Environment and Climate Change Canada
Environnement et Changement climatique Canada

Water License 8BC-EUR2131 Notification of Modification

February 1, 2022

1871 | 2021
1971 | 2021

Canada

Re: Water Licence 8BC-EUR2131. Notification of Modification - Eureka High Arctic Weather Station. Water and Sewage Treatment Infrastructure Upgrades, Temporary Storage of Contaminated Soils, Fuel Storage Tank Systems Inspections and Repairs and Secondary Containment Area for Fuels and Hazardous Materials, Program of Works, Grey Water Exfiltration Trench, and Blacktop Quarry

February 1, 2022

Hi Assol and Richard,

Environment and Climate Change Canada (ECCC) will be carrying out several modifications (i.e., an alteration to the physical works at the Eureka High Arctic Weather Station (HAWS) that introduces a new structure and does not alter the purpose or function of the work or include an expansion) to the Waste Disposal and Water Supply Facilities described in Water Licence 8BC-EUR2131 (the Licence). The modifications are consistent with the following Nunavut Planning Commission's (NPC) Conformity Determinations and Nunavut Impact Review Board (NIRB) Screening Decisions:

- NPC File No. 149476 and NIRB File No. 21XN012
- NPC File No. 149617– Exempt from NIRB Screening
- NPC File No. 149587 – Exempt from NIRB Screening
- NPC File No. 149638 – Exempt from NIRB Screening

The following sections are included for each modification:

1) Purpose of the Modification
2) Description of the Modification
3) Plans for Operation
4) Plans for Decommissioning

Updated versions of the Topographical Maps previously provided to NWB in June 2021 (Amendment Renewal Application, Attachment A) are included in **Attachment A** of this Memo.

Water and Sewage Treatment Infrastructure Upgrades

Purpose of the Modification

The purpose of the proposed Water and Sewage Treatment Infrastructure Upgrades is to replace or upgrade the existing water (raw and sewage) storage and treatment systems at the Eureka HAWS and to treat up to 28m^3/day of wastewater. Stamped and certified for-construction drawings of the Water and Sewage Treatment Infrastructure Upgrades are in included in **Attachment B**.

Description of the Modification

Development of a new raw water storage reservoir and associated infrastructure as well as incorporation of the existing raw water storage reservoir. A new packaged wastewater treatment plant will also be installed, as well as upgrades and conversion of the existing wastewater lagoon to a retention pond. Wastewater discharge piping and overflow will also be upgraded.

The work is expected to commence in June 2022 and be completed by 2025. The new wastewater treatment plant will be sealifted to site and consists of four (4), 6m long high-cube shipping containers with peak hour flow capacity of 28m^3/day. In 2022, site preparation will commence which will include

levelling and preparing pads. Other earthworks will include excavation, placement of granular, compaction, and grading including construction of berms. Drains and thermistors will then be installed within the underlying soil for the reservoir.

Once the packaged wastewater treatment is installed, the existing sewage lagoon will be converted to a retention pond. Treated effluent that meets the parameters identified in Part D, Item 10 of the Licence will be discharged into the ocean.

In 2023, the construction of the new raw water storage area will continue and include installation of sand, drainage piping, a dual liner, and geotextiles. As well, pump stations will be positioned, and a raw water storage basin will be filled with water. In 2024, the pump stations will be connected so water from the existing reservoir can be transferred to the new reservoir. In 2025, inspections will be undertaken.

Plans for Operation

The Summary of Operation and Maintenance Procedures for Drinking Water, Sewage, Solid Waste Disposal and Waste Treatment Facilities (June 2021 Amendment Renewal Application, Attachment E) previously provided will be revised to include details specific to the new facilities. This will be shared with the NWB within 90-days after completion of construction of the Modification in 2023.

Plans for Decommissioning

Plans for decommissioning of the water and sewage treatment facilities is consistent with the Interim Abandonment & Restoration Plan previously provided (June 2021 Amendment Renewal Application, Attachment F). The Abandonment and Restoration Objectives, and actions to be taken to achieve objectives for the "pumphouse, water reservoir, water diversion area, and sewage lagoon," all apply to this modification and remain unchanged.

Temporary Contaminated Soils Storage

Purpose of the Modification

Hydrocarbon affected soil has been identified at the Eureka High Arctic Weather Station (HAWS) within the existing runway apron as well as in the vicinity of the existing and proposed future raw water reservoir site. A Remedial Action Plan and Risk Assessment (RAPRA) currently in preparation will determine if the soils may be used as fill in non-environmentally sensitive locations or treated in the Landfarm. It will also inform the design of the landfarm (e.g., the required capacity). The Purpose of the Temporary Contaminated Soils Stockpile is to store the hydrocarbon affected soil prior to construction of the landfarm. For-construction drawings of the Landfarm and the RAPRA will be provided to the Nunavut Water Board in a separate Notification of Modification once available.

Description of the Modification

Contaminated soils are to be stored temporarily in two lined stockpiles. There is an existing temporary stockpile approved by the Nunavut Water Board and CIRNAC under the Licence and Land Use Permit (No. N2017N0017), respectively. This Modification adds an additional temporary stockpile placed adjacent to the existing stockpile. The temporary stockpile holding area(s) will be built to stockpile up to a total of 10,000 m^3. Design details of the additional temporary stockpile area are provided in **Attachment C**.

Plans for Operation

Operational activities include monthly sampling at EUR-6 during periods of observed flow of any runoff from the contaminated soils stockpile consistent with Part I of the Licence.

Plans for Decommissioning

Plans for decommissioning of the contaminated soils storage cells are consistent with the Interim Abandonment & Restoration Plan previously provided (June 2021 Amendment/ Renewal Application, Attachment F). The Abandonment and Restoration Objectives, and actions to be taken to achieve objectives for the "contaminated sites" apply to this modification and remain unchanged.

Fuel Storage Tank Systems Inspections and Repairs

Purpose of Modification

There are ten above-ground fuel storage tanks contained in an existing tank farm and eleven other smaller above-ground fuel storage tanks around the HAWS. To comply with regulatory requirements for storage tank systems under federal jurisdiction (Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations), the fuel storage tanks at the Eureka High Arctic Weather Stations (HAWS) need to be inspected periodically and necessary repairs made.

Description of the Modification

Potential activities include:

- Inspections and audits of fuel systems and pipeline
- Replacement of pipeline supports
- Replacing/adding valves, bump knobs, monitoring and emergency shut off systems, sumps, dispensing hoses
- Leveling and adding aggregate under tanks
- Tank replacements (if required, during initial information review, it doesn't appear any of the current tanks will need replacement)
- Potential for subsurface work depending on which monitoring system is chosen for the underground pipe sections
- Removal of fuel sludge to clean tanks for internal inspections and work. Up to 100 drums of sludge would be temporarily stored (for about 1 month) in a containment area near the fuel storage tank systems prior to being disposed of off-site at an approved facility
- Disposal of empty/damaged steel barrels (approximately 120, 205L barrels) from current tank supports in landfill if inert and off-site at an approved facility if hazardous

Plans for Operation

This Modification will operate in accordance with the Emergency Plan for Petroleum and Allied Petroleum Products and The Summary of Operation and Maintenance Procedures for Drinking Water, Sewage, Solid Waste Disposal and Waste Treatment Facilities provided previously (June 2021 Amendment Renewal Application Attachment E and D).

Plans for Decommissioning

Plans for decommissioning the fuel storage tank systems areas is consistent with the Interim Abandonment & Restoration Plan previously provided (June 2021 Amendment Renewal Application Attachment F). The Abandonment and Restoration Objectives, and actions to be taken to achieve objectives for “Infrastructure” apply also to this Modification and remain unchanged.

Secondary Containment Area for Fuels and Hazardous Materials

Purpose of Modification

Temporarily store up to 400, 205L barrels of fuels and hazardous materials to support ongoing operations at the HAWS.

Description of the Modification

Two designated secondary containment areas for temporary storage of fuels and hazardous materials will be constructed in the summer of 2022. The first area extends north of the existing fuel drum area at the airstrip (Shown in **Attachment A, Figure 3**). The second area would be used as a designated area to temporarily store ECCC's existing petroleum oils and lubricants and is located near the Station (**Attachment A, Figure 2**). Both are equal in footprint and will store 200 barrels each.

Plans for Operation

This Modification will operate in accordance with the Emergency Plan for Petroleum and Allied Petroleum Products and The Summary of Operation and Maintenance Procedures for Drinking Water, Sewage, Solid Waste Disposal and Waste Treatment Facilities provided previously (June 2021 Amendment Renewal Application Attachment E and D).

Plans for Decommissioning

Plans for decommissioning the secondary containment areas is consistent with the Interim Abandonment & Restoration Plan previously provided (June 2021 Amendment Renewal Application Attachment F). The Abandonment and Restoration Objectives, and actions to be taken to achieve objectives for “Infrastructure” apply also to this Modification and remain unchanged.

Program of Works

Purpose of Modification

The Program of Works project involves improving the efficiency of three buildings: Main Complex, Pearl Laboratory, and the Power House. The purpose of the Program of Works is to both modernize and improve the efficiency of the buildings.

Description of the Modification

This may include, but is not limited to, modifications to the building envelope, insulation, roofs, LED conversion, electrical upgrades, air handling modifications, and grading modifications. Waste quantities are unknown at this time but would be less that 100m^3 in total. If hazardous waste is identified during the design stage (in the Power House), it will be disposed of offsite. Waste may include windows, old insulation, dry wall, doors, etc. Reasonable efforts will be made to recycle at an approved facility. Inert material will be disposed of onsite at the landfill.

Plans for Operation

Work is planned to commence in summer of 2022. This Modification will operate in accordance with the Emergency Plan for Petroleum and Allied Petroleum Products and The Summary of Operation and Maintenance Procedures for Drinking Water, Sewage, Solid Waste Disposal and Waste Treatment Facilities provided previously (June 2021 Amendment/Renewal Application Attachment E and D).

Plans for Decommissioning

Plans for decommissioning are consistent with the Interim Abandonment & Restoration Plan previously provided (June 2021 Amendment/Renewal Application Attachment F). The Abandonment and Restoration Objectives, and actions to be taken to achieve objectives for "building" apply also to this Modification and remain unchanged.

Grey Water Exfiltration Trench

Purpose of the Modification

The purpose of the proposed grey water exfiltration trench (referred to as "sump" in NPC File No. 149617) is for treatment of an estimated 5 m^3 of grey water produced daily by the Nuna Camp (**Figure 1**) for a 3-month period in the summer from 2022 to 2025. The grey water will mainly consist of water from sinks, showers, and the kitchen. Black waste from toilets would continue to be treated separately with incineration toilets. The grey water would mainly consist of wash water, with a low level of solids and ammonia in it.

Description of the Modification

Grey water produced by the Temporary Camp referred to in the Licence will be collected and batch discharged into a grey water exfiltration trench. The trench is a subsurface system consisting of a perforated pipe, surrounded by aggregate, which provides temporary storage and then passive treatment of received water by exfiltration. Water flows from the perforated pipe through the layer of surrounding aggregate and in-situ soil reducing BOD5, TSS, total ammonia nitrogen, and other parameters. Treatment occurs through natural filtration and organic treatment prior to flowing into a water body, like a septic field but with a much less concentrated input load.

Grey water is proposed to be collected in a holding tank instead of an "old-fashioned" soak pit due to the higher daily flow and the permafrost layer in the area. Collected grey water will be pumped from the tank into the exfiltration trench for passive treatment. The trench bottom would be flat, with zero grade to ensure that water exfiltrates through soil at the same rate. Groundwater would seep through the soil going downhill taking many years to reach a body of water thereby significantly reducing parameters of concern. It is assumed that the trench would be constructed in the existing soil on site, that is typically silty, gravelly sand.

The soil will allow the water to percolate through it, but the fine components will slow the exfiltration, allowing some natural soil treatment. The proposed location of the trench is identified in **Figure 1**, however its siting may vary by 100 meters to optimize the soil properties and location. The exfiltration trench will be located at minimum of 100 meters from the nearest body of water.

(Source: Google Earth, 2022)

Figure 1: Proposed Grey Water Exfiltration Trench.

It is proposed to install one exfiltration trench 60 m long, 1.5 m wide and 0.6 m deep as shown in **Figure 2**. The total storage capacity of the trench would be approximately 45 m^3, which would be adequate for a temporary storage of a 9-day grey water discharge volume to accommodate high flows or wet conditions. Unsaturated exfiltration capacity of the proposed exfiltration trench was estimated at 32.5 litres/m3/day (0.8 US Gal/ft2/day).

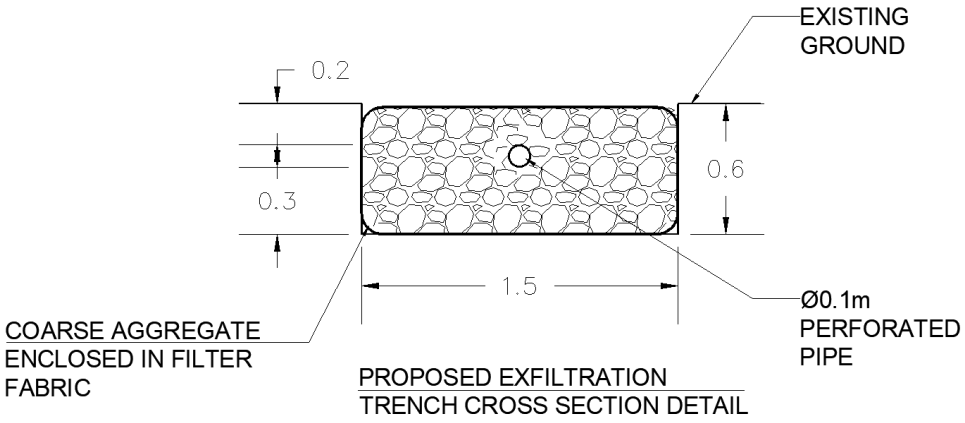

Figure 2: Proposed Exfiltration Trench Cross Section

Plans for Operation

The grey water would flow to a holding tank and periodically be pumped into the trench, based on float levels in the holding tank. Operation of the trench with a periodic pumped feed is required rather than a gravity feed system. It is important to soak the entire trench, each time it is dosed.

As this system will operate during summer months only, it was designed as a very shallow system. The system would be used over the summer and the collection tank would be drained for winter. In spring, the system can be restarted in late June once the upper 0.1 m of ground has thawed. The system will rapidly melt over the upcoming weeks. It is recommended that the inground 100mm perforated pipe be HDPE with holes drilled in it, as that material performs well with freeze thaw. The trench would be filled with granular that has a low fines content to allow for distribution of the water. The proposed exfiltration system layout is shown in **Figure 3**.

The Summary of Operation and Maintenance Procedures for Drinking Water Sewage, Solid Waste Disposal and Waste Treatment Facilities (June 2021 Application Attachment E) previously provided will be revised to include the plans for trench operation described above and provided to the Nunavut Water Board within 90-days of the construction of the Modification.

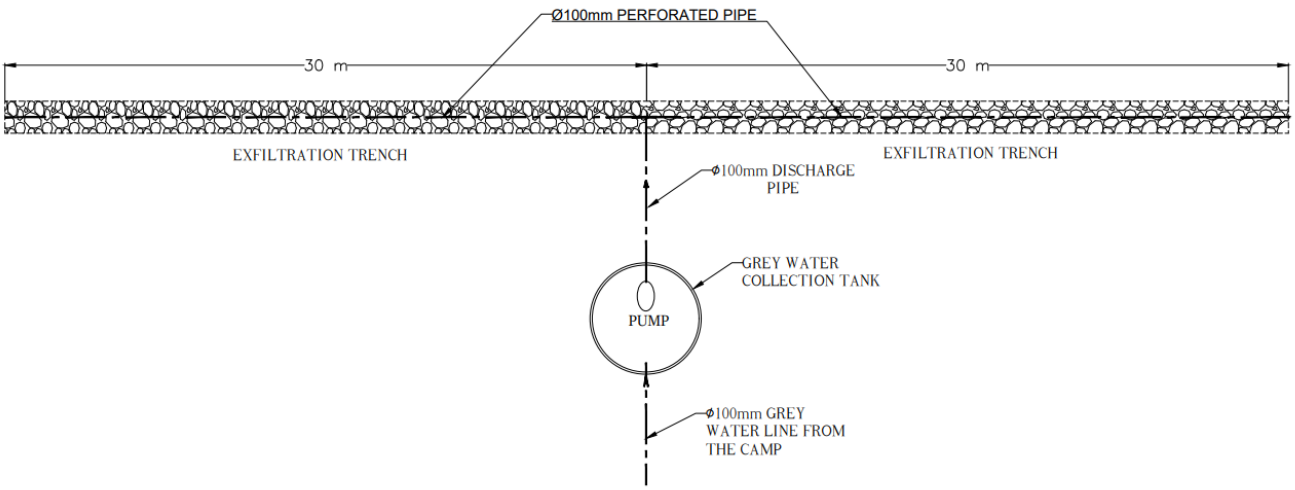

Figure 3: Proposed Exfiltration System Layout

Plans for Decommissioning

Once the exfiltration trench is no longer required, the distribution pipe should be removed, and the site should be leveled and allowed to return to pre-existing conditions. The Abandonment and Restoration Plan (June 2021 Application Attachment F) previously provided will be revised to include the plans for exfiltration trench decommissioning described above and provided to the Nunavut Water Board at least 90-days after construction of the Modification.

Blacktop Quarry

Purpose of the Modification

Obtain aggregate for use as fill for various construction projects

Description of the Modification

Up to 60,000 m^3 will be removed from Blacktop Quarry (Expired Quarry Permit 2015QP0051), and potentially 2 areas adjacent (east) of Black Top Quarry. A quarry permit application will be submitted to the Crown Indigenous Relations and Northern Affairs Canada.

Plans for Operation

Updated Quarry Operations Plan (June 2021 Amendment Renewal Attachment I) is included in **Attachment D.**

Plans for Decommissioning

Plans for decommissioning Blacktop Quarry are consistent with the Interim Abandonment & Restoration Plan previously provided (June 2021 Amendment Renewal Application Attachment F). The Abandonment and Restoration Objectives, and actions to be taken to achieve objectives for "West Remus Quarry" apply also to this Modification and remain unchanged.

Closing

ECCC is providing notification to the Nunavut Water Board at least 60-days prior to beginning the Modifications described herein as required by Part F of the Licence. It is ECCC's understanding that the Modifications are consistent with the terms of the Licence 8BC-EUR2131.

Sincerely,

Jean-Philippe Cloutier-Dussault
Property Manager, Assets, Real Property and Security Directorate
Environment and Climate Change Canada

jean-philippe.cloutier-dussault@ec.gc.ca

Attachment A

Topographical Maps, Indicating Components of the Undertaking

Legend

- Watercourse

N
W E
S

500 250 0 500 1,000 1,500 m

1:50,000

NAD 1983 UTM Zone 16N

Sources: NRCan
Imagery: Esri World Imagery

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Figure: 1

EUREKA HIGH ARCTIC WEATHER STATION
STATION SITE OVERVIEW

EUREKA HIGH ARCTIC WEATHER STATION
WATER LICENSE 8BC-EUR1621 2020 ANNUAL REPORT
PUBLIC SERVICES AND PROCUREMENT CANADA, EUREKA HAWS
Project No.: 60638794 Date: January 2022

Last saved by: STEPHANIE.CLARK (2022-01-18) Last Plotted: Tue Jan 18, 2022
Filename: \\na.aecomnet.com\LFS\AMER\Calgary-CACGY3\Legacy\CACGY5FS002\Library\Environment\GIS\Stephanie Clarke\Permitting & IAP\60638794_Eureka\02_MXDs\2020 Annual Report\Water License\H001_60638794_HAWS_Water_SiteOverview_20220118.mxd
Project Management Initials: Designer: Checked: Approved: ANSI B 279.4mm x 431.8mm

Legend

Watercourse

N
W E
S

50 25 0 50 100 150 m

1:5,000

NAD 1983 UTM Zone 16N

Sources: NRCan
Imagery: Esri World Imagery

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Figure: 2

EUREKA HIGH ARCTIC WEATHER STATION MAIN COMPLEX

EUREKA HIGH ARCTIC WEATHER STATION
WATER LICENSE 8BC-EUR1621 2020 ANNUAL REPORT
PUBLIC SERVICES AND PROCUREMENT CANADA, EUREKA HAWS
Project No.: 60638794 Date: February 2022

Last saved by: PAIGE.CROSSMAN (2022-02-01) Last Plotted: Mon Mar 08, 2022
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Legend

- Watercourse
- Temporary Access Road
- Existing Access Road

NOTE:
The New Drum Crushing Site and Contaminated Soil Storage Cell are approximate locations

N
W E
S

75 37.5 0 75 150 225 m

1:7,500

NAD 1983 UTM Zone 16N

Sources: NRCan
Imagery: Esri World Imagery

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Figure: 3

EUREKA HIGH ARCTIC WEATHER STATION

WATER LICENSE 8BC-EUR1621 2020 ANNUAL REPORT

PUBLIC SERVICES AND PROCUREMENT CANADA, EUREKA HAWS

Project No.: 60638794 Date: January 2022

Last saved by: STEPHANIE.CLARK (2022-01-26) Last Plotted: Wed Jan 26, 2022
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Attachment B

For-Construction Drawings of the Water and Sewage Treatment Infrastructure Upgrades

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

310-269 Main Street, R3C 1B3
WINNIPEG, MANITOBA

EUREKA, NUNAVUT

EUREKA WATER AND SEWAGE SYSTEM

ISSUED FOR CONSTRUCTION
APRIL 15, 2021

DRAWING LIST

AECOM

0 10 20 30 40 50 60 70 80 90 100mm

CADNM

OVERALL EXISTING SITE PLAN

Scale 1:1000

EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW
RWL	RAW WATER	RWL		HYDRO POLE w/ ANCHOR	
U	UTILITY WATER	U	FOS	OIL PIPELINE	FOS
	HYDRANT		E	HYDRO	E
	VALVE			FENCE	
SAN	SANITARY SEWER	SAN		DITCH	
B	BRINE	B		GRAVEL	
FE	FINAL EFFLUENT	FE		ASPHALT	
	DEGASS/DEWATER SUBDRAIN			CONCRETE	
	DEGASS/DEWATER VENT			RIP RAP	
	DRAINAGE COLLECT. TANK		*247.33	ELEVATION	245.85
	CULVERT			BOLLARD	
MW	MONITORING WELL				
TH	TEST HOLE / TEST PIT				

BENCH MARK:
749167A
LOCATED ON THE FOSHEIM PEN OF ELLESMERE ISLAND AT THE AIRSTRIP OF THE EUREKA WEATHER STATION, ON BRADLEY AIR SERVICE PROPERTY, 16.04m FROM MAIN STATION "749167", MARKED BY A BRASS TABLET SET ON A COPPER ROD.
ELEV. 77.851m (Geoid. HT2_0)

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL
SIGNED BY

P. BARSALOU

2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

CIVIL
OVERALL
EXISTING SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0001 OF	1

	RAW WATER			HYDRO POLE w/ ANCHOR	
	UTILITY WATER			OIL PIPELINE	
	HYDRANT			HYDRO	
	VALVE			FENCE	
	SANITARY SEWER			DITCH	
	BRINE			GRAVEL	
	FINAL EFFLUENT			ASPHALT	
	DEGASS/DEWATER SUBDRAIN			CONCRETE	
	DEGASS/DEWATER VENT			RIP RAP	
	DRAINAGE COLLECT. TANK		+247.33	ELEVATION	245.85
	CULVERT			BOLLARD	
MW	MONITORING WELL				
TH	TEST HOLE / TEST PIT				
EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW

N

STATION CREEK

SAND BORROW PIT APPROX. 2.4 km BY ROAD (RESERVOIR TO PIT)

TH -a15-03
TH -a1503pit

NEW 1.9m HIGH PAGE WIRE FENCING ALONG TOE OF RESERVOIR

TH -a15-02

PROPOSED MATERIAL INTERIM STOCKPILE AREA

INSTALL 3.0m WIDE, 0.3m THICK LAYER OF RIP RAP ON THE SLOPE

TH -a1513pit

TH -a15-04
TH -a1504

NEW RAW WATER STORAGE RESERVOIR SEE SHEET C-0003

NEW RESERVOIR PUMP STATION 2.4m x 3.0 m PREFABRICATED BUILDING SEE SHEET C-0006

TH -a1514pit

TH -old

TH -old

TH -a1515pit

NEW ACCESS ROAD

TH -a1512pit

TH -a1501

TH -a1506pit

TH -a1507

DECOMMISSION EXISTING STORAGE DITCH

SEASONAL 50mm RAW WATER FILL HOSE

NEW RAW WATER TRANSFER STATION

RWL

CONTAMINATED SOIL LAND FARM

TH -a1516pit

EXISTING ABOVE GROUND FUEL OIL LINE

INSTALL 3.0m WIDE, 0.3m THICK LAYER OF RIP RAP ON THE SLOPE

153m BERM (0.4m HIGH, 0.5m WIDE WITH 4:1 SIDE SLOPES) TO PREVENT SURFACE WATER DRAINING TOWARDS CONTAMINATED SOIL

PROTECT AND MOVE POWER AND FIBRE OPTIC LINES TO AVOID CONSTRUCTION

PROPOSED TEMPORARY ROAD FOR BLACK TOP CREEK BORROW PIT-STOCKPILE HAUL ROUTE TO SITE STOCKPILE AREA

TH-a15-05

CREEK PUMP STATION 2.4m x 3.0m PREFABRICATED BUILDING

EXISTING RAW WATER RESERVOIR

116m RAW WATER SUPPLY AND RETURN LINES ON PIPE SUPPORTS

DECOMMISSION EXISTING RAW WATER SUPPLY PIPING

DECOMMISSION EXISTING PUMP HOUSE

BRINE TRANSFER STATION UPGRADE

BRINE AND UTILITY WATER PIPING

HAULED WASTEWATER DISCHARGE LOCATION

OPERATIONS BUILDING

UPGRADE EXISTING RAW WASTEWATER LIFT STATION

EXISTING CLOUD CEILING MEASUREMENT DEVICE (REMOVE)

GARAGE

TH -7

GENERATOR

PACKAGED WASTEWATER TREATMENT PLANT 4 - 2.4m x 6.1m PREFABRICATED BUILDINGS

APPROXIMATE LOCATION OF EXISTING 600V POWER AND COMMUNICATION LINE ON GROUND, MOVE TO PROTECT

SEASONAL INTAKE HOSE

TRUCKS NOT ALLOWED ON BRIDGE. CROSS CREEK BED ONCE FROZEN TO OBTAIN SAND FROM PIT

PLUG AND ABANDON

EXISTING 150Ø SEWAGE PIPE

100Ø HDPE FORCEMAIN BURIED 0.6m, SEE SHEET C-0004 & C-3002

RETENTION BASIN UPGRADE SEE SHEET C-3002

CHLORINATION SYSTEM UPGRADE

RAW WATER STORAGE TANKS

CLEANOUTS (TYP.)

REPLACE AND BURY POWER SUPPLY FROM HYDROGEN BUILDING

BRINE AND SANITARY FORCEMAIN. 100Ømm OVERFLOW PIPE TO EFFLUENT COLLECTION TANK. 250Ømm UTILITY WATER SERVICE LINE COMPLETE WITH BACK FLOW PREVENTION

EXTENT OF DECOMMISSION

HYDRO POLE

DECOMMISSION AND REMOVE EXISTING WASTEWATER PIPE

DECOMMISSION EXISTING PUMP HOUSE

RETENTION BASIN PUMP STATION 2.4m x 3m PREFABRICATED BUILDING

RETENTION BASIN INLET PAD SEE SHEET C-0007

SEASONAL DISCHARGE

RETENTION BASIN DISCHARGE CHANNEL SEE SHEET C-0007

SEASONAL INTAKE

SLIDRE FJORD

OVERALL PROPOSED SITE PLAN

Scale 1:1000

CONSTRUCTION NOTES:

1. PRIOR TO CONSTRUCTION, DELETERIOUS SOILS COMPRISING VEGETATION, TOPSOIL, POND SEDIMENT, AND THE SOFT/VERY SOFT, LOOSE, WET, DISTURBED, PORTION OF NATIVE SOILS, IF ANY, SHOULD BE REMOVED FROM THE FOOTPRINT AREAS FOR STRUCTURES AND OTHER SETTLEMENT SENSITIVE FACILITIES.
2. FOLLOWING INITIAL SITE STRIPPING OF DELETERIOUS SOILS, AND PRIOR TO GRADING, AREAS IDENTIFIED FOR FILL PLACEMENT SHOULD BE COMPACTED. ANY SOFT AREAS SHOULD BE OVER-EXCAVATED AND BACKFILLED TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) USING SPECIFIED FILL.
3. THE FINISHED SUBGRADE MUST BE FREE OF DEPRESSIONS AND SHOULD BE SLOPED TOWARD THE EMBANKMENT'S SIDE SLOPES, OR TOWARD THE SIDE DITCHES, IN ORDER TO PROVIDE EFFICIENT SURFACE WATER CONTROL (DRAINAGE).
4. CONTAMINATED SOIL WITHIN THE LIMITS OF THE NEW RAW WATER STORAGE RESERVOIR CONSTRUCTION SITE TO BE REMOVED AND DISPOSED OF AT THE CONTAMINATED SOIL STORAGE CELL AS DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE AND IN ACCORDANCE WITH SECTIONS 02 55 13 - CONTAMINATED SOIL AND 01 35 15 - SPECIAL PROCEDURES FOR CONTAMINATED SITES. SEE CONTAMINATED SOIL STORAGE CELL DETAILS ON C009.
5. THE CONTRACTOR SHALL ENSURE THAT LOCAL DRAINAGE PATTERNS ARE NOT ALTERED BY THE CONSTRUCTION.
6. TEMPORARILY RE-ROUTE OR / PROTECT CABLES ON BRIDGE NEAR FRESHWATER RESERVOIR.
7. PROHIBIT HEAVY EQUIPMENT ON BRIDGE OVER CREEK. LIMIT TO LIGHT TRUCKS ¾ TON ONLY.

0 10 20 30 40 50 60 70 80 90 100mm

PWGSC – A1 – 841X594

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Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY

P. BARSALOU

2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
Date SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

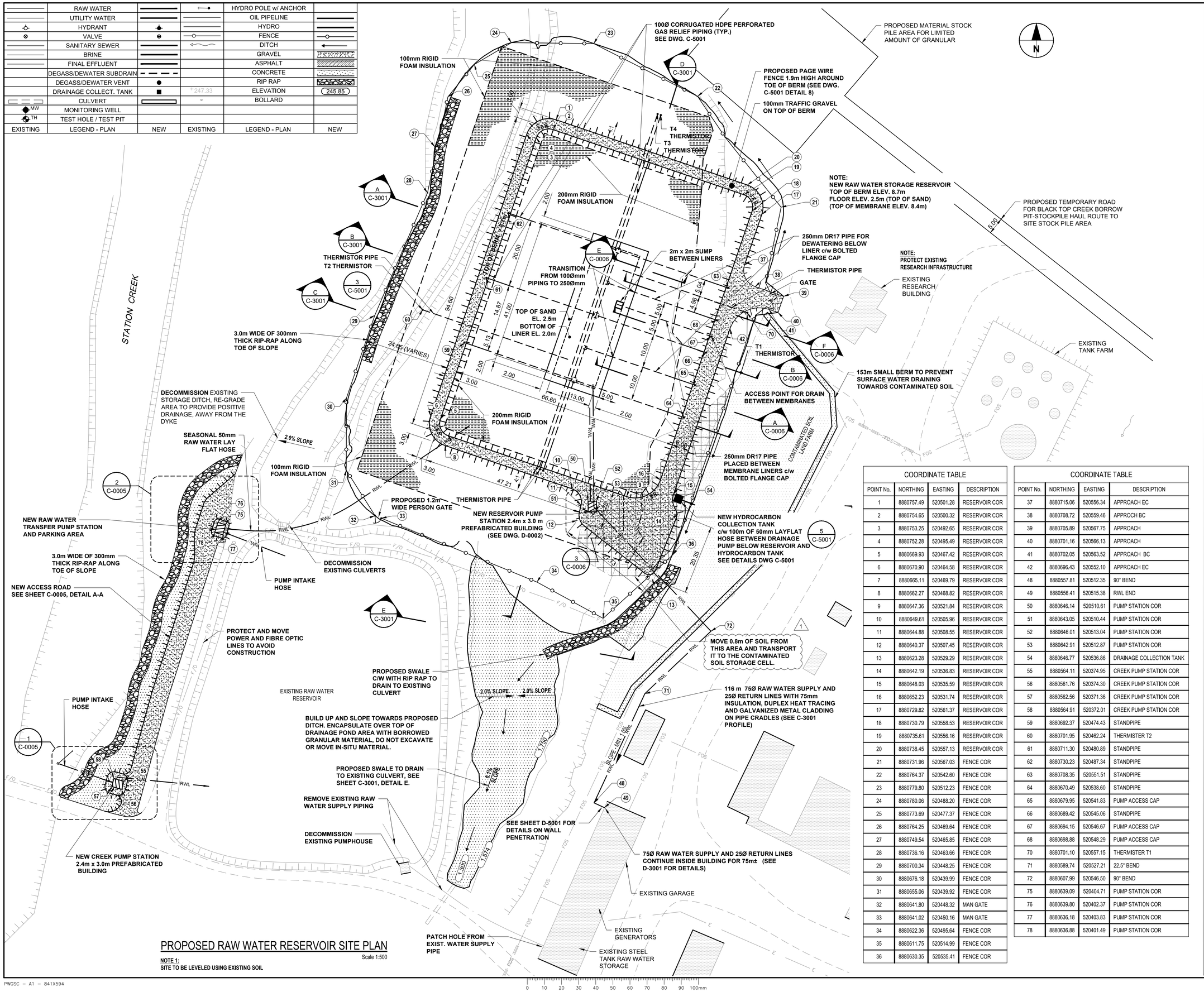
Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

CIVIL
OVERALL
PROPOSED SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0002 OF	1

EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW
	RAW WATER			HYDRO POLE w/ ANCHOR	
	UTILITY WATER			OIL PIPELINE	
	HYDRANT			HYDRO	
	VALVE			FENCE	
	SANITARY SEWER			DITCH	
	BRINE			GRAVEL	
	FINAL EFFLUENT			ASPHALT	
	DEGASS/DEWATER SUBDRAIN			CONCRETE	
	DEGASS/DEWATER VENT			RIP RAP	
	DRAINAGE COLLECT. TANK		+247.33	ELEVATION	245.85
	CULVERT			BOLLARD	
MW	MONITORING WELL				
TH	TEST HOLE / TEST PIT				



PROPOSED RAW WATER RESERVOIR SITE PLAN

Scale 1:500

NOTE 1:
SITE TO BE LEVELED USING EXISTING SOIL

COORDINATE TABLE			
POINT No.	NORTHING	EASTING	DESCRIPTION
1	8880757.49	520501.28	RESERVOIR COR
2	8880754.65	520500.32	RESERVOIR COR
3	8880753.25	520492.65	RESERVOIR COR
4	8880752.28	520495.49	RESERVOIR COR
5	8880669.93	520467.42	RESERVOIR COR
6	8880670.90	520464.58	RESERVOIR COR
7	8880665.11	520469.79	RESERVOIR COR
8	8880662.27	520468.82	RESERVOIR COR
9	8880647.36	520521.84	RESERVOIR COR
10	8880649.61	520505.96	RESERVOIR COR
11	8880644.88	520508.55	RESERVOIR COR
12	8880640.37	520507.45	RESERVOIR COR
13	8880623.28	520529.29	RESERVOIR COR
14	8880642.19	520536.83	RESERVOIR COR
15	8880648.03	520535.59	RESERVOIR COR
16	8880652.23	520531.74	RESERVOIR COR
17	8880729.82	520561.37	RESERVOIR COR
18	8880730.79	520558.53	RESERVOIR COR
19	8880735.61	520556.16	RESERVOIR COR
20	8880738.45	520557.13	RESERVOIR COR
21	8880731.96	520567.03	FENCE COR
22	8880764.37	520542.60	FENCE COR
23	8880779.80	520512.23	FENCE COR
24	8880780.06	520488.20	FENCE COR
25	8880773.69	520477.37	FENCE COR
26	8880764.25	520469.64	FENCE COR
27	8880749.54	520465.85	FENCE COR
28	8880736.16	520463.66	FENCE COR
29	8880700.34	520448.25	FENCE COR
30	8880676.18	520439.99	FENCE COR
31	8880655.06	520439.92	FENCE COR
32	8880641.80	520448.32	MAN GATE
33	8880641.02	520450.16	MAN GATE
34	8880622.36	520495.64	FENCE COR
35	8880611.75	520514.99	FENCE COR
36	8880630.35	520535.41	FENCE COR

COORDINATE TABLE			
POINT No.	NORTHING	EASTING	DESCRIPTION
37	8880715.06	520556.34	APPROACH EC
38	8880708.72	520559.46	APPROCH BC
39	8880705.89	520567.75	APPROACH
40	8880701.16	520566.13	APPROACH
41	8880702.05	520563.52	APPROACH BC
42	8880696.43	520552.10	APPROACH EC
48	8880557.81	520512.35	90° BEND
49	8880556.41	520515.38	RWL END
50	8880646.14	520510.61	PUMP STATION COR
51	8880643.05	520510.44	PUMP STATION COR
52	8880646.01	520513.04	PUMP STATION COR
53	8880642.91	520512.87	PUMP STATION COR
54	8880646.77	520536.86	DRAINAGE COLLECTION TANK
55	8880564.11	520374.95	CREEK PUMP STATION COR
56	8880561.76	520374.30	CREEK PUMP STATION COR
57	8880562.56	520371.36	CREEK PUMP STATION COR
58	8880564.91	520372.01	CREEK PUMP STATION COR
59	8880692.37	520474.43	STANDPIPE
60	8880701.95	520462.24	THERMISTER T2
61	8880711.30	520480.89	STANDPIPE
62	8880730.23	520487.34	STANDPIPE
63	8880708.35	520551.51	STANDPIPE
64	8880670.49	520538.60	STANDPIPE
65	8880679.95	520541.83	PUMP ACCESS CAP
66	8880689.42	520545.06	STANDPIPE
67	8880694.15	520546.67	PUMP ACCESS CAP
68	8880698.88	520548.29	PUMP ACCESS CAP
70	8880701.10	520557.15	THERMISTER T1
71	8880589.74	520527.21	22.5° BEND
72	8880607.99	520546.50	90° BEND
75	8880639.09	520404.71	PUMP STATION COR
76	8880639.80	520402.37	PUMP STATION COR
77	8880636.18	520403.83	PUMP STATION COR
78	8880636.88	520401.49	PUMP STATION COR

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Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY
P. BARSALOU
2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
Date SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2	ISSUED FOR CONSTRUCTION	2021/04/15
1	HATCHED CONTAMINATED SOIL REMOVAL AREA	2020/11/12
0	ISSUED FOR TENDER	2020/06/19

Client / client
Public Works and Government Services Canada
310-269 Main Street, R3C 1B3 Winnipeg, MB

Project title / Projet
NUNAVUT EUREKA

EUREKA WATER AND SEWAGE SYSTEM

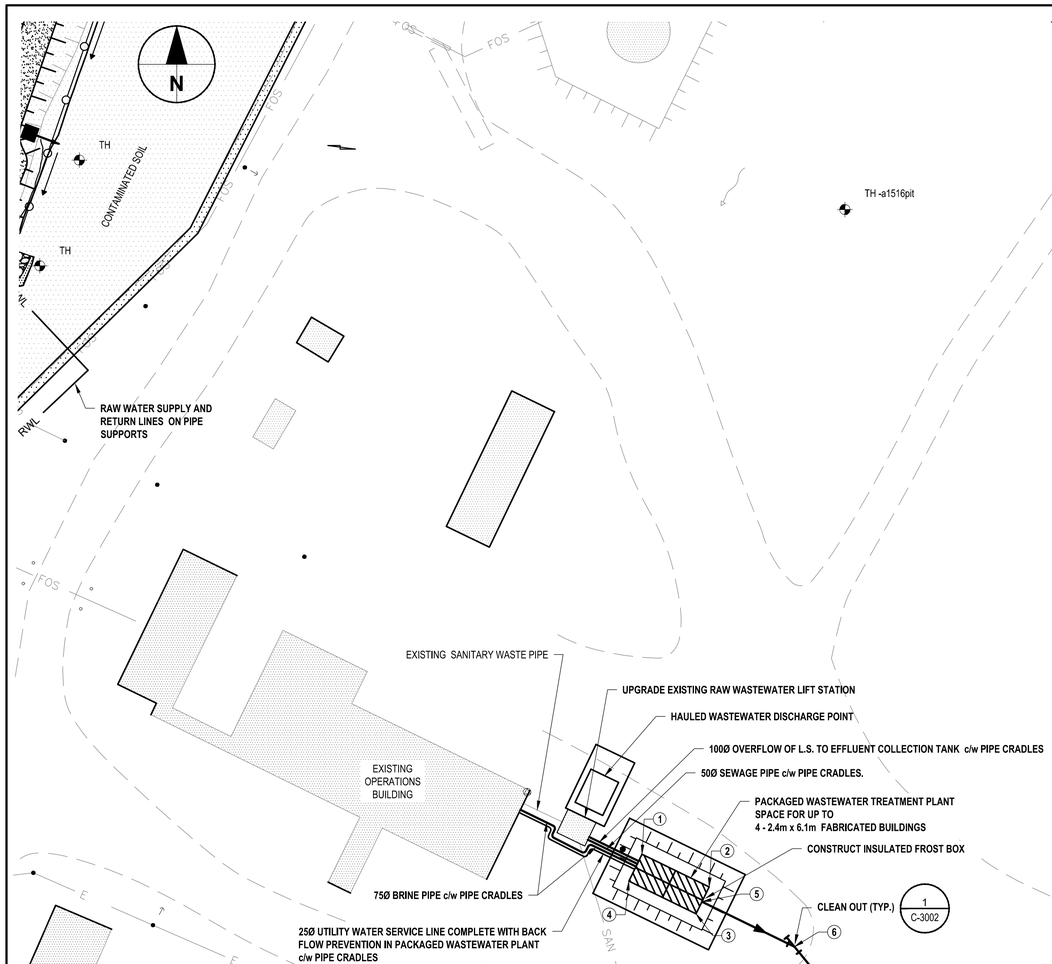
Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

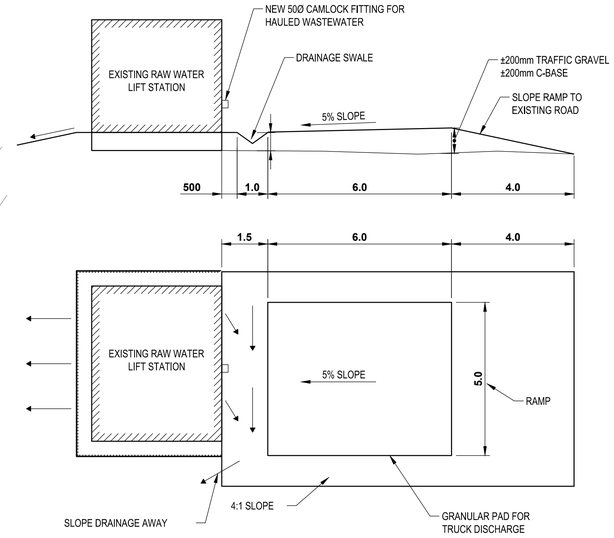
Drawing title / Titre du dessin
CIVIL
NEW RAW WATER RESERVOIR
PROPOSED SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0003 OF	2

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm





HAULED WASTEWATER DISCHARGE PAD DETAIL

Scale 1:100

NOTE:
1. PROVIDE 5m OF 50mm BROWN FLEXIBLE HOSE TO DRAIN HAULED WASTEWATER INTO DISCHARGE TANK.
2. PROVIDE CAMLOCK CONNECTION AND 50Ø BALL VALVE FOR EXISTING HAULED WASTEWATER TANK COMPLETE WITH FITTINGS.
3. COORDINATE HEIGHT OF PAD WITH HAULING TRUCK FOR GRAVITY FLOW INTO TANK.

COORDINATE TABLE			
POINT No.	NORTHING	EASTING	DESCRIPTION
1	8880529.01	520636.93	BLDG. COR
2	8880523.67	520647.89	BLDG. COR
3	8880519.29	520645.76	BLDG. COR
4	8880524.63	520634.80	BLDG. COR
5	8880521.27	520646.72	SAN PIPE CONNECTION
6	8880513.91	520661.82	CLEAN OUT CHAMBER
7	8880470.10	520697.73	CLEAN OUT CHAMBER
8	8880460.51	520741.96	CLEAN OUT CHAMBER
9	8880449.21	520743.67	OUTLET
10	8880455.49	520744.46	FORCEMAIN OUTLET STRUCTURE COR
11	8880446.36	520745.50	FORCEMAIN OUTLET STRUCTURE COR
12	8880446.02	520742.52	FORCEMAIN OUTLET STRUCTURE COR
13	8880455.16	520741.48	FORCEMAIN OUTLET STRUCTURE COR
14	8880418.67	520694.09	FENCE COR
15	8880440.89	520694.09	FENCE GATE
16	8880447.62	520694.10	FENCE GATE
17	8880452.65	520694.10	FENCE COR
18	8880460.90	520706.05	FENCE COR
19	8880458.24	520738.00	FENCE COR
20	8880471.06	520807.98	FENCE COR
21	8880469.96	520809.37	FENCE GATE
22	8880466.98	520813.00	FENCE GATE
23	8880465.67	520814.75	FENCE COR
24	8880439.61	520818.73	FENCE COR
25	8880448.49	520701.72	RETENTION BASIN PUMP HOUSE CONTAINER CNR
26	8880447.07	520704.42	RETENTION BASIN PUMP HOUSE CONTAINER CNR
27	8880444.91	520703.29	RETENTION BASIN PUMP HOUSE CONTAINER CNR
28	8880446.33	520700.59	RETENTION BASIN PUMP HOUSE CONTAINER CNR
29	8880423.45	520750.25	RETENTION BASIN DISCHARGE STRUCTURE COR
30	8880438.15	520748.00	RETENTION BASIN DISCHARGE STRUCTURE COR
31	8880437.43	520743.05	RETENTION BASIN DISCHARGE STRUCTURE COR
32	8880422.69	520745.31	RETENTION BASIN DISCHARGE STRUCTURE COR

EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW
	RAW WATER			HYDRO POLE w/ ANCHOR	
	UTILITY WATER			OIL PIPELINE	
	HYDRANT			HYDRO	
	VALVE			FENCE	
	SANITARY SEWER			DITCH	
	BRINE			GRAVEL	
	FINAL EFFLUENT			ASPHALT	
	DEGASS/DEWATER SUBDRAIN			CONCRETE	
	DEGASS/DEWATER VENT			RIP RAP	
	DRAINAGE COLLECT. TANK		+247.33	ELEVATION	245.85
	CULVERT			BOLLARD	
MW	MONITORING WELL				
TH	TEST HOLE / TEST PIT				

PROPOSED RETENTION BASIN SITE PLAN

Scale 1:500

NOTES:
1. DEWATER SLUDGE BY COMBINING THICKENED SLUDGE FROM LAGOON AND DEWATERING POLYMER AND PUMPING INTO DEWATERING GEOTEXTILE SLUDGE DRAINAGE BAGS. ALLOW DRAINAGE BACK TO EXISTING LAGOON DURING FREEZE THAW CYCLE OF WINTER / SUMMER. HAUL DEWATERED SLUDGE TO LANDFILL FOR BURIAL.
2. INSTALL GEOMEMBRANE UNDER THE GEOBAGS AND ON THE SLOPE TO PREVENT EROSION.
3. MOVE 4 EXISTING ELECTRICAL LINES ON THE GROUND FURTHER FROM THE SLUDGE DEWATERING AREA. PROVIDE PROTECTIVE PLYWOOD COVERS ON THE 4 EXISTING ELECTRICAL LINES.

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY

P. BARSALOU

2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

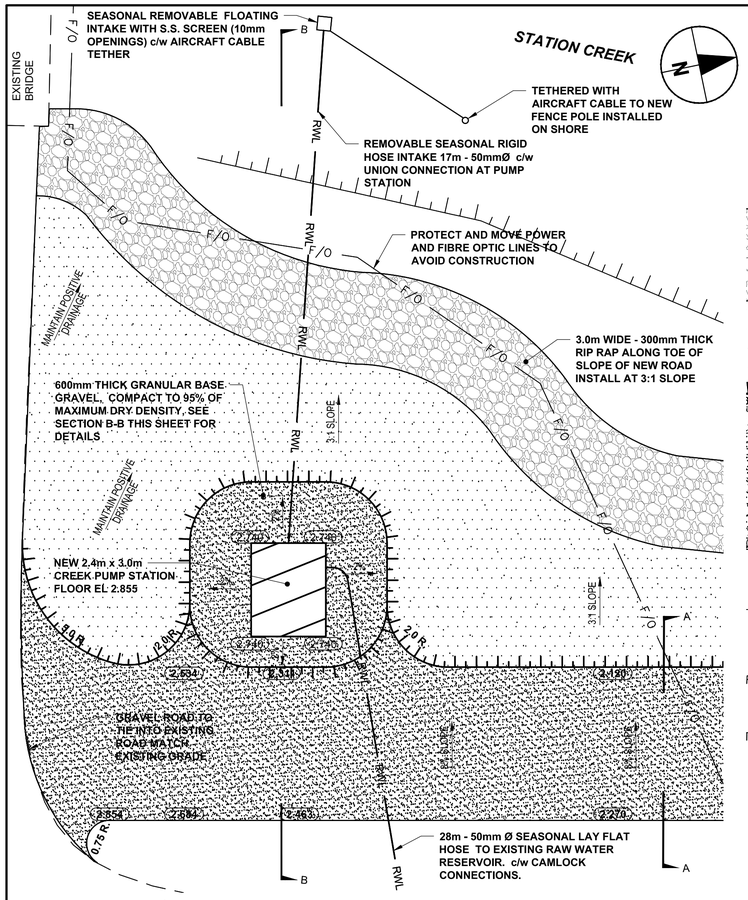
EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: A. FARROKHI
Drawn by / Dessiné par: G. LACOSTE
Approved by / Approuvé par: P. BARSALOU
PWGSC Project Manager / Administrateur de Projets TPSGC: M. MOGAN

Drawing title / Titre du dessin

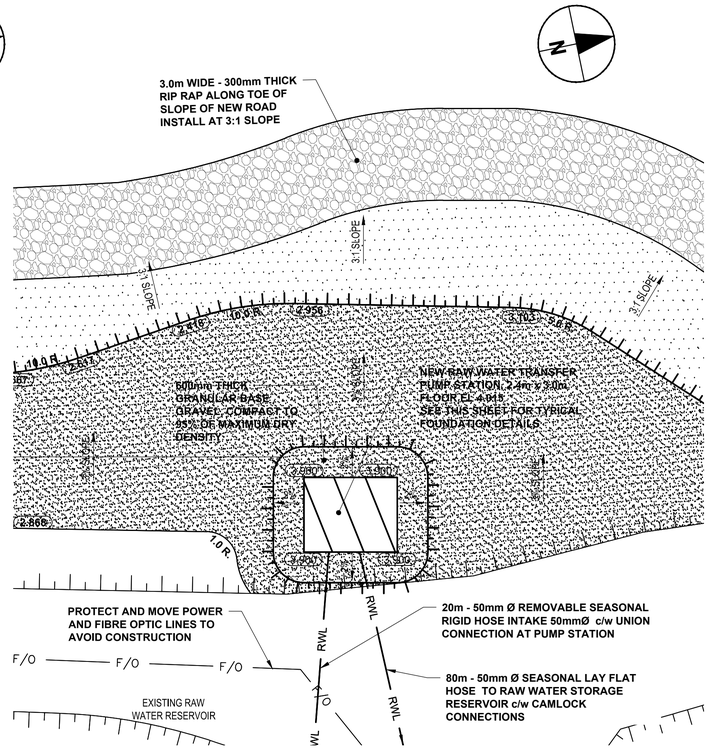
CIVIL
RETENTION BASIN UPGRADE & WASTEWATER
PROPOSED SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0004 OF	1



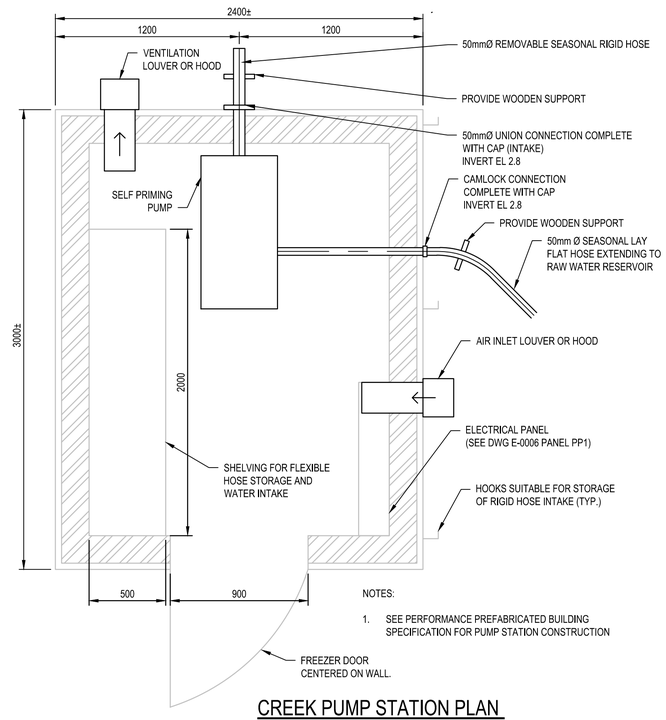
1 | CREEK PUMP STATION PLAN

C-0003 — Scale 1:100



2 | RAW WATER TRANSFER STATION GRADING PLAN

C-0003 — Scale 1:100

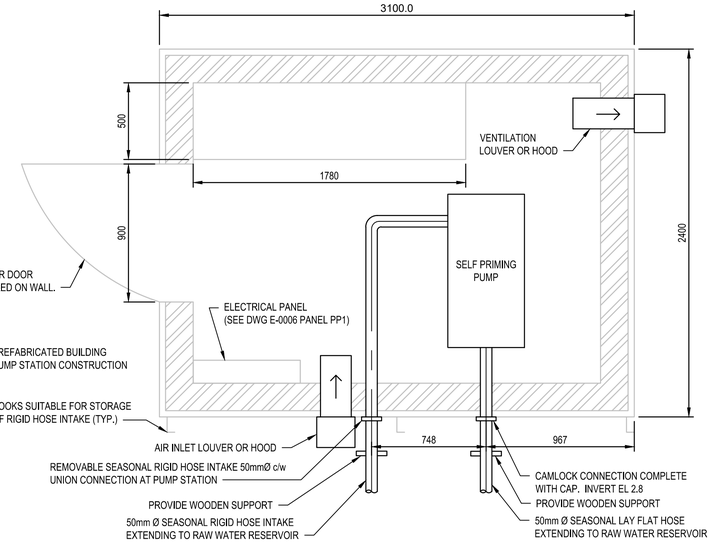


NOTES:

1. SEE PERFORMANCE PREFABRICATED BUILDING SPECIFICATION FOR PUMP STATION CONSTRUCTION

CREEK PUMP STATION PLAN

Scale 1:20

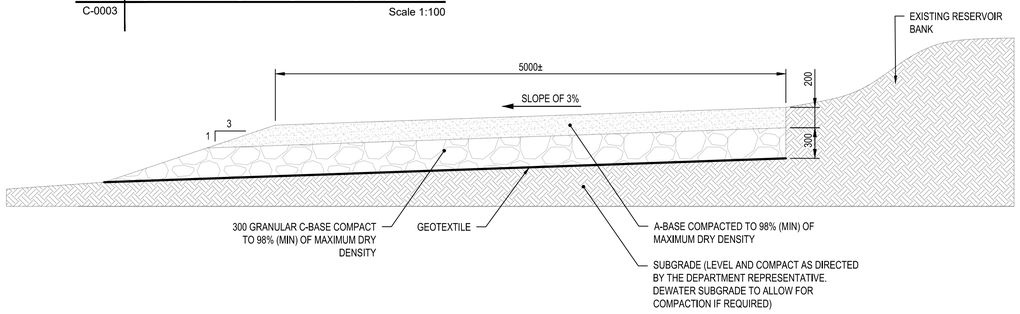


NOTES:

1. SEE PERFORMANCE PREFABRICATED BUILDING SPECIFICATION FOR PUMP STATION CONSTRUCTION

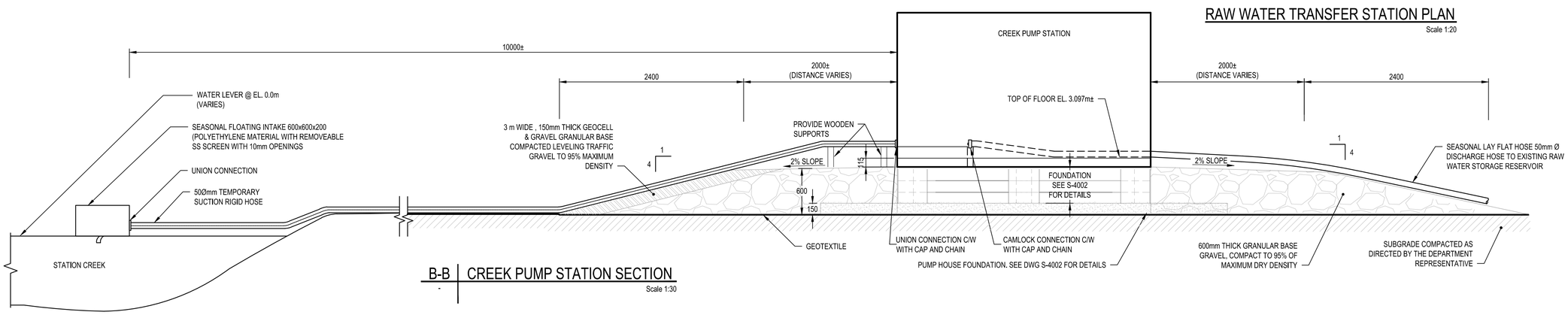
RAW WATER TRANSFER STATION PLAN

Scale 1:20



A-A | RAW WATER TRANSFER PUMP STATION ACCESS ROAD AND PARKING AREA SECTION

Scale 1:30



B-B | CREEK PUMP STATION SECTION

Scale 1:30

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
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ORIGINAL SIGNED BY

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Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

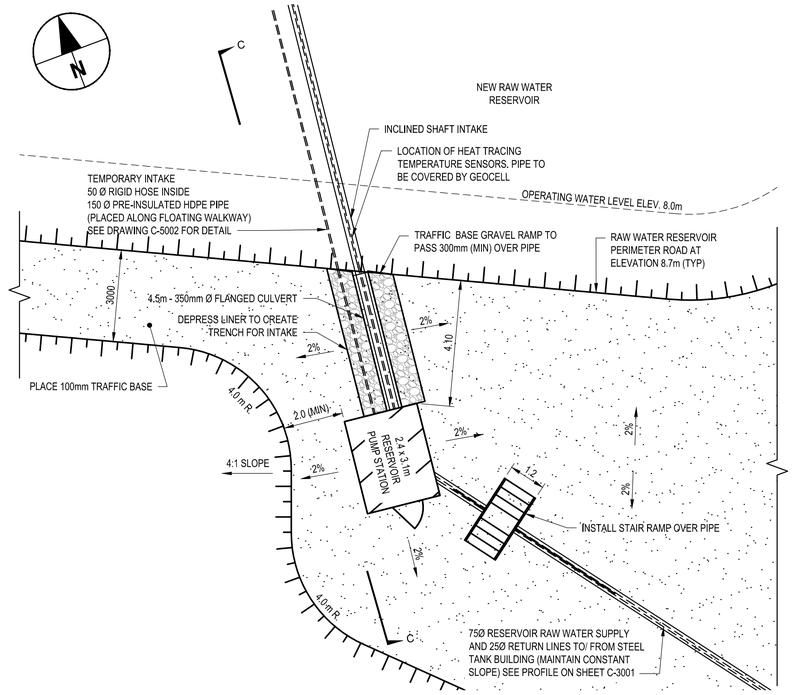
EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

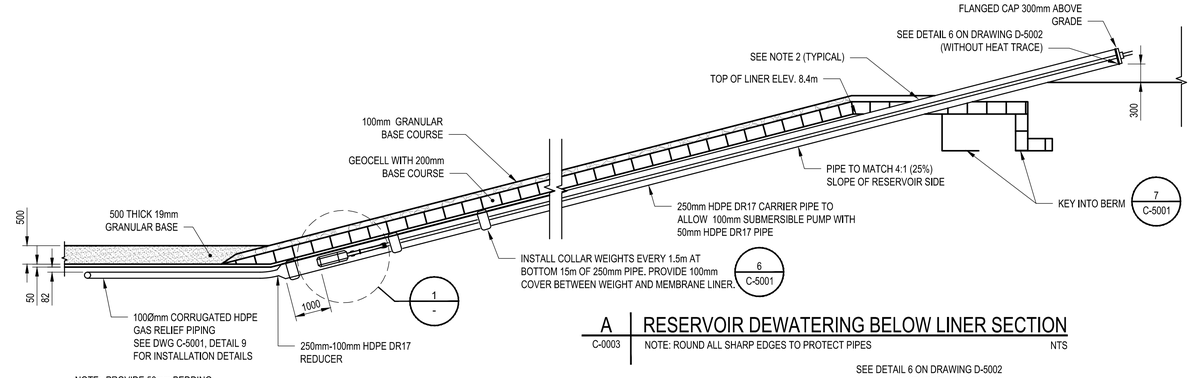
Drawing title / Titre du dessin

CIVIL
CREEK PUMP STATION
CROSS SECTIONS

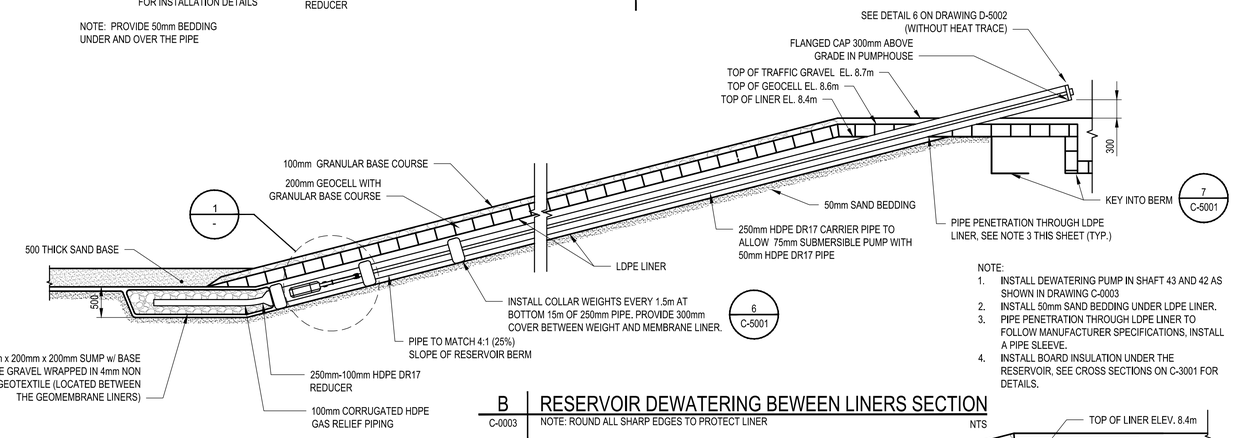
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0005 OF	1



3 | RESERVOIR PUMP HOUSE PLAN
C-0003 — Scale 1:100

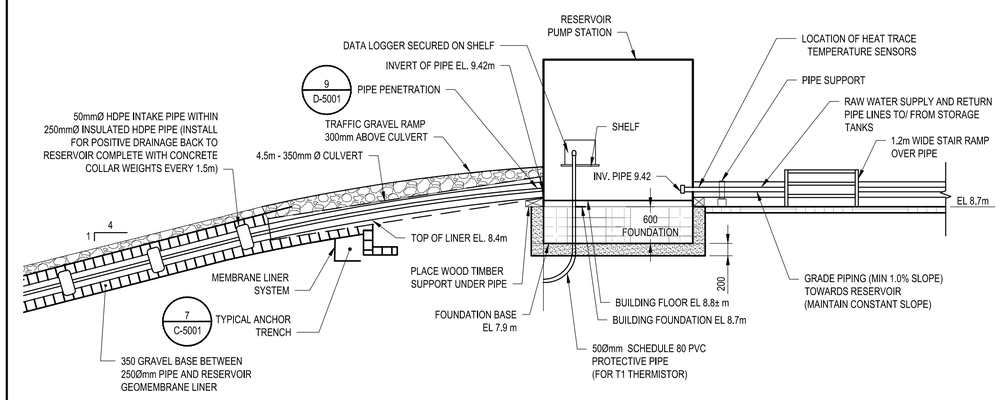


A | RESERVOIR DEWATERING BELOW LINER SECTION
C-0003 — NOTE: ROUND ALL SHARP EDGES TO PROTECT PIPES — NTS

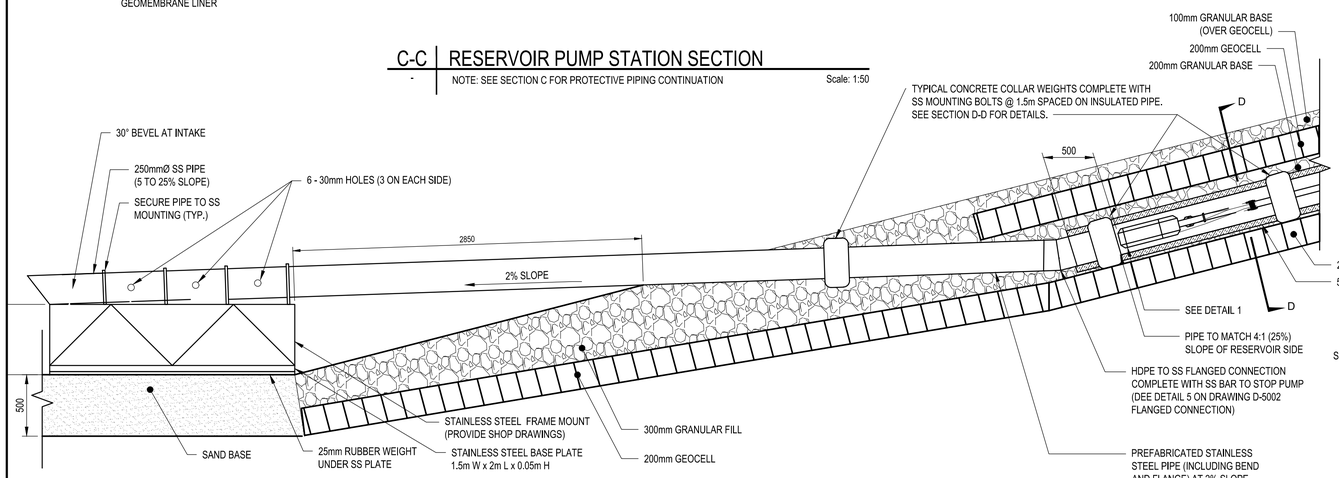


NOTE:
1. INSTALL DEWATERING PUMP IN SHAFT 43 AND 42 AS SHOWN IN DRAWING C-0003
2. INSTALL 50mm SAND BEDDING UNDER LDPE LINER.
3. PIPE PENETRATION THROUGH LDPE LINER TO FOLLOW MANUFACTURER SPECIFICATIONS, INSTALL A PIPE SLEEVE.
4. INSTALL BOARD INSULATION UNDER THE RESERVOIR, SEE CROSS SECTIONS ON C-3001 FOR DETAILS.

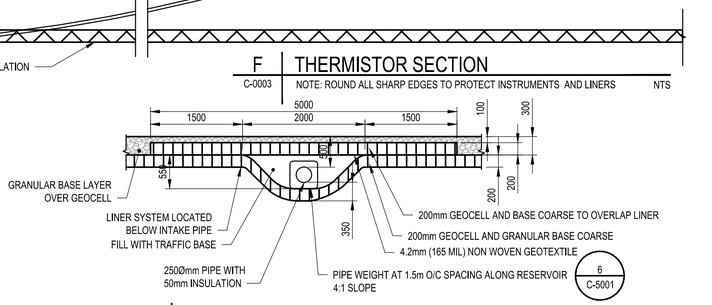
B | RESERVOIR DEWATERING BEWEEN LINERS SECTION
C-0003 — NOTE: ROUND ALL SHARP EDGES TO PROTECT LINER — NTS



C-C | RESERVOIR PUMP STATION SECTION
- — NOTE: SEE SECTION C FOR PROTECTIVE PIPING CONTINUATION — Scale: 1:50

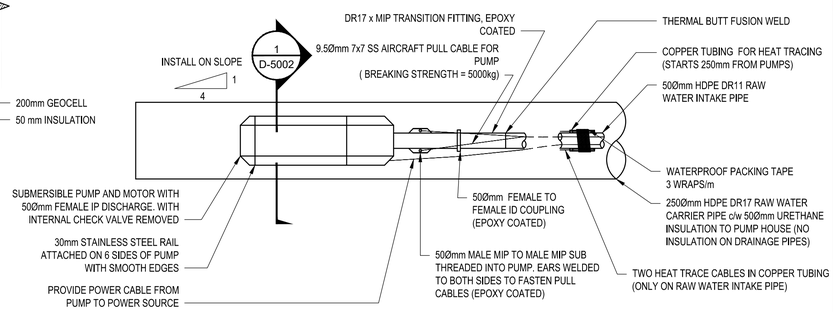


E | COVERED INTAKE CROSS SECTION
C-0003 — NOTE: ROUND ALL SHARP EDGES TO PROTECT LINERS — Scale 1:20



F | THERMISTOR SECTION
C-0003 — NOTE: ROUND ALL SHARP EDGES TO PROTECT INSTRUMENTS AND LINERS — NTS

D | COVERED INTAKE CROSS SECTION
- — Scale 1:50



1 | SUMBERSIBLE PUMP DETAIL (RAW WATER AND DRAINAGE PUMPS)
- — NOTE: PROVIDE PIPE WEIGHTS AS NOTED — Scale 1:10

NOTES:
1. POSITION PUMP 0.5m AWAY FROM BEND IN INCLINED SHAFT AND DRAINAGE SUCTION PIPE.
2. INSTALLATION, SEALING, JOINING & ANCHORING OF PIPE PENETRATIONS SHALL CONFORM TO MEMBRANE MANUFACTURER'S SPECIFICATIONS. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW.

Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
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AECOM

ORIGINAL SIGNED BY
P. BARSALOU
2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

CIVIL
RESERVOIR PUMP STATION PLAN AND SECTION VIEWS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0006 OF	1

PWGSC – A1 – 841X594

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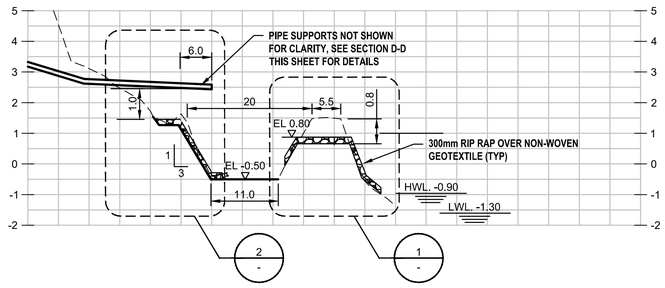
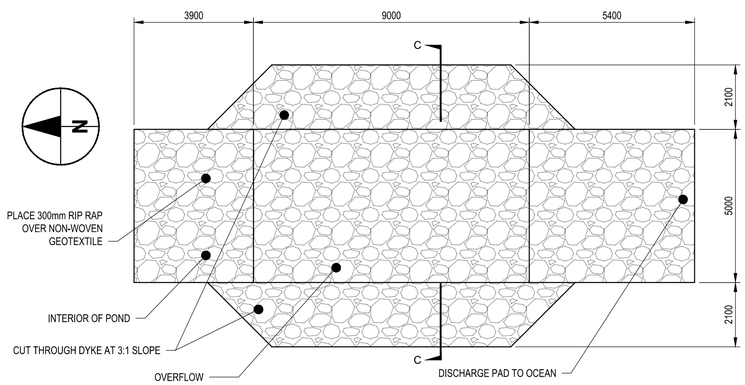


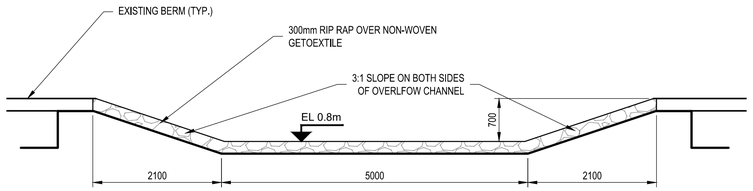
PROFILE OF RETENTION BASIN UPGRADE & FORCEMAIN OUTLET STRUCTURE

Scale N.T.S.



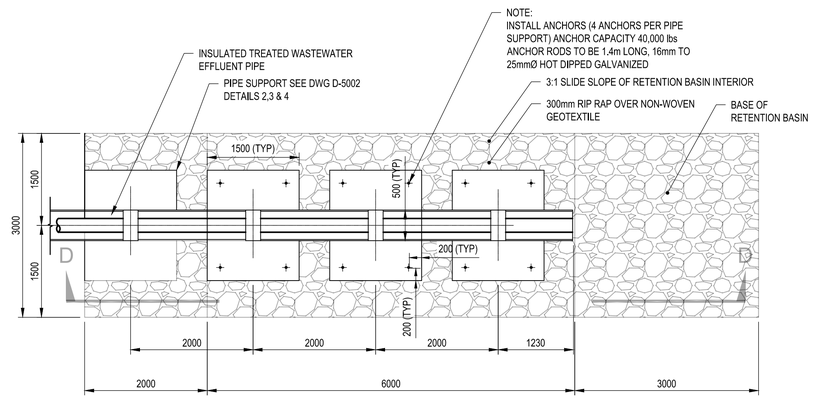
1 - RETENTION BASIN DICHARGE CHANNEL PLAN

Scale 1:100



C-C - RETENTION BASIN DISCHARGE CHANNEL SECTION

Scale 1:50

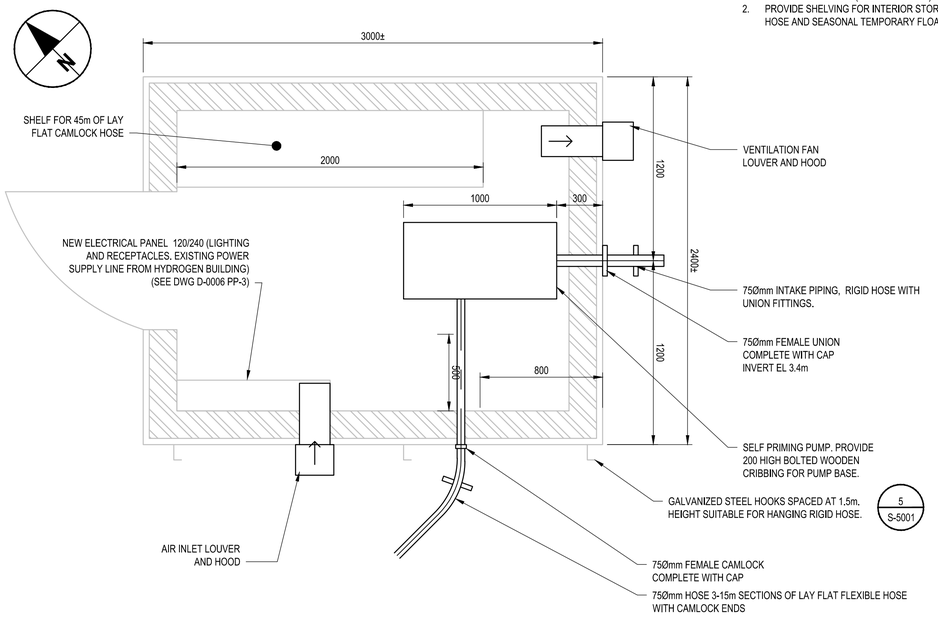


2 - RETENTION BASIN INLET PAD c/w FORCEMAIN OUTLET STRUCTURE

Scale 1:50

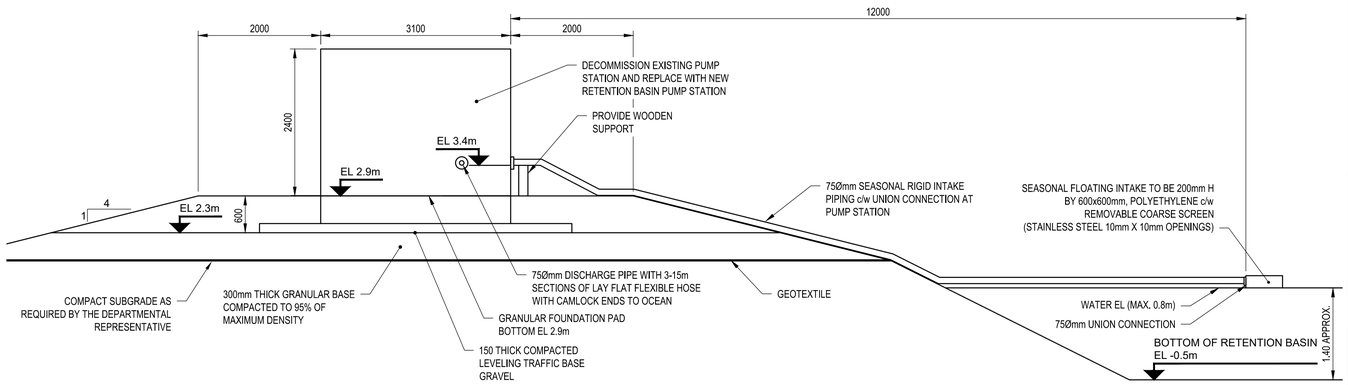
NOTES:

1. PROVIDE STURDY GALVANIZED BRACKETS TO SUPPORT RIGID HOSE ON EXTERIOR. (SEE DWG S-5001)
2. PROVIDE SHELVING FOR INTERIOR STORAGE OF LAY FLAT HOSE AND SEASONAL TEMPORARY FLOATING INTAKE.



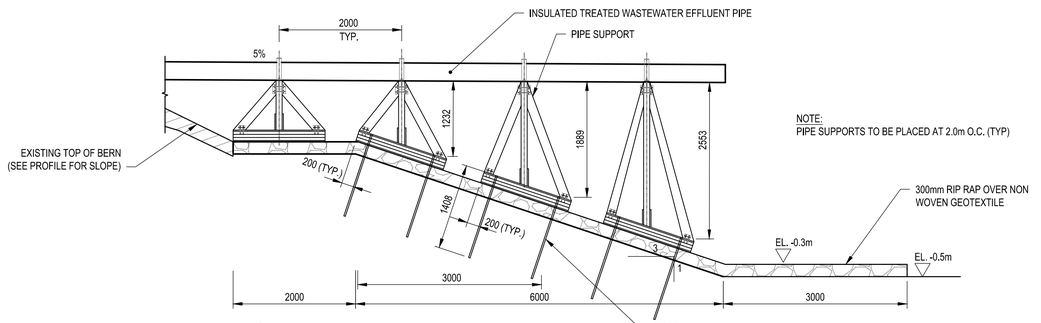
RETENTION BASIN PUMP STATION PLAN

Scale 1:20



RETENTION BASIN PUMP STATION SECTION

Scale 1:50



D-D - INTAKE PIPE CHANNEL SECTION

Scale 1:50

NOTE:
PIPE SUPPORTS TO BE PLACED AT 2.0m O.C. (TYP)

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Western Region
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Région de l'ouest

AECOM

ORIGINAL SIGNED BY

P. BARSALOU

2020/06/23

PERMIT TO PRACTICE
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Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

CIVIL
UPGRADED RETENTION BASIN PLAN, CROSS SECTIONS AND DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0007 OF	1

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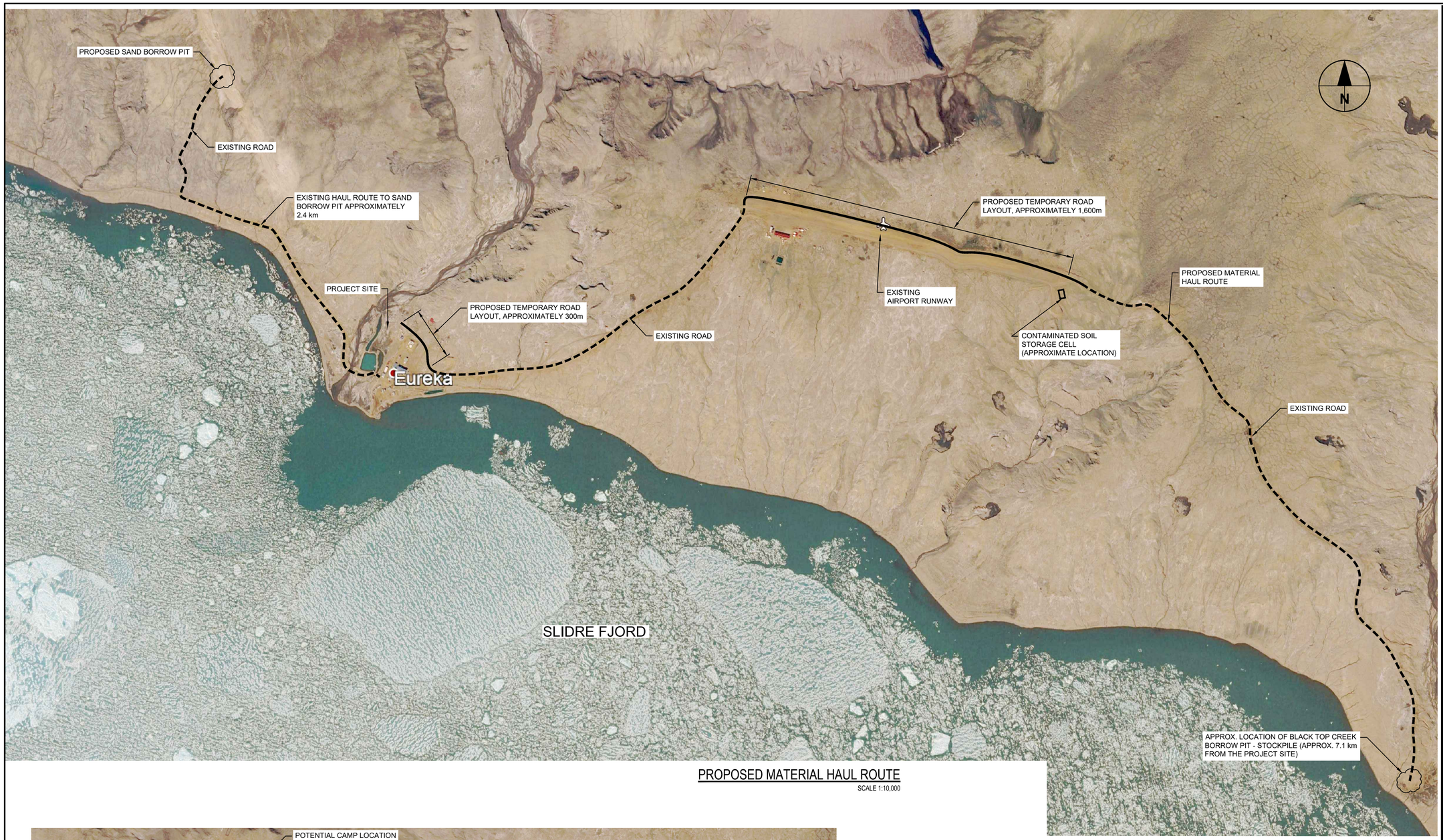
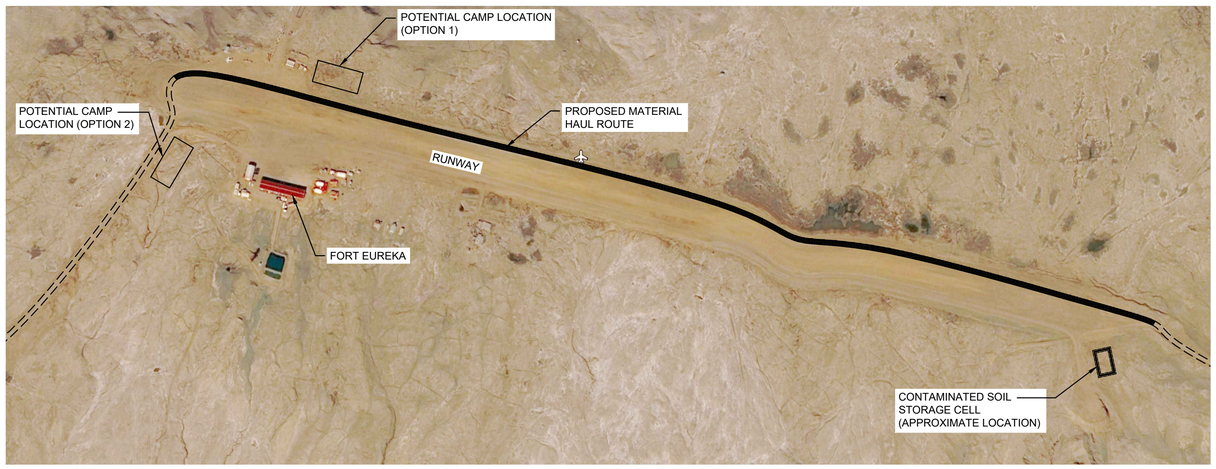


PROPOSED MATERIAL HAUL ROUTE

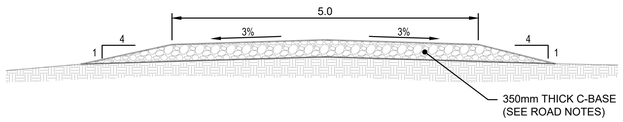
SCALE 1:10,000

IMAGE OBTAINED FROM GOOGLE EARTH (2016)



PROPOSED ROAD LAYOUT AT THE EXISTING AIRPORT

NTS



ROAD X-SECTION

Scale NTS

BENCH MARK:
749167A
LOCATED ON THE FOSHEIM PEN OF ELLESMERE ISLAND AT THE AIRSTRIP OF THE EUREKA WEATHER STATION, ON BRADLEY AIR SERVICE PROPERTY, 16.04m FROM MAIN STATION "749167", MARKED BY A BRASS TABLET SET ON A COPPER ROD.
ELEV. 77.851m (Geoid. HT2_0)

ROAD NOTES:
1. CONSTRUCT TEMPORARY ROADS TO HAUL GRANULAR MATERIAL FROM BLACK TOP CREEK STOCKPILE AS SHOWN.
2. PROOF-ROLL AND COMPACT EXISTING SUBGRADE. REMOVE SOFT / WET MATERIAL IF REQUIRED.
3. INSTALL 0.35m THICK C-BASE AS PER SECTION 32 11 23 AGGREGATE BASE COURSES.
4. COORDINATE TRAFFIC ON EXISTING ROAD AND AT AIRPORT WITH OTHER CONTRACTORS AND THE STATION.
5. PROTECT AND AVOID ALL EXISTING INFRASTRUCTURE AND RESEARCH EQUIPMENT.
6. CAMP SET-UP INCLUDES SITE LEVELING AND USE OF UP TO 100m3 OF STOCKPILED GRANULAR.
7. TEMPORARILY RE-ROUTE OR / PROTECT CABLES ON BRIDGE NEAR FRESHWATER RESERVOIR.
8. PROHIBIT HEAVY EQUIPMENT ON BRIDGE OVER CREEK. LIMIT TO LIGHT TRUCKS ¾ TON ONLY.

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Travaux publics et Services gouvernementaux Canada
REAL PROPERTY SERVICES
Western Region
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Région de l'ouest

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P. BARSALOU

2020/06/23

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Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
A. FARROKHI

Drawn by / Dessiné par
G. LACOSTE

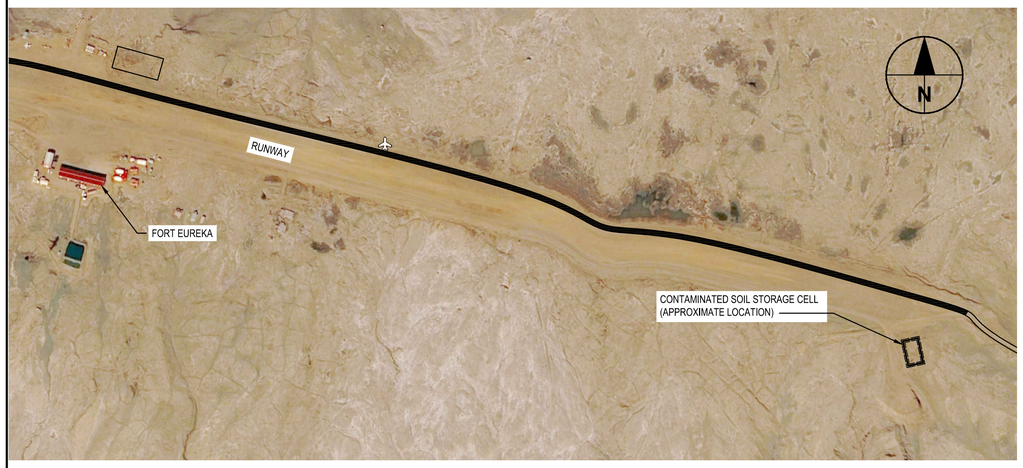
Approved by / Approuvé par
P. BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

CIVIL
OVERALL
PROPOSED MATERIAL HAUL ROUTE

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0008 OF	1

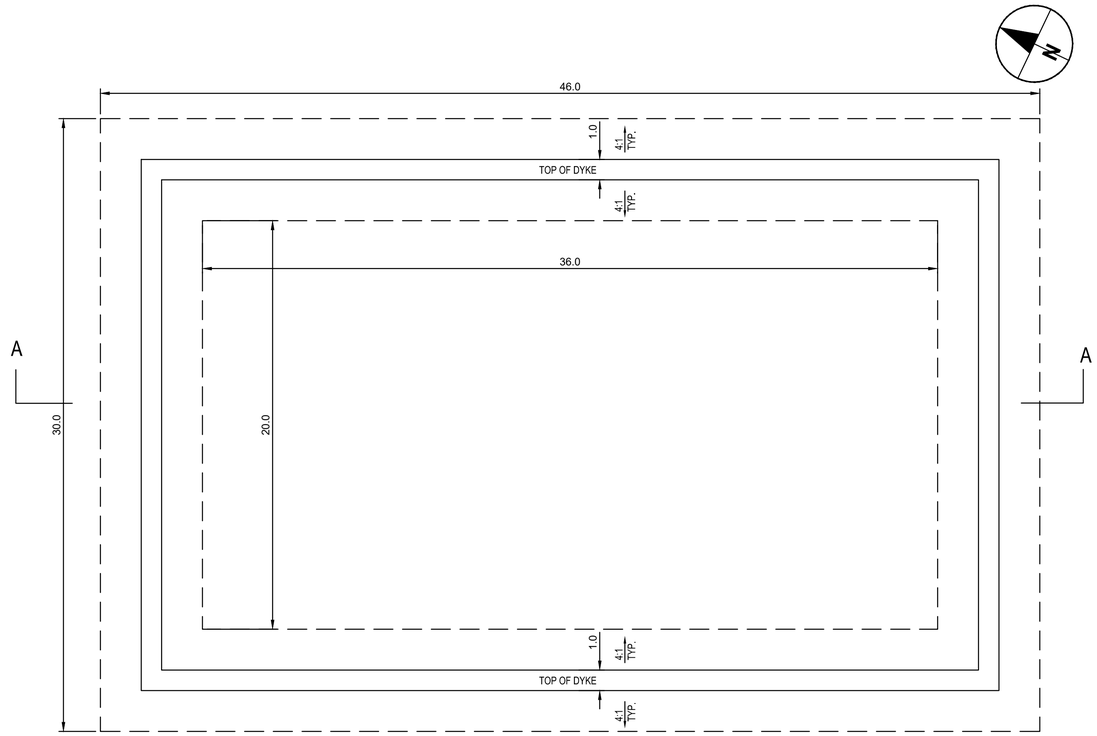


CONTAMINATED SOIL STORAGE CELL POTENTIAL LOCATION

Scale NTS

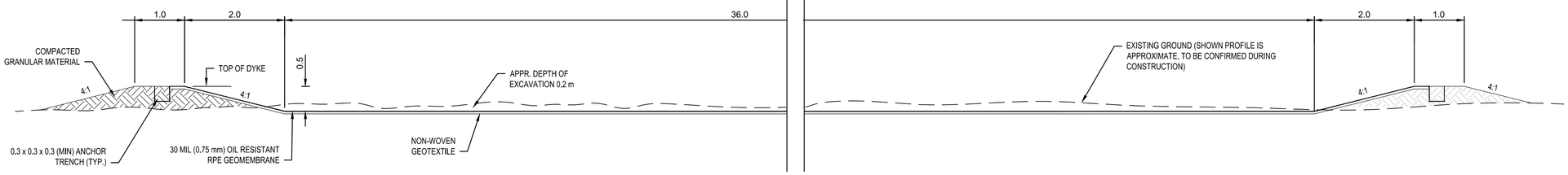
CONSTRUCTION NOTES:

1. PRIOR TO CONSTRUCTION, DELETERIOUS SOILS COMPRISING VEGETATION, TOPSOIL, AND THE SOFT/VERY SOFT, LOOSE, WET, DISTURBED, PORTION OF NATIVE SOILS, IF ANY, SHOULD BE REMOVED FROM THE STORAGE CELL FOOTPRINT.
2. FOLLOWING INITIAL SITE STRIPPING OF DELETERIOUS SOILS, AND PRIOR TO GRADING, AREAS IDENTIFIED FOR FILL PLACEMENT SHOULD BE COMPACTED. ANY SOFT AREAS SHOULD BE OVER-EXCAVATED AND BACKFILLED TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) USING GRANULAR BASE MATERIAL.
3. ALL FILL REQUIRED TO RAISE THE SUBGRADE ELEVATION SHOULD MEET THE REQUIREMENTS AS DEFINED IN SECTION 32 11 23 - AGGREGATE BASE COURSES.
4. FILL MATERIAL SHOULD BE PLACED IN LIFTS NOT EXCEEDING 150MM IN COMPACTED THICKNESS AND A MINIMUM DENSITY OF 98% SPMDD.
5. THE FINISHED SUBGRADE MUST BE FREE OF DEPRESSIONS.
6. THE CONTRACTOR SHALL ENSURE THAT LOCAL DRAINAGE PATTERNS ARE NOT ALTERED BY THE CONSTRUCTION.
7. CELL DYKES TO BE CONSTRUCTED USING GRANULAR BASE COURSE AS DEFINED IN SECTION 32 11 23, WITH 4:1 INTERIOR AND EXTERIOR SLOPES.
8. THE STOCKPILE OF CONTAMINATED SOIL SHALL BE COVERED BY A 30 mil (0.75 mm) OIL RESISTANT RPE GEOMEMBRANE LINER AFTER SOIL PLACEMENT IS COMPLETE. SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION.
9. HANDLING AND INSTALLATION OF THE LINER SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS.
10. WELDING OF THE LINER SHEETS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
11. THE LINER MATERIAL SHALL NOT BE PUNCTURED DURING PLACEMENT.
12. SECURE THE COVER LINER IN A 0.5 m x 0.5 m x 0.5 m ANCHOR TRENCH ON THE EXTERIOR OF THE BERM SO THAT PRECIPITATION IS SHED OFF OF THE STORAGE CELL.
13. SECURE THE TOP OF THE COVER MATERIAL WITH SANDBAGS AT A 5 M GRID TO PREVENT FROM WIND DAMAGE.



1 - PROPOSED CONTAMINATED SOIL STORAGE CELL PLAN

Scale 1:100



A - PROPOSED CROSS SECTION, LINER AND GEOTEXTILE DETAILS

Scale 1:50

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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
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ORIGINAL
SIGNED BY

P. BARSALOU

2020/06/23

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310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
A. FARROKHI

Drawn by / Dessiné par
G. LACOSTE

Approved by / Approuvé par
P. BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

CIVIL
CONTAMINATED SOIL STORAGE CELL PLAN, CROSS SECTION AND LOCATION PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0009 OF	1

PWGSC – A1 – 841X594

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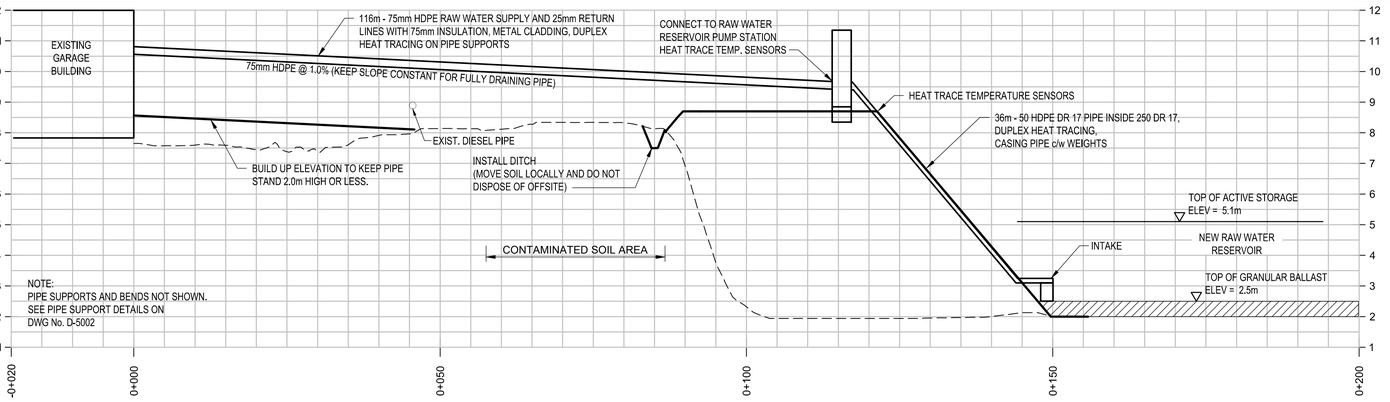
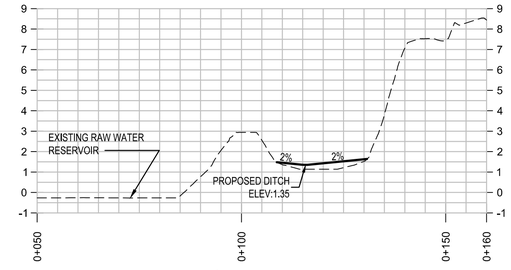
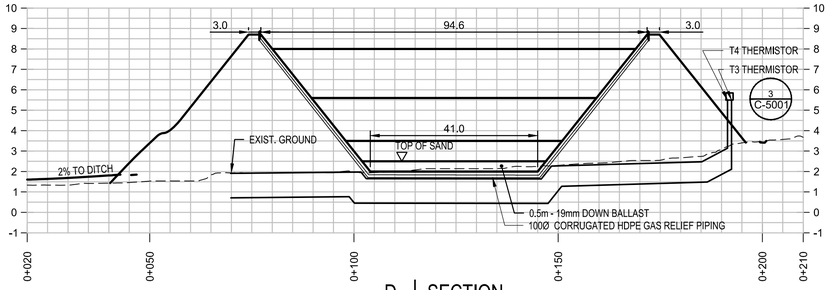


RAW WATER SUPPLY AND RETURN PIPE LINES PROFILE

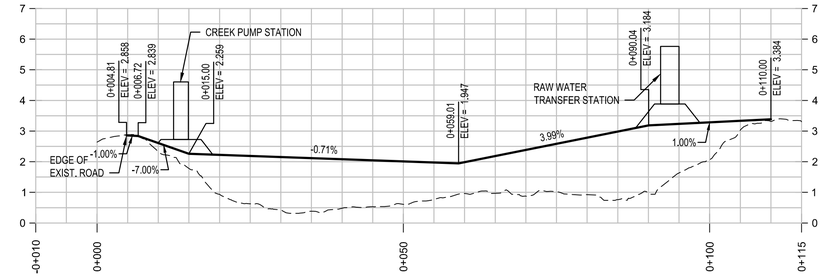
Scale Horz. 1:500
Vert. 1:100



E | SECTION
C-0003 | Scale Horz. 1:750 Vert. 1:150

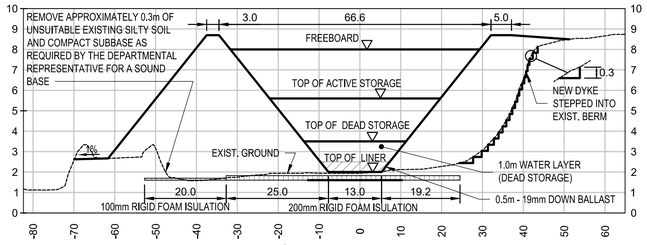


D | SECTION
C-0003 | Scale Horz. 1:750 Vert. 1:150

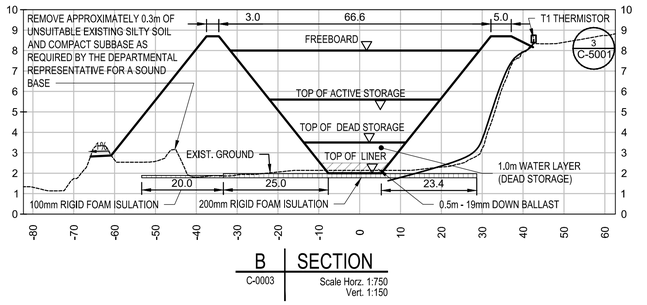


RAW WATER TRANSFER PUMP STATION ACCESS ROAD PROFILE

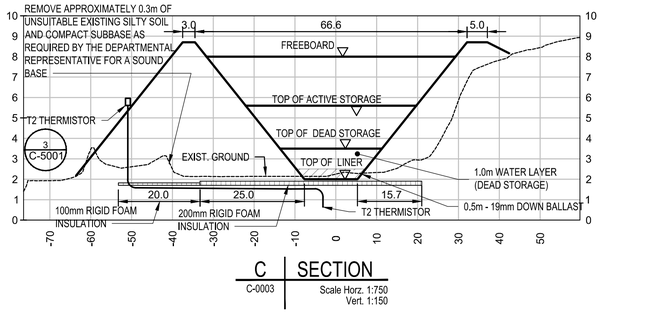
Scale Horz. 1:500
Vert. 1:100



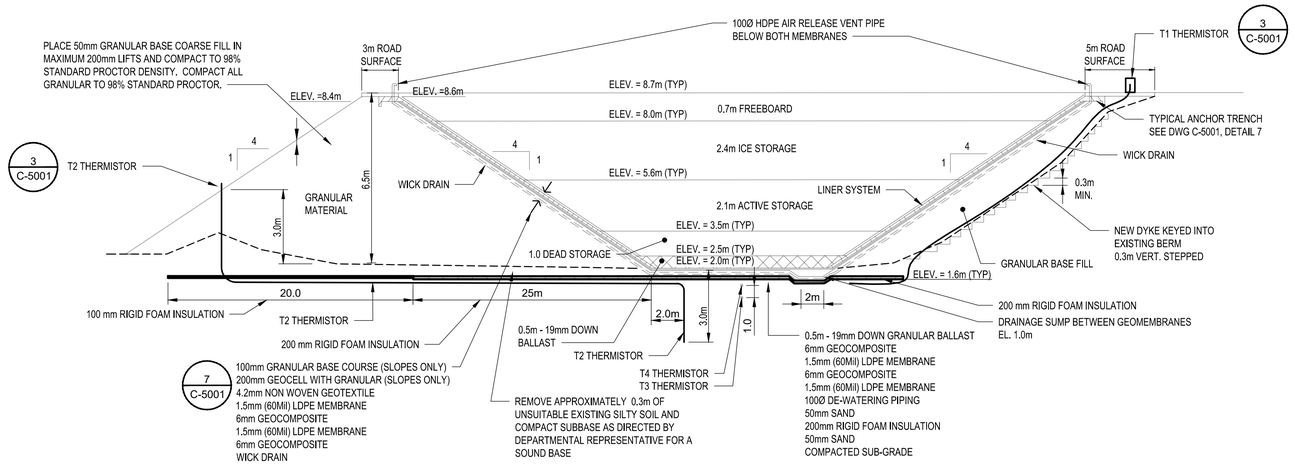
A | SECTION
C-0003 | Scale Horz. 1:750 Vert. 1:150



B | SECTION
C-0003 | Scale Horz. 1:750 Vert. 1:150



C | SECTION
C-0003 | Scale Horz. 1:750 Vert. 1:150



NEW RAW WATER STORAGE RESERVOIR CROSS SECTION DETAIL

Scale NTS

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Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3 Winnipeg, MB

Project title / Projet

NUNAVUT EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

CIVIL
NEW RAW WATER STORAGE RESERVOIR PROFILES AND SECTIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-3001 OF	1

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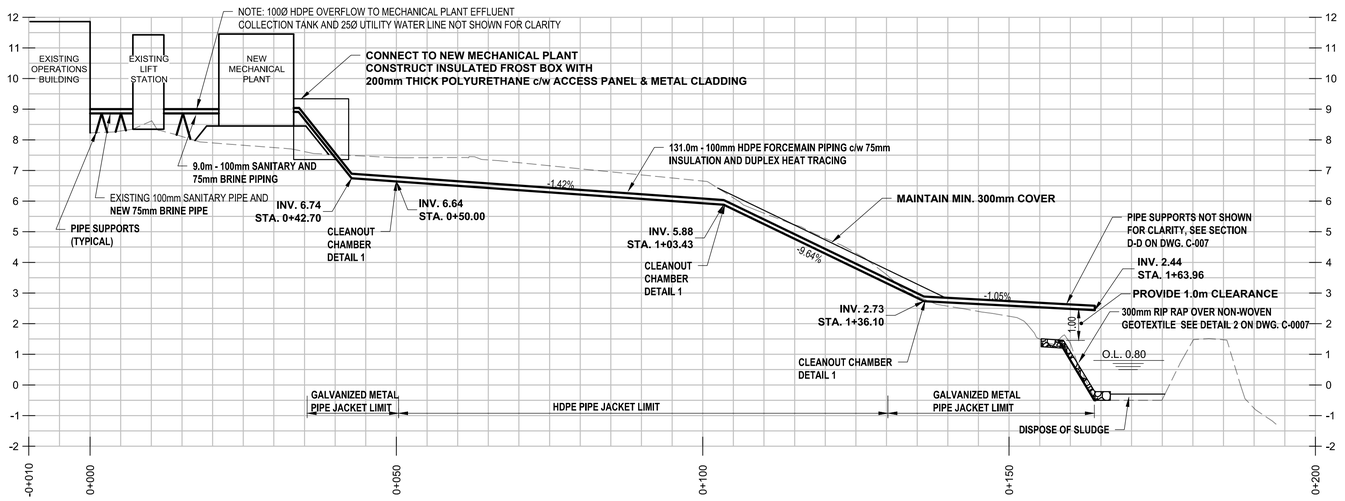
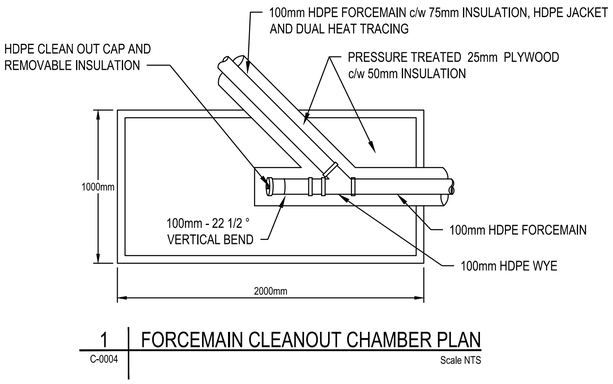
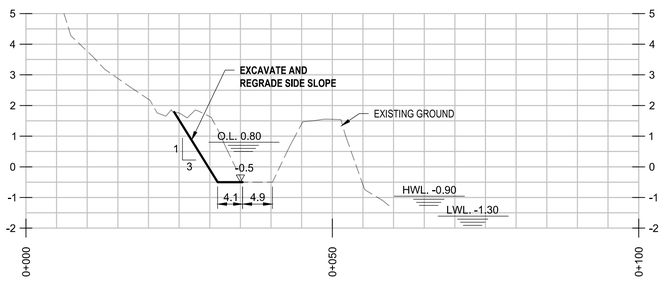


FINAL EFFLUENT FORCEMAIN PROFILE

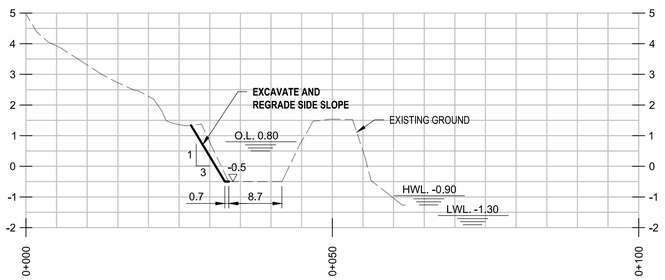
Scale 1:500
Vert. 1:100



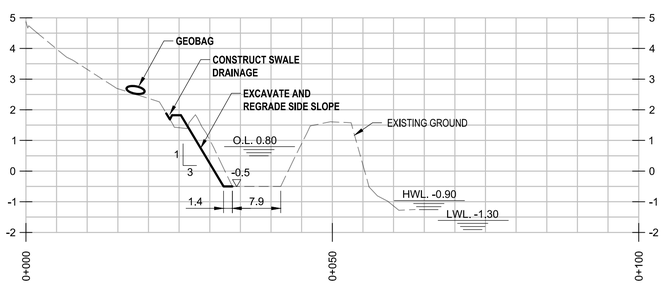
1 | FORCEMAIN CLEANOUT CHAMBER PLAN
C-0004 — Scale NTS



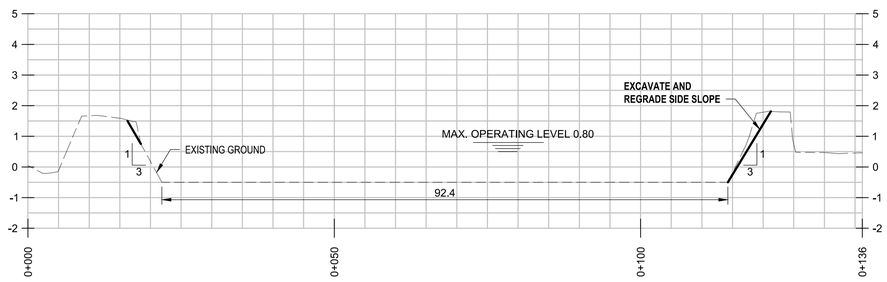
A | RETENTION BASIN SECTION
C-0004 — Scale Horz. 1:500, Vert. 1:100



B | RETENTION BASIN SECTION
C-0004 — Scale Horz. 1:500, Vert. 1:100



C | RETENTION BASIN SECTION
C-0004 — Scale Horz. 1:500, Vert. 1:100



D | RETENTION BASIN SECTION
C-0004 — Scale Horz. 1:500, Vert. 1:100

NOTES:
1. DISPOSE OF SLUDGE PRIOR TO REGRADING AND EXCAVATING RETENTION POND. SLUDGE TO BE DRAINED, DRIED AND INCINERATED AT LANDFILL.

2. DISPOSE OF EXTRA SOIL IN AREA AS SHOWN ON C-0004, EAST OF RETENTION BASIN.

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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY

P. BARSALOU

2020/06/23

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AECOM Canada Ltd.
Signature SIGNED BY B.B.
SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
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Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

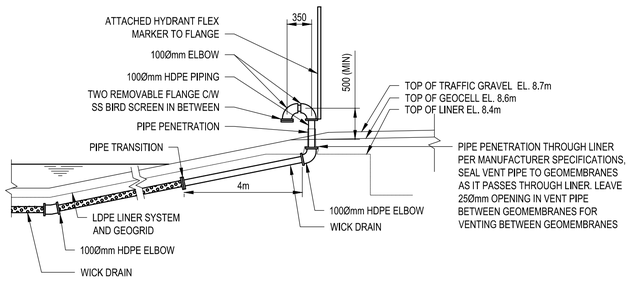
Drawing title / Titre du dessin

CIVIL
UPGRADED RETENTION BASIN PROFILES AND SECTIONS

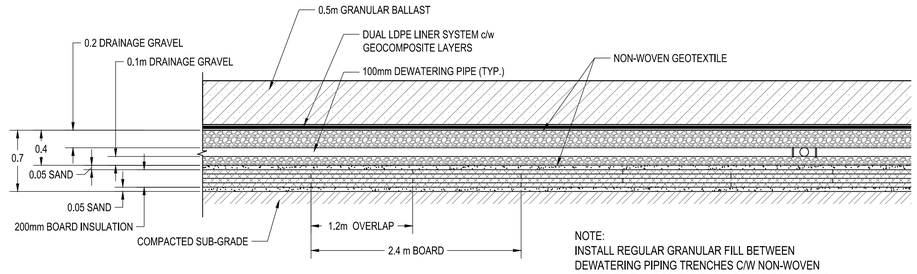
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-3002 OF	1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

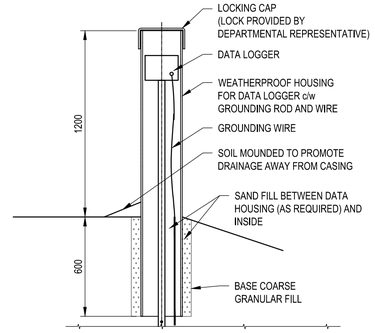


1 | GAS RELIEF SYSTEM DETAIL
C-0003 | Scale NTS

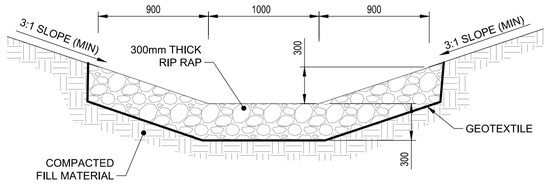


NOTE:
INSTALL REGULAR GRANULAR FILL BETWEEN DEWATERING PIPING TRENCHES C/W NON-WOVEN GEOTEXTILE UNDER THE DUAL LDPE LINER SYSTEM.

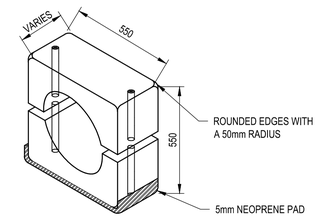
2 | BOARD INSULATION INSTALLATION DETAIL
C-3001 | Scale NTS



3 | DATA LOGGER DETAIL
N.T.S



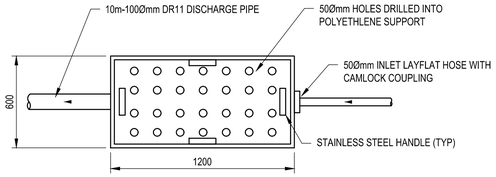
DITCH RIP-RAP DETAIL
Scale NTS



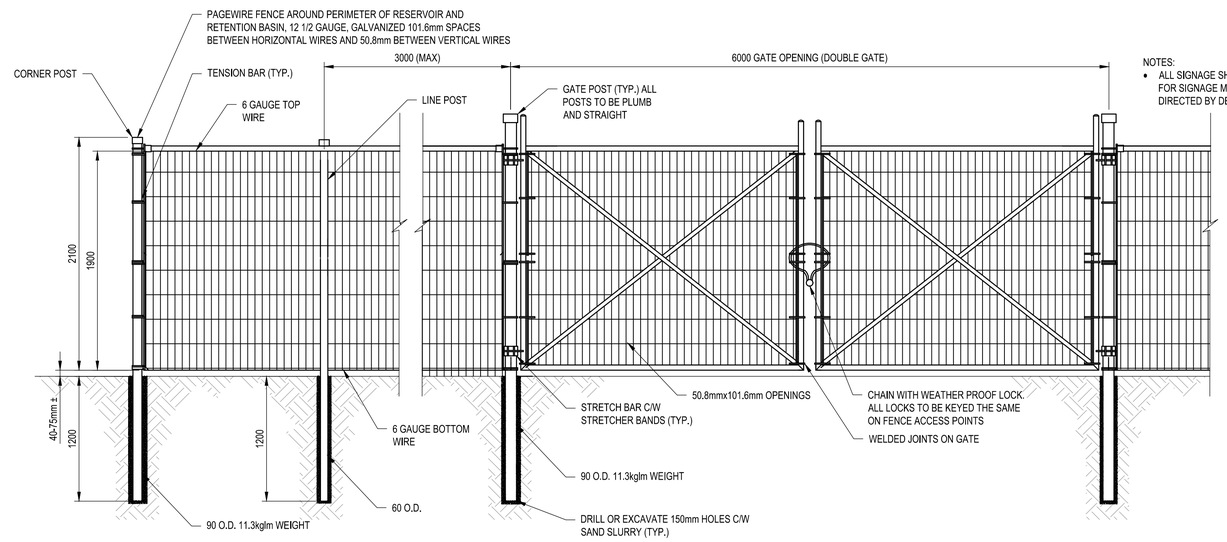
NOMINAL PIPE SIZE	APPROX. WEIGHT IN AIR	APPROX. WEIGHT IN WATER	SPACING	LOCATION
250 PIPE AND 50mm INSULATION (NOMINAL SIZE 350mm)	135 kg	80 kg	1.5m	INTAKE PIPE
250 PIPE WITHOUT INSULATION	100 kg	60 kg	1.5m	INTAKE PIPE

6 | PRECAST CONCRETE COLLAR WEIGHT DETAIL
C-0006 | Scale NTS

GAS RELIEF/DEWATERING PIPING
4 | TRENCH INSTALLATION DETAIL
C-0003 | Scale NTS



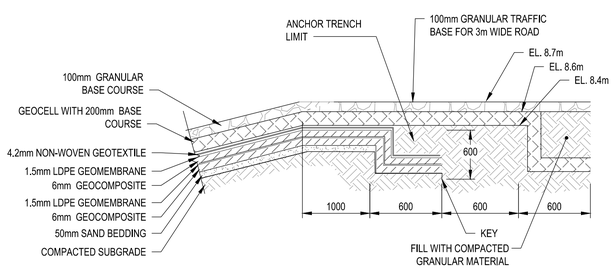
5 | HYDROCARBON COLLECTION DETAIL
C-0003 | Scale 1:20



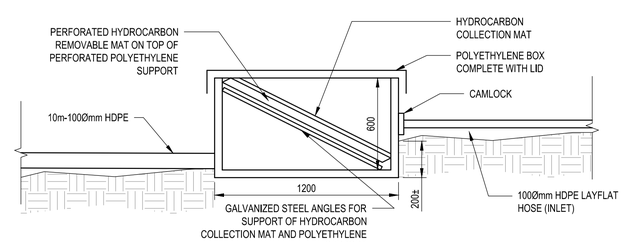
NOTES:
- ALL SIGNAGE SHALL BE IN ACCORDANCE WITH SECTION 10 14 53 FOR SIGNAGE MATERIAL AND INSTALLATION DETAILS AND AS DIRECTED BY DEPARTMENT REPRESENTATIVE

8 | TYPICAL FENCE DETAIL
C-0003 | Scale NTS

NOTE: PERSON GATES TO BE 1200mm WIDE GATE POSTS, WITH CHAIN LOCK , HINGES, GATE BRACING AND DROP LATCH



7 | TYPICAL ANCHOR TRENCH
Scale NTS



A-A | HYDROCARBON COLLECTION SECTION
C-0003 | Scale 1:20

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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY
P. BARSALOU
2020/06/23

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Client / client
Public Works and Government Services Canada
310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet
NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **L. CHUNDEROVA**
Drawn by / Dessiné par: **G. LACOSTE**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**
Drawing title / Titre du dessin:
CIVIL
GENERAL
CIVIL DETAILS
SHEET 1 OF 2

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-5001 OF	1

PWGSC – A1 – 841X594

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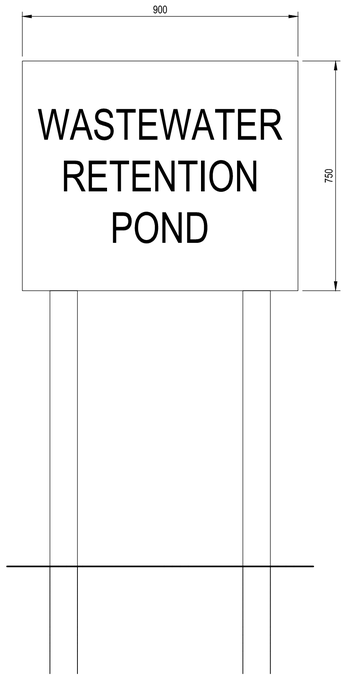
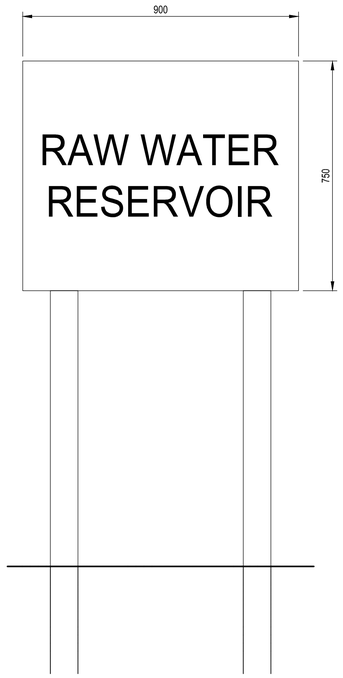
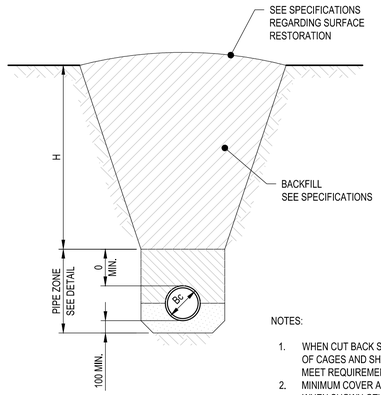




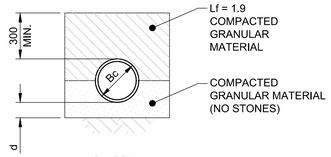


NOTES:

1. WHEN CUT BACK SLOPES ARE TO BE USED IN LIEU OF CAGES AND SHORING, THESE SLOPES ARE TO MEET REQUIREMENTS OF LOCAL CODES.
2. MINIMUM COVER ABOVE PIPE IS 3.5m EXCEPT WHEN SHOWN OTHERWISE
3. Bc = OUTSIDE PIPE DIAMETER

9 | TRENCH

Scale N.T.S.

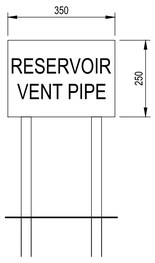


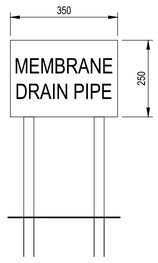
CLASS 'B'

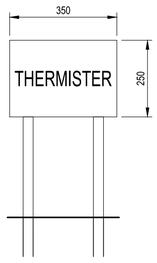
LEGEND:
H = TRENCH DEPTH ABOVE BEDDING ZONE
Bc = OUTSIDE PIPE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE (100mm MIN., 150mm IN ROCK)
As = AREA OF TRANSVERSE STEEL IN THE CRADLE OR ARCH EXPRESSED AS A PERCENTAGE OF AREA OF CONCRETE AT INVERT OR CROWN
Lf = LOAD FACTOR

10 | PIPE ZONE

Scale N.T.S.







NOTE:

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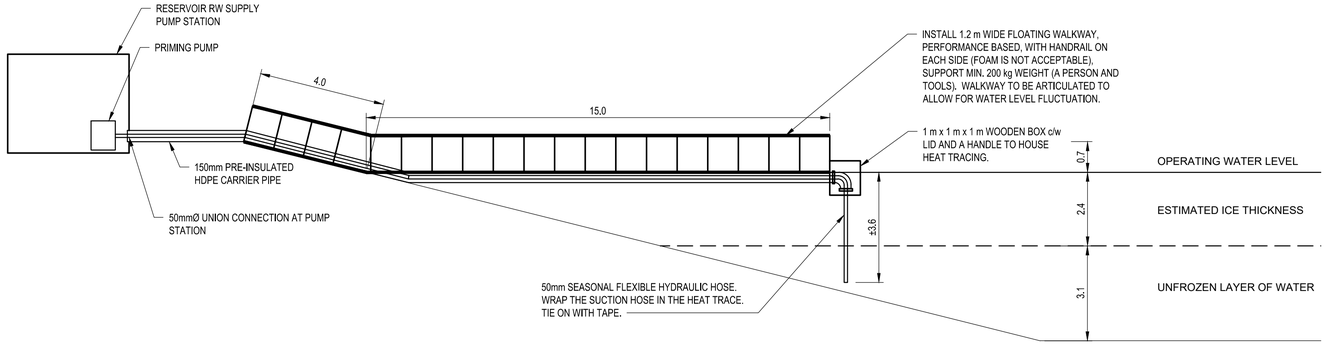
SIGNAGE

Scale N.T.S.



TEMPORARY INTAKE DETAIL

Scale 1:100

NOTES:

1. POSITION THE 150 mm PRE-INSULATED PIPE ON THE WALKWAY.
2. SECURE IN PLACE LOOSELY TO ALLOW FOR MOVEMENT.
3. THE PIPING IS TO BE CONSTRUCTED IN 2 LENGTHS, CONNECTED BY A FLANGE.
4. PIPE IS TO BE KEPT ON THE RESERVOIR BERM WHEN NOT IN USE.

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Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

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SIGNED BY

P. BARSALOU

2020/06/23

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The Association of Professional Engineers and Geophysicists of the NWT/NU.

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Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
L. CHUNDEROVA

Drawn by / Dessiné par
G. LACOSTE

Approved by / Approuvé par
P. BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

CIVIL
GENERAL
CIVIL DETAILS
SHEET 2 OF 2

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-5002 OF	1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

WASTEWATER TREATMENT PLANT AND PUMP HOUSES LOCATION PLAN

Scale 1:1000

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Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

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SIGNED BY

J.N. CARTMELL

2020/06/19

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Date SIGNED ON 06.23.2020
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Public Works and Government Services Canada
310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet
NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **G.G. PROFETA**
Drawn by / Dessiné par: **D. LANDERS**
Approved by / Approuvé par: **R. MERKOSKY**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin
STRUCTURAL
PACKAGED WASTEWATER TREATMENT PLANT AND PUMP STATIONS LOCATION PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-0001 OF	1

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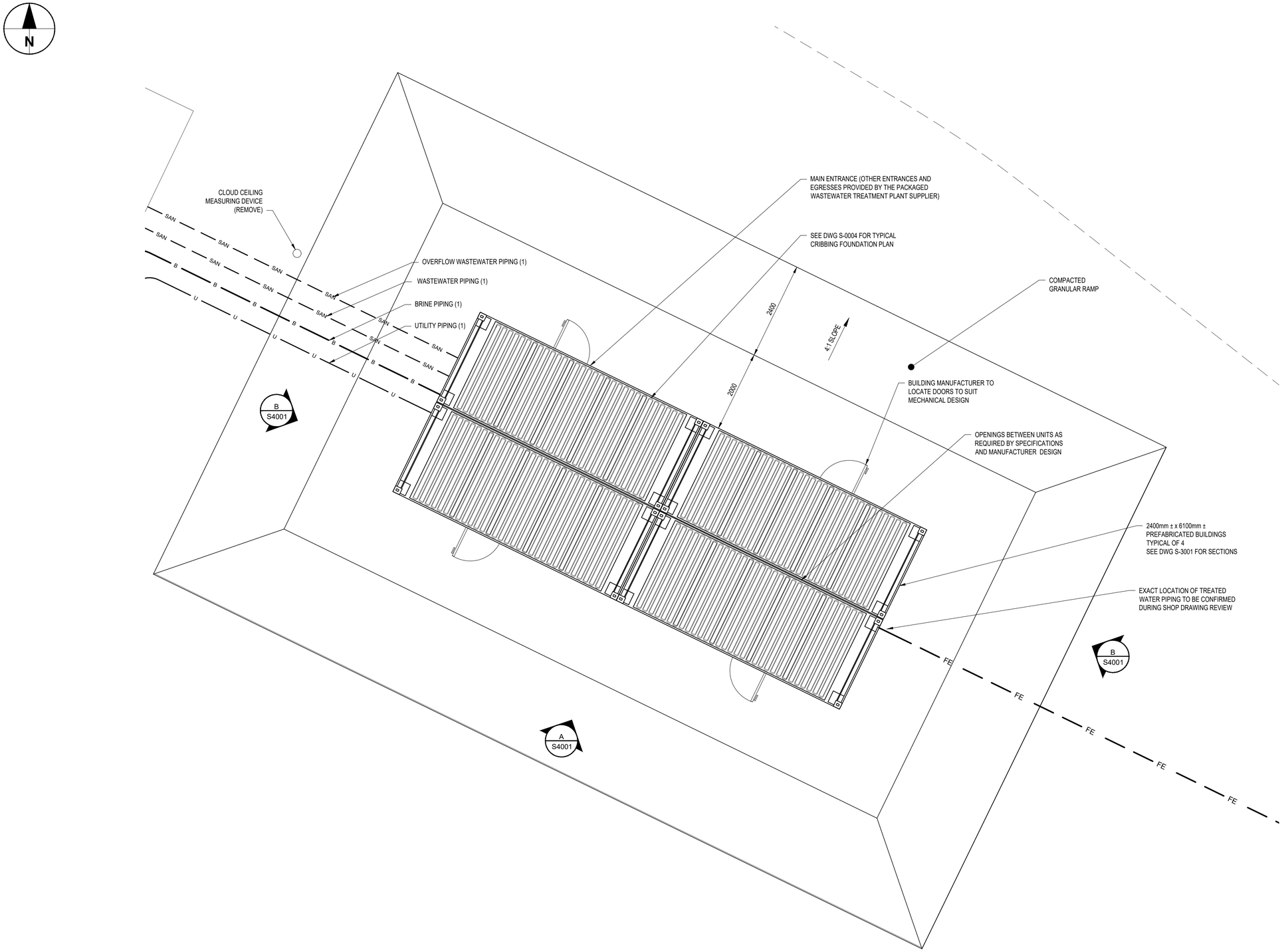
PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm



1 WASTEWATER MECHANICAL PLANT PLAN

Scale 1:50

0 1250 2500 mm

NOTES;

1. EXACT LOCATIONS OF INCOMING PIPING TO BE DETERMINED DURING SHOP DRAWING REVIEW.
2. 4 PREFABRICATED BUILDINGS ARE SHOWN, HOWEVER THIS MAY BE REDUCED IF THE CONTRACTOR CAN PROVIDE FEWER LARGER CONTAINERS OR IF LESS SPACE IS REQUIRED.
3. BUILDINGS TO BE LEVELED AND FASTENED TOGETHER.

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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

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J.N. CARTMELL

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Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **G.G. PROFETA**

Drawn by / Dessiné par: **D. LANDERS**

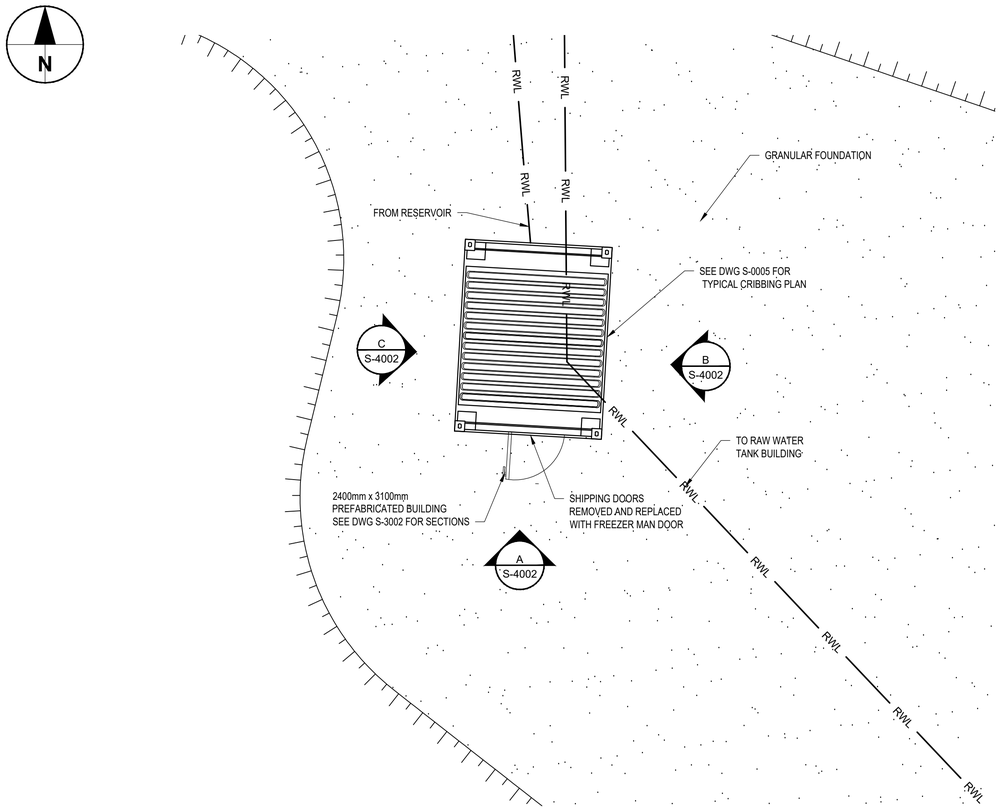
Approved by / Approuvé par: **R. MERKOSKY**

PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

STRUCTURAL
PACKAGED WASTEWATER TREATMENT PLANT
PLAN

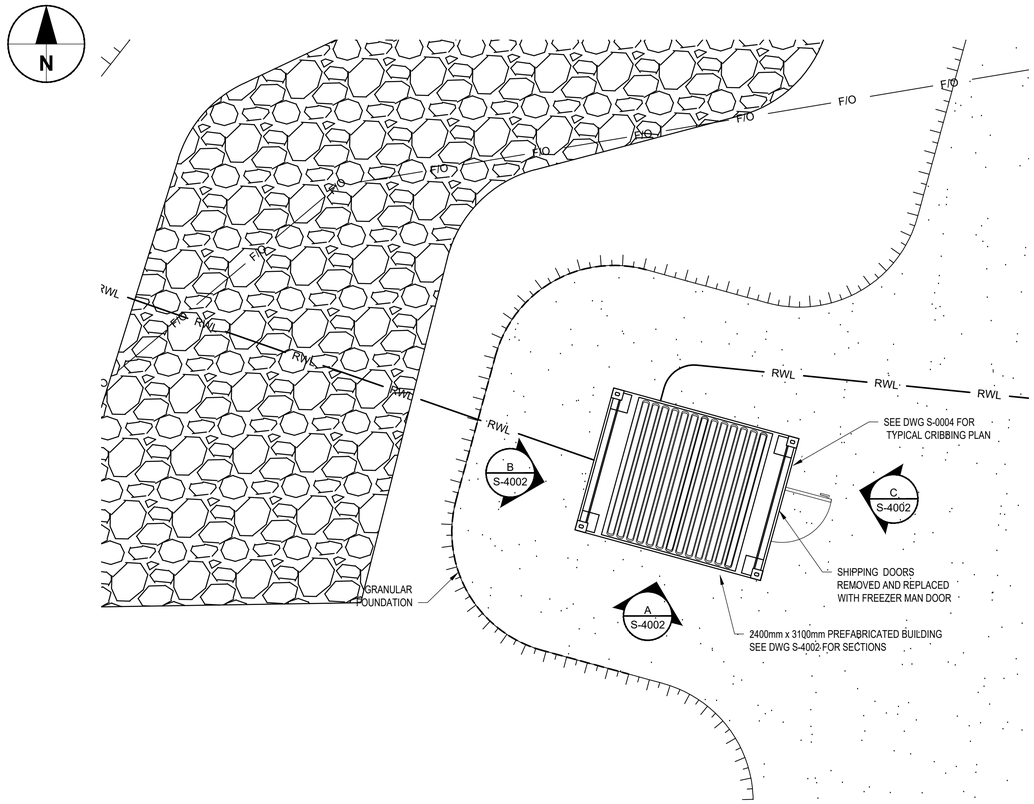
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-0002 OF	1



1 | RESERVOIR PUMP STATION PLAN

SCALE 1:50

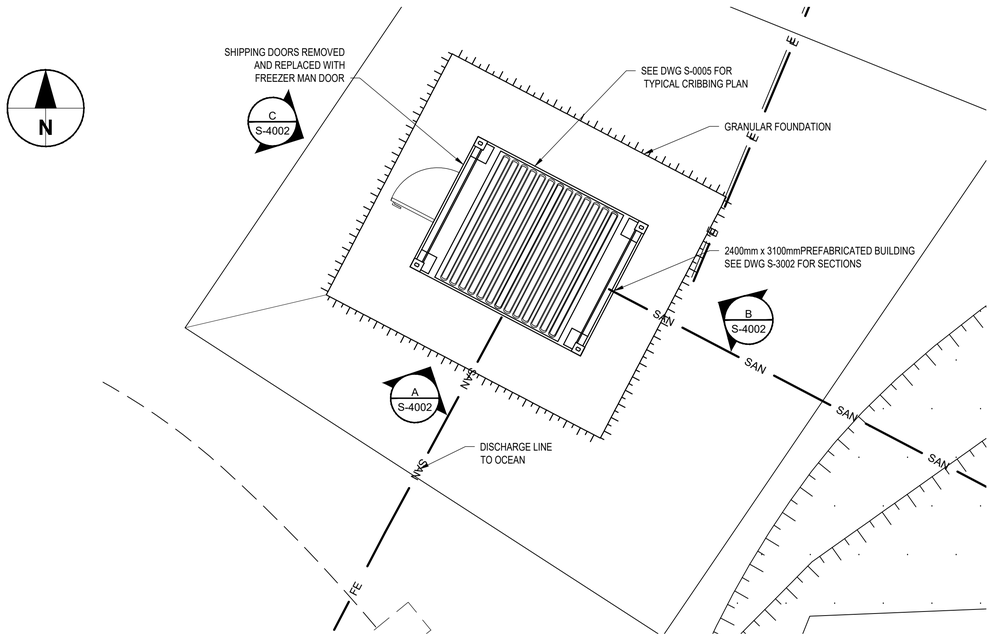
0 1250 2500 mm



2 | CREEK PUMP STATION PLAN

SCALE 1:50

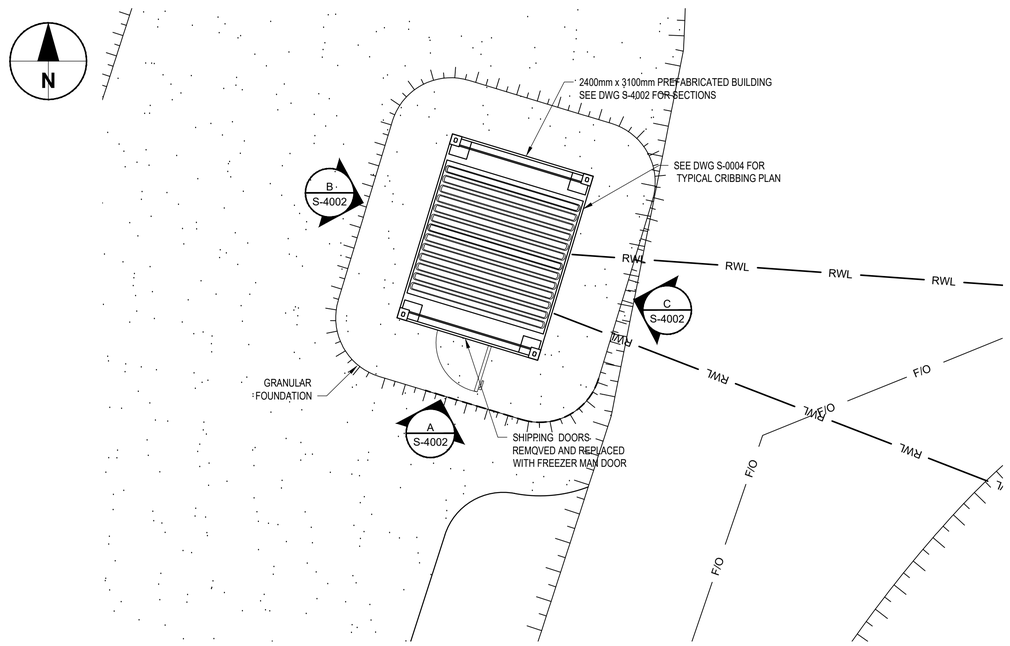
0 1250 2500 mm



3 | RETENTION BASIN PUMP STATION PLAN (WASTEWATER)

SCALE 1:50

0 1250 2500 mm



4 | RAW WATER TRANSFER STATION

SCALE 1:50

0 1250 2500 mm

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REAL PROPERTY SERVICES
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SERVICES IMMOBILIERS
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310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
G.G. PROFETA

Drawn by / Dessiné par
D. LANDERS

Approved by / Approuvé par
R. MERKOSKY

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

STRUCTURAL
CREEK, RAW WATER AND RETENTION BASIN PUMP STATIONS PLANS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-0003 OF	1

PWGSC – A1 – 841X594

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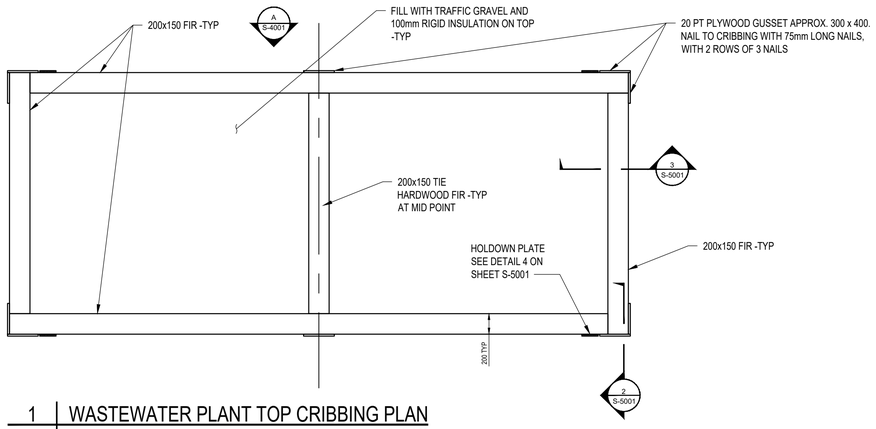
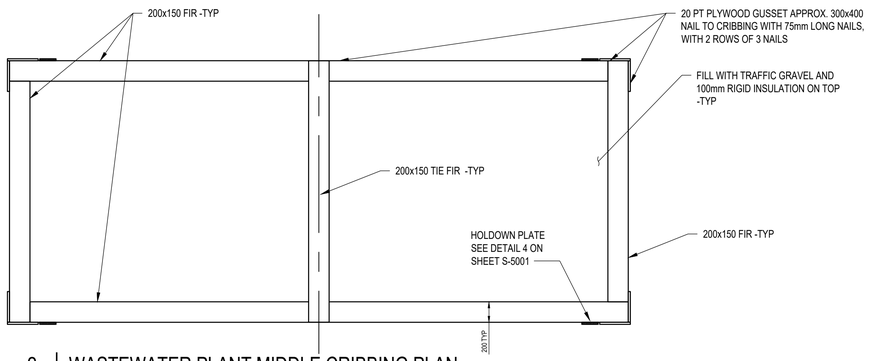


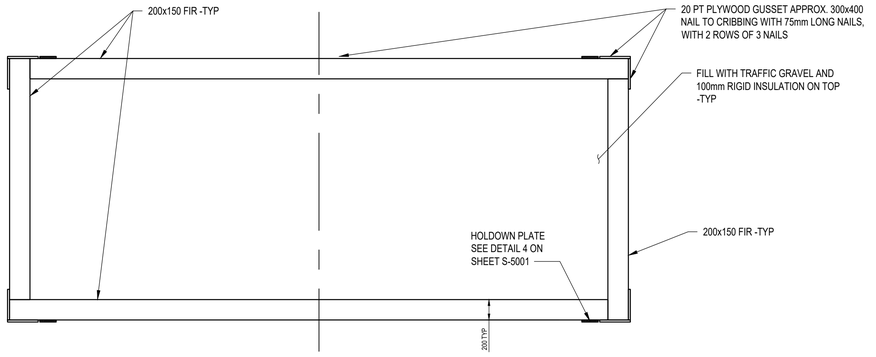
1 | WASTEWATER PLANT TOP CRIBBING PLAN

Scale 1:30



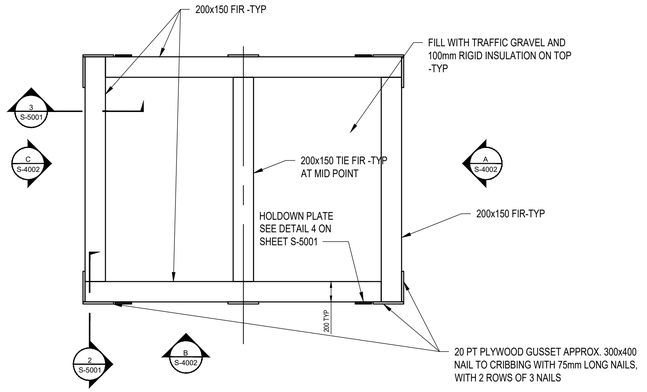
2 | WASTEWATER PLANT MIDDLE CRIBBING PLAN

Scale 1:30



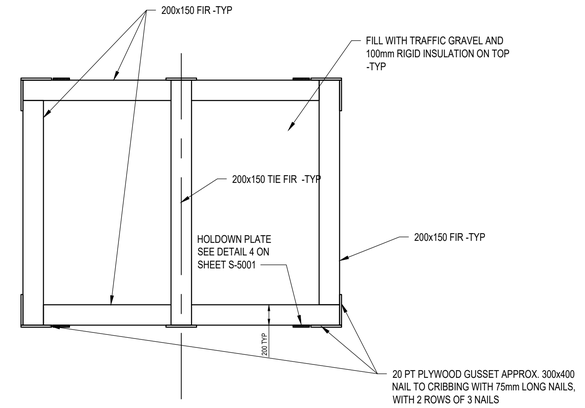
2 | WASTEWATER PLANT LOWER CRIBBING PLAN

Scale 1:30



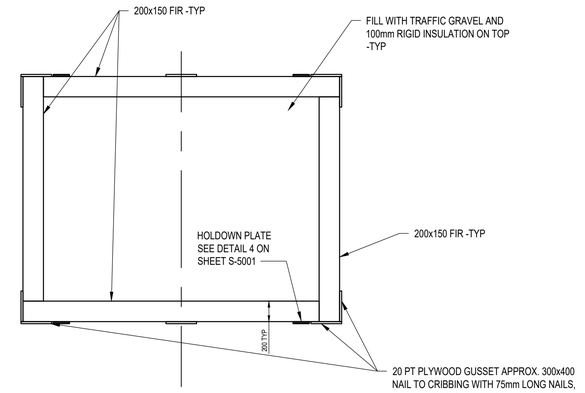
4 | PUMP STATION TOP CRIBBING PLAN

Scale 1:30



5 | PUMP STATION MIDDLE CRIBBING PLAN

Scale 1:30



6 | PUMP STATION LOWER CRIBBING PLAN

Scale 1:30

0 750 1500 mm

DRAWING NOTE:

1. CRIBBING TYPICAL FOR CREEK PUMP HOUSE, RAW WATER PUMP HOUSE AND RETENTION BASIN PUMP HOUSE
2. SIZES TO MATCH ACTUAL DIMENSIONS OF PREFABRICATED BUILDINGS
3. SEE DWG S-5001 FOR ANCHORING SYSTEM

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Travaux publics et Services gouvernementaux Canada
REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL
SIGNED BY

J.N. CARTMELL

2020/06/19

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
Date SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
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0	ISSUED FOR TENDER	2020/06/19

Client: client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **G.G. PROFETA**
Drawn by / Dessiné par: **D. LANDERS**
Approved by / Approuvé par: **R. MERKOSKY**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

STRUCTURAL PACKAGED WASTEWATER TREATMENT PLANT AND PUMP STATION CRIBBING PLANS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-0004 OF	1

PWGSC – A1 – 841X594

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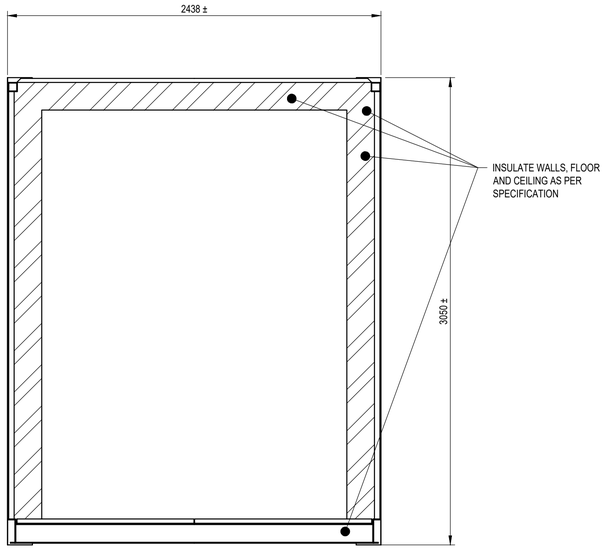
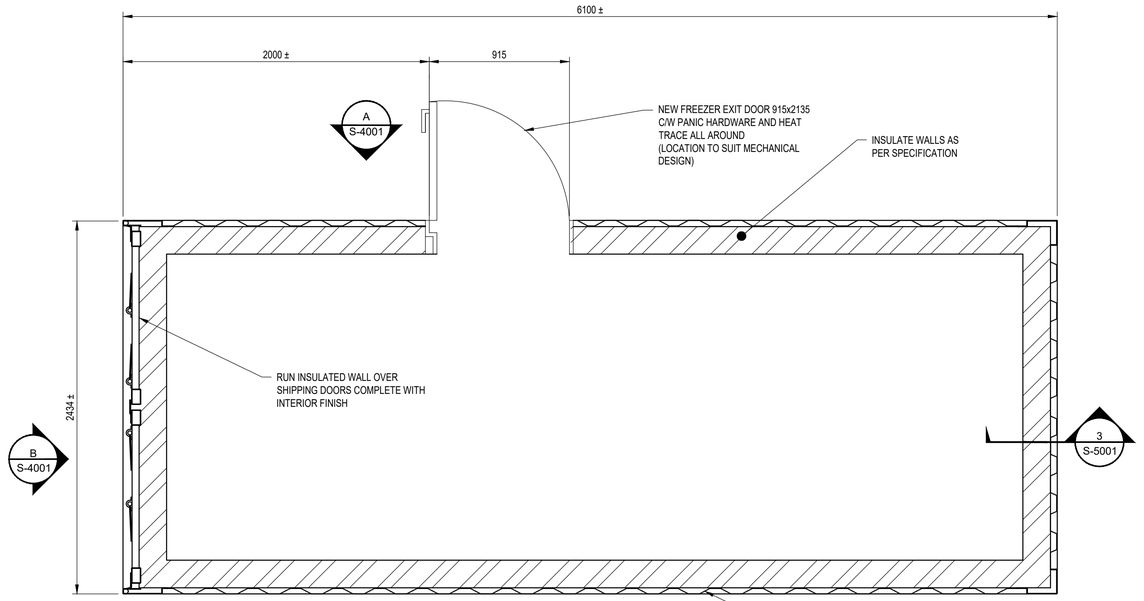


A-A | TYPICAL WASTEWATER MECHANICAL PLANT SECTION

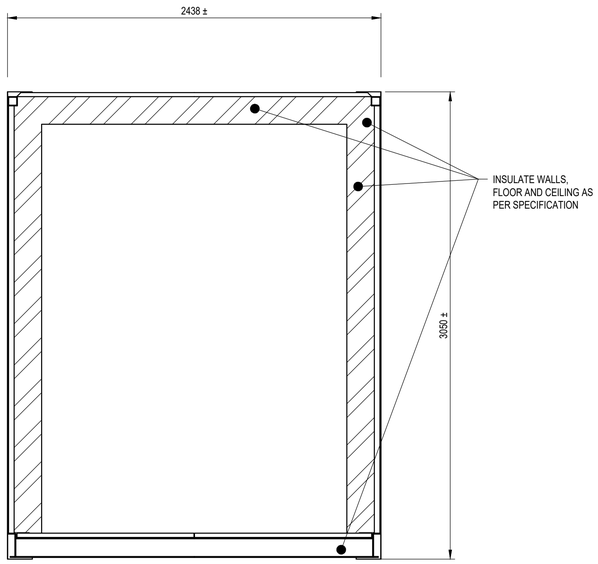
Scale 1:20



WASTEWATER MECHANICAL PLANT INTERIOR PLAN

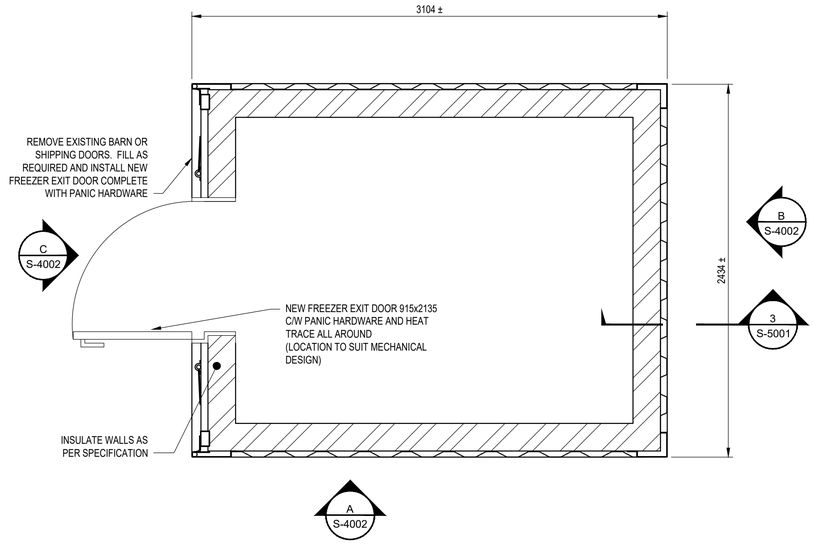
NOTE: MOVE LOCATION OF ENTRANCE AND EGRESS BASED ON DESIGN OF PACKAGED WASTEWATER TREATMENT PLANT.

Scale 1:20



B-B | TYPICAL PUMP STATION SECTION

Scale 1:20



TYPICAL PUMP STATION INTERIOR PLAN

Scale 1:20

0 500 1000 mm

DRAWING NOTES:

1. SECTIONS TYPICAL FOR, PACKAGED WASTEWATER TREATMENT PLANT, CREEK PUMP HOUSE, RESERVOIR PUMP HOUSE AND RETENTION BASIN PUMP HOUSE
2. INTERMODAL UNITS ARE PURCHASED ITEMS AND ARE DESIGNED AND DETAILED BY VENDOR BASED ON PERFORMANCE SPECIFICATIONS TO CREATE A PREFABRICATED BUILDING.

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Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

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NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **G.G. PROFETA**

Drawn by / Dessiné par: **D. LANDERS**

Approved by / Approuvé par: **R. MERKOSKY**

PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

STRUCTURAL
PACKAGED WASTEWATER TREATMENT PLANT AND TYPICAL PUMP STATION PLANS AND SECTIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-3001 OF	1

PWGSC – A1 – 841X594

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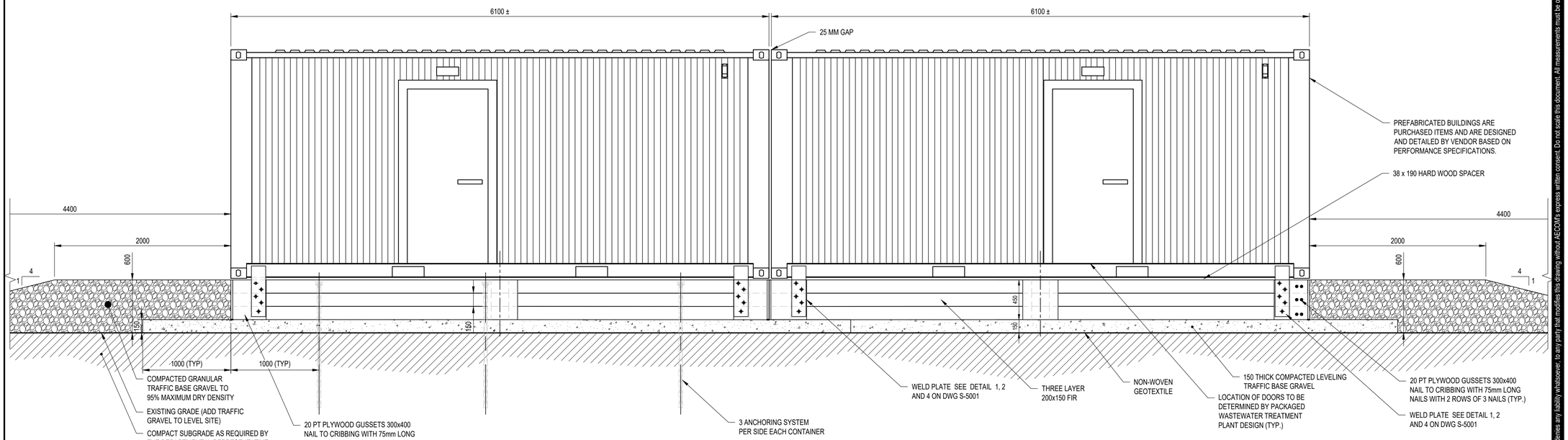
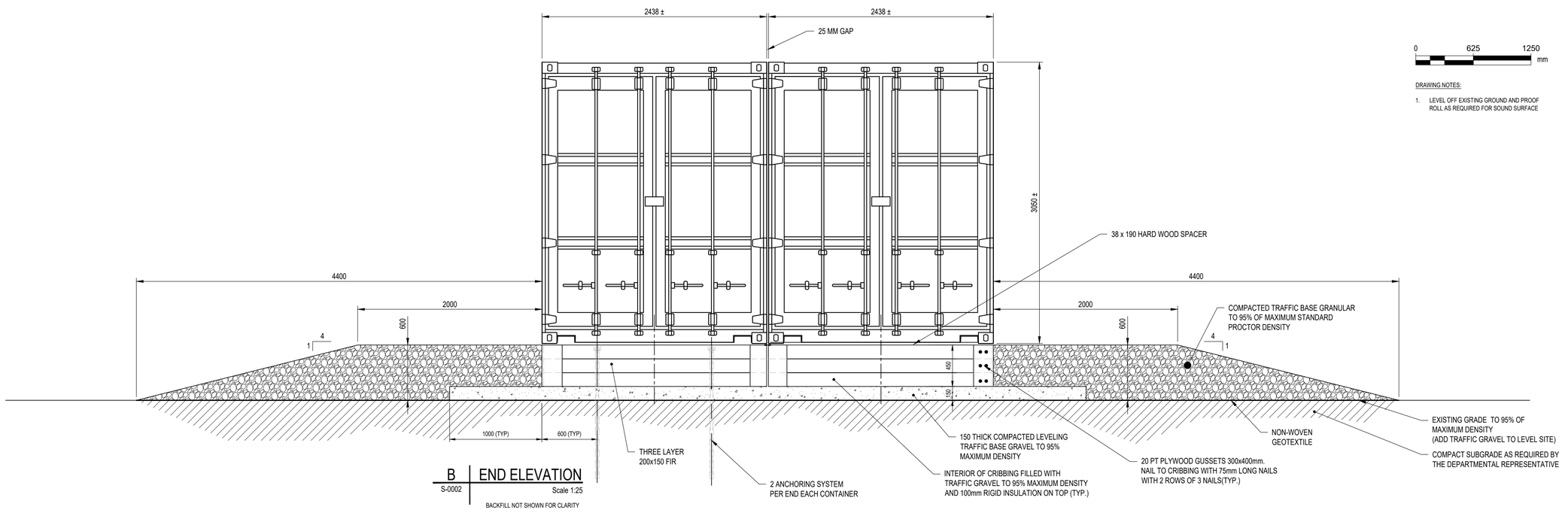


A | SIDE ELEVATION



B | END ELEVATION
S-0002 | Scale 1:25

BACKFILL NOT SHOWN FOR CLARITY

0 625 1250 mm

DRAWING NOTES:

1. LEVEL OFF EXISTING GROUND AND PROOF ROLL AS REQUIRED FOR SOUND SURFACE

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EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
G.G. PROFETA

Drawn by / Dessiné par
D. LANDERS

Approved by / Approuvé par
R. MERKOSKY

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

STRUCTURAL PACKAGED WASTEWATER TREATMENT PLANT ELEVATIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-4001 OF	1

PWGSC – A1 – 841X594

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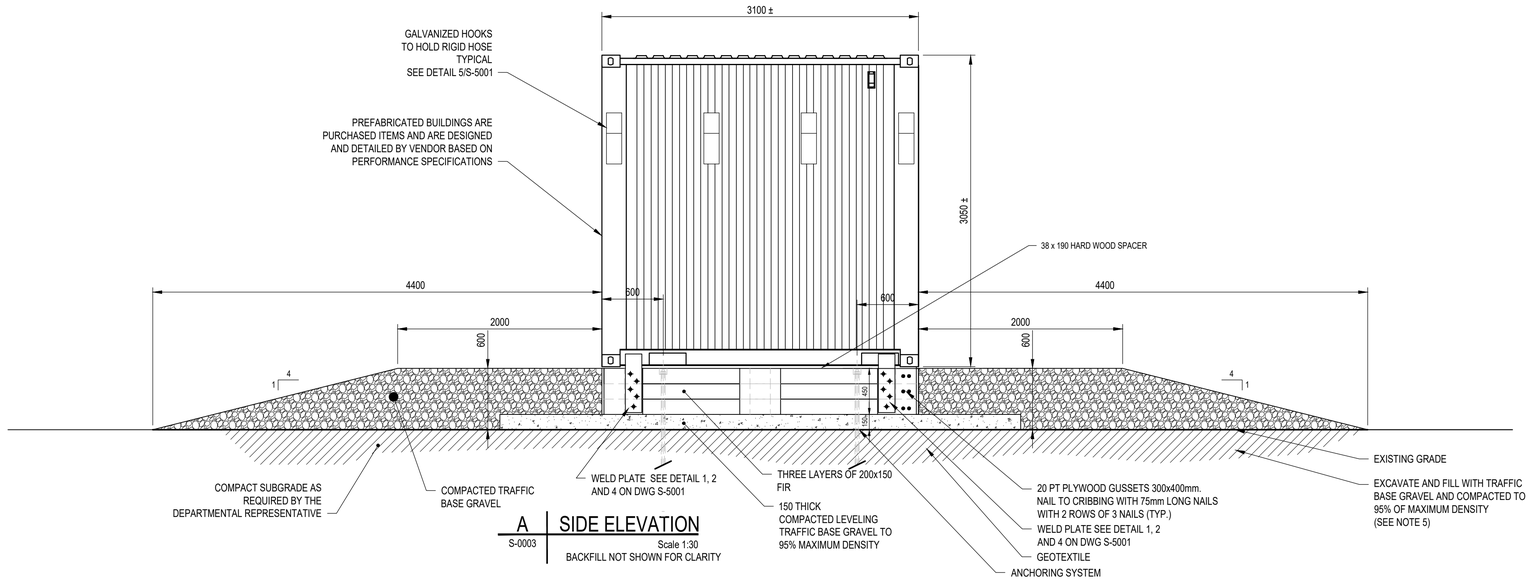
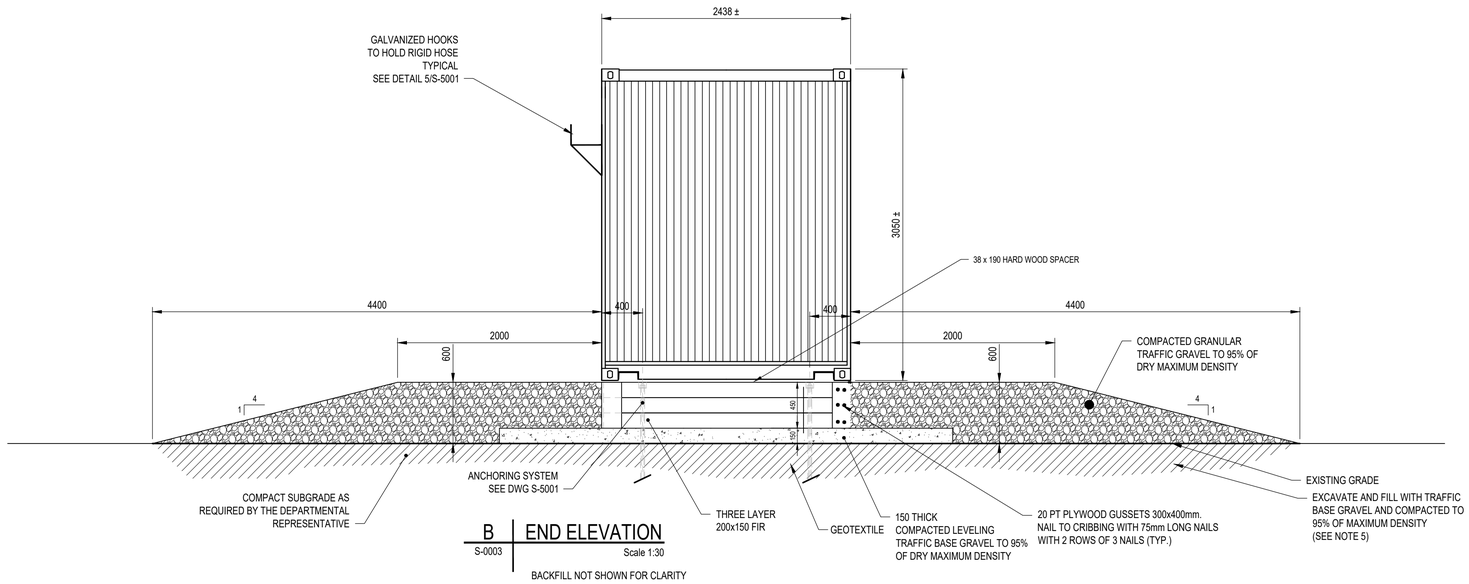
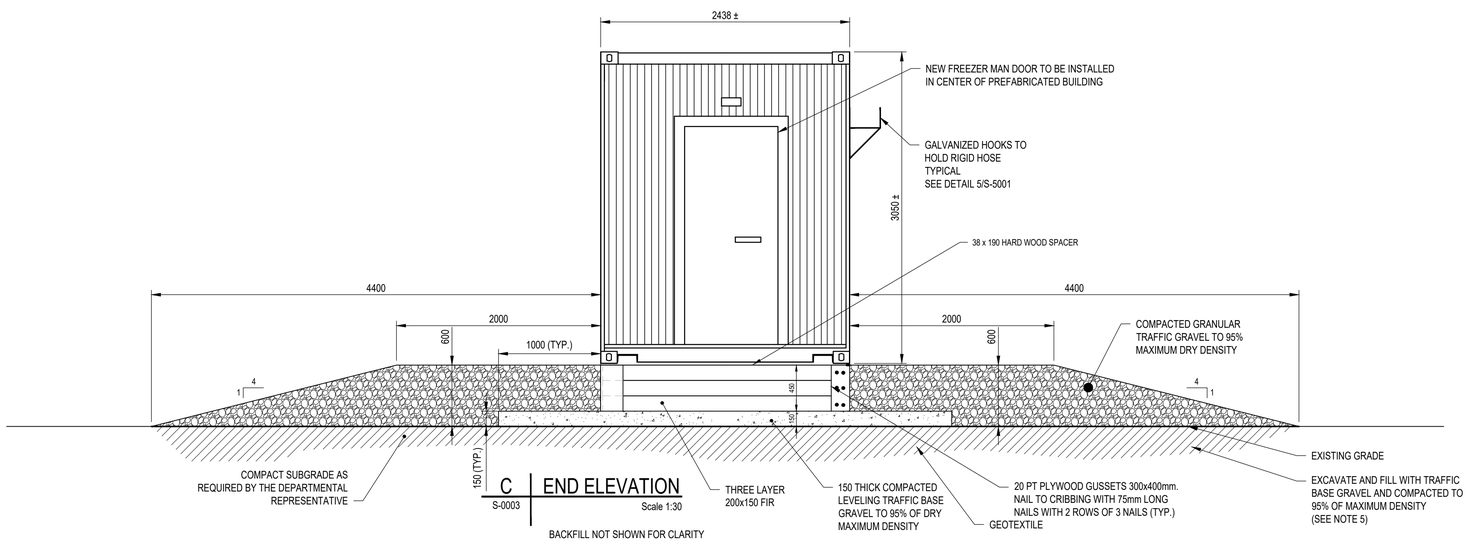


A | **SIDE ELEVATION**
S-0003 | Scale 1:30
BACKFILL NOT SHOWN FOR CLARITY



B | **END ELEVATION**
S-0003 | Scale 1:30
BACKFILL NOT SHOWN FOR CLARITY



C | **END ELEVATION**
S-0003 | Scale 1:30
BACKFILL NOT SHOWN FOR CLARITY

0 750 1500 mm

DRAWING NOTES:

1. ELEVATIONS TYPICAL FOR RESERVOIR PUMP HOUSE AND DETENTION BASIN PUMP HOUSE.
2. INTERMODAL UNITS ARE PURCHASED ITEMS AND ARE DESIGNED AND DETAILED BY VENDOR BASED ON PERFORMANCE SPECIFICATIONS.
3. INTERIOR OF CRIBBING FILLED WITH TRAFFIC GRAVEL TO 90% MAXIMUM DENSITY AND 100mm RIGID INSULATION ON TOP (TYP.)
4. ELECTRICAL AND PIPING NOT SHOWN.
5. GRANULAR FOUNDATION PAD CONSTRUCTED FOR THE RESERVOIR PUMP HOUSE WILL BE INCORPORATED INTO THE BERM CROSS SECTION AND WILL NOT BE ELEVATED BY 600mm ABOVE GRADE. SEE DRAWING C-0006 FOR DETAILS.

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Winnipeg, MB

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EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **G.G. PROFETA**
Drawn by / Dessiné par: **D. LANDERS**
Approved by / Approuvé par: **R. MERKOSKY**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

STRUCTURAL RESERVOIR AND RETENTION BASIN PUMP STATION ELEVATIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-4002 OF	1

PWGSC – A1 – 841X594

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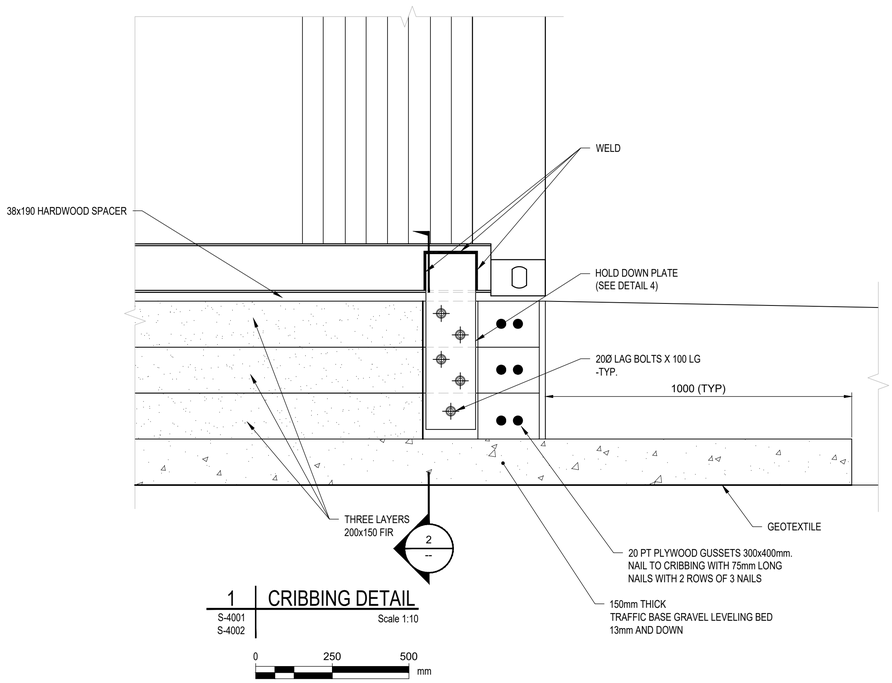
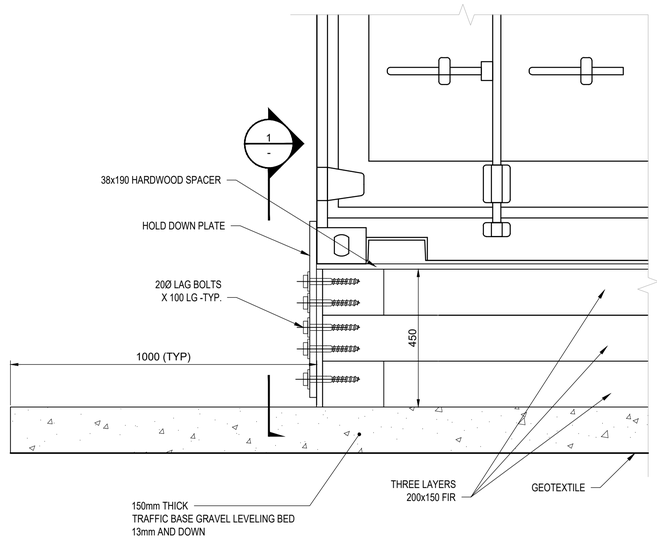
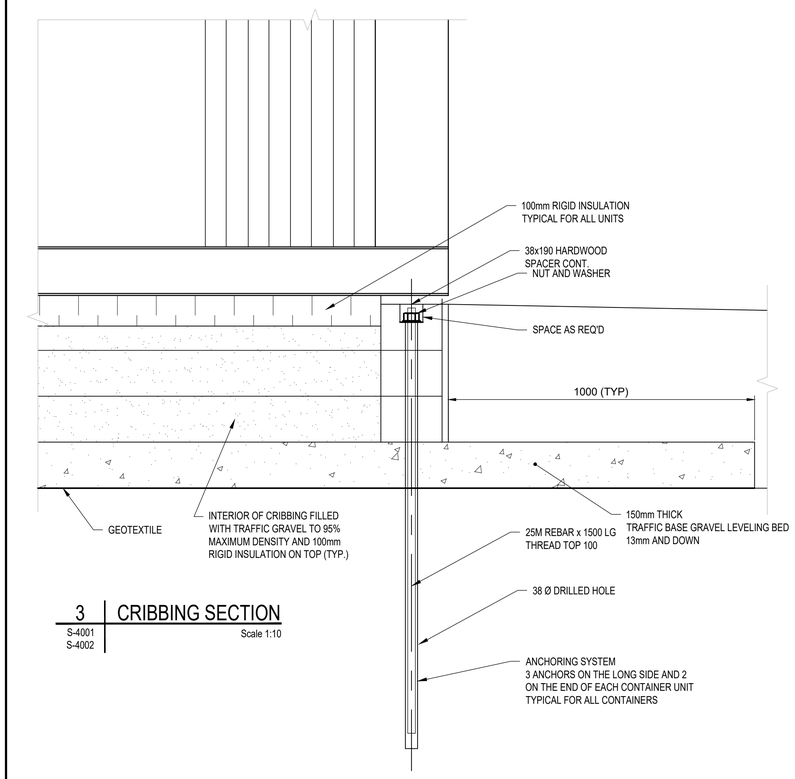


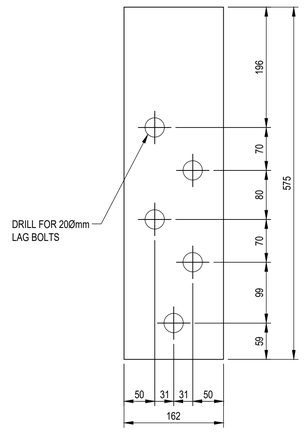
1 | CRIBBING DETAIL
S-4001, S-4002 | Scale 1:10



2 | CRIBBING DETAILS
S-4001, S-4002 | Scale 1:10

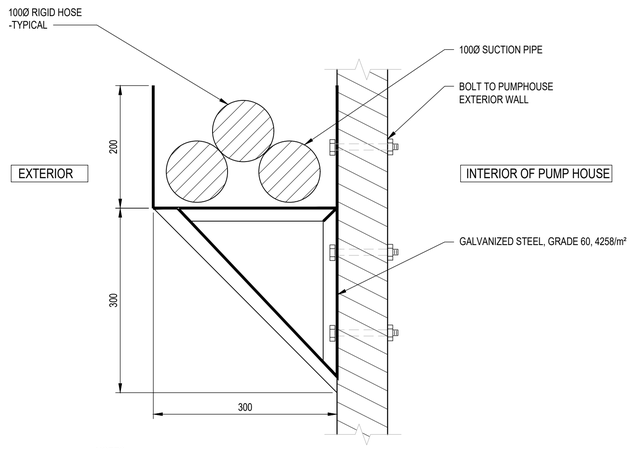


3 | CRIBBING SECTION
S-4001, S-4002 | Scale 1:10



4 | HOLD DOWN WELD PLATE DETAIL
S-4001, s-4002 | Scale 1:5

0 125 250 mm



NOTES:

1. ALL STEEL HOT DIPPED GALVANIZED AFTER FABRICATION.
2. SECURE WITH APPROVED ANCHORS TO MATCH WALL CONSTRUCTION.

5 | TYPICAL SUPPORT FOR RIGID HOSE STORAGE
C-0007 | Scale 1:5

DRAWING NOTES:

1. DETAILS TYPICAL FOR PACKAGED WASTEWATER TREATMENT PLANT, CREEK PUMP HOUSE, RESERVOIR PUMP HOUSE AND RETENTION BASIN PUMP HOUSE
2. GROUT FOR THE ANCHORS INTO THE GROUND SHOULD BE SIKAGROUT ARCTIC 100 OR EQUAL (CONFIRM GROUND TEMPERATURE TO MANUFACTURERS LIMITS).
3. ALL FASTENERS (NAILS AND LAG SCREWS) TO BE HOT DIPPED GALVANIZED.

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Designed by / Conçu par: **G.G. PROFETA**
Drawn by / Dessiné par: **D. LANDERS**
Approved by / Approuvé par: **R. MERKOSKY**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

STRUCUTRAL PACKAGED WASTEWATER TREATMENT PLANT AND PUMP STATIONS CRIBBING DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	S-5001 OF	1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

VALVE SYMBOLS

SYMBOL - TYPE - ABBREVIATION		
	BALL VALVE (N.O.)	BV
	BALL VALVE (N.C.)	BV
	CHECK VALVE	CV
	BUTTERFLY VALVE	BFV
	PLUG VALVE (N.O.)	PV
	PLUG VALVE (N.C.)	PV
	GATE VALVE (N.O.)	GV
	GATE VALVE (N.C.)	GV
	BALL CHECK VALVE	BCV
K	KNIFE GATE VALVE	KV
	NEEDLE VALVE	NV
	GLOBE VALVE	GLV
	BACKFLOW PREVENTER	BFP
	BALANCING DAMPER	BD
	DOUBLE LEAF CHECK VALVE	CV
	DUCKBILL CHECK VALVE	DCV
	PINCH VALVE	PNV
	TELESCOPIC VALVE	TSV
	DIAPHRAGM VALVE	DV
	MUD VALVE	MDV
	FLOAT VALVE	FV

SYMBOL - TYPE - ABBREVIATION		
	PRESSURE REGULATOR EXTERNAL PRESSURE TAP	PRV
	PRESSURE REGULATOR SELF CONTAINED	PRV
	BACK PRESSURE REGULATOR EXTERNAL PRESSURE TAP	BPV
	BACK PRESSURE REGULATOR SELF CONTAINED	BPV
T	THERMAL SHUT OFF VALVE	TOV
	PRESSURE RELIEF VALVE	PRV
	VACUUM RELIEF VALVE	PRV
	PRESSURE & VACUUM RELIEF VALVE	PRV
	PRESSURE RELIEF VALVE (RUPTURE DISC)	RD
	VACUUM RELIEF VALVE (RUPTURE DISC)	RD
	THREE-WAY VALVE	3W
	FOUR-WAY VALVE	4W
	ANGLE VALVE	AV

ACTUATORS

D	DIGITAL
M	MOTORIZED
S	SOLENOID

PROCESS LINE TYPES

	MAJOR PROCESS LINE
	MINOR PROCESS LINE
	NEW STRUCTURE
	ENCLOSURE OR BOUNDARY
	VENDOR PACKAGE SUPPLY BOUNDARY
	EXISTING PIPING & EQUIPMENT
	EXISTING STRUCTURE
E	INSULATED PIPE (WITH HEAT TRACING)

EQUIPMENT SYMBOLS

MOTORIZED EQUIPMENT

SYMBOL - TYPE - ABBREVIATION		
	AERATOR (SURFACE)	AER
	AIR DRYER BLOWER EXHAUST FAN	AD BL EF
	BOILER	B
	CENTRIFUGE	CFG
	MECHANICAL SCREEN	SCR
	CONVEYOR (BELT)	CON

SYMBOL - TYPE - ABBREVIATION		
	GRINDER	GDR
	GRIT CLASSIFIER	GCL
	MIXER (PROPELLER)	MXR
	SCREEN (BAR)	SCR
	SCREEN (ROTARY)	SCR
	SCREENINGS WASHER / COMPACTOR	CMP

NON-MOTORIZED EQUIPMENT

SYMBOL - TYPE - ABBREVIATION		
	CYCLONE	CY
	INJECTOR	INJ
	HEAT EXCHANGER	HEX
S	SAMPLER (AUTOMATIC)	SMP

SYMBOL - TYPE - ABBREVIATION		
S	SAMPLER (MANUAL)	SMP
	MIXER (STATIC)	SM
M	MOTOR	-

PUMPS

SYMBOL - TYPE - ABBREVIATION		
	CENTRIFUGAL PUMP	P
	COLUMN PUMP	P
	DIAPHRAGM PUMP	P
	PERISTALTIC PUMP	P
	METERING PUMP	P
	PROGRESSING CAVITY PUMP	P
	SUBMERSIBLE PUMP	P
	SUBMERSIBLE PROPELLER PUMP	P
	VERTICAL PUMP	P
	WELL PUMP	P

PRIMARY ELEMENT SYMBOLS

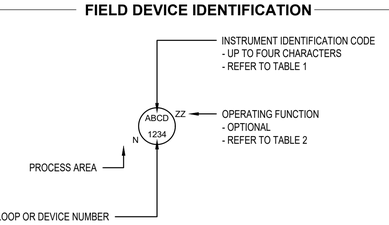
ANNUBAR	IN-LINE CAPACITANCE FLOW ELEMENT	PROPELLER OR TURBINE METER	MAGNETIC FLOW METER
DENSITY METER	ANNULAR PRESSURE ISOLATOR	SONIC FLOW METER (DOPPLER OR TRANSIT TIME)	THERMAL MASS FLOW ELEMENT
FLOAT LEVEL ELEMENT	UNGUIDED WAVE ULTRASONIC / MICROWAVE LEVEL ELEMENT	THERMAL ELEMENT WITH WELL	CAPACITANCE / POINT LEVEL ELEMENT

MISCELLANEOUS SYMBOLS

I	INTERLOCK REFER TO CONTROL DESCRIPTION STRATEGY
R	RESET FOR LATCH-TYPE OPERATOR
VFD	VARIABLE FREQUENCY DRIVE
	ANNUNCIATOR HORN

INSTRUMENT FIELD DEVICE IDENTIFICATION

FIELD DEVICE IDENTIFICATION

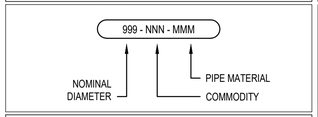


PIPE LINE DEVICES

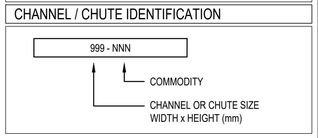
AIR GAP		PULSATION DAMPENER	
AIR INTAKE		QUICK CONNECTOR	
BLIND FLANGE OR FLANGE CONNECTION		REDUCER	
CALIBRATION CHAMBER		SEPARATOR, AIR	
CAP OR PLUG		SEPARATOR, LIQUID	
CONNECTION TO VENDOR SUPPLY PACKAGE		SIGHT GLASS	
DIFFUSER OR SPRAY NOZZLE		SILENCER	
DRAIN	D	STRAINER	
EXPANSION JOINT		STRAINER, BASKET	
EMERGENCY EYEWASH & SHOWER STATION		TRAP	T
FILTER		UNION	
FLAME ARRESTER		UTILITY CONNECTION	XX
FLEXIBLE CONNECTION		UTILITY STATION	
PRESSURE SENSOR (IN-LINE)		VENT, AIR	
		CAMLOCK	
		HEAT TRACE	

ANNOTATION SYMBOLS

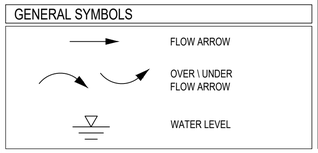
PIPE IDENTIFICATION



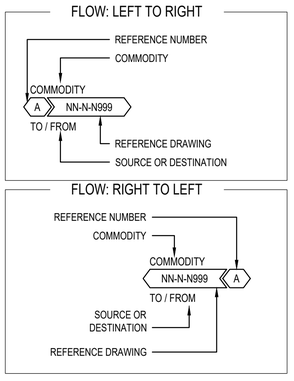
CHANNEL / CHUTE IDENTIFICATION



GENERAL SYMBOLS



PROCESS LINE IDENTIFICATION



SIGNAL LINE TYPES

PROPOSED - EXISTING - DESCRIPTION		PROPOSED - EXISTING - DESCRIPTION	
	INSTRUMENT SUPPLY OR PROCESS TAP		ELECTRIC SIGNAL
	FOUNDATION FIELDBUS		MECHANICAL LINK

STANDARD ABBREVIATIONS

COMMODITY ABBREVIATIONS

AIR	AIR
ASH	ASH
AWH	AIR WASH
BRW	BRINE WASTE
BW	BACKWASH WATER (FILTERED)
BWR	BACKWASH RETURN
BWW	BACKWASH WASTE WATER
DEWS	WET DEWATERED SLUDGE
DRA	DRAIN
DSB	DAF SUBNATANT
DSE	DISINFECTED SECONDARY EFFLUENT
FE	FINAL EFFLUENT
FSL	FERMENTED SLUDGE
FTW	FILTER TO WASTE
FLT	FILTRATE
FY	FERMENTER SCUM
HL	HAULED WASTEWATER
OF	OVERFLOW
PE	PRIMARY EFFLUENT
PI	PRIMARY INFLUENT
PA	PROCESS AIR
PS	PRIMARY SLUDGE
PY	PRIMARY SCUM
RA	RETURN AIR
RAS	RETURN ACTIVATED SLUDGE
RW	RAW WATER
SAM	SAMPLE
SAN	SANITARY SEWER
SE	SECONDARY CLARIFIER EFFLUENT
SLH	SETTLED HEATED SLUDGE
SPY	SCREENED PRIMARY SCUM
SRSW	RAW SEWAGE
SY	SECONDARY CLARIFIER SCUM
SW	SERVICE WATER
UW	UTILITY WATER

CHEMICAL ABBREVIATIONS

CDG	CARBON DIOXIDE
CDL	CARBON DIOXIDE LIQUID
CLD	CHLORINE DIOXIDE
CLL	CHLORINE LIQUID
CLS	CHLORINE SOLUTION
FC	FERRIC CHLORIDE
FEC	FERROUS CHLORIDE
FES	FERROUS SULPHATE
FS	FERRIC SULFATE
FSL	FERMENTER SLUDGE
HCL	HYDROCHLORIC ACID
HEL	HELIUM
HFS	FLUOSILIC ACID
HG	HYDROGEN GAS
HP	HYDROGEN PEROXIDE
MET	METHANOL
N2	NITROGEN
NAOH	SODIUM HYDROXIDE
NASF	SODIUM SILICOFLUORIDE
NOX	NITROUS OXIDE
PHA	PHOSPHORIC ACID
pH	pH
PLY	POLYMER
PP	POTASSIUM PERMANGANATE
PPP	PHOSPHATE
PYPH	POLYPHOSPHATE
SA	SULPHURIC ACID
SAS	SODA ASH SOLUTION
SH	SODIUM HYPOCHLORITE
SLT	SODIUM CHLORIDE
SS	SODIUM SILICATE

GENERAL

AI	ANALOG INPUT
AO	ANALOG OUTPUT
CCTV	CLOSED CIRCUIT TELEVISION
DB	DEVICE BUS
DCS	DISTRIBUTED CONTROL SYSTEM
DI	DIGITAL INPUT
DO	DISSOLVED OXYGEN TRANSMITTER
D/P	DIFFERENTIAL PRESSURE
FB	FIELDBUS
HMI	HUMAN MACHINE INTERFACE
LEAK	LEAKAGE
LCP	LOCAL CONTROL PANEL
MCC	MOTOR CONTROL CENTRE
OBD	OUTBOARD BEARING
O/L	OVERLOAD
PLC	PROGRAMMABLE LOGIC CONTROLLER
RTD	RESISTIVE TEMPERATURE DEVICE
SOL	SOLENOID
T/C	THERMOCOUPLE
TOR	TORQUE

INSTRUMENT IDENTIFICATION

INSTRUMENT OR DEVICE IDENTIFIERS

AE	ANALYSIS ELEMENT
AIT	ANALYSIS INDICATING TRANSMITTER (ANALYTIC INST.)
AK	ANALYSIS (SAMPLER) CONTROL STATION
ASH	ANALYSIS SWITCH - HIGH
AT	ANALYSIS TRANSMITTER (ANALYTIC INST.)
FE	FLOW ELEMENT
FG	FLOW METER ULTRASONIC GENERATOR
FI	FLOW INDICATOR
FIC	FLOW INDICATING CONTROLLER
FIT	FLOW INDICATING TRANSMITTER
FQI	FLOW TOTALIZING INDICATOR
FQY	FLOW TOTALIZING / INTEGRATING RELAY
FSH	FLOW SWITCH HIGH
FSL	FLOW SWITCH LOW
FT	FLOW TRANSMITTER
LE	LEVEL ELEMENT
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LIT	LEVEL INDICATING TRANSMITTER
LSL	LEVEL SWITCH LOW
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH HIGH
PE	PRESSURE ELEMENT
PG	PRESSURE GAUGE
PI	PRESSURE INDICATOR
PIT	PRESSURE INDICATING TRANSMITTER
PS	PRESSURE SWITCH
pH	pH TRANSMITTER
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PSLL	PRESSURE SWITCH LOW LOW
PT	PRESSURE TRANSMITTER
SC	SPEED CONTROLLER
SI	SPEED INDICATOR
TC	TEMPERATURE CONTROLLER
TE	TEMPERATURE ELEMENT
TG	TEMPERATURE GAUGE
TI	TEMPERATURE INDICATOR
TIT	TEMPERATURE INDICATING TRANSMITTER
TSH	TEMPERATURE SWITCH HIGH
TSHH	TEMPERATURE SWITCH HIGH HIGH
TSL	TEMPERATURE SWITCH LOW
TSLL	TEMPERATURE SWITCH LOW LOW
TT	TEMPERATURE TRANSMITTER
UVT	ULTRAVIOLET TRANSMITTER

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P. BARSALOU
2020/06/23

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Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS & INSTRUMENTATION OVERALL DIAGRAM & SCHEMATICS LEGEND, ABBREVIATIONS AND INSTRUMENTATION

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0001 OF	1

PWGSC – A1 – 841X594

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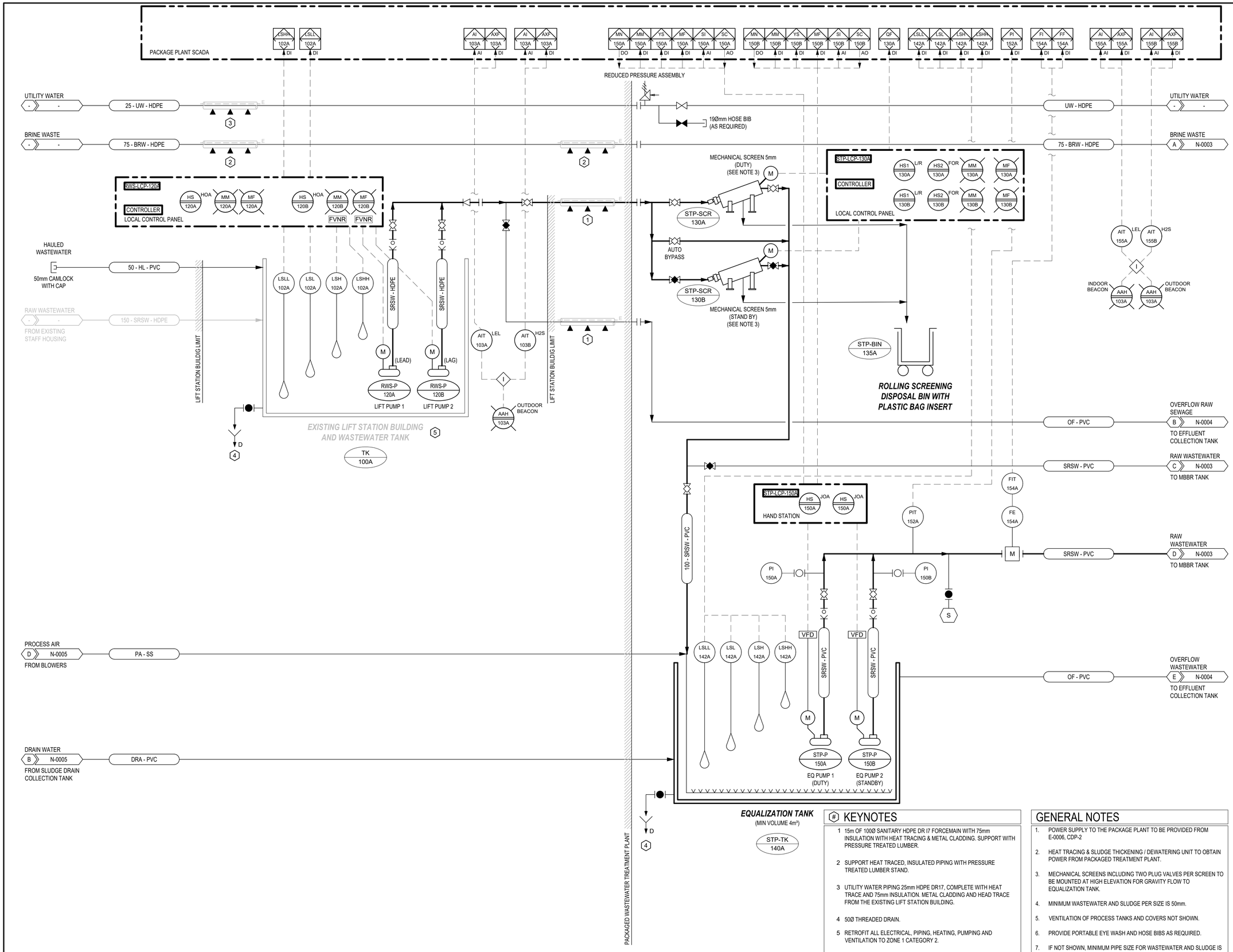

KEYNOTES

1. 15m OF 100Ø SANITARY HDPE DR I7 FORCEMAIN WITH 75mm INSULATION WITH HEAT TRACING & METAL CLADDING. SUPPORT WITH PRESSURE TREATED LUMBER.
2. SUPPORT HEAT TRACED, INSULATED PIPING WITH PRESSURE TREATED LUMBER STAND.
3. UTILITY WATER PIPING 25mm HDPE DR17, COMPLETE WITH HEAT TRACE AND 75mm INSULATION. METAL CLADDING AND HEAD TRACE FROM THE EXISTING LIFT STATION BUILDING.
4. 50Ø THREADED DRAIN.
5. RETROFIT ALL ELECTRICAL, PIPING, HEATING, PUMPING AND VENTILATION TO ZONE 1 CATEGORY 2.

GENERAL NOTES

1. POWER SUPPLY TO THE PACKAGE PLANT TO BE PROVIDED FROM E-0006, CDP-2
2. HEAT TRACING & SLUDGE THICKENING / DEWATERING UNIT TO OBTAIN POWER FROM PACKAGED TREATMENT PLANT.
3. MECHANICAL SCREENS INCLUDING TWO PLUG VALVES PER SCREEN TO BE MOUNTED AT HIGH ELEVATION FOR GRAVITY FLOW TO EQUALIZATION TANK.
4. MINIMUM WASTEWATER AND SLUDGE PER SIZE IS 50mm.
5. VENTILATION OF PROCESS TANKS AND COVERS NOT SHOWN.
6. PROVIDE PORTABLE EYE WASH AND HOSE BIBS AS REQUIRED.
7. IF NOT SHOWN, MINIMUM PIPE SIZE FOR WASTEWATER AND SLUDGE IS 50Ømm.
8. ALL INSTRUMENTS HAVE PREFIX IN TAG NUMBER. REFER TO EQUIPMENT AND LOCATION FOR PREFIX DETAILS. CONTRACTOR TO ENSURE ALL PROGRAMMING, CABLES AND NAMEPLATES ASSOCIATED TO INSTRUMENTS INCLUDE PREFIX IN TAGS.

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Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS & INSTRUMENTATION PACKAGED WASTEWATER TREATMENT PLANT & LIFT STATION PRETREATMENT DIAGRAM

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0002 OF -----	1

PWGSC – A1 – 841X594

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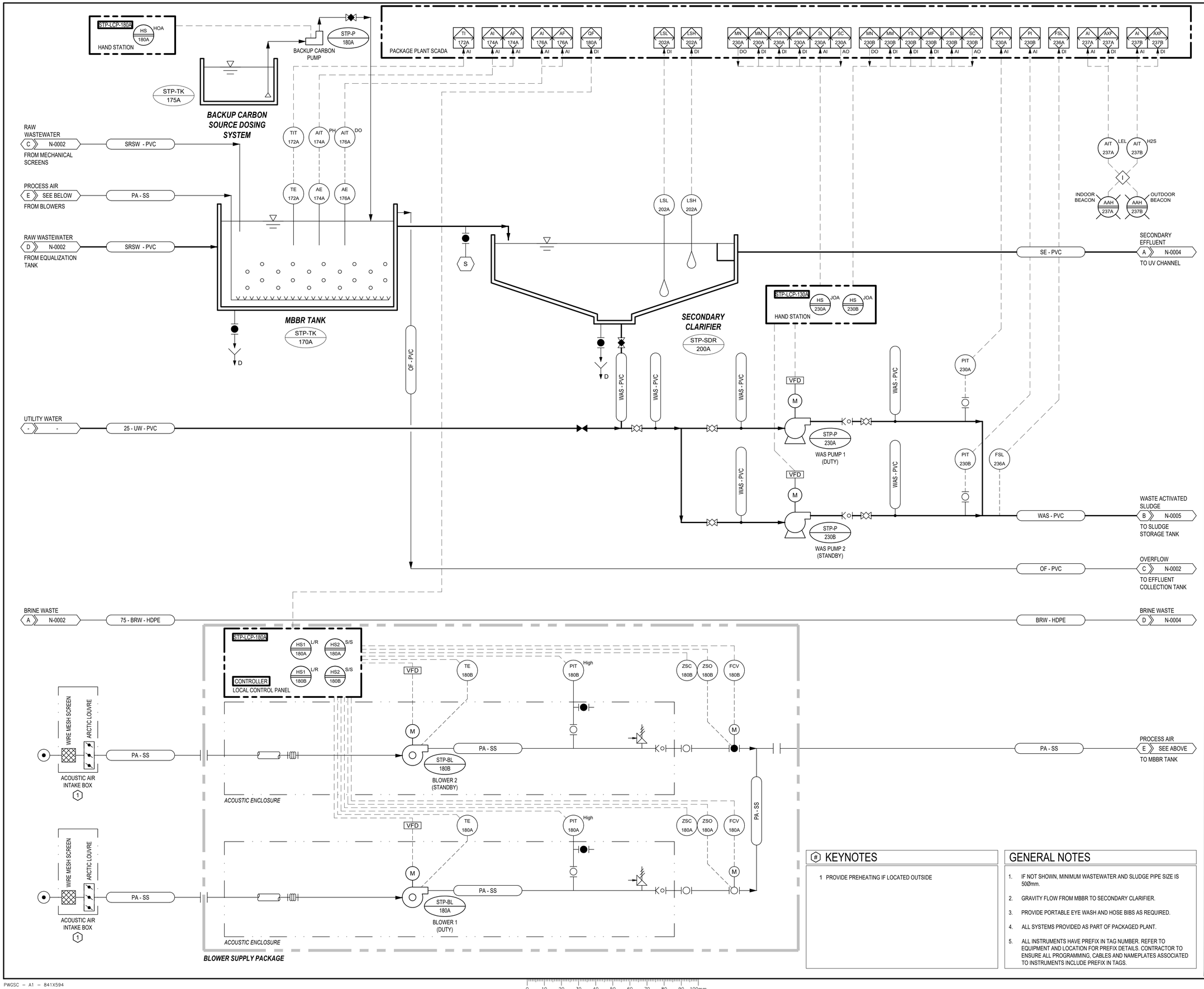

KEYNOTES

1 PROVIDE PREHEATING IF LOCATED OUTSIDE

GENERAL NOTES

1. IF NOT SHOWN, MINIMUM WASTEWATER AND SLUDGE PIPE SIZE IS 500mm.
2. GRAVITY FLOW FROM MBBR TO SECONDARY CLARIFIER.
3. PROVIDE PORTABLE EYE WASH AND HOSE BIBS AS REQUIRED.
4. ALL SYSTEMS PROVIDED AS PART OF PACKAGED PLANT.
5. ALL INSTRUMENTS HAVE PREFIX IN TAG NUMBER. REFER TO EQUIPMENT AND LOCATION FOR PREFIX DETAILS. CONTRACTOR TO ENSURE ALL PROGRAMMING, CABLES AND NAMEPLATES ASSOCIATED TO INSTRUMENTS INCLUDE PREFIX IN TAGS.

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Client: **Public Works and Government Services Canada**
310- 269 Main Street, R3C 1B3
Winnipeg, MB

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EUREKA WATER AND SEWAGE SYSTEM

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Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin
PROCESS & INSTRUMENTATION PACKAGED WASTEWATER TREATMENT PLANT AERATION, SEDIMENTATION & BLOWER DIAGRAM

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0003 OF 006	1

PWGSC – A1 – 841X594

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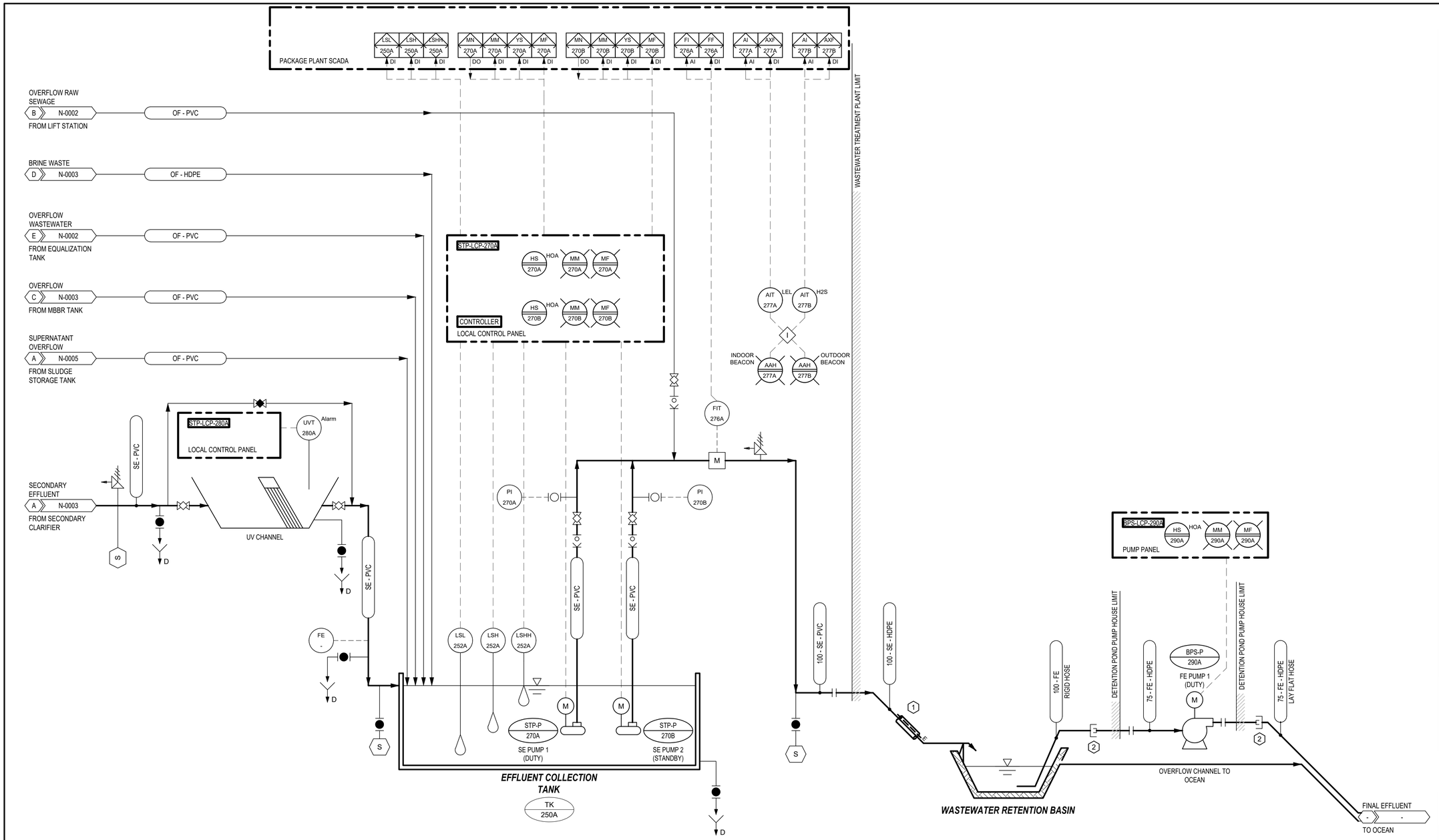

KEYNOTES

1 100Ø HDPE DR 17 EFFLUENT LINE WITH 75mm INSULATION WITH HEAT TRACING & CLADDING. APPROX. 0.6m BURY

2 TYPE D CAMLOCK FITTING.

GENERAL NOTES

1. IF NOT SHOWN, MINIMUM WASTEWATER AND SLUDGE PIPE SIZE IS 500mm.
2. GRAVITY HYDRAULIC FLOW FROM CHANNEL UV TO EFFLUENT COLLECTION TANK
3. PROVIDE EYE WASH AND HOSE BIBS AS REQUIRED.
4. ALL INSTRUMENTS HAVE PREFIX IN TAG NUMBER. REFER TO EQUIPMENT AND LOCATION FOR PREFIX DETAILS. CONTRACTOR TO ENSURE ALL PROGRAMMING, CABLES AND NAMEPLATES ASSOCIATED TO INSTRUMENTS INCLUDE PREFIX IN TAGS.

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Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS & INSTRUMENTATION PACKAGED WASTEWATER TREATMENT PLANT FINAL DISINFECTION DIAGRAM

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0004 OF ----	1

PWGSC – A1 – 841X594

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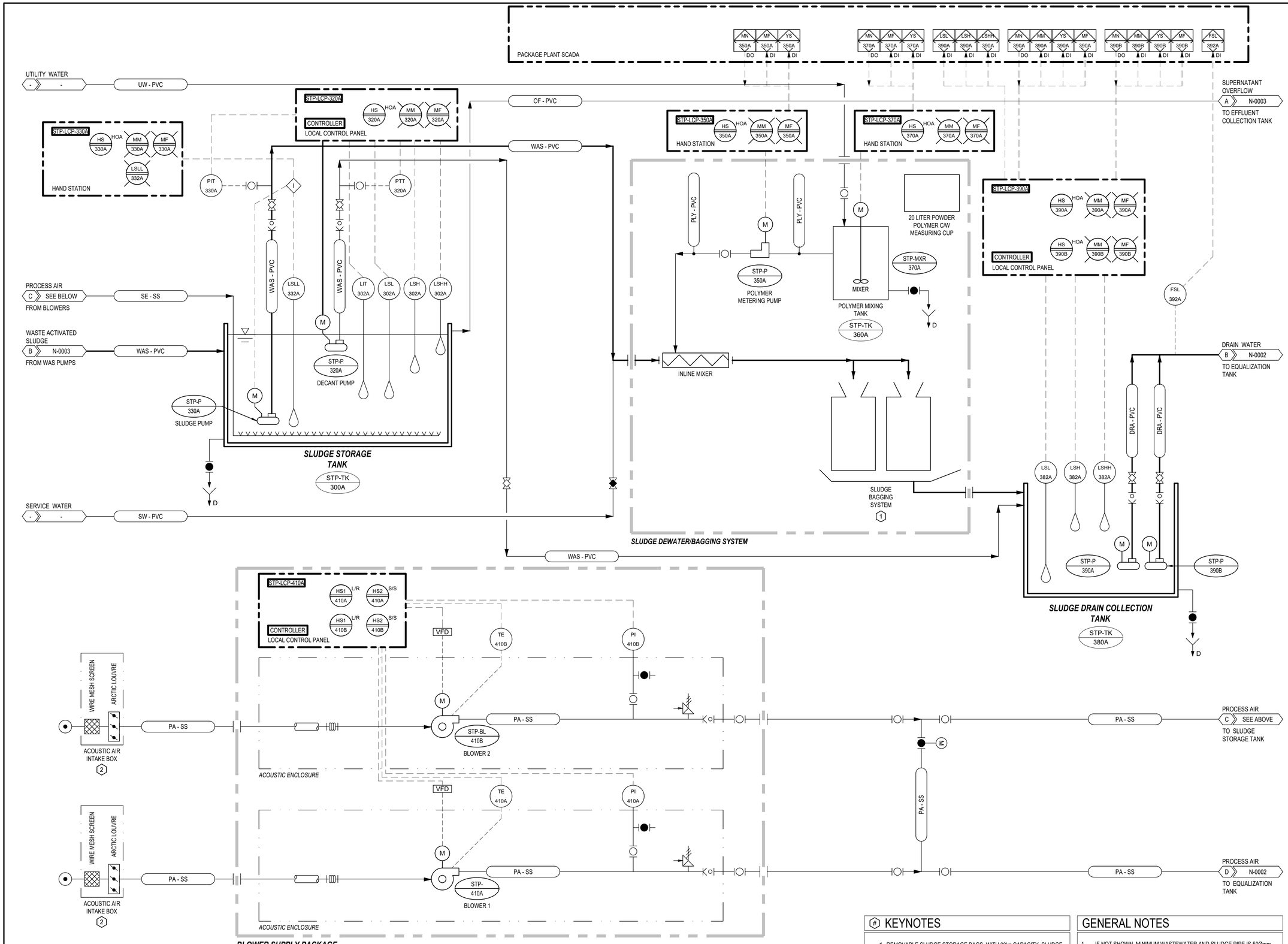

KEYNOTES

1 REMOVABLE SLUDGE STORAGE BAGS, WITH 20kg CAPACITY. SLUDGE TO BE DEWATERED TO 20% DRY SOLIDS, MIN. AMOUNT FOR GRAVITY DRAIN.

2 PROVIDE PREHEATING IF LOCATED OUTSIDE

GENERAL NOTES

1. IF NOT SHOWN, MINIMUM WASTEWATER AND SLUDGE PIPE IS 50Ømm.
2. PROVIDE PORTABLE EYE WASH AND HOSE BIBS AS REQUIRED.
3. ALL SYSTEMS PROVIDED AS PART OF PACKAGED PLANT.
4. ALL INSTRUMENTS HAVE PREFIX IN TAG NUMBER. REFER TO EQUIPMENT AND LOCATION FOR PREFIX DETAILS. CONTRACTOR TO ENSURE ALL PROGRAMMING, CABLES AND NAMEPLATES ASSOCIATED TO INSTRUMENTS INCLUDE PREFIX IN TAGS.

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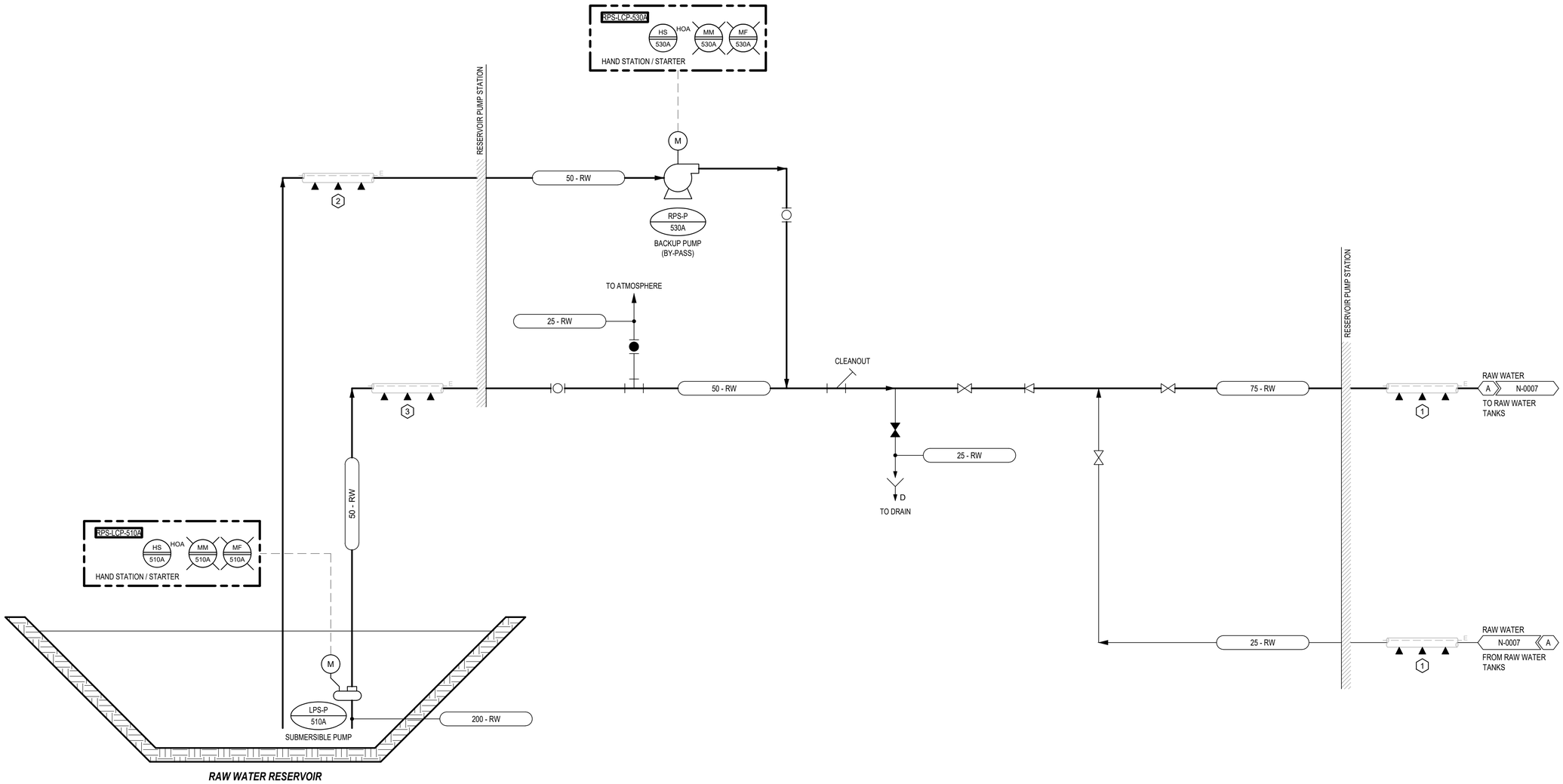
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS & INSTRUMENTATION PACKAGED WASTEWATER TREATMENT PLANT BLOWERS AND SOLIDS DIAGRAM

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0005 OF ----	1



KEYNOTES

1. DUAL 75mm AND 25mm HDPE DR I7 PIPE LINES C/W DUAL HEAT TRACE. 75mm INSULATION AND GALVANIZED STEEL JACKET.
2. 50mm FLEXIBLE HYDRAULIC HOSE WRAPPED IN SUBMERSIBLE HEAT TRACE INSIDE 150mm PRE-INSULATED HDPE DR I7 PIPE.
3. 50mm HDPE DR I7 PIPE C/W 50mm INSULATION AND SUBMERSIBLE HEAT TRACE INSIDE 150mm HDPE DR I7 PRE-INSULATED PIPE.

GENERAL NOTES

1. ALL INSTRUMENTS HAVE PREFIX IN TAG NUMBER. REFER TO EQUIPMENT AND LOCATION FOR PREFIX DETAILS. CONTRACTOR TO ENSURE ALL PROGRAMMING, CABLES AND NAMEPLATES ASSOCIATED TO INSTRUMENTS INCLUDE PREFIX IN TAGS.

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Public Works and Government Services Canada

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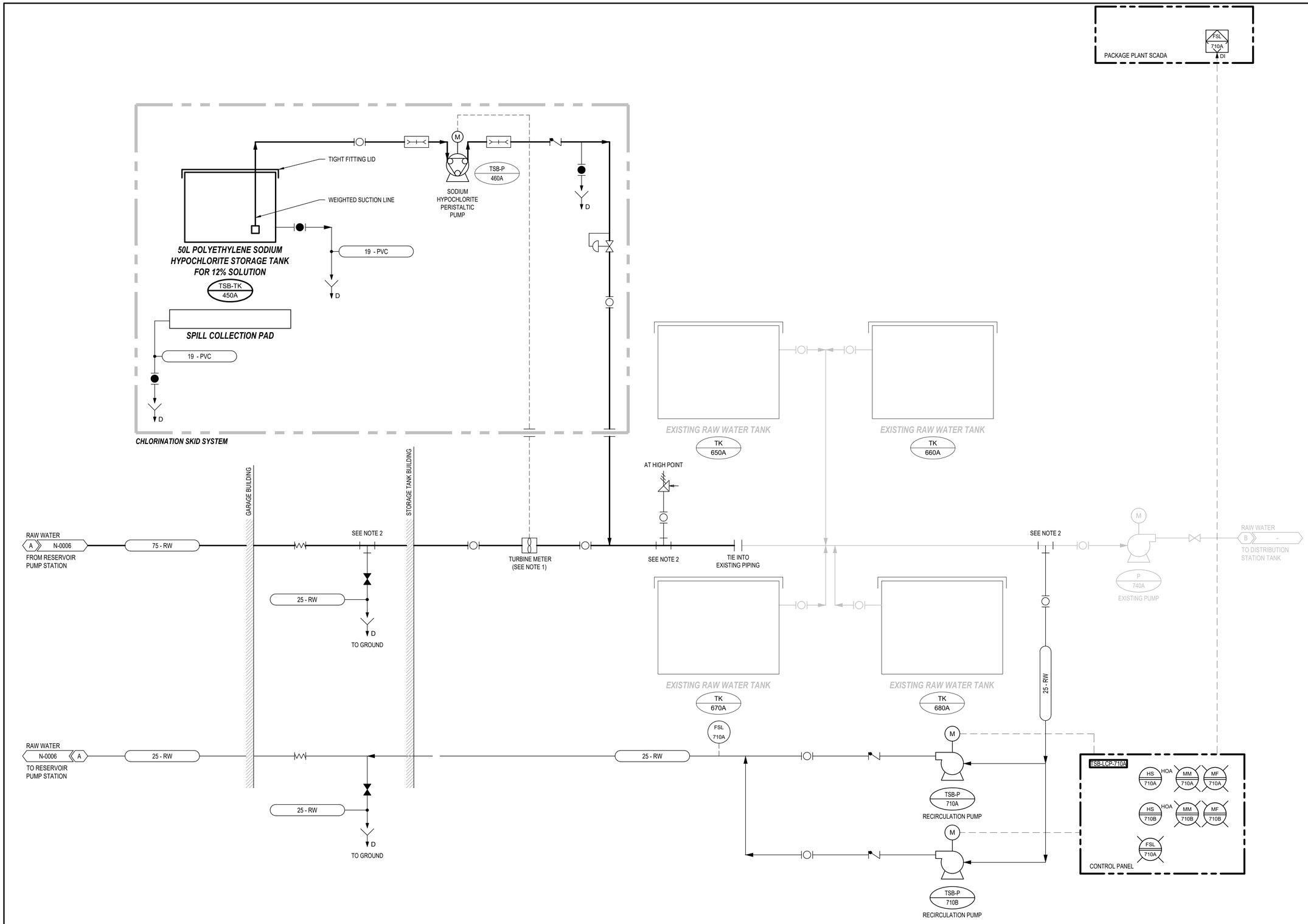
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS & INSTRUMENTATION
-
RAW WATER RECIRCULATION SYSTEM AND BACKUP INTAKE

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0006 OF ----	1



KEYNOTES

1

GENERAL NOTES

1. PULSE FROM TURBINE METER TO INITIATE PERISTALTIC PUMP.
2. INSTALL NEW REDUCING TEE 75x75x25mm.
3. ALL INSTRUMENTS HAVE PREFIX IN TAG NUMBER. REFER TO EQUIPMENT AND LOCATION FOR PREFIX DETAILS. CONTRACTOR TO ENSURE ALL PROGRAMMING, CABLES AND NAMEPLATES ASSOCIATED TO INSTRUMENTS INCLUDE PREFIX IN TAGS.

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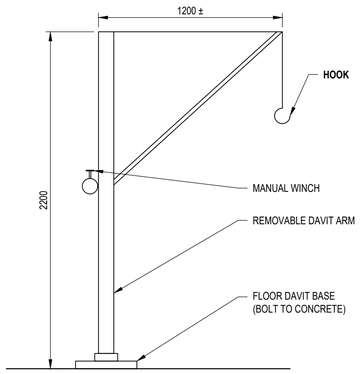
PROCESS & INSTRUMENTATION - RAW WATER RECIRCULATION SYSTEM DIAGRAM

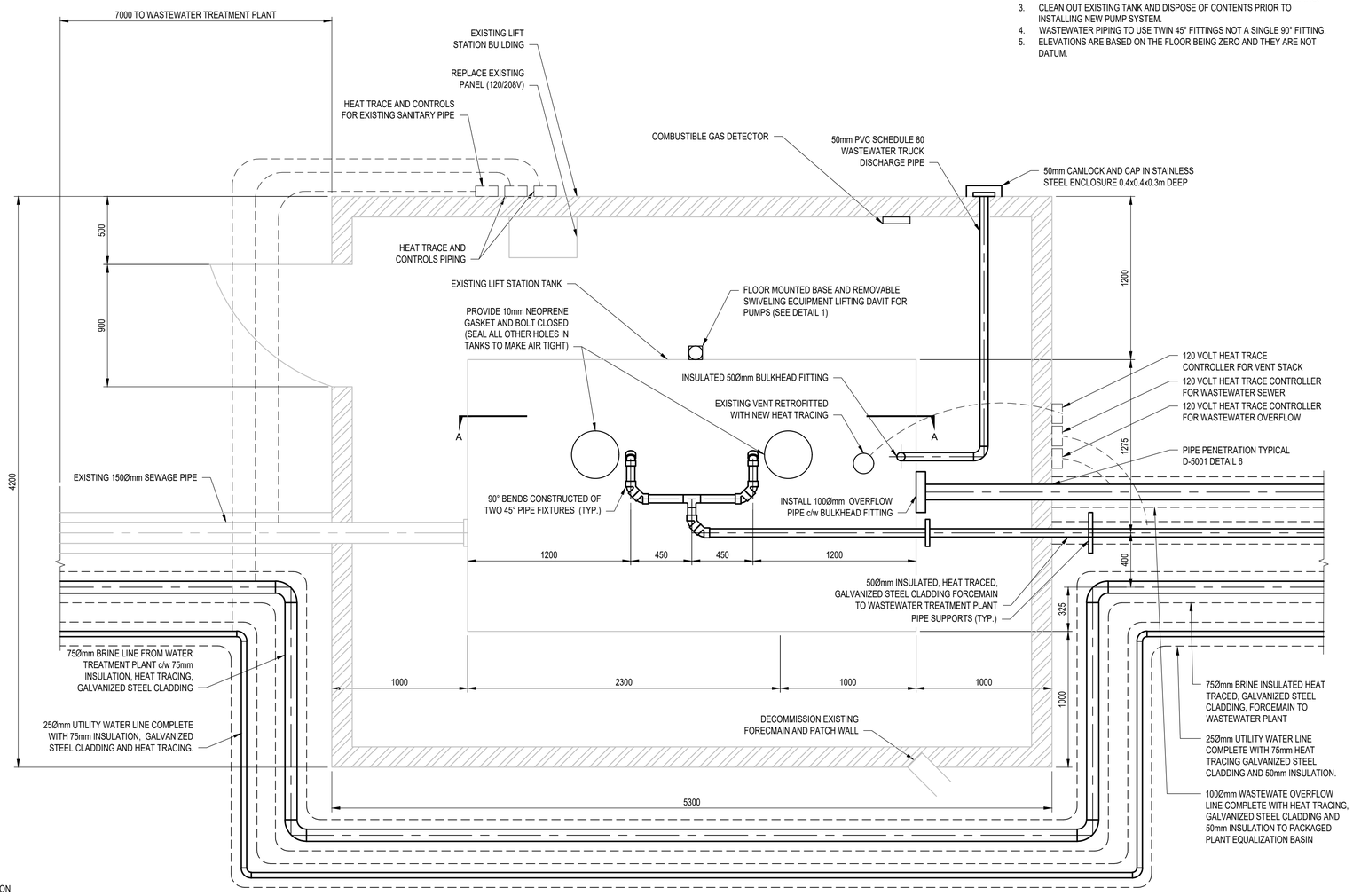
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	N-0007 OF ----	1



1 EQUIPMENT LIFTING DAVIT
Scale 1:20

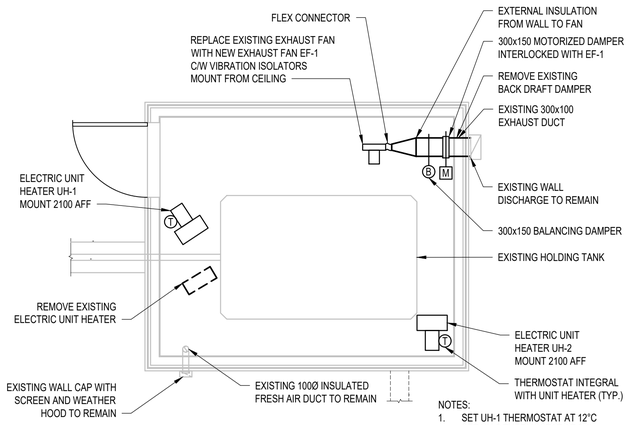
NOTES:

1. SEE PERFORMANCE SPECIFICATION FOR PUMP SPECIFICATIONS.
2. PROVIDE PIPE HANGERS TO PREVENT PIPE MOVEMENT DURING PUMPING.
3. CLEAN OUT EXISTING TANK AND DISPOSE OF CONTENTS PRIOR TO INSTALLING NEW PUMP SYSTEM.
4. WASTEWATER PIPING TO USE TWIN 45° FITTINGS NOT A SINGLE 90° FITTING.
5. ELEVATIONS ARE BASED ON THE FLOOR BEING ZERO AND THEY ARE NOT DATUM.



UPGRADED EXISTING LIFT STATION

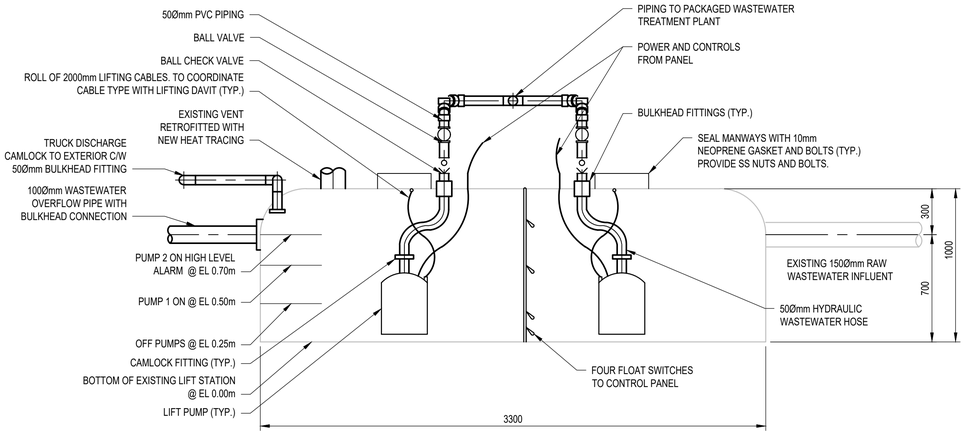
NOTE: PROVIDE EXTERIOR PIPE SUPPORTS AS PER D-5002 Scale 1:20



RAW WASTEWATER LIFT STATION BULDING PLAN
Scale 1:50

NOTES:

1. SET UH-1 THERMOSTAT AT 12°C SET UH-2 THERMOSTAT AT 8°C
2. ALL EQUIPMENT TO BE RATED FOR ZONE 1 (CLASS 1 ZONE1) APPLICATION
3. EF-1 SHALL START WHEN MOTORIZED DAMPER IS 85% OPEN.
4. MOTORIZED DAMPER AND EF-1 SHALL START BY MEANS OF A TIMER SWITCH LOCATED OUTSIDE THE BUILDING. REFER TO ELECTRICAL DRAWINGS.



A-A LIFT STATION SECTION
Scale 1:20

NOTE:

1. BRACE PIPING TO PREVENT MOVEMENT

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Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada
REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY
P. BARSALOU
2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

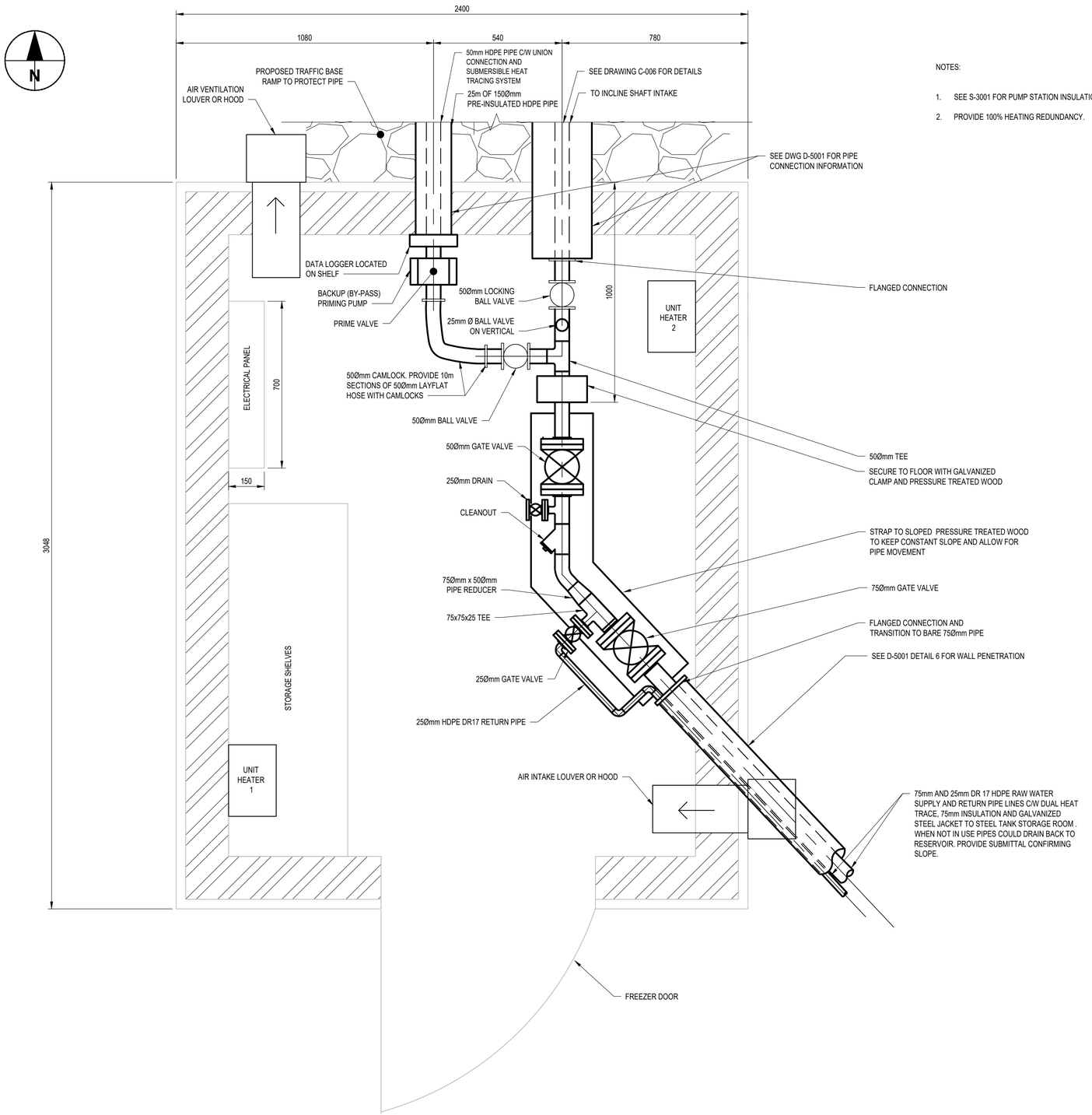
EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS MECHANICAL EXISTING LIFT STATION UPGRADE PLAN, SECTION AND DETAIL

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	D-0001 OF 005	1



NOTES:

1. SEE S-3001 FOR PUMP STATION INSULATION DETAILS.
2. PROVIDE 100% HEATING REDUNDANCY.

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SIGNED BY

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EUREKA WATER AND SEWAGE SYSTEM

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S. ELLIOTT

Approved by / Approuvé par
P. BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

PROCESS MECHANICAL RAW WATER RESERVOIR PUMP STATION PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	D-0002 OF	1

PWGSC – A1 – 841X594

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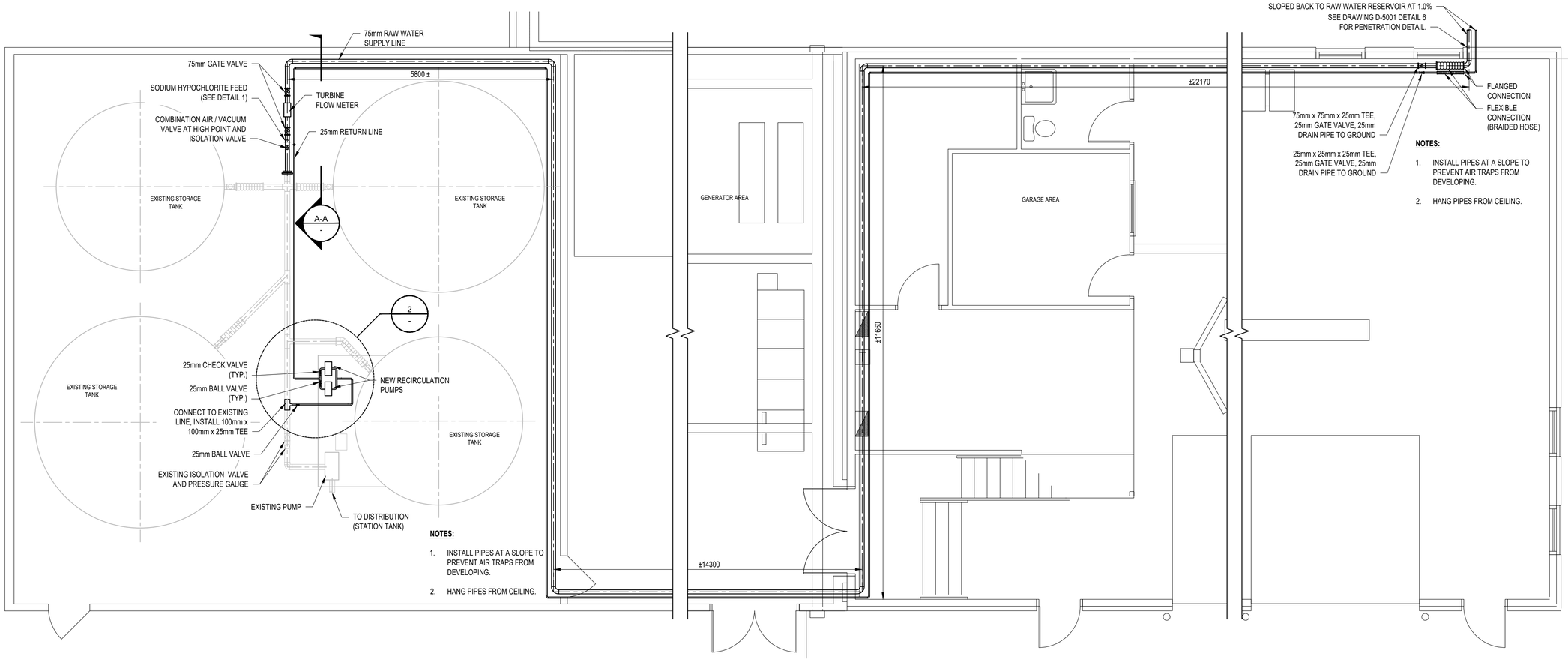
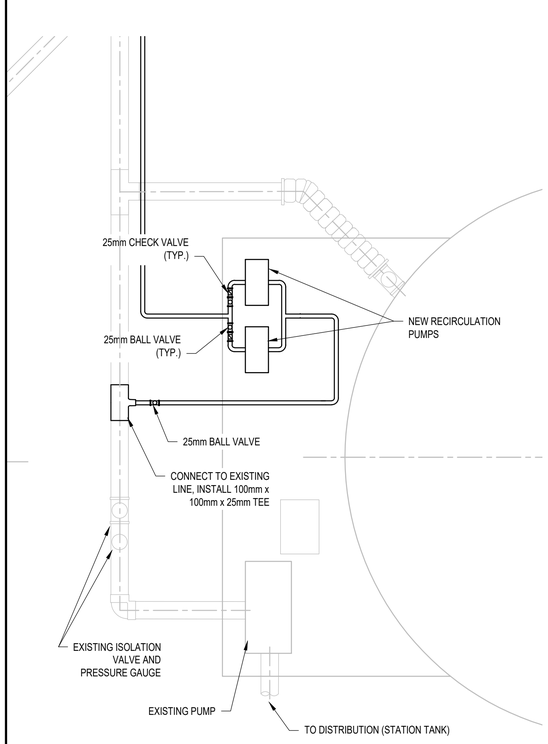
A000



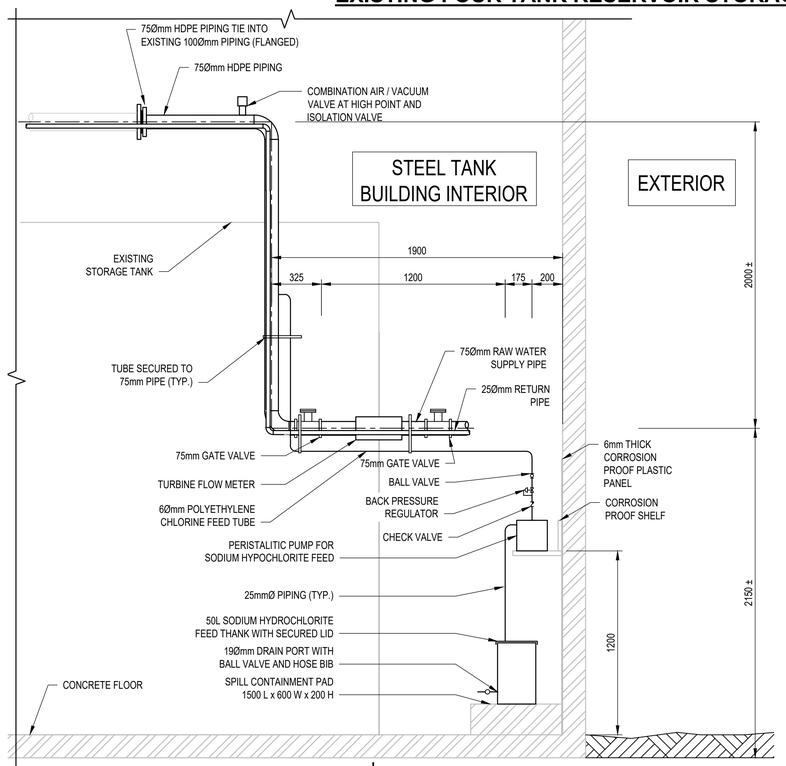
EXISTING FOUR TANK RESERVOIR STORAGE ROOM PLAN

1:50



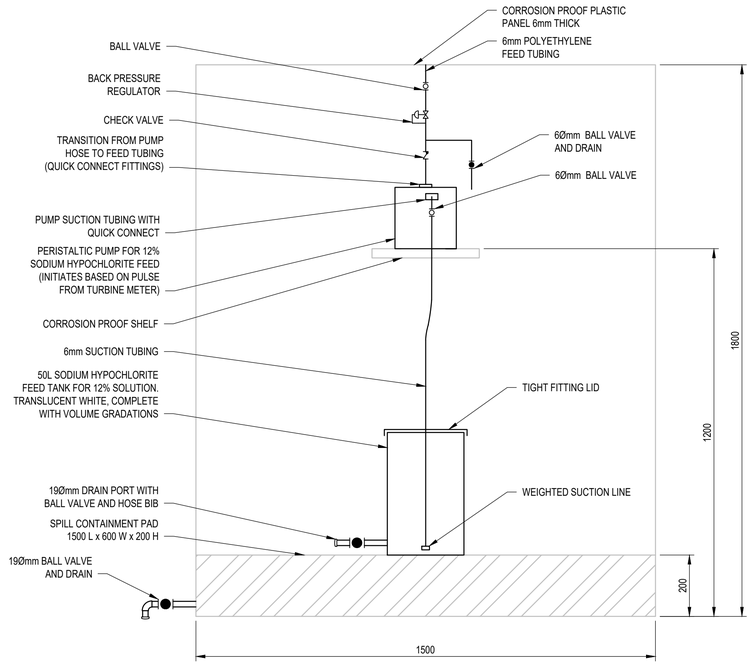
2 | RECIRCULATION PUMP DETAIL

Scale 1:20



A-A | SECTION

Scale 1:20



1 | SODIUM HYPOCHLORITE FEED DETAIL

Scale 1:10

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SERVICES IMMOBILIERS
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EUREKA WATER AND SEWAGE SYSTEM

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Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS MECHANICAL
RAW WATER RESERVOIR
RAW WATER SUPPLY AND CHLORINATION CROSS SECTION AND DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	D-3001 OF	1

PWGSC – A1 – 841X594

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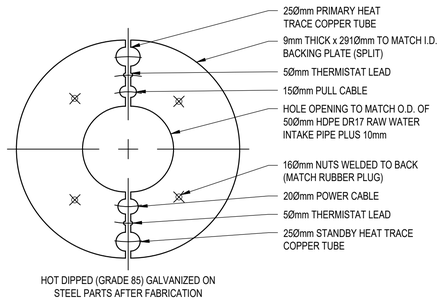
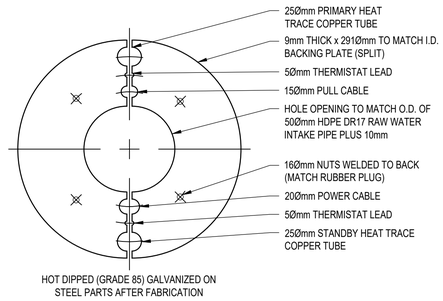
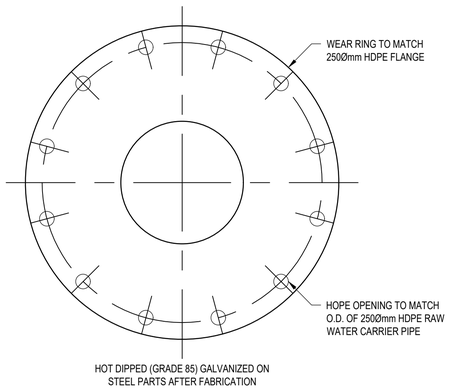
A000



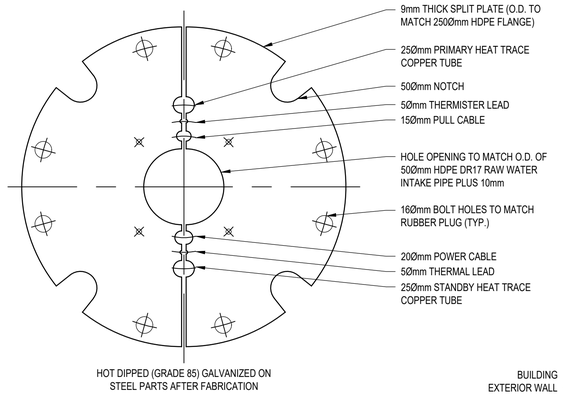
1 TYPICAL RUBBER PLUG DETAIL
D-0002 — N.T.S



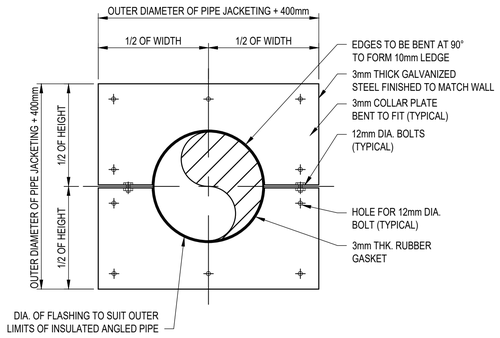
2 TYPICAL RUBBER PLATE DETAIL
D-0002 — N.T.S



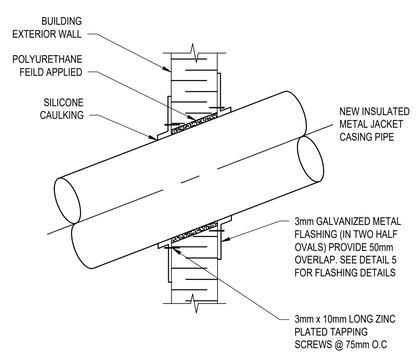
3 TYPICAL WEAR RING DETAIL
D-0002 — N.T.S



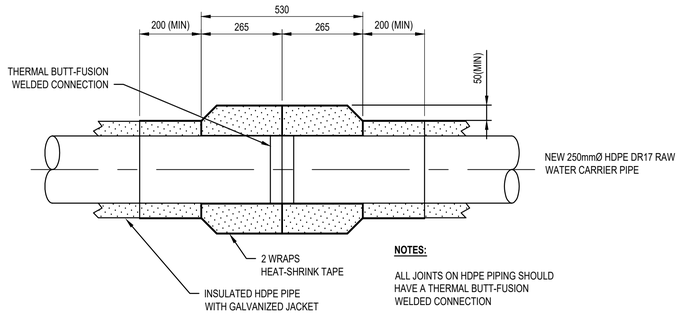
4 TYPICAL FACE PLATE DETAIL
D-0002 — N.T.S



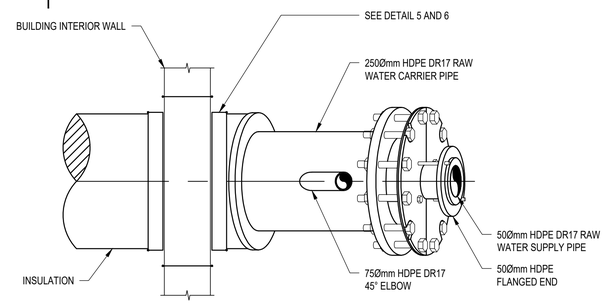
5 WALL PENETRATION PIPE FLASHING DETAIL
D-0002 — N.T.S



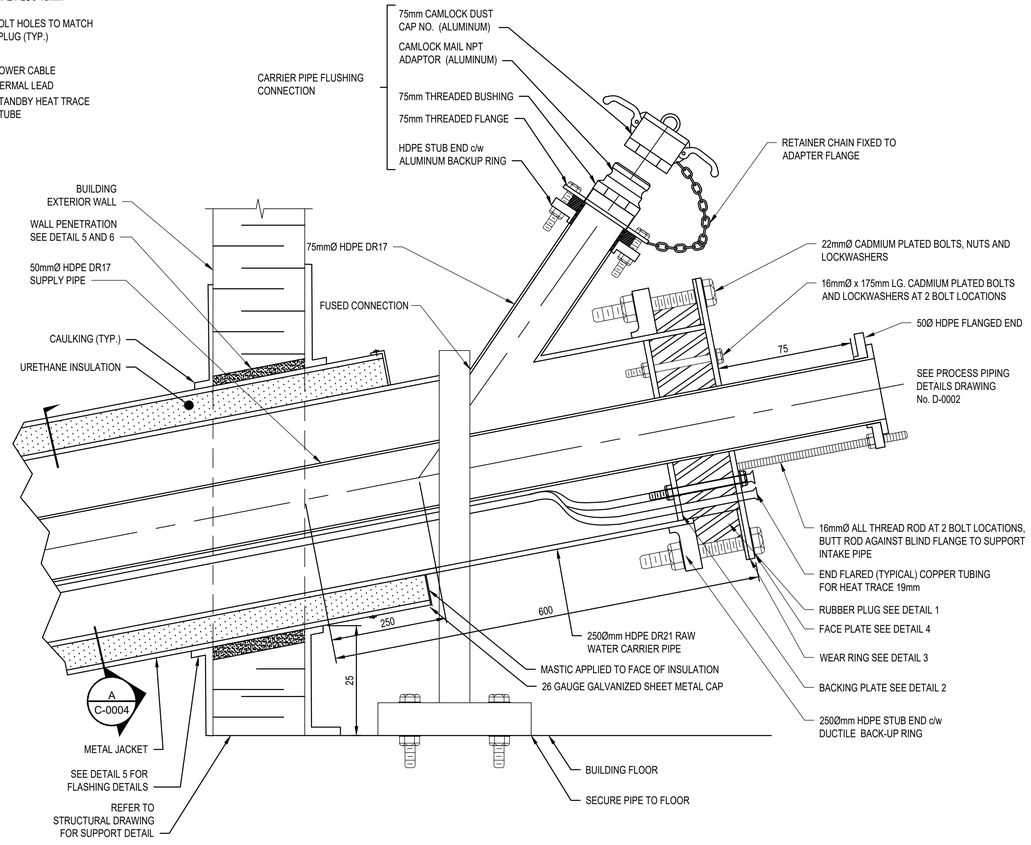
6 WALL PENETRATION SECTION
D-0002 — N.T.S



7 TYPICAL RAW WATER SUPPLY PIPE JOINT DETAIL
D-0002 — N.T.S



8 WALL PENETRATION PLAN
D-0002 — N.T.S



9 RAW WATER PIPE AND SEAL DETAIL
D-0002 — N.T.S

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AECOM

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NOTE:
PRE-ASSEMBLE RAW WATER PIPING ASSEMBLY AT MANUFACTURER PRIOR TO BRINING TO SITE.

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Client: client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

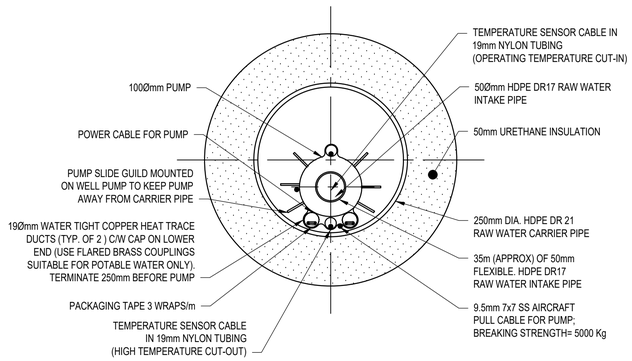
Project title / Projet
NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

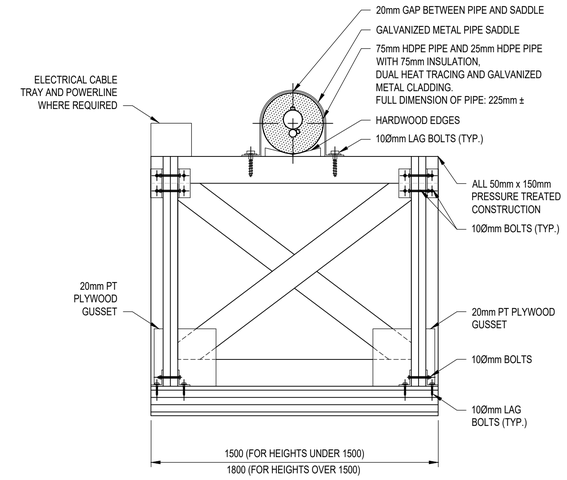
Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin
PROCESS MECHANICAL
GENERAL
PIPING DETAILS
SHEET 1 OF 2

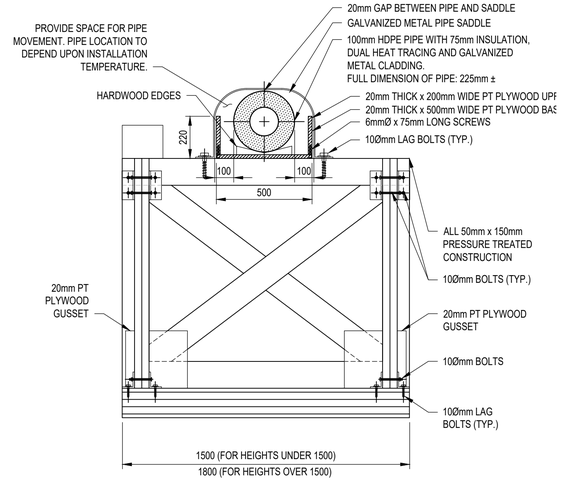
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	D-5001 OF	1



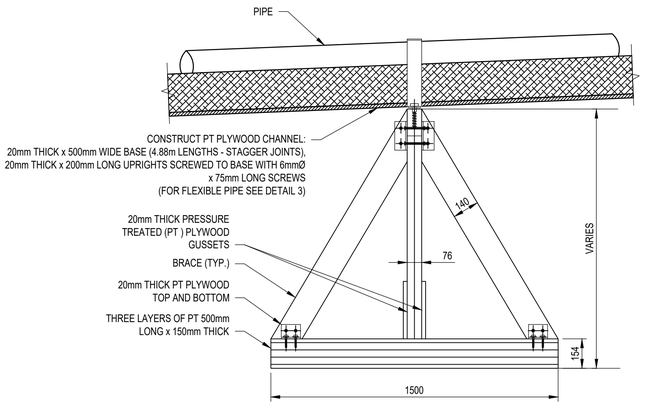
1 | RESERVOIR INTAKE PIPE DETAIL
C-0006 | N.T.S



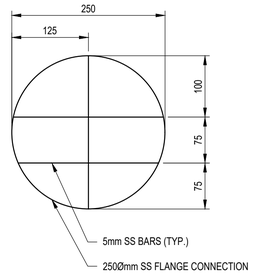
2 | RIGID PIPE SUPPORT DETAIL
C-0002 | NOTE: INSTALL ON STRAIGHT LENGTHS LEADING UP TO 10m FROM PIPE BENDS. N.T.S



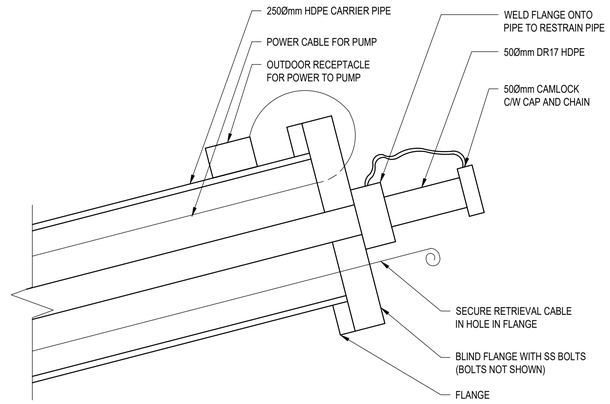
3 | FLEXIBLE MOVEMENT PIPE SUPPORT DETAIL
C-0002 | NOTE: INSTALL IN PIPE BEND AREA AND ON STRAIGHT SECTIONS WITHIN 10m OF THE BEND N.T.S



4 | PIPE SUPPORT (SIDE VIEW) DETAIL
D-3001 | N.T.S

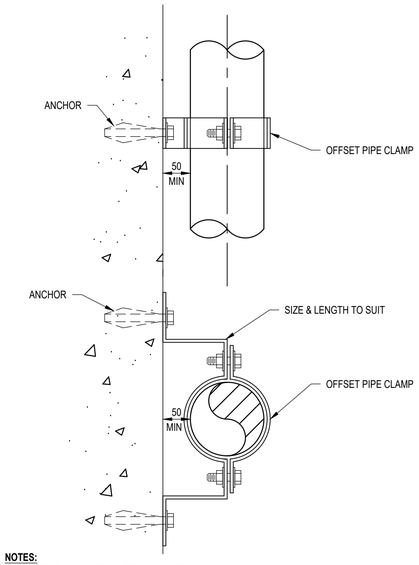


5 | PUMP STOP BAR DETAIL
C-0006 | N.T.S



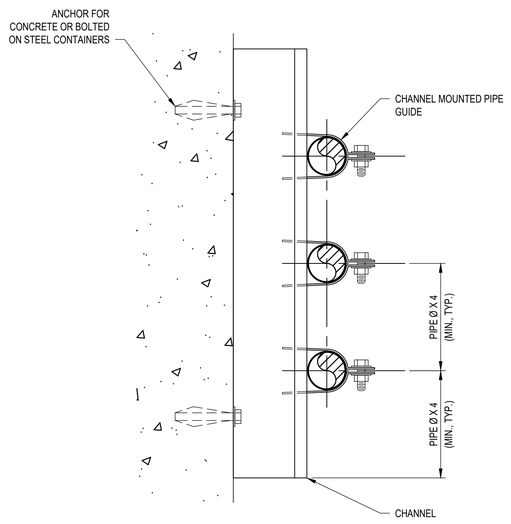
6 | RESERVOIR DRAINAGE PIPE CAP DETAIL
C-0006 | N.T.S

NOTES:
1. INSTALL PUMPS IN SHAFT 42 AND 43 ON DRAWING C-0003.
2. PROVIDE CABLE FROM THE DRAINAGE PUMPS, EXTENDING TO THE RESERVOIR PUMP HOUSE

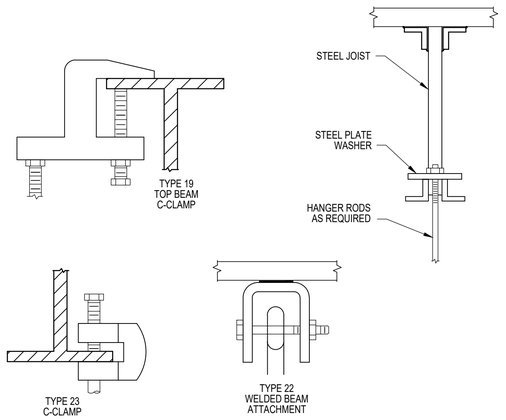


NOTES:
1. SUITABLE FOR PIPING 25Ømm TO 30ØØmm
2. GALVANIZE ALL METAL PARTS AND HARDWARE
3. SUITABLE FOR WALL OR FLOOR SUPPORTED PIPE

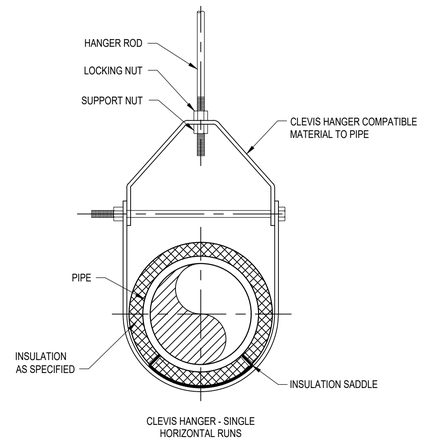
6 | OFFSET PIPE SUPPORT DETAIL
- | NOTE: SIZE TO MATCH PIPE N.T.S



7 | SMALL PIPE WALL MOUNTED SUPPORT DETAIL
- | NOTE: SIDE TO MATCH PIPE N.T.S



8 | PIPE CLEVIS HANGER WITH LOWER ATTACHMENT DETAIL
- | N.T.S



9 | PIPE CLEVIS HANGER WITH LOWER ATTACHMENT DETAIL
- | NOTE: SIZE TO MATCH PIPE N.T.S

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Client / client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3 Winnipeg, MB

Project title / Projet

NUNAVUT EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **A. FARROKHI**
Drawn by / Dessiné par: **S. ELLIOTT**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

PROCESS MECHANICAL GENERAL PIPING DETAILS SHEET 2 OF 2

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	D-5002 OF	1

PWGSC – A1 – 841X594

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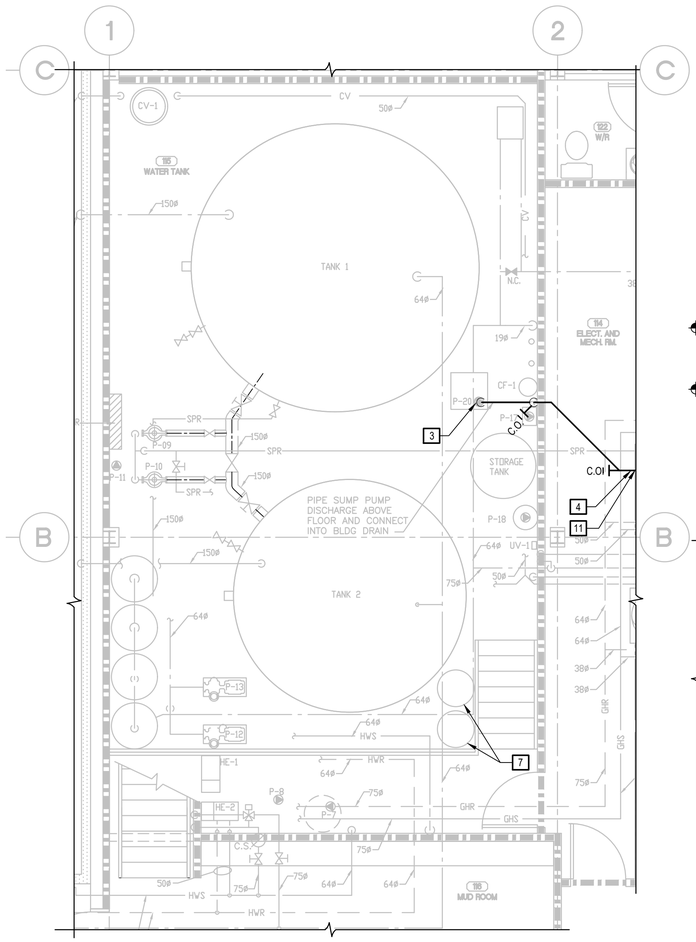
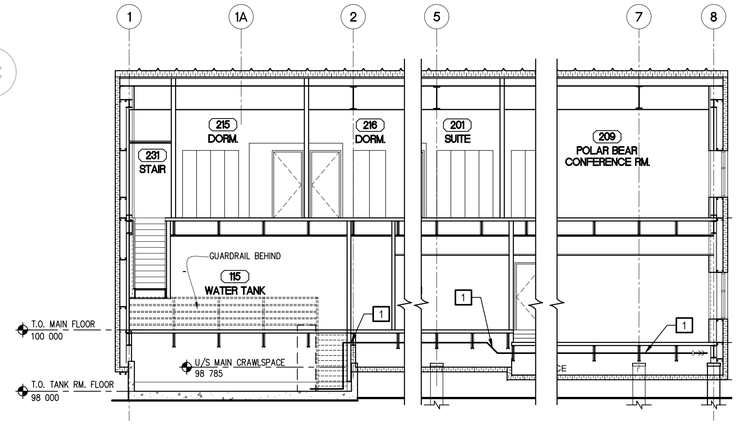
A000



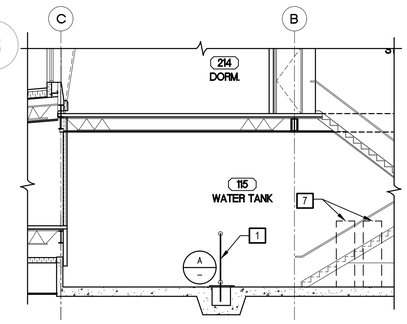
PARTIAL WATER TANK ROOM MODIFICATIONS

Scale 1:50



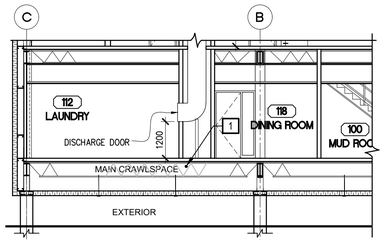
1 PARTIAL SECTION

Scale 1:100



2 PARTIAL SECTION

Scale 1:100



3 PARTIAL SECTION

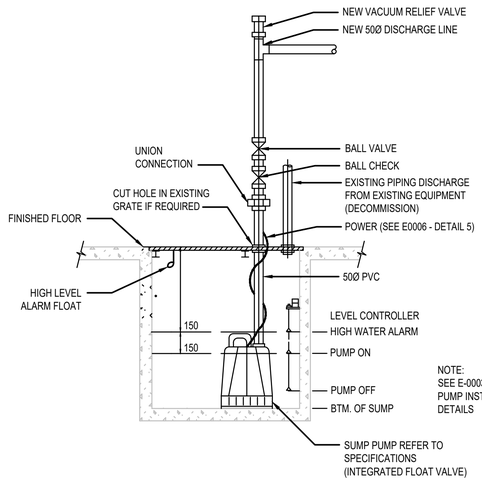
Scale 1:100

GENERAL NOTES:

1. CONTRACTOR TO MAKE SURE THAT ALL PENETRATIONS THROUGH FIRE RATED AREAS ARE PROPERLY SEALED ACCORDING TO THE NATIONAL BLDG. CODE.
2. CONTRACTOR SHALL SITE VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES FOR HEAD ROOM AND SPACE ALLOCATION OF NEW PIPING IN CRAWL SPACE.

DRAWING NOTES:

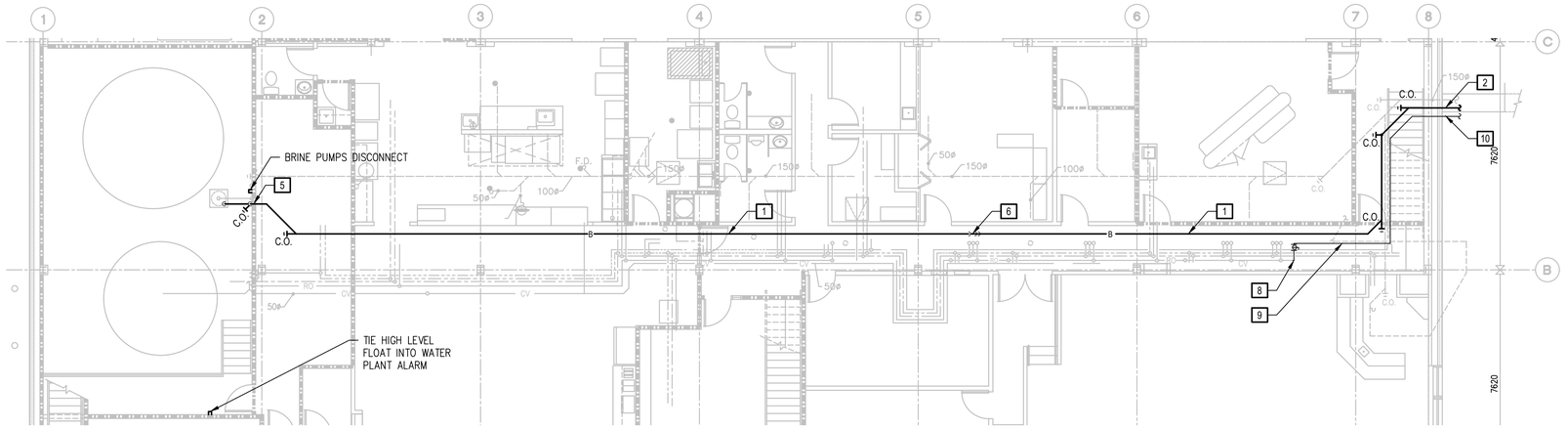
1. NEW 50mm PVC DISCHARGE FROM SUMP PIT TO RUN ALONG CRAWLSPACE AND STRAPPED TO UNDERSIDE OF STRUCTURE IN HEATED SPACE.
2. NEW 50mm HDPE DISCHARGE LINE FROM EXTERNAL LIFT STATION C/W 75mm THERMAL INSULATION, HEAT TRACE AND GALVANIZED JACKET. SEE CIVIL DRAWINGS FOR CONTINUATION. HEAT TRACE FROM LIFT STATION.
3. REMOVE AND REPLACE P-20 AND ASSOCIATED PIPING WITH NEW PUMP AND NEW DISCHARGE PIPING. PLACE NEW 50mm PVC DISCHARGE PIPING IN CRAWLSPACE.
4. FOR CONTINUATION SEE MAIN COMPLEX-PARTIAL MAIN FLOOR PLUMBING PLAN DETAIL 2.
5. CORE THROUGH CONCRETE. NEW PENETRATION TO ACCOMMODATE NEW 50mm PVC DISCHARGE LINE. TO BE PLACED IN CRAWLSPACE. PATCH EXISTING HOLE.
6. DIRECTION CHANGE AT THIS POINT SEE PARTIAL SECTION 1.
7. EXISTING WATER SOFTENERS.
8. NEW 25mm COPPER SERVICE FOR UTILITY WATER, COMPLETE WITH ISOLATION BALL VALVE.
9. NEW 25mm COPPER LINE FROM TAPPING POINT , STRAPPED TO UNDERSIDE OF STRUCTURE.
10. NEW 25mm HDPE EXTERNAL PIPE COMPLETE WITH 75mm INSULATION AND GALVANIZED JACKET. HEAT TRACE FROM LIFT STATION.
11. DISCONNECT EXISTING BRINE LINE FROM EXISTING SANITARY LINE AND PLUG HOLE.



NOTE:
SEE E-0003, DETAIL 4 FOR PUMP INSTALLATION DETAILS

1 SUMP PUMP DETAIL

EXISTING MODIFIED SUMP PIT NTS



EUREKA STATION-PARTIAL MAIN FLOOR PLUMBING PLAN

Scale 1:100

MECHANICAL LEGEND

	CONTROL VALVE
	3-WAY CONTROL VALVE
	BALL VALVE
	CHECK SWING GATE VALVE
	CHECK GATE VALVE C/W BALL DRIP
	BUTTERFLY VALVE
	GLOBE VALVE
	GATE VALVE
	NORMALLY CLOSED VALVE
	PUMP
	PRESSURE GAUGE
	STRAINER
	CAPPED END
	UNION
WM	WATER METER
GM	GAS METER
EWS	EYE WASH
	TRAP
	HOSE BIBB
	QUICK CONNECT
FFD	FUNNEL FLOOR DRAIN
FD	FLOOR DRAIN
RD	ROOF DRAIN
	DRAIN
C.O.	CLEAN OUT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATING
SAN	SANITARY SEWER ABOVE GRADE
SAN	SANITARY SEWER BELOW GRADE
ST	STORM DRAIN ABOVE GRADE
ST	STORM DRAIN BELOW GRADE
RWL	RAIN WATER LEADER ABOVE GRADE
SD	SUMP DISCHARGE
V	SANITARY VENT LINE
FE	FINAL EFFLUENT
B	BRINE LINE
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL TANK VENT
	PIPING DOWN
	PIPING UP
	TEE FITTING DOWN FLOW
	TEE FITTING UP FLOW
	FLOW DIRECTION

DRAWING TAGS

1	DRAWING NOTE No.
SH-3	PLUMBING FIXTURE
UH 1	EQUIPMENT DESIGNATION EQUIPMENT No.

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Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

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P. BARSALOU
2020/06/23

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SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2		
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
C. COURCHAINE

Drawn by / Dessiné par
D. PEREZ

Approved by / Approuvé par
P.BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

MECHANICAL
EUREKA STATION
PARTIAL MAIN FLOOR PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	H-0001 OF	1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

A000

LEGEND

POWER

- WITHDRAWABLE CONNECTION
- 800AF / LSIG / 600AT — LOW VOLTAGE POWER CIRCUIT BREAKER (LVPCB)
  MODIFIERS: 800AF - FRAME; LSIG - TRIP FUNCTIONS; 600AT - TRIP
  FUNCTIONS: 100% - 100% RATED
- TM / 3P / 120A — LOW VOLTAGE THERMAL/MAGNETIC BREAKER
  MODIFIERS: 3P - # OF POLES; 120A - TRIP
  FUNCTIONS: 100% - 100% RATED; MCP - MOTOR PROTECTOR
- 7A / MCP — MOTOR CIRCUIT PROTECTOR, MAGNETIC ONLY MODIFIERS: 7A CONTINUOUS RATING. 3 POLE UNLESS OTHERWISE NOTED.
- DISCONNECT SWITCH (SINGLE LINE)
- K — KIRK KEY INTERLOCK
- THERMAL OVERLOAD DEVICE
- CONTACT - NORMALLY OPEN
- CONTACT - NORMALLY CLOSED
- X — CAPACITOR C/W KVAR RATING
- DM — DIGITAL METERING
- SPD — SURGE PROTECTION DEVICE
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- VFD — VARIABLE FREQUENCY DRIVE
- M — UTILITY METER
- ELECTRIC MOTOR - SINGLE PHASE
- ELECTRIC MOTOR - THREE PHASE
- DISTRIBUTION TRANSFORMER
- DELTA CONNECTION
- WYE CONNECTION
- WYE WITH SOLIDLY GROUNDED NEUTRAL
- GROUND CONNECTION
- 100A / #X — DISCONNECT SWITCH #X - NEMA RATING
- STARTER - FVNR, FULL VOLTAGE NON-REVERSING
- GROUND ROD

- DUPLEX RECEPTACLE
- ABOVE COUNTER RECEPTACLE
- DRYER RECEPTACLE
- ISOLATED GROUND RECEPTACLE
- SPLIT-FEED RECEPTACLE
- GROUND FAULT (GFCI) RECEPTACLE
- 240V RECEPTACLE
- 120V DIRECT CONNECTION / POWER ROUGH-IN
- 600V DIRECT CONNECTION / POWER ROUGH-IN
- SPECIAL 600V RECEPTACLE
- DISCONNECT SWITCH (FLOOR PLAN)
- FUSED DISCONNECT SWITCH
- COMBINATION DISCONNECT/ MAGNETIC MOTOR STARTER
- M — MANUAL COMBINATION MOTOR STARTER
- UNIT HEATER
- PANEL BOARD - SURFACE MOUNTED
- MISC. PANEL BOARD - FLUSH MOUNTED
- TRANSFORMER
- HAND DRYER
- TERMINAL IN MOTOR STARTER COMPARTMENT
- TERMINAL IN LCP-XXXX
- TERMINAL IN LIT-XXXX
- G — INDICATING LIGHT R = RED, A = AMBER, G = GREEN
- TRANSIENT VOLTAGE SUPPRESSOR
- DUCT HEATER
- 1Ø MOTOR
- 49 — WINDING TEMPERATURE PROTECTION
- CIRCUIT BREAKER
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- 3Ø MOTOR
- FUSE
- J — JUNCTION BOX

LIGHTING

- LED LUMINAIRE - SUSPENDED
- LED LUMINAIRE - WALL MOUNTED
- LED WALL PACK
- EXTERIOR WALL MOUNTED
- WALL MOUNTED EXIT LIGHT - ARROWS AS REQUIRED
- WALL MOUNTED EXIT LIGHT WITH REMOTE HEADS
- DUAL FACEPLATE EXIT SIGN - SUSPENDED
- BATTERY PACK C/W HEADS AS INDICATED
- WALL MOUNTED EMERGENCY REMOTE HEADS
- PC — PHOTO ELECTRIC CELL
- OS — OCCUPANCY SENSOR
- # — LUMINAIRE TYPE
- Y — LIGHTING SWITCH
  Y=3: THREE WAY
  Y=4: FOUR WAY
  Y=D: DIMMER
  Y=PL: PILOT LIGHT
  Y=OS: OCCUPANCY SENSOR

COMMUNICATION

- VOICE OUTLET
- DATA OUTLET
- VOICE/DATA OUTLET

FIRE ALARM

- MANUAL PULL STATION
- WALL MOUNTED HORN
- WALL MOUNTED HORN/STROBE
- ST — WALL MOUNTED STROBE
- SMOKE DETECTOR
- HEAT DETECTOR
- RATE OF RISE THERMAL DETECTOR
- DUCT SMOKE DETECTOR
- END OF LINE RESISTOR
- IM — INSULATION MODULE

SECURITY

- CARD READER
- DPS — DOOR POSITION SWITCH
- MD — MOTION DETECTOR
- PUSHBUTTON FOR DOOR BUZZER
- DOOR BUZZER
- KP — KEYPAD
- PAN/TILT/ZOOM (PTZ) CAMERA

CABLES

- OVERHEAD
- DIRECT BURIED

ABBREVIATIONS

AHU	AIR HANDLE UNIT
A.F.F.	ABOVE FINISHED FLOOR
ATS	AUTOMATIC TRANSFER SWITCH
BLK	BLACK
BMS	BUILDING MANAGEMENT SYSTEM
BU	BATTERY CHARGER CABINET
CEC	CANADIAN ELECTRICAL CODE
CF	CEILING FAN/AIR CONDITIONER
CSTE	CUSTOMER SERVICE TERMINATION ENCLOSURE
DP	600V DISTRIBUTION PANEL BOARD
DCS	DISTRIBUTED CONTROL SYSTEM
DCU	DISTRIBUTED CONTROL UNIT
DN	DOWN
DRI	DIGITAL REMOTE INTERFACE
EF	EXHAUST FAN
EQ	EQUIPMENT
ETR	ELECTRICAL CABLE TRAY
FACP	FIRE ALARM CONTROL PANEL
FD	SMOKE/HEAT DETECTOR
FK	PULL STATION
FSC	FIBRE.COMMUNICATIONS CABINET
FVNR	FULL VOLTAGE NON REVERSING STARTER
FVR	FULL VOLTAGE REVERSING STARTER
GRD	GROUND
HN	HORN/STROBE
IR	INFRARED
ITR	INSTRUMENTATION CABLE TRAY
KB	CONTROL PANEL
LP	LIGHTING PANEL 120/208V
LCP	LIGHTING CONTROL PANEL
LSIG	LONG-TIME, SHORT-TIME, INSTANTANEOUS, GROUND FAULT TRIP BREAKER
MAU	MAKE-UP AIR UNIT
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
mmC	MILLIMETRE CONDUIT
MP	MECHANICAL POWER PANEL 120/208V
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
OH	OVERHEAD
OS	OCCUPANCY SENSOR
PMCS	POWER MANAGEMENT CONTROL SYSTEM
PP	POWER PANEL 120/208V
RED	RED
RTU	ROOF TOP UNIT
RR	RATE OF RISE
SPM	SMART POWER METER
SS	SOFT STARTER
SP	SECURITY PANEL
SPD	SURGE PROTECTION DEVICE
SPT	SPLITTER
SW	SWITCHBOARD
TR	TRANSFORMER
UH	UNIT HEATER
UPS	UNINTERRUPTABLE POWER SUPPLY
UX	UPS DISTRIBUTION PANEL BOARD
WHT	WHITE
WP	WATERPROOF
XP	EXPLOSION PROOF
YLW	YELLOW

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Western Region
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Région de l'ouest

AECOM

ORIGINAL SIGNED BY
R. BOGDANOV
2020/06/23

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SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet
NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **R. BOGDANOV**
Drawn by / Dessiné par: **R. CHAVEZ**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin
ELECTRICAL LEGEND

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0000 OF ----	1

EXISTING	LEGEND - PLAN	NEW
P	ABOVEGROUND CABLE	P
UG	UNDERGROUND CABLE	UG

NOTES:

1. CABLE ROUTES SHOWN ARE APPROXIMATE. SITE CONDITIONS MAY REQUIRE MODIFICATION OF ROUTE.
2. CONTRACTOR IS RESPONSIBLE FOR ALL SITE UNDERGROUND AND OVERHEAD SERVICES WITHIN THE WATER AND WASTEWATER INFRASTRUCTURE AND ASSOCIATED TRENCHING ROUTES.
3. CONTRACTOR TO BE RESPONSIBLE FOR ALL CABLES AND SERVICES DAMAGED BY CONSTRUCTION ACTIVITIES.
4. FENCE GROUNDING AS PER 36-312 OF CEC.

1 | SITE PLAN
- | Scale 1:1000

0 10 20 30 40 50 60 70 80 90 100mm

PWGSC – A1 – 841X594

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SERVICES IMMOBILIERS
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EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
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Drawn by / Dessiné par
R. CHAVEZ

Approved by / Approuvé par
P. BARSALOU

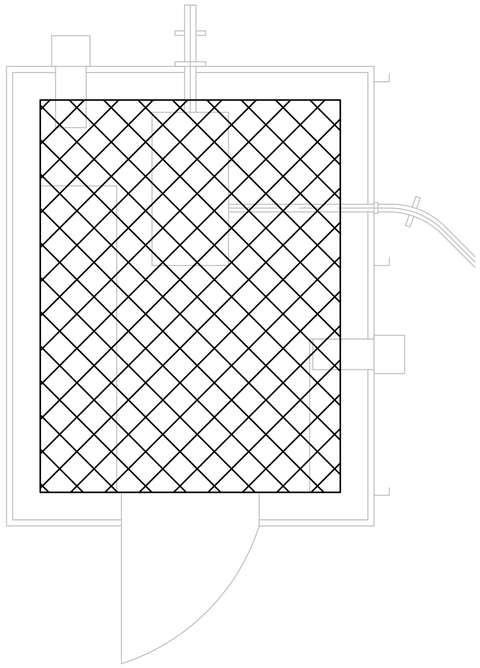
PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

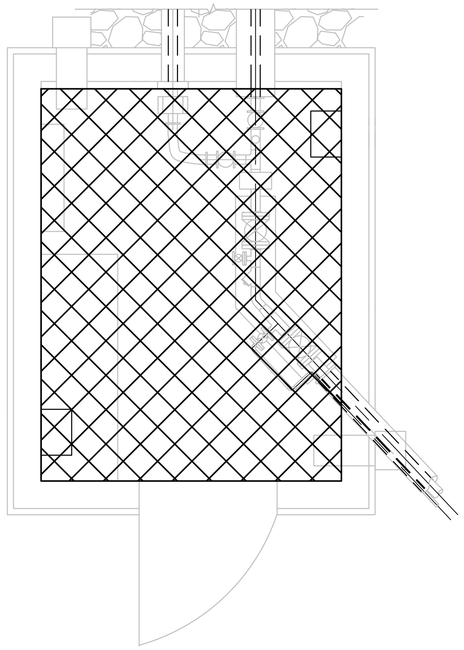
ELECTRICAL SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0001 OF ----	1

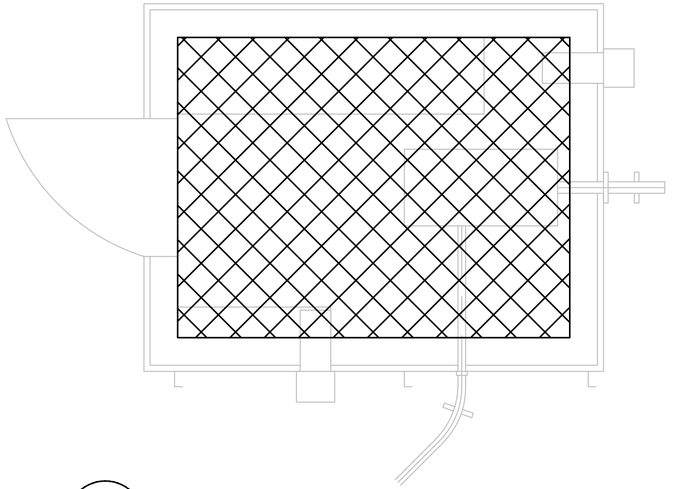
A000



1 | CREEK PUMP STATION PLAN
Scale 1:20



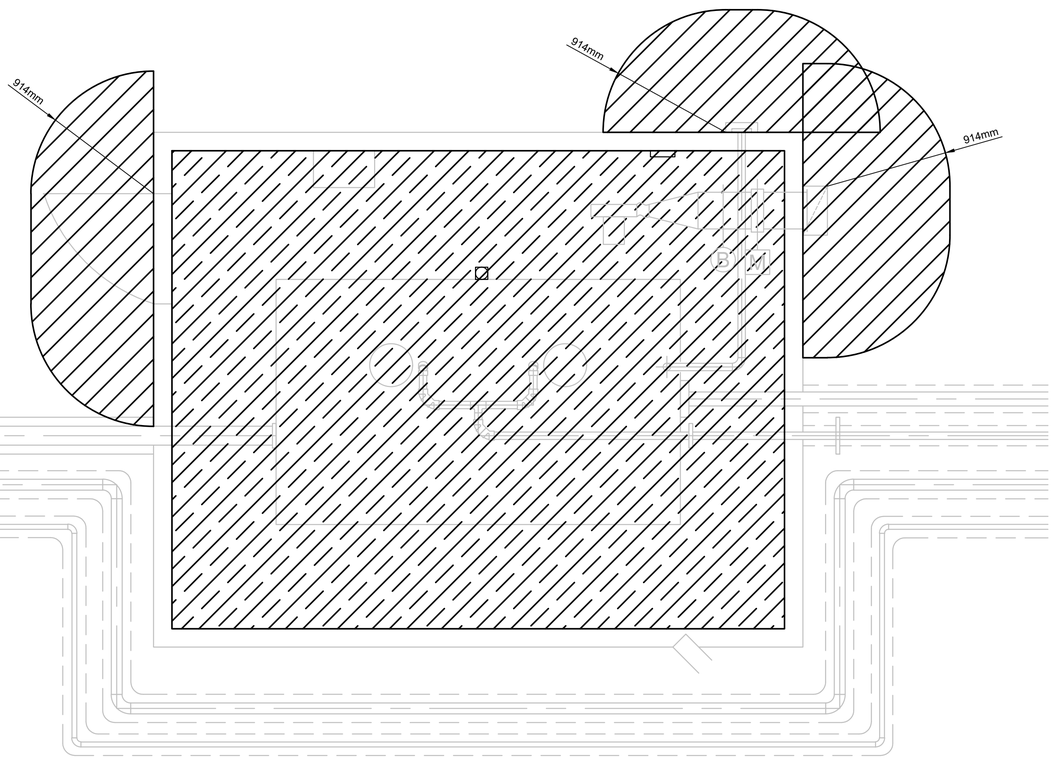
2 | NEW RESERVOIR PUMP STATION PLAN
Scale 1:20



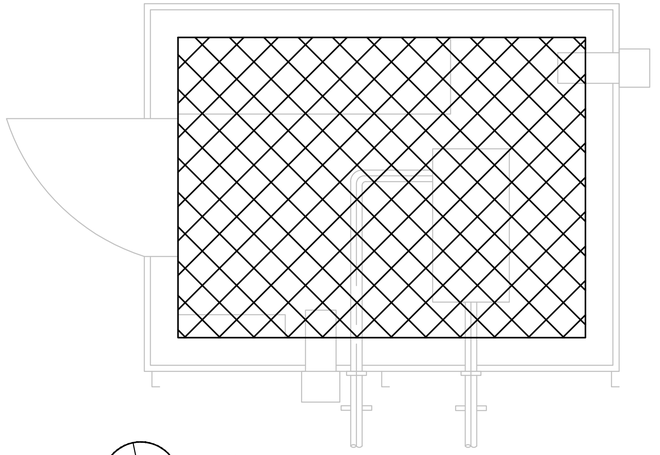
3 | NEW RETENTION BASIN PUMP STATION PLAN
Scale 1:20

CLASSIFICATION:

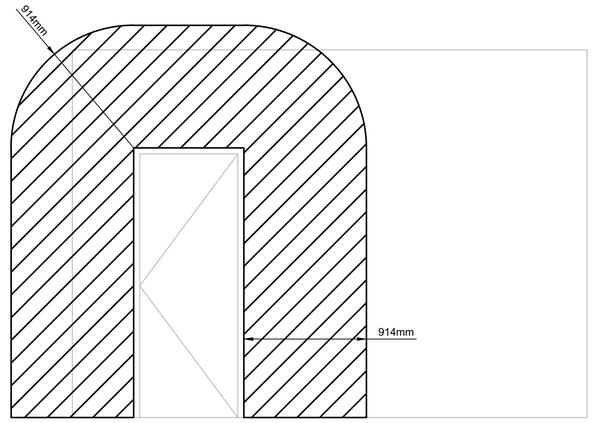
- CATEGORY 1
- CATEGORY 2 CORROSIVE (CLASS 1, ZONE 1)
- CATEGORY 2 CORROSIVE (CLASS 1, ZONE 2)



4 | EXISTING RAW WASTEWATER LIFT STATION PLAN
Scale 1:25



6 | NEW RAW WATER TRANSFER STATION
Scale 1:20



5 | EXISTING RAW WASTEWATER LIFT STATION ELEVATION
Scale 1:25

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Région de l'ouest

AECOM

ORIGINAL SIGNED BY

R. BOGDANOV

2020/06/23

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SIGNED ON 06.23.2020
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The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
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0	ISSUED FOR TENDER	2020/06/19

Client: client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **R. BOGDANOV**
Drawn by / Dessiné par: **R. CHAVEZ**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

ELECTRICAL CATEGORY & HAZARDOUS AREA CLASSIFICATION

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0002 OF ----	1

PWGSC – A1 – 841X594

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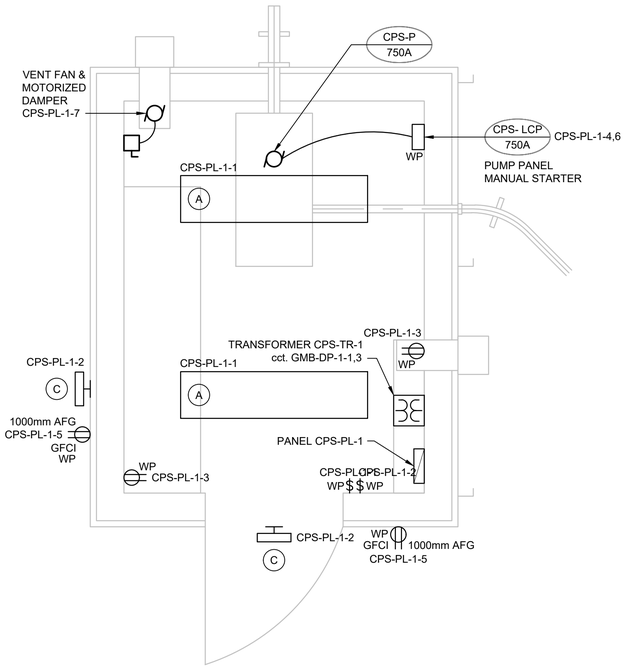
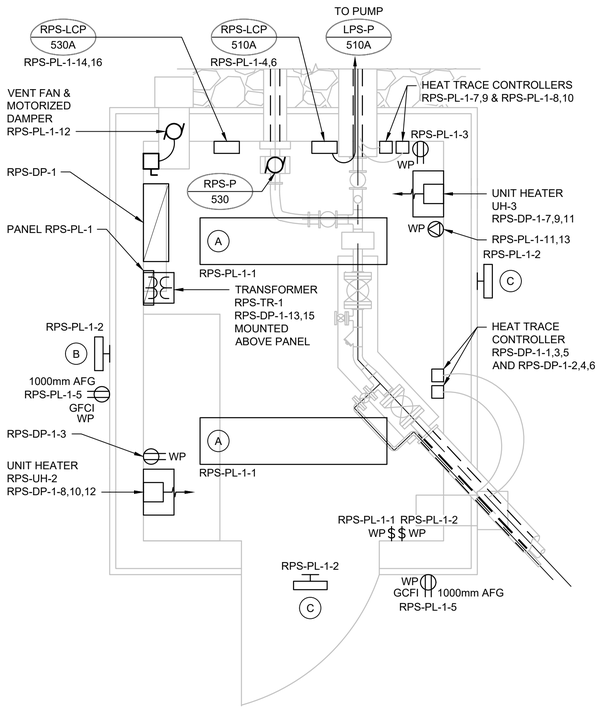
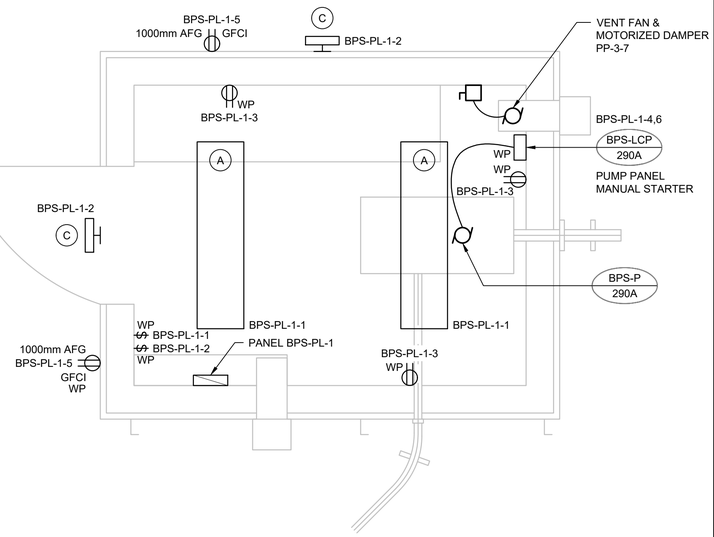
A000



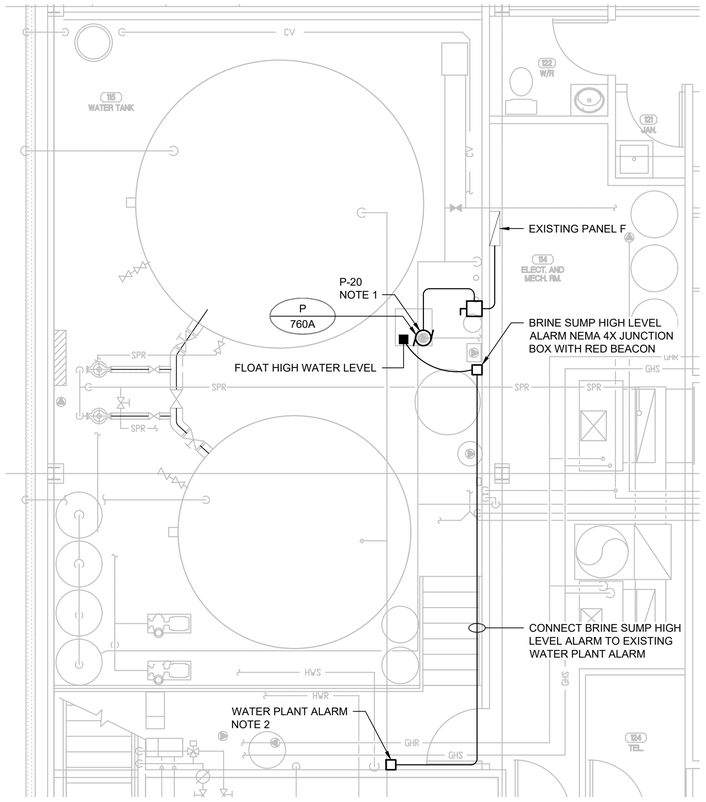
1 | CREEK PUMP STATION PLAN
Scale 1:20



2 | NEW RESERVOIR PUMP STATION PLAN
Scale 1:20



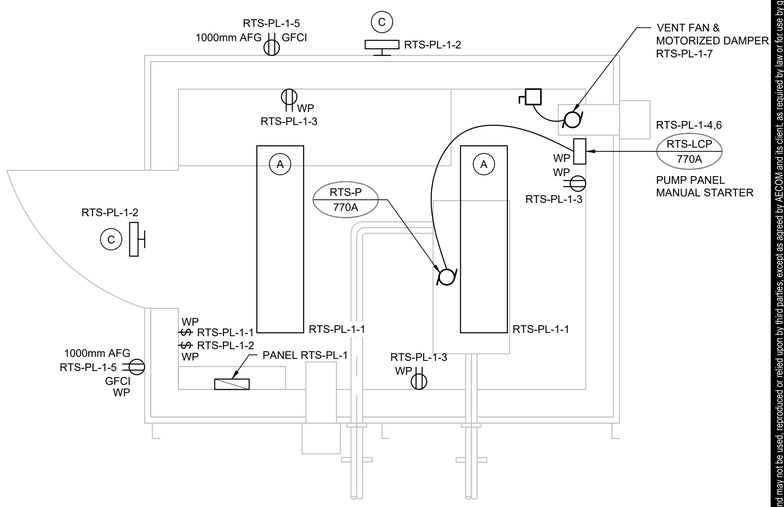
3 | NEW RETENTION BASIN PUMP STATION PLAN
Scale 1:20



4 | BRINE WATER TREATMENT ROOM MODIFICATIONS
Scale 1:50

NOTES:

1. REMOVE AND REPLACE EXISTING SUMP PUMP P-20 WITH NEW SUMP PUMP WITH HIGH LEVEL FLOAT SWITCH. PROVIDE AND INSTALL NEW 120/208V, 3 POLE, 15A BREAKER IN PANEL F cct. 61,63,65. PROVIDE AND INSTALL NEW 3C #12AWG TECK CABLE FROM PANEL F TO NEW PUMP P-20.
2. TIE HIGH LEVEL FLOAT SWITCH IN BRINE SUMP INTO WATER TREATMENT PLANT GENERAL ALARM.



5 | NEW RAW WATER TRANSFER STATION
Scale 1:20

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AECOM

ORIGINAL
SIGNED BY

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Client: **Public Works and Government Services Canada**
310- 269 Main Street, R3C 1B3
Winnipeg, MB

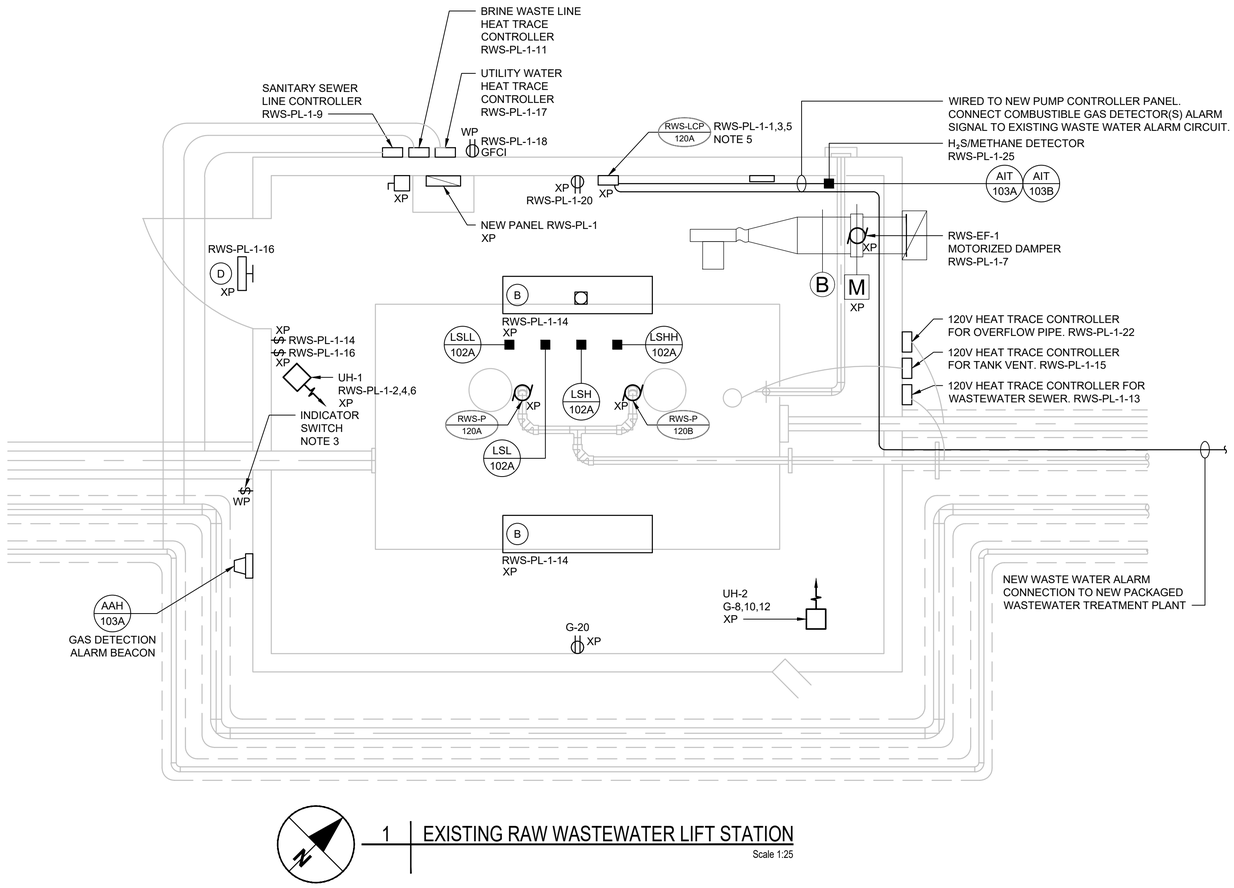
Project title / Projet:
NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **R. BOGDANOV**
Drawn by / Dessiné par: **R. CHAVEZ**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin:
ELECTRICAL
PUMP HOUSES & UPGRADED EXISTING LIFT STATION PLANS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0003 OF	1



1 EXISTING RAW WASTEWATER LIFT STATION

Scale 1:25

DEMOLITION NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL NOT DISCONNECT EQUIPMENT AND ELECTRICAL CIRCUITS WITHOUT PRIOR NOTIFICATION AND PERMISSION FROM THE DEPARTMENTAL REPRESENTATIVE.
2. DEMOLISH ALL ELECTRICAL EQUIPMENT IN LIFT STATION BUILDING INCLUDING BUT NOT LIMITED TO PUMPS, ELECTRICAL PANEL, LIGHTING FIXTURES, CONDUITS AND WIRING, INSTRUMENTS, SWITCHES, CONTROL PANELS, ETC. ALL DEMOLISHED EQUIPMENT SHALL BE RETURNED TO OWNER.
3. CONTRACTOR WILL BE RESPONSIBLE FOR PATCHING ALL OPENINGS IN EXISTING CONSTRUCTION AFTER REMOVAL OF EQUIPMENT AND ELECTRICAL DEVICES.

INSTALLATION NOTES:

1. ALL ELECTRICAL EQUIPMENT IN LIFT STATION SHALL BE ZONE 1 HAZARDOUS LOCATION RATED (SECTION 18, CEC).
2. ALL ELECTRICAL INSTALLATION SHALL MEET REQUIREMENTS OF SECTION 18, CEC FOR ZONE 1 (CLASS 1, ZONE 1).
3. ZONE 2 RATED 30 MINUTE MECHANICAL TIMER TO ENERGIZE MOTORIZED DAMPER. WHEN DAMPER IS FULLY OPEN TURN ON EXHAUST FAN EF-1.
4. GENERAL ALARM FROM PACKAGED PLANT TO BE WIRED TO GENERAL LIFT STATION ALARM.
5. TIE NEW PANEL INTO EXISTING LIFT STATION ALARM. REPLACE WIRE TO MEET ZONE 1 RATING.
6. USE HAZARDOUS LOCATION RATED FOR ZONE 1 TECK CABLES WITH XP RATED TECK CONNECTORS FOR ALL CABLING WITHIN THE RAW WASTEWATER LIFT STATION.

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Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL
SIGNED BY

R. BOGDANOV

2020/06/23

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SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **R. BOGDANOV**

Drawn by / Dessiné par: **R. CHAVEZ**

Approved by / Approuvé par: **P. BARSALOU**

PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

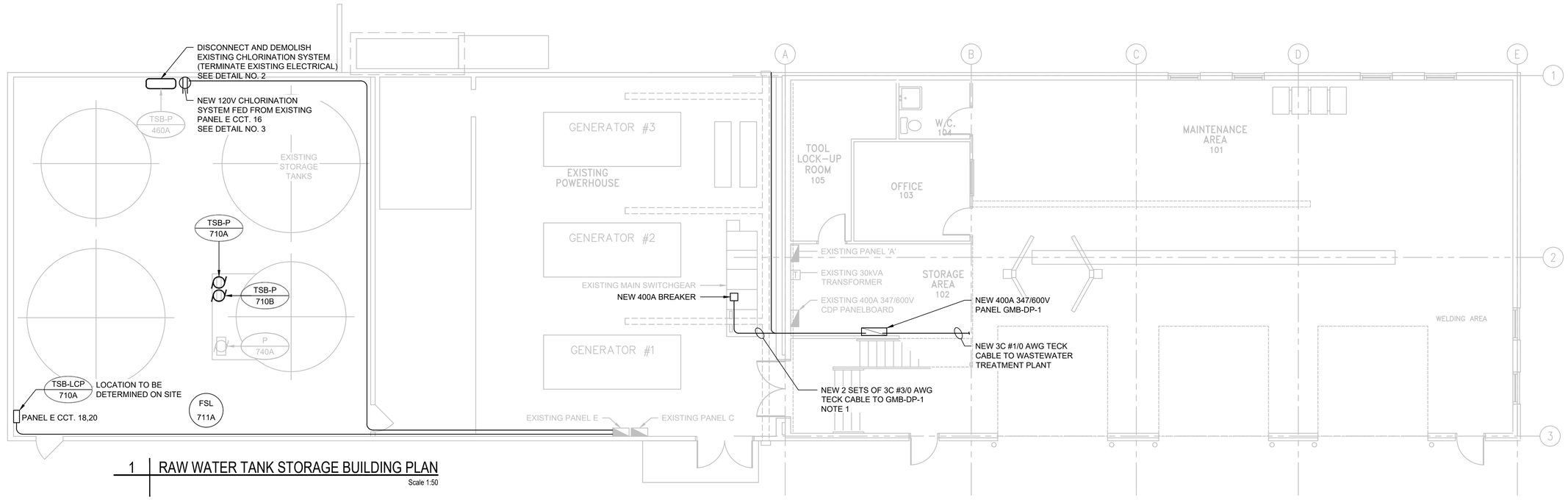
ELECTRICAL
EXISTING LIFT STATION PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0004 OF	1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

A000

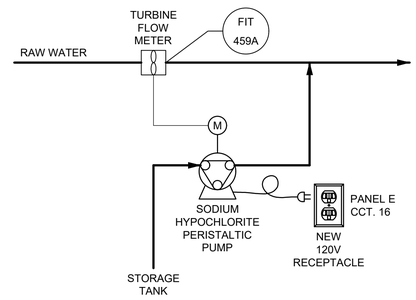


1 | RAW WATER TANK STORAGE BUILDING PLAN

Scale 1:50

2 | EXISTING CHLORINATION SYSTEM FOR DEMOLITION

Scale N.T.S.



3 | NEW CHLORINATION SYSTEM

Scale N.T.S.

NOTES:

1. MAINTAIN 100% SPACING BETWEEN POWER CABLES OR DE-RATE CABLES ACCORDING TO TABLE 5C OF CEC. PROVIDE BARRIER BETWEEN POWER AND CONTROL CABLES.

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REAL PROPERTY SERVICES
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EUREKA WATER AND SEWAGE SYSTEM

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R. BOGDANOV

Drawn by / Dessiné par
R. CHAVEZ

Approved by / Approuvé par
P. BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

ELECTRICAL
GENERATOR BUILDING PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0005 OF	1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

A000

NEW PANEL CPS-PL-1

CCT. NO.	DESCRIPTION	BKR	A	B	BKR	DESCRIPTION	CCT. NO.
1	LIGHTING	15A	*		15A	EXTERIOR LIGHTING	2
3	RECEPTACLES	15A		*	15A 2P	CPS-LCP-750A	4
5	EXTERIOR RECEPTACLES	15A	*				6
7	VENT. FAN	15A		*	15A	SPARE	8
9	SPARE	15A	*		15A	SPARE	10
11	SPACE			*		SPACE	12
13	SPACE		*			SPACE	14
15	SPACE			*		SPACE	16
17	SPACE		*			SPACE	18
19	SPACE			*		SPACE	20
21	SPACE		*			SPACE	22
23	SPACE			*		SPACE	24
25	SPACE		*			SPACE	26
27	SPACE			*		SPACE	28
29	SPACE		*			SPACE	30

VOLTAGE: 120/240V, 1 Phase, 3 Wire	LOCATION : CREEK PUMP STATION
MAIN BREAKER: 60A	FED FROM : CPS-TR-1
MAINS: 100A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 10KA

NOTES:
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NEW PANEL RPS-PL-1

CCT. NO.	DESCRIPTION	BKR	A	B	BKR	DESCRIPTION	CCT. NO.
1	LIGHTING	15A	*		15A	EXTERIOR LIGHTING	2
3	RECEPTACLES	15A		*	15A 2P	RPS-LCP-510A	4
5	EXTERIOR RECEPTACLES	15A	*				6
7	HEAT TRACE CONTROLLER GFCI	20A 2P		*	20A 2P	HEAT TRACE CONTROLLER GFCI	8
9			*				10
11	RPS-LCP-510A	15A 2P		*	15A	VENT FAN	12
13			*		15A	SPARE	14
15	SPARE	15A		*	15A	SPARE	16
17	SPACE		*			SPACE	18
19	SPACE			*		SPACE	20
21	SPACE		*			SPACE	22
23	SPACE			*		SPACE	24
25	SPACE		*			SPACE	26
27	SPACE			*		SPACE	28
29	SPACE		*			SPACE	30

VOLTAGE: 120/240V, 1 Phase, 3 Wire	LOCATION : NEW RESERVOIR PUMP STATION
MAIN BREAKER: 60A	FED FROM : RPS-TR-1
MAINS: 100A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 10KA

NOTES:
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NEW PANEL BPS-PL-1

CCT. NO.	DESCRIPTION	BKR	A	B	BKR	DESCRIPTION	CCT. NO.
1	LIGHTING	15A	*		15A	EXTERIOR LIGHTING	2
3	RECEPTACLES	15A		*	15A 2P	BPS-LCP-290A	4
5	EXTERIOR RECEPTACLES	15A	*				6
7	VENT. FAN	15A		*	15A	SPARE	8
9	SPARE	15A	*		15A	SPARE	10
11	SPACE			*		SPACE	12
13	SPACE		*			SPACE	14
15	SPACE			*		SPACE	16
17	SPACE		*			SPACE	18
19	SPACE			*		SPACE	20
21	SPACE		*			SPACE	22
23	SPACE			*		SPACE	24
25	SPACE		*			SPACE	26
27	SPACE			*		SPACE	28
29	SPACE		*			SPACE	30

VOLTAGE: 120/240V, 1 Phase, 3 Wire	LOCATION : NEW RETENTION BASIN PUMP STATION
MAIN BREAKER: 60A	FED FROM : HYD-01
MAINS: 100A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 10KA

NOTES:
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NEW PANEL GMB-DP-1

CCT. NO.	DESCRIPTION	BKR	A	B	C	BKR	DESCRIPTION	CCT. NO.
1	CREEK PUMP HOUSE	20A 2P	*			30A 2P	RAW WATER RESERVOIR PUMP HOUSE	2
3				*				4
5	FAN #1	15A 3P			*	15A 3P	FAN #2	6
7			*					8
9				*				10
11	RAW WASTEWATER LIFT STATION	30A 3P			*	90A 3P	NEW PACKAGED WASTEWATER TREATMENT PLANT	12
13			*					14
15				*				16
17	NEW RAW WATER TRANSFER STATION	15A 2P			*	30A 3P	SPARE	18
19			*					20
21	SPARE	15A		*				22
23	SPARE	15A			*		SPACE	24
25	SPACE		*				SPACE	26
27	SPACE			*			SPACE	28
29	SPACE				*		SPACE	30

VOLTAGE: 600V, 3 Phase, 3 Wire	LOCATION : STORAGE AREA 102 (GENERATOR ROOM)
MAIN BREAKER: 400A	FED FROM : SWITCHGEAR
MAINS: 400A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 25KA

NOTES:
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NEW PANEL RWS-PL-1

CCT. NO.	DESCRIPTION	BKR	A	B	C	BKR	DESCRIPTION	CCT. NO.
1	RWS-LCP-120A	20A 3P	*			20A 3P	5kW RWS-UH-1 UNIT HEATER	2
3				*				4
5					*			6
7	EF-1 MOTORIZED DAMPER	15A	*			20A 3P	5kW RWS-UH-2 UNIT HEATER	8
9	SANITARY SEWER HEAT TRACE	15A		*				10
11	BRINE LINE HEAT TRACE	15A			*			12
13	WASTEWATER SEWER HEAT TRACE	15A	*			15A	LIGHTING	14
15	TANK VENT HEAT TRACE	15A		*		15A	EXTERIOR LIGHTING	16
17	UTILITY WATER HEAT TRACE	15A			*	15A	EXTERIOR RECEPTACLE	18
19	SPARE	20A 3P	*			15A	INTERIOR RECEPTACLES	20
21				*		15A	OVER FLOW HEAT TRACE	22
23					*	15A	SPARE	24
25	SPARE	15A 3P	*			15A	SPARE	26
27				*		15A	SPARE	28
29					*	15A	SPARE	30

VOLTAGE: 120/208V, 3 Phase, 4 Wire	LOCATION : RAW WASTEWATER LIFT STATION
MAIN BREAKER: 100A	FED FROM : RWS-TR-1
MAINS: 125A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 10KA

NOTES:
1.PROVIDE GFCI BREAKERS FOR HEAT TRACE CONTROLLERS, CIRCUITS 9,11,13,15 AND 22. REVIEW HEAT TRACE CONTROLLERS MANUFACTURER INSTRUCTION BEFORE PANEL ORDERING. IF CONTROLLERS COMES WITH INTERNAL GFCI PROTECTION, GFCI BREAKERS NOT REQUIRED.
2. ZONE 1, CATEGORY 2 RATED.

EXISTING PANEL E

CCT. NO.	DESCRIPTION	BKR	A	B	C	BKR	DESCRIPTION	CCT. NO.
1	TANK ROOM UNIT HEATERS	15A	*			40A 3P	SPARE	2
3	TANK ROOM LIGHTS	15A		*				4
5	TANK ROOM PLUGS	15A			*			6
7	ROOF FANS	15A	*			20A	HEAT TRACE GFI	8
9	HEAT TRACE	15A		*		20A	LIGHT	10
11	SPACE				*	20A 2P	HIGH BAY	12
13	-	15A 3P	*					14
15				*		15A	CHLORINATION SYSTEM	16
17					*	15A 2P	TSB-LCP-710A	18
19	UNKNOWN	30A 2P	*					20
21				*		15A	SPARE	22
23	SPARE	15A			*	15A	SPARE	24
25	SPARE	15A	*			15A	SPARE	26
27	SPACE			*			SPACE	28
29	SPACE				*		SPACE	30

EXISTING

EXISTING

VOLTAGE: 120/240V, 3 Phase, 3 Wire	LOCATION : RAW WATER TANK STORAGE BUILDING
MAIN BREAKER:	FED FROM :
MAINS:	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 10KA

NOTES:
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LUMINAIRE SCHEDULE

SYMBOL	LABEL	TYPE	VOLTS	LAMP	DESCRIPTION	MOUNTING
	A	LED	120V	N/A	INDUSTRIAL LINEAR LED LUMINAIRE WITH FIBERGLASS HOUSING , STAINLESS STEEL WIRE GUARD, 3500K, MINIMUM 50000 LIFETIME HOURS, NEMA 4X. ARCTIC WEATHER RATED.	CEILING MOUNTED
	B	LED	120V	N/A	INDUSTRIAL LINEAR LED LUMINAIRE, STAINLESS STEEL WIRE GUARD, 3500K, MINIMUM 50000 LIFETIME HOURS, RATED FOR ZONE 1 (CLASS 1, ZONE 1 HAZARD LOCATION)	CEILING MOUNTED
	C	LED	120V	N/A	LED LUMINAIRE WITH DIE-CAST ALUMINUM HOUSING, GASKETED, STAINLESS STEEL WIRE GUARD, RATED FOR OUTDOOR AND ARCTIC WEATHER INSTALLATIONS.	WALL MOUNTED
	D	LED	120V	N/A	LED LUMINAIRE WITH DIE-CAST ALUMINUM HOUSING, GASKETED, STAINLESS STEEL WIRE GUARD, RATED FOR CLASS 1, ZONE 2. ARCTIC WEATHER RATED.	WALL MOUNTED

NEW PANEL RPS-DP-1

CCT. NO.	DESCRIPTION	BKR	A	B	C	BKR	DESCRIPTION	CCT. NO.
1	HEAT TRACE	15A 3P	*			15A 3P	HEAT TRACE	2
3				*				4
5					*			6
7	5kW UNIT HEATER RPS-UH-1	15A 3P	*			15A 3P	5kW UNIT HEATER RPS-UH-2	8
9				*				10
11					*			12
13	PANEL RPS-PL-1	15A 2P	*			15A 3P	SPARE	14
15				*				16
17	SPACE				*			18

VOLTAGE: 600V, 3 Phase, 3 Wire	LOCATION : NEW RESERVOIR PUMP STATION
MAIN BREAKER: 30A	FED FROM : GMB-DP-1
MAINS: 225A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 25KA

NOTES:
1. PROVIDE GFCI BREAKERS FOR HEAT TRACE CONTROLLERS.

NEW PANEL RTS-PL-1

CCT. NO.	DESCRIPTION	BKR	A	B	BKR	DESCRIPTION	CCT. NO.
1	LIGHTING	15A	*		15A	EXTERIOR LIGHTING	2
3	RECEPTACLES	15A		*	15A 2P	RTS-LCP-770A	4
5	EXTERIOR RECEPTACLES	15A	*				6
7	VENT. FAN	15A		*	15A	SPARE	8
9	SPARE	15A	*		15A	SPARE	10
11	SPACE			*		SPACE	12
13	SPACE		*			SPACE	14
15	SPACE			*		SPACE	16
17	SPACE		*			SPACE	18
19	SPACE			*		SPACE	20
21	SPACE		*			SPACE	22
23	SPACE			*		SPACE	24
25	SPACE		*			SPACE	26
27	SPACE			*		SPACE	28
29	SPACE		*			SPACE	30

VOLTAGE: 120/240V, 1 Phase, 3 Wire	LOCATION : RAW WATER TRANSFER STATION
MAIN BREAKER: 60A	FED FROM : RTS-TR-1
MAINS: 100A	FEEDER :
MOUNTING: SURFACE	BREAKER I.C. : 10KA

NOTES:
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Travaux publics et Services gouvernementaux Canada
REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL SIGNED BY

R. BOGDANOV

2020/06/23

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Public Works and Government Services Canada

310- 269 Main Street, R3C 1B3 Winnipeg, MB

Project title / Projet

NUNAVUT EUREKA

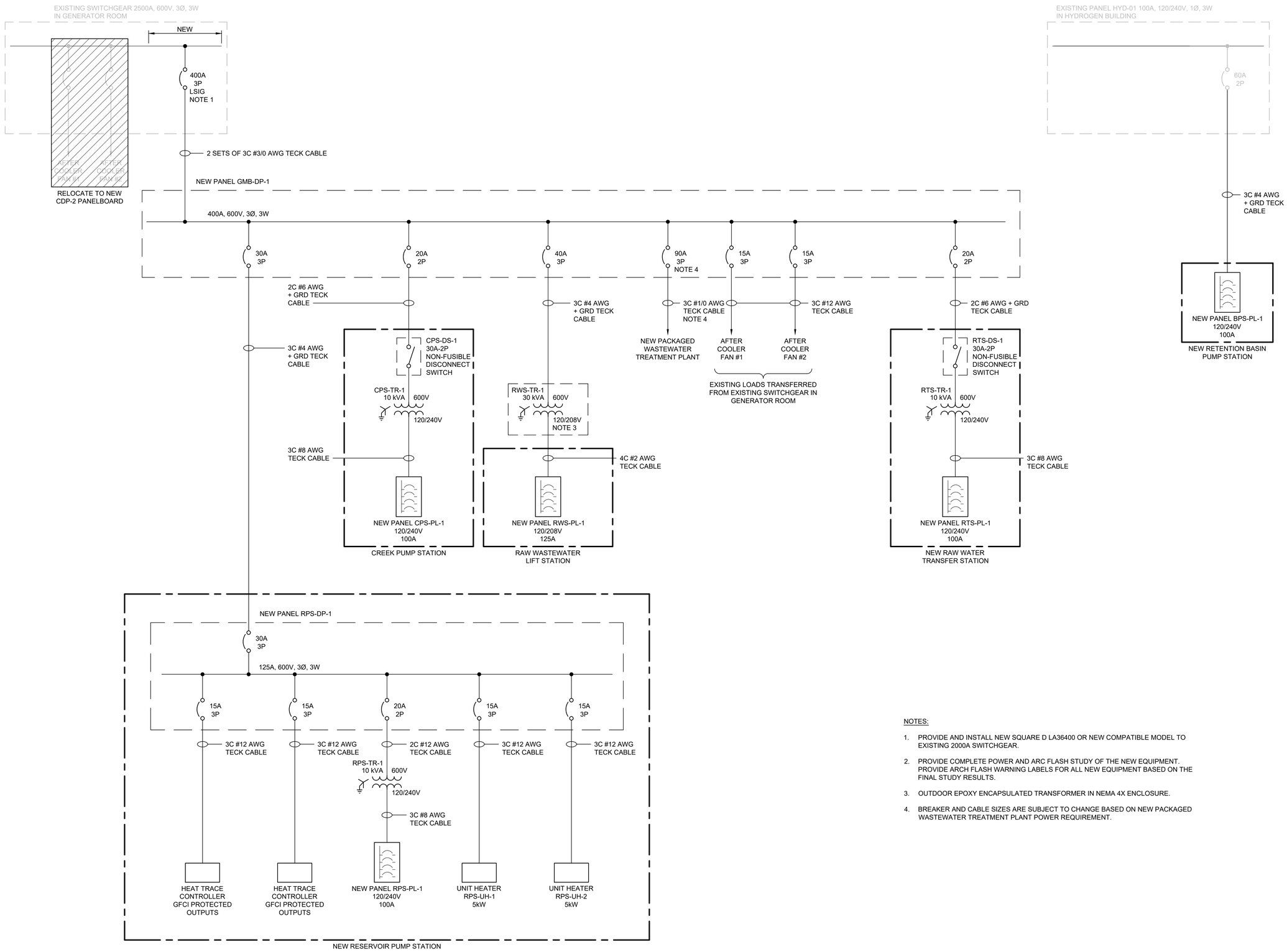
EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par: **R. BOGDANOV**
Drawn by / Dessiné par: **R. CHAVEZ**
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

ELECTRICAL SCHEDULES

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0006 OF	1



NOTES:

1. PROVIDE AND INSTALL NEW SQUARE D LA36400 OR NEW COMPATIBLE MODEL TO EXISTING 2000A SWITCHGEAR.
2. PROVIDE COMPLETE POWER AND ARC FLASH STUDY OF THE NEW EQUIPMENT. PROVIDE ARCH FLASH WARNING LABELS FOR ALL NEW EQUIPMENT BASED ON THE FINAL STUDY RESULTS.
3. OUTDOOR EPOXY ENCAPSULATED TRANSFORMER IN NEMA 4X ENCLOSURE.
4. BREAKER AND CABLE SIZES ARE SUBJECT TO CHANGE BASED ON NEW PACKAGED WASTEWATER TREATMENT PLANT POWER REQUIREMENT.

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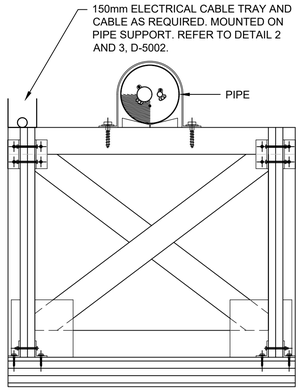
Approved by / Approuvé par: **P. BARSALOU**
PWGSC Project Manager / Administrateur de Projets TPSGC: **M. MOGAN**

Drawing title / Titre du dessin

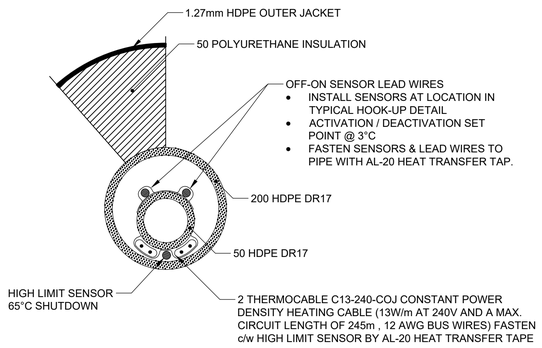
ELECTRICAL
SINGLE LINE DIAGRAM

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	E-0007 OF	1



1 CABLE TRAY AND PIPE SUPPORT DETAIL

Scale N.T.S.

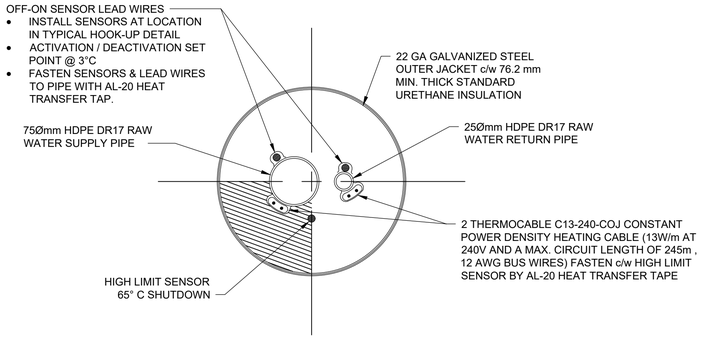


2 WATER INTAKE PIPE HEAT TRACE DETAIL

Scale N.T.S.

- SENSORS TO BE 2-LEAD-TYPE THERMISTORS WHICH SENSE TEMP. CHANGE WITH CHANGE IN ELECTRICAL RESISTANCE.
- REQUIRE EXTRA LONG LEAD FOR ON-OFF SENSOR AS DETAILED

(THERMISTORS, CONTROLLER, ELECTRIFICATION AND EXTENSION OF SERVICE TO BE BY OTHERS)



3 RAW WATER SUPPLY AND RETURN PIPE DETAIL

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PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

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ELECTRICAL DETAILS

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R.037261.001	E-0008 OF	1

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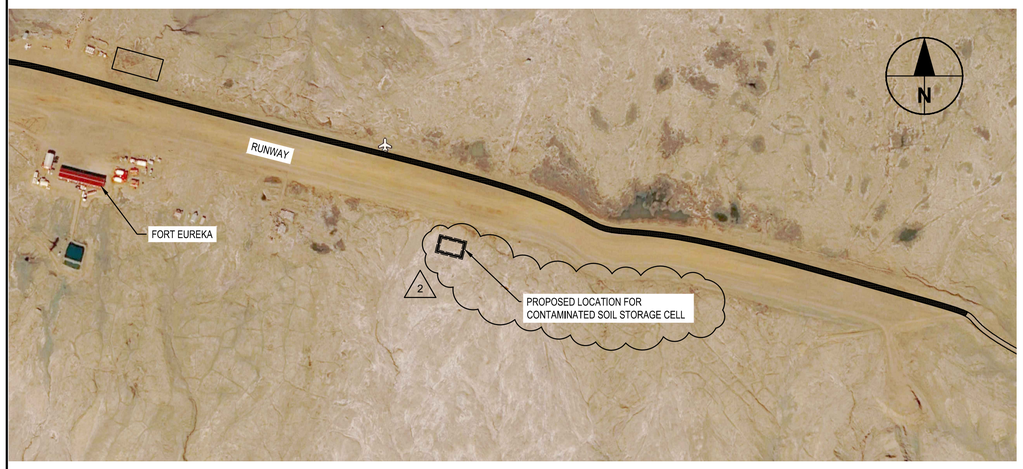
Attachment C

Preliminary Design of Temporary Contaminated Soils Stockpile



CONTAMINATED SOIL STORAGE CELL POTENTIAL LOCATION

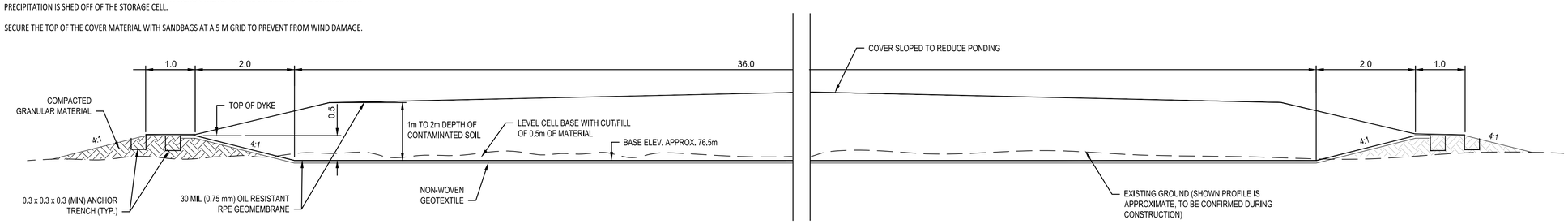
Scale NTS

CONSTRUCTION NOTES:

1. PRIOR TO CONSTRUCTION, DELETERIOUS SOILS COMPRISING VEGETATION, TOPSOIL, AND THE SOFT/VERY SOFT, LOOSE, WET, DISTURBED, PORTION OF NATIVE SOILS, IF ANY, SHOULD BE REMOVED FROM THE STORAGE CELL FOOTPRINT.
2. FOLLOWING INITIAL SITE STRIPPING OF DELETERIOUS SOILS, AND PRIOR TO GRADING, AREAS IDENTIFIED FOR FILL PLACEMENT SHOULD BE COMPACTED. ANY SOFT AREAS SHOULD BE OVER-EXCAVATED AND BACKFILLED TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) USING GRANULAR BASE MATERIAL.
3. ALL FILL REQUIRED TO RAISE THE SUBGRADE ELEVATION SHOULD MEET THE REQUIREMENTS AS DEFINED IN SECTION 32 11 23 - AGGREGATE BASE COURSES.
4. FILL MATERIAL SHOULD BE PLACED IN LIFTS NOT EXCEEDING 150MM IN COMPACTED THICKNESS AND A MINIMUM DENSITY OF 98% SPMDD.
5. THE FINISHED SUBGRADE MUST BE FREE OF DEPRESSIONS.
6. THE CONTRACTOR SHALL ENSURE THAT LOCAL DRAINAGE PATTERNS ARE NOT ALTERED BY THE CONSTRUCTION.
7. CELL DYKES TO BE CONSTRUCTED USING GRANULAR BASE COURSE AS DEFINED IN SECTION 32 11 23, WITH 4:1 INTERIOR AND EXTERIOR SLOPES.
8. THE STOCKPILE OF CONTAMINATED SOIL SHALL BE COVERED BY A 30 mil (0.75 mm) OIL RESISTANT RPE GEOMEMBRANE LINER AFTER SOIL PLACEMENT IS COMPLETE. SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION.
9. HANDLING AND INSTALLATION OF THE LINER SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS.
10. WELDING OF THE LINER SHEETS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
11. THE LINER MATERIAL SHALL NOT BE PUNCTURED DURING PLACEMENT.
12. SECURE THE COVER LINER IN A 0.5 m x 0.5 m x 0.5 m ANCHOR TRENCH ON THE EXTERIOR OF THE BERM SO THAT PRECIPITATION IS SHED OFF OF THE STORAGE CELL.
13. SECURE THE TOP OF THE COVER MATERIAL WITH SANDBAGS AT A 5 M GRID TO PREVENT FROM WIND DAMAGE.

1 | PROPOSED CONTAMINATED SOIL STORAGE CELL PLAN

Scale 1:100



A | PROPOSED CROSS SECTION, LINER AND GEOTEXTILE DETAILS

Scale 1:50

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

AECOM

ORIGINAL
SIGNED BY

P. BARSALOU

2020/06/23

PERMIT TO PRACTICE
AECOM Canada Ltd.
Signature SIGNED BY B.B.
SIGNED ON 06.23.2020
PERMIT NUMBER: P 639
The Association of Professional Engineers and Geophysicists of the NWT/NU.

Revision	Description	Date
5		
4		
3		
2	FIELD INSTRUCTION 02	2021/09/22
1	ISSUED FOR CONSTRUCTION	2021/04/15
0	ISSUED FOR TENDER	2020/06/19

Client / client

Public Works and Government Services Canada

310-269 Main Street, R3C 1B3
Winnipeg, MB

Project title / Projet

NUNAVUT
EUREKA

EUREKA WATER AND SEWAGE SYSTEM

Designed by / Conçu par
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Drawn by / Dessiné par
G. LACOSTE

Approved by / Approuvé par
P. BARSALOU

PWGSC Project Manager / Administrateur de Projets TPSGC
M. MOGAN

Drawing title / Titre du dessin

CIVIL
CONTAMINATED SOIL STORAGE CELL PLAN, CROSS SECTION AND LOCATION PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.037261.001	C-0009 OF	2

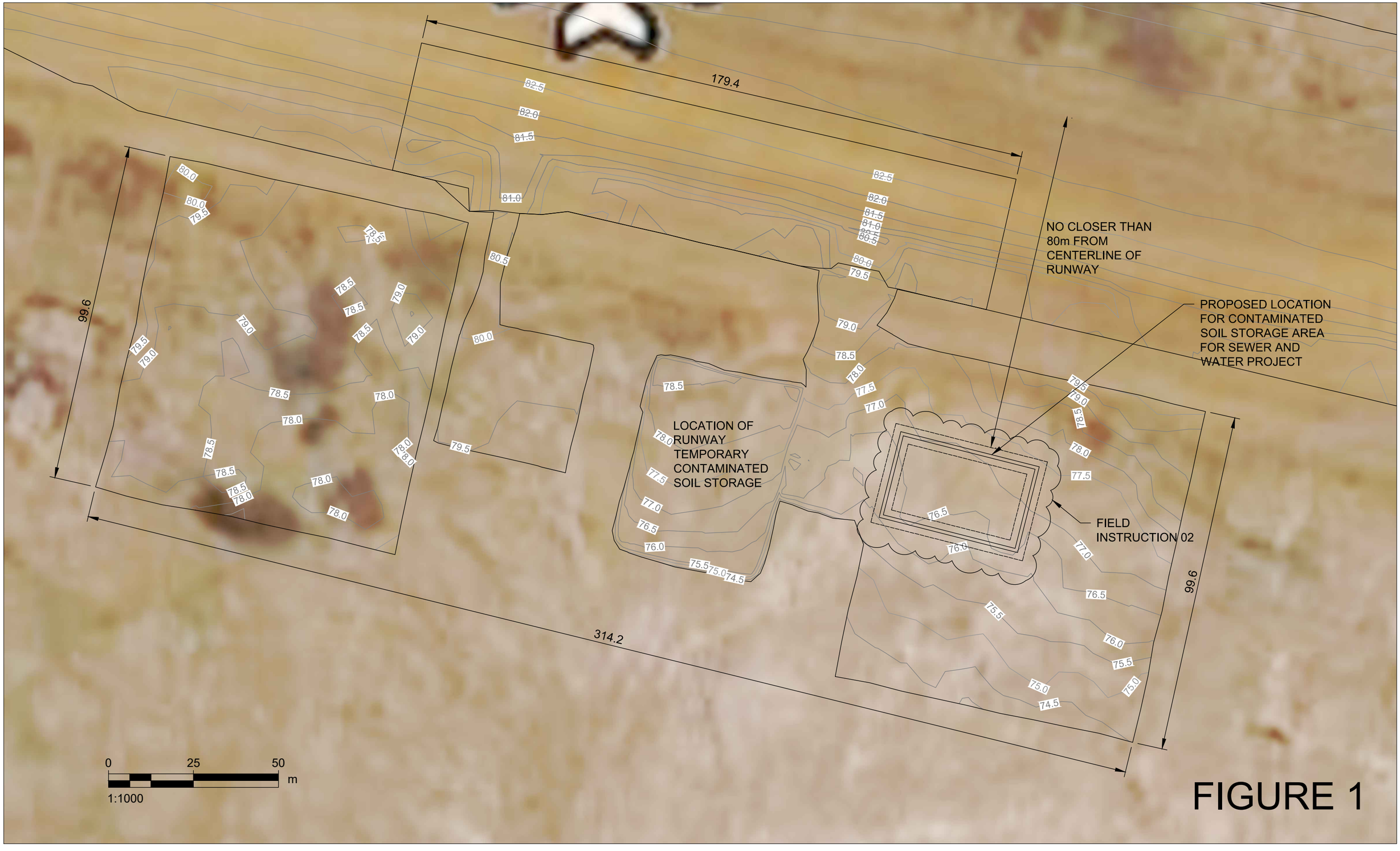

179.4
99.6
314.2
NO CLOSER THAN
80m FROM
CENTERLINE OF
RUNWAY
PROPOSED LOCATION
FOR CONTAMINATED
SOIL STORAGE AREA
FOR SEWER AND
WATER PROJECT
LOCATION OF
RUNWAY
TEMPORARY
CONTAMINATED
SOIL STORAGE
FIELD
INSTRUCTION 02
0
25
50
m
1:1000

FIGURE 1

Attachment D

Quarry Operations Plan

Revised Quarry Operations Plan

BLACKTOP CREEK AND WEST REMUS CREEK,
EUREKA, NUNAVUT

NUNA EAST LTD.

Date: January 2022

Revision: 3

Table of Contents

1.0 INTRODUCTION

Nuna East Ltd. ("Nuna East"), is an aboriginally owned contracting firm with resources of heavy equipment and personnel, involved in heavy construction, mining, winter road construction, site service and maintenance activities. Nuna has worked in the North for 25 years and is well versed in northern environments.

Nuna East was awarded the Eureka Recapitalization Runway Project in Nunavut, NT. The intent of this project is to rehabilitate the existing runway airside apron, as well as construct a new airside apron and upgrade the local access road. Mobilization for this work took place in late August 2015 however the project has been unable to proceed due to insufficient borrow material at the planned borrow site.

The original Quarry Operations plan was previously submitted in September 2015 for this project naming Blacktop Creek as the primary borrow source and quarry location. Revisions to this Quarry Operations Plan have been submitted over the past 6 years as the runway recapitalization project has been underway, which included the development of the Remus Creek West Quarry.

With the recent award of the Water and Wastewater Treatment Infrastructure project, the need for additional granular resources has been identified. Sourcing of the additional quantities may include extended areas of West Remus Creek and additional potential sources near Blacktop Creek. The attached maps in Section 2.1 identify all potential quarry development areas.

The Quarry Development Plan will commit to the best management practices of the quarry resource development at all potential areas including Remus Creek West and Blacktop Creek Nuna East will work in tandem with the Northern Development regulatory AANDC Land Resources Office to ensure these objectives are met during the initial start-up of the quarry operation and through to the completion of the current construction contracts.

2.0 DESCRIPTION OF THE DEPOSIT

2.1 TOPOGRAPHIC MAPS

Two maps captured from the National Topographic System Index Maps website included in the attachments to show the location of the quarry site relative to the High Arctic Weather Station at Eureka, both from high and low level. The proposed access road route, quarry location and temporary camp and fuel storage area are shown on Figures 1 and 2 below, along with a recent photograph of the area in Figure 3.

FIGURE 1 – ACCESS ROAD AND BORROW LOCATION

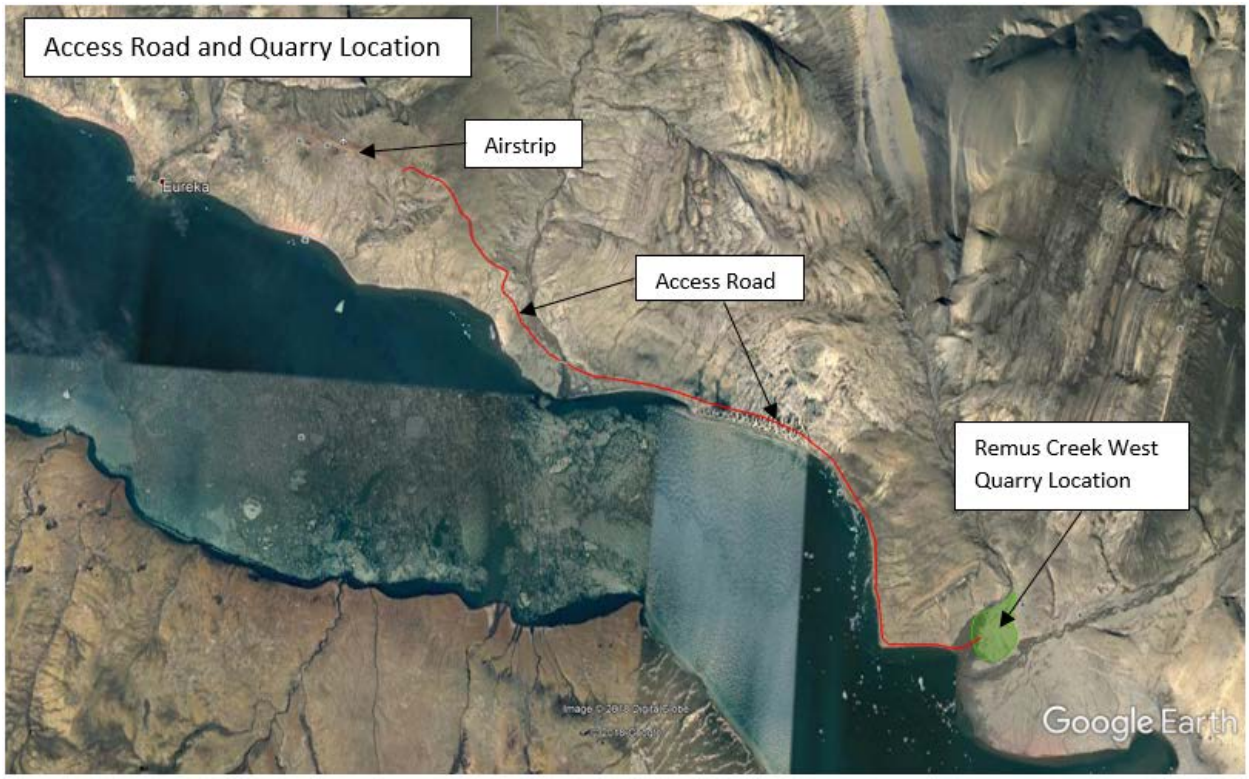


FIGURE 2 – CURRENT BORROW LOCATION

The estimated total surface area of the proposed borrow area at Remus Creek West as shown above is estimated to be 360,000 m2 and is expected to yield more than 325,000 m3 of raw granular material. The application for extension to the borrow area limits will add another 88,000 square meters of surface area for an increase of approximately 80,000 m3 of potential extraction volume.

The current program is expected to require extraction of approximately 325,000 m3 of material from within the full permitted area. The area for extraction will be determined on site based on visual assessment of the materials but will be within the approved boundaries only.

The proposed boundary extension is shown on the drawing on the following page.

FIGURE 3 – PROPOSED QUARRY BOUNDARY EXTENSION

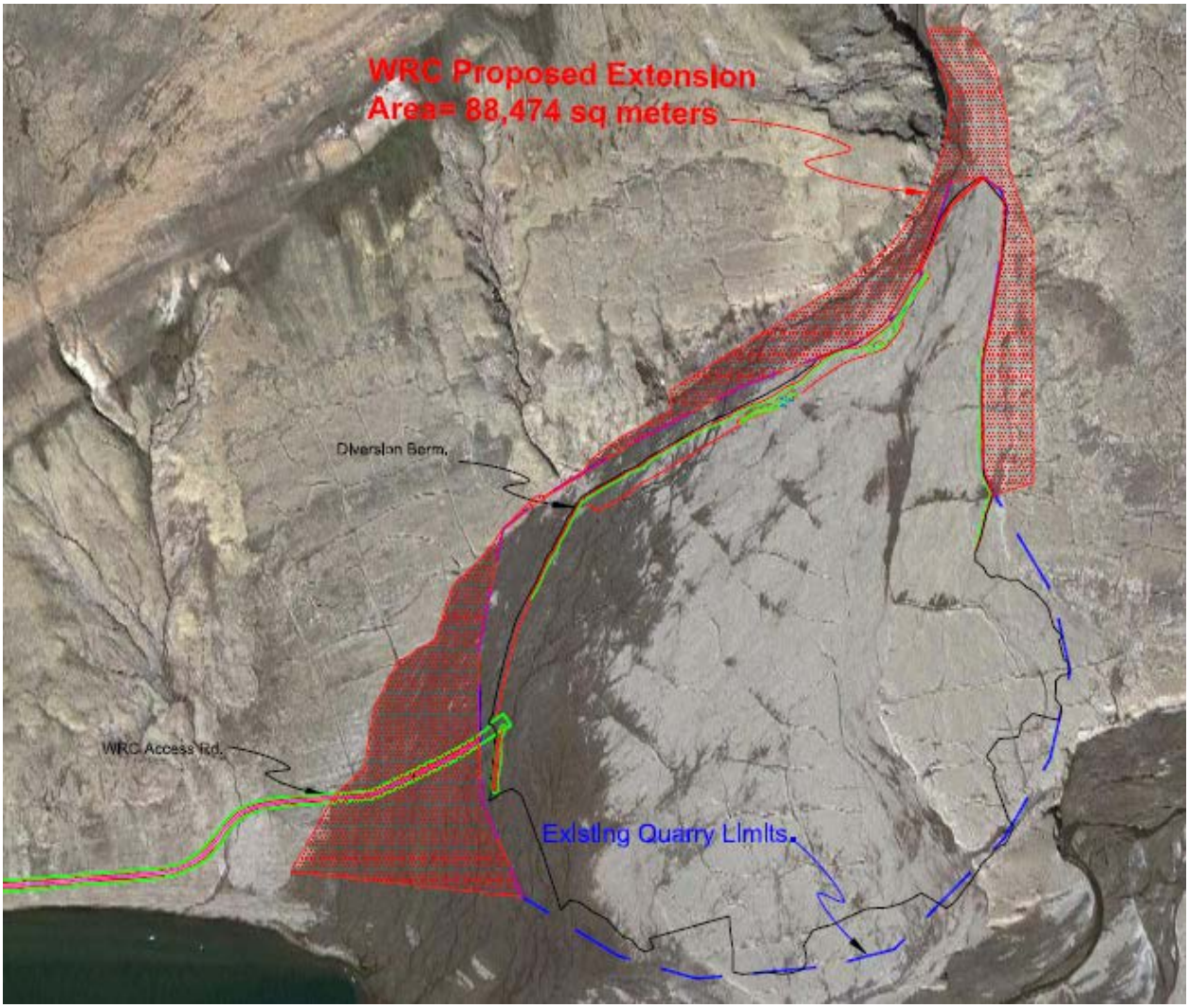
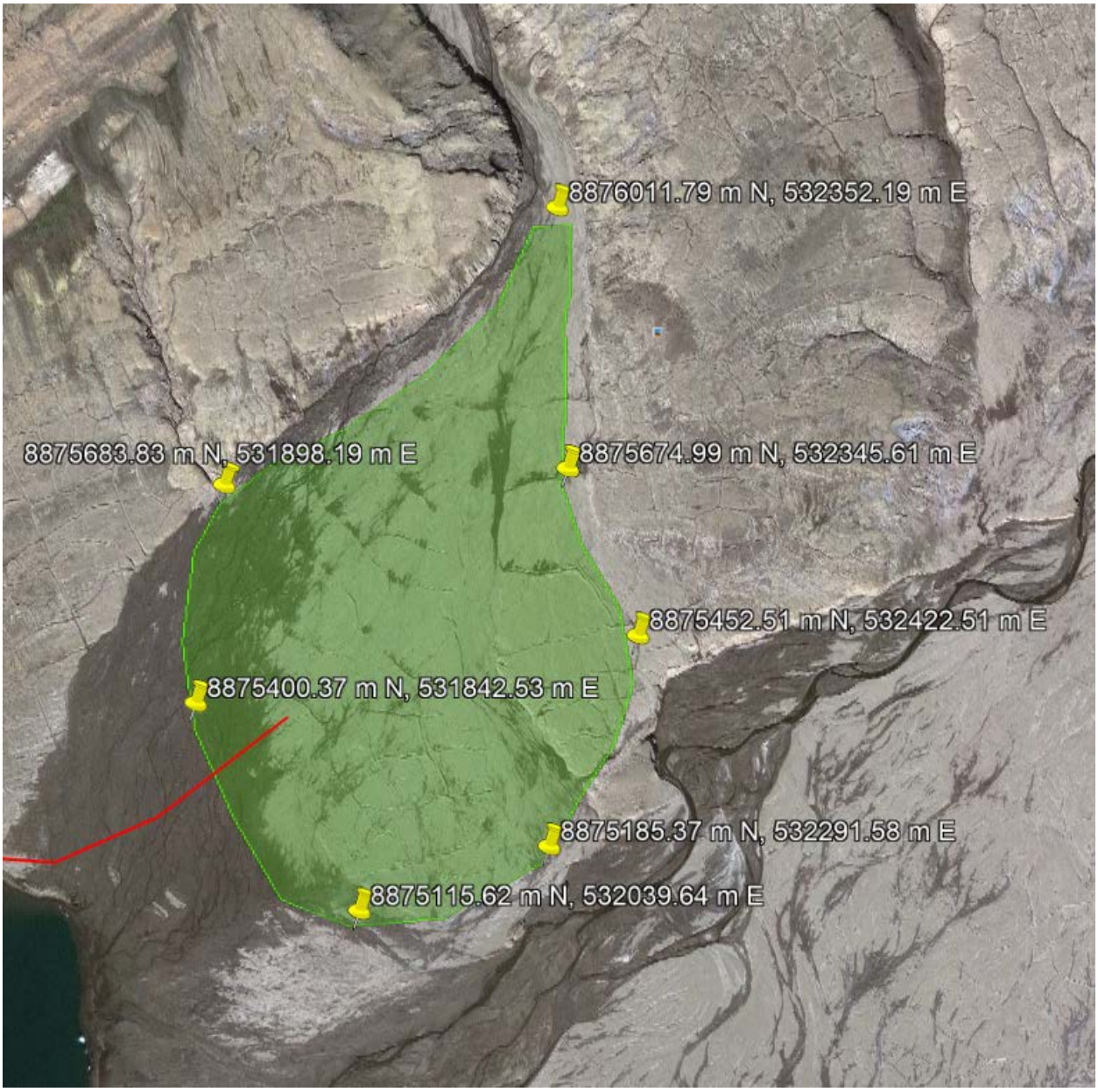


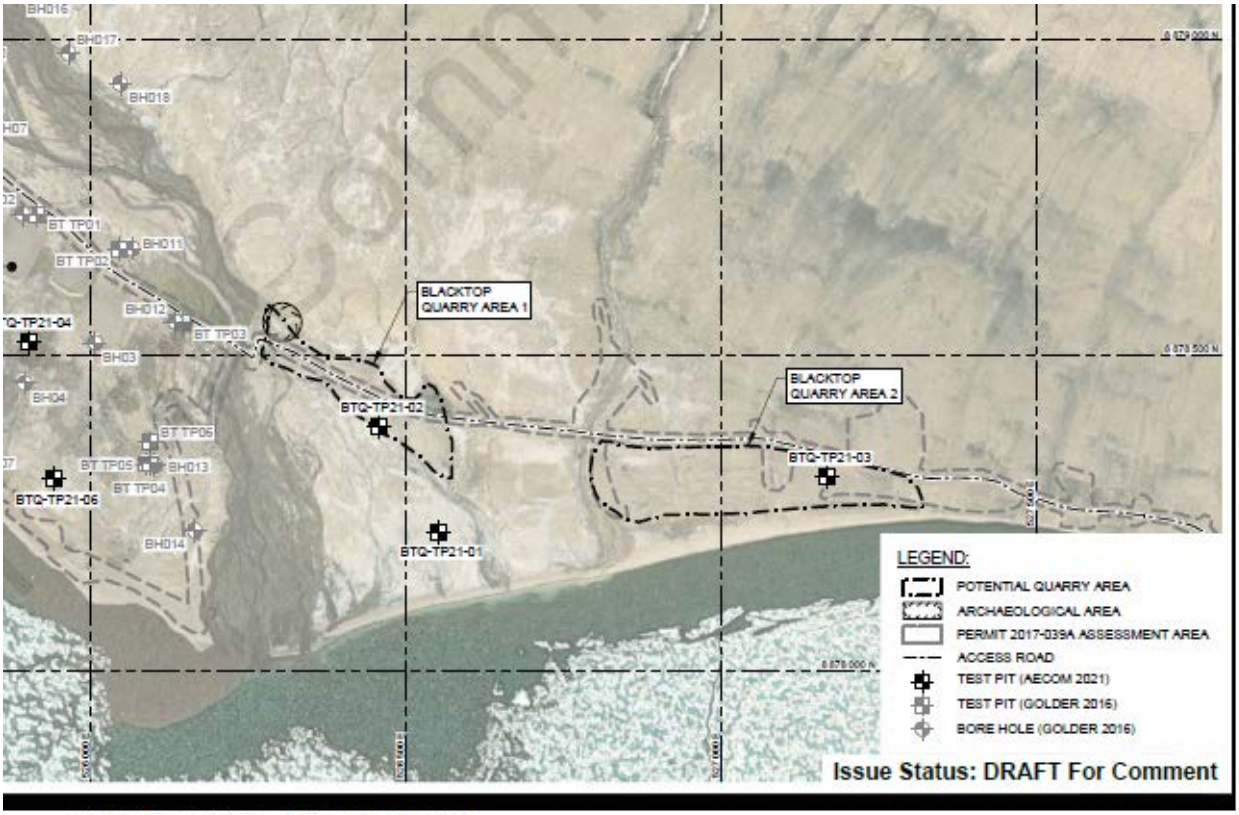
FIGURE 4 – QUARRY LOCATION COORDINATES



2.2 ADDITIONAL POTENTIAL QUARRY DEVELOPMENTS – 2022

Geotechnical investigation and sampling programs conducted during the summer of 2021 have identified potential sources of granular resources as shown on the maps below.

FIGURE 5 – NEW BLACKTOP CREEK QUARRY SOURCES



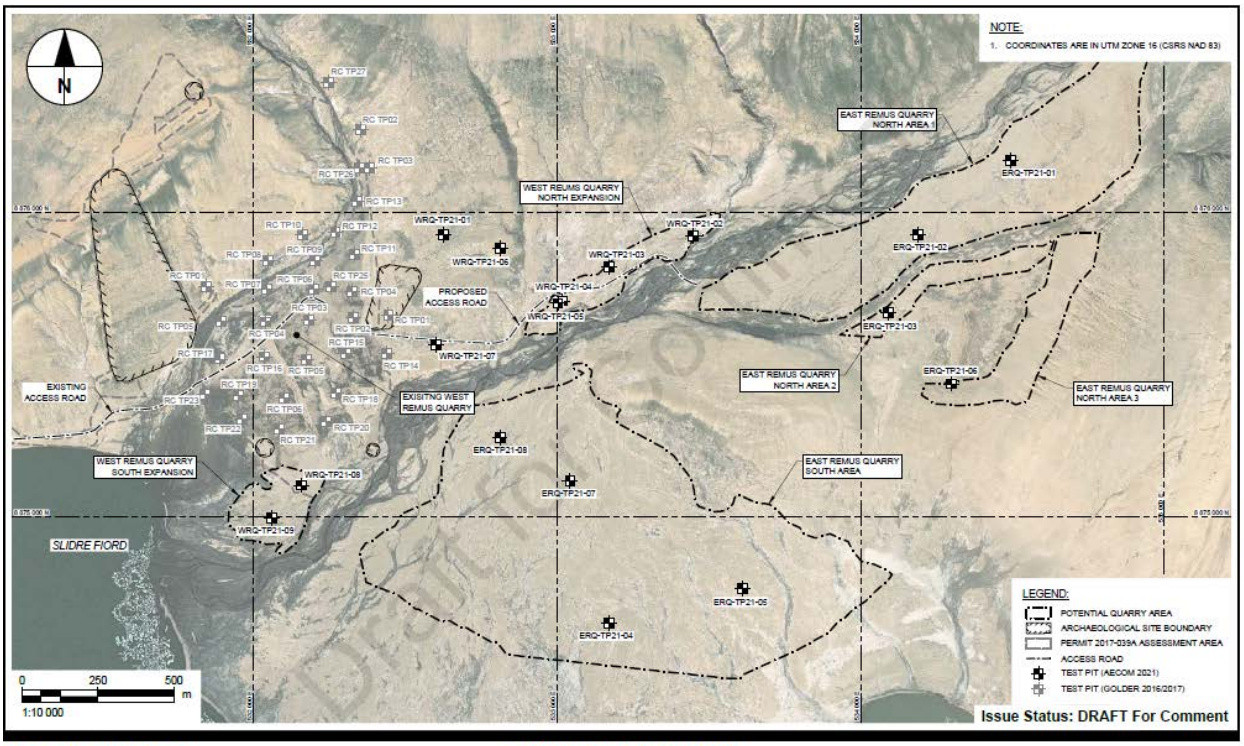
Blacktop Quarry Area 1 and Blacktop Quarry Area 2 are both located to the east of the bridge installed at Blacktop Creek in 2018 as part of the access road construction to Remus Creek West. The runs through and adjacent to these two new potential sources.

Nuna is aware that Blacktop Quarry Area 1 surrounds an identified archaeological site that will require a 30 m buffer area, where no disturbance will be permitted.

Nuna is also aware that Blacktop Creek Quarry Area 2 is adjacent to the ocean and must comply with the current Land Use Permit and Water License requirements in this area in respect of:

a) 31 m buffer undisturbed buffer zone between the quarry limit and high water mark
b) Excavation depth shall be limited to 1 m above the high water mark, or groundwater table

FIGURE 6 – EXISTING REMUS CREEK WEST SOURCES



Eureka High Arctic Weather Station
2021 Geotechnical Borrow Investigation
Eureka, Nunavut
Project No.: 60663416 Date: 2021-10-14

REMUS CREEK POTENTIAL QUARRY AREAS
TEST PIT LOCATIONS

AECOM
Figure: 2

The areas shown above have been identified in the AECOM Geotechnical Borrow investigation report compiled in 2021.

2.3 TEST PIT PROGRAM RESULTS

According to Golder Associates Geotechnical Report and visual observations made during the 2016 and 2017 geotechnical investigations, the surficial soils at Remus Creek West consist of sand, gravel and cobbles. A summary of the laboratory test results is presented in Figure 4.

FIGURE 4 – LABORATORY TEST SUMMARY RESULTS

Table 4: Summary of Laboratory Testing Results from West Remus Creek

Test	Test Pit ID									
	RC TP02	RC TP03	RC TP04	RC TP06	RC TP07	RC TP09	RC TP11	RC TP15	RC TP16	RC TP25
Dry Rodded Bulk Density (kg/m^3)	1,328	1,427	1,456	1,456	1,456	1,512	1,470	1498	1,526	1470
Freeze/Thaw Average Loss (%)	12.3	9.2	6.6	11.8	9.8	8.8	8.0	8.6	10.9	8.6
LA Abrasion (%)	34.6	42.0	48.1	40.6	36.5	46.4	39.1	33.8	35.7	42.1
Micro-Deval (%)	33.6	37.6	35.8	35.0	33.1	37.4	35.5	35.1	40.2	35.1
Petrographic Number	148	140.8	145.6	145.4	127.8	142.6	122.6	135.4	144.2	127.4
Primary Rock, %	Diabese, 38.7	Sandstone, 29.3	Sandstone, 36.7	Diabese, 28.2	Diabese, 23.7	Carbonate, 28.3	Sandstone, 31.1	Diabase, 30,1	Carbonate, 32.4	Sandstone, 26.3
Secondary Rock, %	Sandstone, 12.2	Diabese, 26.9	Carbonate, 16.8	Carbonate, 18.6	Carbonate, 23.6	Diabase, 23.6	Diabase, 23.7	Quartzite, 19.1	Sandstone, 15.3	Diabae, 23.5
					Quartzite, 21.1					

DRAFT

3.0 SITE PREPARATION

3.1 ACCESS

Upgrading of an existing trail that extends from the current Eureka runway to the Remus Creek West borrow area will be required. The trail is currently a light vehicle road only without a permanent crossing at Blacktop Creek. The length of the access road is approximately 12 km south east from the airstrip and generally follows the shoreline of Slidre Fjord. Nuna East will construct this road upgrade using the proposed Remus Creek West quarry as a borrow source, including an all-season crossing at the Blacktop Creek location.

A temporary culvert crossing will also be required at the eastern limit of the proposed quarry area to cross West Remus Creek. Suitably sized culverts will be installed at an optimum location to provide minimum disturbance to the natural flow. The crossing will be observed frequently during operations and maintained as required at the beginning and end of each construction season.

The upgraded road will then provide year-round access to the Remus Creek West borrow area and provide a primary haul route from the quarry to the runway at some future date.

The proposed road alignment and general location of the borrow source is shown in Figure 1 above.

Access within the borrow area is generally unrestricted and requires little to no preparation. The entire area is comprised of exposed sand and gravel with negligible vegetation or other organic material. Traffic patterns within the quarry will be determined to limit traffic to those specific areas required for quarry operations and to limit unnecessary travel in areas that will not be disturbed at this time.

3.2 SITE CLEARING

There will be no requirement for site clearing, vegetation removal or topsoil salvage at the proposed quarry location. Observations at the site indicate the site to be clear of vegetation and organic surficial soils.

3.3 BUILDINGS OR OTHER FACILITIES

2020 Revision: The construction camp has not been set up at Remus Creek West as previously proposed. All camp facilities are installed near the Eureka runway. This will continue to be the operational plan through 2022.

One mobile washcar has been positioned at Remus Creek West to provide washroom facilities and small lunchroom for the construction crew. Potable water is delivered to the washcar by truck and sewage is removed by vacuum truck and disposed of at the HAWS facilities.

Fuel will be stored in 4,995 liters double wall containment capsules at a designated laydown area near the crusher location. Fuel will then be distributed using a fuel lube truck with no greater than 4,995 liters on board at any time.

3.4 TOPOGRAPHIC SURVEY FOR FUTURE VOLUME CHECKS

A private legal surveying company will be contracted to perform all of the survey requirements for the project including the quarry site development. They will use up to date technology of satellite surveying/imagery, AutoCAD and end area method for calculation of the volumes.

The estimated quantities for extraction is 325,000 m3 of raw granular material, as required for access road construction ~~only~~, runway rehabilitation and production of crushed products for future HAWS projects.

An original ground topographic survey will be completed prior to quarry activities and repeated upon completion of quarrying to obtain a final measurement of the materials excavated from the quarry source. The final quantities used will be submitted to INAC, Lands Resources Officer on a required monthly reporting form.

4.0 QUARRYING OPERATION

4.1 QUARRY DEVELOPMENT

The quarry site development will use conventional stripping methods with progressive excavation in thawed material. Additional depth of cut will be achieved after removal of the initial layer and subsequent thawing of freshly exposed material.

The quarry will be developed using a D8 Dozer, 980 loader and a 320 excavator. The dozer will cut and push material into stockpiles and windrows as appropriate such that the loader and/or excavator can more readily load the material into haul trucks.

There are no drill & blast requirements.

The total area that will be developed to meet the project's needs is approximately 448,000 m2. To the extent possible the excavations will be of uniform depth over a wide area to maintain positive surface drainage.

Reclamation procedures/methods will be in place to ensure cleanup, trimming and tidiness of the quarry.

4.2 EQUIPMENT

The equipment proposed for the access road construction and quarry development will be as follows:

Description	Weight (Kg)
Pick-up F350	3,636
Pick-up F350	3,636
Pick-up F350 w/ Truck Cap	3,636
Flatdeck F550	3,359
Mechanic Truck F550	5,456
Lube / Fuel Truck	13,100
Roll-off / Vac Truck	11,340
Spare components for vac truck (flatdeck, potable water tank)	9,071
Winch Tractor	13,640
Scissor deck trailer	8,000
Packer CS563	11,818
Skid Steer 257B c/w forks, bucket bound on top	4,091
Dozer D6	21,047
Dozer D7	24,600
Dozer D8T	42,573
Excavator 320EL	24,730
Loader 980 H	39,909
Loader 980 G c/w forks & bucket	39,909
Loader 966	25,000
Grader 14H	20,454

Rock Truck 730	25,550
Rock Truck 730	25,550
Rock Truck 730	25,550
Jaw Plant 25" x 42"	57,240
Power Tower 6' X 8'	24,690
Stacking Conveyor with Hopper36" x 50"	18,200
Screen Plant 6" x 20"	45,068
Cone Plant 40"	29,563
Bin wall, cross conveyor	18,000
Screen Plant (new)	44,000
20' Sea Can - hose press	9,890
Washroom / Lunchroom (Wheeled) (survival shack)	10,000
Washroom / Lunchroom (Wheeled) (survival shack)	10,000
QA/QC Trailer	8,145
Office Trailer	9,000
30 man tent camp	155,273
Duel Burner Incinerator	27,500
Generator 275kw	9,000

4.3 EROSION PROTECTION

Regular inspection and remedial action will be in place to capture any erosion problems that may arise during the quarry development such as ditching and maintaining proper drainage.

Silt fence will be on hand and installed as necessary to mitigate silt transport from the quarry operation into nearby waterways.

4.4 SETBACKS

The quarry site has a natural sloping terrain and therefore a 100 m setback will be established between the quarry development and the existing water courses. Setbacks will be surveyed and staked before any construction can proceed. Positive drainage will be a natural progression in the quarry design and stripping/farming approach. Since these activities will be surveyed by grade calculation, slope values and positive drainage will be maintained. The pit floor will also have a positive grade applied for drainage to flow and will not create a ‘ponding effect’. Grades will not exceed 4% in value to avoid any adverse flow and erosion problems.

Temporary diversion of the natural flow paths may be required in order to access the granular materials near the western perimeter of the proposed quarry. If necessary, this will only be done during the low flow season, after freshet has subsided. The flow path will be returned to its original location after removal of granular material is completed at the end of the season.

5.0 AGGREGATE PROCESSING

5.1 CRUSHING

It is anticipated that the crushing plant will produce approximately 200,000 m3 of aggregate Crushing will proceed throughout the 2019, 2020 and 2021 construction seasons. Work is expected to commence annually in early July and shut down in late September.

5.2 STORAGE AREA OVERSIZE MATERIAL

It is not expected to encounter oversized cobles that cannot be processed during the development of the quarry. No other reject material is anticipated during the quarrying operation.

5.3 STORAGE AREA FOR FINISHED PRODUCTS

It is expected that all the processed quarry material will be consumed and hauled to the project location. All products will be consumed and hauled away, no stockpiles of produced aggregate materials will remain at the quarry locations when the work is complete. A detailed and final quantity list of the quarry materials consumed will be provided at the end of the project.

6.0 RECLAMATION

6.1 DESIRED FUTURE CONDITION OF THE SITE & ENVIRONMENTAL PROTECTION

Nuna East will have an ongoing cleanup plan in order to keep up with the required progression of the work. The quarry site will be kept level and tidy on completion of the quarry activities. In the event that the quarry floor soil is contaminated. The remediation plan will be to immediately clean up the area and place the contaminated soils into drums and keep stored on to a lined pad in preparation for transporting off site to a certified land fill. All contaminated drums will be labeled as such with TDG and DFO requirements.

At the completion of the quarry development, the typical cut depth is expected to be no more than about 1 m deep. Trimming of the slopes will be completed with to 3H to 1V grades.

The pit floor will be graded with a dozer to promote free drainage. Baselines and survey elevations will be set into place in order to ensure proper drainage. This will remain consistent through the quarry development.

6.2 WATER DIVERSION AND PROTECTION

As described previously, the quarry development will ensure positive drainage for the quarry floor. On completion of the operations and final clean-up of the quarry, the positive drainage course will be improved to enhance drainage requirements. Based on the initial development of the quarry, no disruption to drainage courses will be encountered. No ‘man made materials’ will be placed i.e. culverts, drainage structures, etc. into the quarry development. Upon completion of the project, the culvert described in Section 3.1 above will be removed and the creek bed restored to natural condition.

6.3 SLOPING/BENCHING

Nuna East will maintain a progressive maintenance program ensuring that the quarry is kept sloped and contoured throughout the project. Experienced operators will adhere to the Northern Land Use Guidelines for the reclamation of the quarry.

6.4 CAMP RECLAMATION AND WASTE DISPOSAL

Camp facilities will not be installed or operated at the quarry site.

6.5 ROAD CLOSURE

The upgraded haul road from the airstrip to the quarry site will be handed over to the ECCC site manager upon completion.