to the south
- Open space associated with the mineral aggregate operation to the west

* We would note that the zoning for the property of the Crieff Hills Community applies site-specific setbacks (A-5 Zone) along the northern property line (abutting the area of the proposed expansion) to:

- prohibit new agricultural buildings within 350 m
- permit one single detached dwelling no closer than 350 m
- prohibit other new buildings within 500 m

Figure 1 Property Location



PURPOSE OF PLANNING APPLICATIONS

The purpose of the Official Plan Amendment is to amend the land use schedule (including revising the Greenlands designation) in order to allow for the pit extension for above and below water extraction. The amendment would also add portions of the property to the Mineral Aggregate Resource Overlay in the Plan. The purpose of the proposed Zoning By-law Amendment is to extend the Extractive Zone onto a portion of the subject land. The current A-13 Zone prohibits extraction and limits the use of the property to berms, forestry and woodlots, open space and conservation, fish and wildlife management.

SITE PLAN AMENDMENT

A Major Site Plan Amendment under the Aggregate Resources Act is required to extend above and below the water table extraction into the Phase 6 area.

POLICY CONTEXT

In order to amend the municipal planning documents, the applicant is required to demonstrate that the proposed land use change is consistent with Provincial plans and policies and ensure conformity with the applicable County planning policies. Some of the provincial matters to be addressed include: protection of water quality and quantity, protection and utilization of mineral aggregate resources, protection of natural heritage features and functions, protection of cultural heritage and archaeological resources, and address potential impacts on adjacent sensitive land uses.

County Official Plan

According to Schedule A7 (Puslinch) of the Official Plan, the area of expansion is designated SECONDARY AGRICULTURAL and GREENLANDS. The Greenlands designation identifies significant woodlands. Schedule "C" of the County Official Plan recognizes most of the area of expansion as being part of the MINERAL AGGREGATE RESOURCE OVERLAY. As such, the land is considered an area of "high potential for mineral aggregate extraction" but "does not presume that all conditions are appropriate to allow extraction or processing of the resource to proceed". The applicant will be required to demonstrate that aggregate extraction at this location is appropriate. Further, the Official Plan requires that any new or expanded mineral aggregate extraction operation shall only be established through amendment to the Plan.

Section 6.6.5 provides policy direction regarding new or expanded mineral aggregate operation, including the following matters for consideration:

- a) the impact on adjacent land uses and residents and public health and safety;
- b) the impact on the physical (including natural) environment;
- c) the capabilities for agriculture and other land uses;
- d) the impact on the transportation system;
- e) existing and potential municipal water supply resources are protected in accordance with Sections 4.9.5 and 4.9.5.9 of this Plan and the applicable Source Protection Plan;
- f) the possible effect on the water table or surface drainage patterns;
- g) the manner in which the operation will be carried out; and
- h) the effect on cultural heritage resources and other matters deemed relevant by Council.

STUDIES

The applicant has submitted the following documents in support of the applications:

- Planning Justification Report, GSP Group (August 2015)
- Level 1 & 2 Natural Environment Assessment, AECOM (August 2015)
- Noise Impact Study, Aeroustics (September 3, 2015)
- Hydrogeological Assessment, Hims GeoEnvironmental (September 4, 2015)
- Stage 1 Archaeological Assessment, Golder Associates (June 3, 2014 Revised)

In response to agency and peer review comments, the applicant submitted supplemental information and the following additional documents:

- Ecological Management Plan & Rehabilitation Plan, Goodban Ecological Consulting Inc. (April 2017)
- Bat Acoustical Survey of Phase 6 White Pine Coniferous Forest, Goodban Ecological Consulting Inc. and Gray Owl Environmental Inc. (April 2017)

It is the responsibility of the applicant to demonstrate that these studies, their amended aggregate site plans and associated recommendations address the applicable Provincial and County planning policies; other matters raised through the review process; and ensure that the proposed land uses are carried out in a manner that minimizes social and environmental impacts.

AGENCY AND PEER REVIEW COMMENTS

We have received comments from three provincial ministries regarding the first circulation. We have received comments from the conservation authority and the Township's peer review consultants regarding the first and second circulation. Comments are summarized as follows.

MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING (MMAH)
CONCERNS (March 30, 2015)
<ul style="list-style-type: none">• Comments provided with respect to potential for endangered species and significant wildlife habitat• A number of areas needing clarification were identified• Need to undertake acoustical monitoring for bats• Applicant has not demonstrated that there will be no negative impacts on the natural features or their ecological function as it relates to the significant woodland
MINISTRY OF TRANSPORTATION (MTO)
NO CONCERNS (March 18, 2016)
<ul style="list-style-type: none">• Ministry has no issues

MINISTRY OF NATURAL RESOURCES AND FORESTRY (MNRF)
CONCERNS (February 25, 2016)
<p>Comments on the Major Site Plan Amendment Application:</p> <ul style="list-style-type: none"> • Concerns related to significant wildlife habitat • Need to demonstrate how the partial removal of significant woodland would meet the Provincial Policy Statement • Note that approved Site Plans for Mill Creek Pit show the majority of the expansion area as lands for reforestation • Information needed to demonstrate how compensation plantings will address the cumulative loss of forested area within the licence post-extraction • Ministry objects to the application for a Major Site Plan Amendment to expand the limit of extraction (including below water extraction)
NO CONCERNS (July 13, 2017)
<p>Comments on the Major Site Plan Amendment Application:</p> <ul style="list-style-type: none"> • Previous issues have been addressed • MNRF has no further concerns at this time • Updated Site Plans are required
GRAND RIVER CONSERVATION AUTHORITY (GRCA)
CONCERNS (February 1, 2016 (Township) & April 1, 2016 (County))
<ul style="list-style-type: none"> • Recommend deferral until sufficient justification is provided to address removal/adjustment of significant woodland to ensure long term function of woodland is not impacted and appropriate phasing and restoration takes place
NO CONCERNS (June 7, 2017)
<ul style="list-style-type: none"> • No objections based on updated information
HARDEN ENVIRONMENTAL
CONCERNS (December 1, 2015)
<p>Questions related to the following:</p> <ul style="list-style-type: none"> • The fate of finer grained material in the event that an appreciable thickness of glacial till is encountered • Whether the fine grained material will be separated and used as backfill in the amendment area or transported with the aggregate and deposited in the approved silt ponds • Whether there is adequate volume in silt ponds to accommodate waste material from the amendment area • Whether there is sufficient dexterity in the dragline operation to minimize disturbance of the basal till layer • What the implications would be to the underlying aquifer if the hydraulic connection to the sand and gravel aquifer is improved
NO CONCERNS (September 18, 2017)
<ul style="list-style-type: none"> • July 5, 2017 letter from MHBC planning responded to above questions • No additional concerns

GWS ECOLOGICAL & FORESTRY SERVICES**CONCERNS (December 22, 2015)**

- Proposal would remove the entire white pine stand found on the property which is designated Greenlands in the County Official Plan
- Insufficient justification given for the proposed loss of significant woodland and wildlife habitats, including species of Special Concern and possibly Endangered Species
- Site plan amendment considered unacceptable

NO CONCERNS SUBJECT TO RECOMMENDATIONS (June 30, 2015)

- Previous natural environment concerns have been addressed
- Western 0.47 ha portion of the white pine stand to be retained and ecological enhancement measures included as part of site rehabilitation
- Details should be included on the Site Plans regarding reforestation and ecological enhancements
- Recommendations are made concerning duration of ecological monitoring, replanting and species mix

PUBLIC COMMENTS

We have received the following comments from adjacent land owners.

CRIEFF HILLS COMMUNITY

February 29, 2016; March 18, 2016; June 6, 2017

What has changed since the original OMB hearing that makes the ruling subject to change?
Was the ruling of the OMB hearing temporary and subject to change at any time?
If yes, the A-13 designation is temporary, is the ruling to allow the Pit License temporary also?
Is it necessary for Crieff Hills Community to defend their position again now in an ongoing basis through OMB hearings?
Potential loss of privacy remains a great concern to the board of directors.

CBM – ST. MARY'S CEMENT

February 29, 2016

- Own adjacent property to the east (CBM McMillan Pit)
- No concerns related to pit expansion

PLANNING AND DEVELOPMENT ADVISORY COMMITTEE (PDAC) COMMENTS

The Zoning By-law Amendment was considered at the September 12, 2017 meeting of PDAC. The Committee made the following comments:

1. Request for Dufferin Aggregates to cover the Township peer review costs of the monitoring reports
2. Township requests review of the amended Site Plan
3. Environmental Monitoring Program is to be presented at the Public Meeting

NEXT STEPS

The upcoming statutory public meeting will provide Council, staff and the public an opportunity to ask questions and obtain more information from the applicant regarding their proposal. We will be in attendance at the public meeting to hear the applicant's presentation and any public comments. Our planning recommendation report will be provided to Council at a later date.

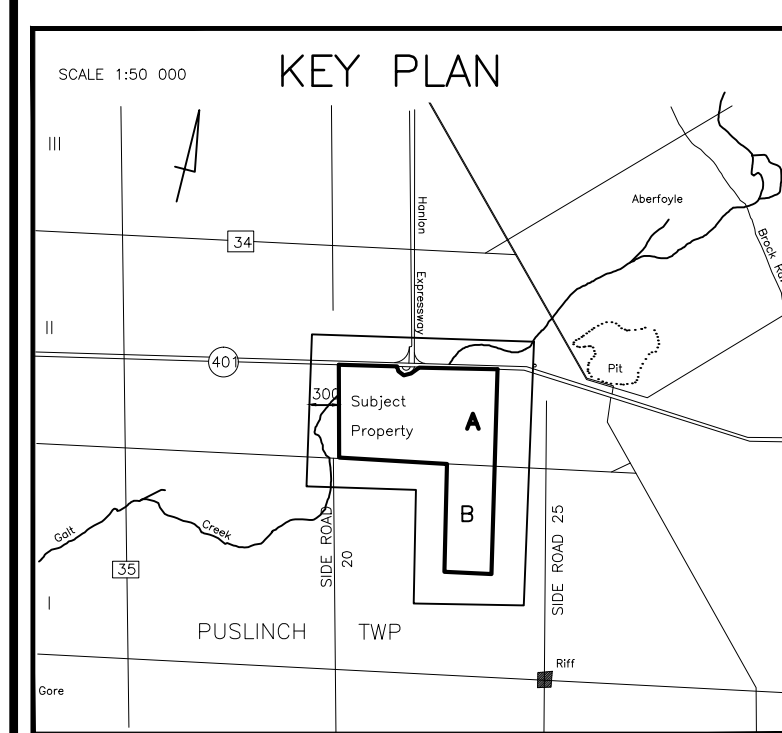
We trust that these preliminary comments are of assistance to Council.

Respectfully submitted
County of Wellington Planning and Development Department

A handwritten signature in dark ink, appearing to read 'Sarah', followed by a horizontal line.

Sarah Wilhelm, BES, MCIP, RPP
Manager of Development Planning

**Site Plans submitted to
MNRF October 2017 to
incorporate to the
application for a Major Site
Plan Amendment for Phase 6**



- # Notes:
1. BOUNDARY INFORMATION FROM A VARIETY OF SOURCES.
 2. TOPOGRAPHY INFORMATION WAS OBTAINED FROM NORTHWAY MAPPING CORP., MARCH 1969.
 3. ZONING INFORMATION WAS OBTAINED FROM THE TOWNSHIP OF PUSLUNCH ZONING BYLAW 19 / 85 AND AMENDED BY OMB ORDER MAY 13, 1991.
 4. TOTAL AREA OF SUBJECT LANDS = 188.6 ha.
 5. TOTAL AREA TO BE LICENCED =
146.4 ha (NORTH PORTION)
42.2 ha (SOUTH PORTION)
188.6 ha (TOTAL)
 6. TOTAL AREA TO BE EXTRACTED =
83.3 ha (NORTH PORTION)
38.8 ha (SOUTH PORTION)
122.1 ha (TOTAL)
 7. THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS "A" LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.
 8. REFER TO SHEET 2 FOR CROSS SECTIONS.
 9. REFER TO SHEET 2 FOR EXISTING FEATURES FOR SUBJECT LANDS LOCATED SOUTH OF TOWNSHIP ROAD 2.
 10. REFER TO SHEET 2 FOR WELL INFORMATION AND BUILDING LIST.
 11. THE ELEVATION OF THE WATER TABLE VARIES FROM APPROXIMATELY 303.5 mASL TO 306.5 mASL AS DETERMINED BY GENIVAR.
 12. GEOLOGIC INFORMATION BASED ON A REPORT ENTITLED GEOLOGICAL RESEARCH RESULTS AND INFORMATION ON AGGREGATE RESOURCES EXTRACTION POTENTIAL BY PEIL, 1981.
 13. ORIGINAL SITE PLANS PREPARED BY PLANNING INITIATIVES LTD., AUGUST 1987. SITE PLAN AMENDMENTS IN 2000, 2002, 2003, AND 2010 BY JAGER HIMS LIMITED / GENIVAR. SITE PLAN AMENDMENTS IN 2015 BY J.H. CHONG ENGINEERING LTD.

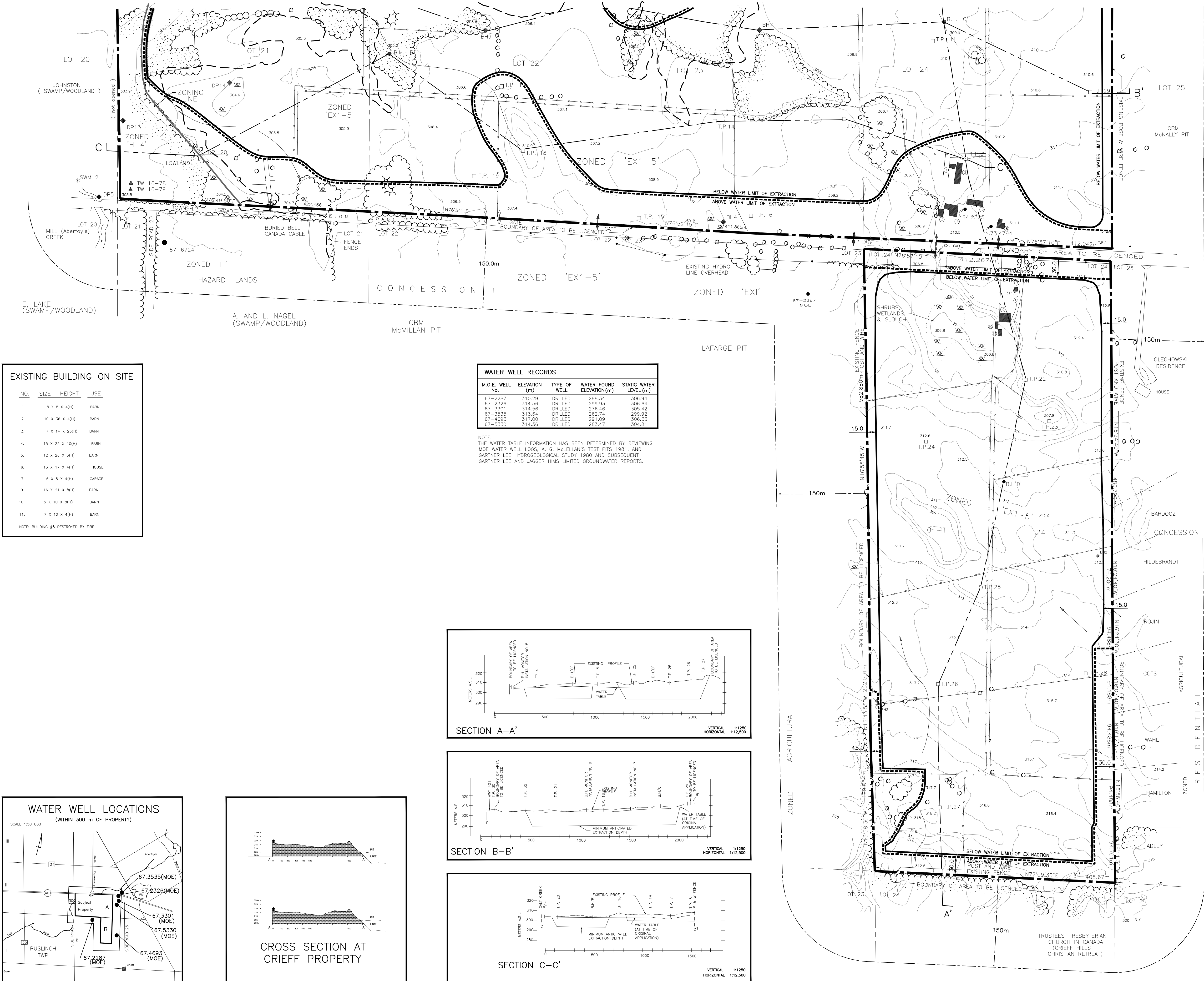
SITE PLAN AMENDMENTS			DATE	INT.
1.	HOUSEKEEPING ITEMS.		AUG. /03	K.M.
2.	MINOR AMENDMENT ON PHASE 3 AREA AND SLT POND 3		FEBR. /10	K.M.
3.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2		SEPT1. /15	K.M.
REVISIONS			DATE	INT.
1.	AS PER SUB-CONSULTANTS AND M.N.R.		OCT. /88	J.L.S.
2.	AS PER SUB-CONSULTANTS AND M.N.R.		APR. /89	C.A.O.B.
3.	AS PER SUB-CONSULTANTS AND M.N.R.		MAY /90	C.A.O.B.
4.	UPDATED TO COMPLY WITH THE AGGREGATE RESOURCES ACT.		JUNE/90	L.L.H.
5.	AS PER O.M.B. CONDITIONS + FILL PERMITTED APPLICATION		OCT. /90	J.J.M.
6.	AS PER MINISTER CONDITIONS TRANSFERRED ONTO AUTOCAD		DEC. /91	J.J.M.
7.	INCLUDING NEW AND RELOCATED MONITORING STATION LOCATIONS		AUG. /92	R.E.G.
8.	AS PER M.N.R.		NOV. /92	R.E.G.
9.	ADDITIONAL DRIVE POINTS ADDED		NOV. /93	R.E.G.
10.	BLDG #8 DELETED, SURFACE WATER STATIONS RE-POSTICED		SEPT. /00	A.G.H.
11.	REGIONAL STORM FLOODLINE ADDED		MAY /01	A.G.H.
12.	HOUSEKEEPING ITEMS		AUG. /03	K.M.
13.	EXPAND TOTAL AREA TO BE EXTRACTION		MAY /05	K.M.
14.	ADDED LIMIT OF EXTRACTION ABOVE AND BELOW		SEPT. /17	K.M.

MILL CREEK AGGREGATES

PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of Guelph		654 GORDON STREET GUELPH, ONTARIO N1Y 1Y7	
Scale 1:3000 			
		J. KEVIN MITCHELL IS AUTHORIZED BY THE MINISTRY OF NATURAL RESOURCES TO PREPARE & CERTIFY SITE PLANS FOR LICENCE APPLICATIONS.	
J.H. COHOON ENGINEERING LIMITED CONSULTING ENGINEERS		440 HARDY ROAD, UNIT #1 BRANTFORD — ONTARIO, N3T 5L8 TEL. (519) 753-2856 FAX. (519) 753-4263	

**EXISTING FEATURES
NORTH OF TOWNSHIP
ROAD 2**

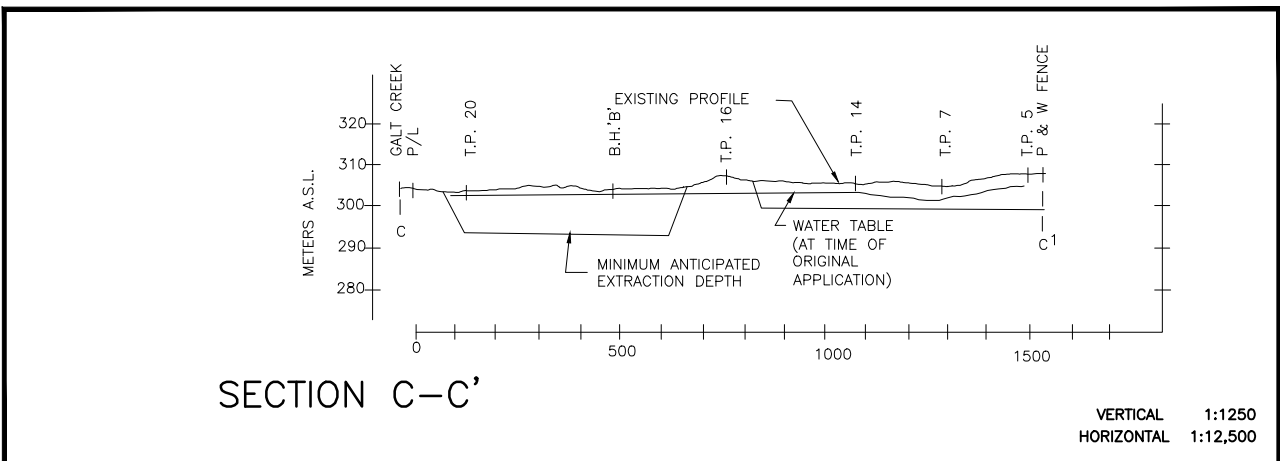
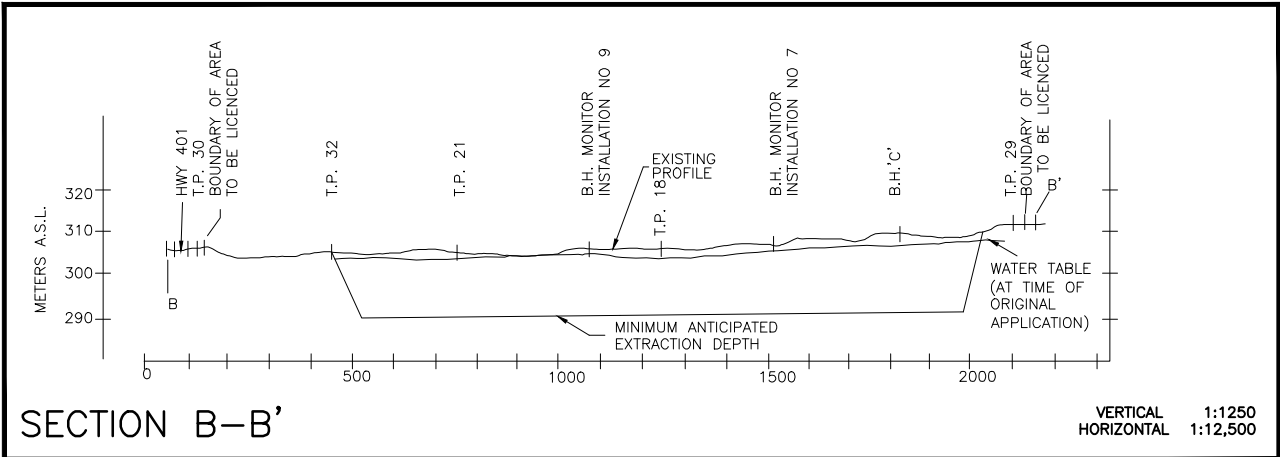
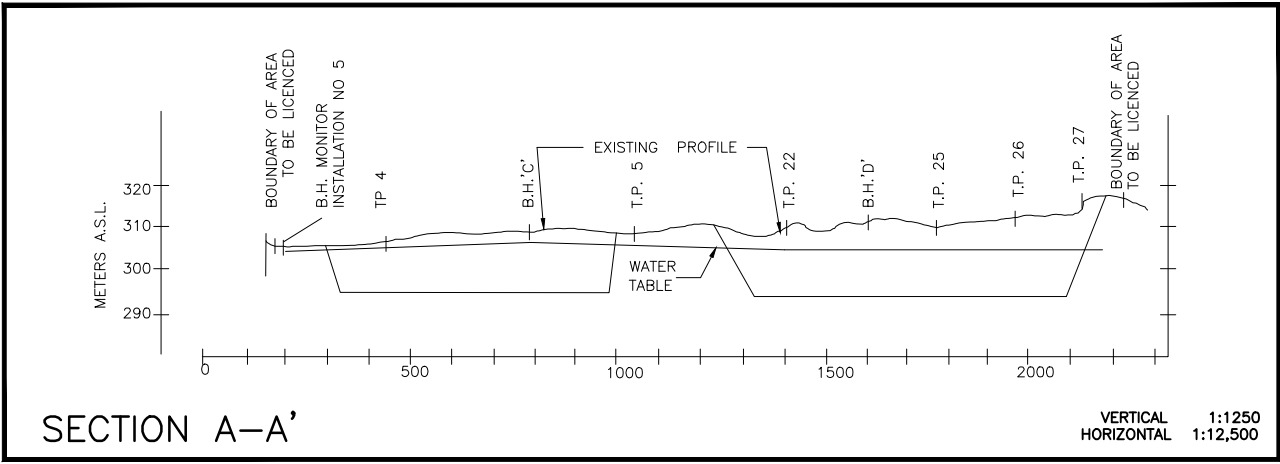
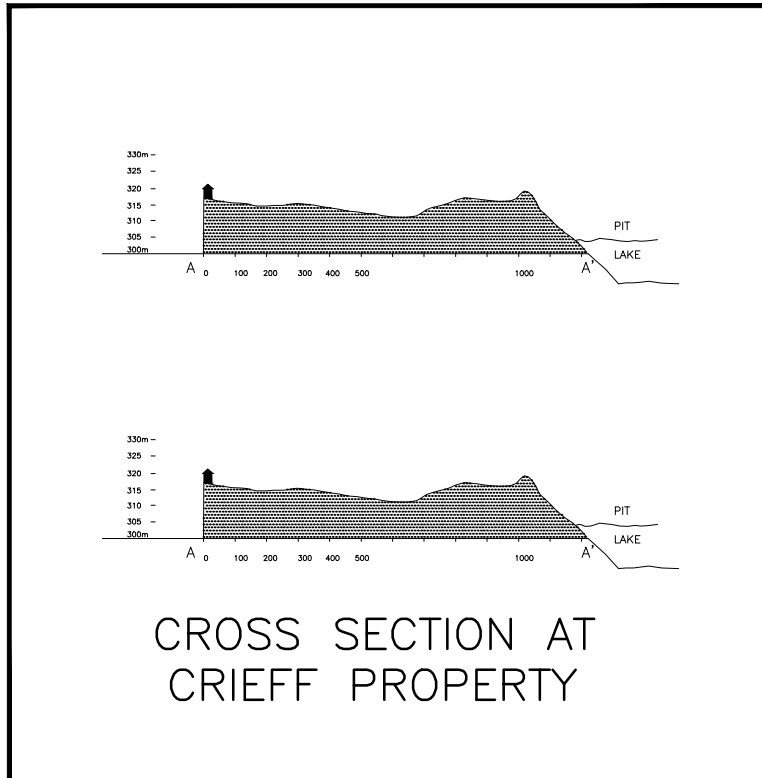
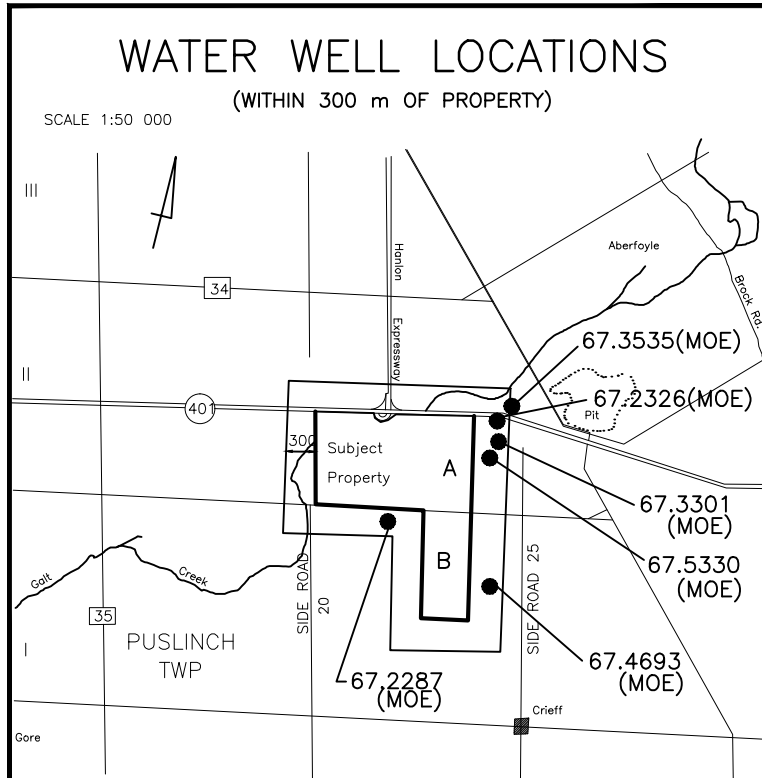


EXISTING BUILDING ON SITE			
NO.	SIZE	HEIGHT	USE
1.	8 x 8 x 4(h)		BARN
2.	10 x 36 x 4(h)		BARN
3.	7 x 14 x 25(h)		BARN
4.	15 x 22 x 12(h)		BARN
5.	12 x 26 x 3(h)		BARN
6.	13 x 17 x 4(h)		HOUSE
7.	6 x 8 x 4(h)		GARAGE
9.	16 x 21 x 8(h)		BARN
10.	5 x 10 x 8(h)		BARN
11.	7 x 10 x 4(h)		BARN

NOTE: BUILDING #8 DESTROYED BY FIRE

WATER WELL RECORDS				
M.O.E. No.	WELL ELEVATION (m)	TYPE OF WELL	WATER FOUND ELEVATION (m)	STATIC WATER LEVEL (m)
67-2287	310.29	DRILLED	288.34	306.94
67-2326	314.56	DRILLED	299.93	306.64
67-3301	314.56	DRILLED	276.46	305.42
67-3535	313.64	DRILLED	262.74	298.92
67-4693	317.00	DRILLED	291.09	306.33
67-5330	314.56	DRILLED	283.47	304.81

NOTE: THE WATER TABLE INFORMATION HAS BEEN DETERMINED BY REVIEWING MOE WATER WELL LOGS, A. G. McLELLAN'S TEST PITS 1981, AND GARTNER LEE HYDROGEOLOGICAL STUDY 1980 AND SUBSEQUENT GARTNER LEE AND JAGGER HIMS LIMITED GROUNDWATER REPORTS.



Legend:

310

CONTOUR LINE (Meters ASL)

314.2

SPOT ELEVATION (Meters ASL)

□ T.P.3

TEST PIT

● B.H.'A'

BOREHOLE

—●—

HYDRO/TELEPHONE LINE

—X—X—

EX. POST AND WIRE FENCE

■

BUILDING

▲

TEST WELLS

◆ BH9

BOREHOLE OBSERVATION MONITOR INSTALLATION

* SWM 4

SURFACE WATER MONITORING STATION

○ 92-27

GROUNDWATER MONITORING STATION (TEMPERATURE AND LEVEL)

W W

WETLANDS

REGIONAL STORM FLOODLINE

● 65 3692

WATER WELL

CREEK

1.2m FARM-TYPE GATE (TYP.)

◆ CW16B-78

OBSERVATION WELL

◆ DP5

DRIVE POINT

ZONED 'H'

ZONED 'EXI'

○

POND

DIRECTION OF NATURAL DRAINAGE

BOUNDARY OF PROPERTY TO BE LICENCED

↔

EXISTING ENTRANCE/EXIT

A L

LINE OF CROSS SECTION

ABOVE WATER LIMIT OF EXTRACTION

BELOW WATER LIMIT OF EXTRACTION

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SITE PLAN AMENDMENTS			
NO.	DESCRIPTION	DATE	INT.
1.	HOUSEKEEPING ITEMS	AUG. /03	K.M.
2.	MINOR AMENDMENT ON PHASE 3 AREA AND TILT POND 3	FEB. /13	K.M.
3.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2	SEPT. /15	K.M.

REVISIONS			
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11.	REGIONAL STORM FLOODLINE ADDED	MAY /01	A.G.H.
12.	HOUSEKEEPING ITEMS	AUG. /03	K.M.
13.	EXPAND SP1 & SP3, EXPAND LIMIT OF EXTRACTION OF PHASE 2 BARN AREA.	MAY /05	K.M.
14.	REVISIONS TO ADDRESS AGENCY COMMENTS DURING PUBLIC COMMENT PERIOD	SEPT. /17	K.M.

MILL CREEK
AGGREGATES

PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of
Guelph

854 GORDON STREET
GUELPH, ONTARIO
N1G 1Y7

Scale 1:3000

50 0 50 100 150 m

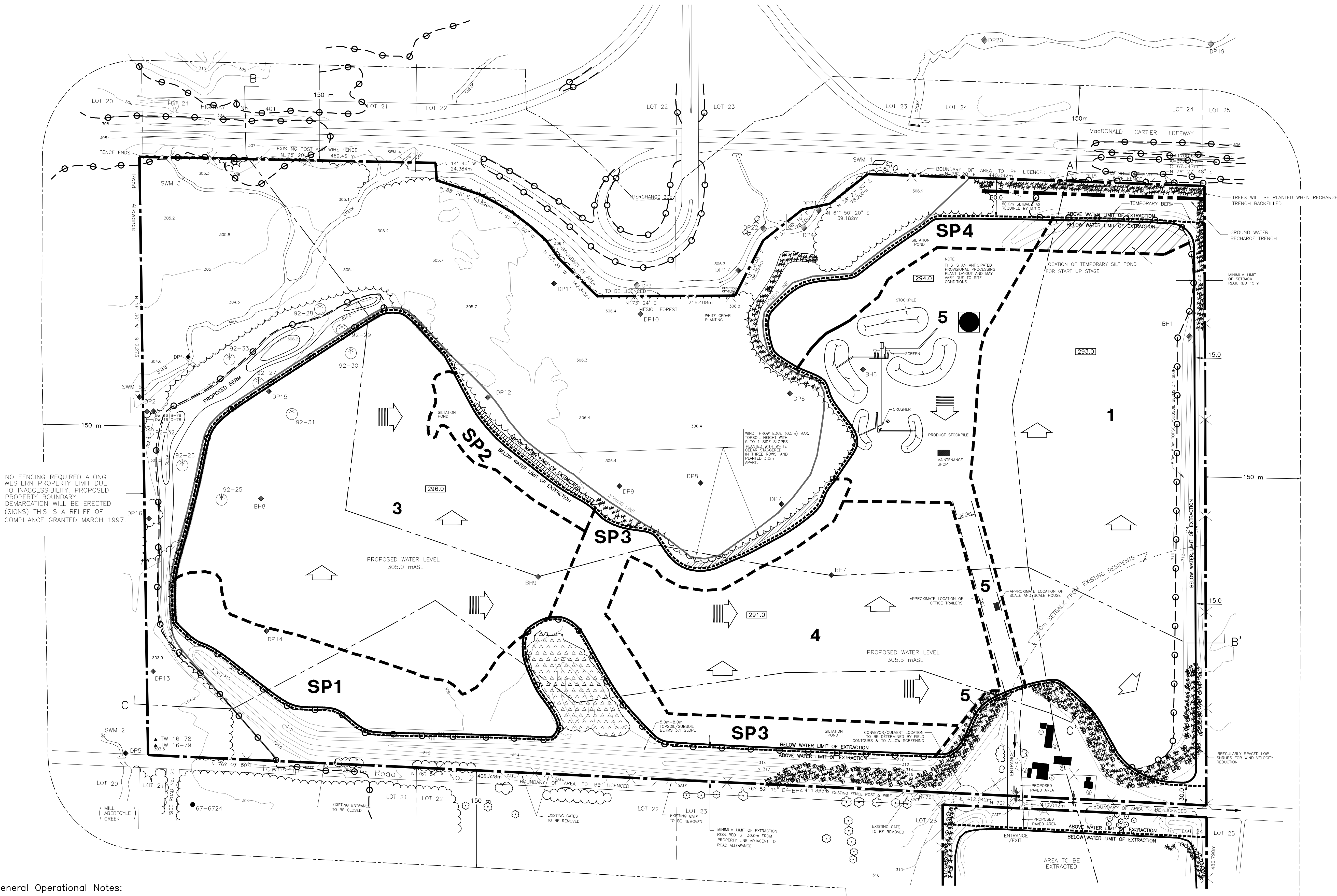
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J.H. COHOON
ENGINEERING LIMITED
CONSULTING ENGINEERS

440 HARDY ROAD, UNIT #1
BRANTFORD - ONTARIO, N3T 5L8
TEL. (519) 753-2656
FAX. (519) 753-4263

EXISTING FEATURES
SOUTH OF TOWNSHIP
ROAD 2

Drawing No.
2 OF **8**



General Operational Notes:

1. THIS PLAN DEPICTS A SCHEMATIC SEQUENCE FOR THE PROPERTY BASED UPON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION. PHASES AND AREAS ARE SHOWN SCHEMATIC AND MAY VARY SLIGHTLY. PHASES DO NOT REPRESENT AN EQUAL TIME PERIOD. PHASES AND AREAS WILL BE STRIPPED AS REQUIRED.
2. TOPSOIL AND OVERBURDEN SHALL BE STRIPPED AND STORED SEPARATELY.
3. TREE PLANTING WILL BE ONGOING IN THOSE AREAS ILLUSTRATED IN ALL PHASES.
4. THE PROCESSING PLANT SHALL BE LOCATED AS SHOWN. USE OF A PORTABLE PROCESSING PLANT WILL BE ALLOWED ON A PERMANENT BASIS (AS PER LETTER DATED FEB. 15, 2000) SUBJECT TO MEETING MOE GUIDELINES. A PORTABLE CRUSHER MAY ALSO BE LOCATED WITHIN PHASE 2 AND 6 AND WILL OPERATE IN ACCORDANCE WITH THE TECHNICAL RECOMMENDATIONS.
5. AGGREGATE MATERIALS WILL BE REMOVED BY DRY EXTRACTION AND WILL BE FOLLOWED IMMEDIATELY BY WET/DRAGLINE EXTRACTION. DIRECTION OF MINING ABOVE AND BELOW THE WATER TABLE WILL PROCEED AS SHOWN ON THE PHASING DRAWINGS ON SHEET 5. FOR BLENDING PURPOSES, AGGREGATE SOURCES IN MORE THAN ONE PHASE MAY BE REQUIRED.
6. DRY AND WET EXTRACTION WILL PROCEED TOGETHER AS DESCRIBED IN THE NOISE STUDY AND WILL PROCEED AS SHOWN ON THE PHASING DRAWINGS ON SHEET 5.
7. IT IS THE INTENT TO REMOVE ALL COMMERCIAL SAND AND GRAVEL DOWN TO GLACIAL TILL, CLAY OR BEDROCK. THE MAXIMUM DEPTH OF EXTRACTION VARIES FROM ±7.3 m TO ±24.4 m BELOW ORIGINAL GROUND SURFACE.
8. INTERNAL HAUL ROUTES TO THE PROCESSING AREA FROM THE EXTRACTION LOCATIONS WILL BE DEVELOPED AND DISBANDED AS REQUIRED. THE MAIN USE HOWEVER IS EXPECTED TO BE FOR SERVICING PURPOSES SINCE THE USE OF CONVEYOR BELT SYSTEMS IS ANTICIPATED. CONVEYOR BELT SYSTEM TO BE LOCATED TO ACCOMMODATE EXTRACTION IN OPERATIONAL PHASE(S). CONVEYOR BELT SYSTEM MAY REQUIRE MINOR GRADING OR ADJUSTMENT IN BERM LENGTH.
9. INTERNAL HAUL ROUTES WILL BE TREATED FOR DUST AS REQUIRED WITH WATER AND/OR MOE APPROVED DUST SUPPRESSANT.
10. SILTATION PONDS ARE AN ESSENTIAL PART OF: A) ENSURING SUCCESSFUL PROCESSING OF THE RAW AGGREGATE AND B) ENSURING THAT THE DESIRED WATER TABLES AND SUBSURFACE FLOWS ARE GUARANTEED. IN ORDER TO ENSURE THE LATTER, IT IS ESSENTIAL THAT SILT POND SP1 AND SP2 ARE UTILIZED TO THEIR FULL PRACTICAL ACCOMMODATION CAPACITY BEFORE UTILIZING THE THIRD SILT POND (SP3). THE SP1 AND SP3 EXTENSIONS WILL BE UTILIZED AFTER THEY HAVE BEEN EXTRACTED.

11. SILTATION SLURRY WILL BE PIPED FROM THE PROCESSING OPERATION. CLEAN PROCESS RETURN WATER WILL BE PUMPED FROM THE SILTATION PONDS (AS APPROPRIATE) AND DISCHARGED INTO THE PHASE 1 POND.
12. A STABILITY BUFFER ZONE WITH A MINIMUM TOP WIDTH OF 1.5 m (5 FEET) WILL BE PROVIDED BETWEEN ALL SILT PONDS AND EXTRACTION AREAS.
13. THE SHORELINES AND STABILITY BUFFER ZONE OF ALL SILTATION PONDS WILL BE STABILIZED AND VEGETATED IMMEDIATELY UPON CREATION OR AT THE NEXT APPROPRIATE PLANTING SEASON.
14. WITH THE EXCEPTION OF THE DRAINAGE SWALES LOCATED AT THE PERIMETER OF THE EXTRACTION AREA, NO SURFACE WATER SHALL LEAVE THE SITE AS A RESULT OF SILT ALTERATIONS AND/OR OPERATIONS.
15. DURING TIMES WHEN THE PROCESSING PLANT IS OPERATING AND/OR BELOW WATER EXTRACTION IS OCCURRING, WATER LEVELS IN ALL OPERATIONAL SILT PONDS SHALL BE VISUALLY AND PHYSICALLY MONITORED DAILY AND REPORTED TO THE MINISTRY OF NATURAL RESOURCES, THE TOWNSHIP OF PUSLINCH AND THE GRAND RIVER CONSERVATION AUTHORITY MONTHLY. THIS EXCLUDES PERIODS WHEN PONDS ARE FROZEN.
16. DURING TIMES WHEN THE PROCESSING PLANT IS OPERATING AND/OR BELOW WATER TABLE EXTRACTION IS OCCURRING, ALL SILT PONDS SHALL BE OPERATED IN ACCORDANCE WITH THEIR SPECIFIC OPERATIONAL WATER LEVELS.
17. A 1.2 m FENCE SHALL BE ERECTED WHERE SHOWN DURING STARTUP OPERATIONS. ALL UNFENCED BOUNDARIES SHALL BE MARKED WITH PAINTED POSTS. ENTRANCE/EXITS SHALL BE GATED.
18. THE OPERATOR WILL ENSURE THAT ALL PROPOSED BERM GROUND COVERS WILL BE REPLACED DURING THE NEXT APPROPRIATE PLANTING SEASON IF IT DIES. ALL REHABILITATED AREAS WILL BE PREPARED TO ENCOURAGE NATURAL REGENERATION.
19. USE OF PORTABLE GENERATORS WILL BE PERMITTED AS PER RELIEF OF COMPLIANCE GRANTED MARCH 1997.
20. A TEMPORARY GROUNDWATER TRENCH WILL BE CONSTRUCTED IN THE SETBACK NORTH OF PHASE 1. FEED WATER WILL BE PUMPED FROM THE POND IN PHASE 1. THE USE OF THE RECHARGE TRENCH WILL NOT EXTEND PAST THE END OF PHASE 5 AND WILL BE BACKFILLED PRIOR TO CLOSEOUT OF OPERATIONS AT THE SITE. REFER TO RECHARGE TRENCH PROPOSAL, APRIL 30, 2001.
21. SCRAP SHALL BE STORED WITHIN THE PROCESSING PLANT AND STOCKPILING AREA. SCRAP SHALL BE REMOVED ON AN ONGOING BASIS.
22. ANY FUEL STORED ON SITE SHALL BE IN ABOVE GROUND TANKS LOCATED NEAR BUILDING 1 OR AT GENSET LOCATIONS.

23. BUILDINGS MAY BE REMOVED FROM THE SITE AT LICENSE HOLDERS DISCRETION. BUILDINGS DEMOLITION WASTE WILL BE DISPOSED OF AT APPROVED FACILITY.
24. REFER TO SHEET 4 FOR GENERAL OPERATIONAL PLAN FOR SUBJECT LANDS SOUTH OF TOWNSHIP ROAD 2 AND SHEET 5 FOR PHASING SCHEMATICS AND INDIVIDUAL PHASE NOTES.
25. REFER TO SHEET 4 FOR SITE PLAN OVERRIDES.
26. REFER TO SHEET 4 FOR TREE PLANNING DETAILS.
27. REFER TO SHEET 5 FOR BERM DETAILS.
28. THE ELEVATION OF THE WATER TABLE VARIES FROM APPROXIMATELY 303.5 mASL TO 306.5 mASL AS DETERMINED BY GENVAR.
29. THE EQUIPMENT OPERATING ON SITE SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: LOADERS, EXCAVATORS, DRAG LINES, PROCESSING EQUIPMENT, SITE MAINTENANCE EQUIPMENT, SITE PREPARATION AND REHABILITATION EQUIPMENT AND TRUCKS. USE OF PORTABLE GENERATORS WILL BE PERMITTED AS PER RELIEF OF COMPLIANCE GRANTED MARCH 1997, SUBJECT TO MEETING MOE NOISE GUIDELINES.
30. SAND, GRAVEL AND LIMESTONE PRODUCTS MAY BE IMPORTED FOR BLENDING OR RESALE. NO CONCRETE OR ASPHALT WILL BE IMPORTED FOR RECYCLING.
31. ANY TREES REMOVED FROM THE SITE SHALL BE USED FOR FIREWOOD OR CHIPPED OR USED FOR REHABILITATION.
32. DURING EXTRACTION OF PHASE 5 & 6, OFFICE TRAILERS, THE SCALE AND SCALE HOUSE MAY BE RELOCATED TO THE AREA OCCUPIED BY THE FORMER HOUSE AND BARN AREA TO PERMIT EXTRACTION IN PHASE 5 BELOW THE WATER TABLE.

Legend:

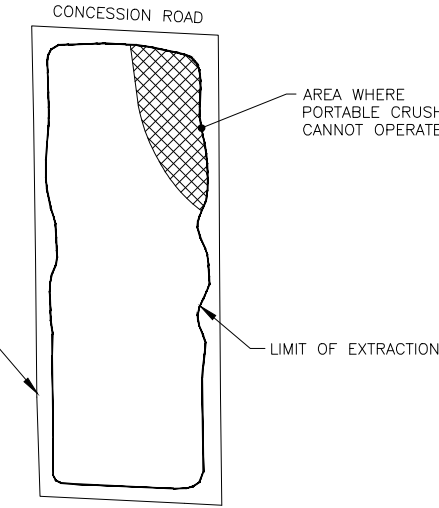
- BOUNDARY OF PROPERTY TO BE LICENCED
- PROPOSED CONTOUR (Meters ASL)
- SPOT ELEVATION (Meters ASL)
- TEST PIT
- B.H.'A'
- BOREHOLE
- DRIVE POINT
- TEST WELLS
- OBSERVATION WELL
- BOREHOLE OBSERVATION MONITOR INSTALLATION
- SWM 4
- GROUNDWATER MONITORING STATION (TEMPERATURE AND LEVEL)
- REGIONAL STORM FLOODLINE AT END OF EXTRACTION
- ZONING LINE
- APPROXIMATE FINAL DEPTH OF EXTRACTION

Legend:

- REFORESTATION
- GATE (EXISTING/PROPOSED)
- MIXED TREED AREA
- WIND THROW EDGE PLANTING BED
- EXISTING TREED AREA
- RECHARGE TRENCH
- PROPOSED BERM
- INTERNAL HAUL ROUTES
- HAUL ROUTE TO MARKET
- PROCESSING PLANT PRODUCT STOCK PILE SCARP AREA AUX. ACTIVITIES
- PHASING LIMIT
- EXTRACTION PHASE
- SP3
- DIRECTION OF EXTRACTION (ABOVE WATER TABLE)
- DIRECTION OF EXTRACTION (BELOW WATER TABLE)
- LINE OF CROSS SECTION
- ABOVE WATER LIMIT OF EXTRACTION
- BELOW WATER LIMIT OF EXTRACTION

Technical Recommendations:

1. A PERIMETER BERM SHALL BE CONSTRUCTED AROUND ALL OPERATIONAL SILT PONDS WITH THE EXCEPTION OF THE PORTION OF SP3 CREATING THE BARRIER BETWEEN PHASES 3 & 4. THE PERIMETER BERM SHALL BE CONSTRUCTED AS FOLLOWS:
 - THE TOP OF THE BERM SHALL HAVE A CREST ELEVATION THAT WILL PROVIDE A MINIMUM 1.25 METRE FREEBOARD THAT WILL ACCOMMODATE SEASONAL FLUCTUATION OF THE SILT POND LEVEL.
 - THE BERM SHALL HAVE AN INNER SLOPE OF NOT GREATER THAN 2H:1V.
 - THE BERM SHALL HAVE AN OUTER SLOPE OF NOT GREATER THAN 3H:1V.
 - THE BERM SHALL BE CONSTRUCTED USING ON SITE GRANULAR MATERIALS.
2. WHEN AGGREGATE WASHING IS OCCURRING AND SILT LADEN WATER IS DISCHARGED TO THE SILT POND, CLEAN WATER WILL BE RECYCLED/PUMPED BACK TO THE MAIN POND AS REQUIRED TO MAINTAIN THE MNR APPROVED OPERATING WATER LEVEL THRESHOLD FOR THE SILT POND.
3. MONITORING AND OPERATION OF THE SITE SHALL BE DONE IN ACCORDANCE WITH THE APPROVED REPORT ENTITLED UPDATED COORDINATED ENVIRONMENTAL MONITORING PROGRAMS FOR MILL CREEK, LICENCE NO. 5738. MONTHLY SUMMARY REPORTS WILL BE SUBMITTED TO THE MINISTRY OF NATURAL RESOURCES, TOWNSHIP OF PUSLINCH AND THE GRAND RIVER CONSERVATION AUTHORITY WITHIN TEN WORKING DAYS OF THE LAST DAY OF EACH MONTH.
4. ALL EQUIPMENT WITHIN PHASE 2 SHALL BE KEPT AS CLOSE AS POSSIBLE TO THE EXTRACTION FACE. A PORTABLE CRUSHER MAY OPERATE WITHIN PHASE 2. THE PORTABLE CRUSHER MAY NOT OPERATE WITHIN 200 METRES OF THE RESIDENCE ADJACENT TO THE NORTHEAST CORNER OF PHASE 2 AS ILLUSTRATED BELOW.



SITE PLAN AMENDMENTS			
NO.	DESCRIPTION	DATE	INT.
1.	REDUCTION OF AREA TO BE EXTRACTED AS A RESULT OF ADDITIONAL WETLAND BUFFER.	JUNE /92	
2.	REMOVAL OF 2.0m BERM TO ADJACENT TO MILL CREEK.	JUNE /92	
3.	CONSOLIDATION OF ENTRANCE / EXIT TO BE LOCATED WEST OF EXISTING BUILDINGS.	JUNE /92	
4.	VARIOUS MINOR AMENDMENTS AS PER MNR MARCH/97 APPROVAL (SILT POND, FENCING, SLURRY PIPE, TREE PLANTING, USE OF GENSETS.)	MAY /97	
5.	REVISIONS TO THE STOCKPILE HEIGHT	SEPT /98	
6.	VARIOUS MINOR AMENDMENTS AS PER MNR APPROVAL, SEPT. /00 (SILT POND SP1, SP2, GRCA CUT & FILL PERMIT, LINE, AMPHITHEATRE, TEMPORARY BERM IN PHASE 1, EXTRACTION PHASE 1)	SEPT. /00	
7.	MINOR AMENDMENTS AS PER MNR APPROVAL, APRIL 2001 (RECHARGE TRENCH IN SET-BACK NORTH OF PHASE 1, EXTRACTION OUTLINE SOUTH END OF PHASE 1, AND SP1 / SP2 OUTLINES AND HAUL ROADS IN PHASE 3).	MAY /01	
8.	VARIOUS MINOR AMENDMENTS AND HOUSEKEEPING.	AUG. /03	
9.	REVISIONS TO GENERAL OPERATION NOTES (ITEM 16) AND TECHNICAL RECOMMENDATION.	JAN. /05	
10.	MINOR AMENDMENT ON PHASE 3 AREA AND SILT POND 3	FEB. /15	K.M.
11.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2	SEPT. /15	K.M.
12.	MINOR AMENDMENT TO PERMIT EXTRACTION OF PHASE 1 EAST BOUNDARY ADJACENT TO OTHER LICENCED PROPERTY TO 1.2m ABOVE THE WATER TABLE	SEPT. /17	K.M.

REVISIONS			
NO.	DESCRIPTION	DATE	INT.
1.	AS PER SUB CONSULTANTS AND MINISTRIES	OCT/26/88	J.L.S.
2.	AS PER SUB CONSULTANTS AND MINISTRIES	APR. /89	A.L.B.
3.	MODIFICATION TO SEQUENCE	SEPT./89	A.B.M.
4.	UPDATED TO CONFORM WITH THE AGGREGATE RESOURCES ACT	JUNE/90	L.L.N.
5.	AS PER OMAK CONDITIONS & FILL PERMIT APPLICATION.	OCT. /90	J.J.M.
6.	AS PER MINISTRIES CONDITIONS & TRANSFERRED ONTO AUTOCAD	DEC. /91	J.J.M.
7.	TO CONFORM WITH G.S.C.A. FILL PERMIT APPLICATION AND REVISED MONITORING STATION LOCATIONS	AUG. /92	R.E.G.
8.	AS PER M.N.R.	NOV. /92	R.E.G.
9.	ADDITIONAL DRIVE POINTS ADDED	NOV. /93	R.E.G.
10.	BLOS. #8 DELETED, SURFACE WATER STATIONS RE-LOCATED	SEPT. /00	A.G.H.
11.	REGIONAL STORM FLOODLINE ADDED	MAY /01	A.G.H.
12.	AS PER M.N.R. COMMENTS	JAN. /04	K.M.
13.	EXPAND SP1 & SP3, EXPAND LIMIT OF EXTRACTION OF PHASE 2 BARN AREA	MAY /05	K.M.
14.	EXTRACT COMMON SETBACK WITH ADJACENT LICENCE (ABOVE WATER)	SEPT. /17	K.M.

MILL CREEK AGGREGATES
PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of Guelph

Scale 1:3000

50 0 50 100 150 m

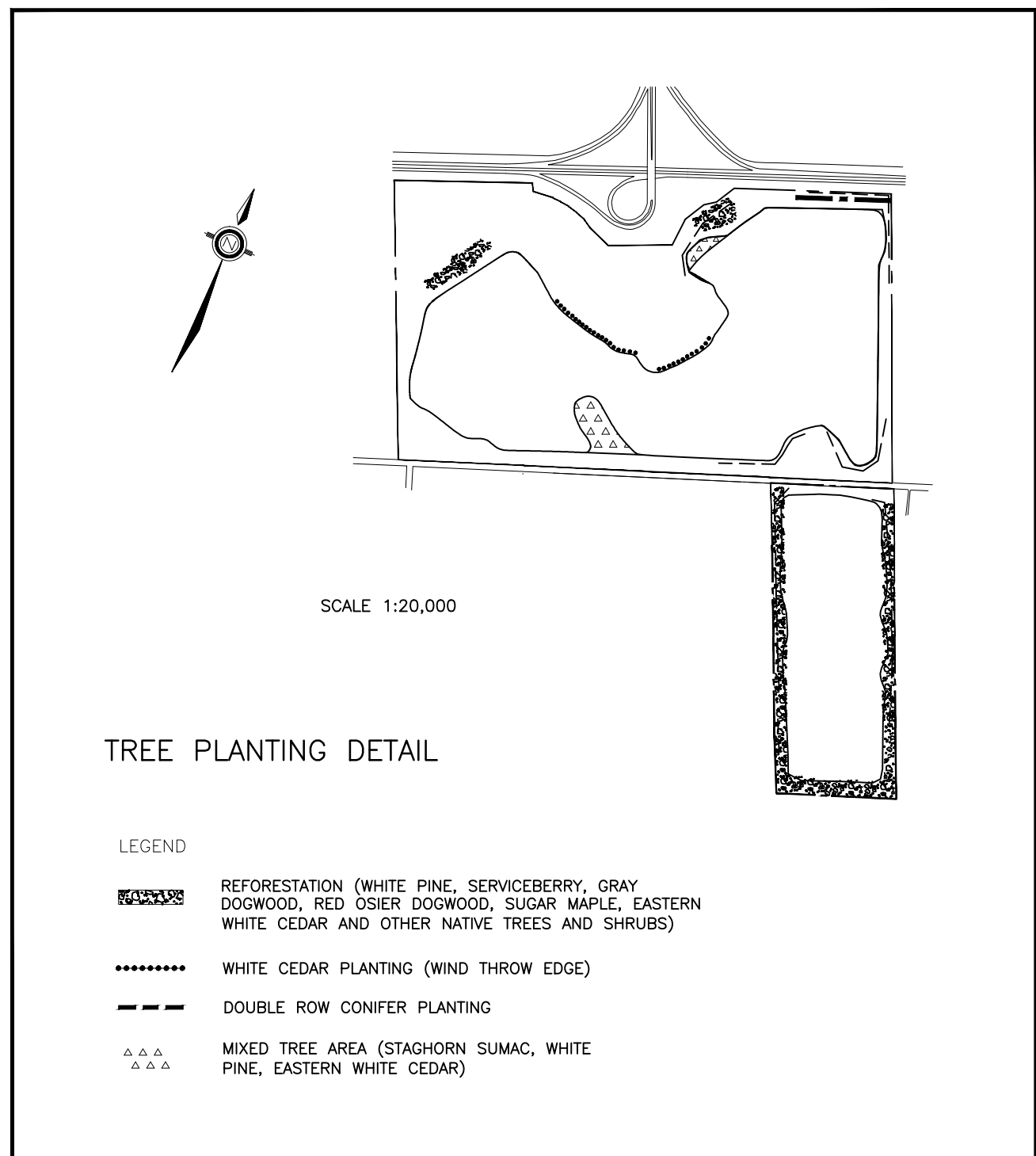
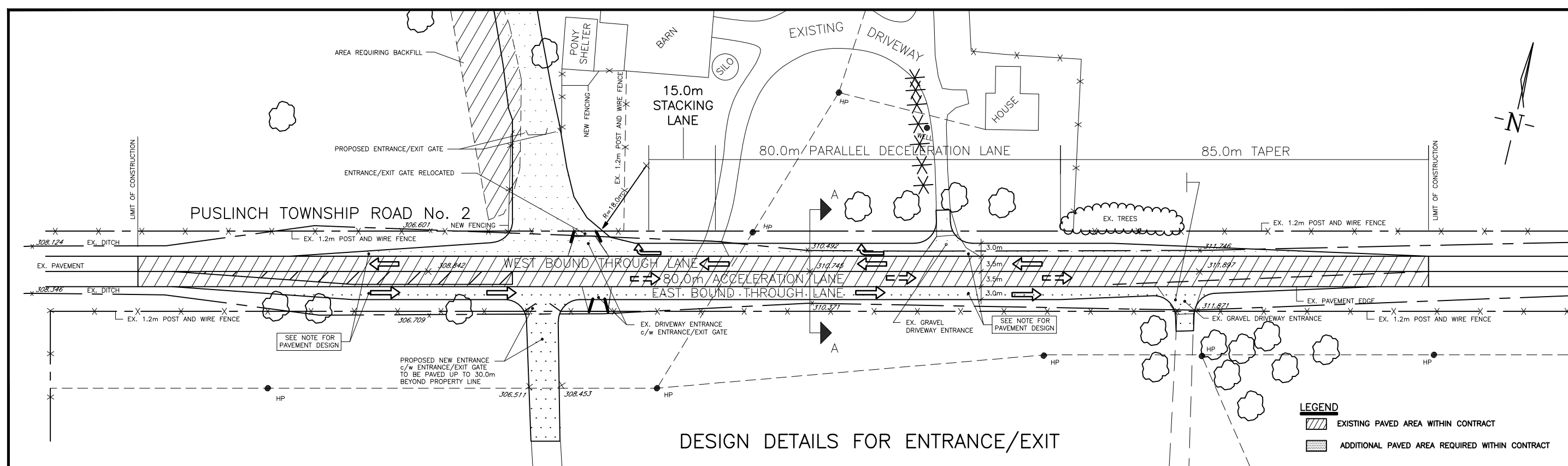
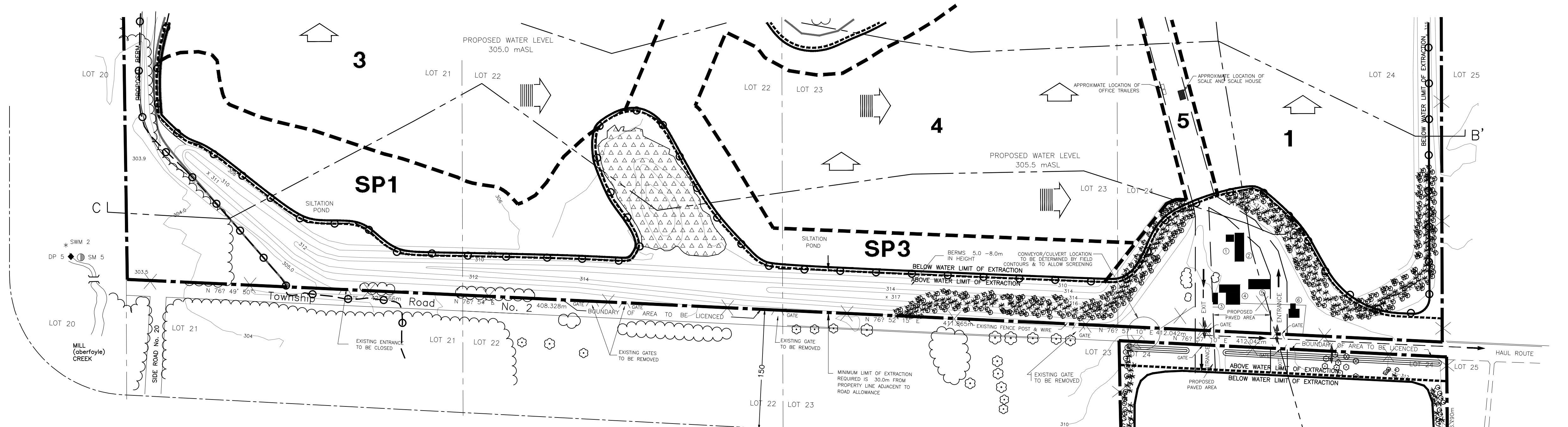
J. KEVIN MITCHELL IS AUTHORIZED BY THE MINISTRY OF NATURAL RESOURCES TO PREPARE & CERTIFY SITE PLANS FOR LICENCE APPLICATIONS.

J.H. COHOON ENGINEERING LIMITED CONSULTING ENGINEERS

440 HARDY ROAD, UNIT #1 BRANTFORD - ONTARIO, N3T 5L8 TEL. (519) 753-2656 FAX. (519) 753-4263

OPERATIONS PLAN NORTH OF TOWNSHIP ROAD 2

Drawing No. 3 OF 8



Technical Recommendations:

HYDROGEOLOGY

CONTINUE EXISTING MONITORING PROGRAM AS APPROVED BY THE MNRF PURSUANT TO LICENCE CONDITION 21.

NOISE

1. THE OPERATION OF THE MILL CREEK PHASE 6 AREA IS RESTRICTED TO THE DAYTIME PERIOD OF 7:00-19:00. THIS INCLUDES EXTRACTION, PROCESSING AND MATERIAL TRANSPORT TO THE PROCESSING PLANT.
2. ANY PROPOSED CHANGES TO THE ASPECTS OF THE EXTRACTION AND PROCESSING OPERATIONS RELATING TO NOISE CONTROL SHALL BE REVIEWED BY A QUALIFIED ACOUSTICAL CONSULTANT FOR COMPLIANCE WITH THE RELEVANT NOISE CRITERIA.
3. THE EXTRACTION, PROCESSING AND SHIPMENT EQUIPMENT OPERATING IN THE MILL CREEK PHASE 6 AREA IS LIMITED TO:
 - a. 2 EXTRACTION LOADERS (CAT 988 OR EQUIVALENT)
 - b. 1 DRAG LINE (LIEBHERR 985 OR EQUIVALENT)
 - c. 1 EXCAVATOR (CAT 375L OR EQUIVALENT)
 - d. 1 PORTABLE JAW CRUSHER
 - e. A CONVEYOR SYSTEM FOR MATERIAL TRANSPORT
4. THE MILL CREEK PHASE 6 AGGREGATE PIT EQUIPMENT SHALL SATISFY THE NOISE EMISSION LEVELS AS LISTED IN TABLE A.

TABLE A: REFERENCE SOUND PRESSURE LEVELS OF AGGREGATE PIT EQUIPMENT	
EQUIPMENT	REFERENCE SOUND PRESSURE LEVEL @ 30m ONE-HOUR LEO (dBA)
PORTABLE JAW CRUSHER	83
EXTRACTION LOADER	74
EXCAVATOR	73
DRAG LINE	75

5. THE SOUND EMISSIONS OF ALL CONSTRUCTION EQUIPMENT INVOLVED IN SITE PREPARATION AND REHABILITATION ACTIVITIES SHALL COMPLY WITH THE SOUND LEVEL LIMITS SPECIFIED IN MOECC PUBLICATION MPC-115 "CONSTRUCTION EQUIPMENT".
6. PRIOR TO EXTRACTION IN MILL CREEK PHASE 6 AREA, BERM 'A' SHALL BE INSTALLED ALONG THE EAST PROPERTY LINE TO A HEIGHT OF 4m AND BERM 'B' SHALL BE INSTALLED ALONG THE SOUTH PROPERTY LINE TO A HEIGHT OF 3m. BOTH BERMS SHALL REMAIN FOR THE PROJECT LIFETIME.
7. ABOVE WATER EXTRACTION IN MILL CREEK PHASE 6 IS LIMITED TO TWO (2) FRONT-END LOADERS AND A PORTABLE JAW CRUSHER AND SHALL PROCEED IN A SINGLE LIFT AT A MAXIMUM PIT FLOOR ELEVATION OF APPROXIMATELY 307m. EXTRACTION EQUIPMENT INCLUDING THE PORTABLE JAW CRUSHER SHALL REMAIN WITHIN 50m OF THE WORKING FACE. THE WORKING FACE SHALL HAVE A MINIMUM HEIGHT OF 5m.
8. BELOW WATER EXTRACTION IN MILL CREEK PHASE 6 IS LIMITED TO ONE (1) DRAG LINE OR EXCAVATOR, ONE (1) FRONT-END LOADER OR EXCAVATOR, AND A PORTABLE JAW CRUSHER.

NATURAL ENVIRONMENT

- ALL TREE CLEARING SHALL BE COMPLETED BETWEEN SEPTEMBER 1 AND MARCH 31 TO AVOID THE BIRD NESTING AND BAT NESTING/ROOSTING SEASON.
- EMPLOYEES AND CONTRACTORS WORKING AT THE SITE WILL BE TRAINED FOR WORKING NEAR SPECIES AT RISK.
- SEDIMENT CONTROL FENCING SHALL BE INSTALLED, AS SHOWN, PRIOR TO SITE PREPARATION.
- IF POSSIBLE, A SECTION OF EXTRACTION FACE (VERTICAL OR NEAR VERTICAL) WHERE EXTRACTION IS NOT TAKING PLACE, WILL BE ALLOCATED FOR BANK SWALLOWS. THE APPLICABLE AREAS WILL BE MONITORED AND DOCUMENTED THREE (3) TIMES PER YEAR AS PART OF AN ANNUAL REPORT.

IN ADDITION, THE COMPENSATION PLANTING AREA IS IDENTIFIED ON THIS PAGE (REFORESTATION AREA).

ARCHAEOLOGY

- SHOULD PREVIOUSLY UNDOCUMENTED ARCHAEOLOGICAL RESOURCES BE DISCOVERED, ALTERATION OF THE SITE MUST BE CEASED IMMEDIATELY AND A LICENSED CONSULTANT CARRY OUT ARCHAEOLOGICAL FIELDWORK.
- ANY PERSON DISCOVERING OR HAVING KNOWLEDGE OF A BURIAL SITE SHALL IMMEDIATELY NOTIFY THE POLICE OR CORONER. IT IS RECOMMENDED THAT THE REGISTRAR OF CEMETERIES AT THE MINISTRY OF CONSUMER SERVICES IS ALSO IMMEDIATELY NOTIFIED.

Legend:

--- BOUNDARY OF PROPERTY TO BE LICENCED	REFORESTATION
--- PROPOSED CONTOUR (Meters ASL)	GATE (EXISTING/PROPOSED)
314.2 SPOT ELEVATION (Meters ASL)	MIXED TREED AREA
□ T.P.3 TEST PIT	WIND THROW EDGE PLANTING BED
• B.H.A' BOREHOLE	EXISTING TREED AREA
◆ DP5 DRIVE POINT	PROPOSED BERM
✕ FENCE (EX/PROPOSED) POST & WIRE	INTERNAL HAUL ROUTES
■ BUILDING (EXISTING)	HAUL ROUTE TO MARKET
▲ TEST WELLS	PHASING LIMIT
◆ CW 16 B-75 OBSERVATION WELL	3 EXTRACTION PHASE
◆ BH19 BOREHOLE OBSERVATION MONITOR INSTALLATION	SP3 SILT POND PHASING
* SWM 4 SURFACE WATER MONITORING STATION	DIRECTION OF EXTRACTION (ABOVE WATER TABLE)
92-27 GROUNDWATER MONITORING STATION (TEMPERATURE AND LEVEL)	DIRECTION OF EXTRACTION (BELOW WATER TABLE)
○ REGIONAL STORM FLOODLINE AT END OF EXTRACTION	APPROXIMATE FINAL DEPTH OF EXTRACTION
--- ZONING LINE	LINE OF CROSS SECTION
--- SILT FENCE	ABOVE WATER LIMIT OF EXTRACTION
	BELOW WATER LIMIT OF EXTRACTION

Notes:

1. REFER TO SHEET 3 FOR GENERAL OPERATIONAL NOTES.
2. REFER TO SHEET 3 FOR OPERATIONAL PLAN NORTH OF TOWNSHIP ROAD 2.

SITE PLAN OVERRIDE OF OPERATIONAL STANDARDS		
NO.	ITEM	SECTION
1.	THE FENCING REQUIREMENTS ALONG THE WEST PROPERTY LINE NORTH OF TOWNSHIP ROAD AND IN THE PORTION OF THE WEST BOUNDARY OF PHASE 2 AND THE ADJACENT LICENCE WHERE THE ACCESS AND CONVEYOR ARE LOCATED SHALL BE ELIMINATED.	S.11
2.	GROUND WATER REMEDIATION TRENCH WILL BE CONSTRUCTED IN EXCAVATION SETBACK AREA OF NORTH OF PHASE 1.	S.11
3.	CONVEYOR AND OFF ROAD EQUIPMENT ACCESS MAY BE INSTALLED IN THE EXCAVATION SETBACK AREA.	S.11
4.	AN INTERNAL ACCESS ROAD TO ALLOW OFF-ROAD EQUIPMENT FROM PHASE 2 TO THE ADJACENT LICENCED PIT ALONG THE WEST BOUNDARY OF PHASE 2.	S.11
5.	THE EXCAVATION SETBACK AREA AND THE FENCING REQUIREMENT ALONG THE PHASE 2 EAST AND WEST BOUNDARIES WITH THE ADJACENT LICENCED LANDS SHALL BE ELIMINATED UPON SUBMITTING AN AGREEMENT WITH THE APPLICABLE LAND OWNER NAME.	S.11 & S.11

SITE PLAN AMENDMENTS			
NO.	DESCRIPTION	DATE	INT.
1.	VARIOUS MINOR AMENDMENTS AS PER M.A.R. APPROVAL SEPT. /00.	SEPT. /00	
2.	VARIOUS MINOR AMENDMENTS AS PER M.A.R. APPROVAL APRIL 2001.	MAY /01	
3.	VARIOUS MINOR AMENDMENTS AND HOUSEKEEPING.	AUG. /03	K.M.
4.	MINOR AMENDMENT ON PHASE 2 AREA AND SILT POND 3.	FEB. /10	K.M.
5.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2.	SEPT. /15	K.M.
6.	MINOR AMENDMENT TO PERMIT EXTRACTION OF PHASE 2 EAST AND WEST BOUNDARIES ADJACENT TO OTHER LICENCED PROPERTIES TO 1.5m ABOVE THE WATER TABLE.	MAY /16	K.M.
7.	MINOR AMENDMENT TO PERMIT EXTRACTION OF PHASE 1 EAST BOUNDARY ADJACENT TO OTHER LICENCED PROPERTY TO 1.5m ABOVE THE WATER TABLE.	SEPT. /16	K.M.

REVISIONS			
NO.	DESCRIPTION	DATE	INT.
1.	AS REQUESTED BY SUB CONSULTANTS AND MINISTRIES	OCT. /88	L.L.M.
2.	AS REQUESTED BY SUB CONSULTANTS AND MINISTRIES	APR. /89	A.L.B.
3.	MODIFICATION TO SEQUENCE	SEPT. /89	A.B.M.
4.	UPDATED TO CONFORM WITH THE AGGREGATE RESOURCES ACT	JUNE /90	L.L.M.
5.	AS PER D.M.B. CONDITIONS & FULL PERMIT APPLICATION	OCT. /90	J.J.M.
6.	TRANSFERRED ON TO AUTOCAD	DEC. /91	J.J.M.
7.	REVISIONS RE: SANDER WALL	SEPT. /00	A.G.H.
8.	REGIONAL STORM FLOODLINE AT END OF EXTRACTION ADDED	MAY /01	A.G.H.
9.	EXPAND SP1 & SP3, EXPAND LIMIT OF EXTRACTION OF PHASE 2 BARN AREA.	MAY /05	K.M.
10.	EXTRACT COMMON SETBACK WITH ADJACENT LICENCES (ABOVE WATER)	MAY /16	K.M.
11.	EXTRACT COMMON SETBACK WITH ADJACENT LICENCES (ABOVE WATER)	SEPT. /17	K.M.
12.	REVISIONS TO ADDRESS AGENCY COMMENTS DURING PUBLIC COMMENT PERIOD	SEPT. /17	K.M.

MILL CREEK AGGREGATES

PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of
Guelph
854 GORDON STREET
GUELPH, ONTARIO
N1G 1Y7

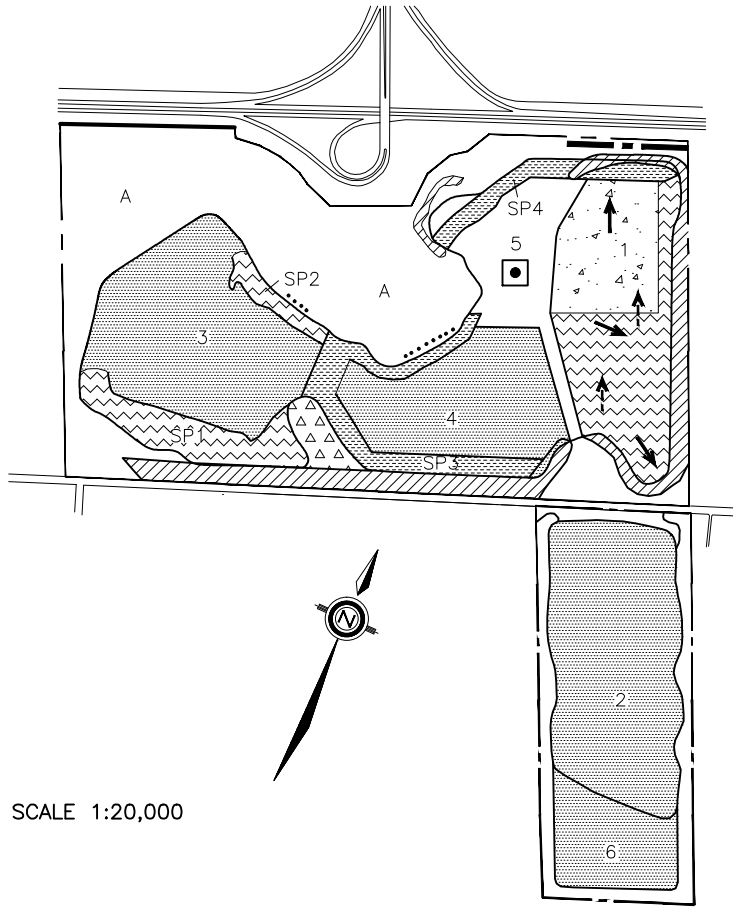
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OPERATIONS PLAN
SOUTH OF TOWNSHIP
ROAD 2

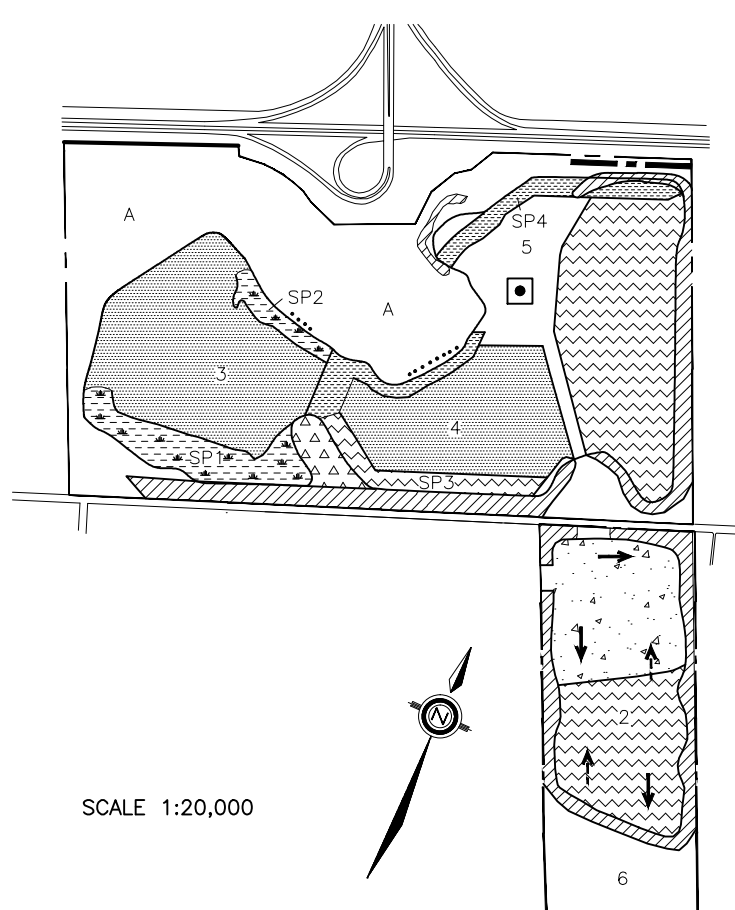
Drawing No.

4 OF 8



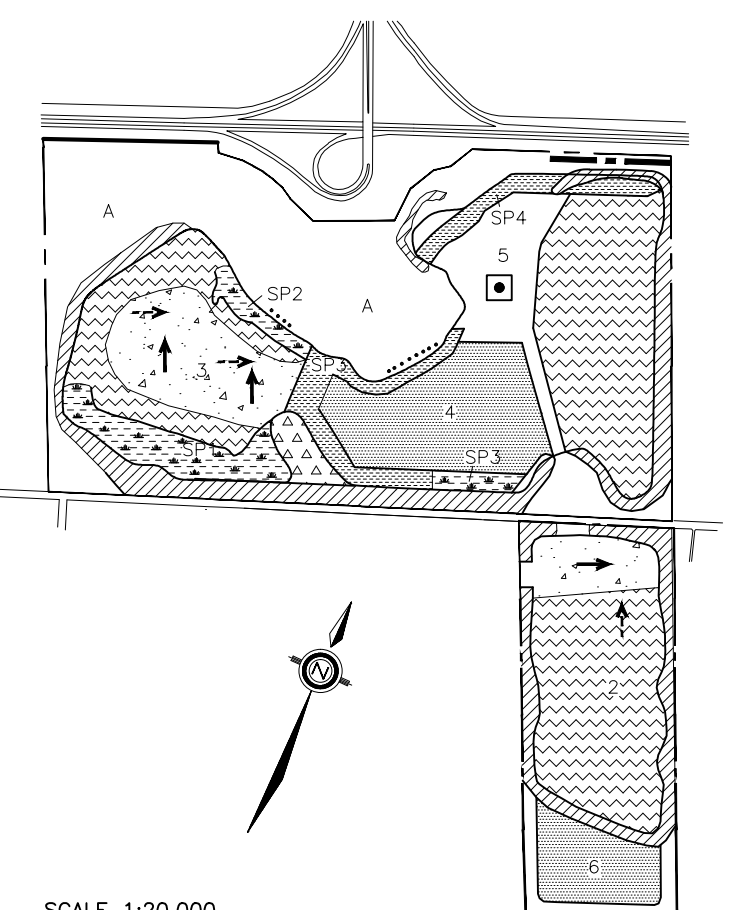
Phase 1

- Topsoil and overburden shall be removed separately and used to construct perimeter berms around Phase 3 and 4 as illustrated.
- A temporary berm will be constructed along Phase 1 and Highway 401 partially over silt pond SP4 and blended into the existing berm along the east boundary as field conditions permit. The berm will consist of either topsoil or subsoil which will be separated when and where possible and needed. The berm may remain as a permanent structure unless the material is required for rehabilitation purposes or may be removed in order to excavate silt pond SP4.
- Berms shall be seeded with a maintenance free ground cover (perennial rye 20 %, tall fescue 80%).
- In Phase 1, extraction generally is to be from south to north. An exception to this is permitted along the eastern limit of Phase 1 to allow extraction to extend northwards up to silt pond SP4.
- Sub water table resources in areas designated for the operation silt ponds (SP1 and SP2) will be extracted first. Ponds to be excavated in spring or fall. Extraction and temporary use of silt pond SP4 during start-up of Phase 1 is permitted.
- Dry excavation in Phase 1 will be in direction as shown. Aggregate materials will be removed by dry excavation and will be followed immediately by wet/dredge extraction.
- Minimum width of alluvial pond (SP1 and SP2) adjacent to Phase 3 of northern property will be 40 metres. Actual width will be dependent on depth of resource and sideslope that can be excavated.
- A temporary groundwater recharge trench will be constructed in the setback north of Phase 1. Fed water will be pumped from the pond in Phase 1. The use of the recharge trench will not extend past the end of Phase 5 and it will be backfilled prior to the closeout of operations at the site. Please refer to recharge trench proposal (April 30, 2001) for details and monitoring program requirements.
- Phases 2, 3 and 4 will remain in agricultural use (excluding haul roads and silt ponds).



Phase 2

- Silt pond SP3 stripped of topsoil and excavated above and below the water table and alluvial pond basin created and available for use as soon as SP1 and SP2 are completed.
- Phase 1 exhausted of its aggregate resources as practical.
- Strip topsoil and overburden separately from Phase 2 and use to complete perimeter berms around Phase 2 as shown.
- Excavation in Phase 2 will occur above and below the water table in the direction shown.
- Tree planting continues.
- Completion of appropriate grading, stabilization and vegetating of shorelines in Phase 1.
- It is the intention of the applicant to transport the aggregate deposits from Phase 2 to the processing plant area by conveyor belt. This will involve the construction of a culvert system under Township Road No. 2. The design and location of the culvert under Concession Road 2 will be subject to the approval of the Township of Puslinch.
- The location of the conveyor system will vary to accommodate extraction. The conveyor installation may require minor grading and berm alterations.
- A temporary haul route across Township Road No. 2 will facilitate the movement of aggregate from Phase 2 to the processing area until the conveyor system is in place. Oversized bank material may also be required to be hauled to the processing area by truck throughout the life of Phase 2.
- Phases 3 and 4 will remain in agricultural use (excluding haul roads and silt ponds).



Phase 3

- Topsoil stripping of Phase 3 and initial above water table removal of aggregate.
- Final removal of all available aggregate resource in Phase 2.
- Phase 4 to continue in agricultural use.
- Tree planting continues.
- Completion of appropriate grading, stabilization and vegetating of shorelines in Phase 2.
- Haul roads in Phase 3 can be extracted during Phase 3, in conformance with Rehabilitation Plan, or may remain for extraction during Phase 5.

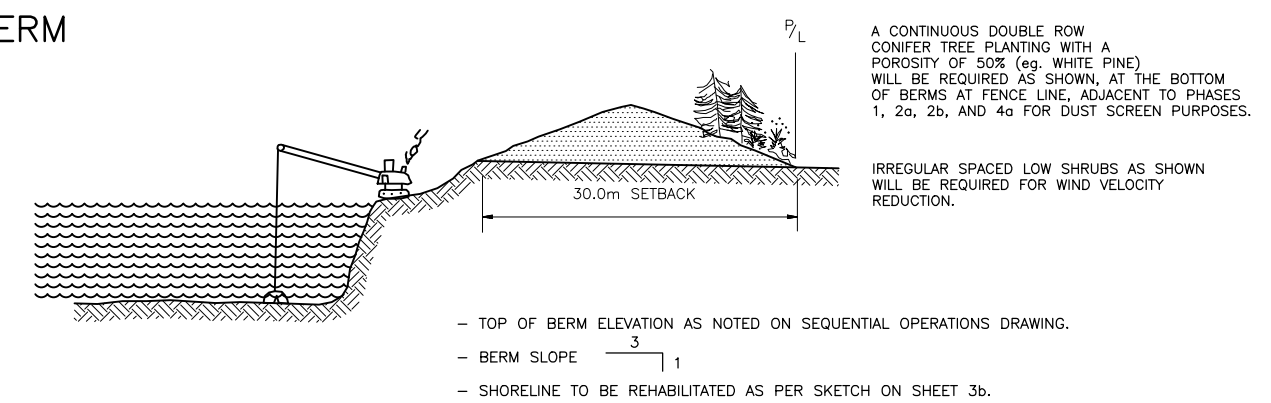
DESIGN OF SPECIAL BERM

EROSION PROTECTION / WIND THROW EDGE

- BERM TO BE 0.5m IN HEIGHT
- TOP TO BE FLAT FOR PEDESTRIAN ACCESS
- BERM TO BE PLANTED WITH WHITE CEDAR
- BERM TO BE LOCATED WHERE NOTED ON SHEET 2A AND IN THE TREE PLANTING DETAIL (ON THIS SHEET)

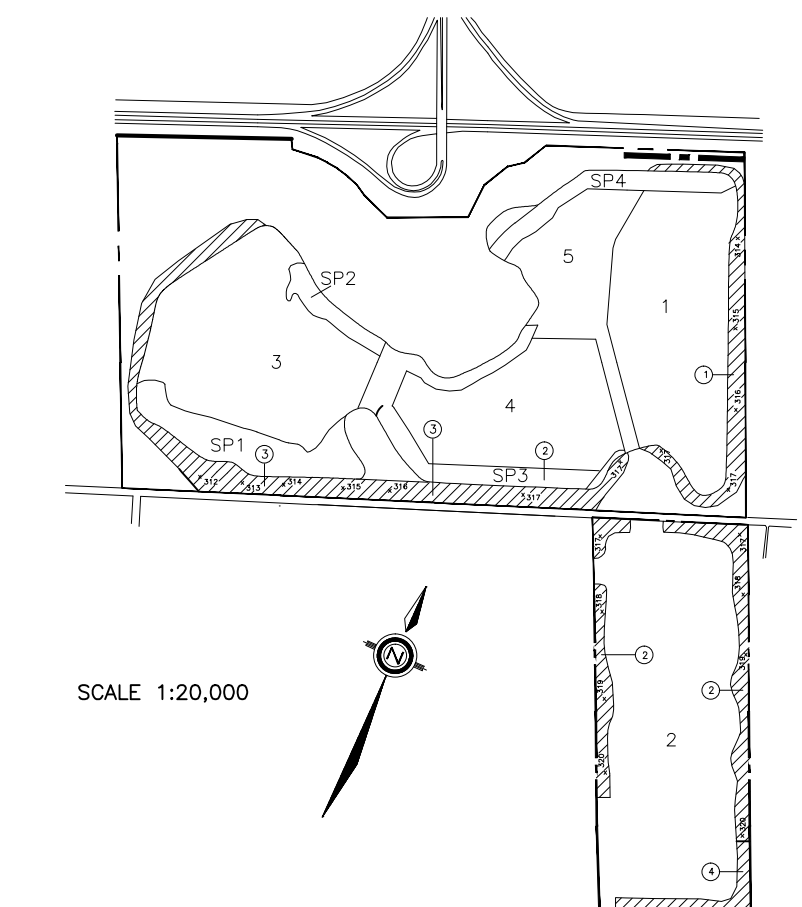


TYPICAL BERM



SPECIAL BERM PROVISIONS

(NOISE / EROSION PROTECTION / VISIBILITY SCREENING)

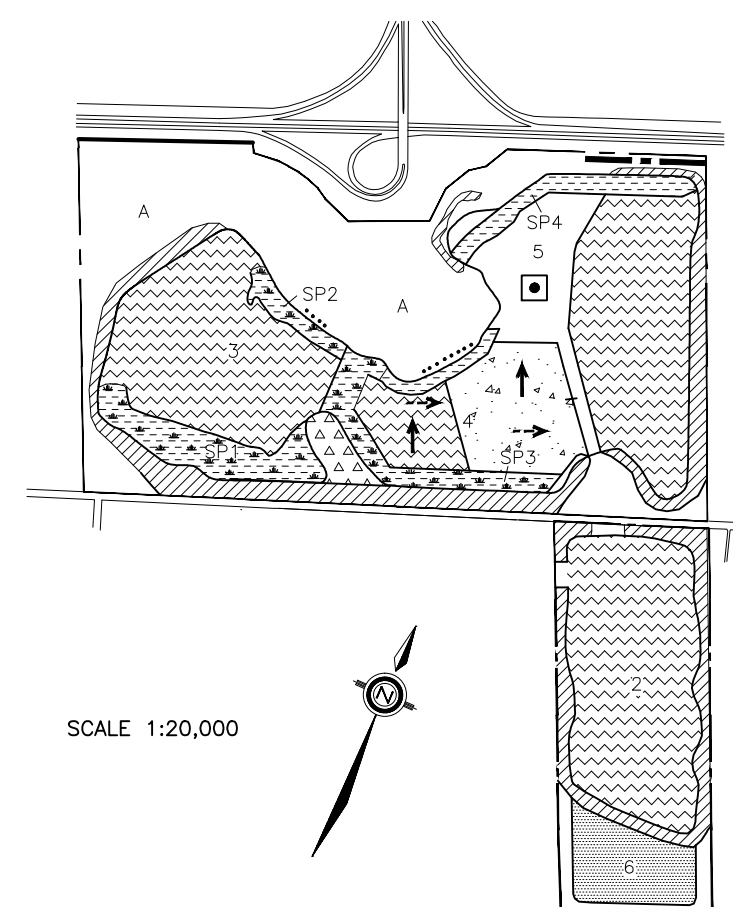


- LEGEND
- ① SEQUENTIAL ORDER OF BERM CONSTRUCTION
 - *.517 FINAL BERM ELEVATIONS
 - /// PERIMETER BERM

Notes:

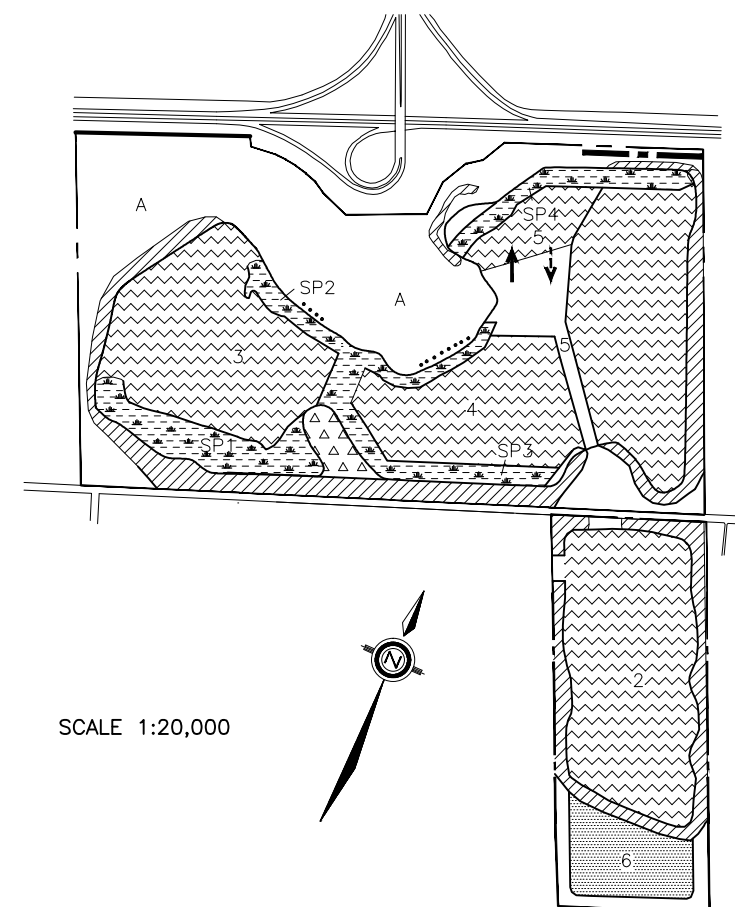
Berms will be constructed to the minimum height and dimensions as shown. However, subsequent applications by other Aggregate Producers may render the berm redundant. If this happens application may be made to the Ministry of Natural Resources for a more appropriate design.

Berms will be designed using a ground cover (ie: white clover, (Trifolium repens), bird's foot trefoil (Lotus corniculatus) and interspersed with a variety of deciduous and coniferous shrubs/trees.



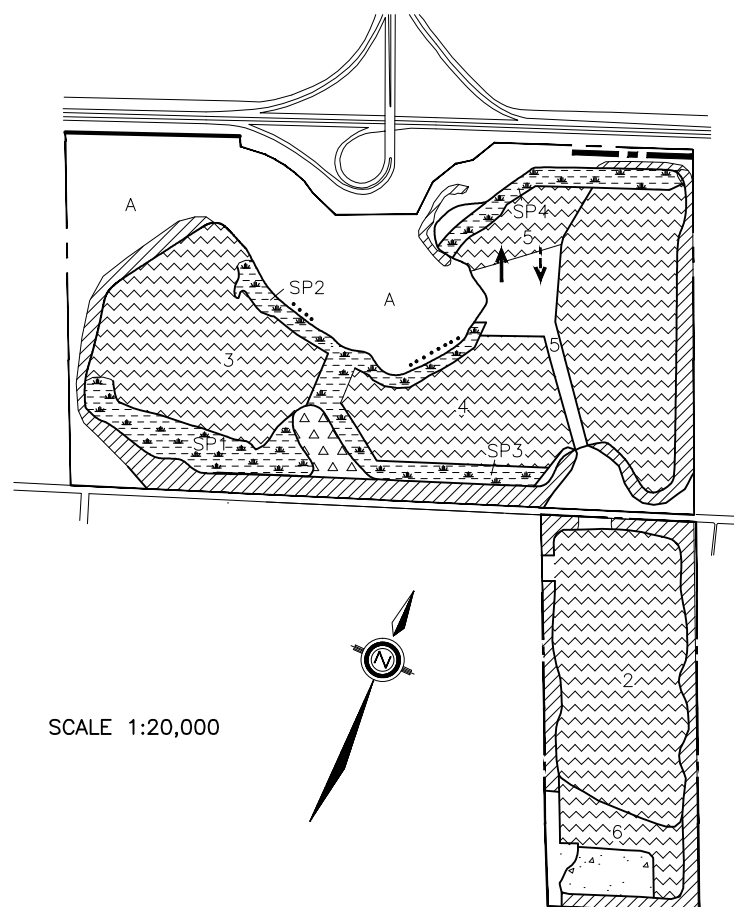
Phase 4

- Silt pond 3 between Phases 3 and 4 shall be filled with silt prior to commencement of extraction in Phase 4.
- Removal of topsoil and above the water table extraction of the sand and gravel.
- Final removal of all available resources in Phase 3.
- Tree planting continues.
- Completion of appropriate grading, stabilization and vegetating of shorelines in Phase 3.
- Removal of redundant haul routes.
- Silt pond 4 north of Phases 1 and 5 will be excavated above and below the water table and alluvial pond basin created and available for use as soon as SP3 is completed.



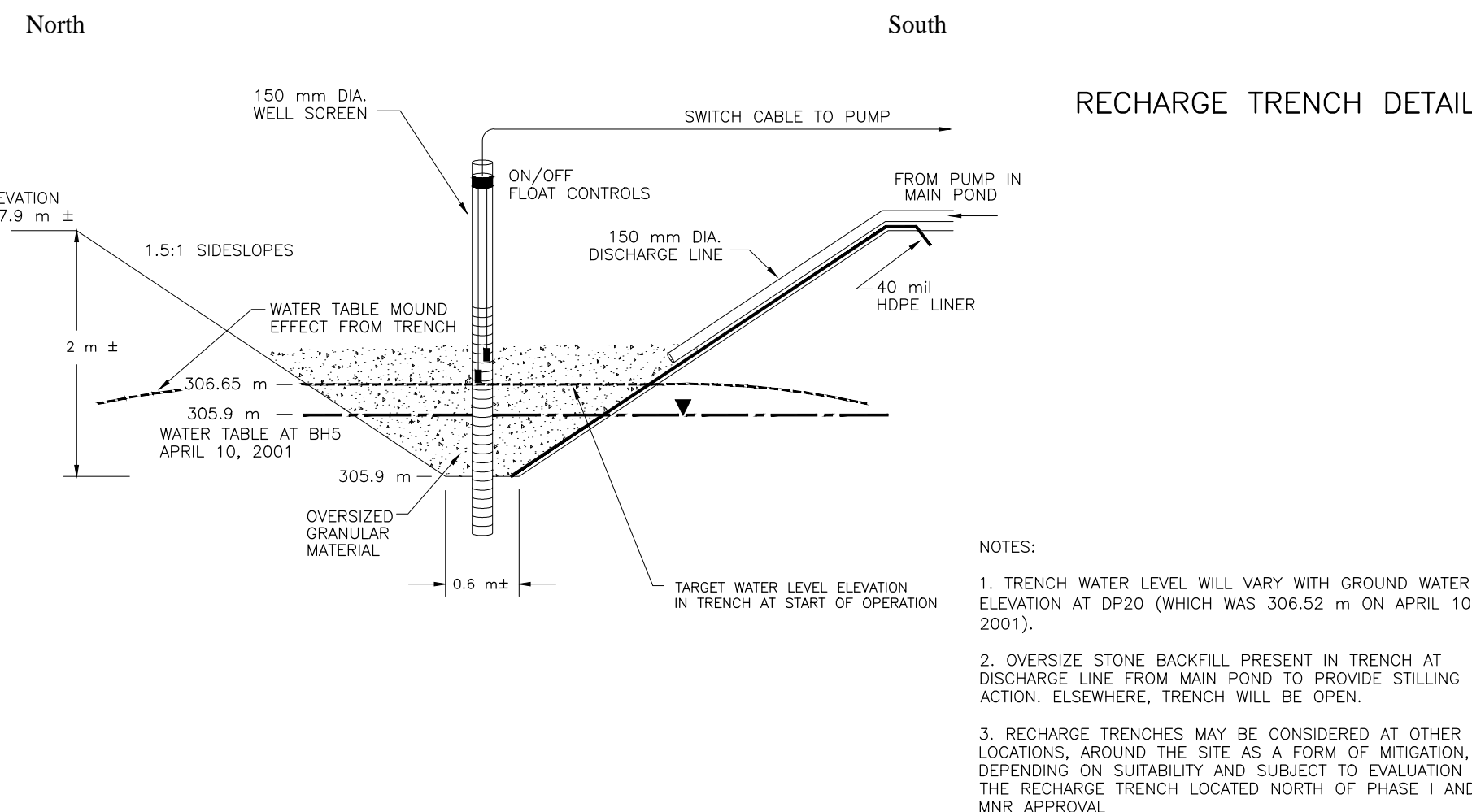
Phase 5

- Final removal of available resources from Phase 4 and resources from redundant haul routes (eg: island habitat locations).
- Relocation of mobile processing plant as Phase 5
- Stripping and above water table extraction followed by below water table extraction for Phase 5. Material may be hauled off site for processing.



Phase 6

- Removal of all haul routes except those required for rehabilitation land uses (eg: island habitat locations).
- Transplanting of final tree stock.
- Completion of appropriate grading, stabilization and vegetating of shorelines.
- Replacing top soils on islands and revegetating them. Side slopes of the pit toward the final losses shall be no steeper than 3:1 except where certain objectives demand a shallower slope. (See Details of Final Rehabilitation on page 7 of 8 and page 8 of 8).
- Excess topsoil and overburden in the berms will be used to create additional promontories(ies).
- Topsoil and overburden removed from Phase 6 and used to rehabilitate sideslopes in Phase 2 and to create acoustic berms.
- Commence extraction of Phase 6. Resources may be conveyed to processing plant in Phase 5 or shipped off site. Extraction in Phase 6 may occur at the same time as Phase 5.



Legend:

- EXTRACTION BELOW WATER TABLE
- EXTRACTION ABOVE WATER TABLE
- AWAITING SILT POND
- AWAITING EXTRACTION INTERIM AGRICULTURAL USE
- BERM
- SILT POND BEING PROGRESSIVELY REHABILITATED TO WETLAND AND MEADOW HABITAT
- HAUL ROUTE
- A/B NO EXTRACTION
-A- ECOLOGICAL
-B- REFORESTATION
- PROCESSING PLANT AREA
- WIND THROW EDGE
- AREA TO BE MONITORED
- TEMPORARY GROUNDWATER RECHARGE TRENCH
- DIRECTION OF EXTRACTION (ABOVE WATER TABLE)
- DIRECTION OF EXTRACTION (BELOW WATER TABLE)

Notes:

1. REFER TO SHEET 3 FOR GENERAL OPERATIONAL NOTES.
2. REFER TO THE FOLLOWING STUDIES AND REPORTS USED IN PREPARING THE OPERATIONAL PLAN:
A) ABERFOYLE PIT TRAFFIC IMPACT STUDY BY UMA ENGINEERING LTD., NOVEMBER 1987.
B) ANTICIPATED FLUTUITE DUST AT THE UNIVERSITY OF GUELPH PROPERTY IN PUSLINCH TOWNSHIP BY ARKTOS LTD., OCTOBER 1987.
C) TERRESTRIAL BIOLOGY IMPACT ASSESSMENT BY PAUL F. G. EAGLES PLANNING LTD, NOVEMBER 1988.
D) MILL CREEK STUDY BY FAUN AQUATICS CANADA LTD., 1987.
E) THE IMPACT AND ABATEMENT OF NOISE FROM A PROPOSED GRAVEL PIT IN THE TOWNSHIP OF PUSLINCH BY J. S. KEELER LTD., 1987, REVISED MAY 10, 1989.
F) WATER RESOURCES STUDY - BASELINE CONDITIONS FOR A PROPOSED SAND AND GRAVEL PIT, UNIVERSITY OF GUELPH BY GARTNER LEE LTD., 1987.
G) POTENTIAL IMPACT ASSESSMENT REPORT AND GROUNDWATER, SURFACE WATER ASPECTS PROPOSED SAND AND GRAVEL PIT, TOWNSHIP OF PUSLINCH BY GARTNER LEE LTD., 1987.
H) SUPPLEMENTAL GROUNDWATER INFORMATION BY JAGGER HIMS LTD., ONGOING FROM 1987 TO 1992.
I) RECHARGE TRENCH PROPOSAL BY JAGGER HIMS LTD., APRIL 30, 2001.
3. THE FOLLOWING REPORTS WERE PREPARED FOR EXTRACTION OF PHASE 6:
A) HYDROGEOLOGICAL ASSESSMENT REPORT BY HIMS GEOENVIRONMENTAL LTD., 2015.
B) NOISE IMPACT STUDY BY AEROCUSTICS ENGINEERING LTD., 2015.
C) LEVEL 1 & 2 NATURAL ENVIRONMENT ASSESSMENT BY AECOM, 2015.
D) STAGE 1 ARCHAEOLOGICAL ASSESSMENT BY GOLDER ASSOCIATES LTD., 2015.
E) PLANNING JUSTIFICATION REPORT BY GSP GROUP INC., 2015.

SITE PLAN AMENDMENTS			
NO.	DESCRIPTION	DATE	INT.
1.	REDUCTION OF AREA TO BE EXTRACTED AS A RESULT OF ADDITIONAL WETLAND BUFFER	JUNE /92	
2.	REMOVAL OF 2.0m BERM TO ADJACENT TO MILL CREEK	JUNE /92	
3.	CONSOLIDATION OF ENTRANCE / EXIT TO BE LOCATED WEST OF EXISTING BUILDINGS.	JUNE /92	
4.	CONSTRUCTION OF DYKE WALL ADJACENT TO PHASE 3	AUG. /92	
5.	VARIOUS MINOR AMENDMENTS AS PER WMR APPROVAL (SILT POND, FENCING, SLURRY PIPE, TREE PLANTING, USE OF GENSETS, ETC.)	MARCH/97	
6.	INCLUSION OF BERM ALONG 401	MARCH/99	
7.	VARIOUS MINOR AMENDMENTS AS PER M.N.R. APPROVAL SEPT. /00 (SILT POND SP1, SP2, DYKE CUT AND FILL TRENCH LINE, ADJUTANT GROUNDWATER TRENCH BERM IN PHASE 1, ETC.)	SEPT. /00	
8.	VARIOUS MINOR AMENDMENTS AS PER MNR APPROVAL, MAY /01 (RECHARGE TRENCH, MODIFICATIONS TO EXTRACTION OUTLINE IN PHASE 1 AND SILT POND SP1/SP2 IN PHASE 3).	MAY /01	
9.	MINOR AMENDMENT RE TRANSPORT AGGREGATE ACROSS CONCESSION ROAD 2.	OCT. /02	
10.	VARIOUS MINOR AMENDMENTS AND HOUSEKEEPING.	AUG. /03	K.M.
11.	MINOR AMENDMENT ON PHASE 3 AREA AND SILT POND 3	FEB. /10	K.M.
12.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2	SEPT. /15	K.M.

REVISIONS			
NO.	DESCRIPTION	DATE	INT.
1.	AS PER REQUEST BY SUB. CONSULTANTS AND MINISTRIES	OCT./88	J.L.S.
2.	AS PER STUDY BY SUB. CONSULTANTS AND MINISTRIES	APR./89	A.L.B.
3.	MODIFICATION TO SEQUENCE	SEPT./89	A.B.M.
4.	UPDATED TO CONFORM WITH THE AGGREGATE RESOURCES ACT	JUNE/90	J.J.M.
5.	AS PER O.M.B. CONDITIONS AND FILL PERMIT APPLICATION	OCT./90	J.J.M.
6.	AS PER MINISTER CONDITIONS AND TRANSFERRED ONTO AUTOCAD	DEC./91	J.J.M.
7.	TO CONFORM WITH G.L.C.A. FILL PERMIT APPLICATION AND REVISED MONITORING STATION LOCATIONS	AUG./92	R.E.G.
8.	AS PER M.N.R.	NOV./92	R.E.G.
9.	AS PER APPROVAL BY M.N.R. SEPT. /00	SEPT./00	A.G.H.
10.	AS PER APPROVAL BY MNR. MAY /01.	MAY /01	A.G.H.
11.	AS PER M.N.R. COMMENTS	JAN. /04	K.M.
12.	EXPAND SP1 & SP3, EXPAND LIMIT OF EXTRACTION OF PHASE 2 BERM AREA.	MAY /05	K.M.
13.	REVISED PHASING NOTES	SEPT. /17	K.M.
14.	REVISIONS TO ADDRESS AGENCY COMMENTS DURING PUBLIC COMMENT PERIOD	SEPT. /17	K.M.

MILL CREEK AGGREGATES

PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of
Guelph
854 GORDON STREET
GUELPH, ONTARIO
N1G 1Y7

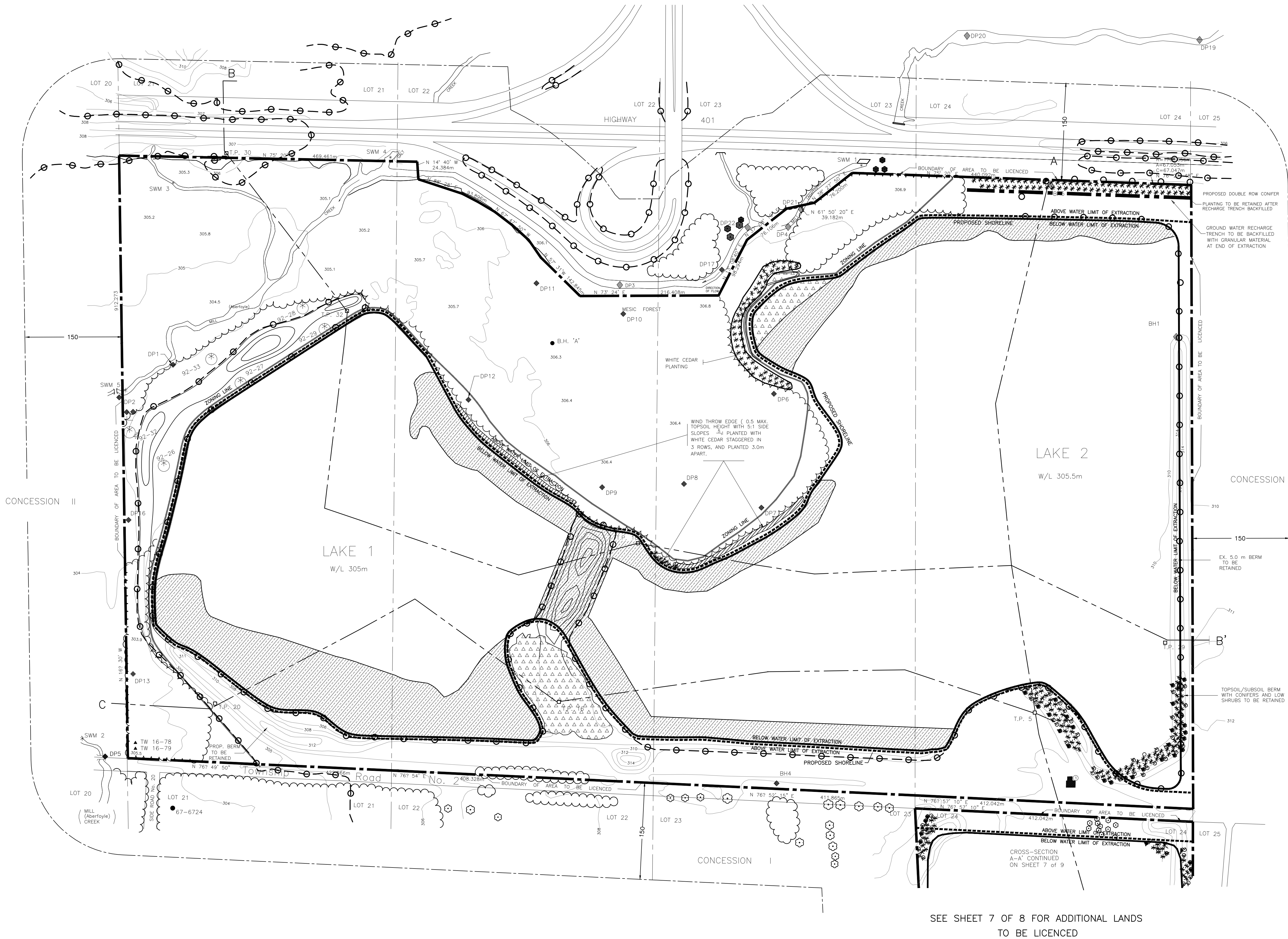
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J.H. COHOON
ENGINEERING LIMITED
CONSULTING ENGINEERS
440 HARDY ROAD, UNIT #1
BRANTFORD - ONTARIO, N3T 5L8
TEL. (519) 753-2656
FAX. (519) 753-4263

OPERATION PHASING
DETAILS

Drawing No.

5 OF 8



Legend:

- ZONING LINE
- PROPOSED CONTOUR (Metres A.S.L.)
- BOUNDARY OF AREA TO BE LICENCED
- EXISTING TREED AREA
- MIXED TREED AREA
- BUILDING (TO BE RETAINED)
- DRIVE POINT
- OBSERVATION WELL
- GROUNDWATER MONITORING STATION (TEMPERATURE AND LEVEL)
- REGIONAL STORM FLOODLINE AT END OF EXTRACTION
- PROPOSED SHORELINE
- RECHARGE TRENCH
- WIND THROW EDGE PLANTING BED
- REFORESTATION
- PROPOSED WETLANDS/MEADOWS HABITAT TO BE CREATED
- TEST PIT
- SURFACE WATER MONITORING STATION
- B.H. 5
- B.H. 'B'
- STREAM QUALITY AND FISHERIES MONITORING STATION (Water Quality, Biological/Fisheries as per Fourquadrants Report)
- TEST WELLS
- ABOVE WATER LIMIT OF EXTRACTION
- BELOW WATER LIMIT OF EXTRACTION

- Notes:**
- REFER TO SHEET 7 FOR REHABILITATION DETAILS SOUTH OF TOWNSHIP ROAD 2.
 - AREA TO BE REHABILITATED = 83.3 ha NORTH
38.8 ha SOUTH
122.1 ha TOTAL
 - BUILDINGS MAY REMAIN ON SITE AT DISCRETION OF LICENCE HOLDER.
 - REFER TO SHEET 7 FOR REHABILITATION CROSS-SECTIONS.
 - PERIMETER BERMS MAY REMAIN IF MATERIAL NOT REQUIRED FOR REHABILITATION.
 - THE CULVERT UNDER CONCESSION ROAD 2 SHALL BE REMOVED PRIOR TO THE SURRENDER OF THE LICENCE.
 - OFFICE TRAILERS, SCALE AND SCALE HOUSE, ALL PROCESSING EQUIPMENT AND SCRAP SHALL BE REMOVED.

SITE PLAN AMENDMENTS		
NO.	DESCRIPTION	DATE
1.	VARIOUS MINOR AMENDMENTS AS PER M.N.R. APPROVAL SEP. /00.	SEPT. /00
2.	SUBMERGED SLOPES 2:1 OR FLATTER.	SEPT. /00
3.	VARIOUS MINOR AMENDMENTS AS PER M.N.R. APPROVAL APRIL. /01.	MAY /01
4.	VARIOUS MINOR AMENDMENTS AND HOUSEKEEPING.	AUG. /03
5.	MINOR AMENDMENT ON PHASE 3 AREA AND S/LT POND 3.	FEB. /10
6.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2.	SEPT. /15
7.	MAJOR AMENDMENT TO PERMIT EXTRACTION OF PHASE 1 EAST BOUNDARY ADJACENT TO OTHER LICENCED PROPERTY TO 120' ABOVE THE WATER TABLE.	SEPT. /17

REVISIONS		
NO.	DESCRIPTION	DATE
1.	AS PER SUB-CONSULTANTS AND M.N.R.	OCT. /88
2.	AS PER SUB-CONSULTANTS AND M.N.R.	APR. /89
3.	AS PER SUB-CONSULTANTS AND M.N.R.	MAY /90
4.	UPDATED TO COMPLY WITH THE AGGREGATE RESOURCES ACT.	JUNE/90
5.	AS PER O.R.M. CONDITIONS + FILL PERMIT APPLICATION	OCT. /90
6.	AS PER MINISTER CONDITIONS & TRANSFERRED ONTO AUTOCAD	DEC. /91
7.	TO CONFORM WITH O.A.C.A. FILL PERMIT APPLICATION AND REVISED MONITORING STATION LOCATIONS	AUG. /92
8.	AS PER M.N.R.	NOV. /92
9.	ADDITIONAL DRIVE POINTS ADDED	NOV. /93
10.	BLDG. #3 BELIEVED SURFACE WATER STATIONS RE-LOCATED	SEPT. /00
11.	REGIONAL STORM FLOODLINE AT END OF EXTRACTION ADDED.	MAY /01
12.	EXPAND SP1 & SP3, EXPAND LIMIT OF EXTRACTION OF PHASE 2 BARN AREA.	MAY /05
13.	EXTRACT COMMON SETBACK WITH ADJACENT LICENCE (ABOVE WATER)	SEPT. /17

MILL CREEK AGGREGATES

PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of
Guelph

854 GORDON STREET
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Scale 1:3000

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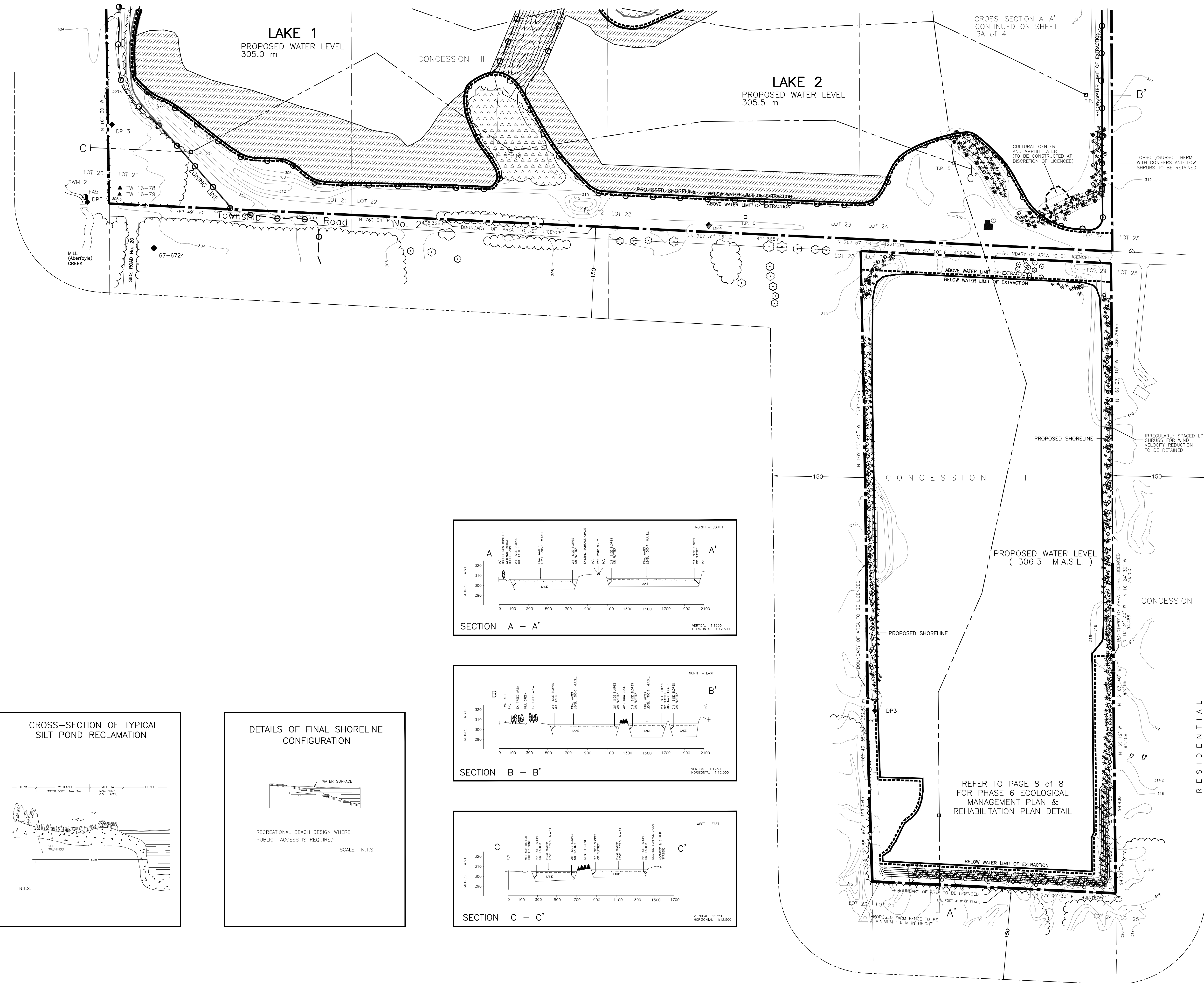
J. KEVIN MITCHELL IS
AUTHORIZED BY THE MINISTRY
OF NATURAL RESOURCES TO
PREPARE & CERTIFY SITE PLANS
FOR LICENCE APPLICATIONS.

J.H. COHOON
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CONSULTING ENGINEERS

440 HARDY ROAD, UNIT #1
BRANTFORD - ONTARIO, N3T 5L8
TEL. (519) 753-2656
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**PROGRESSIVE & FINAL
REHABILITATION PLAN
NORTH OF TOWNSHIP
ROAD 2**

Drawing No.
6 OF 8



Legend:

- ZONING LINE
- PROPOSED CONTOUR (Metres A.S.L.)
- BOUNDARY OF AREA TO BE LICENCED
- EXISTING TREED AREA
- MIXED TREED AREA
- BUILDING (TO BE RETAINED)
- DRIVE POINT
- REVEGETATED ISLANDS
- OBSERVATION WELL
- GROUNDWATER MONITORING STATION (TEMPERATURE AND LEVEL)
- REGIONAL STORM FLOODLINE AT END OF EXTRACTION
- PROPOSED SHORELINE
- RECHARGE TRENCH
- WIND THROW EDGE PLANTING BED
- REFORESTATION
- PROPOSED WETLANDS/MEADOW HABITAT TO BE CREATED
- TEST PIT
- SURFACE WATER MONITORING STATION
- BORE HOLE OBSERVATION MONITOR INSTALLATION
- BORE HOLE
- STREAM QUALITY AND FISHERIES MONITORING STATION (Water Quality, Biological/Fisheries as per FounAquatics Report)
- TEST WELLS
- BERM
- ABOVE WATER LIMIT OF EXTRACTION
- BELOW WATER LIMIT OF EXTRACTION

- Notes:**
- REFER TO SHEET 6 FOR REHABILITATION DETAILS NORTH OF TOWNSHIP ROAD 2.
 - AREA TO BE REHABILITATED = 83.3 ha NORTH
38.8 ha SOUTH
122.1 ha TOTAL
 - BUILDINGS MAY REMAIN ON SITE AT DISCRETION OF LICENCE HOLDER.
 - PERIMETER BERMS MAY REMAIN IF MATERIAL NOT NEEDED FOR REHABILITATION.

SITE PLAN AMENDMENTS			
NO.	DESCRIPTION	DATE	INT.
1.	VARIOUS MINOR AMENDMENTS AS PER M.N.R. APPROVAL SEP. /00.	SEPT. /00	
2.	VARIOUS MINOR AMENDMENTS AS PER MNR APPROVAL APRIL /01.	MAY /01	
3.	VARIOUS MINOR AMENDMENTS AND HOUSEKEEPING.	AUG. /03	K.M.
4.	MINOR AMENDMENT ON PHASE 2 AREA AND Silt POND 3	FEB. /10	K.M.
5.	MAJOR AMENDMENT TO ENLARGE LIMIT OF EXTRACTION IN PHASE 2	SEPT. /15	K.M.
6.	MINOR AMENDMENT TO PERMIT EXTRACTION OF PHASE 1 EAST BOUNDARY ADJACENT TO OTHER LICENCED PROPERTY TO 1.5m ABOVE THE WATER TABLE	SEPT. /17	K.M.

REVISIONS			
NO.	DESCRIPTION	DATE	INT.
1.	AS PER SUB-CONSULTANTS AND M.N.R.	OCT. /88	J.L.S.
2.	AS PER SUB-CONSULTANTS AND M.N.R.	APR. /89	C.A.D.B.
3.	AS PER SUB-CONSULTANTS AND M.N.R.	MAY /90	C.A.D.B.
4.	UPDATED TO COMPLY WITH THE AGGREGATE RESOURCES ACT.	JUNE/90	L.L.H.
5.	AS PER O.B.M. CONDITIONS + FILL PERMIT APPLICATION	OCT. /90	J.J.M.
6.	AS PER MINISTER CONDITIONS & TRANSFERRED ONTO AUTOCAD	DEC. /91	J.J.M.
7.	TO CONFORM WITH G.A.C.A. FILL PERMIT APPLICATION AND REVISED MONITORING STATION LOCATIONS	AUG. /92	R.E.G.
8.	AS PER M.N.R.	NOV. /92	R.E.G.
9.	BUILD. #3 DELETED, SURFACE WATER STATIONS RE-LOCATED	SEPT. /00	A.G.H.
10.	REGIONAL STORM FLOODLINE AT END OF EXTRACTION ADDED	MAY /01	A.G.H.
12.	EXPAND SPI & SPI. EXPAND LIMIT OF EXTRACTION OF PHASE 2 BARN AREA.	MAY /05	K.M.
13.	EXTRACT COMMON SETBACK WITH ADJACENT LICENCE (ABOVE WATER)	SEPT. /17	K.M.
14.	REVISIONS TO ADDRESS AGENCY COMMENTS DURING PUBLIC COMMENT PERIOD	SEPT. /17	K.M.

MILL CREEK AGGREGATES

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PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

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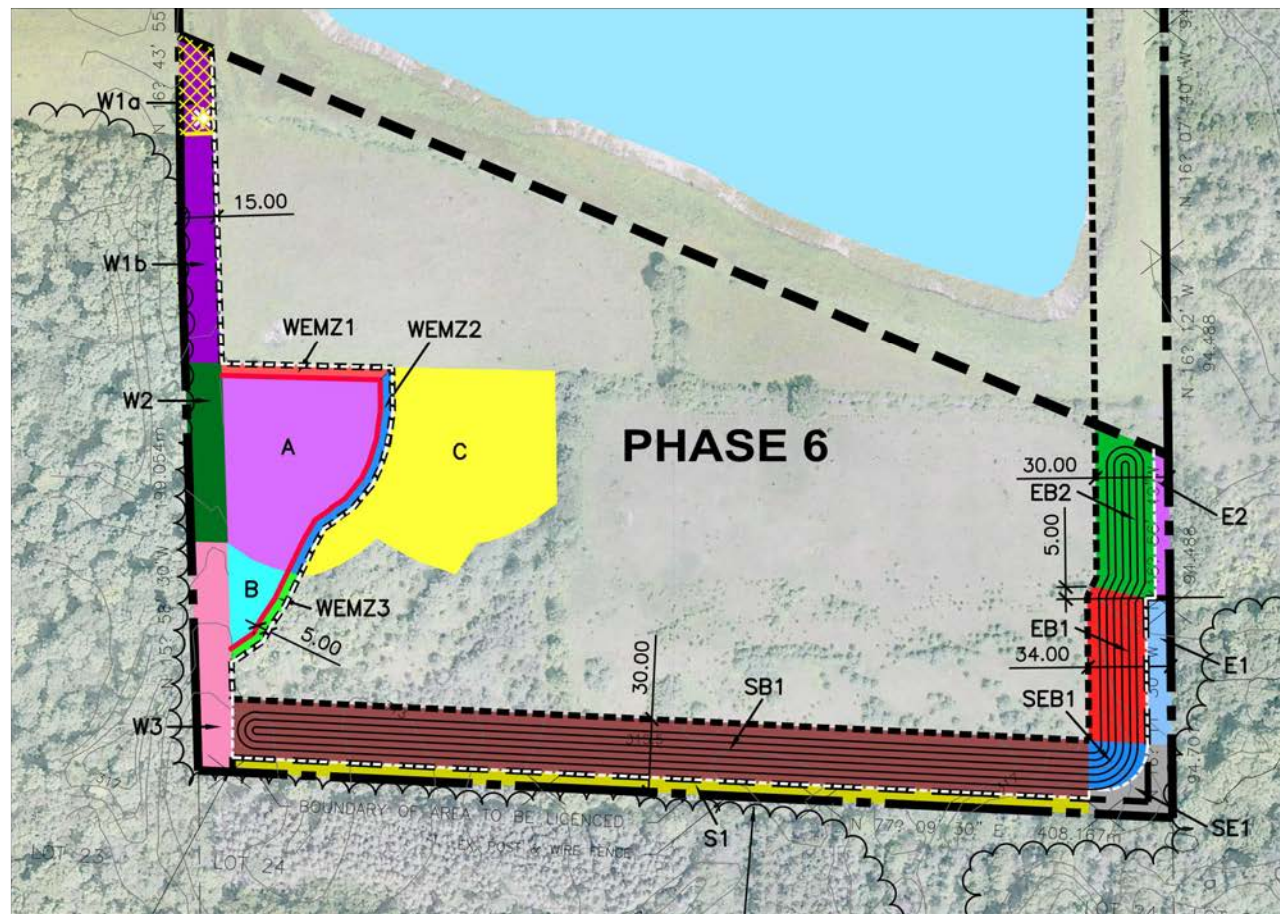
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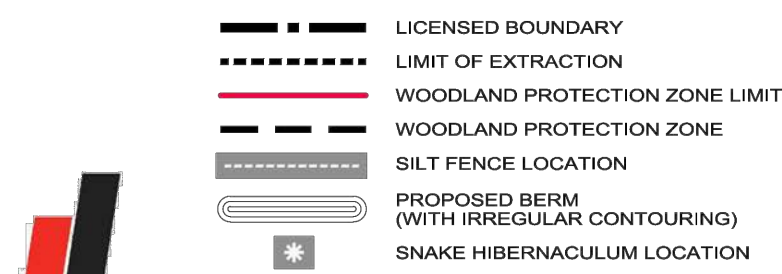
PROGRESSIVE & FINAL REHABILITATION PLAN SOUTH OF TOWNSHIP ROAD 2

Drawing No.
7 of 8



LEGEND

- A - WOODLAND PROTECTION ZONE A
- B - WOODLAND PROTECTION ZONE B
- C - WOODLAND TO BE REMOVED
- WEMZ1 - WOODLAND EDGE MANAGEMENT ZONE 1
- WEMZ2 - WOODLAND EDGE MANAGEMENT ZONE 2
- WEMZ3 - WOODLAND EDGE MANAGEMENT ZONE 3
- W1a - 15m SETBACK
- W1b - 15m SETBACK
- W2 - 15m SETBACK
- W3 - 15m SETBACK
- S1 - 6m NO TOUCH ZONE
- SB1 - SOUTH BERM AREA
- SEB1 - SOUTHEAST BERM
- SE1 - NO TOUCH ZONE
- E1 - 10m NO TOUCH ZONE
- EB1 - PORTION OF EAST BERM
- E2 - 6m NO TOUCH ZONE
- EB2 - PORTION OF EAST BERM
- BELOW WATER EXTRACTION

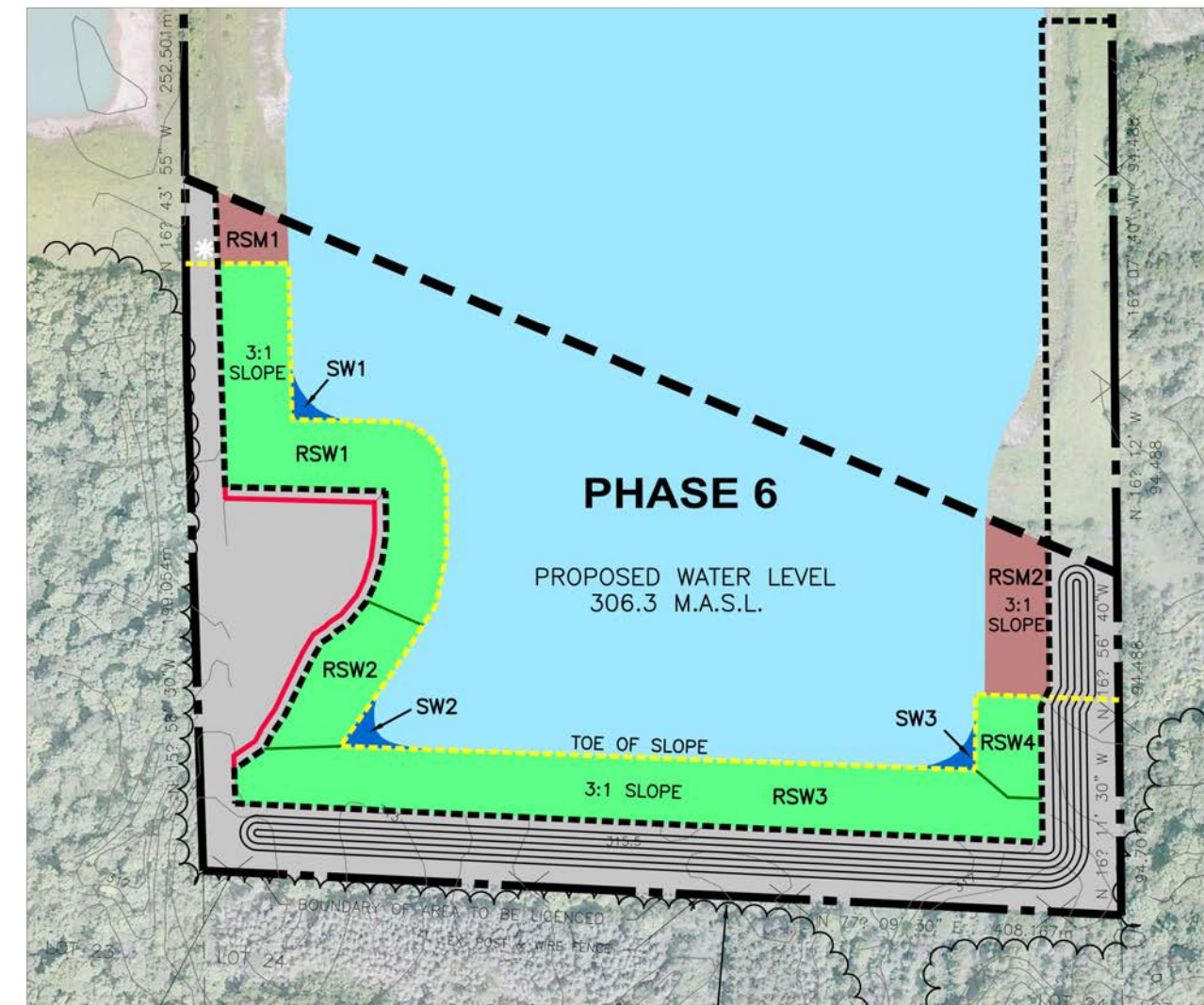


Dufferin Aggregates
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FIGURE 3
ECOLOGICAL MANAGEMENT PLAN
MILL CREEK PIT
PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

J.H. COHOON ENGINEERING LIMITED
CONSULTING ENGINEERS
BRANTFORD

SCALE: 1:3000 DATE: MAR. 15/17



LEGEND

- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- WOODLAND PROTECTION ZONE LIMIT
- FUTURE SIGNIFICANT WOODLAND BOUNDARY
- PROPOSED BERM (WITH IRREGULAR CONTOURING)
- REFER TO FIGURE 3 FOR DETAILS
- RSW - REHAB SIDE SLOPE WOODLAND
- RSM - REHAB SIDE SLOPE MEADOW
- SW - SHORELINE WETLAND
- SNAKE HIBERNACULUM LOCATION
- BELOW WATER EXTRACTION



FIGURE 4
REHABILITATION PLAN
MILL CREEK PIT
PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

J.H. COHOON ENGINEERING LIMITED
CONSULTING ENGINEERS
BRANTFORD

SCALE: 1:3000 DATE: MAR. 15/17

Dufferin Aggregates
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PRE-EXTRACTION AND SITE PREPARATION - ECOLOGICAL MANAGEMENT REQUIREMENTS

I. WITHIN 3 YEARS OF APPROVAL OF THE MAJOR SITE PLAN AMENDMENT TO PERMIT PHASE 6, THE LICENSEE SHALL CREATE THE FOLLOWING ECOLOGICAL AREAS IN THE LOCATIONS IDENTIFIED ON THIS PAGE:

AREA	FEATURE	DESCRIPTION
W1a	NATURAL REGENERATION AREA	THE LICENSEE SHALL MAINTAIN THIS AREA IN A NATURAL STATE WITH FUTURE CONSTRUCTION OF A SNAKE HIBERNACULUM THAT FEATURES ROOT WADS, LOGS AND ROCK PILES.
W1b	FUTURE TREE PLANTING AREA	THE LICENSEE SHALL PLANT SEEDLINGS OF EASTERN WHITE CEDAR, EASTERN RED CEDAR, WHITE BIRCH, TREMBLING ASPEN AND/OR BIGTOOTH ASPEN.
W2	FOREST MANAGEMENT AREA	THE LICENSEE SHALL MAINTAIN THE EXISTING WOODLAND IN A CONTIGUOUS STATE WITH THE WHITE PINE STAND TO THE EAST. DAMAGED SAPLINGS SHALL BE FLUSH CUT NEAR THE GROUND TO PROMOTE REGROWTH.
W3	FOREST MANAGEMENT AREA	THE LICENSEE SHALL MAINTAIN THE EXISTING WOODLAND AND PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR AND/OR WHITE BIRCH WITHIN ANY GAPS. DAMAGED SAPLINGS SHALL BE FLUSH CUT NEAR THE GROUND TO PROMOTE REGROWTH AND INVASIVE WOODY SPECIES WILL BE CUT AND TREATED.
WEMZ1	FUTURE TREE PLANTING AREA	THE LICENSEE SHALL PLANT SEEDLINGS OF EASTERN WHITE CEDAR, EASTERN RED CEDAR, WHITE BIRCH, TREMBLING ASPEN AND/OR BIGTOOTH ASPEN. INVASIVE WOODY SPECIES WILL BE CUT AND TREATED.
WEMZ2	FOREST MANAGEMENT AREA	THE LICENSEE SHALL REMOVE LARGE TREES ALONG WOODLAND EDGE AND PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR AND/OR WHITE BIRCH WITHIN GAPS. INVASIVE WOODY SPECIES WILL BE CUT AND TREATED.
WEMZ3	FOREST MANAGEMENT AREA	THE LICENSEE SHALL PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR AND/OR WHITE BIRCH. DAMAGED SAPLINGS SHALL BE FLUSH CUT NEAR THE GROUND TO PROMOTE REGROWTH.
A	FOREST MANAGEMENT AREA	THIS WOODLAND SHALL BE MAINTAINED IN A NATURAL STATE.
B	FOREST MANAGEMENT AREA	THIS WOODLAND SHALL BE MAINTAINED IN A NATURAL STATE. DAMAGED SAPLINGS SHALL BE FLUSH CUT NEAR THE GROUND TO PROMOTE REGROWTH.
S1	FUTURE TREE PLANTING AREA	THE LICENSEE SHALL MAINTAIN DESIRABLE WOODY SPECIES AND REMOVE INVASIVE WOODY SPECIES TO BE CUT AND TREATED. GAPS WILL BE PLANTED WITH EASTERN WHITE CEDAR, EASTERN RED CEDAR AND/OR WHITE BIRCH.

PRE-EXTRACTION AND SITE PREPARATION - ECOLOGICAL MANAGEMENT REQUIREMENTS (CONT'D)

AREA	FEATURE	DESCRIPTION
		NORTH/PIT SIDE OF BERM: THE LICENSEE SHALL PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR, PIN CHERRY, WHITE BIRCH, TREMBLING ASPEN AND/OR BIGTOOTH ASPEN.
SB1	FUTURE TREE PLANTING AREA	SOUTH/NON-PIT SIDE OF BERM: THE LICENSEE SHALL PLANT BASSWOOD, BLACK CHERRY, RED OAK AND/OR WHITE PINE. HABITAT FEATURES SUCH AS ROOT WADS, LOG AND ROCK PILES SHALL BE ADDED, ALONG WITH 5 SHRUB PATCHES AND 10 POLLINATOR STRIPS
SEB1	FUTURE TREE PLANTING AREA	NORTH WEST/PIT SIDE OF BERM: THE LICENSEE SHALL PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR, PIN CHERRY, WHITE BIRCH, TREMBLING ASPEN AND/OR BIGTOOTH ASPEN. CREST OF BERM: THE LICENSEE SHALL PLANT BASSWOOD, BLACK CHERRY, RED OAK AND/OR WHITE PINE.
SE1	FUTURE TREE PLANTING AREA	THE LICENSEE SHALL MAINTAIN DESIRABLE WOODY SPECIES AND REMOVE INVASIVE WOODY SPECIES TO BE CUT AND TREATED. GAPS WILL BE PLANTED WITH BASSWOOD, BLACK CHERRY, RED OAK AND/OR WHITE PINE.
E1	FOREST MANAGEMENT AREA	THE LICENSEE SHALL MAINTAIN DESIRABLE WOODY SPECIES AND REMOVE INVASIVE WOODY SPECIES TO BE CUT AND TREATED. GAPS WILL BE PLANTED WITH EASTERN WHITE CEDAR, EASTERN RED CEDAR AND/OR WHITE BIRCH.
E2	FOREST MANAGEMENT AREA	THE LICENSEE SHALL MAINTAIN DESIRABLE WOODY SPECIES AND REMOVE INVASIVE WOODY SPECIES TO BE CUT AND TREATED.
		WEST SIDE OF BERM: THE LICENSEE SHALL PLANT BASSWOOD, BLACK CHERRY, RED OAK AND/OR WHITE PINE.
EB1	FUTURE TREE PLANTING AREA	EAST SIDE OF BERM: THE LICENSEE SHALL PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR, PIN CHERRY, WHITE BIRCH, TREMBLING ASPEN AND/OR BIGTOOTH ASPEN. HABITAT FEATURES SUCH AS ROOT WADS, LOG AND ROCK PILES SHALL BE ADDED, ALONG WITH 2 SHRUB PATCHES AND 5 POLLINATOR STRIPS
EB2	FUTURE NATURAL REGENERATION AREA	THE LICENSEE SHALL PLANT NON-INVASIVE GRASS/LEGUME MIXTURE TO STABILIZE THE SLOPE, INCLUDING MILKWEED. HABITAT FEATURES SUCH AS ROOT WADS, LOG AND ROCK PILES SHALL BE ADDED, ALONG WITH 2 SHRUB PATCHES AND 5 POLLINATOR STRIPS

PROGRESSIVE & FINAL REHABILITATION - ECOLOGICAL MANAGEMENT REQUIREMENTS

I. PROGRESSIVE REHABILITATION WILL BE COMPLETED WITHIN PHASE 6 AS FINAL EXTRACTION LIMITS AND DEPTHS ARE REACHED. THE FOLLOWING FEATURES WILL BE CREATED AS A RESULT OF THE REHABILITATION:

AREA	FEATURE	DESCRIPTION
RSM1	NATURAL REGENERATION AREA	THE LICENSEE SHALL PLANT NON-INVASIVE GRASS/LEGUME MIXTURE TO STABILIZE THE SLOPE, INCLUDING MILKWEED. HABITAT FEATURES SUCH AS ROOT WADS, LOG AND ROCK PILES SHALL BE ADDED, ALONG WITH 1 SHRUB PATCH AND 3 POLLINATOR STRIPS.
RSM2	NATURAL REGENERATION AREA	THE LICENSEE SHALL PLANT NON-INVASIVE GRASS/LEGUME MIXTURE TO STABILIZE THE SLOPE, INCLUDING MILKWEED. HABITAT FEATURES SUCH AS ROOT WADS, LOG AND ROCK PILES SHALL BE ADDED, ALONG WITH 2 SHRUB PATCHES AND 5 POLLINATOR STRIPS.
RSW1	TREE PLANTING AREA	THE LICENSEE SHALL PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR, PIN CHERRY, WHITE BIRCH, TREMBLING ASPEN, AND/OR BIGTOOTH ASPEN, ALONG WITH 5 SHRUB PATCHES AND 10 POLLINATOR STRIPS.
RSW2	TREE PLANTING AREA	THE LICENSEE SHALL PLANT BLACK OAK, CHINQUAPIN OAK, RED OAK AND/OR WHITE OAK, ALONG WITH TALLGRASS PRAIRIE PLANT SPECIES.
RSW3	TREE PLANTING AREA	THE LICENSEE SHALL PLANT EASTERN WHITE CEDAR, EASTERN RED CEDAR, PIN CHERRY, WHITE BIRCH, TREMBLING ASPEN, AND/OR BIGTOOTH ASPEN, ALONG WITH 7 SHRUB PATCHES AND 15 POLLINATOR STRIPS.
RSW4	TREE PLANTING AREA	THE LICENSEE SHALL PLANT NON-INVASIVE GRASS/LEGUME MIXTURE TO STABILIZE THE SLOPE, INCLUDING MILKWEED. HABITAT FEATURES SUCH AS ROOT WADS, LOG AND ROCK PILES SHALL BE ADDED, ALONG WITH 3 SHRUB PATCHES AND 5 POLLINATOR STRIPS.
SW1, SW2, SW3	SHALLOW WETLAND AREAS	THE LICENSEE SHALL INSTALL ROOT WADS, LOGS AND ROCK PILES ABOVE AND BELOW THE WATER LINE, ALONG WITH SMALL SANDBAR WILLOWS AND OTHER WETLAND SHRUBS TO BE PLANTED ALONG THE SHORELINE. A GRAVEL BAR SHALL BE ESTABLISHED ABOVE THE HIGH WATER LINE.

ECOLOGICAL MANAGEMENT REQUIREMENTS - PRE-EXTRACTION, SITE PREPARATION AND PROGRESSIVE & FINAL REHABILITATION

- I. TREE PLANTING AREAS SHALL BE PLANTED WITH APPROXIMATELY 2,500 SEEDLINGS PER HECTARE AND THE SPACING WILL BE APPROXIMATELY 2.0 M X 2.0 M.
- II. SHRUB PATCHES ARE APPROXIMATELY 10 M X 10 M IN SIZE AND SPACING/DENSITY WILL BE APPROXIMATELY 1.5 M X 1.5 M.
- III. TREE AND SHRUB SPECIES AND PERCENTAGES OF SPECIES SHALL BE IN ACCORDANCE WITH THE ECOLOGICAL MANAGEMENT PLAN PREPARED BY GOODBAN ECOLOGICAL CONSULTING INC. IN APRIL 2017.
- IV. THE LICENSEE SHALL IMPLEMENT THE ADDITIONAL HABITAT REQUIREMENTS FOR EACH AREA IN ACCORDANCE WITH THE ECOLOGICAL MANAGEMENT PLAN PREPARED BY GOODBAN ECOLOGICAL CONSULTING INC. IN APRIL 2017.

MONITORING AND REPORTING

- I. THE LICENSEE SHALL COMPLETE AN ANNUAL ECOLOGICAL MONITORING REPORT TO BE SUBMITTED TO MNRF, COUNTY OF WELLINGTON, TOWNSHIP OF PUSLINCH AND GRCA BY JUNE 30TH OF THE FOLLOWING YEAR, DEMONSTRATING THE IMPLEMENTATION OF THE ECOLOGICAL MANAGEMENT PLAN AND REHABILITATION PLAN WITHIN PHASE 6.
- II. AS PART OF THE MONITORING REPORT A NETWORK OF 8 FIXED-POINT PHOTO-MONITORING STATIONS WILL BE PERMANENTLY ESTABLISHED TO TAKE PHOTOGRAPHS A MINIMUM OF 3 TIMES PER YEAR.

Legend:

1. REFER TO FIGURES FOR INDIVIDUAL LEGENDS AS SHOWN.

Notes:

1. REFER TO SHEET 6 FOR REHABILITATION DETAILS NORTH OF TOWNSHIP ROAD 2.
2. AREA TO BE REHABILITATED = 83.3 ha NORTH
38.8 ha SOUTH
122.1 ha TOTAL
3. BUILDINGS MAY REMAIN ON SITE AT DISCRETION OF LICENCE HOLDER.
4. PERIMETER BERMS MAY REMAIN IF MATERIAL NOT NEEDED FOR REHABILITATION.
5. REFER TO "ECOLOGICAL MANAGEMENT PLAN AND REHABILITATION PLAN" BY GOODBAN ECOLOGICAL CONSULTING INC., APRIL 2017.

SITE PLAN AMENDMENTS			
NO.	DESCRIPTION	DATE	INT.
1.	PAGE 8 OF 8 ADDED TO REFLECT ECOLOGICAL MANAGEMENT AND REHABILITATION PLAN DETAILS	SEPT. /17	K.M.

REVISIONS			
NO.	DESCRIPTION	DATE	INT.

MILL CREEK AGGREGATES

PART OF LOTS 21, 22, 23 AND 24, CONCESSION II
PART OF LOT 24, CONCESSION I
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

University of
Guelph
854 GORDON STREET
GUELPH, ONTARIO
N1G 1Y7

Scale 1:3000
50 0 50 100 150 m
J. KEVIN MITCHELL IS AUTHORIZED BY THE MINISTRY OF NATURAL RESOURCES TO PREPARE & CERTIFY SITE PLANS FOR LICENCE APPLICATIONS.

J.H. COHOON ENGINEERING LIMITED
CONSULTING ENGINEERS
440 HARDY ROAD, UNIT #1
BRANTFORD - ONTARIO, N3T 5L8
TEL. (519) 753-2656
FAX. (519) 753-4263

PHASE 6 ECOLOGICAL MANAGEMENT PLAN & REHABILITATION PLAN DETAIL

Drawing No.
8 OF 8

**Public Meeting Presentation
prepared by MHBC Planning**



MILL CREEK PIT PROPOSED PHASE 6

Dufferin Aggregates

A Division of CRH Canada
Group Inc.



Thursday, October 19, 2017

Brian Zeman

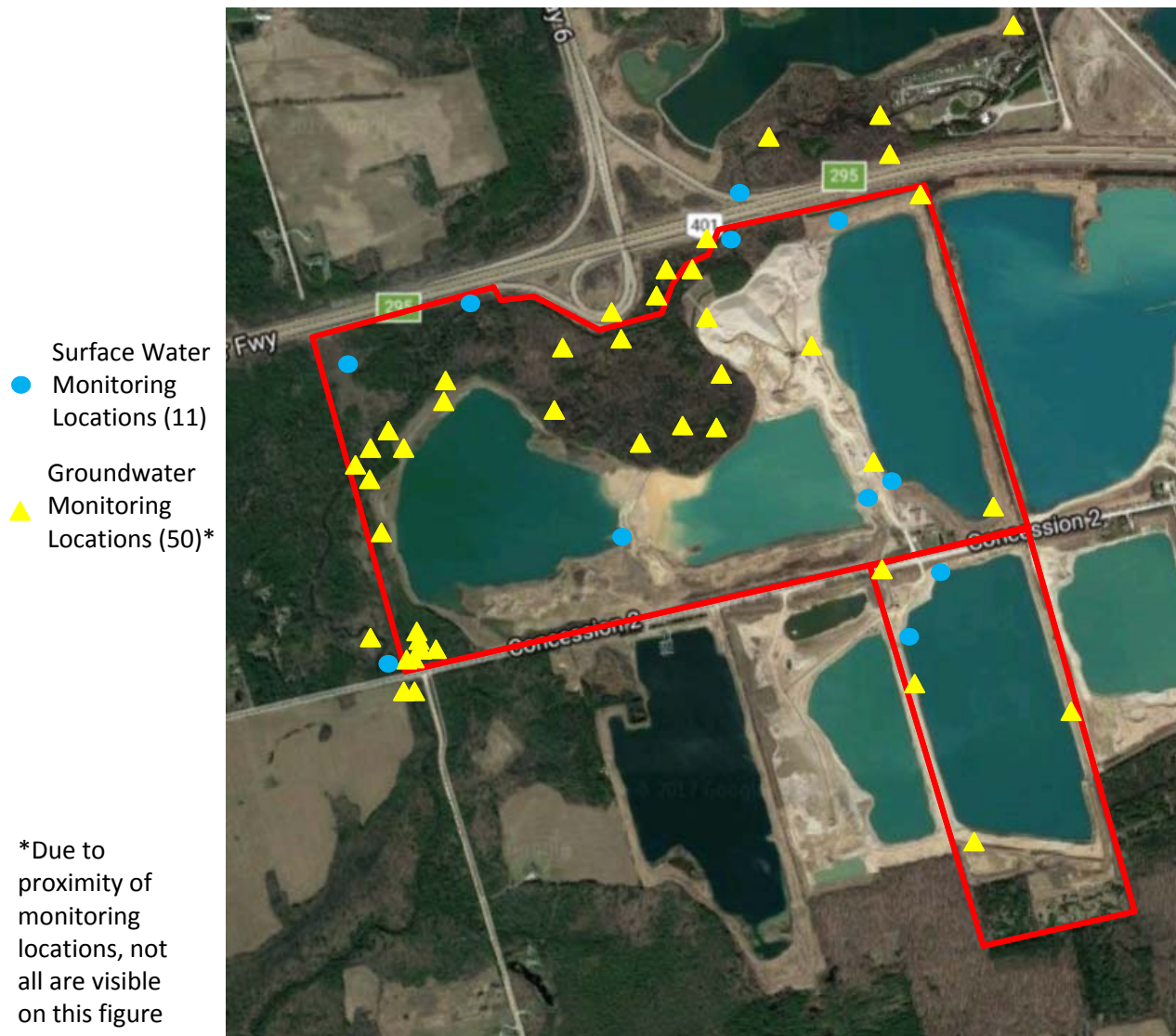
Location & History

Part of Lot 21-24, Concession 2 & Part of Lot 24, Concession 1
Township of Puslinch, County of Wellington



- Licensed Since 1991
- Licence Area: 188.6 ha
- Extraction Area: 111.7 ha
- Resource predominantly exhausted
- Surrounding area consists of other mineral aggregate operations

Comprehensive Monitoring Program



- Monitoring for:
 - Quantity
 - Quality
 - Temperature
- Annual Reports Submitted to:
 - Township
 - MNRF
 - DFO
 - GRCA

Comprehensive Monitoring Program

Monitoring Tasks	Conclusions
Surface Water (Hourly)	<ul style="list-style-type: none"> • No indication that aggregate extraction has affected stream flow in Mill Creek • Quality has remained stable over the past decade within historical ranges
Groundwater (Daily and Monthly)	<ul style="list-style-type: none"> • Groundwater quality has generally remained consistent • Groundwater discharge provides relatively constant base flow to Mill Creek resulting in cooling influence during summer months and warming influence during winter months • No impacts on surrounding wells
Fisheries (Monthly and Annually)	<ul style="list-style-type: none"> • No indication that aggregate extraction has affected local brown trout population • Trout populations have been consistent and/or increased since below-water extraction began in 1995

****Fish Habitat Video**

Rehabilitation Is On-Going to Enhance the Natural Environment

Wetland & Aquatic Habitat



Wetland & Aquatic Habitat



Snake Habitat



Turtle Habitat



Mill Creek Pit Proposed Phase 6



- Additional Area Proposed for Extraction: 6.53 ha

Applications Submitted September 2015

Applications Submitted	Technical Reports Submitted
<ul style="list-style-type: none">• Official Plan Amendment• Zoning By-law Amendment• Ministry of Natural Resources and Forestry Site Plan Amendment	<ul style="list-style-type: none">• Site Plans• Planning Justification Report• Natural Environment Assessment Report• Archaeological Assessment Report• Noise Impact Study• Hydrogeological Assessment Report

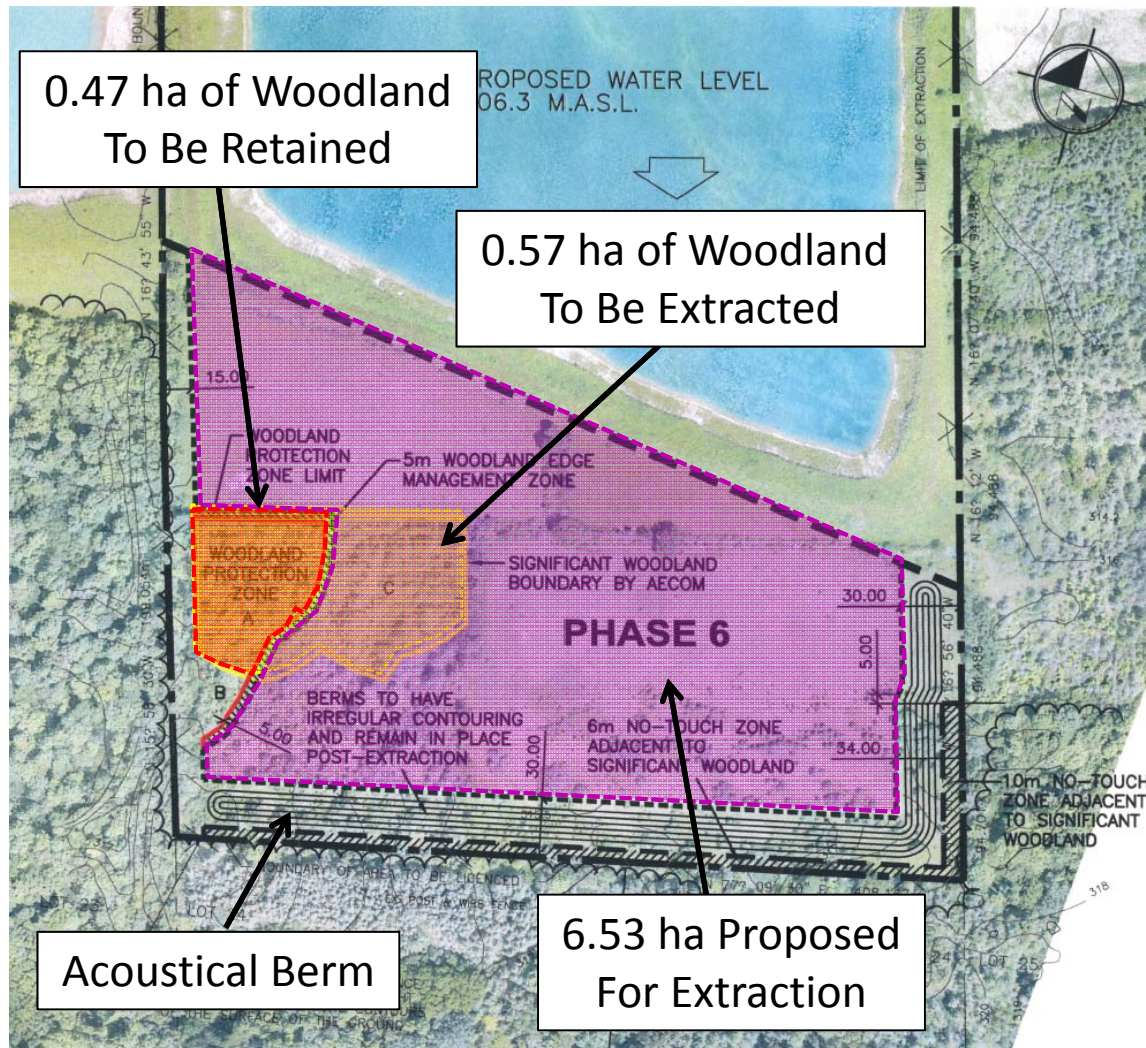
Agency Review & Comments Submitted



Application Updated to Address Agency Comments

- Proposed extraction area reduced from **6.8 ha to 6.53 ha**.
- Proposed woodland to be removed reduced from **1.04 ha to 0.57 ha**.
- Detailed Ecological Management Plan prepared for **9.08 ha**.
- Annual Ecological Monitoring Report to be prepared.
- Sign to be posted reminding drivers that local roads are also potential school bus routes.
- Comprehensive Water Monitoring Program to continue.
- Acoustical Berm and buffer in place to protect surrounding properties. MOECC noise limits will be met for adjacent properties.
- CRH will continue to pay Township annual peer review costs for monitoring reports.
- October 11th – CRH submitted updated Site Plans to agencies for review.

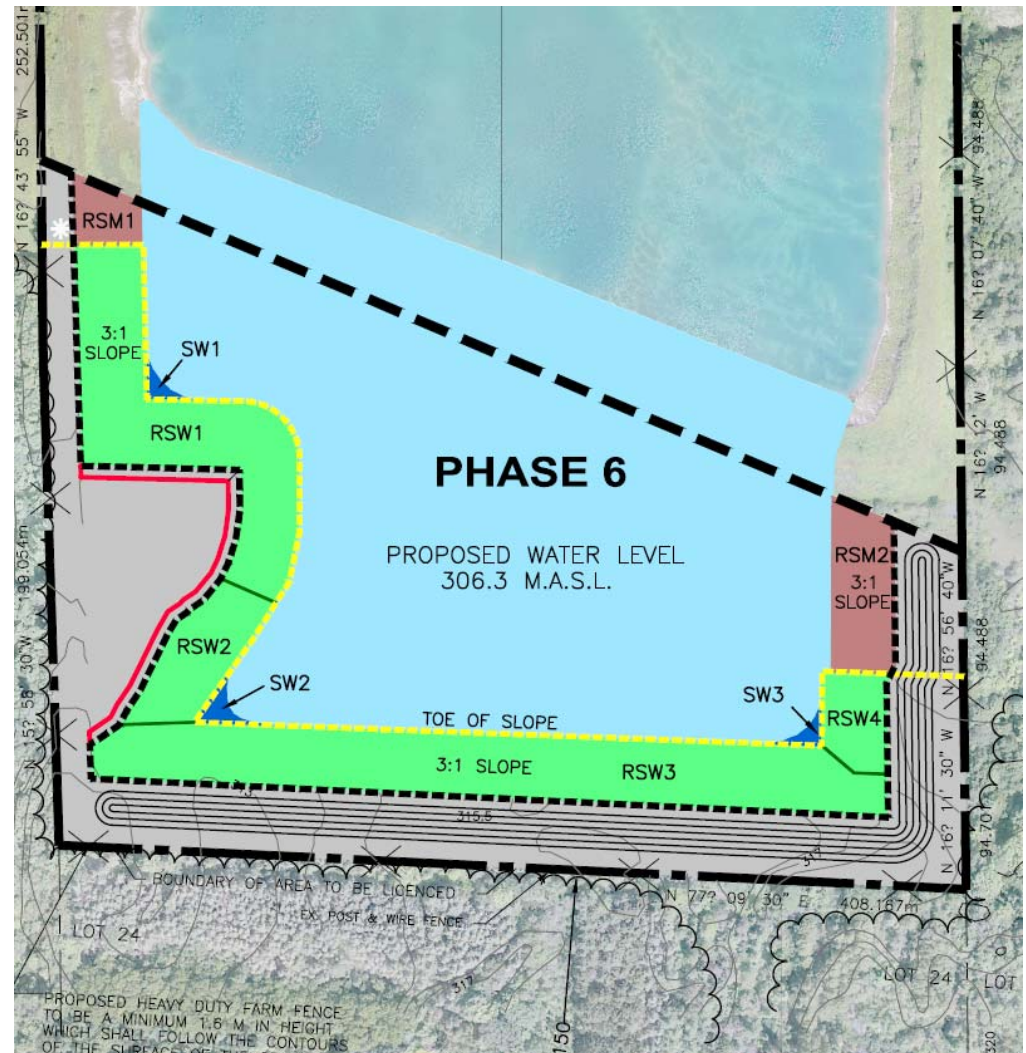
Revised Extraction Area



- **0.57 ha** of woodland is a white pine stand with few deciduous trees resulting in limited groundcover with thick patches of invasive Tatarian Honeysuckle.

Ecological Management Plan & Rehab

- **9.08 ha** of ecological enhancements increasing biodiversity.
- **2.98 ha** net increase in the size of the Significant Woodland.
- Proposal will result in an overall net gain to County's Greenlands system.
- An annual Ecological Monitoring Report will be prepared and provided to MNRF, GRCA, County and Township.

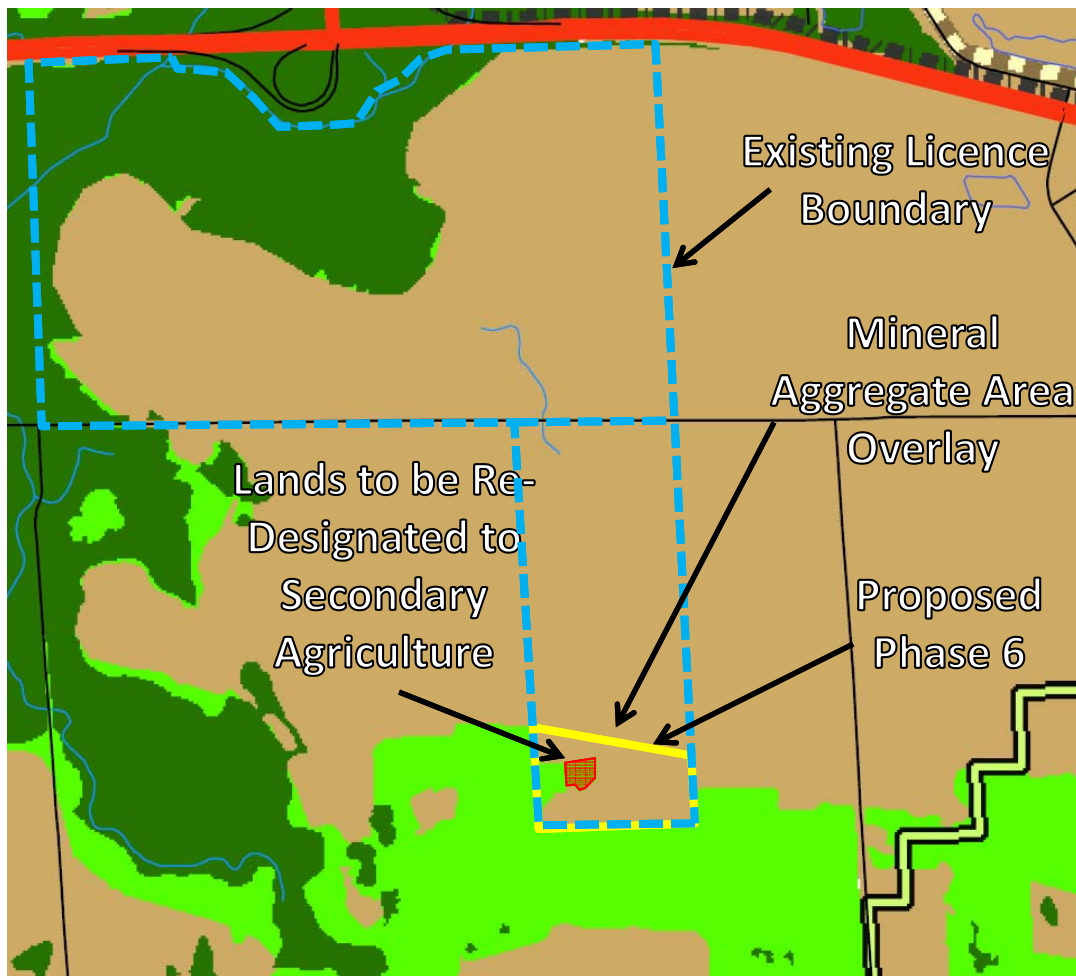


Agency Review of Revised Application



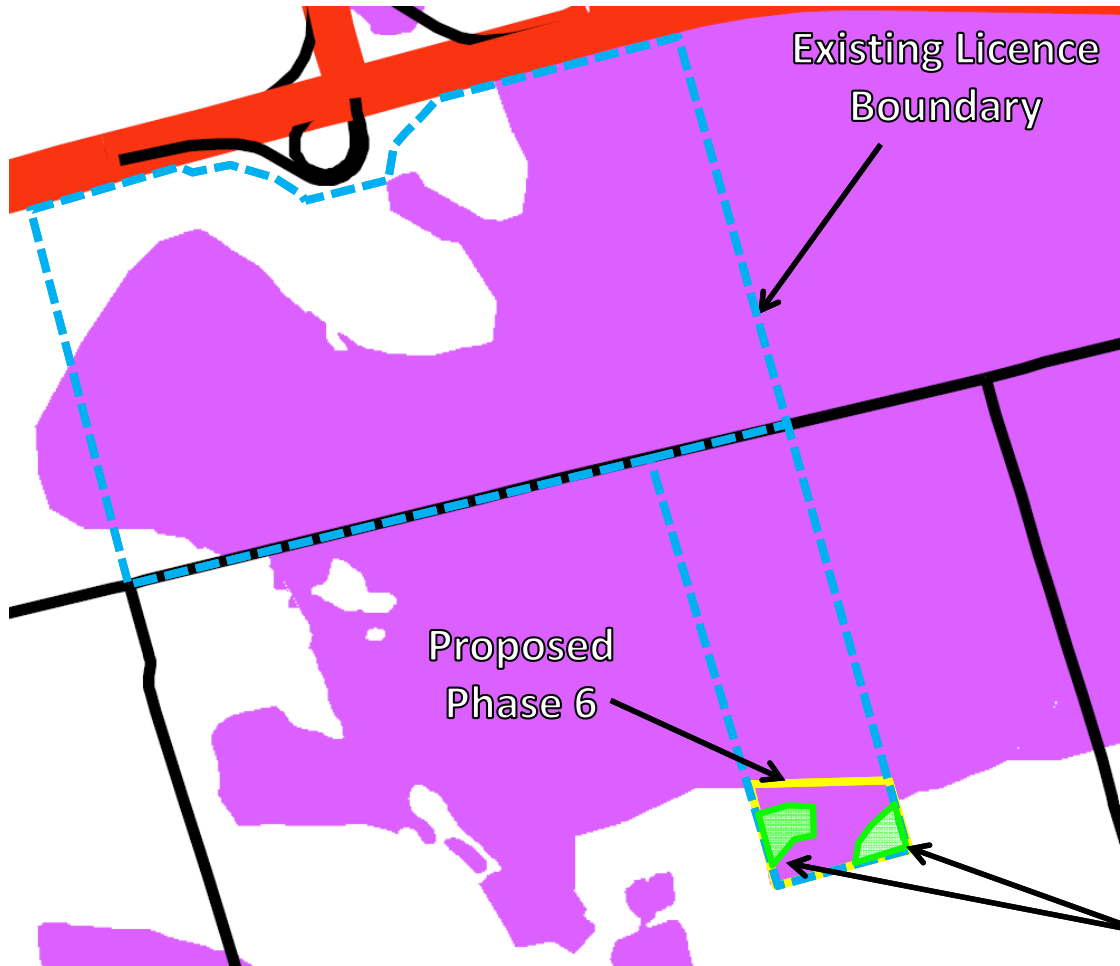
- GRCA - No further concerns.
- MNRF – No further concerns subject to review of updated Site Plans.
- MMAH - Original comments were similar to MNRF. CRH is following up to confirm they are satisfied since MNRF has no further concerns.
- Township Natural Environment Peer Review: No further concerns.
- Township Water Resources Peer Review: No further concerns.

Official Plan Amendment



- Phase 6 is identified as a “Licensed Aggregate Operation” on Appendix 2
- County has requested Amendment to Schedule A7
- Amendment includes re-designating portion of lands from ‘Greenlands’ to ‘Secondary Agriculture’ and overlay of ‘Mineral Aggregate Area’

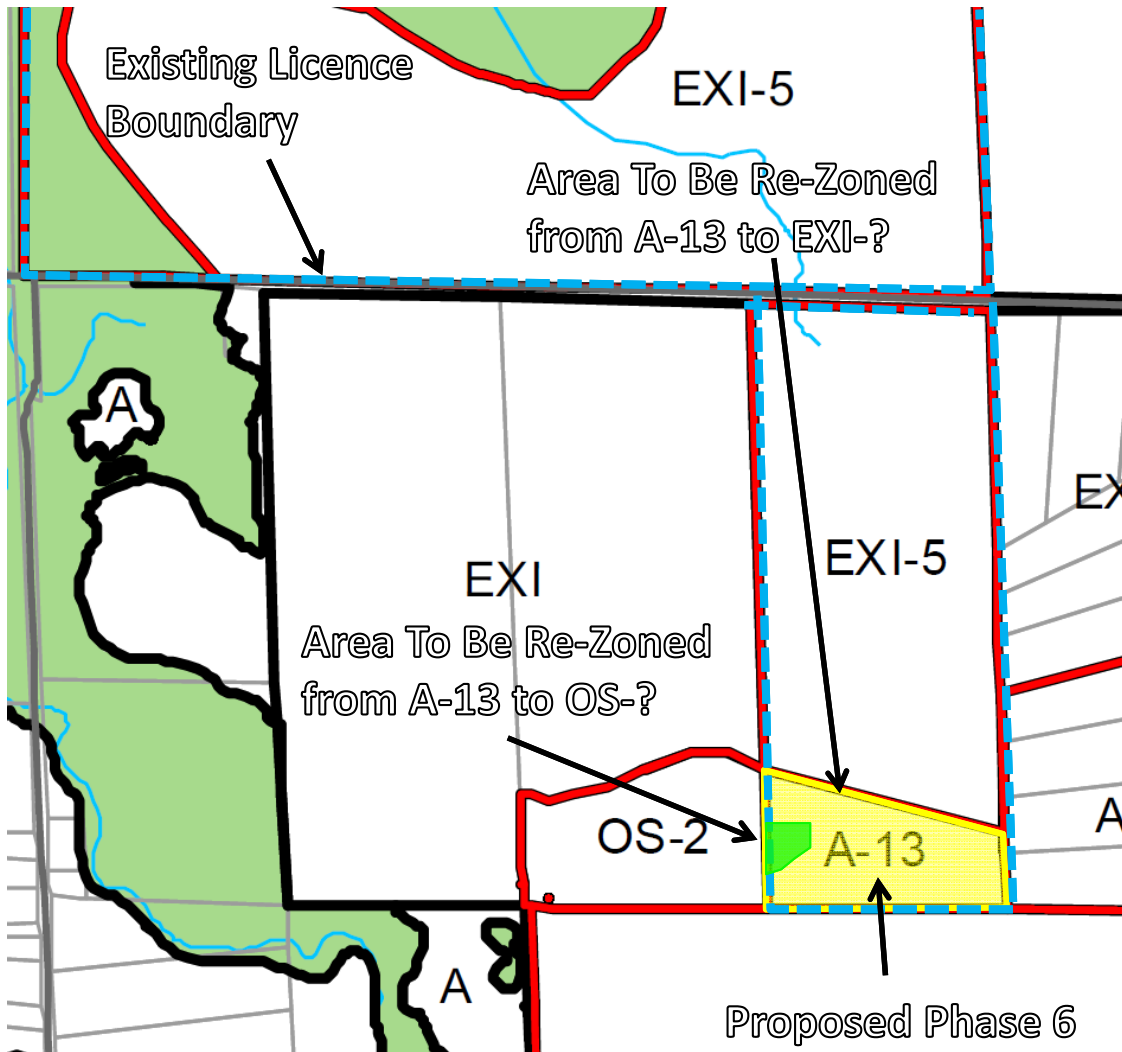
Official Plan Amendment



- County has requested Amendment to Schedule C
- Amendment to include remainder of property within 'Sand and Gravel Resources of Primary and Secondary Significance' Overlay

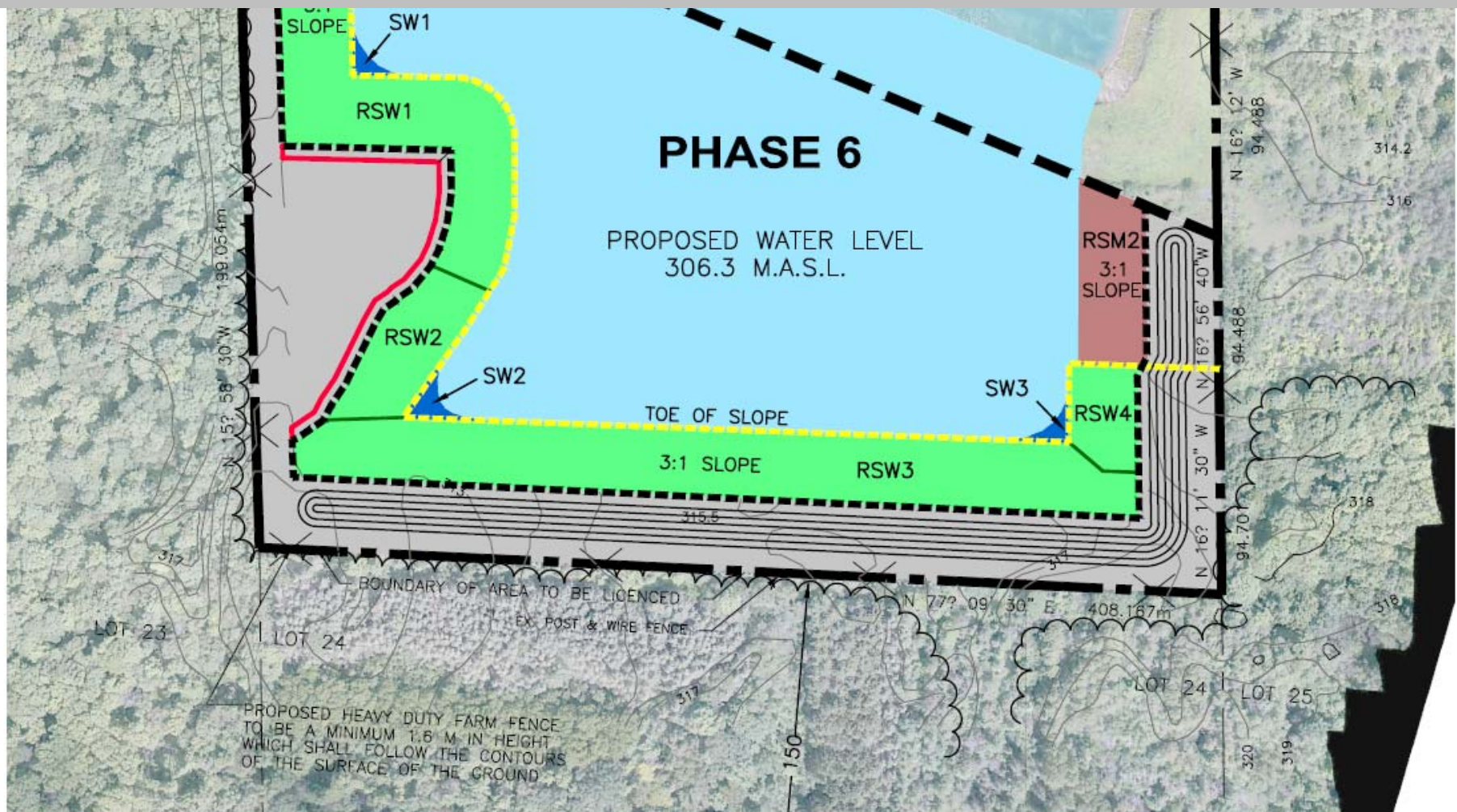
Lands to be added to
'Sand and Gravel
Resources of Primary and
Secondary Significance'

Zoning By-law Amendment



- Amendment to rezone a portion of the Phase 6 area 'Extractive Industrial' and 'Open Space' with site specific exceptions based on technical studies and agency review

QUESTIONS?



Review Information to date



CRH Canada Group Inc.
2300 Steeles Ave W, 4th floor
Concord, Ontario
L4K 5X6 Canada

T. 905-761-7100
F. 905-761-7200

www.crhcanada.com

October 11, 2017

Kelly Patzer, Development Coordinator
Township of Puslinch
7404 Wellington Road 34
Puslinch, ON
N0B 2J0

Dear Ms. Patzer:

Re: Mill Creek Monitoring Reports – Peer Review Costs

In response to the Planning Development Advisory Committee (PDAC) meeting minutes from September 12th, 2017, please accept this letter as CRH's acceptance of continuing to pay the Township's Peer Review costs to review the annual monitoring reports completed for the Mill Creek Pit.

In the event that CRH is successful in obtaining the approvals, CRH agrees to work with the Township to cover the costs of peer reviews required for additional monitoring reports for the Mill Creek Pit.

If you have any further questions or require any other information, please do not hesitate to contact me.

Yours truly,

A handwritten signature in purple ink, appearing to read "M. Topalovic", with a horizontal line extending to the right.

Maria Topalovic
Environment Manager
CRH Canada Group Inc.
DL : (905) 532-3232
M : (647) 924-5498
E: maria.topalovic@ca.crh.com

cc. *Kevin Mitchell, CRH Canada Group Inc.*
Brian Zeman, MHBC Planning
Stefanie Pratt, MHBC Planning



Harden Environmental Services Ltd.
4622 Nassagaweya-Puslinch Townline Road
R.R. 1, Moffat, Ontario, L0P 1J0
Phone: (519) 826-0099 Fax: (519) 826-9099

Groundwater Studies

Geochemistry

Phase I / II

Regional Flow Studies

Contaminant Investigations

OMB Hearings

Water Quality Sampling

Monitoring

Groundwater Protection
Studies

Groundwater Modeling

Groundwater Mapping

Permits to Take Water

Environmental Compliance
Approvals

Our File: 0004

September 18, 2017

Township of Puslinch
7404 Wellington Road 34
Guelph, ON, N1H 6H9

Attention: Ms. Kelly Patzer
Development Coordinator

Dear Ms. Patzer;

Re: Mill Creek Pit, License #5738
Phase 2 Amendment

We are satisfied with the responses to our December 1, 2015 comments.
We have no additional concerns.

Sincerely,

Harden Environmental Services Ltd.

Stan Denhoed, M.Sc., P.Eng.
Senior Hydrogeologist



File: 3531
By: Email

June 30, 2017

Township of Puslinch
7404 Wellington Road 34
Guelph, Ontario
N1H 6H9

Attention: Ms. Kelly Patzer
Development Coordinator

Dear: Ms. Patzer

**Re: Natural Environment Review of the Proposed Mill Creek Pit Amendment in Part
Lot 24 Concession 1 Township of Puslinch, D14/UNI**

A requested, I have reviewed the additional documentation submitted by MHBC in support of the proposed extension to the existing extraction area (ie. Phase 6) at Dufferin Aggregates Mill Creek Pit. This documentation included responses to the concerns raised in my December 22, 2015 comments on potential impacts to the natural environment. The response documents were prepared by Goodban Ecological Consulting (GEC) and Gray Owl Environmental who also submitted a Bat Acoustical Survey of the Phase 6 White Pine Coniferous Forest, an Ecological Management Plan & Rehabilitation Plan and related photographs, maps and plans. Dufferin Aggregates previously proposed to remove the entire white pine stand found on this property, which has been identified as part of the Greenlands System in the Wellington County Official Plan, as well as the adjacent successional woodland, except for those portions found in the standard 15m setback from the property boundary. Dufferin Aggregates is now only proposing to remove the eastern portion of this significant woodland which comprises 0.57 ha and will retain the western 0.47ha which lies adjacent to the high quality upland hardwood forest. They are now also proposing a variety of ecological enhancement measures as part of their site rehabilitation. My comments on this additional information and the revised development proposal are presented as follows in the same sequence as my original correspondence.

1. A detailed discussion is provided on the use of the white pine stand by area-sensitive breeding birds. I agree with the conclusion that no area-sensitive breeding birds will be affected by the removal of the eastern portion of this stand (ie. 0.57ha). Hence, this area does not qualify as Significant Wildlife Habitat (SWH) for area-sensitive breeding birds.
2. With respect to bird species of Special Concern, I agree that the removal of the eastern portion of the white pine stand will not affect the nesting habitat of Eastern Wood Pewee or Wood Thrush, both of which are more dependent upon the adjacent deciduous forest for breeding purposes.

3. Subsequent to my 2015 correspondence the province downgraded the status of milksnake from Special Concern to Not at Risk. Consequently, the habitat for milksnake no longer qualifies as SWH. Snake hibernacula can, however, qualify as SWH but only one milksnake and one eastern gartersnake were found in this area after much fieldwork. It therefore seems very unlikely that the rock pile located in an open area immediately north of the white pine stand provides snake hibernacula. Furthermore, as pointed out by GEC and Gray Owl, there is an extensive rock pile in the western portion of the white pine stand that will be retained and this rock pile has more potential to provide habitat for overwintering snakes than the rock pile in the open area that was recently created from digging a test pit. In light of these considerations, I have no concern for the protection of snake habitat or feel there is any need to create additional habitat features as has been suggested by GEC.

4. A very detailed and thorough survey of bat utilization in the white pine stand was carried out. This survey concluded there was no evidence of any maternal roosts in the mature white pines. In any event the majority of the mature white pines will now be retained and tree removal in the western portion of this stand is only proposed to occur from November 1st to April 1st when there will be no bat activity at this site. I am therefore satisfied that these mitigation measures will effectively protect potential woodland habitat for endangered bat species.

5. As previously concluded habitat conditions for monarch butterfly and snapping turtle will not be affected by the proposed mining operations. GEC has nonetheless recommended the creation of several pollination strips and turtle nesting areas as part of the Ecological Management Plan & Rehabilitation Plan. Although these habitat enhancements are unnecessary compensation features in my opinion, they will help to increase habitat diversity on the rural landscape.

6. With respect to the proposed removal of Significant Woodland, I am satisfied that the best portion of the white pine stand will be retained within the 0.47ha adjacent to the deciduous forest. This area contains the majority of the mature pines with native hardwoods intermingled and predominantly native groundflora, as well as some very large piles of field stones. In contrast, the 0.57 eastern section that is proposed for removal contains mostly dense immature pines, few deciduous trees, a dense understory of highly invasive tartarian honeysuckle and common buckthorn and sparse groundflora that is mostly characterized by invasive garlic mustard. Given these ecological conditions I have no concerns with the removal of the western portion of the white pine stand. Furthermore, the proposed Ecological Management Plan & Rehabilitation Plan will result in a 2.98ha increase in the future size of the Significant Woodland area. The tree species proposed for reforestation and the density of planting seem appropriate for this site. These reforestation details should be included on the Site Plans along with details on other proposed ecological enhancements. I recommend that the proposed ecological monitoring program should extend for at least 5 years after the trees are planted or until the trees are "free to grow" (ie. they extend above the height of competing grass and herbs). Furthermore, replanting must be carried out if tree survival falls below 40% of the 2,500 seedlings/ha that are proposed for planting as there must be over 1,000 trees/ha in this area for it to qualify as woodland under the County's Tree Conservation By-law. In this regard, I suggest that a higher proportion of conifers should be incorporated into the species mix since their survival and growth is typically much better than hardwoods when planted in old field sites.

In summary, the natural environment concerns raised in my previous correspondence have been effectively addressed by the comprehensive and well written documentation submitted in support of this application. Please feel free to contact me if further clarification is needed on these matters.

Yours truly,

GWS Ecological & Forestry Services Inc.

A handwritten signature in black ink, reading "Greg Scheifele". The signature is written in a cursive, flowing style.

Greg W. Scheifele, M. A., R.P.F.

Principal Ecologist/Forester

CC: Sarah Wilhelm, County of Wellington
Aldo Salis, County of Wellington
Nathan Garland, Grand River Conservation Authority
Stan Denhoed, Harden Environmental



June 7th, 2017

County of Wellington
74 Woolwich Street
Guelph, ON N1H 3T9
Attn: Gary Cousins, Director of Planning and Development

Dear Mr. Cousins,

**Re: OP-2015-04
Dufferin Aggregates – Mill Creek Pit
Major Site Plan Amendment Application under the Aggregate Resources Act
7115 Concession 2, Township of Puslinch**

The Grand River Conservation Authority (GRCA) has now had the opportunity to review the Ecological Management Plan and Rehabilitation Plan (dated April 2017, prepared by Goodban Ecological Consulting Inc.) submitted in support of the Official Plan Amendment. The intent of the application is to re-designate the subject lands from the Agricultural Zone to the Extractive Zone.

Our office has no objections to the proposed Official Plan Amendment based on the site plan provided by J.H. Cohoon Engineering Limited dated March 15th, 2017.

We note that the proposed extraction limit has now been revised to limit extraction within the woodland area and additional lands and details have been added with respect to reforestation and woodland edge management.

Should you have any questions regarding this letter, please contact me at 519-621-2763 ext. 2236.

Yours truly,

A handwritten signature in black ink, appearing to read "Nathan Garland", is written over a horizontal line.

Nathan Garland
Resource Planner
Grand River Conservation Authority

c.c. Brian Zeman, MHBC (email)
Maria Topolovic, Dufferin Aggregates (email)
Sarah Wilhelm/Aldo Salis, Wellington County (email)
Seana Richardson, Guelph District Office, MNRF (email)



December 9, 2015
Our File: 115006-19

Township of Puslinch
RR 3, 7404 Wellington Road 34
Guelph, ON N1H 6H9

Attention: Ms. Kelly Patzer
Development Coordinator

Re: D14/UNI (University of Guelph/Dufferin
Aggregates Mill Creek Pit)
7115 Concession 2 Road, Rear Lot 24,
Concession 1, Township of Puslinch

Dear Ms. Patzer,

We have reviewed the application in support Zoning By-Law Amendment for the Dufferin Aggregates Mill Creek Pit expansion and are pleased to provide you with comments for further consideration by the applicant.

Documents submitted and reviewed include:

- Zoning By-law Amendment Application Form, dated September 10, 2015
- Drawings 1 through 7, Mill Creek Aggregates, Revision 13 – May 2005
- Planning Justification Report, GSP Group, dated August 2015
- Natural Environment Assessment Report, AECOM, dated August 2015
- Archaeological Assessment Report, Golder & Associated, dated June 3, 2014
- Noise Impact Study, Aerocoustics Engineering Limited, dated September 3, 2015
- Hydrogeological Assessment Report, Hims GeoEnvironmental Ltd, dated September 4, 2015

Based on our review of the documents listed above, we have no comments regarding the proposed zone change.

If you have any questions or require additional information, please do not hesitate to contact us

Yours truly,

GM BLUEPLAN ENGINEERING LIMITED

Per:

A handwritten signature in blue ink, appearing to read 'Steve Conway'.

Steve Conway, C.E.T., rcsi, PMP
Senior Project Manager, Partner
SC/mh



UPPER GRAND DISTRICT SCHOOL BOARD
500 Victoria Road North, Guelph, Ontario N1E 6K2
Phone: (519) 822-4420 Fax: (519) 822-2134

Martha C. Rogers
Director of Education

September 29, 2017

PLN: 17-80
File Code: R14
Sent by: mail & email

Karen Landry CAO/Clerk
Township of Puslinch
7404 Wellington Road 34
Puslinch, Ontario N0B 2J0
admin@puslinch.ca

Dear Ms. Landry;

Re: D14/UNI - Township of Puslinch
OP-2015-04 - County of Wellington
Rear lot 24, Concession 1 - 7115 Concession 2, Puslinch

Planning staff at the Upper Grand District School Board has received and reviewed the above noted application for a Zoning By-law Amendment to permit extraction within a 6.53 hectare southern portion of the subject lands. Related Official Plan Amendment OP-2015-04 is to allow for the expansion of an aggregate extraction operation.

Be advised that the board has no objection to the proposed applications subject to the following condition:

- That the applicant be required to erect notice signs at the pit entrances/exits to remind drivers to proceed with caution as local roads are also potential school bus routes.

Should you require additional information, please feel free to contact me.

Sincerely,

Emily Bumbaco
Planning Technician
emily.bumbaco@ugdsb.on.ca

cc – Sarah Wilhelm, County of Wellington *(by email)*
Kelly Patzer, Township of Puslinch *(by email)*

From: [Jason Benn](#)
To: [Kelly Patzer](#)
Cc: [Steve Goode](#)
Subject: D14/UNI - University of Guelph/ Dufferin Aggregates Mill Creek Pit
Date: November-03-15 1:57:01 PM

Kelly,

I have perused over the documents provided for D14/UNI. I see no concerns from a fire prospective at this time. In the future if there are other documents provided on this particular project, I would be happy to have a look.

Yours in fire safety

Jason Benn CMM, JFIS

Chief Fire Prevention Officer
Puslinch Fire & Rescue Services
7404 Wellington Rd. 34
Guelph, ON N1H 6H9
Tel: 519-821-3010
Fax: 519-936-6421
Email: jbenn@puslinch.ca
Prevention Begins With You!

July 13, 2017

Maria Topalovic
Environment Manager
Dufferin Aggregates
Division of CRH Canada Group Inc.
2300 Steeles Avenue West, 4th Floor
Concord, Ontario L4K 5X6

**Re: Application for a Major Site Plan Amendment to Increase the Area to be Extracted
University of Guelph- DFA Mill Creek Pit, Licence 5738
Part Lots 21, 22, 23, Concession 2 and Part Lot 24, Concession 1
Township of Puslinch, County of Wellington**

Dear Ms. Topalovic,

The Ministry of Natural Resources and Forestry (MNRF) Guelph District Office can confirm receipt of the updated submission to the application for a Major Site Plan Amendment to expand the limit of extraction (including below water extraction) for the Mill Creek Pit (licence #5738) - Category 1, Class A Licence pursuant to the *Aggregate Resources Act* (ARA). The Ministry received the following documents in the resubmission package, dated May 4, 2017:

- MHBC Technical Memorandum, dated May 4, 2017;
- Table 1 – “Responses to MNRF comments dated February 25, 2016”;
- Table 2 – “Responses to Township of Puslinch comments (Greg Scheifele, GWS Ecological & Forestry Services Inc.) dated December 22, 2015”;
- Figure 1 – Site Location
- Figure 2 – Revised Extraction Footprint;
- Figure 3 – Ecological Management Plan;
- Figure 4 – Rehabilitation Plan;
- Figure 5 – Location of 2014 Blue Spotted Salamander;
- Figure 6 – Location of Pool A;
- Figure 7 – 1945 -2006 Historic Air Photos;
- Appendix A – Photographs of the Significant Woodland and buffers;
- Bat Acoustical Survey;
- Proposed Ecological Management Plan and Rehabilitation Plan; and
- Email from MHBC – Mill Creek Phase 6 – Significant Wildlife Habitat and Bat Maternity Roosts dated July 12, 2017.

Ministry staff has reviewed the technical reports and related figures and tables, and offer the following comments for consideration.

MNRF Comments

The Ministry's most recent objection letter was dated February 25, 2016. The letter provided questions and comments related to Significant Wildlife Habitat; Species at Risk bats; and Significant Woodland removal. It is clear to MNRF staff through the most recent submission that most of these issues were addressed. MNRF staff had a few additional questions, which were addressed in a meeting with the project team on July 12, 2017.

At this time, MNRF staff is in support of the information provided to-date for the proposed amendment, and has no further concerns at this time. MNRF sign-off on the proposed amendment is pending staff review and acceptance of updated site plans to reflect the recent reports.

Closing

In light of the above comments, the Ministry continues to object to the application for a Major Site Plan Amendment to expand the limit of extraction (including below water extraction) for the Mill Creek Pit (Licence #5738) at this time.

The Ministry would appreciate the submission of updated site plans to reflect the recently submitted reports. Ministry staff would be pleased to discuss any of the above issues further with the proponent or consultant(s).

Please contact the undersigned if you have questions or if clarification is required.

Regards,



Tara McKenna, District Planner
Ministry of Natural Resources and Forestry, Guelph District
1 Stone Road West
Guelph, ON, N1G 4Y2
Phone: (519) 826-4912
Email: tara.mckenna@ontario.ca

cc Ian Thornton, MNRF
Melinda Thompson, MNRF
Seana Richardson, MNRF
Kevin Mitchell, Dufferin Aggregates
Brian Zeman, MHBC

Ministry of
Municipal Affairs
and Housing

Municipal Services Office -
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APR 08 2016

Township of Puslinch

March 30, 2015

Mr. Gary Cousins, Director
Planning and Development Department
Administration Centre
74 Woolwich Street
Guelph ON N1H 3T9

Re: County of Wellington Official Plan Amendment
County File No. OP-2015-04
Dufferin Aggregates – Mill Creek Pit
Part Lot 24, Concession 1, Puslinch Township
Ministry of Municipal Affairs and Housing and
Ministry of Natural Resources and Forestry comments

CLERK'S DEPARTMENT	
TO	Kelly P.
Copy	
Please Handle	
For Your Information	
Council Agenda	
Title	

Dear Mr. Cousins,

The Ministry of Municipal Affairs and Housing (MMAH) has reviewed the above-noted application, as per the mandate of this Ministry with respect to provincial interest in land use planning and development. The application was also circulated to the Ministry of Natural Resources and Forestry (MNRF) through the One Window Provincial Planning Service for their review. The following comments are based on Provincial staff's review of the application and associated documents, and include considerations with respect to potential for endangered species and significant wildlife habitat as specified in the Level 1 & 2 Natural Environment Assessment report, August 2015, prepared by AECOM.

The subject lands, known as the Mill Creek Pit, are legally described as Part of Lots 21, 22, 23, and 24, Concession 2 and Part Lot 24, Concession 1 in the Township of Puslinch. The application, if approved, would redesignate a 42.1 hectare part of these lands on the south side of Concession Road 2 – described as Part Lot 24, Concession 1 – to facilitate a 6.8 hectare expansion of an aggregate extraction operation.

Level 1 & 2 Natural Environment Assessment, August 2015, AECOM

MNRF staff note that Appendix C of the Level 1 & 2 Natural Environment Assessment report states that Milksnake was not found on site, but Table 4 indicates that Milksnake was found on site. Additionally, Appendix C indicates that Wood Thrush was not found during the field investigations, but section 4.2 indicates that Wood Thrush was found within 120 metres of the site. Both Milksnake and Wood Thrush are listed as Special Concern under the *Endangered Species Act* (ESA).

The Provincial Policy Statement, 2014 (PPS) provides policy direction on matters of provincial interest related to land use planning and development. Section 3 of the *Planning Act* requires that planning decisions must be consistent with the PPS. Policy 2.1.7 of the PPS prohibits development and site alteration in habitat of endangered species, except in accordance with provincial and federal requirements. Provincial staff would appreciate clarification on the findings for these species.

Table 4 of the report notes that Blue Spotted Salamanders were found during the 2014 cover board surveys. However, Table 1.2.2 notes that breeding pools were not observed within the coniferous forest, but that they may exist within the deciduous forests adjacent to the site. MNRF staff note that animal movement corridors may represent Significant Wildlife Habitat (SWH).

PPS policy 2.1.5 d) prohibits development and site alteration in significant wildlife habitat unless it can be demonstrated that there will be no negative impacts on the natural features or their ecological functions. Provincial staff recommend that the applicant clarify the approximate locations of breeding ponds for the Blue Spotted Salamanders in relation to the location that they were found under the cover boards. This information will be important to determine if the proposed extraction activities will negatively impact a potentially significant amphibian movement corridor for the species.

MNRF staff note that Little Brown Myotis and Northern Myotis have been listed in Table 1.2.2 as species that could provide for potential SWH. Little Brown Myotis and Northern Myotis are also listed as Endangered under the ESA, and both species receive individual and habitat protection under the Act. Provincial staff recommend that the applicant revise the report as necessary to ensure these species are appropriately categorized.

It is understood that the applicant completed a bat habitat assessment on May 27, 2015, which focused on the density of cavity trees within the significant woodland. Based on the results, the project team determined that the significant woodland represents SWH for Bat Maternity Colonies within the woodland. In order to confirm presence or absence of Species at Risk (SAR) Bats, it is recommended that the project team undertake acoustical monitoring to identify the species of bats making use of the woodland proposed for removal. This information will help to identify the potential implications of the ESA if SAR Bats are present. MNRF Guelph District can provide the recommended survey protocols for bats upon request.

Provincial staff understand that, as part of the amendment, the proposal is to remove a 1.14 hectare part of significant woodland – representing approximately 0.82% of the larger significant woodland. Section 6.2.2.2 of the report notes that the removal of this woodlot “will result in the temporary loss of associated breeding and foraging habitat for resident wildlife species”, as the compensation planting “will result in the provision of suitable breeding and foraging habitat for resident wildlife in the long-term.”

PPS policy 2.1.5 b) prohibits development and site alteration in significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. To ensure consistency with this policy, the applicant should demonstrate that there will be no negative impacts to the significant woodland and its ecological functions (e.g. interior habitat and edge effects), and how the health, diversity, and size of the feature will be maintained or restored, and to the extent possible improved. The relevant sections of the report, including the

Environmental Management Plan, needs to be reviewed comprehensively and revised to demonstrate in detail how the relevant policy tests for the feature (e.g. PPS policies in Section 2.1) have been, or will be achieved. This should also include, in detail, the specific silviculture approaches and rehabilitation timelines required to support these policies.

Thank you for the opportunity to review and comment on this application. Please send the Notice of Decision for this application to my attention.

Please contact me if you have any questions.

Regards,

A handwritten signature in black ink, reading "Tyler Shantz". The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

Tyler Shantz, BES
Planner

Municipal Services Office – Western
Ministry of Municipal Affairs and Housing
659 Exeter Road, 2nd floor
London, ON N6E 1L3
519 873-4695
Tyler.Shantz@Ontario.ca

Cc: Karen Landry, Township of Puslinch
Maria Topalovic, Dufferin Aggregates
Tara McKenna, MNFR (email only)
Erick Boyd, MMAH (email only)

Ministry of Transportation

Engineering Office
Corridor Management Section
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March 18, 2016

County of Wellington
Planning and Development Department
74 Woolwich Street
Guelph, ON
N1H 3T9

Attn: Mr. Gary Cousins, RPP, MCIP
Director of Planning and Development

RE: Application: OP-2015-04
Applicant: University of Guelph – Dufferin Aggregates (Mill Creek Pit)
Submission No.: D11/GSB
Part Lots 21, 22, 23 and 24 Concession 2 and Part Lot 24, Concession 1
Wellington County
Township of Puslinch - Highway 401

The Ministry of Transportation (MTO) has completed its review of the above-noted amendment in accordance with the requirements of our highway access control policies and the Public Transportation and Highway Improvement Act. The following outlines our comments.

MTO has no issues with the proposed amendment which is specific to lands on the south side of Township Road 2 (Part Lot 24, Concession 1).

The Owner should be made aware of the following which affects "Other Lands Owned by the Applicant"

The Ministry of Transportation received approval in January 2009 for an Individual Environmental Assessment for a new Highway 6 corridor between Freelon and Guelph. Following that, MTO received EA clearance in December 2013 for improvements to Highway 401 under GWP 8-00-00. The preferred plan includes the following:

- A new 5 km, 4-lane alignment, west of Morriston, that connects Highway 401 in the north with existing Highway 6 just south of Maddaugh Road;
- Widening of Highway 401 to 10 lanes HOV with continuous auxiliary lanes between Highway 6 North and Highway 6 South;
- Construction of 3 new interchanges and improvements to the Highway 401 and Highway 6 (Hanlon Expressway) interchange;
- Three new overpass structures and eight underpass structures; and
- Construction of a local connection road.

The proposed highway expansion adjacent to the subject property will increase the current 6 lanes to 12 lanes, and will require property to accommodate the improvements.

The project is listed in the Southern Highways Program 2014 to 2018 under "Planning for the Future.", however; timing of construction has not been determined at this time. The new route has been designated and property is being acquired in hardship cases, or on a willing seller-willing buyer basis.

I have attached the preferred plan for your file, which identifies the impact to the lands.

We would appreciate receiving a copy of the decision for our files.

Should you have any questions, please contact me.

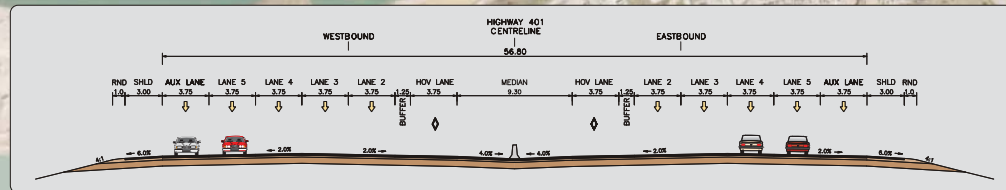
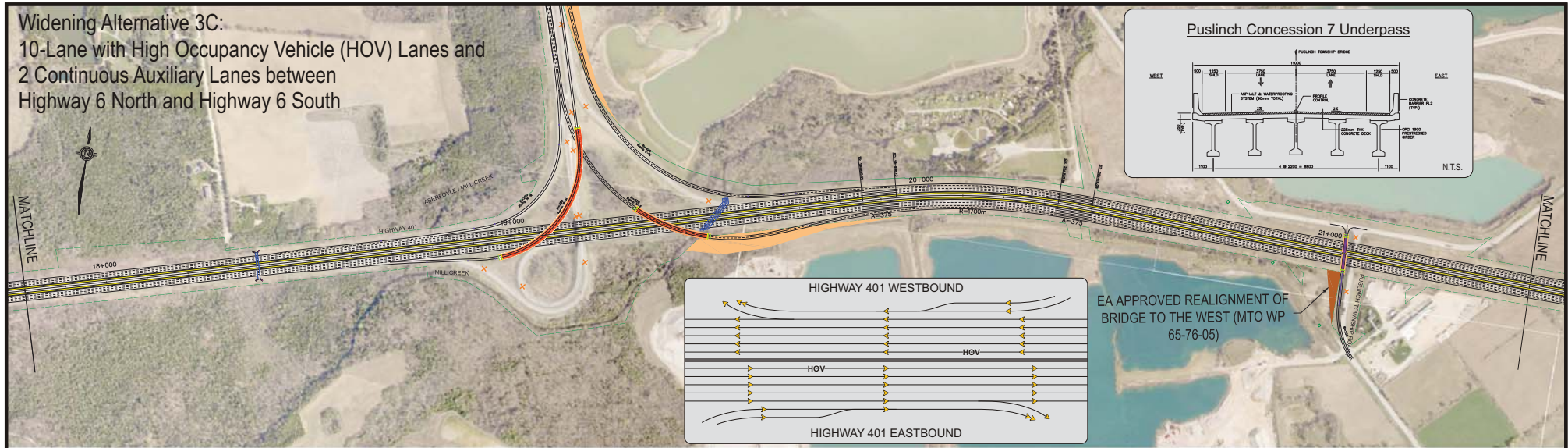
Regards,

A handwritten signature in blue ink, appearing to read "John Morrisey".

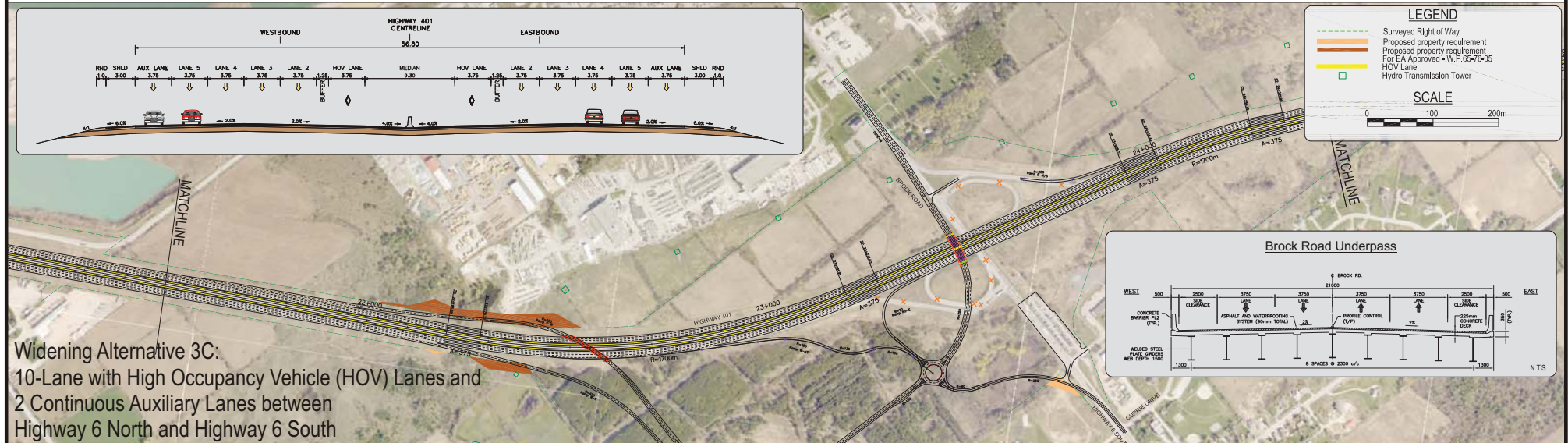
John Morrisey
Corridor Management Planner
Corridor Management Section
West Region, London

- c. Tracy Pastor, Corridor Management Officer – Corridor Management Section
Karen Landry, CAO/Clerk – Township of Puslinch
Maria Topalovic, Dufferin Aggregates

Widening Alternative 3C:
10-Lane with High Occupancy Vehicle (HOV) Lanes and
2 Continuous Auxiliary Lanes between
Highway 6 North and Highway 6 South



Widening Alternative 3C:
10-Lane with High Occupancy Vehicle (HOV) Lanes and
2 Continuous Auxiliary Lanes between
Highway 6 North and Highway 6 South



GWP 8-00-00: Highway 401
from 1.0 km west of Hespeler Road easterly to the Wellington County/Halton Region Boundary
Preliminary Design and Environmental Assessment Study

Preferred Highway 401 Widening
and Interchange Plan - Section 3

EXHIBIT
7-1c