

# **REGISTRATION DOCUMENT**

**Continental Stone Limited  
Proposed Development  
Belleoram Crushed Granite  
Rock Quarry**

**APRIL 3, 2006**

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## **1.0 PROPONENT INFORMATION**

### **1.1 Name of Undertaking**

Belleoram Rock Quarry

### **1.2 Proponent**

Name of Corporate Body: Continental Stone Limited

Address: P.O. Box 5424  
St. John's NL A1C 5W2

Chief Executive Officer: Ed Murphy

Principle Contact Person  
for Purposes of  
Environmental Assessment: Robert Rose

## 2.0 THE UNDERTAKING

### 2.1 Nature of the Undertaking

Continental Stone Limited proposes to develop a crushed granite rock quarry to supply raw material to international markets. The granite will be quarried and crushed on site using standard industry methodologies and loaded onto ships via a conveyor belt and then shipped to market.

The project will be carried out in three phases.

**Phase 1** (Development) will include excavation and removal of overburden material to enable construction of a road to the site for employees, visitors, and equipment suppliers. Core samples of the rock will be taken at this phase to ensure that the rock is suitable for market. This phase will also include the excavation of an area suitable for setup of the crusher and associated equipment and a suitable marine wharf for the project. All equipment will be setup at this phase.

**Phase 2** (Operation) will consist of drilling and blasting of the rock source. This fractured rock will then be crushed in various sizes for transport by bulk carrier to market. It is estimated that 2,000,000 tonnes of aggregate will be shipped in the first year of operation.

**Phase 3** (Decommissioning) of this project will involve demobilizing all unsuitable structures at the site and the creation of an area friendly for the community and the environment.

A Development Plan pursuant to the requirements of the Department of Natural Resources as outlined in the *Minerals Act* is being prepared.

### 2.2 Purpose of the Project

The purpose of the project is to gain a market share of the aggregate industry, with a view of enhancing the long term viability of Continental Stone and the economy of the Connaigre Peninsula through the creation of sustainable employment. The project is expected to bring 80-100 full time direct jobs with the potential for numerous indirect jobs for a project life of 50 years.

### 2.3 Alternative Means of Carrying Out the Project

Continental Stone has examined and evaluated technically and economically feasible alternative means of carrying out the project including different modes of transportation and alternative facility locations.

In terms of transportation, consideration was given to the environmental and socio-economic implications of shipping the crushed aggregate versus moving it overland. Continental Stone has determined that the use of ocean going vessels along established and approved shipping lanes would be less intrusive to the surrounding communities and also less expensive. Furthermore it was also

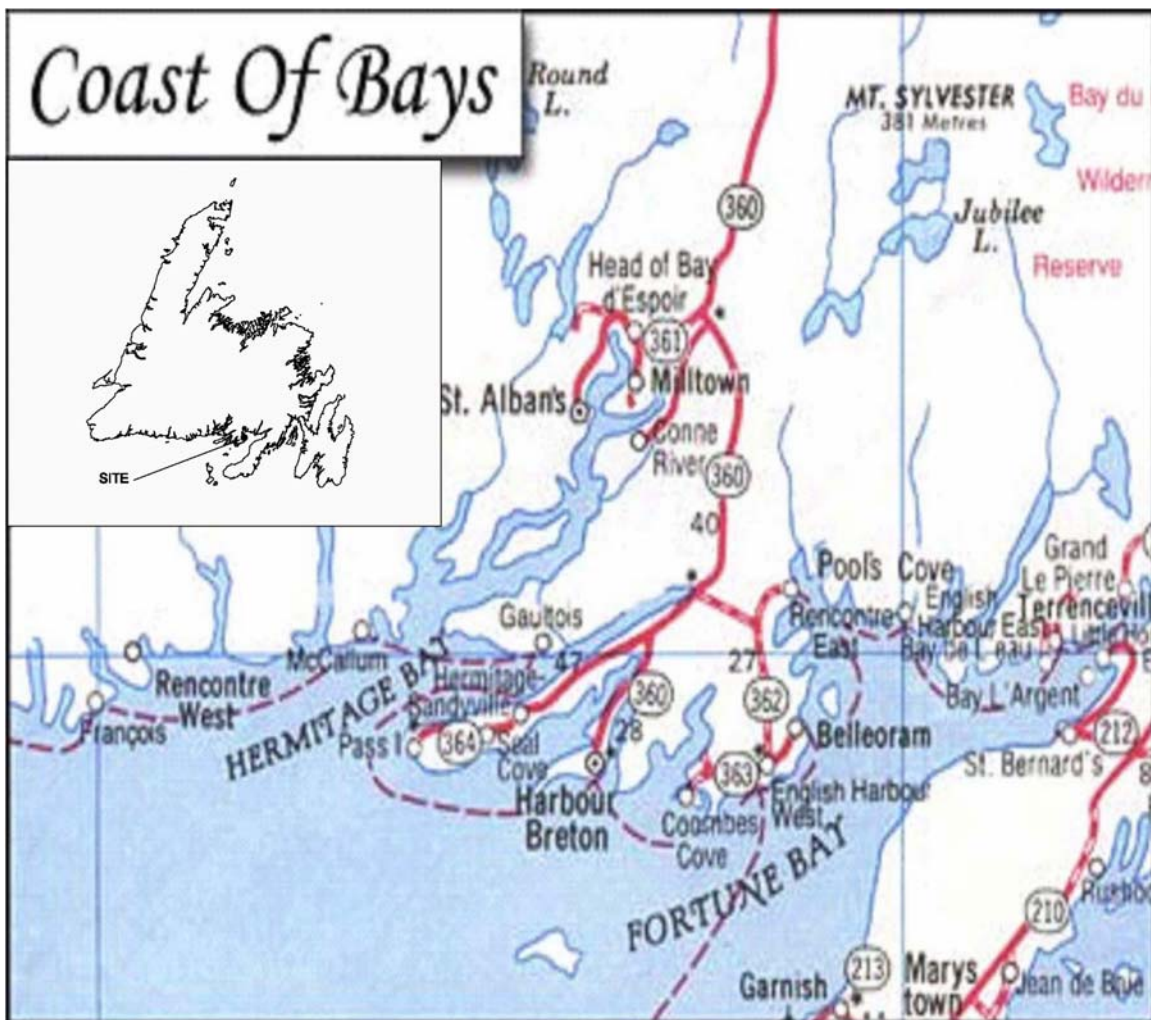
determined that the use of ocean going vessels would require less construction and maintenance of infrastructure such as roads and highways able to withstand the repeated heavy loads of trucks. Adopting the shipping mode of transportation is deemed to have the additional benefit of restricting the spatial extents of potential effects on the terrestrial environment in the project area.

The Belleoram site was chosen due to its large deposit of granite, deep ice free port, close proximity to shipping lanes, minimal tidal action, and supply of suitable labour.

## 2.4 Location

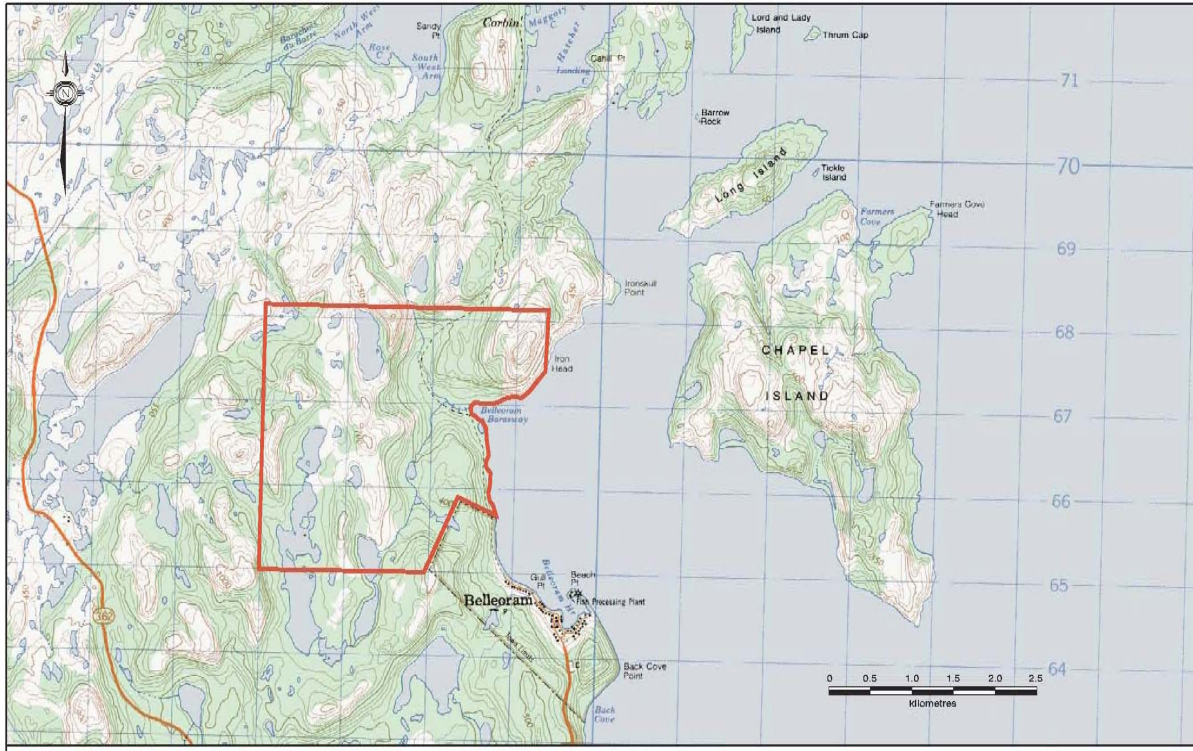
The proposed site of the Continental Stone Quarry is immediately north of the community of Belleoram which is located in Fortune Bay Newfoundland. The town has a population of approximately 450 people. Fishing is currently the main industry in the area.

**Figure 1 Community of Belleoram, Fortune Bay, Newfoundland and Labrador**



The project area of approximately 900 ha is illustrated in figure 2.

**Figure 2 Belleoram Granite Quarry Project Area**



## 2.5 Stakeholder Consultation

Public consultation has been conducted with government agencies and local stakeholders. Letters of support for the project from various community organizations is presented in Appendix 1.

## 2.6 Physical Features

The primary physical features will include the quarry, a marine wharf and a new access road. Additional constructed features will include a rock crusher, a conveyor system, administrative and cook house buildings and a transmission line.

Preliminary design details of the marine wharf are provided in Appendix 2.

The access road will be constructed from the community to the quarry site following an established trail along the shoreline. The road will be gated for security and safety.

A conveyor system will transport crushed rock from the crushers and screeners to the transport vessel. Administration buildings and cook houses will be constructed on site. A transmission line will be needed for electrical power and telephone service.

Negotiations with Newfoundland and Labrador Hydro to install the transmission line are ongoing.

### **2.6.1 Site Plan**

A Site Plan is provided in Appendix 3.

## **2.7 Existing Environment**

The average daily temperature in the area ranges from 15.2 °C in August to -6.3 °C in February. Annual precipitation is 1829 mm with January and November being the months of highest precipitation. The terrain can be described as rugged with steep to gently rolling topography. Site elevation ranges from sea level to approximately 320 metres.

Representative photographs of the site are presented in Appendix 3.

### **2.7.1 Terrestrial Environment**

#### Vegetation

The site is located in the South Coast Barrens Sub-region of the Maritime Barrens Ecoregion of Newfoundland. This sub-region is characterized by extensive heathland interspersed with bogs, fens and forests. Forests dominated by balsam fir and to a lesser extent black spruce occur primarily in sheltered valleys and on leeward hillsides. Typical heathland shrub species include rhododendron, common juniper, Labrador tea, sheep laurel, blue berry, crowberry, partridge berry, bunch berry and bakeapple (Protected Areas Association 2000). Herbaceous plants are less common but include aster, sedges and minor amounts of grasses. The moss and lichen layer is usually dominated by reindeer lichen with minor amounts of moss that typically includes red-stemmed feathermoss.

#### Wildlife

Wildlife in the South Coast Barrens Sub-region include many of the same species found throughout the rest of the island. Mammals such as caribou, moose, black bear, red fox, snowshoe hare and mink are common throughout while red squirrel, meadow voles and masked shrews are less abundant. Beaver and muskrat may be found around freshwater bodies. The project area falls within Moose and Black Bear Management Areas 25 and Caribou Management Area 64.

The Connaigre Peninsula in general is subject to migratory shorebirds, waterfowl and seabirds. Birds in the area are also typical of the boreal ecosystem and likely include migratory species such as osprey and bald eagle, and migrant passerines including thrushes, warblers and fly catchers. Common year-round resident birds likely include common raven, boreal chickadee, willow ptarmigan, spruce grouse, dark-eyed junco and pine grosbeak. Common waterfowl such as Canada goose, black ducks and green-winged teal may frequent the area.



### Inland Fish

There are a number of freshwater bodies with a combined area of approximately 75 ha within the proposed site. Preliminary investigations indicate that there may be freshwater fish habitat in the project area. Field investigations will be conducted to identify all fish habitat. Should the potential exist for the harmful alteration/disruption or destruction (HADD) of fish habitat, mitigation measures will be put in place.

### **2.7.2 Marine Environment**

Belleoram is located on the south coast in Fortune Bay. The Fortune Bay area supports moderate lobster, scallop, and ground fish. The region also supports a number of aquaculture sites with the closest to the project being a distance of approximately 2 km. The physical environment in the area of the proposed wharf consists of grass, small trees and a marshy area with no previous construction. The bathymetry from the shore has a sloping drop to a depth of 15m at a distance of approximately 15 m from the shore. The marine environment will be investigated by a marine biologist if required by the Department of Fisheries and Oceans. The investigation will include identification of benthic habitat and species and bottom composition. Consultation with locals indicates the area for the proposed wharfing facility is not fished for lobsters.

The shipping route from the loading dock to the mouth of Fortune Bay is not an area of concentrated fishing activities (pers. Comm. Stuart May and Barry Fiander 2006). Historically there has not been any conflict between commercial shipping and fishing vessels.

### **2.7.3 Air Quality**

The region within 10 kilometres of the proposed site and Newfoundland in general, experiences good air quality because there are few industrial sources of emissions. Climate conditions support good dispersion of air borne particles and the frequent rainfall help dilute those particles in the air. The air quality is also enhanced by the infusion of relatively clean, oceanic air masses from the North Atlantic Ocean.

The climate is relatively wet with a winter season that typically lasts for 4 months. This snow cover results in the saturation of the surface and thus it is expected there is little background particulate matter.

## **2.8 Construction**

Development of the quarry is scheduled to begin in June, 2006 and will consist of:

- access road construction
- timber salvage
- stripping of overburden
- building and wharf construction

The Aggregate Operators Best Management Practices (BMP) Handbook for British Columbia 2002 Volume 2 will be used as a guideline for construction activities.

The BMP Handbook addresses such issues as: storm water management; erosion control; noise and dust; risk management; and pollution.

### **2.8.1 Access Road Construction**

An access road will be constructed from the community to the quarry following an established trail along the shoreline. Construction of the access road is expected to take approximately 4 weeks. The access road will be used to transport employees and service vehicles to the site but will not be used on a regular basis for heavy equipment.

A network of site roads will be constructed as needed within the quarry for safe and efficient movement of people and equipment.

### **2.8.2 Timber Salvage**

Merchantable timber (greater than 10 cm dbh) will be salvaged by local contractors with an expected start date in May 2006. Timber salvage will progress in as the aggregate is quarried.

### **2.8.3 Stripping of Overburden**

Overburden will be removed to uncover the bedrock during the development phase. The overburden thickness varies over the projected extent of the quarry. The starting pit will target an area of minimal overburden cover, to minimize the volume to be removed and stored. The volume of overburden that will be removed will be confirmed once the in-fill drilling program and final detailed designs are completed. Overburden will be stored around the perimeter of the property in a berm that will reduce the visual impact of the quarry as well act as a barrier to unauthorized off-road vehicles. The berm will be planted with trees, shrubs and grasses to increase structural stability and to reduce erosion.

Unused overburden will be used for other purposes such as fill for contractors in the area. A large amount of overburden is not expected.

Overburden and waste rock will be used for future rehabilitation of the quarry site.

### **2.8.4 Building and Wharf Construction**

The establishment of the crushing and screening equipment along with the conveyors will require the construction of some permanent structures. The immediate area affected by this construction is just south of the Belleoram Barasway and north of the community of Belleoram.

The construction of the marine wharf is expected to begin in July 2006 and will take a year to complete. The wharf will include the construction and placement of caissons as well as a ship loader with a hopper and conveyors, the installation of a girder supported wharf section, and anchorage emplacement. The rock fill section will be constructed with clean armour stone from within the quarry

site along the east facing shore line. These stones will be placed using dump trucks, loaders and excavators.

### **2.8.5 Potential Sources of Pollution during Construction**

The development phase will consist of earth-moving activities. The potential sources of pollution are limited to site drainage (effluent from overburden storage areas/waste rock and wash water), solid waste, equipment exhaust, noise, and the unlikely event of an accidental release of fuel or lubricant.

#### Effluent

Site run-off water will be directed to vegetated areas within the site, which will filter suspended solids. Spills kits will be maintained near fuelling facilities. All water releases will meet the regulatory requirements of the *Environmental Control (Water and Sewage) Regulations* and provincial permits.

Sewage will be handled by an approved portable facility during construction. The holding tanks will be emptied by a pump truck on a regular basis and disposed of in an appropriate manner.

All fuel handling and storage will comply with the *Storage and Handling of Gasoline and Associated Products Regulations*. All waste oil generated at the quarry will be disposed of by a licensed disposal agent. There will be no on-site bulk storage of fuel or oil.

#### Waste and Litter

Domestic garbage will be collected from the construction site and disposed of in the Belleoram landfill. Any food or organic garbage onsite will be held in animal-proof containers to prevent attracting wildlife.

#### Air Emissions

All equipment will have the appropriate emission-control features. Dust control measures (i.e., water application) will be applied as required for vehicle traffic on the access road.

### **2.8.6 Potential Resource Conflicts during Construction**

Current resource use of the project area is likely minimal due to the rugged environment, limited access to the area and small local population. Resource conflicts, if any, during construction are likely restricted to big and small game hunting, freshwater fishing, berry harvesting and domestic wood cutting.

Informal consultations with local residents indicate that the water bodies in the project area are not fished and that wood cutting is confined to an area closer to the town of Belleoram (Robert Rose pers. comm.).

A literature review found no reference to prehistoric sites in the area. If, however, during development or operation, historic resources are encountered, work in the area of the discovery will stop and the foreman will notify the proper authorities.

## 2.9 Operation

The operational phase will consist of quarrying operations, which include drilling and blasting, primary, secondary, and tertiary crushing, dry and wet screening, stockpiling, reclaiming of finished products, and ship loading. Quarry and settling pond dewatering will occur as required. Water quality will be tested; but associated metals are not expected to be present. The grounds and facilities will be maintained according to environmental health and safety standards and regulations. The blasting operations will be conducted by licensed blasters. The explosives will not be manufactured on site but will be ordered on a regular basis from reputable suppliers.

The quarry operation is expected to run approximately 40 weeks from March to December each year with a two shift operation as required. The ship loading activities are expected to run year round in order to supply contract demands. The quarry is expected to operate for 50 years.

As with the construction phase, the BMP Handbook will be adhered to during the operation phase of the quarry.

### 2.9.1 Potential Sources of Pollution during Operation

The potential sources of pollution will be ANFO, dust, site run-off, and an accidental spill of fuel. At the quarry the only dust emissions will result from blasting. Should dust become a problem during blasting, water trucks will be used to moisten surfaces and keep dust down.

#### Effluent

Site run-off will be directed to vegetated areas within the project area, which will filter any potential suspended solids. Adsorbents will be used to recover any hydrocarbon sheen in the pit water. The use of ANFO explosives has the potential to produce ammonia blast residue in the pit water and waste rock drainage. Although elevated levels of ammonia are toxic to some aquatic life, the discharge to vegetated areas will encourage bio- and chemical degradation of ammonia.

If the aggregate requires washing, industry approved settling ponds will be constructed that will screen out the silt and other suspended solids. This treated water will be recycled back into the aggregate cleaning process.

Spills kits will be maintained near fuelling facilities. All water releases will meet the regulatory requirements of the *Environmental Control (Water and Sewage) Regulations* and provincial permits.

Sewage will be handled by an approved portable facility during operation. The holding tanks will be emptied by a pump truck on a regular basis and disposed of in an appropriate manner.

All fuel handling and storage will comply with the *Storage and Handling of Gasoline and Associated Products Regulations*. Vehicles and mechanical equipment will be maintained in good working order to prevent leaks and spills. There will be no on-site bulk storage of fuel or oil. All waste oil generated at the quarry will be disposed of by a licensed disposal agent.

Waste and Litter

During operation, domestic garbage will be collected and hauled to the incinerator operated by Belleoram in accordance with the *Waste Material Disposal Act*. Any food or organic garbage onsite will be held in animal-proof containers to prevent attracting bear, fox, birds, or other wildlife.

Air Emissions

All equipment will have the appropriate emission-control features. Dust control measures will be applied as appropriate and as described in the BMP Handbook.

**2.9.2 Potential Resource Conflicts during Operation**

The potential resource conflicts associated with operation of the quarry are the same as those for construction as the scope and nature of activities are quite similar.

**2.10 Decommissioning/Rehabilitation**

The quarry will be progressively rehabilitated. The details of the decommissioning will be provided in the Development Plan. However based on existing decommissioning standards and protocols for mines and quarries, it is anticipated that the following activities will occur:

Prior to decommissioning the public and local stakeholders will be consulted to determine possible further commercial or recreational uses for the site.

All facilities and infrastructure, with the possible exception of the marine wharf, will be dismantled. These structures and all other waste materials will be disposed of and /or recycled in an appropriate manner, and in accordance with existing environmental regulations. Access roads will also be closed.

The site will be restored by re-establishing drainage patterns, re-vegetation, soil stabilization and habitat enhancement methodologies, as appropriate.

A Phase 1 Environmental Site Assessment will be required prior to finalization of the decommissioning plans.

An outline of the requirements for a Rehabilitation and Closure Plan is provided in Appendix 5.

If for any reason (e.g. Christmas Break) the quarry is not in operation, Continental Stone will ensure that access to the site is closed.

Occupations

Contractors will be retained during the Development phase of the quarry. The overburden removal and site preparation phase will require mobile equipment operators (excavators, haul trucks, dozers, graders). Drilling and blasting operations will require experienced drillers and blasters. It is envisaged that at peak times during construction, there will be 60 to 70 personnel on site and approximately 80 to 100 during the operation phase.

Quarry operations will be contracted out to meet inventory and consumption requirements. All operational occupations will be determined by the contractor as deemed necessary to fulfill requirements.

*Project Related Documents*

Aggregate Operators Best Management Practices Handbook for British Columbia Volume 2. April 2002.

### 3.0 APPROVAL OF THE UNDERTAKING

The proposed quarry will be over 10 ha in size, and is therefore subject to environmental assessment provisions of the Newfoundland and Labrador *Environmental Protection Act*, pursuant to Section 33(3) of the *Environmental Assessment Regulations*. The permits and approvals in place are listed in Table 1 and those that may be required are listed in Table 2.

**Table 1 Permits That Have Been Issued for Activities at the Belleoram Quarry**

Department/Agency	Applicable Legislation	Approval/Certificate/ Permit	Project Element
Mines and Energy Division, Department of Natural Resources	<i>Quarry Materials Act</i> and Regulations	Exploration Licence	Exploration and drilling

**Table 2 Permits and Approvals that May Be Required for Belleoram Quarry**

Department/Agency	Applicable Legislation	Approval/Certificate/ Permit	Project Element
<b>Federal Government Requirements</b>			
Department of Fisheries and Oceans	<i>Canadian Environmental Assessment Act, 1995</i>	Release from EA process	Harmful Alteration, Disruption or Destruction (HADD) of fish
	<i>Fisheries Act, Section 35(2)</i>	Authorization for the Harmful Alteration, Disruption or Destruction of fish habitat	Construction of wharf and alterations to ponds and streams
Department of Transport	<i>Navigable Waters Protection Act Canadian Environmental Assessment Act, 1995</i>	Permit for construction within navigable waters Release from EA process	Wharf construction
	<i>Transportation of Dangerous Goods Act, 1992</i>	Permit to store, handle and transport dangerous goods	Storage, handling and transportation of fuel and chemicals
<b>Provincial Government Requirements</b>			
Mines and Energy Division, Department of Natural Resources	<i>Quarry Materials Act</i> and Regulations	Quarry Permit	Quarry construction and operation
Department of Environment and Conservation	<i>Environmental Protection Act</i>	Release from the EA process	Quarry project
	<i>Environmental Protection Act, 2002</i>	Certificate of environmental approval to alter a body of water	Construction of wharf and alteration to ponds and streams
	<i>Environmental Protection Act, 2002</i>	Certificate of approval for construction (site drainage)	Quarry development
	<i>Environmental Protection Act, 2002</i>	Permit for water withdrawal	Pumphouse
	<i>Environmental Protection Act, 2002</i>	Water use Permit	Water use
	<i>Wildlife Act and Regulations</i>	Authorization to control nuisance animals	Construction activity

Department/Agency	Applicable Legislation	Approval/Certificate/ Permit	Project Element
Department of Natural Resources	<i>Forestry Act Cutting of Timber Regulations</i>	Permit to cut crown timber	Site clearing and Construction activity
	<i>Forestry Act Forest Fire Regulations</i>	Permit to burn	Site clearing and Construction activity
Department of Education, Industrial Training Section		Blasters Safety Certificate	Blasting
Department of Works, Services and Transportation	<i>Dangerous Goods Transportation Act, 1995 and Regulations</i>	Compliance standard; no permit required	Storage, handling and transportation of fuel
<b>Municipal Government Requirements</b>			
Town of Belleoram		Development Permit	Development within Town Boundary
		Approval for waste disposal	Waste disposal

A Quarry Development Plan will be prepared in accordance with the requirements of the Department of Natural Resources. An outline of the requirements of a Quarry Development Plan is provided in Appendix 6.



## 4.0 SCHEDULE

**Table 3 Proposed Schedule of Site Activities**

<b>Activity</b>	<b>Date</b>
Submission of Registration	April 2006
Government decision	May 2006
Preliminary site work	May 2006
Core sampling (drilling and testing)	May 2006
Wharf geotechnical work (drilling and testing)	May 2006
Hydro site work	May to October 2006
Surveying	May to June 2006
Wharf Construction	July 2006 to September 2007
Site clearing and grubbing	July to December 2006
Construction of site office/garage/utility building	July to December 2006
Ship loader delivery	May 2006 to August 2007
Quarry equipment delivery	December 2006 to July 2007
Laboratory setup	June to July 2007
Drilling and blasting	June to November 2007
Crushing	September to November 2007

## **5.0 CONCLUSION**

Continental Stone is committed to meeting or exceeding all legislative and regulatory requirements for the project. As part of a due diligence strategy, Continental Stone intends to use as a guideline the BMP Handbook. Continental Stone will also develop a comprehensive Environmental Management System that will be effective in minimizing the effects of construction and operation of the project on the natural environment. Monitoring will be conducted as required.

## **6.0 FUNDING**

The project will be primarily funded by Continental Stone Limited. Application for funding will be made to the Atlantic Canada Opportunities Agency for some components of the project.

## 7.0 SUBMISSION

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name:  
Position:

## **8.0 REFERENCES**

Protected Areas Association 2000. Maritime Barrens Ecoregion – South Coast Barrens Subregion. Report Prepared for the Newfoundland and Labrador Ecoregions Brochures Project, St. John's, NL.

## **APPENDIX 1**

### **Public Letters of Support for the Project**



# Town of Belleoram

• INCORPORATED 1946 •

P.O. Box 29  
Belleoram, NL Canada  
A0H 1B0  
Tel: 709-881-6161  
Fax: 709-881-6161

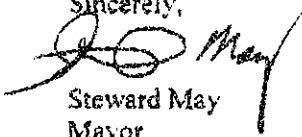
February 15, 2006

Continental Stone  
c/o Robert Rose  
21 Cardinal Crescent  
Paradise, NL  
A1L 2L4

Dear Mr. Rose:

The Town of Belleoram fully supports the endeavors of Continental Stone, quarry and shipping capacity in the processing of their application for a proposed rock quarry in the Belleoram area.

We feel this will be an economic boost not only for our Town but for the whole region.

Sincerely,  
  
Steward May  
Mayor



Coast of Bays Corporation

February 21, 2006

Mr. Robert Rose, Project Manager  
Belleoram Quarry Operation  
Continental Stone Limited  
P.O. Box 5424  
St. John's, NL  
A1C 5W2

Dear Mr. Rose:

The Coast of Bays Corporation is one of twenty regional economic development boards in the province with a mandate to create a climate for economic growth. The Coast of Bays region extends from Rencontre East in Fortune Bay along the coast to McCallum in the west, including the communities of the Bay D'Espoir estuary.

Traditionally, the Coast of Bays has been recognized for its fish and forest resources. However, the Coast of Bays is also where the continents collided and later pulled apart millions of years ago creating a variety of geological structures resulting in dimension stones of varying colours and grains along with the possibility of base minerals waiting to be discovered. To ensure that we have examined all opportunities to diversify our local economy, we have always promoted the mining potential of the region as a section of the Strategic Economic Plan for the area.

A proposal by your company to operate an aggregate quarry in the Belleoram area will create direct employment opportunities for approximately 100 persons. Considering a 3:1 ratio for indirect employment creation as a result of this quarry means a total economic impact of approximately 400 persons during the fifty-year lifespan of this project. This is substantial and will impact greatly on the long-term sustainability of this region.

I am, therefore, writing to extend the support of the Coast of Bays Corporation for the Belleoram Aggregate Quarry project and offer any assistance we can to ensure your company's success in this region.

I understand that you have spoken with our Economic Development Officer, Mr. Conrad Collier, and should you wish any further assistance, please feel free to contact Mr. Collier or Ms. Tracey Perry, Executive Director, at our office in St. Alban's at any time.

Sincerely,  
*Wesley Harris*

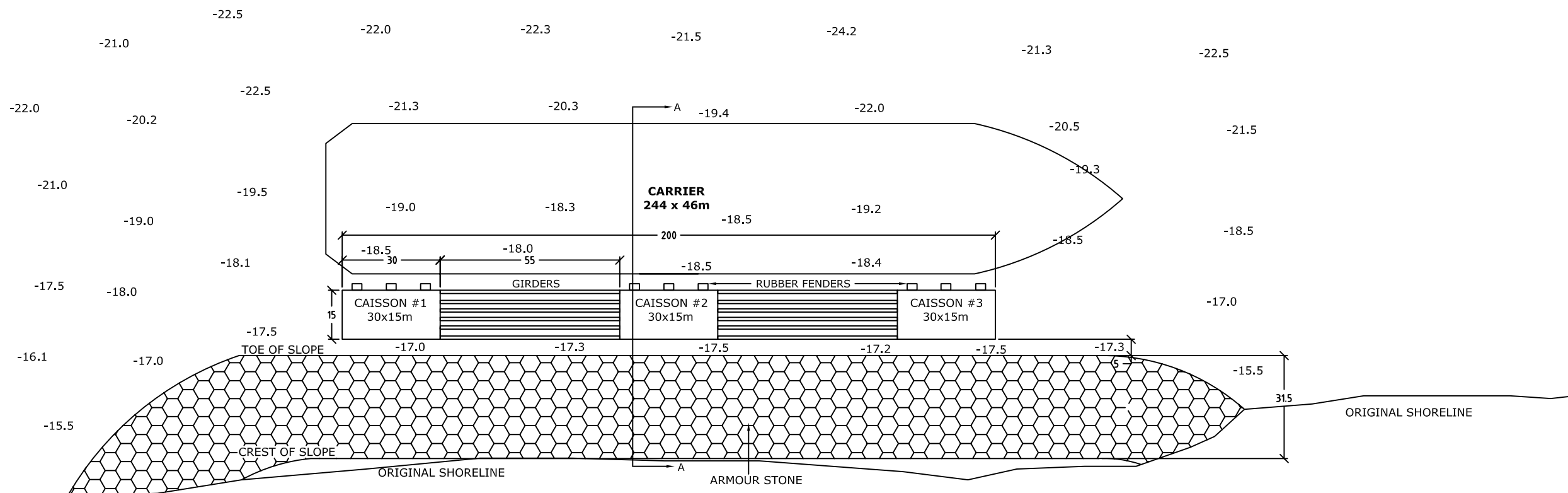
Wesley Harris  
Chair

P.O. Box 310, St. Alban's  
Newfoundland & Labrador  
Canada A3H 2E0  
Bus: 709-338-3552  
Fax: 709-338-3627  
Toll Free: 1-800-265-0722  
E-mail: [tperry@coastofbays.nl.ca](mailto:tperry@coastofbays.nl.ca)  
url: [www.coastofbays.nl.ca](http://www.coastofbays.nl.ca)

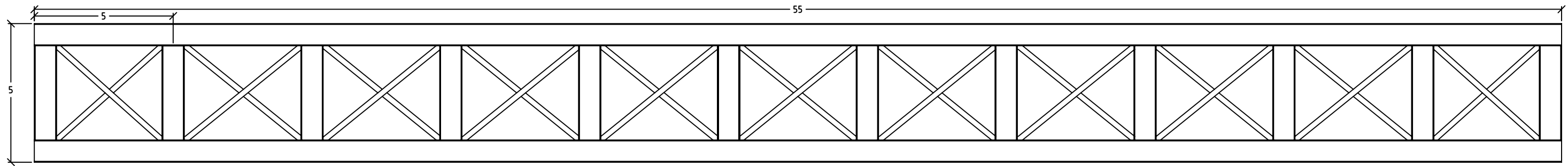




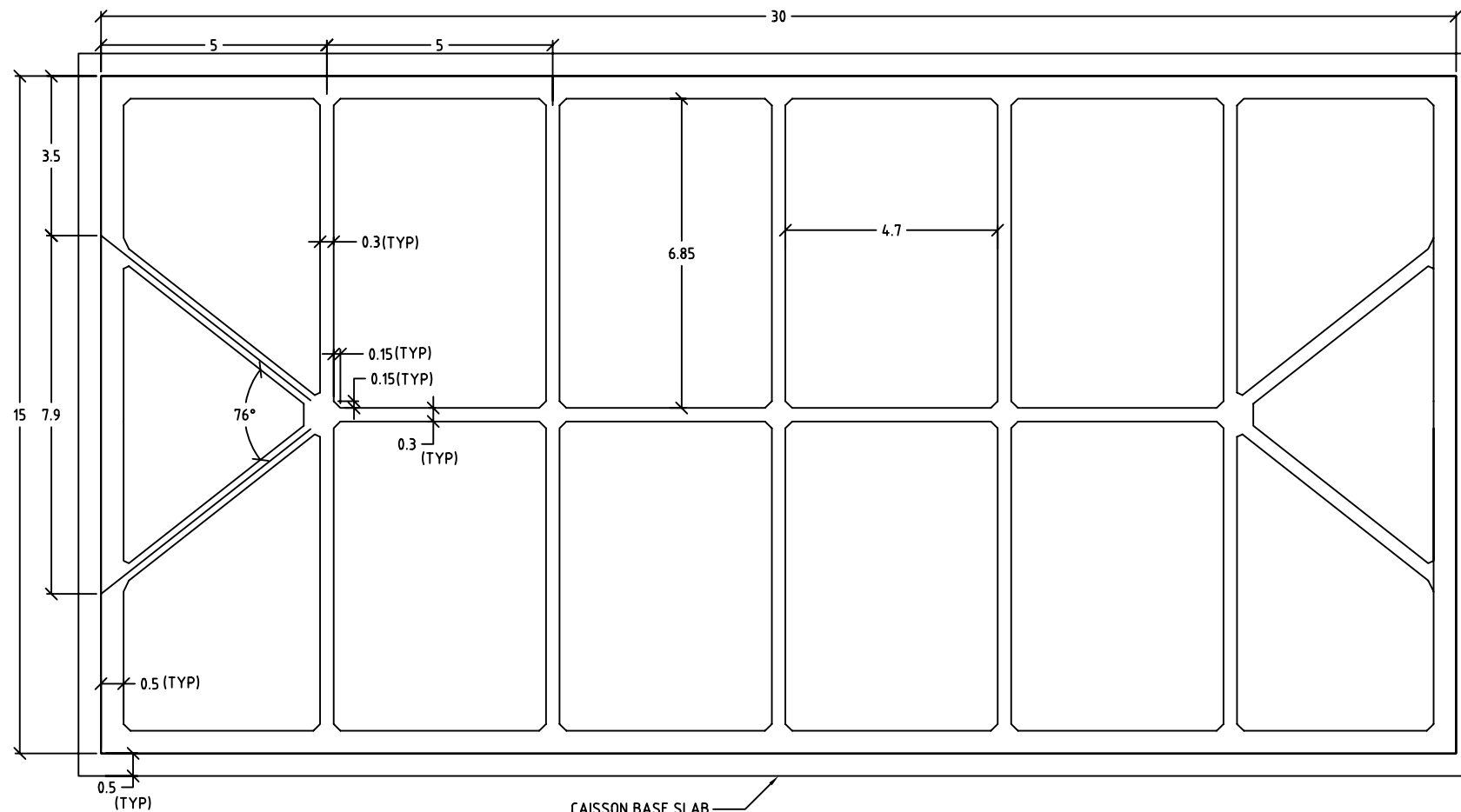
**APPENDIX 2**  
**Marine Wharf Design**



NOTES		
<b>Northland Contracting Inc.</b>		
1309 Topsail Rd. St. John's, NL, Canada A1B 3N4		
CLIENT <i>Continental Stone</i>		
PROJECT TITLE <i>Load out Facility Belleoram</i>		
DRAWING TITLE <i>Site Plan</i>		
Date: February 9, 2006		
Drawing Review	Drawn by	
<i>L. PUDDISTER</i>	<i>J. O'Brien</i>	
Scale: NTS	Sheet #	REV. #
UNITS: METRIC	<i>B-01</i>	

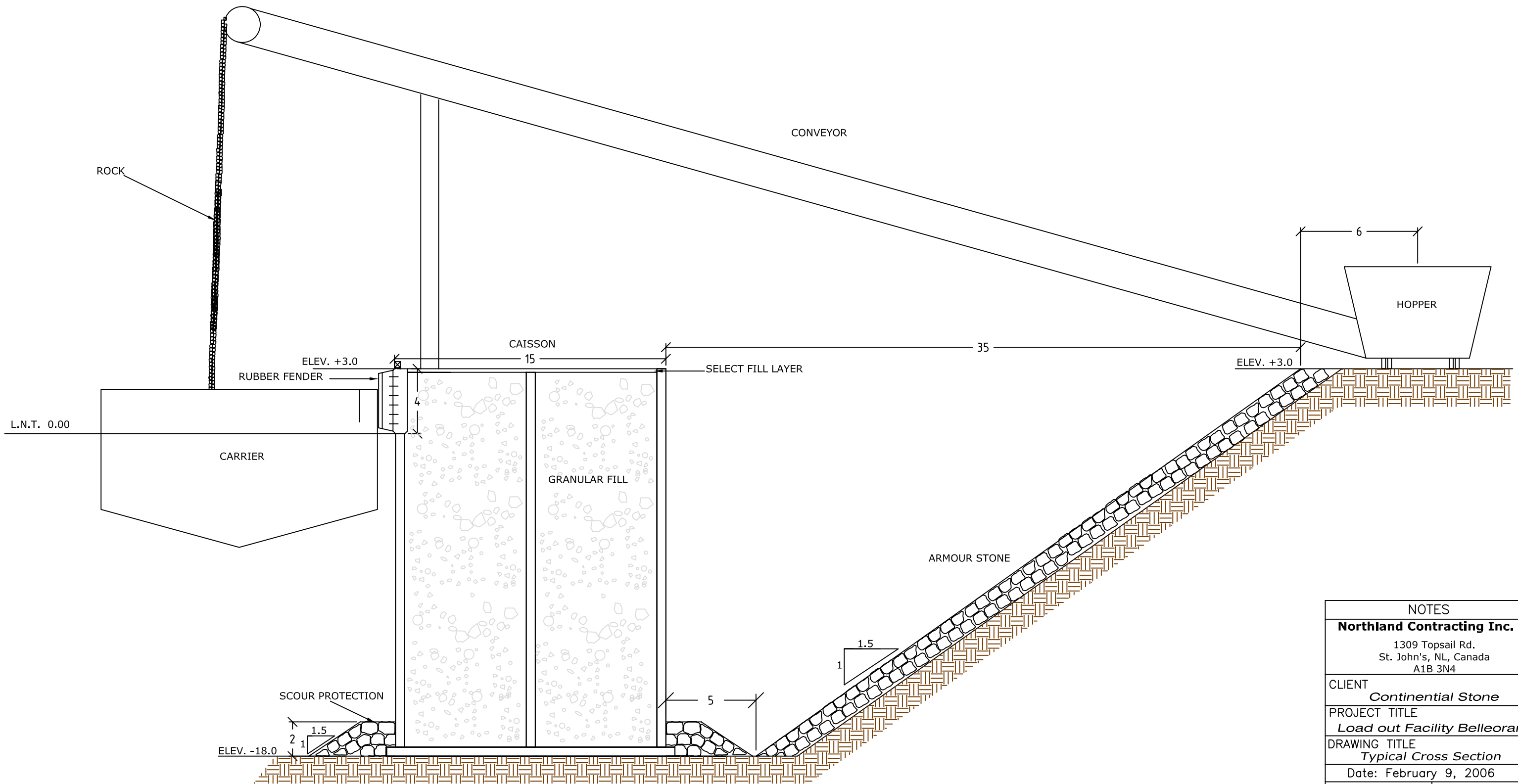


TYPICAL GIRDER SECTION



TYPICAL CAISSON LAYOUT

NOTES		
<b>Northland Contracting Inc.</b>		
1309 Topsail Rd. St. John's, NL, Canada A1B 3N4		
CLIENT <i>Continental Stone</i>		
PROJECT TITLE <i>Load out Facility Belleoram</i>		
DRAWING TITLE <i>Caisson &amp; Girder Layout</i>		
Date: February 9, 2006		
Drawing Review	Drawn by	
<i>L. PUDDISTER</i>	<i>J.O'Brien</i>	
Scale: NTS	Sheet #	REV. #
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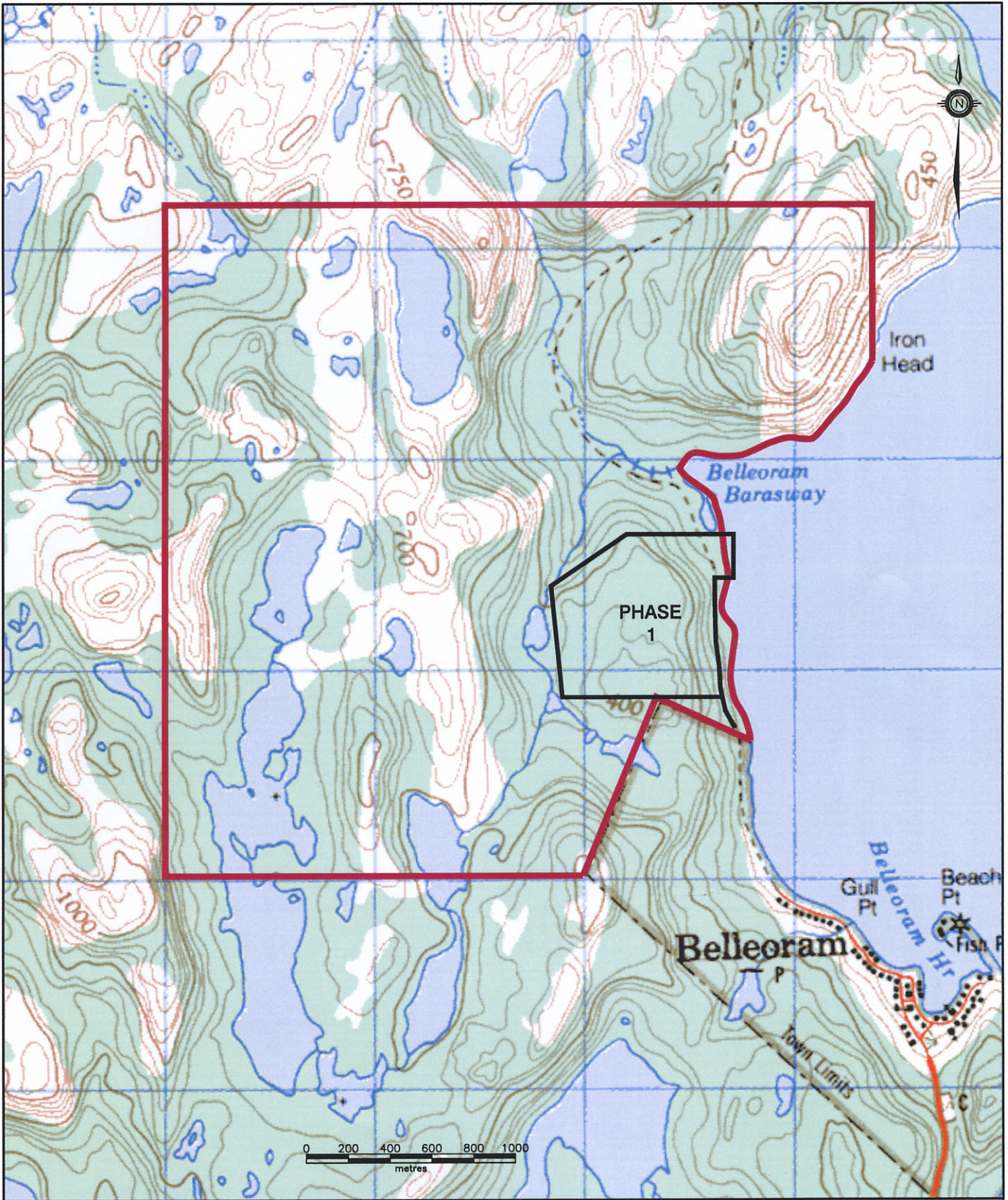


TYPICAL SECTION A-A

NOTES		
<b>Northland Contracting Inc.</b> 1309 Topsail Rd. St. John's, NL, Canada A1B 3N4		
CLIENT <i>Continental Stone</i>		
PROJECT TITLE <i>Load out Facility Belleoram</i>		
DRAWING TITLE <i>Typical Cross Section</i>		
Date: February 9, 2006		
Drawing Review	Drawn by	
<i>L. PUDDISTER</i>	<i>J.O'Brien</i>	
Scale: NTS	Sheet #	REV. #
UNITS: METRIC	<i>B-02</i>	

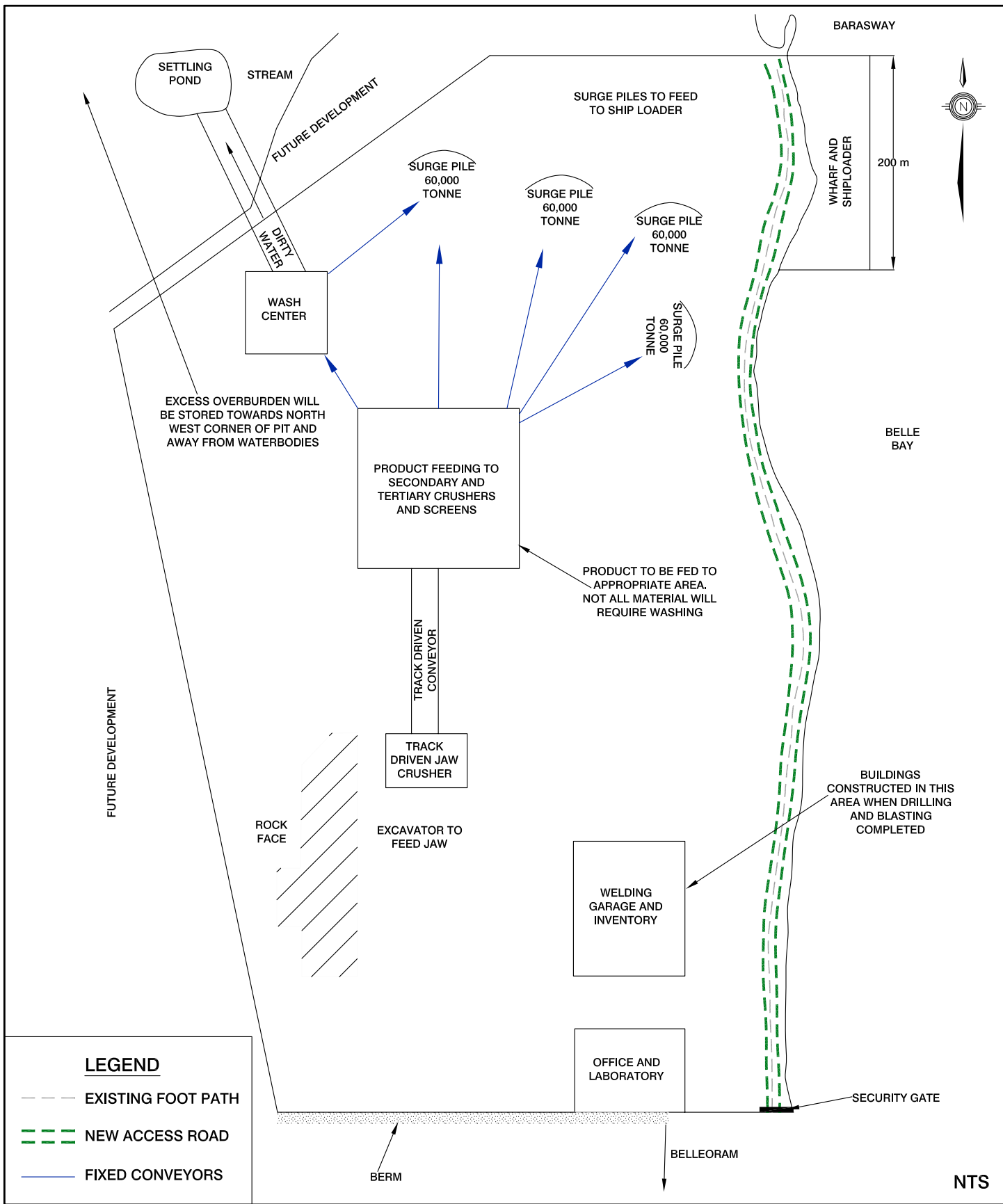
**APPENDIX 3**  
**Site Plan - Phase 1**





PHASE 1 SITE PLAN





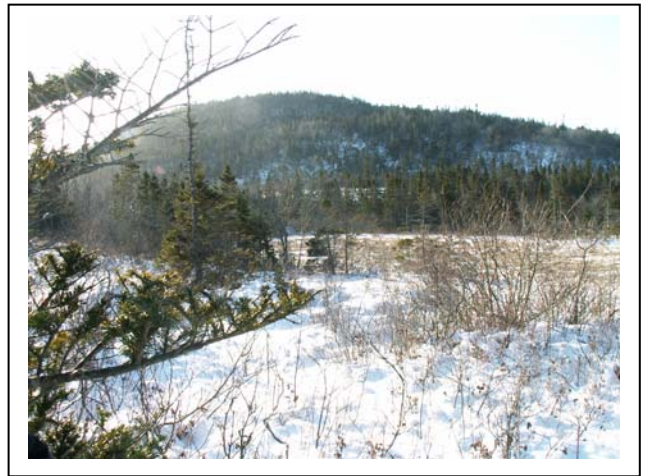
**SITE PLAN**

## **APPENDIX 4**

### **Representative Photographs of the Area**



Representative photographs of the proposed project area.





## **APPENDIX 5**

### **Outline of the Requirements for a Rehabilitation and Closure Plan**

## Rehabilitation and Closure Plan

The following is an outline of the information that is required in a Rehabilitation and Closure Plan as per the requirements of Sections (8), (9) and (10) of the *Mining Act*, its Regulations and Guidelines.

### Legislation - Mining Act

8. A lessee shall take all reasonable steps to progressively rehabilitate a site whether or not closure has commenced.
- 9.(1) A lessee shall submit to the Minister a rehabilitation and closure plan setting out the measures the lessee proposes to take
  - (a) to progressively rehabilitate a site; and
  - (b) upon closure of a project, in the rehabilitation of a project.
- (2) The Minister may accept a rehabilitation and closure plan with or without the changes the Minister may require.
- (3) A lessee shall comply with a rehabilitation and closure plan accepted by the Minister under subsection (2).
- (6) Where closure commences on a site, subject to the rehabilitation and closure plan, the lessee shall
  - (a) notify the Minister immediately that closure has begun; and
  - (b) comply with the requirements of the rehabilitation and closure plan.
- (7) Where a lessee intends to change the method of closure of a project, the lessee shall file with the Minister an amended rehabilitation and closure plan which the Minister may accept with or without changes.
- 10.(1) The lessee shall provide financial assurance as part of a rehabilitation and closure plan.
  - (2) a lessee shall provide a copy of a statement of a person qualified to make it that the estimate of the cost of completing the work set out in the rehabilitation and closure plan is a reasonable one.  
(All costs shall be third party costs (not in house), and the inclusion of salvage values is disallowed).
  - (3) The financial assurance required as part of a rehabilitation and closure plan shall be in a form acceptable to the Minister, including
    - (a) cash;
    - (b) a letter of credit from a bank named in Schedule I of the Bank Act;
    - (c) a bond;
    - (d) an annual contribution to a financial assurance fund established for the project;
    - (e) another form of security acceptable to the Minister and the amount specified in the rehabilitation and closure plan, or an amendment to it, shall be acceptable to the Minister.

A Rehabilitation and Closure Plan may be divided into 3 main parts as follows:

- Part 1 - Background Information
- Part 11 - Initial Site Closure Plan
- Part 111- Financial Assurance

## **Part I Background Information**

- provides a description of the facilities, closure planning goals and objectives, the scope of closure plans, a review of statutory and corporate criteria, and a review of stakeholder and community expectations.

### **Common Closure Planning Objectives**

- to restore affected landscapes to a physically and chemically stable and safe environment, which will protect public health and safety.
- to reduce or eliminate potential adverse environmental effects associated with each phase of the project.
- to decommission and rehabilitate the project site to a land use similar to its original use.
- to return the property to the Crown for long term care / use after monitoring demonstrates closure objectives have been met.

The following outline is based on utilizing closure planning from the beginning:

(a) exploration, (b) construction, (c) operation, and (d) decommissioning and rehabilitation. Pre-existing mines have traditionally instituted closure planning during the operational stage (prior to 2000).

## **Part II Initial Site Closure Plan**

- includes detailed inventories of facilities, an assessment of key hazards and liabilities, a review of options for closure, and the selection of a preferred closure strategy in consideration of proposed future land use, costs, social and ecological impacts, statutory and internal best practices criteria. Based on the Development Plan, plans evolve for progressive rehabilitation, and estimated costs are developed to implement the capital works and any costs associated with long term management of the site.

### **(A) Exploration Phase**

- initiate evaluation of potential acid rock drainage (ARD) problems.
- some infrastructure may be used during the construction phase.
- initiate progressive rehabilitation of drill and trench sites, adits, and declines, exploration camps, support structures, and drill hole abandonment. Some rehabilitation measures may continue into the construction and operations phases.

**(B) Construction Phase**

- activities must be planned to facilitate progressive rehabilitation commencing during this stage.
- follow up on in depth evaluation of potential ARD problems for the next phase.
- minimize impacted areas (restrict areal extent of Right of Way (ROW)); mitigate potential for erosion and siltation; utilize buffer zones around water bodies.
- topsoil (growth layer) removal and storage for future rehabilitation activities.
- minimize the number of stream crossings; curtail borrow pitting to ROW's and buffer zones.
- construction related facilities
  - (a) construction borrow pits and quarries
  - (b) construction camps, storage yards, laydown areas, barge ramp and landing strip.

**(C) Operational Phase**

- an annual schedule of progressive rehabilitation work and expenditures (e.g. tailings area re-vegetation); site specific test work (native species versus agronomic species; or; dump/stockpile slope stability analysis) will be utilized to minimize current environmental impacts, reduce financial assurance; and provide resolution to issues for implementation during the decommissioning and rehabilitation on final closure. Should ARD problems continue, include remediation measures in all proposals.
- closure option analysis in areas (2, 3, 4 and 6) may be modified based on site operating experience.
- the number and type of closure options for evaluation are based on proponent criteria.
- the final Rehabilitation and Closure Plan will evolve from the initial Closure Plan.

The major areas of a new project as defined in a Development Plan are as follows, and must be covered in the Rehabilitation and Closure Plan. For a project involving an underground mine or combination of open pit and underground, utilize the area (2) format.

**(1) Buildings and Infrastructure**

**(A) Port Buildings and Permanent Wharf**

**(B) Mill Complex**

**(C) Explosives Plant**

**(D) Airstrip**

**(E) Services**

- |  |  |
|--|--|
| (1) Roads                                  | (9) Incinerators   |
| (2) Power Distribution Lines               | (10) Petroleum Impacted Soil Treatment Pad               |
| (3) Pipelines and Pump-houses              | (11) Sewage Treatment and Disposal Systems               |
| (4) Potable Water System                   | (12) Petroleum Products Storage Facilities               |
| (5) Dams, Dykes and Embankments            | (13) Chemical and Hazardous Materials Storage Facilities |
| (6) Sedimentation Ponds/Diversion Channels |  |
| (7) Water Treatment System                 |  |
| (8) Landfills                              |  |

**(2) Open Pit Mine Or Underground Mine**

**(A) Closure Options**

- (1) Pit Lake
- (2) Waste Backfill
- (3) Tailings Backfill

**(B) Review Options**

- (1) Capital Costs
- (2) Operating Costs
- (3) Total Costs
- (4) Post Closure Care & Maintenance
- (5) Surface and Ground Water Quality Effects
- (6) Future Land Use

**(C) Selection of Open Pit / Underground Closure Option**

**(D) Potential Risks and Remedial Measures**

**(E) Future Studies**

**(3) Overburden Stockpiles**

**(4) Non-mineralized Rock Stockpiles**

**(5) Topsoil Stockpiles**

**(A) Closure Options**

- (1) Vegetate
- (2) Reslope and vegetate
- (3) Relocate

**(B) Review Options**

- (1) Capital Costs
- (2) Post Closure Care & Maintenance
- (3) Future Land Use
- (4) Aesthetics

**(C) Selection of Stockpile Closure Option**

**(D) Potential Risks and Remedial Measures**

**(E) Future Studies**

**(6) Tailings / Potential Acid Generating (PAG) Rock Storage Pond**

**(A) Closure Options**

- (1) Shallow Water
- (2) Shallow Water with an Engineered Barrier
- (3) Dry Cover with Elevated Water Table

**(B) Review Options**

- (1) Capital Costs
- (2) Operating Costs
- (3) Post Closure Care & Maintenance
- (4) Surface and Ground Water Quality Effects
- (5) Future Land Use

**(C) Selection of Tailings Pond Closure Option**

**(D) Potential Risks and Remedial Measures**

**(E) Future Studies**

**(D) Decommissioning and Rehabilitation Phase**

- in preparation for final closure, determine the timing, a work schedule, and the associated third party cost to perform the required work to decommission and rehabilitate the project site.
- (1) Decommissioning - once a work area is deemed no longer required for a production or active support function, all mobile and stationary equipment, and storage tanks, (all pipelines, power lines and sewage treatment facilities, as well as buildings -and their foundations) will be cleaned and removed from the site.
  - (2) Rehabilitation - based on statutory requirements of the Mining Act, specific closure requirements as contained in operating permits and Certificates of Approval, MMER, and internal corporate policy.
    - rehabilitate all tailings impoundments, waste rock areas and stockpiles, as well as all landfill sites and other waste management areas.
    - backfill all underground mine openings, or cap with reinforced concrete if backfilling is impractical.
    - rehabilitate all open pits or quarries to the satisfaction of the Minister (Guidelines 12.(1)h).
    - reclaim all roadways, airstrips, and other civil works to the satisfaction of the Minister.
    - assess the long term stability of all surface and underground workings.

**Key Hazards and Liabilities**

Open pit Mine - primary concerns:

- U/ground Mine
- (1) PAG Vs non-PAG rock -in pit water quality, requiring treatment and pumping
  - (2) Pit Lake or Dry Cover - in pit water quality, requiring treatment.
  - (3) Public Safety - rock berms, slope stability, resloping, vegetation, signage, fencing, and culvert removal.

Overburden stockpile - primary concerns:

- (1) Wind and water erosion - stabilize stockpile surface, reslope
  - rock cladding and vegetation.
- (2) Aesthetics - recontour and vegetate.



Non-mineralized Rock Stockpile / Dump - primary concerns:

- (1) Contaminated run-off water quality, requiring monitoring & treatment.
- (2) Aesthetics (treat, capping, or relocate).

Tailings Pond / PAG Rock Storage - primary concerns:

- (1) Water quality - monitor & treat before discharge
  - may need long term treatment
- (2) Dams - designed as stable, long term, low maintenance structure - inspections.

### **Environmental Monitoring, Inspection and Maintenance**

Usually there are three levels of environmental monitoring, inspection and maintenance programs after mine/concentrator closure:

- (1) some continuation of programs initiated during the operations phase - discharge water
- (2) quality from the tailings pond, and or sedimentation pond.
- (3) completion in the short term (within 10 years of mine closure) - sampling and analysis for petroleum hydrocarbon indicator parameters in remediated areas; or investigation for appropriate chemicals of concern around bulk chemical products storage and hazardous materials storage facilities;
- (4) programs conducted over the long term (starting after 10 years of mine closure, and continuing into the long term (> 30 years after closure)) -leachate testing from the closed on-site landfills; groundwater monitor wells down- gradient of petroleum hydrocarbon impacted soil or other chemical impacted soil.

### **Part III Cost Estimate**

Based on the Development Plan, a work schedule of progressive decommissioning and rehabilitation work and its associated cost estimate is developed during the operations phase of the Project. A comprehensive third party cost estimate covering decommissioning and rehabilitation costs after the closure of the open pit, concentrator and associated facilities plus the progressive decommissioning and rehabilitation cost and all the post-closure monitoring, inspection and maintenance costs are combined into a sub total. Lump sum estimates for Project Management (5% of sub-total), Engineering (3% of sub-total), and a Contingency Allowance (5% to 15% of sub-total) are added to the sub-total to provide a best estimate of Total Closure Costs. The project proponent must submit a reasonable and supportable cost estimate of Closure Costs (certified by a qualified person) and a means to fund the Closure Cost under section 10.1 to 10.9 of the Mining Act to the Minister of Natural Resources as part of an acceptable Rehabilitation and Closure Plan.

### **Comments on Estimate**

All cost estimates must be third party costs (not in-house costs), and the use of salvage values is disallowed.

All costs should be in Canadian funds for labor, material and equipment, and not include the 15 % HST. All costs should be in current year (2005) dollars, with no allowance made for escalation.

The cost estimate is based on the schedule of work in the Rehabilitation and Closure Plan, and the selected closure option in the accepted Rehabilitation and Closure Plan (term of pit water treatment after closure).

## **General Comments**

The preceding are intended to provide some order and direction in the preparation of a Rehabilitation and Closure Plan. It is expected that numbered tables and digital format drawings will be utilized within the body of the Rehabilitation and Closure Plan to clarify work areas in relation to one another. Use of the same base plan is helpful to illustrate work progress over a time span. (E.g.:Tailings area revegetation every 3 years). Feb. 2, 2005.

## **APPENDIX 6**

### **Outline of the Requirements of a Quarry Development Plan**

## Development Plan

The following is an outline of the information that is required in a Development Plan as per the requirements of the *Mining Act*, its Regulations and Guidelines. The Minister may request other information as per section 6(1)c of the Act.

### A Development Plan should include as applicable, but not be limited to:

1. A **Project Description** including;
  - a. anticipated time lines for completion of and the duration of all stages of the project;
    - i. development,
    - ii. operation,
    - iii. rehabilitation, and
    - iv. closure.
  - b. a description of the geographical location and access,
  - c. a list of all leases (mining, quarry, other), and surface leases,
  - d. A **Site Boundary Plan**, showing;
    - i. the entire area of the lease, and
    - ii. outline all know mineral resources on the lease, projected to surface.
  - e. A **Site Plan**, showing in detail all areas of project activities, including;
    - i. the mine area showing;
      - (1) ore, waste and overburden stockpiles,
      - (2) sedimentation pond/s, and
      - (3) explosives magazines (powder and caps),
    - ii. for an underground operation;
      - (1) shafts,
      - (2) portals,
      - (3) ramps,
      - (4) ventilation and service raises to surface, and
      - (5) main ventilation fans,
      - (6) an ore and waste development schedule from pre-production to five years production,
    - iii. for an open pit operation;
      - (1) access and haulage ramps,
      - (2) pit outline,
      - (3) diversion ditches around pit,
    - iv. mill complex showing;
      - (1) Crusher
      - (2) Concentrate/beneficiation facilities
      - (3) Ore storage bins/areas
      - (4) Conveyors
      - (5) Concentrate handling facilities

- (6) Ancillary facilities
    - v. Tailings facilities
      - (1) Dams and spillways
      - (2) Pipelines
      - (3) Discharge points
      - (4) Reclaim water lines
    - vi. Effluent treatment plant
    - vii. Site infrastructure
      - (1) Roads showing water crossing infrastructures (bridges, culverts)
      - (2) Railways
      - (3) Port facilities
      - (4) Airstrip and helicopter pad
      - (5) Backfill plant
      - (6) Quarries
      - (7) Power generating stations, transmission lines , substations
      - (8) Cables and pipelines
      - (9) Accommodation facilities
      - (10) Warehouses
      - (11) Maintenance facilities
      - (12) Water and sewerage facilities
      - (13) Communication towers and ancillary facilities
      - (14) Explosives plant
      - (15) Fuel storage tanks
      - (16) Hazardous materials facilities
    - viii. any other installations
  - f. A **Surface Plan** showing, where applicable,
    - i. all natural topographical features in the project watershed area, including;
      - (1) water bodies (lakes, streams, etc.)
      - (2) terrestrial features (hills, forested areas, etc.)
    - ii. all man-made structures or features in the project area as per the site plan.
  - g. Measures to deal with environmental issues, including;
    - i. handling of potentially acid generating material,
    - ii. a water balance for the project, and
    - iii. a spreadsheet listing all required permits, responsible agency and the status of the permit.
2. Geological description of the mineral resource or orebody including geological drawings that;
- a. Show geological sections and plans with all relevant diamond drill holes, collared from surface or from underground, and
  - b. show the outline of the orebody with all relevant diamond drill holes, collared from surface or from underground
3. A description of planned delineation and exploration drilling and other exploration work;

4. A mineral resource/ore reserve statement detailing the tonnages and grades by category, and giving the name of the qualified person as per National Instrument 43-101 of the Canadian Securities Administrators, including;
  - a. economic cutoff grades used,
  - b. the method of calculation,
  - c. the plans and sections used in the calculations,
  - d. the ore/mineral resource blocks shown on vertical longitudinal sections, and
  - e. a spreadsheet which allows for reconciliations of resources/reserves as the project advances.
  
5. Description of the Mining Process, including;
  - a. details of all relevant infrastructure as noted on the site plan with the corresponding dimensions, capacities, throughputs, etc.
  - b. a mine plan (minimum 5 years), showing annual production, which shall include;
    - i. mine production tonnages and grades,
    - ii. plans and sections showing the mining sequence corresponding to the mine plan (minimum 5 years),
    - iii. dilution and recovery factors (used to determine mineable reserves) and how they were derived ,
    - iv. mill feed tonnages and grades,
    - v. areas to be mined, and corresponding reduction in ore reserves, including plans and sections where required,
    - vi. for an underground mine a description of the mining method including;
      - (1) stope and pillar design,
      - (2) backfilling method,
      - (3) level plans and longitudinal sections showing, where applicable;
        - (a) shafts,
        - (b) access and haulage ramps,
        - (c) main drifts and crosscuts, and
        - (d) active stopes, mined out stopes and backfilled stopes.
    - vii. for an open pit mine or quarry, the level plans, longitudinal sections, and cross sections showing, where applicable;
      - (1) access and haulage ramps,
      - (2) bench heights and number of benches,
      - (3) sequencing,
      - (4) roadways,
      - (5) berms, trees and vegetation screening,
      - (6) overburden, top soil, and waste rock piles, and
      - (7) the pit development plans and the ultimate pit development plan based on current mineable reserves.
  - c. for an open pit, the waste to ore ratio with details on how this ratio was calculated, and
  - d. a list of the major mining equipment.
  
6. Description of the Milling Process, including;
  - a. details of all relevant infrastructure as noted on the site plan with the

- corresponding dimensions, capacities, throughputs, etc.
  - b. mill flow sheet,
  - c. mill feed rate, head grade, grade and tonnages of all concentrates, metal recoveries, and tails tonnages and grades,
  - d. a metallurgical balance sheet,
  - e. a description of any arrangements for mill tailings to be re-introduced to the mine for backfill, consolidated or unconsolidated, with waste rock or without waste rock,
  - f. the milling method and expected operating life at the planned milling rate, and
  - g. a description of concentrate handling.
7. Description of the tailings disposal facilities, including;
- a. description of tailings impoundment area, showing;
    - i. total volume available for disposal,
    - ii. anticipated active life of the area,
  - b. approved engineered design drawings (construction plans and sections) for all dams and spillways,
  - c. approved as-built drawings upon completion, and
  - d. description of all effluent treatment methods.
8. A detailed listing, by year, of all major capital and operating expenditures for the project. Provide a breakdown of expenditures into sub-categories, where appropriate.
9. A cash-flow sheet/s for the project including; commodity price, exchange rate, and discount rate assumptions.
10. Provide a breakdown of annual employment by major project activity and a listing of occupations according to National Occupation Classification 2001.
11. A description of possible changes to the Development Plan.
12. Measures the lessee will undertake to ensure the project conforms to prudent resource management.

Reports and drawing should, as appropriate, conform to the requirements as stated in the Guidelines to the *Mining Act*.