

WESTERN AIRCRAFT HANGAR

NEUDESIGN ARCHITECTURE, BOISE, ID
INDUSTRIAL

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Tamarack Grove provided a foundation design for a pre-engineered steel building utilizing nearly 300ft free spanned moment frames, the second largest free span moment frames in the state of Idaho.



CHALLENGE

Complexities included foundation design for the large moment frames, heated slab, soil frost considerations, snow design, and saturated soils. Due to the snow loading applied to these vast spanning frames the forces at the base of the columns were extremely large and needed to be adequately tied to resist the outward thrust. The heated slab created an additional set of constraints such as allowable slab thickness, location of reinforcement, and location of grade beams.

SOLUTION

We started by developing multiple design solutions based on the complexities with the owner's budget in mind. The final design determined was a long grade beam tying shallow footings together. The key achieved for the grade beams was to not interfere with the heated slab. Value engineering was considered throughout the design to minimize foundation depths and sizes while ensuring the project could keep within the owner's budget. We worked closely with the contractor to ensure that the final design was a success for the owner. We quickly solved construction issues that typically occur through site visits and on-site design changes working with the architect and contractor.

TEAM MEMBERS

DOUG HARDIN, P.E.
President, Principal

GARRETT DAVIS, E.I.
Project Engineer

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Engineering Manager

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SERVICES

**VALUE ENGINEERING
STRUCTURAL DESIGN
& ANALYSIS**

**PRE-ENGINEERED
METAL BUILDING
FOUNDATION
REVIT**

**CONSTRUCTION
OBSERVATION
CONSTRUCTION
ADMINISTRATION**

 **92,000
square feet**

 **300 feet long**
2nd largest free-
spanning moment
frames in Idaho

 **2,000 cubic
yards of
concrete in
slabs alone**

 **350,000
pounds of
rebar used in
foundation**

TAMARACK GROVE

TAMARACKGROVE.COM

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