

I PRO 315—Design of a Large Scale Structure

PROBLEM

- Finding a viable, economical design of a structure to support a green building
- Learning to coordinate between different disciplines
- Replacing Gunsaulus Hall with a larger, more efficient building

OBJECTIVES

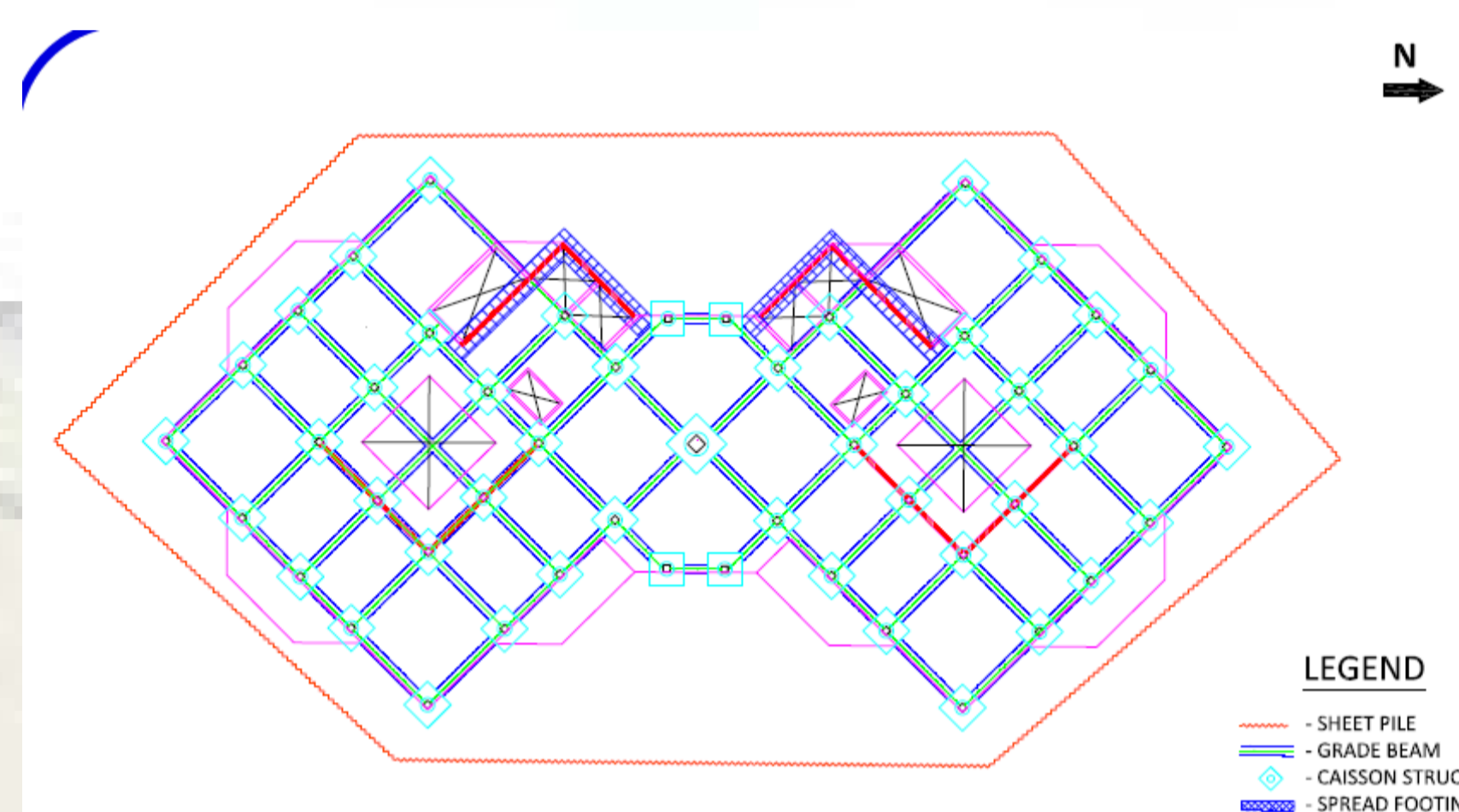
- Lay out and design of structural system and structural elements
- Choose foundation type and design earth retaining system

METHODOLOGY

- Structural Design Team – Responsible for designing superstructure
- Foundation Design Team – Responsible for designing substructure and geotechnical design

FOUNDATION DESIGN

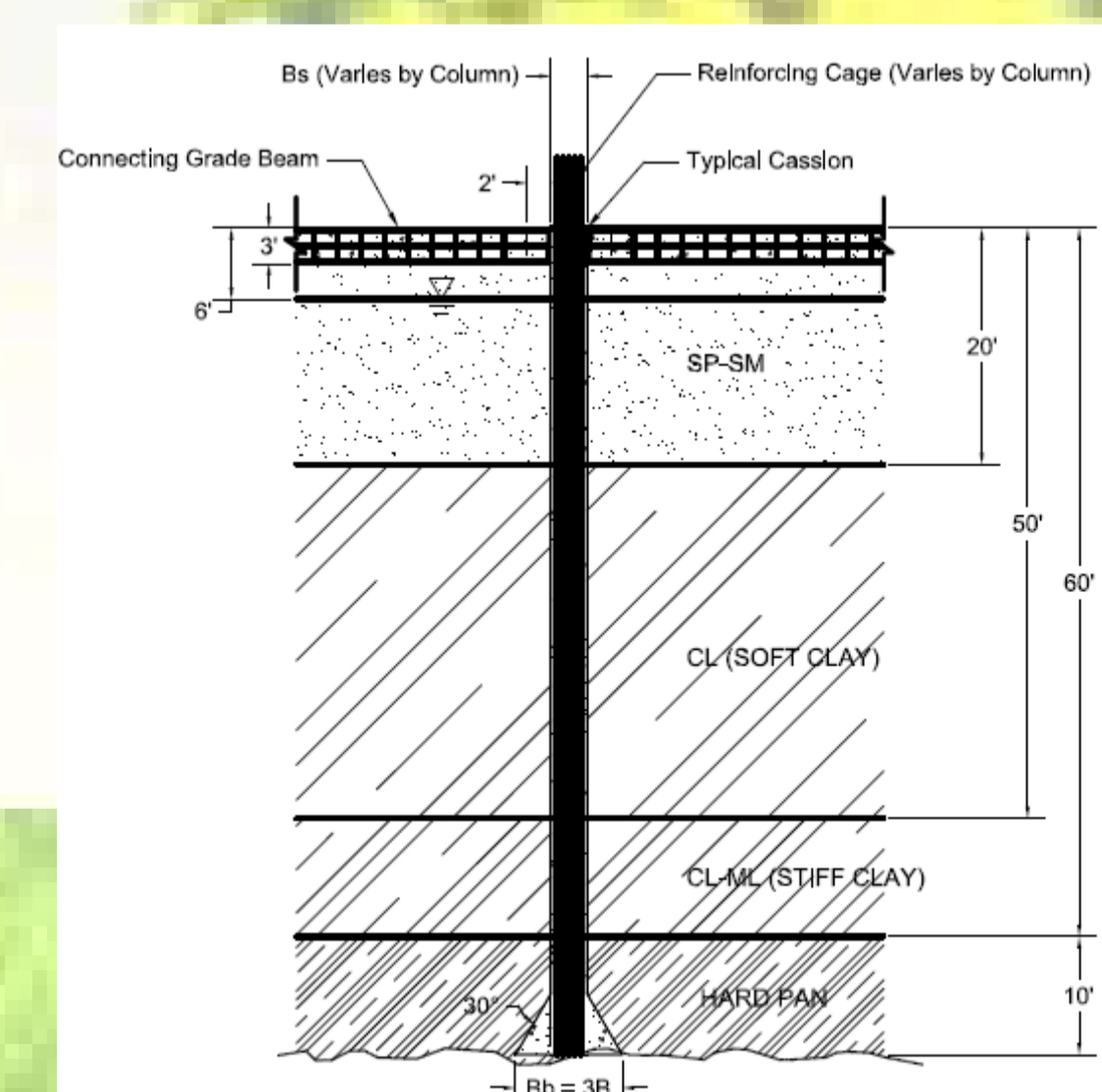
Foundation Layout



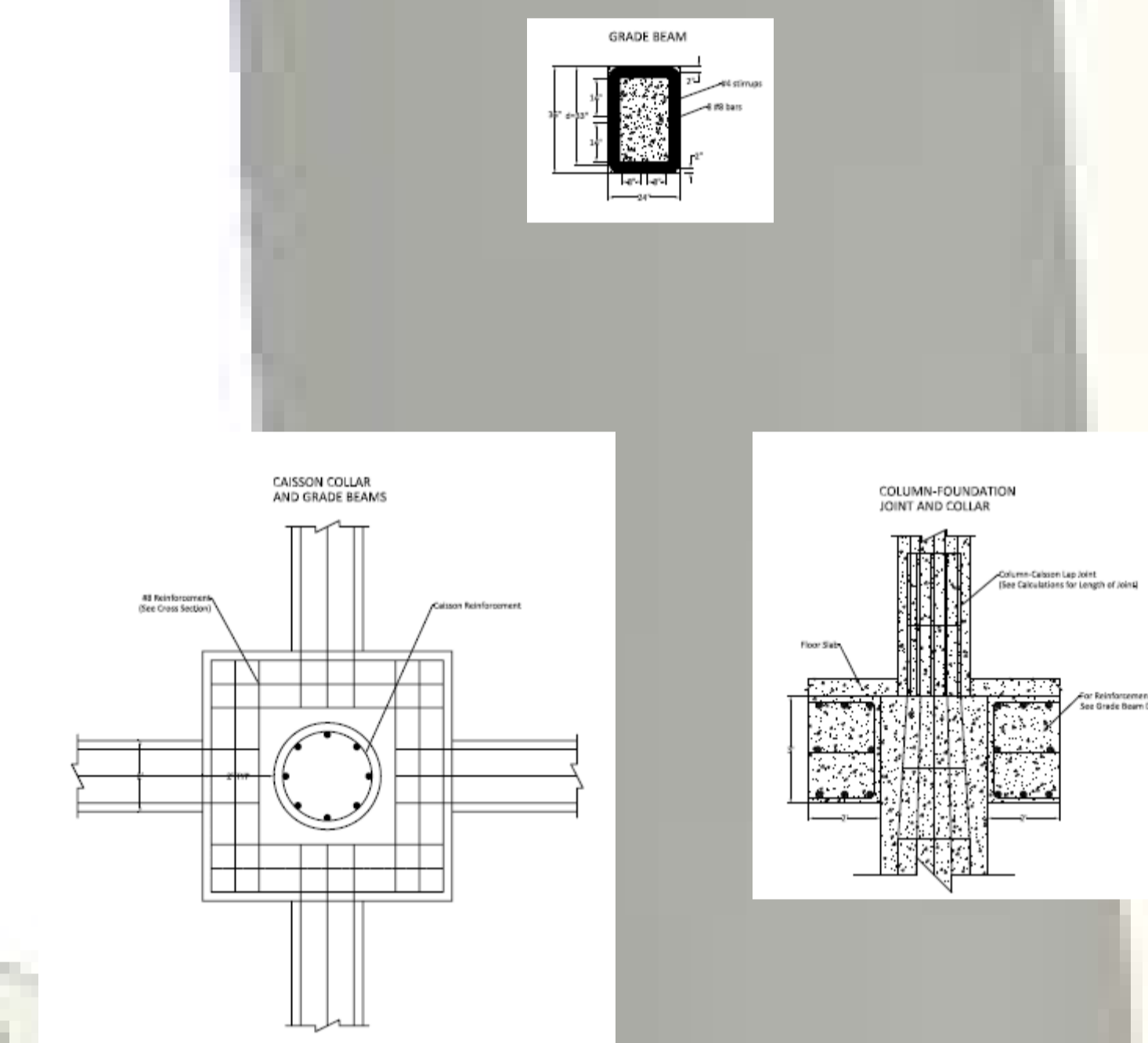
Selection of Foundation Components

- Drilled shaft (caisson) foundations were selected to provide a high performance foundation system with high load capacity and low settlement at an economical cost and minimal disturbance to the surrounding community.
- Steel sheet pile was selected for the earth retaining structure for economical and performance reasons. The sheet pile will be removed at the end of the project and can be reused in other projects.

Caisson Design



Column Foundation



Sheet Pile Design

