



Timber Tech Engineering, Inc.
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November 17, 2009

Bob Meyer
Perma Column Inc.
400 Carol Ann Lane
Ossian, IN 46777

RE: Perma-Deck Precast Concrete Deck Post Design Review
Timber Tech Engineering Project No. S075-09

Dear Mr. Meyer:

Thank you for the opportunity to work with you on this project. Please find enclosed the design calculations for the wood to steel connections, the steel weld connections and the footing capacities. The loads shown in the table are for a Perma-Deck Precast Concrete Post. This is a concrete post with a steel bracket at the top welded to a $\frac{1}{2}$ " A706 weldable rebar with a $\frac{1}{2}$ "x8" HH Bolt at the base for height adjustment. The concrete will be a $3\frac{1}{2}$ "x $3\frac{1}{2}$ " column extending down from the base of the bracket to the bolt for a length of 30 inches. The bracket is a $3\frac{1}{2}$ " wide, 12 gage steel U shape bracket to allow for $3\frac{1}{2}$ " of wood post/beam to be attached through six holes. There are six holes on each side of the bracket to stagger 3 screws as needed on each side.

The following table shows the allowable shear, uplift and vertical gravity load values for a Perma-Deck Precast Concrete Post using a total of (6) #12x3" screws from the bracket into the wood post or beam (3 each side). The wood post or beam is assumed to have a specific gravity of 0.36 or greater.

**Allowable Shear, Uplift and Gravity Loads
for a Perma-Deck Precast Concrete Post**

Post Specific Gravity is 0.36 or greater

All loads in pounds

Depth to Bottom of Footing	Diameter of Footing	Shear (160)	Uplift (160)	Gravity (100)
34"	8"	802	607	680
34"	10"	802	733	1090
24"	8"	578	227	590
24"	10"	754	298	950

Notes:

- 1) This chart is for Perma-Deck Precast Concrete Posts used in a deck foundation application to connect wood posts or beams to concrete footing.
- 2) The forces applied from the posts to the brackets are a vertical uplift force, a horizontal shear force and a vertical gravity load. Loads shown in the chart are unfactored.
- 3) The allowable loads in wood have been increased by 60% for wind or seismic loading, reduce where other loads govern.
- 4) The allowable concrete loads assume a minimum f_c of 2500 psi.
- 5) Wood to steel connection assumes (3) #12x3" screws each side (6 total per post) with the wood specific gravity of 0.36 and wet service reductions applied.
- 6) Footing is assumed to be 8" in depth and 24" to 34" from grade to base of footing.

Thank you once again for the opportunity to work with you on this project, and please feel free to contact me if you have any questions.

Sincerely,

Brent Leatherman, P.E.
Timber Tech Engineering, Inc.

BL:cf
Enclosures