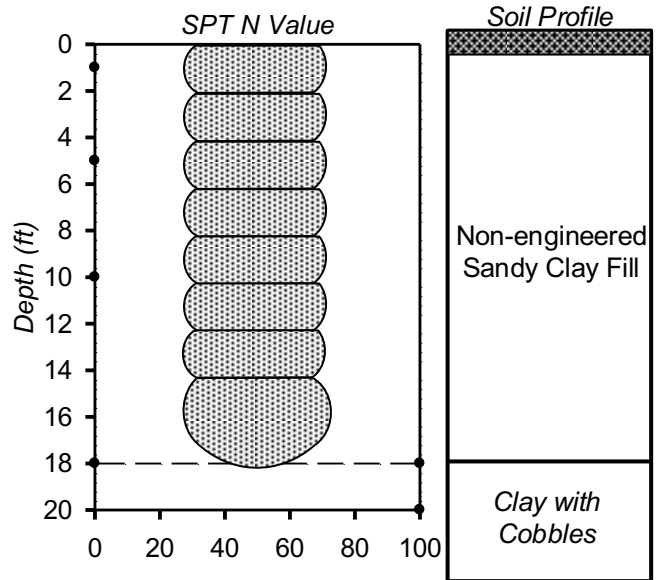


Soil Profile:

The soil profile showed an 18’ thick layer of non-engineered sandy clay fill. Below, a hard clay with cobbles layer with SPT N values of 50 or more was encountered.

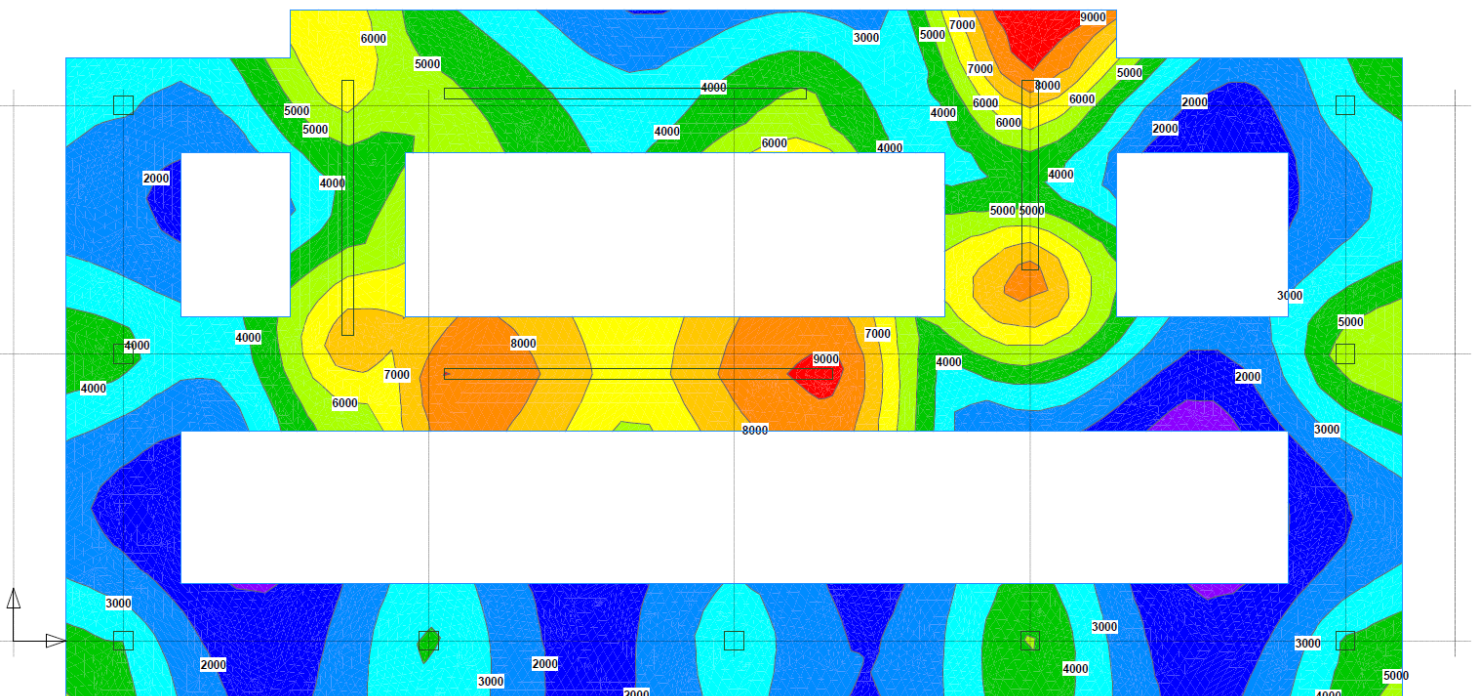
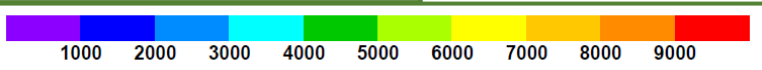
The aggregate pier design was made considering that all the aggregate piers were going to penetrate into the hard clay with cobbles layer.



Bearing Capacity Analysis:

Due to seismic loads and overturning moments, the soil bearing capacity needed was not uniform. In some areas it was as low as 2,000psf but in others it was up to 10,000psf. To ensure uniform settlement through the entire footprint of the building, the aggregate pier distribution was adjusted to match the varying pressure. Areas of high applied load required closer pier spacing than that of lower applied loads.

Bearing Capacity Heat Map



Project Description:

The project consisted of a new 6-story office building located in Lehi, Utah. As a cost savings measure Aggregate Piers were proposed in conjunction with the project Geotechnical Engineer as a value engineer alternate to over-excavation of weak sandy clay fill material. Not only did the piers save on project cost but also on overall schedule.

Project Details:

- 220 Aggregate Piers installed.
- The Aggregate Piers were designed to mitigate compressibility of a non-engineered sandy clay fill overlying a hard clay with cobbles layer and to increase the bearing capacity up to 10,000 psf.

Team Details:

- General Contractor – Okland Construction
- Architect – Babcock Design
- Structural – Babcock Design
- Geotechnical – GSH Geotechnical, Inc.

3D Foundation Model

