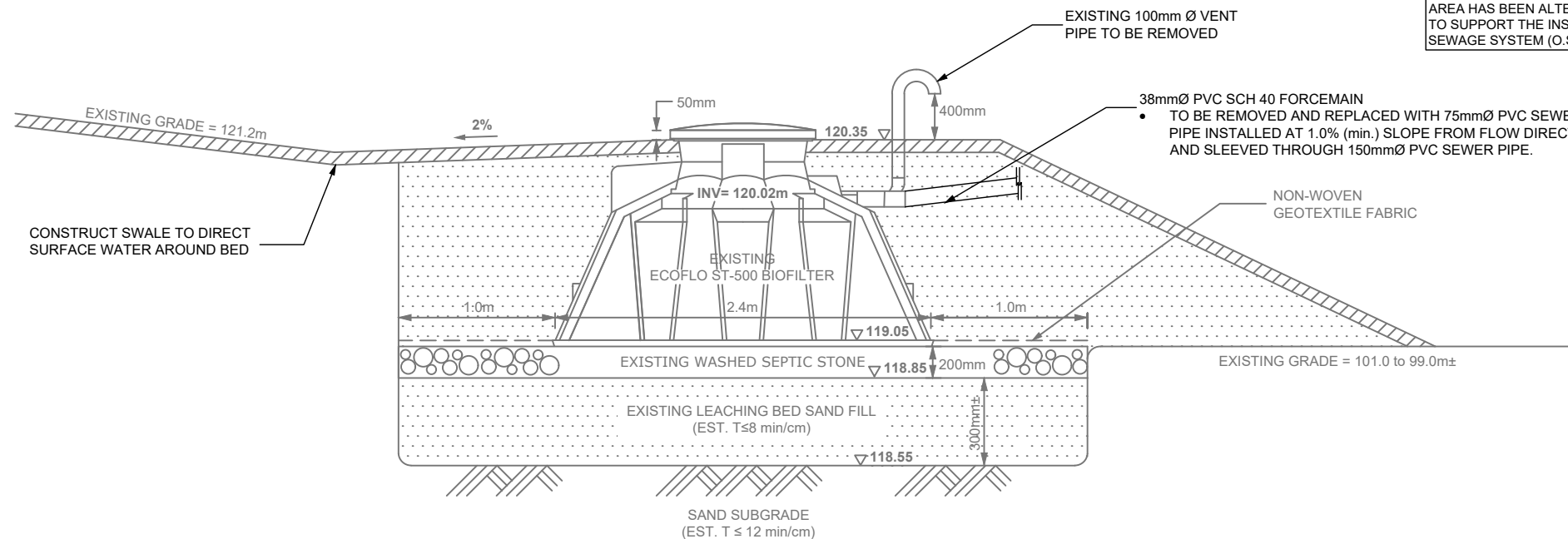


SUBJECT DRAWING SHALL BE READ IN CONJUNCTION WITH PATERSON GROUP DRAWING PH4600-1(rev.4)

PROPOSED GRADING SHALL SUPPORT LOT GRADING AND DRAINAGE PLAN BY OTHERS.

EXISTING GRADING IN PROPOSED LEACHING BED AREA HAS BEEN ALTERED FROM THE ORIGINAL GRADE TO SUPPORT THE INSTALLATION OF THE EXISTING SEWAGE SYSTEM (O.S.S.O. PERMIT No 18-565).



## PROFILE

N.T.S.

## NOTES:

### 1) ESTIMATE OF DAILY SEWAGE FLOW (Q)

THE PROPOSED SEWAGE SYSTEM REPLACEMENT, HAS BEEN DESIGNED TO SUIT THE NITRATE REDUCTION REQUIREMENTS OF PROPOSED ADDITION/RENOVATION WORKS OF THE BUILDING. THE DESIGN FLOW RATE HAS NOT BEEN INCREASED FROM THE EXISTING SEWAGE SYSTEM AS PER O.S.S.O. PERMIT No. 18-565, HOWEVER, BASED ON DISCUSSION WITH O.S.S.O. IT HAS BEEN DISCUSSED THAT A MORE ACCURATE METHOD OF FLOW RATE CALCULATION BE USED. THE BUILDING CONSISTS OF A MAINTENANCE GARAGE USAGE WHICH CAN BE CONSIDERED TO BE MOST SIMILAR TO FACTORY TYPE FLOWS. THE SEWAGE FLOW FOR THE EXISTING OCCUPANCY HAS BEEN CALCULATED AS FOLLOWS,

- No. OF EMPLOYEES = 2 x 75 L/DAY = 150 L/DAY
- OFFICE SPACE 90m<sup>2</sup> = (90m<sup>2</sup>/9.3) x 75 L/DAY = 726 L/DAY

DESIGN SEWAGE FLOW RATE = 876 L/DAY

### 2) SOIL CONDITIONS

SOILS INFORMATION GATHERED BY PATERSON GROUP INC. ON SEPTEMBER 12, 2017 & NOVEMBER 12, 2021

TH 1-18, ELEV. 119.09m		TP 2-21, ELEV. 118.67m		TP 3-21, ELEV. 118.55m	
0-0.29	GRAVEL	0-0.10	TOPSOIL	0-0.12	TOPSOIL
0.29-1.20	SAND, TRACE GRAVEL	0.10-0.60	FILL: SISA, GRAVEL	0.12-0.60	FILL: SISA CRUSHED STONE
		0.60-0.70	RIGID INSULATION	0.60-0.70	RIGID INSULATION
		0.70-1.00	FILL: CRUSHED STONE	0.70-1.60	BROWN SILTY SAND
		1.00-2.10	BROWN SILTY SAND		

- TH DRY UPON COMPLETION      - TP DRY UPON COMPLETION      - TP DRY UPON COMPLETION

### 3) PRETREATMENT TANK

- EXISTING 4,900 L PLASTIC XACTICS TANK c/w TUF-TITE EF-6 EFFLUENT FILTER SHALL BE PUMPED AND RE-USED.

### 4) TREATMENT UNIT

- THE TREATMENT UNIT SHALL CONSIST OF AN ECOFLO MODEL ECDN5.7 DE-NITRIFICATION ROTOMOLD BIOFILTER. MAXIMUM TREATMENT CAPACITY = 1,755L/D.
- THE TREATMENT UNIT SHALL BE INSTALLED IN SERIES AND DOWNSTREAM FROM THE PRETREATMENT TANK.
- CONNECT PRETREATMENT TANK TO TREATMENT UNIT WITH 100mm PVC SEWER PIPE INSTALLED AT 2.0% MINIMUM SLOPE.
- THE TREATMENT UNIT SHALL PRODUCE TERTIARY TREATMENT QUALITY EFFLUENT IN ACCORDANCE TO ITEM 3 OF TABLE 8.6.2.2.A OF THE ONTARIO BUILDING CODE.
- THE TREATMENT UNIT MUST BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS BY A CERTIFIED INSTALLER.
- THE TREATMENT UNIT SHALL BE BACKFILLED AND COMPACTED, IN LIFTS, WITH SELECT GRANULAR FILL, SUCH AS SAND OR CLEAR STONE.
- THE TOP OF THE TREATMENT UNIT MUST EXTEND TO THE GROUND SURFACE.
- THE TREATMENT UNIT SHALL BE EQUIPPED WITH A SINGLE TIME OPERATED EFFLUENT PUMP, WHICH WILL PUMP THE EFFLUENT TO A PREMIER TECH MODEL PFS-200N/DN SPLITTER VALVE. (DENITRIFICATION UNIT).

### 5) FLOW SPLITTER

- THE SPLITTER VALVE SHALL BE INSTALLED LEVEL ON A BED OF COMPACTED SAND.
- THE SPLITTER VALVE CONTAINS TWO (2) OUTLETS. ONE OUTLET RE-CIRCULATES 2/3 OF THE EFFLUENT TO THE PRIMARY CHAMBER OF THE TANK, VIA GRAVITY, USING A 100mmØ PVC SEWER PIPE. THE OTHER OUTLET DISCHARGES 1/3 OF THE EFFLUENT, VIA GRAVITY, USING A 75mmØ SEWER PIPE.
- 75mmØ SEWER PIPE SHALL BE INSTALLED TO GRAVITY DRAIN @ 1.0% (min.) SLOPE TO THE EXISTING ECOFLO ST-500 AND SHALL BE OVERLAIN WITH 50mm T x 600mm W RIGID INSULATION BOARDS.
- THE PUMP SHALL BE OPERATED BY A PREMIER TECH MODEL DCU 100 TIME DOSING CONTROL PANEL.
- A 38mmØ SCH40 PVC FORCEMAIN SHALL BE USED TO CARRY THE EFFLUENT FROM THE PUMP CHAMBER (LOCATED WITHIN TREATMENT UNIT) TO THE FLOW SPLITTER.
- THE FORCEMAIN SHALL BE INSTALLED TO GRAVITY DRAIN TO TREATMENT UNIT
- FORCEMAIN SHALL BE INSTALLED ON A 150mm THICK LAYER OF COMPACTED SAND BEDDING.
- ALL PIPING SHALL BE SLEEVED THROUGH A 150mm PVC SEWER PIPE.

### 4) TYPE 'A' DISPERSAL BED SIZING REQUIREMENTS

- STONE AREA REQUIRED =  $Q/50 = 876/75 = 11.7m^2$
- EXISTING STONE AREA PROVIDED = 5.4m x 4.4 = 23.8m<sup>2</sup>
- SAND AREA REQUIRED =  $876(12)/850 = 12.4m^2$
- SAND AREA PROVIDED = 5.4m x 4.4m = 23.8m<sup>2</sup> + NATIVE

### 8) EXISTING TYPE 'A' BED

- EXISTING ECOFLO ST-500 BIOFILTER AND EXISTING CLEAR STONE AREA SHALL BE RE-USED AS THE TYPE 'A' BED FOR THE PROPOSED SYSTEM ALTERATIONS.
- THE FINAL LANDSCAPED GRADING SHALL DIRECT SURFACE WATER AWAY FROM THE BIOFILTER.
- ENSURE THAT SURFACE WATER IS DIRECTED AWAY FROM THE BIOFILTER.

### 9) MINIMUM CLEARANCE DISTANCE FROM LEACHING BED

- 3.0m FROM ANY PROPERTY LINE
- 5.0m FROM ANY STRUCTURE; 5.0m TO ANY STRUCTURE WITHOUT PERIMETER DRAINAGE
- 15.0m FROM ANY DRILLED WELL; 31.1m TO ANY DUG OR SANDPOINT WELL

### 10) MINIMUM CLEARANCE DISTANCE FROM TANK(S)

- 1.5m FROM ANY STRUCTURE
- 13.3m FROM SUBJECT DRILLED WELL AND 15.0m FROM ANY OTHER DRILLED WELL (AS PER EXISTING)
- 3.0m FROM ANY PROPERTY LINE

### 11) GENERAL

- ELECTRICAL PANEL FOR TANKAGE SHALL BE LOCATED OUTSIDE OF SUBJECT BUILDING NEAREST THE TANKAGE AS RECOMMENDED BY ECOFLO.
- SNOW STORAGE SHALL NOT BE PLACED OVER THE SEWAGE SYSTEM COMPONENTS.
- THE SEWAGE SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT TRAFFIC LOADING, AND AS SUCH, THE RISK OF ANY VEHICULAR TRAFFIC SHOULD BE MINIMIZED WITH THE INSTALLATION OF PROTECTIVE BOLLARDS.
- THE BACKFILLING OF THE SEWAGE SYSTEM SHOULD MINIMIZE THE RISK OF OVER COMPACTION WITH THE USE RUBBER TRACKED EQUIPMENT AND BY AVOIDING THE CREATION OF ANY CONSTRUCTION ROUTES OR PATHWAYS OVER THE SYSTEM.
- THE BACKWASH WATERS FROM ANY WATER TREATMENT UNIT, SUCH AS WATER SOFTENER, SHOULD NOT DISCHARGE INTO THE SEWAGE SYSTEM.
- THE SEWAGE SYSTEM HAS BEEN DESIGNED TO ACCEPT ONLY WATER FROM DOMESTIC TYPE FIXTURES - NO FLOOR DRAINS, WASHWATER, ETC ARE TO BE DIRECTED TO SYSTEM.
- CONTRACTOR SHALL BE QUALIFIED AND REGISTERED UNDER PART 8 OF THE ONTARIO BUILDING CODE.
- ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST BY-LAWS, CODES AND REGULATIONS.
- CONTRACTOR SHALL REVIEW DRAWINGS IN DETAIL AND SHALL INFORM THE CONSULTANT OF ANY ERRORS AND/OR OMISSIONS ON DESIGN DRAWINGS IMMEDIATELY.
- CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING UNDERGROUND SERVICES.
- CONTRACTOR SHALL VISIT THE SITE AND REVIEW ALL DOCUMENTATION TO BECOME FAMILIAR WITH THE SITE AND SUBSURFACE SOIL CONDITIONS TO DETERMINE SUITABLE METHODS OF CONSTRUCTION.
- THE FIRM OF PATERSON GROUP INC. HAS PROVIDED DESIGN SERVICES ONLY FOR THE SUBJECT SEWAGE SYSTEM. THE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES AND OUR INTERPRETATION OF PART 8 OF THE ONTARIO BUILDING CODE.
- IF THIS FIRM IS TO COMPLETE ANY CONSTRUCTION INSPECTION(S), ADDITIONAL FEES MAY BE APPLIED. CONFIRMATION OF PAYMENT WILL BE REQUIRED PRIOR TO THE INSPECTION.
- THE TEST HOLE INFORMATION PROVIDED, IS INTENDED TO BE USED FOR DESIGN PURPOSES ONLY, AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IF DISCREPANCIES ARE FOUND DURING THE CONSTRUCTION PROCESS, IT IS THE CLIENT'S RESPONSIBILITY TO CONTACT THIS FIRM TO MAKE ANY NECESSARY COMMENTS OR REVISIONS. ADDITIONAL REVISIONS ARE NOT CONSIDERED PART OF THE DESIGN WORKS AND WILL BE CONSIDERED AS AN ADDITIONAL COST.
- REFER TO PATERSON GROUP DRAWING No. PH4600-1(rev.3) FOR THE SEWAGE SYSTEM LAYOUT.



DD/MM/YY	DESCRIPTION	REV.
20/08/24	Revised to Re-Use Existing Ecoflo	4
20/06/24	Revised to Ecoflo Treatment Unit	3
19/03/24	Issued for Preliminary Review	2
14/10/22	Issued for Septic Permit	1
26/09/22	Issued for Preliminary Review	0

Consultant:



Client:

**PREMIER BUS LINES INC.**

Project:

**PROPOSED ADDITION TO COMMERCIAL BUILDING**

**135 CARDEVCO ROAD  
OTTAWA (CARP), ONTARIO**

Drawing:

**SEWAGE SYSTEM  
DETAIL & NOTES**

Scale:	N.T.S.	Drawn by:	HV
Date:	08/2024	Checked by:	MK

Drawing No.:

**PH4600-2(rev.4)**

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