

- A. General**
- This site plan is prepared under the Aggregate Resources Act (ARA) for a Class 'A' Licence, Category 1 & 2.
  - Area Calculations:
    - Licence Area: 160.3 hectares
- B. References**
- Contours were obtained from Ontario GeoHub (Land Information Ontario) and are displayed in two metre intervals. Elevations shown are in metres above sea level (masl).
  - Topographic information was obtained from numerous sources including Ontario GeoHub, Google Earth Pro aerial photography captured on October 8, 2019 and field investigations for technical reports.
  - All topographic features and structures are shown to scale in Universal Transverse Mercator (UTM) with North American Datum 1983 (NAD83), Zone 17 (metre), Central Meridian 81 degrees west coordinate system.
  - The licence boundary was established using Lot & Concession data from Ontario GeoHub, Registered Plan of Surveys 35R-15640, 35R-22033, 35R-22850, 35R-23040 and a Plan of Survey by T.A. Bunter Surveying Ltd. completed January 24, 2020.
  - Existing zoning and land use designations of the site are from Town of Bracebridge Zoning By-law 2016-088, Schedule C - Macaulay Ward, last updated in 2016. The site is currently zoned Extractive Industrial Quarry - Exception One (MQO-1) and Environmental Protection One - Wetland (EPW1).
  - Land use information and structures identified on or within 120 metres of the licence boundary was determined using Google Earth Pro aerial photography captured on October 8, 2019.
- C. Drainage**
- Surface drainage on and within 120 metres of the licence boundary is by overland flow in the directions shown by arrows on the plan view, or by infiltration.
- D. Groundwater**
- Based on available water level data, the water table elevation on site ranges from 285 masl in the southwest corner to 325 masl in the northeast corner. The existing groundwater in shallow bedrock elevations are shown in each cross section on this drawing.
- E. Site Access and Fencing**
- Two site accesses exist on site. The first access is on Bonnie Lake Road and the second access is on the north common boundary with adjacent licence #618881 as shown on the plan view. The site access on Bonnie Lake Road is gated.
  - Post and wire fencing (unless noted otherwise) exists in the locations shown on the plan view.
- F. Aggregate Related Site Features**
- A haul road used to access licence #618881 exists in the location shown on the plan view. There are no additional existing aggregate operations or features on site such as processing, stockpiles, scrap, fuel storage, berms or excavation faces.
- G. Cross Sections**
- As shown on this drawing.
  - Cross section locations are identified on the plan view for each drawing.
- H. Technical Reports - References**
- Blair Impact Analysis, Proposed Childs Pit and Quarry Expansion, EpochTech Engineering Ltd. May 27, 2020.
  - Level 1 and Level 2 Hydrogeological and Hydrological Assessments in Support of Aggregate Resources Act Applications for the Childs Pit and Quarry Extension, Golder Associates Ltd. June 2020.
  - Natural Environment Report - Level 1 and 2 Assessment, Childs Pit and Quarry, RiverStone Environmental Solutions Inc., June 2020.
  - Noise Impact Assessment, Childs Pit and Quarry Extension, Howe Gastmeier Chapnick (HGC) Engineering Limited, June 2020.
  - Stage 1 Archaeological Assessment of the Childs Pit and Quarry Extension, Concession 9 Part Lots 14-16 and Concession 10 Lots 15-16, Kinicknick Heritage Consulting, September 15, 2015.
  - Stage 2 Archaeological Assessment of the Childs Pit and Quarry Extension, Concession 9 Part Lots 14-16 and Concession 10 Lots 15-16, Kinicknick Heritage Consulting, September 15, 2015.
  - Stage 1 and 2 Archaeological Assessment for Proposed Childs Pit & Quarry Extension, Concession 9 Part Lot 17, Kinicknick Heritage Consulting and Cannon Heritage Consulting, December 18, 2020.
  - Traffic Review, Childs Pit and Quarry Extension, Tatham Engineering, June 2020.
  - Consolidated Proposed Groundwater and Surface Water Monitoring Programs and Complaints Response Program, Childs Pit and Quarry Extension, WSP, April 26, 2023.

**Site Plan Amendments**

No.	Date	Description	By

**Site Plan Revisions (Pre-Licensing)**

No.	Date	Description	By
1	November 2020	Added Archaeological Site Bg504 and Archaeological Potential areas to plan view. Updated note #15 and added note #16 and #17. Adjusted limit of extraction to remain outside of Archaeological Site.	C.P.
2	December 2020	Updated notes #3, 5 and #7. Adjusted licence boundary and limit of extraction to remain outside of archaeological areas.	C.P.
3	August 2021	Updated site plan per feedback from MNRF.	C.P.
4	July 2022	Updated limit of extraction per feedback from MNRF. Based on cross sections to reflect updated final construction contours.	C.P.
5	April 2023	Updated limit of extraction to remove Phase II.	C.P.

**MHBC Stamp**

**Brian Zeman**  
 is authorized by the Ministry of Natural Resources and Forestry pursuant to Subsection 0.2(3)(b) of Ontario Regulation 244/97 to prepare and certify site plans.

**Christopher Poole**  
 is authorized by the Ministry of Natural Resources and Forestry pursuant to Subsection 0.2(3)(b) of Ontario Regulation 244/97 to prepare and certify site plans.

**Applicant**  
**Fowler Construction Company Limited**  
 1206 Rosewarne Drive  
 Bracebridge, Ontario  
 P1L 1T9

**Project**  
**Child's Pit & Quarry Extension**  
 1235 Bonnie Lake Road, Bracebridge, Ontario

**MNRF Licence Reference No.**  
**626505**

**Applicant's Signature**  
 June 2020

**Plan Scale:** 1:4000 (Arch E)

**Date**  
 June 2020

**Drawn By**  
 C.P.

**File No.**  
**1515C**

**Checked By**  
 B.Z.

**File Name**  
**Existing Features & Cross Sections**

**Drawing No.**  
**1 of 4**

**File Path**  
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- A. General**
1. Area Calculations:
- a. Licence Area 160.3 hectares
  - b. Limit of Extraction 70.8 hectares
  - c. The maximum annual tonnage is 2,000,000 t.
  - d. Scale and scale house may be constructed on site.
2. Based on available water level data, the water table elevation on site ranges from 205 masl in the southwest corner to 325 masl in the northeast corner. The existing groundwater in shallow bedrock elevations are shown as cross section on drawing 1 of 4.
- B. Hours of Operation**
1. Hours of operation are Monday to Sunday, 24 hours per day, excluding statutory holidays (see noise control requirements on drawing 3 of 4 for additional detail and restrictions on hours and location of equipment). Site preparation and rehabilitation is permitted Monday to Friday between 7:00am to 7:00pm excluding statutory holidays.
2. Blasting is permitted Monday to Friday between 8:00am to 6:00pm excluding statutory holidays. Blasting will typically occur once per week if the operation provides the maximum annual tonnage, however, blasting will typically be less frequent.
- C. Site Access and Fencing**
1. A gated entrance/exit on Bonnie Lake Road provides access to this licence and adjacent licence #618881. The gate shall be kept closed during hours of operation and maintained throughout the life of this licence and licence #618881.
2. The entrance/exit shall be sited 75 metres south prior to truck volumes exceeding 35 trucks per hour during day time hours (7:00am to 7:00pm) or 12 trucks per hour during nighttime hours (7:00pm to 7:00am). Prior to relocating the entrance/exit, the licensee shall obtain an entrance permit from the District of Muskoka. The licensee shall advise the District MNR/OF office upon approval from the District of Muskoka is granted for the entrance permit and prior to construction of the new entrance. If the relocated entrance is not approved in the location identified on the plan view, a site plan amendment will be required to accurately depict the location of the relocated entrance. Once the existing entrance is relocated, the previous entrance shall be removed and a noise attenuation berm constructed, as shown on the plan view.
3. Existing licence #618881 shall be accessed through the common licence boundary with this licence. The entrance/exit for licence #618881 (as shown on the plan view) may refer to coincide with extraction operations in licence #618881 (see Section Q, Variations from Provincial Standards).
4. A portion of the existing internal haul road rd is situated outside the licence boundary and limit of extraction. However, the internal haul road is situated in a land owned by the licensee (see Section Q, Variations from Provincial Standards).
5. The east and south boundary of the licence shall be fenced with post and wire fencing, at least 1.2 metres in height, within 12 months of the licence being issued.
6. Fencing shall not be required where the licence abuts existing licence #618881 (see Section Q, Variations from Provincial Standards) and will be delineated with marker posts every 30 metres.
7. There are two locations in the southeast corner where the fencing will be located outside of the licence boundary (see plan view and Section Q, Variations from Provincial Standards).
8. All fencing shall be maintained for the life of the extraction operation.
- D. Drainage and Siltation Control**
1. Drainage of undisturbed areas will continue in the directions shown on drawing 1 of 4.
2. Prior to site preparation, an Erosion and Sedimentation Control (ESC) Plan will be prepared and implemented.
- E. Site Preparation**
1. Prior to site preparation, a Spills Contingency Plan shall be prepared and implemented.
2. Each Phase shall be fenced with specialized reptile fencing (see Reptile Fencing Detail on this drawing) as extraction progresses (see Natural Environment notes "n" and "n" under Section Q, Report Recommendations).
3. Removal of trees within the limit of extraction shall only occur October 15<sup>th</sup> and April 15<sup>th</sup>.
4. Timber resources will be salvaged for use as saw logs, fence posts and fuel wood when appropriate. Stumps and brush cleared will be burned (with applicable permits), used for aquatic habitat enhancement or mulched for use in progressive rehabilitation.
5. Prior to commencing extraction activities in Phase A, removal of wetlands within the proposed extraction area shall occur in two stages to minimize impacts on species using the wetlands:
- a. Stage 1 shall occur in the month of July and involves the draining of the wetland feature only (i.e., mechanical clearing of vegetation, grubbing, stripping, etc.) shall not occur until Stage 2). Draining the wetland will remove the function of this community for turtles at a time that allows for turtles within the wetland to move to alternative habitats prior to the full hibernation season. Every effort shall be made to collect and relocate any turtles found in the wetland feature, as some turtles may choose to remain.
  - b. Stage 2 involves the mechanical clearing of vegetation, grubbing, stripping, etc., and shall commence after the wetland has been maintained in a dry state for one hibernation season (one winter) and shall begin no earlier than June of the following year after completing Stage 1.
6. Wetland removal within the limit of extraction shall not occur during the turtle hibernation season (between October 1<sup>st</sup> and May 15<sup>th</sup>).
7. Prior to removing any portion of the fen community in the northeast corner on drawing 1 of 4 (including alterations to the water balance in that community), a new 4.2 hectare wetland shall be created adjacent to the Muskoka River (see Proposed Offsite Wetland Detail on this drawing for proposed location).
8. Topsoil and overburden shall be stripped and stored separately wherever feasible (see Section Q, Variations from Provincial Standards).
9. Topsoil and overburden shall be placed in noise attenuation berms or used immediately for progressive rehabilitation in the licence or adjacent licence #618881 (see Section Q, Variations from Provincial Standards).
10. Excavate topsoil and overburden not required for immediate use in berms or rehabilitation may be temporarily stockpiled on the pit and quarry floor. Topsoil and overburden stockpiles shall be located within the limit of extraction and within a maximum of 30 metres from the licence boundary (except where the licence boundary abuts existing licence #618881 - see Section Q, Variations from Provincial Standards) and 90 metres from a property with a residential use.
11. Temporary topsoil and overburden stockpiles which remain for more than one year shall have their slopes vegetated to control erosion. Seeding shall not be required if these stockpiles have vegetated naturally in the first year.
- F. Berms and Screening**
1. Noise attenuation berms shall be constructed to the height specified in the locations shown on the plan view (see Noise Note "n" under Section Q, Report Recommendations for details regarding timing of berm construction).
2. Berm side slopes shall not exceed 2:1.
3. Berms shall not be located within three metres of the licence boundary.
4. Berms shall be vegetated with a native mix of wildflowers and grasses to stabilize slopes and minimize mowing and maintenance. The vegetation on the berms shall be maintained throughout the operational life of the pit and quarry and may remain as part of the rehabilitated landform.
5. Once required, noise attenuation berms shall be maintained throughout the operational life of the pit and quarry and may remain as part of the rehabilitated landform.
6. Existing deciduous and coniferous trees within the setbacks shall be maintained except where the relocated entrance and noise attenuation berms are required.
- G. Site Dewatering**
1. The licensee shall operate in accordance with Environmental Compliance Approval (ECA) and Permit to Take Water (PTTW).
- H. Extraction Sequence**
1. Phase A1
- a. Prepare Phase A1 for extraction and ensure all requirements in Sections "C" through "G" of this drawing are met.
  - b. Strip Phase A1 and use material for berm construction or reuse the material for future rehabilitation and berm construction.
  - c. Extract Phase A1 by commencing at the common boundary with existing licence #618881 and proceeding in a southerly and/or easterly direction.
  - d. Undertake attenuation study for blasting with the first 12 months of operation (see Blasting note "n" under Section Q, Report Recommendations for additional information).
  - e. Phase A1 may be extracted to a maximum depth of 270 masl.
  - f. As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence.
  - g. Progressive rehabilitation shall consist of backfilling the east and south phase boundary to establish 2:1 side slopes on the top bench.
  - h. Prepare Phase A2 for extraction and ensure all requirements in Sections "C" through "G" of this drawing are met.
2. Phase A2
- a. Strip Phase A2 and use the material for progressive rehabilitation in Phase A1 and/or existing licence #618881 or to construct any required berms.
  - b. Extract Phase A2 in a southerly direction from the common licence boundary with existing licence #618881 and/or easterly from Phase A1.
  - c. Phase A2 may be extracted to a maximum depth of 300 masl. In certain areas, selective blasting and excavation may occur to an elevation of 288 masl to create wetlands habitat for rehabilitation purposes (see drawing 4 of 4).
  - d. As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence.
  - e. Progressive rehabilitation shall consist of backfilling portions of the east phase boundary, and all of the south phase boundary, to establish 2:1 side slopes. Cliff with talus slopes shall also be created where 3:1 side slopes transition to vertical faces along the east phase boundary.
  - f. At least 50% of the side slopes for Phase A1 and the landform for Phase A2 shall have rehabilitation completed before proceeding to any potential future extraction in Phase B.

- I. Extraction Details**
1. All trees within five metres of the excavation face inside the limit of extraction shall be removed.
2. Lifts will typically be 15 metres in height. The maximum height of a lift shall be 20 metres.
3. The maximum depth of material in Phase A1 is approximately 60 metres and shall be extracted in four lifts.
4. The maximum depth of material in Phase A2 is approximately 35 metres and shall be extracted in two lifts.
5. Extraction may occur concurrently in Phases A1 and A2.
6. Extraction shall occur concurrently with existing licence #618881.
7. Aggregate stockpiles (including recyclable materials) shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts existing licence #618881 - see Section Q, Variations from Provincial Standards) and 90 metres from a property with a residential use.
8. Internal haul road locations will vary as extraction progresses and will be located on the pit and quarry floor.
- J. Equipment and Processing**
1. Equipment used on-site may include but shall not be limited to drills, scrapers, excavators, front-end loaders, feed bin, crushing plant, screening plant, wash plant, conveyors and haul trucks.
2. All primary processing equipment will be portable and move with the extraction operation.
3. If required, an ECA will be obtained for processing equipment to be used on-site.
4. Aggregate will be processed at the main processing plant (which includes a wash plant) located on existing licence #618881 and/or in the alternate location in the southern extent of Phase A1, as shown on the plan view (see Noise Note "n" under Section Q, Report Recommendations and drawing 3 of 4 for additional information).
5. Processing shall be located within the limit of extraction and remain a minimum of 30 metres from the licence boundary (except where the licence boundary abuts existing licence #618881 - see Section Q, Variations from Provincial Standards) and 90 metres from a property with a residential use. See noise mitigation measures on drawing 3 of 4 for additional restrictions on the location of processing equipment.
6. Material from this licence or existing licence #618881 shall be processed in either licence.
- K. Wash Pond and Sump**
1. Wash ponds and a sump will be permitted on the quarry floor in accordance with ECA and PTTW requirements. The pond and sump will move throughout the life of the operation as extraction progresses horizontally and vertically.
- L. Fuel Storage**
1. Fuel storage tanks will be installed in close proximity to the main processing plant and shall be maintained in accordance with the Liquid Fuels Handling Code.
2. Fuel trucks shall be used to transfer fuel to on-site equipment in accordance with the Liquid Fuels Handling Code.
3. Prior to site preparation, a Spills Contingency Plan shall be prepared and implemented.

- M. Dust**
1. Dust shall be mitigated on-site.
2. Water or another provincially approved dust suppressant shall be applied to internal haul roads as often as required to mitigate dust.
3. Processing equipment will be equipped with dust suppressing or collection devices where the equipment creates dust and is being operated within 300 metres of a sensitive receptor.
- N. Scrap and Recycling**
1. Scrap may be stored on-site and shall be removed on an on-going basis.
2. Scrap shall not be stored within 30 metres of any body of water or the licence boundary and shall be kept in close proximity to the main processing plant in this licence or existing licence #618881 (see Section Q, Variations from Provincial Standards).
3. Recycling of asphalt and concrete shall be permitted on-site.
4. Recyclable asphalt materials shall be stockpiled within:
- a. 30 metres of any waterbody or man-made pond, or
  - b. 2 metres of the surface of the established groundwater table
5. Recyclable material shall be kept in close proximity to the main processing plant in this licence or existing licence #618881.
6. Any rebar and other structural material shall be removed from the recycled material during processing and placed in a designated scrap pile on site and shall be removed on an on-going basis.
7. Recycled aggregate shall be removed on an on-going basis.
8. Once the site is depleted, no further importation of recyclable material shall be permitted.
9. Once final rehabilitation has been completed and approved in accordance with the site plan, all recycling operations shall cease.
- O. Report Recommendations**
1. **Noise**
- a. See drawing 3 of 4 for noise control requirements by phase and lift.
  - b. Operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - c. The main processing plant can operate within the alternative area shown on the plan view within Phase A1 when the final design of the quarry face is approved, third, or fourth lift (at 300 masl or lower).
  - d. All noise control equipment used for site preparation and rehabilitation on site shall produce sound levels which comply with the Ministry of Environment, Conservation and Parks (MECP) Guideline NRC-115.
  - e. It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures shall be permitted provided that the revision still meets MECP guidelines, as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MECP.
2. **Traffic**
- a. Based on noise requirements, operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - b. The new access shall be constructed to satisfy District requirements with all applicable permits.
  - c. Prior to extraction exceeding 1,000,000 tonnes per year, an eastbound left turn lane shall be constructed to provide 30 metres of vehicle storage on Muskoka Road 111, satisfying District requirements with all applicable permits.
3. **Blasting**
- a. An attenuation study shall be undertaken by an independent consulting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. Blast designs and parameters implemented during the study period shall be representative of typical production blasts anticipated for the quarry. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
  - b. All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptors adjacent to the site or closer, with a minimum of two (2) instruments - one installed in front of the blast and one installed behind the blast.
  - c. Blasts shall be designed to maintain vibration levels below 130ms/s at the location of the closest identified active spawning bed as per the Department of Fisheries and Oceans Canada (DFO) guidelines. When blasting during active spawning season, a minimum of one supplemental vibration monitor shall be installed on the shoreline adjacent to the closest spawning bed to confirm the vibration levels.
  - d. The guideline limits for vibration and water overpressure shall adhere to standards as outlined in the publications Guidelines For the Use of Explosives in or Near Canadian Fisheries Waters (1996) or any such document, regulation or guideline which supersedes this standard.
  - e. The guideline limits for ground vibration and air overpressure shall adhere to standards as outlined in the Model Municipal Noise Control By-law publication NRC 119 (1970) or any such document, regulation or guideline which supersedes this standard.
  - f. In the event of an exceedance of NRC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and parameters shall be reviewed prior to any subsequent blasting and revised accordingly in order to return the operations to compliant levels.
  - g. Blasts shall be designed to maintain vibrations at the transmission towers in the Hydro One Corridor below 50ms/s and any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the towers may exceed 50ms/s, the closest tower shall be monitored for ground vibration.
  - h. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the blast will be away from structures as much as possible.
  - i. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to maintain compliance with current applicable guidelines and regulations.
  - j. Detailed blast records shall be maintained in accordance with current industry best practices.
4. **Hydrology and Hydrogeology**
- a. Prior to the start of water taking and/or water discharge, a PTTW and an ECA for Industrial Sewage Works shall be obtained and the licensee shall operate in compliance with these approved instruments, including the associated monitoring and reporting. The proposed groundwater and surface water monitoring program in the Consolidated Proposed Groundwater and Surface Water Monitoring Programs document (prepared by WSP, dated April 06, 2023) shall be considered for inclusion in these instruments.
  - b. If a water well complaint is received by the licensee the following actions shall be taken:
    - b.a. The local MECP District Office shall immediately be notified of any complaint arising from the taking of water at the well.
    - b.b. When a complaint is received by the licensee, the Complaint Response Program detailing how that incident is resolved. As soon as is practicable, a representative of the licensee or their agent will visit the site to make an initial assessment of the complaint. This will include a wellhead inspection (where accessible) by a licensed pump maintenance contractor to determine the groundwater level, pump depth setting and condition of the well system. The available groundwater level data from the existing on-site monitoring well network will be reviewed by a licensed professional hydrogeologist to develop an estimate of the potential groundwater level drawdown at the potentially affected well that is the subject of the complaint response.
    - b.c. The information obtained from the contractor from the wellhead system inspection and the review of the available groundwater level data will be used by the professional hydrogeologist to prepare an opinion on the likelihood that the well interference complaint is attributed to quarry dewatering.
    - b.d. If it is concluded that the well interference complaint is most likely attributable to quarry dewatering activities at the site and the water supply is at risk, then a temporary supply shall immediately be arranged and a water supply restoration program shall be implemented. The decision as to whether to proceed with the water supply restoration program will be based on a review of groundwater level information by the professional hydrogeologist and well construction and performance information from the licensed pump maintenance contractor as noted above.
    - b.e. The water supply restoration program consists of the following measures which are applicable for local water supply wells where the operation of the water supply wells may have been compromised by quarry excavation or, based on the analysis of all monitoring data, are assessed to likely be compromised in the near future:
      - b.e.a. Well System Rehabilitation - The well system could be rehabilitated by replacement or lowering of pumps, pump line faulting, well deepening, etc. to improve performance. Where water is unavailable in the immediate bedrock and a well in deepening is being considered, a water sample(s) would be taken from the existing well for chemical, physical and bacteriological analyses prior to deepening the well in order to provide a basis of comparison. If the groundwater in the deeper bedrock is found to be of acceptable quality by the homeowner, either directly from the well or with treatment, it will be developed as a domestic supply. Any modifications to a well would be conducted in accordance with Ontario Regulation 903.

- D. Report Recommendations**
1. **Noise**
- a. See drawing 3 of 4 for noise control requirements by phase and lift.
  - b. Operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - c. The main processing plant can operate within the alternative area shown on the plan view within Phase A1 when the final design of the quarry face is approved, third, or fourth lift (at 300 masl or lower).
  - d. All noise control equipment used for site preparation and rehabilitation on site shall produce sound levels which comply with the Ministry of Environment, Conservation and Parks (MECP) Guideline NRC-115.
  - e. It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures shall be permitted provided that the revision still meets MECP guidelines, as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MECP.
2. **Traffic**
- a. Based on noise requirements, operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - b. The new access shall be constructed to satisfy District requirements with all applicable permits.
  - c. Prior to extraction exceeding 1,000,000 tonnes per year, an eastbound left turn lane shall be constructed to provide 30 metres of vehicle storage on Muskoka Road 111, satisfying District requirements with all applicable permits.
3. **Blasting**
- a. An attenuation study shall be undertaken by an independent consulting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. Blast designs and parameters implemented during the study period shall be representative of typical production blasts anticipated for the quarry. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
  - b. All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptors adjacent to the site or closer, with a minimum of two (2) instruments - one installed in front of the blast and one installed behind the blast.
  - c. Blasts shall be designed to maintain vibration levels below 130ms/s at the location of the closest identified active spawning bed as per the Department of Fisheries and Oceans Canada (DFO) guidelines. When blasting during active spawning season, a minimum of one supplemental vibration monitor shall be installed on the shoreline adjacent to the closest spawning bed to confirm the vibration levels.
  - d. The guideline limits for vibration and water overpressure shall adhere to standards as outlined in the publications Guidelines For the Use of Explosives in or Near Canadian Fisheries Waters (1996) or any such document, regulation or guideline which supersedes this standard.
  - e. The guideline limits for ground vibration and air overpressure shall adhere to standards as outlined in the Model Municipal Noise Control By-law publication NRC 119 (1970) or any such document, regulation or guideline which supersedes this standard.
  - f. In the event of an exceedance of NRC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and parameters shall be reviewed prior to any subsequent blasting and revised accordingly in order to return the operations to compliant levels.
  - g. Blasts shall be designed to maintain vibrations at the transmission towers in the Hydro One Corridor below 50ms/s and any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the towers may exceed 50ms/s, the closest tower shall be monitored for ground vibration.
  - h. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the blast will be away from structures as much as possible.
  - i. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to maintain compliance with current applicable guidelines and regulations.
  - j. Detailed blast records shall be maintained in accordance with current industry best practices.
4. **Hydrology and Hydrogeology**
- a. Prior to the start of water taking and/or water discharge, a PTTW and an ECA for Industrial Sewage Works shall be obtained and the licensee shall operate in compliance with these approved instruments, including the associated monitoring and reporting. The proposed groundwater and surface water monitoring program in the Consolidated Proposed Groundwater and Surface Water Monitoring Programs document (prepared by WSP, dated April 06, 2023) shall be considered for inclusion in these instruments.
  - b. If a water well complaint is received by the licensee the following actions shall be taken:
    - b.a. The local MECP District Office shall immediately be notified of any complaint arising from the taking of water at the well.
    - b.b. When a complaint is received by the licensee, the Complaint Response Program detailing how that incident is resolved. As soon as is practicable, a representative of the licensee or their agent will visit the site to make an initial assessment of the complaint. This will include a wellhead inspection (where accessible) by a licensed pump maintenance contractor to determine the groundwater level, pump depth setting and condition of the well system. The available groundwater level data from the existing on-site monitoring well network will be reviewed by a licensed professional hydrogeologist to develop an estimate of the potential groundwater level drawdown at the potentially affected well that is the subject of the complaint response.
    - b.c. The information obtained from the contractor from the wellhead system inspection and the review of the available groundwater level data will be used by the professional hydrogeologist to prepare an opinion on the likelihood that the well interference complaint is attributed to quarry dewatering.
    - b.d. If it is concluded that the well interference complaint is most likely attributable to quarry dewatering activities at the site and the water supply is at risk, then a temporary supply shall immediately be arranged and a water supply restoration program shall be implemented. The decision as to whether to proceed with the water supply restoration program will be based on a review of groundwater level information by the professional hydrogeologist and well construction and performance information from the licensed pump maintenance contractor as noted above.
    - b.e. The water supply restoration program consists of the following measures which are applicable for local water supply wells where the operation of the water supply wells may have been compromised by quarry excavation or, based on the analysis of all monitoring data, are assessed to likely be compromised in the near future:
      - b.e.a. Well System Rehabilitation - The well system could be rehabilitated by replacement or lowering of pumps, pump line faulting, well deepening, etc. to improve performance. Where water is unavailable in the immediate bedrock and a well in deepening is being considered, a water sample(s) would be taken from the existing well for chemical, physical and bacteriological analyses prior to deepening the well in order to provide a basis of comparison. If the groundwater in the deeper bedrock is found to be of acceptable quality by the homeowner, either directly from the well or with treatment, it will be developed as a domestic supply. Any modifications to a well would be conducted in accordance with Ontario Regulation 903.

- D. Report Recommendations**
1. **Noise**
- a. See drawing 3 of 4 for noise control requirements by phase and lift.
  - b. Operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - c. The main processing plant can operate within the alternative area shown on the plan view within Phase A1 when the final design of the quarry face is approved, third, or fourth lift (at 300 masl or lower).
  - d. All noise control equipment used for site preparation and rehabilitation on site shall produce sound levels which comply with the Ministry of Environment, Conservation and Parks (MECP) Guideline NRC-115.
  - e. It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures shall be permitted provided that the revision still meets MECP guidelines, as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MECP.
2. **Traffic**
- a. Based on noise requirements, operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - b. The new access shall be constructed to satisfy District requirements with all applicable permits.
  - c. Prior to extraction exceeding 1,000,000 tonnes per year, an eastbound left turn lane shall be constructed to provide 30 metres of vehicle storage on Muskoka Road 111, satisfying District requirements with all applicable permits.
3. **Blasting**
- a. An attenuation study shall be undertaken by an independent consulting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. Blast designs and parameters implemented during the study period shall be representative of typical production blasts anticipated for the quarry. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
  - b. All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptors adjacent to the site or closer, with a minimum of two (2) instruments - one installed in front of the blast and one installed behind the blast.
  - c. Blasts shall be designed to maintain vibration levels below 130ms/s at the location of the closest identified active spawning bed as per the Department of Fisheries and Oceans Canada (DFO) guidelines. When blasting during active spawning season, a minimum of one supplemental vibration monitor shall be installed on the shoreline adjacent to the closest spawning bed to confirm the vibration levels.
  - d. The guideline limits for vibration and water overpressure shall adhere to standards as outlined in the publications Guidelines For the Use of Explosives in or Near Canadian Fisheries Waters (1996) or any such document, regulation or guideline which supersedes this standard.
  - e. The guideline limits for ground vibration and air overpressure shall adhere to standards as outlined in the Model Municipal Noise Control By-law publication NRC 119 (1970) or any such document, regulation or guideline which supersedes this standard.
  - f. In the event of an exceedance of NRC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and parameters shall be reviewed prior to any subsequent blasting and revised accordingly in order to return the operations to compliant levels.
  - g. Blasts shall be designed to maintain vibrations at the transmission towers in the Hydro One Corridor below 50ms/s and any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the towers may exceed 50ms/s, the closest tower shall be monitored for ground vibration.
  - h. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the blast will be away from structures as much as possible.
  - i. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to maintain compliance with current applicable guidelines and regulations.
  - j. Detailed blast records shall be maintained in accordance with current industry best practices.
4. **Hydrology and Hydrogeology**
- a. Prior to the start of water taking and/or water discharge, a PTTW and an ECA for Industrial Sewage Works shall be obtained and the licensee shall operate in compliance with these approved instruments, including the associated monitoring and reporting. The proposed groundwater and surface water monitoring program in the Consolidated Proposed Groundwater and Surface Water Monitoring Programs document (prepared by WSP, dated April 06, 2023) shall be considered for inclusion in these instruments.
  - b. If a water well complaint is received by the licensee the following actions shall be taken:
    - b.a. The local MECP District Office shall immediately be notified of any complaint arising from the taking of water at the well.
    - b.b. When a complaint is received by the licensee, the Complaint Response Program detailing how that incident is resolved. As soon as is practicable, a representative of the licensee or their agent will visit the site to make an initial assessment of the complaint. This will include a wellhead inspection (where accessible) by a licensed pump maintenance contractor to determine the groundwater level, pump depth setting and condition of the well system. The available groundwater level data from the existing on-site monitoring well network will be reviewed by a licensed professional hydrogeologist to develop an estimate of the potential groundwater level drawdown at the potentially affected well that is the subject of the complaint response.
    - b.c. The information obtained from the contractor from the wellhead system inspection and the review of the available groundwater level data will be used by the professional hydrogeologist to prepare an opinion on the likelihood that the well interference complaint is attributed to quarry dewatering.
    - b.d. If it is concluded that the well interference complaint is most likely attributable to quarry dewatering activities at the site and the water supply is at risk, then a temporary supply shall immediately be arranged and a water supply restoration program shall be implemented. The decision as to whether to proceed with the water supply restoration program will be based on a review of groundwater level information by the professional hydrogeologist and well construction and performance information from the licensed pump maintenance contractor as noted above.
    - b.e. The water supply restoration program consists of the following measures which are applicable for local water supply wells where the operation of the water supply wells may have been compromised by quarry excavation or, based on the analysis of all monitoring data, are assessed to likely be compromised in the near future:
      - b.e.a. Well System Rehabilitation - The well system could be rehabilitated by replacement or lowering of pumps, pump line faulting, well deepening, etc. to improve performance. Where water is unavailable in the immediate bedrock and a well in deepening is being considered, a water sample(s) would be taken from the existing well for chemical, physical and bacteriological analyses prior to deepening the well in order to provide a basis of comparison. If the groundwater in the deeper bedrock is found to be of acceptable quality by the homeowner, either directly from the well or with treatment, it will be developed as a domestic supply. Any modifications to a well would be conducted in accordance with Ontario Regulation 903.

- D. Report Recommendations**
1. **Noise**
- a. See drawing 3 of 4 for noise control requirements by phase and lift.
  - b. Operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - c. The main processing plant can operate within the alternative area shown on the plan view within Phase A1 when the final design of the quarry face is approved, third, or fourth lift (at 300 masl or lower).
  - d. All noise control equipment used for site preparation and rehabilitation on site shall produce sound levels which comply with the Ministry of Environment, Conservation and Parks (MECP) Guideline NRC-115.
  - e. It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures shall be permitted provided that the revision still meets MECP guidelines, as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MECP.
2. **Traffic**
- a. Based on noise requirements, operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - b. The new access shall be constructed to satisfy District requirements with all applicable permits.
  - c. Prior to extraction exceeding 1,000,000 tonnes per year, an eastbound left turn lane shall be constructed to provide 30 metres of vehicle storage on Muskoka Road 111, satisfying District requirements with all applicable permits.
3. **Blasting**
- a. An attenuation study shall be undertaken by an independent consulting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. Blast designs and parameters implemented during the study period shall be representative of typical production blasts anticipated for the quarry. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
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  - c. Blasts shall be designed to maintain vibration levels below 130ms/s at the location of the closest identified active spawning bed as per the Department of Fisheries and Oceans Canada (DFO) guidelines. When blasting during active spawning season, a minimum of one supplemental vibration monitor shall be installed on the shoreline adjacent to the closest spawning bed to confirm the vibration levels.
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  - f. In the event of an exceedance of NRC 119 limits or any such document, regulation or guideline which supersedes this standard, blast designs and parameters shall be reviewed prior to any subsequent blasting and revised accordingly in order to return the operations to compliant levels.
  - g. Blasts shall be designed to maintain vibrations at the transmission towers in the Hydro One Corridor below 50ms/s and any such document, regulation or corporate policy in effect at the time. When vibration calculations suggest vibrations at the towers may exceed 50ms/s, the closest tower shall be monitored for ground vibration.
  - h. Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the blast will be away from structures as much as possible.
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    - b.a. The local MECP District Office shall immediately be notified of any complaint arising from the taking of water at the well.
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    - b.c. The information obtained from the contractor from the wellhead system inspection and the review of the available groundwater level data will be used by the professional hydrogeologist to prepare an opinion on the likelihood that the well interference complaint is attributed to quarry dewatering.
    - b.d. If it is concluded that the well interference complaint is most likely attributable to quarry dewatering activities at the site and the water supply is at risk, then a temporary supply shall immediately be arranged and a water supply restoration program shall be implemented. The decision as to whether to proceed with the water supply restoration program will be based on a review of groundwater level information by the professional hydrogeologist and well construction and performance information from the licensed pump maintenance contractor as noted above.
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- D. Report Recommendations**
1. **Noise**
- a. See drawing 3 of 4 for noise control requirements by phase and lift.
  - b. Operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - c. The main processing plant can operate within the alternative area shown on the plan view within Phase A1 when the final design of the quarry face is approved, third, or fourth lift (at 300 masl or lower).
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  - e. It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures shall be permitted provided that the revision still meets MECP guidelines, as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MECP.
2. **Traffic**
- a. Based on noise requirements, operations shall be restricted to 35 trucks per hour (during the day time) or 12 trucks per hour (during the night time) until the existing site access is relocated approximately 75 metres south, and a five metre high noise attenuation berm is constructed, in the locations shown on the plan view (see note C.2. on this drawing).
  - b. The new access shall be constructed to satisfy District requirements with all applicable permits.
  - c. Prior to extraction exceeding 1,000,000 tonnes per year, an eastbound left turn lane shall be constructed to provide 30 metres of vehicle storage on Muskoka Road 111, satisfying District requirements with all applicable permits.
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    - b.a. The local MECP District Office shall immediately be notified of any complaint arising from the taking of water at the well.
    - b.b. When a complaint is received by the licensee, the Complaint Response Program detailing how that incident is resolved. As soon as is practicable, a representative of the licensee or their agent will visit the site to make an initial assessment of the complaint. This will include a wellhead inspection (where accessible) by a licensed pump maintenance contractor to determine the groundwater level, pump depth setting and condition of the well system. The available groundwater level data from the existing on-site monitoring well network will be reviewed by a licensed professional hydrogeologist to develop an estimate of the potential groundwater level drawdown at the potentially affected well that is the subject of the complaint response.
    - b.c. The information obtained from the contractor from the wellhead system inspection and the review of the available groundwater level data will be used by the professional hydrogeologist to prepare an opinion on the likelihood that the well interference complaint is attributed to quarry dewatering.
    - b.d. If it is concluded that the well interference complaint is most likely attributable to quarry dewatering activities at the site and the water supply is at risk, then a temporary supply shall immediately be arranged and a water supply restoration program shall be implemented. The decision as to whether to proceed with the water supply restoration program will be based on a review of groundwater level information by the professional hydrogeologist and well construction and performance information from the licensed pump maintenance contractor as noted above.
    - b.e. The water supply restoration program consists of the following measures which are applicable for local water supply wells where the operation of



**Legend**

- Licence Boundary
- Limit of Extraction
- Phase Boundary
- Existing Main Processing Area
- Alternative Location of Main Processing Plant

**Daytime (7:00am to 7:00pm) Physical Noise Control Measures - Phase A, Lifts 1 - 4**

- Rock Drill Option 1**
- Localized barrier with eight 40-foot shipping containers stacked two high and four long, in a 'D' shape, providing shielding to north, east and south.
- Rock Drill Option 2**
- Use quieter drill with maximum sound power level of 110 dBA.
- Primary Crusher & Loader**
- Localized shielding to north, east and south. Can be achieved by working face or supplemental noise barriers with a height of 15 metres, located within 40 metres of the primary crusher.

- Existing Main Processing Plant Location**
- Localized shielding with 17 metre high stockpile on the east side of the processing area as shown on the plan view.

- Alternative Main Processing Plant Location - Lifts 2 to 4 Only**
- Localized shielding in the form of a working face or stockpile with a height of 17 metres to the north, east and south of the processing plant. The processing plant shall be constructed at an elevation of 300 masl or lower, in the southern extent of Phase A1 as shown below.

- Loading & Shipping**
- When more than 35 trucks visit the site per hour, the site entrance shall be relocated and a 5 metre high noise berm shall be constructed along the southeast licence boundary as shown on drawing 2 of 4.
  - Loading and shipping activities can operate simultaneously with any other operation.

**Night-time (7:00pm to 7:00am) Physical Noise Control Measures - Phase A, Lifts 1 - 4**

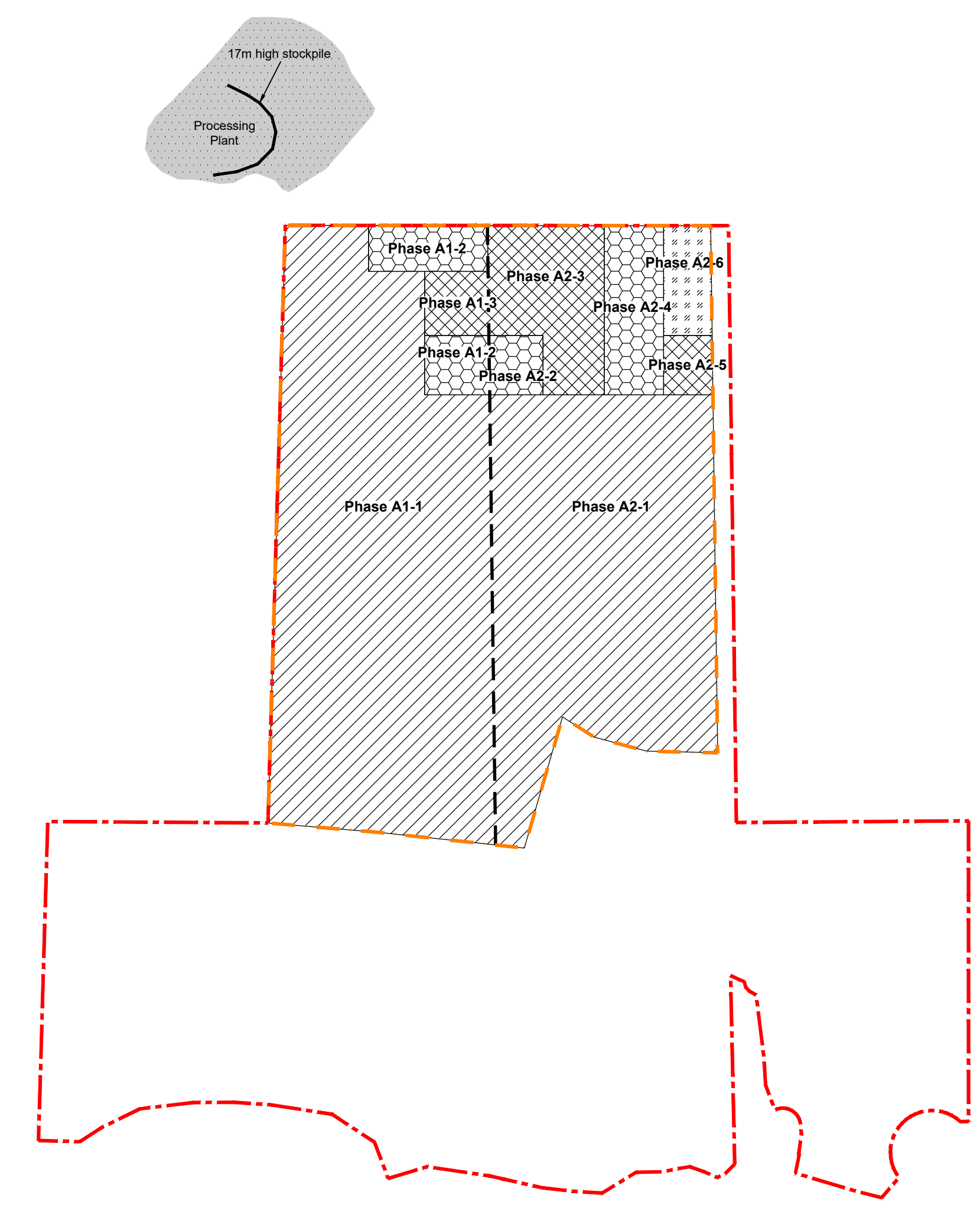
- Primary Crusher & Loader**
- Localized shielding to north, east and south. Can be achieved by working face or supplemental noise barriers with a height of 15 metres, located within 40 metres of the primary crusher.

- Existing Main Processing Plant Location**
- Localized shielding with 17 metre high stockpile on the east side of the processing area as shown on the plan view.

- Alternative Main Processing Plant Location - Lifts 2 to 4 Only**
- Localized shielding in the form of a working face or stockpile with a height of 17 metres to the north, east and south of the processing plant. The processing plant shall be constructed at an elevation of 300 masl or lower, in the southern extent of Phase A1 as shown below.

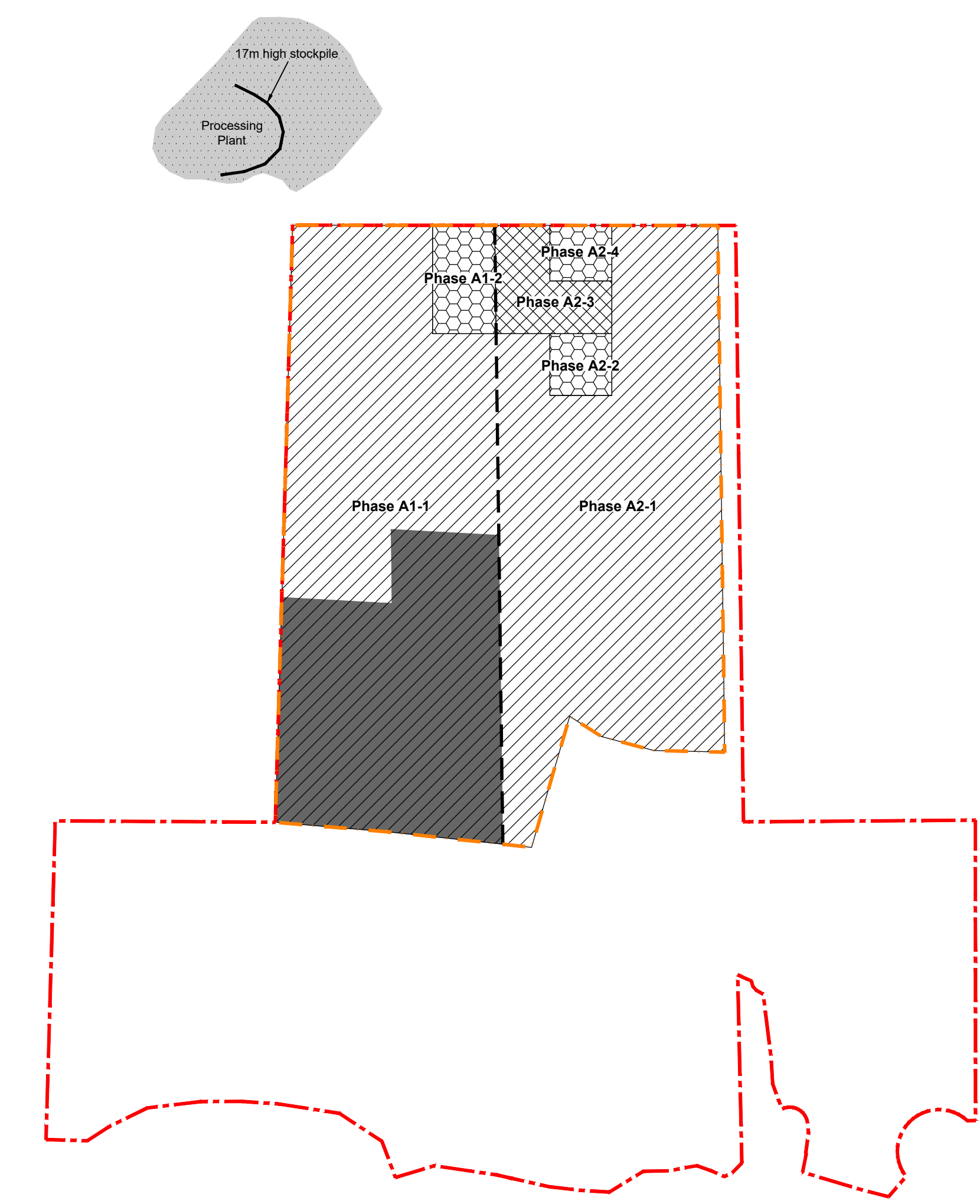
- Loading & Shipping**
- When more than 12 trucks visit the site per hour, the site entrance shall be relocated and a 5 metre high noise berm shall be constructed along the southeast licence boundary as shown on drawing 2 of 4.

- Drilling**
- No drilling during night-time hours



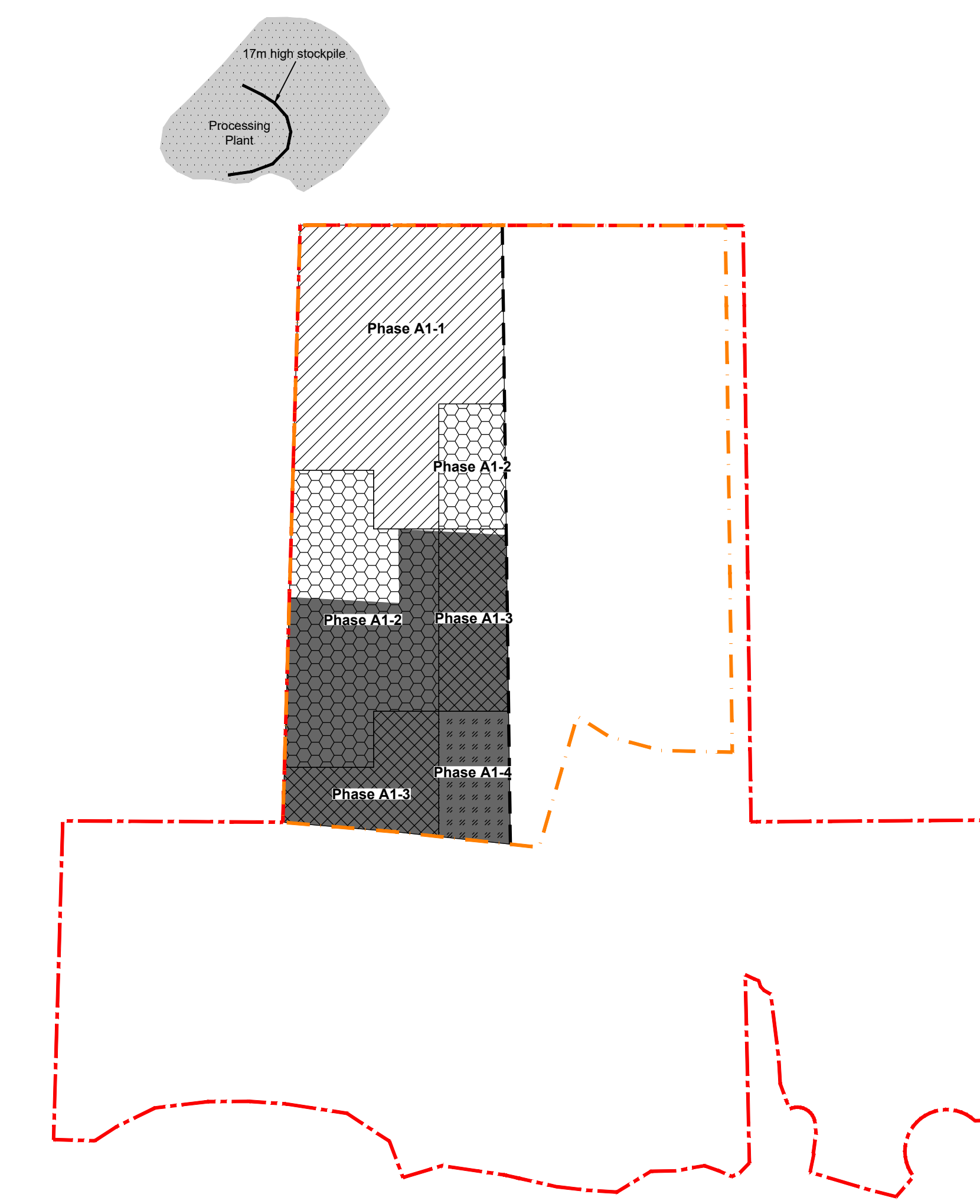
**Operating Restrictions - Phase A - Lift 1  
Day-Time Hours (7:00am to 7:00pm)**

- Phase A1-1 & A2-1**
- No restrictions, any equipment can operate.
- Phase A1-2, A2-2 & A2-4**
- Option 1: Primary crusher and main processing plant only;
  - Option 2: Main processing plant and drill only; or
  - Option 3: Primary crusher and drill only.
- Phase A1-3, A2-3 & A2-5**
- Option 1: Primary crusher and main processing plant only; or
  - Option 2: Main processing plant and drill only.
- Phase A2-6**
- Option 1: Primary crusher and main processing plant only; or
  - Option 2: Drilling only, using quieter drill and localized noise barrier.



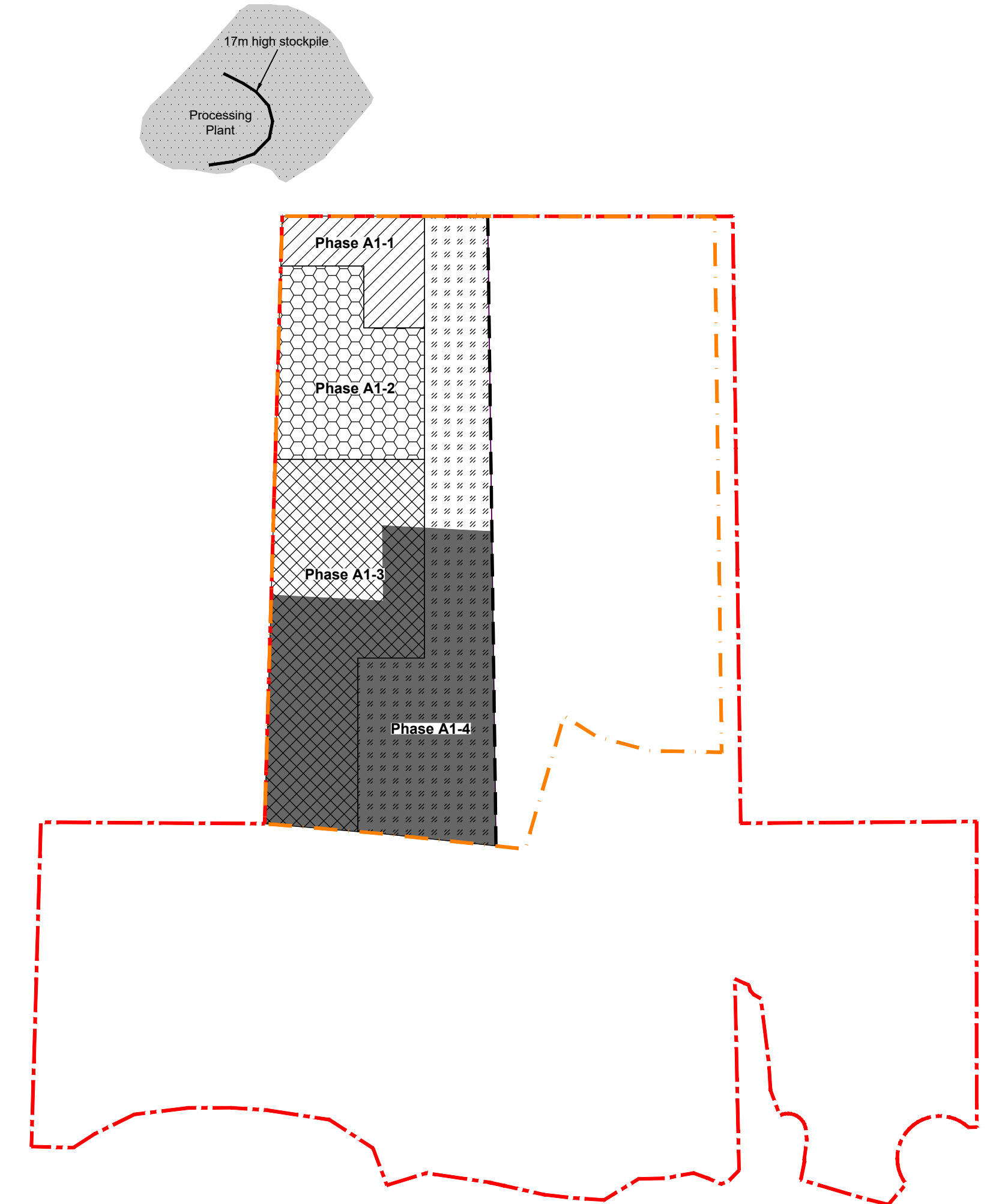
**Operating Restrictions - Phase A - Lift 2  
Day-Time Hours (7:00am to 7:00pm)**

- Phase A1-1 & A2-1**
- No restrictions, any equipment can operate.
- Phase A1-2, A2-2 & A2-4**
- Option 1: Primary crusher and main processing plant only;
  - Option 2: Main processing plant and drill only; or
  - Option 3: Primary crusher and drill only.
- Phase A2-3**
- Option 1: Primary crusher and main processing plant only; or
  - Option 2: Main processing plant and drill only.



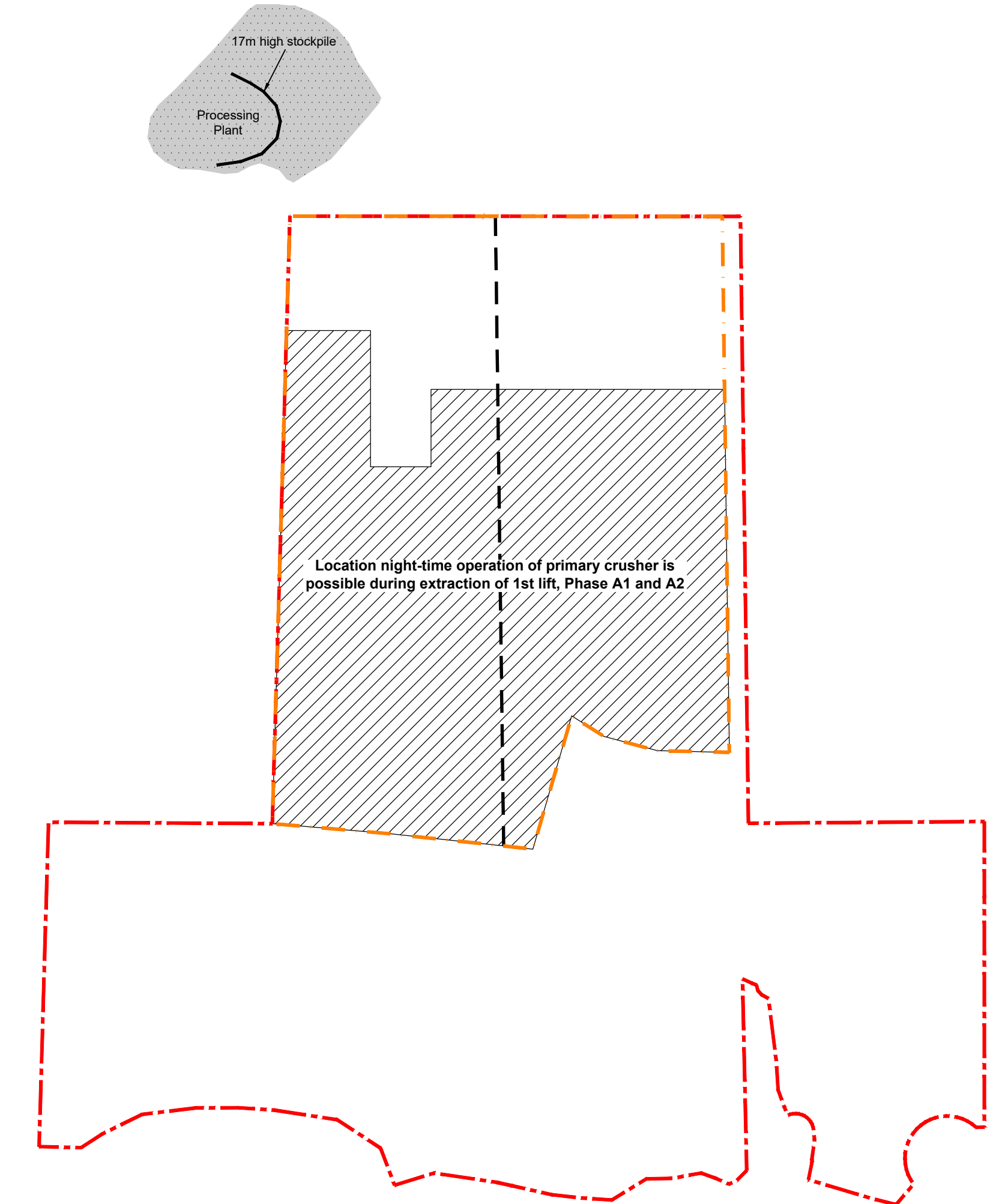
**Operating Restrictions - Phase A - Lift 3  
Day-Time Hours (7:00am to 7:00pm)**

- Phase A1-1**
- No restrictions, any equipment can operate with physical measures in place.
- Phase A1-2**
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
  - Option 2: No physical measures required when drill operates only.
- Phase A1-3**
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
  - Option 2: No physical measures for drill required when drill and main plant operate only.
- Phase A1-4**
- Option 1: No restrictions, any equipment can operate with physical measures in place;
  - Option 2: No physical measures required when drill and main plant operate only; or
  - Option 3: No physical measures for drill required when drill and primary crusher operate only.



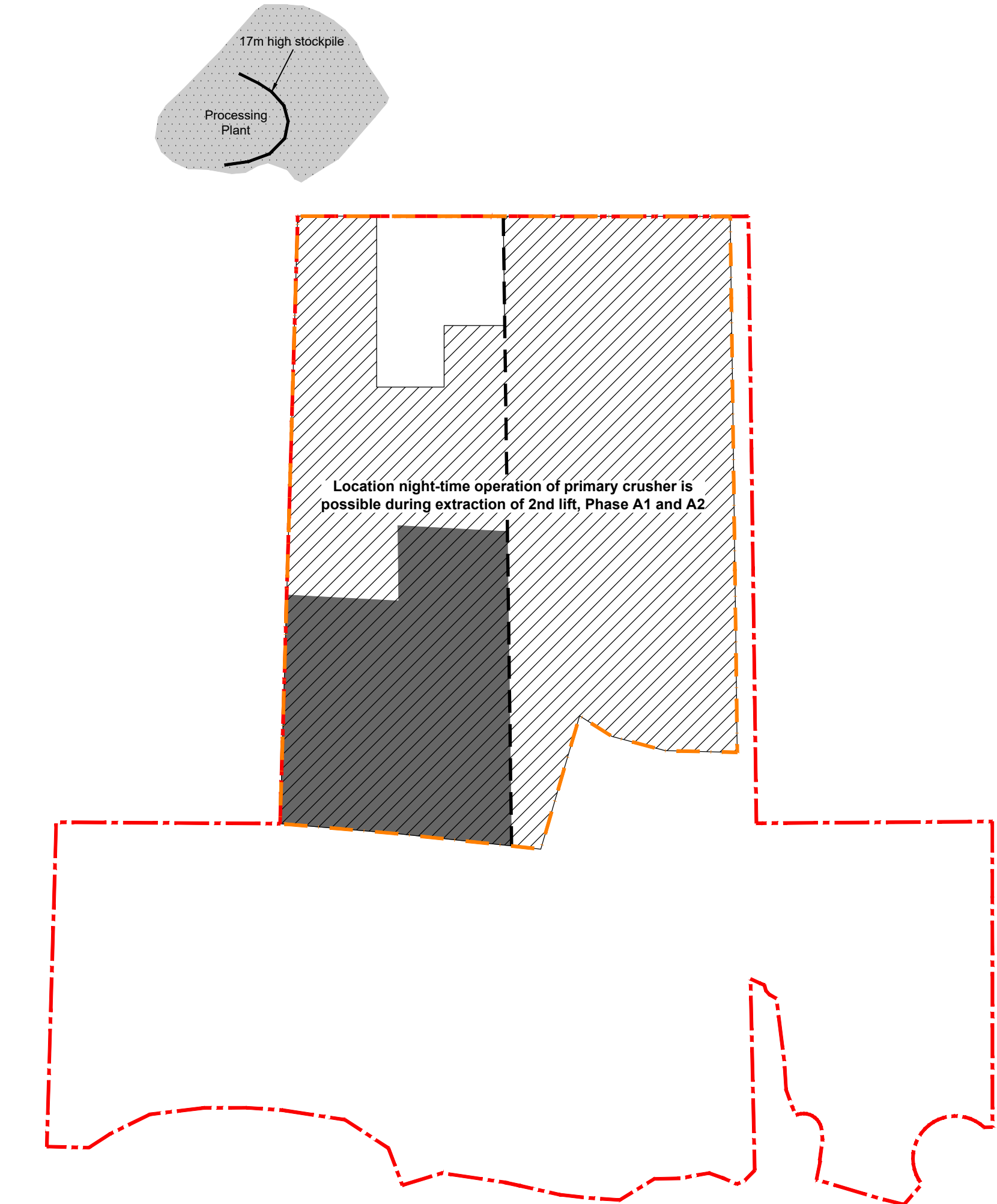
**Operating Restrictions - Phase A - Lift 4  
Day-Time Hours (7:00am to 7:00pm)**

- Phase A1-1**
- No restrictions, any equipment can operate with physical measures in place.
- Phase A1-2**
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
  - Option 2: No physical measures required when drill operates only.
- Phase A1-3**
- Option 1: No restrictions, any equipment can operate with physical measures in place; or
  - Option 2: No physical measures for drill required when drill and main plant operate only.
- Phase A1-4**
- Option 1: No restrictions, any equipment can operate with physical measures in place;
  - Option 2: No physical measures for drill required when drill and main plant operate only; or
  - Option 3: No physical measures for drill required when drill and primary crusher operate only.



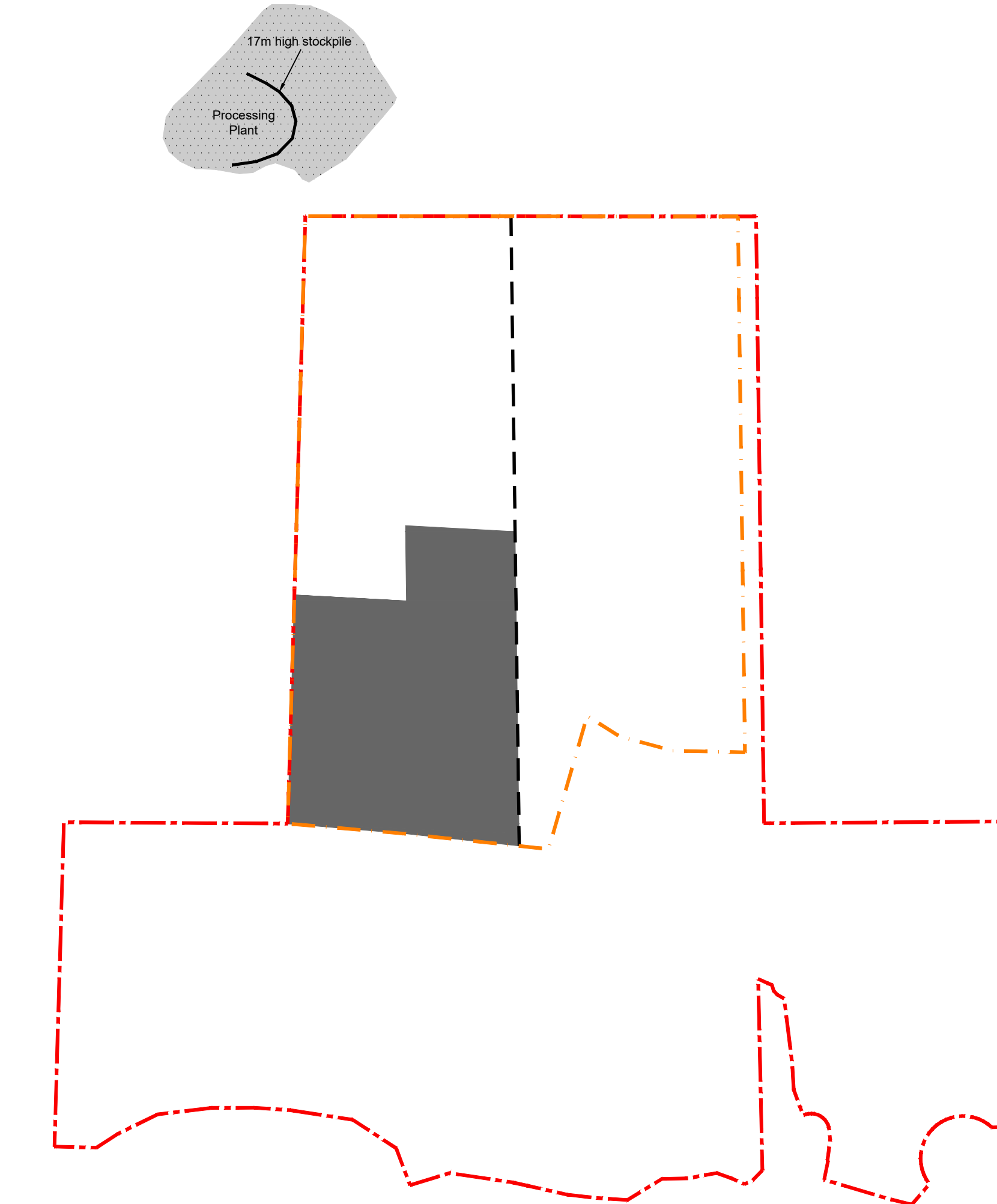
**Operating Restrictions - Phase A - Lift 1  
Night-Time Hours (7:00pm to 7:00am)**

- Option 1:** Operation of main processing plant and shipping only; or
- Option 2:** Operation of primary crusher only in areas shown above.



**Operating Restrictions - Phase A - Lift 2  
Night-Time Hours (7:00pm to 7:00am)**

- Option 1:** Operation of main processing plant and shipping only; or
- Option 2:** Operation of primary crusher only in areas shown above.



**Operating Restrictions - Phase A - Lifts 3 & 4  
Night-Time Hours (7:00pm to 7:00am)**

- Phase A**
- Option 1: Operation of main processing plant and shipping only; or
  - Option 2: Operation of primary crusher only, no area restrictions apply.

**Site Plan Amendments**

No.	Date	Description	By

**Site Plan Revisions (Pre-Licensing)**

No.	Date	Description	By
1	November 2020	Adjusted limit of extraction in southeast corner to remain outside of Archaeological Site.	C.P.
2	December 2020	Adjusted licence boundary and limit of extraction in southeast corner to remain outside of archaeological areas.	C.P.
3	August 2021	Updated site plan per feedback from MNRF.	C.P.
4	July 2022	Updated limit of extraction per feedback from MNRF.	C.P.
5	April 2023	Updated limit of extraction to remove Phase B.	C.P.

**MHBC**  
 PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE  
 113 QUEEN STREET, BARRE, ON, CANADA L4R 1H2 | P: 705.728.0045 F: 705.728.2010 | WWW.MHBCON.COM

**MHBC Stamp**

**Brian Zeman**  
 is authorized by the Ministry of Natural Resources and Forestry pursuant to Subsection 0.2(3)(e) of Ontario Regulation 244/97 to prepare and certify site plans.

**Christopher Poole**  
 is authorized by the Ministry of Natural Resources and Forestry pursuant to Subsection 0.2(3)(f) of Ontario Regulation 244/97 to prepare and certify site plans.

**Applicant**

**Fowler Construction Company Limited**  
 1206 Rosewarne Drive  
 Bracebridge, Ontario  
 P1L 1T9

**Project** *Child's Pit & Quarry Extension*  
 1235 Bonnie Lake Road, Bracebridge, Ontario

**MNRF Licence Reference No.** 626505  
**Applicant's Signature**

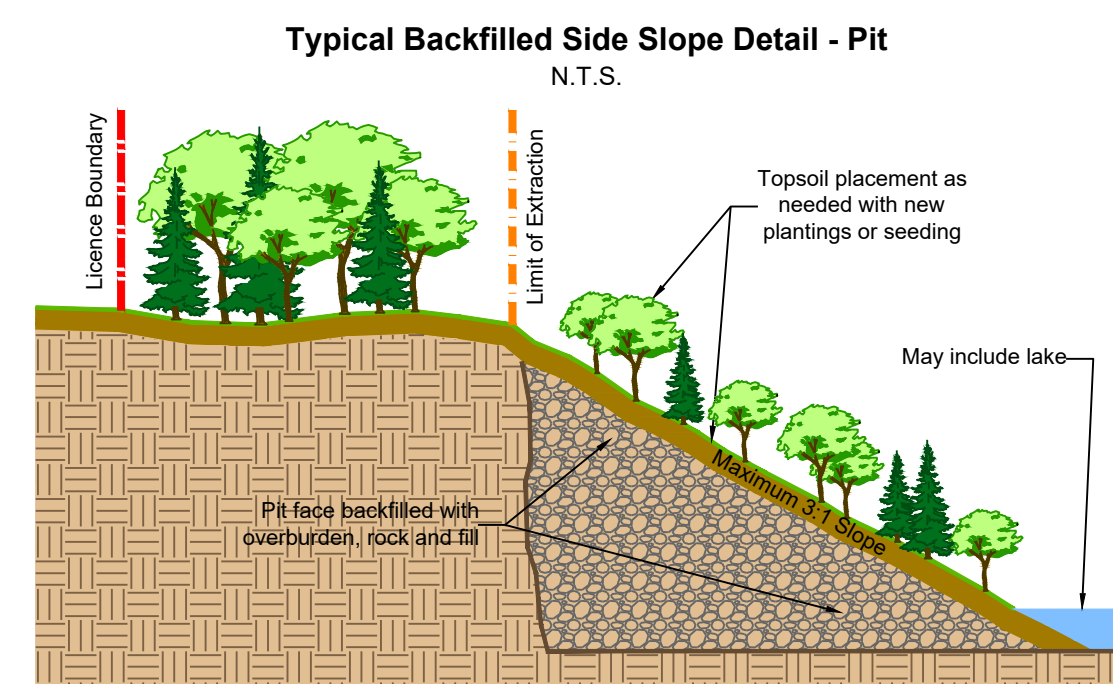
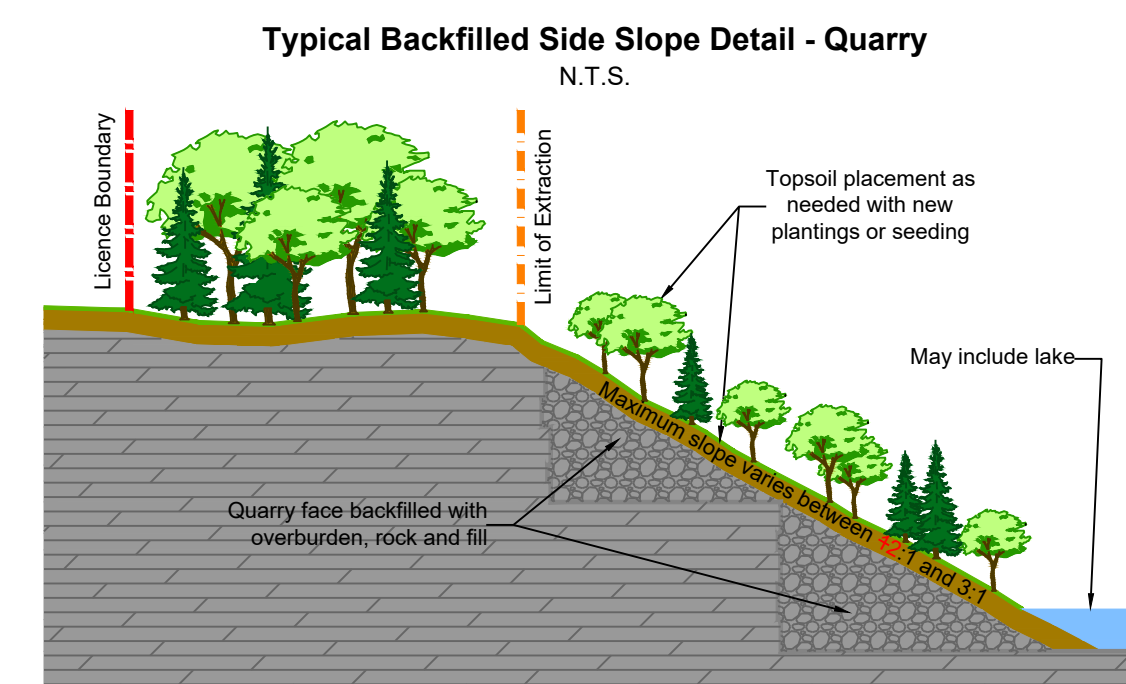
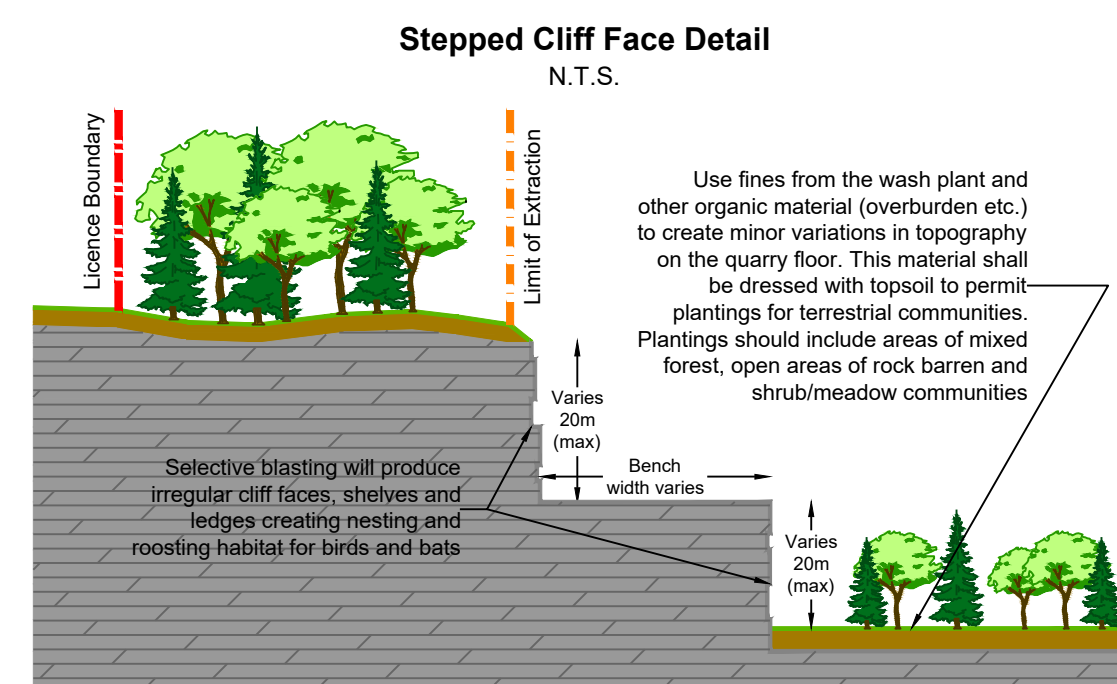
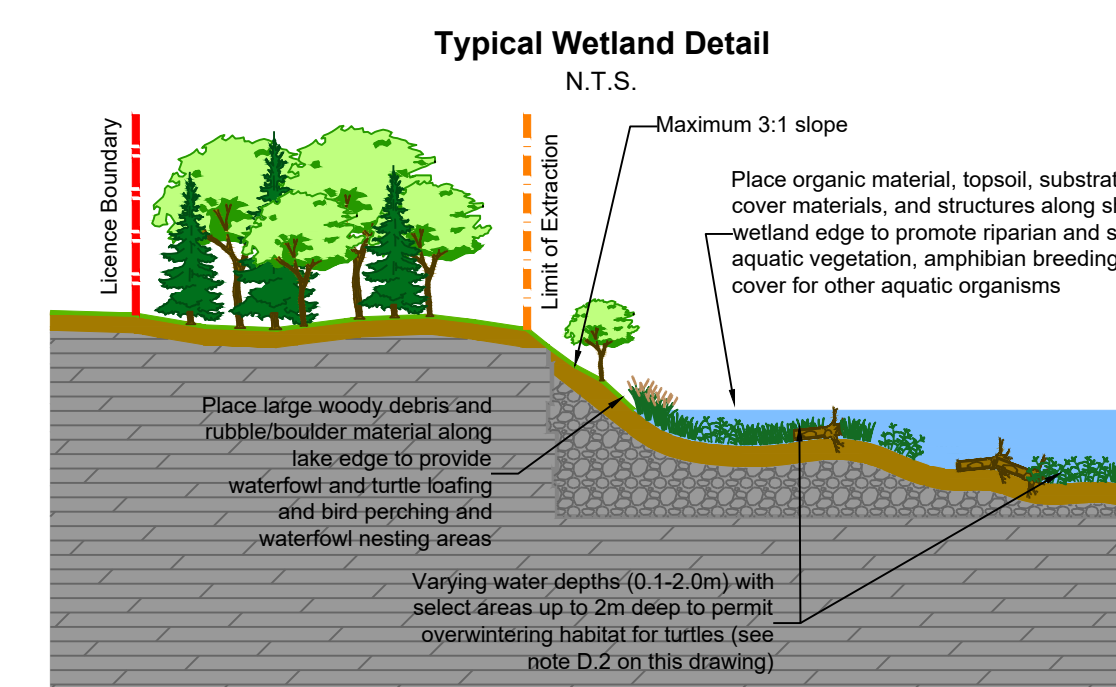
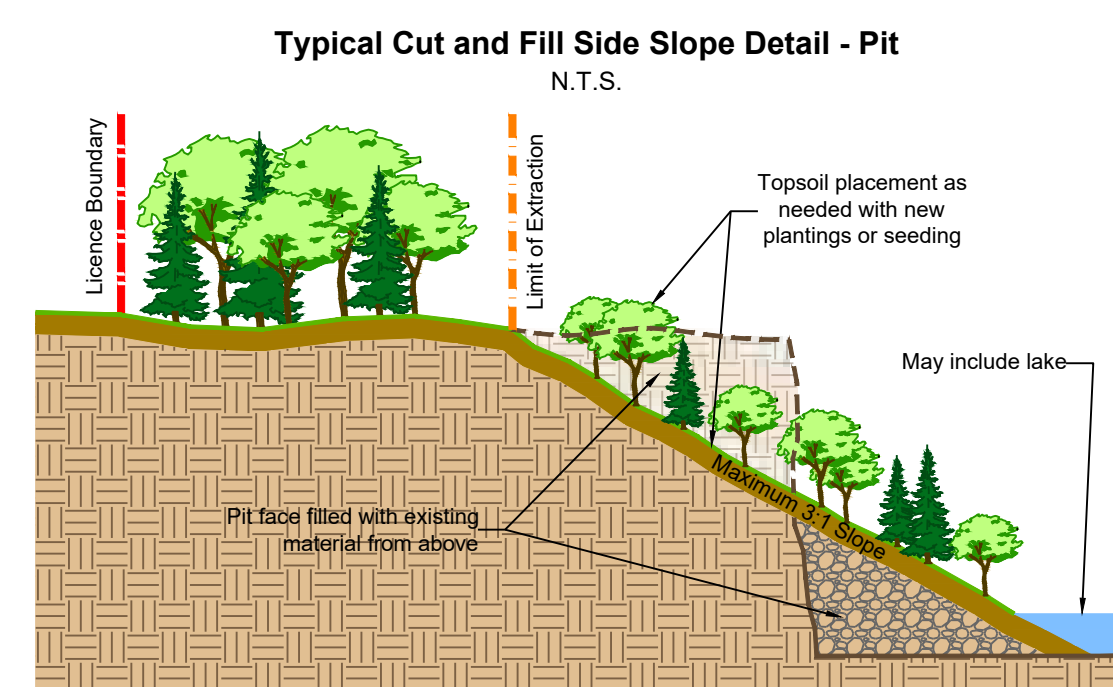
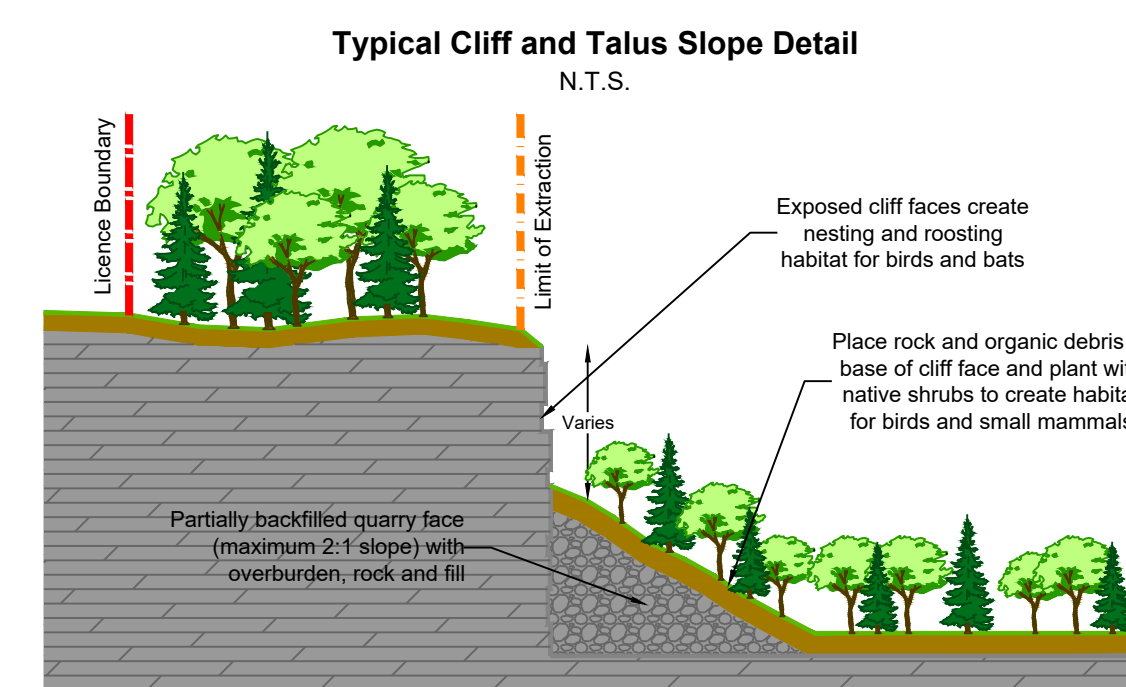
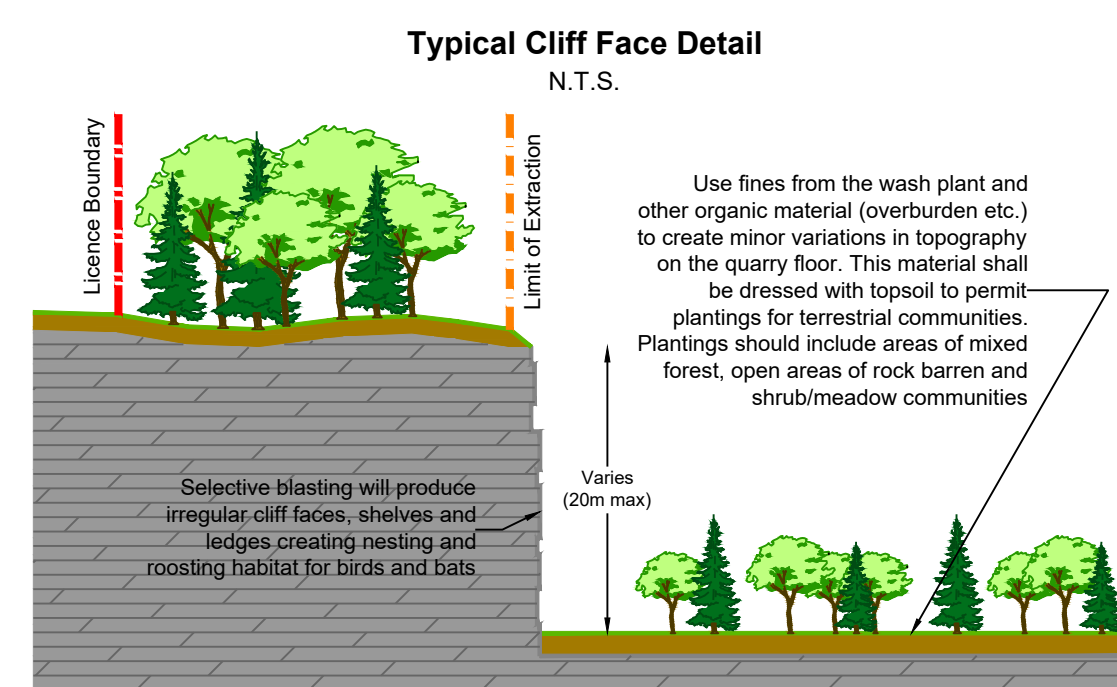
**Plan Scale:** 1:7,500 (Arch. E)  
**Date:** June 2020  
**Drawn By:** C.P. **File No.:** 1515C  
**Checked By:** B.Z.

**File Name:** Operational Plan - Noise Attenuation  
**Drawing No.:** 3 of 4



**Legend**

	Licence Boundary		120m Offset From Licence Boundary
	Limit of Extraction		Existing Licence Existing Licence Boundary - solid line Existing Limit of Extraction - dash line
	Contours with Elevation Metres above sea level (MASL)		Lots and Concessions
	Public Road		Fence 1.2m post & wire fence unless otherwise noted
	Internal Road		Hydro Corridor
	Extraction Face		Gate
	Watercourse Permanent - solid Intermittent - dash with dot		Final Direction of Surface Drainage
	Waterbody		Building/Structure
	Wetland 4.9 hectares		Proposed Floor Elevation Metres above sea level (MASL)
	Terrestrial Habitat		Proposed Final Grade and Slope
	Wooded Area		Cross Sections A1
	Evaluated Wetland (Non Significant) Provided by Land Information Ontario		



**Progressive Rehabilitation**

- A. General**
- Area Calculations:
    - Licence Area 160.3 hectares
    - Limit of Extraction 70.8 hectares
- B. Phasing**
- As excavation reaches the limit of extraction or maximum depth within each phase, progressive rehabilitation shall commence.
  - Progressive rehabilitation shall follow the direction and sequence of extraction identified on the plan view and described in the notes on drawing 2 of 4.
- C. Slopes and Grading**
- Progressive rehabilitation will utilize a variety of rehabilitation techniques including:
    - Backfilling extraction faces and pit & quarry faces;
    - Partially backfilling extraction faces to create a cliff with talus slope or
    - Leaving extraction faces vertical.
  - The final rehabilitated landforms established using the rehabilitation techniques will consist of a lake, wetland, and terrestrial habitat. Side sloping on-site will range from vertical face, 2:1 and 3:1 side slopes as shown on the plan view.
  - In order to permit wildlife access to the wetland and terrestrial communities in Phase A2, the south and east boundary of Phase A2 shall be backfilled to create a 3:1 side slope except where cliff faces and off with talus slopes are required.
  - Excess soil, as defined in Ontario Regulation 244/97, may be imported to this site to facilitate the following rehabilitation:
    - Creation of 3:1 slopes (or sloping ratio otherwise described and depicted on this drawing)
    - Top dressing to establish vegetation
  - Liquid soil, as defined in Ontario Regulation 406/19 under the Environmental Protection Act, is not authorized for importation to the site.
  - The quality of excess soil imported to the site for final placement must be equivalent to or more stringent than the applicable excess soil quality standards as determined in accordance with Ontario Regulation 244/97, as amended from time to time, and must be consistent with the site conditions and the end use identified in the approved rehabilitation plan.
  - Where a qualified person is retained or required to be retained in accordance with Ontario Regulation 244/97, the quality, storage, and final placement of excess soil shall be done according to the advice of the qualified person.
  - Excess soil imported to facilitate rehabilitation as described on this site plan shall be undertaken in accordance with Ontario Regulation 244/97 under the Aggregate Resources Act, as amended from time to time.
  - The cumulative total amount of excess soil that may be imported to this site for rehabilitation purposes is 1,100,000 m<sup>3</sup>.
- D. Wetland Creation**
- A 15.0 hectare wetland shall be established in Phase A2 at the location and elevations shown on the plan view.
  - 25% of the wetland in Phase A2 shall be constructed to provide minimum water depths of 1.0 metres during low water conditions, while the remainder of the wetland will range in depth between 0.1 metres and 1.0 metres.
  - Turtle basking structures constructed from natural features (e.g., rock ramps, logs, rockwads, etc.) shall be placed in the wetland and along its edges in a manner suitable for turtles to crawl onto. The diameter of the rocks and logs shall vary to permit use by small and large turtles.
  - Where used, logs and root balls shall be placed at a variety of angles and water depths. Only a small number of logs or root balls shall be placed parallel to the shoreline.
  - All rock ramps shall be constructed by placing small to medium sized round and flat rocks below the water line to gradually above the water line, in a manner that allows turtles to crawl from the water to the basking area.
  - Where possible, logs features that are installed shall contain limbs. Where available, full trees (canopy and root ball) shall be used as basking structures.
  - Substrates within the wetland shall be dominated by 'muck' organics, especially in the deeper sections of the wetland.
  - The wetland shall be planted with a variety of aquatic and emergent vegetation. Where possible, species that will provide floating mats of vegetation shall be prioritized. A list of suitable wetland vegetation is provided in Table 1 - Vegetation Species Suitable for Wetland Creation and Rehabilitation below.

**Table 1: Vegetation Species Suitable for Wetland Creation and Rehabilitation**

Floating / Emergent / Submergent	Wetland Fringe
White Water Lily (Nymphaea odorata)	Broadleaf Cattail (Typha latifolia)
Yellow Pond Lily (Nuphar lutea ssp. Virgatica)	Canada Blue-joint (Calamagrostis canadensis)
American Eel-grass (Vallisneria spiralis)	Tamarack (Larix laricina)
Hartwig's Blue Flag (Iris versicolor)	Black Spruce (Picea mariana)
Pickerelweed (Pontederica cordata)	Spotted Alder (Alnus incana)
Narrow-leaved Burhead (Paspalum emersoni)	Mountain Holly (Ilex mucronata)
	Northern Wild Russian (Urtum canadensis)
	Common Elderberry (Sambucus canadensis)

**E. Terrestrial Habitat**

- Terrestrial rehabilitation shall be established in the areas identified on the plan view. The list of plant species for progressive rehabilitation is provided in Table 2 - Vegetation Species Suitable for Pit and Quarry Rehabilitation below to allow for naturalization that blends with the buffers for the adjacent natural features.

**Table 2: Vegetation Species Suitable for Pit and Quarry Rehabilitation**

Trees and Shrubs	Herbaceous Species
White Spruce (Picea glauca)	Canada Bluegrass (Poa compressa)
Eastern White Cedar (Thuja occidentalis)	Timothy (Phleum pratense)
Tamarack (Larix laricina)	Perennial Rye (Lolium perenne)
Largemouth Aspen (Populus grandidentata)	Affinis (Medicago sativa)
Trembling Aspen (Populus tremuloides)	Red Clover (Trifolium pratense)
Pix Cherry (Prunus pennsylvanica)	Rough Hair Grass (Agrostis scabra)
Red Maple (Acer rubrum)	Powery Owl Grass (Dianthus spicata)
White Birch (Betula papyrifera)	Little Bluestem (Schizanthus scoparium)
Choke Cherry (Prunus virginiana)	Sidesats Grama (Bouteloua curtipendula)
Red-osier Dogwood (Cornus stolonifera)	New England Aster (Aster novae-angliae)
Staghorn Sumac (Rhus typhina)	Lanceolated Coreopsis (Coreopsis lanceolata)
Narrow-leaved Meadowsweet (Spiraea alba)	Flat Topped White Aster (Aster umbellatus var. umbellatus)
Red Raspberry (Rubus idaeus)	Phalaris Pratense (Eriogon phalaridifolius ssp. phalaridifolius)
Downy Serviceberry (Amelanchier arborea)	Black-eyed Susan (Rudbeckia hirta)
Common Blackberry (Rubus alleghaniensis)	Canada Goldenrod (Solidago canadensis)
White Oak (Quercus alba)	Gray Goldenrod (Solidago nemoralis ssp. nemoralis)
Northern Red Oak (Quercus rubra)	Canada Milkweed (Asragalus canadensis)
Eastern White Pine (Pinus strobus)	Red Pine (Pinus resinosa)

- Rehabilitation of the terrestrial portions of the quarry shall include the creation of cliff and talus slope along portions of the eastern limit of extraction for Phase A2.
  - Where possible, terrestrial communities within Phase A2 shall be created using trees and other organic material available on-site to provide variations in the topography and therefore encourage growth of new plant life.
- F. Drainage**
- Final surface drainage will follow the rehabilitated contours and directional arrows shown on the plan view.
  - The final design of the quarry takes shall provide for overflow channels directed towards the MR-North tributary. The final design of the channels shall be developed with the assistance of a qualified professional and shall provide end uses for fish and wildlife.
  - Analysis of monitoring data shall be undertaken prior to cessation of extraction to establish geologically based flow requirements for the MR-North tributary between the limit of extraction and the North Branch of the Muskoka River to ensure adequate flow during the flood back period.

**Final Rehabilitation**

- A. General**
- All equipment and buildings/structures shall be removed from the site.
  - The internal haul roads through the potential Phase B lands may remain to provide access to the final landform.
  - The established groundwater table is approximately 295 masl.



**Site Plan Amendments**

No.	Date	Description	By

**Site Plan Revisions (Pre-Licensing)**

No.	Date	Description	By
1	November 2020	Adjusted limit of extraction in southeast corner to remain outside of Archaeological Site. Updated notes A.1.3 and A.1.3.b.	C.P.
2	December 2020	Adjusted fence boundary and limit of extraction in southeast corner to remain outside of archaeological areas. Updated note A.1.a.	C.P.
3	August 2021	Updated notes B.1, C.4, C.5, and Table 2 under note E.1.	C.P.
4	July 2022	Adjusted notes to be written as enforceable conditions per feedback from MNR. Updated notes A.1, A.1.a, A.1.b, C.2, D.2 and D.3. Added notes C.4, C.5, C.6 and D.5. Updated Table 1.	C.P.
5	April 2023	Updated limit of extraction to remove Phase B.	C.P.

**MHBC**  
 PLANNING & ARCHITECTURE  
 URBAN DESIGN & LANDSCAPE ARCHITECTURE  
 113 COLUER STREET, BARRE, ON, L4R 1H2 | P: 705.728.0405 | F: 705.728.2010 | WWW.MHBCON.COM

**MHBC Stamp**

<p><b>Brian Zeman</b></p> <p>Is authorized by the Ministry of Natural Resources and Forestry pursuant to Subsection 0.2(3)(e) of Ontario Regulation 244/97 to prepare and certify site plans.</p>	<p><b>Christopher Poole</b></p> <p>Is authorized by the Ministry of Natural Resources and Forestry pursuant to Subsection 0.2(3)(f) of Ontario Regulation 244/97 to prepare and certify site plans.</p>
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**Applicant**

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 P1L 1T9

**Project** *Child's Pit & Quarry Extension*  
 1235 Bonnie Lake Road, Bracebridge, Ontario

**MNR Licence Reference No.** 626505  
**Applicant's Signature** [Signature]

**Plan Scale:** 1:4000 (Arch E)  
**Date:** June 2020  
**Drawn By:** C.P. **File No.:** 1515C  
**Checked By:** B.Z.

**File Name:** Rehabilitation Plan  
**Drawing No.:** 4 of 4