

November 30, 2016

Ms. Tracey Braun, M.Sc.  
Director  
Environmental Approvals Branch  
Manitoba Sustainable Development  
Suite 160, 123 Main Street  
Winnipeg, Manitoba R3C 1A5

Subject: RM of Gimli Wastewater Treatment Plant: Notice of Alteration Request  
Environment Act Licence No. 2587

Dear Ms. Braun:

On behalf of the RM of Gimli, I am requesting a notice of alteration to Licence 2587 issued on January 20, 2003. The requested changes are as follows:

- Item 1 – Installation of a second dewatering centrifuge.
- Item 2 – Change of clause 16 e. to 1 mg/L total phosphorus limit based on a 30-day rolling average instead of a never to exceed basis.
- Item 3 – Change of clauses 16 a. and b. to 25 mg/L cBOD, BOD and TSS based on a 98% annual compliance basis from a 20 mg/L BOD and 20 mg/L TSS never to exceed basis.
- Item 4 – Deletion of Clause 16 d. stipulating a total coliform effluent limit and testing requirements.

Attached for your review is the completed Notice of Alteration Form, four hardcopies and one electronic copy of the NOA detailed report and the \$500 application fee.

If you have any questions, please contact me by email at [BMcIntosh@bt-consult.ca](mailto:BMcIntosh@bt-consult.ca) or by phone at 204-229-5681.

Sincerely,

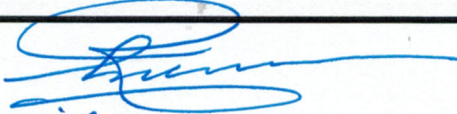
Birchtree Consulting Ltd.



Bonnie McIntosh, M.Sc., P. Eng.  
Owner

- c. Joann King, CAO, RM of Gimli; Dick Menon, PM, RM of Gimli; Siobhan Burland Ross, Manitoba Sustainable Development; Asit Dey, Manitoba Sustainable Development

Notice of Alteration Form

Client File No. :	Environment Act Licence No. : 2587
Legal name of the Licencee: Rural Municipality of Gimli	
Name of the development: Wastewater Collection System and Wastewater Treatment Plant	
Category and Type of development per Classes of Development Regulation: Waste Treatment and Storage                                  Wastewater treatment plants	
Licencee Contact Person: Dick Menon, M.Eng.. P.Eng. FEC	
Mailing address of the Licencee: Box 1246, 62-Second Ave	
City: Gimli                                  Province: Manitoba                                  Postal Code: R0C 1B0	
Phone Number: (204) 396-1000    Fax: (204) 642-6660    Email: dmenon@rmgimli.com	
Name of proponent contact person for purposes of the environmental assessment (e.g. consultant): Bonnie McIntosh, M.Sc., P.Eng. Birchtree Consulting Ltd.	
Phone: (204) 229-5681	Mailing address: 23 Morton Bay, Winnipeg, MB
Fax:	R3R 2C5
Email address: BMcIntosh@bt-consult.ca	
Description of Alteration ( <i>max 90 characters</i> ): 1) Installation of 2nd WAS centrifuge; 2) Change to 1 mg/L TP on a 30-day rolling avg. instead of never to exceed; 3) Change to 25 mg/L BOD and TSS instead of 20/20 mg/L; 4) Deletion of total coliform limit.	
Alteration fee attached:    Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	
If No, please explain:	
Date: 2016-11-30	Signature: 
	Printed name: R. (DICK) MENON
<b>A complete Notice of Alteration (NoA) consists of the following components:</b> <input checked="" type="checkbox"/> Cover letter <input checked="" type="checkbox"/> Notice of Alteration Form <input checked="" type="checkbox"/> 4 hard copies and 1 electronic copy of the NOA detailed report (see " <a href="#">Information Bulletin - Alteration to Developments with Environment Act Licences</a> ") <input checked="" type="checkbox"/> \$500 Application fee, if applicable (Cheque, payable to the Minister of Finance)	
<b>Submit the complete NOA to:</b> Director Environmental Approvals Branch Manitoba Sustainable Development Suite 160, 123 Main Street Winnipeg, Manitoba R3C 1A5  <b>For more information:</b> Phone: (204) 945-8321 Fax: (204) 945-5229 <a href="http://www.gov.mb.ca/conservation/eal">http://www.gov.mb.ca/conservation/eal</a>	

# Rural Municipality of Gimli Notice of Alteration Request

## Background

The Rural Municipality of Gimli (Gimli) operates a wastewater treatment plant (WWTP) in the RM of Gimli Business Park (previously call Industrial Park), under Environment Act Licence No. 2473, issued on January 20, 2003. The Licence was issued in accordance with the Proposal filed under the Environmental Act on May 8, 2002 by Stantec Consulting Ltd. and additional information provided by Stantec Consulting Ltd. on October 21, 2002.

The WWTP treats the wastewater received from the Gimli collection system; holding and septage tank contents from the RM of Gimli and RM of Armstrong; and industrial wastes from the Diageo Gimli distillery.

The treatment process consists of fine screening, grit removal, SBR secondary treatment with biological and supplemental chemical phosphorus removal followed by ultraviolet disinfection. The waste activated sludge (WAS) is pre-thickened using a drum filter, aerobically digested in two aerobic digesters and then dewatered using a centrifuge prior to storage and land disposal.

Phase I according to the Licence is defined as operating with two SBRs and two aerobic digesters and Phase II is defined as operating with three SBRs and three aerobic digesters. The wastewater load on the WWTP is defined in the Licence as follows:

Phase	Hydraulic Loading <sup>(1)</sup> , m <sup>3</sup> /d	BOD5 Loading <sup>(1)</sup> , kg/d
I	8,400	2,520
II	12,900	3,870

<sup>(1)</sup> Over any 24-hour period.

## Descriptions and Environmental Effects of Notice of Alteration Requests

### Item 1 – Installation of Second Dewatering Centrifuge and Conveyor

The proposed change consists of installing a second centrifuge and conveyor as shown in the Stantec Consulting Ltd. Record Drawing DP102 dated November 01, 2007 noted as “Centrifuge #2 (future)”. Currently the aerobically digested sludge is dewatered in the existing Centrifuge #1 prior to sludge storage. Licence 2587 does not stipulate how dewatering was to be done prior to sludge storage or that dewatering was required at all. Clause 24 only indicates:

*“The Licencee shall, prior to discharging to the sludge storage ponds, treat the sludge solids by aerobic digestion for a period of 25 days at a minimum temperature of 10°C, or by an equivalent digestion process acceptable to the Director.”*

However, in the May 8, 2002 Proposal filed under the Environment Act by Stantec Consulting Ltd., the proposed method was to pre-thicken the WAS, aerobically digest the WAS, and then store the stabilized WAS at 5 to 8 percent solids before land application. Likewise, in the additional information provided by Stantec Consulting Ltd. on October 21, 2002, there was no mention of the centrifuge dewatering facility or truck loading bay. Between the October 21, 2002 correspondence and the June 1, 2006 Issued for Construction Drawing set, a sludge dewatering facility complete with a centrifuge and a truck loading bay was added.

The installation of Centrifuge #2 is proposed to allow Gimli to have greater flexibility in managing their existing Phase I sludge levels and to allow Centrifuge #1, which is now 10 years old, to be taken out of service for maintenance and repair. The centrifuges will generally be operated in a duty/standby mode, however the Operators will have the option to operate both centrifuges at once to dewater at a faster rate and reduce operating costs (i.e. labour costs).

The proposed second centrifuge will:

- Not change the type or quantity of raw materials or substances that would be used or processed. The raw materials will still be within the Phase I and future Phase II licenced levels.
- Not change in the environmental effects from the development as a result of the alteration as compared with the base level of the development as licensed. The sludge will continue to be aerobically digested as stipulated in the Licence and no additional WAS will be produced in the SBR process. The proposed change will only change the rate at which the WAS is dewatered (i.e. instead of operating the existing centrifuge 16 hours per day, the Operators could operate both centrifuges at 8 hours per day).
- Not change to the environmental effects on the receiving environment.

Overall, there will be no negative environmental effects on the receiving environment as a result of this proposed alteration.

## **Item 2 – Change of Clause 16 e. to 1 mg/L Total Phosphorus Limit Based on a 30-day Rolling Average**

The proposed change consists of changing the licence limit (Clause 16 e.) from “The Licencee shall not discharge effluent from the wastewater treatment plant: ... e. where the total phosphorus content of the effluent is in excess of 1 milligram per liter;” to a 1 mg/L based on a 30-day rolling average basis to match the Tier I Manitoba Water Quality Standards, Objectives, and Guidelines (MWQSOG) dated November 28, 2011 and the Summary of Comments/Recommendations posted on the Sustainable Development website for this Licence. The listed comment/recommendation from Conservation – Sustainable Resource Management was that the “total phosphorus limits should be set at 1.0 mg/L, based on a monthly mean value.”

With the plant having biological phosphorus removal with backup chemical phosphorus removal, the plant is able to meet the 1 mg/L TP limit on a monthly mean or 30-day rolling average basis; but is not able to consistently meet the 1 mg/L limit on a “never to exceed” basis. For example, on summer weekends, the Operators increase their alum dosages before the weekend in anticipation of higher loadings, but they are not always able to accurately predict the next day’s flows and loadings because the seasonal cottage population varies depending on many variables (including the weather). It is not until the next day when the Operators perform their in-house testing that they know if the alum dosing estimate was correct or not. If not correct, they are out of compliance with the never to exceed limit even though they immediately adjust their dosing levels to suit and are in compliance on a monthly basis. For example in May 2016, the ALS test results indicate that there was one sample at 1.23 mg/L TP and the monthly average was 0.47 mg/L. Likewise in July, 2016, one sample was measured at 1.36 mg/L and the monthly average was 0.61 mg/L.

This requested Licence clause change:

- Has no physical changes proposed.
- Has no change in the type or quantity of raw materials or substances that would be used or processed.
- Has no change in the environmental effects as compared with the base level of the development as licensed since the phosphorus level will still be under 1 mg/L on a monthly or 30-day rolling average basis. There is no daily impact of phosphorus on the receiving water body but the impact is more accumulative. In addition, in 2002 at the time of Licence development and review, the recommendation from Conservation was for the limit to be on a monthly average.

Overall, there will be no negative environmental effects on the receiving environment as a result of this proposed alteration.

### **Item 3 – Change of Clauses 16 a. and b. to 25 mg/L cBOD, BOD and TSS**

The requested proposed change consists of changing the licence limits (Clauses 16 a. and b.) from:

*“The Licencee shall not discharge effluent from the wastewater treatment plant: ... a. where the organic content of the effluent, as indicated by the five day biochemical oxygen demand, is in excess of 20 milligrams per litre; b. where the total suspended solids content of the effluent is in excess of 20 milligrams per litre;”*

to 25 mg/L Carbonaceous Biochemical Oxygen Demand, 25 mg/L Biochemical Oxygen Demand, and 25 mg/L Total Suspended Sediments to match the Tier I November 28, 2011 MWQSOG’s minimum secondary treatment technology standards. In addition it is requested to change the compliance basis from “not to exceed” to an “annual 98% compliance limit”.

As with Item 2 requested, above, the current limits are too stringent for the existing plant’s technology (SBR activated sludge process) with the varying influent seasonal and daily loadings that the plant experiences within the Phase I loading limits. For example in 2016, based on the ALS test results the

effluent BOD was measured once at 20.3 mg/L and once at 20.4 mg/L in July and once at 29.6 mg/L in August. For the remainder of the test results, the plant was in compliance with the 20/20 limits. A 25 mg/L limit of the BOD, cBOD and TSS, would better represent what the technology is capable of with a reasonable number of plant upsets.

This requested Licence clause change:

- Has no physical changes proposed.
- Has no change in the type or quantity of raw materials or substances that would be used or processed.
- Has a negligible environmental effect as compared with the base level as licensed. The level of treatment will not be modified, and the plant will continue to treat to within the 20/20 level for the better part of the year with a few exceedances as seen over the past 2016 summer. Modelling was not performed as part of the original EAP for BOD and TSS. Only modelling for coliforms and ammonia were performed.

Overall, there will be negligible additional environmental effects on the receiving environment as a result of this proposed alteration.

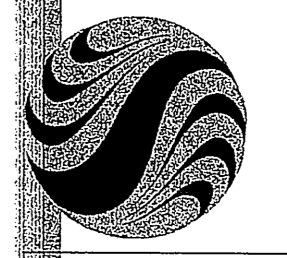
#### **Item 4 – Deletion of Clause 16 d., Total Coliform Effluent Limit**

Clause 16 d. stipulates a total coliform effluent limit and total coliform effluent testing requirements. In discussions with Siobhan Burland Ross on November 28, 2016, it was indicated that total coliform limits are no longer stipulated in Licences as per the November 28, 2011 MWQSOG. The RM of Gimli is therefore requesting that this clause be removed from the Licence at this time to reduce the RM of Gimli's testing costs.

This requested Licence Clause change:

- Has no physical changes proposed.
- Has no change in the type or quantity of raw materials or substances that would be used or processed.
- Has no change in the environmental effects as UV disinfection will continue to be employed with the fecal coliform limit (Clause 16 c.) in place.

Overall, there will be no negative environmental effects on the receiving environment as a result of this proposed alteration.



Stantec Consulting Ltd.  
905 Waverley Street  
Winnipeg MB Canada  
R3T 5P4  
Tel. 204-489-5900  
Fax. 204-453-9012  
www.stantec.com

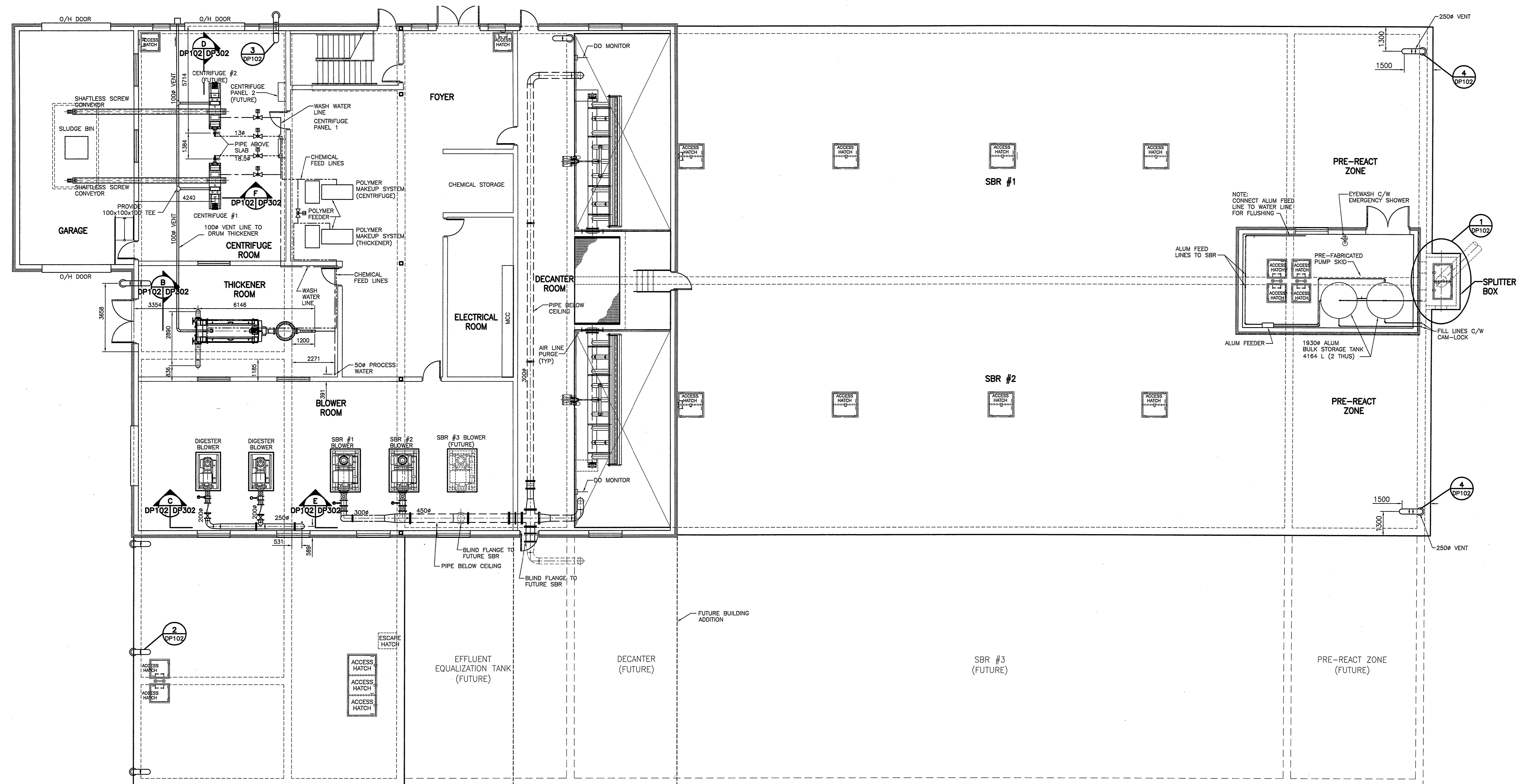
**Stantec**

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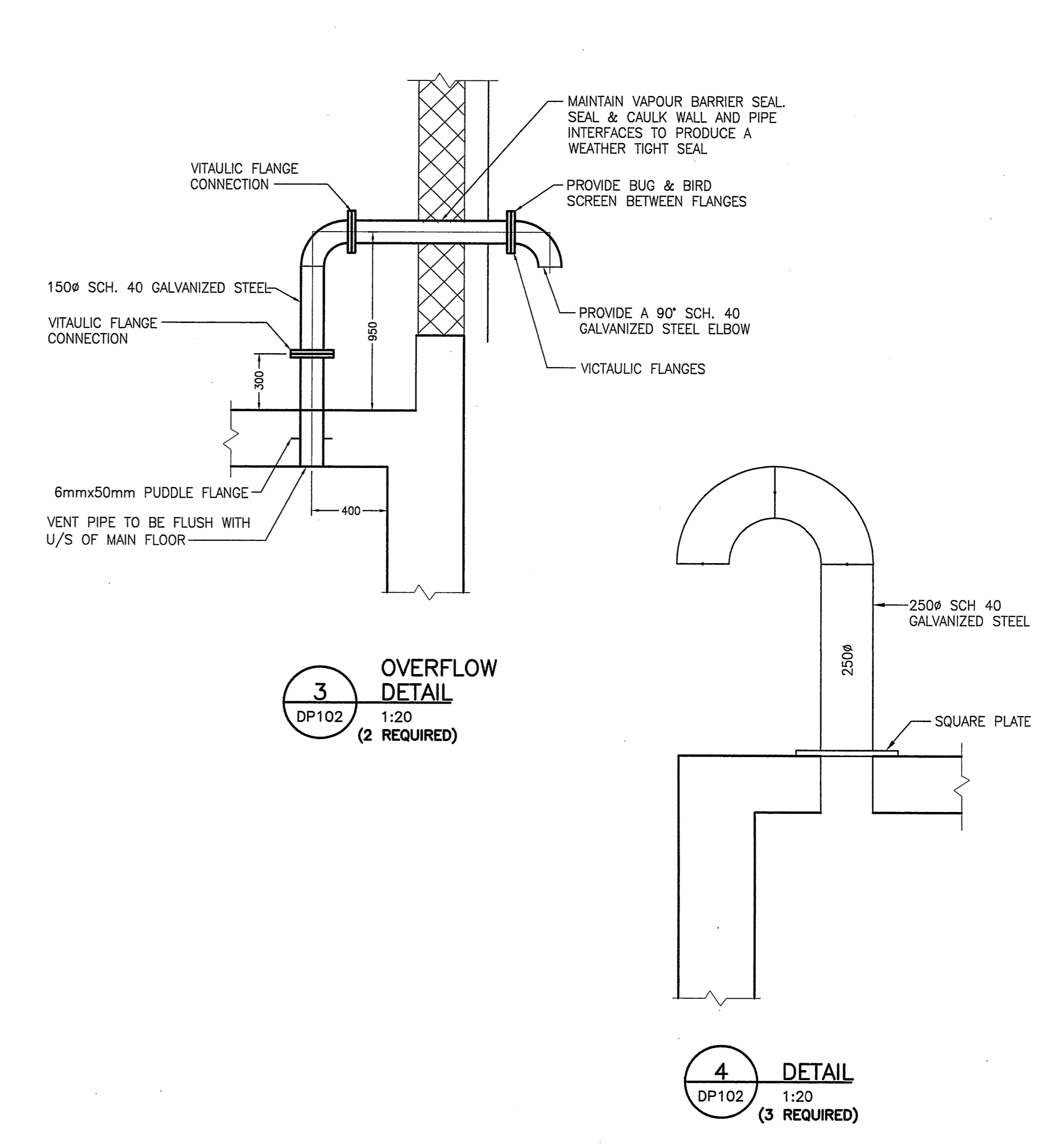
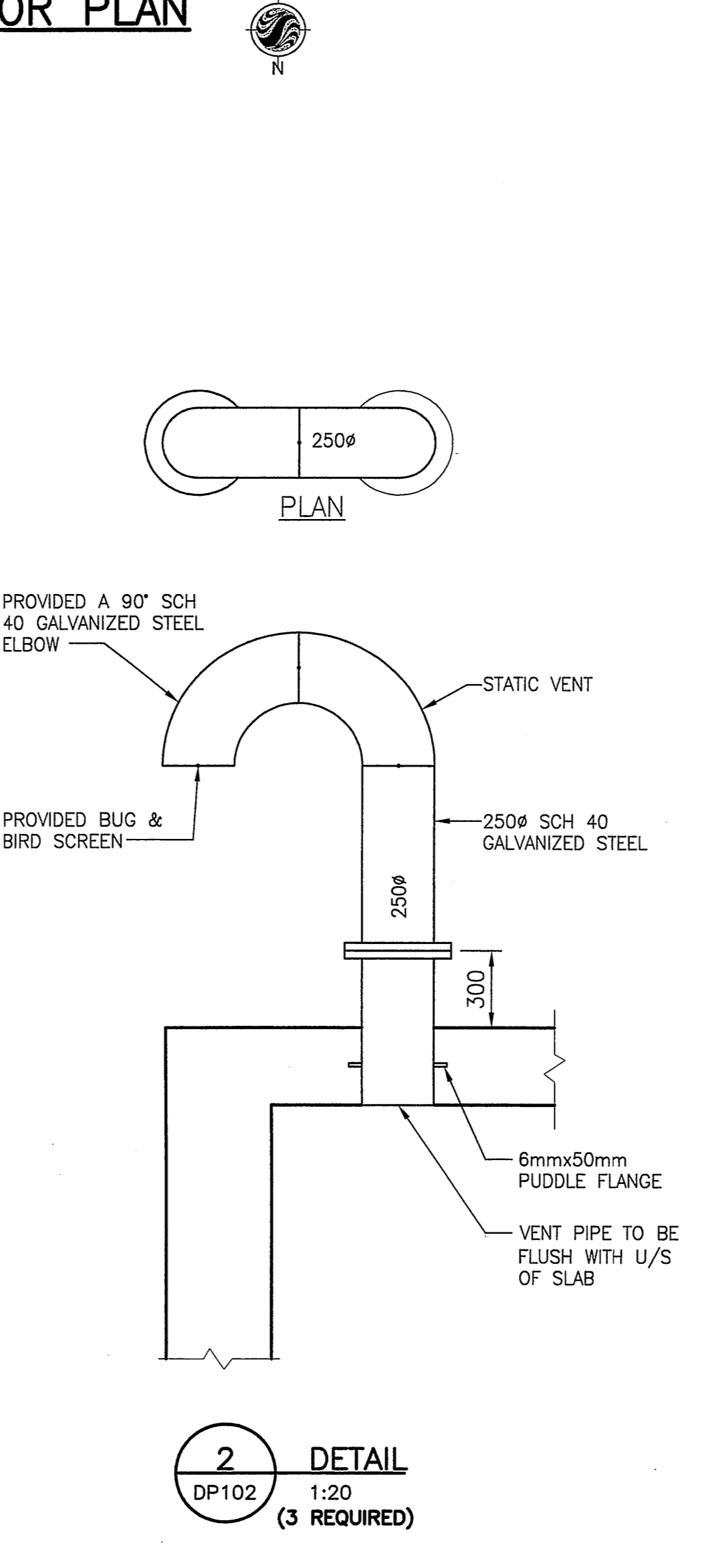
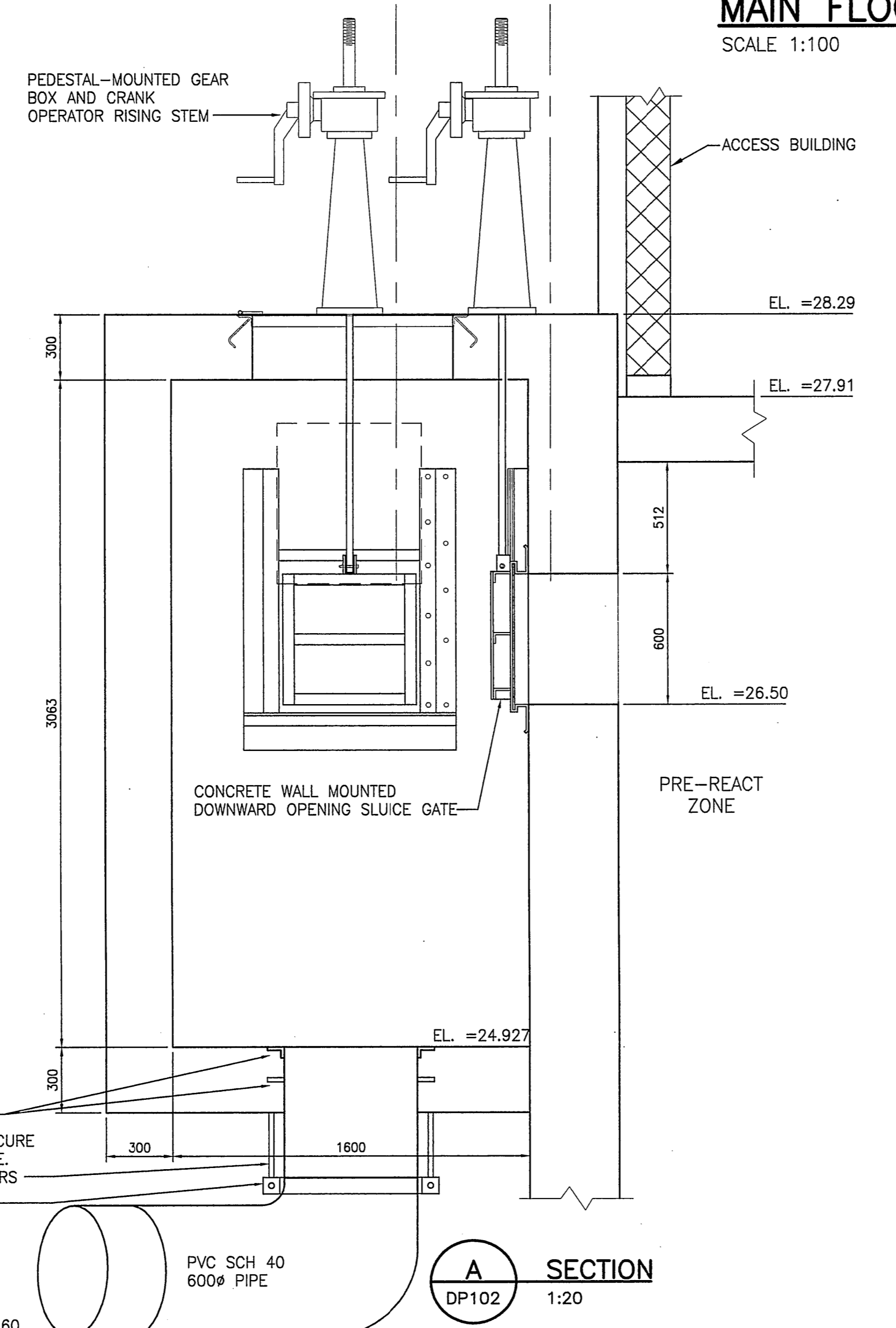
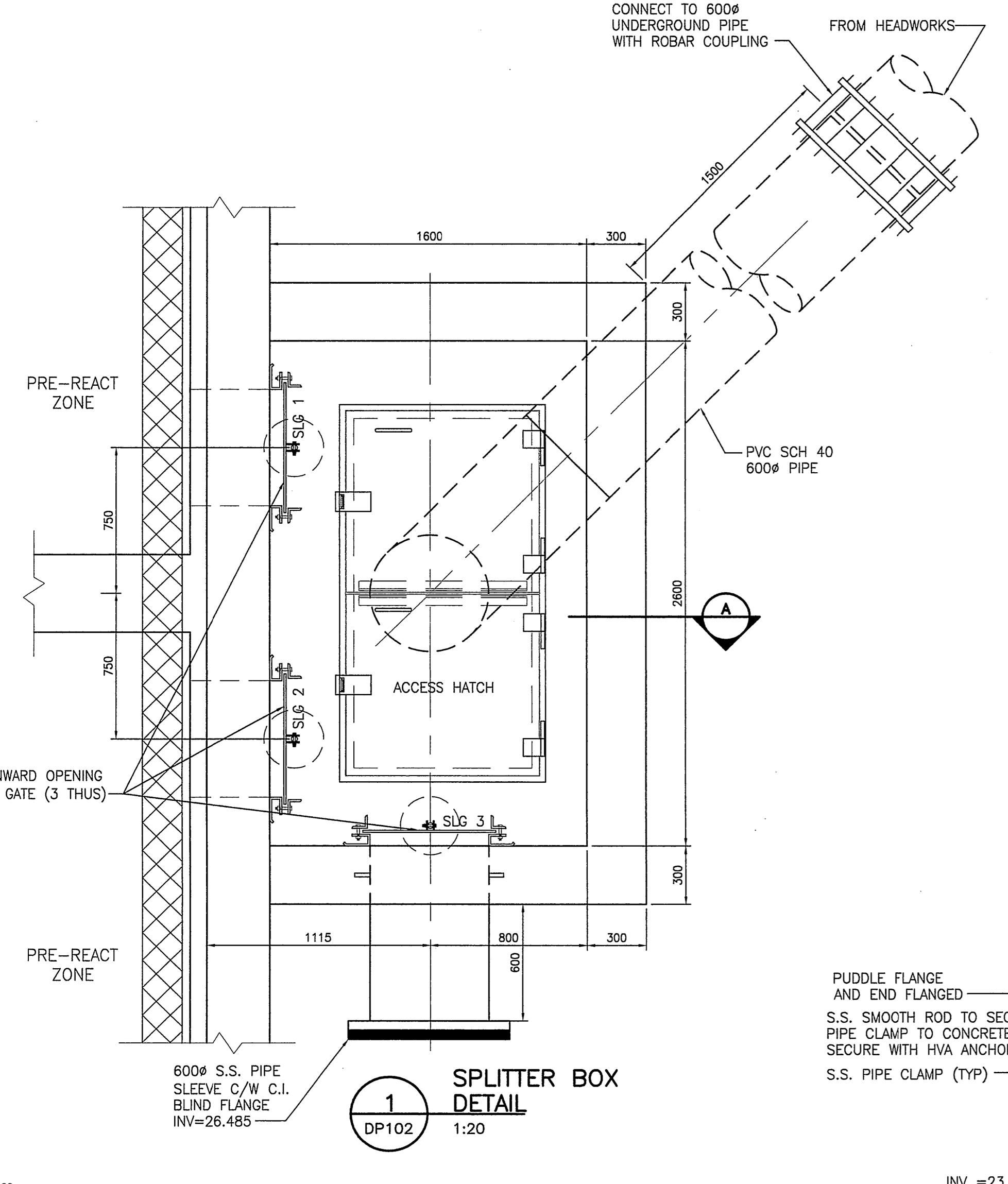
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Legend

Notes



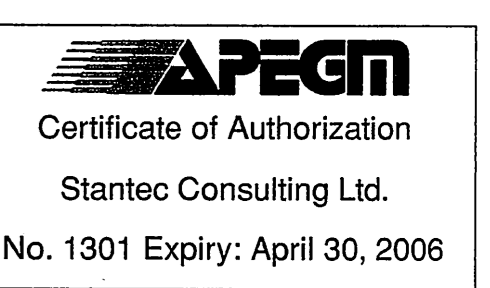
**MAIN FLOOR PLAN**  
SCALE 1:100



**RECORD DRAWING**  
BY: TG DATE: 07/11/01  
CHECKED BY: R.A.

Revision	By	Appr.	Date
1	R.A.	R.A.	07.11.01
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Permit-Seal  
ORIGINAL SEALED BY  
S.K. BASU  
P. ENG.  
03/30/06



Client/Project  
**RURAL MUNICIPALITY OF GIMLI W.W.T.P.**  
**SEQUENCING BATCH REACTOR (SBR)  
AND SLUDGE HANDLING SYSTEM (PHASE 2)**  
**MWSB PROJECT #887**  
Gimli MB Canada

Title  
**MAIN FLOOR PLAN  
SECTIONS AND DETAILS**

Project No. 111207880 Scale AS NOTED  
Drawing No. Sheet Revision

DP102 2 of 2 1

11/11/2006 10:00 AM Project: 111207880 07/11/01 04:00:00  
2006-05-24 10:00 AM S.K. Basu