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ARCH 452 / ARCE 415
Ansgar Killing & Ed Saliklis



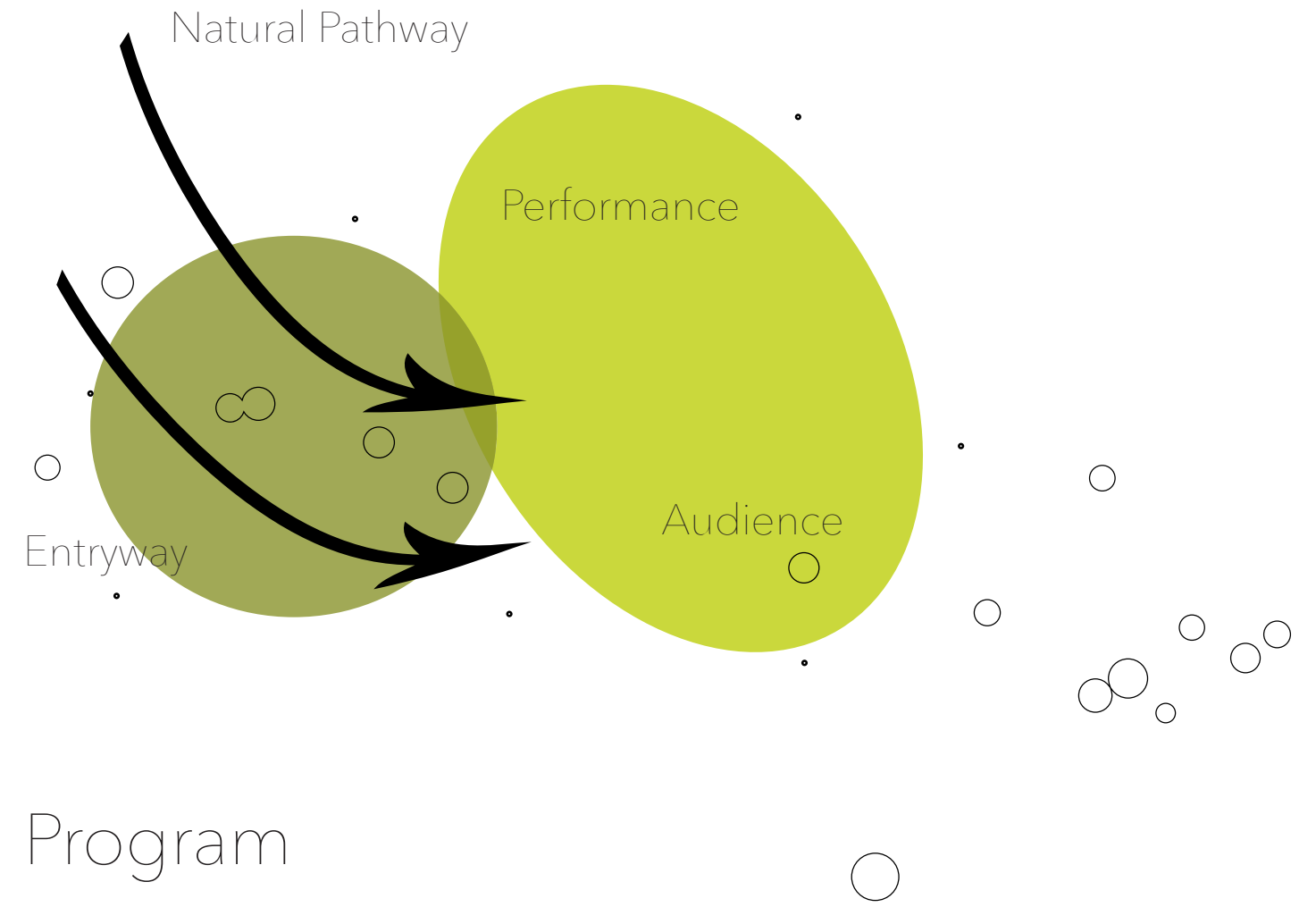
Clothedral





Falera, Switzerland

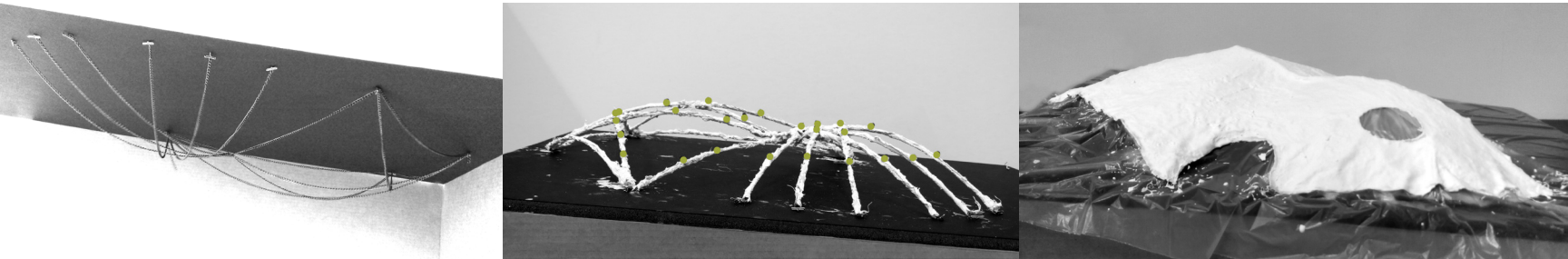
In order to develop an event space for the city of Falera, Switzerland a basic floor plan was developed with the understanding that attendees would arrive from the village through the natural path created by the astrological installation. Through the use of hanging chain studies, a funicular form was found that respects the nearby cathedral, provides a comfortable performance space, and allows for astrological observation in the evenings.



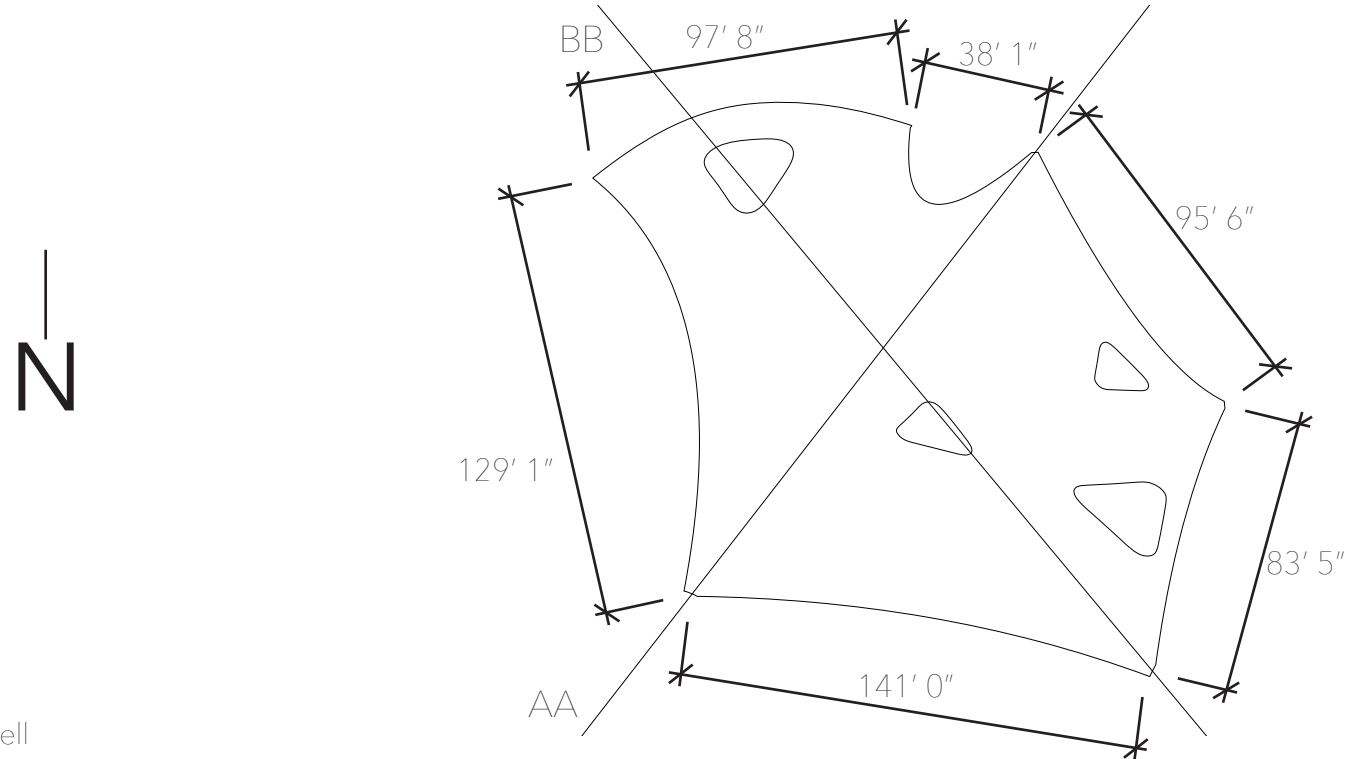
First Concept



Funicular Form Finding

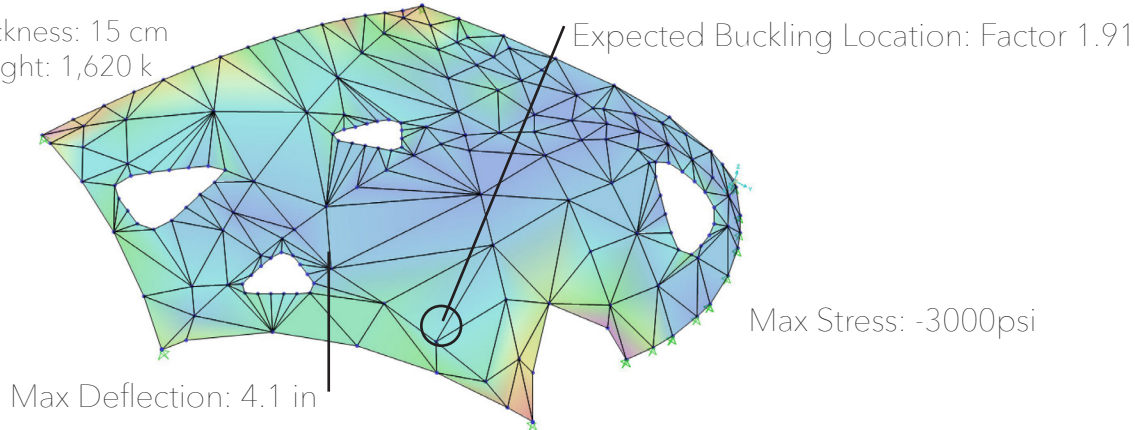


Plan



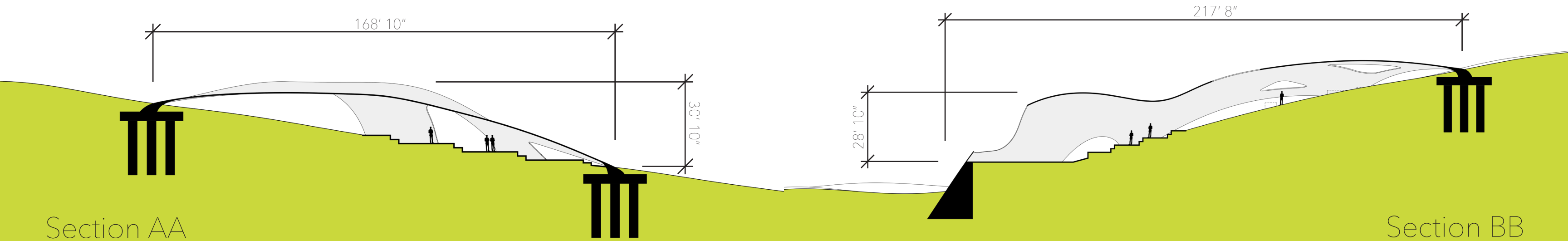
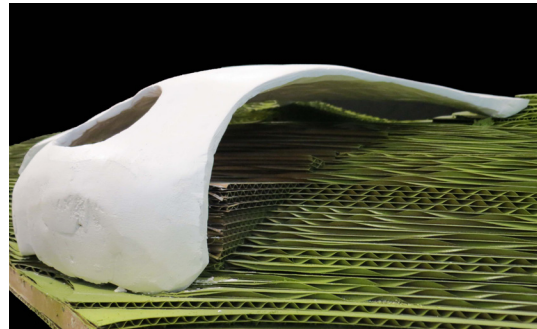
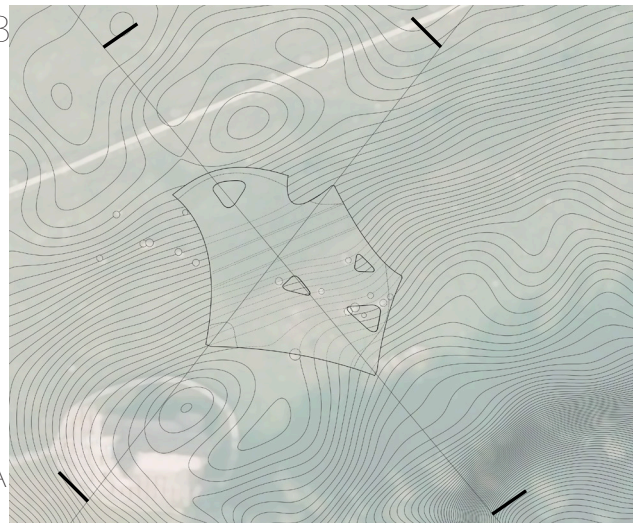
Concrete Shell

Thickness: 15 cm
Weight: 1,620 k



BB

AA



Section AA

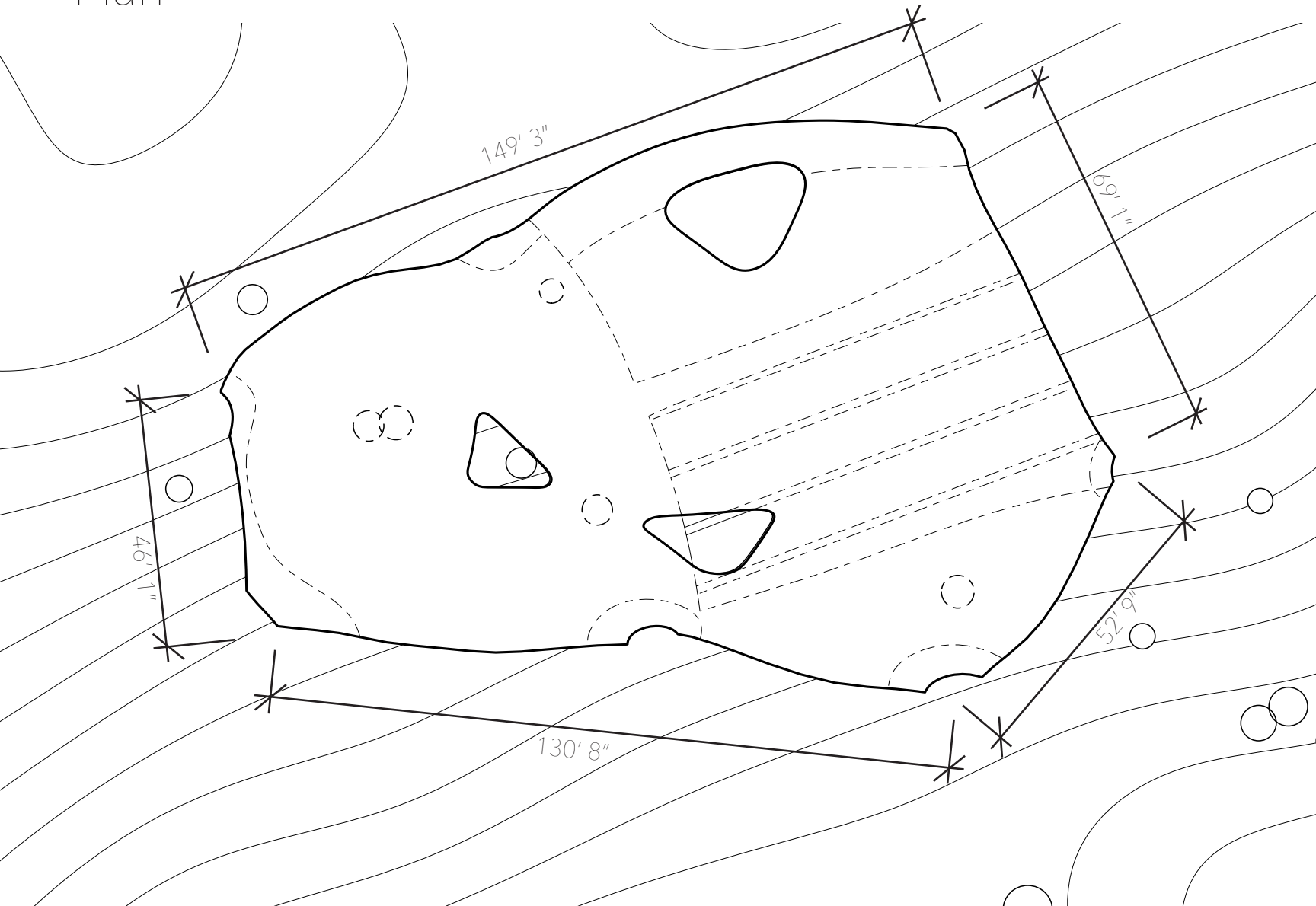
Section BB

Final Concept

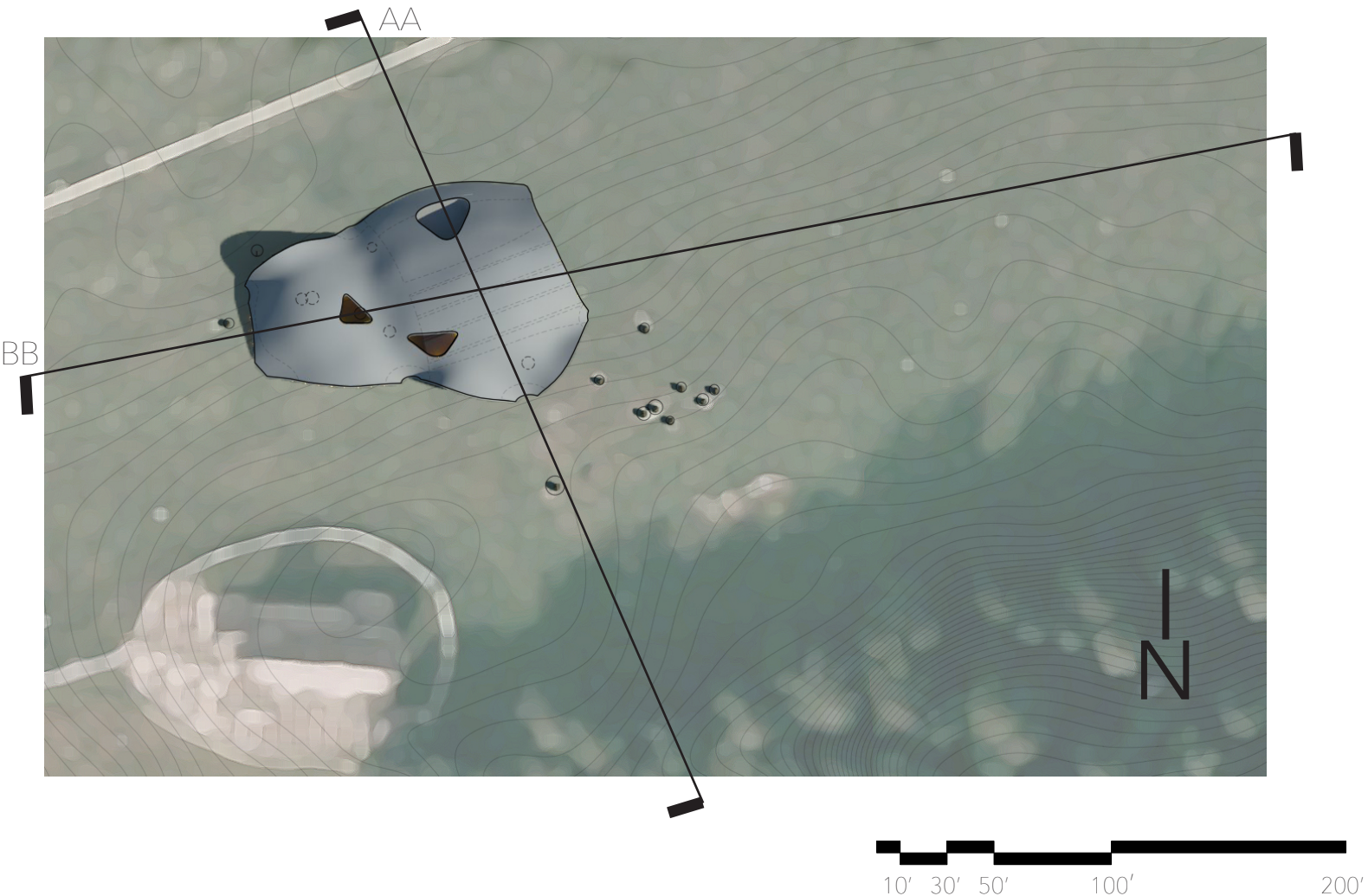


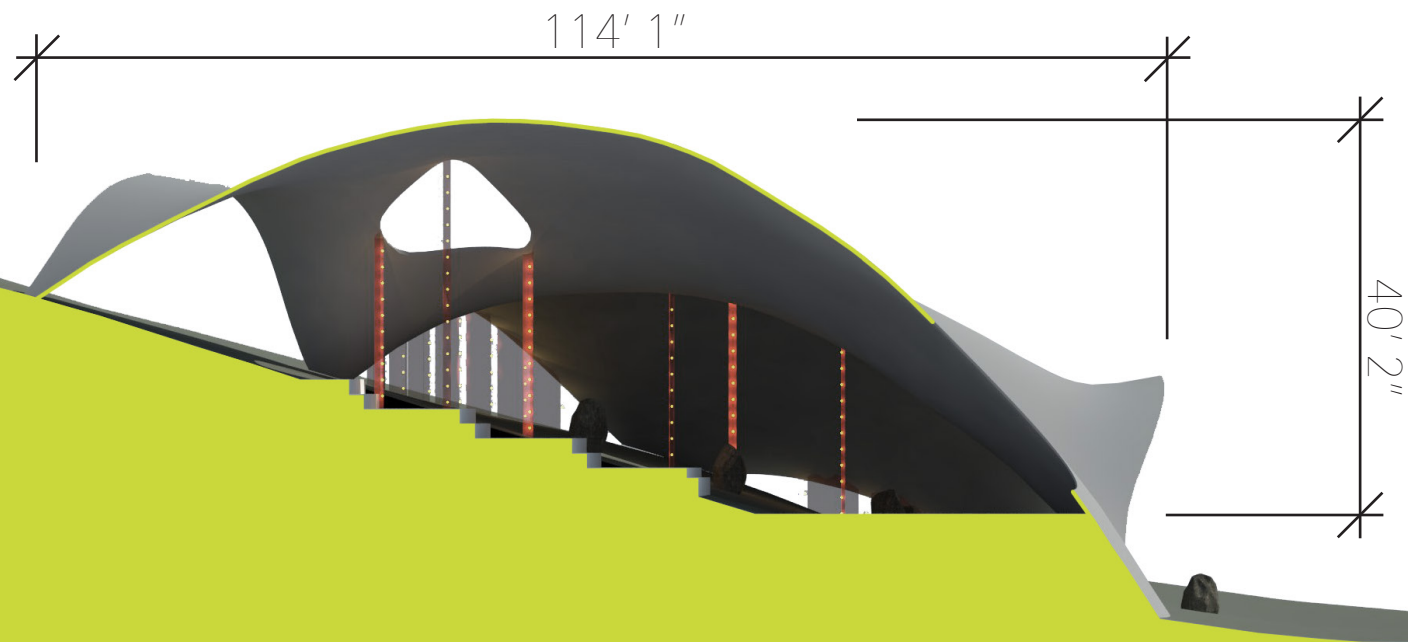
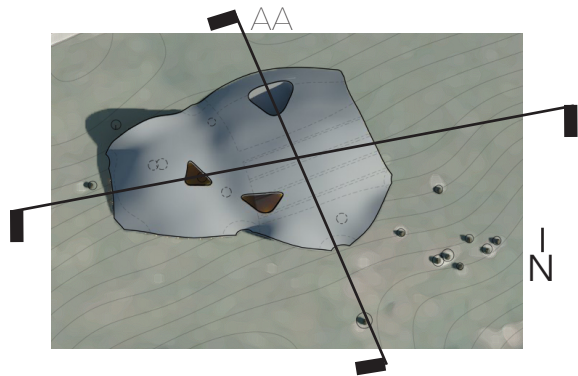
Cloth Model

Plan

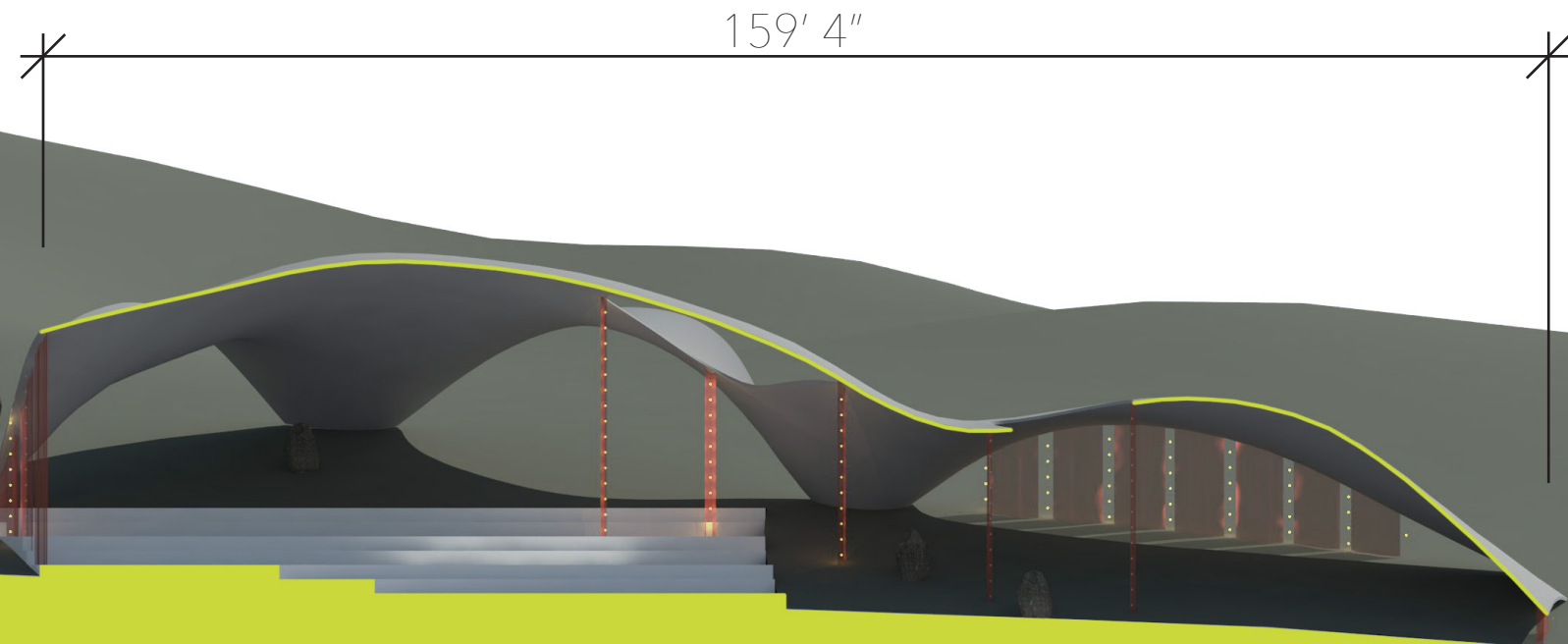
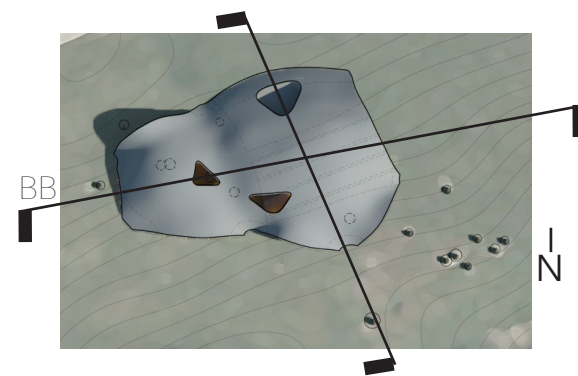


Site Plan



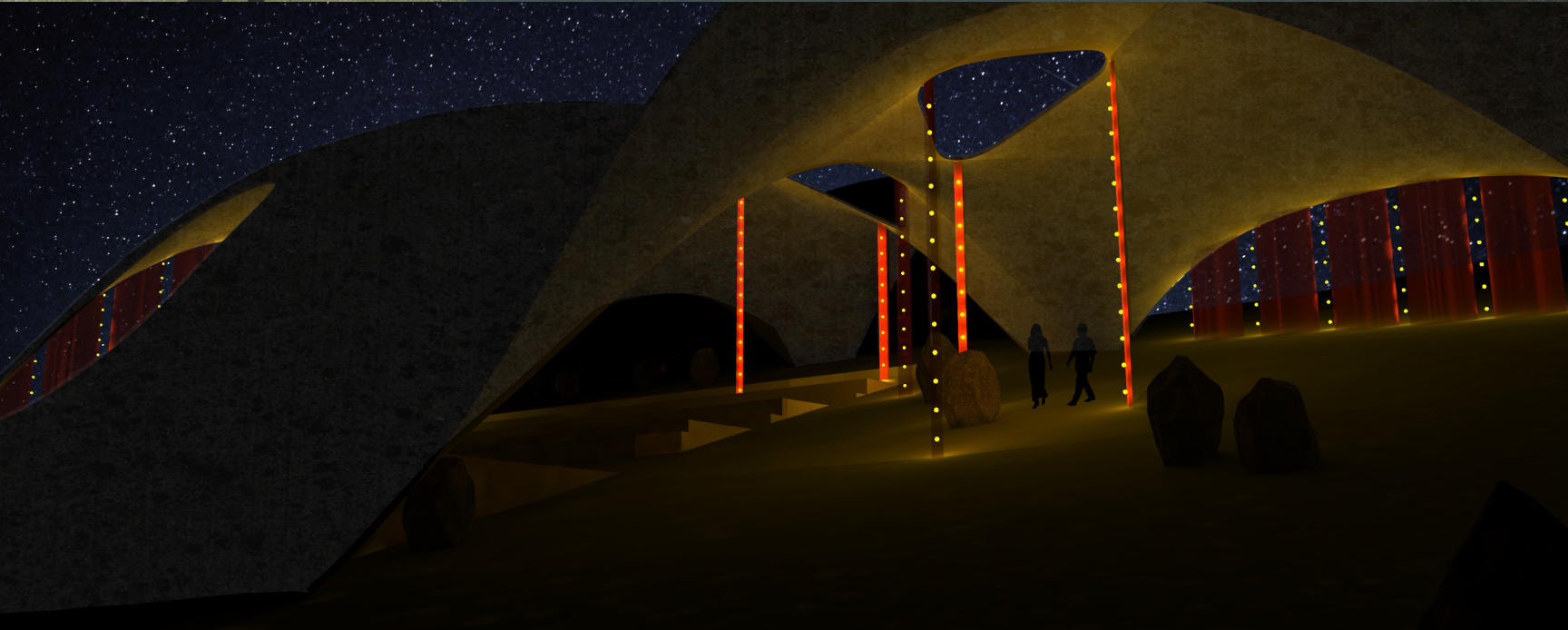
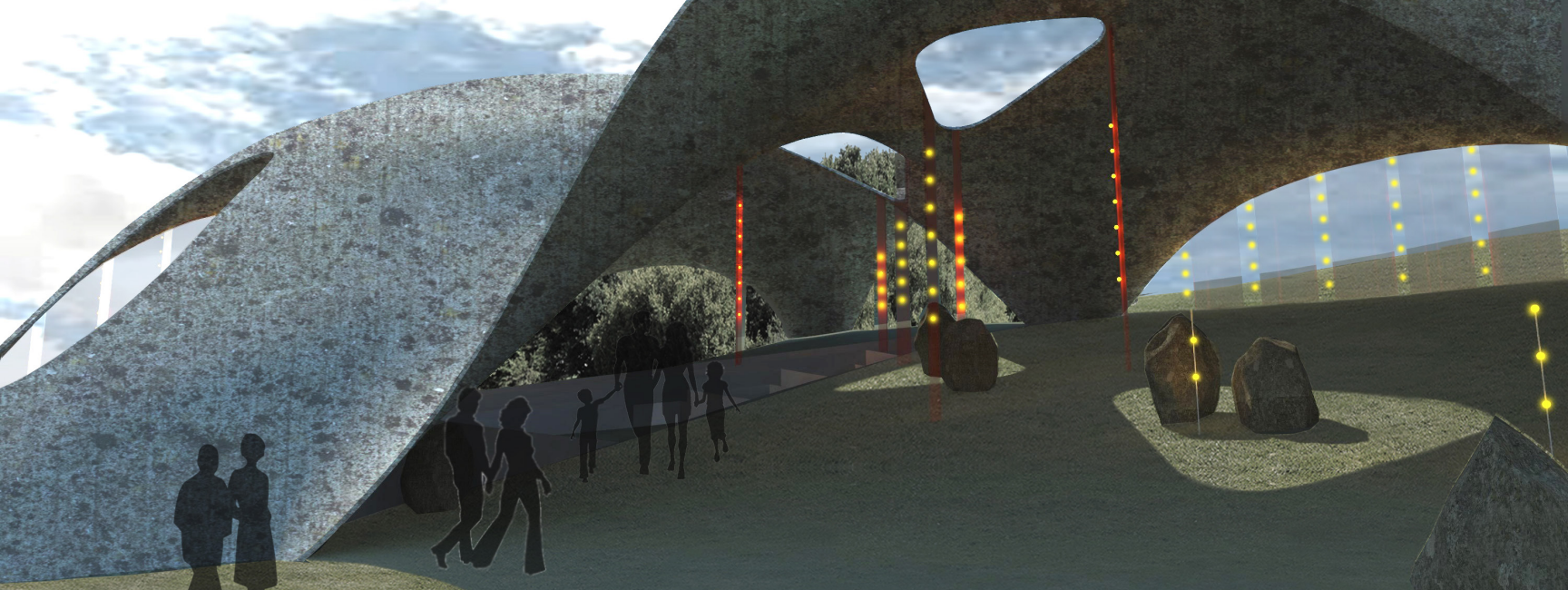
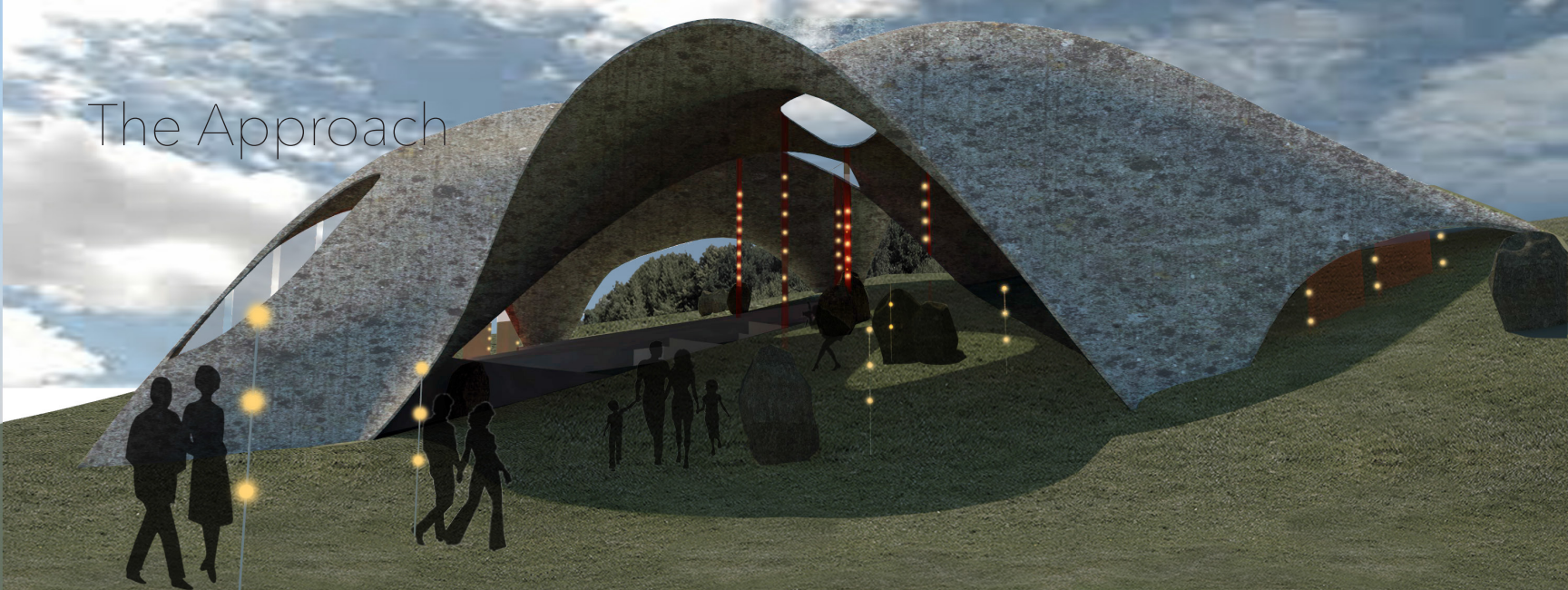


Section AA



Section BB

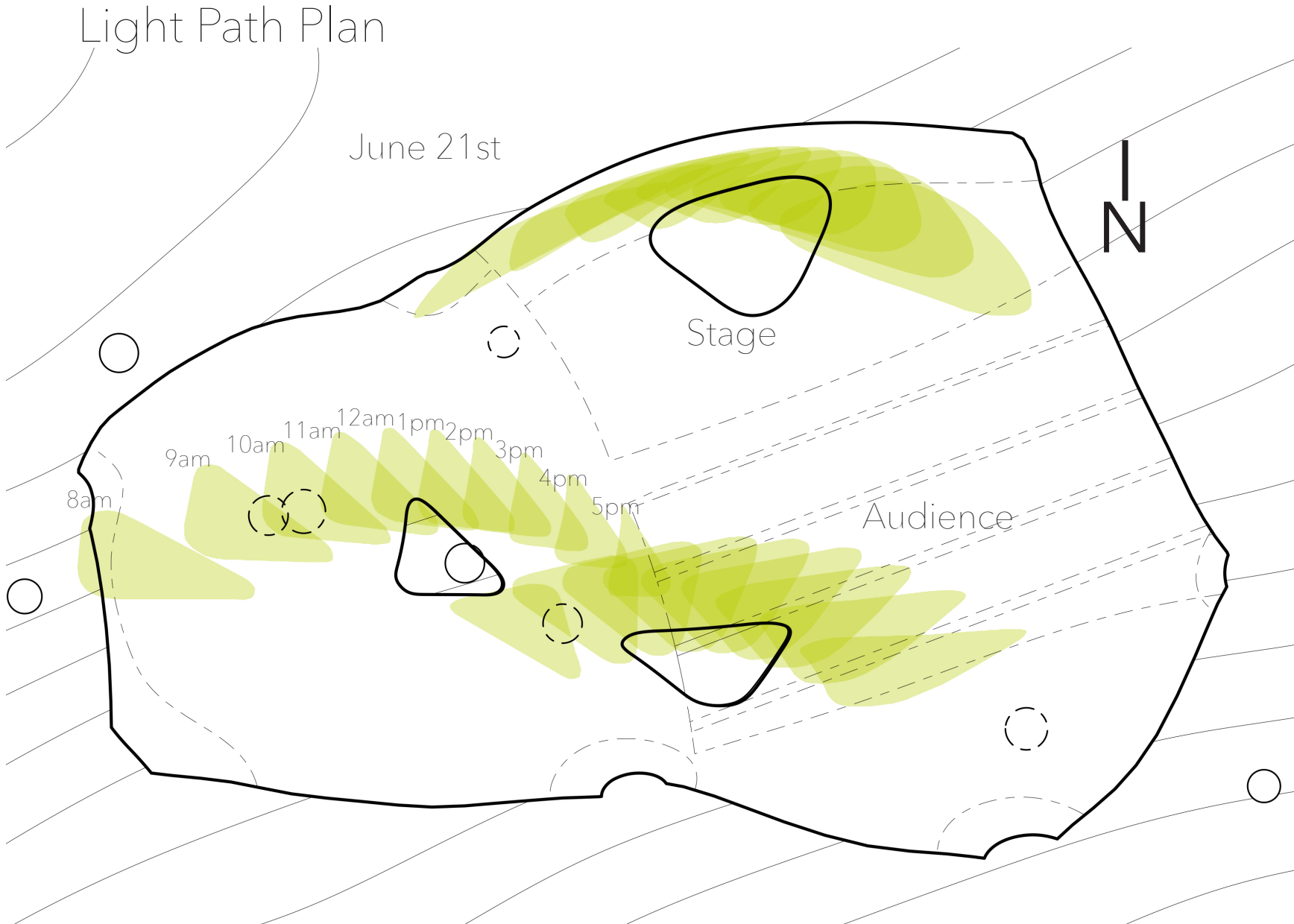
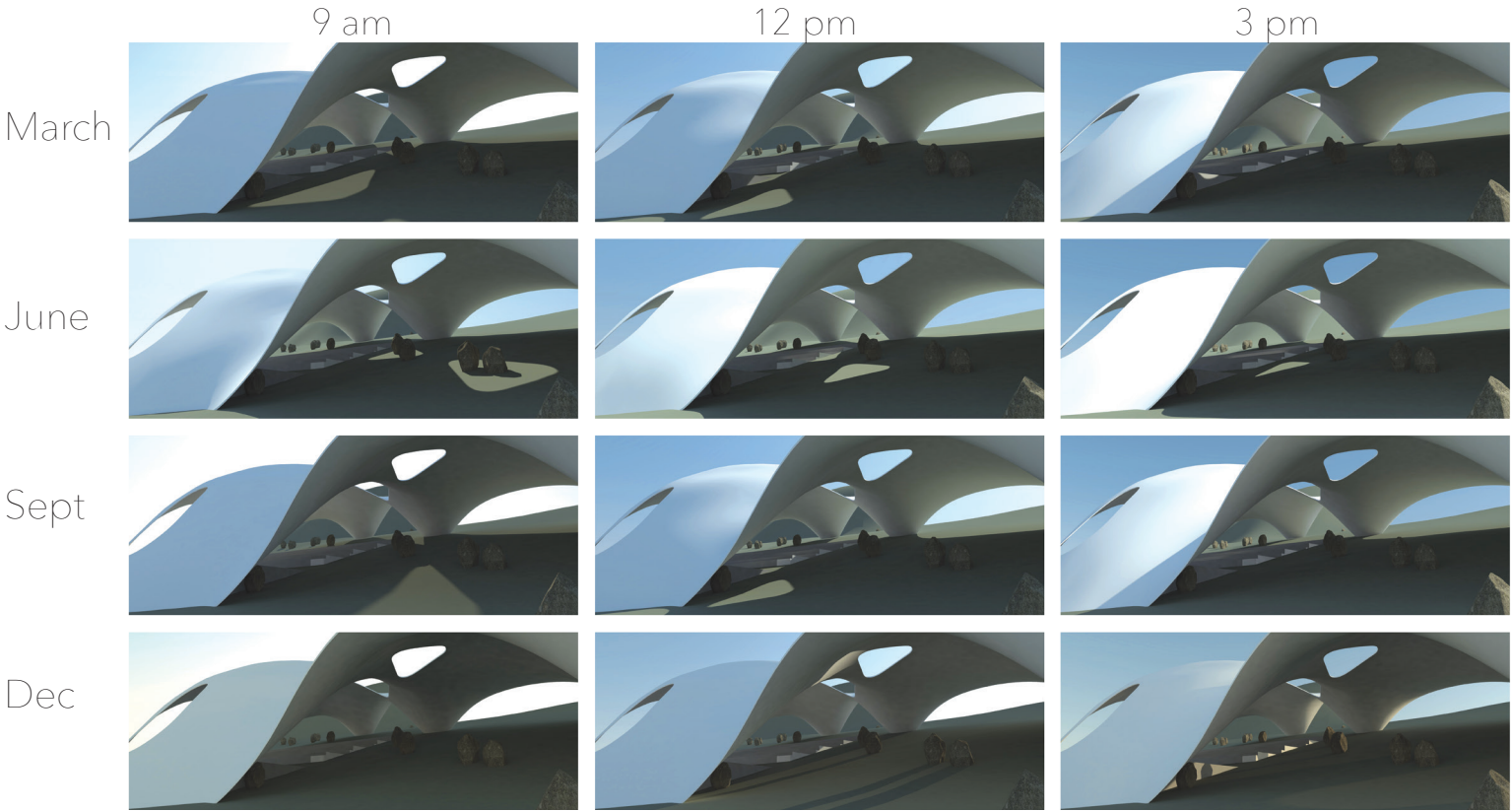
The Approach



View up the Hill

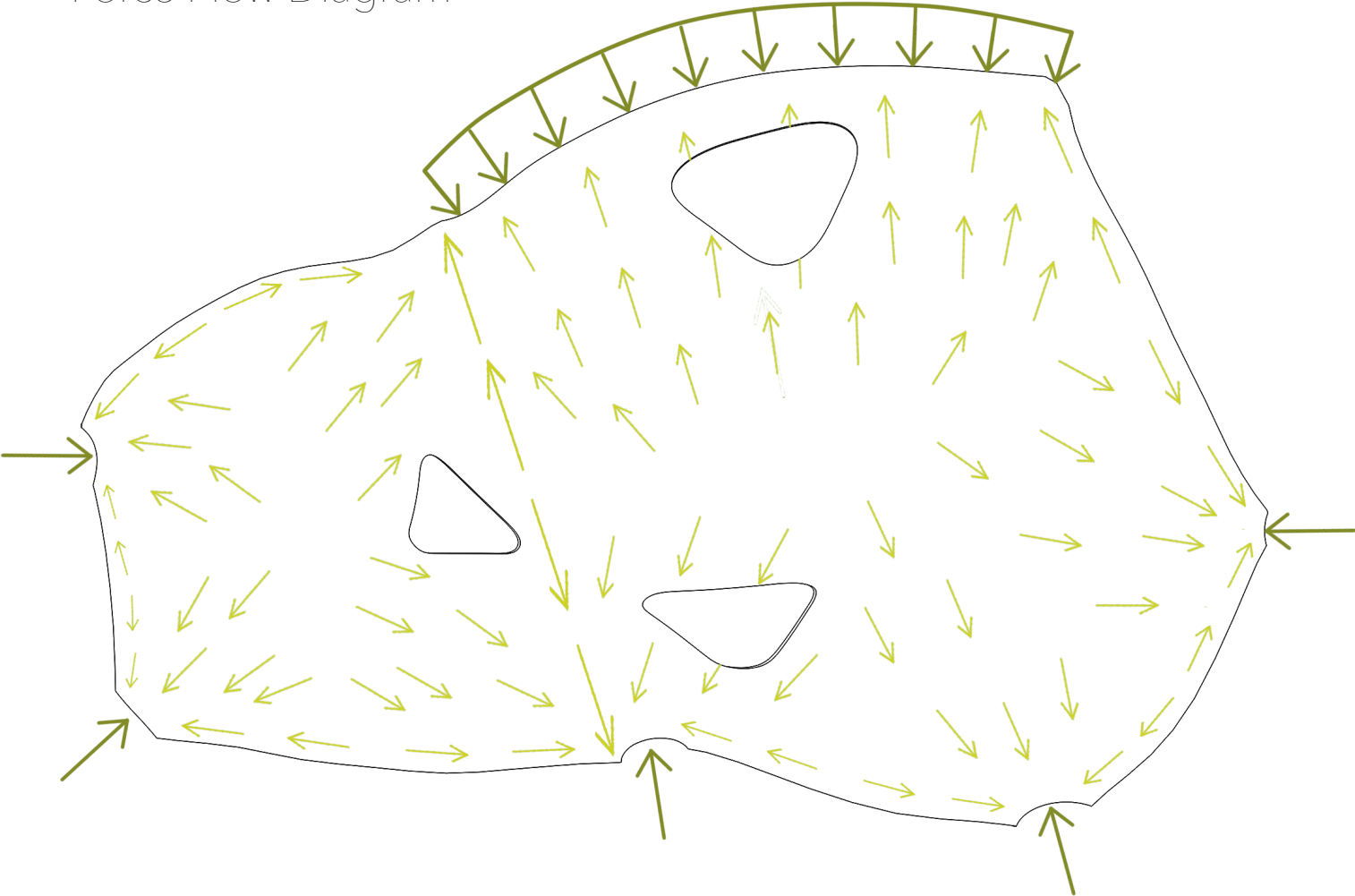


Sun Study & Lighting Layout



Structural Schematic

Force Flow Diagram



SAP Model

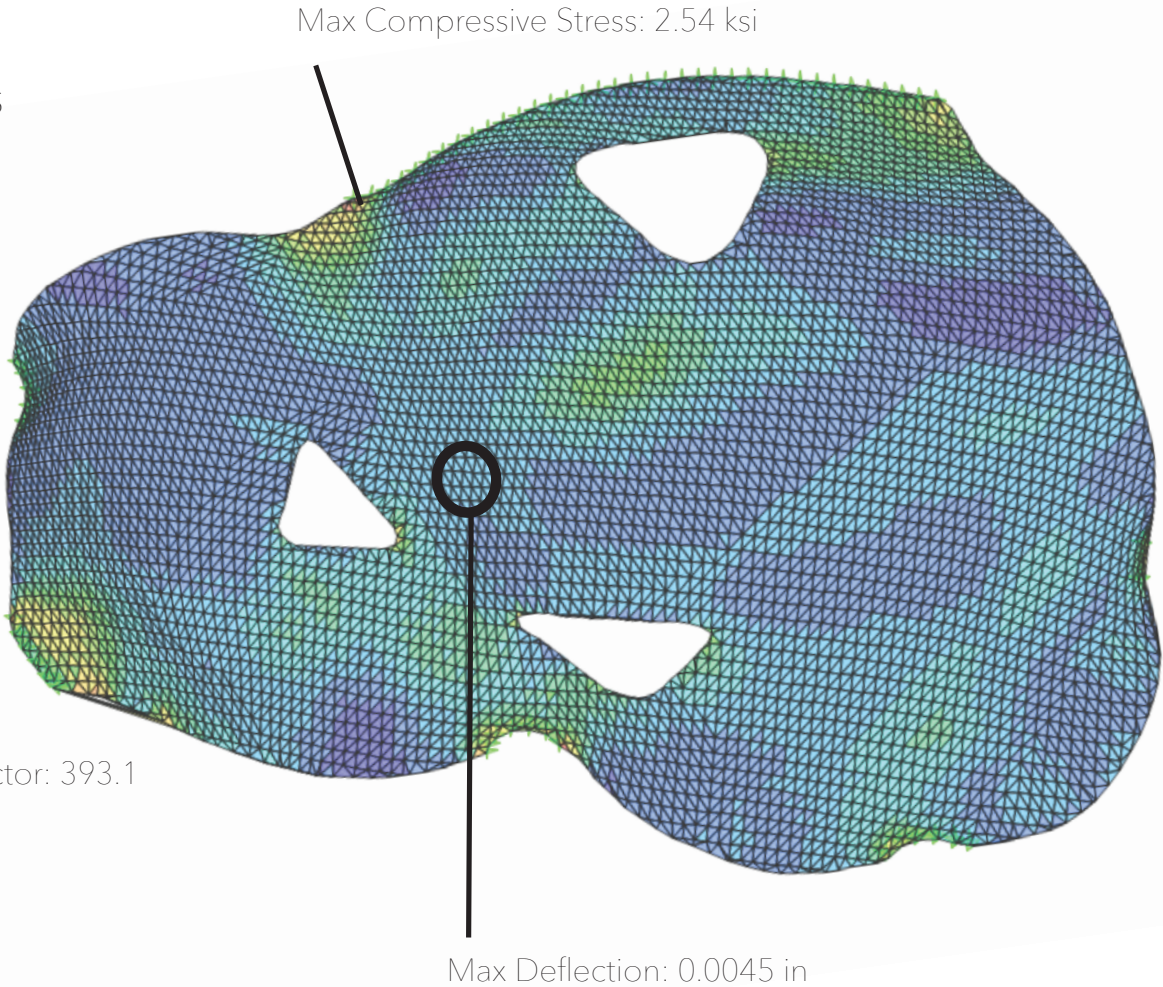
Shell Parameters

Thickness: 4 in
Weight: 258 kips

Design Loads

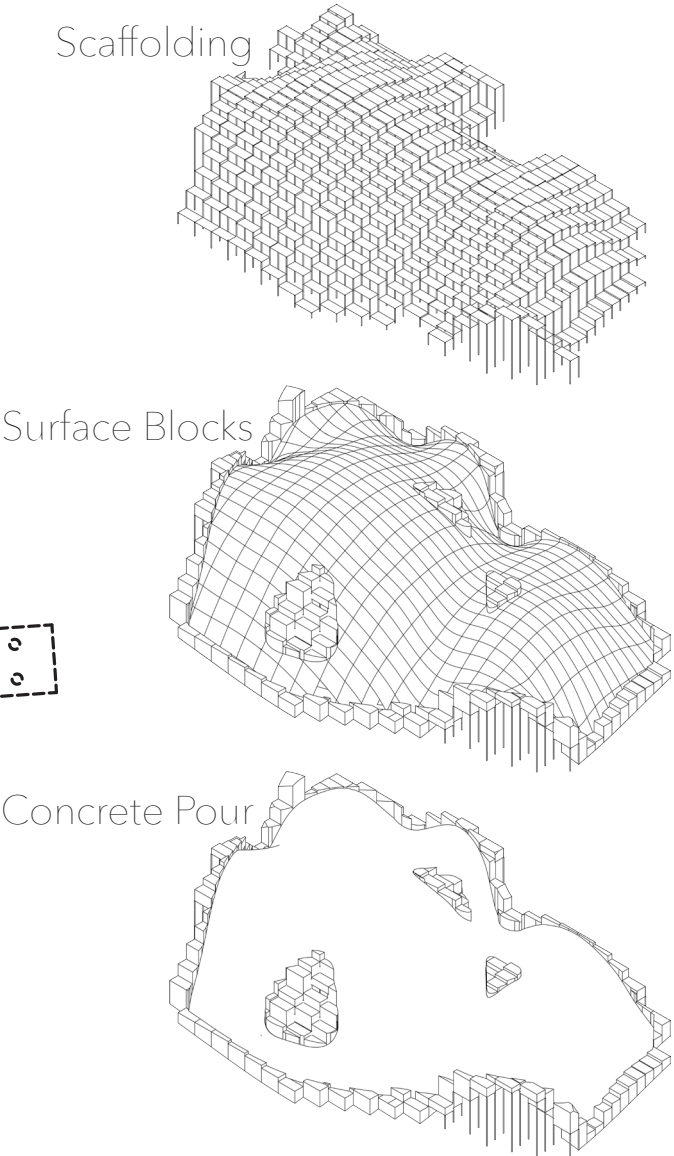
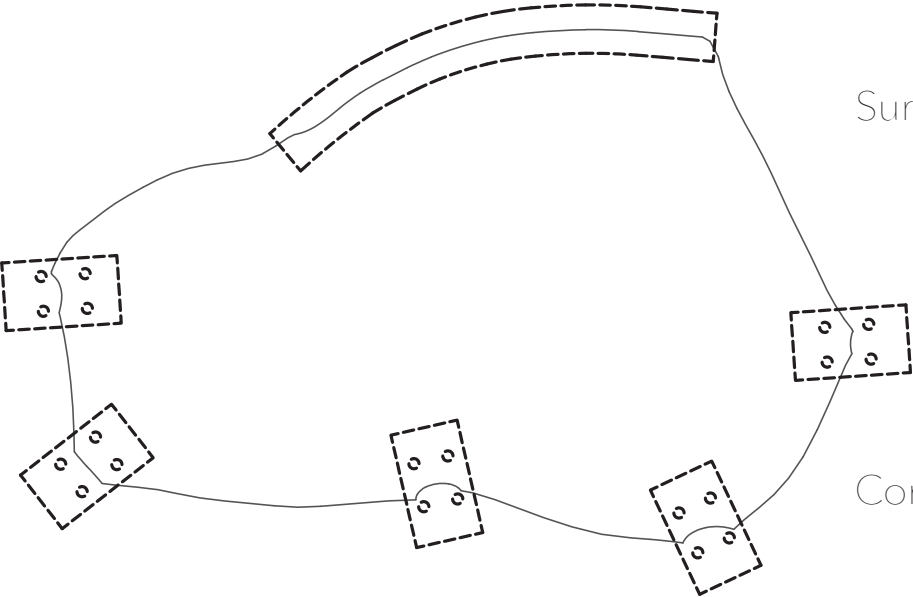
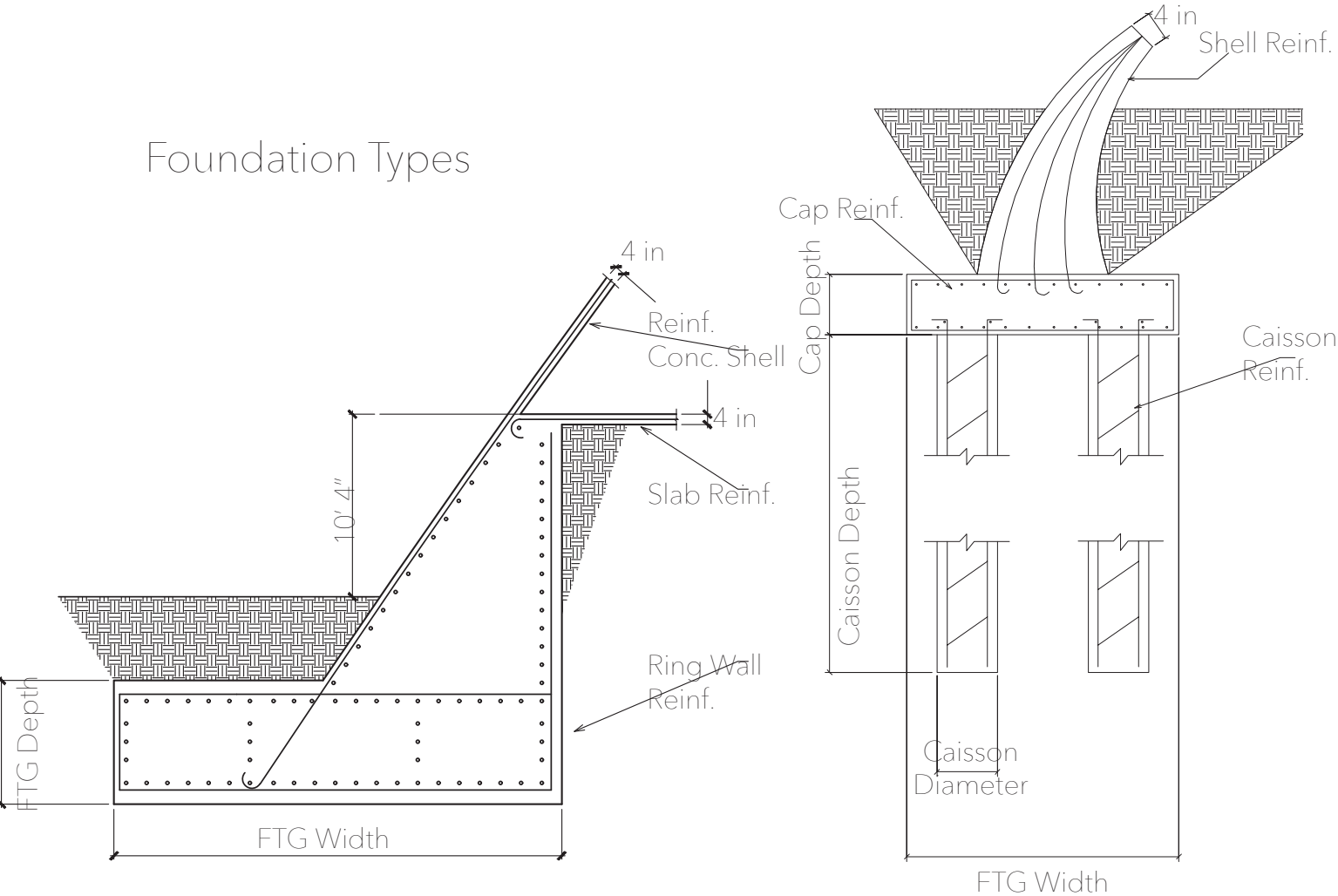
Dead Load: 50 psf
Snow Load: 25 psf

Expected Buckling Factor: 393.1



Course of Construction

Foundation Types



Model Construction Process



When we designed the formwork for our concrete cast, we did not anticipate some of the issues encountered due to human error. While we were working with the CNC machine for the first time, we realized that our cut file pieces were to close together so some of them got torn up. Then while nailing and screwing the smaller pieces together there was some splitting that created some semi flimsy pieces that then needed so extra reinforcement. Finally our corner/top condition pieces didn't fit exactly where they were supposed to, also due to human error in putting the layers together. Even though putting the formwork together caused some issues, the take down worked perfectly.

Final Model

