

**PROJECT: SEA CUCUMBER CUTTING AND
BLANCHING**

VERSION: 1

DESIGN SUMMARY FOR:

**ADDITION OF SEA CUCUMBER CUTTING AND
BLANCHING PROCESS TO SEA CUCUMBER WASHING
FACILITY**

PREPARED FOR:

**AT LANDING
252 RED BARN ROAD
BLACKS HARBOUR, NB
E5H 1E1**

PREPARED BY:



**134 CARLETON STREET
SAINT ANDREWS
NEW BRUNSWICK, CANADA
E5B 1N9**

18/12/2018

TABLE OF CONTENTS

1.0 PROPONENT DESCRIPTION	3
2.0 DESCRIPTION OF THE UNDERTAKING	4
2.1 NAME OF UNDERTAKING	4
2.2 LOCATION	4
2.3 PROJECT INTRODUCTION.....	4
3.0 WATER WORKS	5
3.1 EXISTING WATER SUPPLY AND STORAGE	5
3.2 EXISTING WATER BUDGET (WATERWORKS CAPACITY)	5
3.3 PROPOSED INCREASE TO WATER BUDGET.....	7
3.3 DISCHARGE	7
APPENDIX A – DRAWINGS	10
APPENDIX B – WATER QUALITY	16
APPENDIX C – WELL DRILLER’S REPORT	22
APPENDIX D - EQUIPMENT SPECIFICATION.....	24

1.0 PROPONENT DESCRIPTION

At Landing is a Canadian company, incorporated July 11, 2017. It is a division of Marine Heart, also a Canadian company. At Landing has committed to purchasing the sea cucumbers fished by [REDACTED] beginning in January 2019 and are actively seeking to secure more product. At Landing intends to employ local labour for the processing of product which will be sold domestically and internationally.

1.1 Proponent Information

Table 1.1 highlights the contact information for the Proponent and their consultant.

Table 1.1: Proponent and Consultant Information

<u>Proponent</u>	
Name of Proponent	At Landing
Postal Address	252 Red Barn Road Black's Harbour, NB E5H 1E1
Telephone:	(506) 755-0905
<u>Proponent Contact</u>	
Name	Jamie Olsen
Official Title	Quality Manager
Address	As Above
Phone	(506) 755-0905
Email	jamie@atlanding.ca
<u>Consultant Contact</u>	
Company	Sorensen Engineering Ltd.
Name	Marc Sorensen
Official Title	President
Address	134 Carleton St. St. Andrews, NB E5B 1N9
Telephone	(506) 529-0093
Email	marc@soreng.ca

2.0 Description of the Undertaking

2.1 Name of Undertaking

The undertaking is being referred to as Sea Cucumber Cutting and will be referred to in this document as “the Project”.

2.2 Location

The project is located in a facility that was originally used to produce fish meal on Red Barn Road in Black’s Harbour, NB and is currently set-up to wash and freeze sea cucumber. The project location details are provided in Table 2.1. Drawing L-1 in Appendix A illustrates the location of the facility. Drawing L-2 illustrates the location of the facility discharge.

Table 2.1: Property Location Information

Site Name	Red Barn Road
Civic Address	252 Red Barn Road
Community	Blacks Harbour
County	Charlotte
PIDs	01225754, 15105265
1:50 000 Topographic Map #	21G02 Edition 3
Grid Reference	45°03'45.6"N, 66°48'08.8"W 45.062668 m N, -66.802430m W (Zone 19T)

2.3 Project Introduction

The Red Barn road facility used to produce fish meal until approximately 2008. At Landing converted the facility for the use of cleaning and freezing sea cucumbers in 2018. This project involves the installation of equipment for cutting, blanching, and cooling sea cucumbers. The process will employ up to 10 people through the winter months, with potential to provide additional work in the future. The sea cucumber production is estimated to be 567 MT (1.25-million pounds) annually, varying between 7,260 kg/day (16,000lb/day) to 9,070 kg/day (20,000 lb/day).

The existing 3-phase power supplied to the site is sufficient for this project.

The septic system on site was recently installed by Cory Spear, a local licensed installer, and is sufficient for the project.

The existing building meets Canadian Food Inspection Agency (CFIA) standards.

Drawings A2.1 and A2.2, in Appendix A illustrate the building plans.

3.0 Water works

3.1 Existing Water Supply and Storage

There are 2 unregistered wells on-site with unknown pumping capacity, neither well has a tag on the casing. Clear Water Drilling measured the wells and determined both are approximately 300 ft deep. They then temporarily installed pumps in each of the wells and pumped both simultaneously for approximately 9 hours. After the initial draw down, the pumping rate stabilized at 13-15 gpm which indicates stable pumping head. The well locations are illustrated on the property map, drawing L-1 dated 180912, and on the building plan, drawing A2.1 dated 180605. A report summarizing the testing done by Clear Water Drilling is included in Appendix C.

Water samples were taken after the 9-hour pump test and submitted to RPC for analysis. The results are included in Appendix B.

A Water Supply Source Assessment (WSSA) will be conducted on the wells on site to confirm the water supply.

Both well 1 and 2 will have a flow totalizer installed and the daily usage of each will be logged.

Two storage tanks are installed on site to assist with demand surges associated with the daily wash down the facility at shift end. Each tank has 9.5 m³ (2,500 gal) capacity, totaling 19 m³ (5,000 gal).

3.2 Existing Water Budget (Waterworks Capacity)

Domestic

0.75 m³/day (200 gal/day)

There will be 10 people working on-site for the freezing of sea cucumber. At 75 L/day per employee, the demand for domestic services will be 0.75 m³/day (200gal/day).

Sea Cucumber Washer

9 m³/day (2,400 gal/day)

The cucumber washer has a holding capacity of 1 m³ (264 gal). The washer will be filled at the beginning of each daily shift. The water supply to the washer will continue to operate throughout the planned 8-hour shift, supplying enough water to change over the tank once per hour, or 1 m³/hr (4.4 gpm). This will require 9 m³/day (2,400 gal).

Cleanup

6.8 m³/day (1,800 gal/day)

The cleanup will be done with garden hoses, scrub buckets, brushes and cleaner.

The planned procedure for cleaning the cucumber washer is:

1. Drain the cucumber washer (washer) and hose it out, this should take approximately 5 minutes.
2. Spray cleaner in and on the washer, let stand for 10 minutes.
3. Hand scrub the washer to remove any debris.
4. Rinse the washer (approx. 5 minutes).
5. Inspect equipment to ensure it is clean prior to applying sanitizer.
6. Apply sanitizer.

The planned procedure for cleaning walls will be:

1. Spot clean as needed (rinse debris, scrub on soap and rinse the area).
Very little water use is required for this activity.

The planned procedure for cleaning floors will be:

1. Squeegee floors to remove any debris.
2. Apply soap.
3. Hosed down to finish cleaning.
4. Apply sanitizer.

The proponent estimates the entire cleaning process will be completed in less than 2.5 hours. A 30.5 m (100 ft) long hose, 16 mm (5/8") in diameter, at 2.75 bar (40 psi) will have an estimated discharge of 2.7 m³/hr (12 gpm)¹. Operated continuously over 2.5 hours this would require 6.8 m³ (1,800 gal), meaning the daily demand is estimated at less than 6.8 m³/day (1,800 gal/day).

It is the proponent's experience that the combination of hand scrubbing with soap and rinsing with hoses requires less water compared to cleaning by pressure washing alone.

¹ https://www.engineeringtoolbox.com/water-discharge-hose-d_1524.html

3.3 Proposed Increase to Water Budget

Cutter **18.2 m³/day (4,800 gal/day)**

Two cutters will be operated for 8 hours per day, each requiring 1.1 m³/h (5.0 gpm). The total daily water requirement for operating the cutters will be 18.2 m³/day (4,800 gpm). See Appendix D for more details on the cutter).

Blanching with Oil Fired Boiler **8.0 m³/day (2,100 gal/day)**

Once the sea cucumbers are cut, they are blanched in a 1.2 m x 3.0 m x 1.5 m tank (see Appendix D for more details) with a total working volume of 4.5 m³. The tank will be filled at the beginning of the day and emptied during clean-up. The blanching tank will be maintained at approximately 95°C using a steam boiler which runs on #2 furnace oil. The boiler requires 3.5 m³/day make-up water.

Cooling **15.9 m³/day (4,200 gal/day)**

After blanching, the sea cucumbers are cooled in a 2.1 m x 6 m x 1.5 m tank (see Appendix D for more details) with a working volume of 15.9 m³, maintained at 3-4°C. Similar to the blanching tank, the tank will be filled at the beginning of the day and emptied during clean up.

Additional Clean-up **13.6 m³/day (3,600 gal/day)**

The clean-up procedure will be similar to the clean-up described for the existing process, using garden hoses, scrub buckets, brushes, and cleaner. It is estimated that two employees will require 2.5 hours to clean the cutters, blanching tank, and cooling tank at the end of each day. Using the same metrics as described in section 3.2, two hoses operated continuously for 2.5 hours would require 13.6 m³, meaning the daily demand is estimated at less than 13.6 m³/day (3,600 gal/day).

Total Estimated Water Requirement **72.25 m³/day (19,100 gallons/day)**

The total estimated water requirement for the facility, including domestic supply and washing, cutting, blanching, cooling, and clean-up is 72.25 m³/day (19,100 gallons/day).

3.4 Discharge

3.4.1 Liquid Effluent

The domestic water used on site has been plumbed to a new septic system installed by a licensed contractor. The remaining 71.5 m³/day, from the sea cucumber washer, cutter, blancher, cooler, and clean up, will discharge

to the adjacent bay. From the plant, the 6" pipe will be 107 m to the shore, less than 480 m to the discharge point. The point of discharge will be below the low-low water mark.

The high temperature water from the blancher (4.5 m^3 at 95°C) will be discharged at the same time as the cooler water (15.9 m^3 at $3\text{-}4^\circ\text{C}$) and sea cucumber washer (1 m^3 at $< 15^\circ\text{C}$). The temperature of the combined 21.4 m^3 of discharge will be less than 24°C and will be mixed with up to 22.4 m^3 of clean-up water at $< 15^\circ\text{C}$.

Exotoxin

The Department of Agriculture, Aquaculture and Fisheries of New Brunswick has worked with sea cucumbers. They have found the triogen (exotoxin) concentration was approximately $0.04 \mu\text{g}$ per kilogram of body weight.

As described in the introductory document for phase 1, the exotoxin concentration in the washer was shown to be negligible. This proposed change would see additional dilution with the cutter ($18.2 \text{ m}^3/\text{day}$) to provide a dilution of $1 \text{ kg}_{\text{TRIOGEN}}:1.3 \times 10^{11} \text{ kg}_{\text{WATER}}$ prior to discharge. This is over 6 orders of magnitude more dilute than the concentration of 1:100,000 cited as toxic by Stonik et al.² prior to dilution with the receiving waters.

Treatment Requirements

Effluent will be screened to 3 mm prior to discharge; all solid material collected will be held in a solids holding tank and disposed in an approved manner.

To confirm the non-lethality of the discharge, the "Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" (2016) will be used on the effluent of the proposed facility. The single concentration procedure in which the full strength effluent will be used. To summarize the method: a control group and test group of rainbow trout will be placed in control water and full strength effluent from the facility, respectively, and remain there for 96 hours. Mortality will be assessed at 24, 48, and 96 hours. If less than 50% mortality is observed after 96 hours, effluent will be considered acceptable (as per the recommendation of the reference method). The test will be repeated (3) times on the first day of processing.

3.4.2 Solid Waste

The solid waste generated from this facility will be sand, grit, and seashells captured with the sea cucumber harvest as well as viscera from processing. This solid waste will be disposed of in an approved manner.

3.4.3 Neighboring Activities

There are existing aquaculture leases adjacent the discharge point, not currently in use. The leasee was contacted, they expressed no concern for the project.

APPENDIX A – DRAWINGS



- NOTES:
1. PROPERTY LINES FROM GEONB.
 2. AERIAL PHOTOGRAPHY FROM BING MAPS

1 MAP – PROJECT AREA
 SCALE 1" TO 500'-0" 11"x17"
 SCALE 1" TO 250'-0" 22"x34"

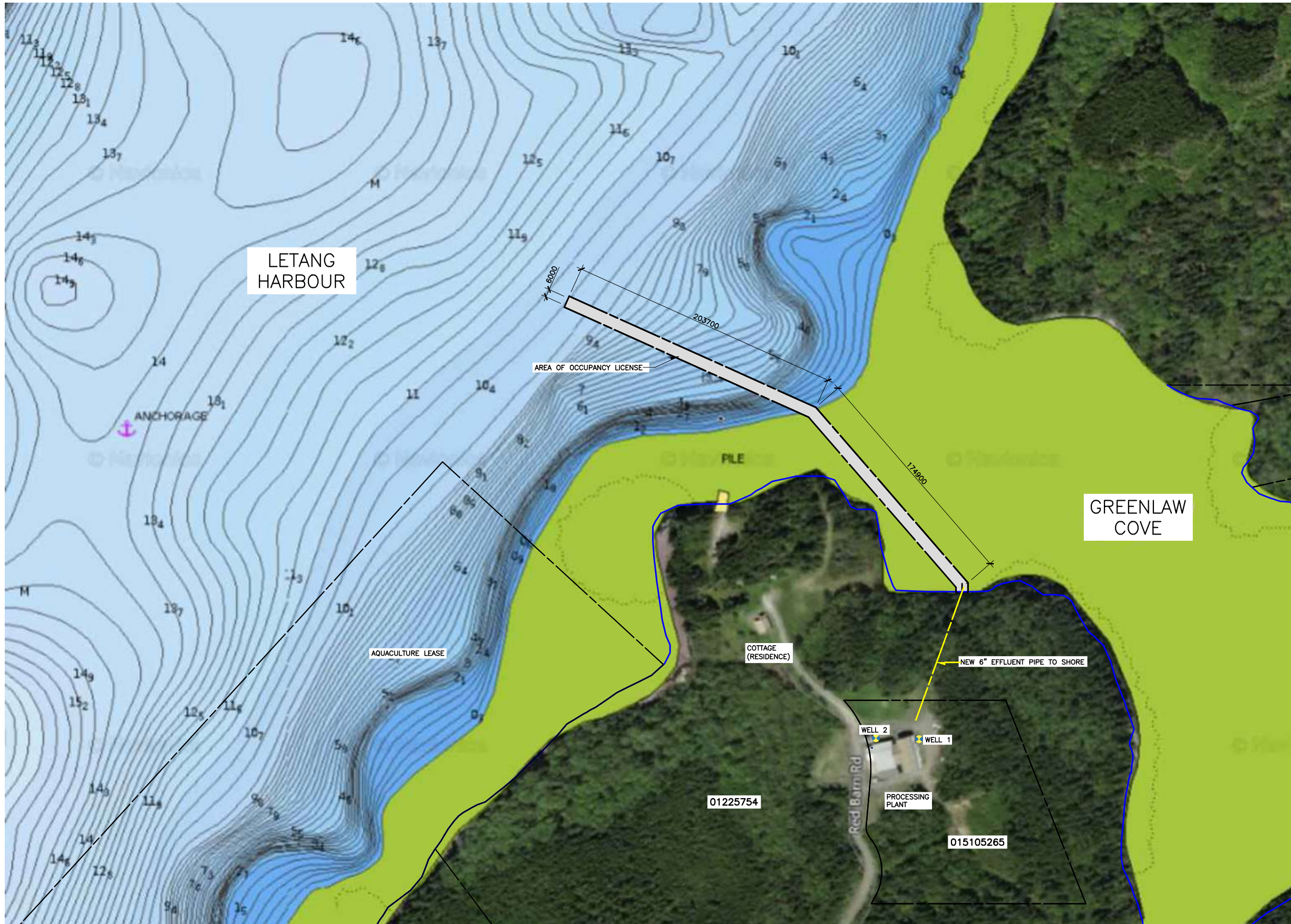
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 PRINTED ON: 2018/09/12

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PROJECT				
RED BARN ROAD RENOVATION				
LOCATION				
BLACKS HARBOUR, NB				
TITLE				
MAP – PROPERTY				
JOB:	DATE:	REVISED:	DRAWN:	CHECKED:
C18.17	18/08/23	18/09/12	M.D.S.	-

sorensen ENGINEERING LTD.
 134 CARLETON, SAINT ANDREWS, NB E5B 1N9
 PHONE (506) 529-0093 EMAIL INFO@SORENEN.CA

SHEET
L-1
 REV. 0



1. BOUNDARY COORDINATES FOR OCCUPANCY AREA
 45.06389144, -66.80140071
 45.06392900, -66.80140071
 45.06508138, -66.80281106
 45.06582685, -66.80514639
 45.06590070, -66.80509946
 45.06514791, -66.80274120
 45.06395923, -66.80128643
 45.06389144, -66.80128643
2. AERIAL TAKEN FROM BING MAPS
3. PROPERTY LINES TAKEN FROM GEONB
4. SONAR DEPTHS TAKEN FROM NAVIONICS. NOT TO BE USED FOR NAVIGATION.

1 MAP - LICENSE AREA
 SCALE 1 TO 3,000 11"x17"
 SCALE 1 TO 1,500 22"x34"

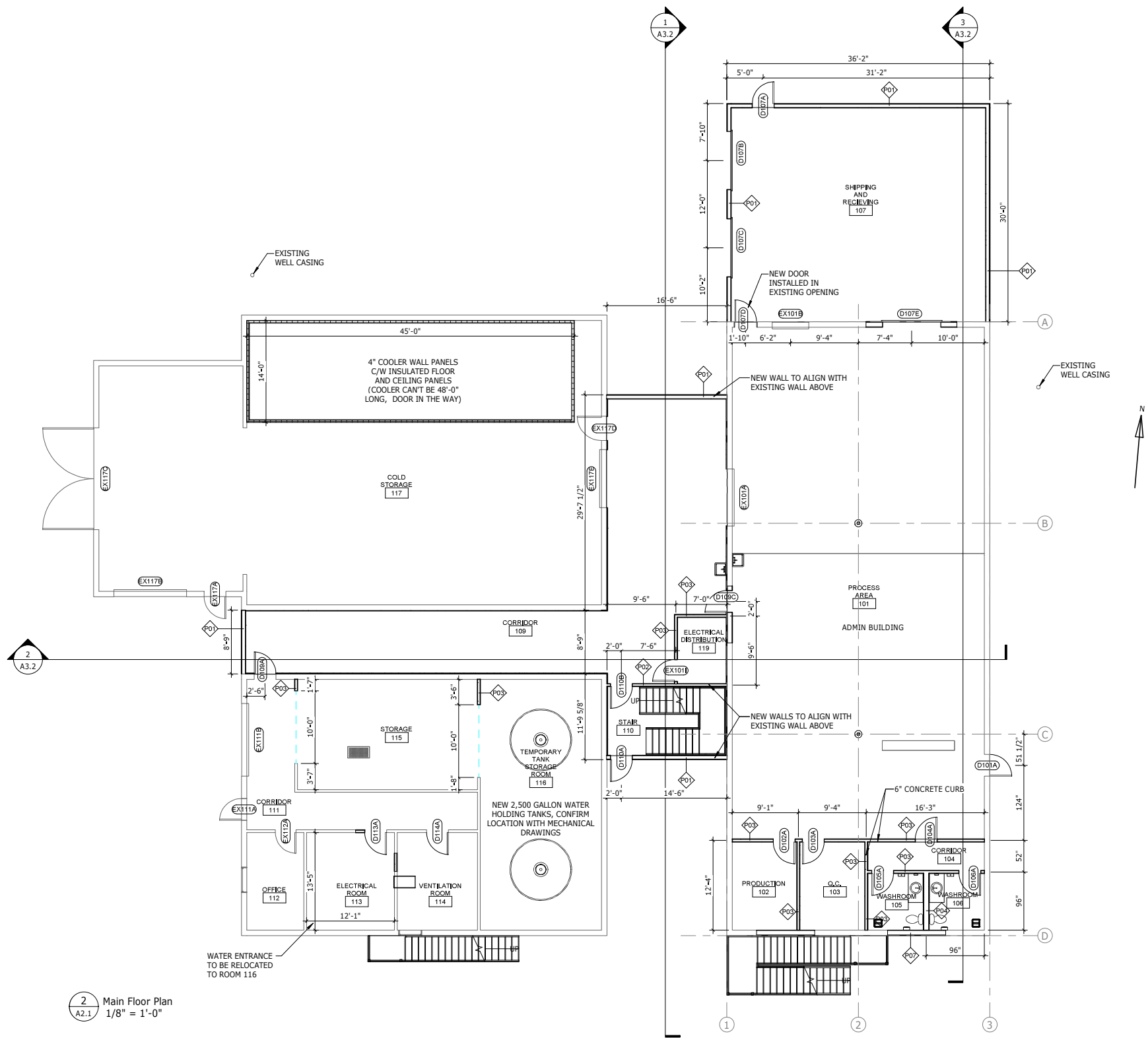
'PRELIMINARY'
 'NOT FOR CONSTRUCTION'

PRINTED ON: 2018/12/17

PROJECT				
SEA CUCUMBER WASHING				
LOCATION				
RED BARN RD, BLACKS HARBOUR				
TITLE				
PLAN - DISCHARGE ROUTE				
JOB:	DATE:	REVISED:	DRAWN:	CHECKED:
C18.17	18/11/09	-	M.D.S.	-

sorensen
 ENGINEERING LTD.
 134 CARLETON, SAINT ANDREWS, NB E5B 1N9
 PHONE (506) 529-0093 EMAIL INFO@SORENSEN.CA

SHEET
L-2
 REV. 0



WALL LEGEND

- P-01 EXTERIOR WALL**
METALS SIDING (MATCH EXISTING)
1/2" SHEATHING
2"x4" @ 16" O.C.
R20 BATT INSULATION (FILL CAVITY)
6 MIL. VAPOUR BARRIER
5/8" TYPE 'X' GWB.
- P-02 ULC 419 (1HR)**
5/8" TYPE 'X' GWB.
3 5/8" S.S. @ 24" O.C.
5/8" TYPE 'X' GWB.
- P-03**
5/8" GWB.
3 5/8" S.S. @ 16" O.C.
5/8" GWB.
- P-04**
5/8" GWB.
8" S.S. @ 16" O.C.
5/8" GWB.
- P-05**
5/8" GWB.
2"x4" @ 16" O.C.
5/8" GWB.
- P-06 ULC I305 (1HR)**
5/8" TYPE 'X' GWB.
EXISTING STUDS.
5/8" TYPE 'X' GWB.
- P-07 EXTERIOR INFILL WALL**
1/2" SHEATHING (MATCH EXISTING)
WOOD FRAMING (MATCH EXISTING)
R20 BATT INSULATION (FILL CAVITY)
6 MIL. VAPOUR BARRIER
5/8" TYPE 'X' GWB.
- EX-1 EXISTING EXTERIOR WALL**
EXISTING
SIDING (METAL OR VINYL)
SHEATHING
WOOD FRAMING
NEW
BATT INSULATION TO FILL CAVITY
6 MIL. VAPOUR BARRIER
5/8" TYPE 'X' GWB.

NOTE:
CONTRACTOR MUST CONFIRM THE STUD THICKNESS OF ALL EXISTING WALL.

ALL WALLS IN PROCESS AREA ARE TO HAVE MOISTURE RESISTANT PANES, SUPPLIED BY OWNER, INSTALLED BY GENERAL CONTRACTOR.

GENERAL NOTES

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Revision	Description	Date
1	Coordination	18 07 31
0	Existing Conditions	18 06 05
		YY MM DD

Stamp:



27 Wellington Row Tel. (506) 635-1566
P.O. Box 6026 Fax. (506) 635-0206
Saint John, NB fundy@fundyeng.com
E2L 4B1 www.fundyeng.com

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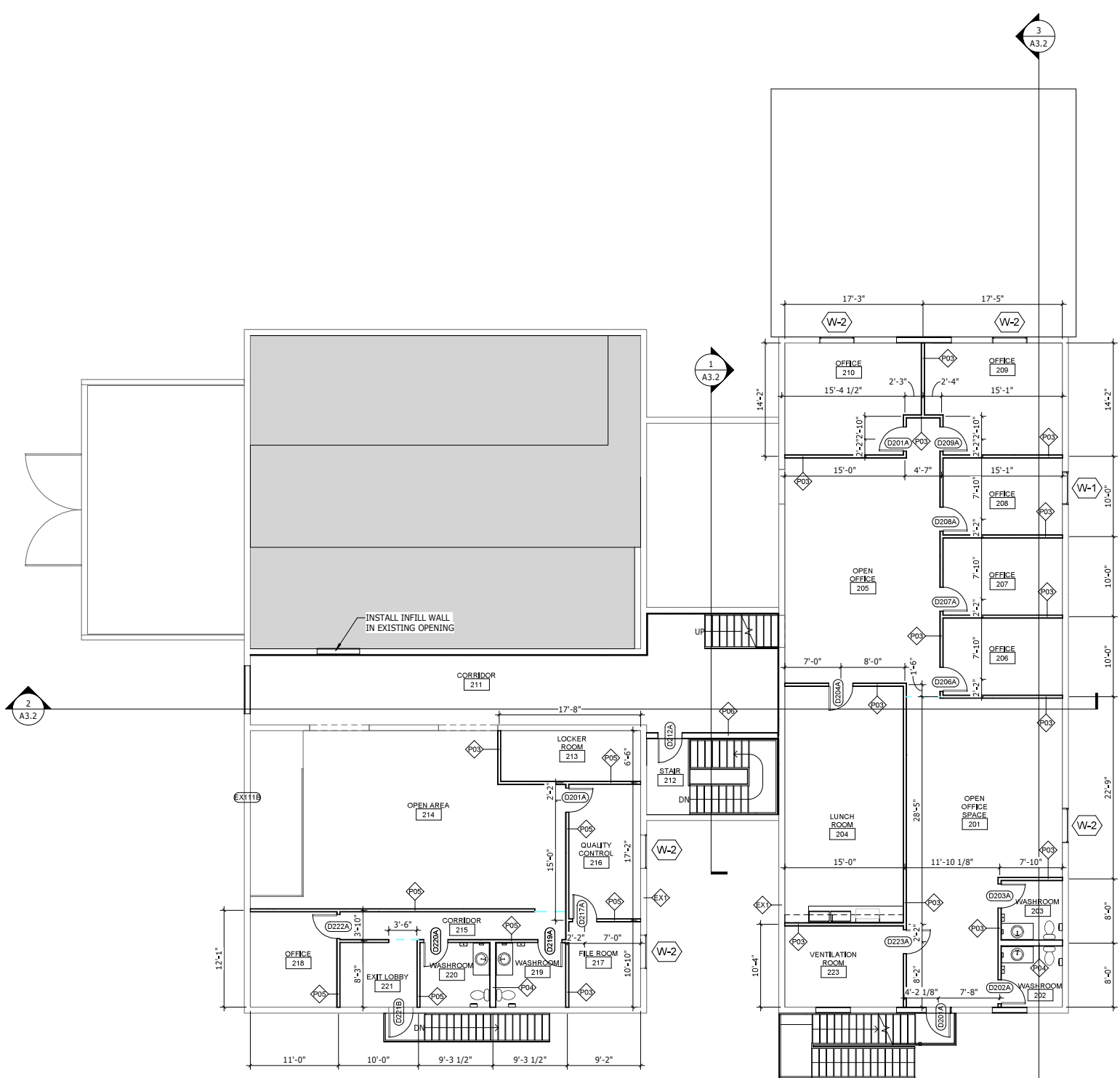
Project: **SEA CUCUMBER PROCESSING FACILITY**
Atlanding Fish Processing
Black's Harbour, New Brunswick

Drawing: **MAIN FLOOR PLAN**

Project No. 13125	Rev. 1	Sheet 1	A2.1
Drawn RAF	Checked JP		
Scale As indicated			

2 Main Floor Plan
A2.1 1/8" = 1'-0"

1
A2.2 Second Floor Plan
1/8" = 1'-0"



WALL LEGEND

- P-01 EXTERIOR WALL**
METALS SIDING (MATCH EXISTING)
1/2" SHEATHING
2"x6" @ 16" O.C.
R20 BATT INSULATION (FILL CAVITY)
6 MIL VAPOUR BARRIER
5/8" TYPE 'X' GWB.
- P-02 ULC 419 (1HR)**
5/8" TYPE 'X' GWB.
3 5/8" S.S. @ 24" O.C.
5/8" TYPE 'X' GWB.
- P-03**
5/8" GWB.
3 5/8" S.S. @ 16" O.C.
5/8" GWB.
- P-04**
5/8" GWB.
8" S.S. @ 16" O.C.
5/8" GWB.
- P-05**
5/8" GWB.
2"x4" @ 16" O.C.
5/8" GWB.
- P-06 ULC U305 (1HR)**
5/8" TYPE 'X' GWB.
EXISTING STUDS
5/8" TYPE 'X' GWB.
- P-07 EXTERIOR INFILL WALL**
1/2" SHEATHING (MATCH EXISTING)
WOOD FRAMING (MATCH EXISTING)
R20 BATT INSULATION (FILL CAVITY)
6 MIL VAPOUR BARRIER
5/8" TYPE 'X' GWB.
- EX-1 EXISTING EXTERIOR WALL**
EXISTING
SIDING (METAL OR VINYL)
SHEATHING
WOOD FRAMING
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BATT INSULATION TO FILL CAVITY
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Revision	Description	YY MM DD
1	Coordination	18 07 31
0	Existing Conditions	18 06 05

Stamp:

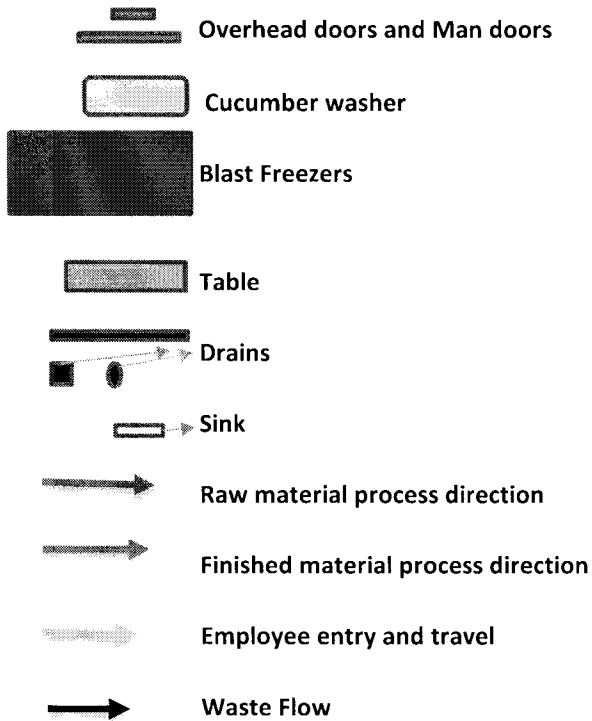
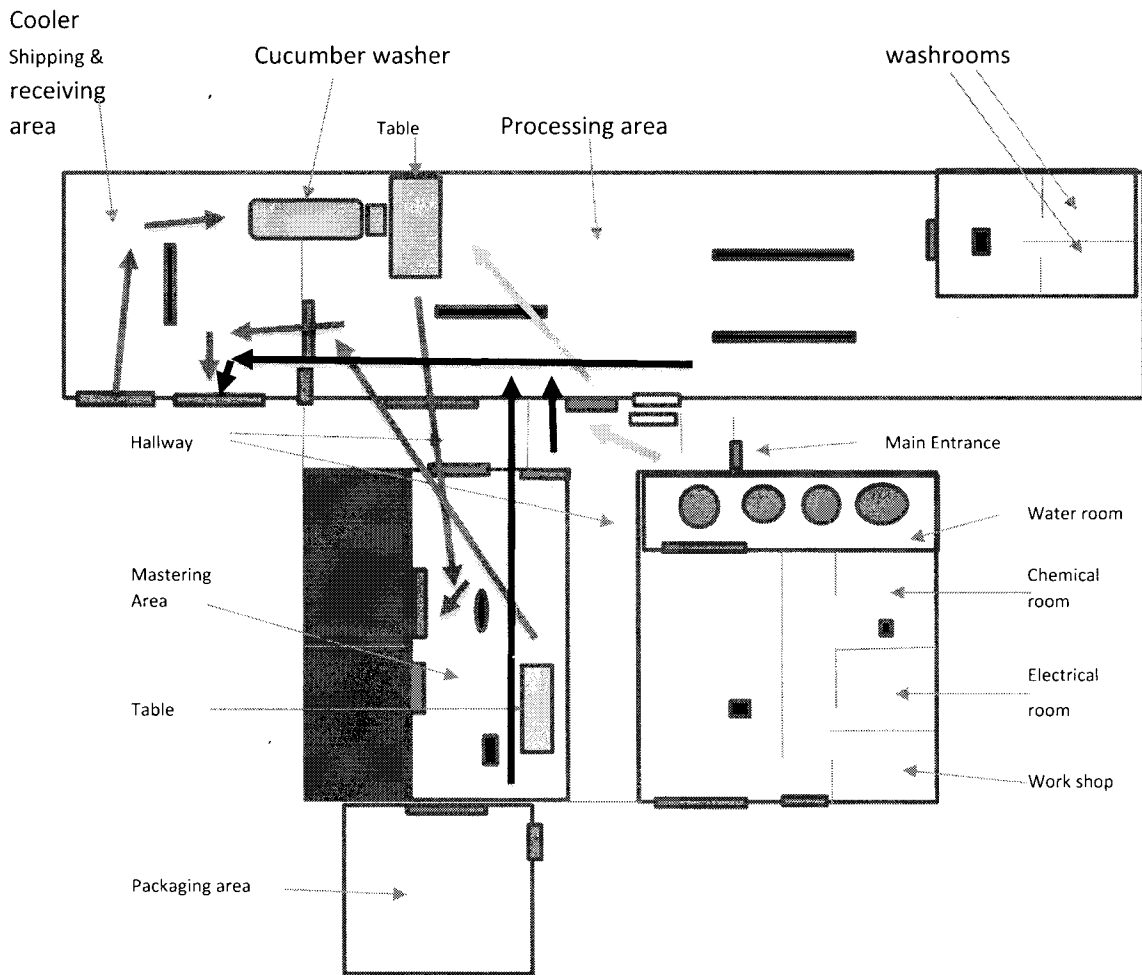


27 Wellington Row Tel. (506) 635-1566
P.O. Box 6026 Fax. (506) 635-0206
Saint John, NB fundy@fundyeng.com
E2L 4B1 www.fundyeng.com

Project
SEA CUCUMBER PROCESSING FACILITY
Atlanting Fish Processing
Black's Harbour, New Brunswick

Drawing
SECOND FLOOR PLAN

Project No. 13125	Rev. 1	Sheet 1
Drawn Author	Checked Checker	A2.2
Scale As indicated		

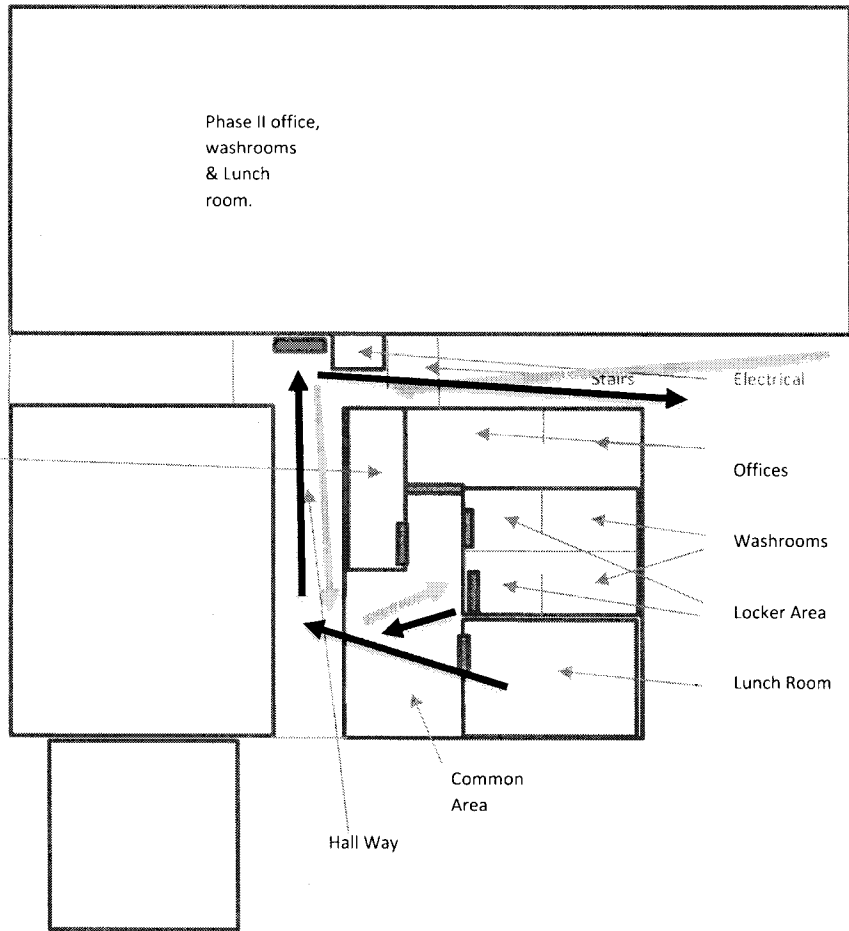


Doc #	A07
Revision #	1
Revision date	Oct 10/2018
Effectice date	Jan 05/2018
approved by	Jamie Olsen

Legend:
Employee entry



Waste Flow



APPENDIX B – WATER QUALITY

Report ID: 269349-IAS
 Report Date: 01-May-18
 Date Received: 20-Apr-18

CERTIFICATE OF ANALYSIS
 for



921 College Hill Rd
 Fredericton NB
 Canada E3B 6Z9
 Tel: 506.452.1212
 Fax: 506.452.0594
 www.rpc.ca

Attention:
 Project #: Not Available

Analysis of Potable Water

RPC Sample ID:					269349-1
Client Sample ID:					Atlanding (252-281Red Barn rd) Well #1
Date Sampled:					18-Apr-18
Analytes	Units	RL	MAC	AO	
Alkalinity (as CaCO ₃)	mg/L	●	-	-	●
Chloride	mg/L	●	-	●	●
Colour	TCU	●	-	●	●
Conductivity	µS/cm	●	-	-	●
Fluoride	mg/L	●	●	-	●
Nitrate + Nitrite (as N)	mg/L	●	●	-	●
pH	units	-	-	●	●
Phosphorus	mg/L	●	-	-	●
r-Silica (as SiO ₂)	mg/L	●	-	-	●
Sulfate	mg/L	●	-	●	●
Total Organic Carbon	mg/L	●	-	-	●
Turbidity	NTU	●	-	-	●
Calculated Parameters					
Hardness (as CaCO ₃)	mg/L	●	-	-	●
TDS (calc)	mg/L	-	-	●	●
Saturation pH (5°C)	units	-	-	-	●
Langelier Index (5°C)	-	-	-	-	●

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit; MAC = Maximum Acceptable Concentration; AO = Aesthetic Objective

Guidelines are from Guidelines for Canadian Drinking Water Quality (February 2017).

Ross Kean

Ross Kean
 Department Head
 Inorganic Analytical Chemistry

Brannen Burhoe

Brannen Burhoe
 Chemical Technician
 Inorganic Analytical Services

Report ID: 269349-IAS
 Report Date: 01-May-18
 Date Received: 20-Apr-18

CERTIFICATE OF ANALYSIS
 for



921 College Hill Rd
 Fredericton NB
 Canada E3B 6Z9
 Tel: 506.452.1212
 Fax: 506.452.0594
 www.rpc.ca

Attention:
Project #: Not Available

Analysis of Potable Water

RPC Sample ID:					269349-2
Client Sample ID:					Atlanding (252-281 Red Barn Rd) Well #2
Date Sampled:					18-Apr-18
Analytes	Units	RL	MAC	AO	
Alkalinity (as CaCO ₃)	mg/L		-	-	
Chloride	mg/L		-		
Colour	TCU		-		
Conductivity	µS/cm		-	-	
Fluoride	mg/L			-	
Nitrate + Nitrite (as N)	mg/L			-	
pH	units	-	-		
Phosphorus	mg/L		-	-	
r-Silica (as SiO ₂)	mg/L		-	-	
Sulfate	mg/L		-		
Total Organic Carbon	mg/L		-	-	
Turbidity	NTU		-	-	
Calculated Parameters					
Hardness (as CaCO ₃)	mg/L		-	-	
TDS (calc)	mg/L	-	-		
Saturation pH (5°C)	units	-	-	-	
Langelier Index (5°C)	-	-	-	-	

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit; MAC = Maximum Acceptable Concentration; AO = Aesthetic Objective

Guidelines are from Guidelines for Canadian Drinking Water Quality (February 2017).

Report ID: 269349-IAS
 Report Date: 01-May-18
 Date Received: 20-Apr-18

CERTIFICATE OF ANALYSIS
 for



921 College Hill Rd
 Fredericton NB
 Canada E3B 6Z9
 Tel: 506.452.1212
 Fax: 506.452.0594
 www.rpc.ca

Attention:
 Project #: Not Available

Analysis of Metals in Potable Water

RPC Sample ID:					269349-1
Client Sample ID:					Atlanding (252-281Red Barn rd) Well #1
Date Sampled:					18-Apr-18
Analytes	Units	RL	MAC	AO	
Aluminum	mg/L		-	-	
Antimony	mg/L			-	
Arsenic	mg/L			-	
Barium	mg/L			-	
Boron	mg/L			-	
Cadmium	mg/L			-	
Calcium	mg/L		-	-	
Chromium	mg/L			-	
Copper	mg/L		-		
Iron	mg/L		-		
Lead	mg/L			-	
Lithium	mg/L		-	-	
Magnesium	mg/L		-	-	
Manganese	mg/L		-		
Molybdenum	mg/L		-	-	
Nickel	mg/L		-	-	
Potassium	mg/L		-	-	
Selenium	mg/L			-	
Sodium	mg/L		-		
Strontium	mg/L		-	-	
Thallium	mg/L		-	-	
Uranium	mg/L			-	
Vanadium	mg/L		-	-	
Zinc	mg/L		-		

Report ID: 269349-IAS
 Report Date: 01-May-18
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CERTIFICATE OF ANALYSIS
 for



921 College Hill Rd
 Fredericton NB
 Canada E3B 6Z9
 Tel: 506.452.1212
 Fax: 506.452.0594
 www.rpc.ca

Attention:
 Project #: Not Available

Analysis of Metals in Potable Water

RPC Sample ID:					269349-2
Client Sample ID:					Atlanding (252-281 Red Barn Rd) Well #2
Date Sampled:					18-Apr-18
Analytes	Units	RL	MAC	AO	
Aluminum	mg/L		-	-	
Antimony	mg/L			-	
Arsenic	mg/L			-	
Barium	mg/L			-	
Boron	mg/L			-	
Cadmium	mg/L			-	
Calcium	mg/L		-	-	
Chromium	mg/L			-	
Copper	mg/L		-		
Iron	mg/L		-		
Lead	mg/L			-	
Lithium	mg/L		-	-	
Magnesium	mg/L		-	-	
Manganese	mg/L		-		
Molybdenum	mg/L		-	-	
Nickel	mg/L		-	-	
Potassium	mg/L		-	-	
Selenium	mg/L			-	
Sodium	mg/L		-		
Strontium	mg/L		-	-	
Thallium	mg/L		-	-	
Uranium	mg/L			-	
Vanadium	mg/L		-	-	
Zinc	mg/L		-		

Report ID: 269349-IAS
Report Date: 01-May-18
Date Received: 20-Apr-18

CERTIFICATE OF ANALYSIS

for



921 College Hill Rd
Fredericton NB
Canada E3B 6Z9
Tel: 506.452.1212
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Methods

<u>Analyte</u>	<u>RPC SOP #</u>	<u>Method Reference</u>	<u>Method Principle</u>
pH	4.M03	APHA 4500-H ⁺ B	pH Electrode - Electrometric
Alkalinity (as CaCO ₃)	4.M43	EPA 310.2	Methyl Orange Colourimetry
Chloride	4.M44	APHA 4500-CL E	Ferricyanide Colourimetry
Fluoride	4.M30	APHA 4500-F- D	SPADNS Colourimetry
Sulfate	4.M45	APHA 4500-SO ₄ E	Turbidimetry
Nitrate + Nitrite (as N)	4.M48	APHA 4500-NO ₃ H	Hydrazine Red., Derivatization, Colourimetry
Free-Silica (as SiO ₂)	4.M46	APHA 4500-SI F	Heteropoly Blue Colourimetry
Carbon - Total Organic	4.M38	APHA 5310 C	UV-Persulfate Digestion, NDIR Detection
Turbidity	4.M06	APHA 2130 B	Nephelometry
Colour	4.M55	APHA 2020 Color (A,C)	Single Wavelength Spectrophotometry
Conductivity	4.M04	APHA 2510 B	Conductivity Meter, Pt Electrode
Trace Metals	4.M01/4.M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

APPENDIX C – WELL DRILLER’S REPORT

RONNIE FIRLOTTE

Clearwater Well Drilling Inc.

41 Old Bay Road, Oak Bay, NB E3L 3W7

Date APR. 18/2018



HAMMER
DRILLING

M. Attending

Blacks Harb.

HST # 811

Well #1	(Factory) chlorinated well - pumped 10-12 gpm 7 hrs - did not drop in flow rate.				
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Well #2	(House well) chlorinated well - pumped 10 gpm 8 hrs - did not drop in flow rate.				
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Net 30 days - 1 1/2 % per month on overdue accounts

APPENDIX D – EQUIPMENT SPECIFICATIONS

QUOTATION FOR:
 BAYSHORE LOBSTER
 ATT'N: [REDACTED]
 EMAIL: [REDACTED]

QUOTATION INFORMATION:
Quotation Number: 00033420
Quote Date: 01/29/18
Customer #: [REDACTED]
Salesperson: [REDACTED]
Terms/Conditions: TO BE DETERMINED
Purchase Order #:

In response to your inquiry, we are pleased to quote as follows:

Qty	Unit	Description	Unit Price	Total Price
1.00	EA	SEA CUCUMBER MACHINE	[REDACTED]	[REDACTED]

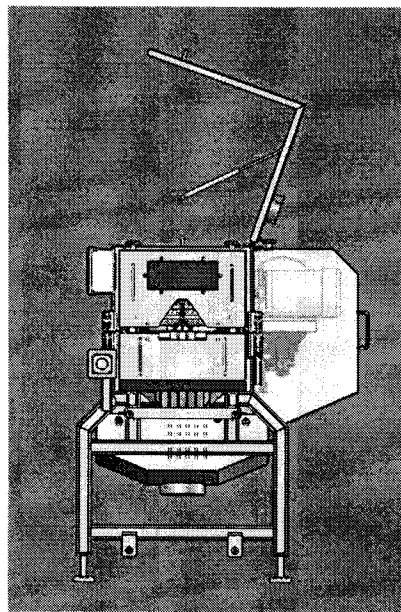
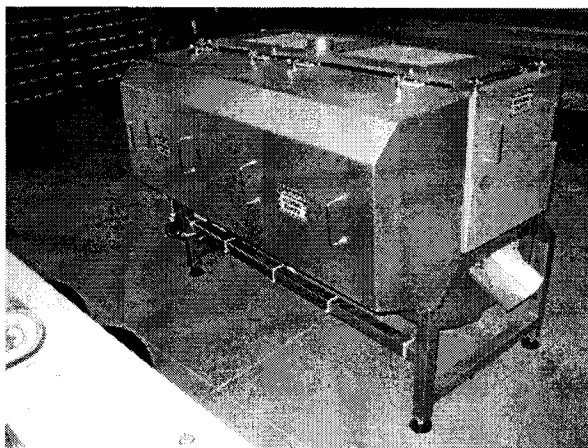
Fabricate One (1) Sea Cucumber Machine as per Genesis CCFI design. Fabrication details as follows:

- Stainless Steel T304 construction
- Approximately 83" long x 48" high x 39" wide overall
- Square Tubing Frame
- One infeed tray to ergonomically feed machine
- One 10" diameter blade
- Clear Acrylic rippled plate to keep Skin flat after being cut
- Two rotating brushes to remove gut
- Two Spray bars c/w nozzles facing brushes
- Five 26mm wide spiked belts to grip Sea Cucumber
- Gas spring hinged top cover c/w two clear lexan windows
- Removable cover to access gear motor, motor, chain and sprockets for cleaning
- Complete access to internal components for cleaning & access
- Legs c/w adjuster
- Complete with fully enclosed drip pan for collecting gut
- Electrical controls included 230/3/60
- Emergency stop included
- Installation not included

NOTE: Prices in Canadian Dollars

Sea Cucumber Machine

Custom Designed Seafood Processing Equipment



Patent Pending

Sea Cucumber Processing Machine:

Developed for: "Cucumaria Frondosa)
Common Names: Northern Sea Cucumber
Beche-de-mer and the Orange Footed Sea
Cucumber

- Stainless Steel Type 304 Construction
- Infeed Tray
- 10" Diameter Blade
- Rippled Clear Acrylic to keep skin flat after the cutting process
- Rotating brushes to eviscerate
- Spray Bars
- Removable cover
- Fully enclosed drip pan
- Emergency stop / Electrical controls

Optional Equipment:

- 4 Gate Conveyor to feed machines
- Feed Tray to feed machines
- Inspection Conveyor
- Control Panel



*Innovation that
keeps you on target*



CW Industrial Fabrication and
Marine Equipment Ltd.

P.O. Box 51, Bay Bulls, NL, Canada A0A 1C0
Tel: 709-334-3303 Toll Free: 1-800-563-3262 Fax: 709-334-2124
cwsales@cwindustrial.com www.cwindustrial.com

Item #4:Continuous Batch Cooker

Description	
Dimensions	4' wide x 10' long x 5' deep
Frame	3" x 3" x 1/4" angle construction , c/w adjustable legs
Sides/Ends/bottom	Formed 12 Ga. sides, 12 Ga. ends, 10 Ga, bottom, c/w slopping floor for ease of cleaning
Cladding/Insulation	18 Ga. SS cladding/Insulation styrofoam 1.5"
Steam Piping /coils	3"sch.40 header pipe, 1" sch.40 finger coils @ 6" centres, 1/4" Syphons, Winters pressure gauge,1.5" full port valves
Drain Vale/piping	3" full open port, 1/4" Syphons, Winters pressure gauge
Steam Valve	Proportional 1.5" (1) RTD Eclipse transmitter
Sprockets & chain	Martin SS 60- B- 24 (5) 60-B SS roller chain (2) runs full length
Bearings	SS Four Bolt Flange Bearings (4)
Drive	Eurodrive R77 DRS71S4
Clean out doors	12" long x 8" deep (1) 6" x 6" square open (1)
Exhaust Hood	7' long x 3' wide c/w 16" dia. piping, customer supplied exhaust system
Guarding	1/2" square SS mesh over shaft between motor and conveyor. To be finalized once owner has specified motor.
Leg Adjusters	3/4" SS shop made
Materials	Stainless Steel type 304

Item #5:Continuous Batch Cooler

Description	
Dimensions	7' wide x 20' long x 5' deep
Frame	3" x 3" x 1/4" angle construction , c/w adjustable legs
Sides/Ends/bottom	Formed 12 Ga. sides, 12 Ga. ends, 10 Ga, bottom, c/w slopping floor for ease of cleaning
Divider Wall	12 Ga. divider wall to separate refrigeration coil from product racks
Cladding/Insulation	18 Ga. SS cladding/Insulation stryofoam 1.5"
Drain Valve	3" full open port, (1)
Sprockets & chain	Martin SS 60- B- 24 (5) 60-B SS roller chain (2) runs full length
Bearings	SS Four Bolt Flange Bearings (4)
Bearings	Pillow Block 1.5" Pobco (2)
Drive	Eurodrive R77 DRS71S4 (1)
Propeller Drive	Eurodrive K57DRE104 (1)
Prop	17" Dia. 12" Pitch x 4 Blades
Coupler	QF15 SS 303 (1)
Clean out doors	12" long x 8" deep (1) 6" x 6" square open (3)
Guarding	1/2" square SS mesh over shaft between motor and conveyor. To be finalized once owner has specified motor.
Leg Adjusters	3/4" SS shop made
Materials	Stainless Steel type 304