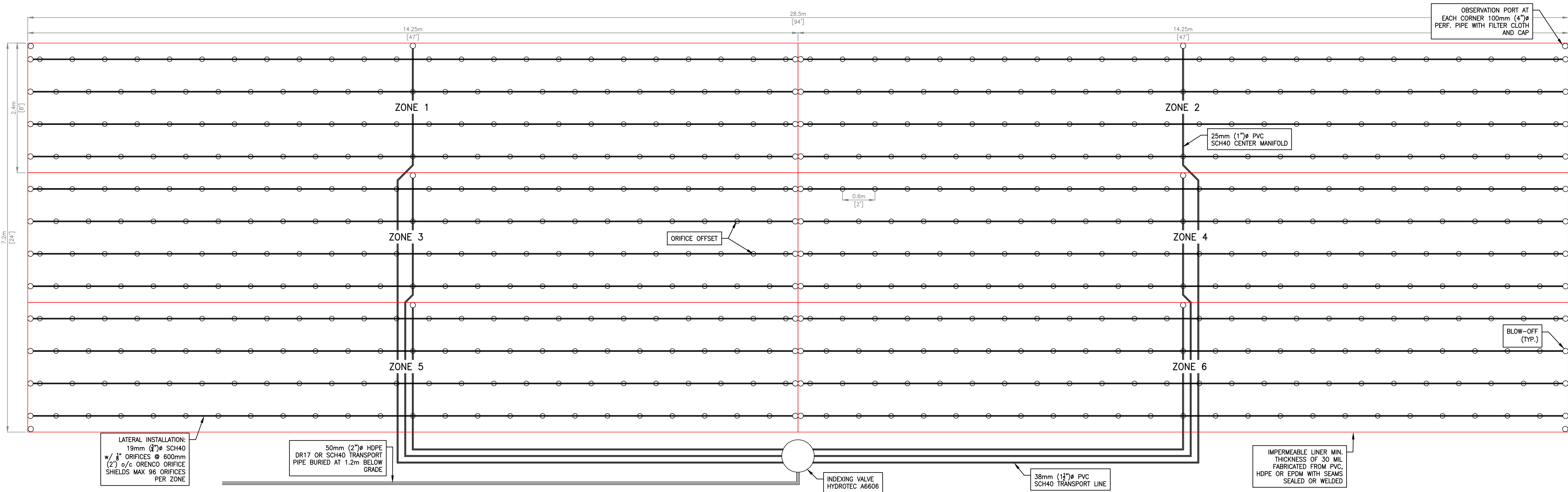


ISSUED FOR
TENDER - DRAFT

FILE: C:\Users\Highland Consulting\Dropbox\Family Room\1-PROJECTS (SHARED - DROPOBOX)\21498_Unicorn Day Care (1st)\2025\C_DRAWINGS\C1_DWG\21498_Unicorn Day Care_Septic_Rev C3 2024 08 21.dwg



6 ZONE ISF SEEPAGE BED

SCALE-1:40

Pump Selection for a Pressurized System - Single Family Residence Project

21498_Unicorn Daycare_pump calcs

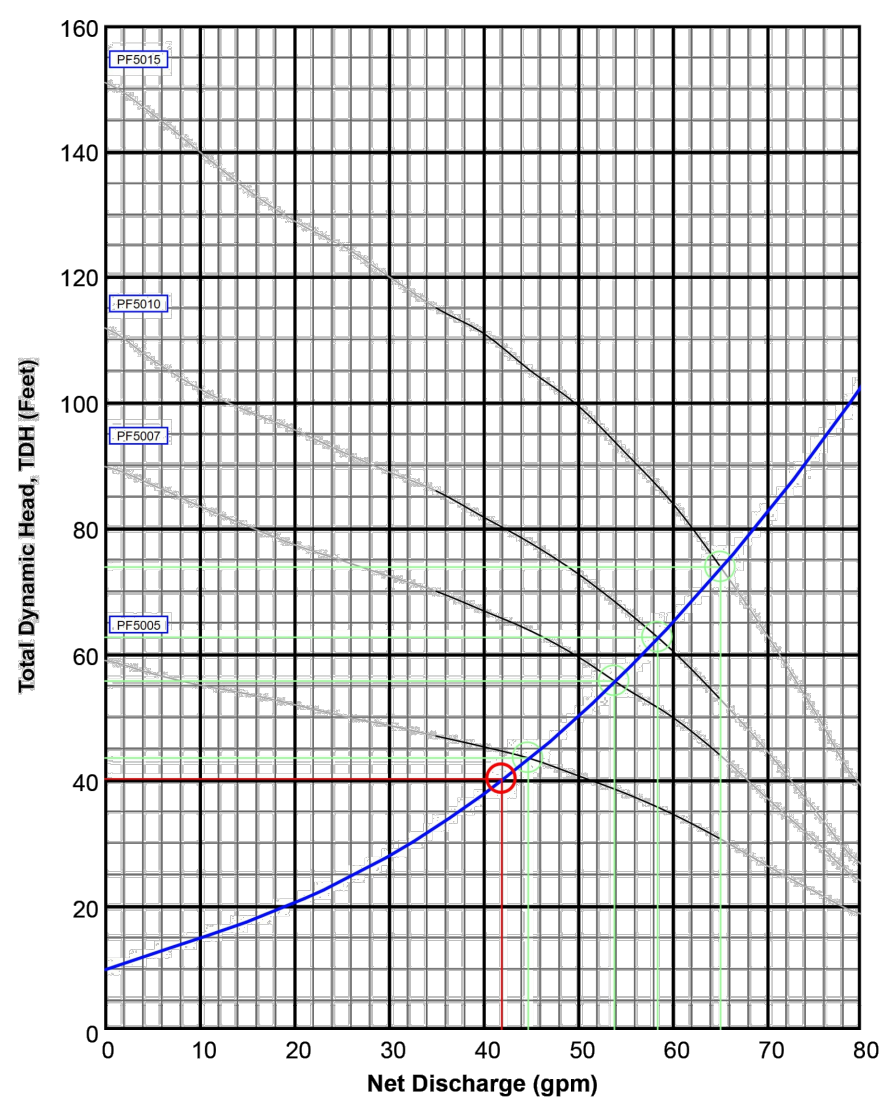
Parameters	
Discharge Assembly Size	2.00 inches
Transport Length Before Valve	83 feet
Transport Pipe Class	40
Transport Line Size	2.00 inches
Distributing Valve Model	6606
Transport Length After Valve	43 feet
Transport Pipe Class	40
Transport Pipe Size	1.50 inches
Max Elevation Lift	10 feet
Manifold Length	8 feet
Manifold Pipe Class	40
Manifold Pipe Size	1.25 inches
Number of Laterals per Cell	48
Lateral Length	23.5 feet
Lateral Pipe Class	40
Lateral Pipe Size	0.75 inches
Orifice Size	1/8 inches
Orifice Spacing	2 feet
Residual Head	5 feet
Flow Meter	None
Add-on Friction Losses	0 feet

Calculations	
Minimum Flow Rate per Orifice	0.43 gpm
Number of Orifices per Zone	96
Total Flow Rate per Zone	41.9 gpm
Number of Laterals per Zone	8
% Flow Differential 1st/Last Orifice	3.9 %
Transport Velocity Before Valve	4.0 fps
Transport Velocity After Valve	6.6 fps

Frictional Head Losses	
Loss through Discharge	3.5 feet
Loss in Transport Before Valve	2.4 feet
Loss through Valve	14.1 feet
Loss in Transport after Valve	4.2 feet
Loss in Manifold	0.5 feet
Loss in Laterals	0.5 feet
Loss through Flowmeter	0.0 feet
Add-on Friction Losses	0.0 feet

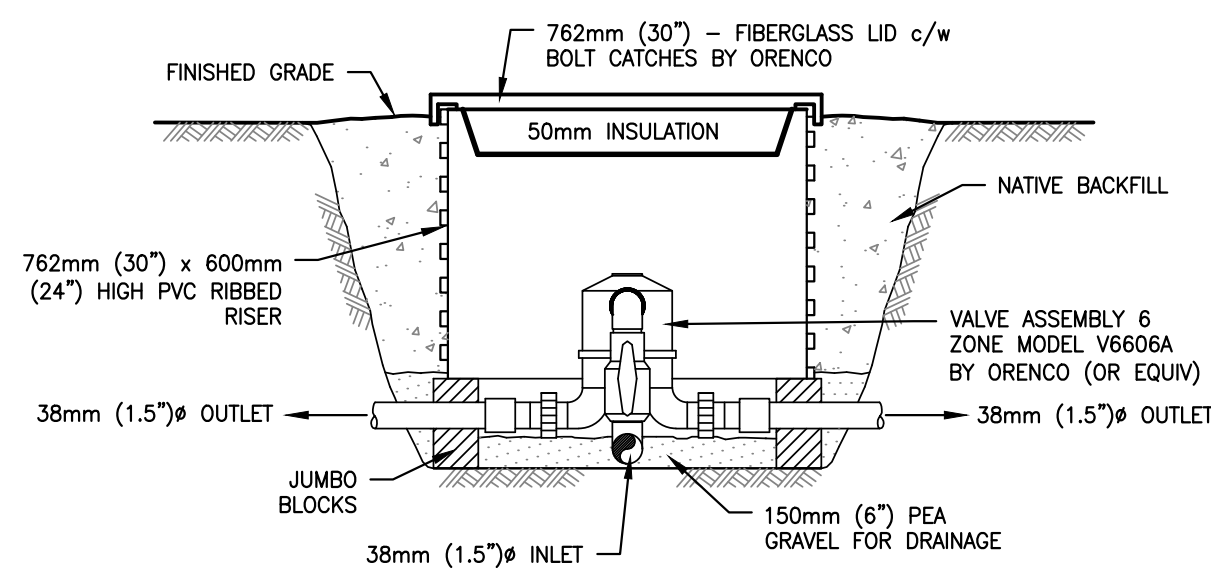
Pipe Volumes	
Vol of Transport Line Before Valve	14.5 gals
Vol of Transport Line After Valve	4.5 gals
Vol of Manifold	0.6 gals
Vol of Laterals per Zone	5.2 gals
Total Vol Before Valve	14.5 gals
Total Vol After Valve	10.4 gals

Requirements	
41.9 gpm	
40.2 feet	

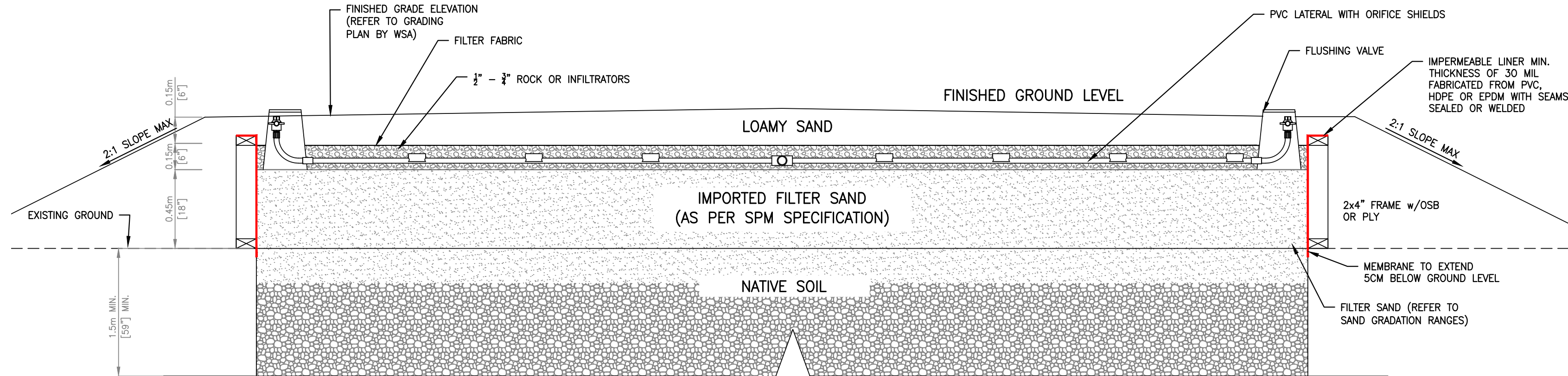


PumpData	
PF5005 High Head Effluent Pump	50 GPM, 1/2HP
115/230V 1Ø 60Hz, 200/230V 3Ø 60Hz	
PF5007 High Head Effluent Pump	50 GPM, 3/4HP
230V 1Ø 60Hz, 200/230/480V 3Ø 60Hz	
PF5010 High Head Effluent Pump	50 GPM, 1HP
230V 1Ø 60Hz, 200/480V 3Ø 60Hz	
PF5015 High Head Effluent Pump	50 GPM, 1-1/2HP
230V 1Ø 60Hz, 200V 3Ø 60Hz	

Legend	
System Curve	—
Pump Curve	—
Pump Optimal Range	—
Operating Point	●
Design Point	○



HYDROTECH-DETAIL

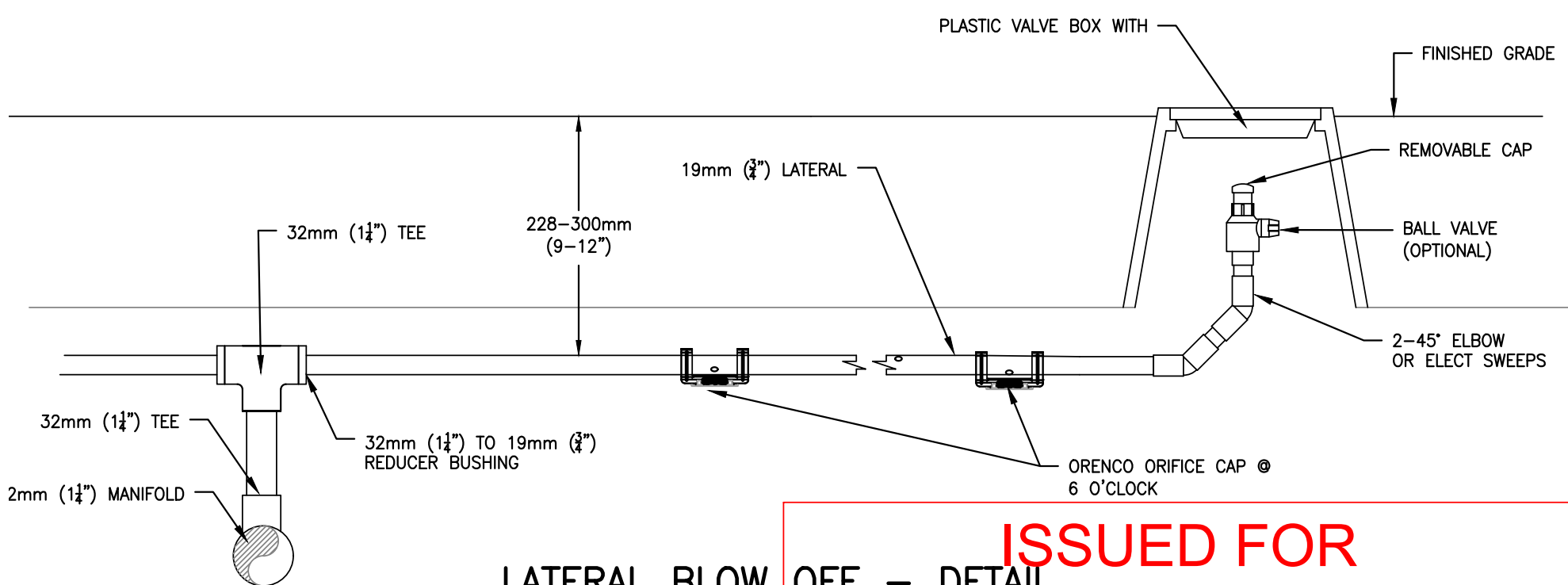


ISF SEEPAGE BED ZONE CROSS SECTION (14.25m x 2.40m) – SINGLE ZONE

SCALE-NTS

SIEVE SIZE	PERCENT PASSING THE LISTED SIEVE
	SAND FILTER COARSE SAND
9.5mm (3/8")	100
4.75mm (No.4 SIEVE)	95 TO 100
2.36mm (No.8)	80 TO 100
1.18mm (No.16)	45 TO 85
600µm (No.30)	15 TO 60
300µm (No.50)	3 TO 15
150µm (No.100)	< 2
75µm (No.200)	< 1
EFFECTIVE PARTICLE SIZE (D10)	> 0.3mm
COEFFICIENT OF UNIFORMITY (D60/D10)	< 3

SAND SPECIFICATIONS



LATERAL BLOW OFF – DETAIL

SCALE-NTS

ISSUED FOR TENDER - DRAFT

GENERAL NOTES:

ALL DIMENSIONS SPECIFIED IN METERS UNLESS OTHERWISE STATED.

LOT PLAN BASED ON ROCK MAPPING DATA AND SURVEY CARRIED OUT BY CLIENT. HIGHLAND CONSULTING IS NOT LIABLE FOR INACCURACIES IN DRAWING.

SCALE IS BASED ON ARCH EXPANDED D (24"x36") DRAWINGS.

NO VARIATION TO THIS DRAWING SHALL BE PERMITTED UNLESS AUTHORIZED BY ENGINEER IN WRITING.

THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS PROVIDED HEREIN FOR THE PURPOSE OF SERVING A FLOW OF 9750L/DAY. ANY CHANGE IN USAGE THAT WOULD AFFECT FLOWS OR WASTE STRENGTH REQUIRES A REVIEW BY THE DESIGNER.

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AT CROSSINGS WHERE THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE SEWER MAIN IS LESS THAN 450mm, ALL JOINTS WITH IN 3.0m OF THE CROSSING SHALL BE WRAPPED WITH DENSIO TAPE OR EQUIVALENT.

NO CLEANING CHEMICALS TO BE USED IN HOME CONTAINING ANTIMICROBIAL CHEMICALS INCLUDING (BUT NOT LIMITED TO) FORMALDEHYDE, RESTAURANT CLEANERS, FLOOR WAX, STRIPPER AND OTHER TOXICS.

SEPTIC TANK TO MEET SPECIFICATIONS OF SEWAGE SYSTEM STANDARD PRACTICE MANUAL AND CURRENT CSA STANDARDS.

SEWAGE SYSTEM TO BE INSTALLED BY AUTHORIZED PERSONS.

ALL SETBACKS TO MEET CRITERIA AS SET OUT IN STANDARD PRACTICE MANUAL 3

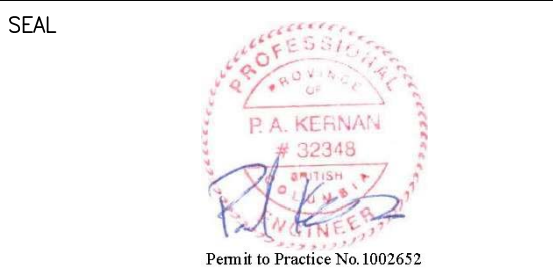
EXACT LOCATION OF PROPOSED SEPTIC SYSTEM TO BE CONFIRMED BY ENGINEER/ DESIGNER PRIOR TO CONSTRUCTION.

REV.	DESCRIPTION	DATE
C	ISSUED FOR TENDER – DRAFT	21-AUG-26
B	70% DETAILED DESIGN	27-JAN-26
A	FOR REVIEW	21-JAN-25

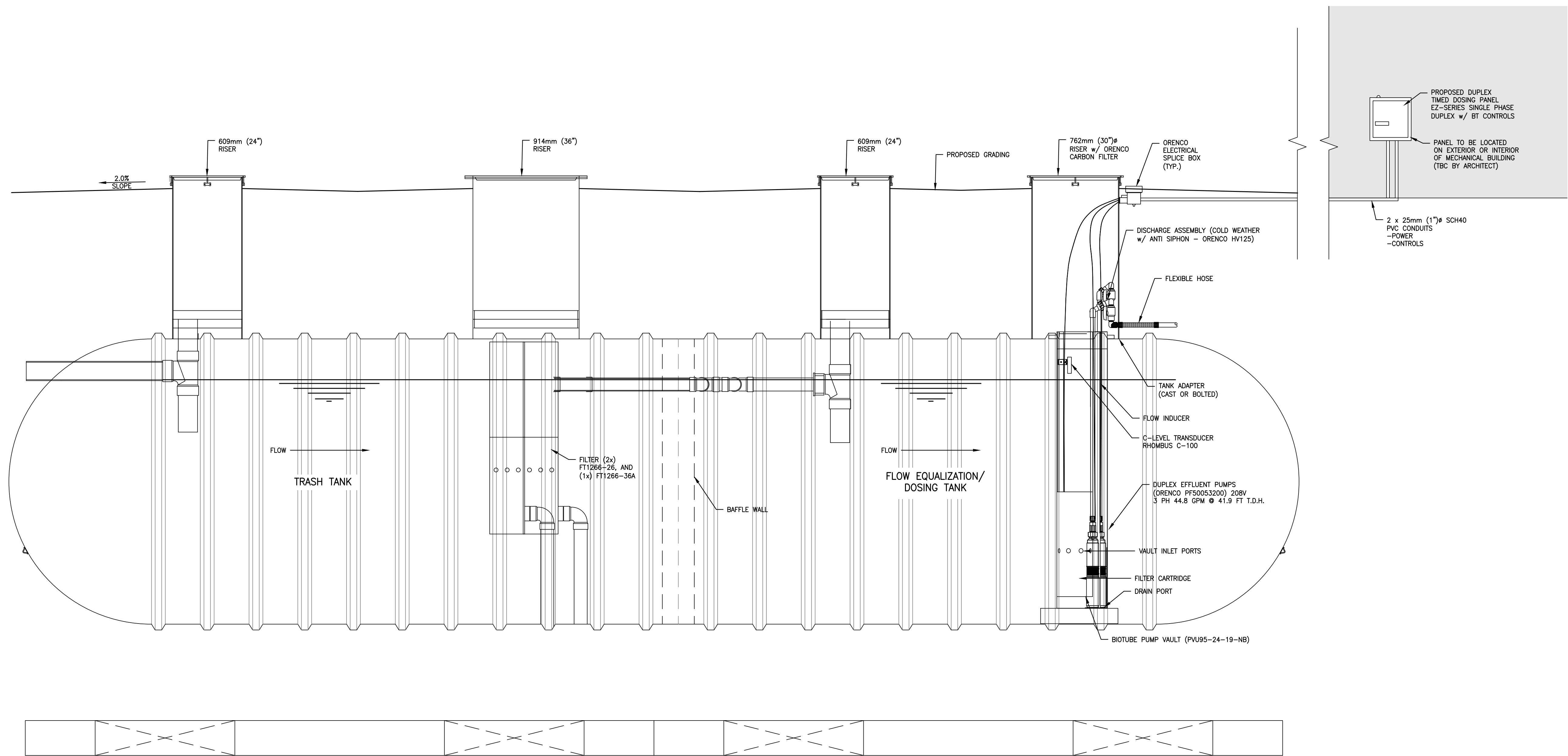
ISSUED	
HIGHLAND CONSULTING LTD CIVIL ENGINEERING 614 Josephine St. Nelson, BC V1L 1W7 Canada	C 250 551 1416 pkernan@highlandconsultingltd.com

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PROJECT TITLE	
UNICORN CHILD CARE FACILITY SEPTIC	
DRAWING TITLE	
DETAILS OPTION 2	
CLIENT NAME	
CITY OF TRAIL	
SCALE: REFER TO DWG	JOB NO. 21498
DRAWN: JH	REVISION
CHECKED: PK	DWG. No.
DATE: 21-Aug-26	
PLOT: 21-Aug-26	S02



13,000 USGAL (8'Ø) XERXES TANK (TYP.)

SCALE=1:20

ISSUED FOR
TENDER - DRAFT

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C	ISSUED FOR TENDER - DRAFT	21-AUG-26
B	70% DETAILED DESIGN	27-JAN-26
A	FOR REVIEW	21-JAN-25

REV.	DESCRIPTION	DATE
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ISSUED


HIGHLAND CONSULTING LTD
CIVIL ENGINEERING
614 Josephine St.
Nelson, BC
V1L 1W7
Canada
C 250 551 1416
pkernan@highlandconsultingltd.com

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SEAL

P.A. KERNAN
32348
P.E. (B.C.)
Permit to Practice No. 1002402

PROJECT TITLE
UNICORN CHILD
CARE FACILITY
SEPTIC

DRAWING TITLE
TANK DETAILS
OPTION 2

CLIENT NAME
CITY OF TRAIL

SCALE: REFER TO DWG	JOB No. 21498
DRAWN: JH	REVISION 
CHECKED: PK	DWG. No.
DATE: 21-Aug-26	S03
PLOT: 21-Aug-26	

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