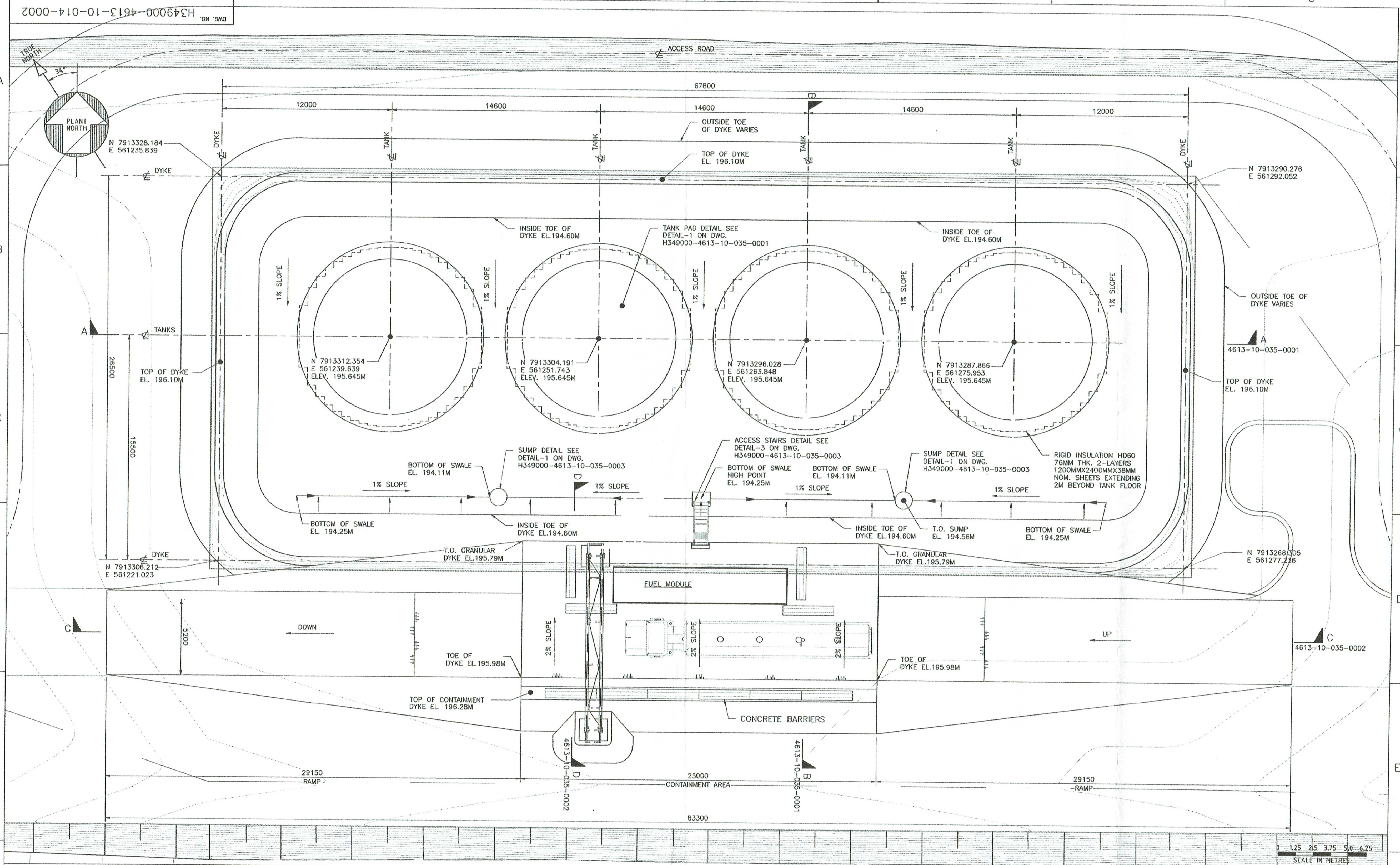


DWG. NO. H349000-4613-10-014-0002
ACCESS ROAD
TRUE NORTH
PLANT NORTH
67800
12000
14600
14600
14600
12000
OUTSIDE TOE OF DYKE VARIES
TOP OF DYKE EL. 196.10M
N 7913328.184 E 561235.839
N 7913290.276 E 561292.052
DYKE
TANK
INSIDE TOE OF DYKE EL.194.60M
TANK PAD DETAIL SEE DETAIL-1 ON DWG. H349000-4613-10-035-0001
1% SLOPE
TANKS
TOP OF DYKE EL. 196.10M
26500
15500
N 7913312.354 E 561239.639 ELEV. 195.645M
N 7913304.191 E 561251.743 ELEV. 195.645M
N 7913296.028 E 561263.848 ELEV. 195.645M
N 7913287.866 E 561275.953 ELEV. 195.645M
4613-10-035-0001
ACCESS STAIRS DETAIL SEE DETAIL-3 ON DWG. H349000-4613-10-035-0003
SUMP DETAIL SEE DETAIL-1 ON DWG. H349000-4613-10-035-0003
BOTTOM OF SWALE EL. 194.11M
BOTTOM OF SWALE HIGH POINT EL. 194.25M
RIGID INSULATION HD60 76MM THK. 2-LAYERS 1200MMX2400MMX38MM NOM. SHEETS EXTENDING 2M BEYOND TANK FLOOR
BOTTOM OF SWALE EL. 194.25M
INSIDE TOE OF DYKE EL.194.60M
T.O. SUMP EL. 194.56M
T.O. GRANULAR DYKE EL.195.79M
N 7913306.212 E 561221.023
N 7913268.305 E 561277.236
FUEL MODULE
DOWN
UP
5200
2% SLOPE
TOE OF DYKE EL.195.98M
TOP OF CONTAINMENT DYKE EL. 196.28M
CONCRETE BARRIERS
4613-10-035-0002
29150 RAMP
25000 CONTAINMENT AREA
83300
0 1.25 2.5 3.75 5.0 6.25
SCALE IN METRES

DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

THIS DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF BAFFINLAND IRON CORPORATION.

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
REVISIONS					

REV.	ISSUE FOR	AUTH. BY	DATE
0	ISSUED FOR CONSTRUCTION		13-07-23

ISSUE AUTHORIZATION

REGISTERED PROFESSIONAL ENGINEER F.E. DUTTO LICENSEE NT/NU

HATCH

DESIGNED BY D. STEPHENSON DATE 13-02-20	DRAWN BY M. PETERSON DATE 13-02-20
CHECKED BY DATE 13-07-12	DISCIP. ENGR. DATE 13-07-12
PROJ. DES. COORD. T. THERTELL DATE 13-07-22	PROJ. ENGR. J. CLELAND DATE 13-07-22
PROJ. MGR. S. PERRY DATE 13-07-22	

Baffinland

MARY RIVER PROJECT

MINE SITE
SITE GRADING PLAN

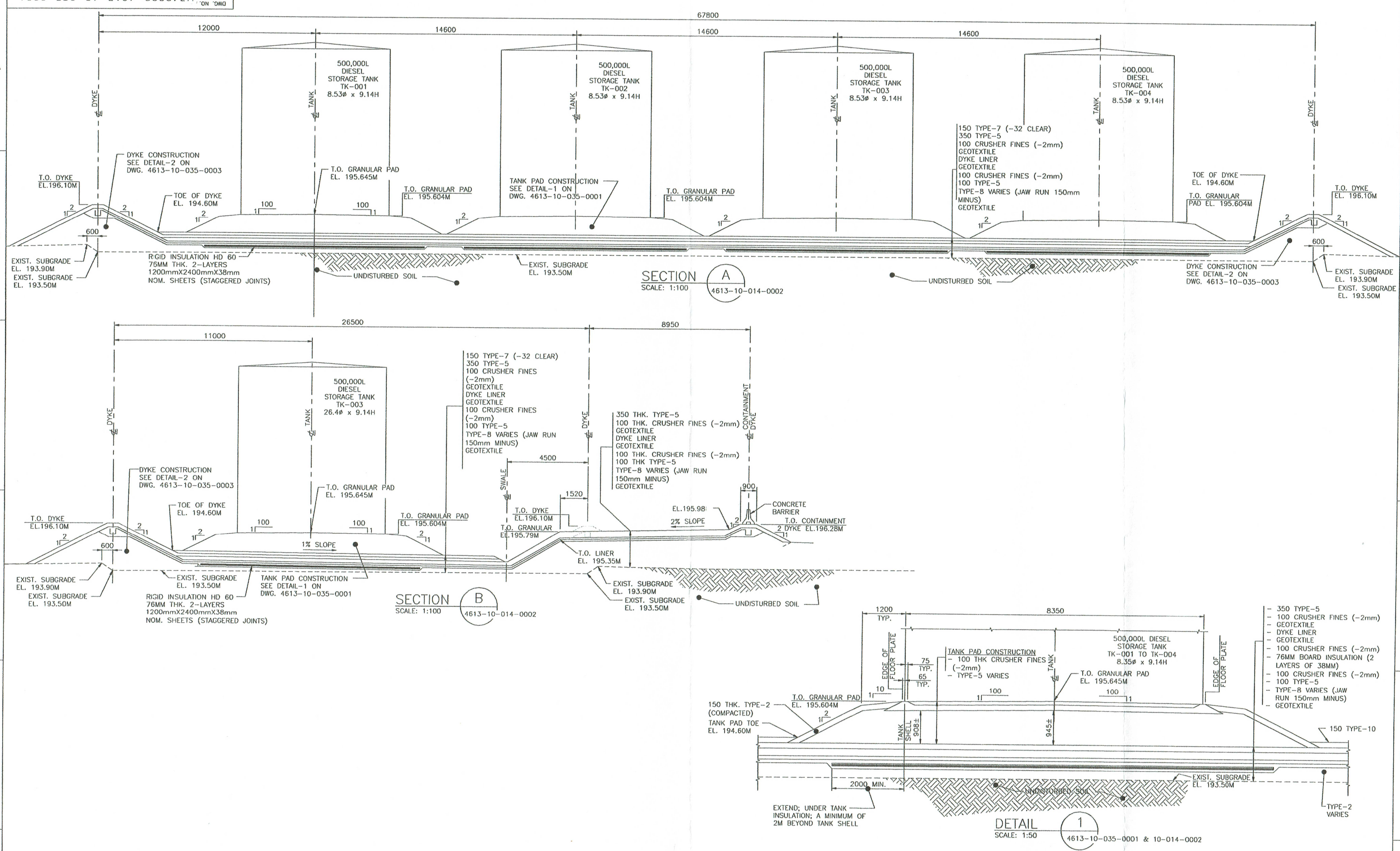
SCALE 1:125 OR AS NOTED

DWG. NO. H349000-4613-10-014-0002 REV. 0

ORIGINAL SHEET SIZE: ISO A1 (841 x 594)

$FILE$ $DATE$ $USERNAME$ $TIME$

DWG. NO. H349000-4613-10-035-0001



DRAWING NO.	DRAWING TITLE
REFERENCE DRAWINGS	

THIS DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF BAFFINLAND IRON CORPORATION ("CLIENT") AND IS ISSUED PURSUANT TO THE AGREEMENT BETWEEN CLIENT AND HATCH ... HATCH DOES NOT ACCEPT AND DISCLAIMS ANY AND ALL LIABILITY OR RESPONSIBILITY ARISING FROM ANY USE OF OR RELIANCE ON THIS DRAWING BY ANY THIRD PARTY ...

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE
REVISIONS					

REGISTERED PROFESSIONAL ENGINEER — F.B. BUTTS — LICENSEE — NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE
0	ISSUED FOR CONSTRUCTION		13-07-23
ISSUE AUTHORIZATION			

HATCH

Baffinland

DESIGNED BY D. STEPHENSON DATE 13-02-20
DRAWN BY M. PETERSON DATE 13-02-20
CHECKED BY DATE 13-07-22
DISCIP. ENGR. DATE 13-07-22
PROJ. DES. COORD. T. THERTELL DATE 13-07-22
PROJ. ENGR. J. CLELAND DATE 13-07-22
PROJ. MGR. S. PERRY DATE 13-07-22

MARY RIVER PROJECT

MINE SITE
DYKE SECTIONS & DETAILS

SCALE 1:100 OR AS NOTED
DWG. NO. H349000-4613-10-035-0001
REV. 0

ORIGINAL SHEET SIZE: ISO A1 (841 x 594)

4.0 MILNE INLET

4.01 General

The containment facilities that we have been doing inspections on for the last 6 years are now rapidly changing in function with the construction underway at the Milne Inlet site.

Structures and facilities that were under construction during our inspection in 2013 have now been completed and new facilities are under construction.

Currently under construction is a large landfarm and contaminated snow containment facility which are being designed as contiguous structures.

Also reviewed was the active quarry from which blasted rock was being removed.

New facilities, just now under construction in August, were the two ore sediment ponds upon which construction was beginning and due for inspection and reporting in the second of two geotechnical inspections in the latter part of September from September 25th until September 30th as the shipping season draws to a close. This was done but the settling ponds were as yet incomplete as noted during thisfinal review

4.02 Bulk Fuel Containment Facility

This particular facility started to undergo decommissioning last summer season after having been in operation in excess of 5 years.

The oil impacted water had been removed and treated and the oil impacted sand/ gravel that was in the bottom of the structure and over the liner on the dykes had been removed from the south end of the structure and had been piled up in the north end where it had been covered to prevent an accumulation of further oil impacted water as noted during our first review in August. By September this facility had been decommissioned and the oil impacted material had been placed in the landfarm.

At the time of our August review roughly 60% of the former Bulk Fuel Containment Facility had been decommissioned and the facility was gone in September.

Stability

Our review of the area around the south end of the former Bulk Fuel Containment Facility showed no sign of oil or oil/water mixture and we conclude that the integrity of the liner has been maintained during the decommissioning process.

Recommendations

We have no recommendations at this time.

4.03 Existing Polishing/Waste Stabilization Pond

This particular PWSP is no longer part of the treatment process for sanitary sewage and in August was being pumped of effluent which was being transferred to the new effluent pond.

This transfer of effluent was part of the decommissioning of this PWSP. At the time of our second review in September, all effluent had been removed and the dykes were awaiting removal.

Stability

The structure is considered stable over the projected short life of the structure.

Recommendations

We have no recommendations at this time pending the immediate decommissioning.

4.04 Barrel Fuel Storage

General Conditions

As set out in our 2013 Geotechnical Inspection, this structure is constructed as a two cell structure.

This structure was originally intended for use as barrel fuel storage. However, with time, this structure's use changed to that of storing lubricant cubes as well as barrel storage.

For continuity, we continue to refer to this two cell structure as Barrel Fuel Storage.

This structure around these two cells conforms to standardized drawings prepared by myself for such a structure.

The structure was in place during our first review but had been decommissioned at the time of our second review in September.

Stability

At the time of my August inspection, there was wet sand in the bottom of the two cells indicating the integrity of the liner.

Our review of the area around the cells, at the base of the exterior dyke slopes showed no sign of seepage, at that time.

There was no sign of oil impacted granular in the area following decommissioning.

Recommendations.

We have no recommendations with respect to this structure at this time.

4.05 Hazardous Waste Storage

General Conditions

This particular structure has been constructed as a two cell structure.

Due to an excess of hazardous waste in the two cells, a third temporary cell has been constructed for the very short term until the ship picks up the hazardous waste at the end of this summer season.

The third cell is constructed with a one piece liner and wood timber curb for this very short term and is contiguous with the south side of the structure.

This cell actually stores hazardous waste in containers, barrel fuel, and lubricant cubes.

Stability

There is water ponding in both cells of the original structure confirming the integrity of the liner at this time.

Our review of the area around the dykes, at the base of the slopes, showed no sign of seepage. The structure is considered stable.

Recommendations

We recommend that the use of the temporary third cell, recently constructed, be discontinued when the currently stored hazardous waste is shipped out by the end of this shipping season.

4.06 Oil and Antifreeze Containment

This structure has been decommissioned and totally removed.

4.07 Jet ”A” Pump Containment

This structure has been decommissioned and totally removed since our 2013 inspection.

4.08 Fuel Tank Farm

General Conditions

This particular structure has been reported on both our 2012 and 2013 inspection reports.

Since both 2012 and 2013 the fuel tank farm has been expanded considerably with the addition of a number of new tanks.

At the time of our last inspection in 2013, the containment structure had been put in place for the entire tank farm but not all tanks were in place.

Since that time, all fuel tanks have been constructed.

There existed in place, a temporary ramp at the north west corner of the containment structure to facilitate the construction of the last tank and entry of crane(s) into the containment structure at the time of our August review.

This temporary ramp did not affect the integrity of the containment structure nor infringe upon the required capacity of the structure. The reamp had been removed by the time of our September review.

We noted no sign of weakness in any of the structure construction.

Stability

We attach the Hatch Bulk Fuel Storage Site Grading Plan setting out the final tank and containment layout.

At both inspections we noted minor water ponding at the low end of the containment confirming the integrity of the liner.

Recommendations

We have no recommendation for this structure.

4.09 New Effluent Pond

General Conditions

This particular effluent pond was first reported up on in 2013 but had not yet been put into operation.

This effluent pond has now been put into operation and sewage effluent from the Polishing/Waste Stabilization Pond was being transferred to permit the decommissioning of that structure at the time of our August review.

There was approximately 5’ of freeboard at the time of our September review.

Stability

We noted no sign of weakness in any of the construction.

Recommendations

We have no recommendations with respect to the use of this structure having no negative comments on the construction of this structure.

4.10 Landfarm

General Conditions

The Landfarm was just under construction to facilitate the decommissioning of the contaminated soil in the north end of the former Bulk Fuel Containment Facility during our August review.

The Landform was constructed to accommodate approximately 9000 m^3 of oil contaminated soil and seasonal water accumulations.

At the time of our August review, the base and dykes of the structure had been formed and the HDPE liner had been installed with a geotextile protection on each side. At the time of our September review the cover had yet to be installed on a small section of the dyke but other areas were covered.

The landfarm had been put into operation at the time of our September review.

It appears as though the structure is being constructed in accordance with good construction practice for structures of this type.

Stability

We see no reason to expect that the construction underway shall not produce a stable structure.

Recommendations

We recommend that the remaining dyke structure without protective cover over it be covered as per the design drawings.

4.11 Contaminated Snow Containment

General Conditions

The construction of the contaminated snow containment structure is contiguous with the east end of the Landfarm.

At the time of our August review, the base and dykes of the structure had been formed and the HDPE liner had been placed with a geotextile protection on each side. At the time of our September review construction had been completed in accordance with design drawings.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

The snow containment facility has a containment volume of 929 m^3 based on estimates of snow volume provided by the Owner.

The structure has been constructed with good quality control.

Stability

We have no reason to expect that the construction shall not produce a stable structure.

Recommendations

We have no recommendations with respect to this construction at this time.

4.12 Sediment Pond East

General Conditions