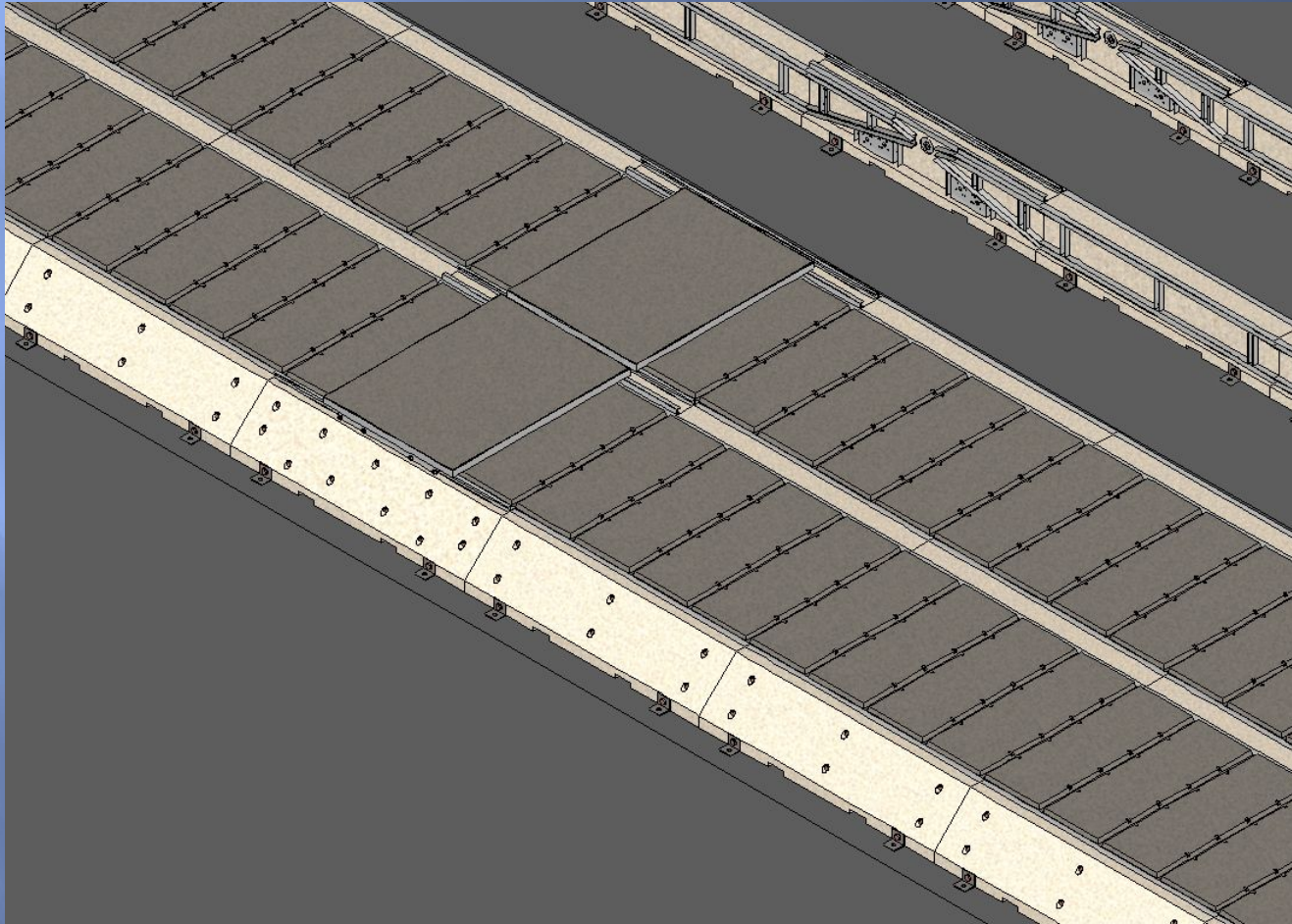




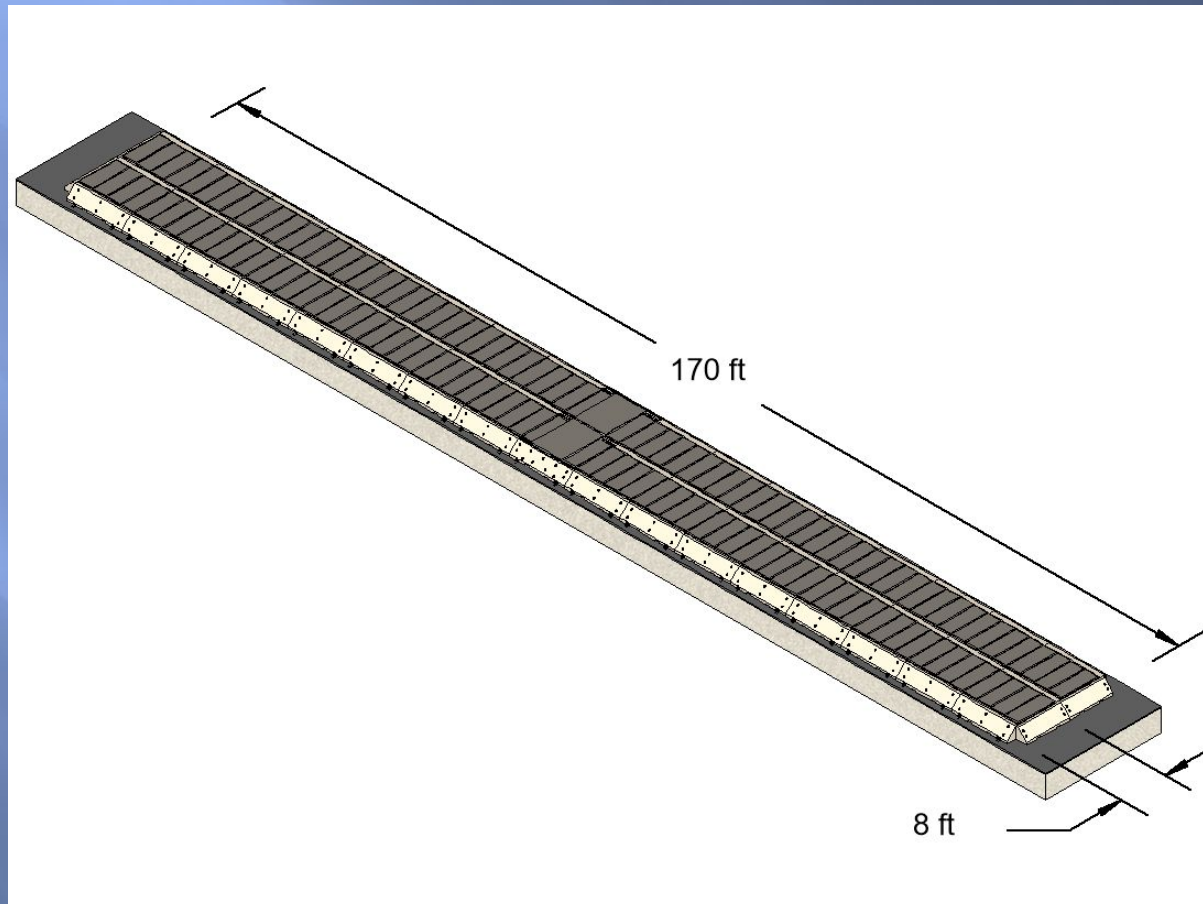
# **CycloBarrier® Storm Resistant Solar Products**

## **Introducing the CycloBarrier® Solar Panel Mounting System**



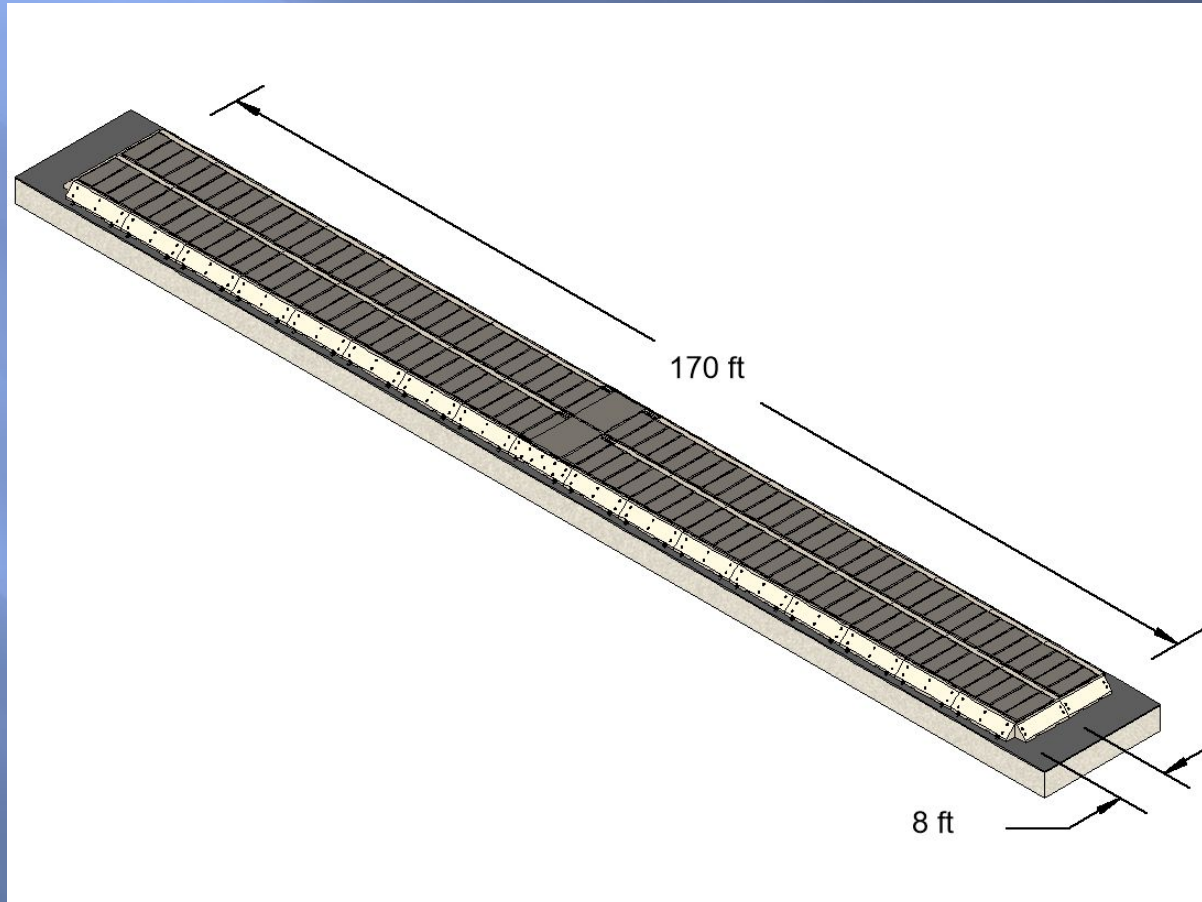
# CycloBarrier® Storm Resistant Solar Products

SO, WHAT EXACTLY IS A 'BARRIER UNIT'?



# CycloBarrier® Storm Resistant Solar Products

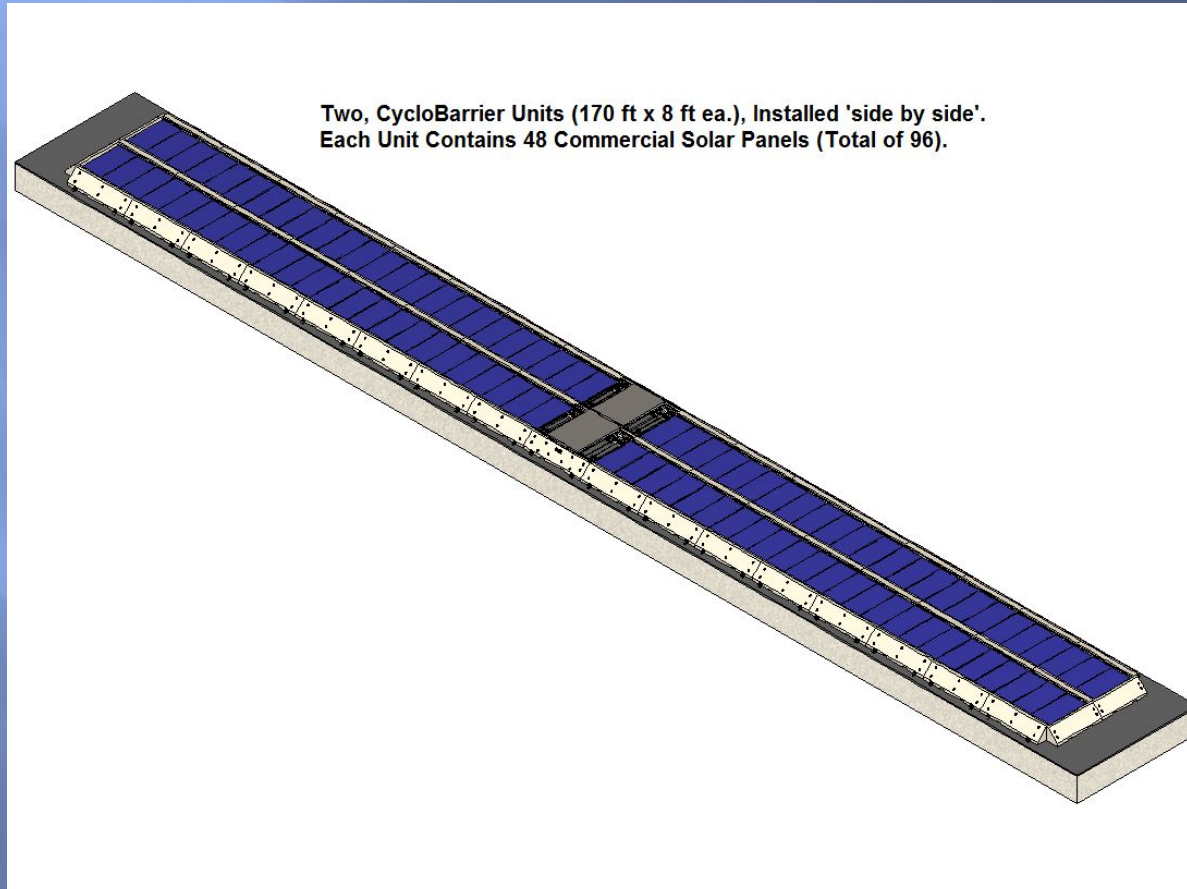
**IN THE MOST BASIC TERMS, THE BARRIER UNIT IS A LONG CONCRETE BOX WITH A MOVABLE CONCRETE LID (ON TOP). WHEN THE LIDS ARE CLOSED, 48 PV PANELS ARE FULLY PROTECTED WITHIN A CONCRETE ENCLOSURE.**





# CycloBarrier® Storm Resistant Solar Products

**WHEN THE LIDS ARE RETRACTED, THE PV PANELS ARE EXPOSED TO SUNLIGHT, COLLECTING ENERGY.**



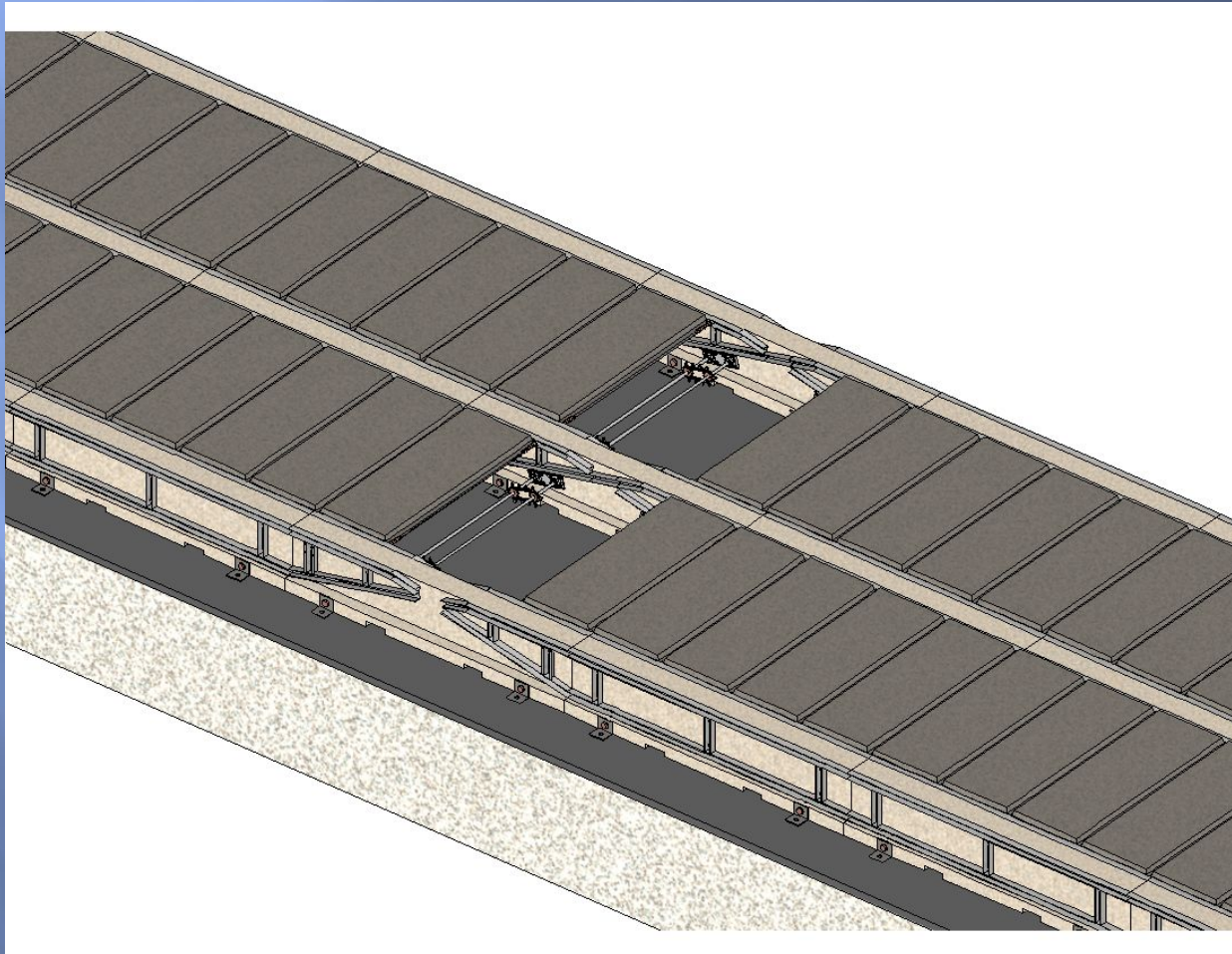
Two, CycloBarrier Units (170 ft x 8 ft ea.), Installed 'side by side'.  
Each Unit Contains 48 Commercial Solar Panels (Total of 96).





# CycloBarrier® Storm Resistant Solar Products

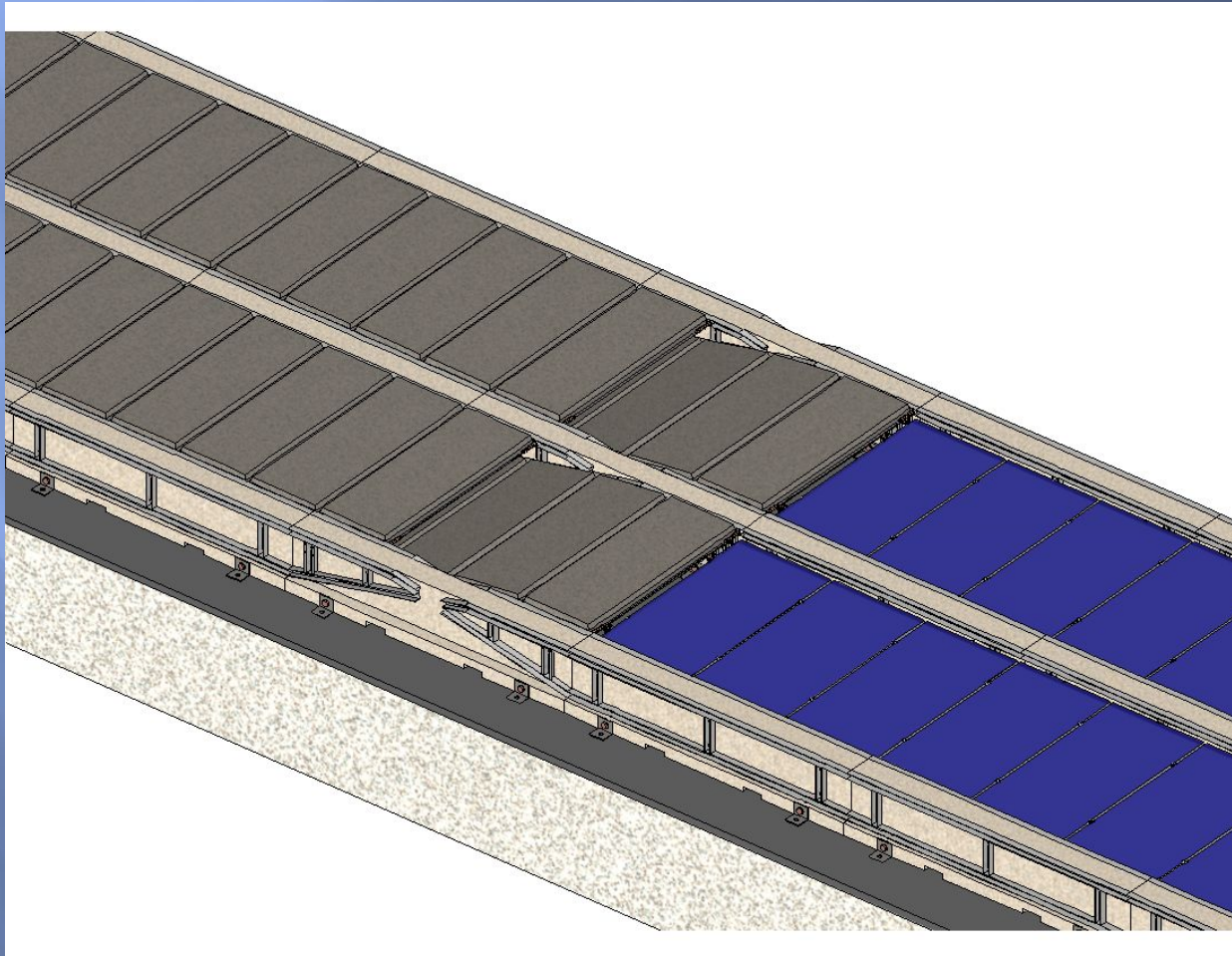
**THE CONCRETE LIDS COMPLETELY COVER THE SOLAR PANELS WHEN WEATHER CONDITIONS DICTATE (DRIVE COMPARTMENT COVER LID REMOVED)**





# CycloBarrier® Storm Resistant Solar Products

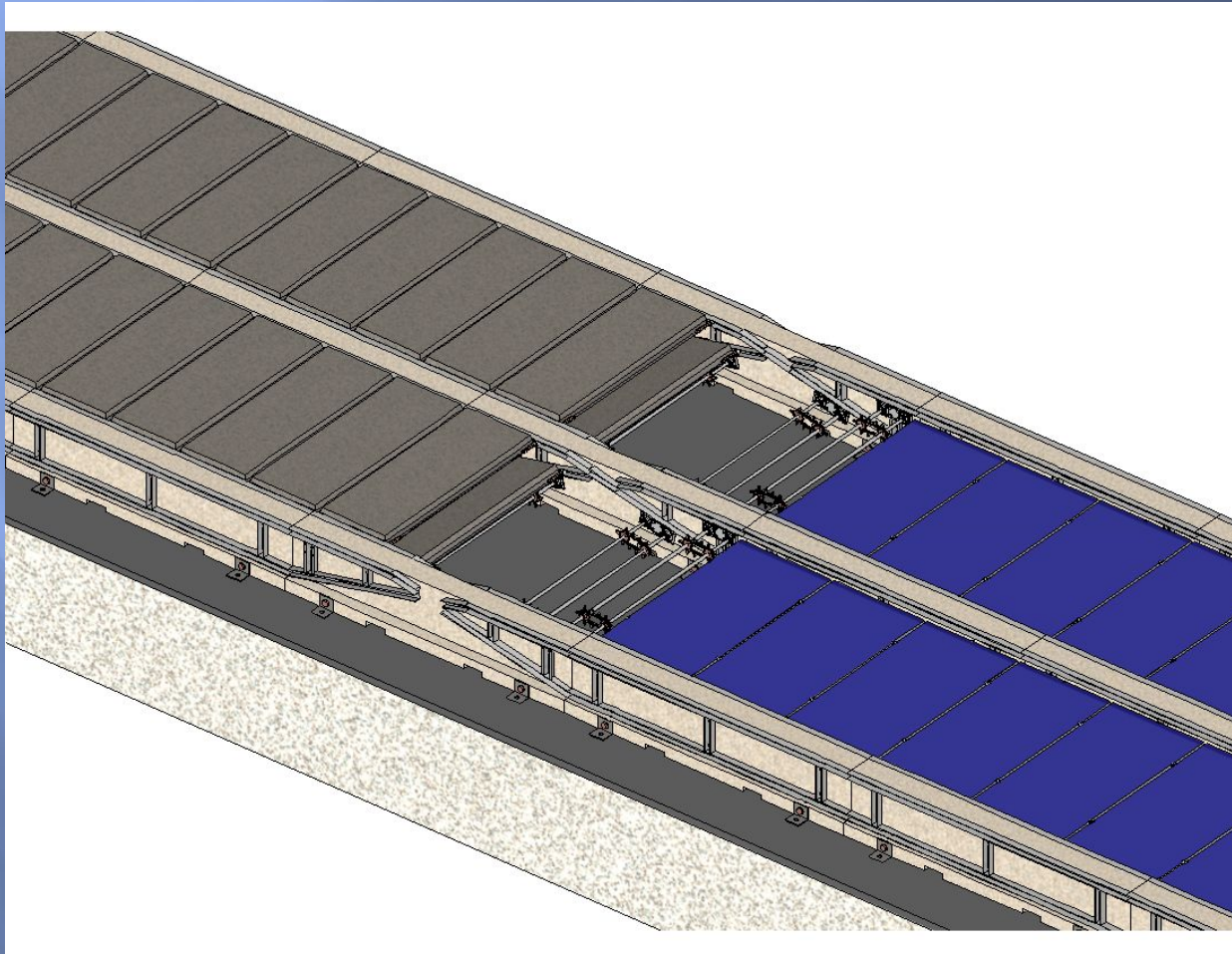
**THE CONCRETE COVER PANELS OF THE FIRST SECTION RETRACT BELOW THE SOLAR PANELS OF THE SECOND SECTION WHEN WEATHER CONDITIONS IMPROVE**





# CycloBarrier® Storm Resistant Solar Products

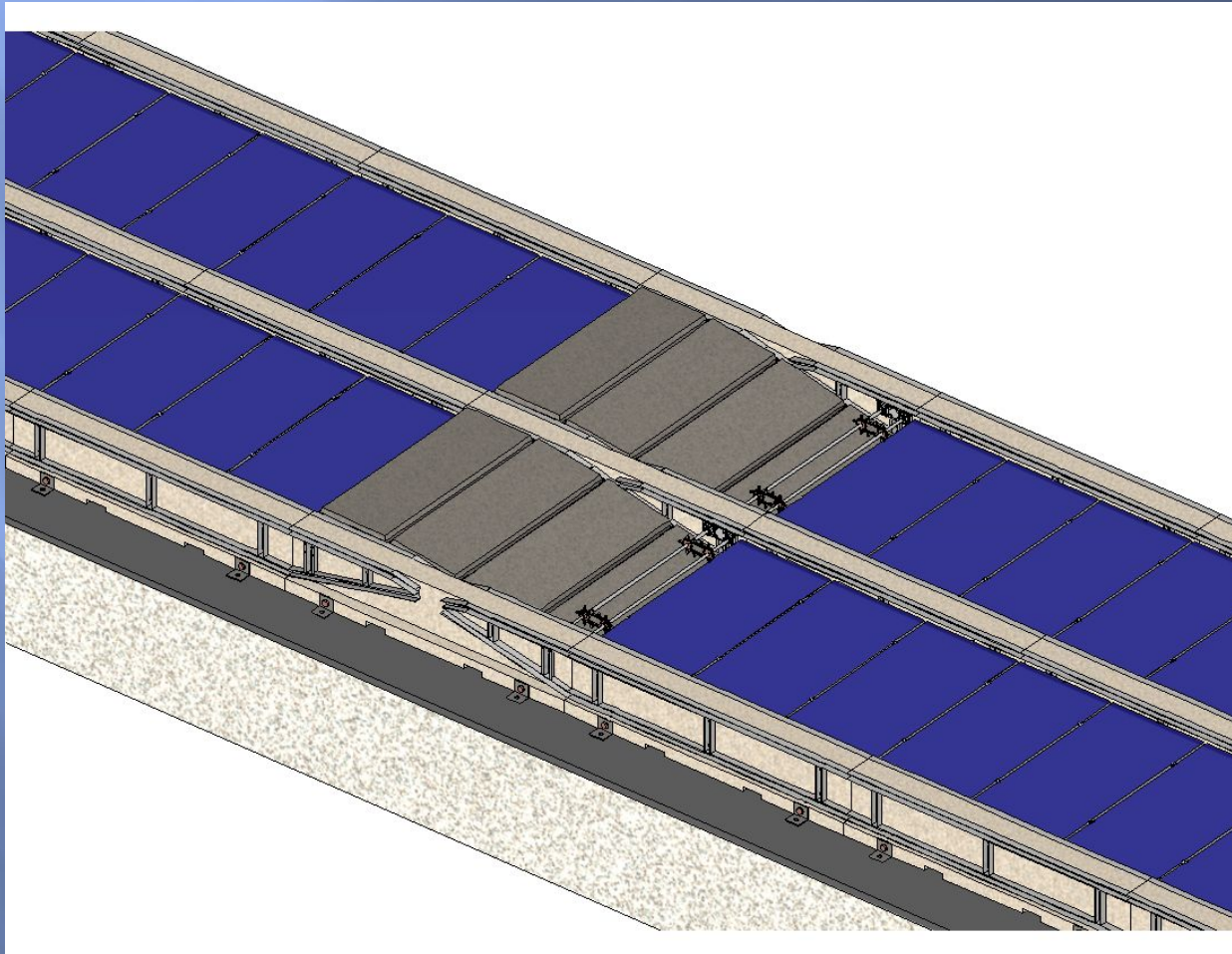
**FIRST SECTION CONCRETE COVER PANELS FULLY RETRACTED (DRIVE COMPARTMENT COVER LID REMOVED)**





# CycloBarrier® Storm Resistant Solar Products

**THE CONCRETE COVER PANELS OF THE SECOND SECTION THEN RETRACT BELOW THE SOLAR PANELS OF THE FIRST SECTION**

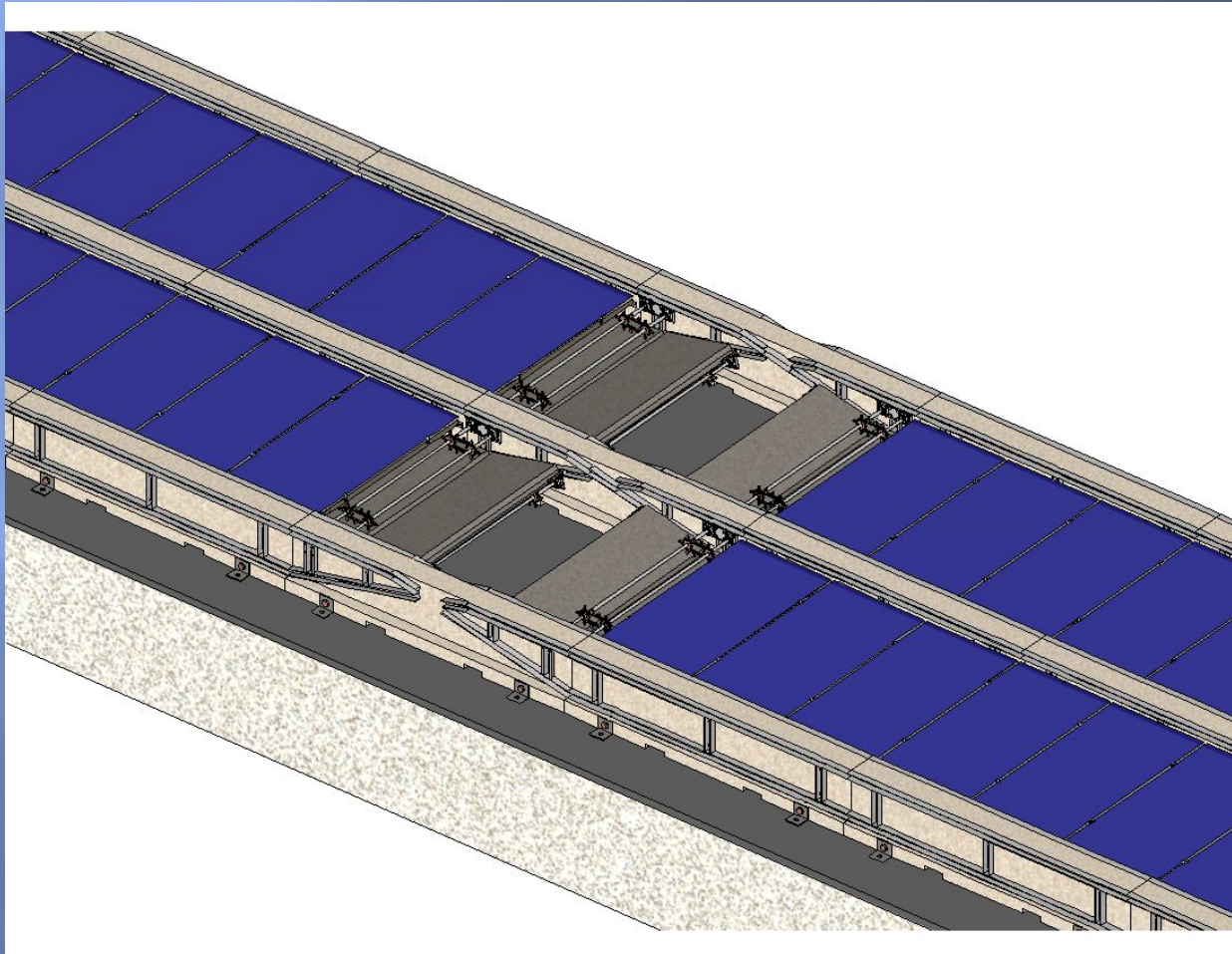






# CycloBarrier® Storm Resistant Solar Products

**WHEN THE LIDS ARE FULLY RETRACTED, THE PV PANELS ARE EXPOSED TO SUNLIGHT, COLLECTING ENERGY (DRIVE COMPARTMENT COVER LID REMOVED)**



# **CycloBarrier Storm Resistant Solar Products**

**The Worlds First Automated, Hurricane-Resistant, Commercial Solar Panel Mounting System.**

## **Key Unit Features**

- Each Unit Securely Mounts 48 Commercial Solar Panels
- 75-Year 'Design Life' (Limited Product Warranty, Service at Scheduled Intervals)
- INTENDED for Application in Hurricane Prone Regions
  - Survivability factor of 85% when Subjected to Category 4 Wind Speeds
  - Reliability factor of 95%, Measured Annually
- Fully Automated Control System, < 15 Minute "Storm-Deployment" Cycle
- Modular and Scalable Design
  - Units Are Designed To Be Applied In Parallel (Commercial / Industrial 'Micro-Grids')
  - Individually Controlled Units Make Precise 'Curtailing' Achievable And Easy
- Efficient Land Usage - 1 mW Power Plant < 1.6 Acres (Assuming 435 W PV Panels)
- Advantageously Applied at 'Brownfield' Sites (with under-used Electrical Infrastructure)
- Rapid Installation on Prepared Surfaces (10-Week Installation - 1 mW Field)
- Web-Based, 'Field Control' Application Available for Owner / Operators
- CycloBarrier Satellite Control Network (Global Control Network, Subscriber Service)

# **CycloBarrier Storm Resistant Solar Products**

**The Worlds First Automated, Hurricane-Resistant, Commercial Solar Panel Mounting System.**

**INTENDED for Application in Hurricane Prone Regions**

- **Survivability Factor of 85% When Subjected to Category 4 Wind-Speeds\***
- **Reliability Factor of 95% (Measured Annually)\*\***

**\* - 'Survivability Factor' definition – "The percentage of the Barrier Units which are fully functional, including installed PV Panels, and capable of delivering energy to the Grid, or to an Energy Storage device within 72 hours following a 'Storm' with associated Category 4 Hurricane Wind Speeds (per Safer-Simpson scale). The calculation will be based on the number of Barrier Units that were in proper working order prior to the 'Storm' event, AND that were in the 'Closed' position before the 'Storm' event begins".**

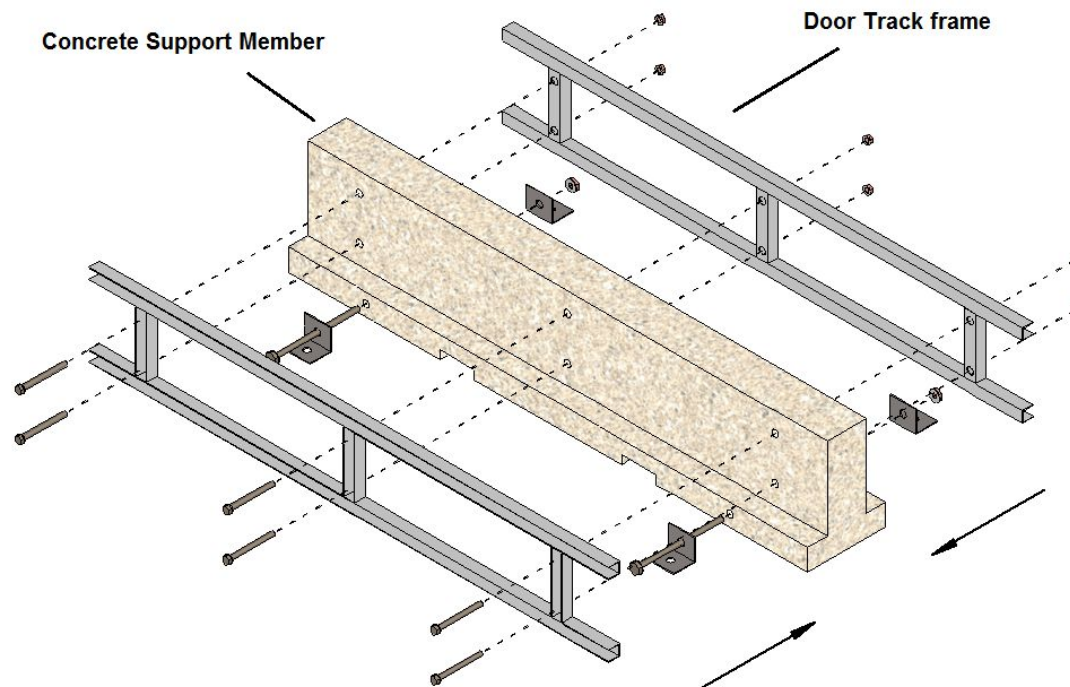
**\*\* - 'Reliability Factor' definition – "The percentage of Daylight hours that the Barrier Series Units are fully functional and ready to deliver energy. The calculation will be based on the total number of Barrier Units applied in a standard 1mW field, on an Annual basis'.**



# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**ALL STRUCTURAL MEMBERS CONSTRUCTED OF CONCRETE AND GALVANIZED STEEL  
THESE TWO MATERIALS COMPRISE OVER 98% OF A 1 MW FIELD**

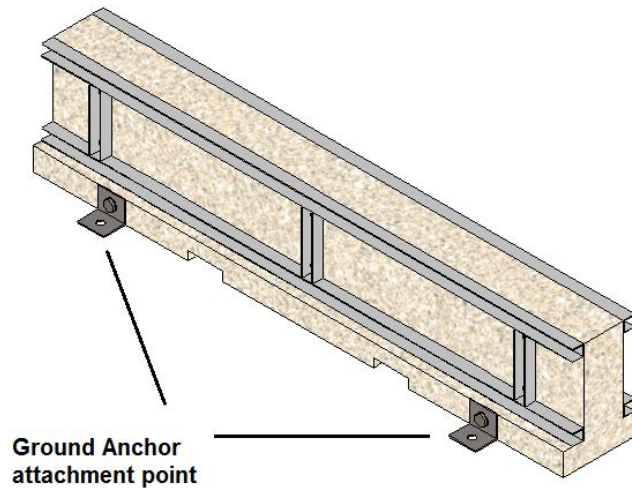


# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**ALL STRUCTURAL MEMBERS CONSTRUCTED OF CONCRETE AND GALVANIZED STEEL**

Concrete Support Member assembly



Approximately 750 Concrete Support Member assemblies per 1 mW Solar Field (peak)

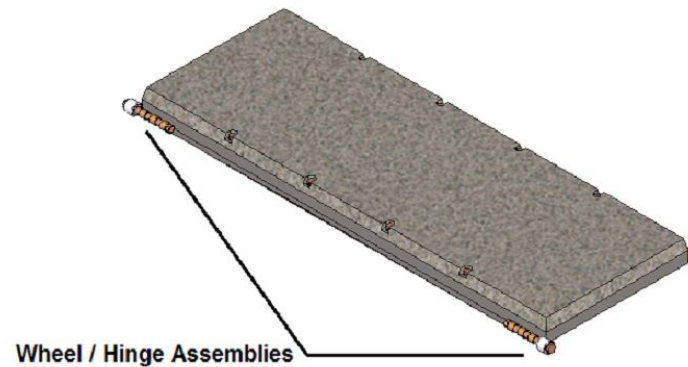


# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**ALL STRUCTURAL MEMBERS CONSTRUCTED OF CONCRETE AND GALVANIZED STEEL**

Concrete Lid Assembly



Approximately 3070 Concrete Lid Assemblies per 1 mW Solar Power Plant

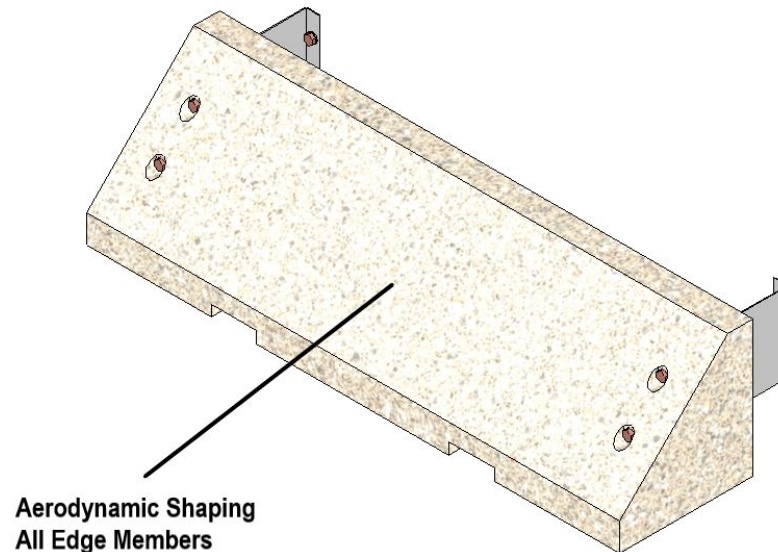


# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**ALL STRUCTURAL MEMBERS CONSTRUCTED OF CONCRETE AND GALVANIZED STEEL**

End Cap Assembly



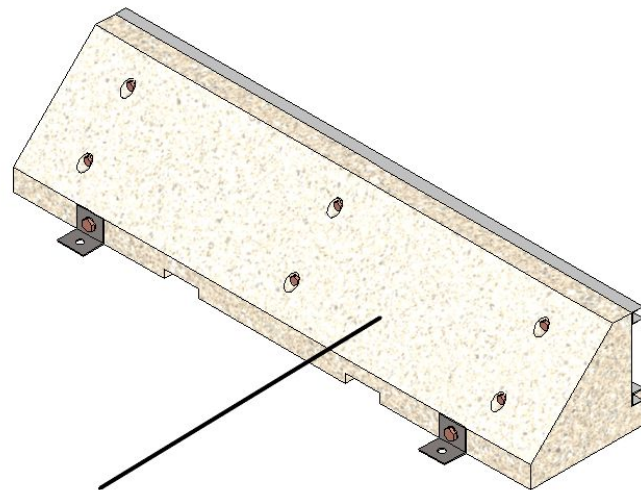
Aerodynamic Shaping  
All Edge Members

# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**ALL STRUCTURAL MEMBERS CONSTRUCTED OF CONCRETE AND GALVANIZED STEEL**

Side Edge Member Assembly



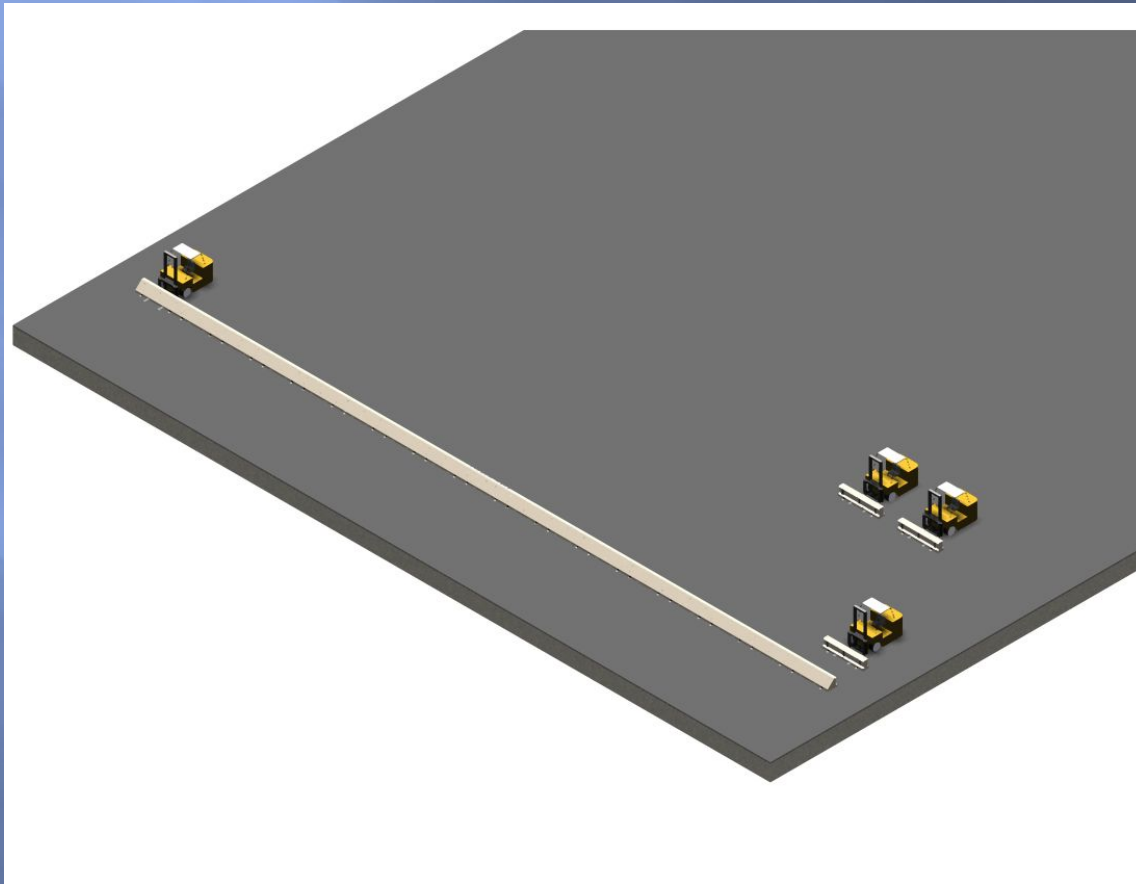
Aerodynamic Shaping  
All Edge Members



# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**RAPID FIELD CONSTRUCTION BY DESIGN!**



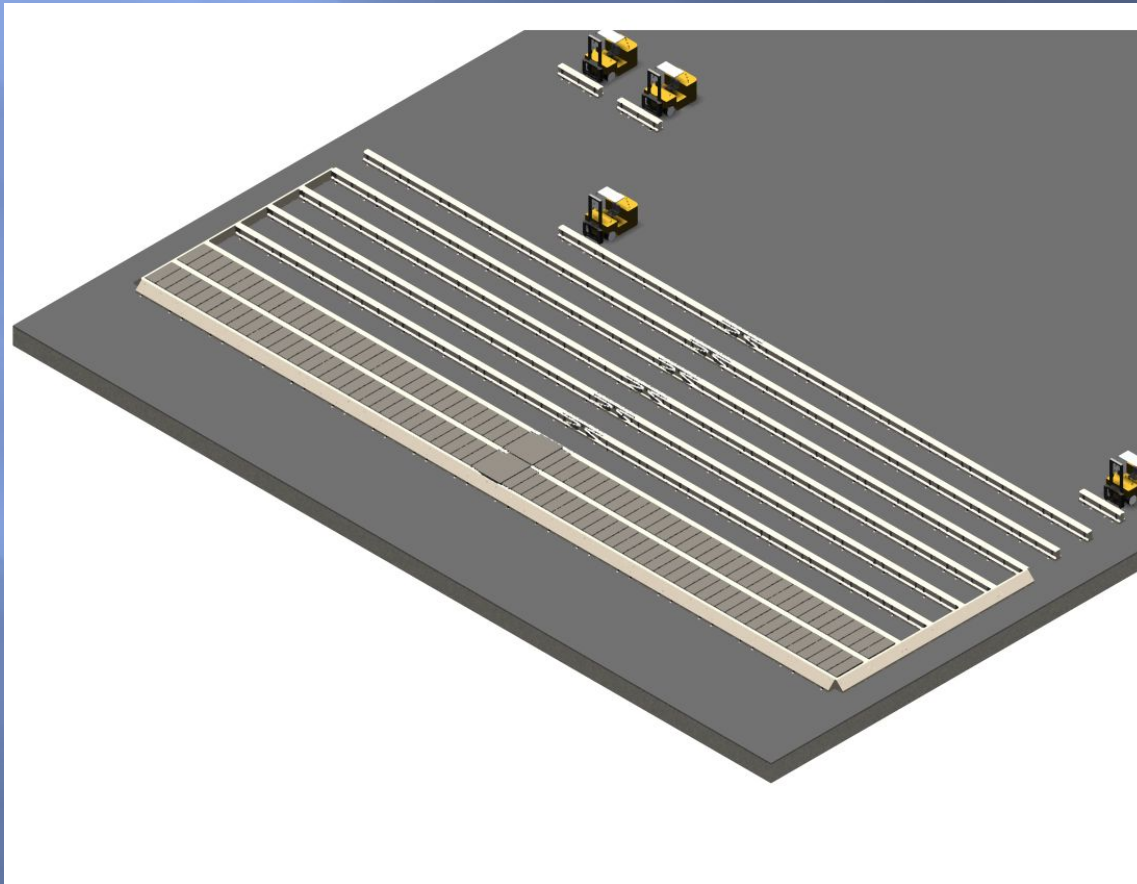




# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**RAPID FIELD CONSTRUCTION BY DESIGN!**

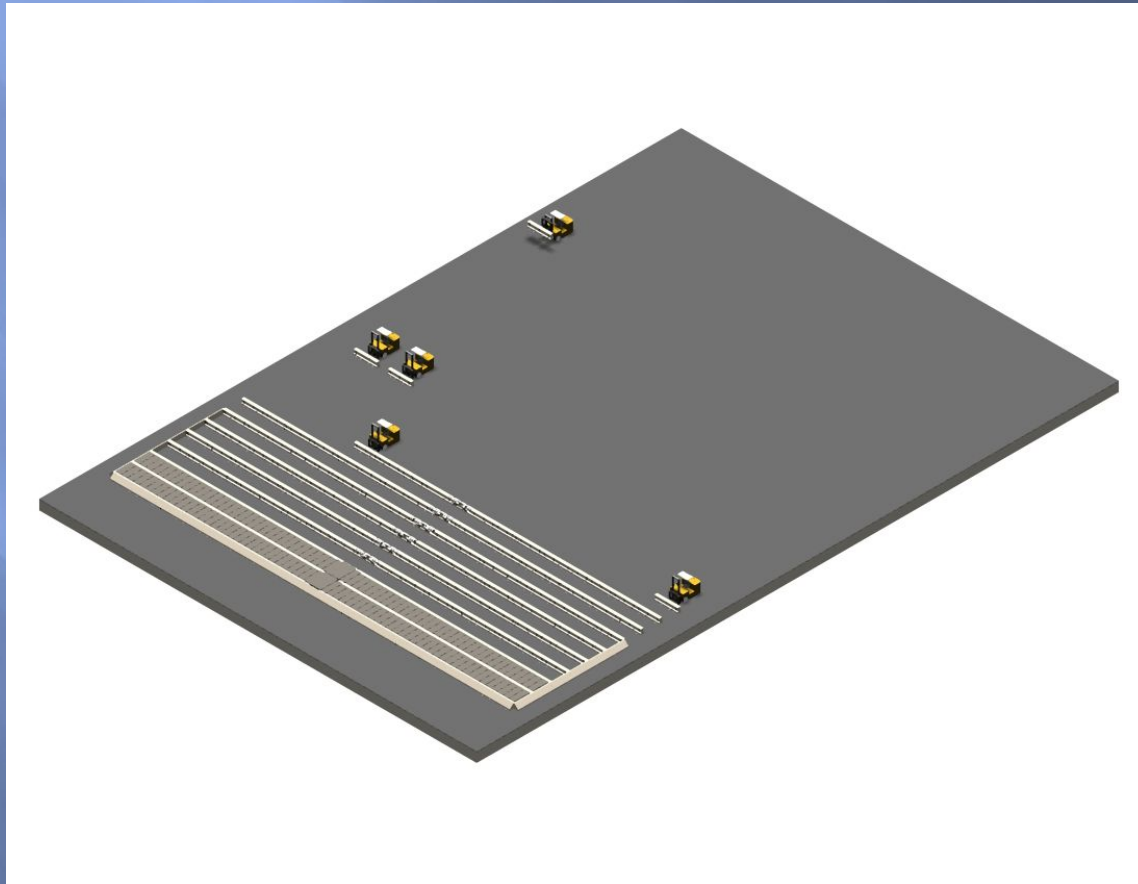




# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**RAPID FIELD CONSTRUCTION BY DESIGN!**

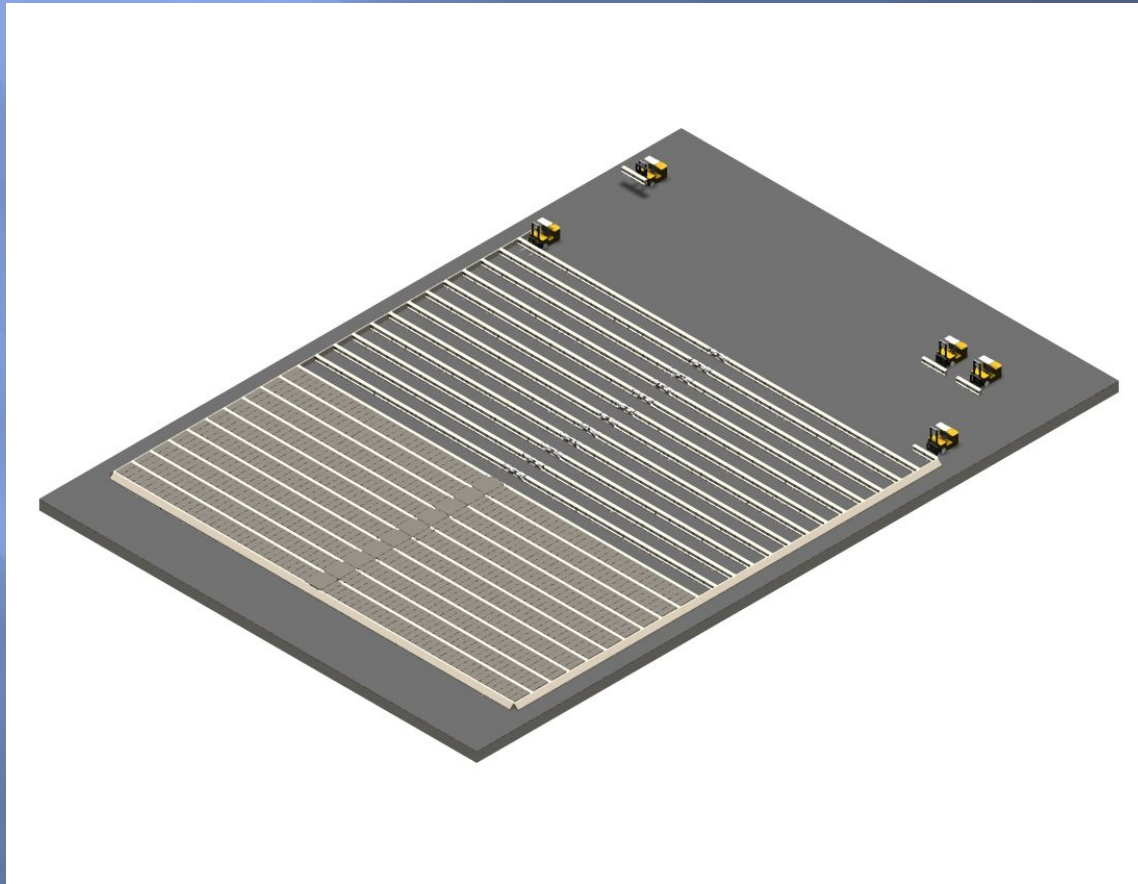




# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**RAPID FIELD CONSTRUCTION BY DESIGN!**





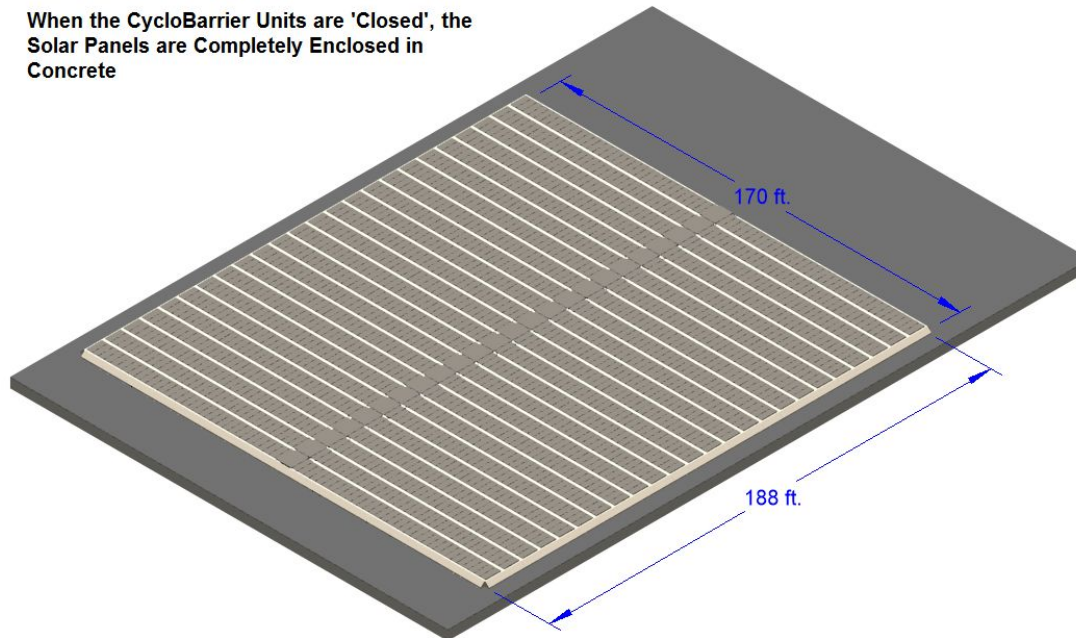


# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**RAPID FIELD CONSTRUCTION BY DESIGN!**

When the CycloBarrier Units are 'Closed', the Solar Panels are Completely Enclosed in Concrete



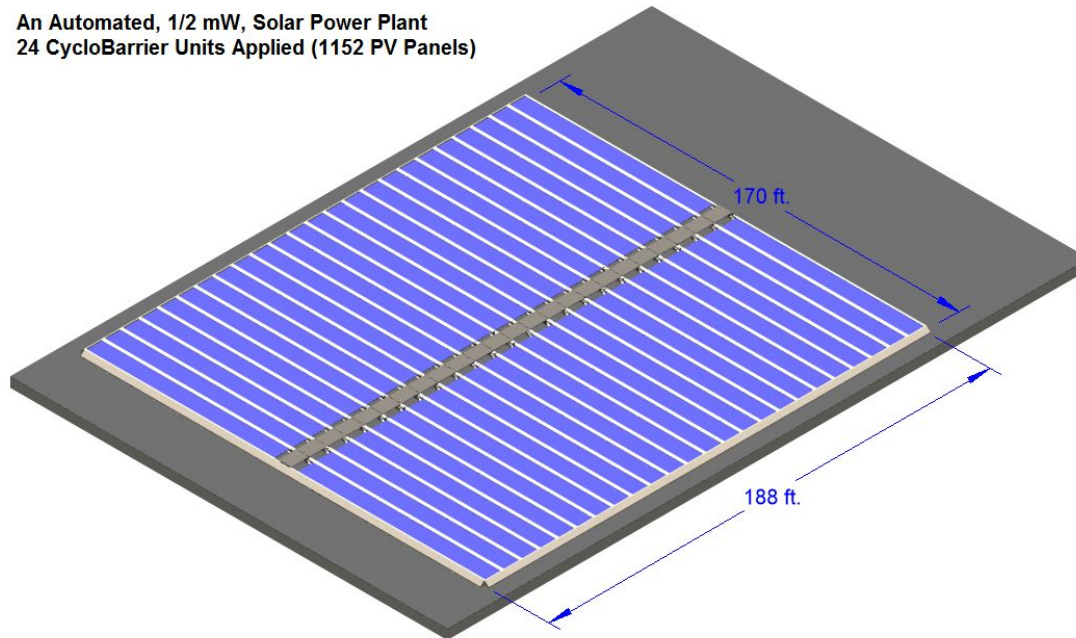


# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

**RAPID FIELD CONSTRUCTION BY DESIGN!**

An Automated, 1/2 mW, Solar Power Plant  
24 CycloBarrier Units Applied (1152 PV Panels)



# CycloBarrier Storm Resistant Solar Products

## Introducing the CycloBarrier® Solar Panel Mounting System

### THE BARRIER SOLAR PANEL MOUNTING SYSTEM (170' X 8' IN 'FOOTPRINT', ONLY 24" TALL):

- IS DESIGNED TO HOLD **48** COMMERCIAL-SIZE **PV** PANELS.
- IS INTENDED TO BE JOINED, 'SIDE BY SIDE', IN PLURALITIES, RESULTING IN MORE WATTAGE OUTPUT PER SQ. FT. THAN TYPICAL COMMERCIAL APPLICATION METHODS.
- ONCE THE **BARRIER** UNITS ARE SECURED ON A PREPARED SURFACE, AND FULLY CONNECTED, A STORM-HARDENED SOLAR FIELD IS THE RESULT. **ALL EDGE MEMBERS** ARE AERODYNAMICALLY SHAPED
- THE FIELD SIZE 'FOOTPRINT' INCREASES BY ANOTHER **170' X 8'** FOR EACH ADDITIONAL BARRIER UNIT (ADDING AN ADDITIONAL **48 PV** PANELS).
- THIS 'MODULAR' METHOD CAN BE RAPIDLY INSTALLED, AND APPLIED IN 'FOOTPRINTS' OF VARIOUS GEOMETRIES. THE **170** FOOT LENGTH OF THE BASE DESIGN CAN BE APPLIED IN **EAST / WEST** OR **NORTH / SOUTH** ARRANGEMENTS (WITHIN CERTAIN **GEOGRAPHIC** REGIONS, GENERALLY ACTIVE **HURRICANE ZONES**).
- A **UNIT** WILL HAVE A USABLE / DESIGN **LIFE** OF **75** YEARS (WITH CORRESPONDING **WARRANTY** AND STIPULATIONS FOR **SERVICE / MAINTENANCE**).
- THE **BARRIER** UNIT WILL ENABLE THE **48** INTERNALLY-MOUNTED **SOLAR** PANELS TO SURVIVE A STORM EVENT, WITH WIND CONDITIONS AT **CATEGORY 4** LEVEL (**SAFFER/SIMPSON** SCALE).
- **ALL** OF THE REQUIRED COMPONENTS TO BUILD **BARRIER** UNITS ARE COMMERCIALY AVAILABLE TODAY.
- **MAY** BE ADVANTAGEOUSLY APPLIED AT FORMER INDUSTRIAL SITES WITH EXISTING, UNUSED ELECTRICAL INFRASTRUCTURE AND PARKING AREAS.
- **MODULAR**, INDIVIDUALLY-CONTROLLED UNITS OFFER EASY AND PRECISE 'CURTAILMENT'.