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FCNQ PETRO INC.

AUPALUK PETROLEUM TANK FARM

Expansion and Modernization of the tank farm
File : 6938
October 2022

Prepared by : *Monica Lapierre*
Monica Lapierre
Project Manager

Verified by : INGÉNIEURS ENGINEERS DENIS THIBODEAU 39025 QUÉBEC 2022-10-26
Denis Thibodeau, ing.

Sacré-Davey

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1. *IDENTIFICATION AND CONTACT DETAILS OF THE PROMOTER*

Project promoter

La Fédération des Coopérative du Nouveau Québec (FCNQ Petro)
19950, rue Clark-Graham
Baie d'Urfé (Quebec)
H9X 3R8
M. Jean-Luc Mallette Main Director Petroleum services and Transport
Tel. : (514) 457-9371 extension : 356
Email : Jean-Luc.Mallette@fcnq.ca
Numéro de l'Entreprise du Québec (NEQ) : 1143668797

Consultant mandaté par le promoteur

Sacre Davey (SD)
486, rue Sainte-Catherine Ouest
Office 200
Montreal (Quebec)
H3B 1A6
M. Denis Thibodeau ing. Director Montreal office
Tel. : (514) 789-9330
Email : dthibodeau@sacre-davey.com

Mandate description :
FCNQ Petro mandated Sacré-Davey to produce plans and specifications and oversee the expansion and modernization of the Aupaluk tank farm.
In addition, this mandate includes the preparation of the schedule, the review of the shop drawings and the coordination of the work between the various project stakeholders.

2. *INTRODUCTION*

In order to meet the growing needs of the Community of Aupaluk, the Fédération des Coopératives du Nouveau-Québec (FCNQ Petro) plans to carry out work to increase its petroleum product storage capacity in Aupaluk, Nunavik, for a period of 15 years. At the same time, the project will also include upgrading and modernizing the facilities.

The tank farm is used to store Arctic Diesel and Gasoline. The existing site includes storage facilities (tanks), a loading dock for tank trucks, a pumping station and an electrical building.

To that end, FCNQ Petro will require additional space, and new land boundaries are proposed on the plans. FCNQ Petro will make a request for additional space.

3. DESCRIPTION OF THE WORK

The current tank farm consists of two vertical tanks and six horizontal tanks. The total capacity of the current tank farm's tanks is approximately 2 196 900 liters. Following the work, the tank farm will have a total capacity of approximately 4 360 000 liters.
The description of the existing and new tanks is given in the following table:

Description of the existing and new tanks					
No	**Status**	**Present Product**	**Projected Product**	**Volume**	**Year of construction**
1	Existing	Diesel	Diesel	1 591 000	1988
2	Existing	Gasoline	Gasoline	333 500	1988
3	Existing	Empty	Dismantled	45 400	1979
4	Existing	Empty	Dismantled	45 400	1979
5	Existing	Empty	Dismantled	45 400	1979
6	Existing	Empty	Dismantled	45 400	1979
7	Existing	Empty	Dismantled	45 400	1979
8	Existing	Empty	Dismantled	45 400	1979
9	New	N/A	Diesel	1 816 000	2023
10	New	N/A	Diesel	620 000	2023

WORK TO EXPEND THE TANK FARM

The work consists of enlarging the existing retention basin, which will have sufficient capacity to contain the retention volume required by regulations for existing tanks, in addition to being able to hold two new tanks, one of 1 816 000 L (Diesel) and one of 620 000 litres (Diesel).

In addition, the work includes the installation of a membrane on the entire new surface of the retention basin, which will be impervious to petroleum products and comply with CAN/ULC-S668, the standard set out in the Quebec Construction Code. The perimeter of the basin will be fenced off. The total surface area of the disposal basin will be 2 655.5 m^2 (center to center of the dikes).

The construction of the new vertical reservoirs will comply with API-650, the only standard accepted by regulation for the construction of this type of reservoir.

The piping for the new tanks, as well as accessories such as valves, flap gates and motorized actuators, will be new.

A new pumping station will be built. This will be connected to a new loading dock where one top loading arm and one bottom loading arm will be installed for filling trucks with diesel. The use of loading arms is preferred as it is safer in terms of the risk of spills.

The existing electrical and control panels as well as the electrical distribution system will be replaced. Lighting fixtures will be added and a grounding system will be installed for the new equipment and the new basin section.

Finally, the tanks 1 and 2 of the existing basin will be emptied and cleaned in order to inspect them, repair them if the inspection requires it and make minor modifications to the installation new monitoring systems. Tanks are inspected and repaired (where necessary) in accordance with API-653, the only recognized standard in this area.

WATERPROOF MEMBRANE, RETENTION BASIN

The retention basin required by the regulations must be impermeable to petroleum products. This tightness is obtained by installing a membrane that complies with the regulations.

The Quebec regulation regarding membranes in petroleum tank farms required, until April 7, 2018 that the membrane complies with the ULC\ORC-C58.9 standards. Since that date, it is the CAN/ULC-S668 standard that must be applied.

Either of the standards deals with impermeability to petroleum products, but focus mainly on one important aspect: the non-flammability of the membrane.

In Aupaluk, the existing membrane, installed in 2007, is one of the recognized membranes in the field of petroleum tank farms construction. It complies with the ULC/ORD-C58.9 standards as set out in section 8.62 of the Quebec Construction Code in effect at the time of installation and until April 7, 2018.

Membrane manufacturers do not commit to a lifespan, only to a warranty period varying from 10 to 20 years, which is not really representative of the lifespan of the material.

Also, there is little documentation on the life span of membranes installed under similar conditions, but in our experience, the life span of such membranes is around 30 years when exposed to UV rays (the main source of degradation of the physico-chemical properties of membranes). The membrane that has been installed in the pit is buried under a backfill to protect it from this type of degradation, the life of the existing membrane is therefore considered to be greater than thirty years and within the design period of this expansion.

To ensure the long-term integrity of the membrane, it is installed between two geotextiles to protect it against the puncturing of the backfill of the tank farm foundation and the non-compacted backfill placed on top of it.

The backfill and geotextile constitute mechanical protection which allows the circulation of pedestrians or light vehicles for the needs of operation and maintenance. No other traffic is permitted, moreover the layout of the tank farm does not allow the circulation of heavy vehicles.

Regular visual inspections ensure that the backfill is always in place. In addition, the drainage valve is kept closed, thus the tightness of the tank farm is constantly monitored, since the operator has to keep the tank farm dry and must therefore see to open the valve after a rain or during the melting of the snow.
In summary, there is little literature relating to the lifetime of polymer membranes. UV exposure is the main cause of degradation. Since the membrane is protected by a geotextile and is covered with backfill, UV degradation is not a problem. Under these conditions, the life expectancy of the membrane is considered to be similar to the other containment solutions proposed in the regulations (section 8.62 of the Quebec Construction Code). In all cases, a lifespan of at least 30 years is considered.

MARINE PIPELINE

No work is planned on the Marine pipeline.

4. AVALANCHE RISK

No avalanche risk at the tank farm location.

5. DRINKING WATER INTAKE

The location of the tank farm in relation to the installations for the abstraction of water intended for human consumption and the grid duly completed by the promoter for the groundwater control program, are presented in Appendix 4.

6. DRAINAGE OF THE RETENTION BASIN

The disposal basin water management is designed according to the requirements of the Quebec Construction Code. The tank farm is equipped with a drainage valve, which is kept closed at all times.

Operating procedures aim to minimize the risk of damage and contamination related to the accumulation of water. Thus, the operator of the tank farm sees that there is no accumulation of water. The accumulation of water promotes the corrosion of installations such as tanks, piping and supports.

Before opening the drainage valve to discharge the accumulated water, the tank farm operator checks to see if there is iridescence on the water or to detect odors from petroleum products. If there is an iridescence on the water, the tank farm operator uses absorbent layers to recover the product on the water surface and stores the soiled layers in barrels provided for this purpose and returns them by boat to Montreal to dispose of it (See details of the drainage valve on the AUT-04 sheet).

7. WASTE MANAGEMENT

All metallic waste from the dismantling of the existing piping, as well as electrical equipment type waste, will be sent to Montreal by sea for recycling.

When cleaning the tanks, the residue consisting of residual petroleum products and possibly metal residues as well as the soiled absorbent material will be disposed of in containers provided for this purpose, of the « Wrangler WW3 » type or in 205 l barrels. These containers or barrels (in compliance with the regulations on the transport of dangerous materials) containing the residues of the tanks will be sent by maritime transport to Montreal for their disposal in authorized locations.

Only construction waste, such as packaging and concrete formwork, will be disposed of at the municipal dump after having been prepared in accordance with the current regulatory requirements and after agreement of the Municipality.

8. TEMPORARY INSTALLATIONS

Temporary installations will be necessary to ensure the distribution of petroleum products during the construction. The existing equipment will be used for these installations.

The temporary installations will comply with regulations on storage and distribution of petroleum products. Once the new pumping station is operational, the temporary installations can then be dismantled.

The operation of the temporary installations is assured by the personnel of the petroleum contractor in charge of the work, in collaboration with the operator of the tank farm, under agreement with FCNQ Petro.

9. CLEANING OF THE TANKS

The FCNQ procedure for the cleaning fuel tanks shall be followed. This cleaning procedure is detailed below.

As part of the tank farm maintenance program, the tanks are regularly cleaned. The volumes of sludge that will be extracted from the tanks will therefore be minimal. This sludge will consist of residual petroleum products and eventually of metallic waste.

Each tank will be cleaned within the petroleum tank farm, after transfer of the petroleum product to another tank. The sludge removed will be placed in containers provided for this purpose, of the “Wrangler WW3” type, or in metal barrels with a removable cover supplied by FCNQ Petro. These containers (compliant with the regulations on the transport of dangerous materials) will then be sent by maritime transport to Montreal for their disposal in authorized places.

Before cleaning, the material safety data sheets will be reviewed to comply with WHMIS. All the necessary material for fire protection must be provided and installed in such a way as to be quickly operational. Before starting the work, the tank and all necessary equipment will be grounded, and the pipes connected to the tanks will be disconnected and isolated.

An inspection of each tank will take place prior to any new filling.

During cleaning work, the contractor must have permanent supervision provided by a foreman or a competent technician as well as competent rescuers present at all times. He will also provide competent and qualified manpower to carry out the work, ensuring that they are completely familiar with the security measures, work methods and risks

relative to the cleaning of the tank when entering an enclosed space and rescue techniques.

The contractor shall provide all personal protective equipment for the health and safety of all the workers. In addition, he must ensure that the testing equipment is properly calibrated, including the gas detectors. These must allow uninterrupted monitoring of the vapors, and be equipped with an audible warning device inside the tank.

Sources of ignition are to be controlled and limited to the maximum extent. Adequate ventilation will also be implemented and access to the tanks will only be permitted when security conditions are met.

All of these measures will be reassessed at the start of each workday, as well as after each work stoppage.

Although vapor emissions during maintenance or modification work are considered as minor emissions during the life of an installation, the following measures are implemented:

Planning is done several months in advance in order to minimize the volumes to be transferred, this planning may address different elements of inventory management. For example, replenishment in the previous year may be reduced in order to minimize the volume in the year of the work, and replenishment may be carried out twice during the navigation season.

In the year of construction, the filling of customer tanks will be carried out just before the transfers.

During the transfers, cloudy and cool days will be favored, so we will avoid moments when the sun is at its zenith and hot days.

At the end of the transfers, the tank will be left to rest before being ventilated for degassing, in order to encourage the condensation of the steam.

10. CONTAMINATED SOIL

New construction does not require mass excavation. Thus, FCNQ Petro does not expect to encounter contaminated soil during the basin expansion work.

However, if contaminated soil is encountered, it will be treated in accordance with the *Guide d'intervention - Protection des sols et réhabilitation des terrains contaminés* of the

Ministère de l'Environnement et de la Lutte contre les changements climatiques or the regulations applicable at the time of the work.

11. BACKFILL

The backfill for the construction of the new basin will come from borrow pits already being exploited. FCNQ Petro has planned to purchase the fill from the Aupaluk Landholding Corporation. The latter already exploits a borrow pit and produces granular materials.

12. EMERGENCY MESURES

Two documents related to safety are available for this jobsite:

The *Safety Action Plan* identifies the general safety elements, but also the rules specific to the site. The Safety Action Plan provides safety information to stakeholders on the site. Regular meetings will be held to provide the safety rules on site. Meetings will also take place in the event of change in working conditions on site.

The *Emergency Measures Plan* deals with measures to be taken in the event of an accident and spill. This plan included the list of stakeholders. A copy of this list is presented in Appendix 1.

In addition, all the contractors working on the site commit to respecting the FCNQ Petro Prevention Program. As a result, all the employees have the responsibility, among other things, to employ safe work practices, to obey the laws and regulations and to advise the employer in the event of an accident.

On the other hand, the transfer of products will be done through existing piping. When necessary, vacuum pumps and flexible hoses with a diameter of two or three inches will be used. All the transfer operations will be carried out under constant supervision by qualified personnel. In the event that a leak occurs, absorbent material and recovery containers will be kept on the work site at all times. According to the procedures to be followed in the event of an accident, after controlling the leak and securing the area, the contractor must immediately inform FCNQ Petro, who will then make the necessary arrangements.

13. GREENHOUSE GAS EMISSIONS

The project to expand and modernize the tank farm will lead to the emission of greenhouse gases during construction, the main sources will come from;

- Shipping of materials and equipment Montreal/Aupaluk round trip;
- Transport by plane of the workforce to Aupaluk;
- Crushed gravel production;
- Generator for temporary power during the works;
- Vehicles for transporting workforce between the camp and the tank farm;
- Civil works - Mechanical excavator, loader and roller compactor;
- Mechanical work and tank cleaning – Diesel compressor for degassing, welding machine and Dieci (Forklift)
- New tank erection works – Crane, generator

14. WORK SCHEDULE

A work schedule is presented in Appendix 2. The various stages of the project are presented in it from the date of this application until the end of the tank addition work.

15. CONSULTATION AND RESOLUTIONS

A meeting with the Municipality of Aupaluk and the Landholding Corporation took place on April 19th, 2022 to present the project to them and consult them. There were present:

- David Angutinguak, Mayor – Municipality of Aupaluk
- Martin Scott, Director – Aupaluk Landholding Corporation
- Eva Grey, President – Aupaluk Landholding Corporation
- Charlie, Vice President – Aupaluk Landholding Corporation
- Lizzie Gordon – Aupaluk Landholding Corporation
- Willie – Aupaluk Landholding Corporation
- Jean-Luc Mallette, General Manager - FCNQ
- Karol Ibrahim, Project Planning and Analysis Coordinator – FCNQ

The project was very well received by all. Thus, a first verbal authorization from the municipality of Aupaluk and the Aupaluk Landholding Corporation was given to us during the meeting.

Another meeting with the executive members of the Aupaluk Cooperative took place on April 20th, 2022 in order to consult them as well.

Official permit applications, including plans and payment, were mailed on May 13th, 2022 to the Municipality of Aupaluk and the Aupaluk Landholding Corporation. Therefore, the resolutions authorizing FCNQ Petro to proceed with the expansion work will be sent to you upon receipt.

16. PLANS AND SPECIFICATIONS

The plans and specifications will be produced in accordance with the current regulations, in particular Chapter VIII of the Quebec Construction Code relating to the « Installation of petroleum equipment », and all contracts awarded under the present project will contain a specific clause for compliance with this chapter.

The plans, presented in Appendix 5, show the proposed layout of the tank farm. Construction details are also presented.

List of plans:

AU01	Localisation plan & work overview
AU02	Existing layout - dismantling
AU03	New layout
AU04	Sections and details

APPENDIX 1

FCNQ PETRO INTERVENTION ORGANIGRAM IN CASE OF ACCIDENTAL SPILL

Police: 819-491-9111
Fire: 819-491-9000

Municipality
819-491-7070

Health Services
819-491-9090

**** Canadian Coast Guard (CCG)**
1-800-363-4735

**** Gather the following information before calling CCG:**
1- Name of person calling
2- Telephone number for call-back
3- Location/address of scene of emergency
4- Name and tel of contact at scene of emergency
6- Product involved
7- Source of leak
8- Approximate quantity or rate of leak
9- Authorities informed of the emergency

Large spill over 500 litres

SCP Environnement Inc.
514-722-1451
After hours/weekends
Georges Simundic 514-712-1451
Daniel Perreault 514-705-1451

Large spill affecting aquatic environment

ECRC-SIMEC
613-930-9690
Contract #: E003-00048

EVENT (ALL SPILLS)

Sealift Petroleum Technician
819-491-7139

FCNQ Petro Environmental Compliance Coordinator
1-800-363-7610 or 7611
After hours/weekends
1-877-705-7798

1- Advise authorities and concerned contacts
2- Secure / Evacuate zone
3- Ensure personnel safety
4- Contain the Spill (if possible)
5- Take charge of the situation
6- Begin Clean up operations
7- Write up an incident report

Petronav
Chris King 514-217-6611
Catherine Huneault 514-809-7207

QC. Min. Env (MELCC)
1-866-694-5454

Environment and Climate Change Canada (ECCC)
1-866-283-2333

Air Inuit Airport
819-491-7010

KRG - Environment
819-964-2961

KRG – Civil Protection
819-964-2961

KRG – Transport
819-964-2961
613-980-2092 (Puvirnituq satellite phone)
819-964-3434 #154 (24/7 pager)

Aupaluk Radio Station
Tel: 819-491-7535
Fax: 819-491-7035

AUPALUK TANK FARM
Oil Pollution Emergency Plan

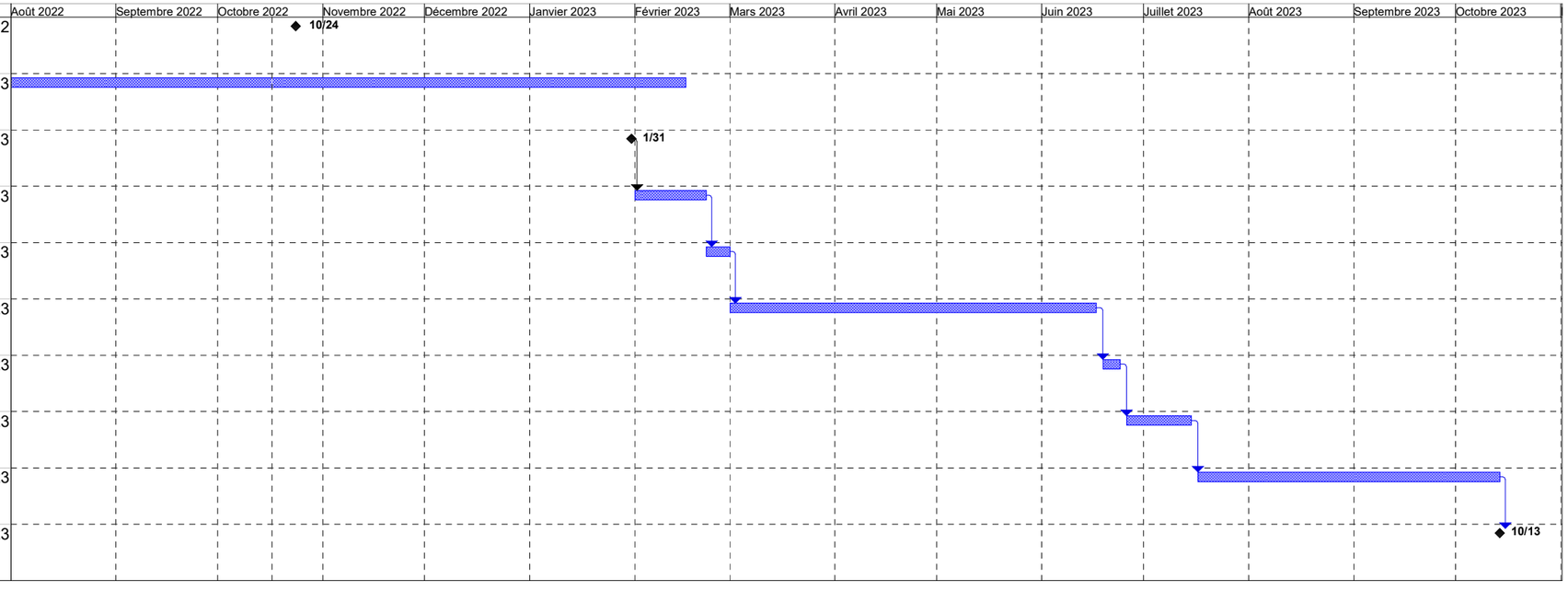
April 2021

APPENDIX 2

PROJECT SCHEDULE

FCNQ Petro
Aupaluk Petroleum Tank Farm - Expansion and Modernization of the tank farm

N°	Nom de la tâche	Début	Fin
1	Application for exemption	Lun 10/24/22	Lun 10/24/22
2	Realization of final plans and specifications	Lun 8/1/22	Mer 2/15/23
3	Permission	Mar 1/31/23	Mar 1/31/23
4	Bid Period	Mer 2/1/23	Mar 2/21/23
5	Granting of contracts	Mer 2/22/23	Mar 2/28/23
6	Purchase, preparation and delivery of equipment and materials to the port	Mer 3/1/23	Ven 6/16/23
7	Loading goods	Lun 6/19/23	Ven 6/23/23
8	Maritime transport of equipment and materials	Lun 6/26/23	Ven 7/14/23
9	Start of work	Lun 7/17/23	Ven 10/13/23
10	End of the works	Ven 10/13/23	Ven 10/13/23



APPENDIX 3

RESOLUTIONS

APPENDIX 4

LOCALISATION PLAN FOR THE DRINKING WATER INTAKE AND GROUND WATER CONTROL GRID

Grille à compléter par l'entreprise pour le programme de contrôle des eaux souterraines

Partie 1 : Information de base

1.1 Identification de l'établissement (à remplir dans tous les cas)

Nom de l'entreprise :Fédération des Coopératives du Nouveau-Québec (FCNQ)	
Adresse de l'établissement : dépôt de Aupaluk	Municipalité ou ville : Aupaluk
	Code postal
	Région administrative :
Téléphone : 514 457 9371	Télécopieur
Courrier électronique	

1.2 Localisation du terrain ou du bâtiment

Projection	NAD	Coordonnées	X (Latitude)	Y (Longitude)
UTM	83	Degré :		
MTM	27	Minute :		
Autre :		Seconde :		

Partie 2 : Secteur d'activité, installation de captage d'eau de surface ou d'eau souterraine et équipement à risque

Secteur d'activité de l,'entreprise (code SCIAN) :			
Description sommaire de l'activité : dépôt pétrolier			
Est-ce que l'activité est visée à l'annexe IV du RPRT ?	(oui)	non	ne sait pas
Est-ce qu'il y a une installation de captage d'eau de surface ou d'eau souterraine destinée à la consommation humaine à moins de 1 km	oui	(non)	ne sait pas
S'il y a une prise d'eau à moins de 1 km de u terrain de votre entreprise, est-elle située en aval hydraulique du terrain de l'entreprise?	oui	(non)	ne sait pas
Notre entreprise a fait réaliser une étude hydrogéologique signée par un ingénieur ou un géologue membre d'un ordre régi par le Code des professions démontrant que l'activité de l'entreprise n'est aucunement susceptible d'altérer la qualité des eaux d'un équipement de captage situé à moins de 1 km en aval hydraulique du terrain.	oui	(non)	ne sait pas
Est-ce qu'il y a sur le terrain de l'entreprise des équipements à risque qui peuvent contaminer une prise d'eau en aval hydraulique?	oui	(non)	ne sait pas

Partie 3 : Commentaires

Prise d'eau est située à l'autre extrémité du village à plus de 1 km en amont du dépôt pétrolier
La localisation de la prise d'eau part rapport au dépôt a été vérifiée par les professionnels de SCP Environnement inc.

Partie 4 : Identification du signataire

Nom : Jean-Luc Malette	Fonction : DIRECTEUR
Signature : Jean-Luc Malette	Date : 18 AVRIL '07

HOPES ADVANCE BAY

Pointe Breakwater

Pointe Merganser

Pointe Range

Nipirqanaup Paangani

Colline Apex

Dépotoir

DÉPÔT PÉTROLIER

Aupaluk

Terrain d'aviation Aupaluk

Colline Baptiste

PRISE D'EAU POTABLE

Funnel Cove

QARQAALUIT

IVLERE AU CHIEN

ROUGE

Aandnniavik

Chute Qurlutuffallak

Aarsutiaup

RUISSEAU VOLTZ

Collines Qingaujaup

Lac Nipirqanaup

Lac Nipirqanaq

AUPALUK

QUÉBEC TERRITOIRES DU NORD-OUEST
QUEBEC NORTHWEST TERRITORIES

Échelle 1:50 000 Scale

ÉCHELLE DE CONVERSION DES ALTITUDES

Mètres 30 20 10 0 50 100 150 200 250 300 Metres

Pieds 100 50 0 100 200 300 400 500 600 700 800 900 1000 Feet

ÉQUIDISTANCE DES COURBES 50 PIEDS
Altitudes en pieds

CONVERSION SCALE FOR ELEVATIONS

CONTOUR INTERVAL 50 FEET
Elevations in Feet above Mean Sea Level

Roads:

loose or stabilized surface, all weather .. 2 voies ou plus / 2 lanes or more — moins de 2 voies / less than 2 lanes

loose surface, dry weather .....

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APPENDIX 5

PLANS

LÉGENDE

EXISTANT		NOUVEAU	EXISTANT		NOUVEAU
270	Courbe de niveau / Contour line	270		Poteau, poteau avec hauban / Wood pole, Guy wired wook pole	
	Ligne des hautes eaux / High water mark			Poteau de bois avec luminaire / Wood pole with light	
	Roc apparent / Apparent rock			Borne	
	Haut de talus / Top of embankment		R.N. 100.000	Repère géodésique et altitude / Benchmark, elevation	
	Bas de talus / Bottom of embankment		XX.XX	Niveau / Grade	XX.XX
	Gravier ou accotement / Gravel or shoulder			Grosse pierre (3m³ @ 8m³) / Boulder (3m³ to 8m³)	
	Limite de propriété / Property Limit			Pente / Slope	
	Bâtiment / Building		EXISTANT	Texte / Text	PROPOSÉ / PROPOSE
X X X	Clôture / Fence	X X X		Puits d'observation / Observation sump	
	Fossé / Ditch				
	Ponceau / Culvert				
G G	Pipeline marin / Marine pipe line	G G			
	Câble électrique aérien / Air electric cable				

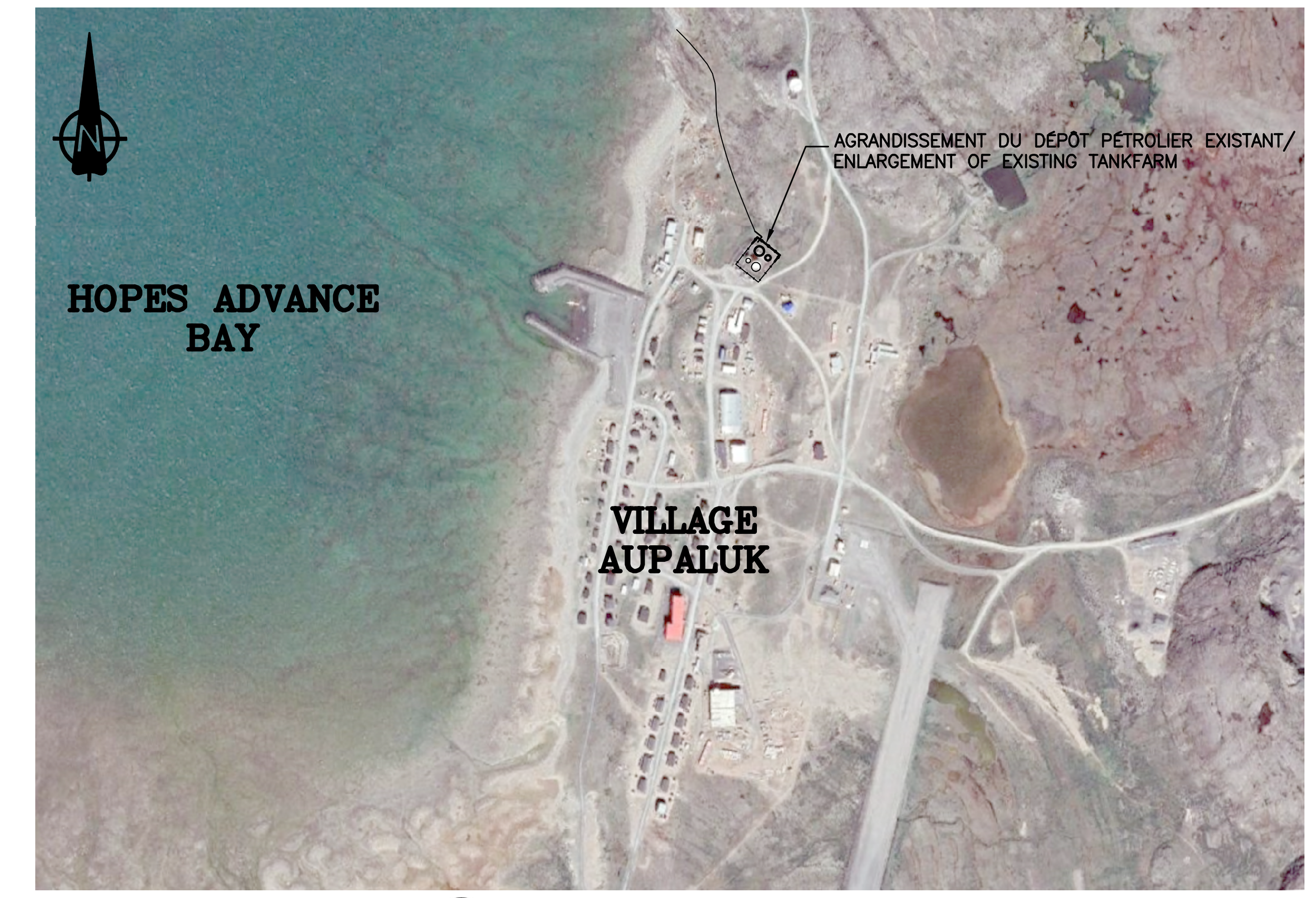
S.I.C. = sauf indication contraire

NOTES GÉNÉRALES

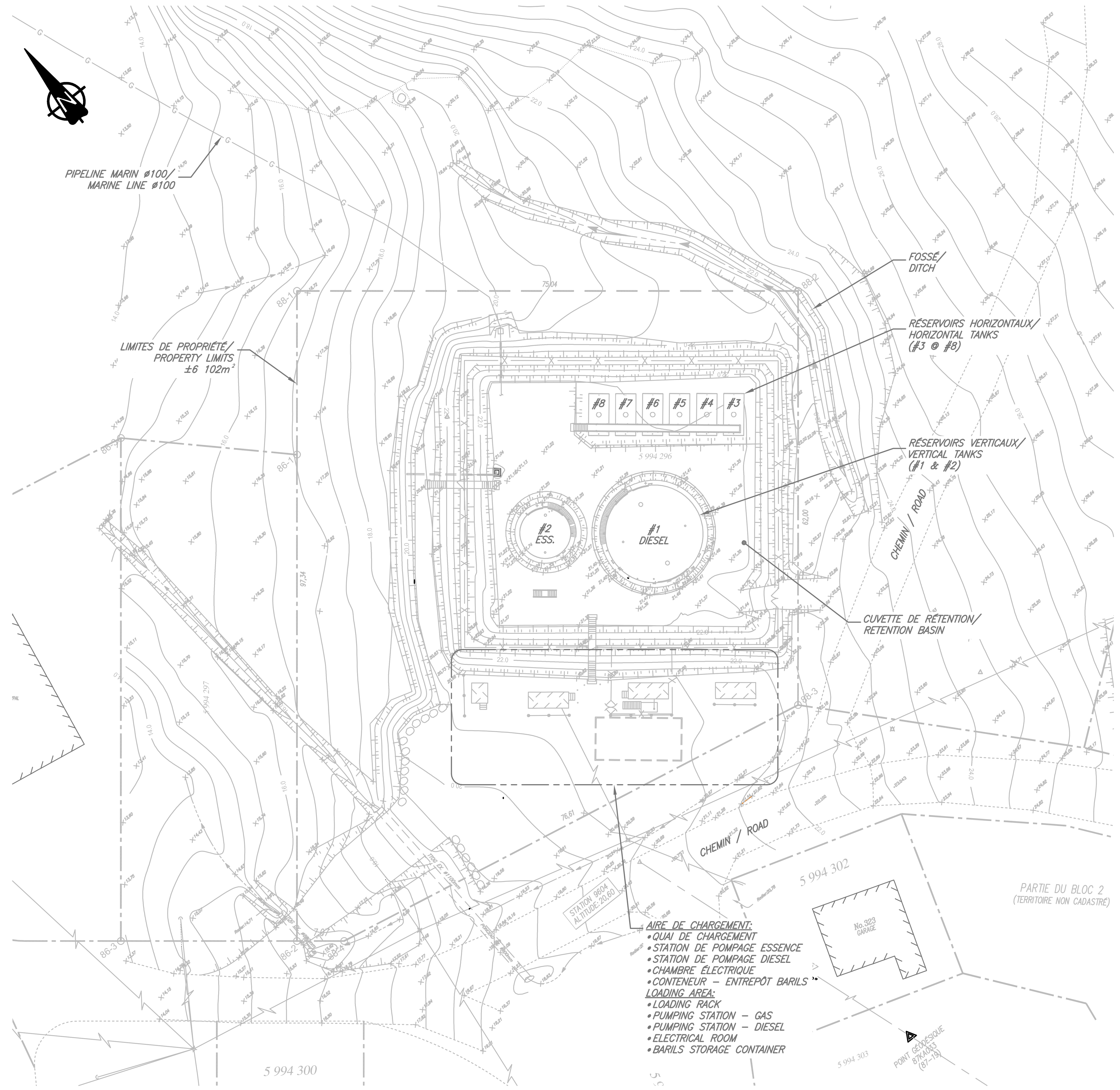
1. TOUTES LES INSTALLATIONS ET TOUS LES ÉQUIPEMENTS EXISTANTS DEVRONT ÊTRE PROTÉGÉS ADÉQUATEMENT TOUT AU LONG DES TRAVAUX. / ALL EXISTING FACILITIES AND EQUIPMENTS MUST BE ADEQUATELY PROTECT THROUGHOUT THE WORK.
2. TOUS LES ÉQUIPEMENTS INUTILISÉS DEVRONT ÊTRE REMIS AU PROPRIÉTAIRE./ ALL UNUSED EQUIPMENTS MUST BE DELIVERED TO THE OWNER.
3. TOUTES LES DIMENSIONS ET ÉLÉVATIONS DEVRONT ÊTRE VÉRIFIÉES AVANT LE DÉBUT DES TRAVAUX. AVISER L'INGÉNIEUR ET/OU LE PROPRIÉTAIRE DE TOUTES ERREURS OU OMISSIONS. / ALL DIMENSIONS AND ÉLÉVATIONS ARE TO BE CHECKED BEFORE THE START OF WORK. NOTIFY THE ENGINEER AND/OR OWNER OF ANY ERRORS OR OF OMISSIONS.
4. TOUS LES TRAVAUX DEVRONT ÊTRE CONFORMES AU CODE DE CONSTRUCTION DU QUÉBEC ET AUX NORMES API 650 & 653 DERNIÈRES ÉDITIONS. / ALL WORKS WILL HAVE TO BE IN CONFORMITY WITH QUÉBEC CONSTRUCTION CODE AND STANDARDS API 650 & 653 LAST EDITIONS.
5. TOUTES LES NOUVELLES INSTALLATIONS DEVRONT ÊTRE À L'INTÉRIEUR DES LIMITES DE PROPRIÉTÉ. / ALL NEW INSTALLATIONS WILL BE INSIDE THE PROPERTY LIMITS.

SOURCES

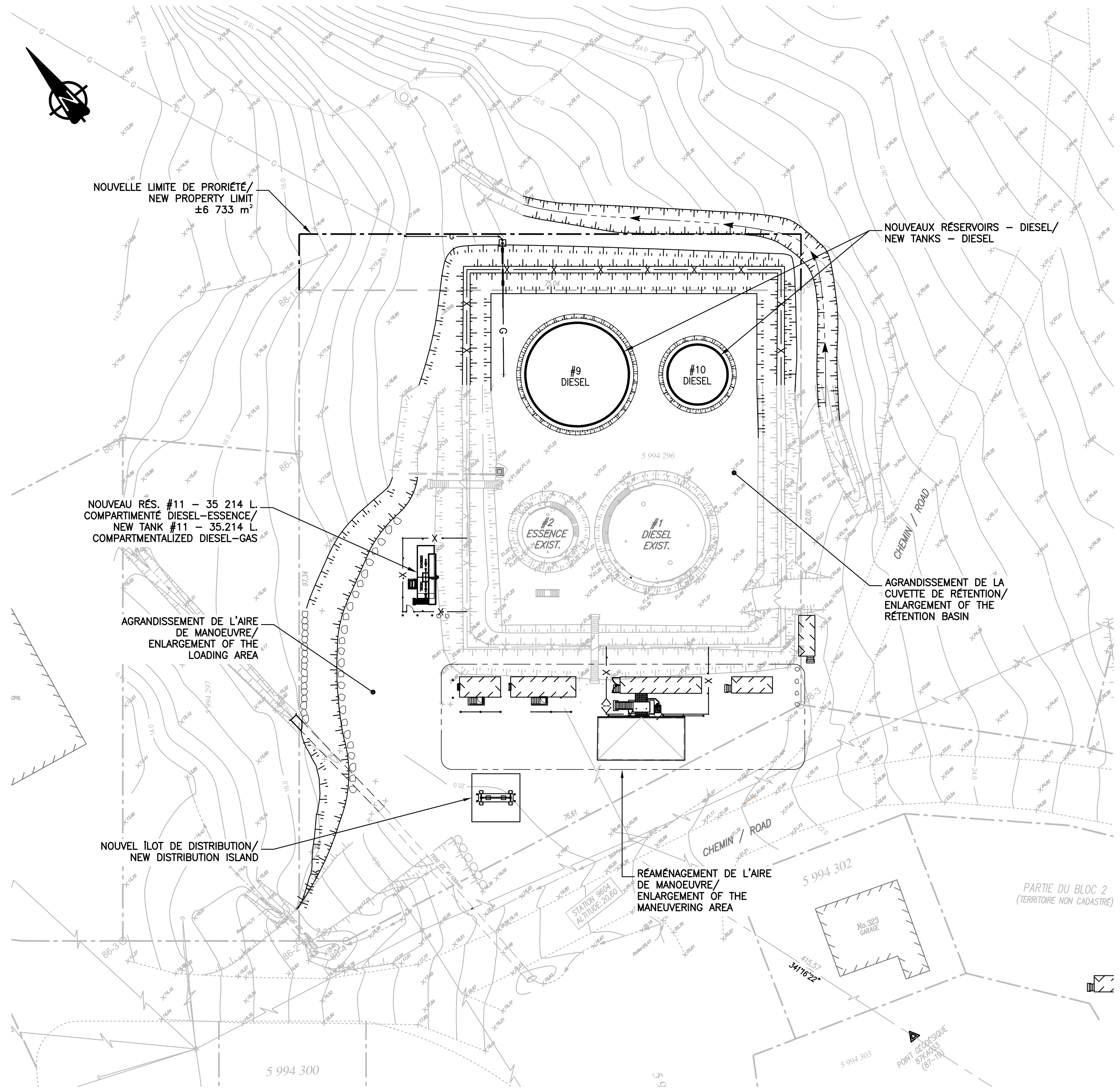
1. Modernisation du dépôt pétrolier Aupaluk, plans tel que construit et photos 2007 par Groupe Conseil Genivar.
2. Plan topographique # N-960 par CR-GH arpenteurs-géomètres, 23 novembre 2020 et photos



1 PLAN DE LOCALISATION
1:10 000



AMÉNAGEMENT EXISTANT



NOUVEL AMÉNAGEMENT

2 PORTÉE DES TRAVAUX
1:500

NE PAS UTILISER POUR CONSTRUCTION

RÉV.	ÉMIS.	DESCRIPTION	DATE	DESS.	VÉRIF.
-	-	-	-	-	-
.	A	POUR DEMANDE D'AUTORISATION / FOR AUTHORIZATION	2022.03.22	GC	ML

CLIENT

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FCNQ PETRO
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SACRE-DAVEY.COM

CONÇU	DATE	VÉRIFIÉ	DATE
M. LAPIERRE	2021.08.12		
DESSINÉ G. CORNUT	DATE 2021.08.12	ING. DE PROJET D. THIBODEAU, ing.	DATE 2021.08.12
VÉRIFIÉ M. LAPIERRE	DATE 2021.08.12	ECHELLE INDIQUÉE	FORMAT D

PROJET
VILLAGE AUPALUK

AGRANDISSEMENT / MODERNISATION DU DÉPÔT PÉTROLIER / ENLARGEMENT / MODERNIZATION OF THE TANK FARM

TITRE
CIVIL
PLAN DE LOCALISATION & PORTÉE DES TRAVAUX, LÉGENDE, NOTES GÉNÉRALES & SOURCES / LOCATION PLAN & SCOPE OF WORK, LEGEND, GENERAL NOTES & SOURCES

DESSIN AU001 — RÉV. 0

arch-D (36"x24")

SECTION DU PIPELINE À DÉMANTELER/
SECTION OF MARINE LINE TO BE DISMANTLE

47± c/c DES DIGUES

LIMITES DE PROPRIÉTÉ EXISTANTES/
EXISTING PROPERTY LIMITS

SECTION DE DIGUE À DÉMANTELER/
SECTION OF THE DIKE TO BE DISMANTLED

BUTÉE DE BÉTON À RÉUTILISER/
CONCRETE BLOC TO BE REUSED

RÉSERVOIRS #3 ⇔ #8
À DÉMANTELER/
TANKS #3 ⇔ #8
TO BE DISMANTLED

PASSERELLE EXISTANTE
À DÉMANTELER/
FOOTBRIDGE TO BE DISMANTLED

℄ DIGUE

#6 45° 400L
#7 45° 400L
#5 45° 400L
#4 45° 400L
#3 45° 400L

5 994 296

PASSERELLE EXISTANTE/
EXISTING FOOTBRIDGE

DRAINAGE EXISTANT DE LA CUVETTE/
EXISTING DRAIN

RÉS. #2 EX.
ESSENCE
Ø7.620 x 7.315 H.
333 500 L.

RÉS. #1 EX.
DIESEL
Ø14.630 x 9.750 H.
1 591 000 L.

PASSERELLE AU-DESSUS DES CONDUITES/ EXISTING FOOTBRIDGE

DIGUES EXISTANTES 1,55m± HAUT, PENTES 2 HOR. & 1 VERT.
EXISTING DIKES 1,55m± HIGH, SLOPES 2 HOR. & 1 VERT.

PORTES D'ACCÈS EXISTANTE 2,4m D'OUVERTURE/
EXISTING ACCESS DOOR 2,4m OPENING

CHEMIN / ROAD

43,00± c/c DIGUES EXISTANTES

BOLLARDS À CONSERVER/
BOLLARDS TO BE CONSERVED

ST. POMPAGE ESSENCE

CHAMBRE ÉLECTRIQUE

STATION DE POMPAGE

QUAI

CONTENEUR À BARILS

CONTENEUR À BARILS À RELOCALISER/
BARILS CONTAINER TO BE RELOCATED
VOIR/SEE NOTES 1 & 2

PARE-CHOCS À DÉMANTELER/
BUMPER TO BE DISMANTLED (TYP.)

ST. DISTRIBUTRICE D'ESSENCE À REMETTRE AU PROPRIÉTAIRE/
GAS DISPENSER STATION TO BE DELIVERED TO THE OWNER

CHAMBRE ÉLECTRIQUE À DÉMANTELER & CONTENEUR 20' À RELOCALISER/
ELECTRICAL ROOM TO BE DISMANTLED & CONTAINER 20' TO BE RELOCATED
VOIR/SEE NOTES 1 & 2

ST. DE POMPAGE À DÉMANTELER & CONTENEUR 20' À RELOCALISER/
PUMPING STATION TO BE DISMANTLED & 20 'CONTAINER TO BE RELOCATED
VOIR/SEE NOTES 1 & 2

QUAI DE CHARGEMENT & CLÔTURE À DÉMANTELER/
LOADING DOCK & FENCE TO BE DISMANTLE

TABLIER DE BÉTON SOUTERRAIN À DÉTERRER & À CONSERVER/
UNDERGROUND CONCRETE APRON TO BE DETERRORED & TO BE CONSERVED

AIRE DE MANOEUVRE

TTOC Ex. ø1100mm

STATION 9604
ALTITUDE: 20.60

5 994 297

5 994 302

PARTIE

No.323

Radier:20.78

NE PAS UTILISER POUR CONSTRUCTION

LÉGENDE-CIVIL / NOTES GÉNÉRALES & SOURCES

VOIR DESSIN C–001

LÉGENDE

EXISTANT À CONSERVER

EXISTANT À DÉMANTELER

NOTE

1. LES CONTENEURS DEVRONT ÊTRE RELOCALISÉS SELON LES DIRECTIVES DU PROPRIÉTAIRE / CONTAINERS MUST BE RELOCATED ACCORDING TO OWNER'S DIRECTIONS.
2. RÉUTILISER LES BASES DE BÉTON EN BON ÉTAT. / REUSE CONCRETE BASES IN GOOD CONDITION.

INSTITUT DES INGÉNIEURS DU QUÉBEC
DENIS THIBODEAU
39025
QUÉBEC
2022-10-25

RÉV.	ÉMIS.	DESCRIPTION	DATE	DESS.	VÉRIF.
	A	POUR DEMANDE D'AUTORISATION / FOR AUTHORIZATION	2022.03.22	GC	ML

CLIENT

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VÉRIFIÉ M. LAPIERRE	DATE 2021.08.12	ÉCHELLE 1:200	FORMAT D

PROJET

VILLAGE AUPALUK

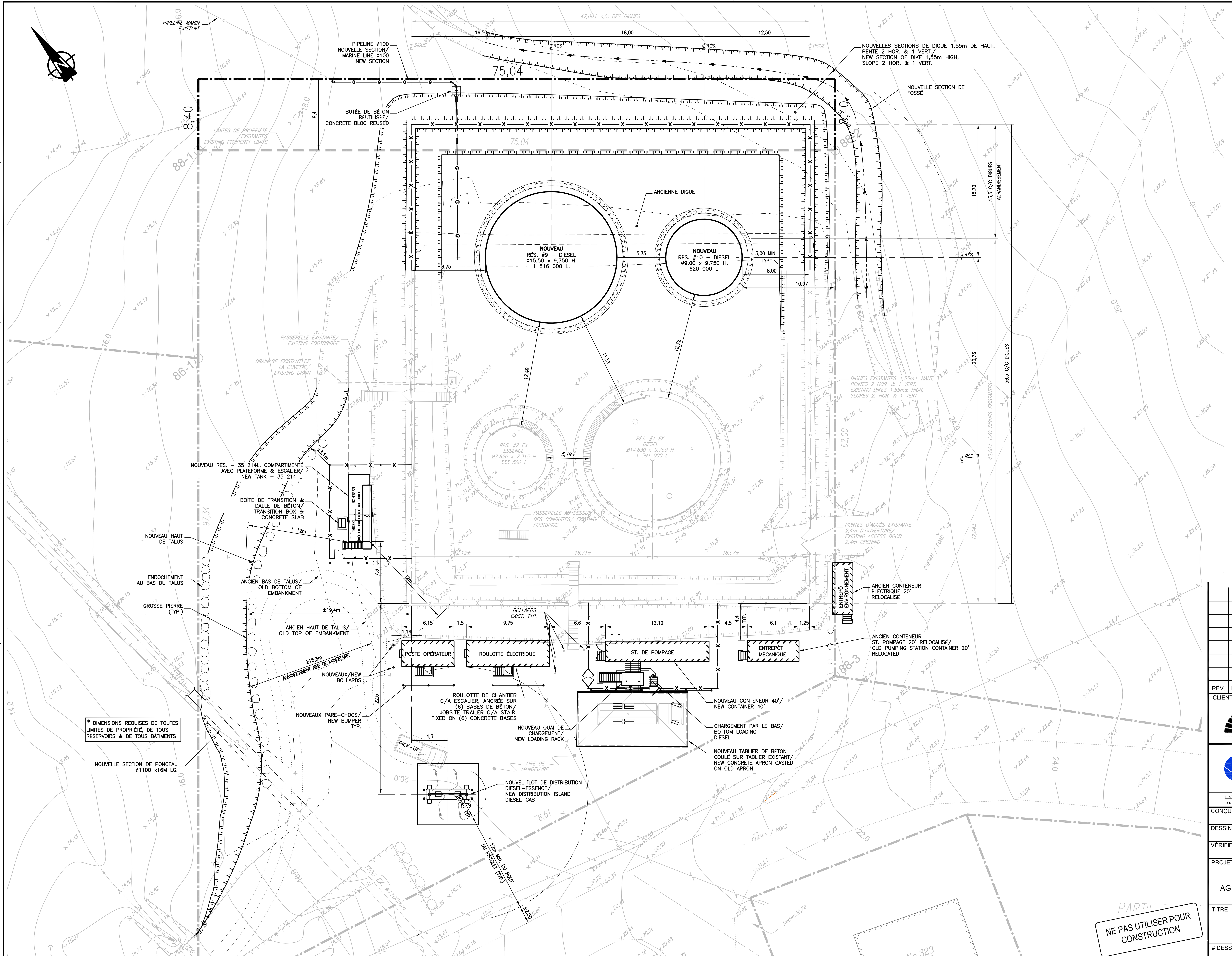
AGRANDISSEMENT / MODERNISATION DU DÉPÔT PÉTROLIER / ENLARGEMENT / MODERNIZATION OF THE TANK FARM

TITRE

CIVIL
AMÉNAGEMENT EXISTANT / EXISTING LAYOUT

# DESSIN	RÉV.
AU002	0

arch-D (36"x24")



PIPELINE MARIN EXISTANT
PIPELINE ø100 NOUVELLE SECTION/ MARINE LINE ø100 NEW SECTION
BUTÉE DE BÉTON RÉUTILISÉE/ CONCRETE BLOC REUSED
NOUVELLES SECTIONS DE DIGUE 1,55m DE HAUT, PENTE 2 HOR. & 1 VERT./ NEW SECTION OF DIKE 1,55m HIGH, SLOPE 2 HOR. & 1 VERT.
NOUVELLE SECTION DE FOSSÉ
ANCIENNE DIGUE
NOUVEAU RÉS. #9 – DIESEL ø15,50 x 9,750 H. 1 816 000 L.
NOUVEAU RÉS. #10 – DIESEL ø9,00 x 9,750 H. 620 000 L.
RÉS. #2 EX. ESSENCE ø7,620 x 7,315 H. 333 500 L.
RÉS. #1 EX. DIESEL ø14,630 x 9,750 H. 1 591 000 L.
PASSERELLE EXISTANTE/ EXISTING FOOTBRIDGE
DRAINAGE EXISTANT DE LA CUVETTE/ EXISTING DRAIN
LIMITES DE PROPRIÉTÉ EXISTANTES/ EXISTING PROPERTY LIMITS
DIGUES EXISTANTES 1,55m± HAUT, PENTES 2 HOR. & 1 VERT./ EXISTING DIKES 1,55m± HIGH, SLOPES 2. HOR. & 1 VERT.
PORTES D'ACCÈS EXISTANTE 2,4m D'OUVERTURE/ EXISTING ACCESS DOOR 2,4m OPENING
PASSERELLE AU-DESSUS DES CONDUITES/ EXISTING FOOTBRIGE
NOUVEAU RÉS. – 35 214L COMPARTIMENTÉ AVEC PLATEFORME & ESCALIER/ NEW TANK – 35 214 L.
BOÎTE DE TRANSITION & DALLE DE BÉTON/ TRANSITION BOX & CONCRETE SLAB
NOUVEAU HAUT DE TALUS
ENROCHEMENT AU BAS DU TALUS
GROSSE PIERRE (TYP.)
ANCIEN BAS DE TALUS/ OLD BOTTOM OF EMBANKMENT
ANCIEN HAUT DE TALUS/ OLD TOP OF EMBANKMENT
AGRANDISSEMENT AIRE DE MANOEUVRE
NOUVEAUX/NEW BOLLARDS
BOLLARDS EXIST. TYP.
POSTE OPÉRATEUR
ROULOTTE ÉLECTRIQUE
ST. DE POMPAGE
ENTREPÔT MÉCANIQUE
ENTREPÔT ENVIRONNEMENT
ANCIEN CONTENEUR ÉLECTRIQUE 20' RELOCALISÉ
ANCIEN CONTENEUR ST. POMPAGE 20' RELOCALISÉ/ OLD PUMPING STATION CONTAINER 20' RELOCATED
ROULOTTE DE CHANTIER C/A ESCALIER, ANCRÉE SUR (6) BASES DE BÉTON/ JOBSITE TRAILER C/A STAIR, FIXED ON (6) CONCRETE BASES
NOUVEAUX PARE-CHOCS/ NEW BUMPER TYP.
NOUVEAU QUAI DE CHARGEMENT/ NEW LOADING RACK
NOUVEAU CONTENEUR 40'/ NEW CONTAINER 40'
CHARGEMENT PAR LE BAS/ BOTTOM LOADING DIESEL
NOUVEAU TABLIER DE BÉTON COULÉ SUR TABLIER EXISTANT/ NEW CONCRETE APRON CASTED ON OLD APRON
PICK-UP
AIRE DE MANOEUVRE
NOUVEL ÎLOT DE DISTRIBUTION DIESEL-ESSENCE/ NEW DISTRIBUTION ISLAND DIESEL-GAS
12m MIN. DU BOUT DU PISTOLET (TYP.)
* DIMENSIONS REQUISES DE TOUTES LIMITES DE PROPRIÉTÉ, DE TOUS RÉSERVOIRS & DE TOUS BÂTIMENTS
NOUVELLE SECTION DE PONCEAU ø1100 x16M LG.
CHEMIN / ROAD
13,5 C/C DIGUES AGRANDISSEMENT
56,5 C/C DIGUES
47,00± c/c DES DIGUES
NE PAS UTILISER POUR CONSTRUCTION

LÉGENDE-CIVIL / NOTES GÉNÉRALES & SOURCES

VOIR DESSIN AU001

LÉGENDE

- EXISTANT
- NOUVEAU
- DÉMANTELÉ

NOTES

1. LA GÉOMEMBRANE ET LES GÉOTEXTILES DEVRONT SUIVRE LES MÊMES PENTES QUE LES PENTES MONTRÉES AU PLAN
2. SUITE AUX TRAVAUX, LES LIMITES DE PROPRIÉTÉ EXACTES SERONT IMPLANTÉES PAR UN ARPENTEUR.

DENIS THIBODEAU 39025 QUÉBEC 2022-03-25

RÉV.	ÉMIS.	DESCRIPTION	DATE	DESS.	VÉRIF.
	A	POUR DEMANDE D'AUTORISATION / FOR AUTHORIZATION	2022.03.22	GC	ML

CLIENT

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VÉRIFIÉ: M. LAPIERRE	DATE: 2021.08.12	ÉCHELLE: 1:200	FORMAT: D

PROJET

VILLAGE AUPALUK

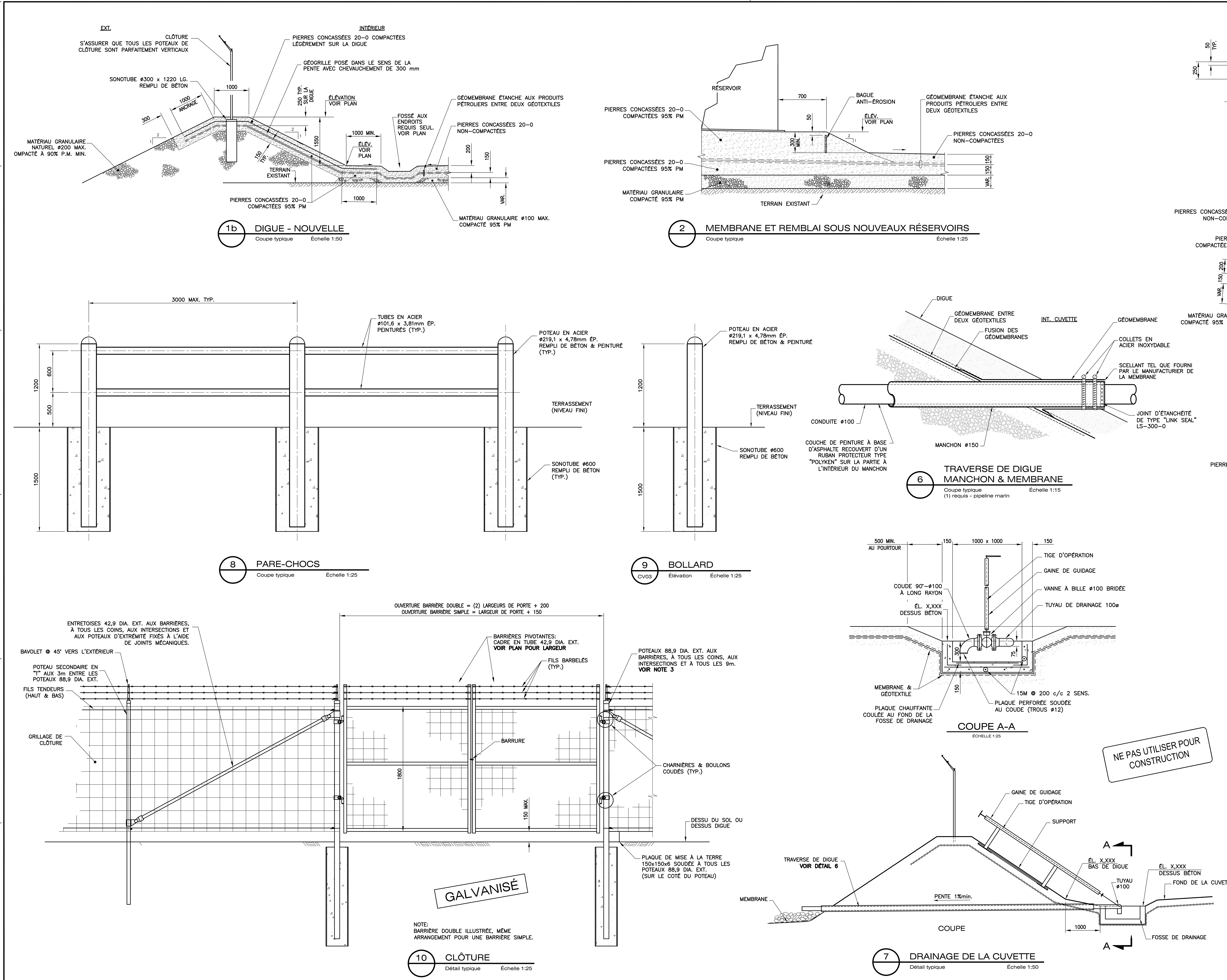
AGRANDISSEMENT / MODERNISATION DU DÉPÔT PÉTROLIER / ENLARGEMENT / MODERNIZATION OF THE TANK FARM

TITRE

CIVIL
NOUVEL AMÉNAGEMENT / NEW LAYOUT

DESSIN: AU003 — RÉV. 0

arch-D (36"x24")


EXT.
INTÉRIEUR
CLÔTURE
S'ASSURER QUE TOUS LES POTEAUX DE CLÔTURE SONT PARFAITEMENT VERTICAUX
PIERRES CONCASSÉES 20-0 COMPACTÉES LÉGÈREMENT SUR LA DIGUE
GÉOGRILLE POSÉ DANS LE SENS DE LA PENTE AVEC CHEVAUCHEMENT DE 300 mm
SONOTUBE ø300 x 1220 LG. REMPLI DE BÉTON
ÉLÉVATION VOIR PLAN
FOSSÉ AUX ENDROITS REQUIS SEUL. VOIR PLAN
GÉOMEMBRANE ÉTANCHE AUX PRODUITS PÉTROLIERS ENTRE DEUX GÉOTEXTILES
PIERRES CONCASSÉES 20-0 NON-COMPACTÉES
MATÉRIAU GRANULAIRE NATUREL ø200 MAX. COMPACTÉ À 90% P.M. MIN.
TERRAIN EXISTANT
PIERRES CONCASSÉES 20-0 COMPACTÉES 95% PM
MATÉRIAU GRANULAIRE ø100 MAX. COMPACTÉ 95% PM
1b DIGUE - NOUVELLE
Coupe typique Échelle 1:50
RÉSERVOIR
PIERRES CONCASSÉES 20-0 COMPACTÉES 95% PM
BAGUE ANTI-ÉROSION
ÉLÉV. VOIR PLAN
GÉOMEMBRANE ÉTANCHE AUX PRODUITS PÉTROLIERS ENTRE DEUX GÉOTEXTILES
PIERRES CONCASSÉES 20-0 NON-COMPACTÉES
MATÉRIAU GRANULAIRE COMPACTÉ 95% PM
TERRAIN EXISTANT
2 MEMBRANE ET REMBLAI SOUS NOUVEAUX RÉSERVOIRS
Coupe typique Échelle 1:25
PLAQUE D'ACIER 250mm x 2500mm LG. CALIBRE 14, BOULONNÉE À CHAQUE BOUT AUTOUR DE LA BASE DES RÉSERVOIRS
3 BAGUE ANTI-ÉROSION
Élévation Échelle 1:25
NOTE: LE HAUT DES FOSSÉS DOIVENT ÊTRE À UNE DISTANCE HORIZONTAL DE 1000mm MINIMUM DU BAS DE LA DIGUE. VOIR COUPE TYPIQUE NOUVELLE DIGUE
PIERRES CONCASSÉES 20-0 NON-COMPACTÉES
PIERRE 20-0 COMPACTÉE 95% PM
MATÉRIAU GRANULAIRE COMPACTÉ 95% PM MIN.
TERRAIN EXISTANT
GÉOMEMBRANE ENTRE DEUX GÉOTEXTILES
4 FOSSÉ À L'INTÉRIEUR DE LA CUVETTE
Coupe typique Échelle 1:25
PIERRES CONCASSÉES 20-0
5 FOSSÉ À L'EXTÉRIEUR DE LA CUVETTE
Coupe typique Échelle 1:25
3000 MAX. TYP.
TUBES EN ACIER ø101,6 x 3,81mm ÉP. PEINTURÉS (TYP.)
POTEAU EN ACIER ø219,1 x 4,78mm ÉP. REMPLI DE BÉTON & PEINTURÉ (TYP.)
TERRASSEMENT (NIVEAU FINI)
SONOTUBE ø600 REMPLI DE BÉTON (TYP.)
8 PARE-CHOCS
Coupe typique Échelle 1:25
POTEAU EN ACIER ø219,1 x 4,78mm ÉP. REMPLI DE BÉTON & PEINTURÉ
TERRASSEMENT (NIVEAU FINI)
SONOTUBE ø600 REMPLI DE BÉTON
9 BOLLARD CV03
Élévation Échelle 1:25
DIGUE
GÉOMEMBRANE ENTRE DEUX GÉOTEXTILES
FUSION DES GÉOMEMBRANES
INT. CUVETTE
GÉOMEMBRANE
COLLETS EN ACIER INOXYDABLE
SCELLANT TEL QUE FOURNI PAR LE MANUFACTURIER DE LA MEMBRANE
JOINT D'ÉTANCHÉITÉ DE TYPE "LINK SEAL" LS-300-0
CONDUITE ø100
COUCHE DE PEINTURE À BASE D'ASPHALTE RECOUVERT D'UN RUBAN PROTECTEUR TYPE "POLYKEN" SUR LA PARTIE À L'INTÉRIEUR DU MANCHON
MANCHON ø150
6 TRAVERSE DE DIGUE MANCHON & MEMBRANE
Coupe typique Échelle 1:15
(1) requis - pipeline marin
500 MIN. AU POURTOUR
TIGE D'OPÉRATION
GAINE DE GUIDAGE
COUDE 90°-ø100 À LONG RAYON
VANNE À BILLE ø100 BRIDÉE
ÉL. X,XXX DESSUS BÉTON
TUYAU DE DRAINAGE 100ø
MEMBRANE & GÉOTEXTILE
15M @ 200 c/c 2 SENS.
PLAQUE CHAUFFANTE COULÉE AU FOND DE LA FOSSE DE DRAINAGE
PLAQUE PERFORÉE SOUDÉE AU COUDE (TROUS ø12)
COUPE A-A
ÉCHELLE 1:25
NE PAS UTILISER POUR CONSTRUCTION
OUVERTURE BARRIÈRE DOUBLE = (2) LARGEURS DE PORTE + 200
OUVERTURE BARRIÈRE SIMPLE = LARGEUR DE PORTE + 150
ENTRETOISES 42,9 DIA. EXT. AUX BARRIÈRES, À TOUS LES COINS, AUX INTERSECTIONS ET AUX POTEAUX D'EXTRÉMITÉ FIXÉS À L'AIDE DE JOINTS MÉCANIQUES.
BAVOLET @ 45° VERS L'EXTÉRIEUR
POTEAU SECONDAIRE EN "T" AUX 3m ENTRE LES POTEAUX 88,9 DIA. EXT.
FILS TENDEURS (HAUT & BAS)
GRILLAGE DE CLÔTURE
BARRIÈRES PIVOTANTES: CADRE EN TUBE 42,9 DIA. EXT. VOIR PLAN POUR LARGEUR
FILS BARBELÉS (TYP.)
POTEAUX 88,9 DIA. EXT. AUX BARRIÈRES, À TOUS LES COINS, AUX INTERSECTIONS ET À TOUS LES 9m. VOIR NOTE 3
BARRURE
CHARNIÈRES & BOULONS COUDÉS (TYP.)
DESSU DU SOL OU DESSUS DIGUE
PLAQUE DE MISE À LA TERRE 150x150x6 SOUDÉE À TOUS LES POTEAUX 88,9 DIA. EXT. (SUR LE COTÉ DU POTEAU)
GALVANISÉ
NOTE: BARRIÈRE DOUBLE ILLUSTRÉE, MÊME ARRANGEMENT POUR UNE BARRIÈRE SIMPLE.
10 CLÔTURE
Détail typique Échelle 1:25
GAINE DE GUIDAGE
TIGE D'OPÉRATION
SUPPORT
TRAVERSE DE DIGUE VOIR DÉTAIL 6
MEMBRANE
PENTE 1%min.
ÉL. X,XXX BAS DE DIGUE
TUYAU ø100
ÉL. X,XXX DESSUS BÉTON
FOND DE LA CUVETTE
FOSSE DE DRAINAGE
COUPE
7 DRAINAGE DE LA CUVETTE
Détail typique Échelle 1:50

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PROJET
VILLAGE AUPALUK
AGRANDISSEMENT / MODERNISATION DU DÉPÔT PÉTROLIER / ENLARGEMENT / MODERNIZATION OF THE TANK FARM

TITRE
CIVIL
DÉTAILS / DETAILS

DESSIN: AU004 — RÉV. 0

arch-D (36"x24")