

# XIX

## A Memorial and Study on the Proximity and Proportion of the Circle and the Square

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of the requirements for the degree of

Master of Architecture  
in  
Architecture

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# XIX

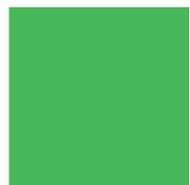
## A Memorial and Study on the Proximity and Proportion of the Circle and the Square

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### ABSTRACT

Programmatically, the aim of the thesis is to create a new place to commemorate the lives lost in the Guatemalan Civil War in the town of Xix (pronounced “sheesh”), Guatemala. Currently, Xix’s boarding school is the only place that houses a memorial for those 113 lives lost in Xix during the war. The existing memorial pavilion that houses a statue and commemorative plaque are being weathered by the elements. It is only a matter of time before the statue and plaque are overcome by the elements. This situation resulted in a complete transformation in the way that Xix remembers the war. This thesis project reroutes the community’s Memorial Day parade so that the procession ends at the proposed memorial plaza. Parade goers travel through the town of Xix to the boarding school where the new memorial is. The new memorial consists of a bridge that leads to a room that houses the existing statue and plaque, and the room has a balcony that overlooks a plaza that includes a small green amphitheater and memorial fountain.

The circle and the square became the generating forms for this place, and through an exploration of nineteen relationships that could be shared among the circle and the square two were found to dominate in regulating many possible relationships. Proximity was the first of the two dominant relationships and the second is proportion. The exploration is set in two stages: research (Circling the Square: Proximity and Proportions), and demonstration of the dominant relationships (Site: Circular Proximity, Elevations + Sections: Boundary of Proportions, and Squaring the Circle).



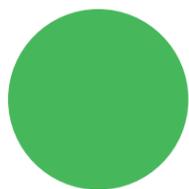
*Acknowledgements:*

*Professors and Colleagues,*

*Engineers Without Borders Virginia Tech Guatemala Team who introduced me to Xix,*

*and*

*Family for all their support*



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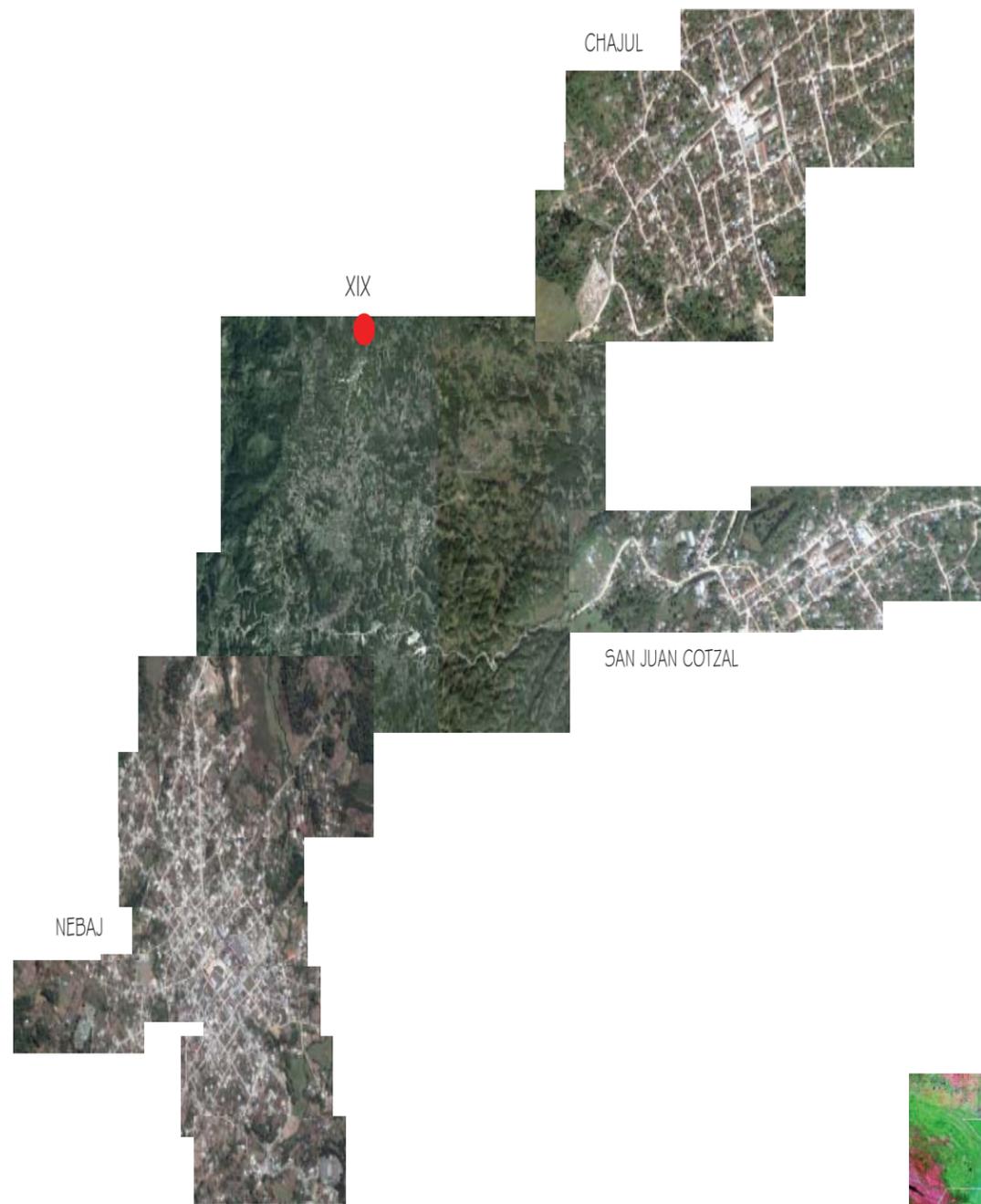
## INTRODUCTION

The Quetzal was a beautiful green bird that proudly gave its long green feathers to adorn the head pieces of the Mayan rulers and warriors.

When the Spanish came, with Pedro de Alvarado as the conquistador, they took by force or deceit the land from the Mayas. The Mayas although brave and strong could not stand to the gunpowder and the magical men on horses. Tecún Umán a Mayan warrior, the strongest of them all, was the last one to fall. In a battle in the valley of Olinstepeque (in the department of Quetzaltenango) he fought to the end. When Tecún Umán was lying dead on the ground the Quetzal came down and rested on his chest and its chest got tinted forever with the blood of Tecún Umán.



The Legend of the Quetzal



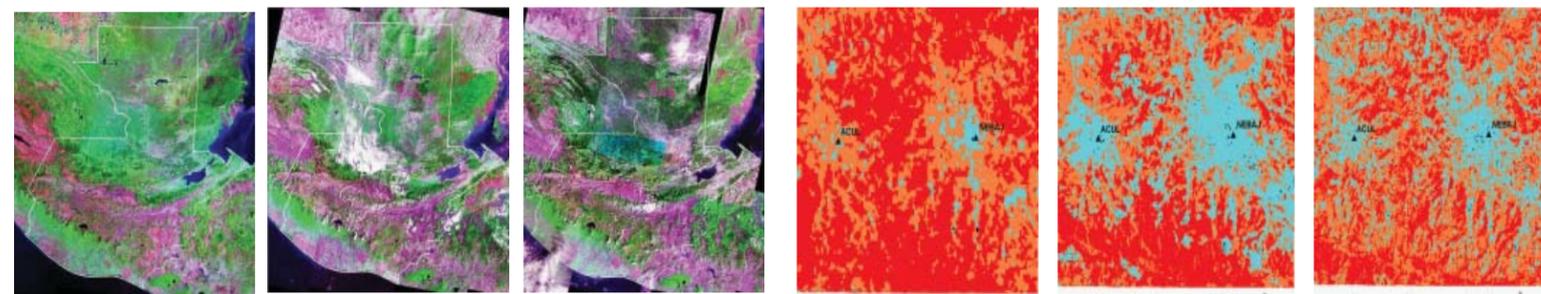
Satellite Image of Ixil Triangle

source: "Nebaj, Chajul, Cotzal." (2007, 25 Mar). 15° 24' 30.00"N, 91° 8' 50.00"W, 39311 ft. Map. Google Earth Image. [Accessed 11 Nov 2011]. Available from: Google Earth

Tecún Umán epitomizes the verse on the Guatemalan anthem that says "Antes muerto que esdavo será" (rather choose death than slavery). The legacy of this legend and Guatemala's Mayan heritage lies within the symbol of the Quetzal. Today, bird sightings are rare and the bird is threatened, like many aspects of Guatemala's culture, the Quetzal is holding on.

In the 1980s, the Guatemalan people had to hold on again through a very tumultuous civil war. During the Guatemalan Civil War, the Guerrilla Army of the Poor (EGP) used the surrounding mountains as a base of operations. The Guatemalan Army pursued a scorched-earth policy to destroy villages. The villagers of the Ixil community, were caught in the crossfire, and thousands of civilians were killed, tortured, or disappeared. Satellite imagery was used by the Yale Genocide Studies Project to map land images before and after the war to trace the atrocities of Guatemala's past. The first three images below show Guatemala before, during and after the war. The national border is shown in white. The mosaic is a false-color image displaying solar energy in the visible green, near infrared, and visible blue parts of the spectrum as red, green, and blue. Green shades of the image depicts vegetation, red is bare soil, and blue is inland water.

The area of greatest impact was in the region known as the Ixil Triangle. The largest city of the region is Nebaj. The Genocide Project focused further studies on Nebaj and nearby Acul, which suffered the most losses during the war. The last three images below represent this area before, during, and after the war. The false color images range from heavy vegetation in red to bare soil in turquoise.



Yale Genocide Studies Project satellite imagery using the vegetation levels of Guatemala before, during, and after the war: first three images are of Guatemala, last three images are of Nebaj and Acul located in the Ixil Triangle region of Guatemala

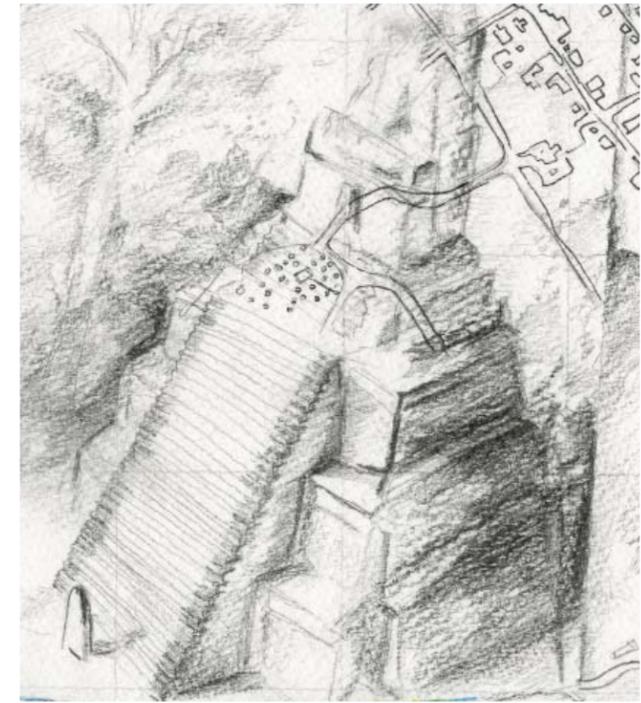


Student painting depicting the horror of the war



The army's campaign against civilians in this region may have been motivated partially by a desire "to weaken and eventually eradicate Maya culture." During the war, villagers learned not to wear their traditional Maya clothing because its distinct appearance made them easy targets. One school, the Centro Formación de Nuevos Mayas (CEFONMA), is a regional boarding school for middle school to high school students that tries to preserve the students' Mayan heritage through teaching them traditional trades, history, and Quiché (pronounced "keet jay" which is their original Mayan language) as well as modern trades that help sustain their future. The project site is located on the campus of CEFONMA.

The school is located in Xix (pronounced "sheesh"), which is a resettlement town in the northern region of the Ixil triangle. Due to its location in the Cuchumatanes mountains, the Ixil Community has remained mostly isolated from the rest of Guatemala. Most of the men are farmers, and most of the women are weavers. Nebaj, San Juan Cotzal, and Chajul make up the vertices of the Ixil triangle.





Ixil Triangle

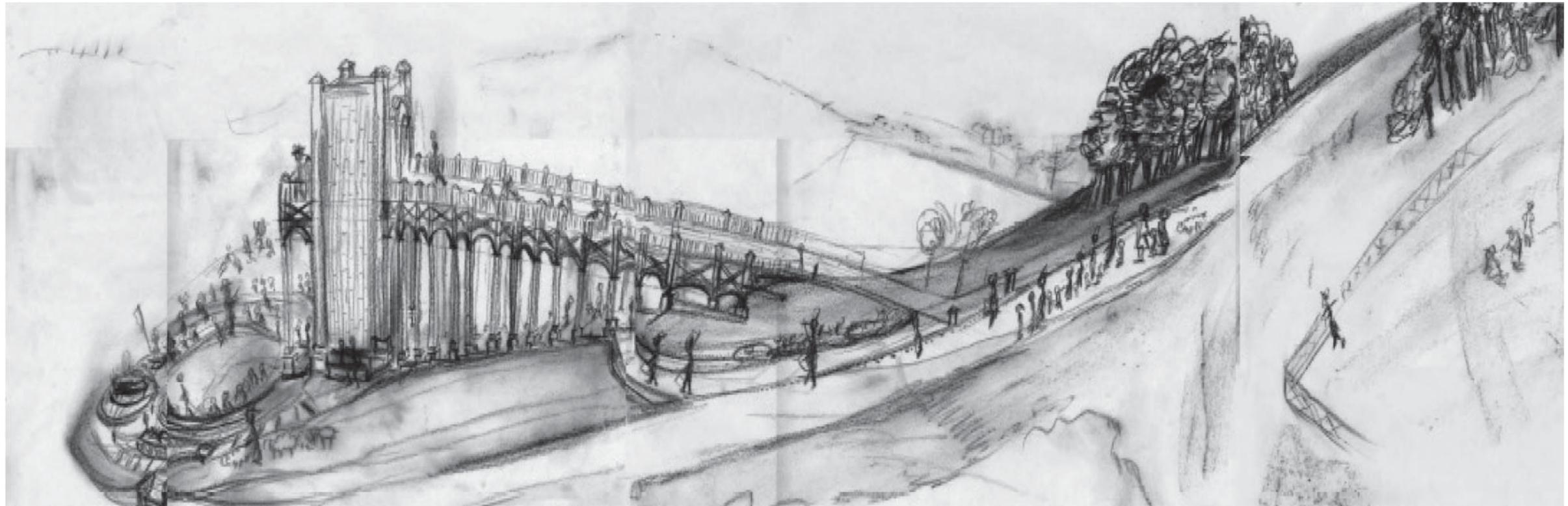


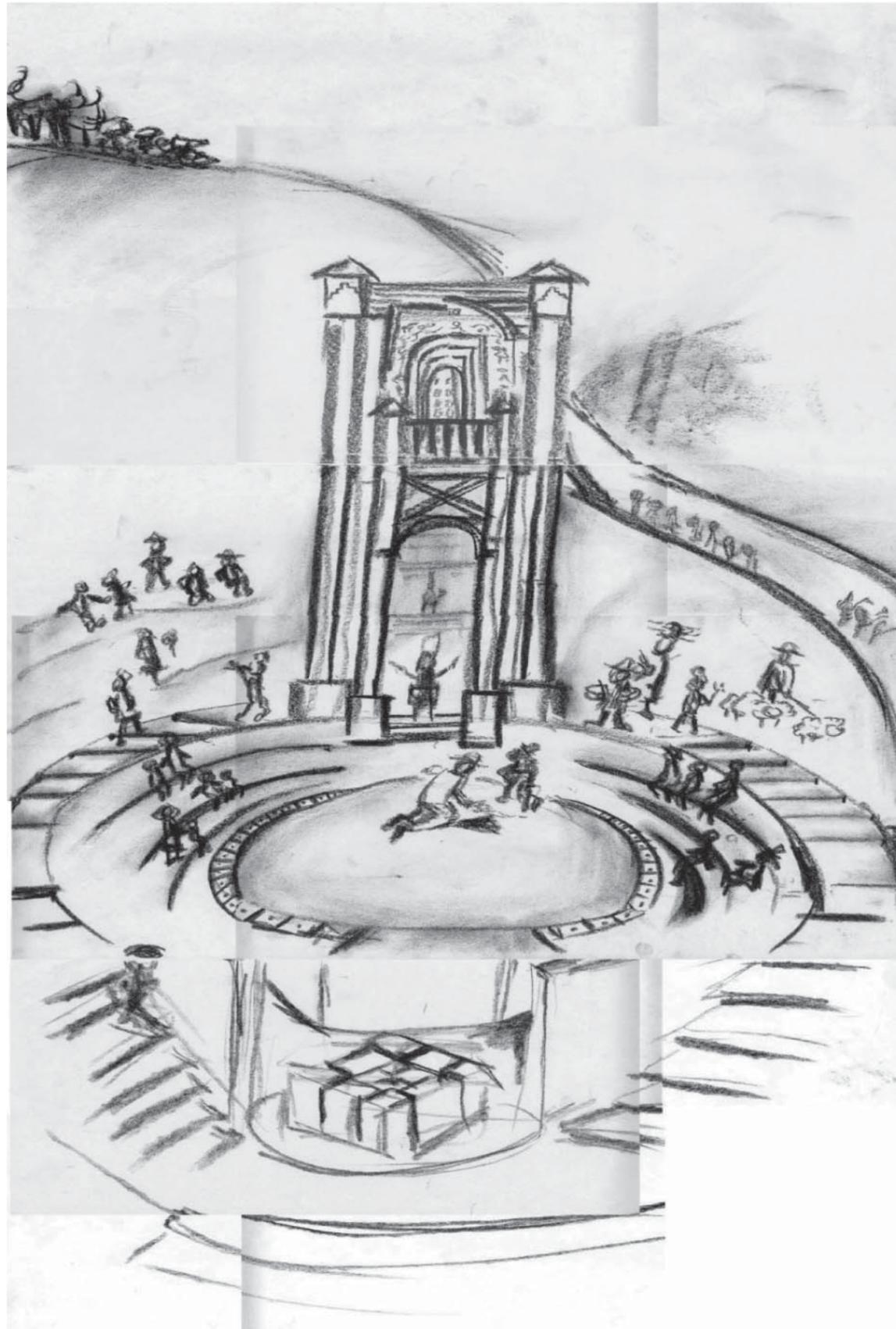
Currently, there is a small pavilion that houses a memorial statue and plaque that commemorates those within the community who have lost their lives during the war. I propose to redesign the memorial pavilion that will promote a stronger connection between community and school. The redesign takes into consideration their current practices of memorial celebrations. Their current practice is to have a parade that goes through the town, bypassing CEFONMA, ending on a grassy hill where they rest, eat, and tell stories.



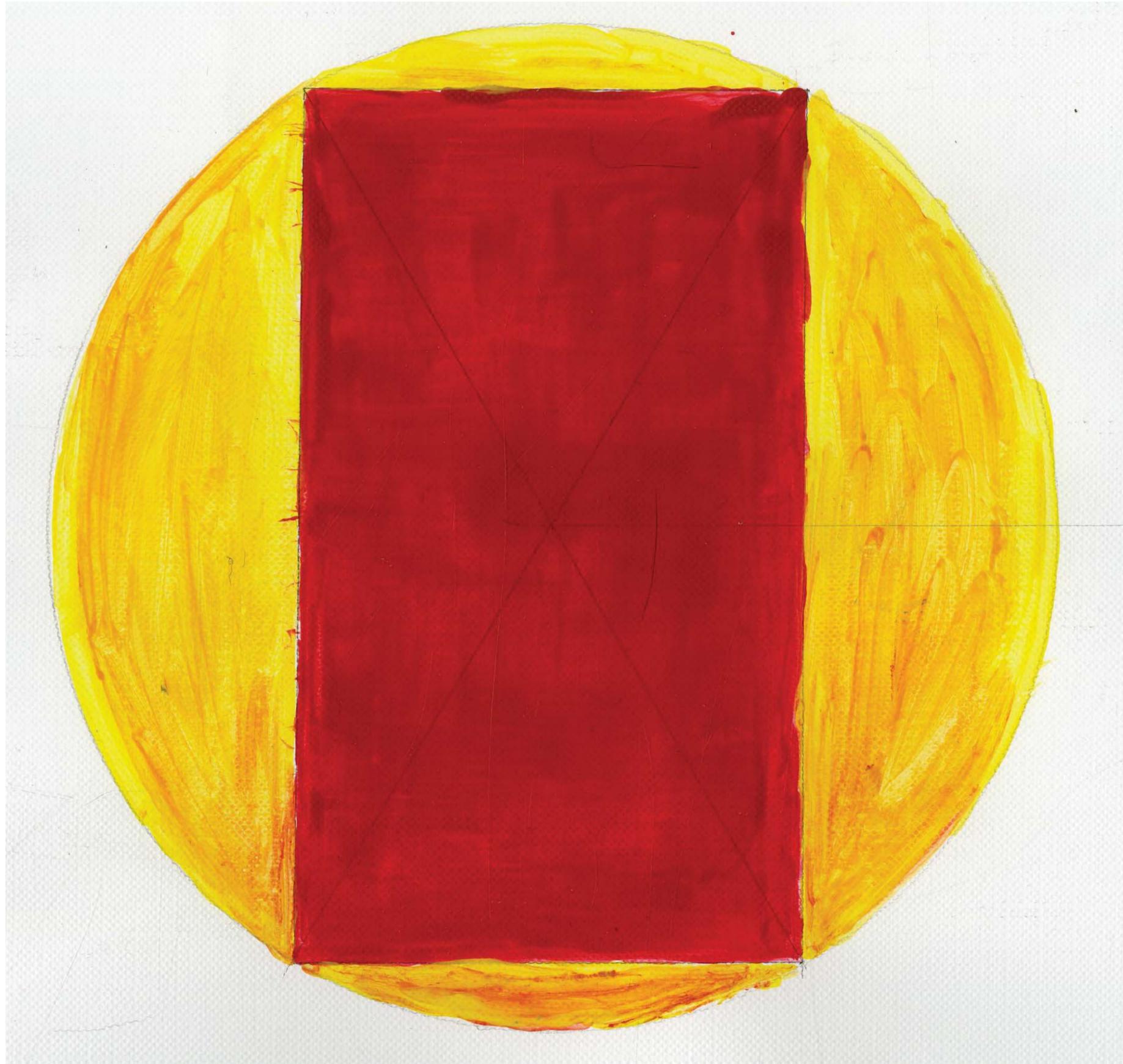


Xix Parade





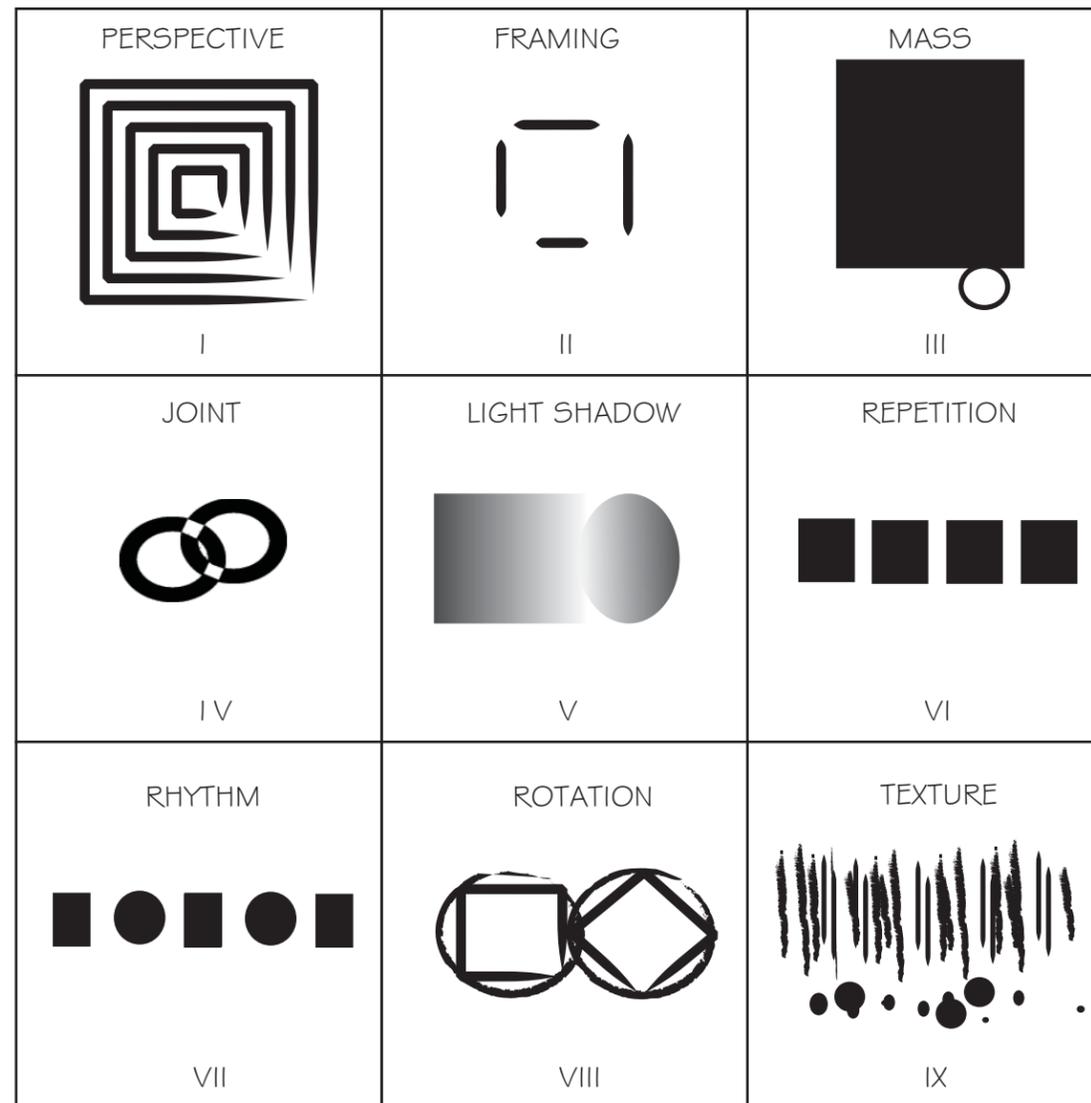
I propose that the parade path be redirected to end in CEFONMA at the new memorial plaza. Here, the community can end at a memorial plaza that houses a reflection room, a grassy amphitheater, and memorial fountain. The parade path leading into the school is a passage underneath an aqueduct to a gateway into the memorial plaza. The aqueduct supplies water to the memorial during the rainy season so that the fountain can run during the dry season. This cycle of the fountain represents the cycle of life and death. The top of the aqueduct is accessible, and becomes the bridge to a lookout upon the memorial plaza. Before reaching the lookout, one enters a room that houses the existing memorial statue and plaque. This new room can better protect the existing statue and plaque from the elements, and the room provides a moment of reflection and pause for XIX.

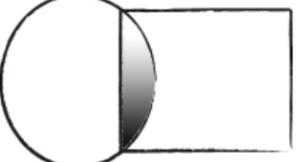
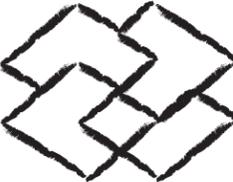
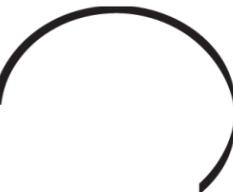
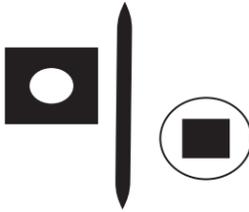
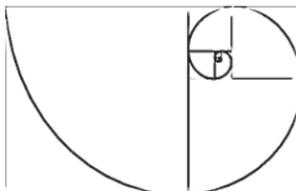


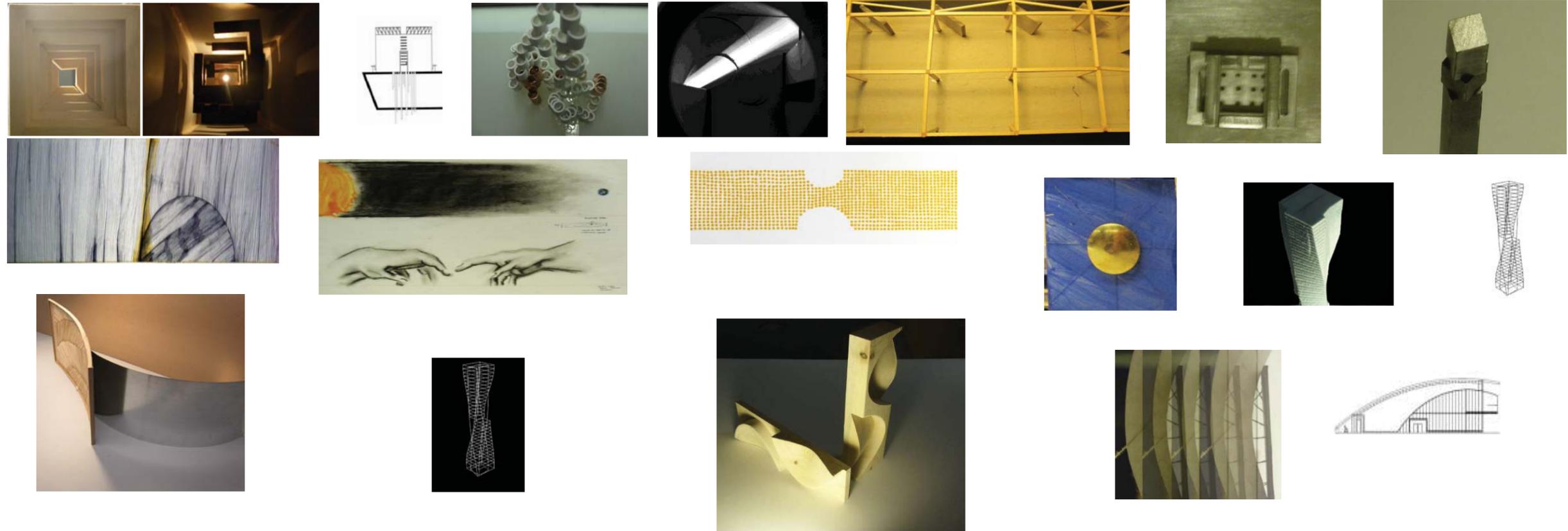


CIRCLING THE SQUARE: PROXIMITY AND PROPORTIONS

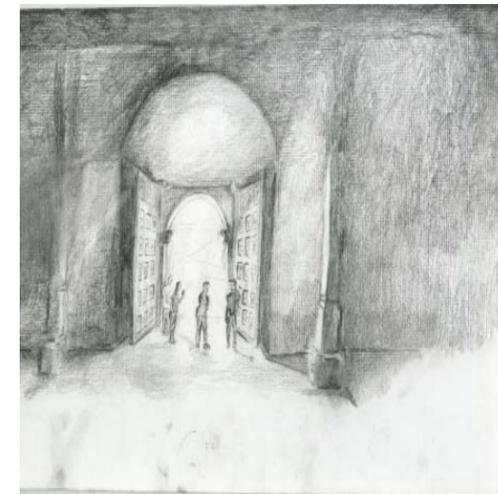
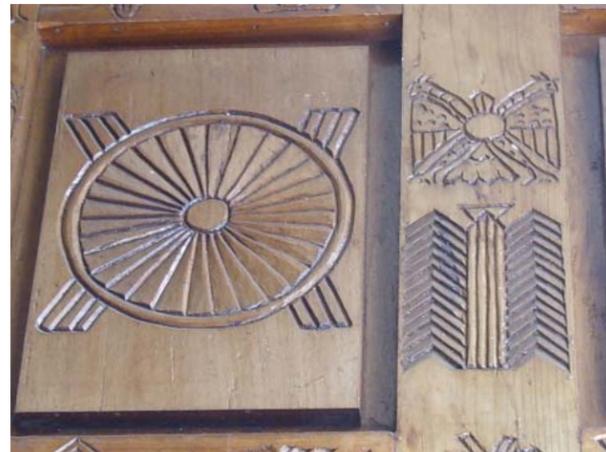
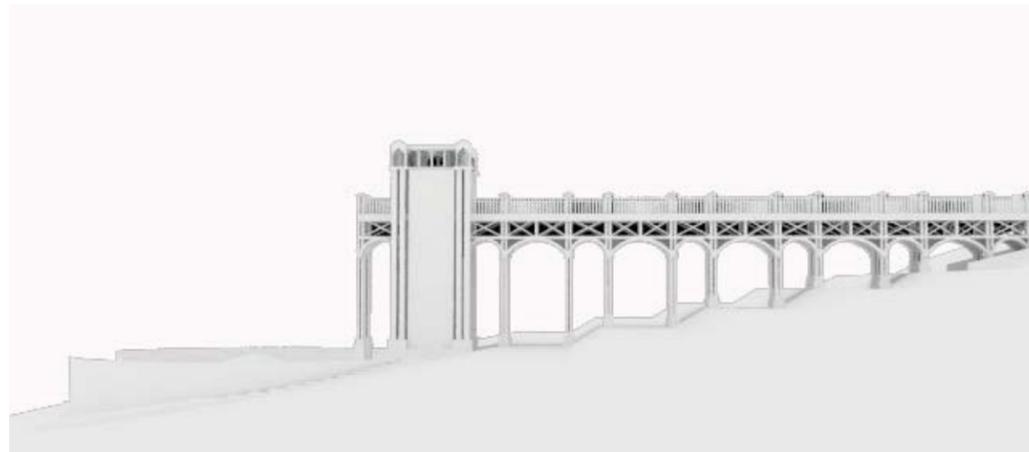
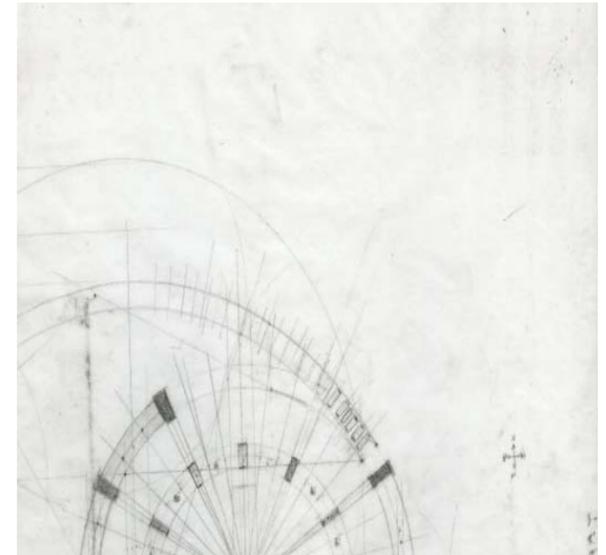
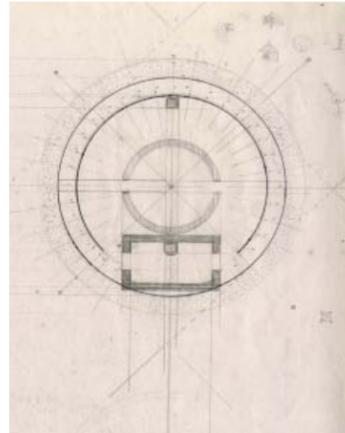
The regulating guides of the final form of the memorial are found in the meeting of the circle and the square. There are many relationships that can be established between the circle and the square. Past architectural graduate work reveal a fascination between the interaction between the circle and the square. Some projects were clear depictions of a circle and square; whereas, other projects dealt with the circle and the square in process rather than product. I have diagrammed nineteen relationships of which two were further studied in this thesis.



<p>PROXIMITY</p>  <p>X</p>	<p>FORM</p>  <p>XI</p>	<p>COLOR</p>  <p>XII</p>	
<p>TRANSLATION</p>  <p>XIII</p>	<p>BOUNDARY THRESHOLD</p>  <p>XIV</p>	<p>TENSION</p>  <p>XV</p>	
<p>FRAGMENTED</p>  <p>XVI</p>	<p>SYMBOL</p>  <p>XVII</p>	<p>INVERSE</p>  <p>XVIII</p>	
			<p>PROPORTION</p>  <p>XIX</p>



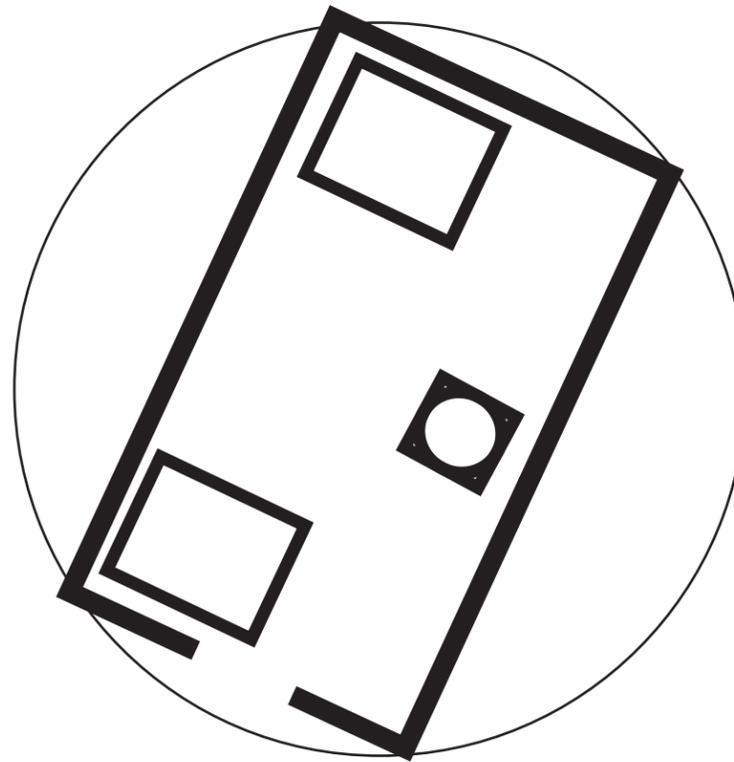
Past Projects: Architectural Graduate Work

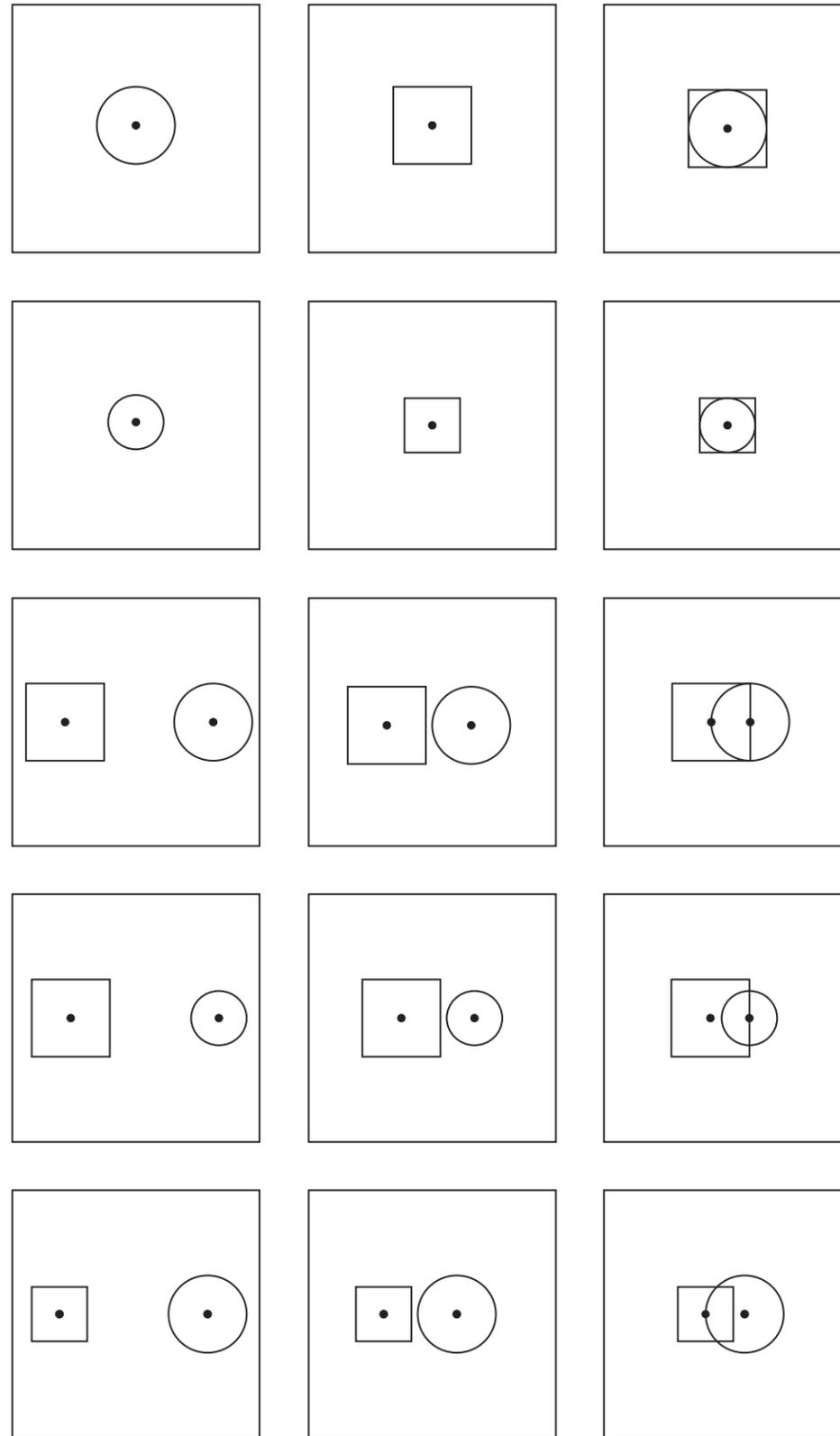


Present Project: Xix Memorial

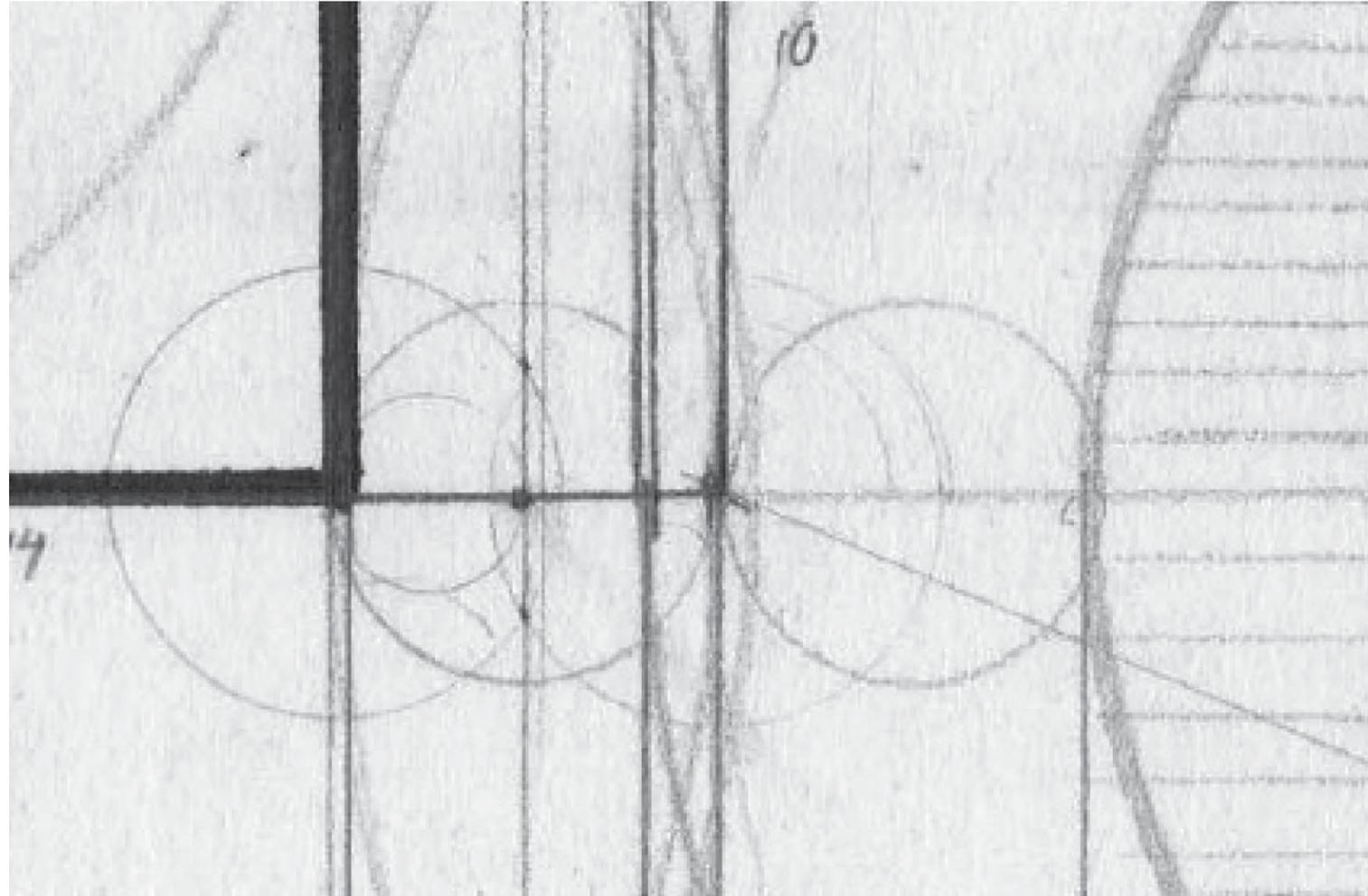
## Proximity and Proportion

The nineteen relationships scratch the surface of my study. Proximity and proportion stand out among the nineteen relationship because they are at the foundation of many other relationships. For example, rhythm in architecture is a product of proximity and proportion of one of object to another object or a set to a group. The interaction matrix produced in this study shows varying proportions and locations of the circle and square. The matrix developed out of the tendency of inscribing the existing rectangular memorial (figure below), due in-part to the want of the final form to be a derivation of the existing form. Using the matrix in the final form of the memorial was not a direct selection. The object of the center was also important to the study because it became the datum of translation of the plan to section in that it helps to measure the proximity and proportion of one object to another.

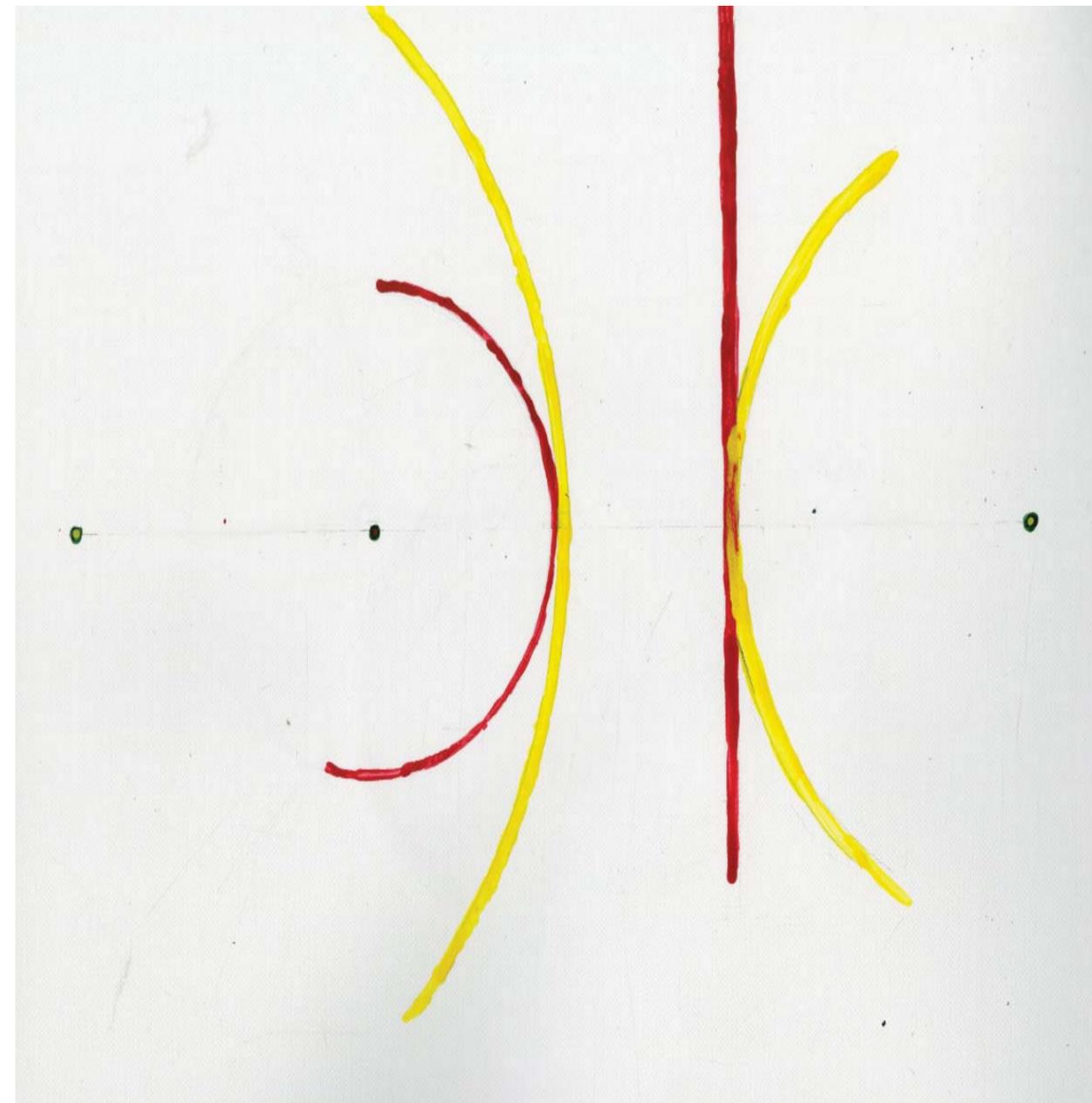
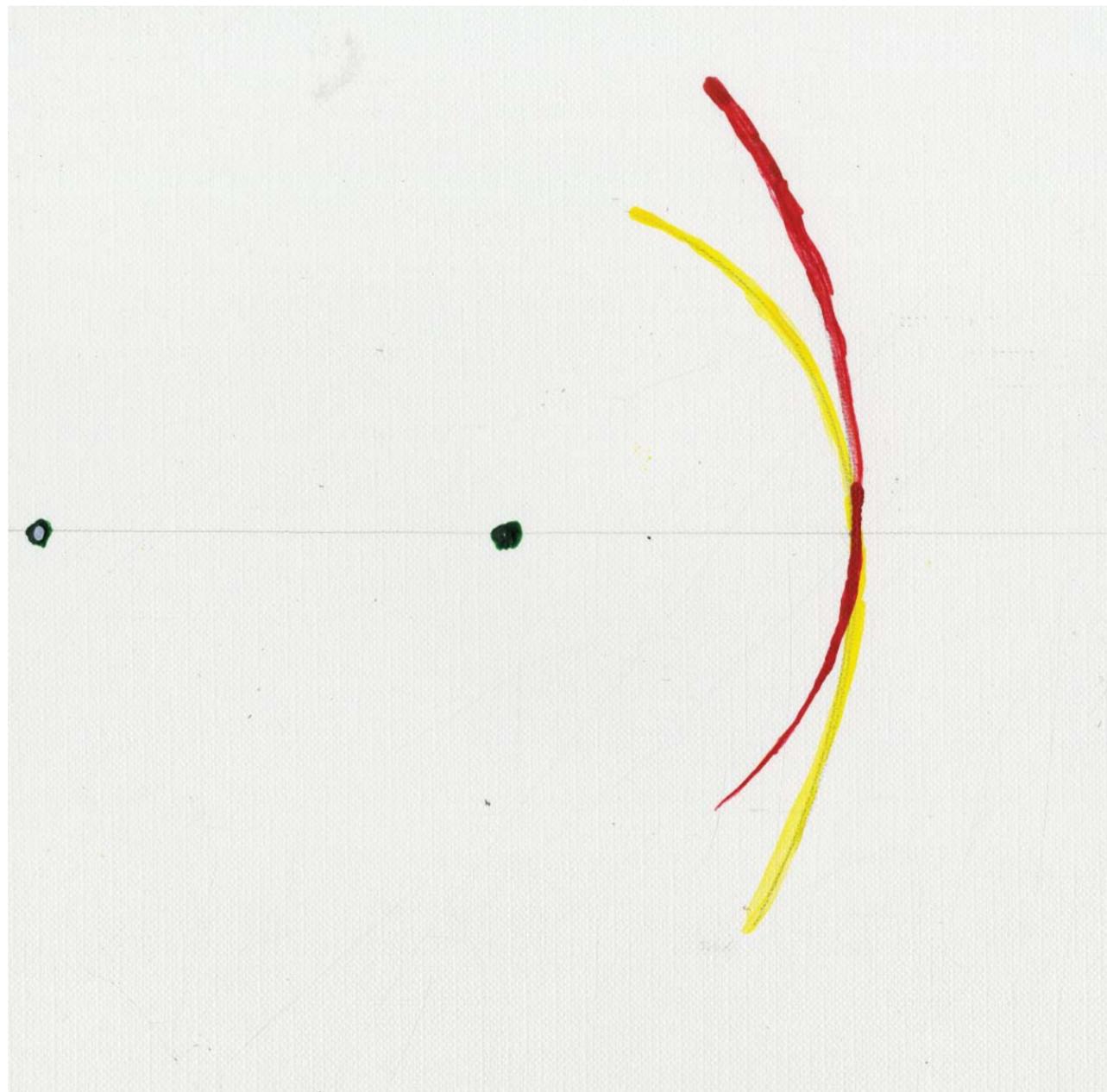




Interaction Matrix

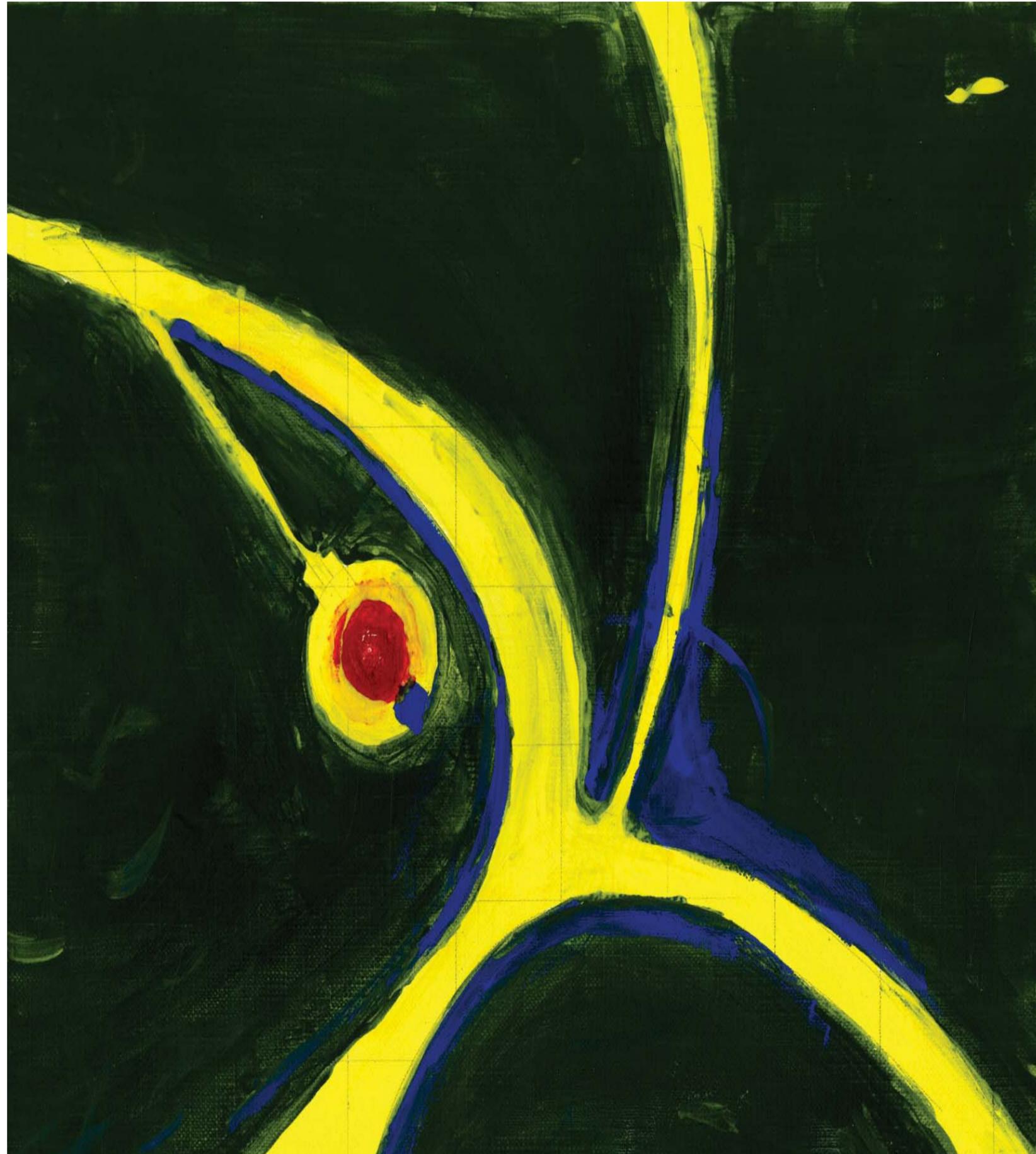


Constructed Investigation on the Intersection of the Circle and the Square



Proximity of Center to Intersection of Linear Plane and Curve





SITE: CIRCULAR PROXIMITY



View of CEFONMA from Xix's church (top), road and driveway into CEFONMA (bottom)



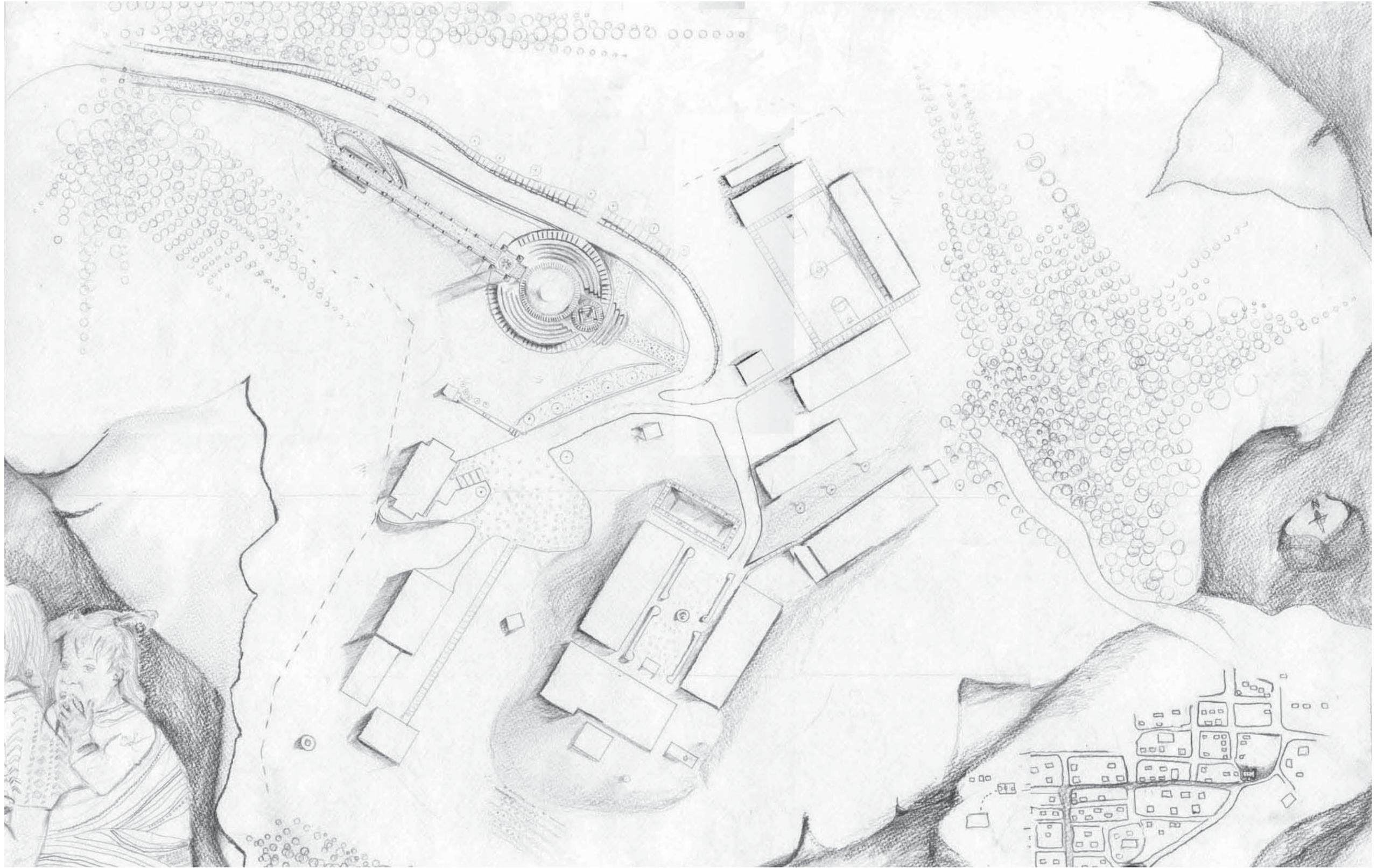
EN MEMORIA DE LOS MAS DE 113 MASACRADOS,  
ASESINADOS Y DESAPARECIDOS  
POR LOS QUE MURIERON POR HAMBRE, SED Y  
POR TODOS LOS QUE SUFREN AUN TRAUMAS  
PSICOLOGICOS DE LA POBLACION DE LA ALDEA XIX  
DURANTE EL CONFLICTO ARMADO  
DESDE EL 16 DE FEBRERO 1982 AL 29 DE DICIEMBRE 1996  
CIMENTOS DE EDUCACION HAYDEN MIGUEL STRICKLER FEB. 2005

The existing memorial is highlighted in yellow. The memorial plaque commemorates the 113 that were massacred, assassinated, or missing during the war. It can be seen that the existing stature is weathered and in need of a new shelter.

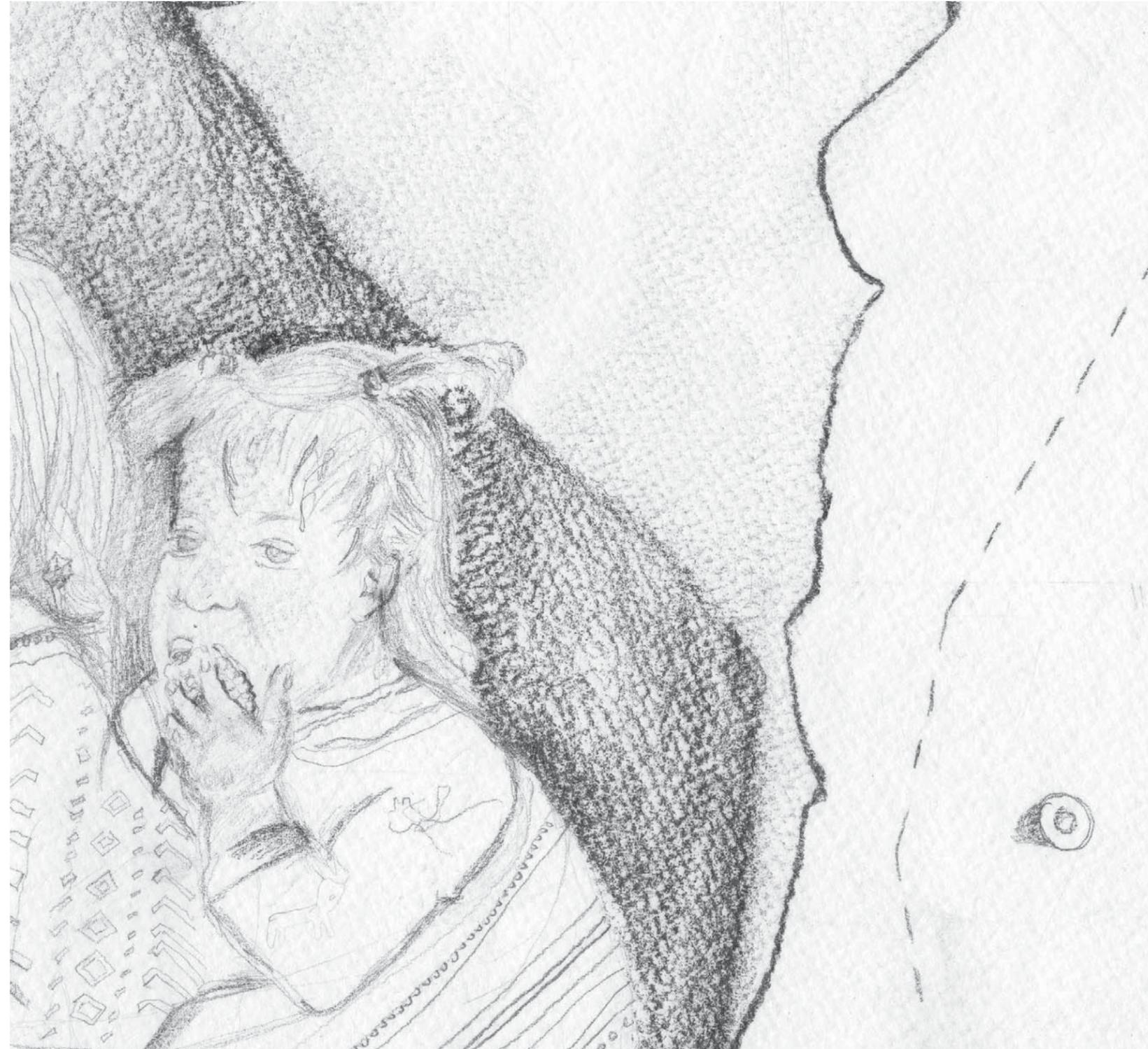


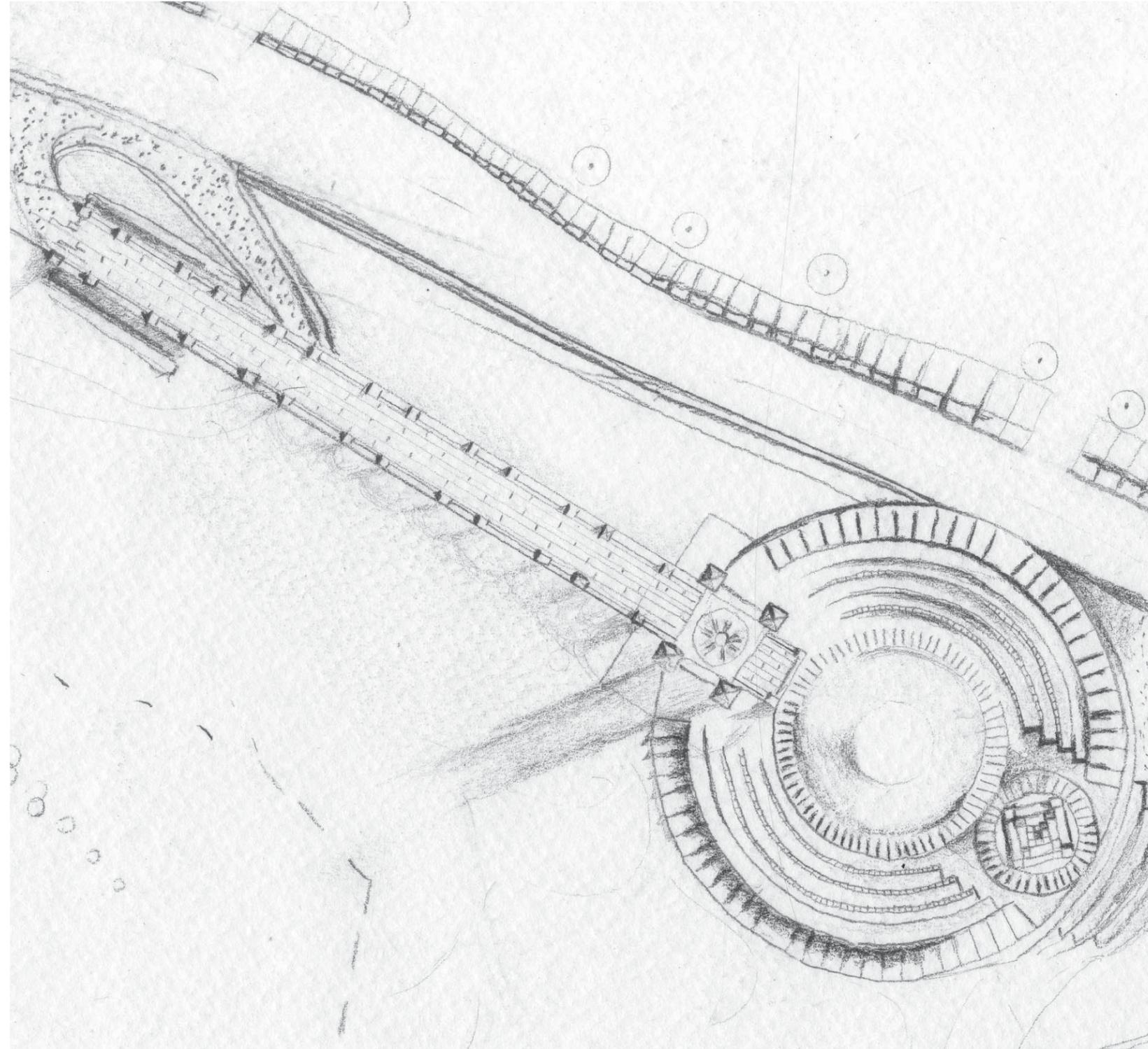


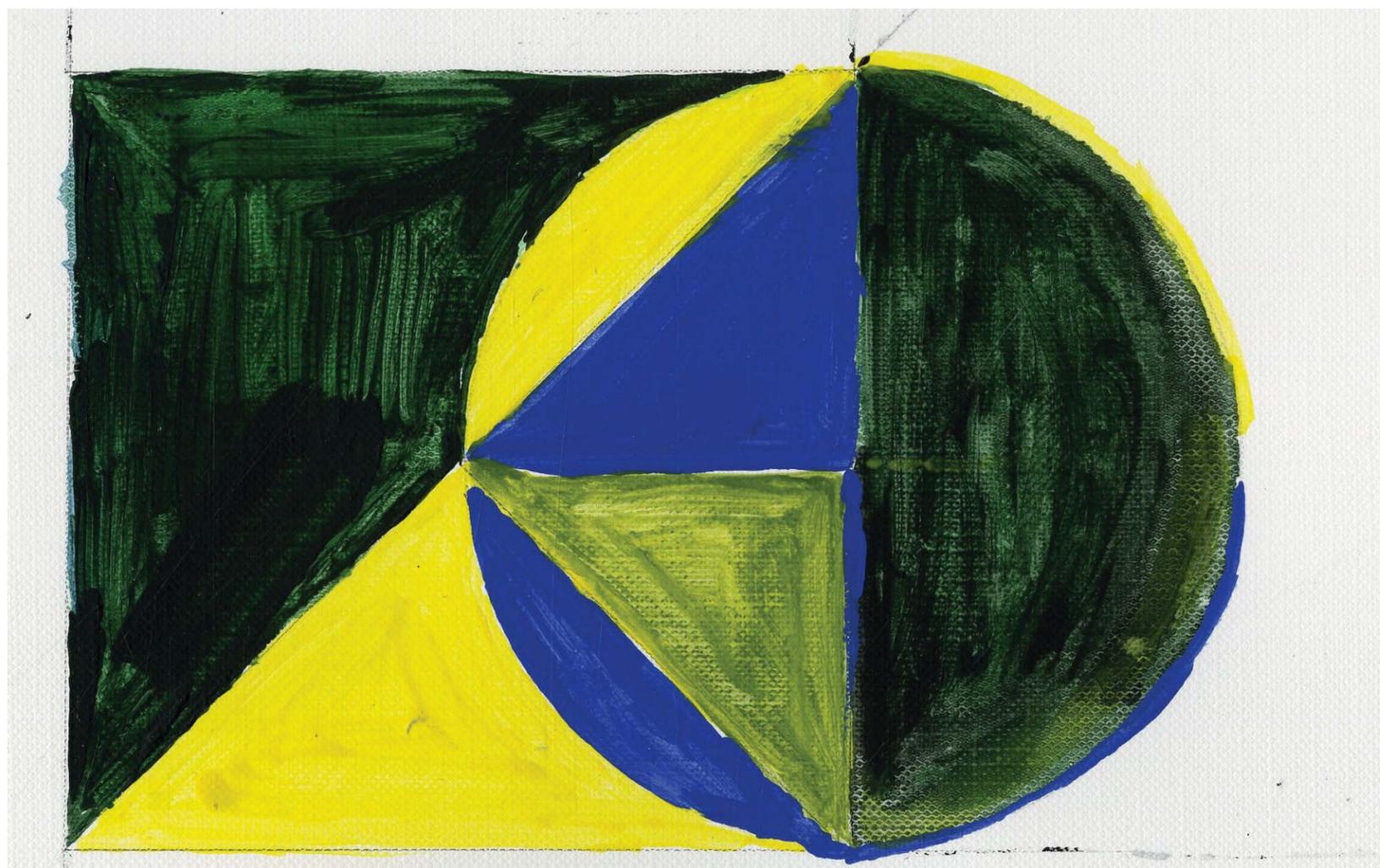
Proposed parade path into from Xix's church to CEFONMA campus



Proposed memorial site plan located at CEFONMA Campus

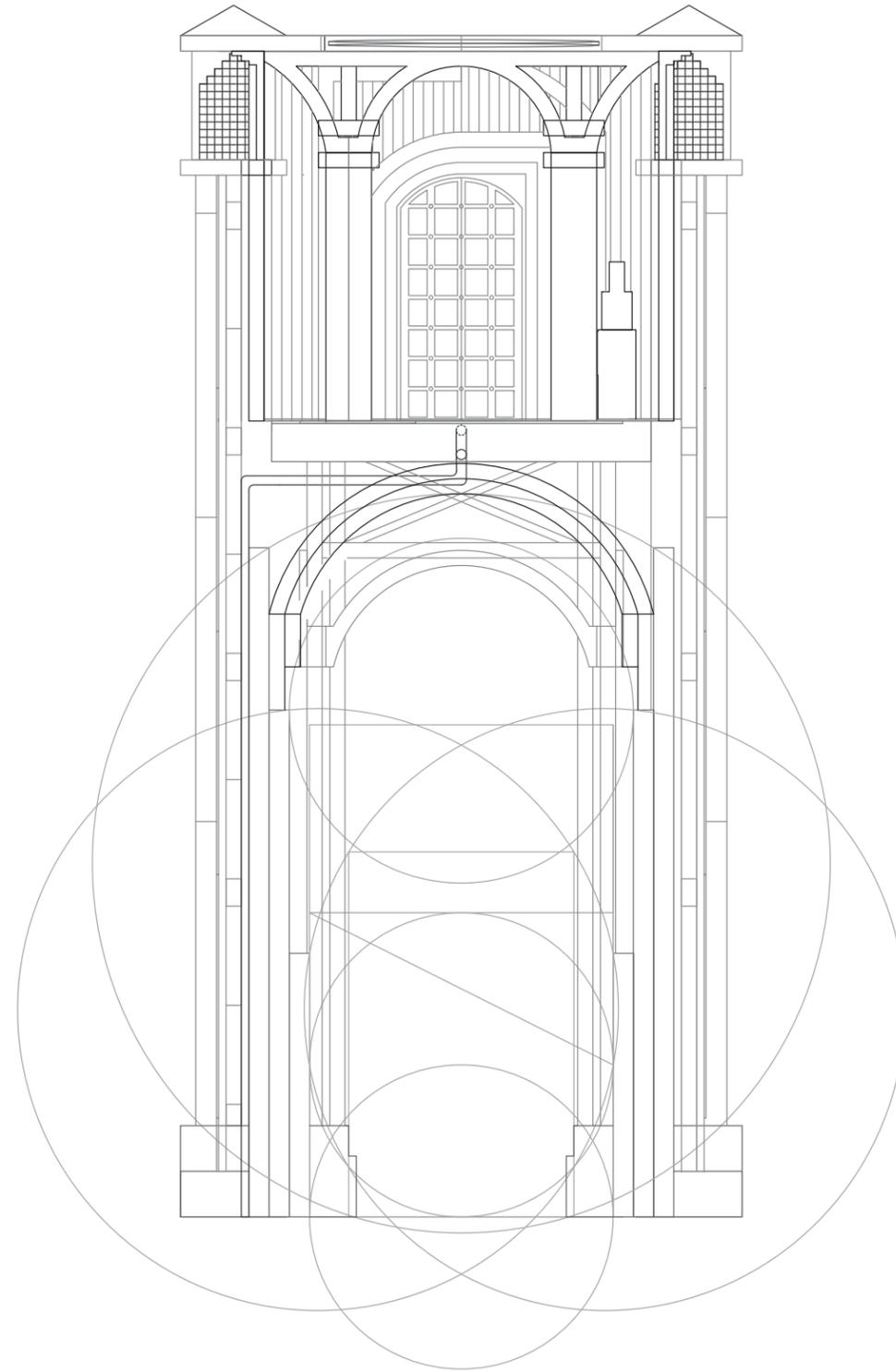




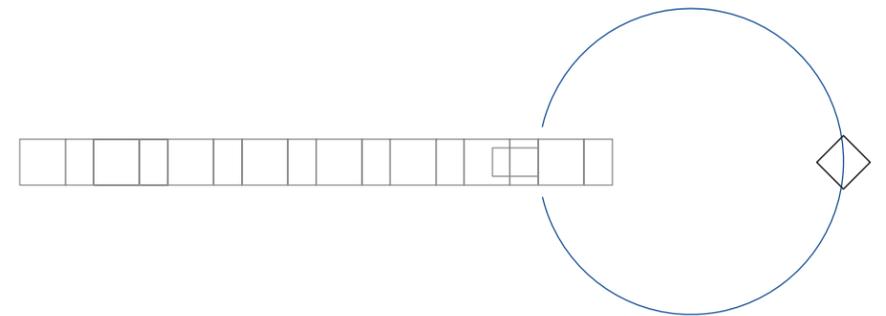
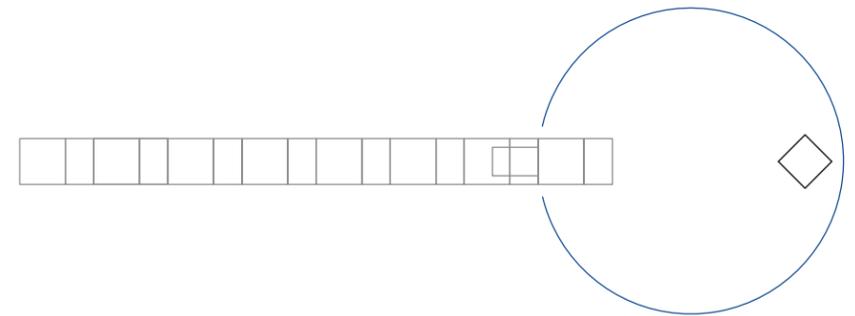
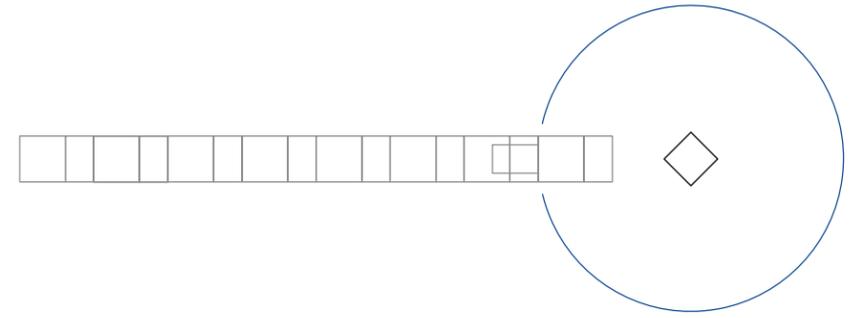
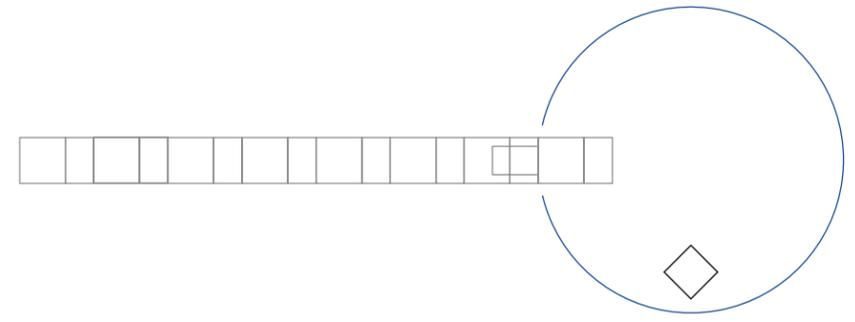
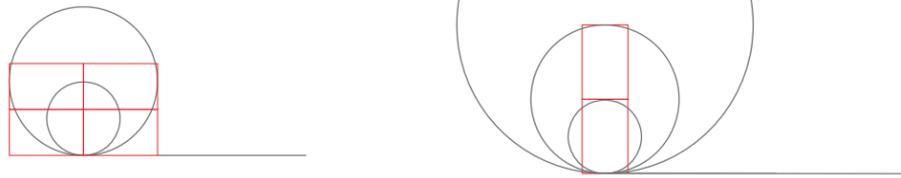
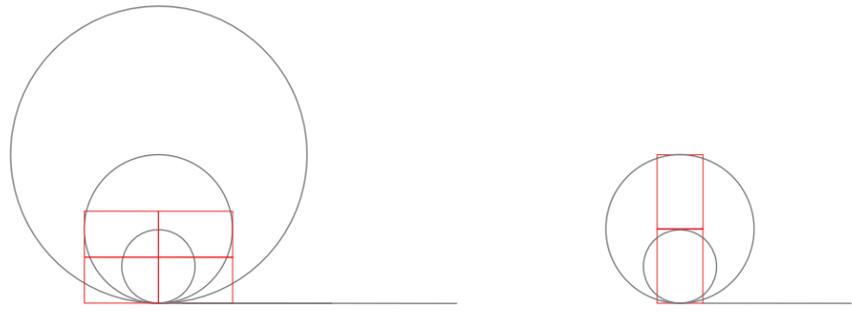
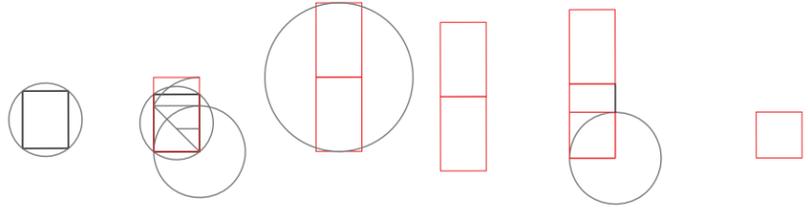




ELEVATIONS + SECTIONS: BOUNDARY OF PROPORTIONS

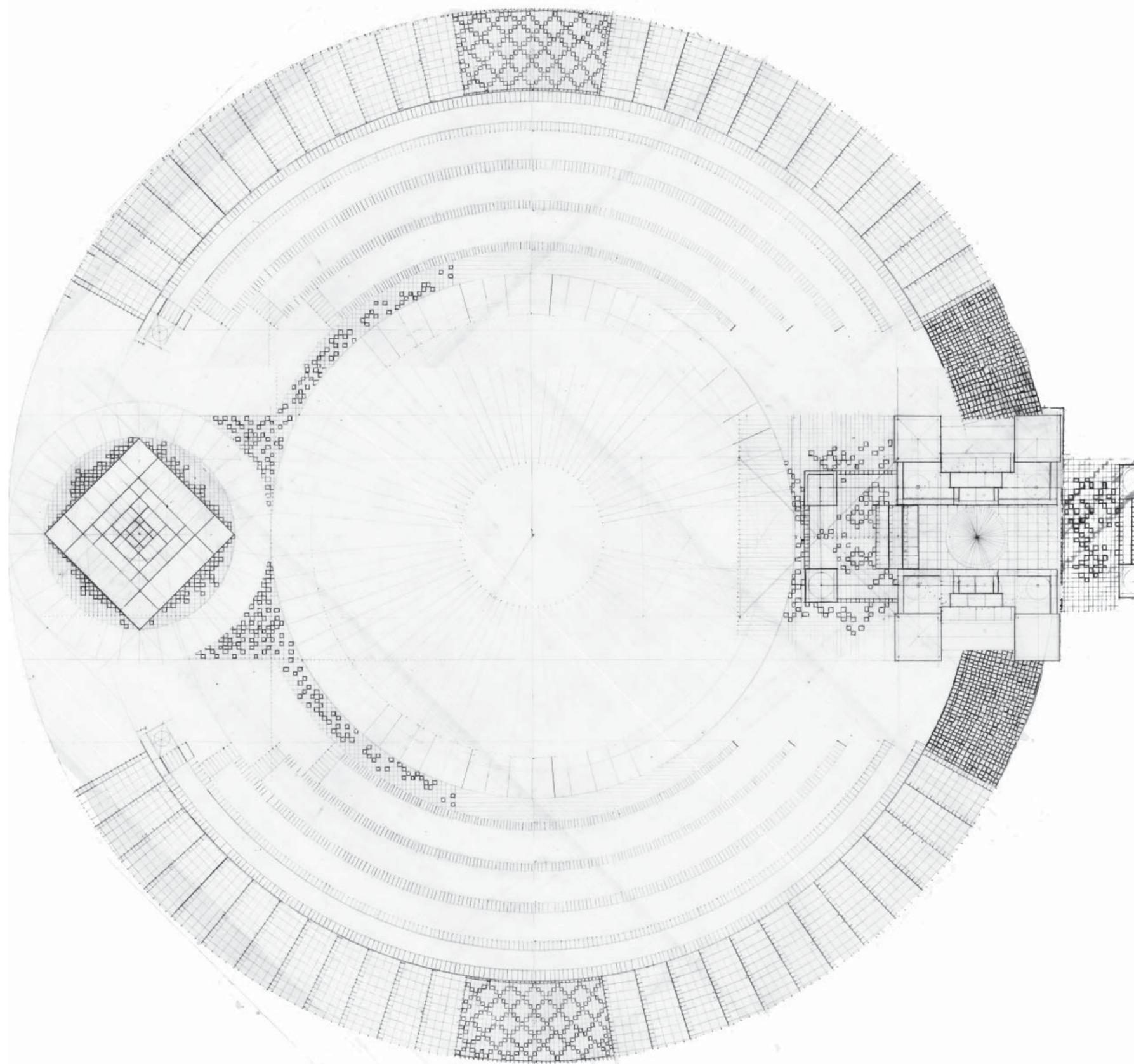


Constructing the Tower

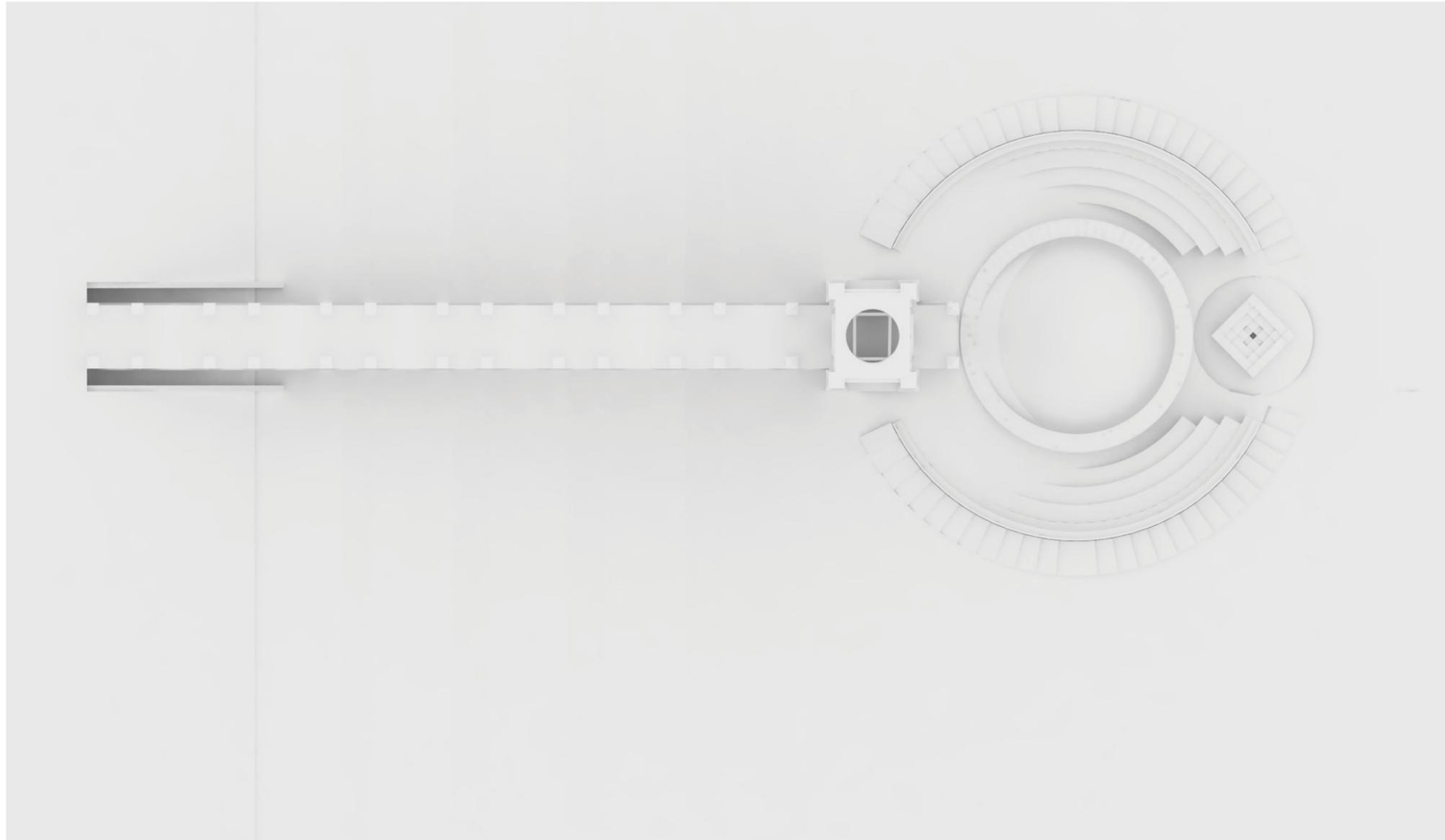


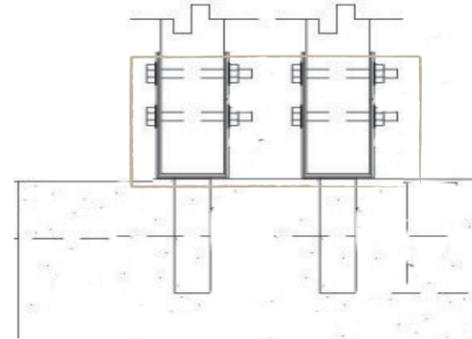
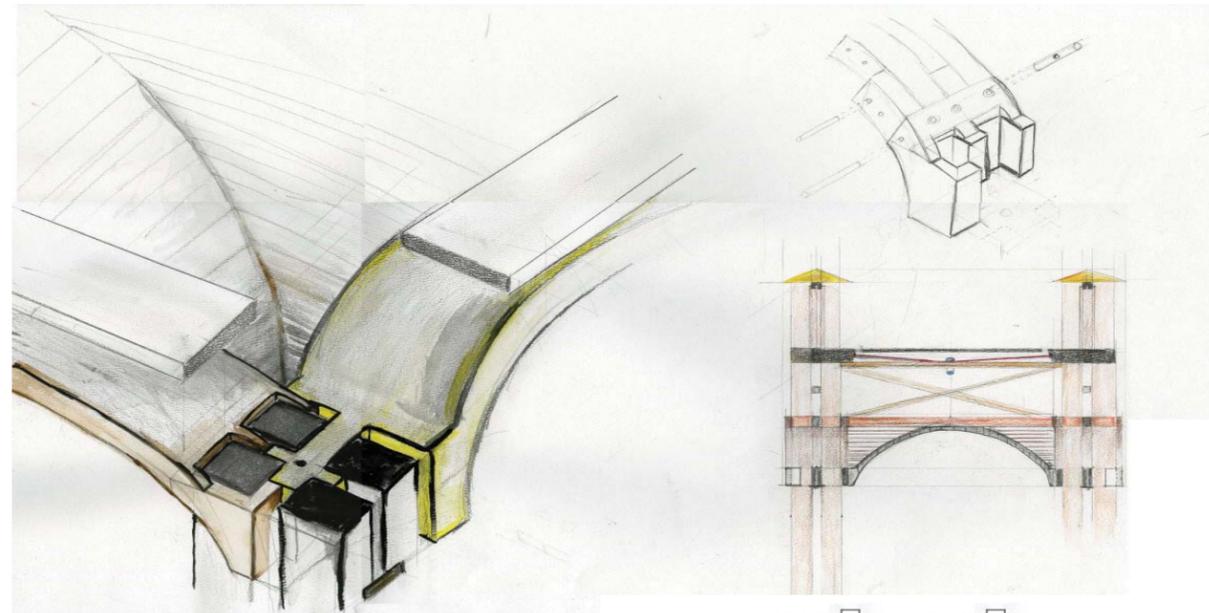
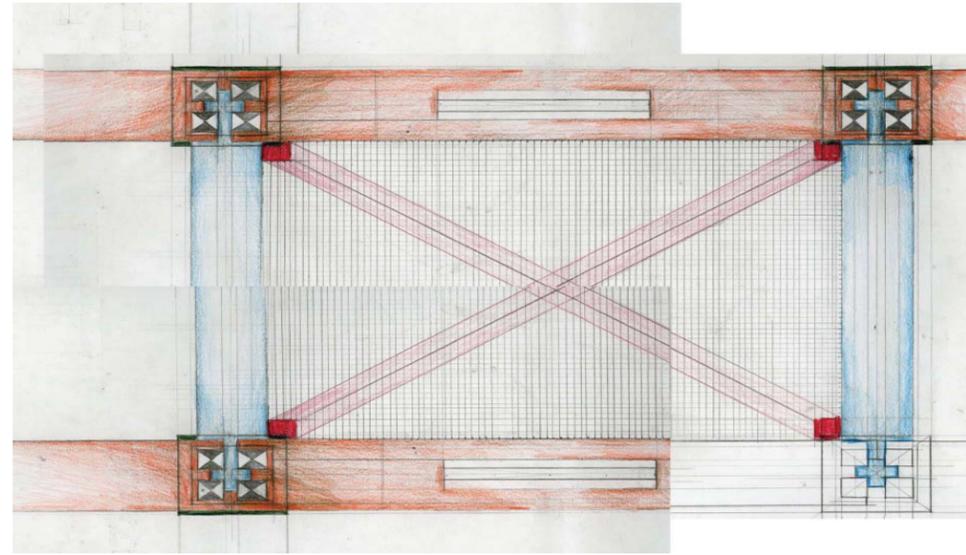
Entering the Circle through Tower: Studies on Constructing Tower Proportions in Elevation

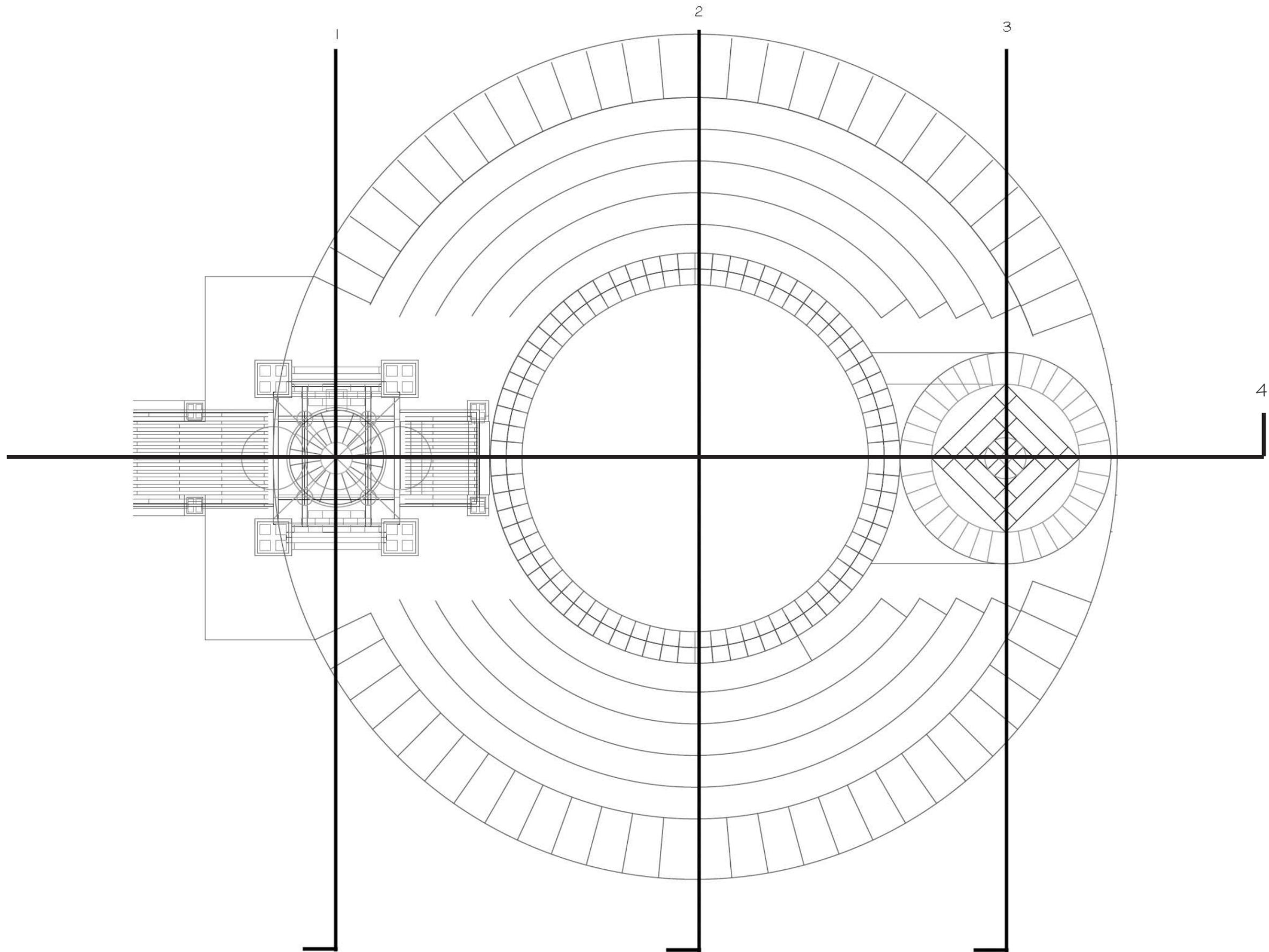
Ending the Circle with Fountain: Studies on Location of Memorial Fountain

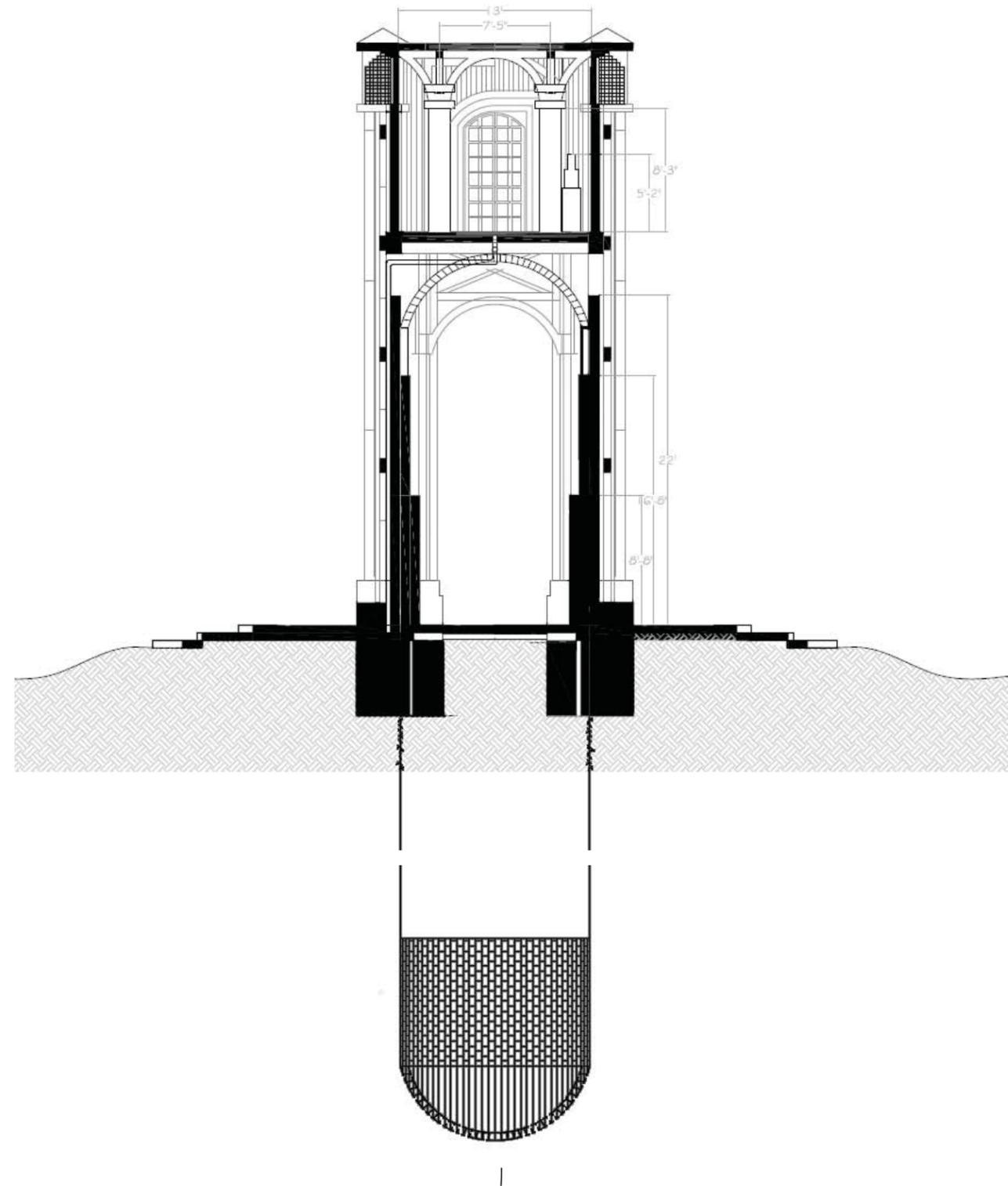


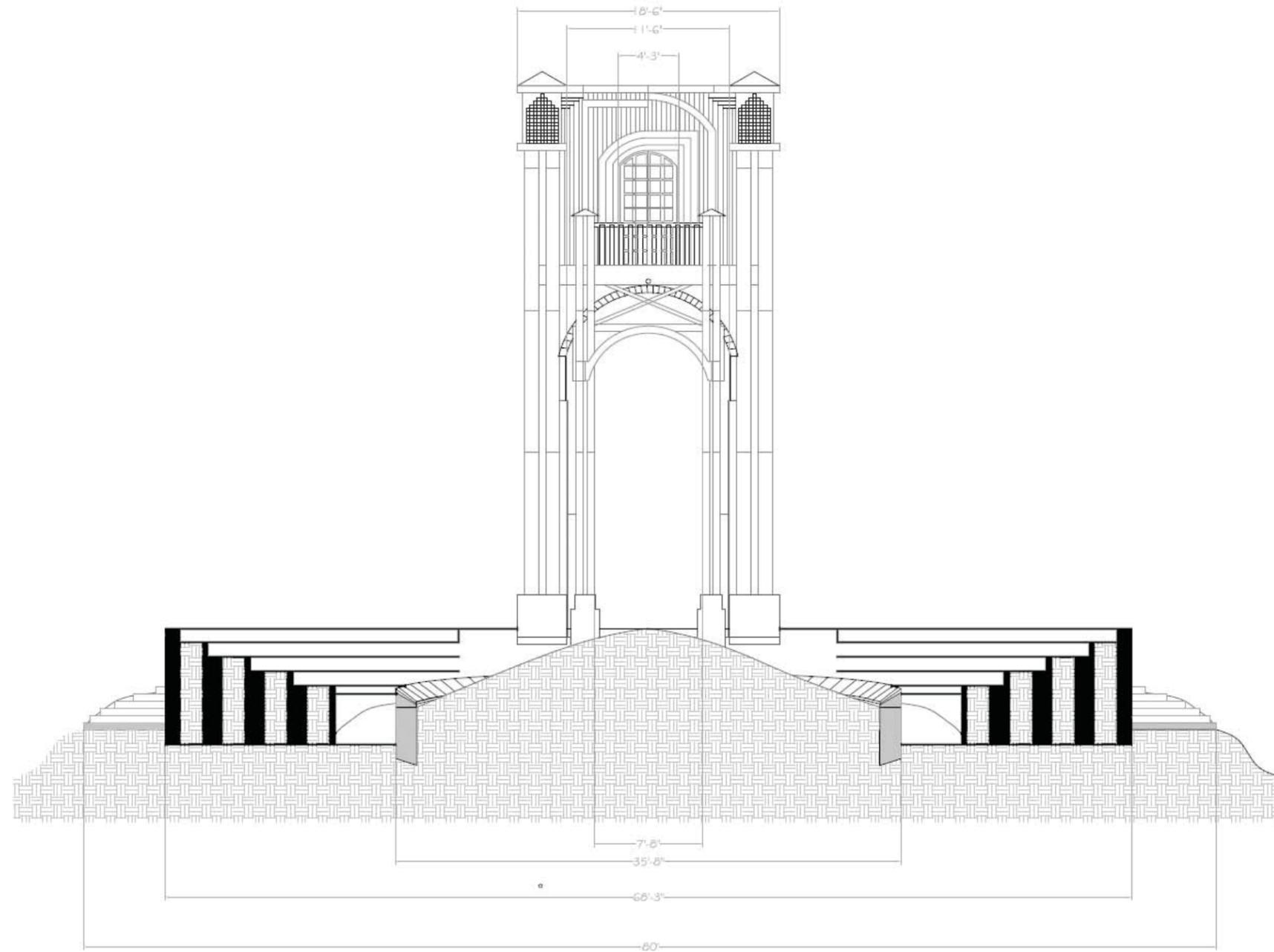
Floor Pattern Plan

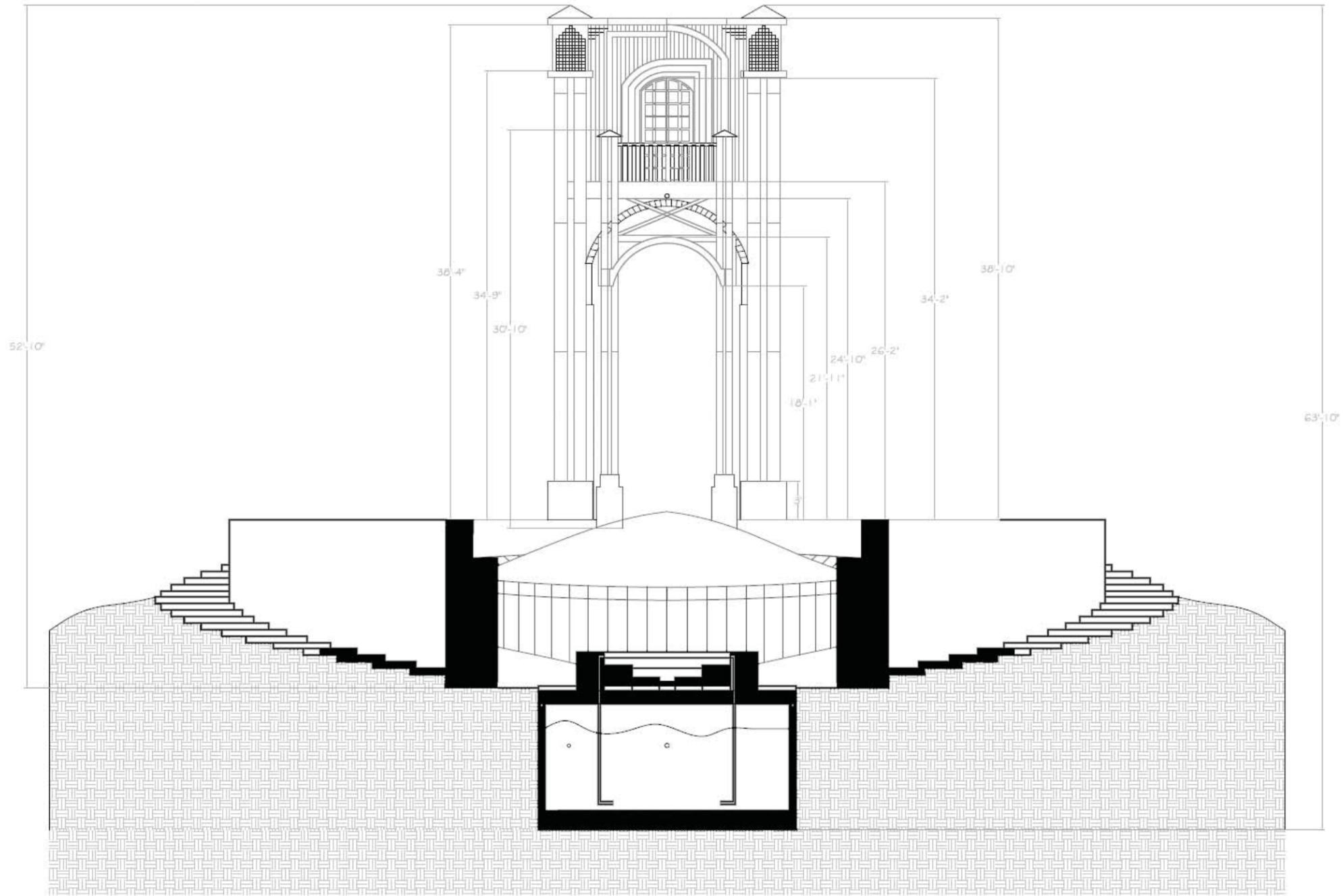


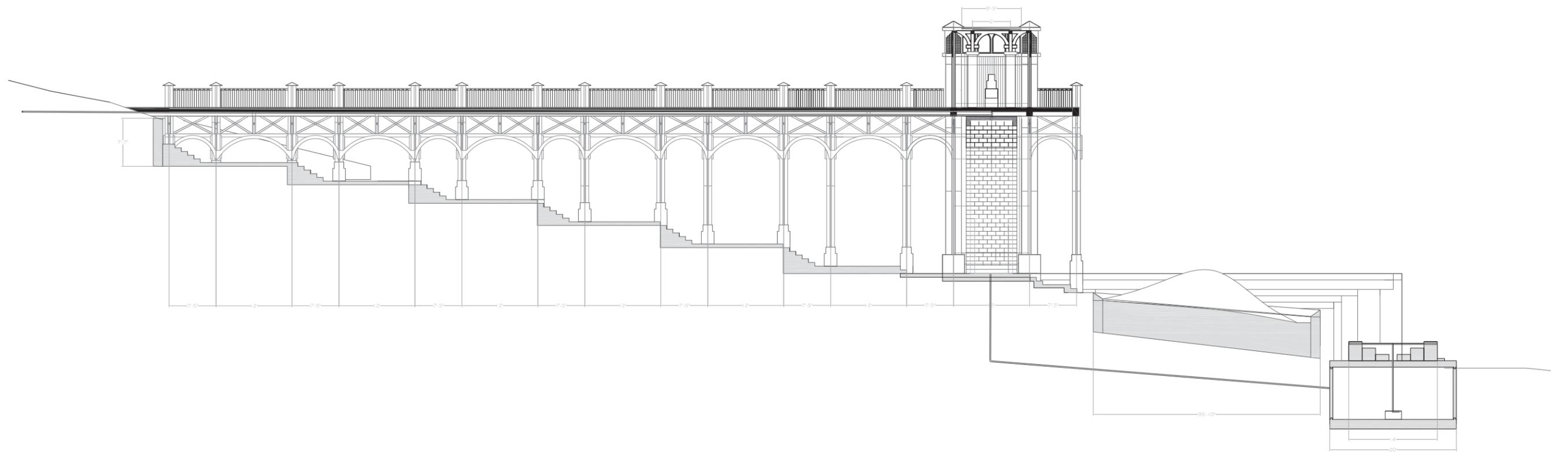


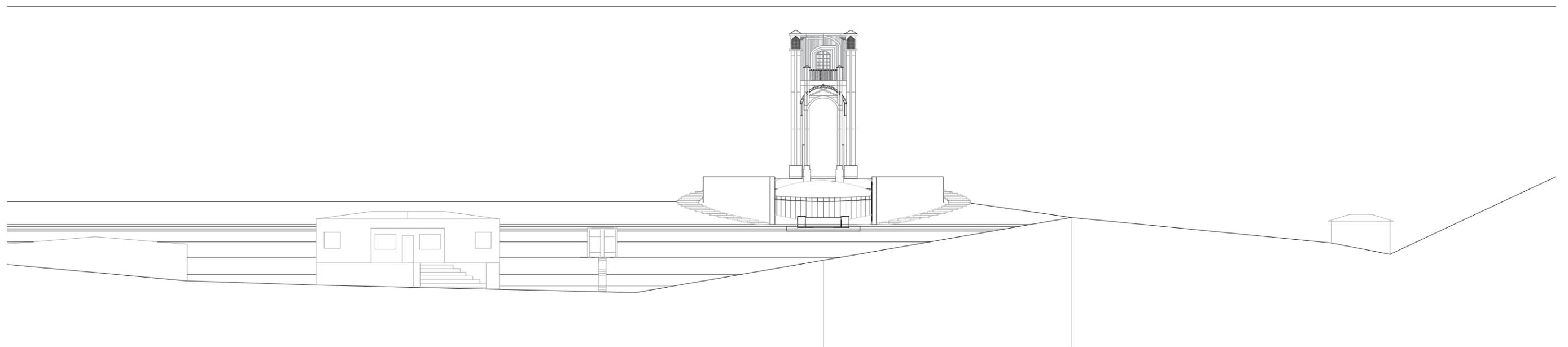








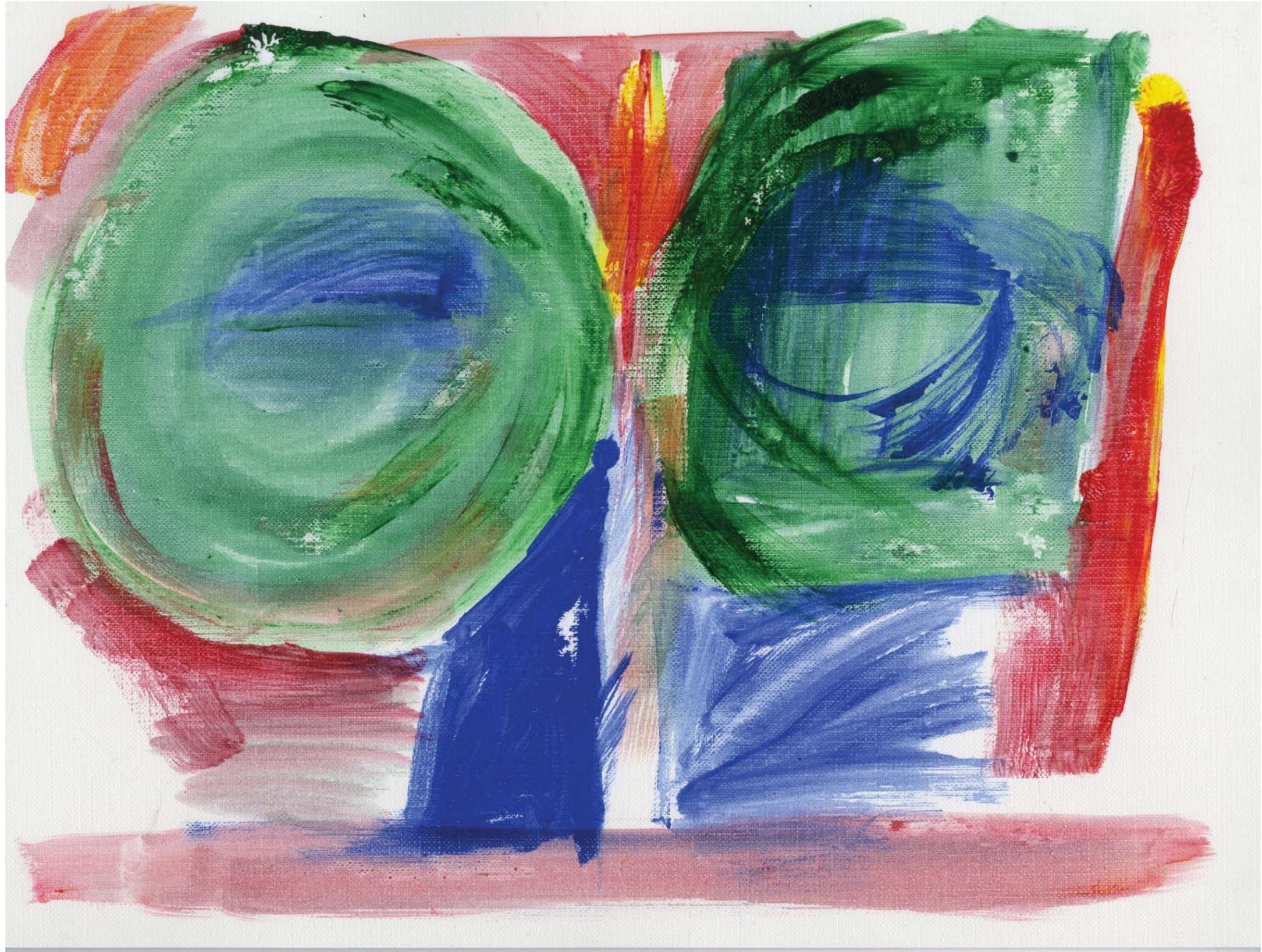


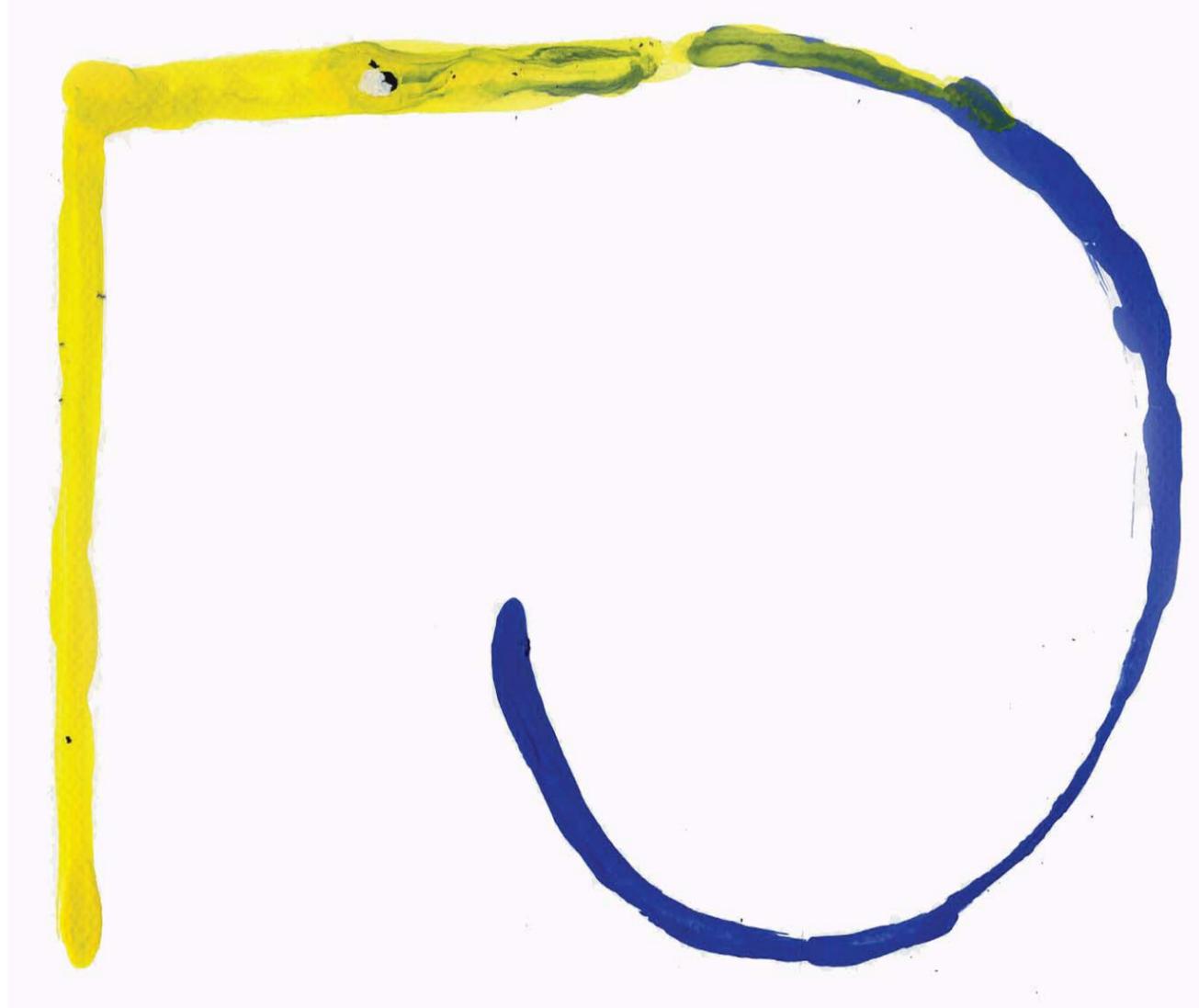


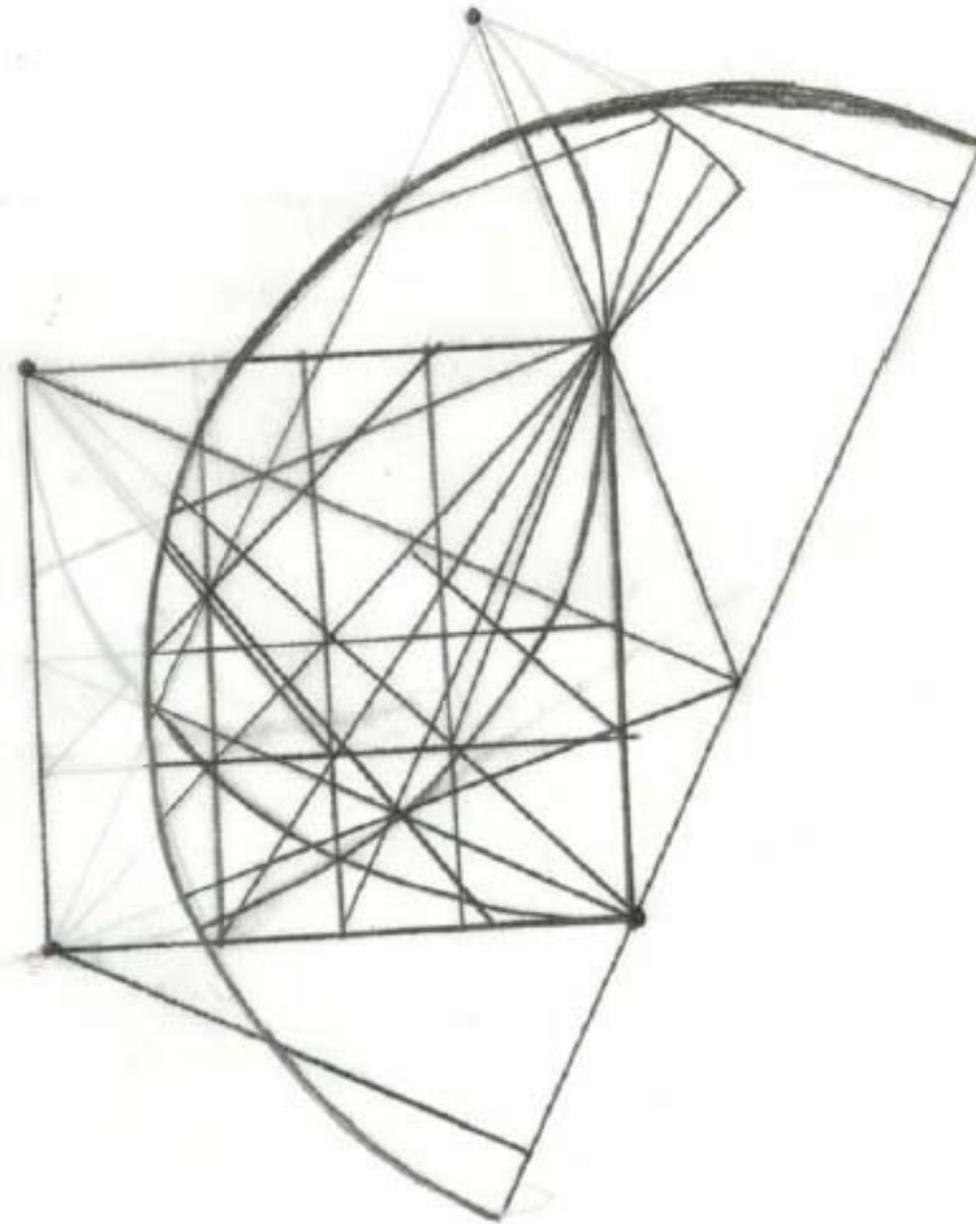
West to East Elevation



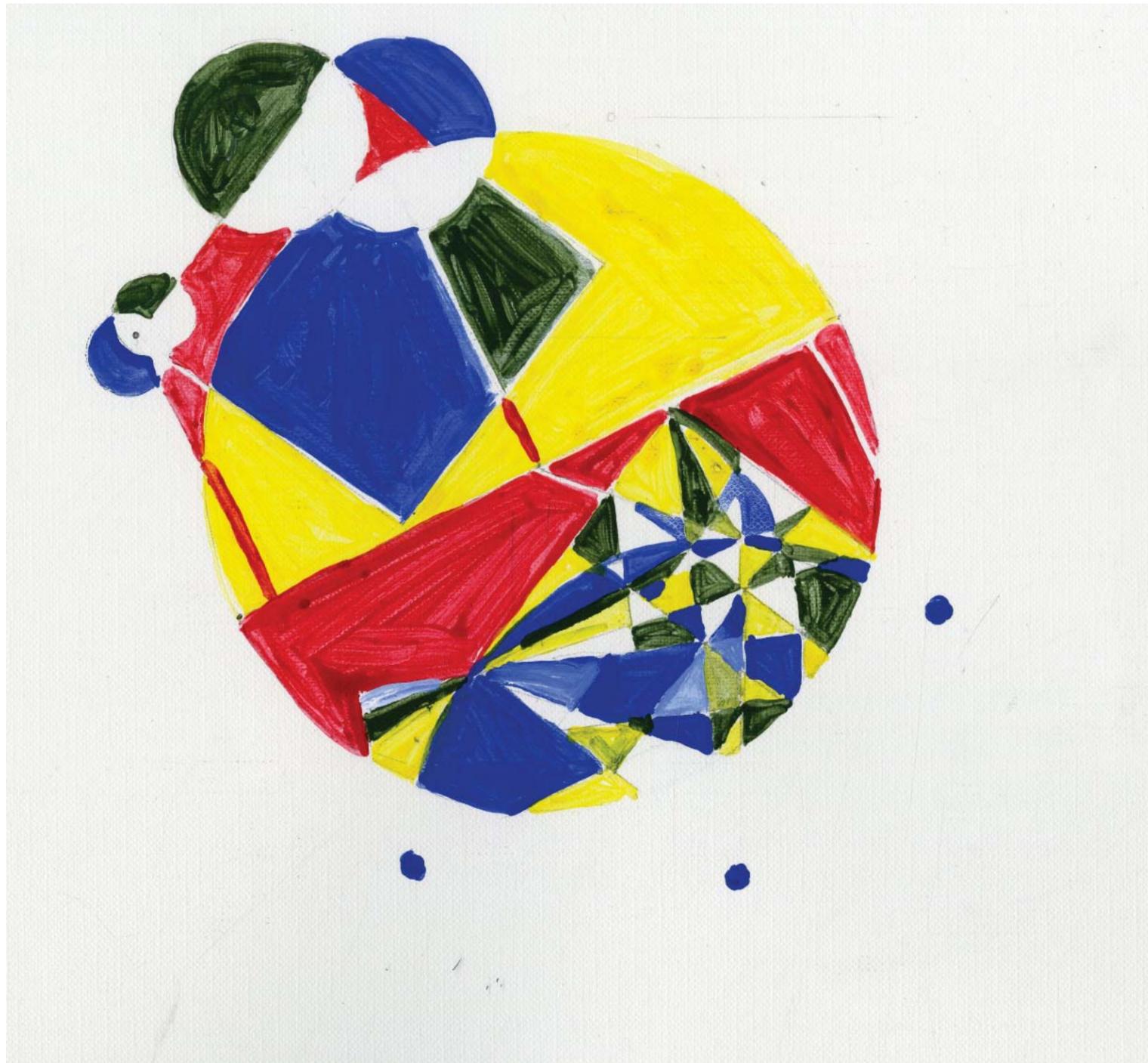
North to South Elevation







Geometric Exercise of Squaring the Circle

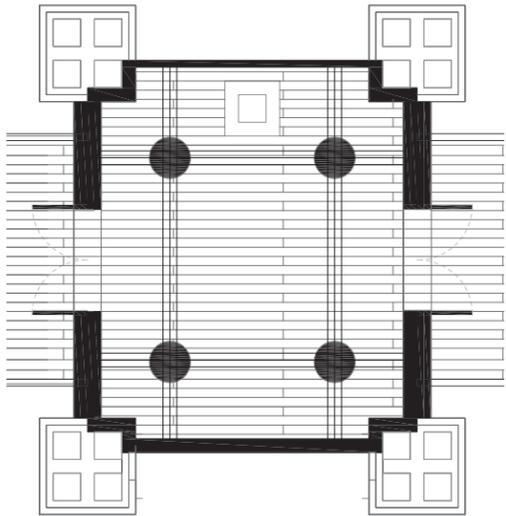


Deconstruction of Geometric Exercise



Memorial Room

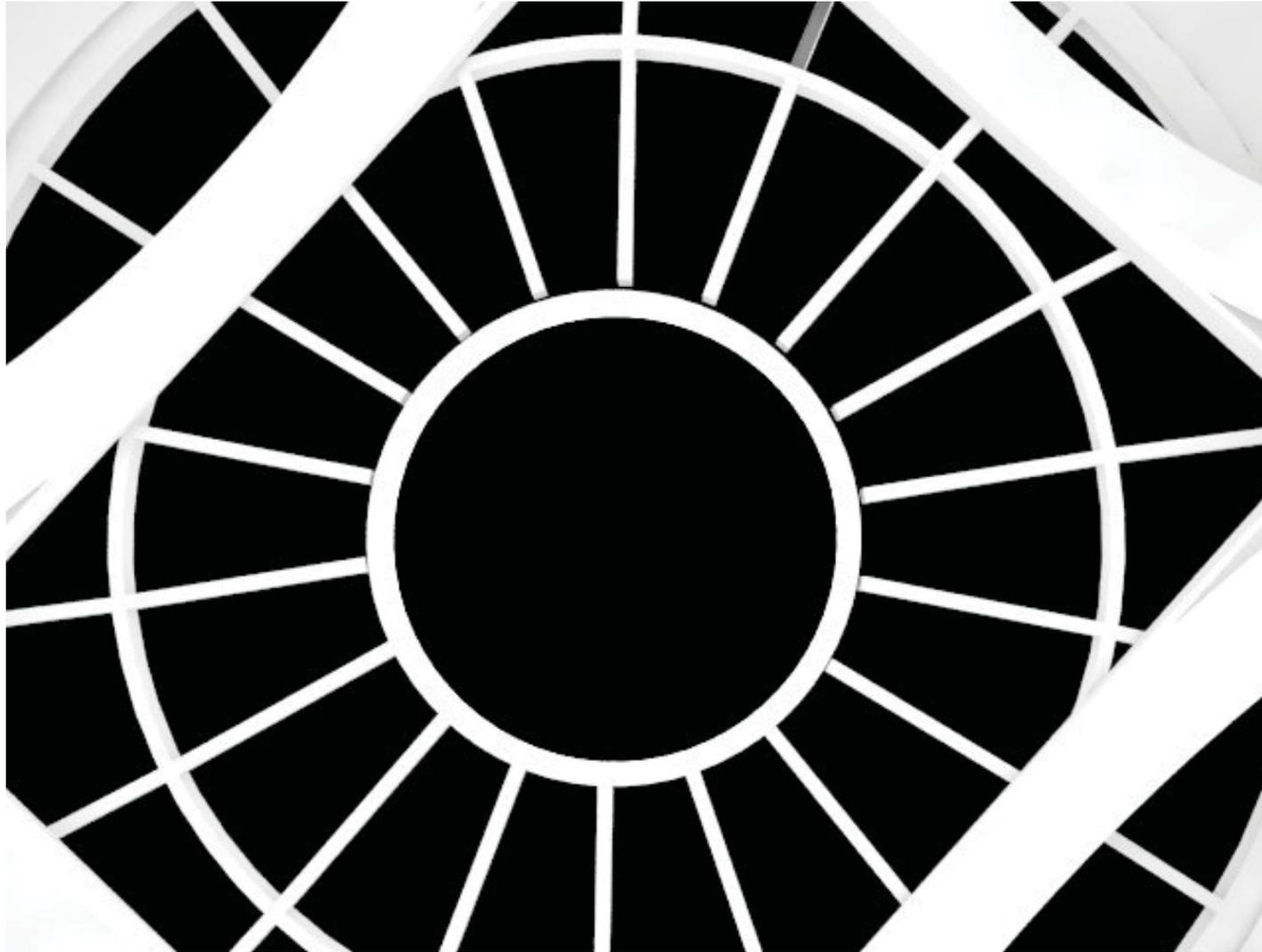




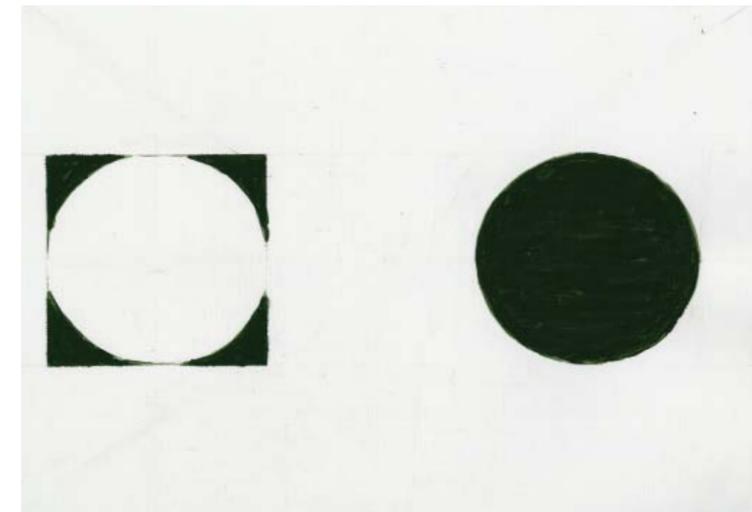
Memorial Room Plan



Interior Memorial Room Sketch



Memorial Room Skylight



Squaring the circle, Creating a room

They [memorials] remind us of something that should never be forgotten. They have a special significance that represents something that has happened and should never be left in the past. I like them not because of the way they look but because of what they represent.

-Jose Ixtup CEFONMA School Director

IMAGE CREDITS: All photos, unless noted otherwise, were taken by author or Engineers Without Borders Virginia Tech Members who have granted use to author of all photos. All illustrations, paintings, and computer renderings were completed by author.

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*“For even the Son of Man came not to be served but to serve”(Mark 10:45)*