

TEAM SUMMIT

SELECT CORE PLATFORM SOLUTIONS DETAIL

PermaDune™



THE UNIQUE PermaDune™ SHORE SOLUTION

- The PermaDune™ Precast Concrete Panels (the “Panels”) facing the water will have the structural ribs facing outward to help break up the wave/surge and catch the sand.
- The design should allow sand to accumulate behind and over the Dune. Small openings (holes/slots) strategically located in the faces of the Panels will allow water and sand to penetrate under the Panels over some time and eventually fill up that space, and dune grass or other such vegetation will take root and grow on the outside surfaces.
- The Panels will be bolted together at, and cabled through, the ends, and connected to each other along the long sides by special "hinge" mechanisms designed to withstand the high impact energy of large waves and surges created by super storms.
- These connections at/through the ends and along the sides of the Panels create an integrated monolithic structure, such that any storm surge would need to move the entire length of the Dune.
- Special non-corrosive non-metallic re-bars would be used in the Panels, and a specially designed anti-erosion fabric will be used to "anchor" the Panels in the sand. These various features are expected to prevent cavitation of the sand in front of and behind the Dune.

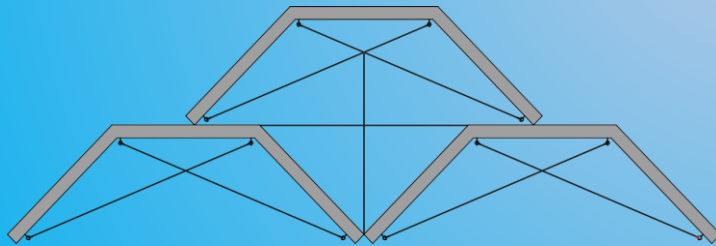
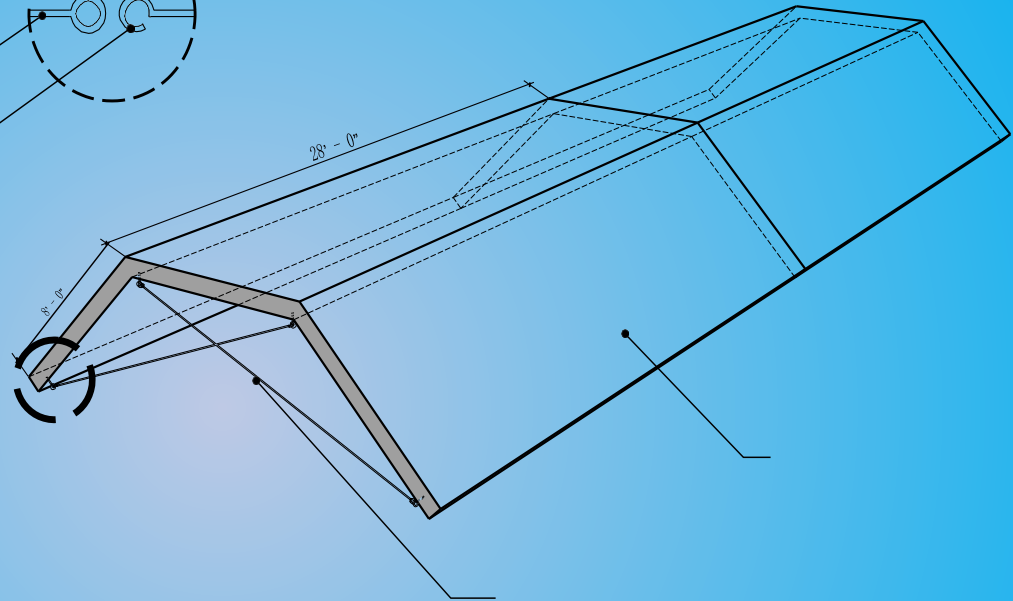
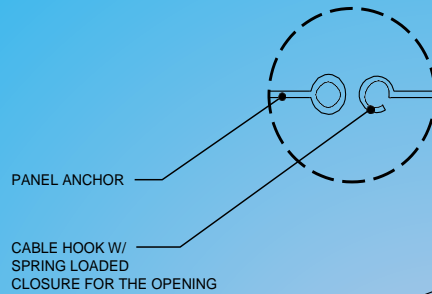
Local Construction Materials, Equipment, Labor and Contractors



PermaDune™ DESIGN CONCEPT



Summit Reliance Group, Inc.
Pioneering a Sustainable Future



IT IS EXPECTED THAT THE WEIGHT OF THE ENTIRE DUNE WILL "ANCHOR" IT INTO THE SAND AND RESIST MAJOR SURGES. PANELS WILL BE BOLTED TOGETHER ALONG THE VERTICALS AND HORIZONTAL EDGES. THE ANGLE OF THE PANEL FACING THE WATER WILL DEFLECT SOME OF THE ENERGY OF THE SURGES UPWARD, CREATING A DOWNWARD FORCE ON THE DUNE.

Project: MOBILE ARTIFICIAL SAND DUNE CONCEPT

CONFIDENTIAL

Drawing Title: CONCEPT SKETCHES

Sheet No: SK-01

Date: 23 SEPTEMBER 2013

Scale: NOT TO SCALE

DRAWN BY: AE



7 Day Street, Suite 302
New York, NY 10007
212.346.0705



PermaDune™ IS PERMANENT

- The Dune is intended to be a permanent structure that does not erode or wash away and need to be "replenished" regularly at some ongoing cost. Alternatively, if desired, the Dune can be installed temporarily at the beginning and removed and stored at the end of the storm season.
- In the event that a Panel is severely damaged, for example by a loose steel sea container being slammed into it by a super storm, the Panel can be easily and inexpensively replaced.
- Where steel sheet piling already has been installed, the Dune can be placed over that structure to hide it and preclude further cavitation and erosion along the sheet piling wall.
- A 1-mile (5,280 foot) Dune, for example, would require 3 rows of 188 Panels each = 564 total Panels. The installed Dune in this example would weigh on the order of 6 million pounds, or 3,000 tons. Employing only 4 StructCrete™ Moulds, each producing only 2 Panels per day, the Dune could be constructed in about only 2.5 months. Using more Moulds and truck-mounted telescoping cranes, the Dune could be installed at a significantly faster rate.
- The initial cost is estimated to be competitive with the cost to create a natural sand dune, and significantly less (i.e., "insignificant") on a life-cycle replenishment basis.



TEAM SUMMIT MISSION

- Employ the StructCrete™ Solution to create functional, sustainable, disaster-resistant, secure and affordable homes and other buildings, as well as environmentally sound and aesthetically appealing beach erosion installations

... FASTER, BETTER & LOWER COST

- Create sustainable jobs and opportunities for a better quality of life in the host communities

... FASTER, BETTER & LONGER LIFE



Contact Us

Summit Reliance Group, Inc.

1441 Broadway, Suite 6092 / New York, New York 10018 USA
Tel: +1.646.569.5703

Steven R. Maimon

President & CEO

Tel: +1.703.220.9104 / Skype: maimonsummit

Email: smaimon@summitreliance.com

Maria I. McKeon

CFO, Director, Strategic Planning & Investment Programs

Tel: +1.917.209.9500 / Skype: maria.mckeon

Email: mmckeon@summitreliance.com

www.summitreliance.com

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