

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of  
Master of Architecture  
In Architecture

A Constant Element of Architecture:  
A Path Through the Puget Sound

Kieran McGuire

May 6th, 2013  
Blacksburg, VA

Hans C. Rott                      Committee Chair

Howard S. Gartner

Patrick A. Doan

Key words

Constant    Bridge    Tower    Charcoal    Scale

# A Constant Element of Architecture:

## A Path Through the Puget Sound

### Abstract

This thesis explores the design of a constant element of architecture over a changing landscape, and the moments created along the way.

This exploration takes the form of a bridge and series of towers that travel 50 miles from Seattle, WA to the edge of the Puget Sound, Protection island. It is a pilgrimage, a journey, a structure situated within a suspended time and space.

## Acknowledgments

To my family and friends, who supported me through these past 6 years.

To Hans, Scott, Patrick and Steve, for pushing me to go bigger, and bigger, and bigger, and then bigger again just for good measure.

To my dad, who bought and sent me more books about bridges than I could ever read in a lifetime.

Thank you all.

# Contents

Title Page	
Abstract	
Acknowledgements	iii
Preface	1
The Sound	2
Embark	3
Bridge	5
Tower	8
Within	15
Beach	19
Landfall	24
Terminus	28
List of Plates	32

# Preface

The bridge is an experience, a journey from city to edge. A path set within surroundings that are raw, powerful and unexplored. A piece of architecture that has existed for centuries and will remain for centuries more...

# The Sound

The bridge is located in the heart of the Puget Sound, it runs from Discovery Park north of Seattle, to Protection Island. The path stretches 50 miles, during which the bridge crosses through deep areas of the Sound, along segments of beach, and over islands. The path was influenced by the bend in the Sound, creating a route that extends itself into a smooth arch. Along the bridge sit the towers, dozens of them, spotting the landscape, they are areas of pause along the journey, opportunities to stop and observe the changing surroundings.



Plate 1: Site Plan

# Embark

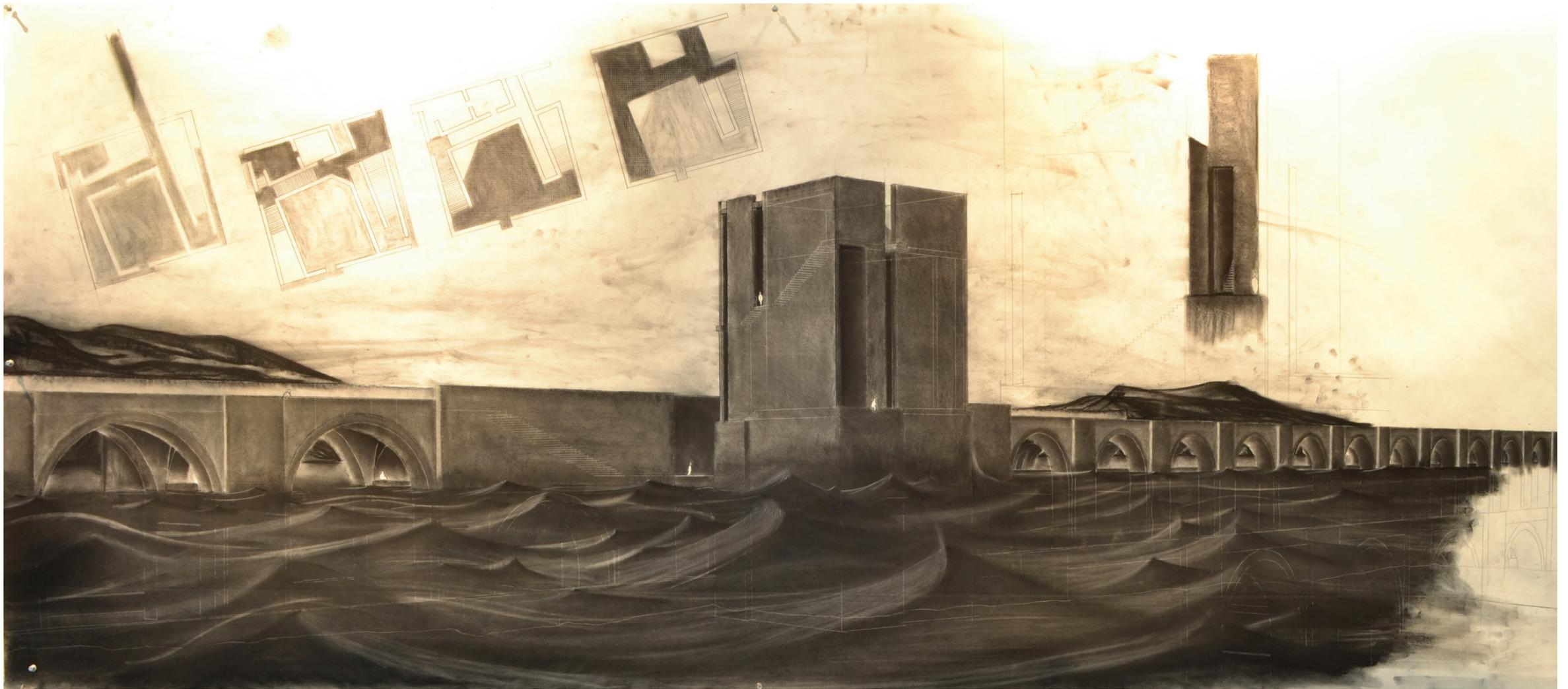


Plate 2: Initial Bridge and Tower

The initial drawing of the bridge and tower, the drawing shows the relationship of the bridge to the towers and the underlying structure of the bridge. The motion and action of the water, and how it relates to life on the bridge was the driving force behind the drawings.

# Embark

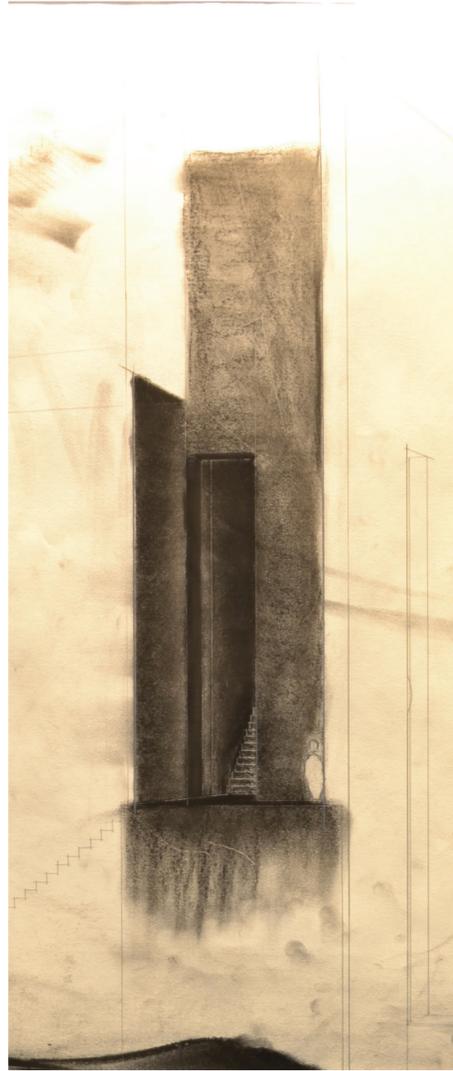


Plate 3: Exterior Reveal



Plate 4: Tower Trace Line Detail

Trace lines showing the hidden interior give an idea of the space within the towers, while the sketch above begins to give an idea to the quality of those spaces.

# Bridge

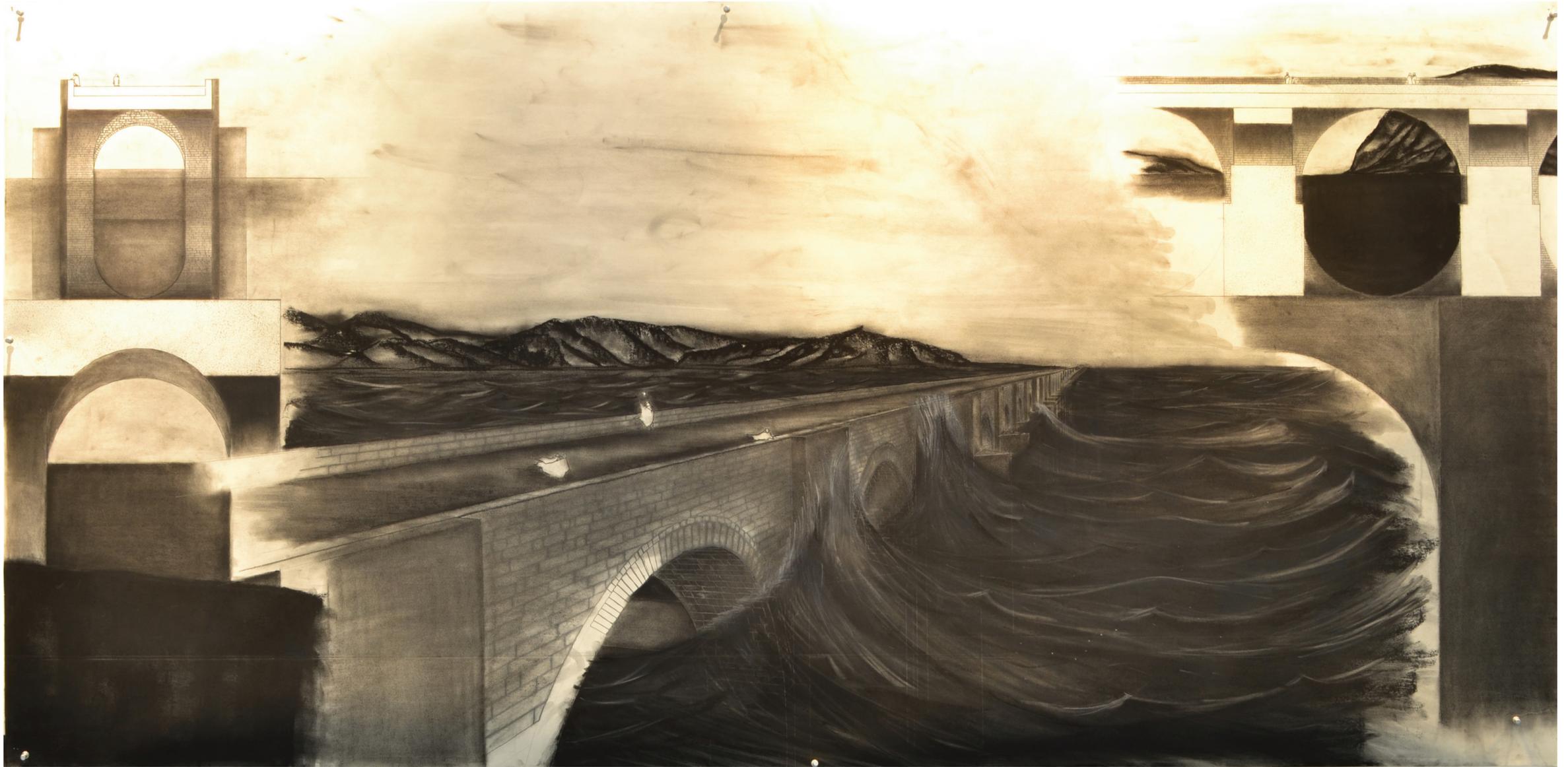
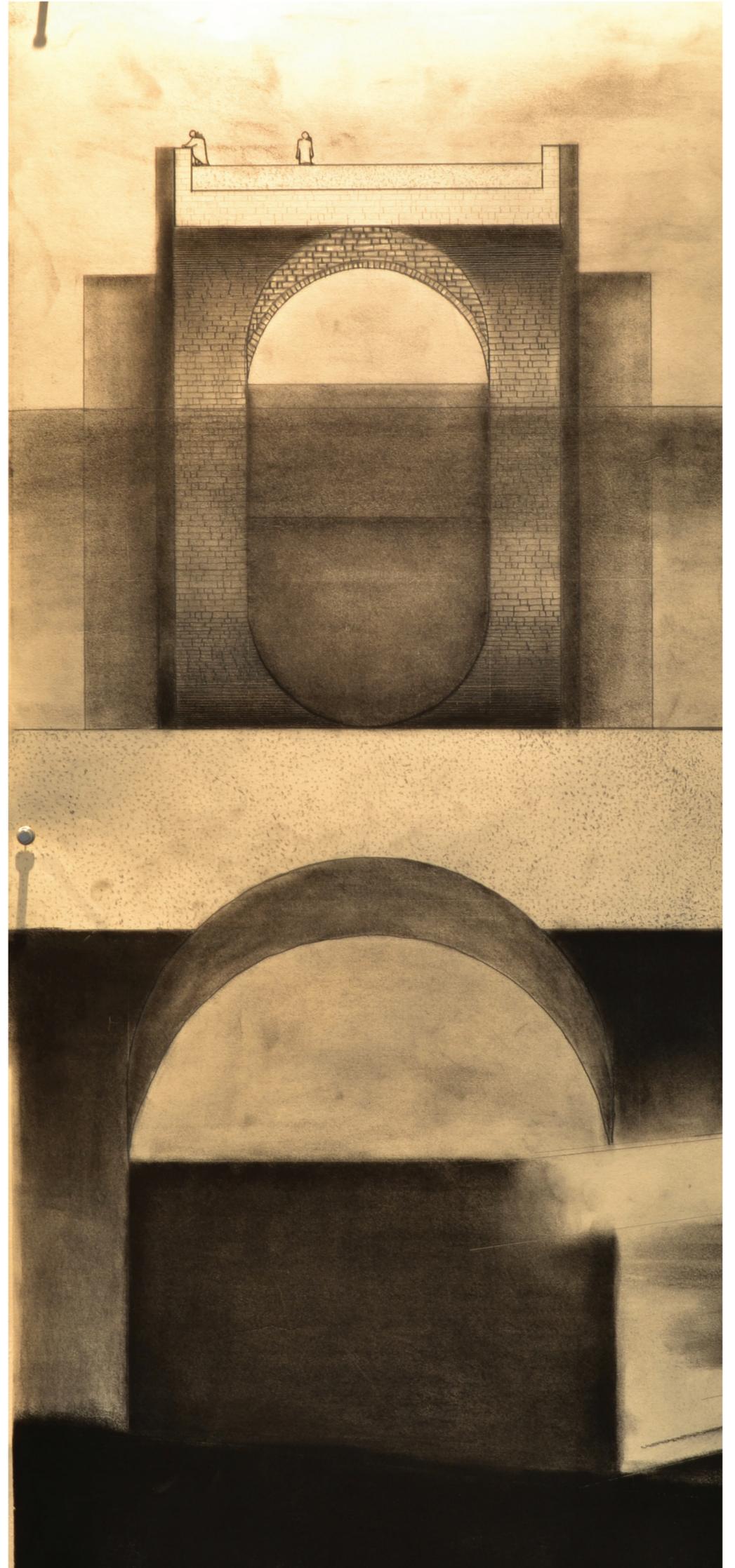


Plate 5: Bridge Details

The structure of the bridge is a series of stone barrel vaults that are mirrored at the base of the bays, continuing the geometry of the vault as they descend toward the next level of structure. Amidst the stone is concrete in-fill that acts as the structural bays of the bridge as well as creating spaces underneath each bay. These spaces provide intimate areas of pause for boats and kayaks.

# Bridge

The section drawing of the bridge shows the stone arches and how they relate to the concrete reinforcing structure. On the exterior of each bay is a triangular column of concrete that acts both as additional structure, as well as a break for the water to lessen the force on the bridge.



# Bridge



The longitudinal section shows the area under each bay, as well as the geometry of the arches as they extend below the surface of the water.

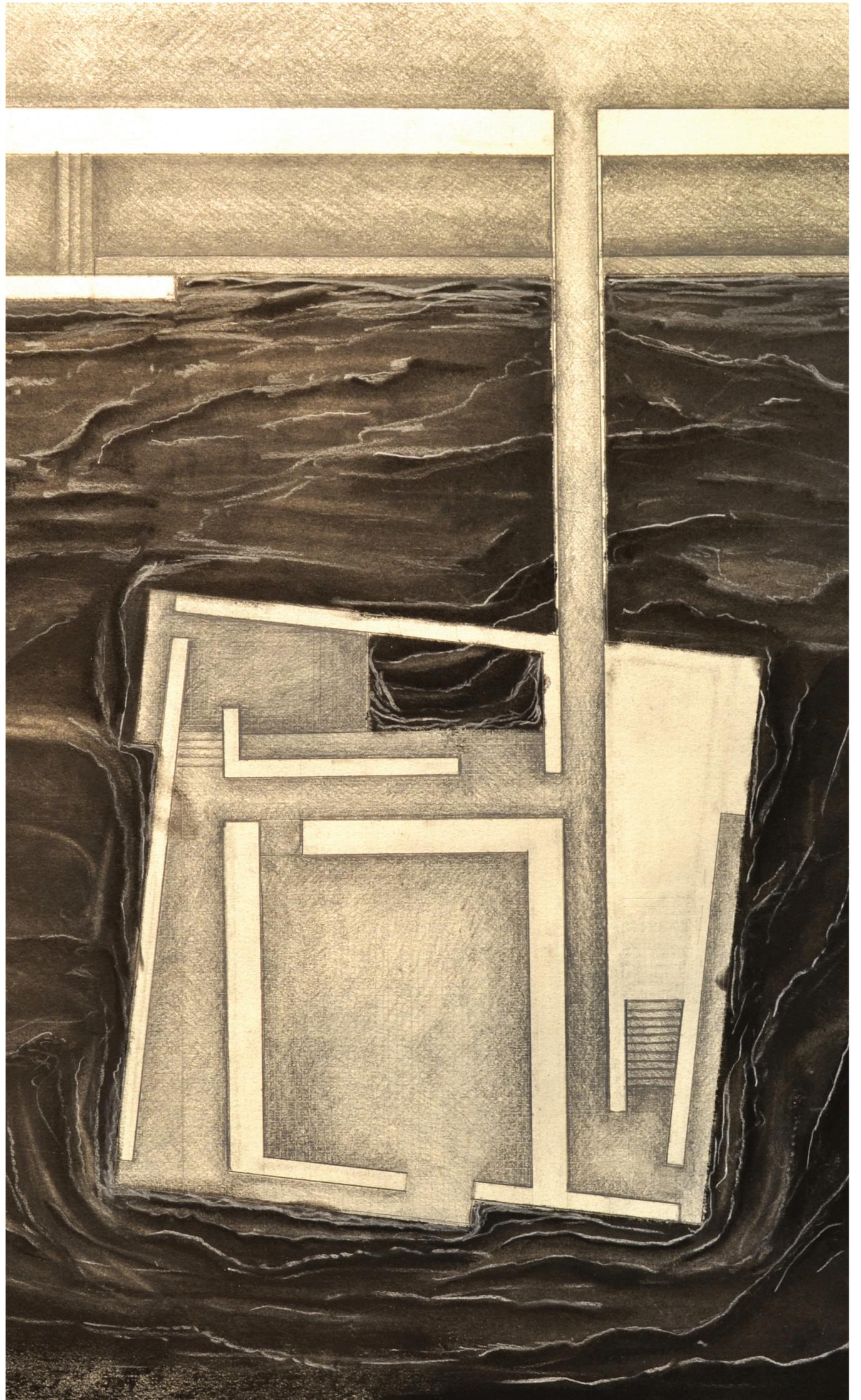
# Tower



Plate 8: Tower Details

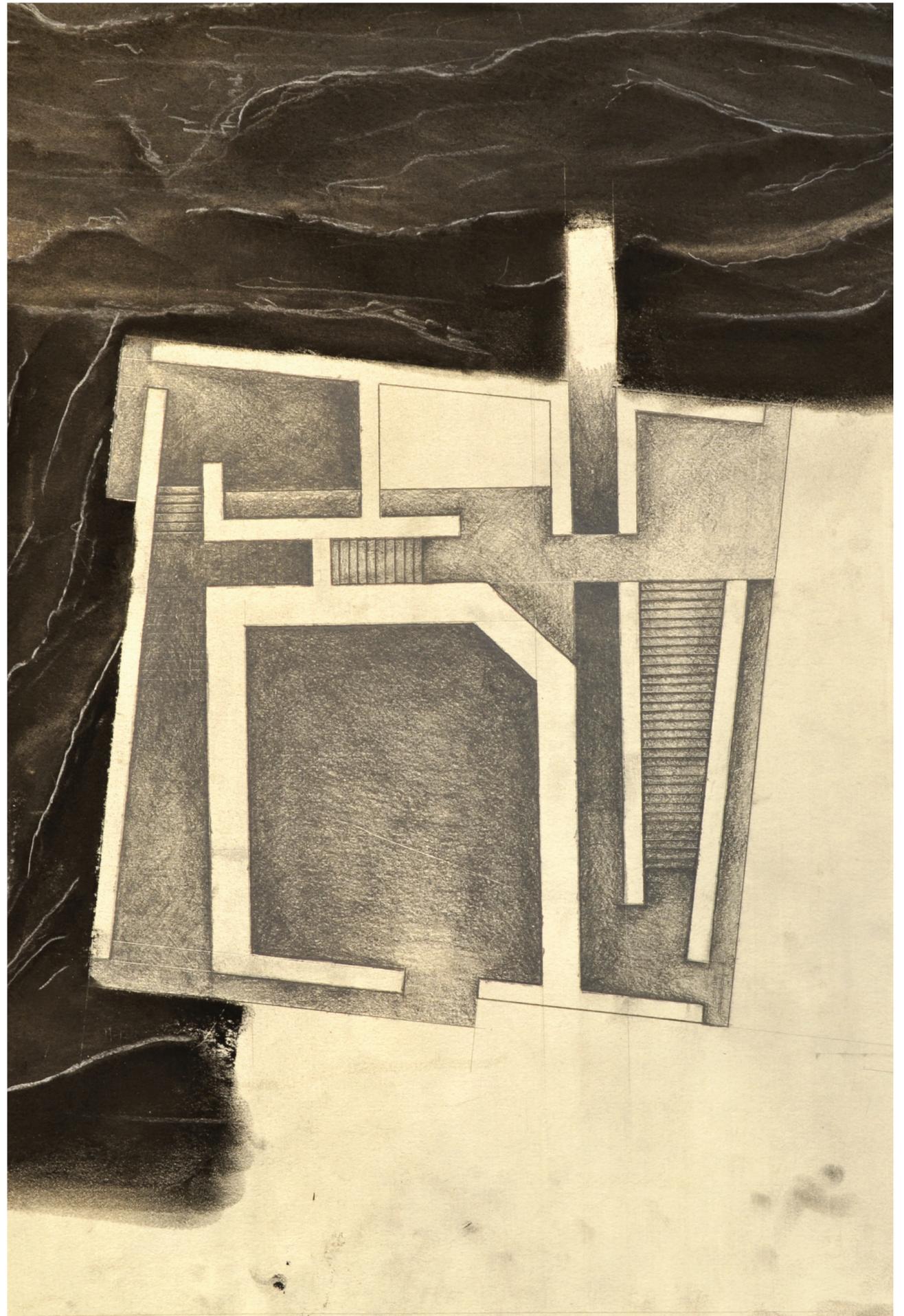
The towers are situated next to the bridge, connected by a simple walkway. Each has a number of small rooms or alcoves, meant for those who are traveling the bridge to sit and observe the landscape.

# Tower



Near the entrance is a void that runs through the entire tower, bringing additional light into the spaces.

# Tower



The second level shows this opening up of space within the stairs, also, it reveals small moments of intersecting paths as the first level passes under a thin walkway connecting two spaces.

Plate 10: Tower Second Level

# Tower

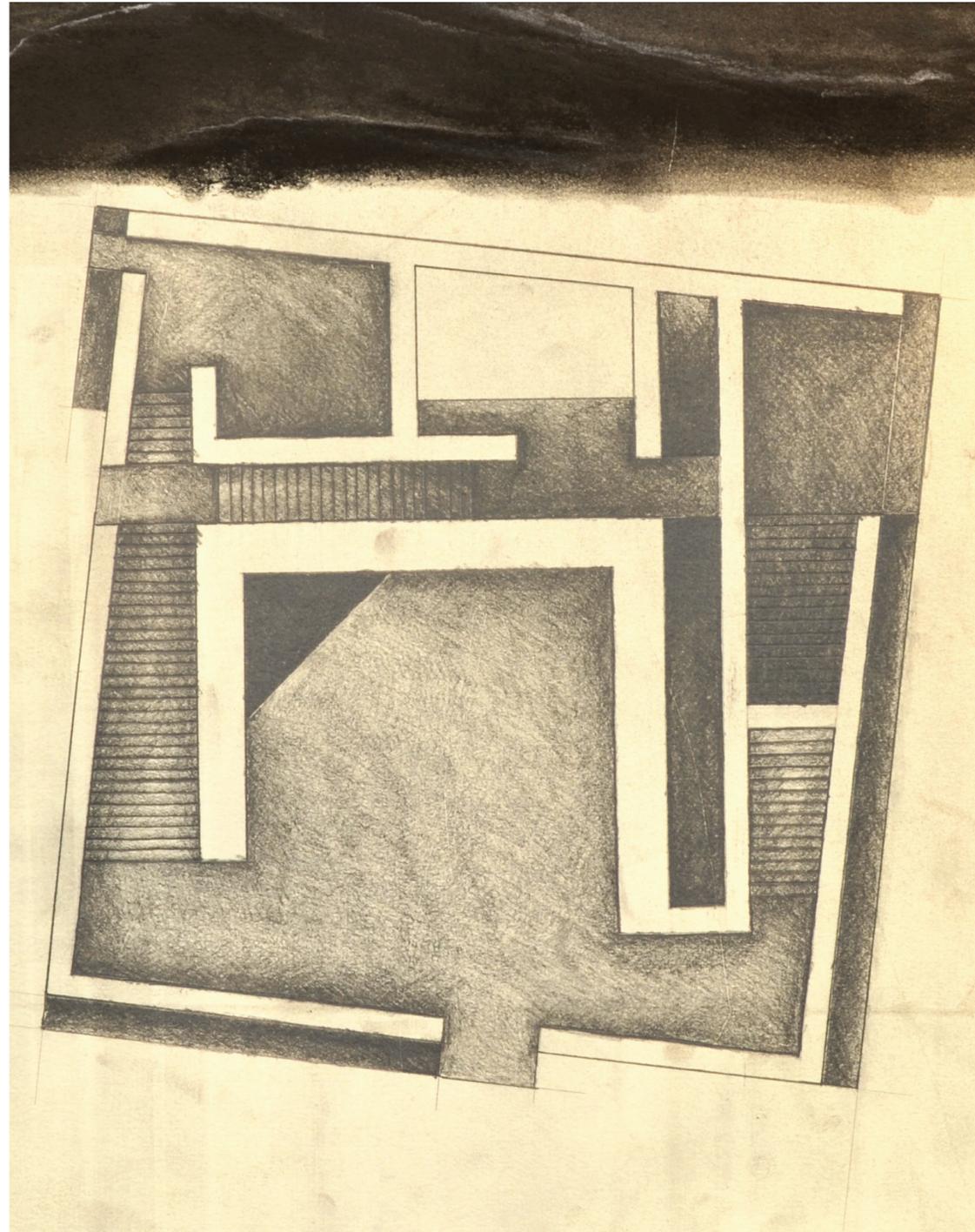


Plate 11: Tower Third Level

# Tower

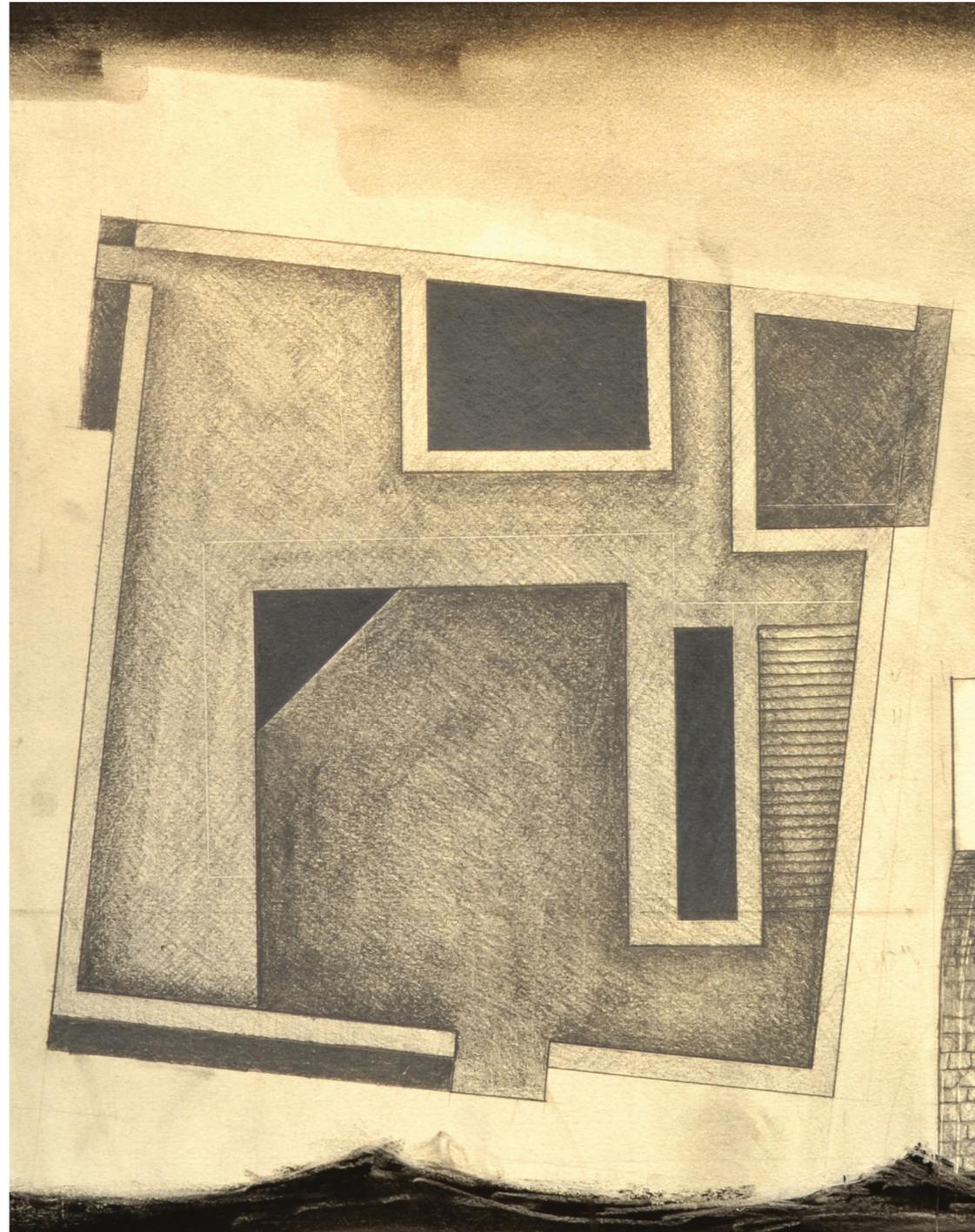


Plate 12: Tower Fourth Level

# Tower



Plate 13: Section Through Bridge and Tower

The entrance to the tower is an important condition, the bridge jogs to one side creating an opportunity for an additional walkway at water level. This allows a connection to the chamber of the tower that sits at water level, a chamber that allows for a connection to any boat that may be following the path.

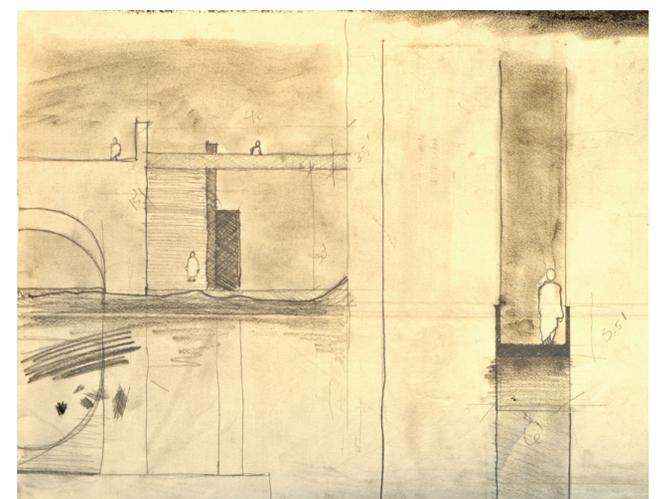
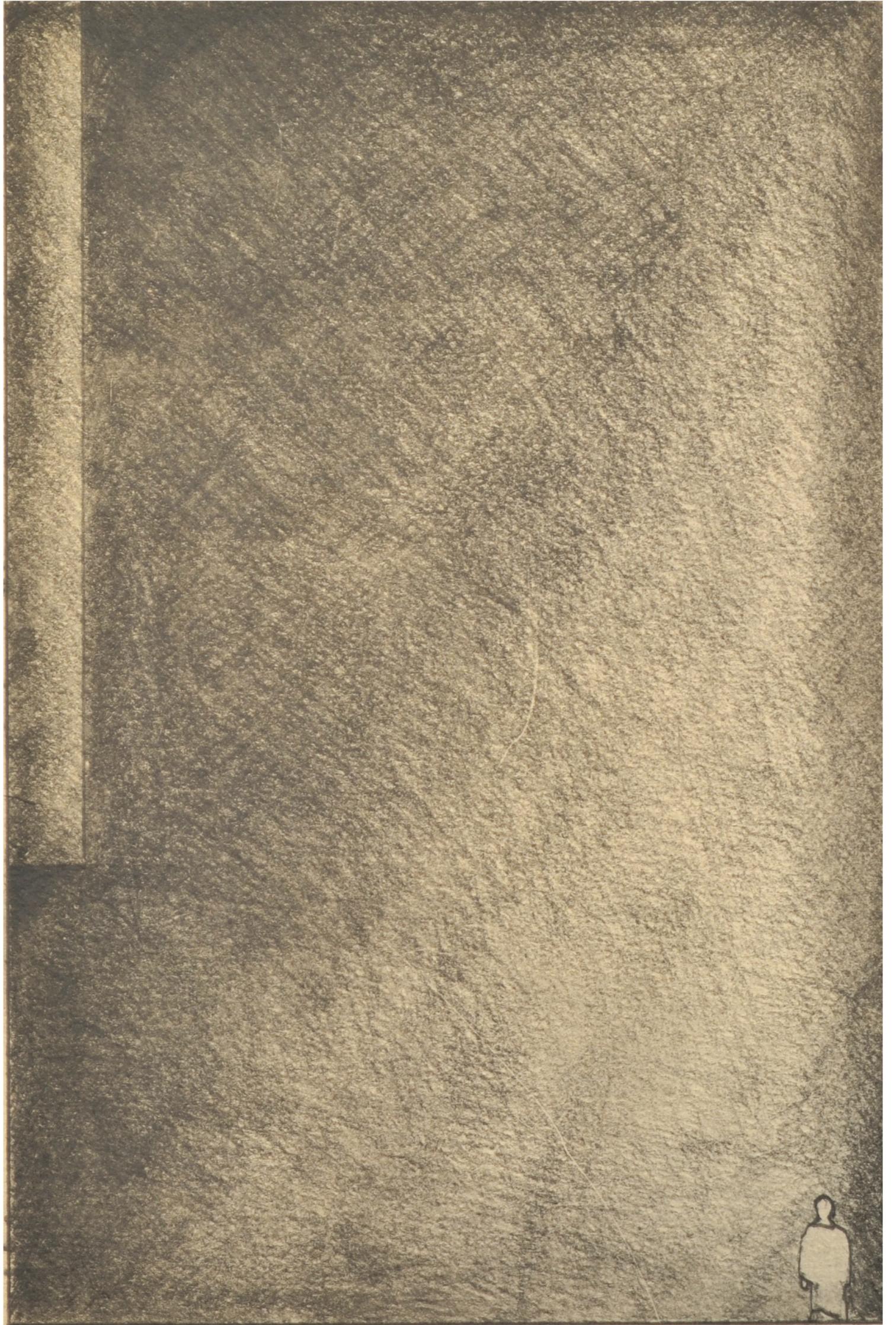


Plate 14: Initial Sketch of Intermediate Space

# Tower



# Within

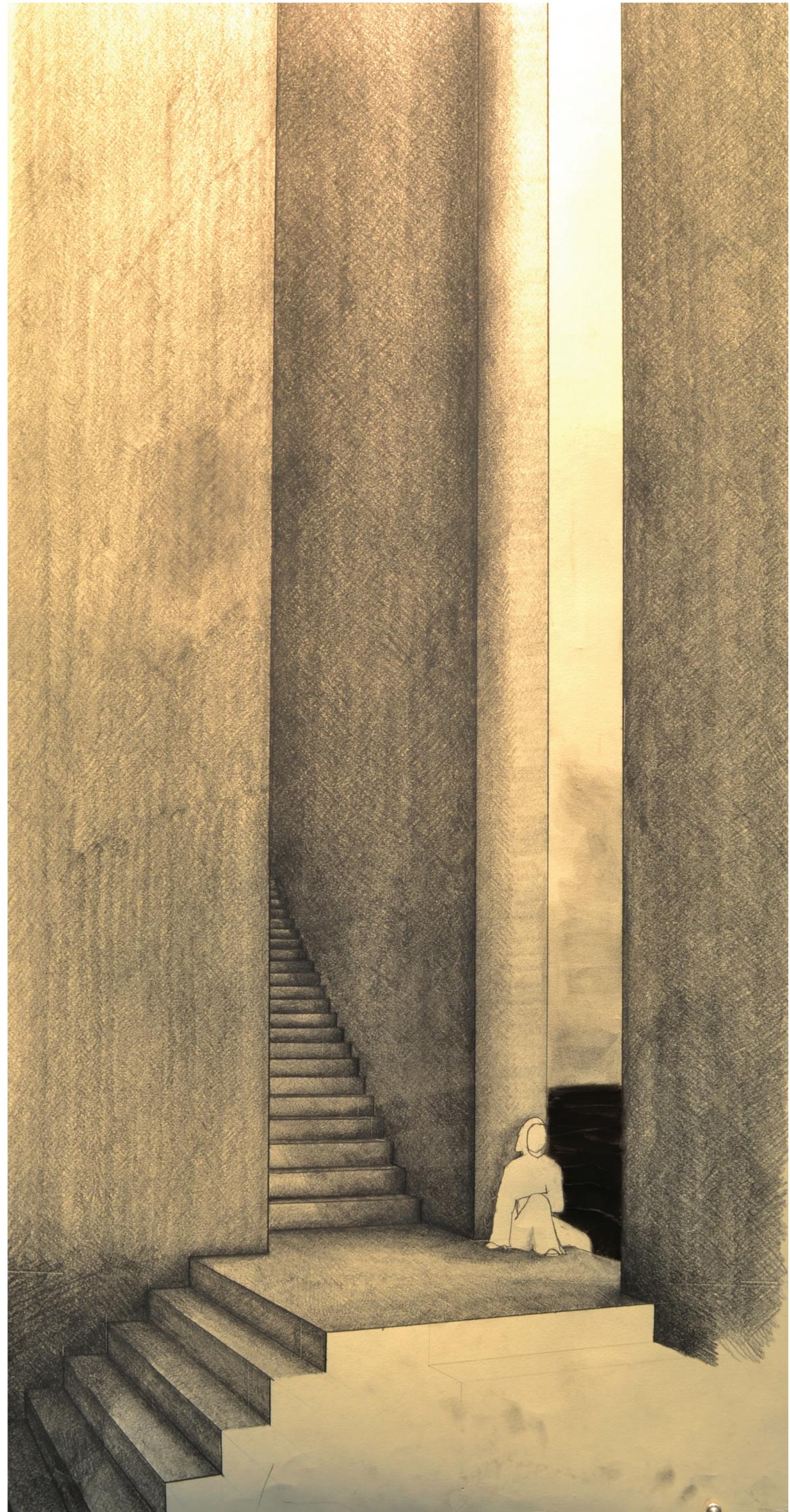


Plate 16: Interior Tower Perspectives and Section

The tower interior houses numerous spaces of shelter and observation, the language throughout is that of thin, high passageways opening into cavernous rooms. The ever-changing levels and room dimensions creates an atmosphere that seems suspended in time.

# Within

Each passage is guided by a beacon of light at the end, showing the path to the next interior space. These beacons are created by portals in the facade that continue the language of the passages, a thin, vertical opening allowing slivers of daylight into the tower.



# Within



Within the towers is a light well that opens to the water below. This opening introduces the sound of the of the water to the tower, allowing it to reverberate throughout the space.

# Within



Plate 19: Interior Perspective at Top of Light Well

Each room has a different quality of space as well as a different view of the surrounding landscape. This creates a journey through the tower which culminates with a full perspective of the Sound at the top.

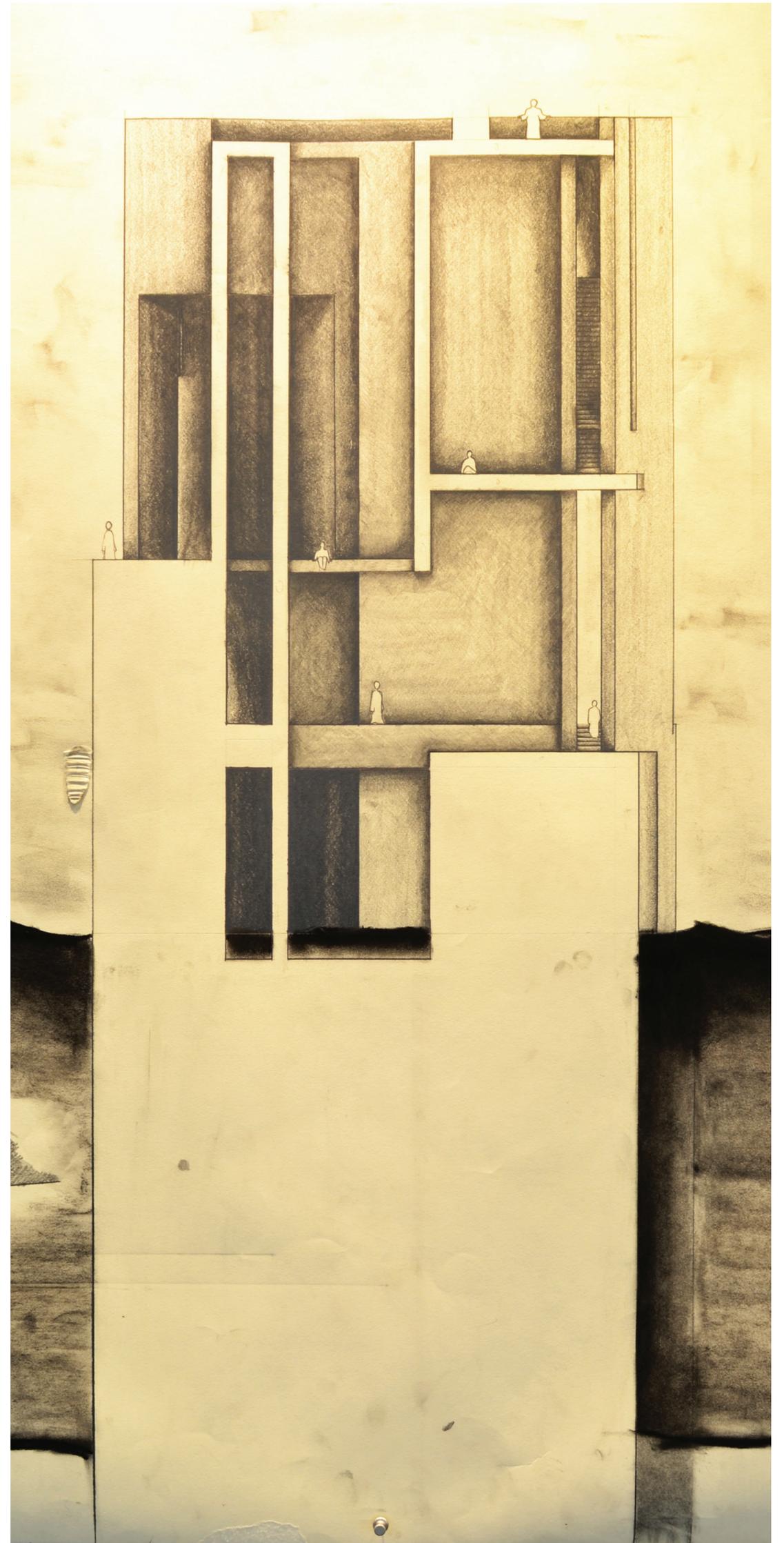


Plate 20: Section of Tower

# Beach

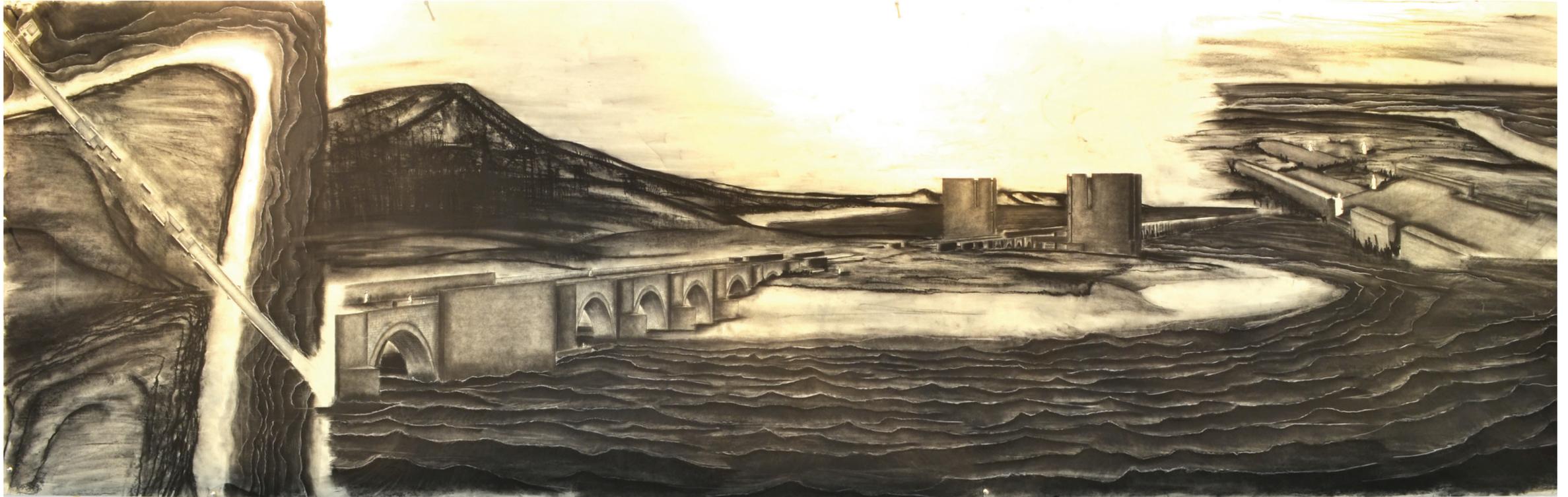


Plate 21: Beach Plan and Perspectives

The first moment in which the bridge encounters land. A small stretch of beach called Point No Point. It is the half-way marker of the path. Here the bridge dissolves and breaks apart as it meets the land, continuing its form with smaller platforms and blocks of concrete. The travelers can sit in the grass and enjoy the small respite, before continuing on their way.

# Beach



On land the bridge resembles a kind of ancient ruin. Huge blocks of concrete sit in a somewhat random order, like the ruins of Greek and Roman temples with their marble and concrete strewn around the site.

# Beach

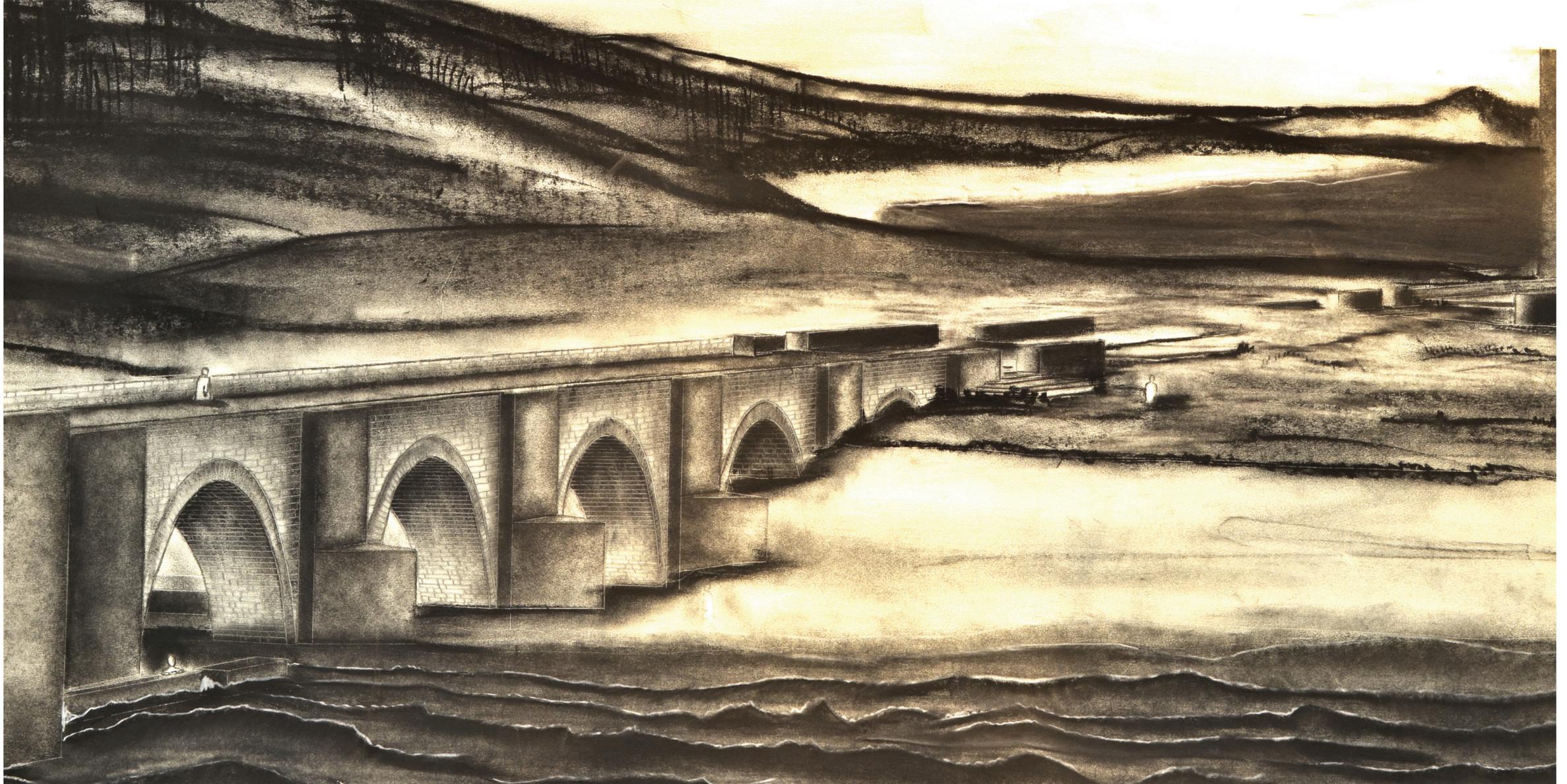


Plate 23: Main Beach Perspective Showing Path Dissolving

# Beach

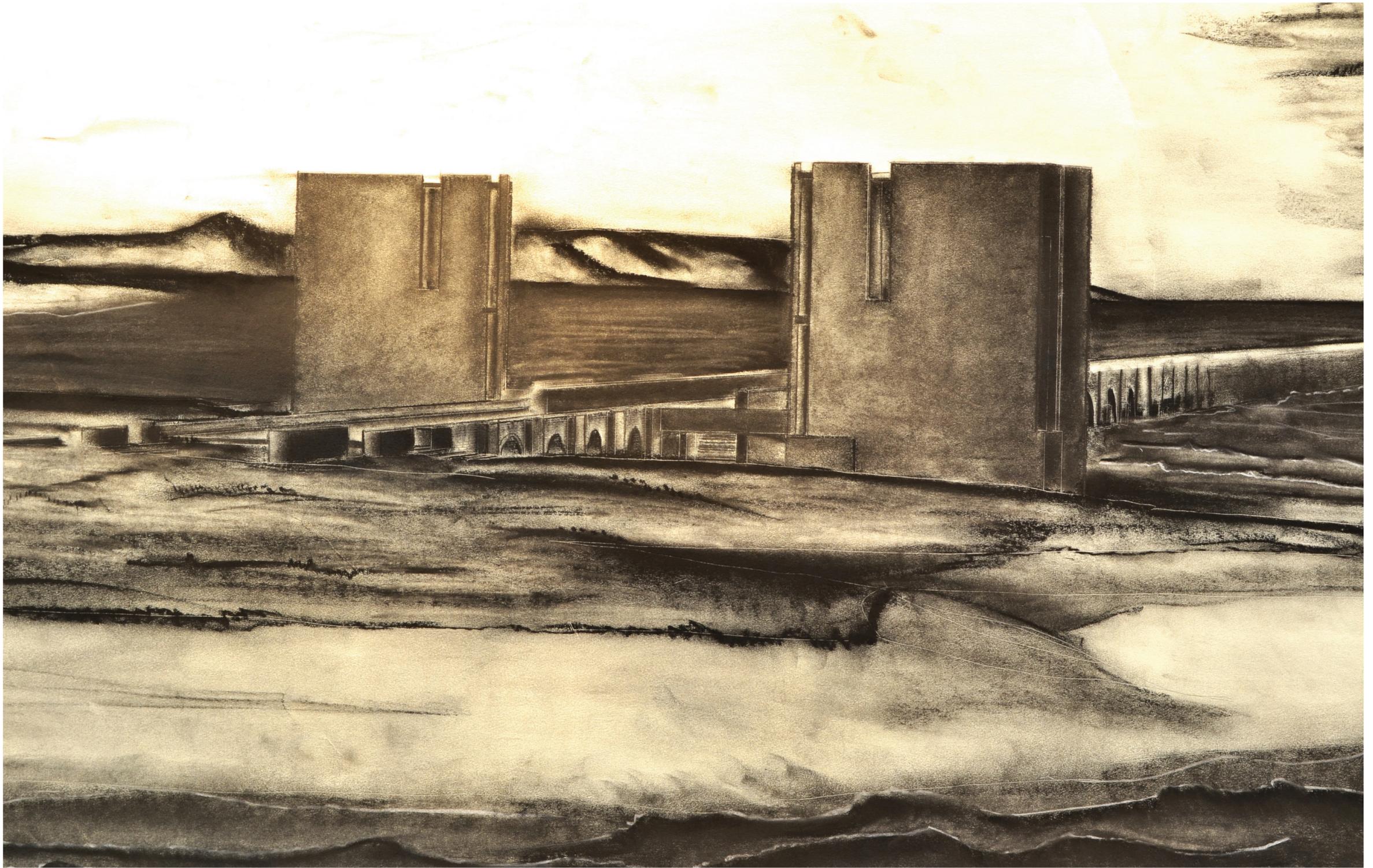


Plate 24: Main Beach Perspective Showing Towers

# Beach



Plate 25: Second Beach Perspective Showing Bridge Fracture

As the bridge fractures it is reduced in scale, creating spaces to sit and enjoy the landscape. Small stairs creep into the sides of the path and the platforms gently step down until they disappear entirely.

# Landfall

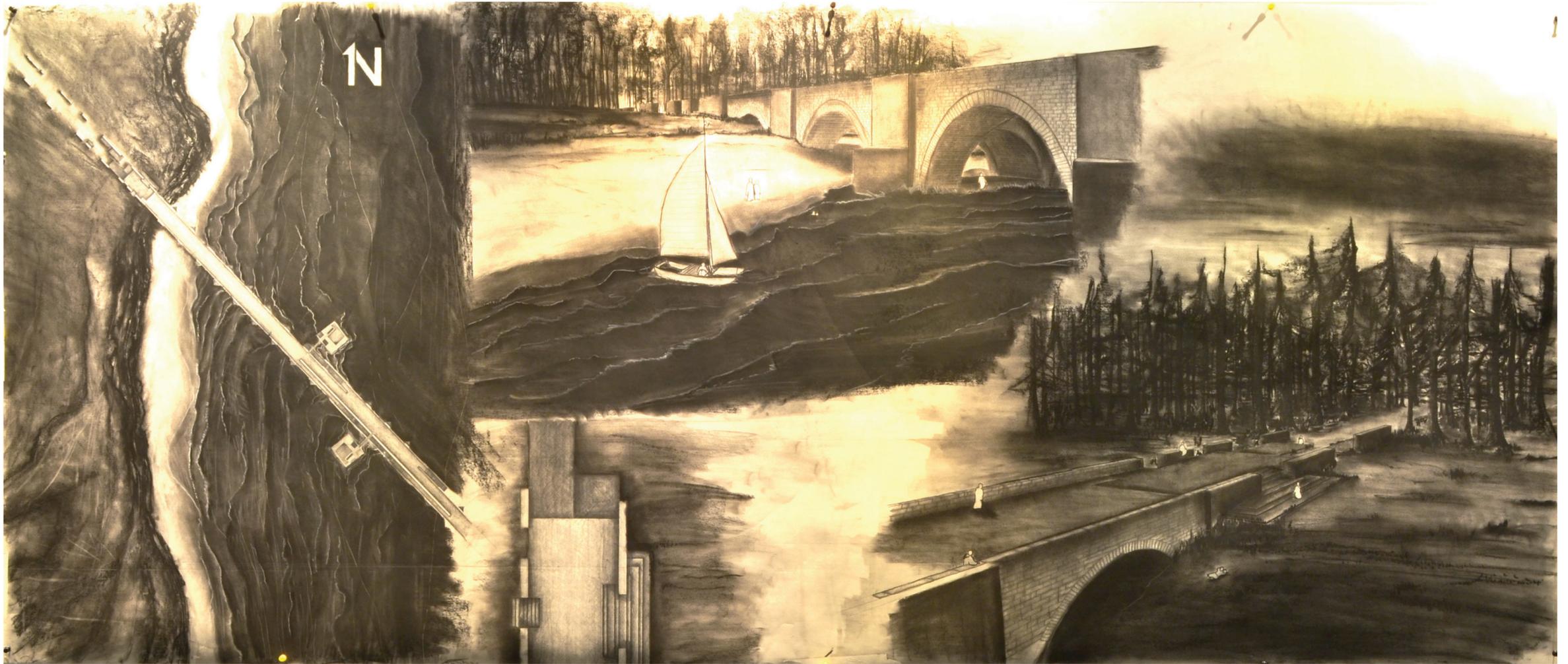


Plate 26: Landfall Site, Plan and Perspectives

Nearing the end of the journey, the bridge begins to stretch over numerous islands in the north of the Sound. Like at the beach, the bridge breaks down into elements that infer its path and enters a dense forest of trees. Over the remaining 20 miles it will travel over islands, back to water and then again to land.

# Landfall



# Landfall



Plate 28: Landfall Perspective Under Bridge

Smaller, more intimate spaces are revealed as the tide recedes both at shore and in deeper water. The water level within the Puget Sound changes 7 feet over the course of the day, which allows for opportunities to create spaces that are revealed only at certain times.

# Landfall

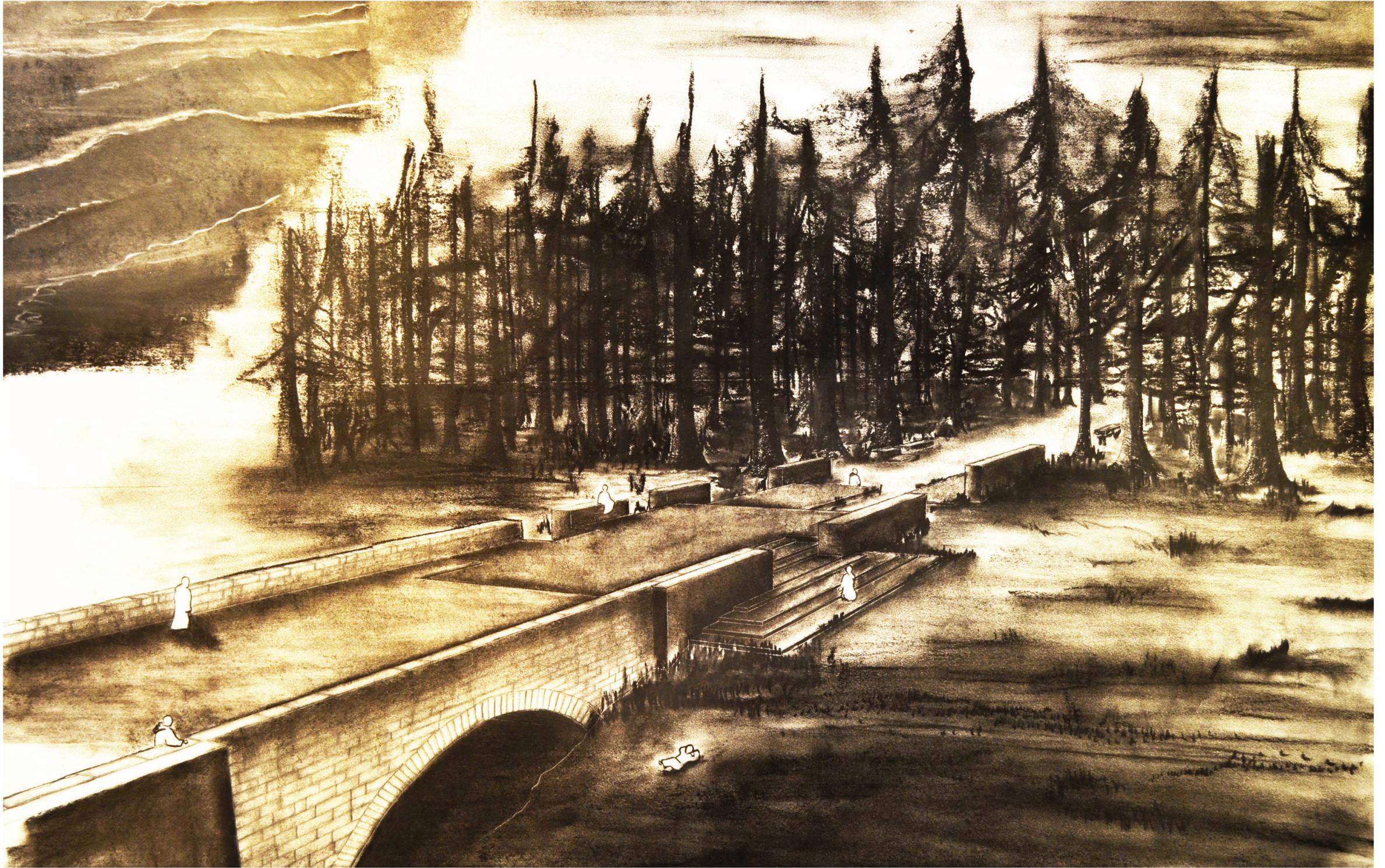


Plate 29: Second Landfall Perspective

# Terminus

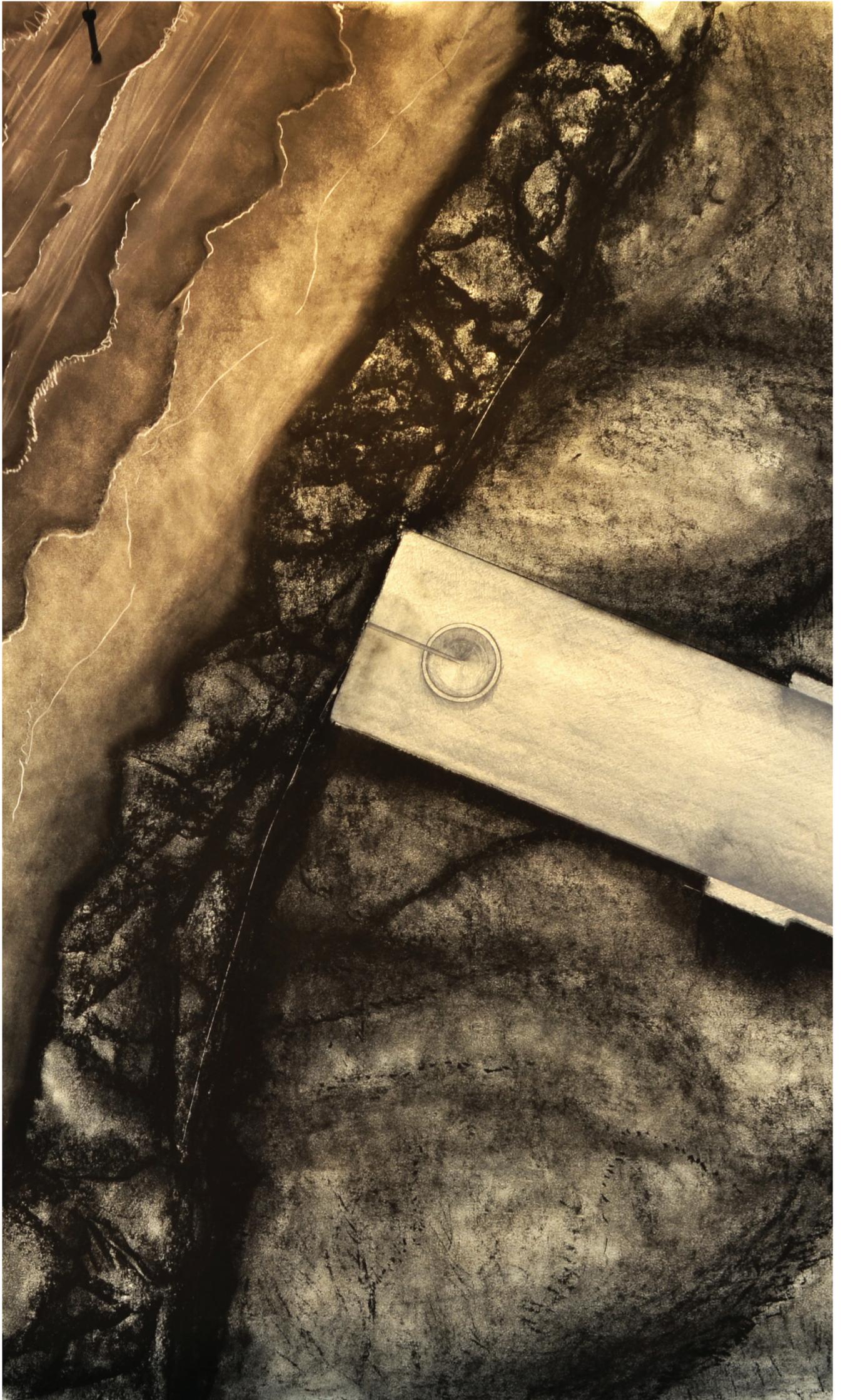


Plate 30: Plan, Section, and Perspective at Bridge End

The journey ends at the cliffs of Protection Island. With little ceremony or theatrics, the bridge merely finishes with a platform and a fire pit. The pit serves as a final marker to be seen from a distance as travelers approach, and once there, it is a place to sit and look out to the open ocean. The fire pit is also significant because it is the only time an additional design element is introduced to the main body of the bridge, unlike the towers that are situated next to it. The pit is a shallow bowl, 18 feet in diameter, with a channel running from the center to the edge of the platform, this channel serves to carry rainwater and charred wood out of the pit and over the edge.

This drawing symbolizes both the end of the journey on the bridge as well as the end of my journey with the project. A chance to reflect of the past year of work and a simple marker of completion of an unforgettable and life-altering experience.

# Terminus



# Terminus

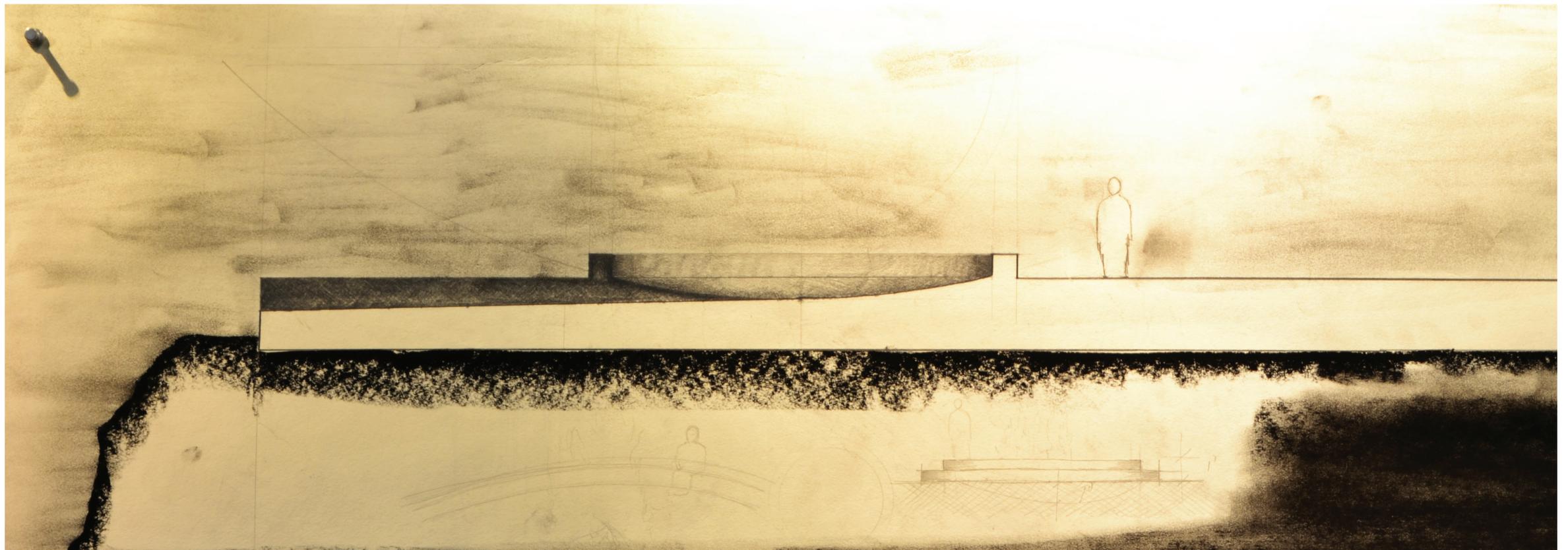


Plate 32: Section and Sketches of Fire Pit

# Terminus



Plate 33: Endpoint Perspective

# List of Plates

Plate 1: pg. 2	Site Plan
Plate 2: pg. 3	Initial Bridge and Tower
Plate 3: pg. 4	Exterior Reveal
Plate 4: pg. 4	Tower Trace Line Detail
Plate 5: pg. 5	Bridge Details
Plate 6: pg. 6	Section Drawing of Bridge 1
Plate 7: pg. 7	Section Drawing of Bridge 2
Plate 8: pg. 8	Tower Details
Plate 9: pg. 9	Tower First Level
Plate 10: pg. 10	Tower Second Level
Plate 11: pg. 11	Tower Third Level
Plate 12: pg. 12	Tower Fourth Level
Plate 13: pg. 13	Section Through Bridge and Tower
Plate 14: pg. 13	Initial Sketch of Intermediate Space
Plate 15: pg. 14	Section Showing Scale of Main Tower Chamber
Plate 16: pg. 15	Interior Tower Perspectives and Section
Plate 17: pg. 16	Interior Perspective at Tower Stair
Plate 18: pg. 17	Interior Perspective of Light Well
Plate 19: pg. 18	Interior Perspective at Top of Light Well
Plate 20: pg. 18	Section of Tower
Plate 21: pg. 19	Beach Plan and Perspectives
Plate 22: pg. 20	Plan of Bridge Across Point No Point
Plate 23: pg. 21	Main Beach Perspective Showing Path Dissolving
Plate 24: pg. 22	Main Beach Perspective Showing Towers
Plate 25: pg. 23	Second Beach Perspective Showing Bridge Fracture
Plate 26: pg. 24	Landfall Site, Plan, and Perspectives
Plate 27: pg. 25	Plan of Landfall
Plate 28: pg. 26	Landfall Perspective Under Bridge
Plate 29: pg. 27	Second Landfall Perspective
Plate 30: pg. 28	Plan, Section and Perspective at Bridge End
Plate 31: pg. 29	Plan of Bridge End and Fire Pit
Plate 32: pg. 30	Section and Sketches of Fire Pit
Plate 33: pg. 31	Endpoint Perspective