ALDRICH
ENGINEERING

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Ms. Debbie Klene
32 Hope Valley Road
Amston, CT 06231

Dear Ms. Klene:

I have completed a structural analysis of the 12' x 20' horse barn with the following results:

1. The 2½" dia. schedule 40 pipe beams with posts 10' o.c. can safely carry a load of 35 lbs/sq ft of horizontal projected roof area.
2. The 2½" dia pipe posts 8' long can carry 20,000 lbs. (at 35 lbs/sq ft the total load on a center post is 3150lbs, 16' rafters with 3' overhang)
3. 2" x 6" rafters at 40" o.c. can carry 20 lbs/sq ft.
   2" x 6" rafters at 24" o.c. can carry 33 lbs/sq ft.
   2" x 8" rafters at 40" o.c. can carry 35 lbs/sq ft.
4. The uplift force from an 80 mph wing blowing into the open side = 5500 lbs. (the building with metal roof and plywood sides weighs about 2200 lbs-67% of the weight is generally credited with resisting uplift; therefore, anchorage is needed to resist about 4000 lbs)
5. With the 8' posts on 5' centers (when doorways are provided) the beams can carry 75 lbs/sq ft.
6. The gable design with 4' overhang can have the same rafter sizes and spacing as above.
7. The 2" x 4" roof purlins at 2' o.c. can carry 60 lbs/sq ft.
8. The 40' of pipe skids with a building weight of 2200 lbs results in a soil pressure of about 1200 lbs/sq ft. Average soil will carry a load of about 2500 lbs/sq ft.

If you have questions or need additional information, please let me know.

sincerely,

Robert A. Aldrich

Robert A. Aldrich, PE

incl.