



Dec. 2, 2024

Project/File: 111220795

Director

Environmental Approvals Branch
Manitoba Environment and Climate
14 Fultz Boulevard
Winnipeg, MB R3Y 0L6

Dear Director,

Reference: Notice of Alteration - Headingley Wastewater Treatment Facility (Licence No. 2869 RRR)

The RM of Headingley and RM of Rosser are working on formalizing an agreement to accept up to 277 m3/day of wastewater from CentrePort at the Headingley Wastewater Treatment Facility.

A report completed by Stantec Consulting Ltd. in 2023 titled '*Headingley Wastewater Treatment Facility Upgrades to Accommodate Short-term Centreport Wastewater*' assessed the remaining capacity of the wastewater treatment facility.

The wastewater treatment facility has sufficient hydraulic and organic capacity to accommodate the proposed development and one half of the remaining capacity will be allocated to wastewater from CentrePort.

Yours truly,

RURAL MUNICIPALITY OF HEADINGLEY

[Redacted Signature]
Sandra Miller, CMMA
Chief Administrative Officer

Cc: Brett Ransom, Stantec Consulting
Larry Wandowich, RM of Rosser
Travis Parsons, Manitoba Water Services Board

Notice of Alteration Form



File No. : 111220795	Environment Act Licence No. : 2869 RRR	
Legal name of the Licensee: RURAL MUNICIPALITY OF HEADINGLEY		
Name of the development: Headingley Wastewater Treatment Facility Upgrade		
Category and Type of development per Classes of Development Regulation: Waste Treatment and Disposal <SELECT>		
Licensee Contact Person: Sandra Miller, Chief Administrative Officer Mailing address of the Licensee: 1-126 Bridge Road City: Headingley Province: MB Postal Code: R4H 1G9 Phone Number: (204) 837-5766 Fax: Email: smiller@rmofheadingley.ca		
Name of proponent contact person for purposes of the environmental assessment (e.g. consultant): Brett Ransom, P.Eng., Stantec Consulting Ltd.		
Phone: (204) 981-2826	Mailing address: 500-311 Portage Ave, Winnipeg, MB	
Fax:		
Email address: brett.ransom@stantec.com		
Short Description of Alteration (max 90 characters): WAS piping, redundant blowers upgrade, centrifuge monrail, splitter box access		
Alteration fee attached: Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>		
If No, please explain: Reduced greenhouse gas emissions & improved efficiency with no significant environmental effects		
Date: 2024-12-03	Signature:	<div style="border: 1px solid red; height: 40px; width: 100%;"></div>
	Printed name:	Brett Ransom
A complete Notice of Alteration (NoA) consists of the following components: <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Cover letter <input checked="" type="checkbox"/> Notice of Alteration Form <input checked="" type="checkbox"/> 1 electronic copy of the NoA detailed report (see "Information Bulletin - Alteration to Developments with Environment Act Licences") <input type="checkbox"/> \$500 Application fee, if applicable (Cheque, payable to the Minister of Finance) </div> <div> Submit the complete NoA to: Director, Environmental Approvals Branch Environment and Climate Change Box 35, 14 Fultz Blvd Winnipeg MB R3Y 0L6 EABDirector@gov.mb.ca For more information: Toll-Free: 1-800-282-8069 Phone: 204-945-8321 Fax: 204-945-5229 https://www.gov.mb.ca/sd/permits_licenses_approvals/eal/licence/index.html </div> </div>		
Note: Per Section 14(3) of the Environment Act, Major Notices of Alteration must be filed through submission of an Environment Act Proposal Form (see "Information Bulletin – Environment Act Proposal Report Guidelines")		

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Manitoba Environment and Climate
14 Fultz Boulevard
Winnipeg, MB R3Y 0L6

Dear Director,

Reference: Notice of Alteration - Headingley Wastewater Treatment Facility (Licence No. 2869 RRR)

The RM of Headingley is undertaking improvements to its existing wastewater treatment facility, currently operated under Licence No. 2869 RRR. A Notice of Alteration and supporting documents are provided for your review and approval.

The improvements to be undertaken are all within the footprint of the existing facility, will improve efficiency during facility maintenance, reduce greenhouse gas emissions and are not anticipated to result in any significant environmental effects. A brief summary of the planned activities is noted below and a more detailed description is attached.

1. Piping is to be added to allow the existing WAS pumps to transfer the contents of one SBR tank to the other when one tank is to be taken out of service for maintenance. This piping will eliminate the need for a pumper truck to be brought to site to complete this activity resulting in reduced greenhouse gas emissions.
2. Redundant blowers are to be added for both the digester and hydrogen sulphide stripping tank. This will reduce the risk of compromised effluent and air quality during maintenance of this equipment. A small building expansion is required to house the blowers. The building expansion is within the footprint of the existing facility.
3. An overhead monorail is to be added to the dewatering room to allow for easier removal of the centrifuge for maintenance.
4. A ladder is to be added to provide access to the splitter box for maintenance.

In addition to these operational improvements noted above, it is the RM of Headingley's intention to accept some wastewater from the CentrePort area of the RM of Rosser. The report '*Headingley Wastewater Treatment Facility Upgrades to Accommodate Short-term Centreport Wastewater*' (Stantec Consulting Ltd., 2023), assessed the remaining capacity of the wastewater treatment facility. It was concluded that one half of the remaining treatment capacity could be allocated to wastewater from CentrePort and the RM of

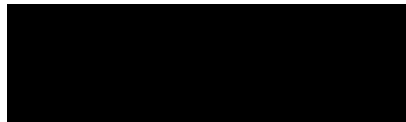
Reference: Notice of Alteration - Headingley Wastewater Treatment Facility

Headingley and RM of Rosser are working on formalizing an agreement to accept up to 277 m³/day of wastewater from CentrePort.

An Environment Act Proposal for the forcemain from CentrePort to the Headingley wastewater treatment facility, and an associated equalization tank, was submitted to Manitoba Environment and Climate in December 2023 (File 6216.00). A copy of the design brief for the equalization tank is attached for reference.

Sincerely,

STANTEC CONSULTING LTD.



Brett Ransom P.Eng.
Senior Associate
Phone: (204) 478-8992
brett.ransom@stantec.com

Attachment: 1. Notice of Alteration Form
2. Detailed Description of Proposed Works (Section 4 Headingley WWTF Improvements)
3. CentrePort Rail Park Forcemain and Equalization Tank Design Brief
4. Letter from RM of Headingley

c. Sandra Miller, RM of Headingley
Larry Wandowich, RM of Rosser
Travis Parsons, Manitoba Water Services Board

4 Headingley WWTF Improvements

4.1 Transferring Mixed Liquor Between SBRs

Currently when an SBR is to be taken out of service, either a portable dewatering pump or sewage pump truck is required. The portable dewatering pump could draw from one SBR through an exterior hatch and discharge to the pre-react zone through an exterior hatch. The sewage pump truck could implement the same strategy, or it could discharge to the sewage truck receiving station.

In order to facilitate this process, the waste activated sludge (WAS) pumps could be used to transfer the SBR contents from one SBR to the other. The WAS pumps are each rated at 8.9 L/s and operate in duty standby mode.

It would be recommended to isolate the SBR and use the decanter to reduce the water level to the minimum water level of 3.6 m. This would leave 1,896 m³ of combined WAS and mixed liquor suspended solids (MLSS) to transfer to the other SBR. The WAS pump has a minimum water level above the pump suction for operation. The minimum submergence is 0.28 m above the pump inlet centreline and the pump inlet centreline is located approximately 0.35 m above the bottom of the SBR floor. Therefore, the minimum level that the SBR can be drained to using the WAS pumps is 0.63 m above the SBR tank floor. The volume between the low water level and minimum submergence level is 1,564 m³.

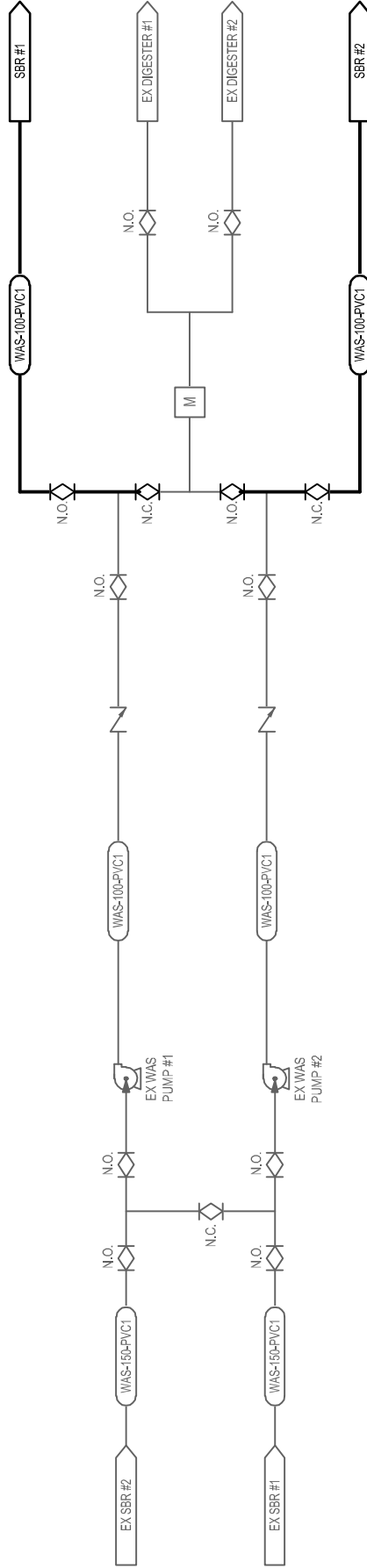
It would take approximately 49 hours of pumping using the WAS pump to transfer the content of one SBR to the other. It is proposed to modify the discharge piping downstream of the WAS pumps to allow for discharging to the decanter end of the SBR. While piping to the pre-react zone would be preferred, discharging to the decanter end is acceptable from a process standpoint so long as the SBR cycle is in the aeration or mixing mode. Refer to **Figure 4-1** for the current piping configuration and to **Figure 4-2** and **4-3** for the proposed piping modification. Note that the valve positioning in **Figure 4-2** is for transferring from SBR No. 2 to SBR No. 1.



Figure 4-1: WAS Pump Current Piping Configuration

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Legend

Notes

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HEADINGLEY WASTEWATER TREATMENT
FACILITY UPGRADES

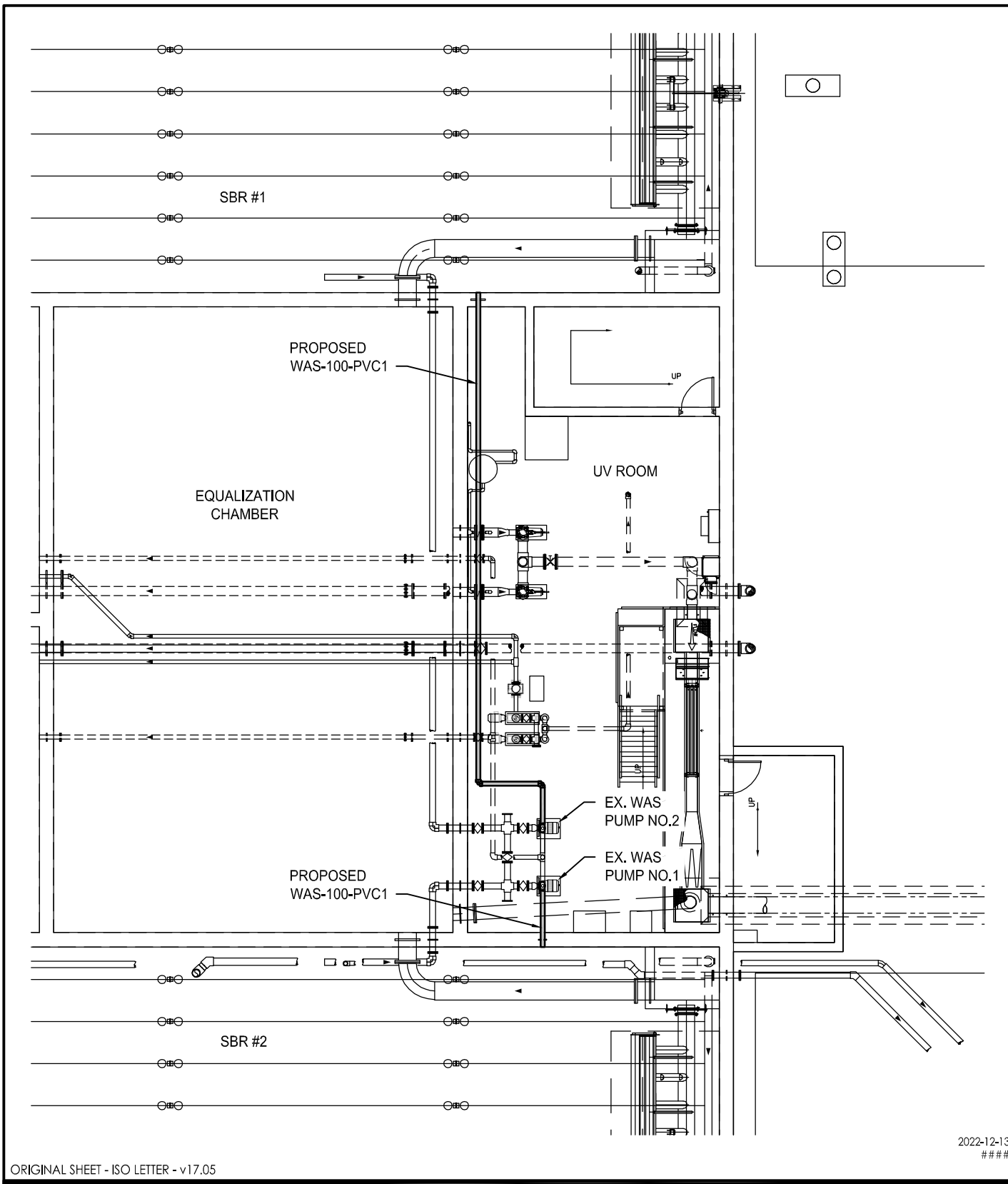
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WAS PIPING CHANGES

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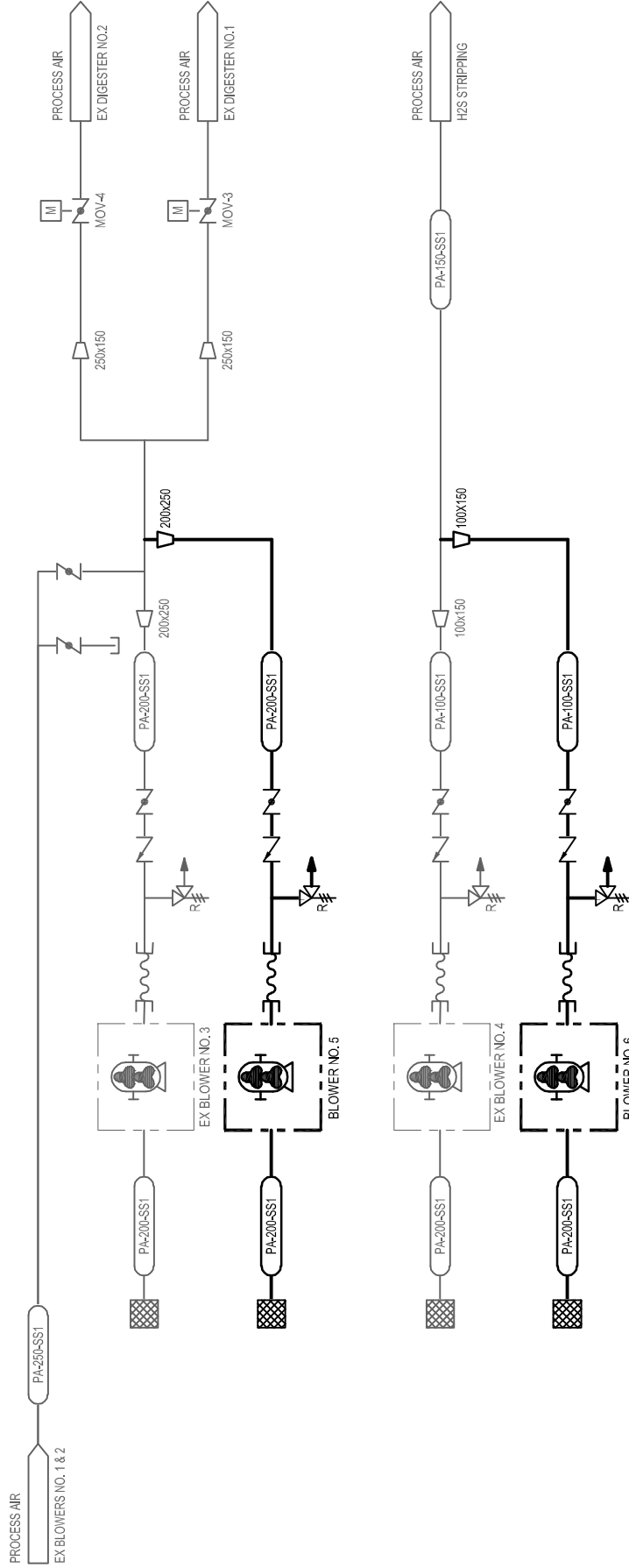
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Figure No.

4.3

Title

WAS PIPING PLAN



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Figure No.

4.4

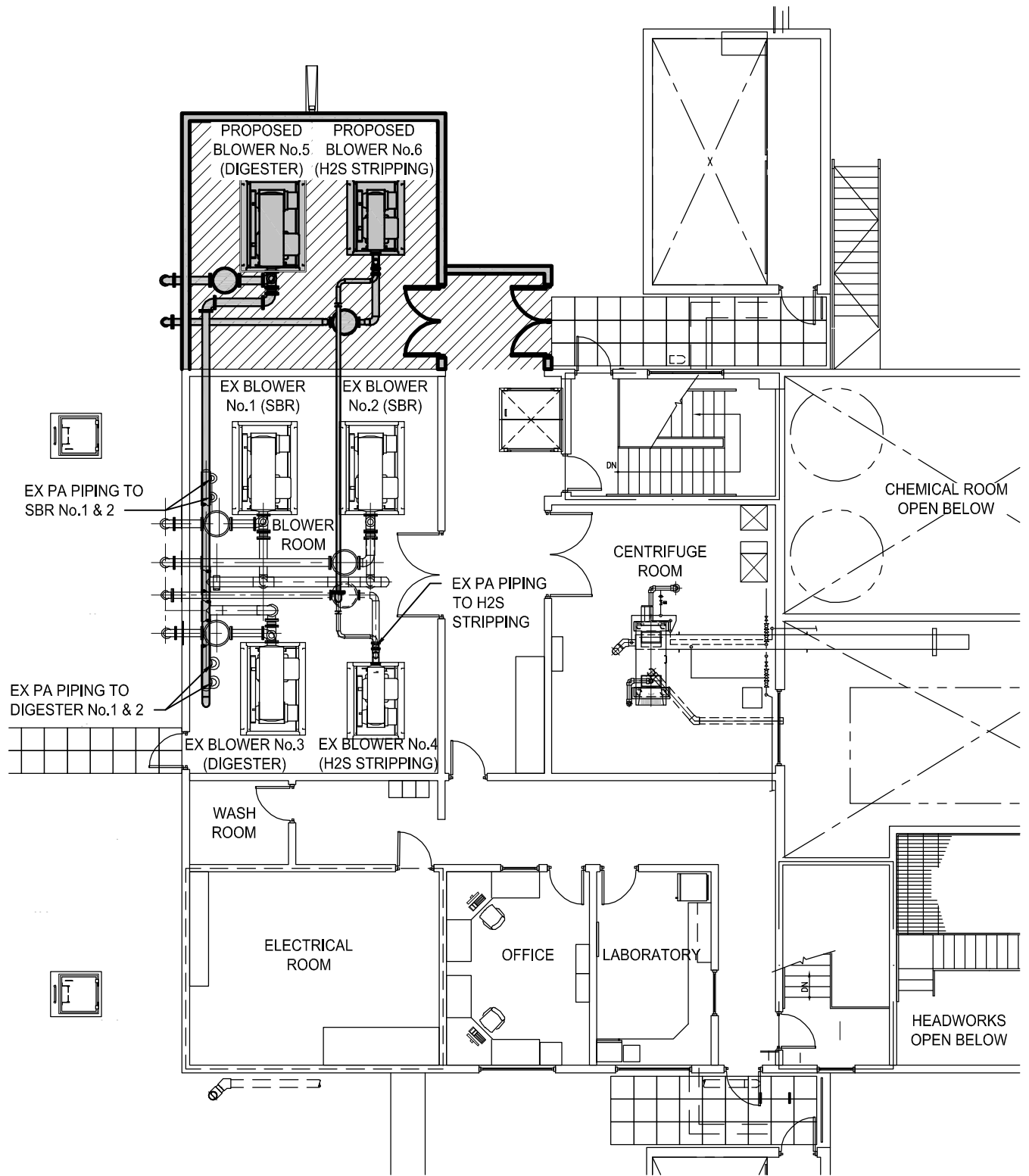
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REDUNDANT BLOWERS

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Notes

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Figure No.

4.5

Title

BLOWER ROOM PLAN

4.2 Blower Upgrades

The characteristics of the existing Digester and H₂S Stripping Tank Blowers are summarized in **Table 4.1**. It is proposed to add redundant blowers to match the existing blowers. Refer to **Figure 4-4** for the proposed piping configuration for the redundant blowers.

Table 4.1 – Digester and H₂S Stripping Tanks Blower Characteristics

Item	Units	Digester Blower	H ₂ S Stripping Tank Blower
Type	-	Positive Displacement	Positive Displacement
Model	-	Excelsior Sutorbilt 616 Heliflow	Excelsior Sutorbilt 6M
Air Flow	m ³ /h	1,921 @ 51 kPa	764 @ 79 kPa
Power	HP	75	40
Control	-	VFD	Soft Start
Footprint	m	2.4 x 1.8	2.0 x 1.5
Weight (with enclosure)	kg	1,950	1,088

A Blower Room expansion is required to install the redundant blowers. The area available for expansion is over SBR No. 1 and the roof for SBR No. 1 at this location consists of 300 mm thick pre-cast hollow core panels. Refer to **Figure 4-5** for the proposed Blower Room expansion.

The hollow core panels alone are not sufficient for supporting the building expansion and proposed blowers. It is proposed to add a 400 x 600 cast-in-place beam under the proposed building expansion exterior wall. The beam would be supported by four (4) 400 x 400 cast-in-place concrete columns at the corners of the proposed building expansion. SBR No. 1 would need to remain out of service for the duration of the concrete works.

The building expansion would match the construction of the existing building, which is a steel structure with 24-gauge exterior pre-finished metal paneling, 200 wall girts, batt insulation, vapour barrier and 26-gauge interior metal liner panel.

4.3 Dewatering Room Monorail

The centrifuge is located in the Centrifuge Room on the upper level of the WWTP and there is currently no permanently installed means to remove the centrifuge rotating assembly for maintenance. The RM reported that the last time the centrifuge was serviced it was very challenging to remove the rotating assembly. The key centrifuge characteristics are summarized in **Table 4.2**.



Headingley Wastewater Treatment Facility: Upgrade to Accommodate CentrePort Wastewater **4 Headingley WWTF Improvements**

Table 4.2 – Centrifuge Characteristics

Item	Units	Criteria
Model	-	ALDEC 30 by Alfa Laval
Weight of rotating assembly	kg	454
Weight of empty unit	kg	1,497
Minimum distance for base to lifting hook	mm	1,500

It is proposed to size the monorail to handle the weight of the entire unit should the centrifuge need to be removed completely in the future. A 2-tonne monorail is recommended for lifting the entire centrifuge.

The installation of a monorail beam above the centrifuge is complicated by ducting installed over the unit. Refer to **Figure 4-6** for an image of the centrifuge installation. There is currently 2,387 mm of space between the 355 mm diameter branch duct and the centrifuge base, while a minimum of 1,500 mm of space is required between the monorail hoist hook and the base. When a monorail beam (381 mm) and 2 tonne hoist (540 mm) are added there is not sufficient space between the duct and the base.

It is proposed to relocate the 355 mm diameter branch duct south and install a 2-tonne monorail beam above the main 812 mm diameter duct. Refer to **Figure 4-7** for a plan view of the proposed monorail.

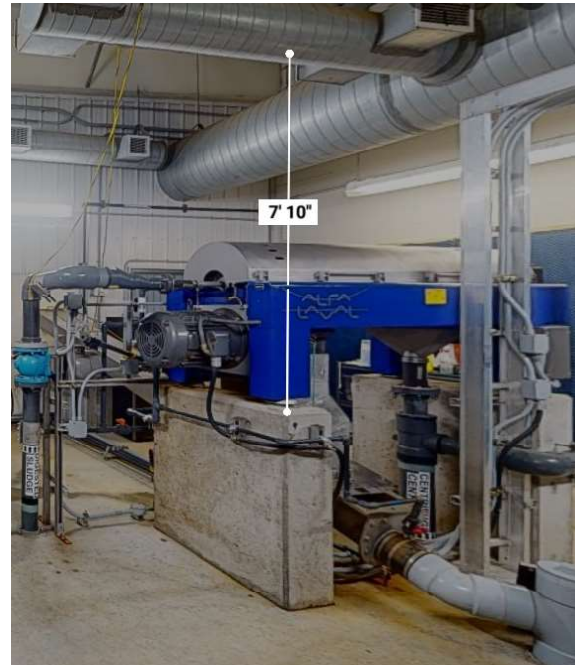


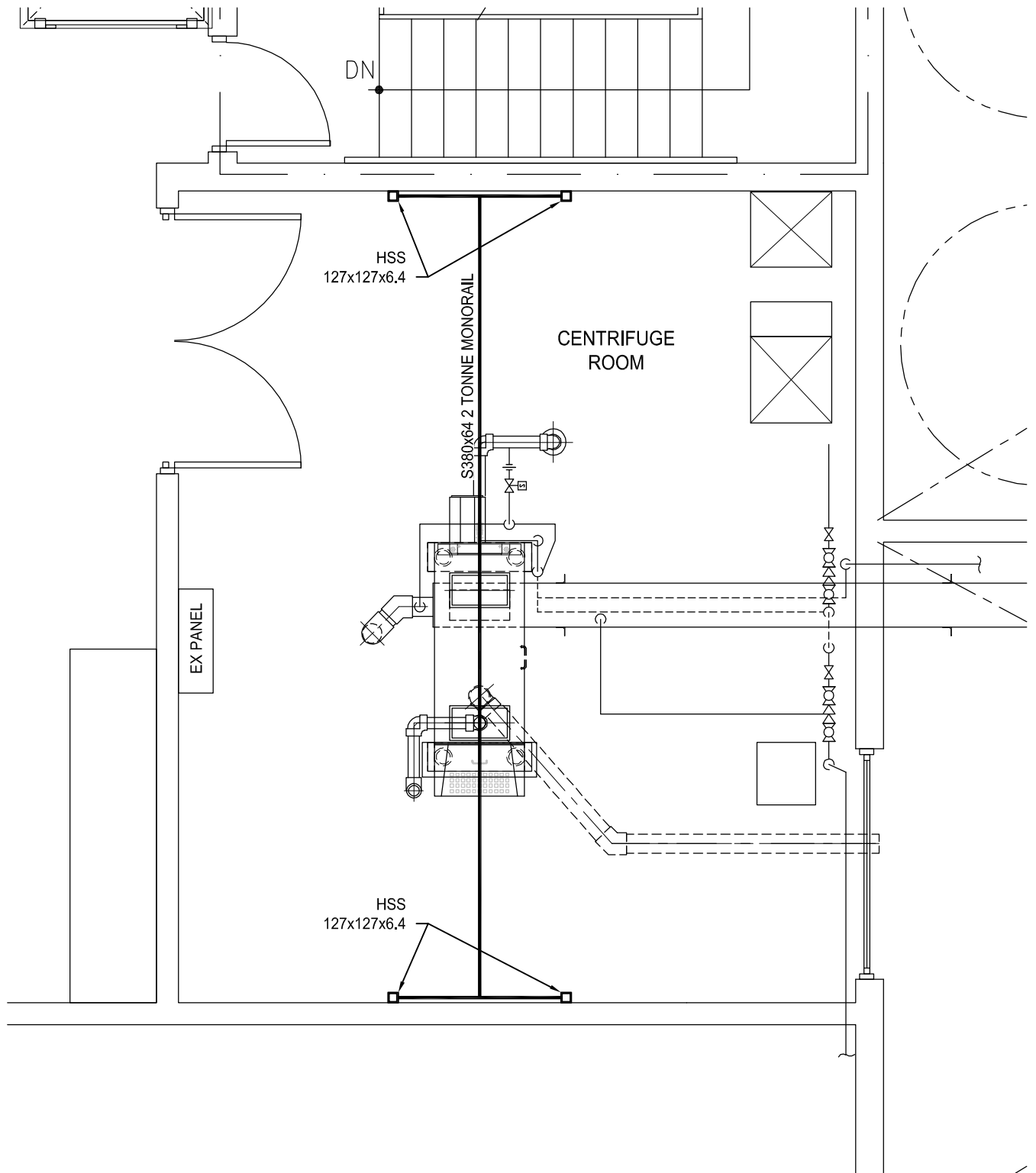
Figure 4-6: Centrifuge Room

4.4 Splitter Box Access

The operators indicated that access to the splitter box for cleaning and maintenance purposes would be beneficial. The following options were reviewed:

- 1) Option 1: Install a permanent ladder from the Sludge Bin Room at the location of the existing hot water tank to a platform adjacent to the splitter box. Space to install a ladder is limited by the height of the centrifuge conveyor and the location of the cable tray. It was concluded that there was not sufficient space to provide safe access to a platform from a permanently installed ladder in the Sludge Bin Room.

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Figure No.

4.7

Title

CENTRIFUGE ROOM MONORIAL

Headingley Wastewater Treatment Facility: Upgrade to Accommodate CentrePort Wastewater

4 Headingley WWTF Improvements

- 2) Option 2: Provide access to a platform over the splitter box from the Dewatering Room. The south wall of the Dewatering Room overlooks the splitter box through a window, as shown in **Figure 4-8**.



Figure 4-8: Window Facing Into Sludge Room

Access would be provided to the splitter box by providing a short vertical ladder to a platform that would be at the level of the top of the splitter box inside the dewatering room. The existing window would be replaced with an access door / window. Grating would be added over the splitter box and railing would be provided around the splitter box.

The centrifuge room and the sludge bin room were both classified as corrosive environments and equipment for these areas was to be supplied and installed in accordance with Section 22, Category 2 of the Canadian Electrical Code therefore there is no issue from a code perspective with interconnecting these rooms with a door.

To:	Travis Parsons	From:	Brett Ransom
	MWSB		Stantec
Project/File:	Headingley CentrePort Wastewater / 111220795	Date:	October 4, 2023

Reference: CentrePort Rail Park Forcemain and Equalization Tank Design Brief

A wastewater lift station (designed by others) is proposed to serve the CentrePort Rail Park and surrounding area in the RM of Rosser. The lift station, with peak pumping capacity of 150 L/s, will pump wastewater to the RM of Headingley via a 19,040 metre long 500mm diameter HDPE forcemain.

The RM of Headingley's low-pressure sewer system cannot accommodate the peak design flow of 150 L/s and an equalization storage tank and pump system is proposed to buffer the peak flow and remove solids from the wastewater prior to it discharging to the low-pressure sewer system.

Once the wastewater from CentrePort reaches the low-pressure sewer system in Headingley, it will flow through the existing lift station, hydrogen sulphide stripping system and wastewater treatment plant in the same manner as all other wastewater within the RM of Headingley's municipal sewer catchment area.

The volume of wastewater allotted to CentrePort for treatment at the Headingley WWTP is 277 m³/day. A cast-in-place concrete septic tank, sized in accordance with Manitoba's Onsite Wastewater Management Systems Regulation, will be situated adjacent to the wastewater treatment plant. The septic tank must have a minimum working capacity in the sedimentation cell of 140% of the daily wastewater flow and 20% of the daily wastewater flow in the control / pump chamber. The required minimum septic tank volumes are calculated as follows:

- Sedimentation Chamber = 277 m³ x 140% = 388 m³
- Pump Chamber = 277 m³ x 20% = 56 m³

A baffle wall has also been added between the forcemain inlet and the sedimentation chamber to control the liquid level in the forcemain so that it does not drain uncontrolled into the septic tank after the pumps have shut off. The top elevation of baffle wall 239.55 will be higher than the top of the forcemain at any point along the length of the pipe between CentrePort and Headingley. The baffle wall will also help to facilitate solids removal which has been raised as a concern by the RM of Headingley.

The proposed septic tank is rectangular in shape with internal dimensions of 3.5 metres deep, 9.0 metres wide and 20.7 metres long. The effective operating depth of the tank is 2.75 metres with the bottom 0.5m reserved for sludge accumulation and a clear head space of 0.25 metres. At those operating levels, the total storage capacity of the sedimentation chamber and pump chambers are 387 m³ and 59 m³, respectively. Combined with the baffle wall and additional settling cell at the forcemain inlet, the tank effectively meets the required minimum storage requirements.

Reference: CentrePort Rail Park Forcemain and Equalization Tank Design Brief

Sludge removal is anticipated to be required on an annual basis when the system is running at full capacity based on the following assumptions.

- Average day wastewater flow of 277 m³
- Domestic strength wastewater
- Equivalent population of 1,385 people based on 200 L/per/day
- Annual sludge accumulation of 0.06 m³/person (from MB Manual for Onsite Wastewater Management Systems)
- Total annual sludge accumulation = 1,385 x 0.06 m³ = 83 m³ (approximately 0.5m deep)

The liquid in the septic tank will be pumped daily through a short section of 75mm diameter forcemain into a 300mm diameter low-pressure sewer main adjacent to the tank. A 2 kW (2.7 horsepower) Sulzer submersible pump with a duty point of 12.2 L/s at 7.5 metres of head will drain the full tank over an approximately 10 hour period. This pump was selected for its ability to run continuously for extended periods of time as required for this project. It is proposed that the pump turns on at a pre-determined time each evening and then run until empty to help mitigate the impact on the Headingley wastewater collection system. A float system will also be provided for the duplex pump system.

Electrical service for the pumps will be extended from the wastewater treatment plant. The pump control panel is proposed to be housed in a small wood-frame building along with a flow meter and composite sampler for measuring the volume of flow and wastewater quality from CentrePort. A small space heater is proposed to keep the building temperature above freezing.

Road access to the equalization tank site has been provided in the design based on feedback from the RM of Headingley. Vehicle access will be needed at least on an annual basis to remove sludge from the septic tank although this could be scheduled when the ground is frozen. Modifications may also be needed to the chain link fence to allow for vehicle access.

Sincerely,

STANTEC CONSULTING LTD.

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James Rodych & Shawn Tosh, Headingley