



Miller Environmental Corporation

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Committed to Leadership in Our Industry

May 7, 2024

Environmental Approvals Branch
MB Environment and Climate Change
Box 35, 14 Fultz Boulevard
Winnipeg MB R3Y 0L6

Attention: Agnes Wittmann – Director, Environmental Approvals Branch

Dear Ms. Wittmann:

RE: Leachate Pond Design Revision

Please accept this as Miller Environmental Corporation's (Miller) revised design plan for installation of a new leachate pond as regulated under the issued Dangerous Goods Handling & Transportation Act License No. 58 HW S2 RRRR.

As per the notice of alteration that was submitted and approved by the province on June 15, 2021, there have been design changes to the leachate pond due to facility operational requirements. Based on this, construction of the original proposed design was put on hold. The usage of the pond has not changed from its original submission. For the new leachate pond engineer stamped design drawings, refer to Appendix A – Leachate Pond Design Drawings.

The new leachate pond will still be located on the east side of repository cell 3 (RC3). For details of the location of the leachate pond, refer to Appendix B – Leachate Pond Location Details. The 110 m x 100 m bermed pond will be lined with a 60 mil HDPE liner with a 3.5 m below grade depth. Leachate discharge lines will still run from existing berm separated leachate containment areas within the repository cells (RC1, RC2, and RC3) to the leachate pond.

Installation of a floating, modular cover system will be implemented to assist with odour management once the leachate pond is operational. A circulation diffuser system will be installed for evaporation to reduce overall leachate volumes. This is intended as an enhancement and addition to the current leachate management plan allowing for application of leachate to the operating areas of the repository for dust control. For information on the diffuser system, refer to Appendix C – Leachate Pond Circular Diffuser System.

If you have any questions, please feel free to contact me at 204-925-9604 or by email at daveh@millerenvironmental.mb.ca

Sincerely yours,
Miller Environmental Corporation



Dave Howes
Director of Regulatory Affairs

CC: Tyler Kneeshaw – Regional Supervisor, MB Environment and Climate Change
Paul Bauer – President, Miller Environmental Corporation
Yolo Ortiz – Operations Manager, Miller Environmental Corporation

Appendix A

Leachate Pond Design Drawings

LEACHATE POND (LP1) DESIGN

FOR TENDER
MILLER ENVIRONMENTAL, ST. JEAN BAPTISTE, MANITOBA



LIST OF FIGURES

FIGURE 1 - PROPOSED LEACHATE POND 1 PLAN ON EXISTING EARTH SURFACE

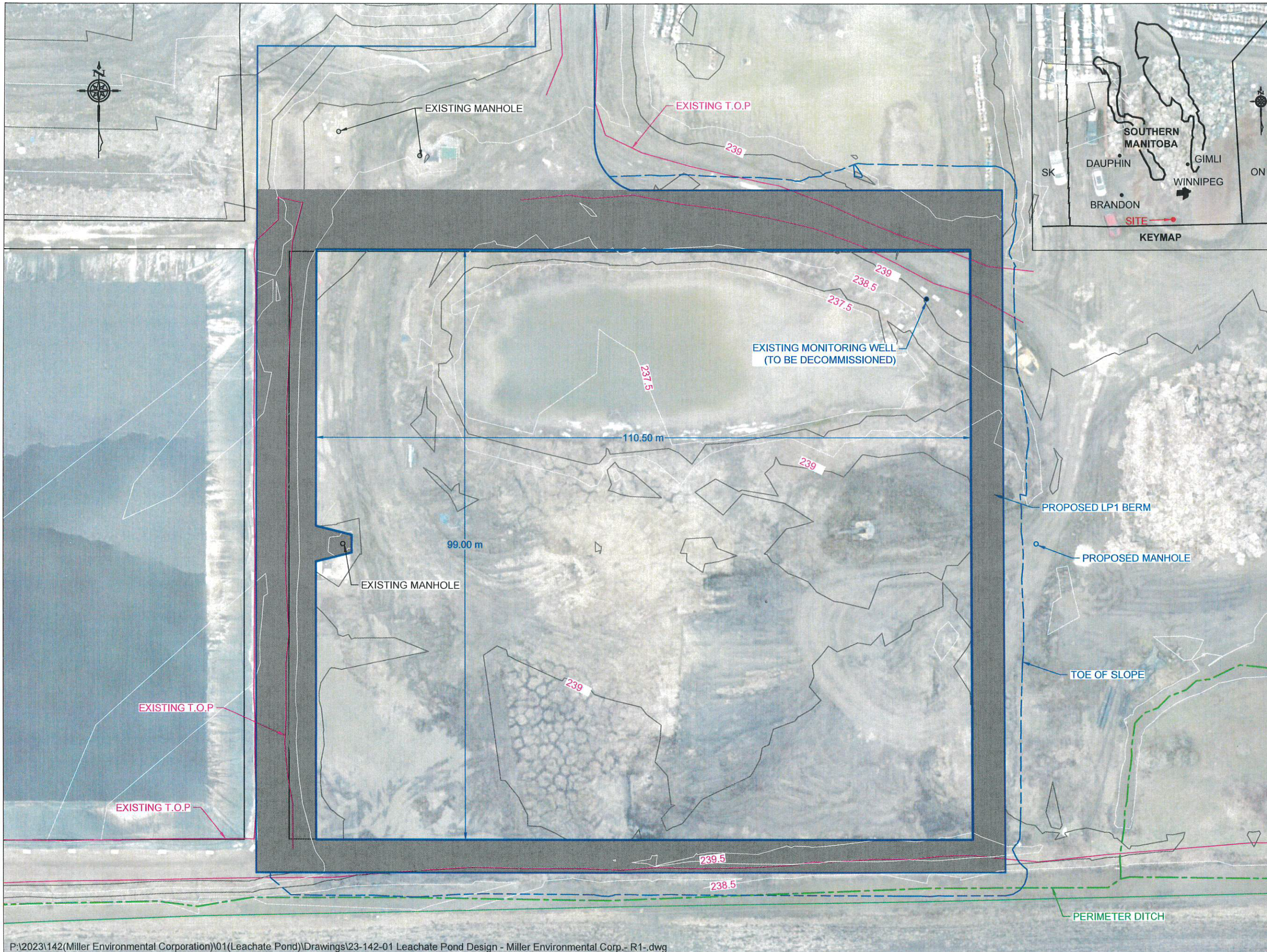
FIGURE 2 - LEACHATE POND 1 PLAN

FIGURE 3 - LEACHATE POND 1 CROSS SECTIONS AND DETAILS

FIGURE 4 - PROPOSED P1 DITCH AND DRAINAGE PIPE TO PERIMETER SOUTH DITCH AND CATCH BASIN DETAILS

FIGURE 5 - PROPOSED MANHOLE, MULTI-FLO VENT, TOP OF R1 AND CONCRETE HOPPER DETAILS

APRIL 2024



LEGEND

B.O.E.	BOTTOM OF EXCAVATION
B.O.P.	BOTTOM OF POND
	DIRT FILL
T.O.B.	TOP OF BERM (DIRT FILL)
LP	LEACHATE POND
T.O.G.	TOP OF GRAVEL

NOTES:

- ALL ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
- ENG-TECH SURVEYED PROPERTY ON AUGUST 29 AND 30, 2023 USING GPS AND TOTAL STATION.

NO.	DATE	ISSUE / REVISION
1	Apr. 2024	revision
0	Apr. 2024	construction

ENG-TECH CONSULTING LIMITED
 420 Turenne Street
 Winnipeg, MB R2J 3W8
 Phone: (204) 233-1694
 Fax: (204) 235-1579

ENGINEERS GEOSCIENTISTS MANITOBA
 Certificate of Authorization
 ENG-TECH Consulting Limited
 No. 2473

CLIENT:
 MILLER ENVIRONMENTAL CORPORATION

PROJECT:
 LEACHATE POND DESIGN - MILLER ENVIRONMENTAL CORP., ST JEAN BAPTISTE, MANITOBA

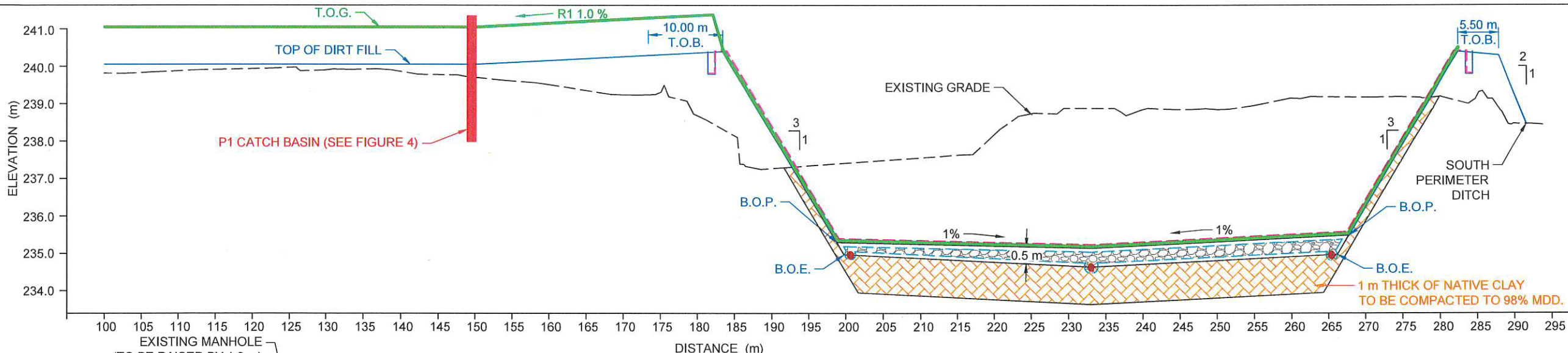
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 PROPOSED LEACHATE POND 1 PLAN ON EXISTING EARTH SURFACE

SCALE:
 AS SHOWN

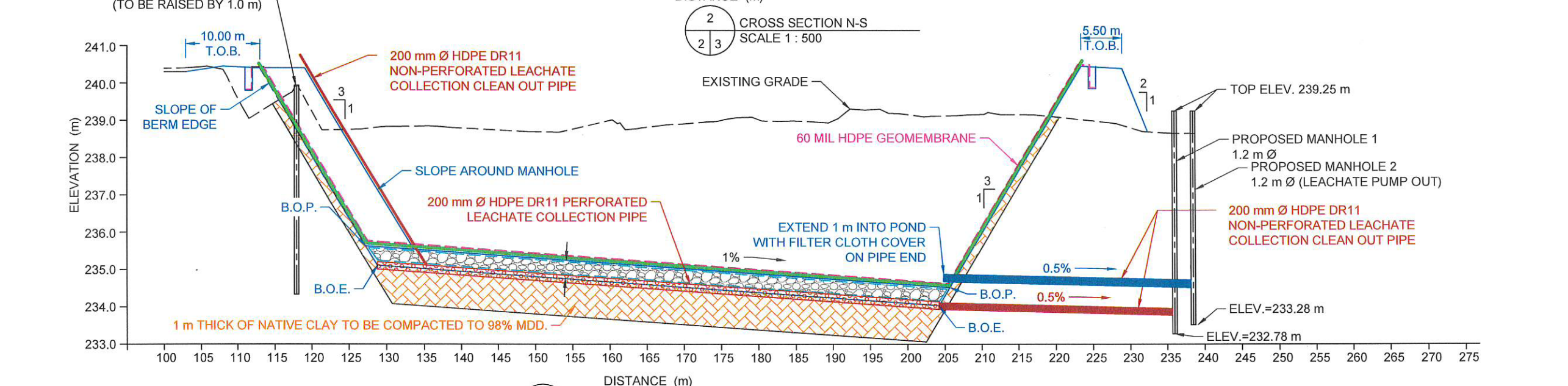
DRAWN BY: DT DATE: APRIL 2024

FILE No.: 23-142-01 CLIENT DWG/FIG. No.:

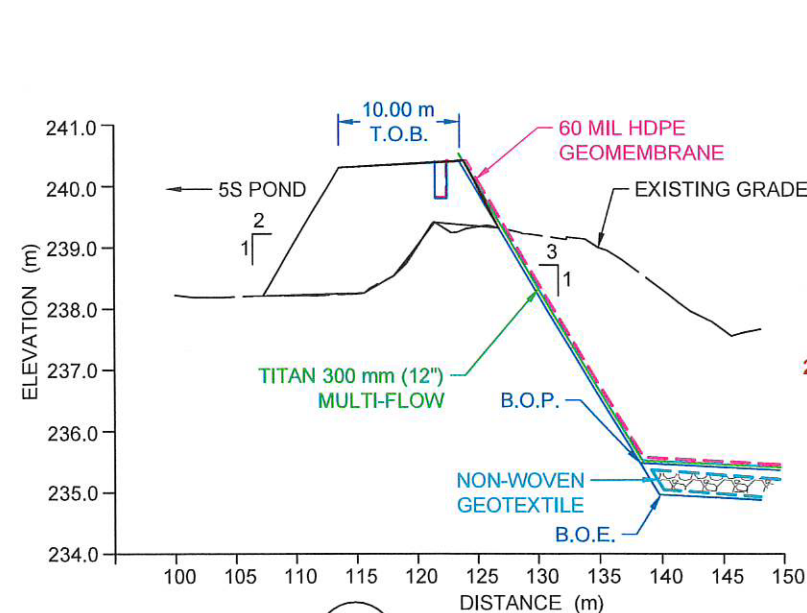
ENG-TECH DWG/FIG. No.: 1 of 5 NO.: 1



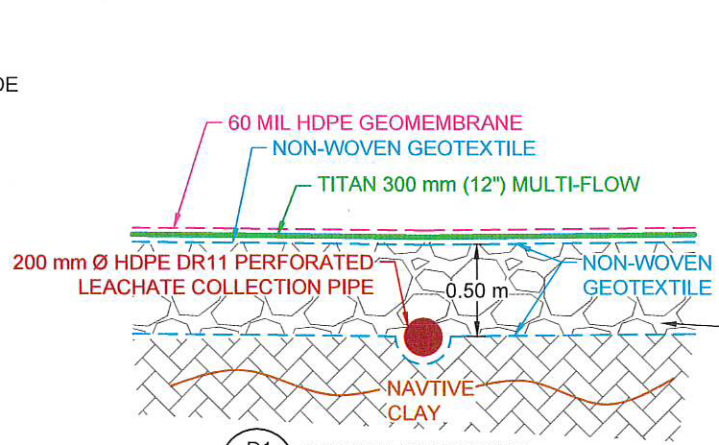
2
2 3
CROSS SECTION N-S
SCALE 1 : 500



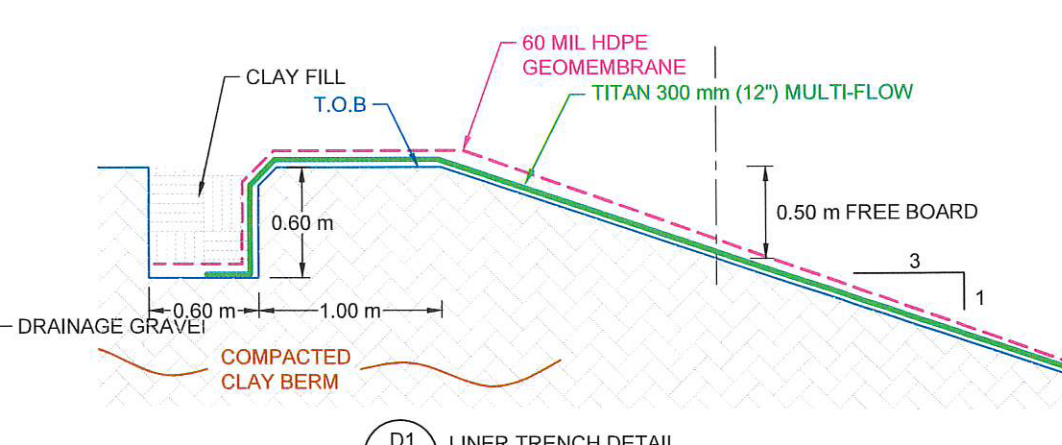
1
2 3
CROSS SECTION W-E
SCALE 1 : 500



3
2 3
CROSS SECTION 5S CORNER
SCALE 1 : 500



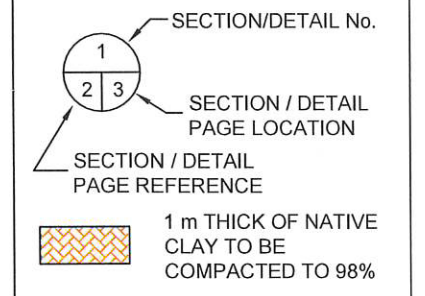
D1
3 3
BOTTOM POND DETAIL
NTS



D1
3 3
LINER TRENCH DETAIL
NTS

LEGEND

B.O.E.	BOTTOM OF EXCAVATION
B.O.P.	BOTTOM OF POND DIRT FILL
T.O.B.	TOP OF BERM (DIRT FILL)
LP	LEACHATE POND
T.O.G.	TOP OF GRAVEL



- NOTES:**
- ALL ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
 - ENG-TECH SURVEYED PROPERTY ON AUGUST 29 AND 30, 2023 USING GPS AND TOTAL STATION.
 - AS INDICATED ON DWG. NATIVE CLAY TO BE COMPACTED TO 98% MAXIMUM DRY DENSITY (MDD.) TO ACHIEVE 10^{-9} cm/sec HYDRAULIC CONDUCTIVITY.
 - CONTRACTOR TO OBTAIN SHELBY TUBES OF COMPACTED NATIVE CLAY FOR ENG-TECH HYDRAULIC CONDUCTIVITY TESTING.

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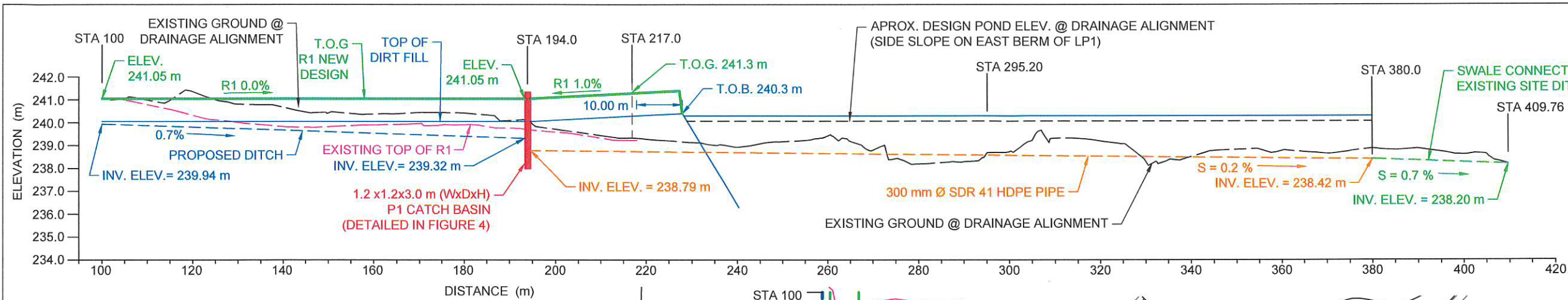
ENG-TECH CONSULTING LIMITED
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ENG. STAMP
ENGINEERS GEOSCIENTISTS MANITOBA
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 No. 2475

CLIENT: MILLER ENVIRONMENTAL CORPORATION
 PROJECT: LEACHATE POND DESIGN - MILLER ENVIRONMENTAL CORP., ST JEAN BAPTISTE, MANITOBA
 DWG DESCRIPTION: LEACHATE POND 1 CROSS SECTIONS AND DETAILS

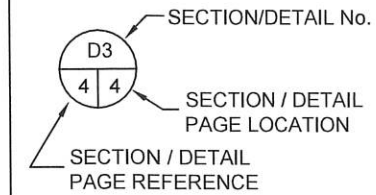
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DRAWN BY: DT	DATE: APRIL 2024
FILE No.: 23-142-01	CLIENT DWG/FIG. No.:
ENG-TECH DWG/FIG. No.: 3 of 5	No.: 1



LEGEND

T.O.P.	TOP OF POND
B.O.P.	BOTTOM OF POND
	DIRT FILL
T.O.B.	TOP OF BERM
	(DIRT FILL)
LP	LEACHATE POND
T.O.G.	TOP OF GRAVEL



NOTES:

- ALL ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
- ENG-TECH SURVEYED PROPERTY ON AUGUST 29 AND 30, 2023 USING GPS AND TOTAL STATION.
- THREE EXISTING MANHOLES SHOWN ON PLAN SHALL BE RAISED AT LEAST 300 mm ABOVE DESIGN SURFACE ELEV.

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PROJECT:
LEACHATE POND DESIGN -
MILLER ENVIRONMENTAL CORP.,
ST JEAN BAPTISTE, MANITOBA

DWG DESCRIPTION:
PROPOSED P1 DITCH AND DRAINAGE
PIPE TO PERIMETER SOUTH DITCH
AND CATCH BASIN DETAILS

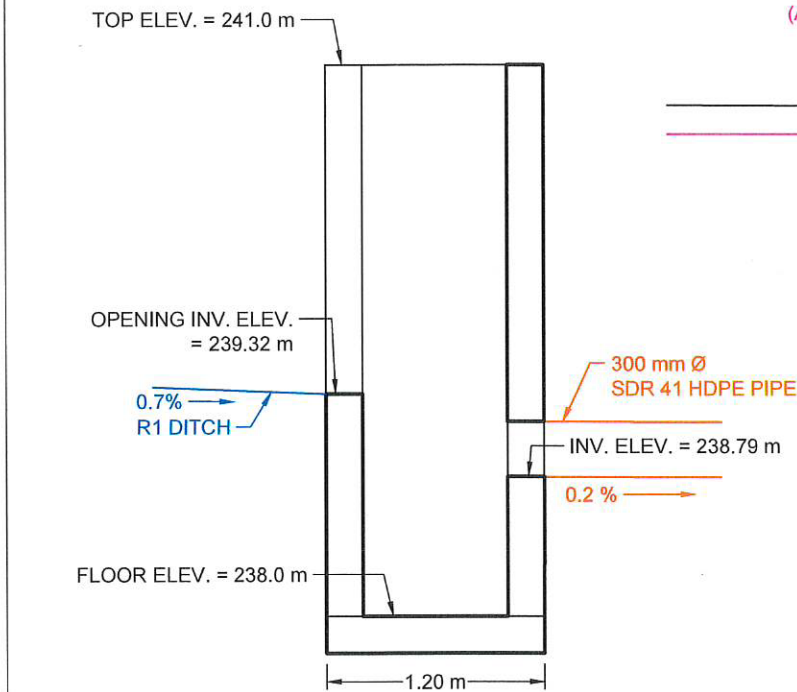
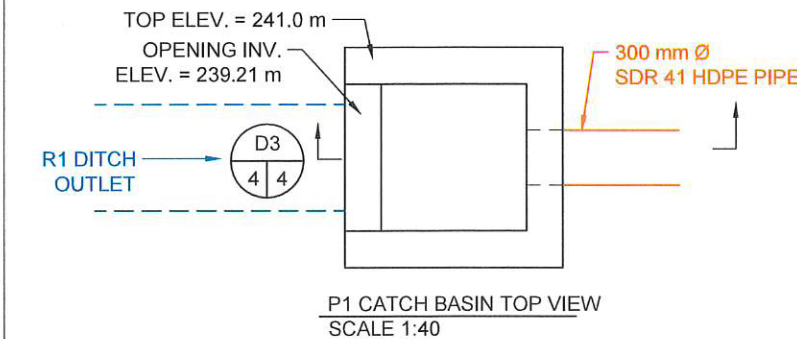
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AS SHOWN

DRAWN BY: DT DATE: APRIL 2024

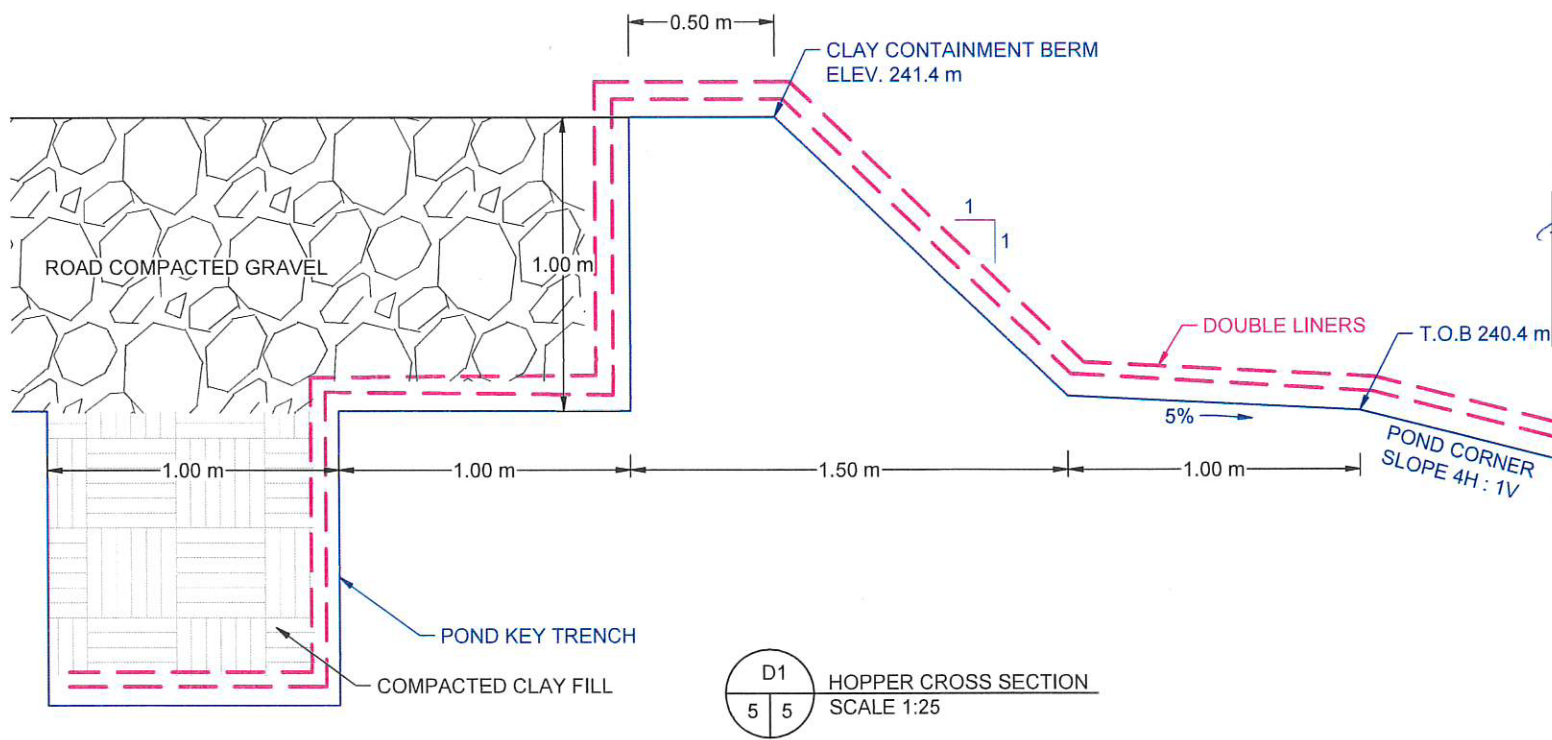
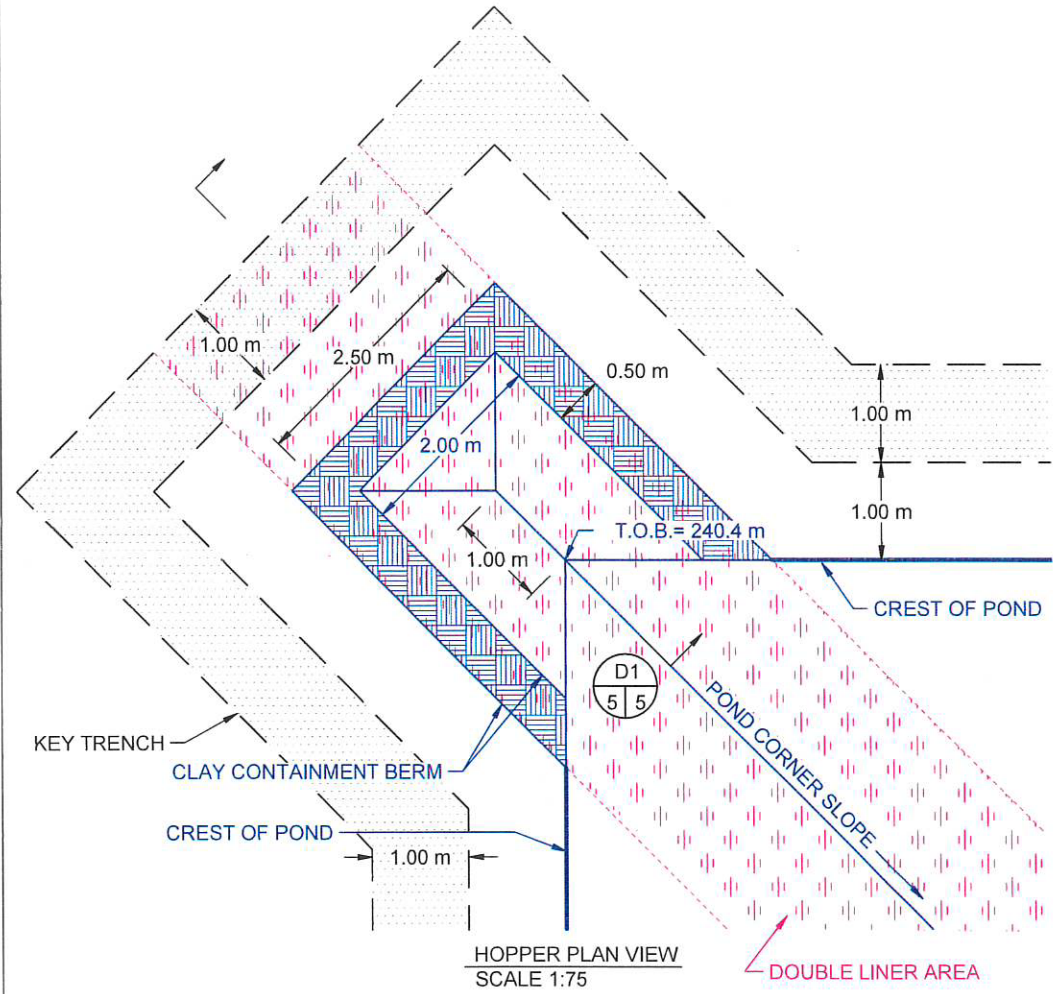
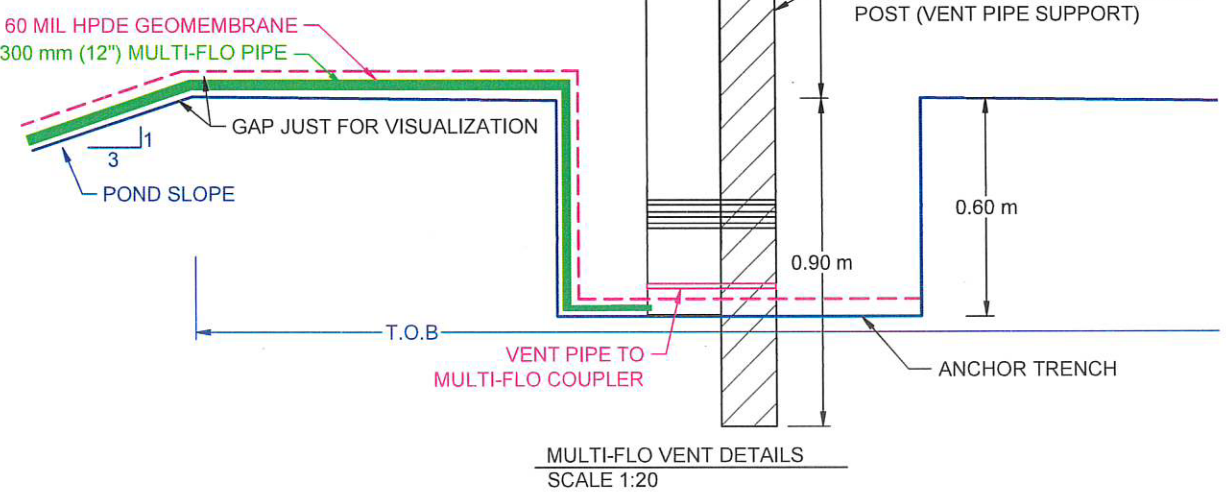
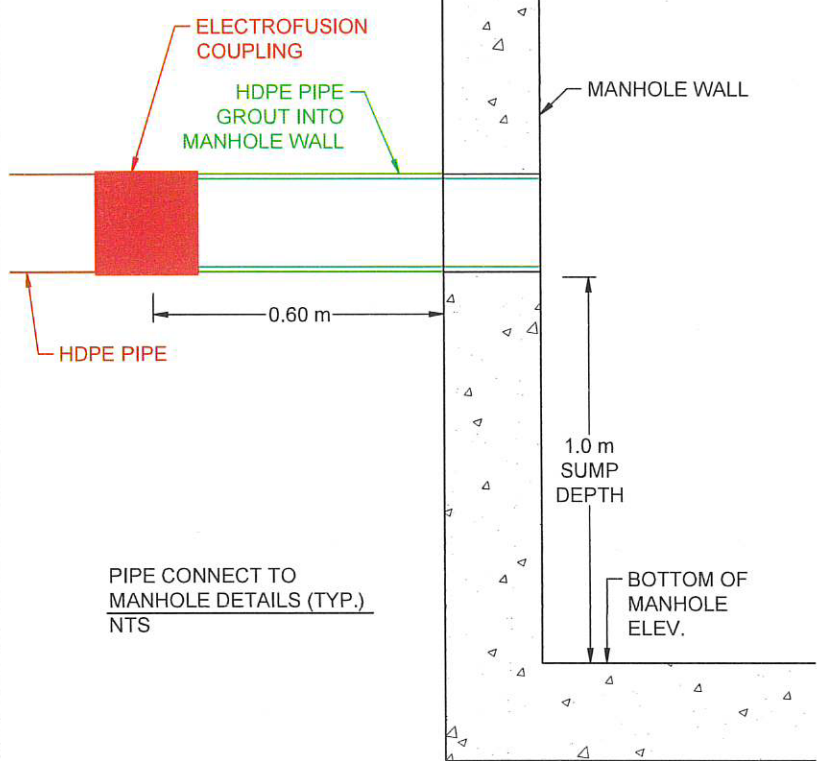
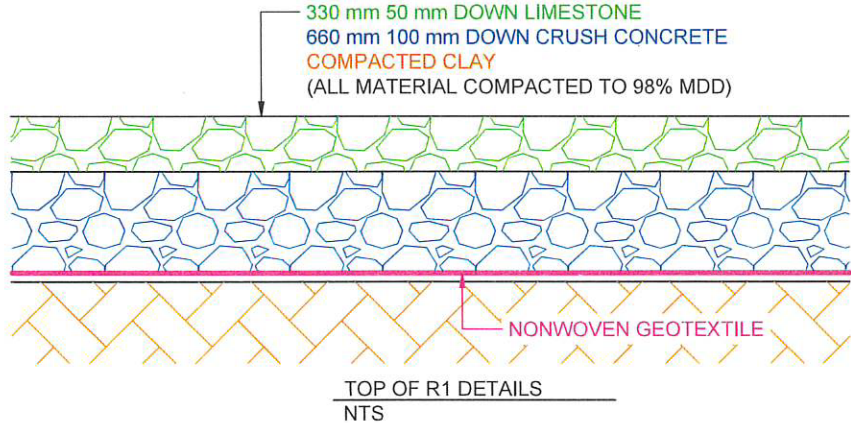
FILE No.: 23-142-01 CLIENT DWG/FIG. No.:

ENG-TECH DWG/FIG. No.: 4 of 5 NO.: 1

PROPOSED P1 DITCH AND DRAINAGE PIPE TO PERIMETER SOUTH DITCH
SCALE 1 : 1000



D3
4/4 P1 CATCH BASIN CROSS SECTION
SCALE 1:40



LEGEND

T.O.P. TOP OF POND
 B.O.P. BOTTOM OF POND DIRT FILL
 T.O.B. TOP OF BERM (DIRT FILL)
 LP LEACHATE POND
 T.O.G. TOP OF GRAVEL

NOTES:

- ALL ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
- ENG-TECH SURVEYED PROPERTY ON AUGUST 29 AND 30, 2023 USING GPS AND TOTAL STATION.
- ALL STEEL ELEMENTS MUST BE GALVANIZED.

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 PROPOSED MANHOLE, MULTI-FLO VENT, TOP OF R1 AND CONCRETE HOPPER DETAILS

SCALE:
 AS SHOWN

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FILE No.: 23-142-01 CLIENT DWG/FIG. No.:

ENG-TECH DWG/FIG. No.: 5 of 5 NO.: 1

Appendix B

Leachate Pond Location Details



CANAL GATE

Repository Cells

Processing Cells 1-5

HD Petroleum

Hydrovac Bins

Office and Decontamination Facility

Parking Lot

CANAL GATE 3&4

RC 2

RC 1

5

5

4

3

2

1

PB 1

Parking Lot

TRAINING CENTER

PB 4

PB 6

PB 2

PB 5

SB 1

RC 3

NEW LEACHATE POND - LP1

CANAL GATE

Appendix C

Leachate Pond Circulation Diffuser System



OctoAir is a high-performance industrial diffuser made in Canada and built for many industrial applications.

OctoAir is made of a Stainless Steel frame with adjustable legs. The industrial design of the steel frame integrates non-weighted Bubble Tubing® which is bound in a spiral thanks to the stainless steel support.

The OctoAir diffuser is available in two different formats, the OctoAir-10 and the OctoAir-60. Both are easily maneuverable and extremely efficient.

Bubble Tubing® Technology used in the OctoAir, produces many tiny air bubbles (between 1 and 3 mm diameter). It is designed to resist deterioration from exposure to UV rays, chemicals, salinity, and changes in pH and temperature of water.

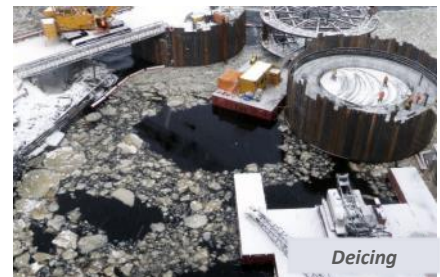


Aeration in produced water basin



"Overall, the results obtained for Bubble Tubing® are excellent and offer some of the highest oxygen transfers that GSEE Inc. Has observed."

Gerald Shell
Environmental Consultants,
Lavergne, TN



Deicing

Applications

- Aeration
- Water Mixing
- Circulation / Upwelling
- Pathogen Reduction
- Deicing

Maintenance

- Use our Eco-Purge product periodically to remove the bio-film that may clog diffusers.
*Safe for aquatic fauna and flora.

Dimensions and formats

- **OctoAir-10** : 100ft tubing
 - ⇒ 4 ft wide (122 cm)
 - ⇒ Weight: 65 lb–29.4 kg
 - ⇒ Minimum pressure: 20 psi – 1.4 BAR
 - ⇒ Maximum pressure: 50 psi– 3.4 BAR
- **OctoAir-60** : 300 ft tubing
 - ⇒ 8ft wide (2.4 m)
 - ⇒ Weight : 315 lb–143 kg
 - ⇒ Minimum pressure suggested: 20 psi – 1.4 BAR
 - ⇒ Maximum pressure: 70 psi– 4.8 BAR

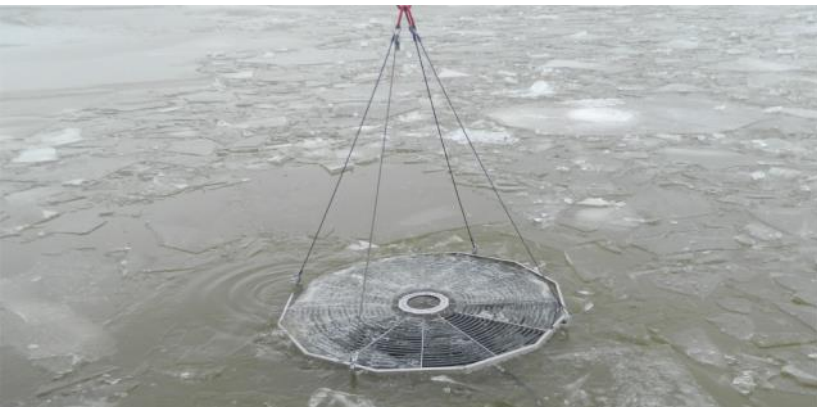
Construction

- PVC tubing
- Stainless steel frame
- Made in Canada 🇨🇦
- Assembled in Canada 🇨🇦
- Resist deterioration from exposure to UV rays, chemicals, salinity, and changes in pH and temperature of water.

Technical info

- Adjustable legs—assembly required
- Warranty: 1 year
- Check valve included
- Anchor Rings included
- Optional sacrificial zink anodes
- Available CFD Services

		OCTOAIR-10	OCTOAIR-60
SPECIFICATIONS	Applications	- Aeration - Deicing - Mixing - Reduction of pathogens	- Aeration - Deicing - Mixing - Reduction of pathogens
	Diffuser	- Stainless steel 304 frame - 4 adjustable legs* - 100 ft (30 m) 1/2" Bubble Tubing®, non weighted - Check valve NOT INCLUDED: - Torpedo Tubing Airline Feeder Hose - Compressor	- Stainless steel 304 frame - 4 adjustable legs* - 300 ft (90 m) 3/4" Bubble Tubing®, non weighted - Check valve NOT INCLUDED: - Torpedo Tubing Airline Feeder Hose - Compressor
	Delivery	Assembled	Unassembled (assembly required)
	Warranty	1 year	1 year
	Options	Marker Buoy Anodes for salt and/or brackish waters	Marker Buoy Anodes for salt and/or brackish waters
DIMENSIONS	Diameter	48" (122 cm)	96" (244 cm)
	Weight	65 lb (29,4 kg)	315 lb (143 kg)
	Assembly	Legs only	Required
PRESSURE	Maximum	50 PSI (3,4 BAR)	70 PSI (4,8 BAR)
	Minimum	20 PSI (1,4 BAR)	20 PSI (1,4 BAR)



Contact us for our expertise!

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