Preliminary Construction Management Plan – Trail Road BESS

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Brookfield
Renewable

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1. General

Brookfield Renewable (BR) is developing a 150 MW 4-hr Battery Energy Storage System (BESS), located at 4186 William McEwen Dr., Richmond, Ontario. The site will consist of an entrance culvert and access road, approximately 147 BESS containers, a 230 kV project substation, a 4.5 kV 230 kV Transmission line (T-line). The site works are schedule to commence in Q1 of 2026 and achieve Commercial Operations Date (COD) in Q3 2027.

2. Site Clearing

The site will require site clearing and grubbing which will commence in early Q1 2026 prior to the bird breading window in April 2026. The expected clearing area of the BESS site and T-Line is approximately 16.5 Acres, with some minor brushing of trees along the access road and T-Line. The access road is planned on an existing gravel path and the T-Line is planned to run along Moodie Dr, further depicted in section 3.2. Equipment that will be used for tree clearing and grubbing are as follows:

- Feller Buncher
- Mulcher
- Excavator
- Skidder
- Log Loader

BR will endeavor to find ways to provide the local community with access to the felled trees in a safe and beneficial manor. The trees that are cut will be quantified and will a rehabilitation plan is being developed to plant a 1 to 1 replacement on the Trail Road BESS property at 4186 William McEwen Dr. as a rehabilitation plan for the loss of trees. Natural snow fencing will be incorporated into the design if necessary, using cedar, spruce or other similar conifers.

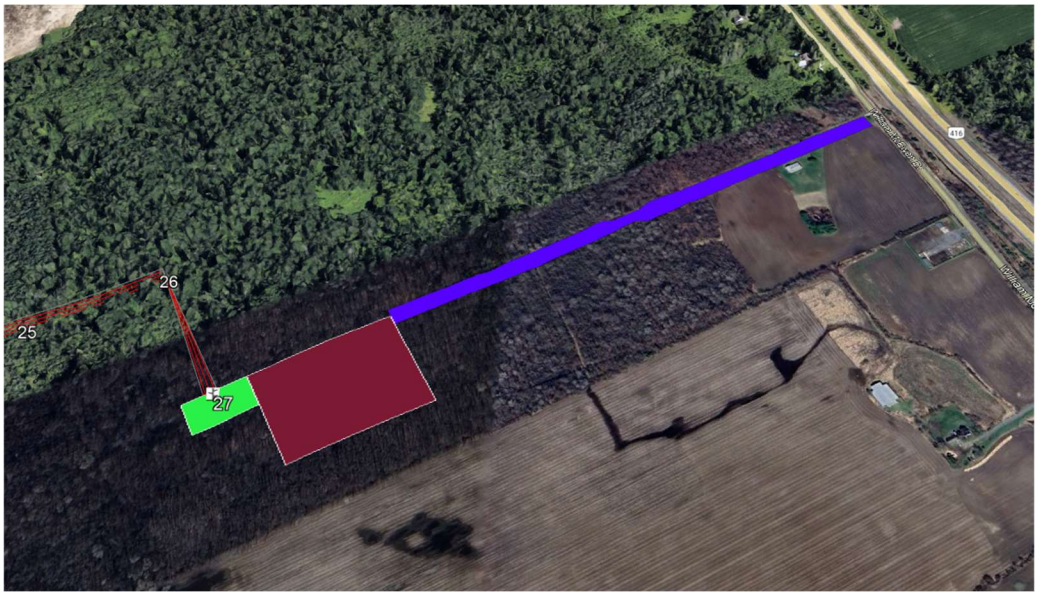


Figure 2.1 above indicates the Trail Road project footprint on William McEwen Dr.

3. Interconnection

The project will interconnect the 150 MW BESS facility to the Hydro One (HONI) E34M 230 kV T-Line that runs parallel to Cambrin Dr.

3.1 Substation

The Trail Road BESS project will consist of a 230 kV Substation which will be fed by 4 battery collector circuits. The substation construction will be comprised of grading, concrete foundations, conduit and cable installation, steel work, overhead bus, electrical equipment installation, gravel placement concluded with final commissioning of the control building and electrical equipment. The substation construction will be constructed from Q2 2026 through q1 2027 and will receive Backfeed power in Q1 2027 from the HONI E34M 230 kV T-Line to allow for the BESS facility to complete final commissioning and capacity checks. The project substation will include one main power transformer to step up the 34.5 kV collection circuits to the 230 kV grid connection. Figure 3.1.1 below is an overhead view of the general arrangement of the project substation. The location of the project substation is indicated above by the green square area marked above in figure 2.1 on page 3. A 230 kV switching station is required at the POI and is identified within the yellow

box above in ***figure 3.1*** on page 4. An example of an overhead view of the switching station is provided for reference below in ***figure 3.1.2***.

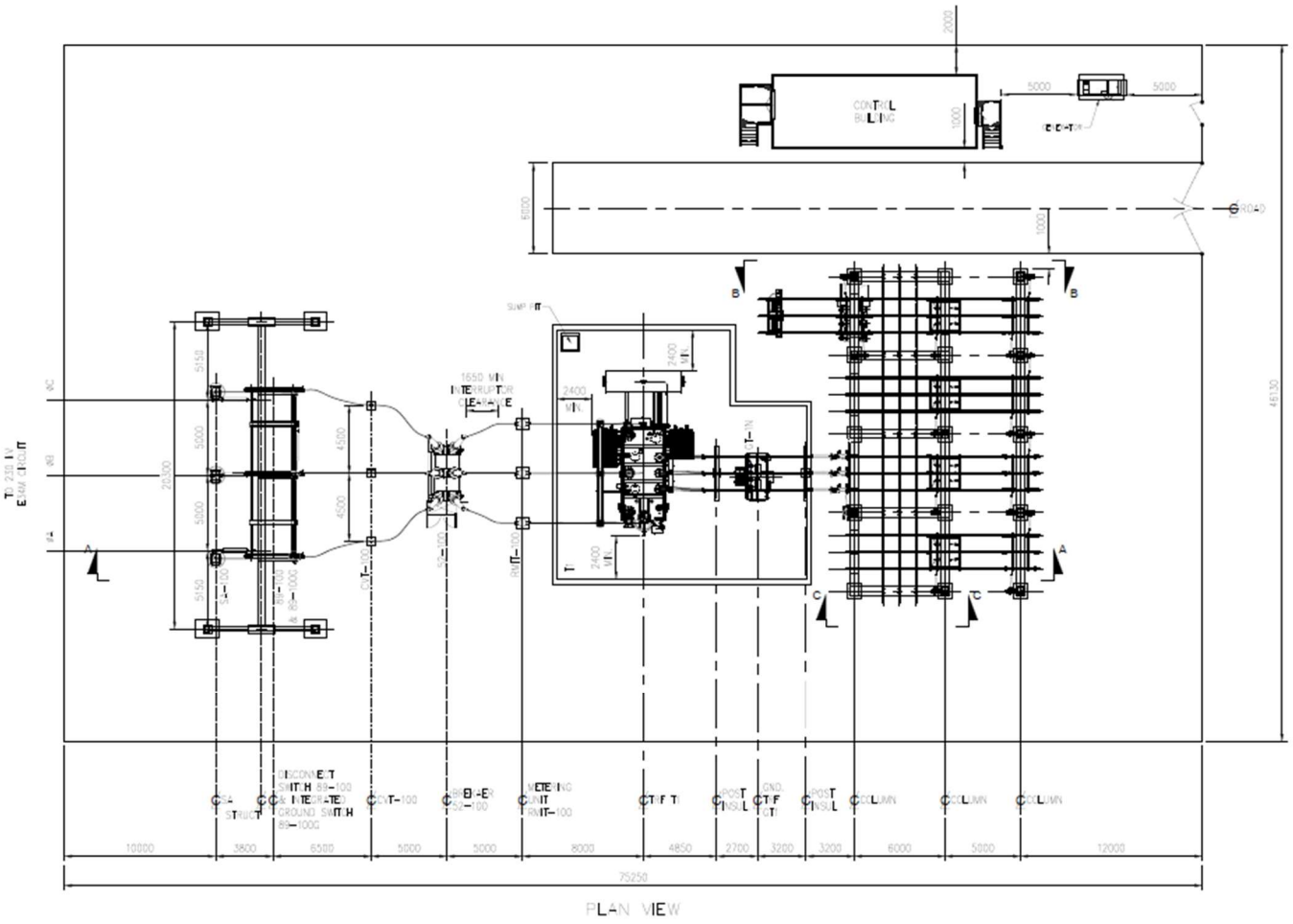


Figure 3.1.1 *above is the Trail Road 230 kV Substation overhead plan view*

3.2 Transmission Line

The 230 kV transmission line will interconnect the BESS site on William McEwen Dr. to the switching station and POI located on the intersection of Moodie Dr. and Cambrian rd. The T-Line will be routed primarily along the road right-of-way (ROW) using self-supporting steel monopole structures. An example of a similar steel monopole T-Line is shown below in ***figure 3.2.1***. Note that the Trail Road BESS will use a single conductor and not a two bundled conductor shown in ***figure 3.2.1.*** The overall T-Line layout is identified below in ***figure 3.2.2***.

Figure 3.2.1 *above is an example of a 230 kV monopole T-Line similar to the Trail Road design*

***Figure 3.2.2** above is the 230 kV Trail Road T-Line routing along Moodie Dr.*

4. BESS - Civil Works

Civil works are to be completed from April through July 2026 and includes the following activities:

- Topsoil Stripping and stockpiling
- Cut and Fill
- Drill and Blasting (if required)
- Gravel Road construction
- Stormwater management, retention pond and grading
- Cable and Conduit trenching and backfilling
- Subgrade and gravel compaction
- Gravel surfacing

The civil design and works will be planned based on deliverables BR is completing which include a tree assessment, hydrology study, geotechnical investigation and site plan surveys. The current easements, municipal drains, land boundaries and detailed report findings will be factored into the site-specific design. ***Figure 4.1*** below is the preliminary site grading plan for the site.

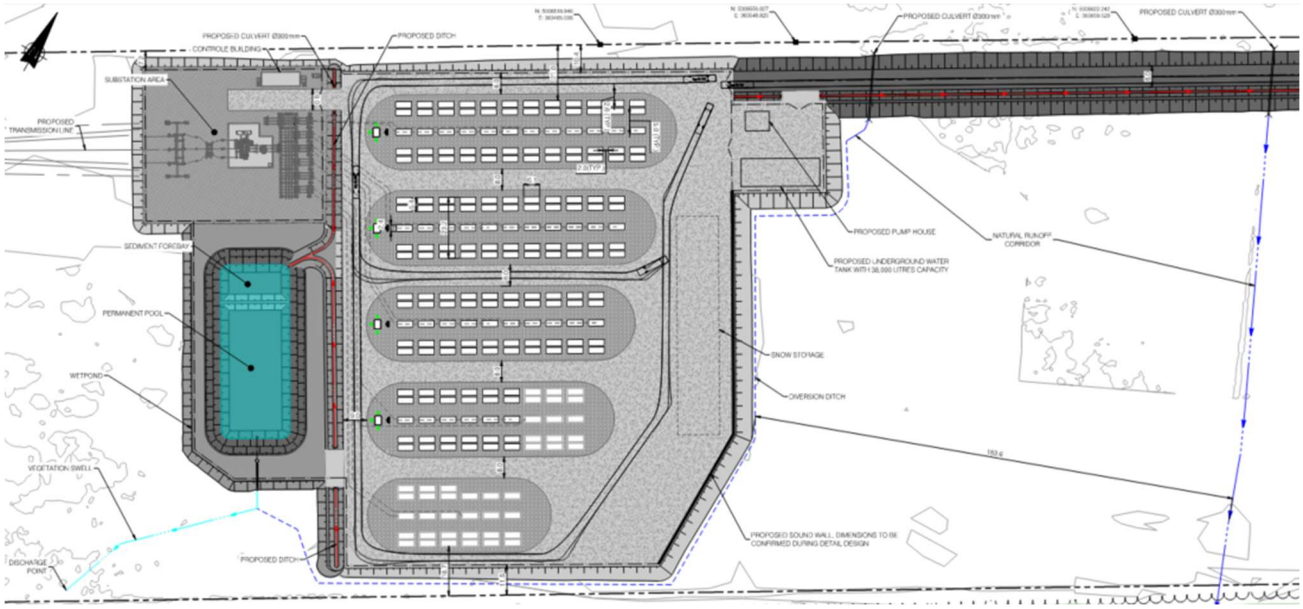


Figure 4.1 above is the preliminary site grading plan for the Trail Road BESS Site

5. BESS - Foundations

On site geotechnical investigations have been conducted to determine suitability of subsurface soils at site and their associated structural and thermal properties. This information will be used to determine the foundation type and size parameters to support the 45,000 kg BESS containers and associated ancillary equipment. The foundations will consist of helical piles, gravel pads and some slab foundations for the BESS containers to be permanently fixed upon. Preliminary foundation details have not been designed, however a typical BESS foundation for a comparable BESS container is shown below in ***figure 5.1***. Note this is just for reference and may not be what is concluded in final issue for construction design of the Trail Road BESS site.

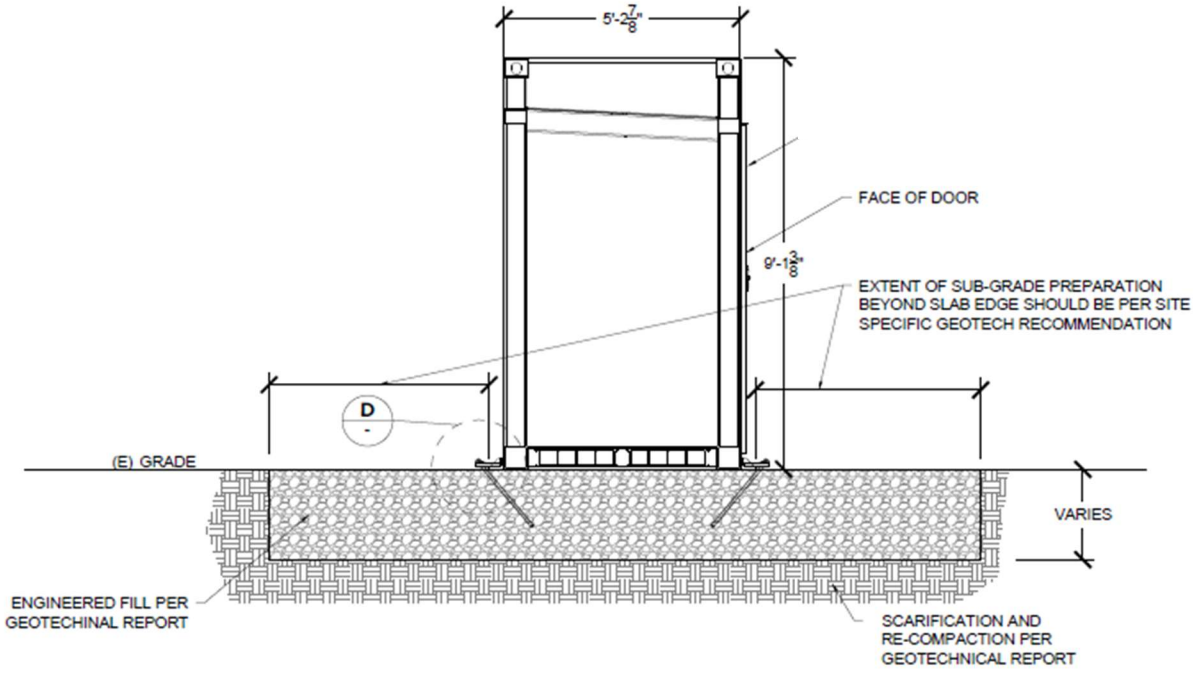


***Figure 5.1** above is an example of a gravel footing for a BESS container*

6. BESS - Electrical Works

The BESS site electrical works are not only subject to the BESS containers and its ancillary components which transform DC current into AC which includes the Power Conversion System (PCS) and Medium Voltage Transformers (MVT's). The PCS converts the low voltage DC to a higher DC voltage, approximately 480-600V. The MVT's then convert the 480-600 Volts DC into 34,500 Volts, or 34.5 kV. This system is further comprised of the following parts:

- 34.5 kV collection system
- Low Voltage (LV) auxiliary system
- Communications and Supervisory, Control and Data Acquisition (SCADA)

Those system pieces play a crucial role for the integration of large utility scale BESS sites into the Ontario Utility grid and are further defined below.

5.1 Collection System

The 34.5 kV collection systems are what allows the BESS system and its ancillary components to received Backfeed power from the HONI grid. It is comprised of primarily 2/0 – 1500 kcmil underground cabling, conduit, grounding conductors and termination kits to connect the BESS containers, PCS and MVT's. A few details are shown below to identify the BESS containers, PCS and collection system in ***figure 6.1.1*** and ***figure 6.1.2***. Note these are not project specific as BR has not selected a BESS supplier for this equipment yet.

Figure 6.1.1 above is an example of a BESS container and PCS/MVT unit

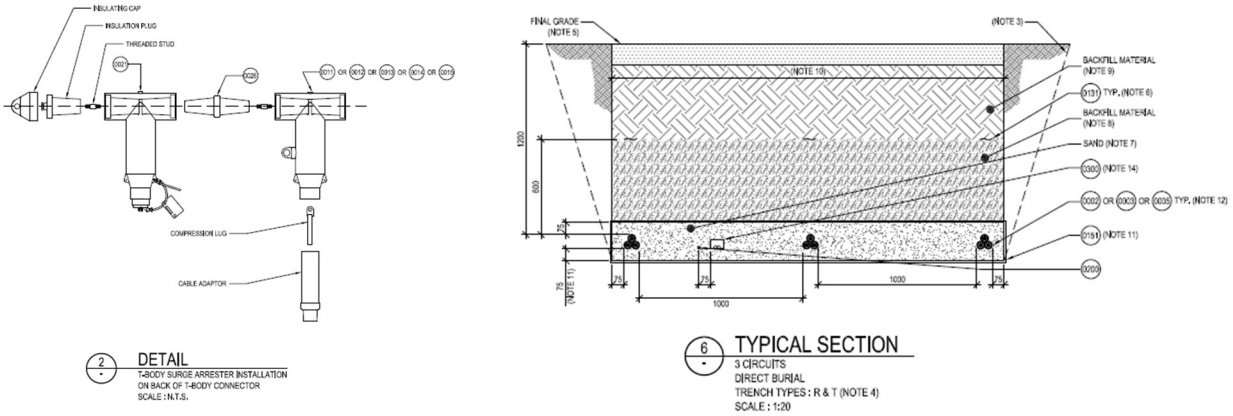


Figure 6.1.2 above is an example of cable installation details and termination kits

6.1 Low Voltage AC/DC Wiring

The BESS electrical system low voltage AC and DC wiring includes cables from 4/0 – 1250 kcmil and are used to primarily connect the auxiliary services for each BESS container on site. These will include all lugs, bolts and miscellaneous hardware, grounding connectors and shrink wrap kits to make a clean and professional connection to the internal auxiliary load panel within each BESS container. Details are not readily available for this system design at the moment but can be shared once available.

6.2 Communication Cabling

Communications are very important for the systems integration of any BESS site. They are primarily fiber optic cables to allow for fast data transfer and reliability. I n some rare circumstances, such as Teleprotection for HONI line protection relaying, the communication link will be established over a copper plain old telephone service (POTS) line, commonly known as S4T4. The PCS, BESS containers and project substation must be in synchronized communication to ensure the power (P) and reactive power (Q) commands received from the Independent Electrical System Operator (IESO) are delivered real time and in a synchronized manor to ensure the project meets the IESO contract requirements and system demands. The SCADA system will also rely on communication cabling to ensure all monitored data points are received in the project substation and the BR Operations Control Centre (OCC).

7. BESS - Mechanical Installation

The BESS mechanical installation will be completed by an Engineering, Procurement and Construction (EPC) contractor, similarly to the balance of the civil and electrical works on the project. The mechanical installation certificate (MCC) is obtained by the EPC contractor once the civil works is completed, the BESS containers are all installed, all electrical wiring is completed and a final walkdown punch list has been generated, completed and signed off. The BESS containers will be delivered from August 2026 though mid-October 2026. The MCC is planned for completion by March 2027 and will allow for all BESS container s to be “Hot” commissioned.

8. BESS - Commissioning

The BESS commissioning will consist of two phases, cold commissioning and hot commissioning. Hot commissioning can commence only when backfeed power is received from HONI expected in Q1 2027. Cold commissioning will used a 1000 kVA diesel generator to power the BESS container auxiliary panel and complete all checks and balances for the BESS containers prior to commence of hot commissioning. These include lighting, sensitive alarms, the fire annunciator panels, communication panels and other ancillary services.

Hot commissioning will consist of fine-tuning programming of the PCS, synchronize the BESS containers and verify integrity of the 34.5 kV electrical system. Once these checks and balances are completed BR will schedule a capacity test with the IESO to prove the systems performance to achieve commercial operations.

9. Impact to City Services – BESS Facility & Substation

9.1 Bus Routes

There are not currently OC Transpo bus routes running along William McEwen Drive, therefore the proposed construction will not require the detour of any bus routes. See Appendix A for a map of the proposed construction area.

9.2 Bike Lanes

There are no bike lanes at or near 4186 William McEwen Drive, therefore the proposed construction will not block any existing bike lanes.

9.3 Sidewalks

There are no sidewalks at or near 4186 William McEwen Drive, therefore no sidewalk closures are required.

9.4 Lane Closures

No lane closures on William McEwen Drive are expected during the duration of construction.

10. Impact to City Services – Transmission Line

Should right-of-way approval be received to install a Transmission line along Moodie Drive, the following impacts are detailed in Section 10.1 to 10.4. See Appendix A for a map of the proposed construction area.

10 .1 Bus Routes

There are not currently OC Transpo bus routes running along Moodie Drive on the proposed Transmission Line routing, therefore no bus routes are impacted.

10.2 Bike Lanes

There are no bike lanes on Moodie Drive along the proposed transmission line route, therefore the proposed construction will not block any existing bike lanes.

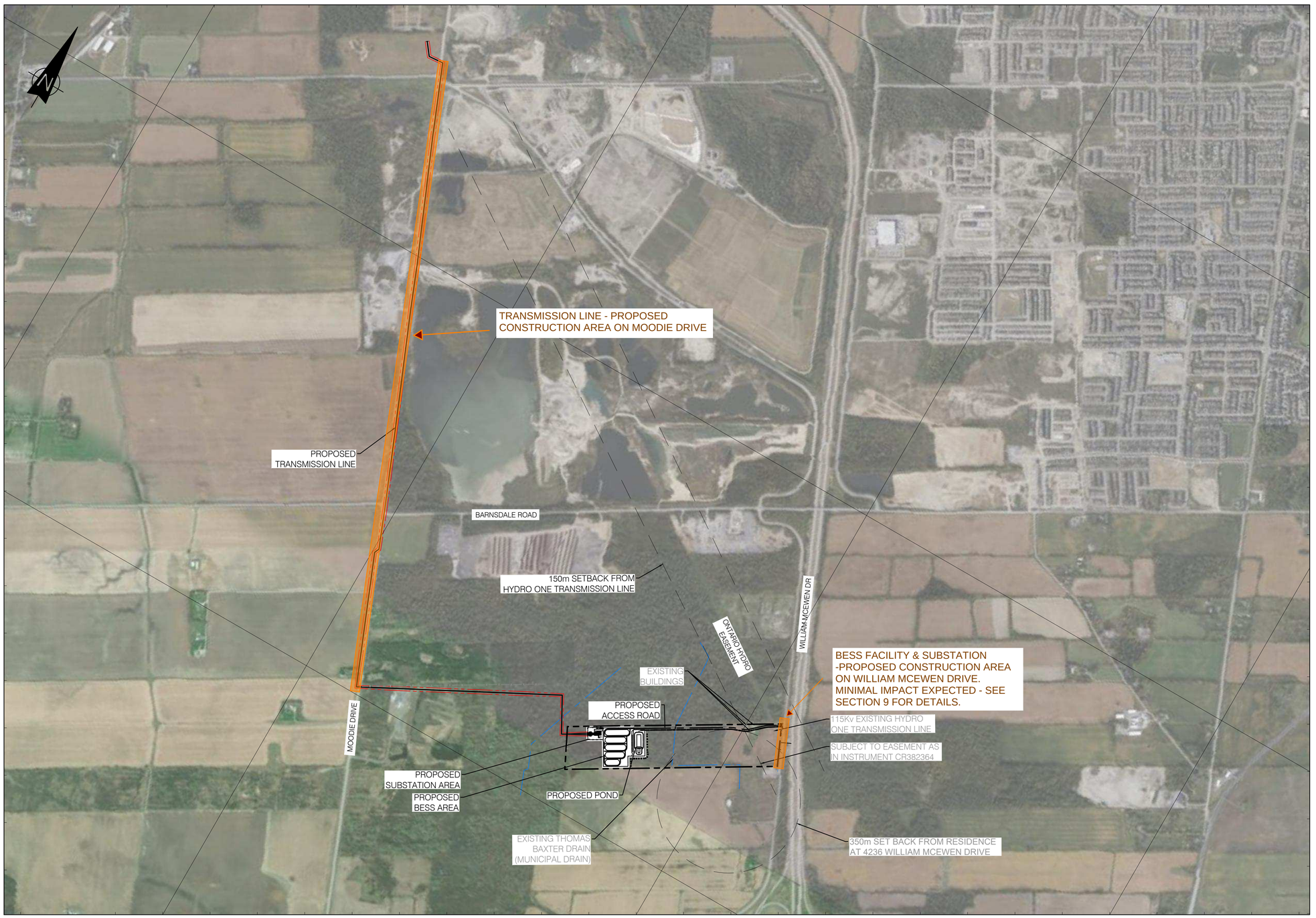
10.3 Sidewalks

There are no sidewalks on Moodie Drive along the proposed transmission line route, therefore no sidewalk closures are required.

10.4 Lane Closures

Lane closures along Moodie Drive may be required to facilitate the construction of the high-voltage transmission line.

Appendix A



NOTES:

1. OBSERVED REFERENCE POINTS ARE DERIVED FROM REAL TIME KINEMATIC (RTK) GNSS OBSERVATIONS USING SPECIFIED CONTROL POINTS AND ARE REFERRED TO MTM ZONE 9, (76°30' WEST LONGITUDE) NAD83 (CSRS) (2010). COORDINATES TO URBAN ACCURACY PER SEC. 14(2) OF O.REG. 216/10
2. COORDINATES ARE IN METERS AND ELEVATIONS ARE GEODETIC AND IN METERS.
3. SURVEY DATA AND PROPERTY BOUNDARY ARE PROVIDED BY THE CLIENT IN THE SURVEY FILE "241437 TRAIL ROAD BESS MTM9-REV0.DWG" BY TULLOCH GEOMATICS INC, AND DATED 2025-01-10.

LEGEND:

- PROPOSED FENCE
- EXISTING FENCE
- OFFSET LINE
- PROPOSED TRANSMISSION LINE WITH PROPOSED ROW
- PROPERTY LINE

PLAN VIEW
SCALE 1:10000

SCALE 1:10000 — 200 100 0 200 400 600 800 1000 m

FOR COMMENTS
NOT TO BE USED FOR CONSTRUCTION

DRAWING No.	DESCRIPTION	REV	DESCRIPTION	PREPARED BY	CHECKED BY	DATE
7154024-300000-47-D20-0001-02	TRAIL BESS - 150 MW - 230 kV - 34.5 kV SUBSTATION	AA	FOR COMMENTS	E.AMELI	M. SHAHRAKI	2025-02-26
REFERENCE DRAWINGS		REVISIONS				

SEAL:

CLIENT: Evolugen by Brookfield Renewable

PROJECT: TRAILROAD BESS
4186 WILLIAM MCEWEN DR, OTTAWA

TITLE: CIVIL
OVERALL SITE LAYOUT
BATTERIES WITH SUNGROW TECHNOLOGY

DESIGNED BY: E.AMELI	DRAFTED BY: D.JAMES
PREPARED BY: E.AMELI	CHECKED BY: M.SHAHRAKI
SCALE: 1:10000	DATE: 2025-02-26

DRAWING No.: 7154024-100000-41-D20-0001 | SHEET: 01 | SIZE: A1 | REV. AA

0 1 2 3 4 5 6 7 8 9 10 cm

BY: JAMES, DONNA
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