BD ELECTRICAL & SOLAR

CAPE COD AGGREGATES SOLAR FARM

560 kWdc Ground-Mounted Solar Installation

Client: Cape Cod Aggregates

Location: Freetown, Massachusetts

Completed: 2017

System Size: 560.6 kWdc / 432 kWac

Modules: 1,536 photovoltaic modules

Inverters: 12 Solectria PVI-36TL commercial inverters

Interconnection Voltage: 480V three-phase with dedicated transformer interconnection

Scope:

- Full EPC delivery
- Ground-mount solar construction
- Underground electrical infrastructure
- Utility metering installation
- Transformer installation
- Medium-voltage interconnection
- Commissioning and startup

Project Overview

In 2017, BD Electrical & Solar completed a 560 kWdc ground-mounted solar installation for Cape Cod Aggregates at its Freetown, Massachusetts facility.

Located within an active aggregate processing operation, the project transformed unused land into a revenue-generating energy asset while helping offset the facility's electrical consumption through Massachusetts net metering programs.

BD served as the Engineering, Procurement, and Construction (EPC) contractor, providing turnkey project delivery including civil coordination, electrical infrastructure, utility interconnection, equipment procurement, construction, commissioning, and startup.

The completed system consists of 1,536 photovoltaic modules mounted on a galvanized steel ground-mount racking system and interconnected through twelve Solectria 36 kW commercial string inverters, producing 560.6 kWdc and 432 kWac.

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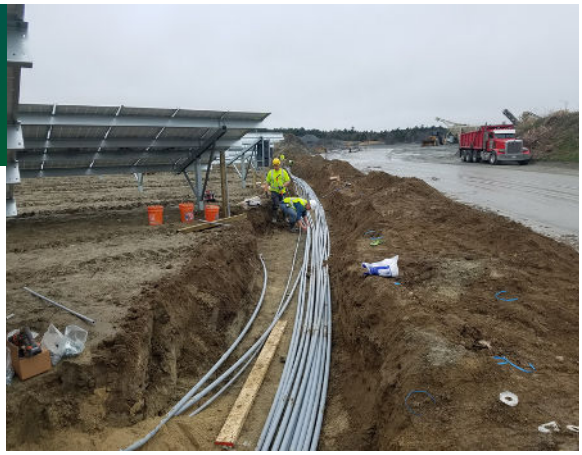
The Challenge

Unlike a typical rooftop solar installation, this project required the construction of an entirely new electrical generation facility from the ground up.

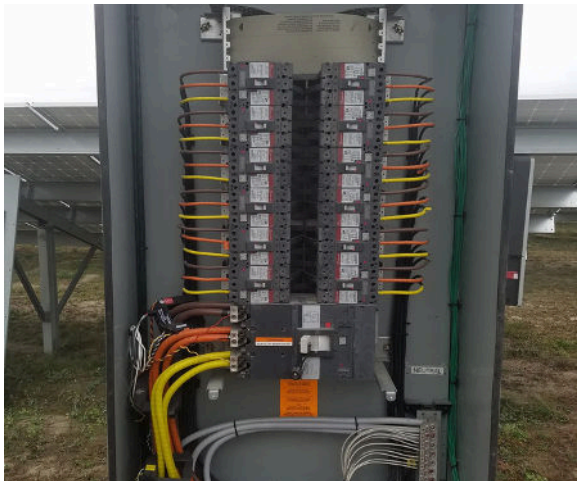


Building a Solar Facility from Raw Land

The project site consisted of undeveloped land within an active aggregate operation. Before any solar equipment could be installed, the site required extensive preparation, layout, pile installation, trenching, and underground electrical infrastructure.

Construction began during winter conditions and continued through periods of rain, snow, and saturated soil conditions. Maintaining productivity while working around weather challenges and ongoing site operations required careful planning and coordination.

Despite these challenges, the project remained on schedule and progressed from driven piles to a fully operational solar facility within a matter of months.



Extensive Underground Infrastructure

A significant portion of the project involved the installation of underground collection systems connecting the solar arrays to the inverter stations and utility interconnection equipment.

Thousands of feet of underground conduit were installed throughout the site to support DC collection circuits, AC output feeders, grounding systems, and communications infrastructure.

The trenching and underground work required coordination with site grading activities and existing aggregate operations while maintaining proper separation, drainage, and long-term reliability.

Utility Interconnection

The project required the installation of dedicated utility infrastructure including:

- Pad-mounted transformer
- Utility metering equipment
- Primary utility service equipment
- Medium-voltage interconnection infrastructure
- Solar AC collection switchgear
- Utility-accessible disconnecting means

The completed facility interconnected at 480V through twelve commercial inverters feeding a centralized AC collection system before stepping voltage up through a dedicated transformer for utility interconnection.

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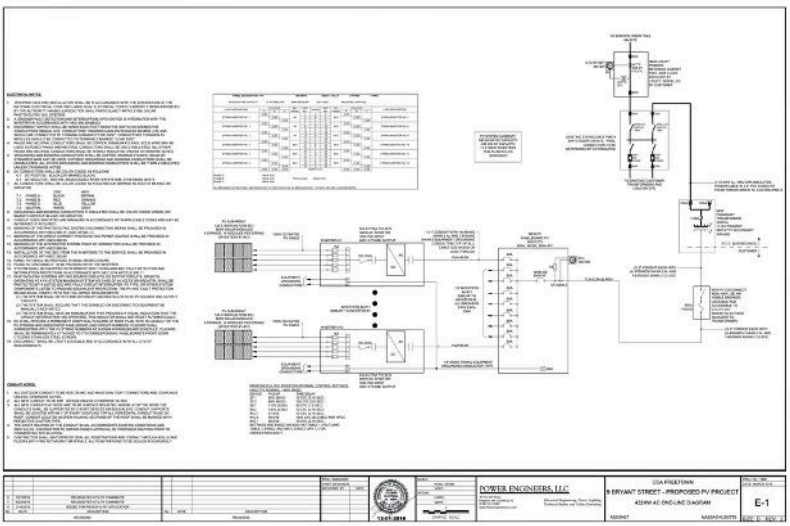
Engineering and Construction

BD Electrical & Solar provided full EPC services including:

- Project management
- Utility interconnection coordination
- Procurement and logistics
- Site electrical design implementation
- Ground-mount racking installation
- Underground conduit systems
- DC collection infrastructure
- Inverter installation
- Transformer installation
- Medium-voltage utility coordination
- Testing and commissioning

The project utilized twelve Solectria PVI-36TL commercial inverters, each connected to dedicated PV sub-arrays and integrated into a centralized AC collection system.

A new pad-mounted transformer and utility metering system were installed to facilitate the interconnection while meeting all utility requirements.



The Results

The completed solar facility provides long-term clean energy production for Cape Cod Aggregates while demonstrating the scalability of commercial solar within industrial environments.

More importantly, the project showcases BD Electrical & Solar's ability to deliver complex energy infrastructure projects involving civil construction, underground electrical distribution, utility coordination, transformer installations, and commercial-scale solar generation.

From driven piles and trench excavation to medium-voltage interconnection and commissioning, the project was executed entirely by a team capable of managing every phase of commercial solar construction.

508-617-0800 info@bdesc.net bdelectrical.services