

Iron Rock Brewing Company Ltd.
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ironrockbrewing@gmail.com
(709) 280 – 6986/ 770 - 5474



December 18th, 2018

Attn: The Honourable Graham Letto, Minister of Municipal Affairs and Environment

PO Box 8700
St. John's NL A1B 4J6
Attention: Director of Environmental Assessment

Re: Registration of Iron Rock Brewing Company Ltd - Microbrewery

Dear Minister Mr. Letto,

Please accept the attached documents for registration and review of our proposed project through the environmental assessment process.

Please contact us at (709) 280-6986 or by email at ironrockbrewing@gmail.com if you require any additional information.

Best Regards,

A handwritten signature in blue ink that reads "D Hurley".

Dave Hurley

Director of Operations & Quality Control

A handwritten signature in blue ink that reads "Brian Hurley".

Brian Hurley

Director of Finance & Administration

Registration

Pursuant to s. 37(1)(e) of the Environmental Protection Act, SNL 2002, c.E-14.2

Undertaking

Microbrewery and Tap Room

Location

118 Humphrey Rd., Labrador City, Newfoundland and Labrador

Submitted by

Brian Hurley and Dave Hurley
for Iron Rock Brewing Company Ltd.

Submission Date

December 18, 2018

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Name of Undertaking:

Iron Rock Brewing Company

Proponent:

(i) Name of Corporate Body

Iron Rock Brewing Company Ltd.

81820 - Newfoundland and Labrador

(ii) Address

118 Humphrey Rd., Labrador City, NL

(iii) Chief Executive Officer

Name: Brian Hurley, P. Eng.

Official Title: CEO, Director of Finance and Administration

Address: 27 Orlando Pl., St. John's, NL, A1B 0S6

Phone: (709) 770-5474

(iv) Primary Contact Person for Environmental Assessment Queries

Name: Dave Hurley

Official Title: COO, Director of Operations and Quality Control

Address: 24 Guy St., Wabush, NL, A0R 1B0

Phone: (709) 280-6986

(v) The Undertaking:

I. Overview of the Undertaking

Brian Hurley and Dave Hurley, the owners of Iron Rock Brewing Company Ltd. (also referred to as “the brewery” or “Iron Rock Brewing”), are seeking approval to install and operate a microbrewery and tap room within the existing building known as the “Bruno Plaza”, located at 118 Humphrey Rd., Labrador City, NL. The building is currently occupied by multiple other tenants and is registered with ServiceNL. The brewery will consist of a 7-barrel (840L) turn-key brewhouse with three (3) fermentation vessels and one (1) brite beer tank. Maximum annual production of this system in year one is estimated to be 660 BBL (79,200L). The beer produced by Iron Rock Brewing will be sold in various portion sizes within the tap room, as well as being available in growlers for off-site consumption. The brewery will also seek to distribute kegs to local establishments in the Labrador region as demand allows.

II. Rational for the Undertaking

The craft beer and micro-brewing industry has been a growing trend within Newfoundland and Labrador, there are approximately 20 microbreweries that are currently operating or have intentions to operate within the province of Newfoundland and Labrador, however none of them are within the Labrador region. Labrador West, comprising of Wabush and Labrador City, has an favourable market for the development of a craft beer industry. This is due to the lack of product diversity for consumers and a limited number of locations to purchase draught beer. Currently, there is only one bar that offers commercial draught beer in Labrador West.

As of the 2016 Census, Labrador West has a population of 9,126 people. 6,070 of those residents are between the ages of 19 and 65. Furthermore, due to the isolation of the neighbouring community of Fermont, QC, there is also a high potential of gaining patronage from this population. Fermont provides an additional 1,494 individuals between the ages of 19 and 65, bringing the total immediate market to 7,564 (Statistics Canada, 2016).

The primary industry in Labrador West is iron ore mining. The mining companies create a large demand for skilled workers who travel to and from the communities for

employment. These individuals are desired patrons for the success of the business, as they are inclined to dine out more frequently than locals would.

(vi) Description of the Undertaking

I. Geographic Location

The proposed site for the microbrewery and tap room is located within a commercially zoned plaza located at 118 Humphrey Rd., Labrador City, NL. The owners of Iron Rock Brewing have applied for municipal approval of the proposed operations of the brewery and are awaiting a response. Please see [Appendix 1 – Aerial Map](#), for a highlighted aerial view of the Bruno Plaza.

II. Physical Features

The building sits in an area of town that has many other commercial properties and businesses. The proposed taproom and brewery will occupy approximately 4600 ft² of the building. To the North is an auxiliary parking lot, to the East is an adjacent lot that has an unused warehouse and additional parking space. To the South is an easement and the rear of Labrador Motors Body Shop, and to the West is EZ Construction and Snow Clearing.

III. Construction

The building is of pre-fabricated steel construction, with an upper level on the front portion of the building (North) of the same construction style. The main level consists of multiple suites that are occupied by a restaurant, government services and professional office space. The upper level is occupied by additional, professional office space.

The suite that Iron Rock Brewing intends to occupy will be stripped of current fixtures and be provided to the proponent as an open floor plan by the building owner. On delivery of the space, the following improvements will be completed:

- Walls will be covered with mildew-resistant drywall in the brewery area, coated with an easy-to-clean covering. All other walls will be constructed of fire-retardant drywall and finished to National Building Code of Canada standards.
- Floor will be protected with an epoxy floor coating to allow for ease of cleaning and slip resistance.

- A 1” waterline equipped with filtration system will be piped into the brewhouse area. The fill line will utilize an air-gap; therefore, an additional backflow preventer will not be required. All hose bibs will be equipped with hose bib vacuum breakers.
- Please refer to Figure 5 - Brewery Floor Plan.

IV. Microbrewery Operations

The typical brewing process is as follows:

- The production process will begin when the automatic timer calls for the Hot Liquor Tank (HLT) to begin heating the 15-barrel (1,800 L) of fresh water that will be used during the brewing process (approximately half of that volume is used to fill the 7-barrel fermenters, and the total volume to fill the 15-barrel fermenter). Four 15 kW electric elements heat the strike water to temperatures close to 75°C as a pump recirculates the water through the HLT to ensure even heating.
- The grains used during the mashing process then have to be crushed; this can be completed the night before, or just prior to brewing. Various types of grains are used dependant on the style of beer; however, Canadian 2-Row malted barley will be used as the bulk of the recipe for most brew days. The average grain bill of most recipes will weigh about 200 kg per 7-barrel (840L) batch.
- Once the strike water has reached the desired temperature, it is pumped from the HLT to the Mash/Lauter Tun, where the grains are added and allowed to mash or steep. Mash times can range from 60 to 90 minutes in duration at temperatures between 64°C and 75°C. During this process, the starches that are released from the grains are converted into fermentable sugars.
- When the conversion of the starches to fermentable sugars has been confirmed, the temperature of the mash is then raised to 75°C for the “Mash Out” phase. Once the “Mash Out” is completed, the liquid that is now called “wort”, is transferred to the Boil Kettle. As the wort is drawn off the bottom of the Mash Tun, 75°C water is added to the top of the grain bed via a parasitotic pump. This process is used to flush the grains, helping to further remove the fermentable sugars from the grains and improve the yield, this is known as fly sparging.

- Once the wort has been collected in the Boil Kettle, it is heated to 100°C and boiled for 60 to 90 minutes. Throughout the boil, hops and other additives are used at pre-determined times according to the recipe. The primary role of hop additions is to add bitterness to the wort as well as adding distinct aromas. Other additives that could be used during the boil would be dependent upon the particular recipe.
- When the boil is complete the wort is pumped from the Boil Kettle to the Whirlpool vessel through a tangential port causing the wort in the vessel to spin, such as a whirlpool. Whirlpooling causes most suspended particles such as hops and coagulated proteins to gravitate to the center of the kettle where they fall to the bottom, this allows for a cleaner wort to be transferred to the fermenter.
- As the wort is transferred into the fermenter, it passes through a plate chiller that cools the wort indirectly with cold water to an appropriate temperature for pitching the yeast. As an additional energy and water conserving measure, the water leaving the plate chiller will be reclaimed at the Hot Liquor Tank. Once the wort leaves the plate chiller, it then passes through an oxygenation tee that aerates the wort. Oxygen is critical to yeast health and growth during the earliest stage of fermentation. Finally, the wort then arrives at the fermenter, where the yeast has been added to begin the fermentation process.
- The temperature of the wort is another critical factor to a successful fermentation. The temperature is controlled to the desired setpoint by the use of a glycol chiller and flooded jacket surrounding the exterior of the fermenter. The primary fermentation process usually takes 3-5 days to complete, and the majority of the alcohol is produced at this time, but so are a number of other undesirable compounds.
- After primary fermentation has completed, a brewery will then harvest the yeast that has accumulated in the bottom of the fermenter if they plan to reuse it, dispose or donate it. Once this is done the secondary fermentation is considered to have begun, which will provide time for residual yeast to continue working to metabolize unwanted flavour compounds as well as consuming some additional fermentable sugars.
- By day 13-15, the beer is now ready to be cold crashed in preparation for transfer to the Brite Beer Tank. Cold crashing is the process of reducing the temperature of the beer to approximately 3°C, this is done to encourage any suspended particles such as

- yeast and proteins to drop to the bottom of the fermenter, where this waste can then be drained off to improve the clarity of the beer prior to arriving at the Brite Beer Tank.
- Once the beer is in the Brite Tank, it is force carbonated using carbon dioxide that is injected into the beer via a carbonation stone, similar to the method of aerating the wort earlier in the process. While being carbonated the beer is maintained at approximately 3°C by chilled glycol and flooded jacket.
 - When the beer has been carbonated to the desired levels, it is then transferred into kegs. The kegs, which have been already put through a wash, rinse, sanitize and CO₂ purge cycle, are weighed as they are filled to determine the proper volume is achieved in each keg. Once the kegs have been filled, they are tagged with the beer name/style, kegging date and the name of the person who kegged the beer. The kegs are then capped with a dust cover and stored in a walk-in cooler where they will await their end use.

Period of Operations

The brewing operations, such as cleaning, kegging, tank transfers, etc., would occur throughout the year. Production days are anticipated to occur three to four days bi-weekly.

V. Microbrewery Consumption and Waste Generation

Water Usage

During the brewing process, water will be used as an ingredient, as well as a method for sanitizing and cleaning. Iron Rock Brewing is anticipating to brew 4 times per production cycle (14 days), which would total 6 production runs per month. Each production run will produce approximately 900L of finished beer, while consuming 1,100L of water for the duration of the day. It is estimated that 225L of waste water will be generated through the cleaning of equipment. Another source of waste water will be in the form of trub from the fermentation process, which is estimated to be 50L per brew. The estimated total water consumption per month will be 10,600L, which will be supplied by municipal water service from Beverly Lake. The total monthly waste water generation is estimated to be 2,200L, which will be removed via municipal sewer system and treated at the Labrador City Wastewater Treatment Facility, located on Tamarack Dr.

Grain Usage

Each production run will utilize an average of 200 kg of grain and equate to approximately 1,600 kg per month. These grains will be cracked on-site during the production run. The use of a flex auger will feed grain directly from the roller mill directly to the mash tun. This will be an enclosed system, preventing dust that would be created from becoming airborne. As a precaution, personnel loading grain to the grain hopper will wear respiratory protection.

Once the grains have been spent, they will be removed from the Mash Tun and placed into 1,200 L totes. The grain will be stored outside for approximately 4-7 days, then picked up by a truck to be shipped to Happy Valley-Goose Bay to be used for animal feed. Additionally, spent grain will also be available for locals who have any use for it and will be communicated publicly so.

Iron Rock Brewing is committed to continually seeking innovative ways to reduce its energy consumption and waste generation through innovative application, as well as implementing methods of reusing or repurposing as much waste or by-product as possible.

Use of Cleaners and Sanitizers

Throughout the brewing process there are a number of cleaners and sanitizers used to ensure that any equipment that comes into contact with the product is clean and sanitary. Each cleaner that would be used will have appropriate WHMIS labels as well as having Safety Data Sheets (SDS) available near the storage area, personnel involved with the brewery operations will also be trained in WHMIS. Located in the cleaners' storage area will be safety goggles, rubber gloves and an eye-wash station. All cleaners that will enter into the municipal sewer system would be highly diluted and pose no environmental risk. Furthermore, any waste water entering the sewer system would be cooler than 70°C and free of any hazardous material.

VI. Occupations

Iron Rock Brewing intends to operate year-round and will require multiple employees to facilitate operations. Co-owner, Dave Hurley will be in the position of Head Brewer, along with being the general manager responsible for taproom and brewery operations. The second owner, Brian Hurley, will be responsible for start-up project management and regulatory/legislative compliance. Ownership intends to employ a dedicated taproom and brewery manager to oversee day to day operations and coordination of taproom staff.

Should market demand allow, the microbrewery and tap room could see the employment of 2-3 taproom attendants and an assistant brewer. During peak summer hours, it is intended to supplement the full-time staff with part-time positions.

Initial start-up:

With a plan to acquire access to the identified leased space on April 1st, 2019, both directors will be present to begin preparing the space for construction and to receive equipment. Initial construction will be completed by the directors with the assistance of contractor services. Trades will be assigned for the construction with plumbing/brewery set-up being completed by the directors.

The directors anticipate to bring the taproom/brewery manager onboard to supplement start-up efforts and to prepare the space for opening. Depending on progress, a brewing assistant will be brought on board to assist the head brewer and taproom/brewery manager.

Other standard duties in the brewery will be completed by the manager and assistant brewer, such as keg filling, cleaning, and preparations for brew days.

Iron Rock Brewing will offer all required training, and is committed to ensuring there is no age or gender discrimination in its workforce.

Approval of the Undertaking

Municipal

- Municipal approval – Town of Labrador City

Provincial

- Environmental Assessment and Approval & Registration – Department of Environment and Conservation
- Food Establishment Licence – Service NL
- Building Accessibility & Fire and life Safety Approval – Service NL
- Manufacturer’s Licence – Newfoundland and Labrador Liquor Corporation
- Lounge Licence – Newfoundland and Labrador Liquor Corporation
- Brewer’s Agent Licence – Newfoundland and Labrador Liquor Corporation

Federal

- Excise Duty Licence – Canada Revenue Agency
- Labelling Requirements – Canadian Food Inspection Agency

Schedule of the Undertaking

Possession of leased space is planned to occur in April 2019 with a tentative opening date for Summer, 2019.

Funding

Funding for the project will be a mix of personal capital, government and private funding agencies.

Dec. 18th, 2018

Date

Brian Harley

Signature of Chief Executive Officer

Appendix

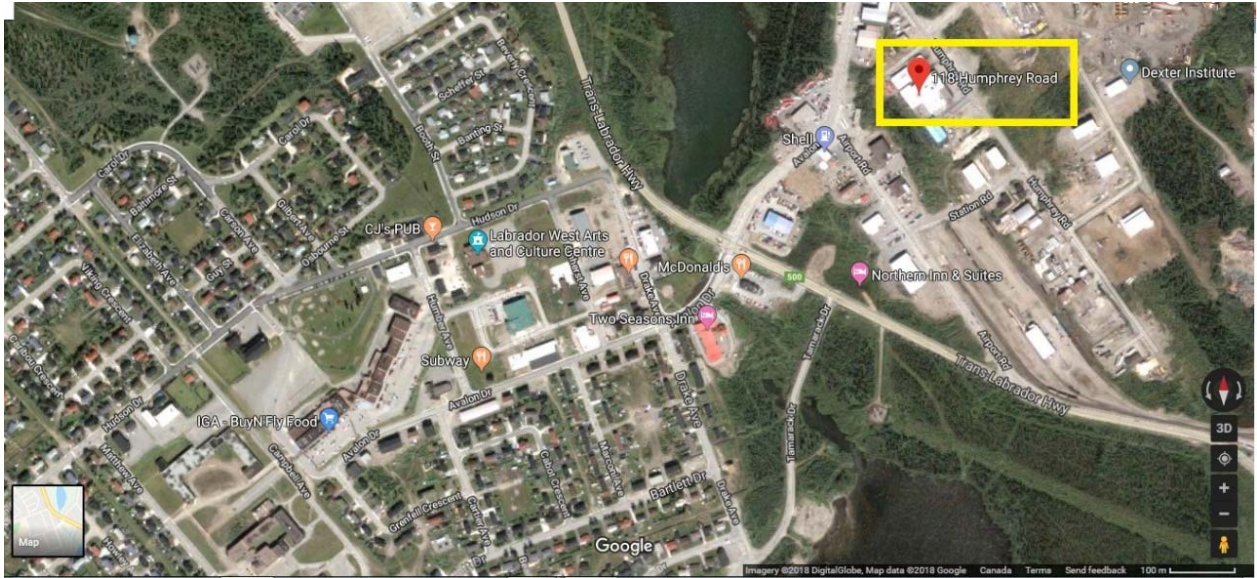


Figure 1 - Aerial Map

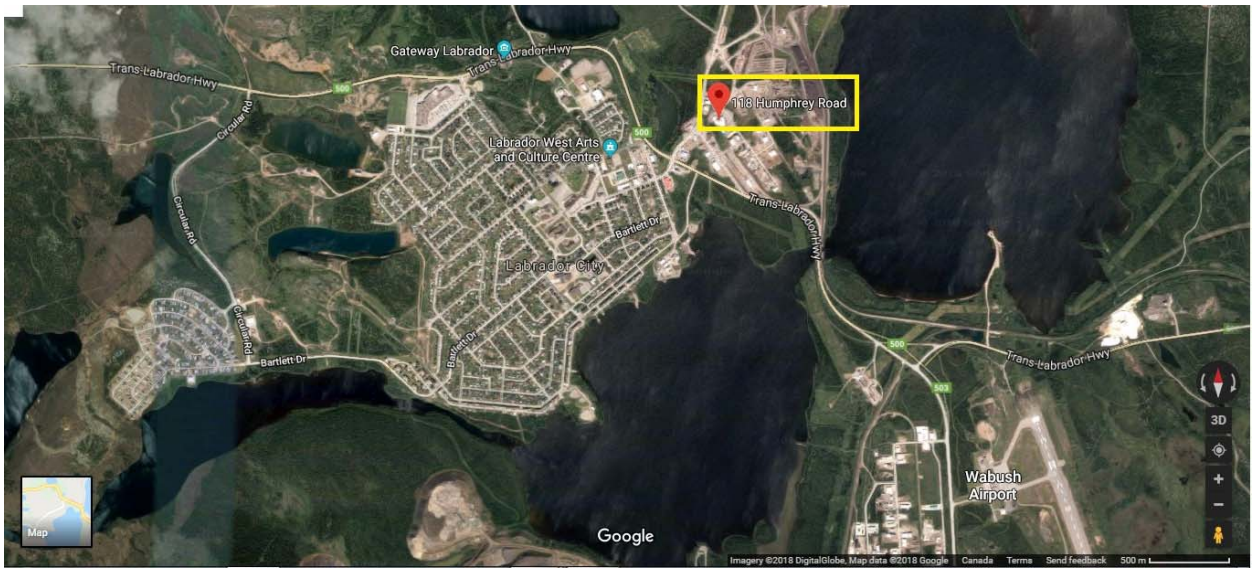


Figure 2 - Labrador City

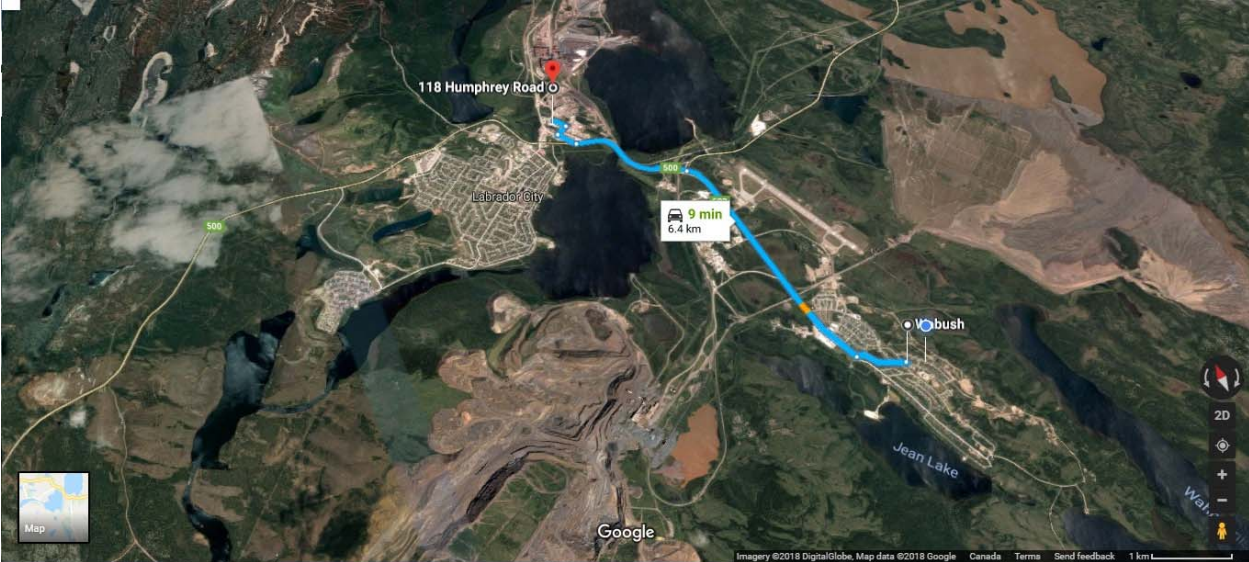


Figure 3 - Wabush to Labrador City

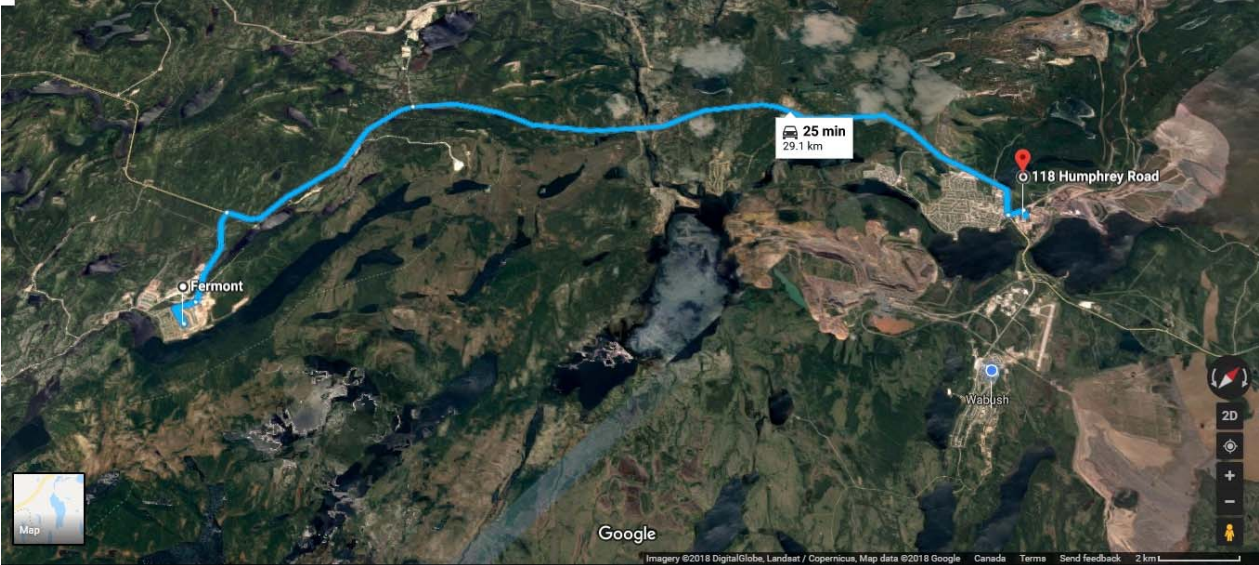


Figure 4 - Fermont to Labrador City

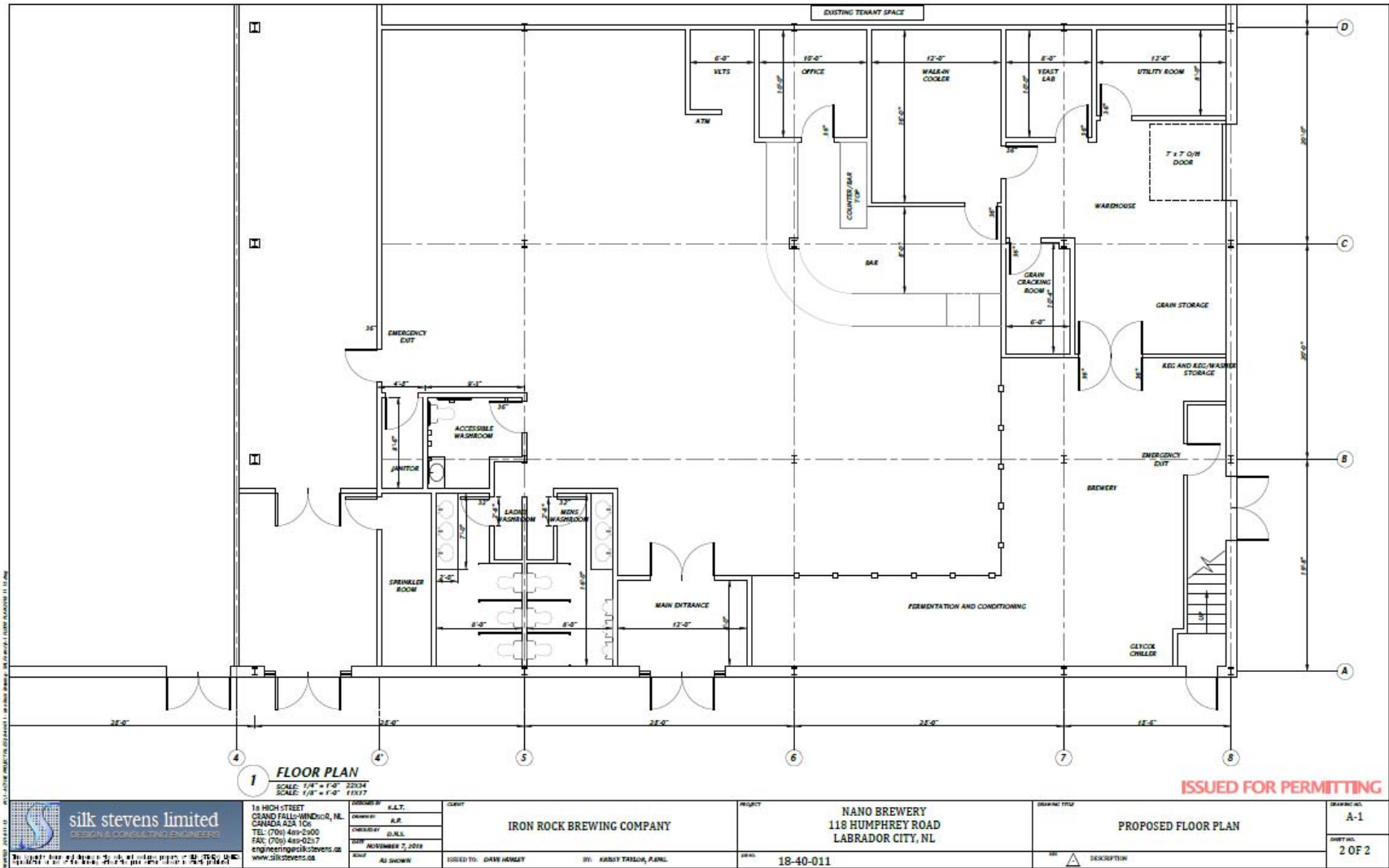


Figure 5 - Brewery Floor Plan