COMPUTATIONAL JOURNAL | WEEK 1 - WORKFLOW DIAGRAM

SITE ANALYSIS → FINISHED DRAWINGS

SURVEY INFO

MASSING + SITE ANALYSIS

MODELING + DETAILS

RENDERING

POST + GRAPHICS

REDLINING

GRAVEYARD

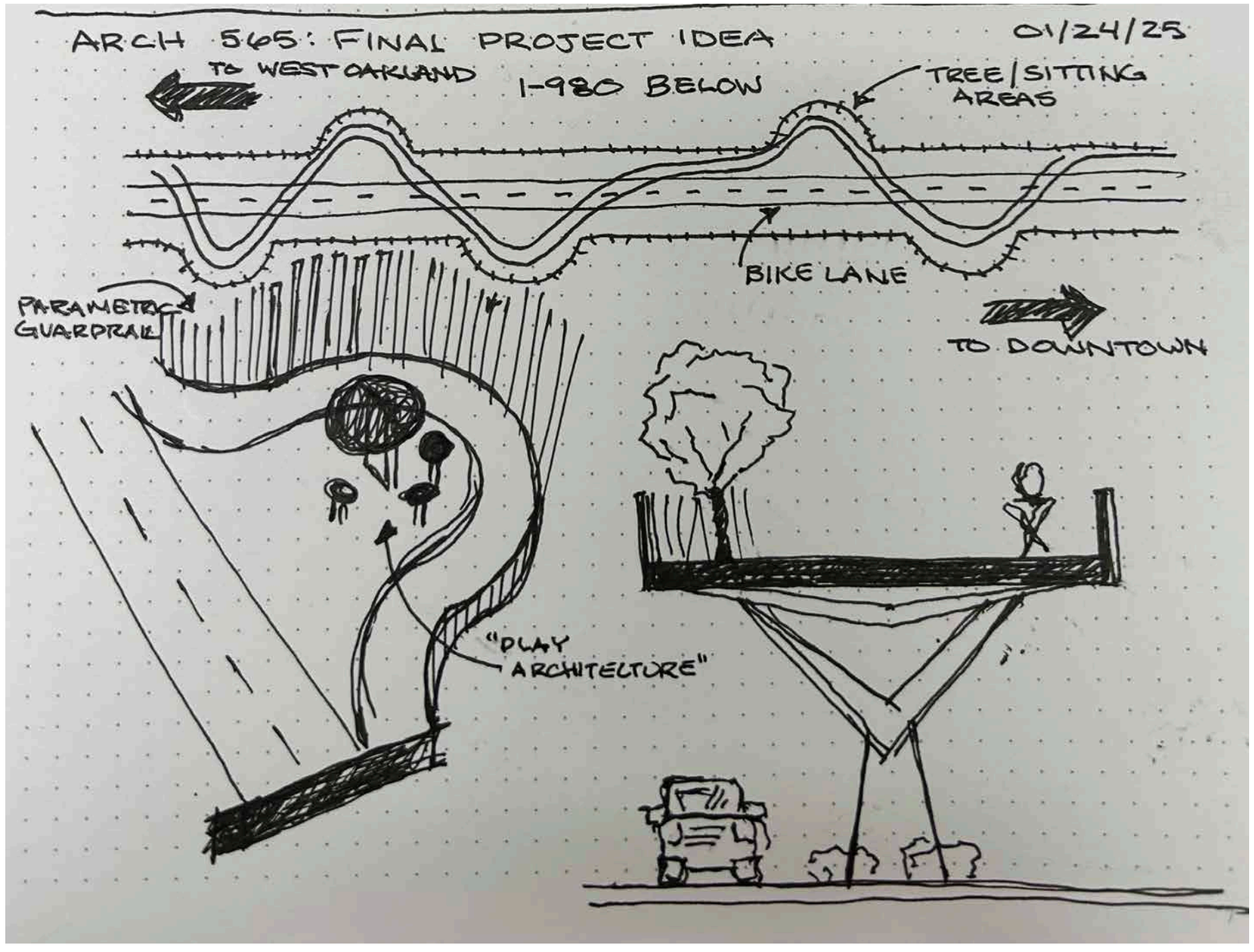
COMPUTATIONAL JOURNAL | WEEK 2

FINAL PROJECT IDEA:
LOCATION: I-980 OAKLAND, CA
TYPOLOGY: PEDESTRIAN BRIDGE / PLAY INFRASTRUCTURE

SITE:

INSPO:

PRELIMINARY “SKETCH”:



COMPUTATIONAL JOURNAL | WEEK 4 - LiDAR SITE ANALYSIS

FINAL PROJECT IDEA:

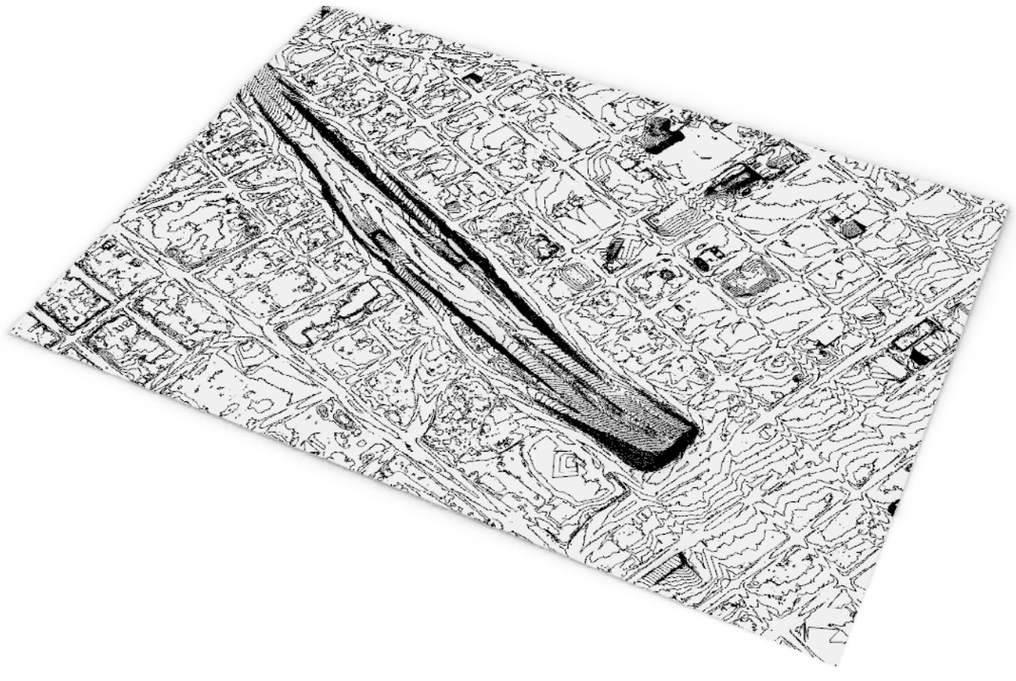
LOCATION: I-980 OAKLAND, CA
TYPOLOGY: PEDESTRIAN BRIDGE / PLAY INFRASTRUCTURE

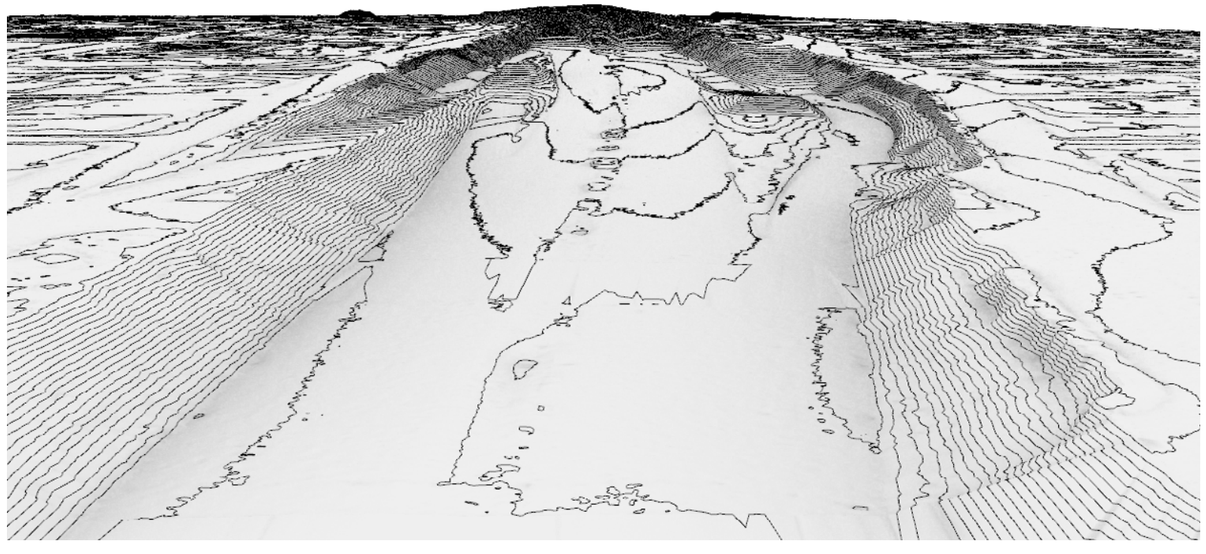
PROCESS:

I initially encountered file size issues when importing the .OBJ mesh into Rhino. Adjusting the area selection size in OpenTopography resolved the issue.

Given the site's urban context and my final project being a pedestrian bridge, integrating existing overpass infrastructure is crucial. I'm still exploring how to align/overlay the contoured mesh with roadway data from OpenStreetMap.

CONTOURS IN RHINO





COMPUTATIONAL JOURNAL | WEEK 5 - GRASSHOPPER

FINAL PROJECT IDEA:

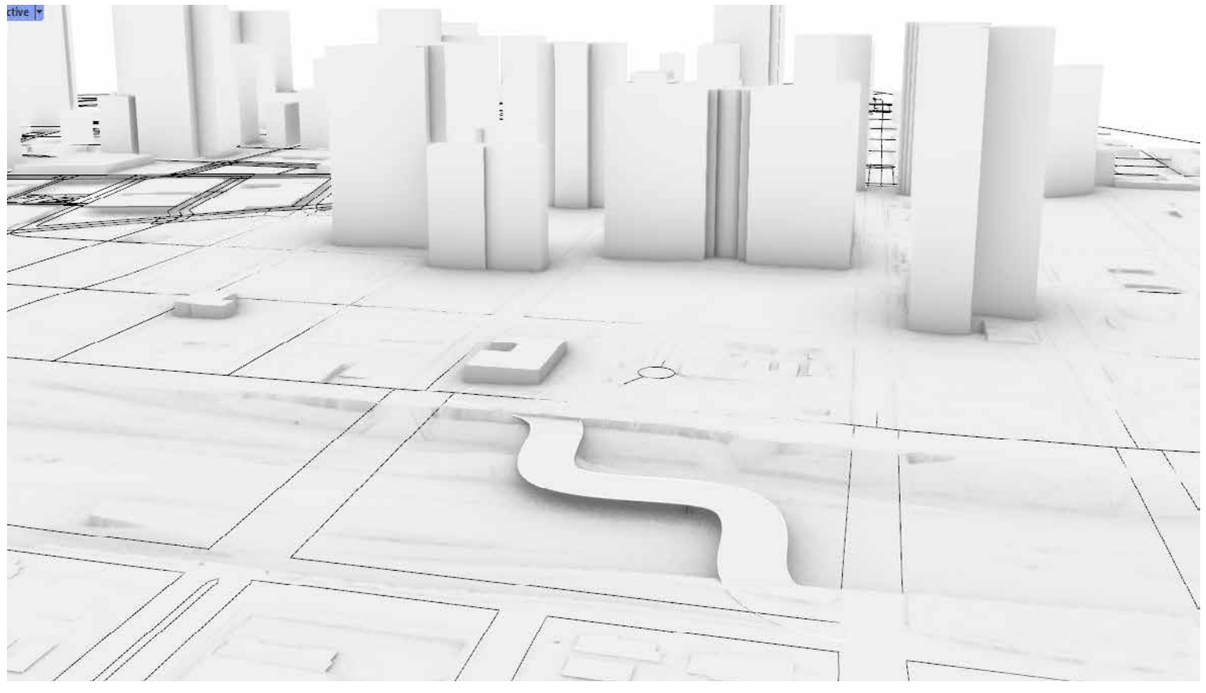
LOCATION: I-980 OAKLAND, CA
TYPOLOGY: PEDESTRIAN BRIDGE / PLAY INFRASTRUCTURE

PROCESS:

This week, I explored Grasshopper to develop a script for a parametric slatted column, allowing for flexible control over spacing, rotation, and profile variations. I'm pleased with the script's capabilities and the design potential it offers. However, I may explore alternative column types for the pedestrian bridge support to better align with structural and aesthetic considerations. Moving forward, I'd like to refine the column's structural logic and find a way to seamlessly integrate it into the underside support of the bridge itself.

PRELIMINARY COLUMN DESIGN

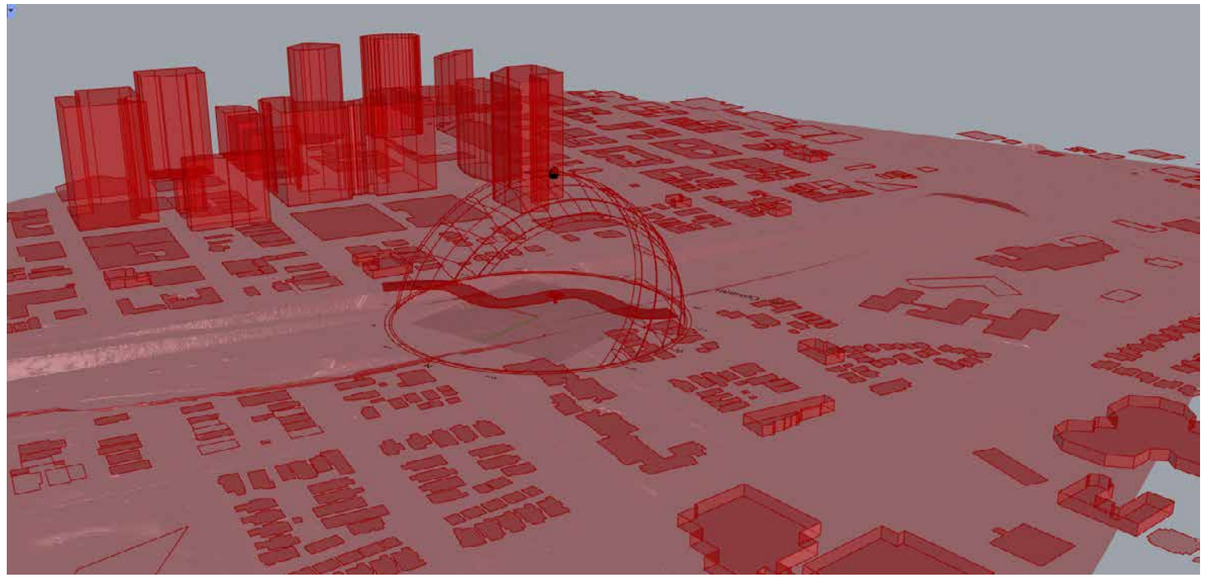
PRELIMINARY BRIDGE PLAN



COMPUTATIONAL JOURNAL | WEEK 6 - LADYBUG ANALYSIS

FINAL PROJECT IDEA:

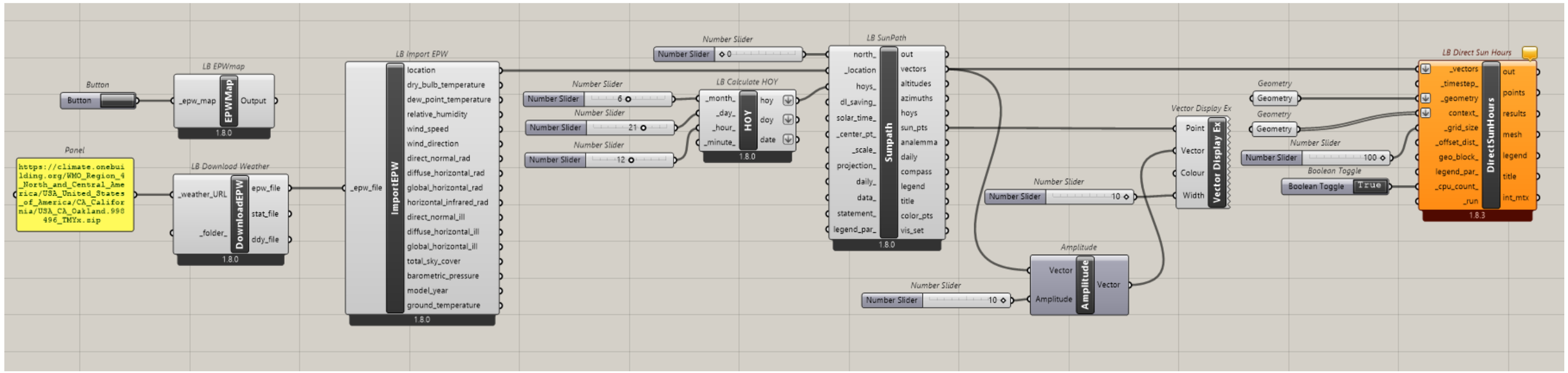
LOCATION: I-980 OAKLAND, CA
TYPOLOGY: PEDESTRIAN BRIDGE / PLAY INFRASTRUCTURE



PROCESS:

This week, we focused on using the Ladybug plugin for Grasshopper to conduct a solar radiation site analysis for our final project. Following the instructional video, I successfully created a sun path diagram in the program. However, when attempting to map solar radiation onto the site's topography, I encountered an error stating, "Input Parameter - Run Failed to Collect Data." Initially, I assumed this issue stemmed from selecting too much context geometry, so I simplified the selection. Despite this adjustment, the error persisted. To further troubleshoot, I adjusted the grid size of the solar radiation analysis in an effort to reduce computational load, but the issue remained unresolved. I also changed the geometry container from a Geometry container to a Mesh to simplify the input, yet the error still occurred. After verifying that all number sliders and component connections in Grasshopper were correct, the issue continued.

GRASSHOPPER SCRIPT



COMPUTATIONAL JOURNAL | WEEK 7 - GRASSHOPPER

FINAL PROJECT IDEA:

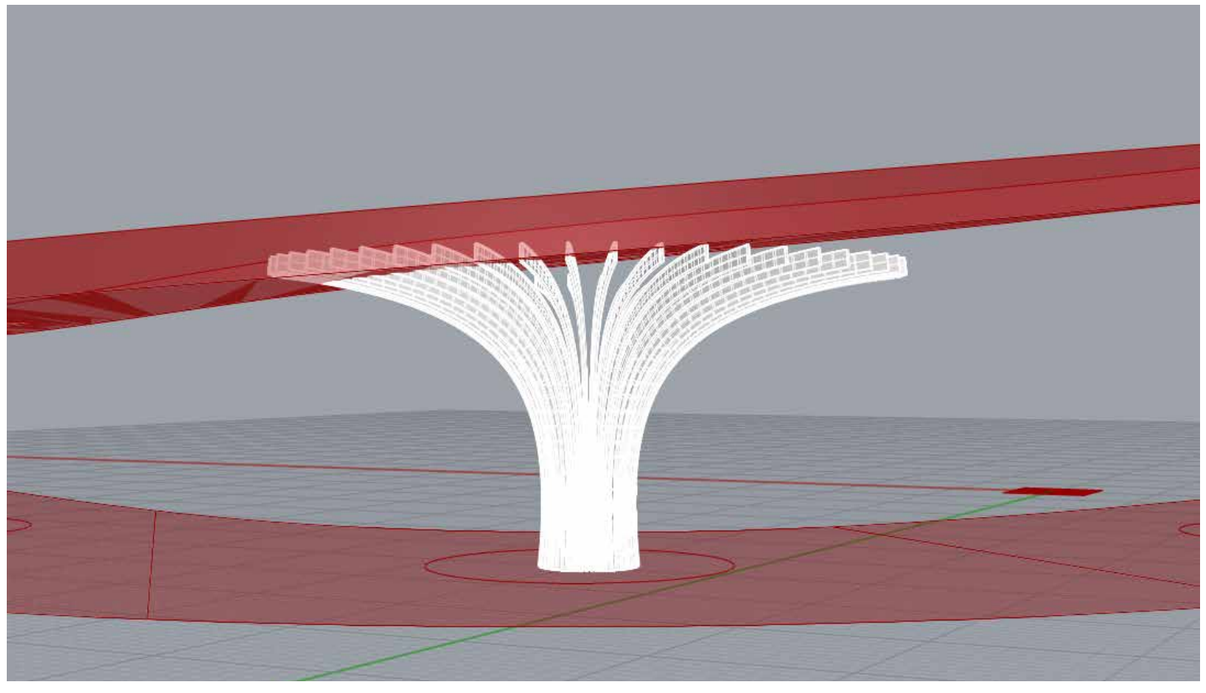
LOCATION: I-980 OAKLAND, CA
TYPOLOGY: PEDESTRIAN BRIDGE / PLAY INFRASTRUCTURE

PROCESS:

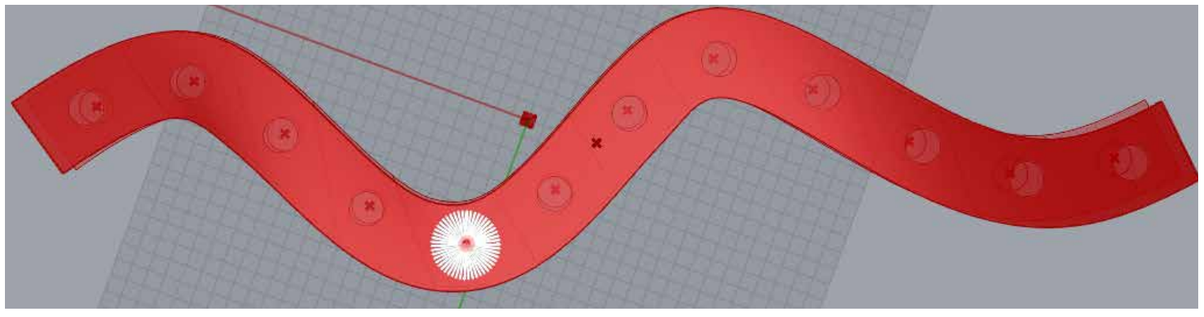
This week, I focused on modeling my pedestrian path, aiming for a curved form with a gentle slope. While I haven't made visible progress with my script yet, I have made some headway in resolving the connections between the column structure and the horizontal supporting members beneath the pedestrian bridge.

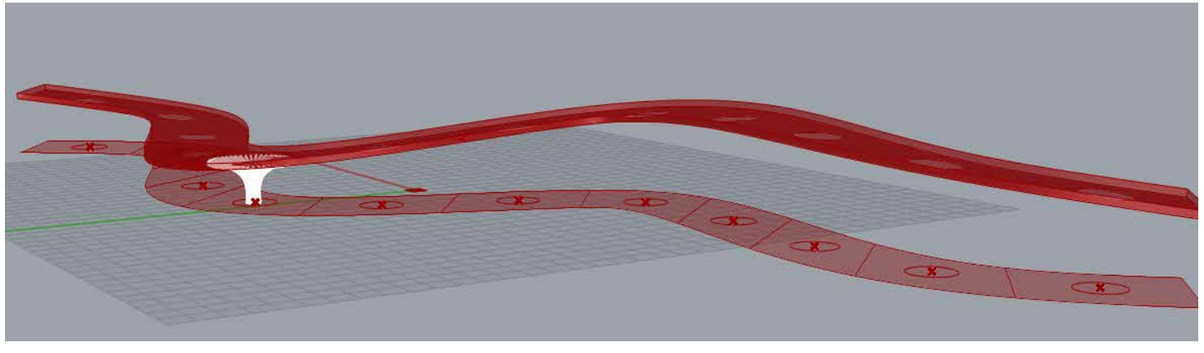
Although I am getting closer to a solution, there are still aspects that need further refinement. I plan to bring my questions to the work period on Thursday to troubleshoot and improve my approach.

PRELIMINARY PATH + COLUMN DESIGN



PRELIMINARY BRIDGE PLAN

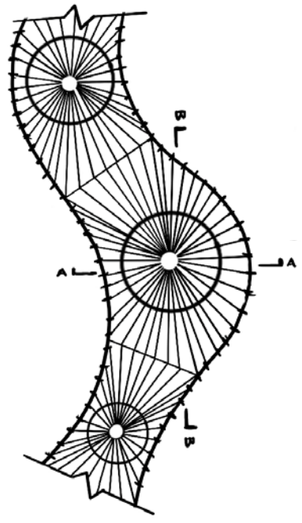


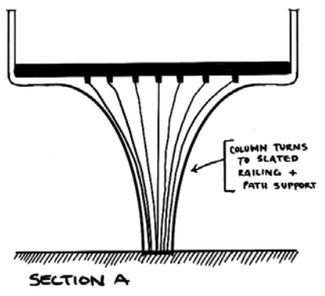


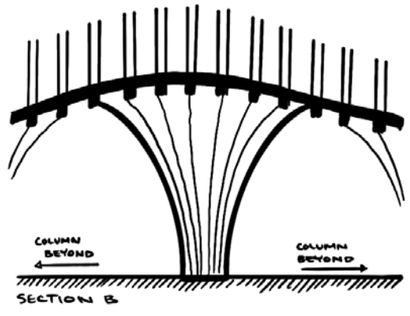
COMPUTATIONAL JOURNAL | WEEK 8 - RHINO INSIDE

FINAL PROJECT IDEA:

LOCATION: I-980 OAKLAND, CA
TYPOLOGY: PEDESTRIAN BRIDGE / PLAY INFRASTRUCTURE







PROCESS:

This week, I was able to make some progress with my column and structural design script. I have a clear vision for how the slatted tulip columns will transform into horizontal supporting members for the path and then take a 90-degree turn to form the slatted railing. I haven't fully refined the script yet... still having issues meeting the sloping plane of the path with the structural elements.

I think this structural system is an interesting approach for the curved and sloping pedestrian path because it allows for a fluid, integrated approach to support while maintaining a sense of openness and playfulness in the design. The transition from vertical to horizontal elements ensures that the structure responds dynamically to the movement of the path, reinforcing stability without feeling rigid or overbearing. The slatted nature of the columns and railing enhances visibility and lightness, creating an engaging experience for pedestrians while preserving structural integrity.

I also attempted to push my Rhino model into Revit, but I wasn't able to get it to work on either my laptop or desktop. Every time I try to "Start" Rhino within the Revit plugin, my application crashes. I'll need to troubleshoot this issue further

PRELIMINARY PATH + COLUMN DESIGN

PRELIMINARY BRIDGE PLAN