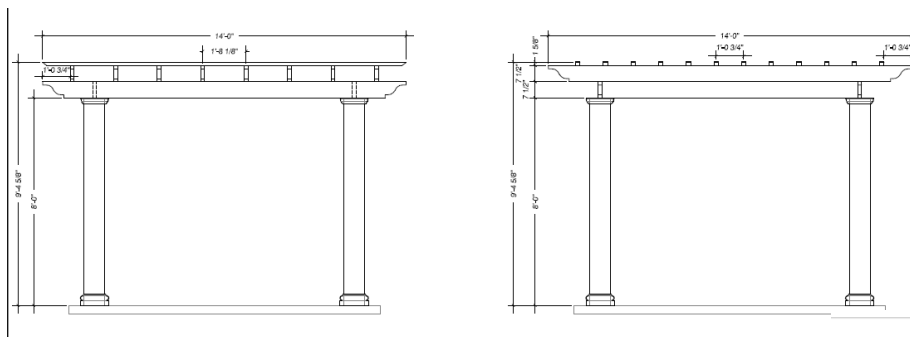


Structural Engineering Analysis
For 14' x 14' HB&G Building Products, Inc. Pergola with 10" columns

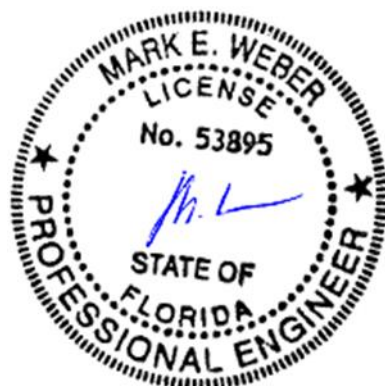
Analysis was performed based on ASCE 7-10 Code, for the 14' x 14' **HB&G Building Products, Inc.** Pergola with 10" round or square columns. The analyses were performed with four (4) anchors per column base plate and the design reflects ASCE 7-10 wind load rating of 160 MPH with the following assumptions:

- 1) (1) 10" Round or Square Anchor plate welded to 5/8" coupler as per Drawings dated 1JULY2014.
- 2) (4) Anchors – Wedge type stainless steel 5/8" diameter with 4" embedment and 3,000 psi concrete (True Bolt WW-5860, Kwik Bolt 3 – SS 5/8 (4) or equivalent).
- 3) (1) 5/8" threaded rod shall be B7 Alloy Steel Threaded Rod (std. Low Carbon Steel is not equivalent).
- 4) (16) Flat Washer, Large OD, 18-8 Stainless Steel washer at each (1/4" -14 x 2 1/2") screw location; qty: 4 per column; 16 washers in total.
- 5) Threaded rod extends through column and bolted to aluminum top plate.

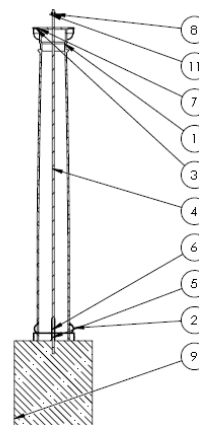
Result: The configuration characterized herein for this structure can resist 160 MPH wind load as per ASCE 7-10 Code with minimum footing size: 24" x 24" x 24" deep.



MW Engineering, Inc.



8/11/2014



ITEM NO.	PART NUMBER	QTY.
1	10" Column	1
2	10" Column Base	1
3	10" Column Cap	1
4	5/8" Threaded Rod	1
5	Short Threaded Rod	1
6	Threaded Coupler	1
7	10" Column Aluminum Top Plate	1
8	HHNUT 0.6250-11-B-N	1
9	24 in concrete footing	1
11	Select'd Wide FW 0.688	1