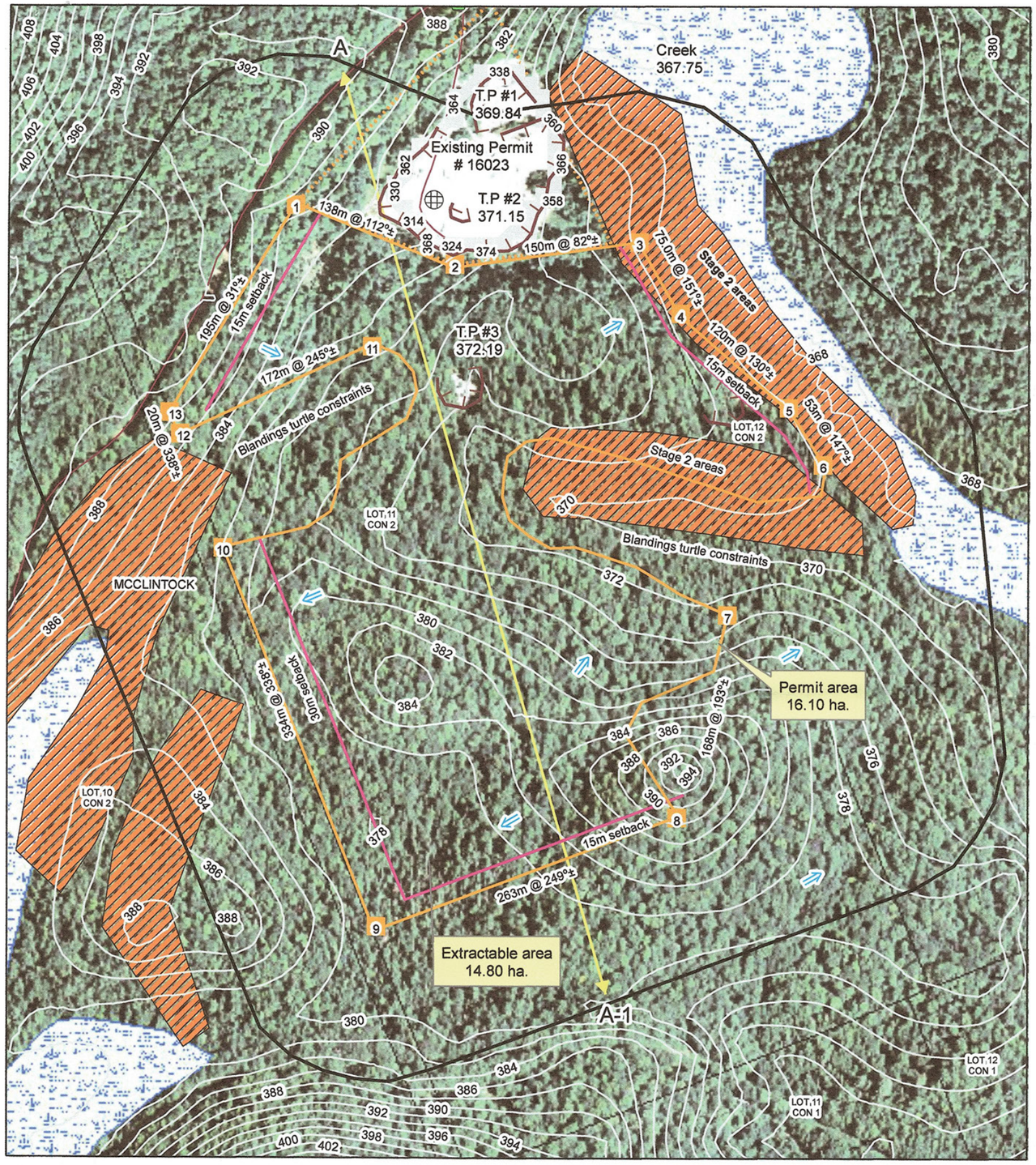
Bacher Construction Limited McClintock Quarry / Pit



1:3,500

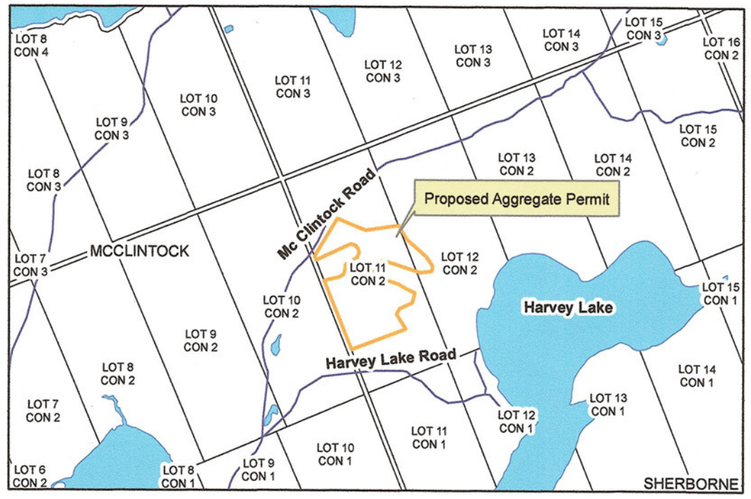
0 100 200 400 Meters

N

Legend

- 120m Information Area
- Permit Boundary
- Setback
- Existing excavation
- contours 2m
- existing pit boundary
- Corner posts
- Benchmark
- Cross Section Line A-A1
- Existing scrap location
- Natural Water Drainage
- roads
- Archeological stage 2 areas
- Wetlands
- Lots/ Concessions

X	Y	Post
668401	5018182	1
668530	5018134	2
668679	5018152	3
668712	5018094	4
668800	5018018	5
668828	5017972	6
668751	5017851	7
668711	5017686	8
668468	5017598	9
668343	5017905	10
668463	5018067	11
668308	5017997	12
668300	5018014	13

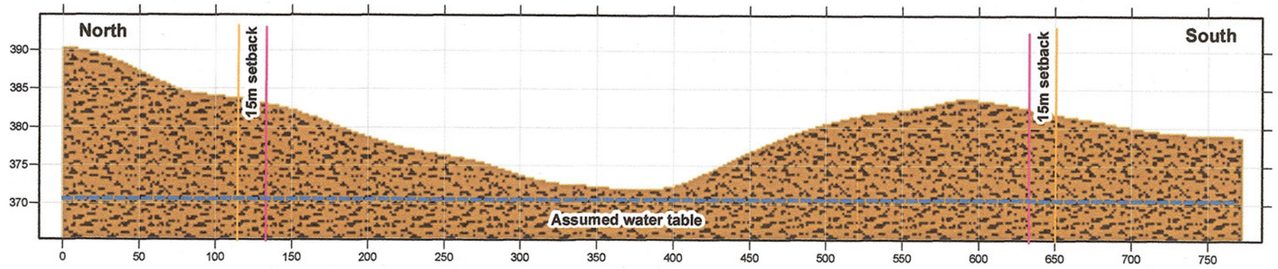


1:24,000

AMENDMENTS/ VARIATIONS			
NO.	DESCRIPTION	DATE Approved	Approved by

Cross Section Scales
Horizontal 1:3500
Vertical 1:700
Vertical exaggeration 5x

Cross Section Line A-A1



Applicant:
John Bacher Construction Limited
5054 Muskoka Road Hwy #117
Dorset, Ontario, POA 1EO

Signature Date

This Site Plan Approved under the Aggregate Resources Act

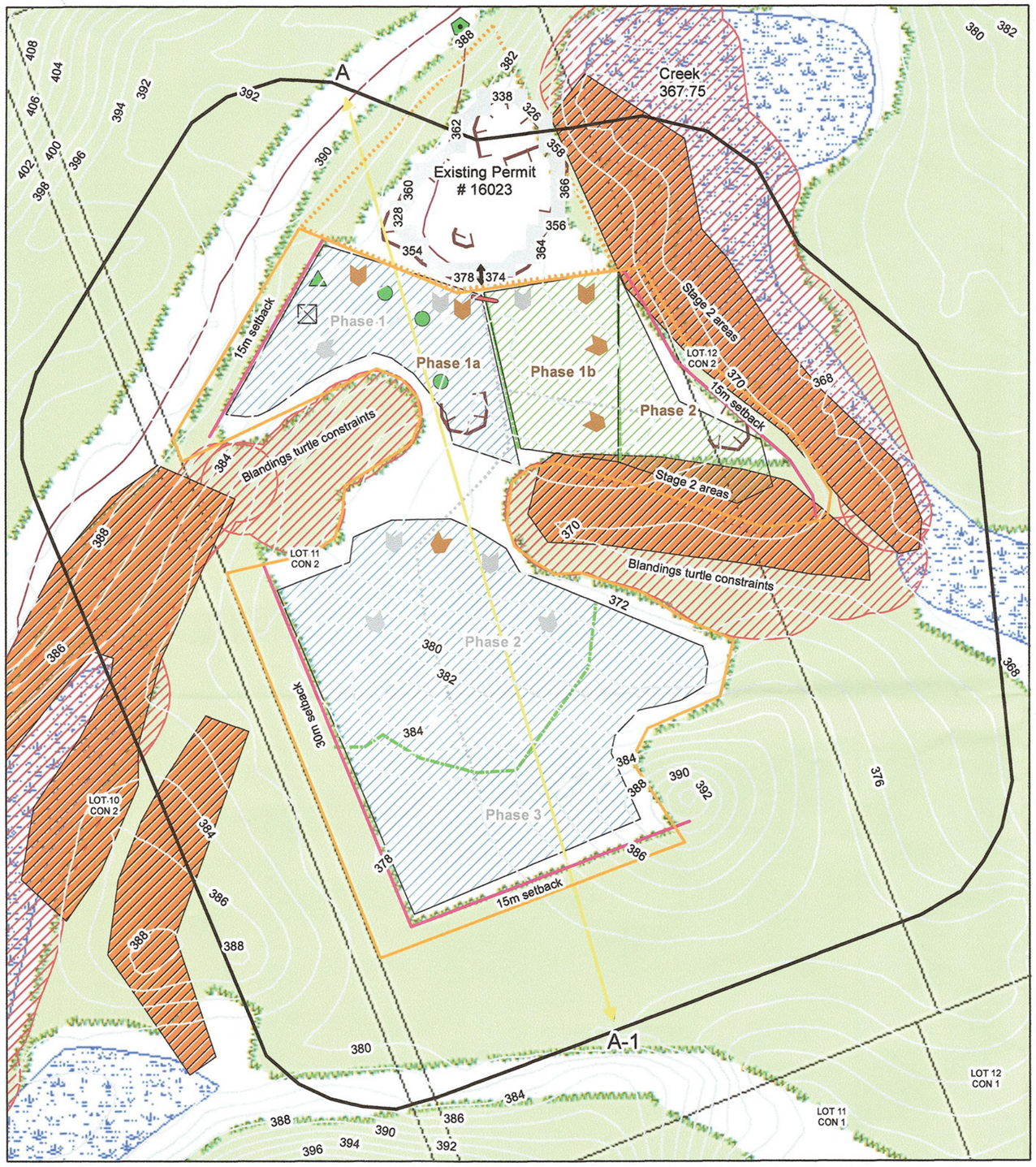
Signature Date

Aggregate Permit #:

Timber Craft Consultation Inc.
North Bay Office (705) 753-6743
Cell (705) 471-6570
1629 Jocko Point, North Bay, ON

Existing Features Plan

Bacher Construction Limited McClintock Quarry / Pit Operational Plan



1:3,500

0 100 200 400 Meters

N

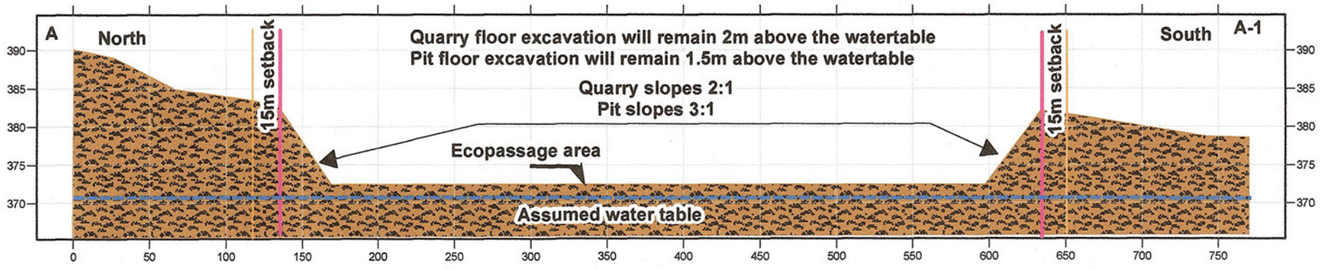
Legend

- 120m Information Area
- Proposed Entrance Exit
- Permit Boundary
- Setback
- contours 2m
- existing pit boundary
- Cross Section Line A-A1
- Benchmark
- Proposed Gate
- Internal Haul Roads
- Quarry phases
- Pit phases
- Bat habitat
- Proposed Internal Haul Roads
- Extraction direction pit operations
- Extraction direction quarry
- Roads
- Phasing
- Existing excavation
- Archeological stage 2 work
- Blanding constraints
- Proposed Recycle Area
- Proposed Scrap Area
- Wetlands
- Lots/ concessions
- Woodarea

AMENDMENTS/ VARIATIONS			
NO.	DESCRIPTION	DATE Approved	Approved by

Cross Section Scales
Horizontal 1:3500
Vertical 1:700
Vertical exaggeration 5x

Cross Section Line A-A1



Timber Craft Consultation Inc.
North Bay Office (705) 753-6743
(705) 471-6570
1629 Jocko Point Road ,
North Bay, ON
Danny Benson

NOTES

1.1 Drawings included in the site plan are on PAGE. 1 & 2 of 4. Site plan notes 1 through 52 are addressed on PAGE 3 and 4 of 4.

1.3 The proposed permit is located on Crown land in part of Lots 11 and 12 Concession 2 in the Geographic Township of McClintock, Township of Algonquin Highlands County of Haliburton.

1.4 UTM coordinates of all corners are included on the site plan on PAGE. 1. All UTM coordinates are in NAD 83 and collected with a Recon GPS. The accuracy of the GPS survey is 1 m.

1.5 Shown on plan

1.7 This site plan is prepared under the Aggregate Resource Act for a Category 9 & 11 Aggregate Permit.

1.8 Signature of person whose direction the site plan was prepared is on PAGE 1 of 1.

1.12 Boundary of permit area including dimensions, UTM coordinates and hectares are included on PAGE 1.

1.13 Demarcation of Lot & Concession lines are shown on sketch.

1.14 The area is surrounded by Crown Land.

1.15 The existing use of land with the area of the application and the 120 m. zone is mainly forested land with an access road along part of the west boundary. The Crown Land Use Policy Atlas was consulted and the proposed aggregate operation is located within the Bracebridge Area of Parry Sound District General Use Area G362; which permits aggregate extraction in this area. Aggregate Permit 16023, held by the applicant, is adjacent to the north boundary of the proposed permit and is a pit operation

1.16 The topography of the site is represented by 2 m. contour intervals referenced to a benchmark, which is the gate post.

1.17 There are no existing or proposed buildings within 120 meters of the permit area, or within the permit boundary.

1.18 There is one existing entrance/exit.

1.19 Existing surface water drainage follows the natural slope of the land, which is indicated on the plan by contour elevations and existing creeks. Outside the area of excavation, drainage will follow the natural course of the land and percolate through to the water table. In the area of excavation, drainage will follow the excavated slopes and percolate through to the water table and for the quarry, once it drains from the excavation area it will percolate through to the water table. Drainage from the quarry will occur naturally when not in operation. If pumping is required, water will be directed to the area of the permit that will not have any negative impacts on surrounding water bodies. (if pumping of water exceeds 50,000 litres per day, an ECA from MOECC is required). No drainage facilities are proposed on this site. An effort will be made to maintain a flat floor or have it slope towards the entrance.

1.20 Existing bush lines have been indicated on the site plan - PAGE 1. There is no additional tree cover proposed for screening purposes. Vegetation inside of the setbacks will remain undisturbed, except at the entrance and as a result of any minor disturbance when the exclusion fencing is being installed along the setback boundary.

1.21 There are no existing topsoil or overburden stockpiles on site. Topsoil and overburden will be stripped and stockpiled separately, unless the two materials are indistinguishable or in layers too thin to separate effectively and will be stored in close proximity to the setback boundaries. The stockpiles will be located in order to facilitate extraction and rehabilitation and in accordance with the Operational Standards. These stockpiles will not be artificially vegetated (see variations on Operational Standards – 5.4).

1.22 There are no aggregate stockpiles on site. Aggregate will be stockpiled within the processing/stripped area and may move forward with the extraction face. (see 1.40 – 5.13)
Recyclable materials will be stockpiled close to the processing equipment and the actual location will be confirmed once the location of the processing plant is determined.

. RECYCLING SHALL ADHERE TO POLICY A.R. 5.00.15.

- Recycling of asphalt and concrete will be permitted on the site.
- Recyclable asphalt materials will not be stockpiled within:
  - 30 m of any water body or man-made pond
  - 2 m of the surface of the established water table.
- Any rebar and other structural metal must be removed from the recycled material during processing and placed in a designated scrap pile which will be removed on an ongoing basis.
- Removal of recycled aggregate is to be ongoing.
- Once the aggregate on the site has been depleted there will be no further importation of recyclable materials permitted.

All recyclables must be removed before surrender of the permit.

1.23 There are no existing scrap stockpiles on site. Scrap will be stored at the location shown on the sketch. All scrap will be removed on an ongoing basis and hauled to a certified waste disposal site.

1.24 There are no existing fuel tanks presently on site. Fueling will be done from fuel trucks or from portable fuel tanks that may be stored on site as long as they adhere to the applicable provincial legislation.

1.25 All significant natural features on the site and within120 meters of the boundaries have been indicated on the site plan-PAGE. 1.

1.26 All significant man-made features on the site and within 120 meters of the boundaries have been indicated on the site plan.

1.27 There are two old excavation (pit) faces.

1.28 The processing equipment will be portable and will be on the pit/quarry floor or in the general area and may move forward within the extraction area.

1.29 Equipment to be utilized on the site will include, but not be limited to:

- scrapers, excavators, loaders, dozers, drills, trucks, screening plant, stacker, conveyors, power plant, feed bin, crushing plant, tool trailer, rock breaker and asphalt plant. An asphalt plant is permitted for public authority projects only.

1.30 There are no existing berms on the site.

1.31 There are no plans for any berms, unless they are required as described in the Noise Impact Analysis, but if any are established, they will be allowed to vegetate naturally unless seeding is required to control erosion.

1.32 Extraction will occur in the direction indicated on PAGE. 2.

1.33 The number of lifts in the quarry could be four and in the pit, three, but this could change based on site conditions. The face heights have not been established. Maximum heights will be 24 m. for the quarry and 12 m. for the pit. Face heights will be maintained in accordance with Ministry of Labor regulations.

1.34 Progressive rehabilitation will involve:

- As the limit of extraction in the quarry is reached, the operator will either extract to the limit of extraction and backfill to produce a 2(horizontal): 1(vertical) slope with available aggregate, or extract less material and use insitu material to produce the 2:1 slope. Similarly for the pit except all slopes will be 3(horizontal): 1(vertical). Imported materials are not to be used in site rehabilitation
- Available topsoil and organic matter will be applied to cover the slopes and floor of the pit and quarry
- The regeneration of trees in the area will be directed by the MNRF.
- Topsoil areas will be seeded to prevent erosion
- Rehabilitation of depleted areas shall be undertaken to encourage habitat suitable for wildlife.

Progressive Rehabilitation will be ongoing throughout the extraction process.

1.35 Available overburden/topsoil will be used once the sloping/leveling of depleted areas is completed. It will be pushed to create a layer of mixed organic material creating a layer suitable for revegetation.

1.36 There will be no water diversions or points of discharge to surface water. Drainage of both the quarry and the pit will be contained onsite and occur by percolation and/or evaporation. If required, water from the quarry will be directed to the area of the permit as indicated in 1.19. The permittee shall have regard for the Environmental Protection Act with respect to the drainage of water.

1.37 Extraction Area is shown on drawing.

1.38 Setbacks are shown on drawing.

1.39 There are no proposed tree screens.

1.40 Variations from the Operational Standards.

5.4 Topsoil and overburden may be stockpiled together allowing native types of vegetation to grow (i.e. grasses, shrubs and trees).

5.10 There will be no setback along the permit boundary that follows the turtle constraint areas. Since these constraint areas were originally in the permit and then subsequently removed, a 15 m setback will not be required. The 30 m. buffer had been built into the original turtle constraint area boundary on the site plan

There is no setback along the southeast boundary since the proposed permit boundary has been moved to the northwest by the applicant.
There is no setback along the north boundary as the applicant is the same as the adjacent permit holder.

5.13 For similar reasons as for 5.10, aggregate, topsoil and overburden may be piled to within 5 m. of the turtle constraint areas.

1.41 List of References: Field notes from the GPS survey, GPS data, consultation with the MNRF, NRVIS data, aerial photos, Aggregate Resources Act, Crown Land Use Atlas, Species at Risk and the Natural Heritage Information Center.

1.42 During progressive rehabilitation, available topsoil/overburden (see 1.21) that has been stockpiled will be spread on a 2H:1V slope (quarry) and 3H: 1V(pit) at a sufficient depth to encourage natural vegetation. Topsoiled areas will be dressed with woody material (see 1.49), and then seeded with a grass/legume seed mix.

1.43 The rehabilitated area will be seeded with grass (clover) and then the site will be artificially planted with tree species as directed by MNRF staff.

1.44 The final elevation of the site is indicated on the cross-section. Extraction could extend to the setback limits ensuring there will be enough material left for a minimum 2H:1V slope (quarry faces) and 3H: 1V(pit faces) at time of rehabilitation. Based on the available information and the interpretation of the hydrogeologic setting, future development of the proposed John Bacher Construction Pit and Quarry should avoid excavations (in the bedrock) that would be deeper than 382 m (in the northwest) to 370 m (in the east). Also, for excavations in the overburden, extraction activities should avoid excavations that would be deeper than 381.5 m (in the northwest) to 369.5 m (in the east). At no time will the pit floor be less than 1.5 m. from the water table in the pit and 2 m. in the quarry.

1.45 3H: 1V (minimum) pit slopes and 2H:1V (minimum) quarry slopes will be established on faces to be rehabilitated through one of the following methods

1) Cut and fill method
2) Using C-horizon material or aggregate, or
3) Using material imported from other portions of the permit area to construct the slopes. The quarry floor may have a gentle slope, as indicated on the site plan.

1.46 The hours of operation at this site will be 7 a.m. to 7 p.m., Monday to Friday, except for blasting which will be from 8 am to 6 pm. There will be no drilling/blasting on the site beginning the third weekend in June until after the Labor Day weekend in September of each year. A response to emergencies is not limited to the hours of operation shown on the site plan. Hauling – Trucks will also be allowed to haul between 8 a.m. and 5 p.m. on Saturdays.

1.47. Existing surface water drainage follows the natural slope of the land, which is indicated on the plan by contour elevations. Outside the area of excavation, drainage will follow the natural course of the land and percolate through to the water table. In the area of excavation, drainage will follow the excavated slopes and percolate through to the water table. Water will not be diverted offsite. Erosion control will be monitored on a regular basis throughout the year ensuring faces are free from erosion and remain stable.

1.48 Cross sections included on PAGE 1 and 2.

1.49 Merchantable trees will be removed from the site under the authority of a Forest Resource Licence issued by MNRF. Unmerchantable trees, brush and stumps will be stockpiled separately from topsoil/overburden or chipped for use in rehabilitation.

1.50 The maximum number of tonnes of aggregate to be removed from this site in any calendar year will be 75,000 tonnes.

1.51 The analysis of the available information indicates that the water table elevation beneath the proposed Bacher Construction Pit and Quarry area constitutes a gently sloping water table surface. The interpreted water table elevations in the northwestern corner of the study area are approximately 380 m, and fall towards the east to a final elevation of 368 m.

1.52 The following are the monitoring/recommendations required within the technical reports:

The Cultural Heritage Stage 1 report states: (HORIZON ARCHAEOLOGY INC.)
Advice on Compliance with Legislation
Should previously unknown or deeply buried archaeological resources by uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The Proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.

Three areas are considered to have high archaeological potential and remain within the adjusted project borders and require Stage 2 Archaeological Assessment, except as indicated below.

a) Two of the areas are completely within areas where development is prohibited under the Endangered Species Act, owing to the presence of the threatened Blanding's Turtle. These areas are protected and will not be disturbed and therefore do not require further assessment at this time. If these areas are ever to be developed, they will require a Stage 2 Assessment.

b) A portion of the third High Potential Area in the east part of the Permit is outside of the protected zones, and will require a Stage 2 Archaeological Assessment prior to any development in this area. This portion must be marked out in the field and posted for no disturbances until the requirements of the Stage 2, if carried out, are implemented.

The remaining area of the application shows low archaeological potential and requires no further assessment.

The Natural Environment Level I & II report states (Fri Ecological Services)

The following general mitigation is recommended to ensure compliance with the Endangered Species Act (2007), the Fisheries Act (1990), the Migratory Birds Convention Act (1994) and the Fish and Wildlife Conservation Act (1997). These recommendations have already been suggested in previous sections of the report. They are reiterated here to confirm their applicability to species groups and habitats which are found on the site.
. All aggregate extraction will occur above the water table
. No in-water works shall take place
. No work shall occur within any wetlands
. A 30 m buffer will be placed around each wetland located in adjacent lands. (This buffer has been taken into consideration in the revision of the Permit boundary.
. Site clearing and preparation shall not occur during the breeding season for migratory birds; May 1 – August 31 of any given year. Exceptions to this may be permissible provided the area is swept by a qualified individual to ensure no nests or birds would be destroyed as a result of the activity.
. No tree removal or vegetation clearing will occur outside of the proposed permit area
. Potential bat roosting trees shall be retained. The trees as indicated in the Report shall be marked on the ground.

An **Avoidance Measures Report** for Blanding's Turtles was submitted to MECP. Todd Copeland, a *Species at Risk Specialist submitted the following after a review of the Report:*

Following the approach you have provided in the report submitted on May 7, 2019. No ESA authorizations for impacts to BLTU are necessary. If details were to change and you are no longer able to follow this please let me know as this may change the assessment.

Groundwater Summary Statement: (Waters Environmental Geosciences Ltd).

Our analysis of the available information indicates that the water table elevation beneath the proposed Bacher Construction Pit and Quarry area constitutes a gently sloping water table surface. The interpreted water table elevations in the northwestern corner of the study area are approximately 380 m, and fall towards the east to a final elevation of 368 m. Although Figure 4 has used a 10 m contour interval in its construction, intermediate groundwater elevation contours can be obtained by interpolating between the indicated contour lines and using the perimeter groundwater elevation values for guidance.

The water levels presented in Figure 4 are considered to be representative of the highest groundwater conditions on-site. Based on the available information and our interpretation of the hydrogeologic setting, future development of the proposed Bacher Construction Pit and Quarry should avoid excavations (in the bedrock) that would be deeper than 382 m (in the northwest) to 370 m (in the east). Also, for excavations in the overburden, extraction activities should avoid excavations that would be deeper than 381.5 m (in the northwest) to 369.5 m (in the east). Figure 4 should be used to interpolate between the plotted water table contours for any intermediate elevation values.

A surface/groundwater monitoring program and a storm water management plan will be developed before operations commence on the site.

Noise Impact Analysis(Valcoustics Canada Ltd.)

For the operation west of the south (formerly the Phase 1/ Phase 2 boundary) boundary, no mitigation is required if Alternative 2 is utilized

1. Construction activities should only occur during the daytime (i.e. 0700 to 1900 hours) period, Monday to Friday. There should be no construction on weekends or on statutory holidays unless required due to an emergency.

2. Sound emissions from equipment to be used on-site should be measured to confirm that they comply with the levels outlined within this report. For the quiet rock drill (i.e. Alternative 2), the maximum emission level is 80 dBA at 15 m. Details regarding a potential quiet drill alternative are included in Appendix C. Alternatively, for equipment brought on-site on an as-needed basis, they should have appropriate portable C's of A or ECA's.
3. Sound barriers are recommended to be constructed as shown in Figure 4 (Alternative 1) if required
4. Back-up beepers are exempt from assessment by the MOE stationary noise source guidelines. However, to reduce off-site noise impacts, we recommend alternative technologies be used on all equipment operating at the McClintock Quarry/Pit site. Details regarding a potential alternative are included in Appendix C.
5. To maximize the acoustical screening provided by dense woods and minimize the sound exposures at the receptors, it is recommended that drilling not be done when there are no leaves on the trees.
6. Operational activities that involve the use of the portable processing plant and/or rock drill should only occur during the daytime (i.e. 0700 to 1900 hours) period. Evening/nighttime operation of only the front end loader and off-site haul trucks for shipping of aggregate off site is predicted to comply with the nighttime MOE guideline limits for all scenarios.
7.Off-site noise audit measurements should be completed when operations are underway on the site. The audit measurements must be done by a qualified acoustical engineer.
8. If other or new equipment is brought to the site, the sound emissions should be checked to ensure the equipment is in compliance with this noise study.
9. If alternate noise mitigation measures are to be implemented, they should be reviewed by a qualified acoustical consultant to ensure the MOE noise guideline limits will be met.

Blast Impact Analysis (EXPLOTECH)

- An attenuation study shall be undertaken by an independent blasting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site-specific attenuation relations. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
- All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptor (with the landowners' approval) adjacent the site, or closer, with a minimum of two (2) digital seismographs – one installed in front of the blast and one installed behind the blast. All monitoring shall be performed by an independent third party engineering firm with specialization in blasting and monitoring.
- Blast designs and vibration data shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to ensure compliance with applicable guidelines and regulations. Decking, reduced hole diameters and sequential blasting techniques will be used to ensure minimal explosives per delay initiated.
- Clear crushed stone shall be used for stemming.
- Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the face will be away from structures as much as possible. Accordingly operations have been designed to follow a general North to South retreat.
- Primary and secondary dust collectors will be employed on the rock drills to keep the level of rock dust to a minimum.
- Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as required to ensure compliance with industry standards.
- Detailed blast records shall be maintained. THE MOEE (1985) recommends that the body of blast reports shall include the information as stated in #9 of the Recommendations in the Blast Impact Analysis.

Detailed blast records shall be maintained in accordance with MOE Standards and the blast records will contain the information as specified in the Report:

- location, date and time of blast;
- dimensional sketch including photographs, if necessary, of the location of the blasting operation, and the nearest point of reception;
- physical and topographical description of the ground between the source and the receptor location;
- type of material being blasted;
- sub-soil conditions, if known;
- prevailing meteorological conditions including the wind speed in m/s, wind direction, air temperature in degrees C, relative humidity, degree of cloud cover;
- number of drill holes;
- pattern and pitch of drill holes;
- size of holes; depth of drilling;
- depth of collar (or stemming);
- depth of toe-load;
- weight of charge per delay;
- number and time of delays; t
- the result and calculated value of peak pressure level in dB and peak particle velocity in mm/s.
- applicable limits
- the excess, if any, over the prescribed limit.

NOTE: Environmentally friendly emulsions will be used as the explosive agent as an additional means of protecting the surface and groundwater supply.