

# Preliminary Construction Management Plan – South March BESS



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#### **4. BESS - Civil Works**

Civil works are to be completed from April through December 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.

#### **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 can be found in the South March Geotechnical Report.

#### **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)

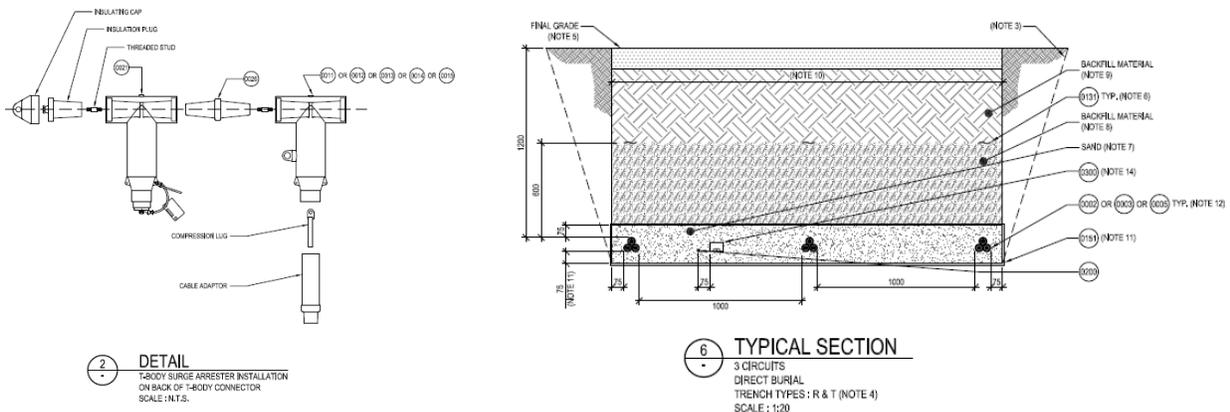
Those system pieces play a crucial role for the integration of large utility scale BESS sites into the Ontario Utility grid and are further defined below.

## 5.1 Collection System

The 34.5 kV collection systems are what allows the BESS system and its ancillary components to receive 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**.



**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. In 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 containers 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 2625 or 2555 Marchurst Road, 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 2625 or 2555 Marchurst Road therefore the proposed construction will not block any existing bike lanes.

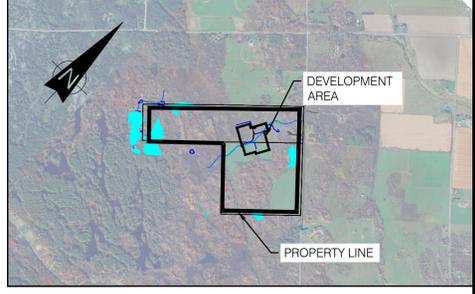
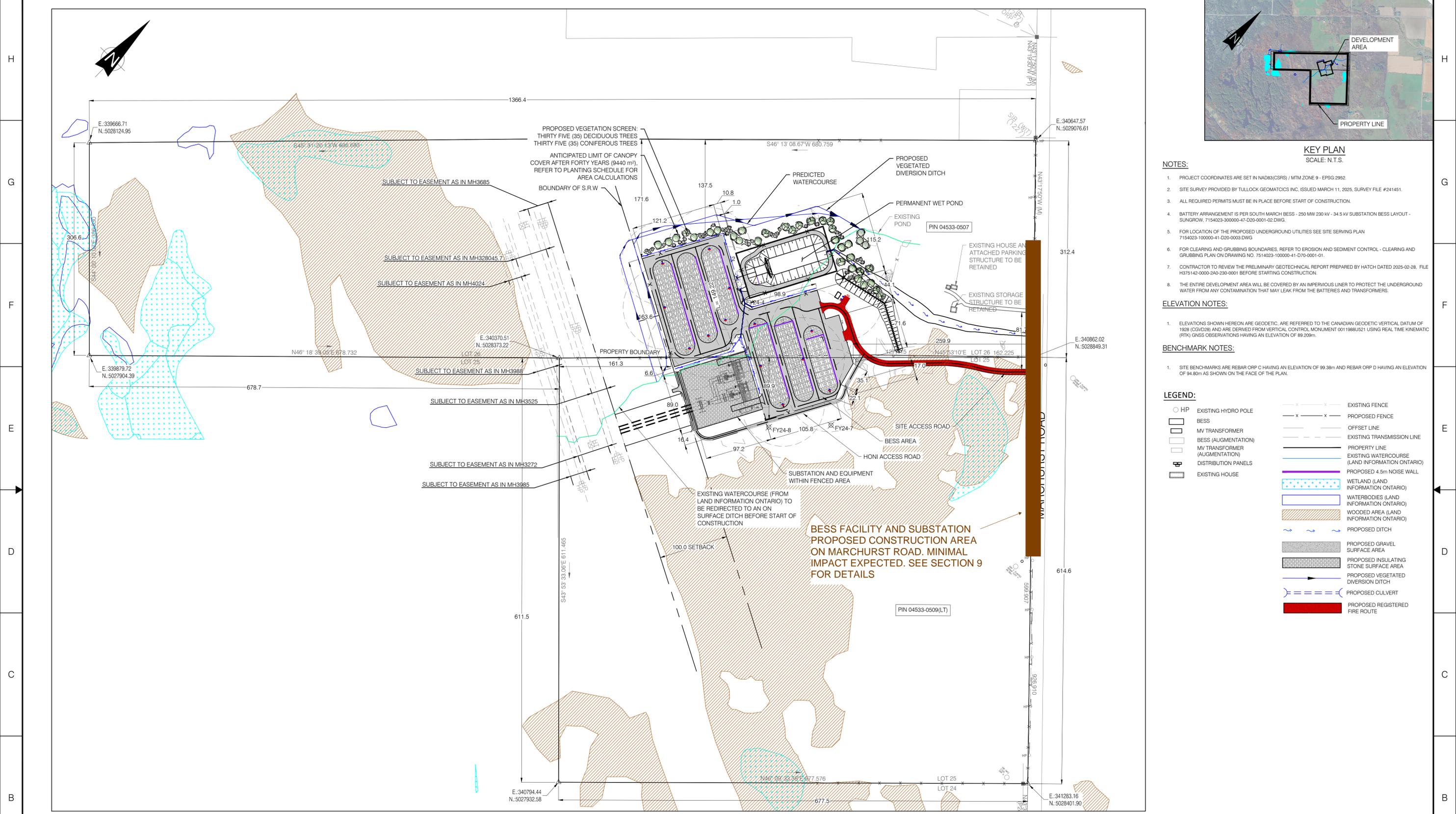
### **9.3 Sidewalks**

There are no sidewalks at or near 2625 or 2555 Marchurst Road, therefore no sidewalk closures are required.

### **9.4 Lane Closures**

No lane closures on Marchurst Road are expected during the duration of construction.

## Appendix A



- NOTES:**
- PROJECT COORDINATES ARE SET IN NAD83(CRS) / MTM ZONE 9 - EPSG:2952.
  - SITE SURVEY PROVIDED BY TULLOCK GEOMATICS INC. ISSUED MARCH 11, 2025. SURVEY FILE #241451.
  - ALL REQUIRED PERMITS MUST BE IN PLACE BEFORE START OF CONSTRUCTION.
  - BATTERY ARRANGEMENT IS PER SOUTH MARCH BESS - 250 MW 230 kV - 34.5 kV SUBSTATION BESS LAYOUT - SUNGROW, 7154023-30000-47-D20-0001-02.DWG.
  - FOR LOCATION OF THE PROPOSED UNDERGROUND UTILITIES SEE SITE SERVING PLAN 7154023-10000-41-D20-0003.DWG.
  - FOR CLEARING AND GRUBBING BOUNDARIES, REFER TO EROSION AND SEDIMENT CONTROL - CLEARING AND GRUBBING PLAN ON DRAWING NO. 7154023-10000-41-D20-0001-01.
  - CONTRACTOR TO REVIEW THE PRELIMINARY GEOTECHNICAL REPORT PREPARED BY HATCH DATED 2025-02-28. FILE H375142-0000-2A0-230-0001 BEFORE STARTING CONSTRUCTION.
  - THE ENTIRE DEVELOPMENT AREA WILL BE COVERED BY AN IMPERVIOUS LINER TO PROTECT THE UNDERGROUND WATER FROM ANY CONTAMINATION THAT MAY LEAK FROM THE BATTERIES AND TRANSFORMERS.

- ELEVATION NOTES:**
- ELEVATIONS SHOWN HEREON ARE GEODETIC, ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1928 (CGVD28) AND ARE DERIVED FROM VERTICAL CONTROL MONUMENT 0011988U521 USING REAL TIME KINEMATIC (RTK) GNSS OBSERVATIONS HAVING AN ELEVATION OF 89.29m.

- BENCHMARK NOTES:**
- SITE BENCHMARKS ARE REBAR ORP C HAVING AN ELEVATION OF 99.38m AND REBAR ORP D HAVING AN ELEVATION OF 94.80m AS SHOWN ON THE FACE OF THE PLAN.

**LEGEND:**

○ HP	EXISTING HYDRO POLE	— x — x —	EXISTING FENCE
□ BESS	BESS	— x — x —	PROPOSED FENCE
□ MV TRANSFORMER	MV TRANSFORMER	---	OFFSET LINE
□ BESS (AUGMENTATION)	BESS (AUGMENTATION)	--- </td <td>EXISTING TRANSMISSION LINE</td>	EXISTING TRANSMISSION LINE
□ MV TRANSFORMER (AUGMENTATION)	MV TRANSFORMER (AUGMENTATION)	--- </td <td>PROPERTY LINE</td>	PROPERTY LINE
□ DISTRIBUTION PANELS	DISTRIBUTION PANELS	--- </td <td>EXISTING WATERCOURSE (LAND INFORMATION ONTARIO)</td>	EXISTING WATERCOURSE (LAND INFORMATION ONTARIO)
□ EXISTING HOUSE	EXISTING HOUSE	--- </td <td>PROPOSED 4.5m NOISE WALL</td>	PROPOSED 4.5m NOISE WALL
		--- </td <td>WETLAND (LAND INFORMATION ONTARIO)</td>	WETLAND (LAND INFORMATION ONTARIO)
		--- </td <td>WATERBODIES (LAND INFORMATION ONTARIO)</td>	WATERBODIES (LAND INFORMATION ONTARIO)
		--- </td <td>WOODED AREA (LAND INFORMATION ONTARIO)</td>	WOODED AREA (LAND INFORMATION ONTARIO)
		--- </td <td>PROPOSED DITCH</td>	PROPOSED DITCH
		--- </td <td>PROPOSED GRAVEL SURFACE AREA</td>	PROPOSED GRAVEL SURFACE AREA
		--- </td <td>PROPOSED INSULATING STONE SURFACE AREA</td>	PROPOSED INSULATING STONE SURFACE AREA
		--- </td <td>PROPOSED VEGETATED DIVERSION DITCH</td>	PROPOSED VEGETATED DIVERSION DITCH
		--- </td <td>PROPOSED CULVERT</td>	PROPOSED CULVERT
		--- </td <td>PROPOSED REGISTERED FIRE ROUTE</td>	PROPOSED REGISTERED FIRE ROUTE

**PLAN VIEW**  
SCALE 1:2500



**FOR PERMITTING**  
NOT TO BE USED FOR CONSTRUCTION

DRAWING No.	DESCRIPTION	REV	DESCRIPTION	PREPARED BY	CHECKED BY	DATE
7154023-402000-47-D20-0001	SOUTH MARCH BESS-250 MW 230kV-34.5 kV SUBSTATION	AD	FOR PERMITTING	E. AMELI	M. SHAHRAKI	2025-10-07
		AC	FOR PERMITTING	E. AMELI	M. SHAHRAKI	2025-07-03
		AB	FOR PERMITTING	E. AMELI	M. SHAHRAKI	2025-06-19
		AA	FOR COMMENTS	E. AMELI	M. SHAHRAKI	2025-04-29

**Evologen**  
by Brookfield Renewable

CLIENT:

<b>PROJECT:</b> SOUTH MARCH 2555 AND 2625 MARCHURST RD, OTTAWA	
<b>TITLE:</b> SITE PLAN SHEET 1	
PREPARED BY: E. AMELI	DRAFTED BY: D. JAMES
CHECKED BY: E. AMELI	APPROVED BY: M. SHAHRAKI
SCALE: 1:2500	DATE: 2025-04-29
DRAWING No.: 7154023-10000-41-D20-0001-01	SHEET: 01 SIZE: A1 REV: AD