2007-December-9

Phyllis Beaulieu
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0A 1J0

Re: October 18th, 2007 Comments on 2BB-MRY0710/Wastewater Management Plan/Mary River Project/Baffinland Iron Mine Corporation

We thank you for your comments in your response dated October 18th with regards to Baffinland Iron Mine Corporations (BIMC) Wastewater Management Plan. Responses to comments are found below in numerical order corresponding with the INAC letter.

1. **The proponent should identify if the Mary River and Milne Inlet Waste Water Treatment Facilities will be operated by people with appropriate training and experience in wastewater management. Project personnel designated to manage these facilities should be referenced within the Waste Water Management Plan and copies of their respective resumes should be included and regularly updated within the Plan's appendices.**

   The manufacturers of the Waste Water Treatment Facilities were on-site to provide direction as part of the initial start-up and commissioning process. As part of this work, the manufacturer provided the level of training to Baffinland site supervisors that it recommends to clients of their equipment.

   To enhance management capabilities and enable continuity of operation, Baffinland has currently retained dedicated operators for Waste Water Treatment Facilities. These operators have undergone intensive on-site training by the manufacturer, Seprotech. The equipment manufacturer will provide on-going training and expert advice, as required. In addition to the use of contract operators and as a contingency, Baffinland supervisors have received additional training.

2. **The proponent to explain how the design of the Mary River Camp's effluent discharge pipeline will prevent the freezing of treated wastewater en route to Sheardown Lake. Section 3.2 of the submitted Plan states the freeze protection measures include having a pipeline constructed of high density polyethylene, polyurethane insulation, and a heat traced electric thermocable. The proponent should explain why it intends to have the portion of pipe within the lake's ice depth to be insulated but not heat traced and why the portion of the pipe below 4 meters depth of the typical water/ice surface will be un-insulated. Having insulation and heat tracing throughout the entire discharge pipeline may be a prudent freeze protection strategy.**

   An upgraded design of the sewage outflow pipe into Sheardown Lake includes the heat tracing and insulation to 300mm below the nominal ice level. This will prevent the freezing of the treated wastewater discharged into Sheardown Lake. The attached Drawing Number E104-R3 illustrates the new design of the sewage outflow line at Mary River and will ensure that a freeze protection strategy is in place.

3. **Erosion protection measures are not clearly noted for all treated wastewater discharge points. Treated wastewater from the Milne Inlet site will be discharged to a local drainage ditch which drains into Milne Inlet. The discharge outfall will be armoured with rip-rap as an erosion protection measure, but according to Section 3.2 of the submitted Plan, the winter discharge point will not be armoured with rip-rap. The proponent should have erosion protection measure in place at the winter discharge point.**

   To prevent erosion occurring at the winter discharge point at Milne Inlet, rip rap will be placed within the drainage ditch during winter months prior to discharge. During spring thaw, this section will be inspected to ensure erosion does not occur. Should erosion occur, although not forseen, protection measures will be implemented as per the Site Water Management Plan, such as the use of silt fences. While discharging into the drainage ditch, inspections will be conducted to ensure erosion, should it occur, is mitigated.

4. **BIMC intends to convert its polishing waste stabilization ponds at the Mary River and Milne Inlet sites into sludge management areas after completion of its bulk sampling program. The consideration of alternative sludge management strategies is recommended. INAC understands that these ponds are used as contingency measures for wastewater storage and treatment should the RBC treatment systems become in-operational. In addition, if these ponds, were to be used to dry sludge, any modifications required to allow continual decant of pooled water which will accumulate from precipitation runoff and the RBC treatment facilities when they are in-operational should be identified.**

   BIMC will take into consideration alternative sludge management systems once volumes of sludge have been calculated at the end of the bulk sampling period. Water that may pool from precipitation in the polishing waste stabilization pond (PWSP) will be returned, if required to the RBC via a vacuum truck to ensure effluent quality prior to discharge into Sheardown Lake or Milne Inlet.

5. **The Wastewater Management should include a detailed description of the drainage ditch situated at the Milne Inlet site. Section 9.3 refers to this ditch as being large, wide and several hundred meters in length. Approximate dimensions of the ditch, observed vegetation, and recorded water levels would allow a better understanding of the receiving environment.**

   A detailed description of the ditch is included as a Figure 2 attached to this letter. The dimensions of the ditch are as follows: average width of the drainage ditch is 15 meters, average depth (not water levels but depth of land) is 1.9 meters and approximate length is 275 meters.

6. **The Wastewater Management Plan should describe whether surface erosion caused by releases from the polishing waste stabilization ponds at the Mary River and Milne Inlet sites will be minimized. This is term of the 2BB-MRY0710 licence set in Part D, Item 14.**

Releases from the Milne Inlet polishing waste stabilization pond at Milne Inlet will occur via vacuum truck into the rip rapped drainage ditch. Erosion is not expected to occur due to rip rap protecting underlying ground while slowing the velocity of the effluent discharged. Should erosion occur, mitigation measures included in the Site Water Management Plan will be implemented such as the use of silt fencing. Effluent from the Mary River polishing waste stabilization pond will be re-directed into the RBC unit, if required. As submitted, the piping detail for the connection of the pond to the Sheardown pipeline from the RBC is shown. The pipeline from the Mary River RBC unit will be constructed to drain directly into Sheardown Lake negating any possible erosion concerns.

7. **The Wastewater Management Plan should include as-built design drawings of the polishing waste stabilization ponds and the Mary River Camp effluent pipeline. Topographic maps of the drainage where effluent will be discharged from the Milne Inlet Waste Water Treatment Facility and the Mary River Camp pipeline should be included as well. All maps and design drawings should be set an appropriate scale.**

   As-builts of the waste water management plants as well as ponds will be submitted within the required dates in BIMC's water license. Upon the completion of the pipeline construction at both Milne Inlet and Mary River, as builts will be submitted, as requested above including topographic data.

8. **INAC recommends that the Proponent agree to set timeline for the installation and commissioning of the Tanks-a-lot and RBC units to be used at Mary River and Milne Inlet.**

   The construction of the Mary River tanks-a-lot system was completed on October 5th. Effluent from the Tank-a-lot system will continue to be discharged into the polishing waste stabilization pond and re-treated in the RBC unit should it be required prior to discharge. The installation and commissioning of the RBC unit at Mary River is currently planned for the end of January 2008 when the 200 man all season weather haven camp is in construction.

   The construction of the Milne Inlet RBC unit was completed on October 29th. Commissioning is continuing and discharge will not occur until effluent parameters set out in the BIMC water license are met. Until this point, effluent will continue to be discharged into the polishing waste stabilization pond.

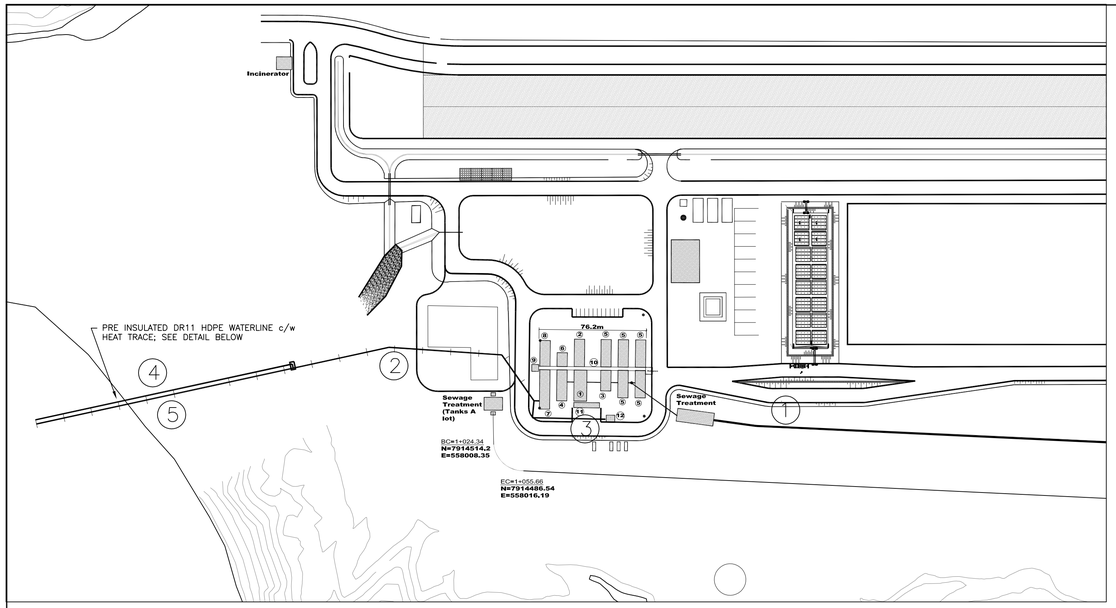
Yours sincerely,

Cheryl Wray
Environmental Superintendent
Baffinland Iron Ore Mines

Dave McCann
Assistant Project Manager
Baffinland Iron Ore Mines

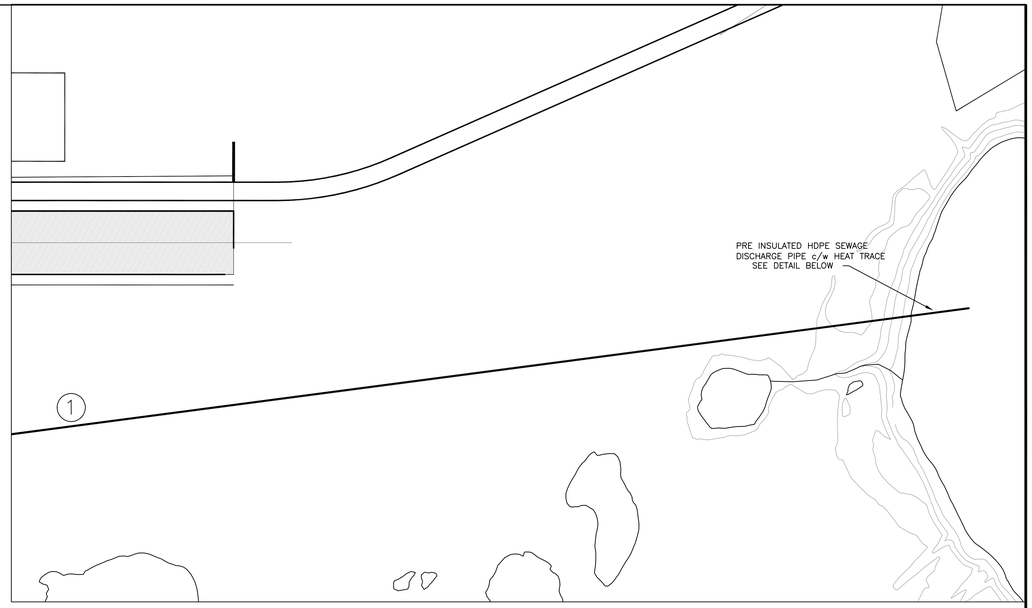
cc. Derek Chubb, VP, Sustainable Development

Attachments



HEAT TRACE PLAN

SCALE 1:2000



HEAT TRACE PLAN

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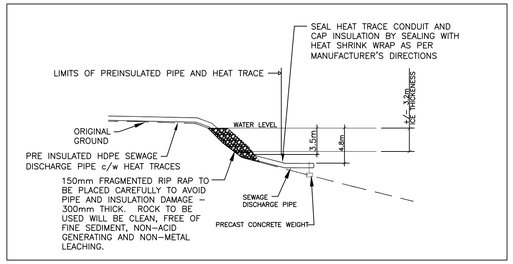
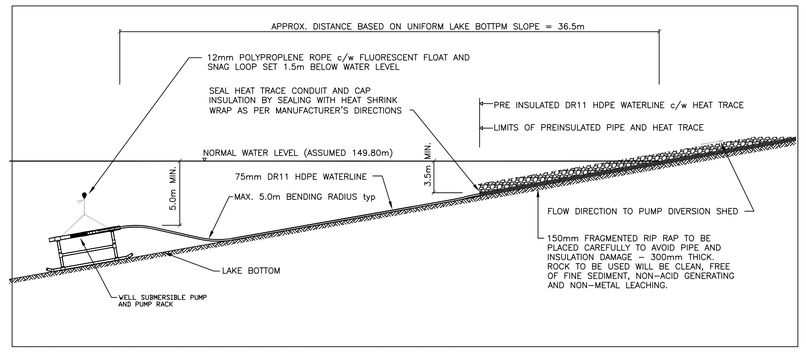


⚠2 HEAT TRACE DETAIL AT SEWAGE DISCHARGE

NO SCALE



⚠3 HEAT TRACE DETAIL AT WATER INTAKE

NO SCALE

1 Sewage Forcemain

Scope

Freeze protection of approximately 1850m (6070ft) x 3" DR26 HDPE – laid directly on grade (above ground) @ -45°C ambient temperature.
Pre-insulated and heat traced with series type heat cable. 600V 3-phase power provided at one end only.

Pre-Insulated Pipe

Nominal 2" thick, factory applied U.I.P.® urethane insulation c/w 8.00" OD x ….175" wall black seamless PE casing, one (1) integral standard channel for the heating cable, and one (1) Slipjoint ® joint insulation kit per 50ft length of 3" DR26 HDPE pipe.
Nominal 2" thick polymer coated insulation kits supplied with accessories to be field installed by others on 3" DR26 HDPE elbows and fittings.

Heat Tracing

Assuming:
2" thick factory applied urethane insulation
Minimum ambient: -45°C
Maintain temperature: 5°C
Voltage available: 600 volts 3 phases
Feed point location: at one end of the pipe
Series connections: at 600 feet (183 m) intervals
2000m x Flexible multi-conductor, ***series type heating cable****, 600 volts rated fluoropolymer insulation. One run of heating cable is required along the pipe. Circuit length would be 2,000 meters. For ease of installation, the circuit could be broken down into segments of approximately 183 meters being series connected in between each of them. The total connected load is 29kW @ 600 volts 3 phase.*
1 pc x Electronic thermostat model # ***UTC-6340-03*** *with ground fault detection circuitry. 600 Vac, 40 A, 3-pole circuit breaker and contactor in a Nema 4 painted steel enclosure. Factory set @; control: 5 oC, high limit: 65 oC for protection of plastic piping.*
2pcs x cold lead connection kit
1pc x End of line termination kit
10pcs x In-Line splice kit
1pc x 100 ohms RTD temperature sensor # URTD-30-G with 30 meters of grey PVC lead wire
1pc x 100 ohms RTD temperature sensor # URTD-30-R with 30 meters of red PVC lead wire

2 Water Line #1 – camp domestic water reservoir to header building at lake

Scope

Freeze protection of approximately 200m (656ft) x 3" DR11 HDPE – laid directly on grade (above ground) @ -45°C ambient temperature.
Pre-insulated and heat traced with Thermocable® heat cable. 208V power provided at one end only.

Pre-Insulated Pipe

Nominal 2" thick, factory applied U.I.P.® urethane insulation c/w 8.00" OD x .175" wall black seamless PE casing, one (1) integral standard channel for the heating cable, and one (1) Slipjoint ® joint insulation kit per 50ft length of 3" DR11 HDPE pipe.
Nominal 2" thick polymer coated insulation kits supplied with accessories to be field installed by others on 3" DR26 HDPE elbows and fittings.

Heat Tracing

One run x ***THERMOCABLE*** *C13-240-COJ heating cable with an output of 13 watts/meter @ 240 volts and a maximum circuit length of 245 meters.*
1pc x Electronic thermostat model # ***UTC-2030-01*** *with ground fault detection circuitry, 120-240 Vac, 30 A, 2 poles in a Nema 4 painted steel enclosure. Factory set @; control: 3°C, high limit: 65°C for protection of plastic piping.*
1pc x 100 ohms RTD temperature sensor # URTD-30-G with 30 meters of grey PVC lead wire
1pc x 100 ohms RTD temperature sensor # URTD-30-R with 30 meters of red PVC lead wire
1pc x Urecon power feed kit model ***PFK-4***

3 Water Line #2– camp domestic water reservoir to fire water reservoir

Scope

Freeze protection of approximately 70m (230ft) x 3" DR11 HDPE – laid directly on grade (above ground) @ -45°C ambient temperature.
Pre-insulated and heat traced with Thermocable® heat cable. 208V power provided at one end only.

Pre-Insulated Pipe

Nominal 2" thick, factory applied U.I.P.® urethane insulation c/w 8.00" OD x .175" wall black seamless PE casing, one (1) integral standard channel for the heating cable, and one (1) Slipjoint ® joint insulation kit per 50ft length of 3" DR11 HDPE pipe.
Nominal 2" thick polymer coated insulation kits supplied with accessories to be field installed by others on 3" DR26 HDPE elbows and fittings.

Heat Tracing

One run x ***THERMOCABLE*** *C13-240-COJ heating cable with an output of 13 watts/meter @ 240 volts and a maximum circuit length of 245 meters.*
1pc x Electronic thermostat model # ***UTC-2030-01*** *with ground fault detection circuitry, 120-240 Vac, 30 A, 2 poles in a Nema 4 painted steel enclosure. Factory set @; control: 3°C, high limit: 65°C for protection of plastic piping.*
1pc x 100 ohms RTD temperature sensor # URTD-30-G with 6 meters of grey PVC lead wire
1pc x 100 ohms RTD temperature sensor # URTD-30-R with 6 meters of red PVC lead wire
1pc x Urecon power feed kit model ***PFK-4***

4 Water Line #3 – Intake from lake to header building

Scope

Freeze protection of approximately 190m (623ft) x 3" DR11 HDPE water intake – 15m will be submerged and 15m will be laid directly on grade (above ground) @ -45°C ambient temperature.
Pre-insulated and heat traced with Thermocable® heat cable. 208V power provided at one end only.

Pre-Insulated Pipe

SUBMERGED SECTION: 50ft length x nominal 2" thick U.I.P.® urethane insulation c/w 8.00" OD x .175" wall black seamless PE casing, one (1) integral channel made from ¾" copper for heat cable - capped at wet/submerged end (to guard against water ingress), one (1) factory applied tapered insulation kit complete with (1) WLOX HiRatio heat shrink sleeve to seal the submerged end below ice cap; and one (1) Canusa Superseal joint insulation kit per 50ft length on 3" DR11 HDPE pipe..
ABOVE GROUND SECTION: 50ft length x nominal 2" thick U.I.P.® urethane insulation c/w 8.00" OD x .175" wall black seamless PE casing, one (1) integral channel made from ¾" copper for heat cable, one (1) integral standard channel for the sensors (on "dry" pipe length), compression couplings for copper conduit and one (1) Slipjoint ® joint insulation kit per 50ft length on 3" DR11 HDPE pipe.
Note: to guard against water ingress, the copper heat trace channels are coupled together over the joints and capped on the far "wet" end. The cables and sensors are fed through the conduits from "dry" end closest to controller at the header building.

Heat Tracing

One run x ***THERMOCABLE*** *C13-240-COJ heating cable with an output of 13 watts/meter @ 240 volts and a maximum circuit length of 245 meters.*
1pc x Electronic thermostat model # ***UTC-2030-01*** *with ground fault detection circuitry, 120-240 Vac, 30 A, 2 poles in a Nema 4 painted steel enclosure. Factory set @; control: 3°C, high limit: 65°C for protection of plastic piping.*
1pc x 100 ohms RTD temperature sensor # ***URTD-06-G*** *with 6 meters of grey PVC lead wire*
1pc x 100 ohms RTD temperature sensor # ***URTD-06-R*** *with 6 meters of red PVC lead wire*
1pc x Urecon power feed kit model ***PFK-4***

5 Water Line #4 – Intake from lake to header building *<same as #3>*

Scope

Freeze protection of approximately 185m (607ft) x 3" DR11 HDPE water intake – 15m will be submerged and 15m will be laid directly on grade (above ground) @ -45°C ambient temperature.
Pre-insulated and heat traced with Thermocable® heat cable. 208V power provided at one end only.

Pre-Insulated Pipe

SUBMERGED SECTION: 50ft length x nominal 2" thick U.I.P.® urethane insulation c/w 8.00" OD x .175" wall black seamless PE casing, one (1) integral channel made from ¾" copper for heat cable - capped at wet/submerged end (to guard against water ingress), one (1) factory applied tapered insulation kit complete with (1) WLOX HiRatio heat shrink sleeve to seal the submerged end below ice cap; and one (1) Canusa Superseal joint insulation kit per 50ft length on 3" DR11 HDPE pipe..
ABOVE GROUND SECTION: 50ft length x nominal 2" thick U.I.P.® urethane insulation c/w 8.00" OD x .175" wall black seamless PE casing, one (1) integral channel made from ¾" copper for heat cable, one (1) integral standard channel for the sensors (on "dry" pipe length), compression couplings for copper conduit and one (1) Slipjoint ® joint insulation kit per 50ft length on 3" DR11 HDPE pipe.
Note: to guard against water ingress, the copper heat trace channels are coupled together over the joints and capped on the far "wet" end. The cables and sensors are fed through the conduits from "dry" end closest to controller at the header building.

Heat Tracing

One run x ***THERMOCABLE*** *C13-240-COJ heating cable with an output of 13 watts/meter @ 240 volts and a maximum circuit length of 245 meters.*
1pc x Electronic thermostat model # ***UTC-2030-01*** *with ground fault detection circuitry, 120-240 Vac, 30 A, 2 poles in a Nema 4 painted steel enclosure. Factory set @; control: 3°C, high limit: 65°C for protection of plastic piping.*
1pc x 100 ohms RTD temperature sensor # ***URTD-06-G*** *with 6 meters of grey PVC lead wire*
1pc x 100 ohms RTD temperature sensor # ***URTD-06-R*** *with 6 meters of red PVC lead wire*
1pc x Urecon power feed kit model ***PFK-4***

Description	Date	No.
REVISED HEAT TRACE DETAILS	NOV 09/07	3
REVISED HEAT TRACE DETAILS	NOV 07/07	2
ISSUED FOR CONSTRUCTION	JULY 13/07	1
ISSUED FOR TENDERS	MAY 25/07	0

Revisions and Issues

NORTH Date Printed

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Project

BAFFINLAND MINE
MARY RIVER SITE

BAFFIN ISLAND NUNAVUT

Drawing

HEAT TRACE PLAN AND DETAILS

Date: FEBRUARY 2007	CADD File Number: ELEC\E104-R3.DWG
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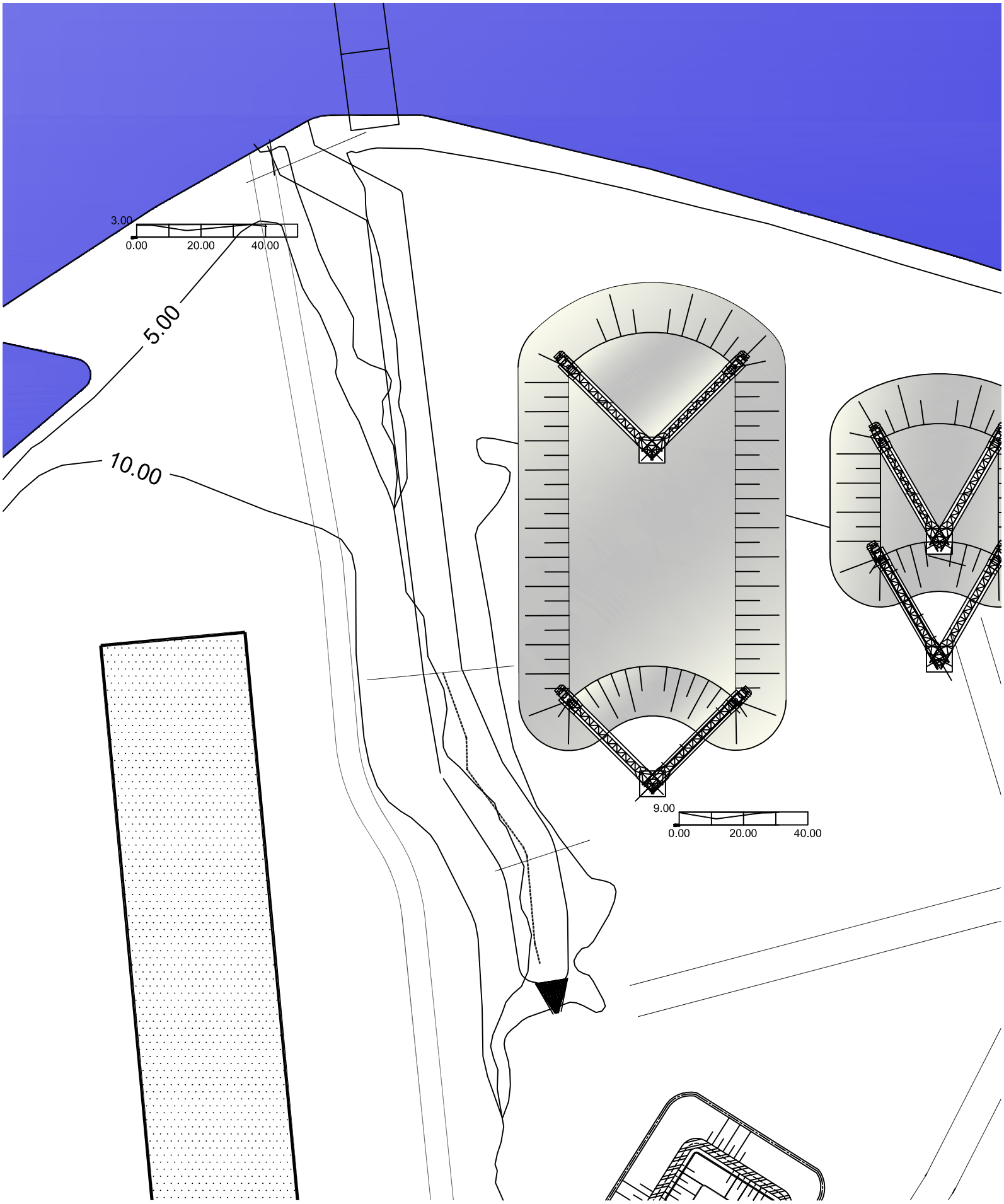
Drawn: MEB/R.S.P.	
Checked: MEB/NRL	Drawing Number: **E104-R3**
Approved: NRL	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