5.8 Radiographic Testing Report

ISO 9001:2000

RADIOGRAPHIC TESTING REPORT

R- 170113

ACUREN

CLIENT: Gem Steel
ATTENTION: Steve Davies
ADDRESS:
PROJECT: Tank 7000 - TK# 001
WORK LOCATION: Milne Inlet - Nunavut

DATE: Sept 25/11
ACUREN JOB #: 231-61676-84
PO/WO #:
PROCEDURE #: RT-0016
ACCEPTANCE STANDARD: API 650 2008

MATERIAL TYPE: c/s
FILM BRAND: Agfa
RADIATION SOURCE: ☑ IR 192 ☐ Co 60 ☐ X-RAY
45 (Ci) KV
FOCAL SPOT: 0.14" MM (IN)

PAGE 1 OF 1

Legend 1. Accept | 2. Moderate 3. Reject * Welder Symbol

	IDENTIFICATION	PIPE DIA.	PIPE SCH	FILM TYPE	REIN.	TECH #	SOD (D)	OFD (t)	# OF EXP	CRK	LF	IP	P	S	UC	CR	EP	*	DEFECT LOCATION & REMARKS	ACC	REJ
1	V1A-1 6-6		5/16"	D5	.125"	1	12"	5/16"	1											✓	
2	V2A-1																			✓	
3	V3A-1																			✓	
4	V4A-1												1							✓	
5	V5A-1																			✓	
6	H1-1												1							✓	
7	H1-2																			✓	
8	V5B-1																			✓	
9	V4B-1																			✓	
10	H2-1																			✓	
11	H2-2												1							✓	
12	H3-1																			✓	
13																				✓	
14																					
15																					
16																					
17																					
18																					
19																					
20																					

SIGNATURES

REFER TO OPPOSITE SIDE FOR SCOPE OF SERVICES AND STANDARD OF CARE

CLIENT REPRESENTATIVE: STEVE DAVIES (PRINT) _____ (SIGNATURE)

TECHNICIAN (SIGN): B. Osmond

PRINT NAME: Brad Osmond (1ST TECHNICIAN) M. Lederer (2ND TECHNICIAN/ASSISTANT)

CGSB LEVEL II SNT LEVEL II CGSB REGISTRATION # 3161

CGSB LEVEL ____ SNT LEVEL ____ CGSB REGISTRATION # ____

FILM USED: 12 PCS FILM SIZE 4½ x 8½ DTR # A296493

PCS ____ PCS ____ PCS ____ PCS ____ PCS ____

*Please note: Film that is not accepted by the client when the report is issued will be disposed of by Acuren unless otherwise notified and acknowledged in writing.

White – Client Copy | Canary – Office Copy | Golden Rod – Office Copy | Pink - Technician Copy

ISO 9001:2000

RADIOGRAPHIC TESTING REPORT

R- 170114

ACUREN

CLIENT: Gem Steel
ATTENTION: Steve Davies
ADDRESS:
PROJECT: Tank 7000 - TK #001
WORK LOCATION: Milne Inlet - Nunavut

DATE: Sept 26/11
ACUREN JOB #: 231-61676-84
PO/WO #:
PROCEDURE #: RT-0016
ACCEPTANCE STANDARD: API 650 2009

PAGE 1 OF 1

MATERIAL TYPE: c/s
FILM BRAND: Agfa
RADIATION SOURCE: ☑ IR 192 ☐ Co 60 ☐ X-RAY
FOCAL SPOT: 45 (CI) KV; 0.14" MM (IN)

Legend 1. Accept 2. Moderate 3. Reject * Welder Symbol

	IDENTIFICATION	PIPE DIA.	PIPE SCH	FILM TYPE	REIN.	TECH #	SOD (D)	OFD (t)	# OF EXP	CRK	LF	IP	P	S	UC	CR	EP	*	DEFECT LOCATION & REMARKS	ACC	REJ
1	V6A-1 0-6		5/16"	D5	.125"	1	12"	5/16"	1				1							✓	
2	V7A-1 ↓		↓	↓	↓	↓	↓	↓	↓				1							✓	
3	H1-3 ↓																			✓	
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					
18																					
19																					
20																					

SIGNATURES

REFER TO OPPOSITE SIDE FOR SCOPE OF SERVICES AND STANDARD OF CARE

CLIENT REPRESENTATIVE: STEVE DAVIES (PRINT) _____ (SIGNATURE)

TECHNICIAN (SIGN): B.O.

PRINT NAME: Brad Osmond (1ST TECHNICIAN) — M. Lederer (2ND TECHNICIAN/ASSISTANT)

CGSB LEVEL: II SNT LEVEL: II — CGSB LEVEL: ____ SNT LEVEL: ____

CGSB REGISTRATION #: 3161 — CGSB REGISTRATION #: ____

FILM USED: 3 PCS — FILM SIZE: 4½ x 8½

PCS ____ PCS ____ PCS ____ PCS ____ PCS ____

DTR #: A296494

*Please note: Film that is not accepted by the client when the report is issued will be disposed of by Acuren unless otherwise notified and acknowledged in writing.

White – Client Copy | Canary – Office Copy | Golden Rod – Office Copy | Pink - Technician Copy

ISO 9001:2000

RADIOGRAPHIC TESTING REPORT

NR- 170115

ACUREN

CLIENT: Adco Power / Gem Steel
ATTENTION: Steve Davies
ADDRESS: Don Fitzgerald
PROJECT: Project # 3266
WORK LOCATION: Milne Inlet - Nunavut

DATE: Sept 25/11
ACUREN JOB #: 231-61676-84
PO/WO #:
PROCEDURE #: RT-0016
ACCEPTANCE STANDARD: ASME B31.3 N 2008

MATERIAL TYPE: c/s
FILM BRAND: Agfa
RADIATION SOURCE: ☑ IR 192 ☐ Co 60 ☐ X-RAY
45 (Ci) Kv
FOCAL SPOT: 0.14" MM / IN

PAGE 1 OF 1

Legend 1. Accept 2. Moderate 3. Reject *Welder Symbol

	IDENTIFICATION	PIPE DIA.	PIPE SCH	FILM TYPE	REIN.	TECH #	SOD (D)	OFD (t)	# OF EXP	CRK	LF	IP	P	S	UC	CR	EP	*	DEFECT LOCATION & REMARKS	ACC	REJ
1	X 1	6"	STD	D4	.125"	3	6.6"	.286"	3							1		W2		✓	
2	2																1	W1		✓	
3	3															1		W1		✓	
4	4																	W1		✓	
5	5	↓																W2		✓	
6	6	4"					4.5"	.237"					2			1		W1		✓	
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					
18																					
19																					
20																					

SIGNATURES

REFER TO OPPOSITE SIDE FOR SCOPE OF SERVICES AND STANDARD OF CARE

CLIENT REPRESENTATIVE: Don Fitzgerald (PRINT) _____ (SIGNATURE)

TECHNICIAN (SIGN): R. Osmond

PRINT NAME: Brad Osmond (1ST TECHNICIAN) M. Lederer (2ND TECHNICIAN/ASSISTANT)

*Please note: Film that is not accepted by the client when the report is issued will be disposed of by Acuren unless otherwise notified and acknowledged in writing.

CGSB LEVEL II SNT LEVEL II CGSB REGISTRATION # 3161

CGSB LEVEL _____ SNT LEVEL _____ CGSB REGISTRATION # _____

FILM USED	FILM SIZE	
13	PCS	4½ x 8½
5	PCS	4½ x 17
	PCS	
	PCS	
	PCS	
	PCS	

DTR # A296493

White – Client Copy | Canary – Office Copy | Golden Rod – Office Copy | Pink - Technician Copy

5.9 Certification of Welding Inspectors

ACUREN

OSMOND, BRAD
RT2

ACUREN

Q-016

VISION EXAMINATION FORM

In accordance with SNT-TC-1A 2001 edition the following eye examination report is evidence that technician's vision acuity has been checked. The evidence of satisfactory vision has been carried out by either the certified SNT level III or a representative trained by the Level III to administer the examination.

APPLICANT SECTION

Name BRAD OSMOND Date JAN 8/10

Initial Examination ☐ Renewal ☑ Re-Certification ☐

VISION REQUIREMENT

NEAR VISION ACUITY

The examination shall assure natural or corrected near-distance acuity in at least one eye such that the applicant is capable of reading a minimum of Jaeger number 1 or equivalent type and size letter at a distance of not less than 12 inches (30.5 cm) on a standard Jaeger test chart. This test shall be administered annually or at any time that the Level III deems vision is questionable.

COLOR AND SHADES OF GREY VISION ACUITY

The examination shall demonstrate the capability of distinguishing and differentiating contrast among colours used in the method, and shades of grey. The successful completion of the practical test or reading of plates 1 through 11 of the Ishihara practical test will demonstrate the applicant's ability to distinguish colour contrast for the method in which the individual is certified. Must be able to distinguish between 4 shades of grey. This shall be conducted upon initial certification and at 3 year intervals thereafter.

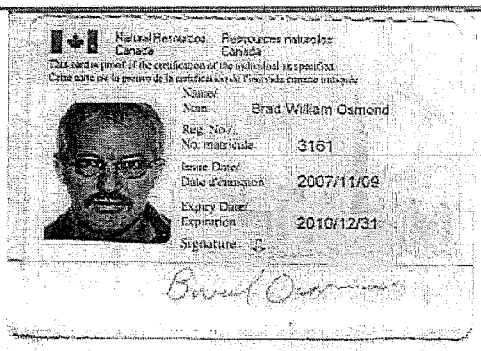
RESULTS

NEAR VISION	Meets without correction ☐	Meets with correction ☑	Does not meet requirements ☐
COLOUR VISION	*(Ishihara test chart)*	Meets requirements ☑	Does not meet requirements ☐
	(Acuren chart 003)	Meets requirements ☑	Does not meet requirements ☐
SHADES OF GREY	*(density strip)*	Meets requirements ☑	Does not meet requirements ☐

Examiner	Name (print)	Signature	Title	Expiry date *(yyyy/mm/dd) (1 year)*
	DOUG MACLEOD		RESOURCE COORDINATOR	2011/1/8

ACUREN

OSMOND, BRAD
RT2


Natural Resources Canada / Ressources naturelles Canada

This card is proof of the certification of the individual in question.
Cette carte est la preuve de la certification de l'individu dont la photo apparaît

Name / Nom: Brad William Osmond

Reg. No./ No. matricule: 3161

Issue Date/ Date d'émission: 2007/11/09

Expiry Date/ Expiration: 2010/12/31

Signature:

CGSB Identification – Reg # 3161
Expiry Date: December 31, 2010


Natural Resources Canada / Ressources naturelles Canada

Qualified to / Qualifié en vertu de: i) CAN/CGSB—48.9712 or/ou ii) ISO 20807 Qualification system

3161 BC

Method / Méthode	Level / Niveau	Sector / Secteur	Cert. Date / Date cert.	Recert. Date / Date recert.	Expiry / Expiration
RT	2	ENG	92/12/09		10/12/31

For proof of certification, visit website: http://pdc.nrcan.gc.ca/
Pour confirmer la certification, visitez le site web: http://pdc.rncan.gc.ca/

Manager, Certifying Agency / Gestionnaire, Organisme de certification

CGSB Certification
RT2


Atomic Energy Control Board / Commission de contrôle de l'énergie atomique

This certifies that / La présente atteste que **Brad William Osmond**

has qualified pursuant to Section 18 of the Atomic Energy Control Regulations as a / s'est qualifié en vertu de l'article 18 du Règlement sur le contrôle de l'énergie atomique comme étant un

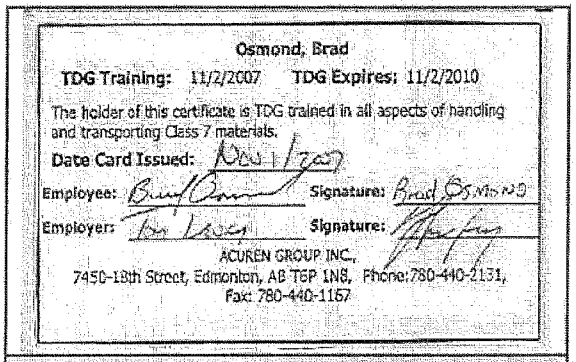
Qualified Operator / Opérateur qualifié

QUALIFICATION DATE / DATE DE QUALIFICATION: 1983/05/01

REG NO / NO MATRICULE: 3161

ISSUE DATE / DATE D'ÉMISSION: 1998/02/23

Certified Exposure Device Operator – Front


Osmond, Brad

TDG Training: 11/2/2007 **TDG Expires:** 11/2/2010

The holder of this certificate is TDG trained in all aspects of handling and transporting Class 7 materials.

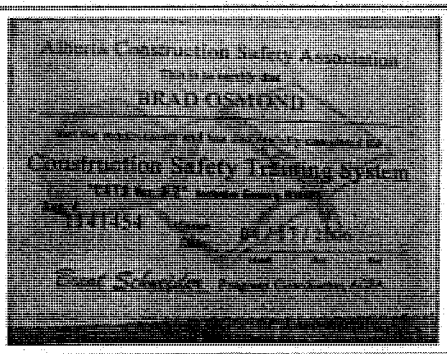
Date Card Issued: Nov 1/2007

Employee: **Signature:** Brad OSMOND

Employer: **Signature:**

ACUREN GROUP INC.,
7450-18th Street, Edmonton, AB T6P 1N8, Phone:780-440-2131,
Fax: 780-440-1167

Transportation of Dangerous Goods (TDG)
Expiry Date: November 2, 2010


Alberta Construction Safety Association

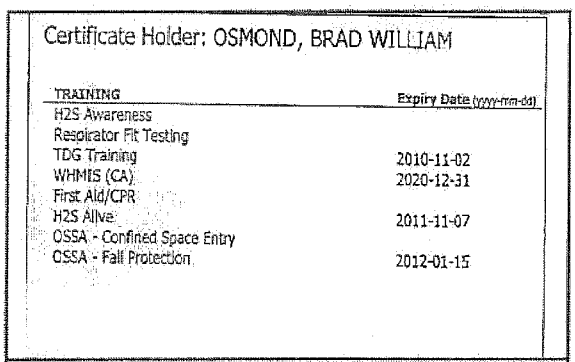
This is to certify that

BRAD OSMOND

has successfully met the requirements of the

Construction Safety Training System

CSTS

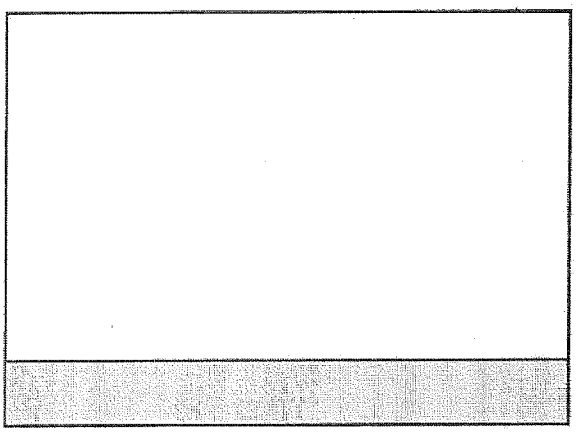

Certificate Holder: OSMOND, BRAD WILLIAM

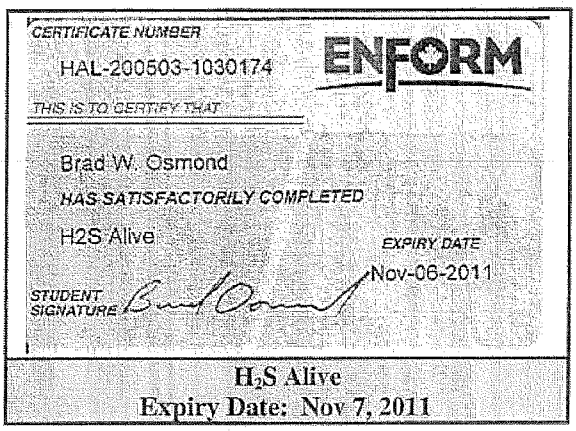
TRAINING	Expiry Date (yyyy-mm-dd)
H2S Awareness	
Respirator Fit Testing	
TDG Training	2010-11-02
WHMIS (CA)	2020-12-31
First Aid/CPR	
H2S Alive	2011-11-07
OSSA - Confined Space Entry	
OSSA - Fall Protection	2012-01-15

Acuren Safety Training

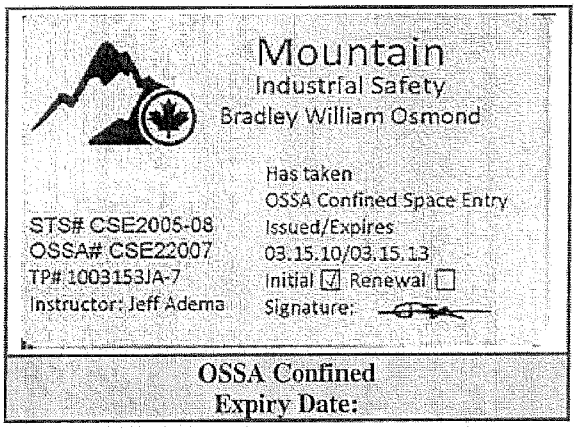
ACUREN

OSMOND, BRAD
RT2

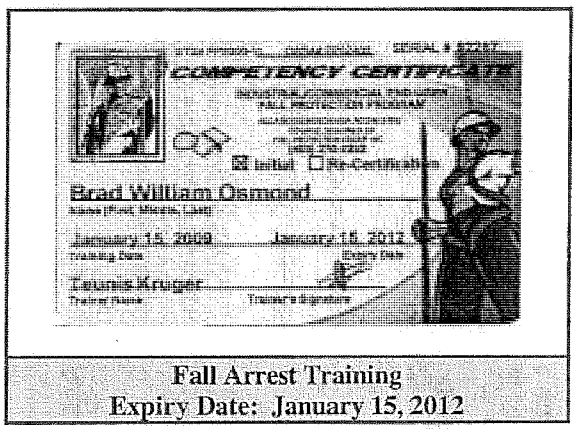




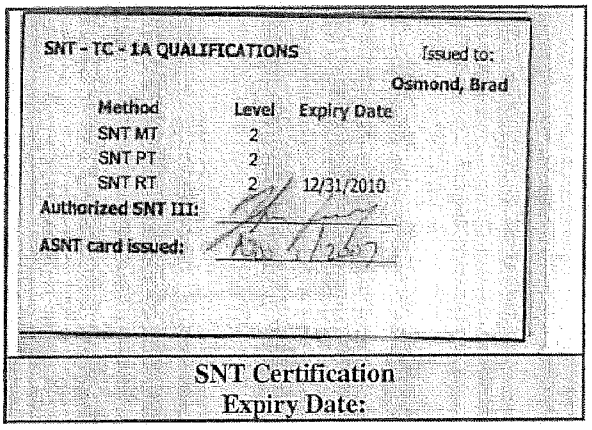
H_2S Alive
Expiry Date: Nov 7, 2011



OSSA Confined
Expiry Date:

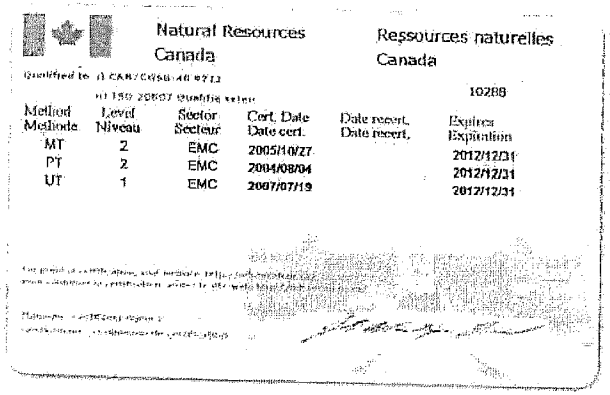


Fall Arrest Training
Expiry Date: January 15, 2012



SNT Certification
Expiry Date:

Aerial Work Platform
Expiry Date: Feb 27, 2012

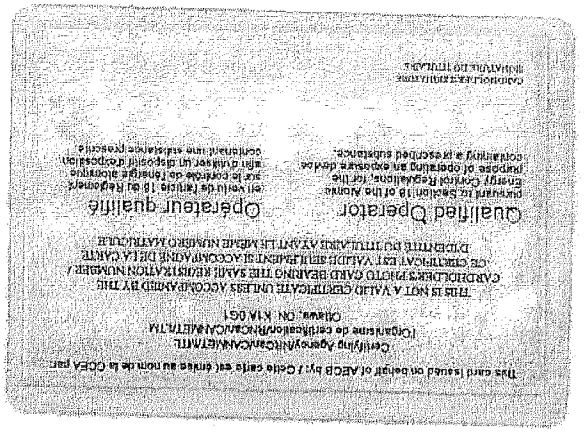


Natural Resources Canada

Ressources naturelles Canada

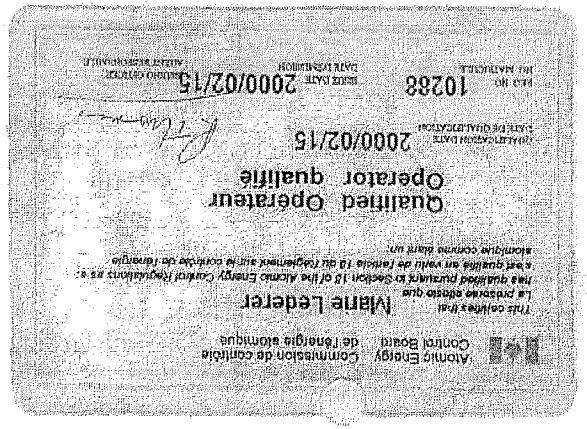
10288

Method Méthode	Level Niveau	Sector Secteur	Cert. Date Date cert.	Date recert. Date recert.	Expires Expiration
MT	2	EMC	2005/10/27		2012/12/31
PT	2	EMC	2004/08/04		2012/12/31
UT	1	EMC	2007/07/19		2012/12/31



Qualified Operator

Operateur qualifié



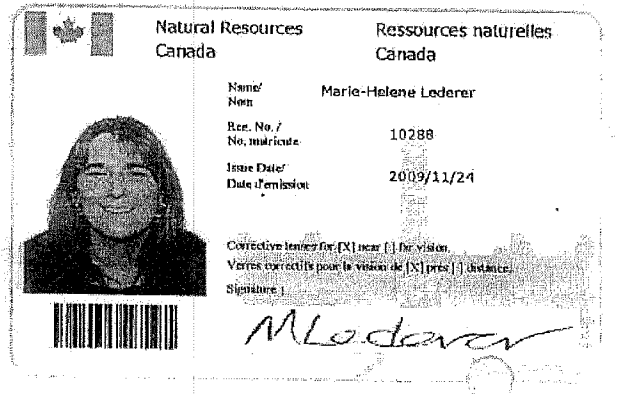
Qualified Operator

Operateur qualifié

2000/02/15

10288

2000/02/15



Natural Resources Canada

Ressources naturelles Canada

Name/ Nom: Marie-Helene Lederer

Rec. No./ No. matricule: 10288

Issue Date/ Date d'emission: 2009/11/24

Corrective lenses for: [X] near [ ] far vision.
Verres correctifs pour la vision de: [X] près [ ] distance.

Signature:

5.10 Welder WPS Qualification Statement and Welder Numbers

GEM STEEL
EDMONTON LTD.

Welder WPS Qualification Statement – Mary River Project 2011

The Gem Steel employees listed below have been qualified and are current to Gem Steel WPS Gem-85-200, Gem-85-300, Gem-85-400 and Gem-85-500 as per Gem Steel Quality Control Manual Section 11.

Steve Davies – Welder Symbol # 3

Carlos Espinosa – Welder Symbol # 2

Allan Garside – Welder Symbol # 13

Chris Gaudet – Welder Symbol # 12

Keith Hopkins – Welder # 5

Mark Kinzel – Welder Symbol # 4

Bruce McCarthy – Welder Symbol # 9

Brian Nielsen – Welder Symbol # 7

Leo Paradis – Welder Symbol # 6

Shaun Smathers – Welder Symbol # 11

Wes White – Welder Symbol # 10

Signed on behalf of Gem Steel

Steve Davies _____ Date: Oct 5/11

WELDER NUMBERS

Steve #3

Carlos #2

Keith #5

Mark K #4

Leo P #6

Brian N #7

[redacted]

Bruce #9

Shaun #11

Chris #12

Al Garside #13

#2 - 176' Verts
#11 - 96'
#13 - 48'
#12 - 16'
#4 - 40'

#2 & 3 Horizontals 3 x 264 = 789
5 Shots total

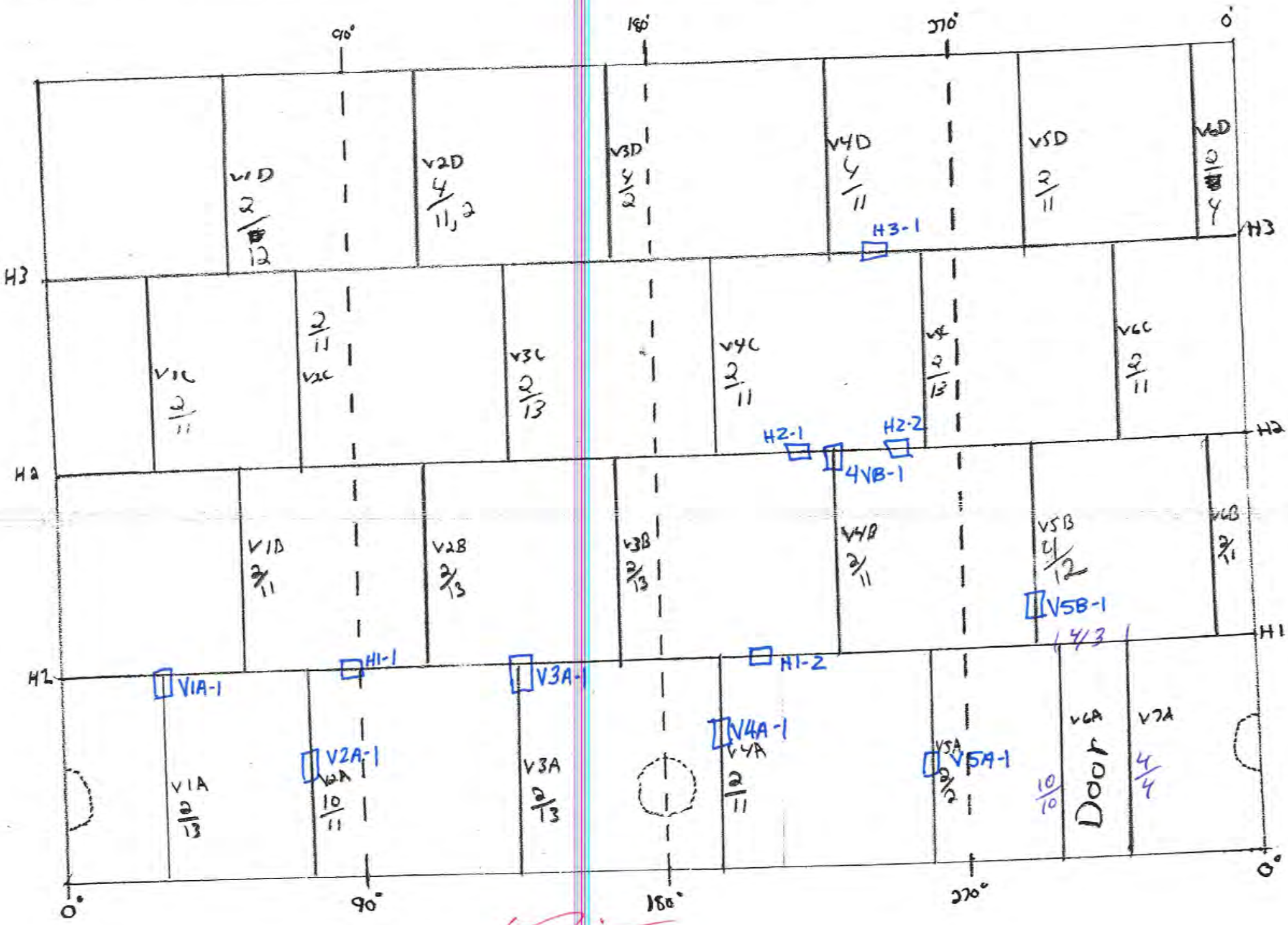
all Ballard 5
+ V5B
+ 1 more #2 welder.
7 verts Total.

Door Plate
2 verts
1 Horizontal

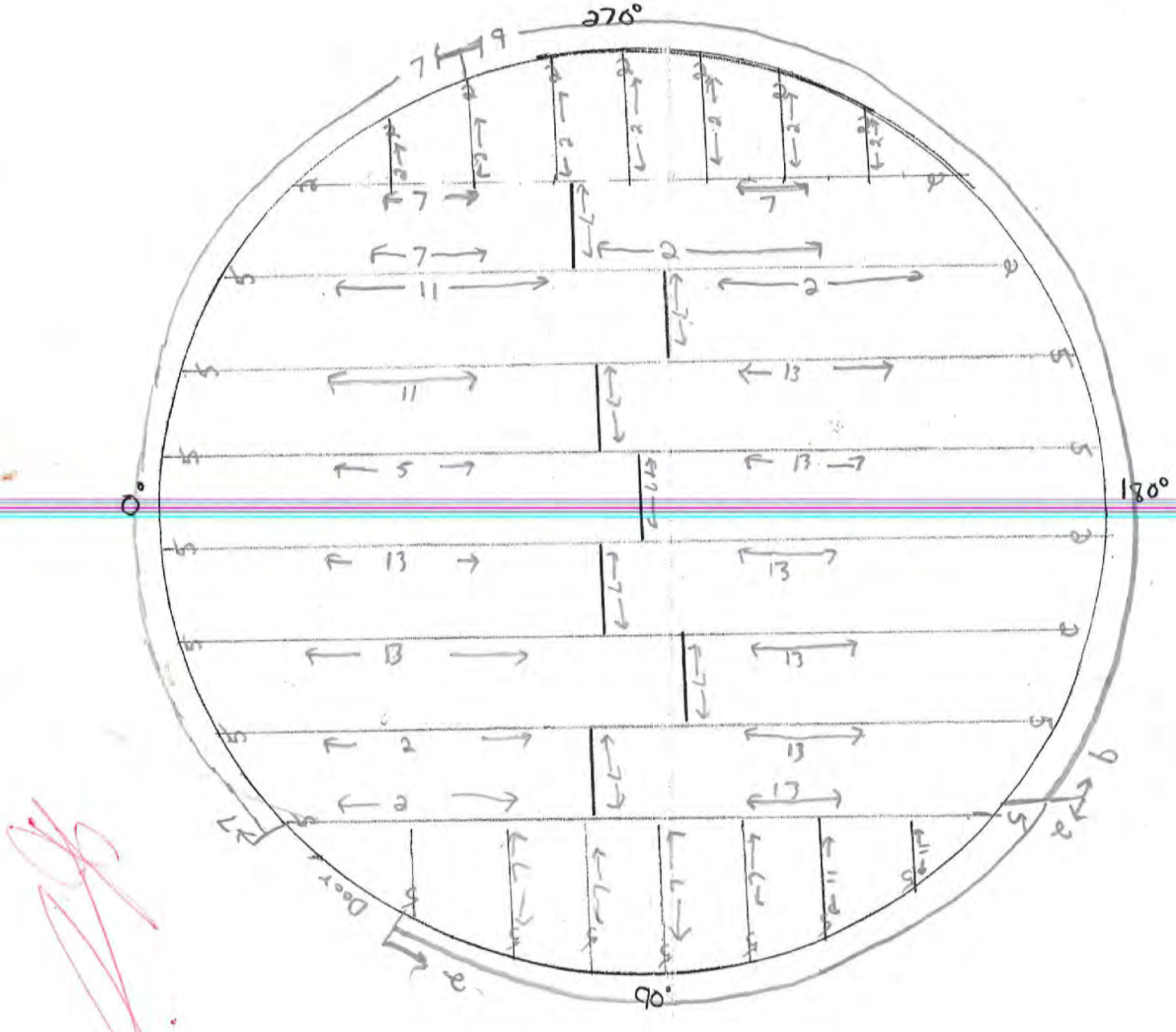
Was #10

5.11 Tank Shell and Floor Weld Map

Tank 7000-TK001 - Shell Weld Map Clockwise From 0°



Floor Map 5M Lt Tank



Appendix A

A.1 RFI's and Correspondance

NUNA

RFI #: AP-RFI-001

Request For Information / Clarification ☐

Request For Change ☒

ORIGINATOR / Company:		Project Stage:	Home Office ☐	Supplier ☐	
			Site ☒	Other ☐	

Submitted by:	*Kyle Kuntz*	Submitted to::	Hatch
Company:	Nuna Contracting	Tie point #:	
Phone No.:	780-434-9114	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-238-6609	Date Issued:	19-Aug-11
E-mail:	kylek@nunalogistics.com	Date Req:	20-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

Drawing H337697-4020-10-035-0002 - Section-D (Dyke Construction) A) Dyke construction requires a Key Trench to allow for Liner to be held securely in place. B) Dyke requires "Type-2" material to be placed above "Type-4" material. "Type-2" material is to be screened as per spec, which would hold up construction as the screener will arrive on sea lift. C) "Type-4" subbase requires 2:1 slope, then flat, then back to a 2:1 slope.

D) Construction under tank pad calls out for Insulation to sit on 100mm of Type-6 Sand.

Proposed Corrective Action:

A) Key Trench can be removed. Liner would then continue over the top of the dyke onto outside. To hold liner securely in place, it would be backfilled on top of liner on the outside of the dyke. B) Current material being used out of Km2 Borrow Pit is very close to the spec'd "Type-2" material. It has proven to compact extremely well as demonstrated to Hatch on site. C) See attached sketch for proposed slopes as the Key Trench will no be required. D) Place Insulation directly ontop of Geotextile.This will gain more material above Insulation, which will allow for more protection of material during construction.

Attachments: Yes ☒ No ☐ Originator:

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☒

A - HMM will allow this design change provided the costs associated with the additional liner required to extend to the outside toe of dyke are bore by the contractor. Documentation from the liner manufacturer shall be provided indicating this is an acceptible means of backfilling.

B - Granular Type-2 substitution with Bank Material out of Km2 Borrow Pit is approved pending documentation from Hatch site staff indicating its adequacy for use within the dyke construction.

C - Revised dyke wall granular configuration with Granular Type-4 sloping as per attached sketch is approved for construction. D - Insulation location shall remain as per current design. Relocating insulation below a layer of bank material (Type-2 Substitute noted in point B) could damage the insulating layer.

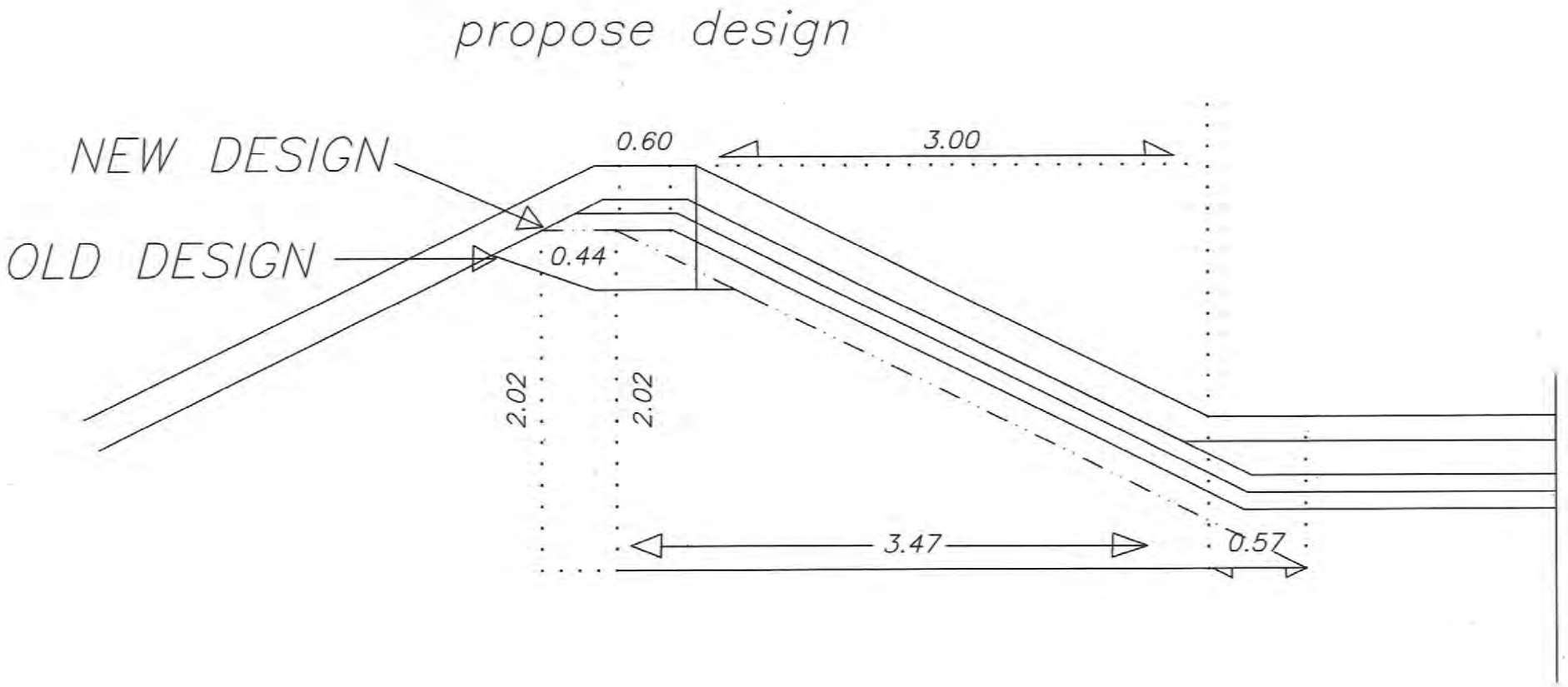
Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ☒ No

Change Order to Contract Required ☐ Yes ☒ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Kyle Kuntz Signature: Date: August 19, 2011


propose design
NEW DESIGN
OLD DESIGN
0.60
3.00
0.44
2.02
2.02
3.47
0.57

NUNA

RFI #: AP-RFI-002

Request For Information / Clarification ☐

Request For Change ☒

ORIGINATOR / Company:		Project Stage:	Home Office ☐	Supplier ☐	
			Site ☒	Other ☐	

Submitted by:	*Kyle Kuntz*	Submitted to::	Hatch
Company:	Nuna Contracting	Tie point #:	
Phone No.:	780-434-9114	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-238-6609	Date Issued:	24-Aug-11
E-mail:	kylek@nunalogistics.com	Date Req:	24-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

A) Replace the specified Extruded Polystyrene for the remaining 15% of the tank base. The remaining amount of insulation is located on the sea lift which is not unloading due to weather conditions. This is holding up construction.

Proposed Corrective Action:

A) There is Insulation on site that we would like to use.
Specifications call for Compressive Strength - 60 psi, the proposed insulation is 40 psi.
Ordered Product - FOAMULAR 600 2" X24" X96" B.C.
Product - FOAMULAR 400 2" X24" X96" B.C.

Proposed

Attachments: Yes ☐ No ☒ Originator: _____

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☐

Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ☒ No

Change Order to Contract Required ☐ Yes ☒ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Kyle Kuntz Signature: Date: August 24, 2011

NUNA

RFI #: AP-RFI-003

Request For Information / Clarification ☐

Request For Change ☒

ORIGINATOR / Company:	Project Stage:	Home Office ☐ Site ☒	Supplier ☐ Other ☐

Submitted by:	*Kyle Kuntz*	Submitted to::	Hatch
Company:	Nuna Contracting	Tie point #:	
Phone No.:	780-434-9114	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-238-6609	Date Issued:	26-Aug-11
E-mail:	kylek@nunalogistics.com	Date Req:	27-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

A) Screening the material available has shown us that it is next to impossible to produce "Type 2" and "Type 3" material as required. This has been confirmed onsite by Hatch (Marlen Coakley).

Proposed Corrective Action:

A) Produce a modified "Type 3" material which would be 75mm or less. With the material produced from the screening, this is the best solution to reach the compaction necessary. We would then combine the "Type 2" and "Type 3" called out on the drawings for the top layer of tank floor (350mm). The modified "Type 3" would replace these two materials.

Attachments: Yes ☐ No ☒ Originator: _____

RESPONSE: ☒ CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS

Modified' Type 3 Material (50mm-65mm Minus) is approved for use in construction of tank base and dyke floor in locations and thicknesses indicated. Required compaction density shall be 100% by standard proctor. Maximum lift thickness shall not exceed 200mm. Contractor shall provide typical sieve analysis for 'Modified' Type 3 material when available for verification of grain size distribution.

Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ☒ No

Change Order to Contract Required ☐ Yes ☒ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Kyle Kuntz Signature: Date: August 26, 2011

NUNA

RFI #: AP-RFI-004

Request For Information / Clarification ☐

Request For Change ☒

ORIGINATOR / Company:		Project Stage:	Home Office ☐	Supplier ☐
			Site ☒	Other ☐

Submitted by:	*Kyle Kuntz*	Submitted to::	Hatch
Company:	Nuna Contracting	Tie point #:	
Phone No.:	780-434-9114	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-238-6609	Date Issued:	28-Aug-11
E-mail:	kylek@nunalogistics.com	Date Req:	30-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

A) Specified "Type 3" (200mm) called out to be placed on the final layer of Berm. As discussed with Hatch (Marlon Coakley) this generated material consists of to much fine particles and would simply erode and wash away over time.

Proposed Corrective Action:

A) While creating the modified "Type 3" as mentioned in RFI-003, the split produces a 75mm plus. This material will provide much greater stability holding up to the elements. It will also provide an astatically pleasing final layer.

Attachments: Yes ☐ No ☒ Originator:

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☒

The material to be used in place of 200mm of Type 3 (50mm Minus) dresser stone on the dyke/berm walls shall be a loose graded 75mm minus material produced from the screens resulting from the production of 'Modified' Type 3 (50-65mm Minus) outlined in RFI-003. This material shall have little to no fines with any/all stones larger than 75mm removed prior to placement. Mechanical compaction following placement is required only to ensure stability with no density testing required.

Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ☒ No

Change Order to Contract Required ☐ Yes ☒ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Kyle Kuntz Signature: Date: August 28, 2011

NUNA

RFI #: AP-RFI-005

Request For Information / Clarification

Request For Change 1

ORIGINATOR / Company:		Project Stage:	Home Office		Supplier
			Site		Other

Submitted by:	*Terry Oszust*	Submitted to::	Hatch
Company:	Adco Ikpiaryuk	Tie point #:	
Phone No.:	780-465-3265	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-984-2640	Date Issued:	28-Aug-11
E-mail:	terry.oszust@adcopower.com	Date Req:	30-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

As shown on drawings H337697-4020-30-035-0001 Rev 0, H337697-4020-30-035-0002 Rev 0, there are wear bars to be installed on top of the W150 X 22 I beam supports at the anchors. Is this correct or is the shoe welded to the pipe and shown on the drawings welded flat and securely at these three anchor points. the rest of the pipe allows for movement and the thpought was that the anchors remain secure.

Proposed Corrective Action:

We would propose that the shoes at these anchor points be stitch welded to the I beam supports.The wear bars should be eliminated. Anchor points are at PS-001, PS-013, PS-030

Attachments: Yes ☐ No ☒ Originator:

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☐

The wear bars shall not be installed at the pipe anchor locations. The pipe shoe shall be welded directly to the support steel with a continuous weld.

Patrick Cashin		Project Engineer
Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ☒ No

Change Order to Contract Required ☐ Yes ☒ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Kyle Kuntz Signature: Date: August 28, 2011

NUNA

RFI #: AP-RFI-006

Request For Information / Clarification

Request For Change 1

ORIGINATOR / Company:		Project Stage:	Home Office		Supplier	
			Site	■	Other	

Submitted by:	*Terry Oszust*	Submitted to::	Hatch
Company:	Adco Ikpiaryuk	Tie point #:	
Phone No.:	780-465-3265	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-984-2640	Date Issued:	28-Aug-11
E-mail:	terry.oszust@adcopower.com	Date Req:	30-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

As shown on drawings H337697-4020-30-035-0001 Rev 0, H337697-4020-30-035-0002 Rev 0, there are wear bars to be installed on top of the W150 X 22 I beam supports at the anchors. Is this correct or is the shoe welded to the pipe and shown on the drawings welded flat and securely at these three anchor points. the rest of the pipe allows for movement and the thpought was that the anchors remain secure.

Proposed Corrective Action:

We would propose that the shoes at these anchor points be stitch welded to the I beam supports.The wear bars should be eliminated. Anchor points are at PS-001, PS-013, PS-030

Attachments: Yes ☐ No ■ Originator: _____

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☐

See RFI # AP-RFI-005

Patrick Cashin	Patrick J. Cashin	Project Engineer
Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ■ No

Change Order to Contract Required ☐ Yes ■ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Kyle Kuntz Signature: Date: August 28, 2011

NUNA

RFI #: AP-RFI-007

Request For Information / Clarification 3

Request For Change

ORIGINATOR / Company:		Project Stage:	Home Office		Supplier	
			Site	■	Other	

Submitted by:	*Terry Oszust*	Submitted to::	Hatch
Company:	Adco Ikpiaryuk	Tie point #:	
Phone No.:	780-465-3265	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-984-2640	Date Issued:	29-Aug-11
E-mail:	terry.oszust@adcopower.com	Date Req:	30-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

As shown on drawings H337697-4020-60-013-0001 Rev 0 , at coordinates A6 and E6 there is note:" Bars on branch tee for pigging". Please provide detail of what, if anything, is required.

Proposed Corrective Action:

Attachments: Yes ☐ No ■ Originator:

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☐

Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tank connections. (4 locations)

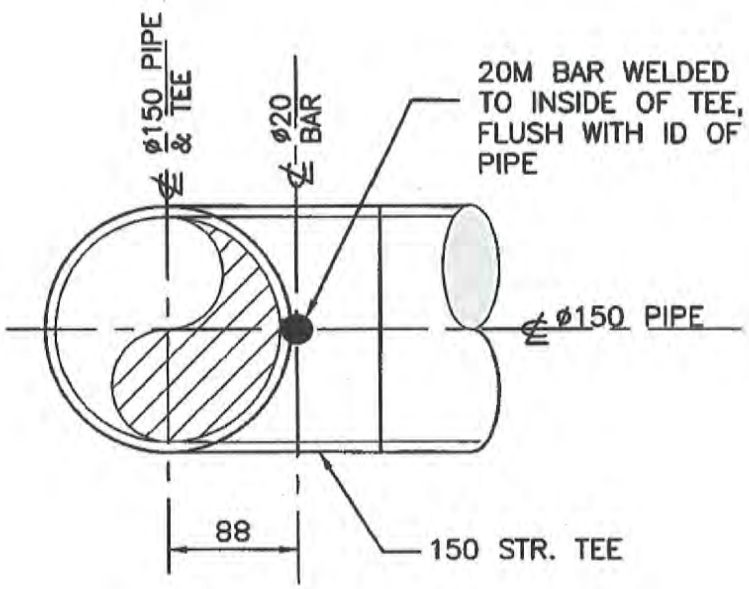
Patrick Cashin	Patrick G. Cash	Project Engineer
Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ■ No

Change Order to Contract Required ☐ Yes ■ No

Site Instruction #: Date Issued:

Adco Project Representative: Name: Terry Oszust Signature: Date: August 29, 2011



DETAIL–6

TYPICAL ø150 PIGGING TEE
REFER H337697–4020–60–013–0001
SCALE: 1:5

0 50 100 150 200 250

SCALE: 1:5 IN MILLIMETRES

18/30, 2011
DWG No.
4020-60-035-0001
DETAIL-6 ADDED

NUNA

RFI #: AP-RFI-008

Request For Information / Clarification

Request For Change

ORIGINATOR / Company:		Project Stage:	Home Office ☐	Supplier ☐	
			Site ■	Other ☐	

Submitted by:	*Terry Oszust*	Submitted to::	Hatch
Company:	Adco Ikpiaryuk	Tie point #:	
Phone No.:	780-465-3265	Related Doc's:	
Fax No.:		Other inform'n;	
Cell Phone:	780-984-2640	Date Issued:	29-Aug-11
E-mail:	terry.oszust@adcopower.com	Date Req:	30-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

PS 0017 currently ends up being located directly in the bottom of a swale. By installing our support here, there is a good chance that spring run off will wash this base and support away.

Proposed Corrective Action:

We can move the support two meters either way and have an 8M span and a 4M span. We could move the support two meters one way and build an H type support out of extra 8" C channel and install this directly on a gravel pad 2 meyers on the other side of the swale. This would allow for a 4m and 4M and 4M spacing of supports. Please advise. The second method would entail cost implications.

Attachments: Yes ☐ No ■ Originator:

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☐

Move pipe support PS-017 two meters providing an 8m span and a 4m span.

Patrick Cashin	Patrick J. Cashin	Project Engineer
Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ■ No

Change Order to Contract Required ☐ Yes ■ No

Site Instruction #: Date Issued:

Adco Project Representative: Name: Terry Oszust Signature: Date: August 29, 2011

NUNA

RFI #: AP-RFI-009

Request For Information / Clarification 5

Request For Change

ORIGINATOR / Company:		Project Stage:	Home Office		Supplier	
			Site	■	Other	

Submitted by:	***Terry Oszust***	Submitted to::	Hatch
Company:	Adco Ikpiaryuk	Tie point #:	
Phone No.:	780-465-3265	Related Doc's:	
Fax No.:	780-466-8086	Other inform'n;	
Cell Phone:	780-984-2640	Date Issued:	29-Aug-11
E-mail:	terry.oszust@adcopower.com	Date Req:	30-Aug-11

Description of Issue: (If required, a sketch should be attached for further clarification)

Drawing H337697-4020-60-013-0001 Rev 0 Shows a 100 Truck offload with a gate and check valve at about E4. Is this part of the unloading module as it doesn't appear elsewhere clearly and was never on the MTO. Please advise if we are to install this outside the module and is it supplied.

Proposed Corrective Action:

Attachments: Yes ☐ No ■ Originator: _____

RESPONSE: CORRECTIVE ACTION APPROVED ☐ CORRECT AS FOLLOWS ☐

Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ■ No

Change Order to Contract Required ☐ Yes ■ No

Site Instruction #: Date Issued:

Adco Project Representative: Name: Terry Oszust Signature: Date: August 29, 2011

NUNA

RFI #: AP-RFI-010

Request For Information / Clarification ☐

Request For Change 2

ORIGINATOR / Company:		Project Stage:	Home Office ☐	Supplier ☐	
			Site ■	Other ☐	

Submitted by:	*Tyler Bruce*	Submitted to::	Hatch
Company:	Nuna Logistics	Tie point #:	
Phone No.:	780-434-9114	Related Doc's:	DWG# H337697-4020-10-035-0001
Fax No.:		Other inform'n:	
Cell Phone:	780-893-0832	Date Issued:	3-Sep-11
E-mail:	tylerb@nunalogistics.com	Date Req:	4-Sep-11

Description of Issue: (If required, a sketch should be attached for further clarification)

DWG# H337697-4020-10-035-0001 Detail-2 shows 150mm of Type-2 unlying the Type 6 sand on the base. Type-2 material is not achieveable from the borrow available at site.

Proposed Corrective Action:

Substitue Type-2 with an additional 150mm of Type-3

Attachments: Yes ☐ No ■ Originator:

RESPONSE:	CORRECTIVE ACTION APPROVED		CORRECT AS FOLLOWS		

Name (print)	Signature	Title

Estimation required from Contractor: ☐ Yes ■ No

Change Order to Contract Required ☐ Yes ■ No

Site Instruction #: Date Issued:

Nuna Project Representative: Name: Tyler Bruce Signature: Date: September 3, 2011

Coakley, Marlon

From: Butts, Floyd [Floyd.Butts@hatchmott.com]
Sent: Friday, September 09, 2011 5:42 AM
To: Tyler Bruce
Cc: Tucker, Shawn; Coakley, Marlon
Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Tyler

I see you were CC'd on this, let me know if there are any other issues. There is some field set up requirements for this gauge please ensure you electrical personnel are aware.

Regards

Floyd

Floyd Butts,P.Eng

From: MacLean, Michael
Sent: Friday, September 09, 2011 8:32 AM
To: Butts, Floyd
Cc: MacLean, Joseph; Tyler Bruce
Subject: RE: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Option C1 is not required on the Level display unit.

Michael MacLean P.Eng.| Electrical Project Engineer
Hatch Mott MacDonald | michael.maclean@hatchmott.com
325 Vulcan Ave., Sydney, Nova Scotia, B1P5X1
T 902.564.5583 x239 C 902.578.0691 F 902.564.9158

From: Butts, Floyd
Sent: Friday, September 09, 2011 7:28 AM
To: MacLean, Michael
Cc: MacLean, Joseph; Tyler Bruce
Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]
Importance: High

Mike

Can you resolve this morning.

Thanks

Floyd Butts,P.Eng

From: Tyler Bruce [mailto:tylerb@nunalogistics.com]
Sent: Thursday, September 08, 2011 9:09 PM
To: Butts, Floyd
Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]
Importance: High

As per my previous email

From: Terry Oszust [mailto:Terry.Oszust@adcopower.com]
Sent: Tuesday, September 06, 2011 12:34 PM
To: Tyler Bruce
Cc: Kyle Kuntz; mcoakley@hatch.ca
Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]
Importance: High

Tyler,
I still have not ordered E and H gauge pending information from Client as per below.
Need soon if we are to install.
Thanks!
Terry

Adco Group of Companies

Terry Oszust
Vice President - Operations
Phone: (780) 465-3265
Cell: (780 984-2640
Fax: (780) 466-8086
E-mail terry.oszust@adcopower.com
www.adcopower.com

From: debbie.ziegert@ca.endress.com [mailto:debbie.ziegert@ca.endress.com]
Sent: September-06-11 10:14 AM
To: Terry Oszust
Cc: Mark.McDowell@ca.endress.com; Angelika.Guggenbuhler@ca.endress.com
Subject: Fw: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]
Importance: High

Good Morning Terry;
The above order is still on Technical Hold pending the clarification requirement below. Please advise as soon as possible to avoid shipping delays.

Thanks!

Best regards

Debbie Ziegert | Inside Sales | Sales
Endress + Hauser Canada | #318, 8925 - 51 Ave | T6E 5J3 Edmonton | AB | Canada
Phone: 780 486 3222 | Mobile: | Fax: 780 486 3166
debbie.ziegert@ca.endress.com | www.ca.endress.com

---- Forwarded by Debbie Ziegert/EHCA on 09/06/2011 10:12 AM ----

Debbie Ziegert/EHCA

08/28/2011 11:12 AM

To Terry.Oszust@adcopower.com

cc Mark McDowell/EHCA@EHCA, Angelika Guggenbuhler/EHCA@EHCA, Jim Randall/EHCA@EHCA

Subject Fw: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required

Good Morning Terry;

The Factory has contacted me for clarification on the RIA46.

You ordered one piece of RIA46-E1C2B+B1**C1**D1E1Z1 and you choose the "**C1**" and that is for customised pre-configuration.

Please see below on the print the explanation of the order code you ordered, and advise what requirements your customer has for the preconfiguration.

```
RIA46              71073510        0004
                   FIELD METER WITH CONTROL UNIT RIA46

010      EN Approval:
     1     E1    CSA AIS, NI/I/2/ABCDEFG/T4

020      EN Input; Output:
           C     1x Universal; 1x analog + 2 relay

030      EN Housing:
     1     2     Field, Alu

040      EN Thread:
     2     B     5x NPT 1/2"

510      EN >Mounting:
           B1    Mounting set wall+pipe

520      EN >>Additional Option:
           C1    Customised pre-configured

530      EN >>Additional Approval:
           D1    SIL

540      EN >>Accessory:
           E1    Configurations kit TXU 10

895      EN >>Marking:
           Z1    Tagging (TAG), metal
```

Best regards

Debbie Ziegert | Inside Sales | Sales
Endress + Hauser Canada | #318, 8925 - 51 Ave | T6E 5J3 Edmonton | AB | Canada
Phone: 780 486 3222 | Mobile: | Fax: 780 486 3166
debbie.ziegert@ca.endress.com | www.ca.endress.com

----- Forwarded by Debbie Ziegert/EHCA on 08/28/2011 11:10 AM -----

Debbie Ziegert/EHCA

08/23/2011 10:28 AM

To Terry.Oszust@adcopower.com
cc Mark McDowell/EHCA@EHCA
Subject E & H - PO#: 3266-00018 - Order Acknowledgement Link

Hi Terry;
I've received the above PO and will process it immediately. A Factory Order Confirmation with an ETA will be forwarded as soon as it has been received. Thanks for the order and have a great day!

Best regards

Debbie Ziegert | Inside Sales | Sales
Endress + Hauser Canada | #318, 8925 - 51 Ave | T6E 5J3 Edmonton | AB | Canada
Phone: 780 486 3222 | Mobile: | Fax: 780 486 3166
debbie.ziegert@ca.endress.com | www.ca.endress.com

"Terry Oszust" <Terry.Oszust@adcopower.com>

08/18/2011 12:09 PM

To <debbie.ziegert@ca.endress.com>
cc
Subject E & H

Debbie,
See attached PO for items on your quote 80665907 Revision as per the Purchase Order Model #'s. Please advise delivery.
Thanks!
Terry

Adco Group of Companies

Terry Oszust
Vice President - Operations
Phone: (780) 465-3265
Cell: (780 984-2640
Fax: (780) 466-8086
E-mail terry.oszust@adcopower.com
www.adcopower.com

-----Original Message-----
From: adminsm@simmax.com [mailto:adminsm@simmax.com]
Sent: August-18-11 10:50 AM
To: Terry Oszust
Subject:

This E-mail was sent from "RNP064A84" (Aficio MP 5001).

Scan Date: 08.18.2011 10:49:35 (-0600)
Queries to: adminsm@simmax.com
[attachment "20110818104935805.pdf" deleted by Debbie Ziegert/EHCA]

A.2 Hatch Record Drawings

1. H337697-4020-10-014-0001 Milne Inlet Fuel System Upgrade Site Grading.
2. H337697-4020-10-017-0001 Milne Inlet Fuel System Upgrade Location Plan.
3. H337697-4020-10-035-0001 Milne Inlet Fuel System Upgrade Dyke Sections.
4. H337697-4020-10-035-0002 Milne Inlet Fuel System Upgrade Dyke Sections and Details.
5. H337697-4020-10-035-0003 Milne Inlet Fuel System Upgrade Sections Thru Truck Loading Area.
6. H337697-4020-10-042-0001 Milne Inlet Fuel System Upgrade General Arrangement.
7. H337697-4020-30-035-0001 Milne Inlet Fuel System Upgrade Pipe Support Details.
8. H337697-4020-30-035-0002 Milne Inlet Fuel System Upgrade Marine Offload Spill Containment, Plan and Sections.
9. H337697-4020-50-035-0001 Milne Inlet Fuel System Upgrade 5M Litre Diesel Storage Tank.
10. H337697-4020-50-035-0002 Milne Inlet Fuel System Upgrade Typical Section, Details and Trim Identification.
11. H337697-4020-60-012-0001 Milne Inlet Fuel System Upgrade Ø150 Pipeline Profile.
12. H337697-4020-60-013-0001 Milne Inlet Fuel System Upgrade Flow Sheet.
13. H337697-4020-60-035-0001 Milne Inlet Fuel System Upgrade Miscellaneous Piping Details.
14. H337697-4020-60-042-0001 Milne Inlet Fuel System Upgrade Piping General Arrangement.
15. H337697-4020-70-035-0001 Milne Inlet Fuel System Upgrade Electrical Sections and Details.
16. H337697-4020-70-042-0001 Milne Inlet Fuel System Upgrade Electrical General Arrangement.
17. H337697-4020-70-042-0002 Milne Inlet Fuel System Upgrade Electrical Grounding Plan.
18. H337697-4020-70-082-0001 Milne Inlet Fuel System Upgrade Power Single Line Diagram

Baffinland
Iron Mines Corporation

MARY RIVER IRON ORE PROJECT

MILNE INLET FUEL SYSTEM UPGRADE

RECORD DRAWINGS

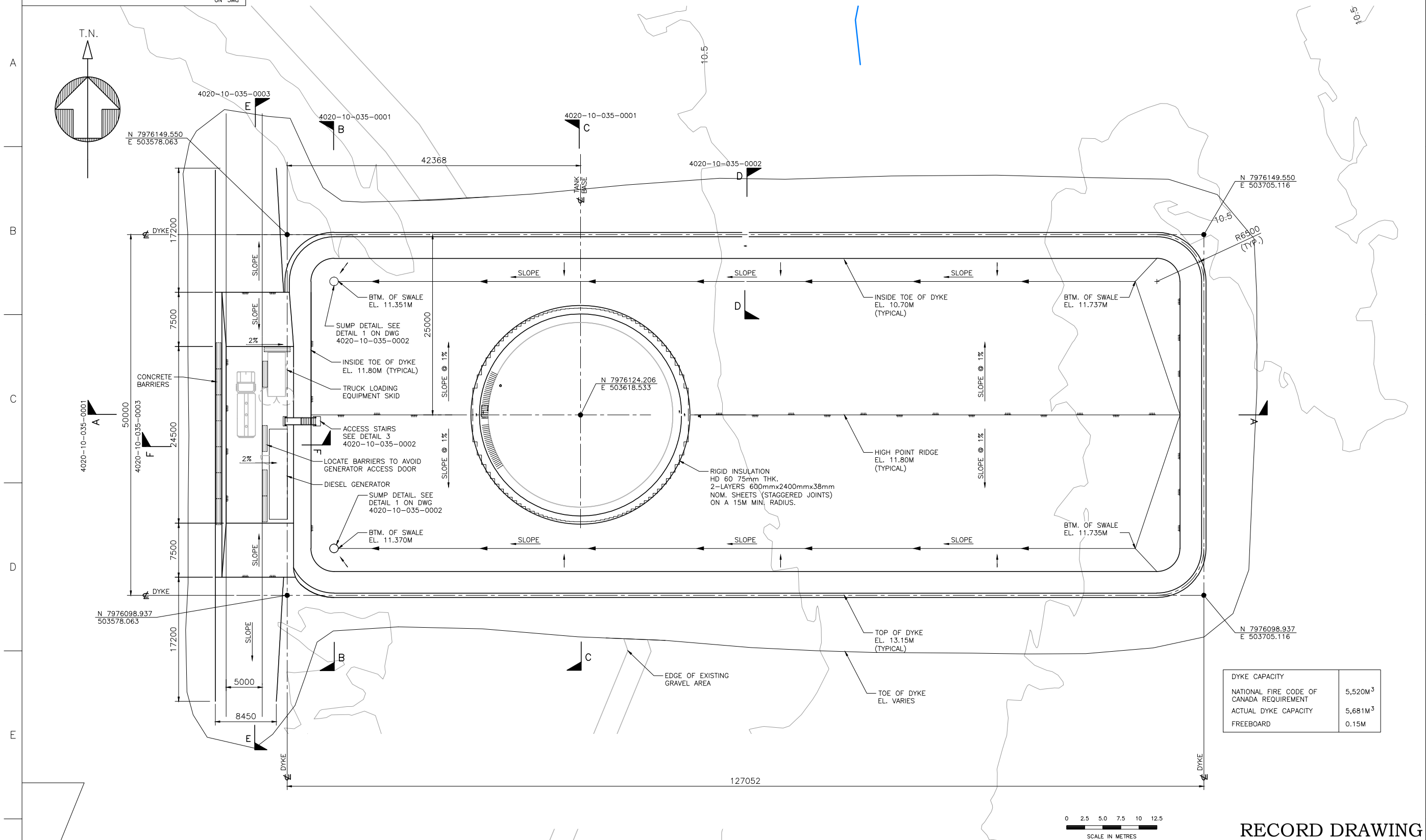
BAFFIN ISLAND, NUNAVUT

DESIGN ENGINEERS

HATCH™

PROJECT NO. H337697
AUGUST, 2011

DWG. NO. H337697-4020-10-014-0001



DYKE CAPACITY	
NATIONAL FIRE CODE OF CANADA REQUIREMENT	5,520M^3
ACTUAL DYKE CAPACITY	5,681M^3
FREEBOARD	0.15M

0 2.5 5.0 7.5 10 12.5
SCALE IN METRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION ; PAD EXTENDED AND DIESEL GENERATOR / EQUIP'T SKID MIRRORED		JM	FB	11-08-05
C	LOADING AREA AND INSULATION UNDER TANK REVISED		MMI	DS	11-07-06
B	INSULATION UNDER TANK THICKNESS REDUCED		SL	DS	11-06-24
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
A. E. BUTTS
LICENSEE
NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH™

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland
IRON ORE COMPANY

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
SITE GRADING

SCALE	DWG. NO.	REV.
1:250 OR AS NOTED	H337697-4020-10-014-0001	1

DWG. NO. H337697-4020-10-017-0001

T.N.

E 502,500 | E 503,000 | E 503,500 | E 504,000 | E 504,500

N 7,976,500 | N 7,976,000 | N 7,975,500 | N 7,975,000

AREA OF WORK

GENERAL ARRANGEMENT SEE DWG 4020-10-042-0001

APPROXIMATE LEASE BOUNDARY

PROPOSED FUEL STORAGE AREA

MILNE INLET

ROCKFILL STOCKPILES

EX. FUEL DRUMS ON PALLETS STORAGE AREA

EX. LAGOON

PROPOSED OILY WATER WASTE HOLDING

EX. FUEL STORAGE DRUMS AND LUBE OIL IN LINED AREA

TEMPORARY EMPTY FUEL DRUMS ON GROUND

EX. BLADDER FUEL FARM TO REMAIN

EX. FUEL DRUMS IN LINED STORAGE AREA

EX. FUEL STORAGE

EX. RUNWAY

EX. INCINERATOR

EX. HAZARDOUS WASTE BERM

EX. QC CAMP

EX. SHANCO CAMP

PERMANENT FUEL STORAGE FACILITY FROM KNIGHT PIESOLD FIGURE 3.2.1

EX. WASTEWATER TREATMENT PLANT

PROPOSED CONSTRUCTION CAMP EXPANSION. (APPROXIMATED)

EXISTING CAMP FACILITIES EXPANDED FROM A 50 PERSON CAMP TO A 100 PERSON CAMP

EXISTING TOTE ROAD

QUARRY LOCATION

A1

WATER

NOTES:

1. ALL WORK MUST CONFORM TO THE REQUIREMENTS OF THE MOST RECENT EDITION OF THE FOLLOWING CODES, ACTS AND STANDARDS:
   - 1.1. APPLICABLE FEDERAL, PROVINCIAL AND TERRITORIAL CODE
   - 1.2. NATIONAL BUILDING CODE OF CANADA (2010)
   - 1.3. NATIONAL FIRE CODE OF CANADA (2010)
   - 1.4. CANADIAN ELECTRICAL CODE (2009)
   - 1.5. CCME ENVIRONMENTAL CODE OF PRACTICE FOR ABOVEGROUND STORAGE TANK SYSTEMS CONTAINING PETROLEUM PRODUCTS
   - 1.6. API 650, 11TH EDITION, 2008, WELDED STEEL TANKS FOR OIL STORAGE INCLUDING ADDENDUMS 1 AND 2.
   - 1.7. API 653 4TH EDITION, 2009, TANK INSPECTION, REPAIR, ALTERATION AND RECONSTRUCTION.
   - 1.8. NFPA 30, 2008 EDITION, FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE.
   - 1.9. ANSI/ASME B31.3-2010, PROCESS PIPING.
   - 1.10. API 1104 2005 AND CSA W47.1-09, CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL.
   - 1.11. CSA W59-03 (R2008) - WELDED STEEL CONSTRUCTION (METAL ARC WELDING).
   - 1.12. CANADIAN ENVIRONMENTAL PROTECTION ACT 1999, (2008 UPDATE), STORAGE TANK SYSTEM FOR PETROLEUM PRODUCTS AND ALLIED PETROLEUM PRODUCTS REGULATIONS.
   - 1.13. CSA W178.2-08, CERTIFICATION OF WELDING INSPECTORS.
   - 1.14. OCCUPATIONAL HEALTH AND SAFETY.
   - 1.15. ENVIRONMENTAL PROTECTION ACT.
   - 1.16. API 2000 VENTING ATMOSPHERIC AND LOW PRESSURE STORAGE TANKS.
   - 1.17. API RECOMMENDED PRACTICE 2003 - PROTECTION AGAINST IGNITIONS ARISING OUT OF STATIC, LIGHTNING AND STAY CURRENTS.
   - 1.18. API STANDARD 2610 - DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE AND INSPECTION OF TERMINAL & TANK FACILITIES.
   - 1.19. API MANUAL OF PETROLEUM MEASUREMENT STANDARDS.
   - 1.20. ASME SECTION VIII - NON FIRED PRESSURE VESSEL
   - 1.21. MEASUREMENT CANADA.
2. COORDINATES TO NAD-83 6 DEGREE UTM, ZONE 17.
3. ALL SURFACE DRAINAGE WILL BE SELF CONTAINED, COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED BY THE LOCAL AUTHORITY.
4. THE WORK SHALL MEET OR EXCEED THE REQUIREMENTS OF THE SPECIFIED STANDARDS, CODES AND REFERENCE DOCUMENTS.
5. EXAMINE SITE OF WORK AND INVESTIGATE ALL MATTERS RELATING TO THE NATURE OF THE WORK TO BE UNDERTAKING. BEFORE COMMENCING WITH THE WORK OBTAIN ALL REQUIRED PERMITS.
6. DO NOT BURY RUBBISH AND WASTE MATERIALS ON SITE.
7. DIVERT SURFACE DRAINAGE WATER AWAY FROM EXCAVATION.
8. PROVIDE TEMPORARY DRAINAGE AND PUMPING AS NECESSARY TO KEEP EXCAVATIONS AND SITE FREE FROM WATER FROM WHATEVER SOURCE UNTIL BACKFILL OPERATIONS ARE COMPLETED.
9. DO NOT PUMP WATER CONTAINING SUSPENDED MATERIALS INTO WATERWAYS.
10. SEPARATE AND RECYCLE WASTE MATERIALS IN ACCORDANCE WITH LOCAL JURISDICTION.
11. ALL REFERENCE MATERIAL FROM KNIGHT PIESOLD REPORT FIGURE 3.2.1 REV 0 AND MILNE SITE LAYOUT DATED 11-06-01.

LEGEND:

- PROPOSED FABRICATION & LAYDOWN AREA

RECORD DRAWING

0 40 80 120 160 200

SCALE IN METRES

DRAWING NO.	DRAWING TITLE
	MILNE SITE LAYOUT (PROGRESS PRINT) 11-06-01
3.2.1 Rev-0	MILNE PORT LAYOUT (KNIGHT PIESOLD ENGINEERING)

REFERENCE DRAWINGS

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION ; PROPOSED FABRICATION				
	AND LAYDOWN AREA / LEGEND ADDED		JM	FB	11-08-05
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER M. E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

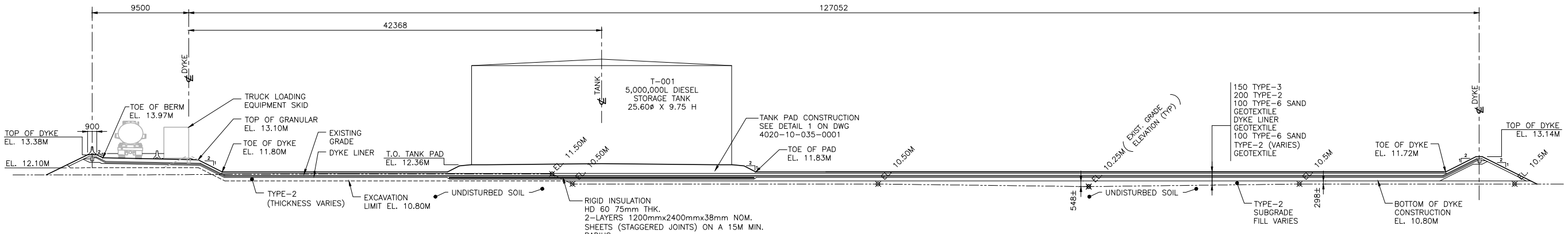
Baffinland IRON MINES CORPORATION

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
LOCATION PLAN

SCALE	DWG. NO.	REV.
1:4000 OR AS NOTED	H337697-4020-10-017-0001	1

DWG. NO. H337697-4020-10-035-0001



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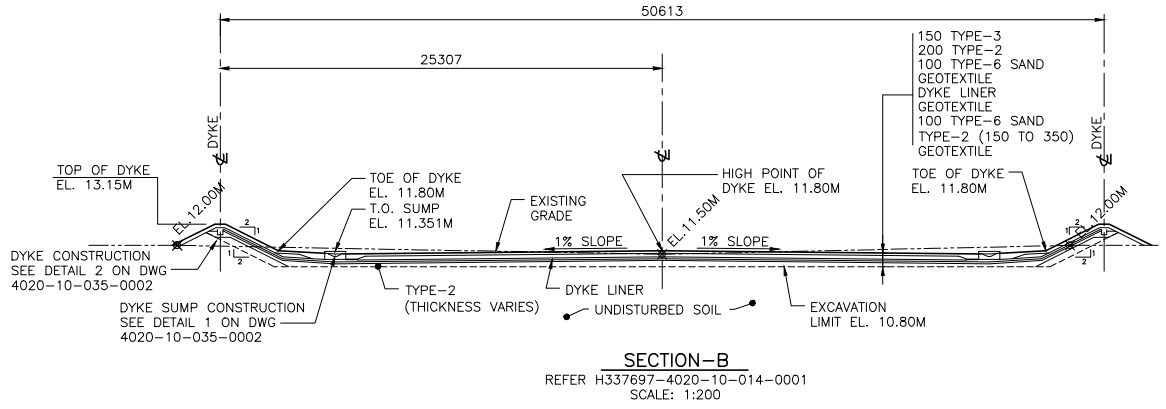
REFER H337697-4020-10-014-0001
SCALE: 1:200



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REFER H337697-4020-10-014-0001
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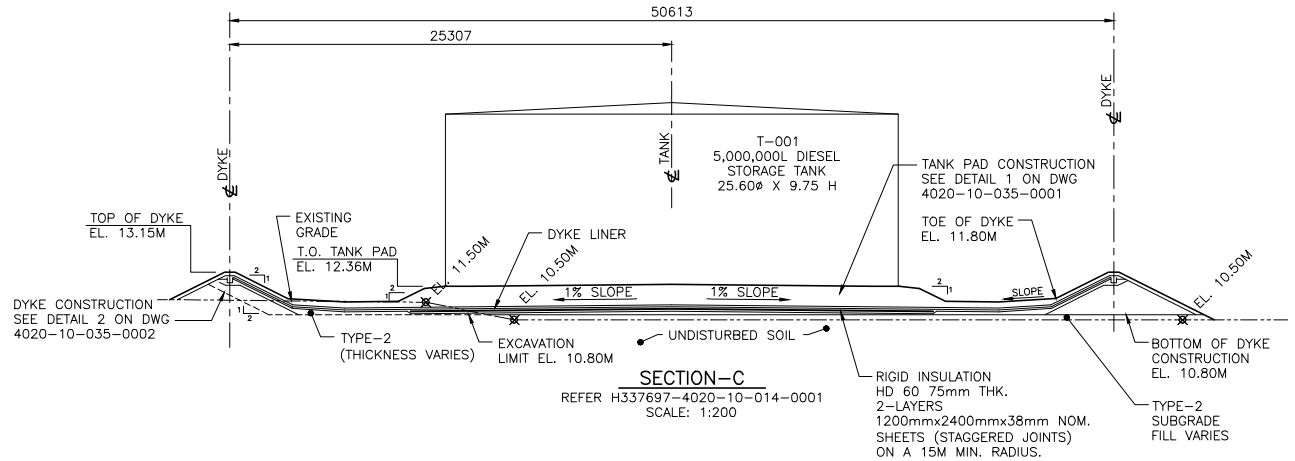

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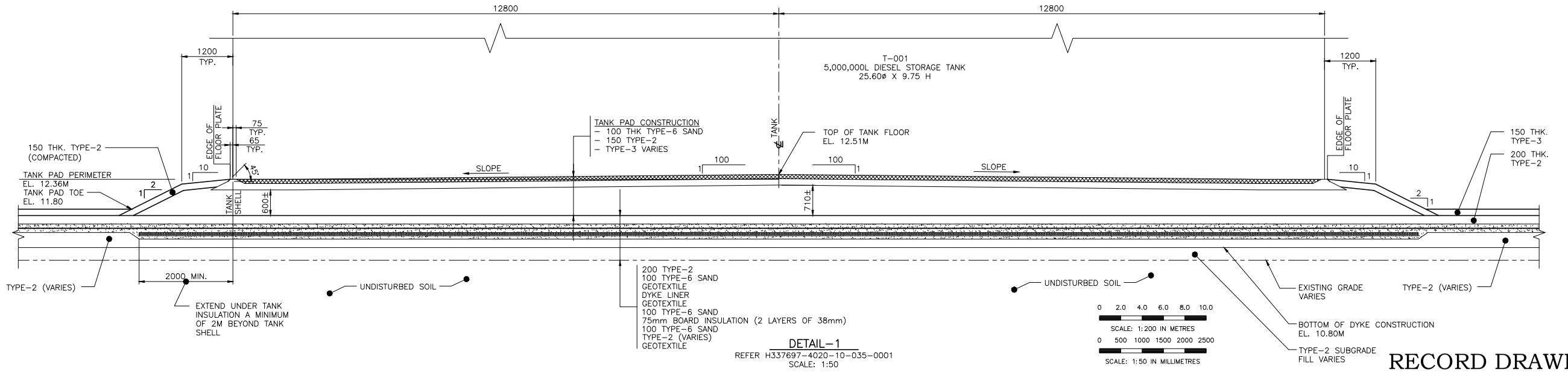
REFER H337697-4020-10-014-0001
SCALE: 1:200



DETAIL-1
REFER H337697-4020-10-035-0001
SCALE: 1:50

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
2	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-27
1	DYKE RAISED 1 METRE		FK	DS	11-08-16
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
C	T.O. TANK PAD AND EXCAVATION DEPTH REVISED		SL	DS	11-07-06
	INSULATION THICKNESS UNDER TANK NOW 75mm				
	100mm TYPE-6 ADDED UNDER INSULATION.				
B	CLEAR STONE REPLACED WITH TYPE 3 FILL AND		SL	DS	11-06-24
	INSULATION THICKNESS UNDER TANK REDUCED				
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

SEAL
ORIGINAL SIGNED AND SEALED BY RAMLI HALIM AUGUST 10, 2011

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY DS DATE 11-05-13	DRAWN BY MWP DATE 11-05-13
CHECKED BY FJK DATE 11-08-05	DISCIP. ENGR. J. MacLean DATE 11-05-13
PROJ. DES. COORD. DATE	PROJ. ENGR. F. Butts DATE
PROJ. MGR. DATE	

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
DYKE SECTIONS

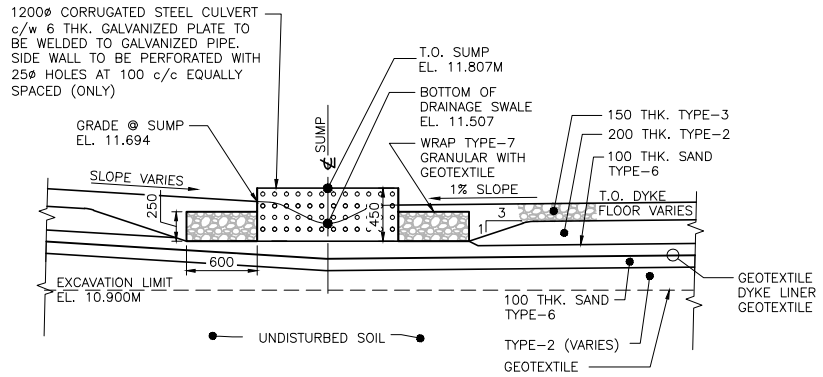
SCALE OR AS NOTED

DWG. NO. H337697-4020-10-035-0001

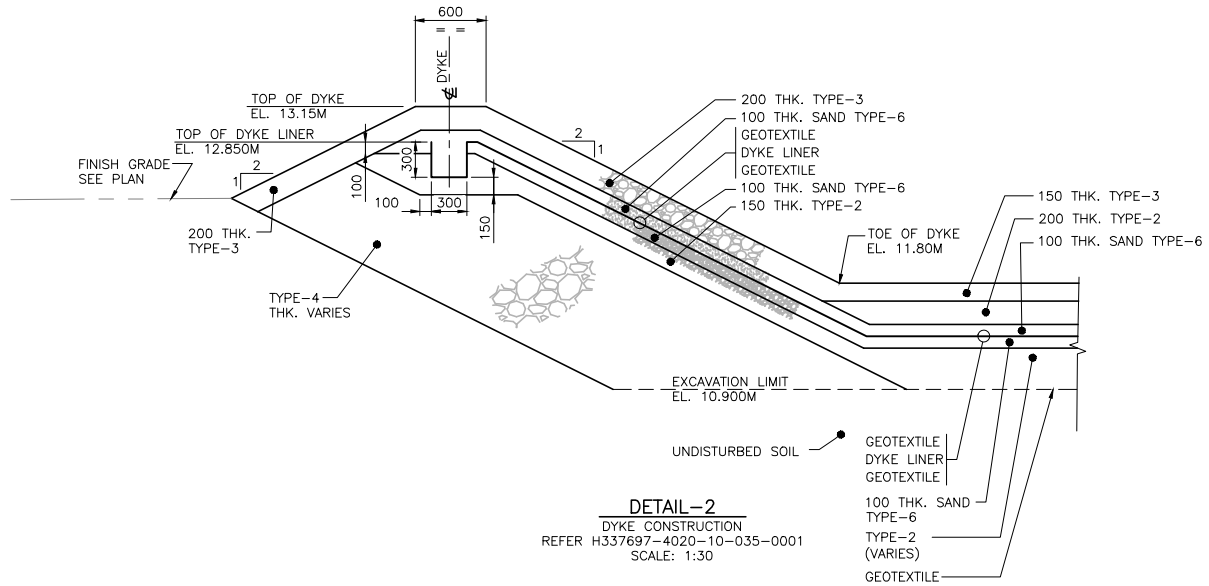
REV. 2

DWG. NO. H337697-4020-10-035-0002

N 7 799 500



DETAIL-1
DYKE SUMP CONSTRUCTION
REFER H337697-4020-10-035-0001
H337697-4020-10-014-0001
SCALE: 1:30



DETAIL-2
DYKE CONSTRUCTION
REFER H337697-4020-10-035-0001
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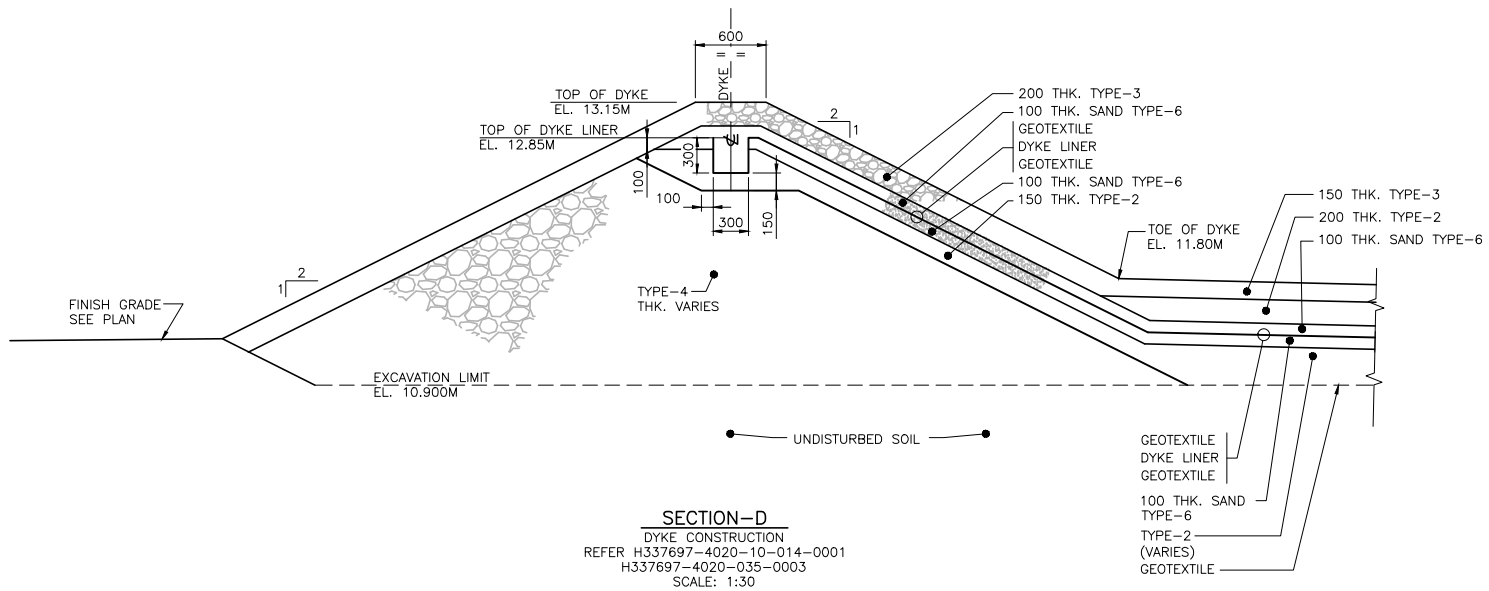
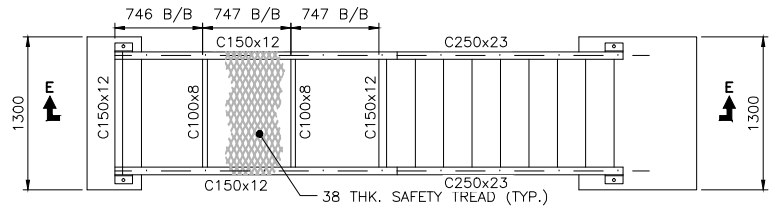
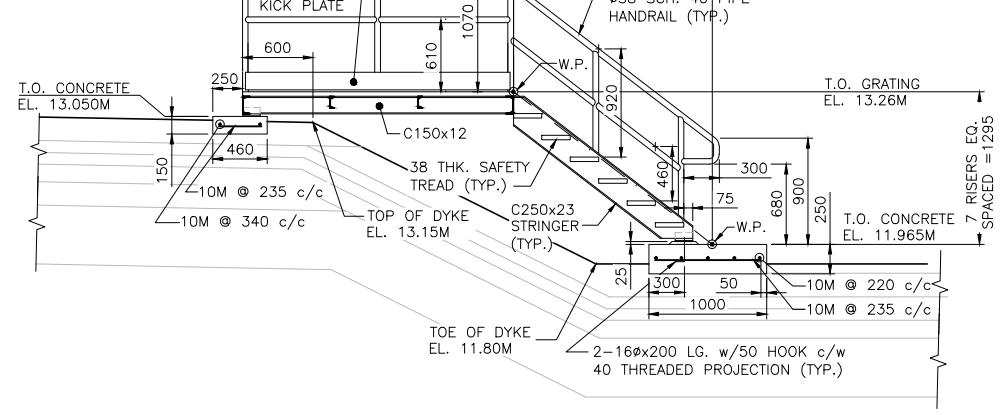


SECTION-D
DYKE CONSTRUCTION
REFER H337697-4020-10-014-0001
H337697-4020-10-035-0003
SCALE: 1:30

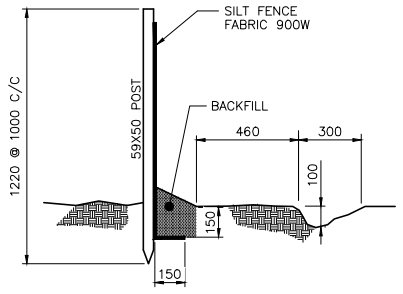


PLAN

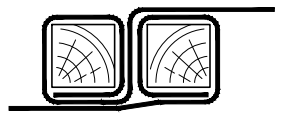


SECTION-E

DETAIL-3
DYKE ACCESS STAIRS
REFER H337697-4020-10-014-0001
SCALE: 1:30



SILT FENCE



TYP. FENCE JOINT
NTS.

TEMPORARY SILT FENCE DURING CONSTRUCTION
SCALE: 1:20

0 200 400 600 800 1000
SCALE: 1:20 IN MILLIMETRES

0 300 600 900 1200 1500
SCALE: 1:30 IN MILLIMETRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
C	DYKE CREST WIDTH AND EXCAVATION DEPTH REVISED		MMI	DS	11-07-06
	HANDRAIL SECTION REMOVED				
B	TYPE-3 REPLACES TYPE-7, TYPE-2 REPLACES TYPE-3		DM	DS	11-06-24
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland IRON MINES CORPORATION

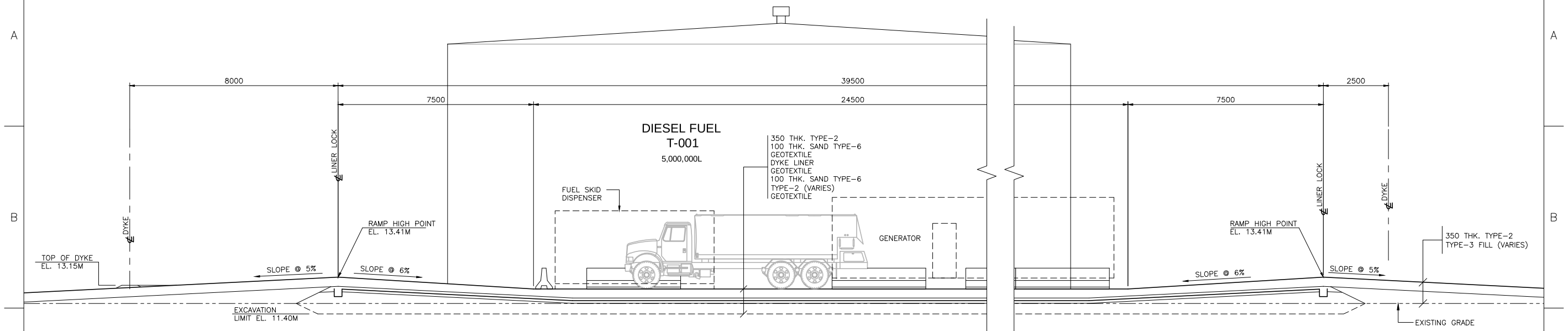
MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
DYKE SECTIONS AND DETAILS

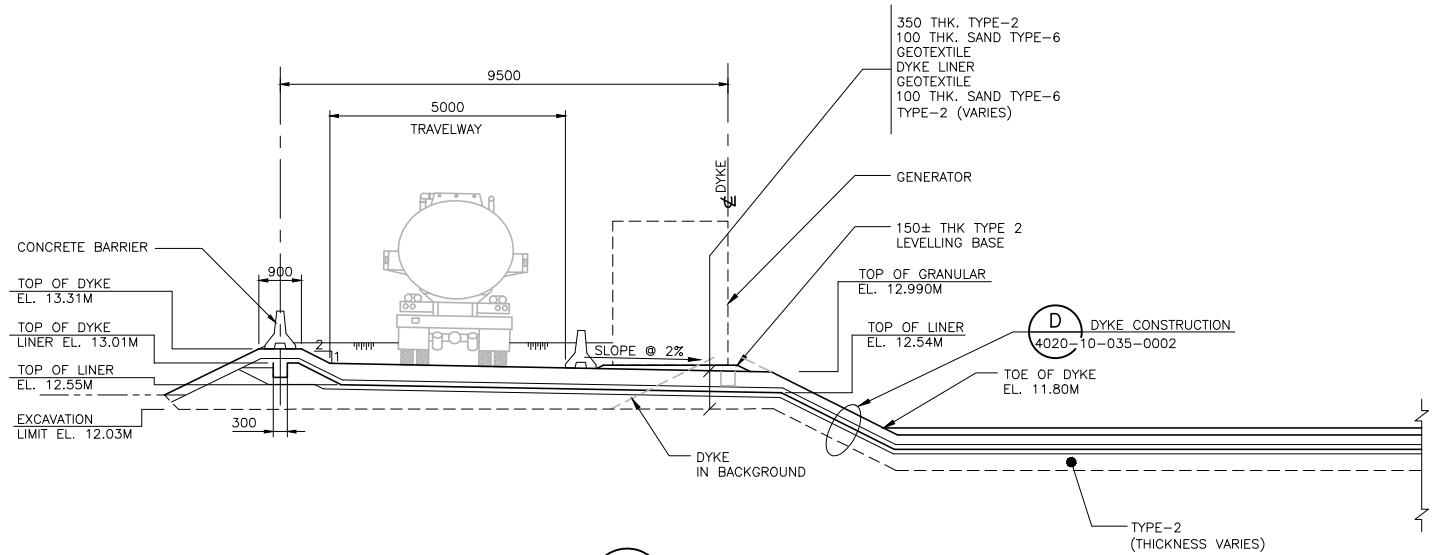
SCALE	DWG. NO.	REV.
1:30 OR AS NOTED	H337697-4020-10-035-0002	1

DWG. NO. H337697-4020-10-035-0003

N 7 799 500



SECTION E
SCALE: 1:75
4020-10-014-0001



SECTION F
SCALE: 1:75
4020-10-014-0001

0 0.75 1.50 2.25 3.0 3.75
SCALE IN METRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION ; PAD EXTENDED		JM	FB	11-08-05
B	GRANULARS AT LOADING AREA REVISED		MMI	DS	11-07-06
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
M. E. BUTTS
LICENSEE
NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

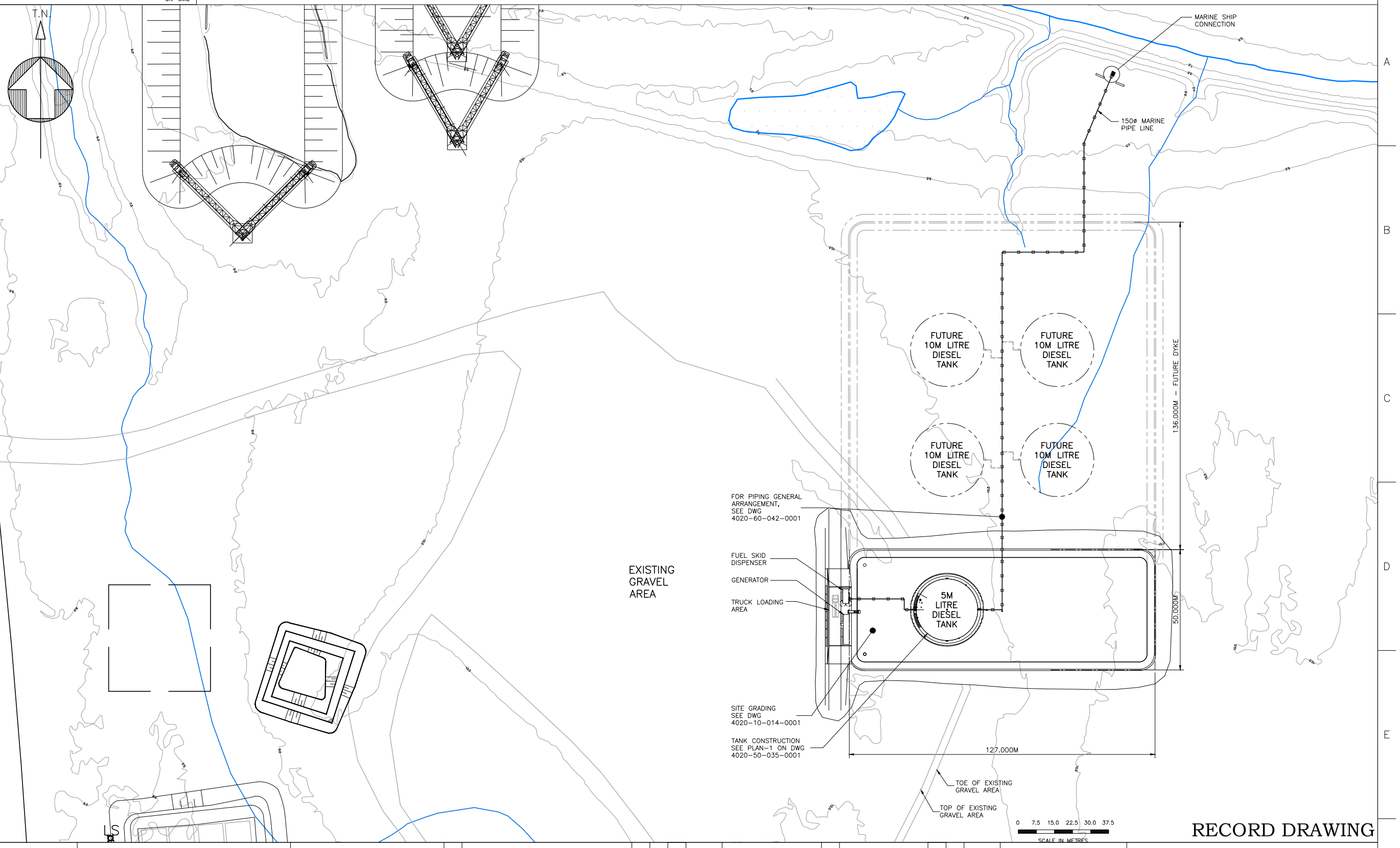
Baffinland
IRON ORE COMPANY

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
SECTIONS THRU TRUCK LOADING AREA

SCALE	DWG. NO.	REV.
1:200 OR AS NOTED	H337697-4020-10-035-0003	1

DWG. NO. H337697-4020-10-042-0001



RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A.E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

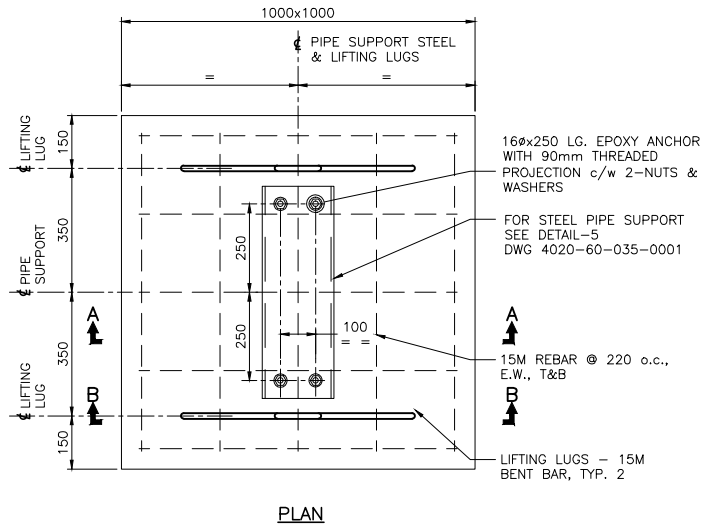
Baffinland Iron Mines Corporation

MARY RIVER PROJECT

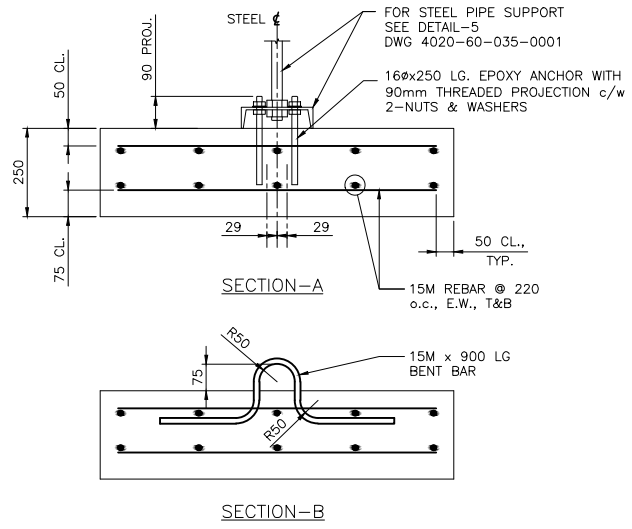
MILNE INLET
FUEL SYSTEM UPGRADE
GENERAL ARRANGEMENT

SCALE	DWG. NO.	REV.
1:200 OR AS NOTED	H337697-4020-10-042-0001	1

DWG. NO. H337697-4020-30-035-0001



PLAN

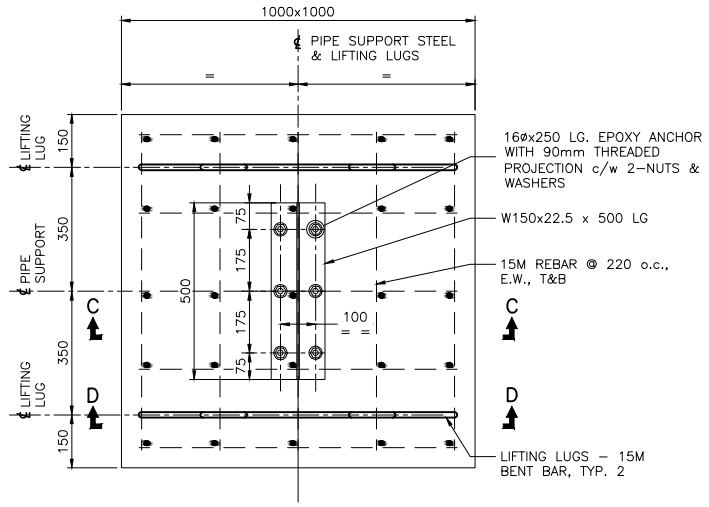


SECTION-A

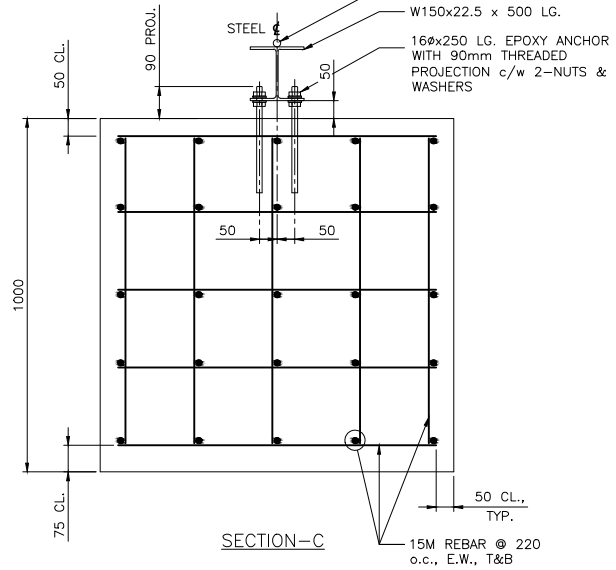
SECTION-B

DETAIL-1

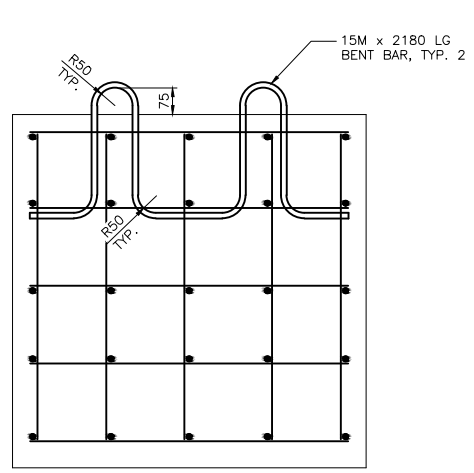
CONCRETE PIPE SUPPORT @ PS-002 TO PS-012, PS-014 TO PS-029, PS-031 TO PS-052
H337697-4020-60-035-0001
SCALE: 1:10



PLAN



SECTION-C



SECTION-D

DETAIL-2

CONCRETE PIPE ANCHOR SUPPORT @ PS-001, PS-013 & PS-030
REFER H337697-4020-60-012-0001 & H337697-4020-60-042-0001
SCALE: 1:10

0 100 200 300 400 500
SCALE IN MILLIMETRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER M. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

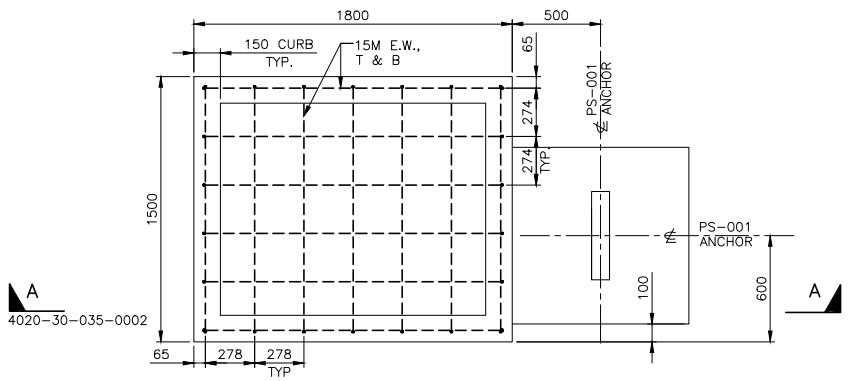
Baffinland IRON MINES CORPORATION

MARY RIVER PROJECT

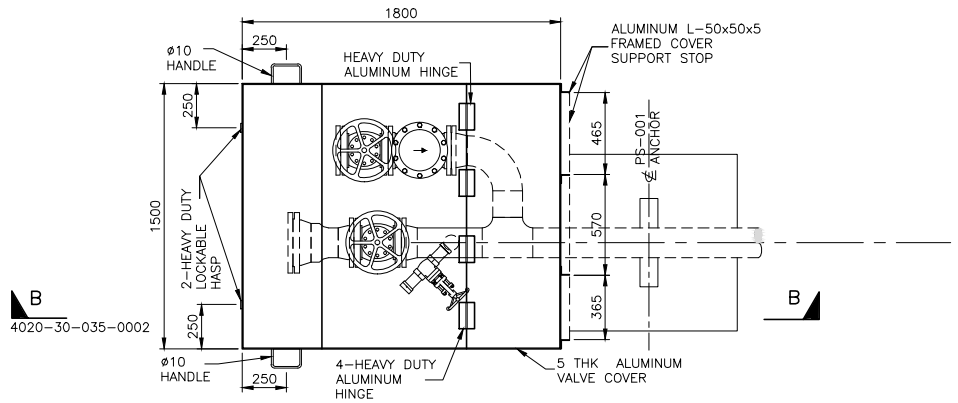
MILNE INLET
FUEL SYSTEM UPGRADE
PIPE SUPPORT DETAILS

SCALE	DWG. NO.	REV.
1:200 OR AS NOTED	H337697-4020-30-035-0001	1

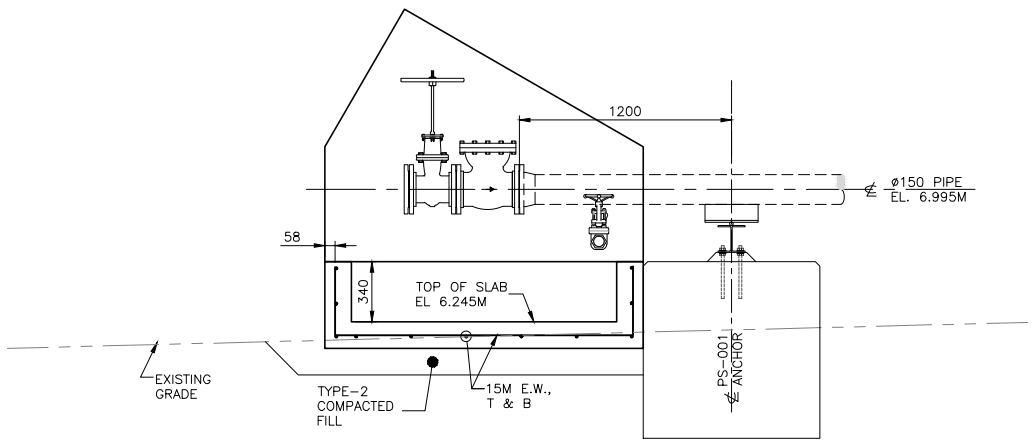
DWG. NO. H337697-4020-30-035-0002



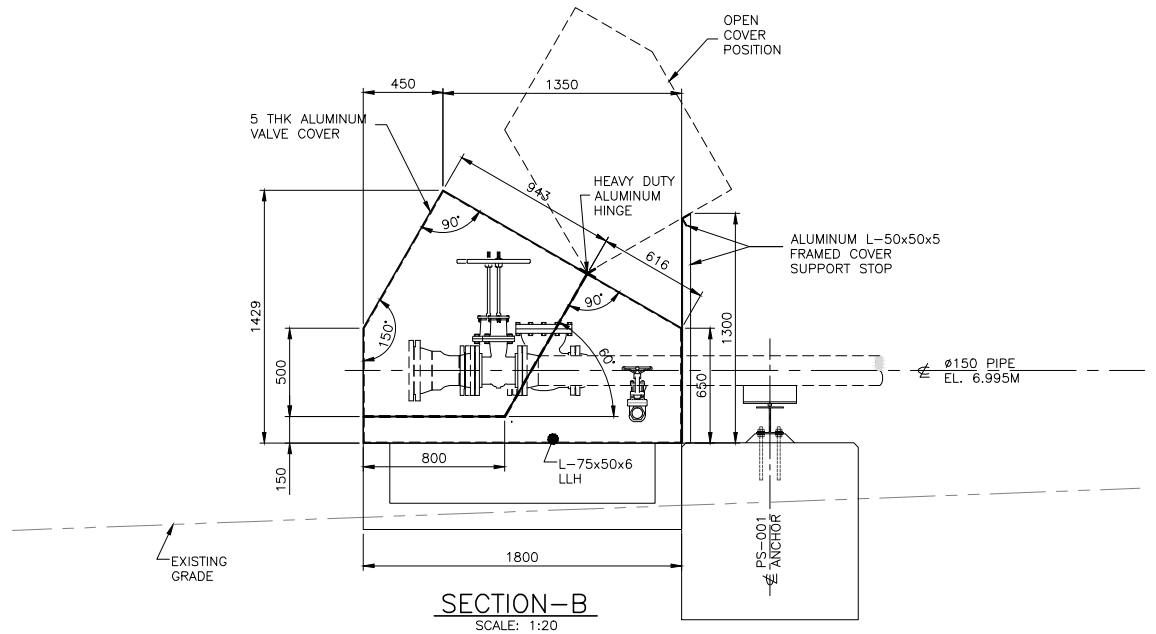
FOUNDATION PLAN
SCALE: 1:20



SPILL CONTAINMENT COVER PLAN
SCALE: 1:20



SECTION-A
SCALE: 1:20



SECTION-B
SCALE: 1:20

DETAIL-1
MARINE OFFLOAD SPILL CONTAINMENT DETAIL
LOOKING EAST
REFER H337697-4020-60-012-0001
H337697-4020-60-042-0001
SCALE: 1:20

0 200 400 600 800 1000
SCALE IN MILLIMETRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
B	MARINE OFFLOADING PIPELINE SIZE REVISED		DS	JM	11-06-24
A	ISSUED FOR PERMITTING		DS	PC	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER M. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-06-15	DATE 11-06-15
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland IRON MINES CORPORATION

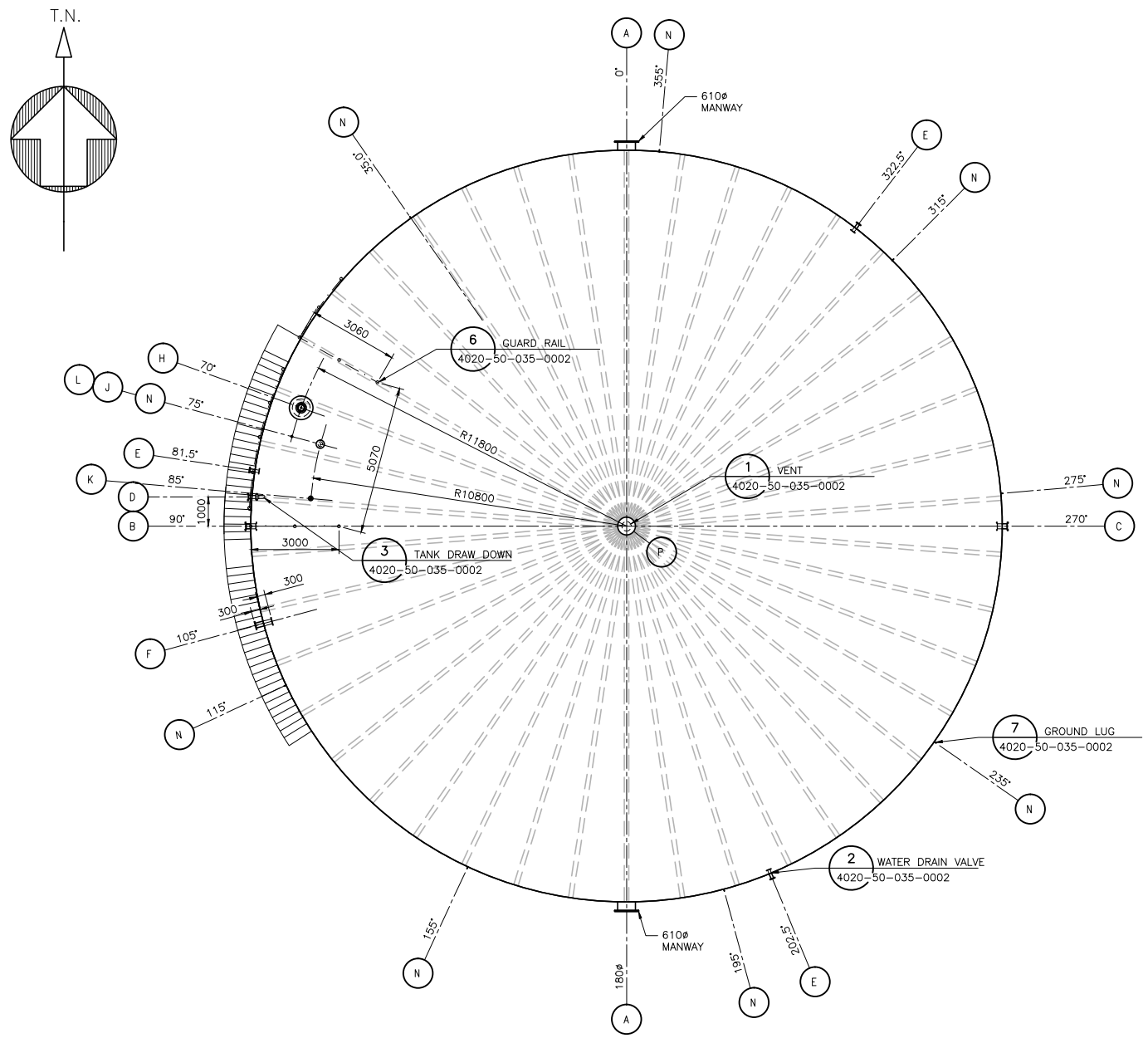
MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
MARINE OFFLOAD SPILL CONTAINMENT, PLAN & SECTIONS

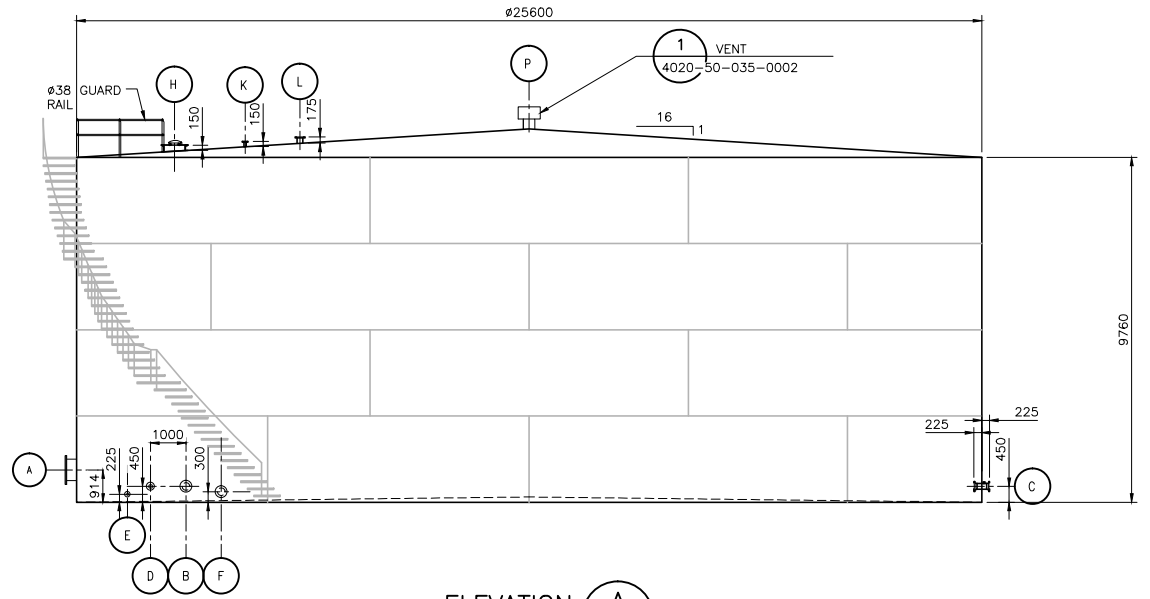
SCALE	DWG. NO.	REV.
1:200 OR AS NOTED	H337697-4020-30-035-0002	1

N 7 799 500

DWG. NO. H337697-4020-50-035-0001



PLAN-1
TANK ORIENTATION
REFER H337697-4020-10-042-0001
SCALE: 1:100



ELEVATION A
TANK ORIENTATION
SCALE: 1:100

TANK APPURTENANCES

ITEM	NO.	SERVICE	SIZE	RATING	TYPE	REMARKS
A	2	SHELL MANWAYS	610 (24")	API 650	FF	API 650 FIG. 5-7A
B	1	TANK SUCTION	150 (6")	CLASS 150	RF SLIP ON	DOUBLE FLANGED /W 25mm SW HALF COUPLING ON EXTERIOR NOZZLE
C	1	TANK FILL	150 (6")	CLASS 150	RF SLIP ON	DOUBLE FLANGED /W 25mm SW HALF COUPLING ON EXTERIOR NOZZLE
D	1	TANK DRAW-DOWN	100 (4")	CLASS 150	RF SLIP ON	DOUBLE FLANGED
E	2	WATER DRAIN NOZZLE	75(3")	CLASS 150	RF SLIP ON	FLANGED
F	1	SPARE SHELL NOZZLE	150 (6")	CLASS 150	RF SLIP ON	FLANGED w/ BLIND FLANGE
H	1	ROOF MANWAY C/W THIEF HATCH	610 (24")	API 650	FF	C/W COVER
J	1	SPARE	38ø (1.5")	3000# CPLG.	NPT	API 650 TYPE A C/W THR'D PLUG
K	1	SPARE	50 (2")	CLASS 150	RF SLIP ON	BLIND FLANGE c/w ø25 (1") THR'D COUPLING & THR'D PLUG
L	1	RADAR GAUGE	150 (6")	CLASS 150	RF SLIP ON	SINGLE FLANGE
N	9	GROUNDING LUGS				
P	1	ROOF VENT	305ø (12")	CLASS 150	NOZZLE	4020-50-035-0002

0 1.0 2.0 3.0 4.0 5.0
SCALE IN METRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
B	TANK NOZZLE SIZES REVISED, WN FLANGES DELETED		MMI	DS	11-07-06
	SPARE NOZZLE RELOCATED				
A	ISSUED FOR PERMITTING		DS	JM	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A.E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY		DATE
1	AS-BUILT DRAWING	DS	FB	11-XX-XX

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland Iron Mines Corporation

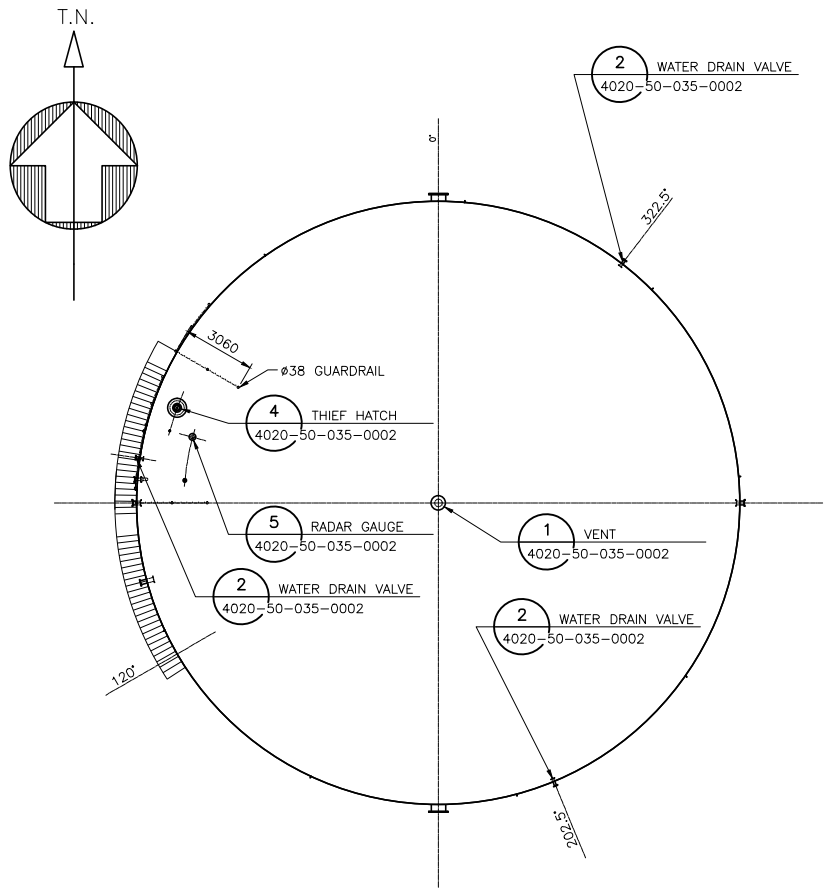
MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
5M LITRE DIESEL STORAGE TANK

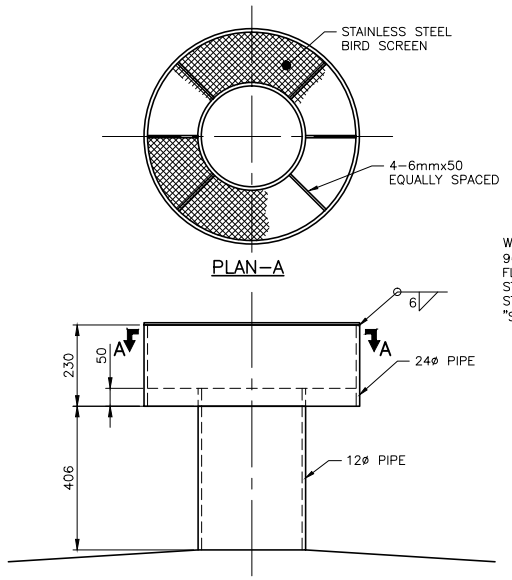
SCALE	DWG. NO.	REV.
1:200 OR AS NOTED	H337697-4020-50-035-0001	1

N 7 799 500

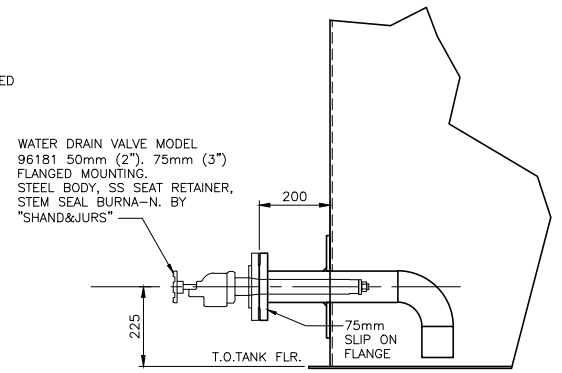
DWG. NO. H337697-4020-50-035-0002



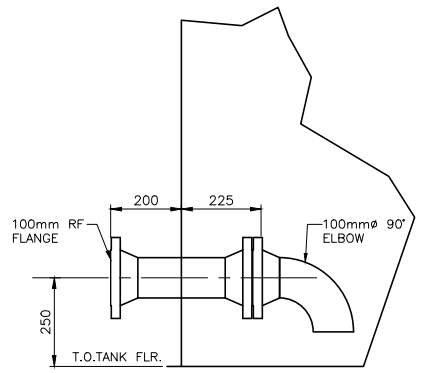
PLAN-1
TRIM IDENTIFICATION
REFER H337697-4020-50-035-0001
SCALE: 1:150



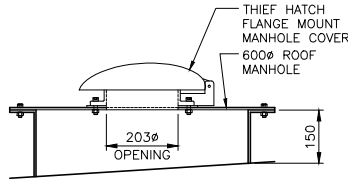
DETAIL 1
VENT DETAIL 4020-50-035-0001
SCALE: 1:10



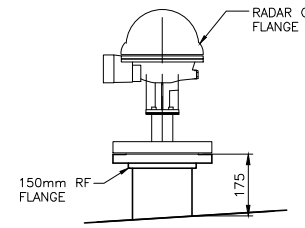
DETAIL 2
WATER DRAIN VALVE 4020-50-035-0001
SCALE: 1:10



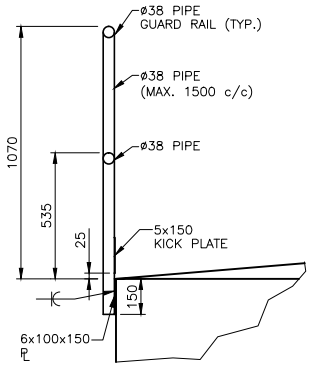
DETAIL 3
TANK DRAW DOWN 4020-50-035-0001
SCALE: 1:10



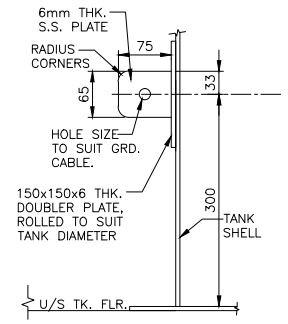
DETAIL 4
THIEF HATCH 4020-50-035-0002
SCALE: 1:10



DETAIL 5
RADAR GAUGE 4020-50-035-0002
SCALE: 1:10



DETAIL 6
TANK PERIMETER GUARD RAIL 4020-50-035-0001
SCALE: 1:15



DETAIL 7
GROUND LUG 4020-50-035-0001
SCALE: 1:5

0 1.0 2.0 3.0 4.0 5.0
SCALE IN METRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A.E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE
1	AS-BUILT DRAWING	DS FB	11-XX-XX

ISSUE AUTHORIZATION

HATCH

Baffinland Iron Mines Corporation

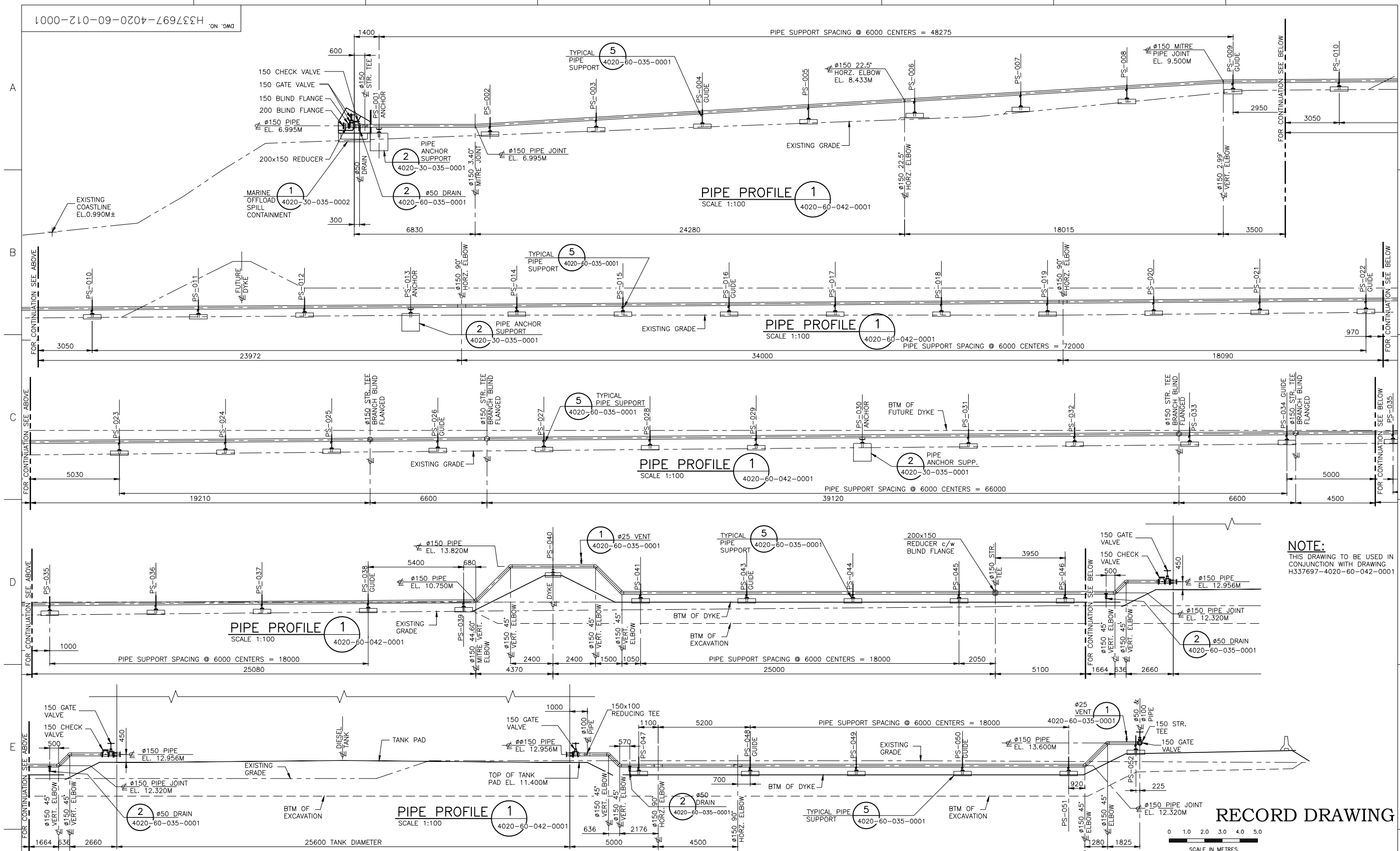
MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
TYPICAL SECTION, DETAILS & TRIM IDENTIFICATION

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

SCALE 1:100 OR AS NOTED
DWG. NO. H337697-4020-50-035-0002
REV. 1

DWG. NO. H337697-4020-60-012-0001



NOTE:
THIS DRAWING TO BE USED IN CONJUNCTION WITH DRAWING H337697-4020-60-042-0001

RECORD DRAWING

0 1.0 2.0 3.0 4.0 5.0
SCALE IN METRES

PERMIT TO PRACTICE
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Date AUGUST 10, 2011
PERMIT NUMBER: P 512
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REGISTERED PROFESSIONAL ENGINEER M. BUTTS LICENSEE NT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION ; PIPING REVISED		JM	FB	11-08-05
B	MARINE OFFLOADING PIPELINE SIZE REVISED		DS	JM	11-06-24
A	ISSUED FOR PERMITTING		DS	JM	11-06-15

REVISIONS

DRAWING NO.	DRAWING TITLE

REFERENCE DRAWINGS

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland IRON MINES CORPORATION

MARY RIVER PROJECT

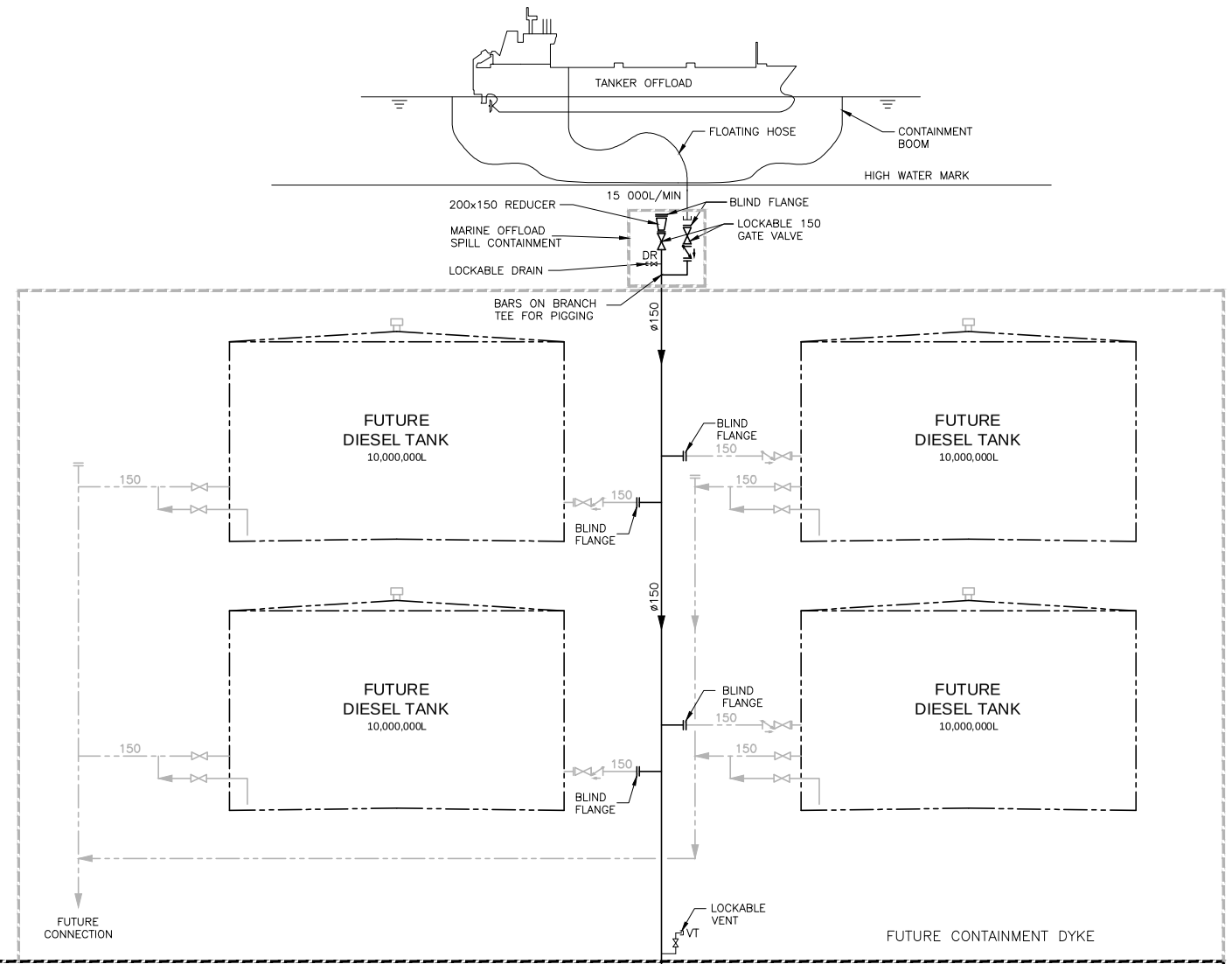
MILNE INLET
FUEL SYSTEM UPGRADE
ø150 PIPELINE PROFILE

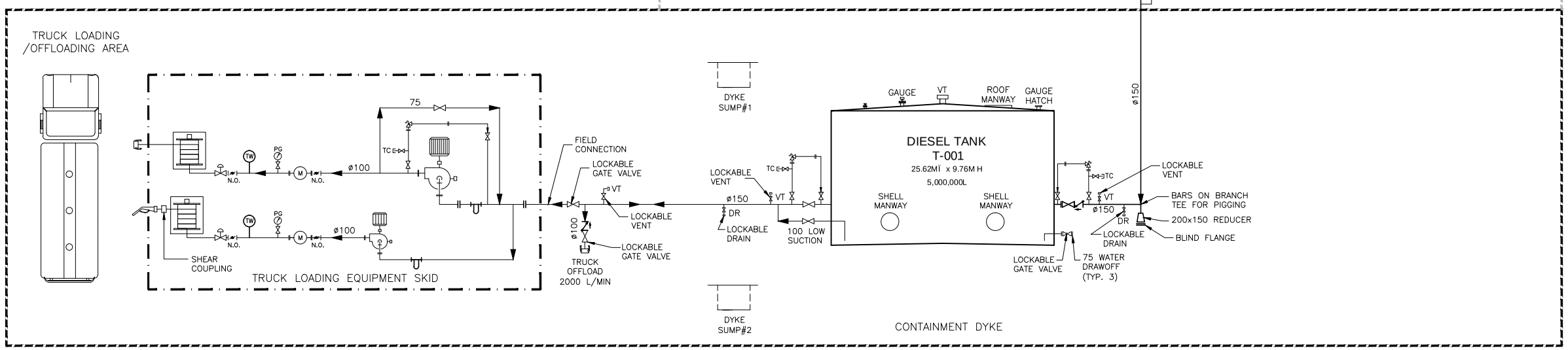
SCALE	DWG. NO.	REV.
1:100 OR AS NOTED	H337697-4020-60-012-0001	1

DWG. NO. H337697-4020-60-013-0001

LEGEND

SYMBOL	DESCRIPTION
	PROCESS LINE FLOW DIRECTION
	FUTURE PIPING/EQUIPMENT
	RELIEF VALVE
TC	TEST CONNECTION
	CONTROL VALVE
	BALL VALVE
	GATE VALVE
	CHECK VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
P	PRESSURE GAUGE
	BLIND FLANGE
VT	VENT
DR	DRAIN
	FLANGED CONNECTION
	CONCENTRIC REDUCER
	BASKET STRAINER
	HOSE REEL
M	FLOW METER
TW	THERMOWELL
	DYKE SUMP
	CENTRIFUGAL PUMP
	A/G VERTICAL STORAGE TANK





RECORD DRAWING

DRAWING NO.	DRAWING TITLE

REFERENCE DRAWINGS

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Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
B	MARINE OFFLOADING PIPELINE SIZE REVISED		DS	JM	11-06-24
A	ISSUED FOR PERMITTING		DS	JM	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

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DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

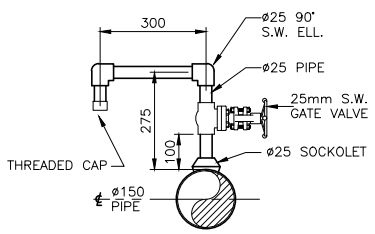
Baffinland IRON MINES CORPORATION

MARY RIVER PROJECT

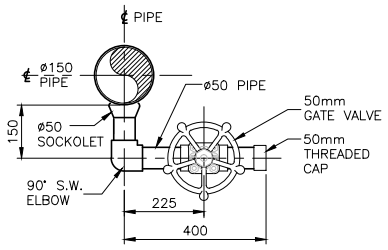
MILNE INLET
FUEL SYSTEM UPGRADE
FLOW SHEET

SCALE	DWG. NO.	REV.
NTS OR AS NOTED	H337697-4020-60-013-0001	1

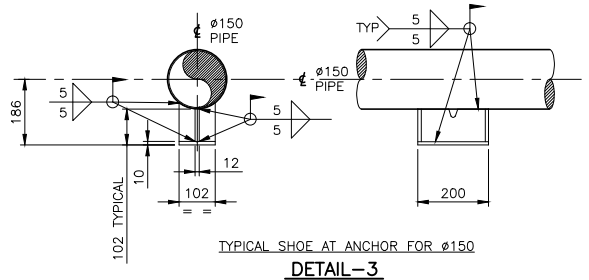
DWG. NO. H337697-4020-60-035-0001



DETAIL-1
TYPICAL ø25 VENT
REFER H337697-4020-60-012-0001
SCALE: 1:10

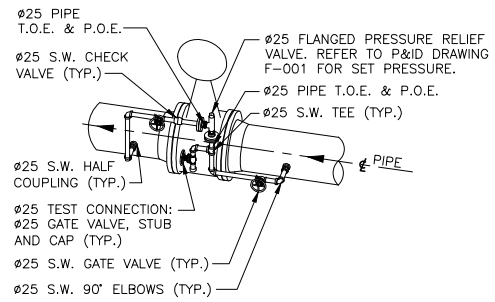


DETAIL-2
TYPICAL ø50 DRAIN
REFER H337697-4020-60-012-0001
SCALE: 1:10



TYPICAL SHOE AT ANCHOR FOR ø150

DETAIL-3
PIPE SHOE
SCALE: 1:10

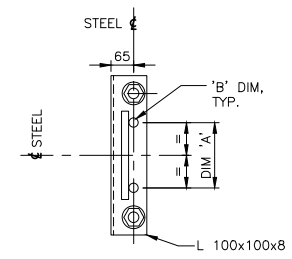


NOTE:

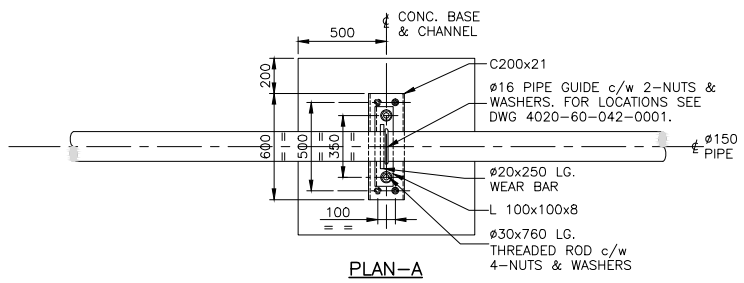
1. ALL PRESSURE RELIEF, AIR RELEASE, AND DRAIN PIPING AND FITTINGS TO BE SCH. 80 STEEL.

DETAIL-4
PERSPECTIVE OF ø25 RELIEF PIPING w/TEST CONNECTION
SCALE: 1:10

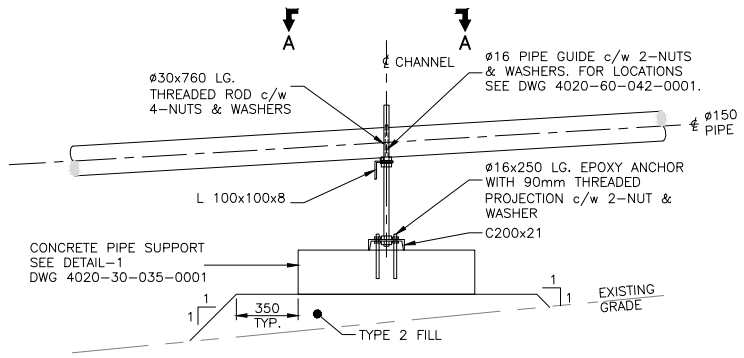
PIPE SIZE	U-BOLT ROD SIZE	'A' DIMENSION	'B' DIMENSION	GUIDES REQUIRED AT PIPE SUPPORTS
ø100	ø13	129	ø15	
ø150	ø16	188	ø18	PS-048, PS-050 PS-004, PS-009, PS-016, PS-022, PS-026, PS-038, PS-043



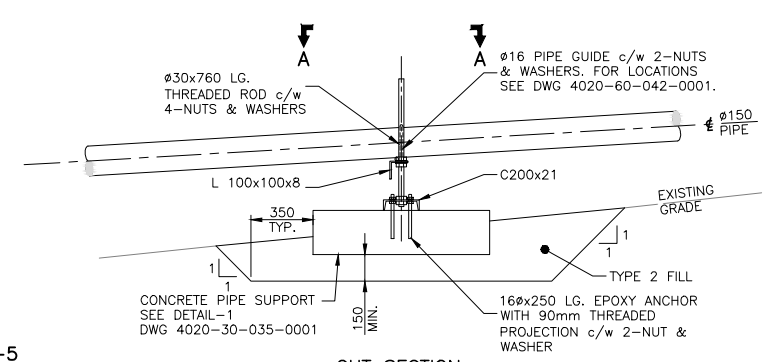
U-BOLT GUIDE LAYOUT FOR ø100, & ø150 PIPE



PLAN-A



FILL SECTION



CUT SECTION

DETAIL-5
H337697-4020-30-035-0001
H337697-4020-60-012-0001
H337697-4020-60-042-0001
SCALE: 1:20

0 100 200 300 400 500
SCALE IN MILLIMETRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
B	MARINE OFFLOADING PIPELINE SIZE REVISED		DS	JM	11-06-24
A	ISSUED FOR PERMITTING		DS	JM	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A. E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

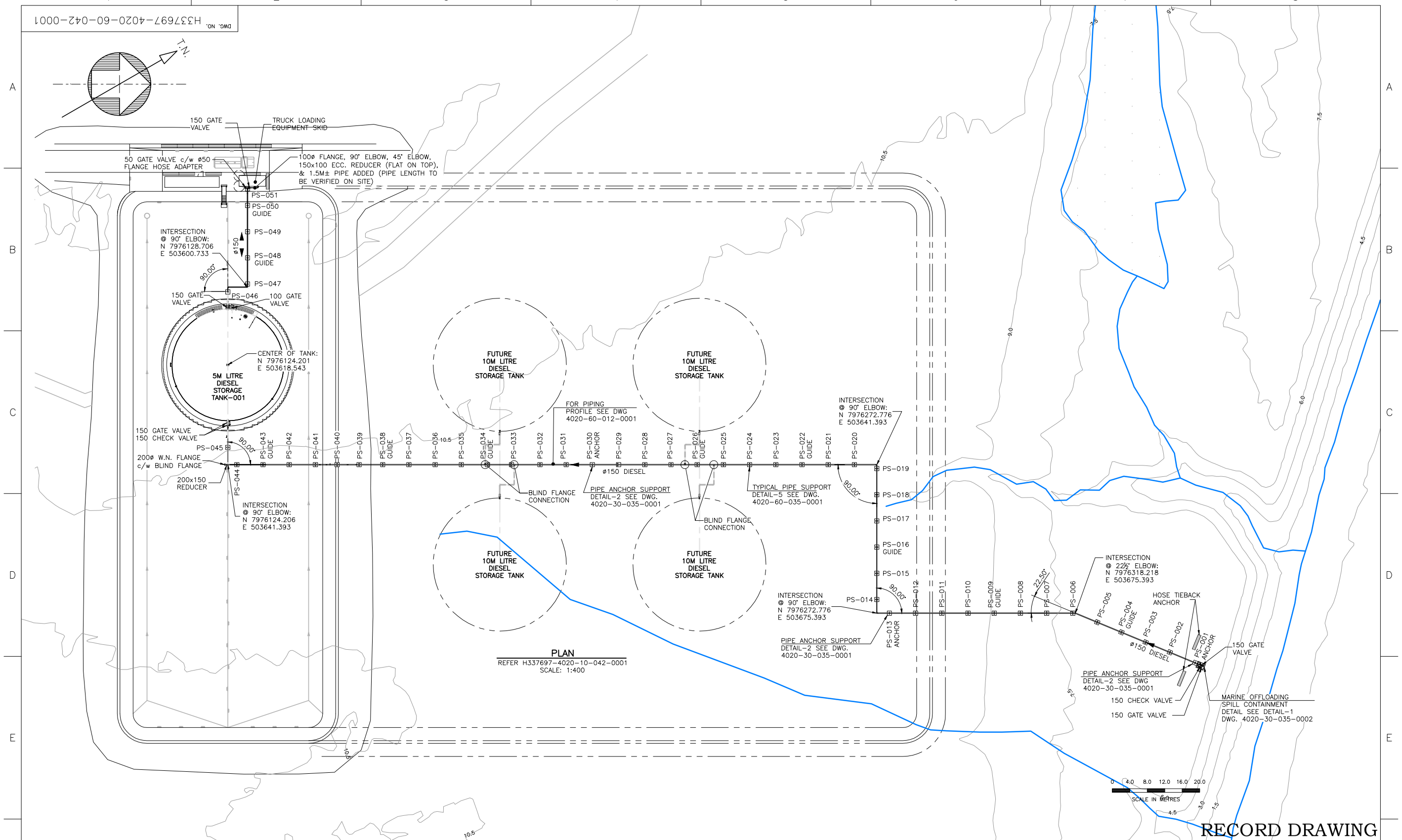
MILNE INLET
FUEL SYSTEM UPGRADE
MISCELLANEOUS PIPING DETAILS

SCALE NTS OR AS NOTED

DWG. NO. H337697-4020-60-035-0001

REV. 1

DWG. NO. H337697-4020-60-042-0001



PLAN
REFER H337697-4020-10-042-0001
SCALE: 1:400

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION ; NOTE REVISED		JM	FB	11-08-05
C	150ø PIPING TO SKID MODIFIED AND 100ø FLANGE, ELBOW, PIPE & REDUCER ADDED (PARTIAL PRINT)	DM	DM	DS	11-07-19
B	MARINE OFFLOADING PIPELINE SIZE REVISED	HPC	DM	DS	11-06-24
A	ISSUED FOR PERMITTING	MMI	DS	JM	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — M. E. BUTTS — LICENSEE — NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-05-13	DATE 11-05-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-05-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

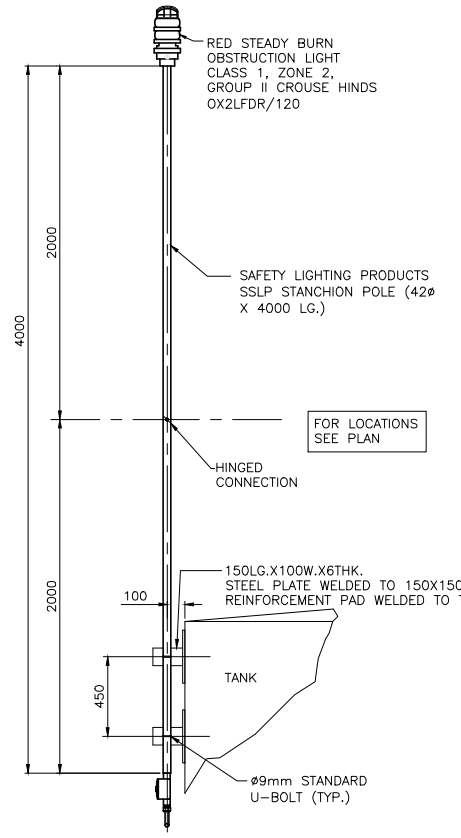
Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
PIPING GENERAL ARRANGEMENT

SCALE	DWG. NO.	REV.
1:30 OR AS NOTED	H337697-4020-60-042-0001	1

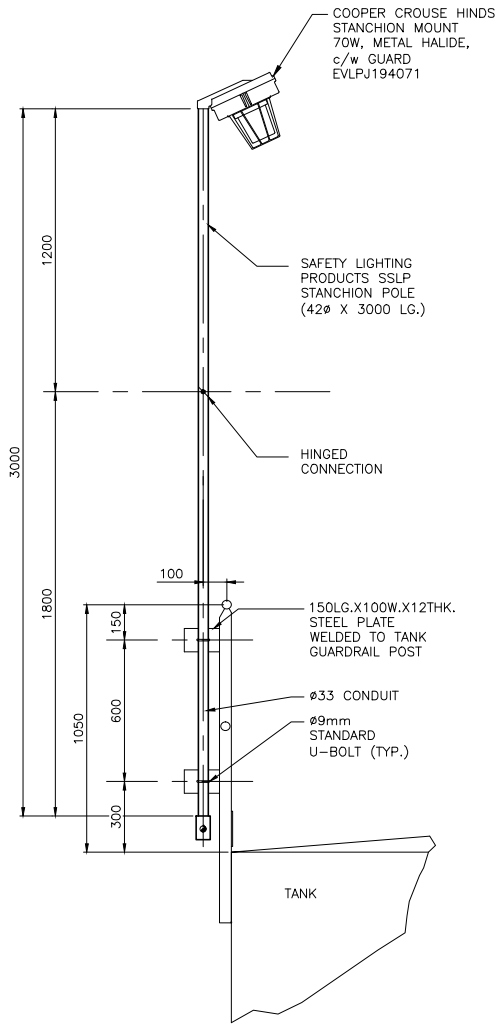
DWG. NO. H337697-4020-70-035-0001



DETAIL–1

TANK OBSTRUCTION LIGHT BRACKET
REFER H337697–4020–70–042–0001
SCALE: 1:20

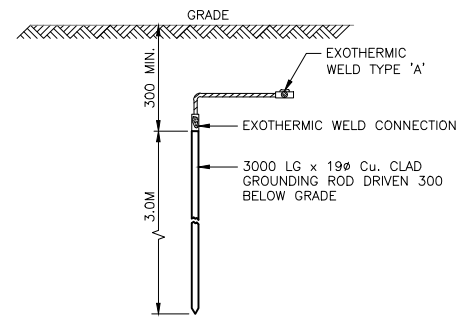
0 200 400 600 800 1000
SCALE IN MILLIMETRES



DETAIL–2

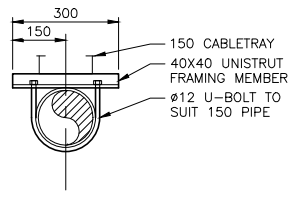
STANCHION FIXTURE DETAIL
REFER H337697–4020–70–042–0001
SCALE: 1:15

0 150 300 450 500 750
SCALE IN MILLIMETRES



DETAIL–3

Cu. CLAD GROUNDING ROD
REFER H337697–4020–70–042–0002
SCALE: 1:10



DETAIL–4

CABLETRAY SUPPORT
REFER H337697–4020–70–042–0001
SCALE: 1:10

0 100 200 300 400 500
SCALE IN MILLIMETRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
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NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
A	ISSUED FOR PERMITTING		DS	JM	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A. E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-06-14	DATE 11-06-14
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-06-14
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
ELECTRICAL SECTIONS & DETAILS

SCALE	DWG. NO.	REV.
AS NOTED OR AS NOTED	H337697-4020-70-035-0001	1

DWG. NO. H337697-4020-70-042-0001

T.N.

DYKE

FUEL SKID

MOUNT TANK LEVEL DISPLAY IN FUEL SKID. MOUNT HIGH TANK LEVEL ALARM LIGHT ON EXTERIOR OF FUEL SKID

PRIMARY GENERATOR

600V/347V DISTRIBUTION PANEL

TRANSFER SWITCH

ELECTRICAL SWITCHES

- TANK LIGHTING CABLES (2C, #10 AWG TECK)
- TANK LEVEL SIGNAL CABLE (1 PR. #18 AWG AND TWISTED SHIELDED TECK ARMOUR)

150 CABLETRAY

CABLETRAY SUPPORT DETAIL SEE DETAIL 4 ON DWG 4020-70-035-0001

TECK CABLE TO TANK LIGHTING

600V TECK CABLE
208V TECK CABLE
TO FUEL SKID

TECK CABLE TO STANDBY GENERATOR UNIT

STANCHION FIXTURE DETAIL SEE DETAIL 2 ON DWG 4020-70-035-0001

RADAR LEVEL GAUGE

OBSTRUCTION LIGHTING SEE DETAIL 1 ON DWG 4020-70-035-0001

10.5

127000

0 0.25 0.50 0.75 1.00 1.25
SCALE IN METRES

NOTE:

FOR GROUNDING SEE DWG H337697-4020-70-042-0002

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
A	ISSUED FOR PERMITTING		DS	MML	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A.E. BUTTS LICENSEE NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-06-13	DATE 11-06-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-06-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
ELECTRICAL GENERAL ARRANGEMENT

SCALE AS NOTED OR AS NOTED

DWG. NO. H337697-4020-70-042-0001

REV. 1

DWG. NO. H337697-4020-70-042-0002

T.N.

GROUND ROD DETAIL
SEE DETAIL 3 ON DWG
4020-70-035-0001

3 - ø19 X 3M 1.8M APART
DRIVEN 300 BELOW GRADE

℄ DYKE

10.5

NOTE:
GENERATOR AND FUEL PUMPING SKID GROUNDING NOT CONFIRMED IN AS BUILT SURVEY

GENERATOR

3 - ø19 X 3M
1.8M APART DRIVEN
300 BELOW GRADE

℄ DYKE

3 - ø19 X 3M 1.8M APART
DRIVEN 300 BELOW GRADE

GROUND ROD DETAIL
SEE DETAIL 3 ON DWG
4020-70-035-0001

EDGE OF EXISTING
GRAVEL AREA

℄ DYKE

℄ DYKE

NOTES:

1. TIE CABLE TRAY GROUND TO BURIED GROUNDING CONDUCTOR AT EVERY THIRD SUPPORT ALONG PUMP PAD.

- ◉ – COPPER CLAD GROUND ROD 19ø X 3M DRIVEN 300 BELOW GRADE
- ● – BOLTED COMPRESSION OR THERMIT CONNECTION
- —— – BURIED GROUND CONDUCTOR 2/0 AWG BARE CU.
- – – – TRAY GROUND CONDUCTOR 2/0 AWG GREEN INSULATED CU.

0 0.25 0.50 0.75 1.00 1.25
SCALE IN METRES

RECORD DRAWING

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05
A	ISSUED FOR PERMITTING		DS	JM	11-06-15

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
A. Butts
AE BUTTS
LICENSEE
NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

HATCH

DESIGNED BY	DRAWN BY
DATE 11-06-13	DATE 11-06-13
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-06-13
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland IRON MINES CORPORATION

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
ELECTRICAL GROUNDING PLAN

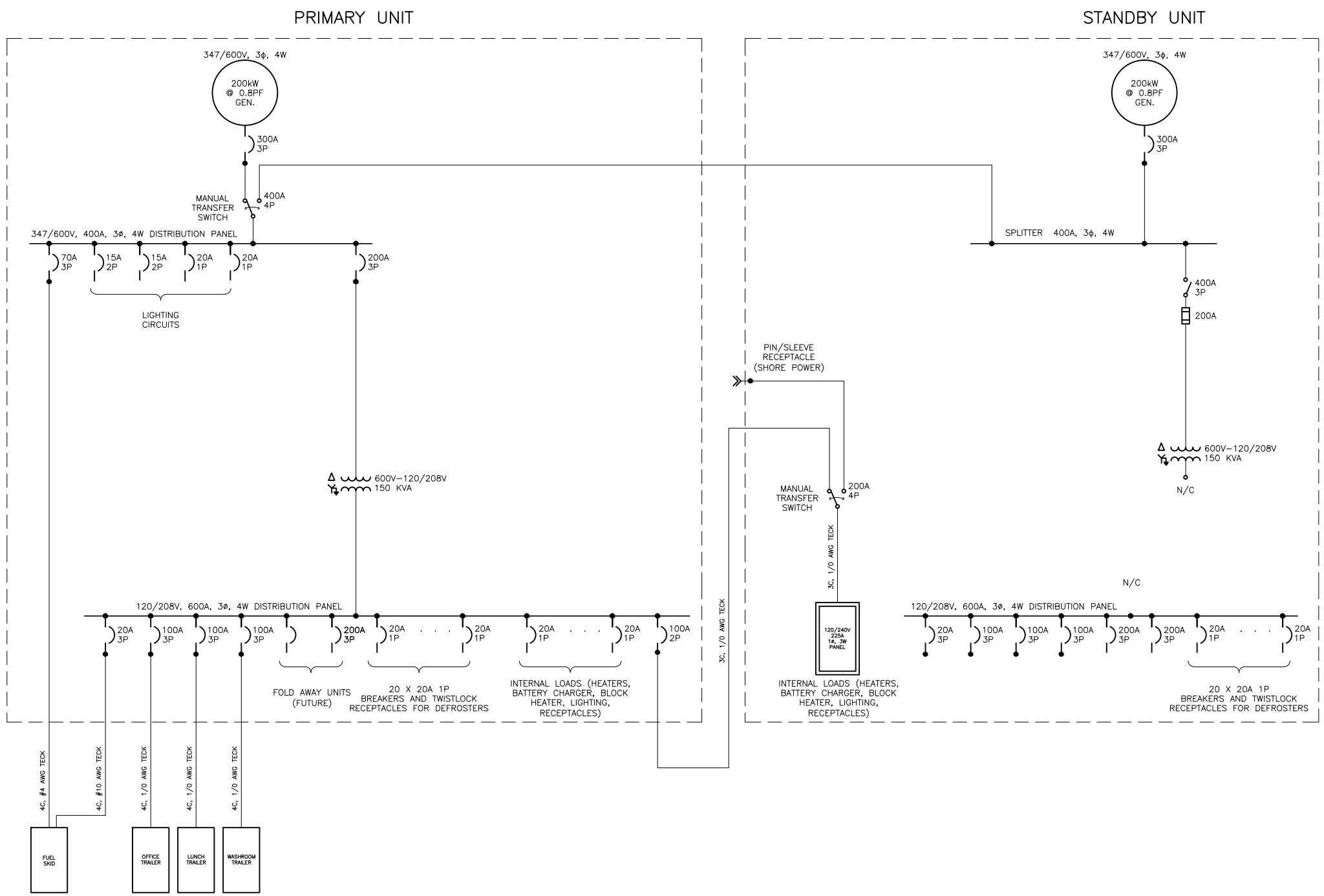
SCALE	DWG. NO.	REV.
1:250 OR AS NOTED	H337697-4020-70-042-0002	1

DWG. NO. H337697-4020-70-082-0001

LEGEND

200A 3P — LOW VOLTAGE CIRCUIT BREAKER, TRIP SETTING AND # POLES AS INDICATED.

200A — FUSE, SIZE AS INDICATED



RECORD DRAWING

PERMIT TO PRACTICE
HATCH LTD.
Signature RAMLI HALIM
Date AUGUST 10, 2011
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

REGISTERED PROFESSIONAL ENGINEER — AE BUTTS — LICENSEE — NT/NU

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
1	RECORD DRAWING FROM CONTRACTOR INFO.				12-01-31
0	ISSUED FOR CONSTRUCTION		JM	FB	11-08-05

REVISIONS

REV.	ISSUE FOR	AUTH. BY	DATE

ISSUE AUTHORIZATION

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE

HATCH

DESIGNED BY	DRAWN BY
DATE 11-07-15	DATE 11-07-15
CHECKED BY	DISCIP. ENGR.
DATE 11-08-05	DATE 11-07-15
PROJ. DES. COORD.	PROJ. ENGR.
DATE	DATE
PROJ. MGR.	
DATE	

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE INLET
FUEL SYSTEM UPGRADE
POWER SINGLE LINE DIAGRAM

SCALE NTS OR AS NOTED

DWG. NO. H337697-4020-70-082-0001

REV. 1

A.3 Daily Inspection Reports

Date	18-Aug-11	**Contract No:**	
Name of Contractor: Nuna Logistics		**Project:** Baffinland - Milne 5M Liter Tank Farm	
Hours Worked: 7am to 7pm			
Weather Report	Time: 7:00 AM	Temp: Low 4ºC High 11ºC	Wind Speed: 5 km/hr Comments: Sunny

Safety Performance

Contractor	First Aid	Medical Aid	Property Damage	Equipment Damage	Spills	Restricted Duties	Near Misses	Yearly Total
Nuna	0	0	0	0	0	0	0	0
Adco	0	0	0	0	0	0	0	0
Layfield	0	0	0	0	0	0	0	0

Incident: No incidents have been reported in the last 24hrs

Corrective Action:

Daily Safety Topics

Contractor	Topic
Nuna & All Sub Contractors	1) Discussed which areas are out of bounds 2) Discussed the importance of 3 point contact with all the machines, including the small ones.

Description of Work Preformed Today

Volume Place (ECM)			# of Loads	Daily Total (ECM)	YTD Total (ECM)
Material Type	From	To			
Sand/Gravel	Km 2 Borrow	Tank Farm	126	1087	1769
Grand Total			126	1087	1769

Screening			
Product	Location	Qty	To Date
	Grand Total	0	0

Daily Activities

Major Project Updates

Overview shot of the Tank Farm

D4 spreading second lift overtop of the compacted first lift

Lift two being compacted and elevation being checked by surveyor

345 Excavator loading Haul Truck at Km2 Borrow Pit

Daily Activities

Contractor	Daily Activities	
Nuna	Material pushed up in Km2 Borrow Pit	Placed, Leveled and Rolled material at Tank Farm
	Loading and Hauling from Km2 Borrow Pit	Road from Km2 borrow pit graded
Adco	Not onsite	
Layfield	Not onsite	

Contractor Remarks

Hatch inspected lift one and and approved.
Baffinland confirmed that Nuna can use 20 m3 of water for soil compaction per day.
Hatch inspected onsite geotextile and approved for use. This will allow Nuna to begin on berm construction before Sea Lift arrives.
New survey elevations marked out on steaks for toe of berm.

Man Power: Daily

Company	Personnel	Daily M/H
Nuna	9	108
Adco	0	0
Layfield	0	0
Underhill	1	12
Total	10	120

Man Power: YTD

Company	YTD Man Hours
Nuna	216
Adco	0
Layfield	0
Underhill	48
Total	264

Date: September 21/ 2011

Daily Report No.: 17-09

DAILY INSPECTION REPORT

Marlon Coakley

Contract H337697

General Information

Conditions	Workforce	Equipment	Sub Contractor	Other
Temperature: 05-	6	Crane & Support Equipment	Nuna	
Weather: overcast	4		ADCO	
Location: Milne Inlet	13		Gem steel	

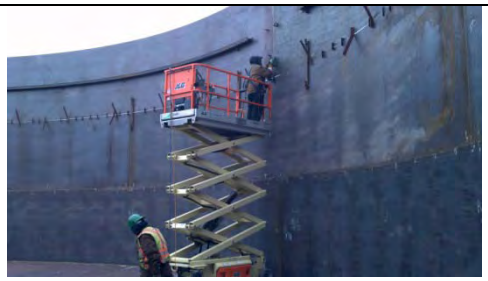
Testing:

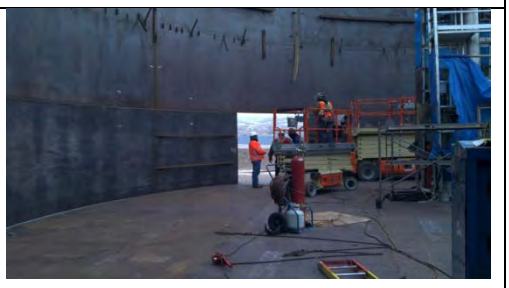
X-RAY set to start on Friday Sept.23

Activities:

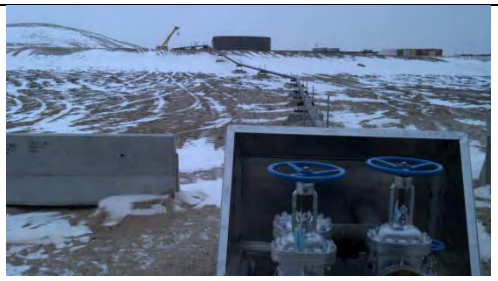
6:45 Safety meeting. Discussed weather conditions ,working at heights ,proper crane signals ,winds speeds , need to insure that that welders use their face shields while using the grinder
Gem Steel Night shift crew will be welding roof plates and removing wind braces
Gem Steel Day shift crew set all roof sheets in place and eight inch nozzle in east side of tank
Gem Steel Day shift crew completed vacuum testing of tank shell
ADCO continues to use the Nuna shop ,to weld pipe sections
ADCO continue to prepare pipe stands for pipe installation
ADCO installing Pig Catchers
ADCO placing and welding pipe ,the pipe is completely weld from the shore line heading south toward containment berm
Ongoing Bears monitoring days and night.
We are now trying to conserve water, due the fact that we have problems with the water truck; the water truck is down due to a mechanical issue. We are excepting the water truck in Mary River to sent to Milne Inlet in the morning

Instructions:





Date: September 24/ 2011

Daily Report No.: 17-09

DAILY INSPECTION REPORT

Marlon Coakley

Contract H337697

General Information

Conditions	Workforce	Equipment	Sub Contractor	Other
Temperature: 02+	3	Crane & Support Equipment	Nuna	
Weather: overcast &light rain	4		ADCO	
Location: Milne Inlet	13		Gem steel	

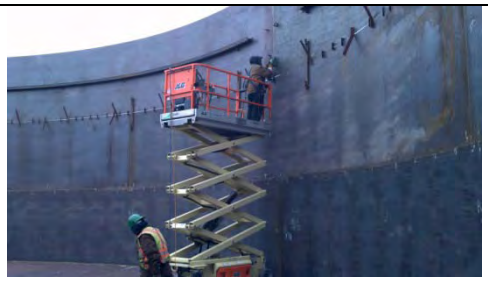
Testing:

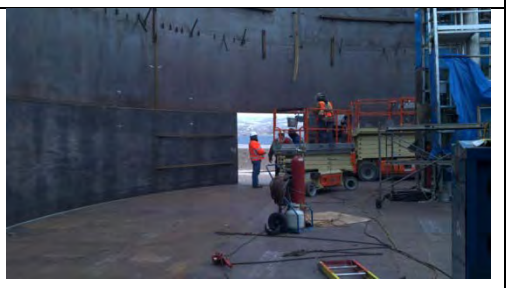
X-RAY testing is scheduled to start Sunday morning, the two X-ray tech are set to arrive from Iqaluit of this evening charter .

Activities:

6:45 Safety meeting. Safety topic discussed with group (look before you leap) weather & wind conditions to be monitor ,working at heights ,100% tie off required hours for man lifts & scissor lifts need to be logged daily on equipment check list
Gem Steel Day shift crew have completed welding all roof plates ,hand rails on top of tank
Gem Steel Day pressure checking all flanges on the tank
Gem Steel Day shift crew completed vacuum testing of floor plates
ADCO continues to use the Nuna shop ,to weld pipe sections
ADCO continue to prepare pipe stands for pipe installation
ADCO placing concrete pipe stands inside containment berm at east end of tank.
ADCO installed lights on top of tank and burying the cable running from the tank to electrical panel
Nuna starting clean work face and move sea cans to lay down area for winter storage
Ongoing Bears monitoring days only
Gem Steel as started to demobe and pack gear into sea cans and cleanup work face
Gem Steel prepare inventory list of the remaining steel for the future five million liter tank
Gem Steel will be sending four of their crew off site today ,excepting to have the remainder of the crew offsite by Wednesday September 28th

Instructions:





Date: September 27/ 2011

Daily Report No.: 17-09

DAILY INSPECTION REPORT

Marlon Coakley

Contract H337697

General Information

Conditions	Workforce	Equipment	Sub Contractor	Other
Temperature: 03-	3	Crane & Support Equipment	Nuna	
Weather: Heavy Snow Mixed With Light Winds	3		ADCO	
Location: Milne Inlet				

Testing:

ADCO will be setting up to air test the pipe line from the shore line to east side of five million liter tank

Activities:

6:45 Safety meeting. The morning safety meeting will ne be hold in the main camp and it include ADCO Nuna and Site Service Weather conditions and proper clothing ,slip trip and falls ,review minutes of the JOHS committee meeting
Gem Steel finished cleanup around tank and moved remaining sea cans to winter lay down area
Gem Steel cleaned inside of the tank and vacuum checked floor plate at the entrance of the man way
ADCO continues setting and welding pipe on east side of tank
Nuna continues to move sea cans and prepare lay down area for winter shut down
Toured the site with the Joint Occupational Health and Safety Committee ,tour completed site with all the committee members .

Instructions:

HATCH

Date: August 11/ 2011

Report No.: 1

INSPECTION REPORT

Contract H337697

General Information

Conditions	Workforce	Equipment	Sub Contractor	Report By
Temperature: 20C		Milne Fuel Skid	Bryant	J. MacLean
Weather: cloudy				
Location: Valley Field Port - Montreal				

Testing:

No testing performed

Equipment Review:

1. Fire suppression system is liquid based with a note on it to use anti freeze in system? We had required nitrogen fire suppression for the cold climate.
2. No API dry break coupling – cam lock with cover has been provided, API dry break required.
3. Solenoid control valve is equipped with rate of flow, wasn't really required for a PD pump, make valve a little more complicated. I might be acceptable if the pump bypass had not been deleted.
4. No pump by pass system – only internal relief for pump – maybe OK if the operators remember to shut it off an, however pump is going to be constantly relieving.
5. No plugs on vents and drains – ball valves are brass, should be steel.
6. A 40 mesh strainer before pump – no strainer before meter. This is a bit too fine for the pump suction.
7. No strainer before meter, the 40 mesh was to go here
8. No evidence that pumps were aligned – no shims – Base did not appear to be machined, most likely not flat.
9. Bolts loose and nuts falling off gear reducer for small pump – check of fasteners will be required on site
10. Doors cut in end of container to access hose reels are very heavy and have no handle or decent latch system
11. Insulation has come off inside access doors
12. System was tested with diesel fuel I assume, should be OK until some Arctic grade can be run through it. It is heat traced and insulated
13. Labeling on electrical panel not correct – labeled as foreign voltage which is incorrectly spelt
14. Pump base is light, because the there is no pump by pass; this pump is going to vibrate when the internal relief starts chattering.
15. The meter displays are in gallons , should be in litres
16. Labeling for switches i. e. hose reel start missing, pump stop/ start

17. Only 800 watts of heat for pump area, probably will not keep up, however the roll up door is not insulated, there is an insulation piece provided to cover the opening. Has to be put in place.
18. The loading section only has one 400 watts heater
19. Recommend to either use a flexible connection to hook up to it or an anchor just outside the cabinet. This is a spot where if we have any pipe stress it is going to translate into the pump.

Photos:


FILL-RITE


GALLONS
DO NOT RESET WHILE COUNTING


R-TECH
R-TECH

A.4 CCME Code Compliance Review

CCME Code Compliance Review

Part 3 Design and Installation of Aboveground Storage Tank Systems	
3.1.1 (1) This Part applies to the design and installation of a new aboveground storage tank system	
3.1.1 (2) A storage tank installed in a concrete vault located below grade with the interior of the vault not filled with backfill material shall be considered an aboveground storage tank for the purpose of this Code.	*N/A*
Section 3.2 General Requirements	
3.2.1 Except as provided in this Part, the design, fabrication and installation of an aboveground storage tanks system shall be in conformance with NFCC.	*The new tank farm 5M A/G tank components have been installed in conformance with Section 4 of the NFCC.*
3.2.2 Except as provided in this Part, the design and installation of an aboveground storage tank system connected to an oil-burning appliance and equipment that comes within the scope of CAN/CSA-B139-00, "Installation Code for Oil Burning Equipment" shall be in conformance with that Code.	*N/A*
3.2.3 An aboveground storage tank, components, and accessories, for which there is a recognized standard, shall be approved only for the uses indicated under the standard.	*All components, accessories and trim comply to this section.*
3.2.4 A company or individual that is authorized by the authority having jurisdiction shall verify that the design and installation of an aboveground storage tank system meets the requirements of this Code or other requirements as specified by the authority having jurisdiction.	*Hatch has reviewed the As-Builts, as constructed status of the facility and confirms it meets the applicable requirements of this code.*
3.2.5 An aboveground storage tank system shall be installed by a company or individual that is authorized by the authority having jurisdiction.	*Hatch is registered to practice engineering in Nunavut and has completed the design, managed the construction and reviewed all As-Built documents pertaining to this tank system. All drawings have been stamped by Registered Professional Engineers.*

CCME Code Compliance Review

3.2.6 An aboveground storage tank shall be equipped to control emissions of volatile organic compounds in conformance with CCME PN 1180, "Environmental Guideline for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks". (See Appendix B, note B.3.2.6)	*Stored fuel is Arctic Grade Diesel with a vapour pressure less than 10kPA, N/A*
3.2.7(1) The Owner of an aboveground storage tank system shall provide an as-built drawing to the authority having jurisdiction in the manner and time frame as specified by the authority having jurisdiction.	*As-Built Drawings form part of this report.*
3.2.7(2) As-built drawings for an aboveground storage tank system shall include, as a minimum: a) The outline of all storage tanks; b) The centerline of all piping or piping groups; c) The centerline of all underground electrical power and monitor sensor conduit; d) Building foundation outlines; e) Secondary containment systems; and Property lines.	*As-Built Drawings forming part of this report meet the minimum requirements as stated in this section.*
3.2.8(1) No person shall install an aboveground storage tank system unless: a) Required permits or approvals have been obtained from the authority having jurisdiction; b) Plans, drawings and specifications of the system or equipment have been examined by the authority having jurisdiction; and The plans, drawings and specifications referred to in Clause (b) bear the stamp and signature of a professional engineer licensed to practice in the province/territory.	*a) Permit for the Tank construction and containment dyke was obtained from the Nunavut Water Board and the Qikiqtani Inuit Association.* *b) Drawings were submitted to the above authorities.* *c) Submitted Drawings to the Authorities bear stamp and signatures of Registered Professional Engineers.*
3.2.9 An aboveground storage tank system shall be designed and installed in accordance with the manufacturer's instructions, the appropriate standards, and this Code.	*The aboveground tank has been constructed in conformance with API 650. The aboveground piping has been constructed in accordance with the NFCC and ANSI 31.3 Process Piping. The Secondary Containment has been constructed in conformance with this code and NFCC.*
Section 3.3 Field-erected Storage Tanks Systems	
3.3.1(1) A field-erected storage tank system shall: a) Have corrosion protection in conformance with Section 3.8; b) Have a secondary containment system in	*a) No underground steel piping or tanks at this facility. The use of secondary containment liner and low corrosion rates preclude the use of CP on the A/G tank floor.*

CCME Code Compliance Review

conformance with Section 3.9; c) Have leak detection in conformance with Part 6; d) Have containment sumps, as applicable; e) Be provided with overfill protection; i. For pipeline delivery, in the form of an alarm system that will automatically alert pipeline or terminal personnel so that action can be taken to prevent the storage tank from being overfilled; ii. For truck, rail, ship, or barge delivery, in the form of a visual and audible alarm system for detecting a high level that will activate and alert personnel in enough time to terminate the flow of the product to the storage tank and prevent an overfill (See Appendix B, note B.3.3.1(1)(e)(ii)), or iii. In conformance with API RP 2350-96, "Overfill Protection for Storage Tanks in Petroleum Facilities"; and f) Have piping in conformance with Part 5, as applicable.	*b) Conforms to Section 3.9.* *c) Conforms, see Section 6 in this table.* *d) N/A* *e) i) N/A* *ii) Conforms, radar gauge and alarm.* *f) Conforms.*
3.3.2 If vapour balancing or vapour recovery systems are required, they shall be designed and built in conformance with CCME PN 1057, "Environmental Code of Practice for Vapour Recovery in Gasoline Distribution Networks".	*N/A*
Section 3.5	
3.5.1(1)	*N/A*
3.5.1(2)	*N/A*
Section 3.6 Design Standards	
3.6.1(1) Based on the design, an aboveground storage tank shall be designed, built, and approved in conformance with the following, as applicable: API Std 650-98, "Welded Steel Tanks for Oil Storage";	*The tank has been designed and constructed in conformance with API 650 – 11th Edition and all issued Addenda .*
3.6.2 An overfill protection device shall be designed, built, and approved in conformance with ORD-C58.15-1992, "Overfill Protection Devices for Flammable Liquid Storage Tanks."	*The tank is equipped with an electronic radar gauge which has over fill set points established and external alarm. All product transfer occurs by marine delivery and pipeline for which there is on site monitoring during all operations.*

CCME Code Compliance Review

3.6.3 A containment sump shall be designed, built, and approved in conformance with ORD-C107.21-1992, "Under-Dispenser Sumps".	*N/A*
3.6.4 A liner shall be designed, built, and approved in conformance with ORD-C58.9-1997, "Secondary Containment Liners for Underground and Aboveground Tanks".	*The secondary containment dyke has been constructed with a Layfield Hazguard 535 synthetic liner installed and tested in conformance with this code and in accordance with manufacturers instructions.*
3.6.5 An aboveground storage tank designed to contain an allied petroleum product shall be designed, built, and approved for use with that product.	*N/A*
3.6.6(1)	
Section 9	
3.9.1(3) A secondary containment system for a field-erected aboveground storage tank shall be: a) A single-wall and single-bottom storage tank placed entirely within a dyked area, with an impermeable barrier in the floor of the containment area and in the dyke walls; b) A single wall, double-bottomstorage tank placed entirely within a dyked area, with an impermeable barrier in the floor of the containment area and in the dyke walls, sealed to the perimeter of the storage tank or pad when the liner is not installed under the tank.	*Construction conforms to 3.9.1(3) a) A synthetic membrane liner has been installed in the granular construction of the dyke.*
3.9.2(1) Except as provided in Sentence (2), a secondary containment impermeable barrier shall be: a) Designed, built, and approved in conformance with: iv. ORD- C58.9-1997, "Secondary Containment Liners for Underground and Aboveground Tanks", or v. ORD-C142.20-1995, "Aboveground Secondary Containment Tanks"; and b) Installed so that: i. The liner is sealed to the perimeter of the storage tank or pad when the liner is not installed under the tank; ii. The liner extends to the top of the dyke wall; The liner is covered with a non-combustible material of such nature and thickness that it	*The liner for this facility is in conformance with ORD-C58.9-1997, the liner extends to the top of the dyke wall and is placed entirely under the tank floor. The liner is covered with a minimum of 450mm of granular material and placed between layers of geotextile and sand for protection.* *The liner is covered with a minimum of 450mm of granular material.*

CCME Code Compliance Review

will not fail when the secondary containment is exposed to fire; and	*Conforms*
3.9.2(2) A secondary containment impermeable barrier that does not conform to Sentence (1) Shall: a) Use material compatible with the product being stored and acceptable to the authority having jurisdiction (See Appendix B, note 3.9.2(2)(A)); and b) Be designed, constructed, and maintained to ensure a maximum hydraulic conductivity of $1x10^{-6}$	*N/A* *N/A* *N/A*
3.9.3(1) Liner penetrations shall be located at the high point or in a raised part of the dyke floor. (See Appendix B, note B.3.9.3(1))	*No liner penetrations are incorporated in the construction of dyke.*
Section 3.10 Spill Containment and Runoff Collection	
3.10.1 Spills, overfills, and storm water from product transfer areas shall be contained, treated and disposed of in conformance with the applicable provincial or territorial regulations, guidelines or policies.	*The fuel transfer area is incorporated in the design of the secondary containment such that all run-off is collected into the containment area.*
3.10.2 Containment area floors within dykes shall slope away from the tank base towards a sump at a slope greater than 1%.	*Dyke floor slope is a minimum of 1% from the tank to collection sumps.*
3.10.3(1) An oil-water separator used to treat storm water runoff, overfills, or a spill from the product transfer area shall be sized for a minimum hydraulic flow rate of a ten year return, one hour storm event, with the one hour rainfall intensity data obtained for the nearest weather station, and: Be designed, built, and approved in conformance with ULC-S656-2000, “Oil-Water Separators”;or	*An OWS will be purchased in 2012 as a mobile unit sized and conforming to this section for this tank farm facility. Currently the existing OWS and treatment system for the Bladder Tank Farm can/will be used in the event of a hydrological occurrence or spill.*
Part 5 – Design and Installation of New Piping Systems	
Section 5.1 Scope	
5.1.1 This Part applies to the design and installation of piping associated with a storage tank system.	
Section 5.2 General Requirements	
5.2.1(1) Piping materials shall, as applicable, be designed, built, and approved in conformance with	*Conforms*

the following: a) ASTM A 53, “Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless”,	
5.2.2 Except as provided in this Part, the design and installation of piping shall be in conformance with the NFCC.	*Conforms*
5.2.4 Piping material shall be installed and maintained in accordance with an approved standard, code, or in a manner acceptable to the authority having jurisdiction.	*As per operators Operations and Maintenance Manual.*
5.2.5 Single-wall piping shall not have buried or concealed mechanical joints. (See Appendix B, note B.5.2.5)	*No buried piping. N/A*
5.2.6 Leak detection testing and monitoring of piping shall be in conformance with Part 6.	*Visual leak detection on A/G piping-conforms.*
5.2.7 A thermal relief valve shall discharge into the low pressure side of the piping.	*Conforms.*
5.2.8(1) Piping located below the maximum product level in a tank shall be provided with a means to prevent the release of liquid from the tank by syphon flow.	*Inlet valving to the A/G tank from the marine pipeline has check and gate valves installed on the tank inlet nozzle.*
5.2.8(2) Except as provided in Sentence 5.2.8(3), a manual shut-off valve shall be lockable or have a method of locking.	*Conforms.*
5.2.8(3) A manual shut-off valve on the piping connecting a storage tank and a heating appliance or a stationary combustion engine does not need to be lockable or have a method of locking.	*N/A*
Section 5.3 Product Transfer	
5.3.1 The fill pipe on a storage tank with a capacity of 5 000 L or more shall be equipped for the attachment of a liquid and vapour-tight connection at the time of filling and shall be sealed with a liquid- and vapour-tight cap when not in use.	*All piping systems are sealed on the inlet and outlet connection ends with liquid and vapour tight cap and connections Conforms.*
5.3.2	*N/A*
Section 5.4 Design Standard for Underground Piping Systems	
Section 5.5 Installation	
5.5.1 Piping shall be installed by a company or individual that is authorized by the authority having jurisdiction.	*Piping was installed by Certified Contractor with Certified Welders and procedure for same.*
5.5.2 Piping shall be located and maintained to permit the eventual removal of the piping when the storage tank system is permanently withdrawn from service.	*Conforms*

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5.5.3 Piping shall be located in a manner that will prevent allowable design stress from being exceeded.	*Piping is designed and constructed in conformance with B31.3-Process Piping Conforms.*
5.5.4 Piping located aboveground shall be protected from physical damage due to impact.	*Conforms*
Section 6.2 General Requirements	
6.2.1(1) A storage tank system shall be tested for leaks in conformance with Sections 6.2 and 6.3 (ii) for an aboveground storage tank system, final installation shall be before the storage tank system is put into service; and	*Tank has been tested in conformance with API 650 and 653. Additional Radiographic testing has been performed in lieu of hydrostatic tank testing.*
6.2.3 Manual or electrical dip or inventory reconciliation shall be in conformance with Section 8.3.	*Conforms.*
6.2.8 Visual leak detection procedures shall be performed in conformance with Sentence 8.4.1(3).	*Conforms*
6.2.11(1) A high-pressure inert gas or vacuum leak detection test for piping shall be in conformance with the following procedures, as applicable. d) a test pressure or vacuum shall, as applicable: (ii) not exceed 700 kPa (gauge), except when the piping system is designed for such pressures; and	*All piping has been tested in conformance with 31.3 Process Piping.* *Conforms.*
Section 6.3 Leak Detection Interlocks and Alarms	*N/A*
Section 6.4 Monitoring Wells	*N/A*
Section 6.5 Groundwater Monitoring Wells	*N/A*
Section 6.6 Vapour Monitoring Wells	*N/A*
Section 6.7 Frequency and Method	*N/A*
6.7.1 The reference letters in Table 2 represent the leak detection and monitoring methods specified in Tables 3 through 9.	
6.7.2(1) Tables 3 through 9 specify the frequencies and methods of leak detection and monitoring that shall be used upon installation and, as applicable (See Appendix B, note B6.7.2(1)): a) For in-service monitoring; b) For periodic leak detection testing; or c) If a leak is suspected	*a) Conforms* *b) Conforms* *c) N/A*

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Table 4 – Aboveground Storage Tanks				
Containment	Final Installation Leak Detection	In-service Monitoring	Periodic Leak Detection	Leak Suspected
API Std 650-98 (within approved secondary containment)	API 650 Standard	IR and VLD; or HTSCM	API 653	PLDT; or API 653
Table 6 – Aboveground Piping				
Containment	Final Installation Leak Detection	In-service Monitoring	Periodic Leak Detection	Leak Suspected
All types	PLMLDT; HPVLDT	VLD	Not required	PLMLDT; or HPVLDT