



Construction Plan Report

Grimsby Anaerobic Digestion Site

Escarpment Renewables

January 24, 2022

GHD

455 Phillip Street, Unit 100A

Waterloo, Ontario N2L 3X2, Canada

T +1 519 884 0510 | F +1 519 884 0525 | E info-northamerica@ghd.com | **ghd.com**

Printed date	2022-01-24 11:18:00 AM
Last saved date	January 24, 2022
File name	11226032-RPT-9-Construction Plan Report
Author	Jason Wilson
Project manager	Jason Wilson
Client name	Escarpment Renewables
Project name	ESCARPMENT-Grimsby AD Permitting
Document title	Construction Plan Report Grimsby Anaerobic Digestion Site
Revision version	Rev [00]
Project number	11226032

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4		Dan Turner	Jason Wilson		Victoria Shortreed		01/24/2022

© GHD 2022

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Executive summary

This Construction Plan Report has been prepared in accordance with Table 1 of Ontario Regulation 359/09. A summary of where information is contained in this report as it relates to these requirements is provided below.

Table 1 Ontario Regulation 359/09 Compliance Summary

Requirements	Location in Report
Set out a description of the following in respect of the renewable energy project:	
1. Details of any construction or installation activities.	Section 2
2. The location and timing of any construction or installation activities for the duration of the construction or installation.	Section 1.4 and 2
3. Any negative environmental effects that may result from construction or installation activities.	Section 7
4. Mitigation measures in respect of any negative environmental effects mentioned in paragraph 3.	Section 7

Contents

1. Introduction	1
1.1 Purpose	1
1.2 Project Location	1
1.3 The Project	1
1.4 Project Timing	1
2. Construction Activities	1
2.1 Construction Management	1
2.2 Site Preparation	2
2.3 Digester and Storage Tank Construction	2
2.4 Building Construction	2
2.5 Testing	2
2.6 Commissioning and Start Up	2
2.7 Site Work Completion	3
3. Materials	3
4. Construction Equipment	3
5. Temporary Uses	3
6. Materials Generated	3
7. Environmental Effects	4
7.1 Stormwater Management	4
7.2 Dust and Noise	4
7.3 Vegetation and Habitat	4
7.4 Water Bodies	4
7.5 Water Taking	4
7.6 Spills	4
7.7 Archaeological Resources	4
8. Potential Environmental Effects and Mitigation	5

Table index

Table 8.1	Effects and Mitigation of Site Activities	5
-----------	---	---

Figure index

Figure 1	Site Location Map
Figure 2	Existing Conditions

1. Introduction

1.1 Purpose

This Construction Plan Report is prepared to fulfill the Renewable Energy Approval (REA) requirements as set out in Ontario Regulation 359/09. The Anaerobic Digestion (AD) facility is located in Grimsby, Ontario and currently operates under Renewable Energy Approval (REA) No. 8541-9HSGG3, as amended. The project has received a Feed-InTarrif (FIT) Contract No. F-000610-BIG-130-302.

1.2 Project Location

The project construction will occur on lands owned by Escarpment Renewables at 424 Sobie Road in the Town of Grimsby (Site). The project will be located on the northwestern 5.4 hectares (ha) of a 10.5-ha property located on the south side of Sobie Road approximately 300 metres (m) east of Park Road South. The legal description of the property is part of Lots 1 and 2, Concession 6, Former Township of North Grimsby being Part 1 on Plan 30R-13677

The Site Location is shown on Figure 1.

1.3 The Project

The project will include expansion to the existing Site. The AD facility processes source-separated organics (SSO) and industrial, commercial, institutional (ICI) organic materials. The AD facility is currently operating at a maximum of 23,000 tonnes per year of incoming organic waste and will be upgraded to accommodate a capacity of 159,000 tonnes per year. A new organics pre-processing building will be constructed with the necessary equipment to receive, temporarily store, and process solid organic material for digestion by removing inert contaminants such as plastic packaging. New digesters will be added to the existing AD facility and thereby a significant increase of biogas production is anticipated. Escarpment Renewables is proposing to build a new renewable natural gas (RNG) upgrading system on Site to produce RNG from the additional biogas generated. The RNG will be compressed and temporarily stored in tube trailers adjacent to the RNG upgrading system for off-Site transportation. The proposed Site expansion is shown on Figures 2 and 3.

1.4 Project Timing

Construction is anticipated to commence in Q2 2023 with the procurement of equipment. Construction of the civil works and building is anticipated to begin in Q3 2023 and will last approximately 6 months. The equipment installation is then anticipated to begin Q1 2024 and is expected to be completed within 6 months. Start up and commissioning is expected to begin in Q2 2024 and take an additional 3 months.

2. Construction Activities

2.1 Construction Management

Throughout the construction period, the work will be managed to minimize disruption to the natural environment and the community through the following measures:

1. Security fencing is existing and will be maintained to limit trespassing and potential public safety issues.

2. Silt fencing will be installed around the perimeter of the construction area to eliminate siltation and erosion. Silt fencing will also be installed along the existing unnamed drainage ditch to the west of the property to prevent discharge of sediment to the environment.
3. Dust suppression will be implemented during dry periods as required.
4. Materials on Site will be managed to minimize the possibility of wind damage or loss.
5. No hazardous waste will be generated during construction.
6. Equipment packaging and materials will be recycled to the extent possible. The remainder will be disposed of according to applicable regulations.
7. Spills will be reported and cleaned up according to the Ministry of the Environment, Conservation and Parks (MECP) requirements.
8. Appropriate emergency and communication procedures will be in place to deal with such situations should they occur, consistent with the existing Site Emergency Response Plan (ERP).

2.2 Site Preparation

Before Site construction begins fencing will be installed around the perimeter of the construction areas. Any topsoil that is stripped from the Site for construction will be stockpiled on Site where it will be re-used for restoration on completion of the work. While some site grading will be required in the area of the digesters, storage tanks, and Organics Pre-Processing Building, the majority of the Site will remain at existing elevations. The existing Site electrical distribution will be utilized for construction purposes and a portable toilet will be delivered for the workers on Site. A temporary Site office and tool and equipment trailers will be set up. Site preparation activities are anticipated to last for 3 weeks.

2.3 Digester and Storage Tank Construction

The area for construction of additional digesters and storage tanks will be cleared and prepared for construction. Granular materials will be delivered on site and compacted to form the base for the tanks. The seepage control system will be installed before the floor and tanks sides are poured. Concrete will be poured for each tank. When the digester storage tanks have been constructed, the membrane roofs will be assembled, installed and connected.

2.4 Building Construction

The construction of the organics pre-processing building, additional pasteurization building, air treatment facility, and RNG facility will be part of the site activities taking place. The facilities' structural framework will be constructed first, consisting of the foundation, exterior walls, and floors. This will be followed by interior structural components, windows, and doors. Piping, electrical, switchgear and heating systems will be installed in the buildings prior to the installation of processing, air treatment, and biogas upgrading equipment. Each facility and building will be properly prepped prior to the installation of an equipment.

2.5 Testing

All installed components will be tested to ensure that there are no leaks. All mixers, pumps, and pipes will be checked to ensure that they are connected properly, and all sensors tested to be certain that they are working as designed. The mechanical and electrical systems will be reviewed and verified by the approval authority.

2.6 Commissioning and Start Up

All systems will be reviewed to confirm that the Site's operation is performing as it should be. When construction is complete, the digester will be filled with material and heated to processing temperatures. As biogas is produced, this will be sent to the new flaring system which will combust the initial biogas. When biogas production has stabilized and

gas quality is suitable for the combined heat and power (CHP) engine, the CHP engine will be started. A portion of biogas will be sent to the RNG facility to ensure the system is operating to specifications. Upgraded RNG will be compressed and trucked off site. Once the operation passes the final checks, the site will be ready for startup. The commissioning and start up period will last for 90 days.

2.7 Site Work Completion

Once Site work is completed, the Site will be prepared to restart normal operation. Landscaping, equipment removal, and general clean-up will be completed prior to resumption of normal operations.

3. Materials

Soil will not be imported nor exported for this project. Granular materials for tank base construction will be required. The only other materials brought onto the Site are the materials used for the construction of the facility. This includes concrete, lumber, insulation, steel cladding, windows, doors, engine, electrical equipment, mixers, pumps, tanks, upgrading equipment, valves and other parts required. Transportation of materials to the Site will be by truck. Truck traffic will be the heaviest when the tanks and vessels are being poured. While there will be additional truck traffic on the roads within the vicinity, impact on neighbours is expected to be negligible and short lived.

4. Construction Equipment

Construction Equipment that will be used on Site will include excavators, cranes, bulldozers, graders, and other earth moving equipment and heavy machinery. All equipment will only be operated by operators trained to operate them. Hand tools will also be used by trained tradespeople. Other equipment may be used on Site, as needed. During the construction period, the Site will be accessed by trucks for loading and unloading of equipment.

5. Temporary Uses

There will not be any temporary uses on the Site. All equipment on Site during construction is used directly for the construction project and will be removed from the Site upon completion

6. Materials Generated

Surplus material generated as a result of the construction will be minimized. Any unused material will be returned to the supplier. Packaging and strapping will be recycled to the extent feasible. Material that cannot be recycled or returned will be disposed of according to regulations.

7. Environmental Effects

7.1 Stormwater Management

The limit of construction will be fenced with a security fence and where required a silt fence. Stormwater will be managed during construction and pumped to existing drainage ditches as required. The drainage ditches will direct the stormwater to the existing stormwater ponds which will remain functional during construction. Surrounding areas of construction will be seeded after construction to stabilize disturbed areas. Site drainage will be maintained during the construction process. As a result, surface drainage from the site will continue as it is currently.

7.2 Dust and Noise

The nearest residence is 385 m to the west. As a result, construction noise is not expected to be an issue. There is no dust sensitive receptor in the vicinity of the active construction Site. Should dust suppression be required, the contractor will be asked to spray water or other materials.

7.3 Vegetation and Habitat

There is currently no natural vegetation on the Site nor is there any identified habitat within 120 m of the Site. As a result, no habitat or vegetation concerns are expected.

7.4 Water Bodies

There are no water bodies within 120 m of the Site.

7.5 Water Taking

No water taking is required in the construction or operation of any of the permitted facilities on Site.

7.6 Spills

Should a spill occur during the operation of construction equipment, the spill area will be contained and the appropriate spill response plan put into action. The MECP will be notified and appropriate spill response procedures implemented.

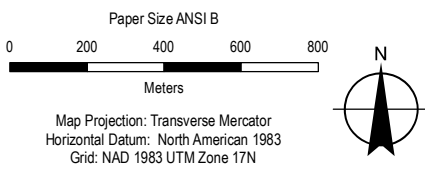
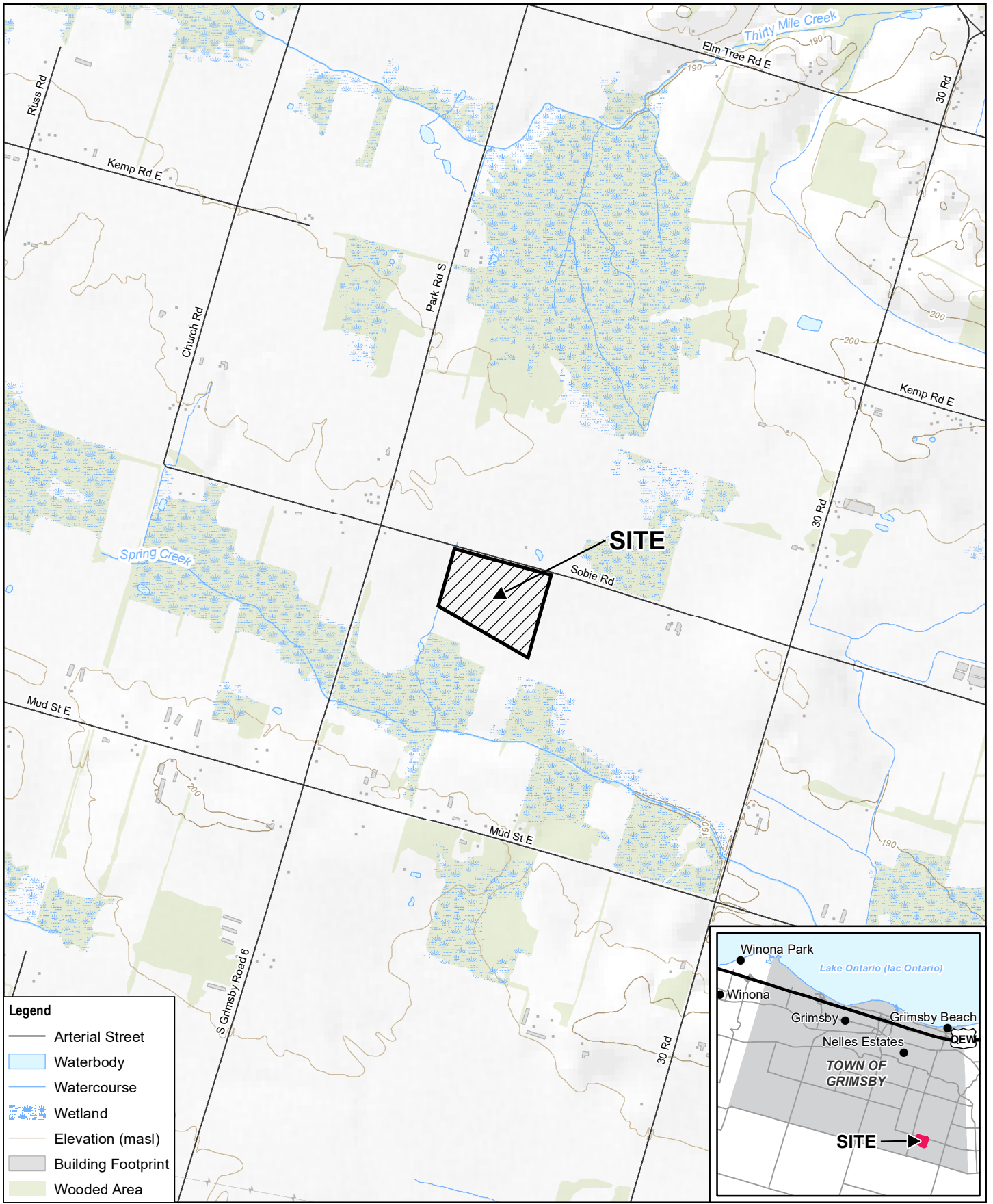
7.7 Archaeological Resources

An archaeological investigation was conducted at the Site prior to construction. No archaeological resources have been identified on the Site or in the vicinity. Should archaeological material be uncovered during construction, the project will be stopped and the Ministry of Heritage, Sport, Tourism and Culture (MHSTC) will be contacted to ensure that the appropriate professionals are retained to provide recovery or other services.

8. Potential Environmental Effects and Mitigation

Table 8.1 *Effects and Mitigation of Site Activities*

	Potential Effect	Mitigation
1	Spills	<ol style="list-style-type: none"> Minimize equipment fueling on Site. All equipment arrives on Site fully fueled. Refueling, if required is done by experienced fuel contractor. In the event of a spill, contain the spill and clean up per MECP protocol.
2	Siltation and Erosion	<ol style="list-style-type: none"> Install silt control fencing before construction commences. Seed all disturbed areas when construction is complete
3	Vegetation and Habitat	<ol style="list-style-type: none"> No natural vegetation or habitat on Site
4	Noise	<ol style="list-style-type: none"> No receptors within 380 m (the closest receptor is at 385 m) Use equipment on Site with suitable noise attenuation
5	Dust	<ol style="list-style-type: none"> Use dust suppressants when needed

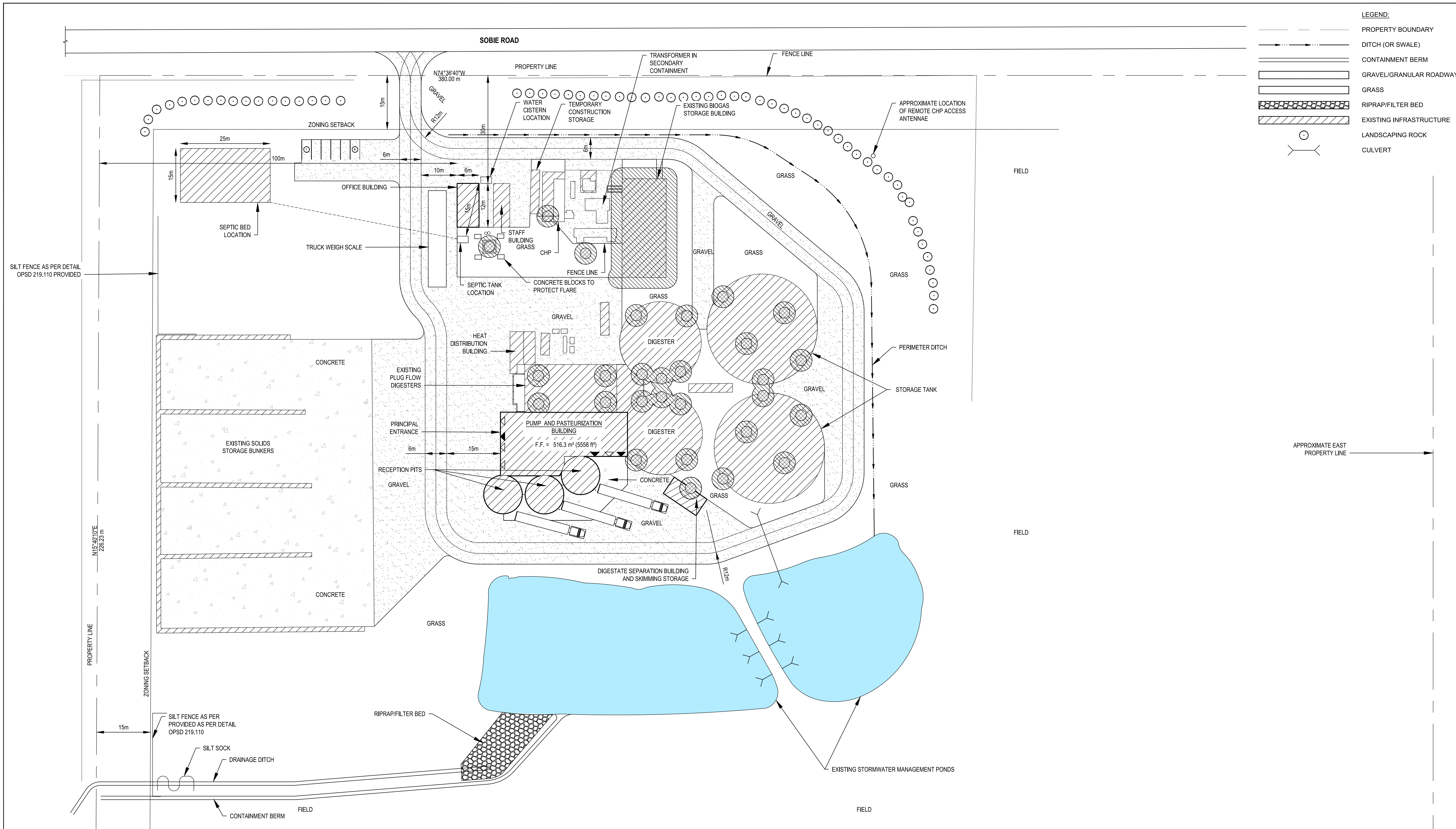


ESCARPMENT RENEWABLES
442 SOBIE ROAD, TOWN OF GRIMSBY, ONTARIO

Project No. 11226032
Date Jun 9, 2021

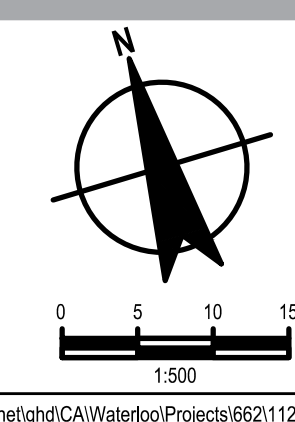
SITE LOCATION MAP

FIGURE 1



PRELIMINARY

No.	Issue	Checked	Approved	Date
				2022-01-17
Author	SPENCER H	Drafting Check	KALJINDER D	Project Manager
Designer	JASON W	Design Check	RYAN L	Project Director
				VICTORIA S



Bar is 25mm on original size sheet
0 25mm



Conditions of Use
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.



Client	ESCARPMENT RENEWABLES		Title
Project	ESCARPMENT RENEWABLE ENERGY APPROVAL AMENDMENT		EXISTING CONDITIONS
Project No.	Date	Scale	Sheet No.
11226032	2022-01-17	1:500	FIGURE 2

