# CarbonFree Rainy River Project

# Design and Operations Report

**H375916-0000-840-066-0006**

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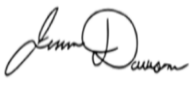
| | | |  |  | Thompson, Shanley |
| **2026-03-17** | **0** | **Final** | **J. Dawson** | **C. Sehl** | **S. Thompson** |
| **DATE** | **REV.** | **STATUS** | **PREPARED BY** | **CHECKED BY** | **APPROVED BY** |
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# Table of Concordance

The following concordance table cross-references the contents of this Design and Operations Report with each requirement identified in O. Reg. 359/09 so that the required information can be easily found within this report.

| Requirements | Report Section |
|---|---|
| 1. Set out a site plan of the project location at which the renewable energy project will be engaged in, including,<br>i. one or more maps or diagrams of,<br>A. all buildings, structures, roads, utility corridors, rights of way and easements required in respect of the renewable energy generation facility and situated within 300 metres of the facility,<br>B. any ground water and surface water supplies used at the facility,<br>C. any things from which contaminants are discharged into the air,<br>D. any works for the collection, transmission, treatment and disposal of sewage,<br>E. any areas where waste, biomass, source separated organics and farm material are stored, handled, processed or disposed of,<br>F. the project location in relation to any of the following within 125 metres: properties described in Column 1 of the Table to section 19, heritage resources, archaeological resources, the portion of the Oak Ridges Moraine Conservation Plan Area that is subject to the Oak Ridges Moraine Conservation Plan, the area of the Niagara Escarpment Plan, the Protected Countryside, the Lake Simcoe watershed, and<br>G. any noise receptors or odour receptors that may be negatively affected by the use or operation of the facility,<br>ii. a description of each item diagrammed under subparagraph i, and<br>iii. one or more maps or diagrams of land contours, surface water drainage and any of the following, if they have been identified in complying with this Regulation: properties described in Column 1 of the Table to section 19, heritage resources, archaeological resources, water bodies, significant or provincially significant natural features and any other natural features identified in the Protected Countryside or in the portion of the Oak Ridges Moraine Conservation Plan Area that is subject to the Oak Ridges Moraine Plan. | Section 2 and Appendix A |
| 2. Set out conceptual plans, specifications and descriptions related to the design of the renewable energy generation facility, including a description of,<br>i. any works for the collection, transmission, treatment and disposal of sewage, including details of any sediment control features and storm water management facilities,<br>ii. any things from which contaminants are discharged into the air, and<br>iii. any systems, facilities and equipment for receiving, handling, storing and processing any waste, biomass, source separated organics, farm material and biogas. | Table 2-1 |

| Requirements | Report Section |
|---|---|
| 3. Set out conceptual plans, specifications and descriptions related to the operation of the renewable energy generation facility, including,<br>i. in respect of any water takings,<br>A. a description of the time period and duration of water takings expected to be associated with the operation of the facility,<br>B. a description of the expected water takings, including rates, amounts and an assessment of the availability of water to meet the expected demand, and<br>C. an assessment of and documentation showing the potential for the facility to interfere with existing uses of the water expected to be taken,<br>ii. a description of the expected quantity of sewage produced and the expected quality of that sewage at the project location and the manner in which it will be disposed of, including details of any sediment control features and storm water management facilities,<br>iii. a description of any expected concentration of air contaminants discharged from the facility,<br>iv. in respect of any biomass, source separated organics and farm material at the facility,<br>A. the maximum daily quantity that will be accepted,<br>B. the estimated annual average quantity that will be accepted,<br>C. the estimated average time that it will remain at the facility, and<br>D. the estimated average rate at which it will be used, and<br>v. in respect of any waste generated as a result of processes at the project location, the management and disposal of such waste, including<br>A. the expected types of waste to be generated,<br>B. the estimated maximum daily quantity of waste to be generated, by type,<br>C. processes for the storage of waste, and<br>D. processes for final disposal of waste. | Sections 3 to 5 |
| 4. Include an environmental effects monitoring plan in respect of any negative environmental effects that may result from engaging in the renewable energy project, setting out,<br>i. performance objectives in respect of the negative environmental effects,<br>ii. mitigation measures to assist in achieving the performance objectives mentioned in subparagraph i,<br>iii. a program for monitoring negative environmental effects for the duration of the time that the project is engaged in, including a contingency plan to be implemented if any mitigation measures fail. | Section 5 |

| Requirements | Report Section |
|---|---|
| 5. Include a response plan setting out a description of the actions to be taken while engaging in the renewable energy project to inform the public, aboriginal communities and municipalities, local roads boards and Local Services Boards with respect to the project, including,<br>i. measures to provide information regarding the activities occurring at the project location, including emergencies,<br>ii. means by which persons responsible for engaging in the project may be contacted, and<br>iii. means by which correspondence directed to the persons responsible for engaging in the project will be recorded and addressed. | Section 6 |
| 6. If the project location is in the Lake Simcoe watershed, a description of whether the project requires alteration of the shore of Lake Simcoe, the shore of a freshwater estuary of a stream connected to Lake Simcoe or other lakes or any permanent or intermittent stream and,<br>i. how the project may impact any shoreline, including the ecological functions of the shoreline, and<br>ii. how the project will be engaged in to,<br>A. maintain the natural contour of the shoreline through the implementation of natural shoreline treatments, such as planting of natural vegetation and bioengineering, and<br>B. use a vegetative riparian area, unless the project location is used for agricultural purposes and will continue to be used for such purposes. | Not Applicable |
| 7. If it is determined that the project location is not on a property described in Column 1 of the Table to section 19, provide a summary of the matters addressed in making the determination. | Not Applicable |
| 8. If section 20 applies in respect of the project and it is determined that the project location does not meet one of the descriptions set out in subsection 20 (2) or that the project location is not in an area described in subsection 20 (3), provide a summary of the matters addressed in making the determination. | Not Applicable |
| 9. If subsection 21 (3) or 23 (2) applies, provide a summary of the matters addressed in making the determination,<br>i. under subsection 21 (3) or clause 23 (2) (a), as the case may be, including a copy of the document completed under the applicable provision, and<br>ii. under clause 23 (3) (b), if applicable. | Not Applicable |

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### *List of Tables*



### *List of Appendices*

# Table of Acronyms

| | |
|---|---|
| AC | Alternating Current |
| ANSI | Areas of Natural and Scientific Interest |
| cSWH | Candidate Significant Wildlife Habitat |
| DC | Direct Current |
| ESC | Erosion and Sediment Control |
| HONI | Hydro One Networks Inc. |
| H&S | Health and Safety |
| kg | Kilogram |
| km | Kilometre |
| kV | Kilovolt |
| kW | Kilowatt |
| MECP | Ministry of the Environment, Conservation and Parks |
| MW | Megawatt |
| MVA | Megavolt-ampere |
| NHA | Natural Heritage Assessment |
| O. Reg. | Ontario Regulation |
| PCS | Power Control System |
| PDR | Project Description Report |
| PV | Photovoltaic |
| REA | Renewable Energy Approval |
| ROW | Right-of-Way |
| SAC | Spills Action Centre |
| SCADA | Supervisory Control and Data Acquisition |
| SoCC | Species of Conservation Concern |
| SWH | Significant Wildlife Habitat |

# Executive Summary

CarbonFree Rainy River Ltd. (CarbonFree) is proposing the development of the CarbonFree Rainy River Project, an up to 60-megawatt (MW) Class 3 ground-mounted solar photovoltaic (PV) facility located in the Township of Chapple, Ontario, approximately 40 kilometres (km) northwest of Fort Frances. The Project is intended to contribute to Ontario's renewable energy generation capacity and support provincial objectives for clean, reliable electricity supply.

This Design and Operations Report has been prepared in accordance with Ontario Regulation 359/09 – Renewable Energy Approvals (REA) and forms a key component of the Project's REA application. The report builds upon the Project Description Report and provides detailed information regarding the site plan, facility design, operations, environmental effects monitoring, mitigation measures, and emergency response procedures associated with the Project.

The proposed facility will consist of approximately 130,676 solar PV modules, inverters, transformers, access roads, fencing, and a centrally located substation that will connect to the existing Hydro One Networks Inc. (HONI) transmission line. The Project will be developed across four privately owned parcels of land that are primarily characterized by agricultural and pasture uses, and regenerative forest habitats. The Project layout has been designed to avoid or minimize interactions with sensitive environmental features, including wetlands, watercourses, and significant wildlife habitat, through the application of appropriate setbacks and best practices.

The Project will operate year-round and generate electricity during daylight hours. The amount of power generated will depend on daily weather conditions and sufficient solar irradiation. The Project will be operated remotely. The Project will primarily be monitored remotely. A permanent workforce is not expected to be required on-site with the exception of maintenance and inspection staff or security personnel (as needed). To ensure the safety and integrity of the Project, access will be limited to Project personnel and unauthorized public access will be prevented by fences, gates and security procedures. Operationally, there are no significant hazards involved in the operation of the Project, nor are hazardous materials stored on-site or created by the Project during its operation. The Project will not generate significant quantities of waste from its operation.

An Environmental Effects Monitoring Plan has been developed to identify potential negative environmental effects during operation and to establish mitigation, monitoring, and contingency measures. With the implementation of proposed design features and mitigation strategies, residual environmental effects are anticipated to be low, localized, and manageable. The Project is not expected to result in significant adverse effects on soil, water resources, wildlife, land use, noise receptors, or public safety.

An Emergency Response and Communications Plan outlines procedures for responding to potential emergency scenarios, including fire, personal injury, and spills. The Plan includes provisions for staff training, coordination with local emergency services, spill prevention and reporting, and mechanisms for public communication and complaint resolution throughout the life of the Project.

Overall, this Design and Operations Report demonstrates that the CarbonFree Rainy River Project is designed to meet regulatory requirements, minimize environmental and community impacts, and support the Project's eligibility for Renewable Energy Approval.

# 1. Introduction

## 1.1 Background

CarbonFree Rainy River Ltd. (CarbonFree or the Proponent) is proposing to develop an up to 60-megawatt (MW) Class 3 solar photovoltaic (PV) on land located in the Township of Chapple, Ontario, approximately 40 kilometres (km) northwest of Fort Frances.

The proposed CarbonFree Rainy River Project (hereinafter referred to as the Project) is a renewable energy generation facility which will use solar PV technology to generate electricity. Electricity generated by solar PV panels will be converted from direct current (DC) to alternating current (AC) by inverters and then stepped-up (via pad-mounted inverters, medium-voltage transformers and a main substation transformer) to 115 kilovolts (kV) prior to being connected to the existing Hydro One Networks Inc. (HONI) transmission line.

The Project aims to contribute to the government of Ontario's goal of accelerating new electricity generation from renewable sources to support the province's growing energy needs. Accordingly, CarbonFree intends to enter into an agreement for the sale or supply of electricity, the quantity of which will be commensurate with the nameplate capacity of the facility.

## 1.2 Renewable Energy Approval Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – Renewable Energy Approvals Under Part V.0.1 of the Act, (herein referred to as the REA Regulation), came into force on September 24, 2009, and establishes the Renewable Energy Approval (REA) requirements for renewable energy generation facilities in Ontario. In accordance with REA Regulation (Part II, Section 4), ground-mounted solar facilities with a nameplate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and require a REA.

Section 13 of the REA Regulation further requires proponents of Class 3 solar facilities to complete a Design and Operations Report, which includes the site plan, facility design, operational details, and measures for monitoring and mitigating environmental effects. For more information, the Table of Concordance provides a summary of these requirements and cross-references where each item is addressed in this report.

## 1.3 Purpose of Report

The Design and Operations Report is a key component of the REA application and serves as the principal document outlining the details of the Project. It builds on the Project Description Report (PDR) by defining:

- The site plan.
- The design of the facility and the equipment to be used.
- How the facility will be operated.

- How environmental effects will be monitored and mitigated.
- How emergencies and communications will be managed.

Additionally, the Design and Operations Report acts as a tool for public and Indigenous consultation. A draft of this report will be made available to the Township of Chapple, the location in which the Project is located, at least 90 days prior to the final public meeting in accordance with Section 18 of O. Reg. 359/09.

# 2. Site Plan

A detailed site plan of the proposed project facilities referenced throughout this report is provided in Appendix A (Figure A1). Additional details regarding the site plan are presented in Table 2-1.

## 2.1 Site Plan Components and Additional Information

The site plan components and additional information are provided in Table 2-1.

**Table 2-1: Site Plan Components and Additional Information**

| Components | Additional Information and Site Plan Reference |
|---|---|
| **Facility Components** | |
| Buildings or Structures | The following are shown in Figure A1 (Appendix A):<br>● Approximately 130,676 solar PV modules, each 625 watts (W) and weighing about 33 kilograms (kg), with approximate dimensions of 2,382 mm long by 1,134 mm wide by 30 mm thick.<br>● Transformers.<br>● Substation and substation yard. |
| Access Roads and Fencing | The following are shown in Figure A1 (Appendix A):<br>● Fence line, as portrayed by the property line.<br>● Permanent and temporary access roads. |
| Electrical Equipment | The following are shown in Figure A1 (Appendix A):<br>● Solar PV Modules: 130,676 units, each 625 W, approximately 33 kg, dimensions 2,382 mm x 1,134 mm x 30 mm.<br>● Inverters: 4.4 MW AC units converting DC from PV modules to AC.<br>● Transformers: Fourteen pad-mounted 4.4 megavolt-ampere (MVA), 3-phase, liquid-filled units stepping voltage to 34.5 kV; each paired with one inverter and a single 4.4 MVA pad-mounted transformer.<br>● Substation Yard: Gravel yard housing approximately 68 MVA transformer (34.5 kV to 115 kV), switchgear, control/monitoring equipment, and communication tower.<br>Underground and overhead medium-voltage transmission lines, DC cabling, and AC cabling are not shown in the figures. |

| Components | Additional Information and Site Plan Reference |
|---|---|
| Utility Corridors, Rights-of-Way (ROWs), or Easements | The Project is proposed to be constructed on privately owned land. It is expected that the development will occur across four separate parcels of land to facilitate the installation of solar panels and the transmission infrastructure required to connect to the existing grid.<br>Ongoing consultation is being completed with the private landowners, Ministry of Transportation, and with the Township of Chapple. Current property boundaries are depicted within Figure A1 of Appendix A.<br>No utility corridors or ROWs are required for this Project. |
| Laydown Area | A construction laydown area will occur on the Project Location, adjacent to where the solar PV arrays are installed. |
| **Other Facility Components (Process Features)** | |
| Water Supply Facilities: Groundwater and Surface Water | The Project does not require any on-site facilities to supply groundwater (wells) or surface water (ponds, watercourses) for operation of the Project. |
| Wastewater (Sewage) Facilities | The Project will not generate any wastewater (sewage) or discharge any liquid effluent from its operation, nor does the Project require any on-site facilities for the collection, transmission, treatment, or disposal of wastewater for operation of the Project.<br>During operation, sanitary facilities (e.g., permanent washrooms with a septic disposal system) are not required. If sanitary facilities are determined to be required, portable toilets, provided and serviced by a local sanitation company, will be used. |
| Stormwater Management | A stormwater management design has been developed to minimize any potential negative environmental effects to existing drainage conditions (e.g., increased runoff, erosion, or sedimentation) such that they do not occur as a result of the Project.<br>Following construction, the entire Project Location, with the exception of the access roads, will be re-vegetated with native grass or other suitable ground cover to promote surface water infiltration, filter stormwater runoff and to prevent erosion.<br>A more detailed analysis of findings is discussed in the Stormwater Management Plan (Appendix B). |
| Drainage | Alterations to land topography will be limited to minor grading as required. Surface runoff will be directed to existing drainage systems (e.g., roadside ditches). Accordingly, alterations to the existing surface drainage patterns are not expected as part of the construction and of the Project. This will ensure productivity of the agricultural land is maintained.<br>A more detailed analysis of findings is discussed in the Stormwater Management Plan (Appendix B). |
| Discharge of Contaminants to Air | The Project has no facilities or equipment that will discharge contaminants or pollutants to the air during normal operations. |
| Waste Management Equipment | No waste management equipment or facilities are required for the Project. Trash, debris, and equipment parts replaced during maintenance and repair activities will be collected and properly stored in waste disposal bins. All waste collected during operation of the Project will be removed in accordance with provincial and local requirements. |
| **Existing Features within 300 m of the Project Location** | |
| Buildings or Structures | Buildings are primarily residential and agricultural, located along Mather Road and R. Wilson Road. |

| Components | Additional Information and Site Plan Reference |
|---|---|
| Municipal Roads | Public roads are shown in Figure A1 in Appendix A. These roads include:<br>● Mather Road.<br>● R. Wilson Road. |
| Utility Corridors, Rights-of-Way (ROWs), and Easements | The HONI transmission line, as displayed in Figure A1 (Appendix A). |
| Groundwater Wells | Existing groundwater wells were not identified in the Ministry of the Environment, Conservation and Parks (MECP) Water Well Records database (2024). |
| Topographical Land Contours | Land contours are shown in Figure A1 (Appendix A). |
| Surface Water Drainage | Drainage features are shown in Figure A1 (Appendix A) and further discussed in the Water Body Assessment Report. |
| Natural Heritage Features | The Project Location is primarily on pasture, agricultural lands, and forest habitats. The Project Location is generally characterized as having an abundance of grassland, meadow, and prairie habitat that are utilized as pasturelands for cattle, hay production, and annual row crops. The Natural Heritage Assessment (NHA) identified wetlands and candidate Significant Wildlife Habitat (cSWH) that have prescribed setbacks for protection. Features are displayed in Figure A1 (Appendix A).<br>Overall, the Project has been sited to avoid sensitive natural features, where possible, particularly wetlands and watercourses, which exist on the edges of the Project boundaries. Mitigation efforts have been planned for the construction phasing.<br>A more detailed analysis of findings is discussed in the Natural Heritage Assessment (H375916-0000-840-066-0002). |
| Land Use | The primary existing land use within the Project Location is agricultural and pasture, with some forested areas. Surrounding land uses found within 300 m of the Project Location include mainly agricultural (primarily hay/crop) and undeveloped forested areas. |
| Provincial Policy Areas | The Project is not located within 300 m of the Oak Ridges Moraine Conservation Plan Area, Niagara Escarpment Plan Area, Greenbelt Plan Area, the Protected Countryside, or Lake Simcoe Watershed. |
| **Noise Considerations** | |
| Noise Receptors | Noise receptors are shown in Figure A1 (Appendix A). More information regarding the noise receptors can be found in the Acoustic Assessment Report. |
| Inverters, Inverter Step-Up Transformer and Main Power, and Transformer | The dominant noise sources for the Project are as follows:<br>● Panel Arrays: 0.04 kWh per tracker motor and considered insignificant community noise emission sources.<br>● Inverter - Transformer Power Conversion System: 4.4 MW AC inverters convert the DC supplied by the PV modules to AC. A 4.4 MVA, 3-phase, liquid-filled transformer will then ‘step up’ the voltage to 34.5 kV. Noise from the power conversion system (PCS) inverter comes from its air-cooling fans while noise from its medium-voltage transformer is largely from the magnetostriction hum.<br>● Switchgear: Switchgear control panel cooling fans are small and are located indoors. Therefore, the switchgears are considered insignificant community noise emission sources. |

| Components | Additional Information and Site Plan Reference |
|---|---|
| | • Substation Transformer: One large 68 MVA transformer that will 'step up' the voltage from 34.5 kV to 230 kV. The substation transformer noise has a magnetostriction hum. |
| **Demonstration of Compliance with Setbacks** | |
| Project Location Boundary | The outer limit of all Project components, including temporary laydown areas during construction works, is shown in Figure A1 (Appendix A). |
| Protected Properties, Built Heritage, and Cultural Heritage Landscapes | None of the properties on or within 300 m of the Project property contained criteria that would necessitate further action in the form of a Cultural Heritage Evaluation Report. No mitigation measures have been recommended as there were no resources observed. |
| Archaeological Resources | No archaeological resources were observed during the Stage 1 and Stage 2 assessments. Should there be any alteration to the plans of this development, additional archaeological assessment may be required based on the presence of archaeological potential as outlined in the 2011 Standards and Guidelines Section 1.3.1.<br>During construction, if an artifact is found, work will stop until a licensed archaeologist has cleared the area and approved that construction can re-commence, in accordance with the Ministry of Citizenship and Multiculturalism requirements. |
| Waterbodies | Mather Creek was identified within 300 m of the Project Location and are displayed in Figure A1 (Appendix A). A 30 m setback will be applied from all waterbodies.<br>More information regarding the waterbodies can be found in the Water Body Assessment Report (H375916-0000-840-066-0004). |
| Significant or Provincially Significant Natural Features | The Project Location overlaps with portions of the Chapple Wetland, which is a Provincially Significant Wetland. There are also several unevaluated wetlands within 300 m of the Project Location, whose boundaries often extend beyond 300 m.<br>A 30 m setback has been applied to all wetlands, including the Chapple Provincially Significant Wetland. More information can be found in the Natural Heritage Assessment (H375916-0000-840-066-0002). |

## 2.2 Supporting Reports

This report references supporting documents noted in Table 2-2, which are available on the Project website: CarbonFree Rainy River.

**Table 2-2: General Reference Documents**

| Document Title |
|---|
| Acoustic Assessment Report |
| Construction Plan Report |
| Cultural Heritage Evaluation |
| Decommissioning Plan Report |
| Natural Heritage Assessment |
| Project Description Report |
| Sediment and Erosion Control Plan |
| Stage 1 and Stage 2 Archaeological Assessment |

| Document Title |
|---|
| Stormwater Management Plan |
| Water Body Assessment Report |

# 3. Facility Design Plan

The following section describes the principal facility components that will be used during the operation of the Project. At this stage in the Project, the specific make, model and dimensions of the various electrical equipment have not been finalized. Where applicable, typical sizes and descriptions of how the various components operate have been provided.

Information describing how these components will be constructed and installed in the Project, and the potential related environment effects and mitigation measures is provided in the Construction Plan Report.

## 3.1 Facility Components Overview

The facility is located in the Township of Chapple, Ontario (approximately 40 km northwest of Fort Frances) (see Appendix A). The facility is designed to operate 24 hours a day, 7 days a week.

No equipment in the facility design relates to groundwater and surface water supplies, air discharges, and/or water and biomass management.

### *3.1.1 Access Roads*

A permanent access road will be constructed from Wilson Road. The access road will be approximately 6 m wide and constructed of crushed gravel. A smaller gravel road will be constructed which will be about 3 to 5 m wide. Exact dimensions and locations of access roads will be finalized in consultation with the Township of Chapple. Ditches and culverts will be constructed, as necessary, to maintain drainage.

### *3.1.2 Fencing and Security*

The Project Location will be gated and fenced to prevent unauthorized access. The fence design includes an 8,000 m chain-link fence, approximately 2 m high, and topped with barbed wire. Signage will be posted identifying the facility as a solar project on private land. Additional security measures may be installed such as task or motion-sensor lighting, and/or security cameras.

### *3.1.3 Laydown Area*

One construction laydown area will be developed on the property (Figure A1, Appendix A). The laydown area will be located adjacent to where the solar PV arrays are installed, will be cleared of vegetation, and topsoil may be removed where required and stockpiled for later reuse on-site during site restoration. Selected areas will then be laid with compacted gravel.

The laydown area will be used as a truck unloading and loading area and to temporarily store various machinery, equipment and materials needed for construction. It will also include fuel and waste storage areas, and modular office and washroom trailers.

### *3.1.4 Inverter Building and Electrical Equipment Foundations*

Foundations will be required beneath transformers and inverters. Subsurface grounding grids may be required depending on soil resistivity conditions. Foundation construction for electrical equipment comprises of excavation and removal of surface materials (topsoil will be stockpiled for later reuse during site restoration), placement of granular material, formwork, reinforcing steel, grounding, and placement of cast-in-place concrete pads. Ready-mix concrete will be delivered by transit mixer truck from a local supplier.

### *3.1.5 PV Module Structural Support*

The PV modules will be mounted on single axis trackers. The trackers will be supported by steel posts which are founded in either concrete slab-on-grade, or foundations buried in the ground to a depth below the frost line.

### *3.1.6 Surface Drainage System*

Alterations to land topography will be limited to minor grading as required. Surface runoff will be directed to existing drainage systems (e.g., roadside ditches). Accordingly, alterations to the existing surface drainage patterns are not expected as part of the construction and of the Project. This will ensure productivity of the agricultural land is maintained.

### *3.1.7 Electrical Equipment*

#### *3.1.7.1 Solar PV Modules*

The Project will include approximately 130,676 solar PV modules grouped into two solar panel arrays spread over four properties. Each array is isolated by its own switchgear. The panels are routed into 14 SunGrow SG4400, 4.4 MVA inverter/transformer PCS modules. Each switchgear feeds the proposed high-voltage substation. The PV panels will be mounted on tracking structures. The tracking structures are expected to be supported by steel piles, driven or screwed into the ground. Where necessary, these foundations may be supported by concrete. Tracking structures are expected to be oriented to the north-south, tracking the sun movement from east to west. A typical tracker system will have up to 20 foundation posts and up to 50 PV modules connected by electrical wiring. The racks of modules will be arranged in long rows, typically spaced about 6 m apart east to west. The DC electrical current from the solar PV modules will be transmitted across the back of the modules and through underground wires connected to combiner boxes.

**Figure 3-1: Typical View of PV, Tracker Setup**[1]

*3.1.7.2 Electrical System Installation*

A network of underground DC cabling will be required from the termination point of the PV array to the inverters and medium-voltage transformers, which will then convert the DC electricity to AC and step up the voltage to 34.5 kV. A network of overhead and underground AC cables may be required from the inverters, to connect the PV array to the proposed substation and HONI transmission system. A simple trenching device will be used to install the underground cables, whereby a slot is opened, the cable laid, and the soil replaced.

*3.1.7.3 Electrical Distribution Line and Interconnection Point*

Connecting to the existing HONI 115 kV transmission line that runs through the Project Location will require a short overhead transmission line (approximately 35 m) to be constructed between the Project substation yard and the point of interconnection with the existing HONI transmission line (presented in Figure A1, Appendix A).

*3.1.7.4 Substation*

The main substation transformer will be located near the center of the Project Location, close to the existing HONI transmission line (presented in Figure A1, Appendix A). The substation transformer is liquid-fueled, used for stepping up the voltage from 34.5 kV to 115 kV. The substation transformer containment system will be an oil-retention pit type consisting of reinforced concrete raft foundation with crushed stone on top of slab designed to absorb the oil in the event of oil spill.

Transformers will use mineral oils or FR3 oils, which are non-toxic, non-bioaccumulating and readily biodegradable in the environment. All transformers will be routinely inspected and any faulty equipment that could result in an oil leak will be repaired. Secondary containment for the transformer substation has been incorporated into the substation design. Switchgear, protection and control equipment will be housed in a prefabricated, weatherproof building enclosure.

[1] Example image sourced from Hatch.

#### 3.1.7.5 *Noise Generating Equipment*

Noise generating equipment during the operation of the Project is expected to be limited to inverters and transformers adjacent to the solar PV arrays and within the substation. Minor noise may be generated by tracker motors at intervals throughout the day. An acoustic assessment has been completed to review proposed locations of noise emitting equipment to confirm that the applicable MECP and NPC-300 noise levels will not be exceeded during operation. Details are provided in the Acoustic Assessment Report (H375916-0000-846-066-0001).

### 3.1.8 *Stormwater Management/Erosion and Sediment Control*

#### 3.1.8.1 *Stormwater Management*

A preliminary stormwater management plan has been prepared to minimize the potential for negative effects to the existing drainage conditions. The stormwater management plan also includes erosion and sediment control measures to prevent downstream sedimentation. The proposed minimum erosion and sediment controls to be installed are described in the Stormwater Management Plan (Appendix B) and can be summarized as follows:

- **Short-Term (Construction) Measures**
  - Silt fence and flow-control barriers.
  - Stabilized construction entrance.
  - Stockpile covering/stabilization.
  - Temporary berms and erosion blankets.
  - Limit equipment to work zones.
  - Daily inspections of control measures and quick repairs as needed.
- **Long-Term (Post-Construction) Measures**
  - Permanent vegetation establishment.
  - Maintain vegetated buffers.
  - One-year post-construction review.
  - Replanting or regrading if erosion persists.

### 3.1.9 *Water Supply Facilities*

The Project does not require any on-site facilities to supply groundwater (wells) or surface water (ponds, watercourses) for operation of the Project. It is anticipated that water from rain and snow will be sufficient for cleaning the solar PV modules and maintaining vegetative cover on-site; if not, the Proponent will contact local suppliers to provide water in tankers from off-site sources for this purpose. No chemicals will be used in the cleaning of the PV modules.

#### *3.1.10 Wastewater (Sewage) Facilities*

The Project will not generate any wastewater (sewage) or discharge any liquid effluent from its operation, nor does the Project require any on-site facilities for the collection, transmission, treatment or disposal of wastewater for operation of the Project.

During operation, sanitary facilities (e.g., permanent washrooms with a septic disposal system) are not required. If sanitary facilities are determined to be required, portable toilets, provided and serviced by a local sanitation company, will be used.

#### *3.1.11 Waste Disposal Facilities*

The Project will not generate significant quantities of waste from its operation. A small waste disposal bin(s) will be provided on-site to collect any trash, debris or equipment parts replaced during routine maintenance of the Project during its operation. Periodically, when required, the Proponent will arrange for a licensed waste disposal company to empty the bins and haul the waste to an appropriate waste disposal facility off-site.

#### *3.1.12 Exhaust Equipment*

The Project has no facilities or equipment that will discharge contaminants or pollutants to the air during normal operations.

# 4. Facility Operations Plan

## 4.1 Operations

The Project will operate year-round and generate electricity during daylight hours. The amount of power generated will depend on daily weather conditions and sufficient solar irradiation. The Project will be operated remotely and, accordingly, no employees will be on-site with the exception of maintenance and inspection personnel or security staff (as needed). To ensure the safety and integrity of the Project, access will be limited to Project personnel and unauthorized public access will be prevented by fences, gates and security procedures.

Operationally, there are no significant hazards involved in the operation of the Project, nor are hazardous materials stored on-site or created by the Project during its operation. The Project will not generate significant quantities of waste from its operation.

## 4.2 Site Maintenance and Inspection

#### *4.2.1 Planned Maintenance*

##### *4.2.1.1 Solar PV Modules*

The Project solar PV modules, inverters and transformers and other electrical equipment, wiring and electrical connections will be routinely inspected, typically on a monthly basis. Any broken or malfunctioning PV modules, electrical cabling or components will be repaired or replaced by facility staff. Trash, debris and equipment parts replaced during maintenance and repair activities will be collected and properly stored in waste disposal bins. All waste

collected during operation of the Project will be removed in accordance with provincial and municipal requirements.

The need to clean the solar PV modules will be determined according to local weather conditions, such as the quantity and frequency of rain and snow at the Project Location. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible that cleaning the modules will not be necessary at all. If required, water trucks will bring water to supply the water required. No chemicals will be used for the cleaning of the modules.

#### *4.2.1.2 Vegetation*

Vegetative ground cover, drainage systems and trees will be routinely monitored and maintained, with inspection frequency varying seasonally. In general, monthly inspections from approximately April through October are anticipated, with more limited winter inspections due to potential access constraints from snow cover.

Since suitable ground cover will be established under the PV modules, some form of vegetation abatement such as grass cutting may be required several times throughout the summer months and may extend outside of the fenced project area to maintain the fence line of the Project. No hazardous chemicals are expected to be used for regular maintenance or vegetation abatement activities and will only be considered for management of invasive species, where present. Limited and targeted use of herbicides will be applied by a licensed exterminator in accordance with the Pesticides Act, R.S.O. 1990, c. P.11 and O. Reg. 63/09 and will be used in accordance with the approved label for the product, along with standard mitigation measures for the herbicide.

#### *4.2.1.3 Drainage*

The Project Location, including any drainage features (e.g., grassed swales, culverts) and any sediment and erosion control measures (e.g., riprap protection, rock flow checks) will be visually inspected for any signs of erosion or sedimentation and recorded. Regular maintenance such as the cleanout of accumulated sediment and/or the removal of any debris blockage would be conducted at that time. If required, remedial works (e.g., stabilizing and/or reseeding of identified erosion areas) and repairs to any drainage features or sediment and erosion control measures will be implemented to minimize environmental impacts.

#### *4.2.1.4 Transformers*

The transformers will be visually inspected on a quarterly basis and their status recorded. Any faulty equipment that could result in an oil leak will be repaired and any observed leaks will be cleaned up immediately by maintenance personnel. Secondary containment will be integrated into the design of the substation and will have the capacity to hold 110% of the mineral oil utilized in the transformer system. Transformer stations will be connected to a supervisory control and data acquisition (SCADA) system that logs and communicates alarms in real time. Transformers will be monitored for oil levels, oil pressure, oil temperature, and gas accumulations to alert operators to faults so as to identify potential issues or leaks. Spill

response equipment will be left on-site or in the maintenance trucks should leaks be observed.

#### *4.2.1.5 Winter Maintenance*

During winter, primary access roads will be ploughed to clear snow to maintain access of personnel to Project facilities. Under most winter conditions, snow is expected to melt due to the module heating and the tilt of the modules. Under some conditions, manual snow removal may be performed by maintenance personnel who will clear the snow using a brush attached to a long pole.

### ***4.2.2 Unplanned Maintenance***

In addition to scheduled maintenance activities, CarbonFree is prepared to address any unplanned maintenance that may be required for the Project. The following outlines CarbonFree's approach:

- Unplanned maintenance activities will be conducted on an as-needed basis, determined by the severity of the issue and the urgency of required repairs.
- Unplanned maintenance may occur at any time throughout the year.
- All work will be performed by qualified personnel following applicable safety standards, procedures, and regulatory requirements.
- Activities may include the repair or replacement of equipment, with the specific scope dependent on the nature and extent of the issue.
- CarbonFree will maintain an inventory of spare parts in a secure location to minimize repair timelines associated with unplanned issues.
- CarbonFree's strategy is to mitigate unplanned maintenance needs by applying sound engineering and construction practices, selecting high-quality and proven equipment, and implementing effective monitoring and preventive maintenance programs.

# 5. Environmental Effects Monitoring Plan

This section provides an overview of the anticipated environmental effects associated with the Project's operation and outlines the mitigation and monitoring measures designed to prevent, mitigate, or manage those effects.

## 5.1 Environmental Effects and Mitigation Measures

A summary of each potential effect, proposed mitigation, and an assessment of the potential residual effects are summarized below in Table 5-2, using criteria outlined in Table 5-1.

## 5.2 Monitoring Plan

Table 5-3 presents the environmental effects monitoring plan for the Project operation, which includes the following information:

- The potential negative environmental effects, carried forward from Table 5-2, that have an ongoing risk of occurrence during Project operation.
- The performance objectives and mitigation strategies to address those effects.
- Monitoring protocols to confirm that performance objectives are being met.
- Contingency measures in the event that objectives are not met, i.e., if monitoring reveals that negative effects are continuing to occur.

For additional information, monitoring will occur as outlined in the relevant reports (e.g., Natural Heritage Assessment, Water Body Assessment Report, Construction Plan Report).

**Table 5-1: Environmental Effects Analysis Criteria**

| Criteria | Description of Threshold Ratings |
|---|---|
| Magnitude | • **Negligible (0):** No detectable change from baseline conditions.<br>• **Low (1):** Differs from the average value for baseline conditions but remains within the range of natural variation and below a guideline or threshold value.<br>• **Medium (2):** Differs substantially from the average value for baseline conditions and approaches the limits of natural variation, but equal to or slightly above a guideline or threshold value.<br>• **High (3):** Differs substantially from baseline conditions and is significantly beyond a guideline or threshold value, resulting in a detectable change beyond the range of natural variation. |
| Geographical Extent (Biophysical) | • **Project Location (1):** Impact is limited to the Project Location.<br>• **Study Area (within 50 m of Project Location) (2):** Effect occurs throughout the Study Area.<br>• **Beyond Study Area (3):** Effect extends beyond the Study Area. |
| Duration | • **Short Term (1):** Impact lasts less than 2 years (e.g., during the Construction Phase of the Project).<br>• **Medium Term (2):** Impact lasts from 2 to 50 years (i.e., encompassing construction and operation phases).<br>• **Long Term (3):** Impact lasts from 50 to 53 years (i.e., impact lasts into the decommissioning and post-closure phase). |
| Frequency | • **One Time (1):** Impact is confined to one discrete event.<br>• **Sporadic (2):** Impact occurs rarely and at sporadic intervals.<br>• **Regular (3):** Impact occurs on a regular basis.<br>• **Continuous (4):** Impact occurs constantly. |
| Reversibility | • **Reversible (1):** Impact can be reversed.<br>• **Partially Reversible (2):** Impact can be partially reversed.<br>• **Permanent (3):** Impact cannot be reversed, is of permanent duration. |
| Ecological and Socio-Economic Context | • **High (1):** The receiving environment or population has a high natural resilience to imposed stresses, and can respond and adapt to the impact.<br>• **Neutral (2):** The receiving environment or population has a neutral resilience to imposed stresses and may be able to respond and adapt to the impact.<br>• **Low (3):** The receiving environment or population has a low resilience to imposed stresses, and will not easily adapt to the impact. |

| Criteria | Description of Threshold Ratings |
|---|---|
| Certainty of Knowledge | • **High (1):** There is a good understanding of the cause-effect relationship and all necessary data are available for the Project. The effectiveness of the mitigation measures is well known. There is a low degree of uncertainty, and variation from the predicted effect is expected to be low.<br>• **Moderate (2):** The cause-effect relationships are not fully understood, there are a number of unknown external variables, or data for the Project are incomplete. The effectiveness of mitigation measures is moderately well understood. There is a moderate degree of uncertainty; while results may vary, predictions are relatively confident.<br>• **Low (3):** The cause-effect relationships are poorly understood, there are a number of unknown external variables, and data for the Project are incomplete. The effectiveness of the mitigation measures may not yet be proven. High degree of uncertainty and final results may vary considerably. |

**Table 5-2: Summary of Potential Negative Effects and Proposed Mitigation – Operation Phase**

| Environmental Component | Sources of Negative Effect | Potential Negative Effect | Mitigation and Contingency Measures | Residual Environmental Effects Analysis | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Magnitude | Geographic Extent | Duration | Frequency | Reversibility | Ecological and Socio-Economic Context | Certainty of Knowledge |
| **Natural Environment Components** | | | | | | | | | | |
| Soils | • Ongoing road use by project vehicles. | • Erosion.<br>• Fuel spills. | • Erosion and sediment controls.<br>• Spill prevention and response planning. | 2 | 2 | 2 | 2 | 1 | 2 | 1 |
| Vegetation/Woodland | • Ongoing road use by project vehicles. | • Fugitive dust.<br>• Spills (e.g., fuel).<br>• Sedimentation.<br>• Introduction of invasive species. | • Erosion and sediment controls.<br>• Spill prevention and response planning.<br>• Continued road maintenance. | 2 | 1 | 3 | 1 | 1 | 2 | 1 |
| Chapple PSW<br>Wetland 2 and Wetland 3 | • Ongoing road use by project vehicles. | • Soil compaction.<br>• Changes in moisture regime.<br>• Fugitive dust.<br>• Spills (e.g., fuel).<br>• Sedimentation.<br>• Introduction of invasive species. | • Set back Project components and fencing 50 m from features.<br>• Create and implement a sediment and erosion control plan to minimize sedimentation where Project activities are located within 50 m of a wetland or 120 m of a water body.<br>• Create and implement a spills management procedure including the requirement that refuelling, and fuel storage occur more than 50 m away from the natural feature.<br>• Grading and civil design will consider existing drainage patterns to minimize impacts to wetland moisture regime. | 0 | 1 | 2 | 1 | 2 | 1 | 1 |
| Groundwater | • Ongoing road use by project vehicles.<br>• Presence of new impervious Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables). | • Spills. | • Spill prevention measures will be implemented and a response plan prepared. | 1 | 1 | 2 | 2 | 3 | 2 | 2 |
| Surface Water | • Mather Creek runs through the Project Location.<br>• Ongoing road use by project vehicles.<br>• Presence of new impervious Project Components (e.g., access roads, foundations, solar panels and other infrastructure).<br>• Washing of solar panels during maintenance activities.<br>• Wind and/or water erosion of soils within the Project Location. | • Reduction in water quality or quantity (e.g., fuel spills, increased runoff, sedimentation). | • No project components will be installed within 30 m of a water body/watercourse.<br>• Erosion and sediment controls will be installed.<br>• Spill prevention measures will be implemented and a response plan prepared. | 1 | 1 | 2 | 2 | 2 | 2 | 2 |

| Environmental Component | Sources of Negative Effect | Potential Negative Effect | Mitigation and Contingency Measures | Residual Environmental Effects Analysis | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Magnitude | Geographic Extent | Duration | Frequency | Reversibility | Ecological and Socio-Economic Context | Certainty of Knowledge |
| Aquatic Habitat | • Ongoing road use by project vehicles.<br>• Presence of new impervious Project Components (e.g., access roads, foundations, solar panels and other infrastructure).<br>• Washing of solar panels during maintenance activities.<br>• Wind and/or water erosion of soils within the Project Location. | • Limited (e.g., fuel spills). Project components are outside of buffers surrounding watercourses. | • Set back Project components and fencing 30 m from features.<br>• Spill prevention measures will be implemented and a response plan prepared. | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Wildlife (Bald Eagle/Osprey Nesting) | • Accessing area for maintenance activities.<br>• Maintenance activities within 400 m of features. | • Noise and visual disturbance to nest feature. | • Set back Project components 120 m from Significant Wildlife habitat (SWH).<br>• Locating noise generating equipment outside of a 400 m setback from the feature.<br>• Ongoing monitoring of usage or observed disturbance during sensitive nesting or rearing windows. | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Areas of Natural and Scientific Interest (ANSI) | • N/A. | • No ANSIs were identified within 300 m of the Project Location. | • None required. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Socio-Economic Environment Components** | | | | | | | | | | |
| Air Quality, Odour, and Dust | • Emissions from Project operations and maintenance vehicles. | • Project operation will not discharge any pollutants into the air and emissions from maintenance vehicles or equipment will be negligible. | • Mitigation measures will include standard best management practices. | 1 | 2 | 2 | 2 | 1 | 3 | 1 |
| Noise | • Presence of new Project Components (e.g., solar panels, transformers, inverters).<br>• Emissions from Project operations and maintenance vehicles. | • Disturbances to nearby sensitive receptors (i.e., houses and institutions) due to noise emissions. | • A notice will be sent to neighbouring residents advising of how they can report complaints related to noise. Inquiries can also be made online at the project website. | 1 | 2 | 2 | 4 | 1 | 2 | 1 |
| Public and Facility Safety | • Facility equipment malfunction, fire or accidents resulting in injury to public or maintenance personnel. | • Personal injury to the public if trespassing on-site or to facility maintenance personnel due to accidents, fire or equipment malfunction. | • Public access to the site will be prevented by fences, gates, and security procedures. Proper health and safety (H&S) procedures for on-site maintenance personnel will be implemented as per provincial and federal regulations.<br>• Mitigation will reduce risk to public and facility safety, but some risk to maintenance personnel will remain throughout Project operation. | 1 | 1 | 2 | 2 | 1 | 3 | 1 |
| Traffic and Municipal Roadways | • Facility operation and maintenance personnel travelling to and from the Project. | • None. The number and frequency of facility personnel travelling to the Project is negligible. | • None required. | 1 | 3 | 2 | 2 | 1 | 3 | 1 |

| Environmental Component | Sources of Negative Effect | Potential Negative Effect | Mitigation and Contingency Measures | Residual Environmental Effects Analysis | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Magnitude | Geographic Extent | Duration | Frequency | Reversibility | Ecological and Socio-Economic Context | Certainty of Knowledge |
| Visual Landscape | • Presence of new Project Components (e.g., solar panels, transformers, inverters). | • Changes to local landscape/viewscape.<br>• Potential visual disturbance to adjacent observers for short periods of time under site-specific conditions and viewing angles between March and September due to reflectivity of the PV modules. | • A “Green screen” of trees and shrubs will be installed in selected areas around the perimeter of the Project Location. | 1 | 1 | 2 | 4 | 1 | 2 | 1 |
| Property Values | • Presence of new Project Components (e.g., solar panels, transformers, inverters). | • Installation of the facility has the potential, though unproven, to result in a change in the value of nearby properties based on aesthetic preference of potential landowners. Though subjective, the potential change in property values for the purpose of this assessment is considered as a potential negative effect. | • Mitigation measures to minimize visibility from neighbouring properties as well as noise emissions. | 1 | 3 | 2 | 2 | 1 | 2 | 3 |
| Protected Areas | • N/A. | • None. There are no protected areas within 300 m of the Project Location. | • None required. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aggregate Resources | • Presence of new Project Components (e.g., solar panels, transformers, inverters). | • The Project will not influence the availability of aggregate resources in the area. Any aggregate resources available within the Project Location will remain in place throughout the construction, operation and decommissioning of the Project. | • None required. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Land Use | • The Project is proposed to be located on privately owned land which is currently utilized for agricultural activities or is currently vacant and covered by woodland and successional vegetation.<br>• Presence of new Project Components (e.g., solar panels, transformers, inverters). | • Loss of agriculture. | • An agrivoltaics program will be implemented throughout the Project lifecycle, promoting a dual use of solar energy and agriculture.<br>• Site restoration will restore the ability to use the area under, beneath and immediately surrounding the solar PV panels for agriculture (e.g., sheep grazing). | 1 | 1 | 2 | 4 | 1 | 2 | 1 |
| Archaeological Resources | • None. | • None. No archaeological resources are known to be present. | • None required. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protected Properties, Built Heritage and Cultural Heritage Landscapes | • N/A. | • None. No protected properties, built heritage or cultural heritage landscapes have been identified within 300 m of the Project Location. | • None required. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Airports, Aerodromes, and Air Traffic | • Presence of new Project Components (e.g., solar panels, transformers, inverters). | • Nestor Falls Airport and International Falls Airport are located over 40 km away from the Project Location.<br>• Currently, glare associated with the Project is not anticipated to be a concern. | • Backtracking technology is anticipated to minimize potential glare impacts. | 1 | 3 | 2 | 0 | 1 | 3 | 2 |

**Table 5-3: Environmental Effects Monitoring Plan – Operation Phase**

| Negative Effect | Mitigation Strategy | Performance Objective | Monitoring Plan | | | | | Contingency Measures |
|---|---|---|---|---|---|---|---|---|
| | | | Methodology | Monitoring Locations | Frequency | Rationale | Reporting Requirements | |
| Erosion and Sedimentation Resulting in Increased Turbidity in Site Runoff | A sediment and erosion control plan expected to include vegetation retention where possible. Vegetated setbacks of Project components to sensitive features.<br>Erosion and sedimentation controls (e.g., silt fences, rock check dams, straw bales, erosion control blankets) near ditches, on steep slopes.<br>Sediment and erosion controls will be installed and maintained between the Project Location and wetlands or watercourses where work is required within 50 m of wetlands or 120 m of water features. | No long-term erosion from site over and above existing conditions. | Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies).<br>Visual monitoring of ESC measures to ensure they remain effective throughout operations. | Throughout Project Location. | During regular site inspection throughout construction and operation. | Visual monitoring of erosion would identify potential areas of concern. | Maintenance and improvement requirements actioned as needed and reported internally throughout monthly operations monitoring reports.<br>Ongoing status of permanent features reported internally within annual operations report. | Erosion remediated as necessary to ensure no long-term erosion issues. |
| Adverse Effects to Surface Water, Groundwater, Wetlands, and Soil Quality Due to Accidental Spills | Standard mitigation to prevent spills and minimize magnitude of spills if they occur. For example, refuelling at least 30 m from wetlands and water features. | No long-term environmental effects due to spills. | Visual monitoring where hazardous liquids may be stored, at transformer locations, where refuelling may occur, and in parking areas.<br>Monitoring of spill prevention measures, with spill reporting procedure in place. | Throughout Project Location. | During regular site inspections. | Visual monitoring would identify potential areas of concern and ensure that spill prevention and control measures are functioning as designed and protocols are being implemented as specified in plans to meet performance objectives. | All spills and remediation efforts to be reported to Contractor's environmental site inspector and reported throughout monthly operations monitoring reports.<br>Reportable spills in water or spills on land >100 L must be documented and reported immediately to the Ontario Spills Action Centre. | Spill contingency measures implemented as necessary in the event of a spill. Following spill event, response will be reviewed to determine if additional or altered response protocols are necessary to meet performance objectives. |
| Increases in Surface Water Runoff from Project Location and Changes in Drainage/ Hydrological Conditions | Maintain existing drainage patterns as much as possible.<br>Stormwater management measures may include enhanced vegetated swales, ditch flow controls and filter strips. | No impacts on water quantity/drainage patterns.<br>Minimize changes to surface water runoff conditions to receiving waterbodies. | Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies).<br>As well, visual assessment of structural stability of mitigation measures and identification of unintended impacts. | Throughout Project Location. | During regular site inspections. | Visual monitoring will confirm that stormwater management measures remain as designed and allow identification of deficiencies. | Reported internally within annual operations report. | Stormwater management measures will be remediated as necessary to ensure that they are functioning as designed. With erosion remediated as necessary to ensure no long-term erosion issues. |

| Negative Effect | Mitigation Strategy | Performance Objective | Monitoring Plan | | | | | Contingency Measures |
|---|---|---|---|---|---|---|---|---|
| | | | Methodology | Monitoring Locations | Frequency | Rationale | Reporting Requirements | |
| Incidental Take of Wildlife | Speeds to be limited on Project Location and maintenance workforce to be made aware of potential for wildlife on the Project Location. | No occurrences of incidental take. | Visual monitoring of access roads and other site areas will be conducted by workers on foot, and occasions of incidental take reported as they are identified. | Throughout Project Location. | Infrequently during operations/maintenance. | Incidental take will be reported by workers to personnel responsible for environmental protection if incidents occur. | Any incidental takes on wildlife will be documented internally and reported within monthly operations monitoring reports.<br>Unless the incidental takes of species is a species of conservation concern in which case reporting will be immediate to the MECP/Environment Canada. | If incidental take of species of conservation concern are recorded, work will be ceased until such time as a trained biologist can state that no other individuals of the species is present in the work area. Injured wildlife, specifically reptiles, will be taken to a wildlife rehabilitation center. |
| Wildlife (Disturbance of Bald Eagle Nesting Activity) | Preclearing survey for stick nests. | Minimal instances of disturbing Bald Eagle from nest when active. | Ongoing observation when working within 800 m of Bald Eagle nest. | Bald Eagle nest and buffer area. | Daily during construction commencement during February 15 to August 15 timeframe. | If nesting eagle is flushed from its nest several times throughout the day due to noise/disturbance, construction setbacks may need to be reevaluated during sensitive time periods. | Ongoing observation when working within 800 m of Bald Eagle nest. | Bald Eagle nest and buffer area. |
| Dust Generation and Off-Site Transport | Minimizing vehicle speeds on unpaved roads.<br>Stabilizing stockpiles.<br>Spraying unpaved roads with water during dry periods. | Minimize fugitive dust from the operations and maintenance on-site. | Visual monitoring of visible dust plumes during operations.<br>in winter, visual monitoring of snowbanks for dust fall.<br>Complaint system in place in case neighbours have an issue. | Throughout operations of the site. | Periodically during operations. | Visual monitoring would identify areas of concern, and complaint system would further indicate the extent and magnitude of the problem. | Reported in monthly operations monitoring report. | More frequent watering of roads may be implemented, or use of a chemical dust suppressant may be considered if watering is not sufficient. |
| Noise Levels Disturbing Nearby Noise Receptors | Maintenance activities typically limited to daylight hours.<br>Ensure mufflers are in good working order on vehicles/ machinery.<br>Limit vehicle idling.<br>Implement noise barriers around receptors. | To minimize excessive noise emissions at nearby noise receptors. | Ongoing dialogue with adjacent noise receptors and follow-up response to noise complaints. | Throughout the site with emphasis at the closest sensitive noise receptors. | Continually throughout operations. | Complaint system would indicate the extent and magnitude of the problem. | Reported in monthly operations monitoring report. | If Project components are not meeting performance objectives with respect to noise emissions, the Proponent will work with affected noise receptors to reduce disturbance to the extent possible. |
| Personal Injury to Public if Trespassing On-Site | Fencing, gates, lighting, signage and/or cameras to be used to limit unauthorized access. | Zero project-related injuries. | Site security monitoring. | Throughout the Project Location and facility perimeter. | Sporadic throughout operations. | Cameras will show any unauthorized access. | Incidents of trespassing or vandalism will be reported to local authorities. | Additional security measures will be implemented as required. |

| Negative Effect | Mitigation Strategy | Performance Objective | Monitoring Plan | | | | | Contingency Measures |
|---|---|---|---|---|---|---|---|---|
| | | | Methodology | Monitoring Locations | Frequency | Rationale | Reporting Requirements | |
| Increase in Traffic and Impacts to Local Roads | Use highway as main access road during maintenance to the extent possible. | Minimal disturbance to road condition and to public use of the roads. | Visual monitoring of road conditions.<br>Public complaint system in place. | Along any local access roads that may be used for maintenance and operations. | Periodically throughout operations. | Visual monitoring can detect issues like potholes or washouts. Complaint system will also indicate if there is a problem. | Reported in monthly operations monitoring report. | Maintenance and operations traffic could be re-scheduled or rerouted if necessary. |

# 6. Emergency Response and Communications Plan

The following describes the implementation of the Project Emergency Response and Communications Plan as it pertains to the construction and operation phases of the Project. A similar plan is provided for the decommissioning phase of the Project in the Decommissioning Plan Report.

## 6.1 Emergency Response

The purpose of the Project Emergency Response Plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses. Potential emergency scenarios which could occur during the construction and operation phases include fire, personal injury, and spills incidents. The following provides the emergency response and communications procedures to be used in response to these scenarios. All Project personnel will receive training in these procedures.

### *6.1.1 Fire*

Fire extinguishers will be located in strategic locations such as Project vehicles. During construction and operation, a sign will be erected near the front gate of the facility. The sign will include instructions to call 911 and to call a Project phone number should a passerby notice an emergency.

If a fire occurs, Project personnel will attempt to extinguish it, only if it is safe to do so. If there is any risk of personal injury, extinguishing the fire will not be attempted. If a fire cannot be extinguished using the hand-held extinguishers, the Project area will be evacuated and Project personnel will immediately call 911 to summon the local fire department (and ambulance if required). All staff on-site during the life of the Project will be trained in the procedure to deal with a fire and the use of an extinguisher.

All incidents will be documented and kept on file. Documentation will include date of incident, date of reporting, name of reporter, description of the incident, cause of the incident, actions taken, communications to outside groups, and internal personnel and follow-up required.

### *6.1.2 Personal Injury*

During the construction phase, the work will be completed by Contractors, who will establish their own Health and Safety (H&S) program in accordance with the Ontario Occupational Health and Safety Act. During operations, CarbonFree will similarly establish their own H&S program to be followed by facility personnel.

Should a personal injury occur on-site that does not require an ambulance, the injured person will be treated on-site and, if necessary, transported to the hospital depending on the extent of the injury. If the injury is more severe, Project personnel will call 911 and assist the injured person until emergency personnel arrive.

In all cases of personal injury, the Project construction manager and the Project facility manager will be notified immediately. All incidents will be documented and kept on file. Documentation will include date of incident, date of reporting, name of reporter, name of injured, description of the incident, cause of the incident, actions taken, communications to outside groups and internal personnel and follow-up required, as required by H&S regulations.

### *6.1.3 Spills*

Spills and the types of spills that require reporting are defined in the Ontario Environmental Protection Act and O. Reg. 675/98 Classification and Exemption of Spills and Reporting of Discharges.

Spills are the unintended release/discharge of material to air, land or water. The most likely spill scenarios could include a fuel or oil leak from a vehicle or a spill from improper handling, or a hazardous material leak from a container or a spill from improper handling. Spill prevention tactics include the following:

- All potentially hazardous materials, fuels and lubricants must be stored in the laydown area, in a protected/bermed area and at least 50 m from watercourses.
- All refuelling and equipment maintenance activities will be conducted at least 50 m from wetlands or water features.
- Vehicles and machinery are to be monitored to ensure they are well maintained and free of leaks.
- Portable toilets will be located no closer than 50 m from a watercourse/drain and will be pumped by an MECP-approved hauler to an approved facility.

In the event of an accidental spill, the response plan includes:

- Evaluating the scene for risks to human health and safety.
- If there is immediate danger to human health, contact 911 for assistance and notify anyone who may be directly impacted or is in harm’s way.
- Notify the Project Manager of the incident.
- Contain and clean up the spill using on-site spill kit, if it is safe to do so.
- If required, contact outside spill response contractor for assistance.
- Report the spill to the provincial Spills Action Centre (SAC), as required.

A spill kit will be available on-site during the construction, operation and decommissioning phases and will contain equipment necessary for spills response. This will include absorbent pads, absorbent boom, polyethylene bags, neoprene gloves, protective goggles, plastic bins or metal drums, and multipurpose granular sorbents.

Spills that could potentially occur during the life of the Project, and may need to be reported include:

- Non-approved releases/discharges (including those to land, air, and water).
- Discharge of fluids greater than 100 L from a vehicle.
- Mineral oil releases greater than 100 L from an electrical transformer.
- Discharges (including sediment) to waterbodies.

The MECP Spills Action Centre phone number (1-800-268-6060) will be posted on-site.

Documentation for all spill incidents will be kept on file and sent to the MECP, as required. Documentation will include date of incident, date of reporting, name of reporter, description of the incident, cause of the incident, type and amount spilled, actions taken, disposal of contaminated material, communications to outside groups and internal personnel and follow-up required. A designated Site Environmental Inspector will be appointed by the contractor to ensure compliance with these plans and will be responsible for ensuring all site workers know what to do in the event of a spill.

## 6.2 Non-Emergency Communications

During all phases of the Project, including operations, a sign will be posted at the facility gate with a Project phone number for public questions, inquiries, or complaints. All inquiries will be directed to the Proponent Project Representative, who will respond accordingly.

All questions, inquiries, and complaints will be logged electronically with the following information: date, name, phone number, email address, response, date of response, and any follow-up actions. Complaints will additionally be logged in a Complaint Response Document.

Efforts will be made to address identified concerns and implement any necessary corrective actions as soon as reasonably possible. The steps taken to resolve the issue, along with any planned measures to prevent similar complaints from arising in the future, will also be documented in the Complaint Response Document.

If at any time public notification is required (e.g., Project changes), the public will be notified through newspaper and direct or general mail-outs, if needed. Should agencies such as the local municipality or the MECP require notification, they will be sent the information directly by email, mail, or telephone conversation. All communications will be documented and kept on file by the Proponent.

As noted previously, additional information or inquiries can be directed to the project website, CarbonFree Rainy River.

# 7. References

CarbonFree Rainy River. 2026. CarbonFree Rainy River Project Website.

Government of Ontario. 2026. Map: Well Records. Ministry of the Environment, Conservation and Parks. Available at: https://www.ontario.ca/page/map-well-records.

Government of Ontario. 2024. Ontario Regulation 359/09: Renewable Energy Approvals under the Environmental Protection Act.

Hatch Ltd. 2026. CarbonFree Rainy River Project; Acoustic Assessment Report. H375916-0000-846-066-0001.

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Hatch Ltd. 2026. CarbonFree Rainy River Project; Natural Heritage Assessment. H375916-0000-840-066-0002.

Hatch Ltd. 2026. CarbonFree Rainy River Project; Water Body Assessment Report. H375916-0000-840-066-0004.

Hatch Ltd. 2026. CarbonFree Rainy River Project; Project Description Report. H375916-0000-840-066-0001.

King's Printer for Ontario. 2024. Provincial Policy Statement 2024. Planning Act. Ministry of Municipal Affairs and Housing.

Woodland Heritage Northwest. 2025. Cultural Heritage Evaluation for Carbonfree Group Lot 4 and Lot 5 CON 6, Township of Chapple, District of Rainy River, Ontario.

Woodland Heritage Northwest. 2025. Stage 1 and Stage 2 Archaeological Assessment for CarbonFree Rainy River Ltd. Lot 4 and Lot 5 CON 6, Township of Dobie, District of Rainy River, Ontario.

# Appendix A
# Site Layout

Microsoft, Vantor, Vantor

N

MATHER ROAD

CATES ROAD

ANGUS ROAD

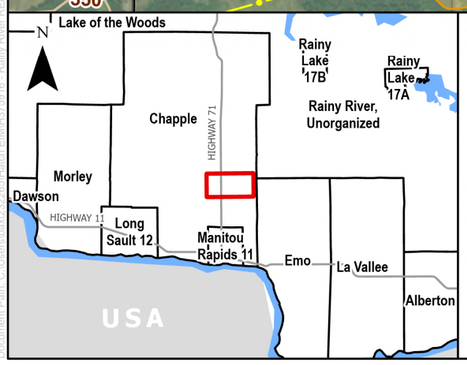
HIGHWAY 71

R WILSON ROAD

360

350

370




**LEGEND**

- Noise Receptor
- Inverter
- Point of Connection
- AccessRoad
- Contour
- Road
- Transmission Line
- Watercourse
- Project Location
- Study Area (500m Buffer)
- Property Boundary
- Offices/Laydown Area
- Solar Array
- Substation/Switching Station
- Waterbody
- Wetland
- Riparian Area

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 15N

0 250 500 1,000 m

1:15,000

| | |
|---|---|
| **PROJECT:** | CarbonFree Rainy River Project – Design and Operations Report |
| **FIGURE TITLE:** | Site Layout |
| **CLIENT:** | CarbonFree Rainy River LTD |

| DWG BY: | CHK BY: | FIG NO.: | REV NO.: |
|---|---|---|---|
| V. BAXTER | C. SEHL | A1 | 1 |
| **DATE:** 02/03/26 | **PAGE:** 1 | | |

HATCH

# Appendix B
# Stormwater Management Plan

## Report

# CarbonFree Rainy River Project Stormwater Management

### H375916-0000-220-066-0001

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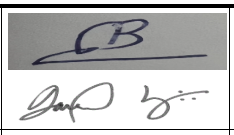
| | | | |  |  |
| **2026-03-13** | **0** | **Approved for Use** | **F. Sargordi** | **M. Basiq, D. Stanger** | **J. Mohammad** |
| **DATE** | **REV.** | **STATUS** | **PREPARED BY** | **CHECKED BY** | **APPROVED BY** |
| | | | | **Discipline Lead** | **Functional Manager** |

# IMPORTANT NOTICE TO READER

This report has been prepared by Hatch Ltd. (Hatch) for the sole and exclusive use of CarbonFree Rainy River Ltd. (the “Client”) for the purpose of assisting the Client in making decisions with respect to the development of a proposed solar photovoltaic project and shall not be (a) used for any other purpose, or (b) provided to, relied upon or used by any third party.

This report contains opinions, conclusions and recommendations made by Hatch Ltd. (Hatch), using its professional judgment and reasonable care. Any use of or reliance upon this report by the Client is subject to the following conditions:

1. This report to be read in the context of and subject to the terms of the agreement between Hatch and the Client including any methodologies, procedures, techniques, assumptions and other relevant terms or conditions that were specified or agreed therein;
2. This report to be read as a whole, with sections or parts hereof read or relied upon in context.
3. The conditions of the Project Location may change over time (or may have already changed) due to natural forces or human intervention, and Hatch takes no responsibility for the impact that such changes may have on the accuracy or validity of the observations, conclusions and recommendations set out in this report; and
4. The report is based on information made available to Hatch by the Client or by certain third parties; and unless stated otherwise in the Agreement, Hatch has not verified the accuracy, completeness or validity of such information, makes no representation regarding its accuracy and hereby disclaims any liability in connection therewith.

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## *List of Appendices*

# 1. Introduction

CarbonFree Rainy River Ltd. (CarbonFree) is proposing to develop an up to 60 megawatt (MW) Class 3 solar photovoltaic (PV) on lands located in the township of Chapple, Ontario, approximately 40 km northwest of Fort Frances (see Figure 1-1 for site location).

Ontario Regulation (O. Reg.) 359/09 identifies the Renewable Energy Approval (REA) requirements for renewable energy generation facilities in Ontario. This regulation requires the development of a design and operations report for the proposed project, including the preparation of a Stormwater Management report (SWM) and the incorporation of erosion and sediment control (ESC) features and stormwater management facilities.

This report evaluates baseline drainage conditions and assesses potential project impacts based on the proposed design of the Project. Where needed, the report prescribes mitigation measures with the goal of preventing adverse effects on sensitive environmental features, or neighboring properties in line with the requirements of the REA.

## 1.1 Study Approach

The methodology adopted for this assessment comprises the following key elements:

- Conduct a quantitative analysis to determine the existing hydrologic conditions for the Project Location.
- Review the proposed development activities, with particular attention to evaluating potential implications arising from modifications to site hydrology.
- Finalizing the design of stormwater management infrastructure intended to regulate surface runoff in accordance with the standards and guidelines prescribed by the Ministry of the Environment, Conservation and Parks (MECP).
- Formulating a comprehensive ESC program that defines the strategies and best management practices to mitigate construction-related impacts on downstream watercourses and receiving aquatic systems.


**Figure 1-1: Rainy River Project Location**

# 2. Existing Conditions

## 2.1 Wetlands and Vegetation

The Rainy River project site consists mainly of open grasslands, and patches of regenerating forest, with generally flat terrain. Field investigations confirmed the presence of four wetlands within the Project Location or within 50 m of the Project Location. These wetlands provide important ecological functions such as water quality protection, flood attenuation, and erosion control. The Project Location has been set back at least 30 m from these wetlands (Figure 2-1). See the Natural Heritage Assessment Report prepared by Hatch (H375916-0000-840-066-0002) for further details regarding wetlands, potential impacts and associated mitigation measures.

## 2.2 Waterbodies

The Project's Water Body Assessment Report prepared by Hatch (H375736-0000-840-066-0004) confirms that no lakes, seepage areas, or Lake Trout Lakes occur within or adjacent to the Project Location. The Mather 1 creek lies within 120 m of certain project components but does not intersect any planned infrastructure directly. The presence of Mather I Creek introduces regulatory constraints under Ontario's REA Regulation, requiring setbacks and mitigation measures to prevent environmental impacts. As a result, ground-mounted solar panels and other infrastructure will be positioned outside the 30 m buffer zone, and best management practices for erosion, sediment control, and stormwater management will be implemented. Overall, while the creek necessitates careful planning and monitoring, its impact on the project is considered manageable with standard mitigation strategies.
As no in channel works or watercourse specific hydraulic constraints apply, stormwater design emphasizes maintaining predevelopment drainage patterns and ensuring that post development runoff from the site does not adversely affect downstream intermittent systems.

## 2.3 Geotechnical Information

TBT Engineering Limited (TBTE) carried out a Preliminary Geotechnical Investigation for the CarbonFree Rainy River Solar Project (2026). The summary presented below reflects TBTE's original findings and interpretations.

The site is overlain by approximately 0.1 to 0.5 m of organic topsoil and cultivated surficial material, underlain predominantly by very stiff to firm silty clay to clayey silt that extends through most investigated depths. These cohesive deposits are generally moist, with intermittent thin sand lenses and isolated zones of more permeable silty sand associated with glacial till. An exception to these conditions was observed at TP25-09 and BH25-01, where cohesionless silty sand units were encountered, reflecting localized glacial till materials overlying shallow bedrock.

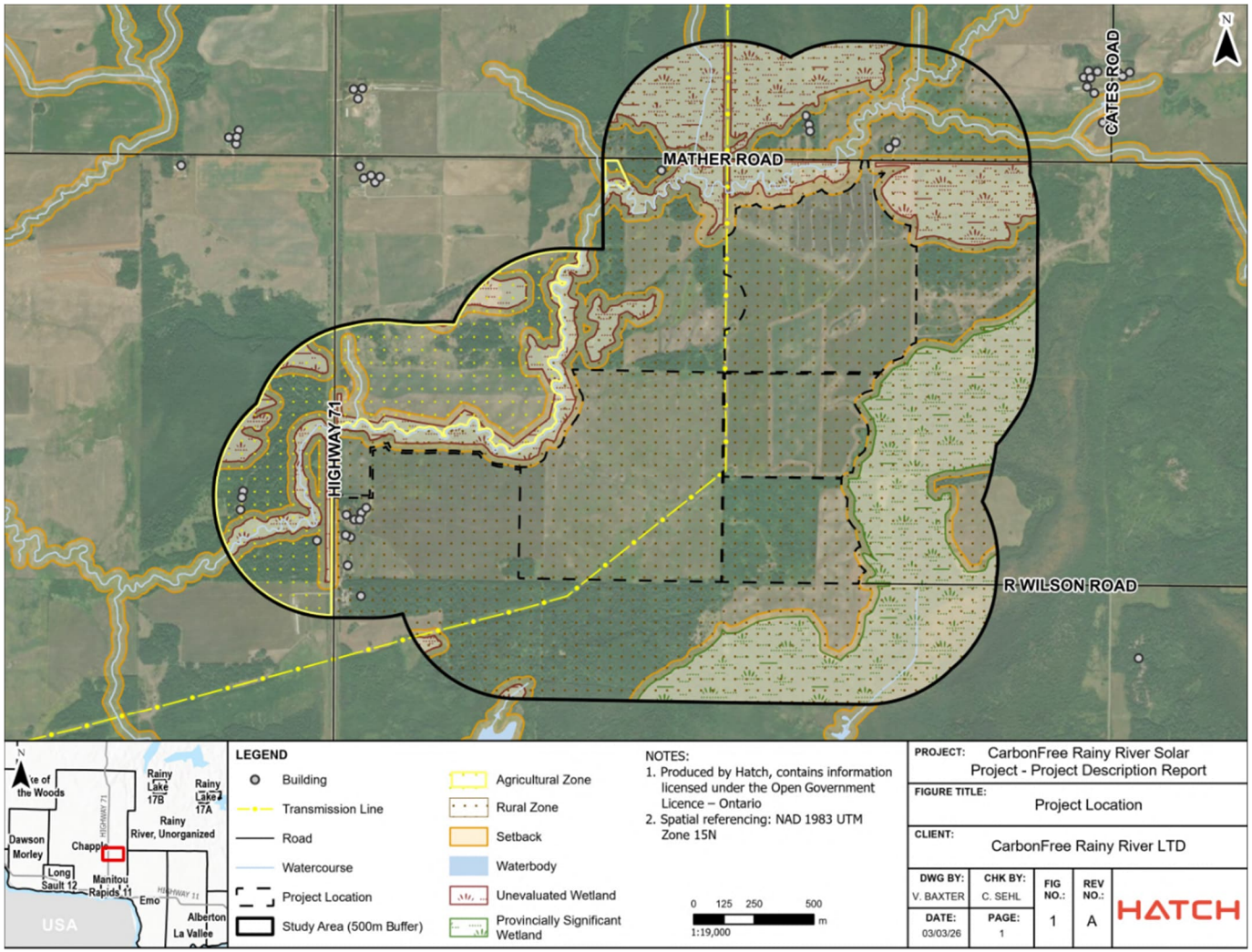



**Figure 2-1: Natural Features, Waterbodies and Land Uses**

Bedrock across the site ranges approximately from 2.6 m to 6.4 m depth, with the shallowest in the north area near TP25-09.

The frost penetration depth for the region is 2.6 m below ground surface, necessitating either equivalent soil cover or engineered insulation to provide adequate frost protection.

Figure 2-2 illustrates the borehole, test pit, monitoring well, and dilatometer test locations completed across the Rainy River Solar Project site. It overlays these geotechnical investigation points on the proposed solar array layout and site boundary, showing ground surface elevations at each test location.

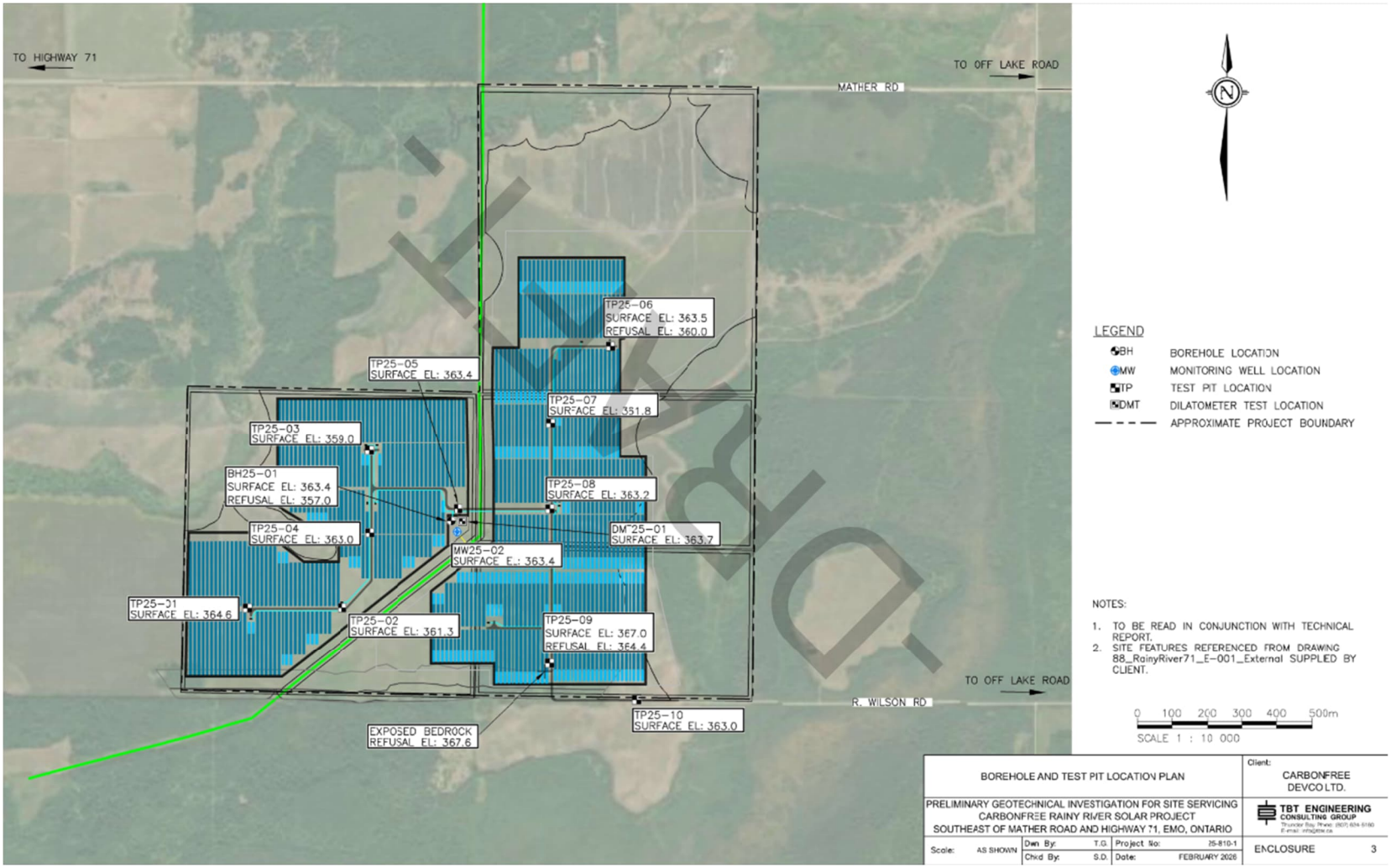



**Figure 2-2: Test Locations Across the Rainy River Area**

## 2.4 Hydrogeological Information

The Preliminary Geotechnical Investigation for the CarbonFree Rainy River Solar Project (2026) prepared by TBT Engineering Limited (TBTE) includes the Project Location hydrogeological information and is detailed in this section.

The subsurface conditions consist primarily of low permeability cohesive overburden soils (silty clay to clayey silt) containing occasional sand lenses, underlain in places by shallow bedrock. Ground surface grades gently downward to the northeast toward the adjacent watercourse, reflecting a corresponding shallow groundwater gradient in that direction.

Groundwater occurs at shallow depths, typically between 1.0 and 1.4 m below ground level, and seepage was noted in several test pits, reflecting the limited natural drainage capacity of the clay-rich deposits. Test Pit TP25-06 showed a higher presence of groundwater, with seepage observed at the overburden-bedrock interface, indicating localized elevated moisture conditions at that location. The groundwater level is expected to fluctuate seasonally, especially rising during spring snowmelt and wet periods. These observations indicate a shallow water table with potential perched groundwater along the sand seams.

Construction excavations may encounter seepage, especially near the soil/bedrock interface or below the water table, so sump pumping will likely be required where excavations extend to or below seasonal groundwater levels. (See TBT Engineering Limited, February 6, 2026.)

## 2.5 Topography and Surface Drainage

The project location exhibits a topography with elevations ranging from approximately 352 m to 367 m. The terrain generally drains, as indicated by flow arrows in Figure 2-3, facilitating surface runoff toward site perimeter zones. The site comprises a varied landscape characterized by open pasture areas interspersed with woodland, creating a mix of grassland and forested environments that support diverse ecological functions and land uses. The site includes a bedrock outcrop which influences infiltration characteristics and runoff concentration. The predevelopment drainage catchments are shown in Figure 2-3 and are described as follows.

Catchment delineation comprising multiple sub-areas (CA-1 to CA-8) and external catchment (EXT 2) draining to project site with corresponding surface areas ranging from 5.13 ha to 35.19 ha, with total catchment area of 133.94 ha. The catchments possess designated tree-covered regions that influence infiltration and runoff characteristics. The catchment includes external catchments EXT 2 which is draining from the outside of the project site to CA-2. The largest catchment is CA-2 (35.19 ha) while CA-7 is the smallest catchment (5.13 ha). Flow arrows indicate the natural direction of surface runoff, essential for hydrological modeling and stormwater management planning. This delineation serves as a foundational reference for applications including runoff estimation, stormwater infrastructure design, and environmental planning, ensuring effective watershed management and sustainable land-use strategies.

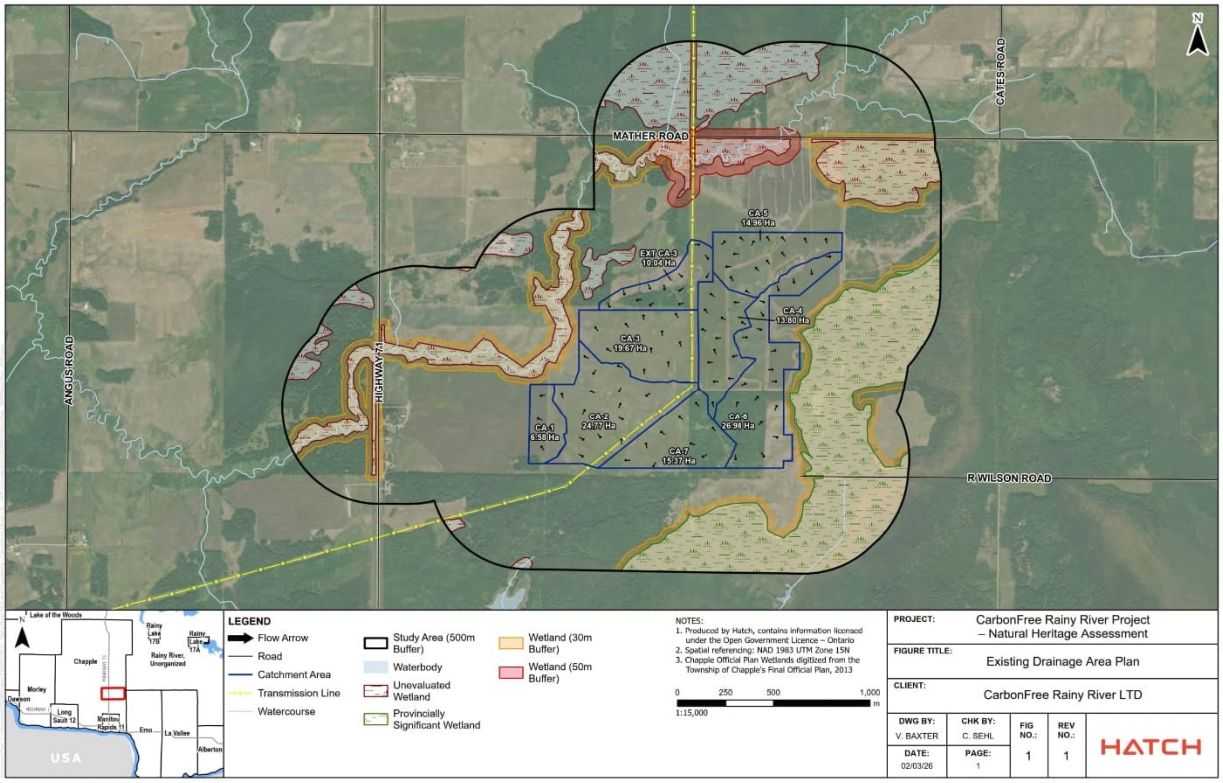



**Figure 2-3: Existing Drainage Area Plan**

# 3. Proposed Conditions

The proposed layout introduces engineered features within the existing catchment framework, shifting from predominantly natural conditions to a mixed-use configuration. While catchment boundaries remain unchanged, the addition of access roads, inverter pads, and a central substation (see H375916-0000-230-260-0001) increases impervious surfaces, reducing infiltration and slightly elevating runoff potential. Impervious areas now range from 400 $m^2$ to 800 $m^2$ and total semi-pervious area is 2.26 ha (Table 3-1). The impervious areas represent only a very small fraction of the total catchment areas. While portions of the existing tree-covered zones remain, their overall hydrologic influence is slightly reduced due to the introduction of new infrastructure. Note that substation and inverters footprints will be finalized during the detailed design engineering.

**Table 3-1: Catchment Characteristics in Proposed Condition**

| Catchment | Area (ha) | Impervious/ Inverter (ha) | Semi-Pervious Area (ha) | Impervious Area (%) |
|---|---|---|---|---|
| 1 | 17.58 | 0.04 | 0.13 | 0.23 |
| 2 | 35.19 | 0.32 | 0.93 | 0.91 |
| EXT-2 | 9.81 | 0.00 | 0.00 | 0.00 |
| 3 | 18.18 | 0.08 | 0.27 | 0.44 |
| 4 | 8.70 | 0.04 | 0.12 | 0.46 |
| 5 | 14.66 | 0.00 | 0.05 | 0.00 |
| 6 | 10.77 | 0.04 | 0.17 | 0.37 |
| 7 | 5.13 | 0.00 | 0.00 | 0.00 |
| 8 | 13.92 | 0.04 | 0.59 | 0.29 |

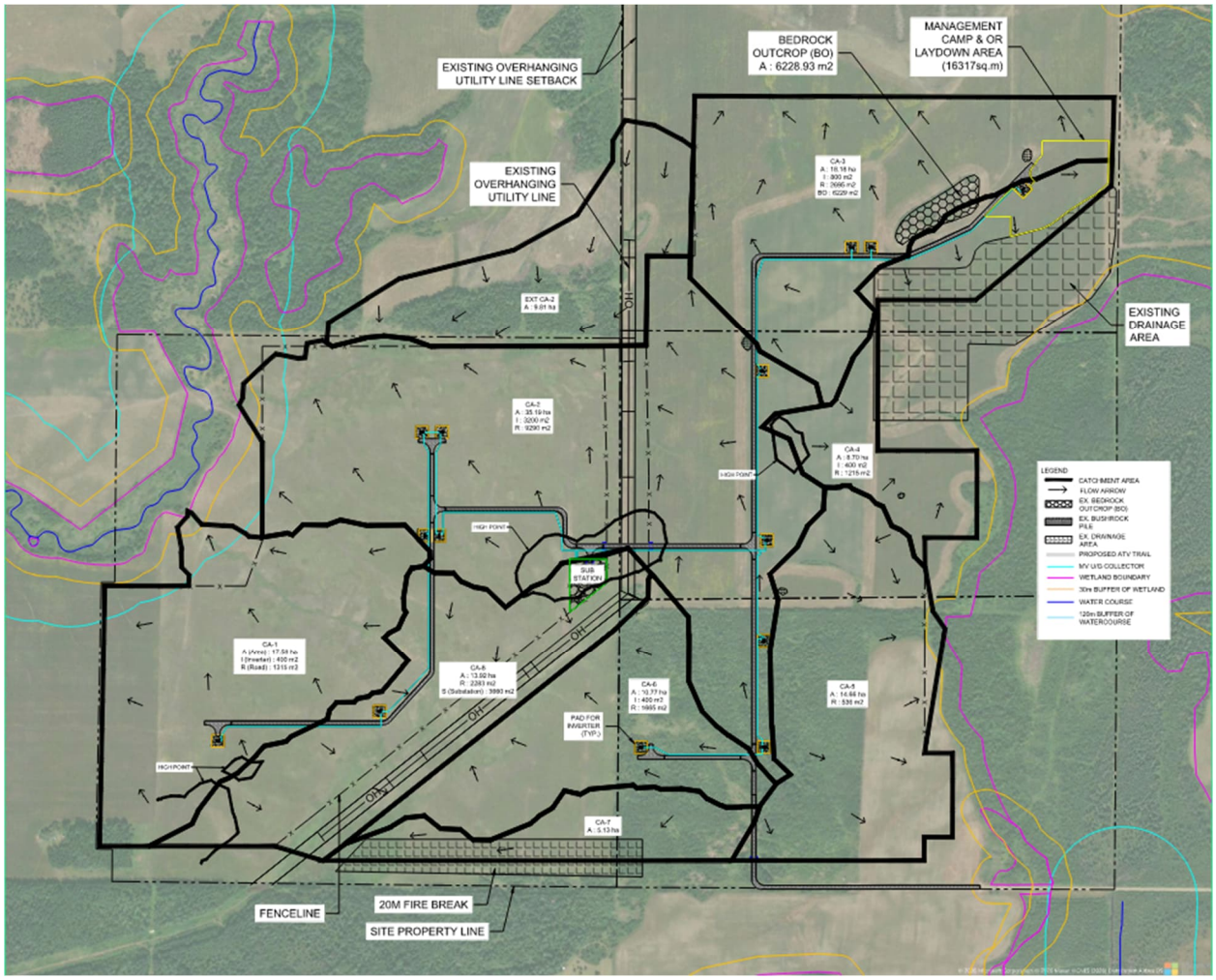



**Figure 3-1: Catchment Area for the Proposed Condition**

# 4. Stormwater Management Design

Following the Ministry of the Environment and Climate Change (MOECC) guidelines, the stormwater management plan for the Rainy River Solar Project was designed to manage site runoff during and after construction.

## 4.1 Stormwater Management During Construction

Recent studies indicate that construction phase traffic during solar facility development can increase peak runoff rates and volumes due to soil compaction and damage to vegetation compared to post-construction conditions following site stabilization. Full establishment of stabilization vegetation often requires several growing seasons before the site's hydrologic response aligns with the assumptions in the proposed stormwater management plan.
To address the temporary increase in runoff during the construction phase, an interim stormwater management strategy should be implemented. The interim construction phase stormwater management plan will be developed during the later phases of the project, in close collaboration with the Contractor, to ensure it fully aligns with the planned construction sequencing, staging, and on-site operational constraints.

This strategy may incorporate the following measures:

- Soil management practices to minimize runoff and enhance infiltration.
- Site water management.
- Stormwater detention facilities to reduce peak discharge rates.
- Vegetated buffer zones to improve water quality treatment of site runoff.

## 4.2 Post-Construction Stormwater Management

### *4.2.1 Assessment of Impacts*

The potential changes in impervious surface coverage and their corresponding effects on stormwater runoff rates were evaluated using the Rational Method for both existing and proposed site conditions. A comparative analysis was conducted to identify any variations in runoff characteristics resulting from the revised imperviousness within the project site.

As highlighted in Hydrologic Response of Solar Farms (Cook and McCuen; Journal of Hydrologic Engineering, May 2013), solar panels mounted on racks above vegetated ground do not significantly increase site imperviousness. Consequently, they have negligible impact on runoff volumes, peak discharge rates, or time to peak for solar farm developments. This finding supports the assumption that the hydrologic response of such installations remains largely similar to pre-development conditions.

Under the existing condition, the site remains undeveloped and is primarily characterized by pastureland interspersed with areas of woodland.

Based on land-use characteristics, an existing area-weighted runoff coefficient (C) of 0.395 was calculated for the entire site, reflecting its predominantly pervious nature. Table 4-1 provides a breakdown of land use within the catchment areas of the project site under the pre-development conditions.

**Table 4-1: Pre-Development Land Use and Runoff Coefficient**

| Component | Runoff Coefficient | Area (ha) |
|---|---|---|
| Pasture | 0.40 | 113.46 |
| Woodland | 0.35 | 19.85 |
| Bare Rocks | 0.80 | 0.63 |
| Area Weighted Runoff Coefficient | 0.395 | |

For the proposed condition, the addition of impervious surfaces, such as inverter pads, associated structures, the semi-impervious gravel access road/substation, is anticipated to slightly increase the overall runoff coefficient, which could influence peak discharge rates. However, the calculated runoff coefficient is around 0.4 compared to the pre-development runoff coefficient of 0.39, indicating that the change is minimal and does not result in a significant difference compared to existing conditions.

The runoff coefficient was calculated using a weighted average, accounting for the added impervious areas. This approach ensures that each land-use type such as pasture, woodland, gravel road, and structural areas contributes to the overall coefficient based on its respective area and hydrologic characteristics.

Table 4-2 provides a breakdown of land use within the catchment areas of the project site under the proposed development scenario.

**Table 4-2: Post-Development Land Use and Runoff Coefficient**

| Component | Runoff Coefficient | Area (ha) |
|---|---|---|
| Impervious Area (Concrete Pads) | 0.95 | 0.56 |
| Semi-Pervious Area (Gravel Roads/Substation) | 0.60 | 2.26 |
| Native Vegetation (Beneath Panels) | 0.40 | 131.11 |
| Area Weighted Runoff Coefficient | 0.4 | |

### *4.2.2 Design Storms*

Runoff calculations for the Rainy River site were performed by modeling both the existing conditions and the post-development scenario under a 100-yr design storm event. These simulations aimed to quantify peak flows, runoff volumes, and evaluate the effectiveness of stormwater management measures to ensure compliance with regulatory requirements and long-term site stability.

Considering that the project is expected to operate for approximately 35 years, the selection of rainfall inputs for hydrologic modelling was aligned with both current and future climate conditions. Runoff for the existing (pre-development) condition was calculated using the 2026 inflow design flood (IDF) curves, and for the post-development condition, the 2061 IDF curves were applied to incorporate anticipated increases in rainfall intensity associated with climate change.

**Appendix A** presents the IDF information for the project location, derived from the MTO's data for the years 2026 and 2061. Also, according to the Table 1 in Appendix A, the rainfall intensities for a 100-yr return period with the times of concentrations for each catchment are shown for the pre-development and post development conditions respectively.

### *4.2.3 Hydrologic Analysis*

A hydrologic analysis was carried out to characterize peak flows and runoff volumes under existing and post-development site conditions to assess stormwater management strategies.

Using the Rational Method, the estimated peak runoff from the project catchments under both existing and proposed conditions has been calculated and summarized in Table 4-3. This comparison provides insight into how land-use changes influence peak discharge rates. The analysis was based on several key parameters, including runoff coefficients, rainfall intensity (for the 100-yr return period), and drainage area, which collectively determine the hydrologic response of the site:

- Rainfall intensity based on IDF data at Rainy River, Ontario (48°43'15"N, 93°54'15"W (48.720833,-93.904167)).
- Time of concentration = Varies based on Bransby-Williams Equation (See Appendix A)

The analysis shows that the maximum change in peak flow occurs in Catchment 2, with an increase of only 1.7%. Across the entire site, the cumulative increase in peak flow is only 0.95% and 0.22% toward the west and east, respectively; the increase remains low and does not result in any meaningful change to the overall hydrologic response or downstream conveyance demands. Consequently, the provision of a dedicated stormwater detention facility is not warranted at this stage. Instead, minor grading adjustments or localized storage features may be sufficient to maintain compliance with regulatory requirements and mitigate downstream impacts.

**Table 4-3: Peak Flows and Changes**

| Catchment | Area, A (ha) | Intensity (Pre-Development) (mm/h) | Intensity (Post-Development) (mm/h) | Runoff Coefficient (Existing), C | Runoff Coefficient (Proposed), C | Peak Flow (Existing) ($m^3/s$) | Peak Flow (Proposed) ($m^3/s$) | Percent Change |
|---|---|---|---|---|---|---|---|---|
| 1 | 17.58 | 137.1 | 139.1 | 0.400 | 0.403 | 2.68 | 2.72 | 1.5 |
| 2 | 35.19 | 69.4 | 70.6 | 0.396 | 0.406 | 2.69 | 2.73 | 1.7 |
| EXT-2 | 9.81 | 98.6 | 100.1 | 0.417 | 0.417 | 1.12 | 1.14 | 1.5 |
| 3 | 18.18 | 119.6 | 121.4 | 0.412 | 0.417 | 2.49 | 2.53 | 1.5 |
| 4 | 8.70 | 249.9 | 252.8 | 0.400 | 0.405 | 2.42 | 2.45 | 1.2 |
| 5 | 14.66 | 173 | 175.3 | 0.377 | 0.378 | 2.66 | 2.69 | 1.3 |
| 6 | 10.77 | 126.6 | 128.5 | 0.378 | 0.384 | 1.43 | 1.45 | 1.5 |
| 7 | 5.13 | 78.1 | 79.3 | 0.378 | 0.378 | 0.42 | 0.43 | 1.6 |
| 8 | 13.92 | 116.1 | 117.8 | 0.400 | 0.410 | 1.8 | 1.82 | 1.5 |

### *4.2.4 Stabilization Vegetation*

All disturbed areas will be stabilized using a permanent restoration seed mix in accordance with Ontario Provincial Standard Specification (OPSS) 803, which governs the application of vegetative cover and requires certified seed mixes with verified composition, purity, and germination. Seeding will occur on properly prepared final grades under suitable weather conditions following OPSS 802 requirements. Application rates will follow OPSS 803 Table 5, and vegetation establishment will be confirmed after 60 days, requiring uniform ground cover with no more than 10% bare areas.

Based on recent solar project experience, full establishment of restoration vegetation typically requires several growing seasons. Until adequate stabilization is achieved, temporary ESC measures will remain in place. Once vegetation is sufficiently established to provide long-term stabilization, these temporary measures will be removed and disposed of off-site.

### *4.2.5 Water Quality Control*

Although the project site is not expected to generate significant additional loads of total suspended solids (TSS) or any other pollutants, an oil containment strategy will be incorporated for the substation.

The containment system will be designed to accommodate total oil volume stored at the substation. Primary containment will be provided by an enclosure installed on a concrete pad, sized and designed with capacity for 110% of the anticipated oil volume.

Additionally, an oil grit separator will be installed on-site to enhance water quality by removing sediments and hydrocarbons from stormwater runoff. Detailed specifications of oil grit separator will be finalized during the detailed design phase.

Medium-voltage transformers at the inverter stations may utilize non-toxic, biodegradable transformer oil - primarily natural or synthetic ester organic vegetable-based oils, when possible.

# 5. Stormwater Management Maintenance and Monitoring

The proposed stormwater management approach emphasizes passive, low-maintenance practices designed to align with straightforward operational requirements. The Owner's responsibilities for inspection, operation, and maintenance will generally include:

- **Annual Site Inspections:** Conduct walking inspections in spring and autumn to identify areas of bare soil or erosion. Corrective measures may involve regrading affected areas and re-establishing vegetation using sod or an appropriate seed mix, supplemented with fertilizer and irrigation as needed to ensure germination and stabilization.
- **Sediment Accumulation Review:** During inspections, visually assess areas where sediment has accumulated. Persistent, non-vegetated sediment deposits pose a risk of re-suspension and downstream transport. If such conditions are observed, remove excess sediment and restore stabilization.
- **Downstream Perimeter Assessment:** Inspect the entire downstream site boundary for signs of erosion or concentrated stormwater discharge. Any observed impact will require the development and implementation of a remediation plan.
- **Vegetation Health Monitoring:** Evaluate the density and vigor of vegetation within grassed waterways during inspections. Poor growth or inadequate coverage may indicate unsuitable species or poor establishment, requiring replanting to achieve sufficient vegetative density.

# 6. Erosion and Sediment Control Plan

## 6.1 Site Erosion Potential

An evaluation of the construction area's erosion potential should be conducted in accordance with the methodology outlined in the ESC Guideline (GGHCA, 2006). This assessment considers three key factors – slope gradient, slope length, and soil texture (erodibility) – to classify the site as having "low," "medium," or "high" erosion potential. The determined erosion risk, combined with the sensitivity of downstream receptors, will influence the level of detail required in the design, monitoring, and maintenance of the ESC system.

## 6.2 Erosion and Sediment Control Measures

Construction of the Rainy River Solar Project will involve activities such as topsoil redistribution, minor grading, and general construction traffic. Without appropriate mitigation, these activities could lead to surface soil disturbance, erosion, and potential sediment transport to off-site areas. Erosion control will be primarily achieved through:

- Implementing soil conservation practices to minimize runoff and sediment transport during construction.
- Installing barriers to filter runoff before discharge.

ESC measures will be in place prior to any grading or servicing activities and will include, but are not limited to, the following:

- **Perimeter Protection:** A light-duty silt fence will be installed along the downstream side of the work limits, concurrent with the construction of the site's chain-link fence, and secured on the upstream side of the permanent fence.
- **Vegetated Buffers:** A 5 m wide vegetated buffer will be maintained downstream of disturbed areas where site boundaries allow. Existing native vegetation will remain undisturbed, and sparse areas will be reseeded.
- **Construction Entrance:** A stabilized entrance (mud mat) will be provided to minimize sediment tracking by construction vehicles.
- **Stockpile Stabilization:** Topsoil stockpiles left in place for more than 30 days will be stabilized using vegetative cover (e.g., hydroseeding) or erosion control blankets during unfavorable growing conditions.
- **Access Restrictions:** Equipment will not be permitted beyond designated work limits.
- **Concrete Washout Area:** A lined, contained washout area will be provided at least 30 m (50 ft) from storm drains, open channels/ditches, wetlands, and waterbodies, with no required setbacks from buildings, solar panels, roads, or stormwater management facilities. Regular maintenance and clean-out will be performed to prevent runoff.

- **Material Management:** Temporarily stockpiled fine materials (D50 <4.75 mm) will be covered with erosion control products if stored for more than 30 days. Coarser materials (D50 ≥4.75 mm) may remain uncovered but will be surrounded by a double light-duty silt fence for added protection.
- **Revegetation:** Disturbed areas anticipated to remain inactive for more than 60 days shall be stabilized. Where permanent revegetation is feasible, areas shall be restored with a minimum 50 mm of topsoil and hydroseeding in accordance with OPSS 804.
  Where revegetation cannot be completed due to seasonal constraints, construction phasing, or site conditions, temporary non-vegetative stabilization measures (e.g., erosion control blankets or equivalent) shall be implemented and maintained until permanent revegetation can occur.
- **Temporary Berms:** If required, perimeter berms constructed from excavated material will provide temporary stormwater detention and sediment settling.
- **Weather Contingency Measures:** In adverse conditions, best practices such as temporary rig mats will be used to prevent soil and vegetation disturbance by construction equipment.

ESC measures will be maintained in good condition throughout construction and removed only after contributing drainage areas are stabilized. Removal will occur upon confirmation by a qualified ESC inspector that the risk of surface water and environmental impacts is negligible. All inspections, performance evaluations, and any repairs or modifications will be documented in on-site logbooks.

## 6.3 Erosion and Sediment Control Monitoring Program

To maintain the effectiveness of ESC measures, a structured inspection and maintenance program should be implemented. This program will include daily inspections during construction period and additional checks following any significant rainfall event, with immediate repair of critical deficiencies. Post-construction monitoring frequency should align with Section 5 above. Non-urgent repairs, those posing no immediate risk of sediment discharge, must be completed within 48 hours of identification or prior to the next forecasted rainfall, whichever occurs first. The program will involve the following activities:

- **Visual Inspection:** Assess ESC measures to confirm that discharged flows are generally free of sediment and turbidity.
- **Condition Review:** Inspect vegetation protection, erosion control blankets, and silt fencing to ensure they remain in good repair.
- **Debris Removal:** Clear any accumulated construction debris that may obstruct ESC performance.

- **Remedial Actions:** Implement corrective measures as needed, including erosion stabilization, repair or replacement of damaged controls, and any additional remediation required to maintain compliance.

## 6.4 Construction Phase Measures

To protect the quality of receiving waters during construction, an ESC plan will be implemented. The plan will include, but is not limited to, the following measures:

- **Flow Interception:** Install straw bale barriers and/or filter cloth barriers, including light-duty silt fences, within existing swales, drains, or at critical downstream flow points to capture suspended solids and prevent sediment transport into downstream watercourses.
- **Minimized Disturbance:** Strip topsoil only in areas required for solar panel installation, utility servicing, and road construction.
- **Grading Practices:** Apply appropriate grading techniques to maintain positive drainage and reduce the potential for increased runoff.

A detailed construction-stage ESC plan will be prepared in later phases of the project in close coordination with the selected contractor. This plan will refine the preliminary measures outlined in this report and ensure that ESC practices are appropriately tailored to the contractor's methods, construction sequencing, and site-specific conditions.

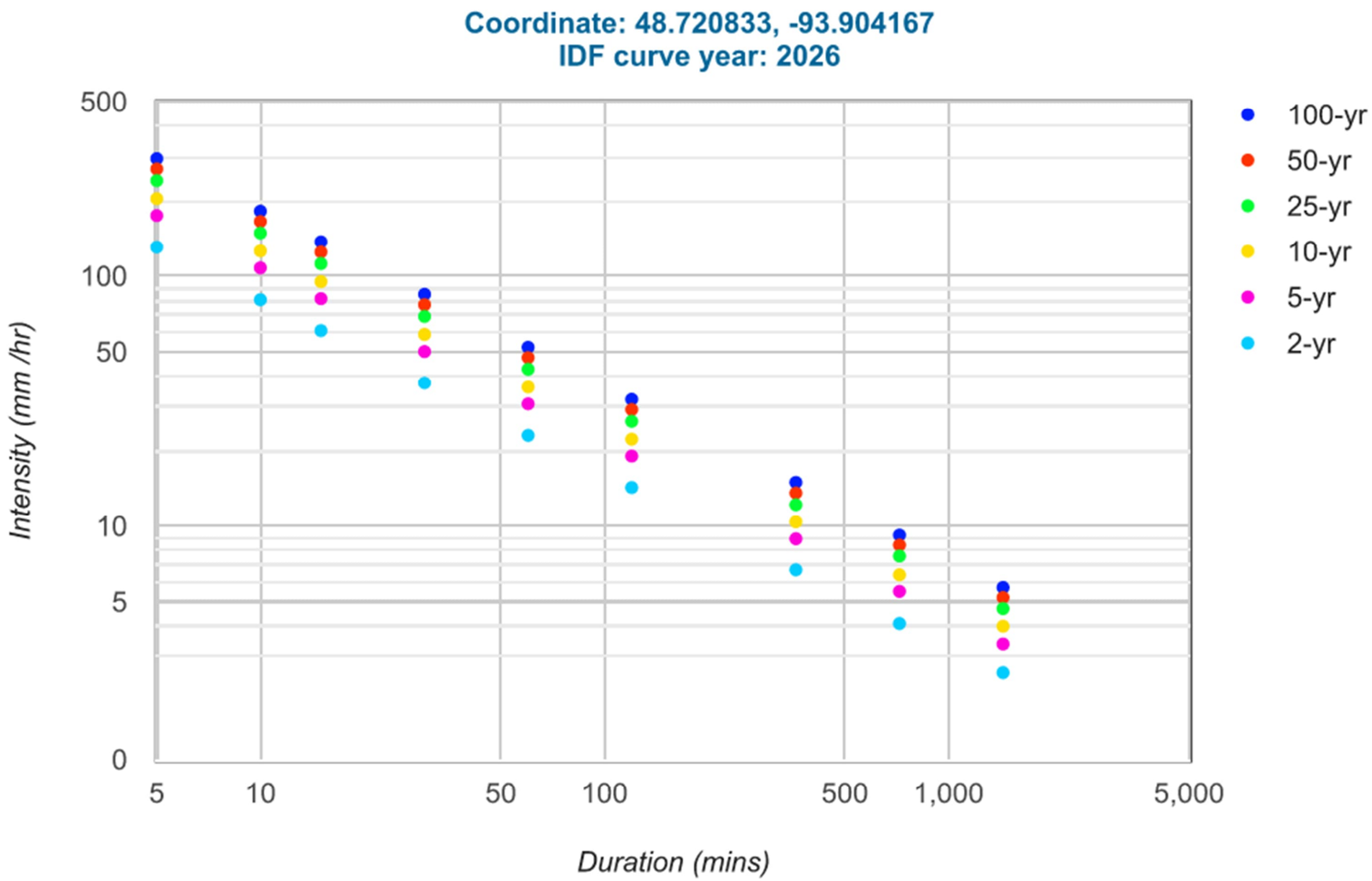
# 7. Conclusion and Recommendations

A preliminary stormwater management approach has been outlined for the proposed Rainy River Solar Project to guide future design and ensure appropriate runoff control during construction and eventual operations. Based on the anticipated site layout and the minimal change in impervious area between existing and post-development conditions, no formal structural stormwater management measures are expected to be required at this stage.
The stormwater measures implemented during the construction period will minimize the potential erosion, and water quality impacts during site preparation and construction activities. The post-construction strategy incorporates the use of vegetated buffers and site-wide stabilization plantings to promote infiltration, minimize erosion, and maintain stable drainage patterns. Based on the present development conditions, no formal structural stormwater management measures are expected to be required at this stage The project has also consistently implemented a standard 30 m setback between construction activities and adjacent sensitive environmental features, including wetlands and watercourses.
This setback strategy enhances the protection of environmentally significant areas and is aligned with best management practices applied throughout the project.

The following recommendations are provided to guide future design phases and project execution:

- The stormwater management considerations described in this draft report should be implemented during detailed design and constructed once finalized.
- All ESC practices identified herein should be applied throughout construction to protect downstream systems.
- A stormwater and ESC monitoring and maintenance program should be carried out during construction and continued through early operations to ensure long-term performance.

# Appendix A
## IDF Table for Rainy River



## Coefficient summary

**IDF Curve:** 48° 43' 15" N, 93° 54' 15" W (48.720833,-93.904167)

Retrieved: Mon, 23 Feb 2026 05:29:58 GMT

**Data year:** 2010
**IDF curve year:** 2026

## Statistics

### Rainfall intensity (mm $hr^{-1}$)

| Duration | 5-min | 10-min | 15-min | 30-min | 1-hr | 2-hr | 6-hr | 12-hr | 24-hr |
|---|---|---|---|---|---|---|---|---|---|
| 2-yr | 130.5 | 80.5 | 60.7 | 37.5 | 23.1 | 14.3 | 6.7 | 4.1 | 2.6 |
| 5-yr | 174.8 | 107.8 | 81.3 | 50.1 | 30.9 | 19.1 | 8.9 | 5.5 | 3.4 |
| 10-yr | 204.3 | 126.0 | 95.0 | 58.6 | 36.1 | 22.3 | 10.4 | 6.4 | 4.0 |
| 25-yr | 241.2 | 148.7 | 112.1 | 69.1 | 42.6 | 26.3 | 12.2 | 7.6 | 4.7 |
| 50-yr | 268.5 | 165.5 | 124.7 | 76.9 | 47.4 | 29.3 | 13.6 | 8.4 | 5.2 |
| 100-yr | 295.2 | 182.0 | 137.1 | 84.6 | 52.1 | 32.2 | 15.0 | 9.2 | 5.7 |

### Rainfall depth (mm)

| Duration | 5-min | 10-min | 15-min | 30-min | 1-hr | 2-hr | 6-hr | 12-hr | 24-hr |
|---|---|---|---|---|---|---|---|---|---|
| 2-yr | 10.9 | 13.4 | 15.2 | 18.8 | 23.1 | 28.6 | 40.2 | 49.2 | 62.4 |
| 5-yr | 14.6 | 18.0 | 20.3 | 25.1 | 30.9 | 38.2 | 53.4 | 66.0 | 81.6 |
| 10-yr | 17.0 | 21.0 | 23.8 | 29.3 | 36.1 | 44.6 | 62.4 | 76.8 | 96.0 |
| 25-yr | 20.1 | 24.8 | 28.0 | 34.5 | 42.6 | 52.6 | 73.2 | 91.2 | 112.8 |
| 50-yr | 22.4 | 27.6 | 31.2 | 38.5 | 47.4 | 58.6 | 81.6 | 100.8 | 124.8 |
| 100-yr | 24.6 | 30.3 | 34.3 | 42.3 | 52.1 | 64.4 | 90.0 | 110.4 | 136.8 |

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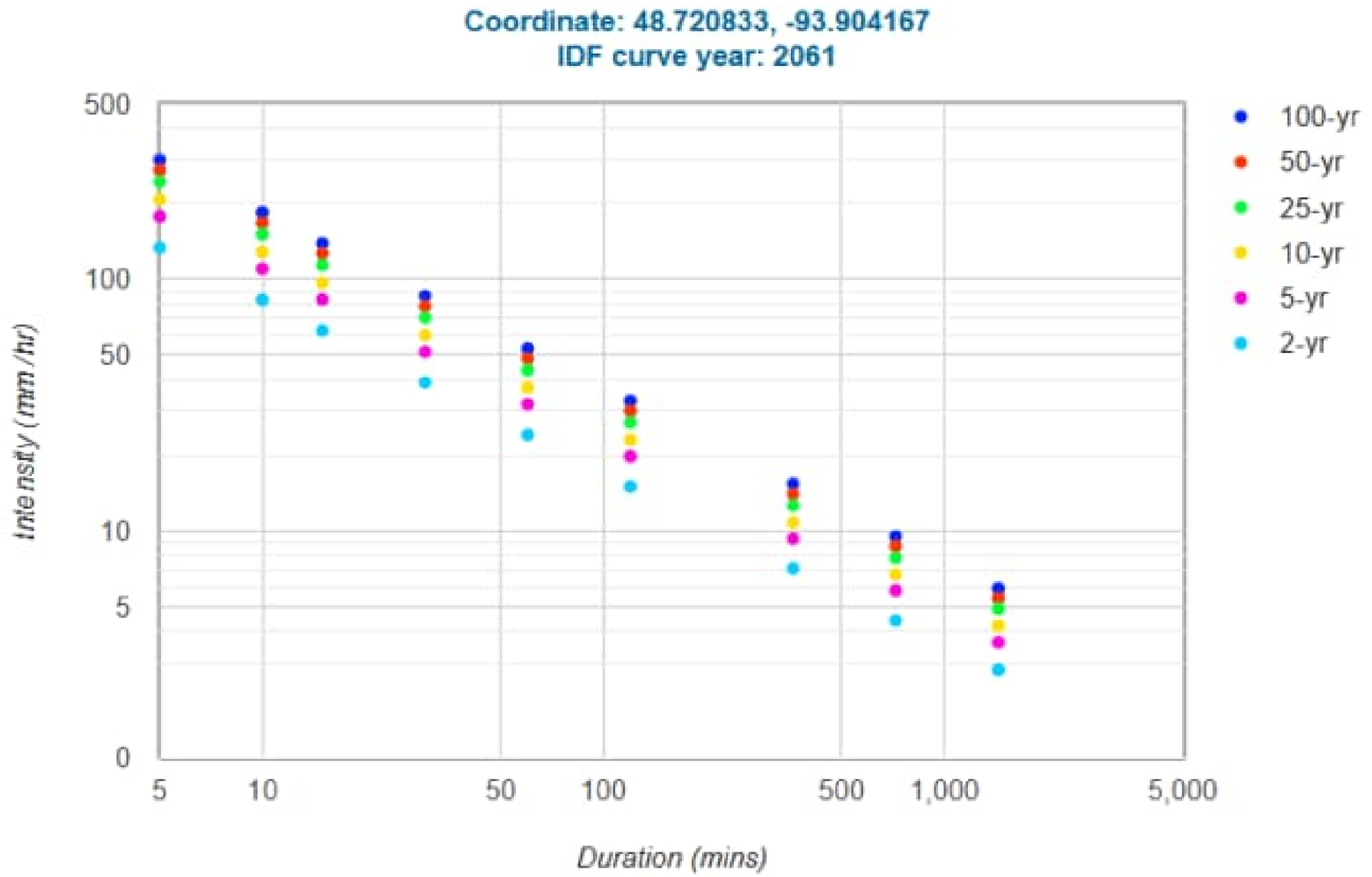

○ Switch variable: Intensity or Depth

## Coefficient summary

**Data year:** 2010
**IDF curve year:** 2061

Click a return period in the table header for more detail.

## Statistics

### Rainfall intensity (mm $hr^{-1}$)

| Duration | 5-min | 10-min | 15-min | 30-min | 1-hr | 2-hr | 6-hr | 12-hr | 24-hr |
|---|---|---|---|---|---|---|---|---|---|
| 2-yr | 133.8 | 82.9 | 62.6 | 38.9 | 24.1 | 15.0 | 7.1 | 4.4 | 2.8 |
| 5-yr | 178.1 | 110.2 | 83.2 | 51.5 | 31.9 | 19.8 | 9.3 | 5.8 | 3.6 |
| 10-yr | 207.6 | 128.4 | 96.9 | 60.0 | 37.1 | 23.0 | 10.8 | 6.7 | 4.2 |
| 25-yr | 244.5 | 151.1 | 114.0 | 70.5 | 43.6 | 27.0 | 12.6 | 7.8 | 4.9 |
| 50-yr | 271.8 | 167.9 | 126.7 | 78.3 | 48.4 | 30.0 | 14.0 | 8.7 | 5.4 |
| 100-yr | 298.5 | 184.3 | 139.1 | 85.9 | 53.1 | 32.9 | 15.4 | 9.5 | 5.9 |

### Rainfall depth (mm)

| Duration | 5-min | 10-min | 15-min | 30-min | 1-hr | 2-hr | 6-hr | 12-hr | 24-hr |
|---|---|---|---|---|---|---|---|---|---|
| 2-yr | 11.1 | 13.8 | 15.7 | 19.4 | 24.1 | 30.0 | 42.6 | 52.8 | 67.2 |
| 5-yr | 14.8 | 18.4 | 20.8 | 25.8 | 31.9 | 39.6 | 55.8 | 69.6 | 86.4 |
| 10-yr | 17.3 | 21.4 | 24.2 | 30.0 | 37.1 | 46.0 | 64.8 | 80.4 | 100.8 |
| 25-yr | 20.4 | 25.2 | 28.5 | 35.3 | 43.6 | 54.0 | 75.6 | 93.6 | 117.6 |
| 50-yr | 22.6 | 28.0 | 31.7 | 39.1 | 48.4 | 60.0 | 84.0 | 104.4 | 129.6 |
| 100-yr | 24.9 | 30.7 | 34.8 | 43.0 | 53.1 | 65.8 | 92.4 | 114.0 | 141.6 |

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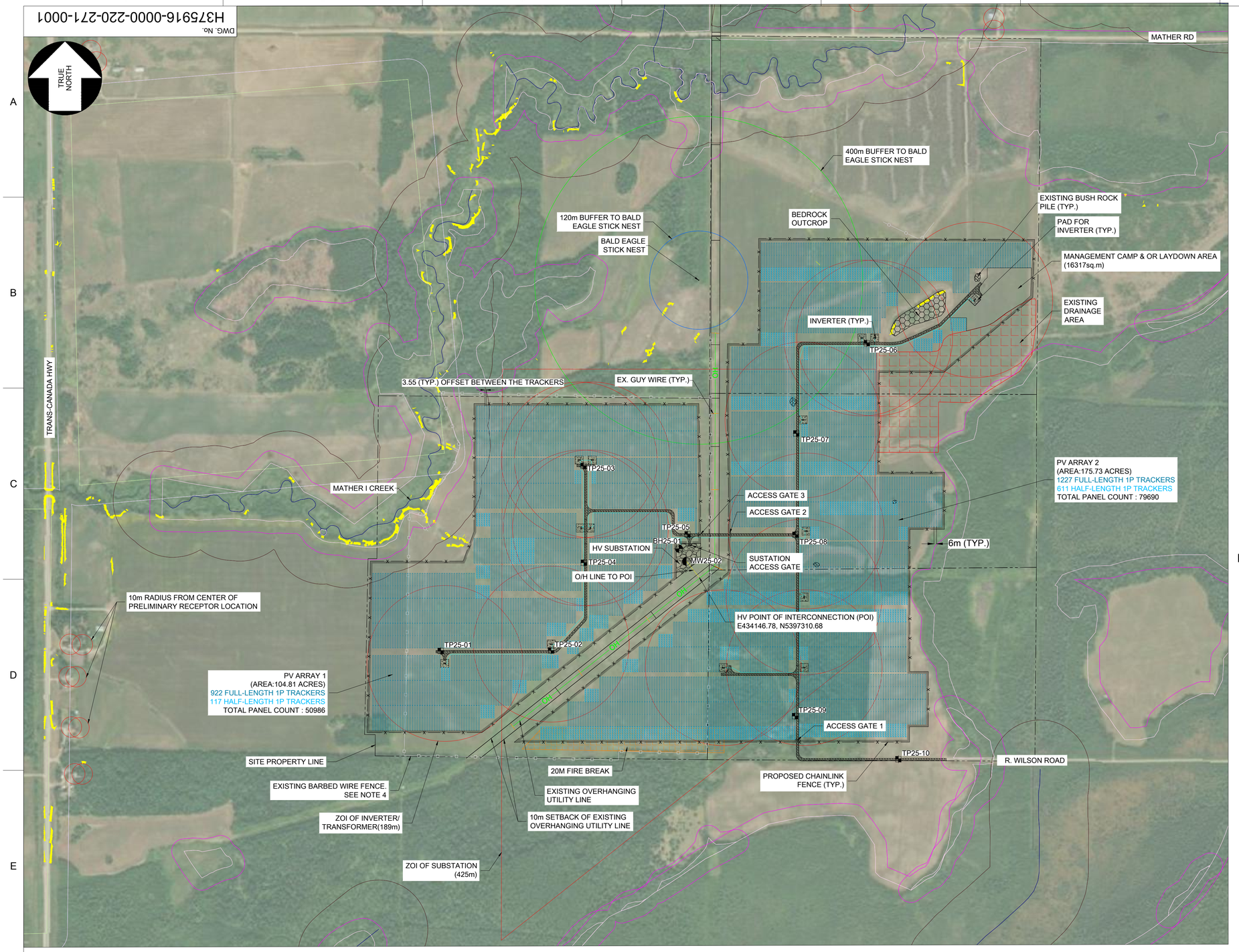
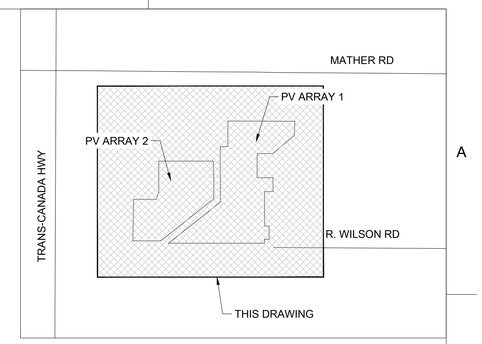
## Table 1

| Catchment | L(m) | S | Area (ha) | Tc(min) | Tc(Final) | Intensity_year 2026(mm/hr) | Intensity_year 2061(mm/hr) |
|---|---|---|---|---|---|---|---|
| 1 | 424 | 2.9 | 17.58 | 14.66 | 15 | 137.1 | 139.1 |
| 2 | 1165 | 1.3 | 35.19 | 44.13 | 44 | 69.4 | 70.6 |
| EXT-2 | 563 | 0.9 | 9.81 | 26.08 | 26 | 98.6 | 100.1 |
| 3 | 495 | 1.4 | 18.18 | 19.74 | 20 | 119.6 | 121.4 |
| 4 | 165 | 1.9 | 8.7 | 6.66 | 7 | 249.9 | 252.8 |
| 5 | 254 | 1.2 | 14.66 | 10.67 | 11 | 173 | 175.3 |
| 6 | 440 | 1.4 | 10.77 | 18.49 | 18 | 126.6 | 128.5 |
| 7 | 706 | 0.8 | 5.13 | 35.73 | 36 | 78.1 | 79.3 |
| 8 | 490 | 1.2 | 13.92 | 20.70 | 21 | 116.1 | 117.8 |

# Appendix B
## Overall Site Plan

DWG. No. H375916-0000-220-271-0001




## KEY PLAN (N.T.S.)

| RAINY RIVER | | |
|---|---|---|
| TRACKER ARRANGEMENT | NO OF TRACKER | |
| | FULL LENGTH | HALF LENGTH |
| TRACKER (1P) | 2149 | 728 |
| PANEL COUNT | 111748 | 18928 |
| TOTAL PANELS | 130676 | |
| POWER RATING OF PANEL | 625W | |
| NO OF INVERTERS | 14 | |
| DC CAPACITY | 81.67 MW | |
| AC CAPACITY | 60.00 MW | |
| PITCH | 6m (TYP.) | |

## NOTES:

1. ALL DIMENSIONS SHOWN HERE ARE IN METRES UNLESS MENTIONED OTHERWISE.
2. COORDINATE SYSTEM SHOWN HERE IS NAD83 (CSRS) 2010 UTM ZONE 15N with CGVD2013 AS VERTICAL DATUM.
3. TOPOGRAPHIC DATA SHOWN IS BASED ON THE SURVEY DATA FILE "260201-ST-Carbon Free Solar - Mather Road OG+Property.dwg" PROVIDED BY 'LANDMARK SURVEY AND TESTING' ON FEBRUARY 09, 2026 (REVISION NUMBER 2/9/26-001) AND THE DATA FILE "1m LIDAR CONTOURS" DOWNLOADED FROM GEOHUB ONTARIO.
4. EXISTING BARBED WIRE FENCE TO BE REMOVED WHERE IT CONFLICTS WITH PROPOSED FEATURES.
5. PROPOSED PERIMETER CHAINLINK FENCE TO BE 2m HIGH WITH 3 STRING BARBED WIRE FOR SECURITY.

## LEGEND:

- PROPOSED FULL-LENGTH 1P TRACKER
- PROPOSED HALF-LENGTH 1P TRACKER
- SITE PROPERTY LINE
- PROPOSED CHAINLINK FENCE
- 5m BUFFER OF PROPOSED CHAINLINK FENCE
- EXISTING WETLAND
- 30m BUFFER OF EXISTING WETLAND
- EXISTING WATER BODY
- 120m BUFFER OF EXISTING WATER BODY
- PROPOSED MV-2
- PROPOSED ATV TRAIL
- EXISTING BEDROCK OUTCROP AREA
- ZOI SUBSTATION (425m)
- ZOI OF INVERTER/ TRANSFORMER(189m)
- 10m RADIUS FROM CENTER OF PRELIMINARY RECEPTOR LOCATION
- PROPOSED INVERTER PAD
- PROPOSED HV SUBSTATION PAD
- EXISTING OVERHEAD UTILITY LINE
- EXISTING BRUSH ROCK PILE
- EXISTING BARBED WIRE FENCE
- EXISTING DRAINAGE AREA
- TP25-01 TEST PIT
- BH25-01 BOREHOLE
- MW25-01 MONITORING WELL
- AREAS WITH EXISTING SLOPES > 20%
- PROPOSED ACCESS GATE
- PROPOSED O/H LINE TO POI

# OVERALL SITE PLAN

SCALE 1:5,000

0 50 100 150 200 250
1:5,000 SCALE IN METRES

NOT FOR CONSTRUCTION



HATCH

CarbonFree TECHNOLOGY
CARBONFREE TECHNOLOGY INC.
1 ST. CLAIR AVE. WEST, #501
TORONTO, ON M4T 1V5

| No. | DESCRIPTION | BY | CHK'D | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR PERMITTING | R.P. | J.M. | 2026/03/13 |

| ROLE | NAME | SIGNATURE | DATE |
|---|---|---|---|
| DRAFTSPERSON | R. POKHAREL | NR | 2025/12/03 |
| DESIGNER | J. SUN | NR | 2025/12/03 |
| CHECKER | J. MOHAMMAD | | 2026/03/13 |
| DESIGN COORD. | M. BASIQ | | 2026/03/13 |
| RESP. ENG. | M. BASIQ | | 2026/03/13 |
| LEAD DISC. ENG. | M. BASIQ | | 2026/03/13 |
| ENG. MANAGER | J. MOHAMMAD | | 2026/03/13 |
| PROJ. MANAGER | S. THOMPSON | Thompson, Shanley | 2026/03/13 |
| CLIENT NAME | | | |

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RAINY RIVER 71 SOLAR PROJECT

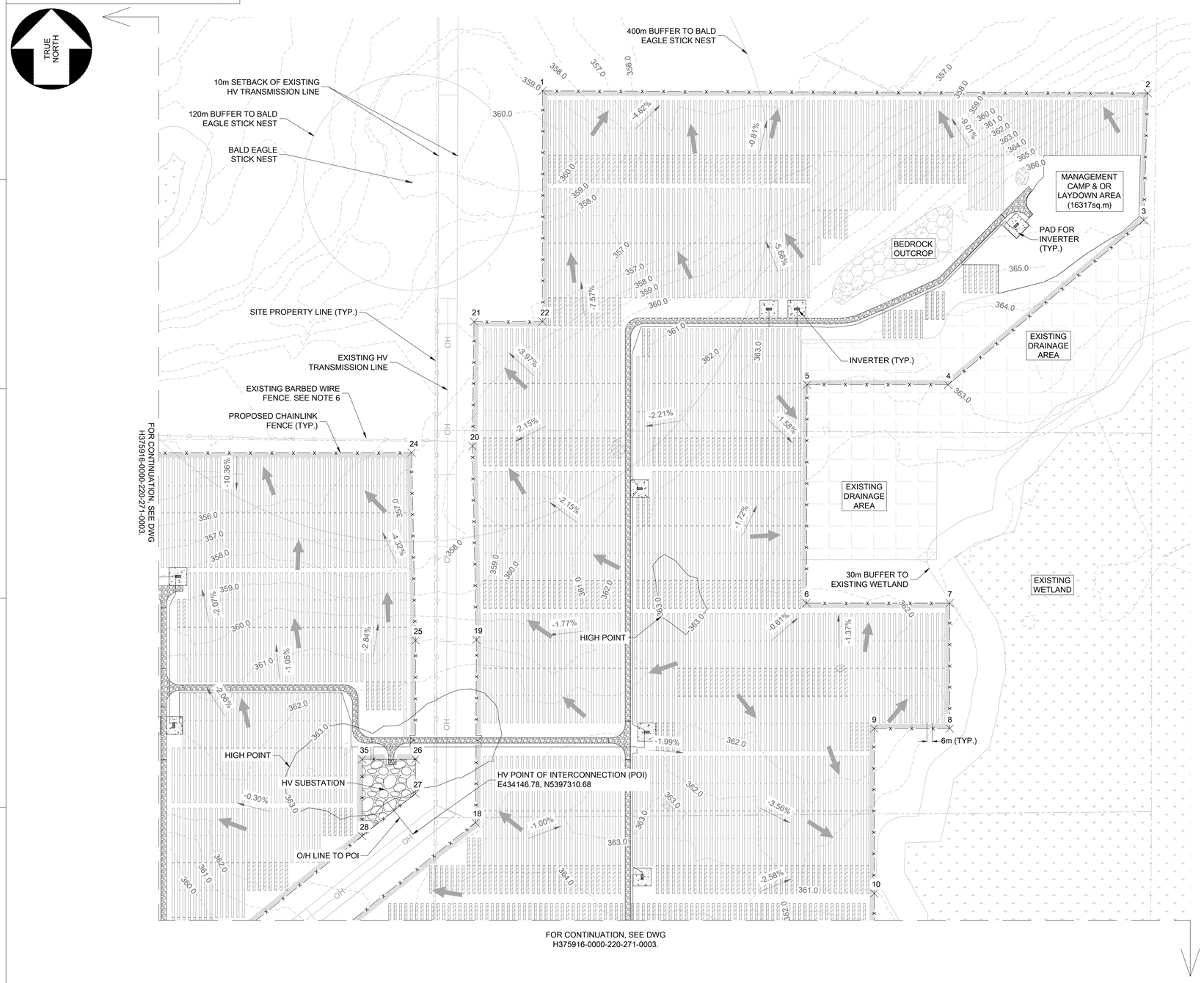
GENERAL SITE WIDE CIVIL
OVERALL SITE PLAN

SCALE 1:5,000 | DWG. No. H375916-0000-220-271-0001 | REV 0

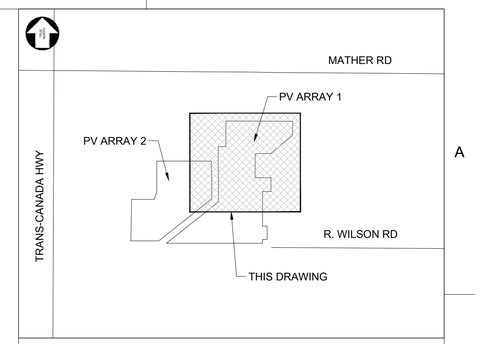
SHEET SIZE: A1

# Appendix C
## Grading and Drainage Plan

DWG. No. H375916-0000-220-271-0002




| PROPOSED CHAINLINK FENCE SETTING OUT POINTS | | | |
|---|---|---|---|
| POINT | NORTHING | EASTING | DESCRIPTION |
| 1 | 5398137.45 | 434291.12 | PROP. FENCE |
| 2 | 5398134.94 | 434964.28 | PROP. FENCE |
| 3 | 5397993.39 | 434959.99 | PROP. FENCE |
| 4 | 5397810.55 | 434742.43 | PROP. FENCE |
| 5 | 5397810.55 | 434585.36 | PROP. FENCE |
| 6 | 5397567.67 | 434584.75 | PROP. FENCE |
| 7 | 5397567.67 | 434744.17 | PROP. FENCE |
| 8 | 5397428.22 | 434744.17 | PROP. FENCE |
| 9 | 5397428.22 | 434660.17 | PROP. FENCE |
| 10 | 5397244.75 | 434660.17 | PROP. FENCE |
| 18 | 5397323.57 | 434216.56 | PROP. FENCE |
| 19 | 5397526.78 | 434217.54 | PROP. FENCE |
| 20 | 5397742.30 | 434213.09 | PROP. FENCE |
| 21 | 5397880.79 | 434214.98 | PROP. FENCE |
| 22 | 5397880.78 | 434291.10 | PROP. FENCE |
| 24 | 5397734.97 | 434145.48 | PROP. FENCE |
| 25 | 5397526.17 | 434150.04 | PROP. FENCE |
| 26 | 5397393.92 | 434149.78 | PROP. FENCE |
| 27 | 5397355.74 | 434149.71 | PROP. FENCE |
| 28 | 5397308.57 | 434090.36 | PROP. FENCE |
| 35 | 5397393.92 | 434090.52 | PROP. FENCE |




KEY PLAN
(N.T.S.)

## NOTES:

1. ALL DIMENSIONS SHOWN HERE ARE IN METRES UNLESS MENTIONED OTHERWISE.
2. COORDINATE SYSTEM SHOWN HERE IS NAD83(CSRS) / UTM ZONE 15.
3. TOPOGRAPHIC DATA SHOWN IN BASED ON THE SURVEY DATA FILE "260201-ST-Carbon Free Solar - Mather Road OG+Property.dwg" PROVIDED BY 'LANDMARK SURVEY AND TESTING' ON FEBRUARY 09, 2026 (REVISION NUMBER 2/9/26-001) AND THE DATA FILE "1m LIDAR CONTOURS" DOWNLOADED FROM GEOHUB ONTARIO.
4. GRADING TO BE COMPLETED IN ACCORDANCE WITH OPSS 206. GRANULAR MATERIAL TO BE USED IN ACCORDANCE WITH OPSS 1010.
5. ALL SEEDING TO BE COMPLETED IN ACCORDANCE WITH OPSS 804.
6. EXISTING BARBED WIRE FENCE TO BE REMOVED WHERE IT CONFLICTS WITH THE PROPOSED FEATURES.
7. PROPOSED PERIMETER CHAINLINK FENCE TO BE 2m HIGH WITH 3 STRING BARBED WIRE FOR SECURITY.

## LEGEND:

- PROPOSED FULL-LENGTH 1P TRACKER
- PROPOSED HALF-LENGTH 1P TRACKER
- 360 — EXISTING CONTOUR LINE
- SITE PROPERTY LINE
- x — PROPOSED CHAINLINK FENCE
- 5m BUFFER OF PROPOSED CHAINLINK FENCE
- EXISTING WETLAND WITH 30m BUFFER
- PROPOSED MV-2
- PROPOSED ROAD-ATV
- EXISTING BEDROCK OUTCROP AREA
- 1 — PROPOSED FENCE SETTING OUT POINTS
- DRAINAGE FLOW DIRECTION
- -2.35% — EXISTING SLOPE WITH DIRECTION
- PROPOSED INVERTER PAD
- PROPOSED HV SUBSTATION PAD
- OH — EXISTING OVERHEAD UTILITY LINE
- EXISTING BRUSH ROCK PILE
- EXISTING BARBED WIRE FENCE
- EXISTING DRAINAGE AREA

NOT FOR CONSTRUCTION

# PROPOSED GRADING & DRAINAGE PLAN 1

SCALE 1:2,500

0 25 50 75 100 125
1:2,500 SCALE IN METRES



HATCH

CarbonFree TECHNOLOGY
CARBONFREE TECHNOLOGY INC.
181 BAY STREET, SUITE 2100
TORONTO, ON M5T 1T3

| | | | |
|---|---|---|---|
| DRAFTSPERSON | R. POKHAREL | NR | 2026/01/28 |
| DESIGNER | J. SUN | NR | 2026/01/28 |
| CHECKER | J. MOHAMMAD | | 2026/03/13 |
| DESIGN COORD. | M. BASIQ | | 2026/03/13 |
| RESP. ENG. | M. BASIQ | | 2026/03/13 |
| LEAD DISC. ENG. | M. BASIQ | | 2026/03/13 |
| ENG. MANAGER | J. MOHAMMAD | | 2026/03/13 |
| PROJ. MANAGER | S. THOMPSON | Thompson, Shanley | 2026/03/13 |
| CLIENT NAME | | | |

| No. | DESCRIPTION | BY | CHK'D | DATE |
|---|---|---|---|---|
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| DRAWING No. | DRAWING TITLE |
|---|---|
| H375916-0000-220-271-0003 | GRADING & DRAINAGE PLAN SHEET 02 OF 02 |
| H375916-0000-220-271-0001 | OVERALL SITE PLAN |

REFERENCE DRAWINGS NA

REG. PROFESSIONAL

DRAWING APPROVAL STATUS: Issued for Permitting

CARBONFREE RAINY RIVER Ltd.
RAINY RIVER 71 SOLAR PROJECT

GENERAL SITE WIDE
CIVIL

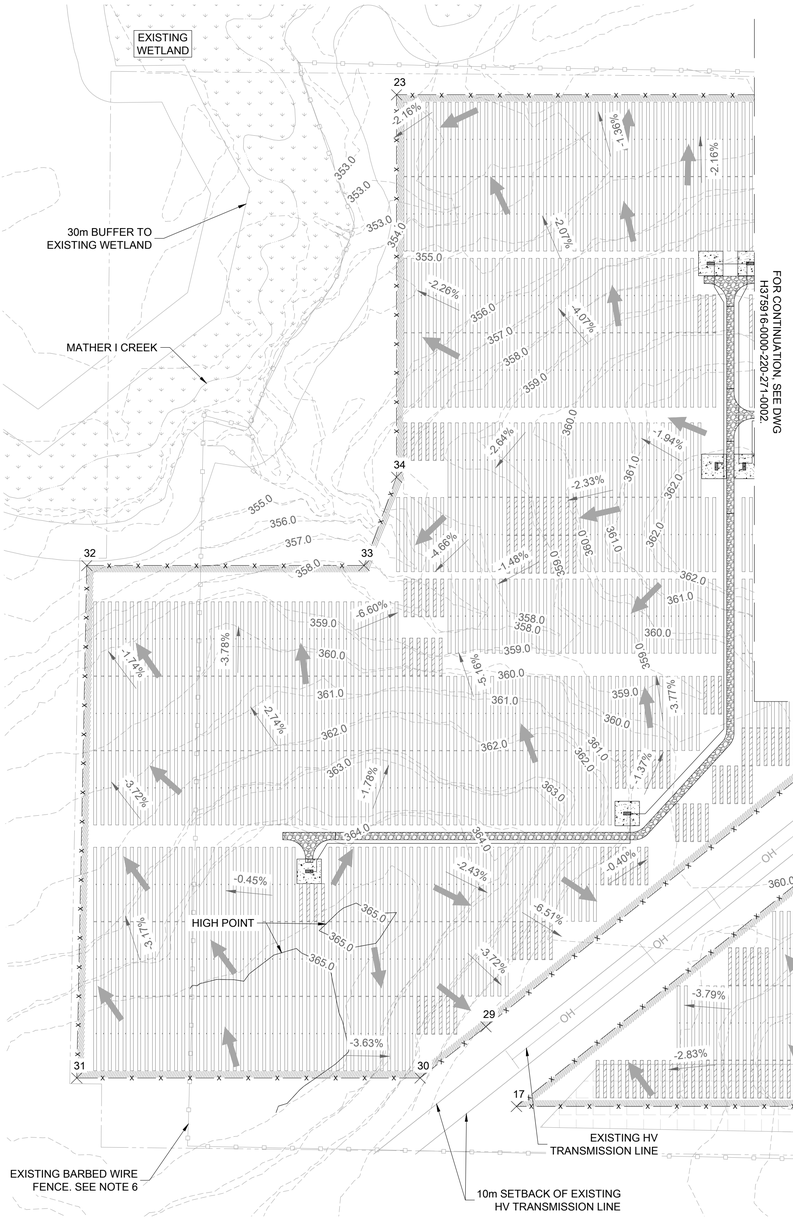
GRADING & DRAINAGE PLAN SHEET 01 OF 02

| SCALE | DWG. No. | REV |
|---|---|---|
| 1:2,500 | H375916-0000-220-271-0002 | 0 |

SHEET SIZE: A1

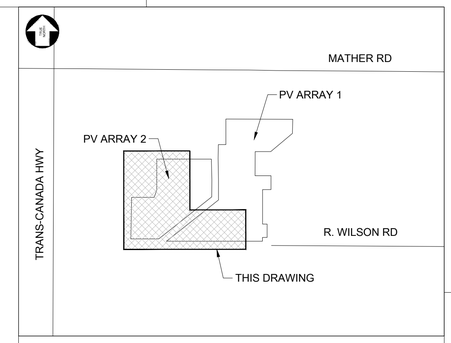
DWG. No. H375916-0000-220-271-0003

TRUE NORTH




## PROPOSED CHAINLINK FENCE SETTING OUT POINTS

| POINT | NORTHING | EASTING | DESCRIPTION |
|---|---|---|---|
| 11 | 5397081.58 | 434660.05 | PROP. FENCE |
| 12 | 5397081.58 | 434705.03 | PROP. FENCE |
| 13 | 5396947.10 | 434705.03 | PROP. FENCE |
| 14 | 5396947.10 | 434659.35 | PROP. FENCE |
| 15 | 5396909.57 | 434659.32 | PROP. FENCE |
| 16 | 5396909.49 | 434218.50 | PROP. FENCE |
| 17 | 5396909.39 | 433694.96 | PROP. FENCE |
| 23 | 5397734.97 | 433597.14 | PROP. FENCE |
| 29 | 5396974.49 | 433670.06 | PROP. FENCE |
| 30 | 5396932.61 | 433616.39 | PROP. FENCE |
| 31 | 5396932.61 | 433336.14 | PROP. FENCE |
| 32 | 5397350.76 | 433344.32 | PROP. FENCE |
| 33 | 5397350.76 | 433570.63 | PROP. FENCE |
| 34 | 5397422.85 | 433597.14 | PROP. FENCE |




## KEY PLAN (N.T.S.)

## NOTES:

1. ALL DIMENSIONS SHOWN HERE ARE IN METRES UNLESS MENTIONED OTHERWISE.
2. COORDINATE SYSTEM SHOWN HERE IS NAD83(CSRS) / UTM ZONE 15.
3. TOPOGRAPHIC DATA SHOWN IN BASED ON THE SURVEY DATA FILE "260201-ST-Carbon Free Solar - Mather Road OG+Property.dwg" PROVIDED BY 'LANDMARK SURVEY AND TESTING' ON FEBRUARY 09, 2026 (REVISION NUMBER 2/9/26-001) AND THE DATA FILE "1m LIDAR CONTOURS" DOWNLOADED FROM GEOHUB ONTARIO.
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5. ALL SEEDING TO BE COMPLETED IN ACCORDANCE WITH OPSS 804.
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## LEGEND:

- PROPOSED FULL-LENGTH 1P TRACKER
- PROPOSED HALF-LENGTH 1P TRACKER
- 360 — EXISTING CONTOUR LINE
- SITE PROPERTY LINE
- x — PROPOSED CHAINLINK FENCE
- 5m BUFFER OF PROPOSED CHAINLINK FENCE
- EXISTING WETLAND WITH 30m BUFFER
- PROPOSED MV-2
- PROPOSED ROAD-ATV
- 1 — PROPOSED FENCE SETTING OUT POINTS
- DRAINAGE FLOW DIRECTION
- -2.35% — EXISTING SLOPE WITH DIRECTION
- PROPOSED INVERTER PAD
- OH — EXISTING OVERHEAD UTILITY LINE
- EXISTING BARBED WIRE FENCE
- EXISTING CREEK

NOT FOR CONSTRUCTION

# PROPOSED GRADING & DRAINAGE PLAN 2

SCALE 1:2,500

0 25 50 75 100 125
1:2,500 SCALE IN METRES



HATCH

CarbonFree TECHNOLOGY
CARBONFREE TECHNOLOGY INC.
1 ST. CLAIR AVE. WEST, 3RD FLOOR
TORONTO, ON M4T 1V5

| | | | | |
|---|---|---|---|---|
| DRAFTSPERSON | R. POKHAREL | NR | 2026/01/28 |
| DESIGNER | J. SUN | NR | 2026/01/28 |
| CHECKER | J. MOHAMMAD | | 2026/03/13 |
| DESIGN COORD. | M. BASIQ | | 2026/03/13 |
| RESP. ENG. | M. BASIQ | | 2026/03/13 |
| LEAD DISC. ENG. | M. BASIQ | | 2026/03/13 |
| ENG. MANAGER | J. MOHAMMAD | | 2026/03/13 |
| PROJ. MANAGER | S. THOMPSON | Thompson, Shanley | 2026/03/13 |
| CLIENT NAME | | | |

DRAWING APPROVAL STATUS: Issued for Permitting

| No. | DESCRIPTION | BY | CHK'D | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR PERMITTING | R.P. | J.M. | 2026/03/13 |

REFERENCE DRAWINGS NA

| DRAWING No. | DRAWING TITLE |
|---|---|
| H375916-0000-220-271-0002 | GRADING & DRAINAGE PLAN SHEET 01 OF 02 |
| H375916-0000-220-271-0001 | OVERALL SITE PLAN |

REG. PROFESSIONAL

CARBONFREE RAINY RIVER Ltd.
RAINY RIVER 71 SOLAR PROJECT

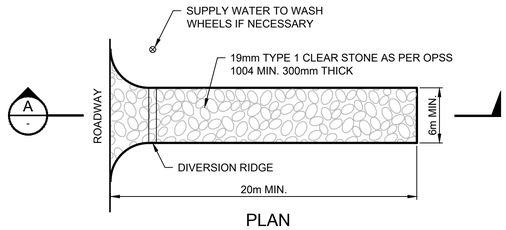
GENERAL SITE WIDE
CIVIL

GRADING & DRAINAGE PLAN SHEET 02 OF 02

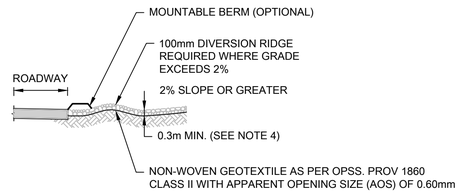
SCALE 1:2,500 | DWG. No. H375916-0000-220-271-0003 | REV 0

SHEET SIZE: A1

# Appendix D
## Erosion and Sediment Control Plan




PLAN



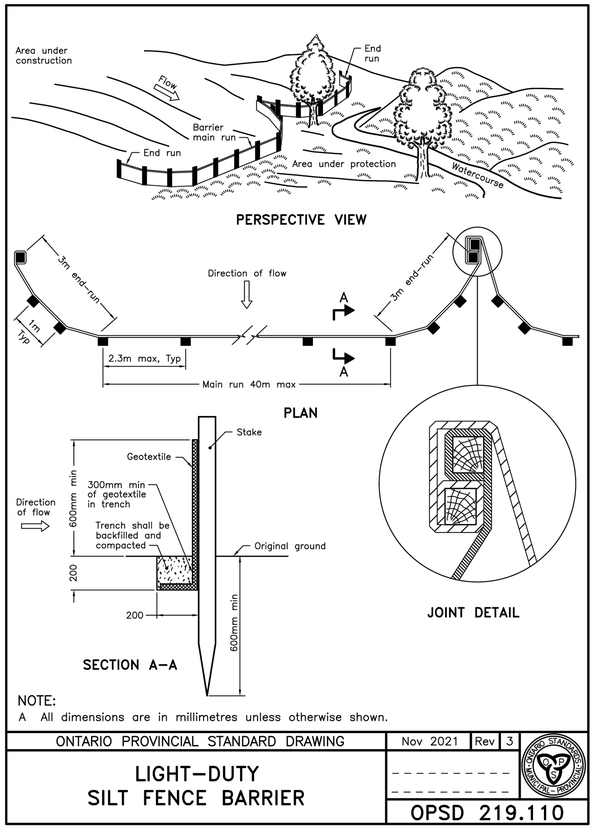

SECTION AT A-A

## 1 - CONSTRUCTION ACCESS

SCALE: NTS

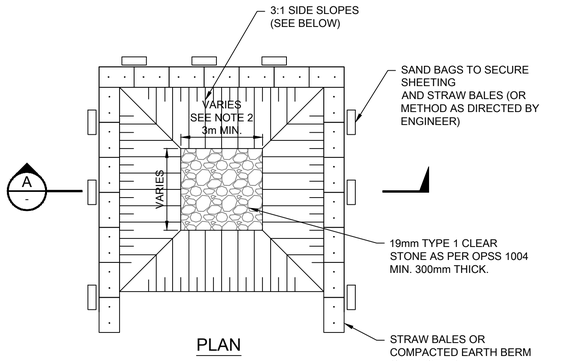
### CONSTRUCTION ACCESS NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING AND SEDIMENT LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE TOP DRESSING, REPAIR AND / OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO EXITING THE CONSTRUCTION ZONE.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A STABILIZED SURFACE THAT DRAINS INTO AN APPROVED SEDIMENT CONTAINMENT SYSTEM.
4. STONE SIZE - USE 19mm TYPE 1 CLEAR STONE AS PER OPSS 1004, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT, FOR CONSTRUCTION ENTRANCE.
   -- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
   -- MAINTENANCE - THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OUTSIDE OF THE CONSTRUCTION ZONE MUST BE CONTAINED AND REMOVED.
5. TEMPORARY "TRUCK ENTRANCE" SIGNS (TC-31) SHALL BE INSTALLED ON THE SHOULDER, 150m IN ADVANCE OF THE CONSTRUCTION ACCESS. THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF OBTAINING, ERECTING AND MAINTAINING THESE SIGNS.
6. THE TEMPORARY CONSTRUCTION ACCESS SHALL BE REMOVED FROM THE ROAD ALLOWANCE WHEN ITS USE IS FINISHED AND ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
7. ENTRANCES SHALL BE PROVIDED WITH A CULVERT IF REQUIRED FOR ROADSIDE SURFACE DRAINAGE.

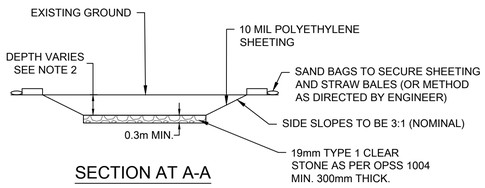



## 2 - OPSD 219.110 - LIGHT-DUTY SILT FENCE BARRIER

SCALE: NTS




PLAN




SECTION AT A-A

## 3 - CONCRETE WASHOUT AREAS

SCALE: NTS

### CONCRETE WASHOUT AREAS NOTES:

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED. ACTUAL LAYOUT SIZE TO BE FIELD DETERMINED.
2. LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) TO BE CONSISTENT WITH THE REQUIREMENTS BELOW.
   -- LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 30m FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE.
   -- SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, STRAW BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS,REGULATIONS, AND GUIDELINES.

### EROSION AND SEDIMENT CONTROL (CONSTRUCTION PHASE) NOTES:

1. CONTRACTOR SHALL IMPLEMENT FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON EROSION AND SEDIMENT CONTROL PLAN TO KEEP SILT AND/OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORMWATER DITCHES EVENTUALLY POLLUTING THE RECEIVING STORMWATER SYSTEM.
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATED MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE.
3. CONTRACTOR SHALL CLEAN UP ALL THE ENTRANCES TO THE SITE DAILY.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. INSTALL ALL ESC MEASURES PRIOR TO CONSTRUCTION AND MAINTAIN THEM THROUGHOUT THE WORK TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
6. DURING CONSTRUCTION, PERFORM DAILY ESC INSPECTIONS AND ADDITIONAL INSPECTIONS AFTER SIGNIFICANT RAINFALL. REPAIR ALL DAMAGED OR INEFFECTIVE MEASURES IMMEDIATELY.
7. ESC MEASURES SHALL ONLY BE REMOVED AFTER FINAL SITE STABILIZATION AND APPROVAL BY A QUALIFIED ESC INSPECTOR. STABILIZE ALL DISTURBED SLOPES AND DITCHES WITH SEED OR EROSION CONTROL BLANKETS AS REQUIRED.
8. RESTORE DISTURBED AREAS INACTIVE FOR MORE THAN 30 DAYS WITH 50 mm TOPSOIL AND HYDROSEED (PER OPSS 804), OR APPLY TEMPORARY NON-VEGETATIVE STABILIZATION IF OUT OF SEASON.
9. CONTRACTOR SHALL MONITOR WEATHER FORECASTS AND REINFORCE ESC MEASURES PRIOR TO RAINFALL EVENTS.
10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM ESC MEASURES TO MAINTAIN PERFORMANCE.
11. STRIP TOPSOIL ONLY WITHIN AREAS REQUIRED FOR SOLAR PANEL INSTALLATION AND SERVICING AND AT SUBSTATION.
12. INSTALL SILT FENCE, STRAW BALES, CHECK DAMS, AND SEDIMENT BAGS IN ACCORDANCE WITH OPSD DETAILS (E.G., OPSD 219.110, 219.180, 219.210).
13. UNTIL ADEQUATE STABILIZATION IS ACHIEVED, TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL REMAIN IN PLACE.

NOT FOR CONSTRUCTION

| DRAWING No. | DRAWING TITLE |
|---|---|
| H375916-0000-220-271-0005 | EROSION & SEDIMENT CONTROL PLAN SHEET 02 OF 02 |
| H375916-0000-220-271-0004 | EROSION & SEDIMENT CONTROL PLAN SHEET 01 OF 02 |
| H375916-0000-220-271-0001 | OVERALL SITE PLAN |

REFERENCE DRAWINGS NA

REG. PROFESSIONAL

| No. | DESCRIPTION | BY | CHK'D | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR PERMITTING | R.P. | J.M. | 2026/03/13 |

REVISIONS



HATCH

| ROLE | NAME | SIGNATURE | DATE |
|---|---|---|---|
| DRAFTSPERSON | R. POKHAREL | NR | 2026/02/09 |
| DESIGNER | J. SUN | NR | 2026/02/09 |
| CHECKER | J. MOHAMMAD | | 2026/03/13 |
| DESIGN COORD. | M. BASIQ | | 2026/03/13 |
| RESP. ENG. | M. BASIQ | | 2026/03/13 |
| LEAD DISC. ENG. | M. BASIQ | | 2026/03/13 |
| ENG. MANAGER | J. MOHAMMAD | | 2026/03/13 |
| PROJ. MANAGER | S. THOMPSON | Thompson, Shanley | 2026/03/13 |
| CLIENT NAME | | | |

DRAWING APPROVAL STATUS: Issued for Permitting

CarbonFree TECHNOLOGY
CARBONFREE TECHNOLOGY INC.
1 ST. CLAIR AVE. WEST, #501
TORONTO, ON M4T 1Y5

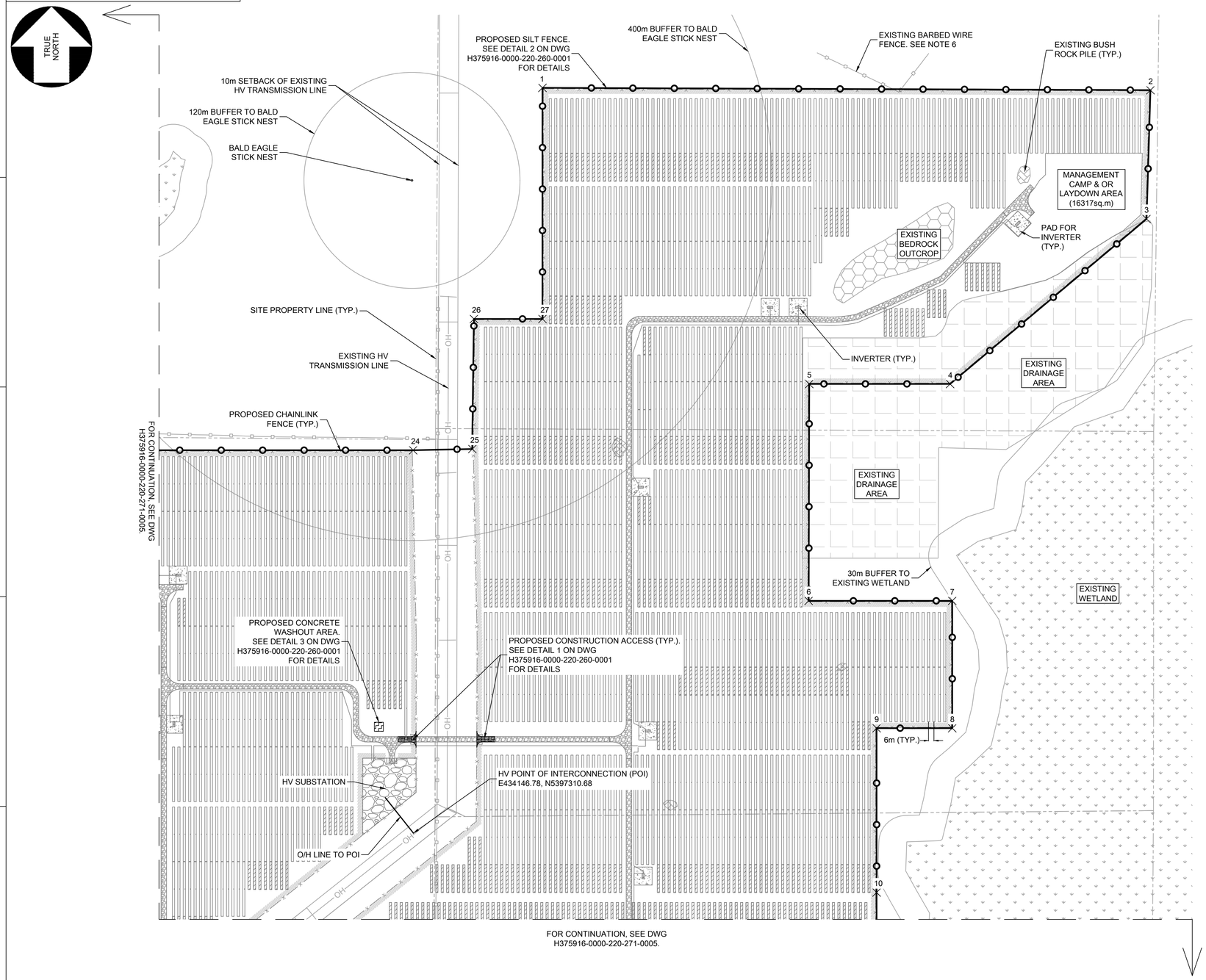
CARBONFREE RAINY RIVER Ltd.
RAINY RIVER 71 SOLAR PROJECT

GENERAL SITE WIDE
CIVIL
EROSION & SEDIMENT CONTROL DETAILS

| SCALE | DWG. No. | REV |
|---|---|---|
| NTS | H375916-0000-220-260-0001 | 0 |

SHEET SIZE: A1

DWG. No. H375916-0000-220-271-0004

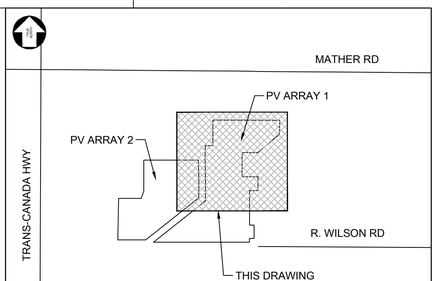



## EROSION & SEDIMENT CONTROL (ESC) PLAN 1

SCALE 1:2,500

0 25 50 75 100 125
1:2,500 SCALE IN METRES

| PROPOSED SILT FENCE SETTING OUT POINTS | | | |
|---|---|---|---|
| POINT | NORTHING | EASTING | DESCRIPTION |
| 1 | 5398138.46 | 434290.12 | PROP. SILT FENCE |
| 2 | 5398135.93 | 434965.31 | PROP. SILT FENCE |
| 3 | 5397992.92 | 434960.97 | PROP. SILT FENCE |
| 4 | 5397809.55 | 434742.80 | PROP. SILT FENCE |
| 5 | 5397809.55 | 434586.35 | PROP. SILT FENCE |
| 6 | 5397568.67 | 434585.76 | PROP. SILT FENCE |
| 7 | 5397568.67 | 434745.17 | PROP. SILT FENCE |
| 8 | 5397427.22 | 434745.17 | PROP. SILT FENCE |
| 9 | 5397427.22 | 434661.17 | PROP. SILT FENCE |
| 10 | 5397244.75 | 434661.17 | PROP. SILT FENCE |
| 24 | 5397735.97 | 434146.46 | PROP. SILT FENCE |
| 25 | 5397737.33 | 434212.20 | PROP. SILT FENCE |
| 26 | 5397881.79 | 434214.00 | PROP. SILT FENCE |
| 27 | 5397881.78 | 434290.10 | PROP. SILT FENCE |




KEY PLAN (N.T.S.)

NOTES:

1. ALL DIMENSIONS SHOWN HERE ARE IN METRES UNLESS MENTIONED OTHERWISE.
2. COORDINATE SYSTEM SHOWN HERE IS NAD83(CSRS) / UTM ZONE 15.
3. TOPOGRAPHIC DATA SHOWN IN BASED ON THE SURVEY DATA FILE "260201-ST-Carbon Free Solar - Mather Road OG+Property.dwg" PROVIDED BY 'LANDMARK SURVEY AND TESTING' ON FEBRUARY 09, 2026 (REVISION NUMBER 2/9/26-001) AND THE DATA FILE "1m LIDAR CONTOURS" DOWNLOADED FROM GEOHUB ONTARIO.
4. REFER DWG H375916-0000-220-260-0001 FOR DETAILS AND FURTHER NOTES.
5. CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND MODIFICATION OF ESC MEASURES AS REQUIRED BY THE CONSTRUCTION PHASING/SEQUENCING.
6. EXISTING BARBED WIRE FENCE TO BE REMOVED WHERE IT CONFLICTS WITH THE PROPOSED FEATURES.
5. PROPOSED PERIMETER CHAINLINK FENCE TO BE 2m HIGH WITH 3 STRING BARBED WIRE FOR SECURITY.

LEGEND:

- PROPOSED FULL-LENGTH 1P TRACKER
- PROPOSED HALF-LENGTH 1P TRACKER
- SITE PROPERTY LINE
- PROPOSED CHAINLINK FENCE
- 5m BUFFER OF PROPOSED FENCELINE
- EXISTING WETLAND WITH 30m BUFFER
- PROPOSED MV-2
- PROPOSED ATV TRAIL
- EXISTING BEDROCK OUTCROP AREA
- 1 PROPOSED SILT FENCE SETTING OUT POINTS
- PROPOSED INVERTER PAD
- PROPOSED HV SUBSTATION PAD
- PROPOSED SILT FENCE
- PROPOSED CONSTRUCTION ACCESS
- PROPOSED CONCRETE WASHOUT AREA
- OH EXISTING OVERHEAD UTILITY LINE
- EXISTING BRUSH ROCK PILE
- EXISTING BARBED WIRE FENCE

NOT FOR CONSTRUCTION

| | |
|---|---|
| H375916-0000-220-260-0001 | EROSION & SEDIMENT CONTROL DETAILS |
| H375916-0000-220-271-0005 | EROSION & SEDIMENT CONTROL PLAN SHEET 02 OF 02 |
| H375916-0000-220-271-0001 | OVERALL SITE PLAN |
| DRAWING No. | DRAWING TITLE |

REFERENCE DRAWINGS NA

REG. PROFESSIONAL

| No. | DESCRIPTION | BY | CHK'D | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR PERMITTING | R.P. | J.M. | 2026/03/13 |

REVISIONS



HATCH

| | | | |
|---|---|---|---|
| DRAFTSPERSON | R. POKHAREL | NR | 2026/02/09 |
| DESIGNER | J. SUN | NR | 2026/02/09 |
| CHECKER | J. MOHAMMAD | | 2026/03/13 |
| DESIGN COORD. | M. BASIQ | | 2026/03/13 |
| RESP. ENG. | M. BASIQ | | 2026/03/13 |
| LEAD DISC. ENG. | M. BASIQ | | 2026/03/13 |
| ENG. MANAGER | J. MOHAMMAD | | 2026/03/13 |
| PROJ. MANAGER | S. THOMPSON | Thompson, Shanley | 2026/03/13 |
| CLIENT NAME | | | |
| ROLE | NAME | SIGNATURE | DATE |

DRAWING APPROVAL STATUS: Issued for Permitting

CarbonFree TECHNOLOGY

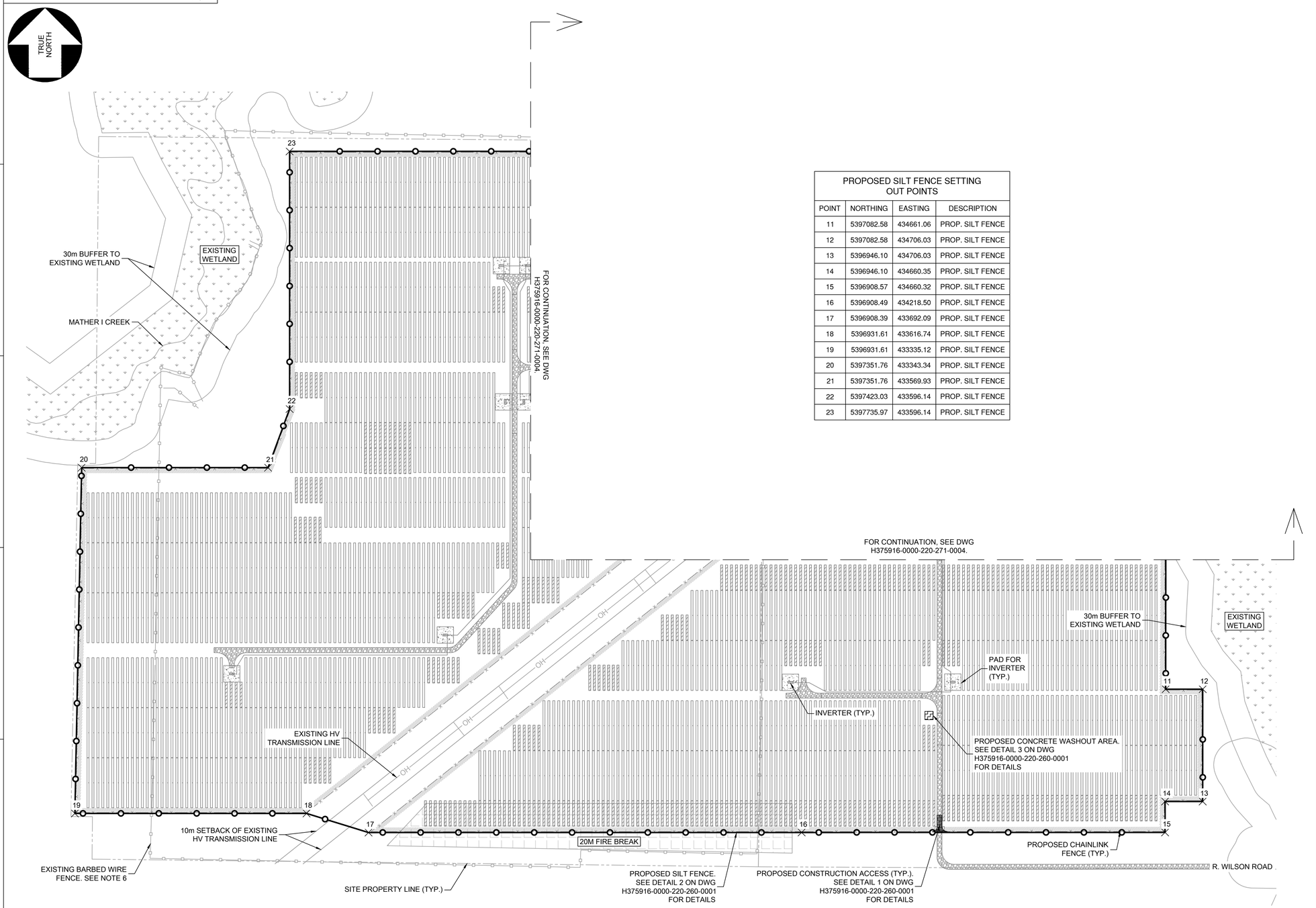
CARBONFREE TECHNOLOGY INC.
1 ST. CLAIR AVE. WEST, #501
TORONTO, ON M4V 1K6

# CARBONFREE RAINY RIVER Ltd.
# RAINY RIVER 71 SOLAR PROJECT
## GENERAL SITE WIDE
## CIVIL
## EROSION & SEDIMENT CONTROL PLAN SHEET 01 OF 02

| SCALE | DWG. No. | REV |
|---|---|---|
| 1:2,500 | H375916-0000-220-271-0004 | 0 |

SHEET SIZE: A1

DWG. No. H375916-0000-220-271-0005



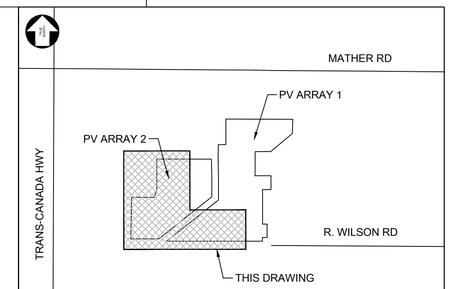

## EROSION & SEDIMENT CONTROL (ESC) PLAN 2

SCALE 1:2,500

0 25 50 75 100 125
1:2,500 SCALE IN METRES

PROPOSED SILT FENCE SETTING OUT POINTS

| POINT | NORTHING | EASTING | DESCRIPTION |
|---|---|---|---|
| 11 | 5397082.58 | 434661.06 | PROP. SILT FENCE |
| 12 | 5397082.58 | 434706.03 | PROP. SILT FENCE |
| 13 | 5396946.10 | 434706.03 | PROP. SILT FENCE |
| 14 | 5396946.10 | 434660.35 | PROP. SILT FENCE |
| 15 | 5396908.57 | 434660.32 | PROP. SILT FENCE |
| 16 | 5396908.49 | 434218.50 | PROP. SILT FENCE |
| 17 | 5396908.39 | 433692.09 | PROP. SILT FENCE |
| 18 | 5396931.61 | 433616.74 | PROP. SILT FENCE |
| 19 | 5396931.61 | 433335.12 | PROP. SILT FENCE |
| 20 | 5397351.76 | 433343.34 | PROP. SILT FENCE |
| 21 | 5397351.76 | 433569.93 | PROP. SILT FENCE |
| 22 | 5397423.03 | 433596.14 | PROP. SILT FENCE |
| 23 | 5397735.97 | 433596.14 | PROP. SILT FENCE |




KEY PLAN
(N.T.S.)

## NOTES:

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5. PROPOSED PERIMETER CHAINLINK FENCE TO BE 2m HIGH WITH 3 STRING BARBED WIRE FOR SECURITY.

## LEGEND:

- FULL-LENGTH 1P TRACKER
- HALF-LENGTH 1P TRACKER
- SITE PROPERTY LINE
- PROPOSED CHAINLINK FENCE
- 5m BUFFER OF PROPOSED FENCE
- EXISTING WETLAND WITH 30m BUFFER
- PROPOSED MV-2
- PROPOSED ATV TRAIL
- 1 PROPOSED SILT FENCE SETTING OUT POINTS
- PROPOSED INVERTER PAD
- PROPOSED SILT FENCE
- PROPOSED CONSTRUCTION ACCESS
- PROPOSED CONCRETE WASHOUT AREA
- EXISTING BARBED WIRE FENCE
- OH EXISTING OVERHEAD UTILITY LINE

NOT FOR CONSTRUCTION

| DRAWING No. | DRAWING TITLE |
|---|---|
| H375916-0000-220-260-0001 | EROSION & SEDIMENT CONTROL DETAILS |
| H375916-0000-220-271-0004 | EROSION & SEDIMENT CONTROL PLAN SHEET 01 OF 02 |
| H375916-0000-220-271-0001 | OVERALL SITE PLAN |

REFERENCE DRAWINGS NA

REG. PROFESSIONAL

| No. | DESCRIPTION | BY | CHK'D | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR PERMITTING | R.P. | J.M. | 2026/03/13 |

REVISIONS



HATCH

| ROLE | NAME | SIGNATURE | DATE |
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| DRAFTSPERSON | R. POKHAREL | NR | 2026/02/09 |
| DESIGNER | J. SUN | NR | 2026/02/09 |
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# RAINY RIVER 71 SOLAR PROJECT

## GENERAL SITE WIDE
## CIVIL

## EROSION & SEDIMENT CONTROL PLAN SHEET 02 OF 02

| SCALE | DWG. No. | REV |
|---|---|---|
| 1:2,500 | H375916-0000-220-271-0005 | 0 |

SHEET SIZE: A1