

On-time foundation installation on flood-prone and high slope site

Challenge



Solar developer Borrego Solar engaged Terrasmart to install the solar foundation for a 7.3 MW project in Orange, Massachusetts. When assessing the site, the installation team noticed some challenges that would make foundation installation difficult—a 21% north and south slope, rocky terrain, and drainage swales.

The site is prone to flooding, which Borrego Solar had to account for by digging drainage swales. The amount of water and a turbulent flow of the water could cause damage to solar foundation and racking if they were installed without any counter-flood measures. These 6-7-foot-deep water trenches would help divert the water away from the array. However, these drainage swales became a challenge for the solar installation team as it restricted their movement. Coupled with the challenge of slope and rocky terrain, it was going to be difficult to move equipment and materials around.

While our team had the expertise and experience to deal with these challenges, we had to ensure we kept the installation crew safe at the same time.

Solution



The first issue we addressed was the type of foundation to install on site.



Based on our expertise and familiarity with the Northeast region, we recommended ground screws, ranging between 2600 - 2900mm depending on how deep the water trenches were, to be installed for this solar project.

When it came to installing the foundation, our team used mud mats and Terrasmart's proprietary equipment to move through the soft and muddy site. Our equipment has low ground pressure so it can get through muddy areas easily. We identified the most difficult areas of the site and began installation there first. We did this to minimize the risk of the ground softening as the weather got warmer—making it harder to move around the site.

Once the water trenches were in place, our installation crew laid the foundation. The screws were installed with a certain portion exposed. Fine gravel and riprap were then used to fill the area—providing extra strength for the ground screws.

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The field crew for this job was amazing. They weren't afraid to get their hands dirty. They worked safely and efficiently to get the job done on time”



— *Richard Van Fleet, Director of Project Operations, Terrasmart*

Result

By leveraging Terrasmart's expertise in turnkey solar projects and extensive in-field experience in the Northeast region, the complexities of the site were effectively addressed, and the following outcomes achieved:

1

Best-fit foundation deployed that addressed the challenges of the terrain

2

Completion of the foundation installation within the timeline

3

Installation of 4,782 ground screws on site

4

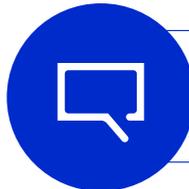
Experience-based problem-solving and specialized equipment that ensured a smooth project flow with no delays

Overcome the challenges of your site with Terrasmart

Refusals, slopes, subsurface conditions, weather, and other variables can impact your installation schedule and project margins. These challenges require quality solutions from the outset—from design and installation to product selection—to minimize risk and unlock maximum project value.

Get your project successfully off the ground by enlisting the expertise of a partner with experience across the solar project lifecycle in the Northeast region.

With 65% of our projects in the Northeast, Terrasmart has 12 years of installation experience in the region and has installed over 1.1GW of solar in the region over the past two years.



Our team of 180 in-the-field experts are ready to help you get your project started. [Contact us](#) today.