

# A Series of Questions, a Joining of Parts

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## Academic Abstract

“Throughout all phases of society the hearth formed that sacred focus around which the whole took order and shape. It is the first and most important, the moral element of architecture. Around it were grouped the three other elements: the roof, the enclosure, and the mound, the protecting negations or defenders of the Hearth’s flame against the three hostile elements of nature” (Semper 102)

This reading, *The Four Elements of Architecture* by Gottfried Semper, and this quote were the origin of my thesis, which became a series of studies of these elements as parts and their relations to one another. Through mechanical investigative drawings I explored the traits and qualities assigned to these elements by Semper and developed my own understanding of them.

Each element has a tectonic quality and architectural characteristic that defines it. The tectonic quality is “different technical skills of man used to construct the elements: ceramics and afterwards metal work around the hearth, water and masonry works around the mound, carpentry around the roof and its accessories... Wickerwork was the essence of the wall” (Semper 103-104). The mound forms the base of the building connecting it to the hearth, and also joins to the hearth and raises it. The roof as a dominant element protects from above. The wall is a spatial enclosure that forms the protected space. The hearth is the central and social element of the building, protected from nature by the other elements.

In addition to an investigation of each of the elements, I also had an interest in constructing a building informed by these investigations, forming a place of gathering that focused around the hearth. How would the protective elements form and appear in space, and how would the hearth form the place around it.

The wall, defined as woven and enclosing, led to a series of questions regarding its form, material, and connection to the other elements. Semper’s understanding of woven extends to being a dressed wall or a wall of a pattern of parts, such as brick or wood. How can variation of size, depth, and material be used to form patterns in a wall? How do hierarchies of panels, verticality, and horizontality differ from one another? How can the wall connect to the mound and emphasize the existing character of the building?

The roof, defined as dominant and of carpentry, led to a series of questions regarding frames and joints. My main interest in the roof was its structure, and the interior spatial quality it provided. How can the joint and the frame inform one another? What are the qualities of trusses? What are different types of joints and how do they display themselves? How do joints form a truss and the truss form a frame?

The mound, defined as earthen and meeting, was investigated in conjunction with other elements. It forms the base that protects the hearth from the earth and acts as a base to the other elements. Its original use as a structural base for houses in marsh lands is no longer prevalent and its role lessened. Semper understood this evolution, “some elements [become] more developed while others [recede] into the background” (Semper 103).

The hearth, defined as central and of worked metal, led to a series of questions regarding material, form, and relation to its surroundings. The hearth acts as a single focus that forms areas of repose protected by the other elements from nature. How should it connect to the roof and the floor? Benefits of a hanging hearth versus traditional? How can it act as more by storing wood and the other tools it needs to be worked? How can it relate to other elements through material and form?

As Semper stated, “some elements [become] more developed” and I found some of these progressions through my studies. One of these developments is the hearth creating areas of transition in the interior and the need to connect this transitioning to the exterior. The frame of the hearth is repeated as a threshold, forming an area of transition between the exterior and the interior. Another development is the roof and the chimney belonging to the sky. As the mound recedes from importance, the sky and its connection to the roof develops further.

These boards each developed from a series of questions, and led to further questions. They ask about the part and then about the part in relation to other parts. Each question can stand on its own, but it is only when you keep asking questions that you begin to find something. Each part is its own, but when formed together it creates something new. And that was my thesis, a series of questions and the joining of parts.

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## General Abstract

This thesis is an exploration of method demonstrated in a series of mechanical drawings of the elements. An investigation of methods of drawing and of how different questions can be asked through drawing.

Furthermore, this thesis asks the question of place in the elements of fire, earth, and sky in the formal relationship between walls, joints, trusses. These architectural elements protect against the natural ones, forming place focused around the hearth.

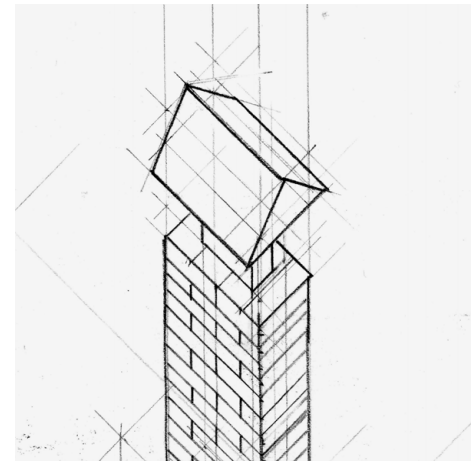
This thesis traces the formal relationship between the elements of architecture stemming from the German thinker Gottfried Semper's treatise on architecture, but diverges from Semper's fixation with materiality and delves into questions of form, appearance, and construction through drawing.

The drawings address questions about the elements; questions about form, tectonics, and the relation of part to whole. The whole becomes a building focused on forming a place and the relation of the elements to one another.

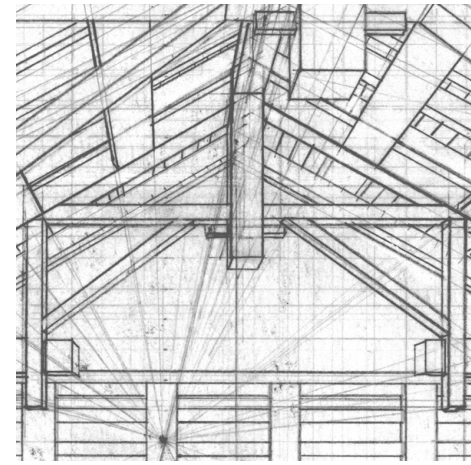
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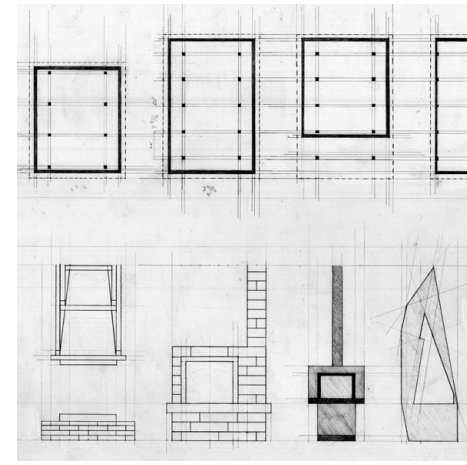
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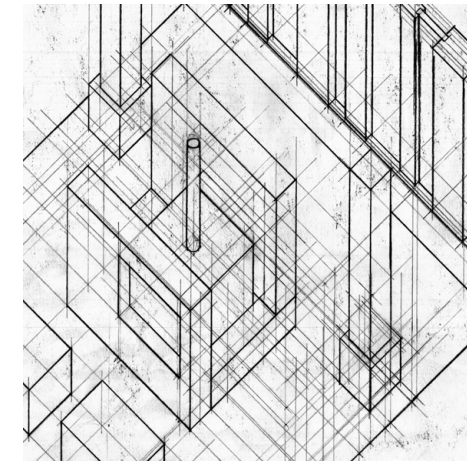
1. The Hearth



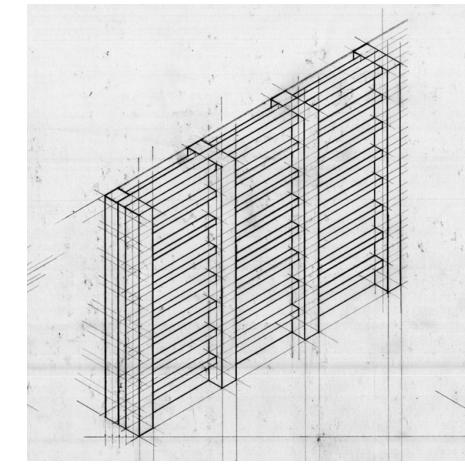
2. Imagined Place



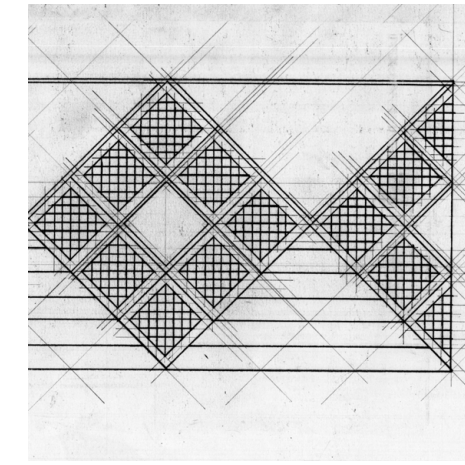
3. Variations of Hearth and Repose



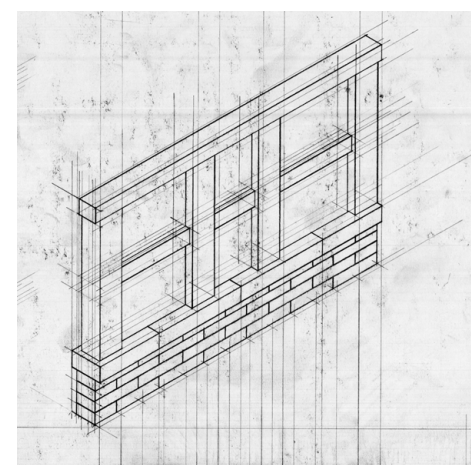
4. Defined Place



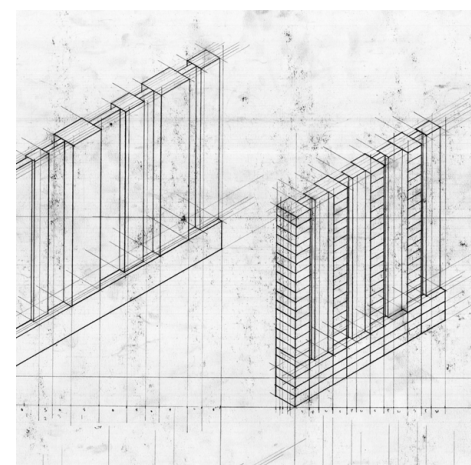
5. The Woven Wall



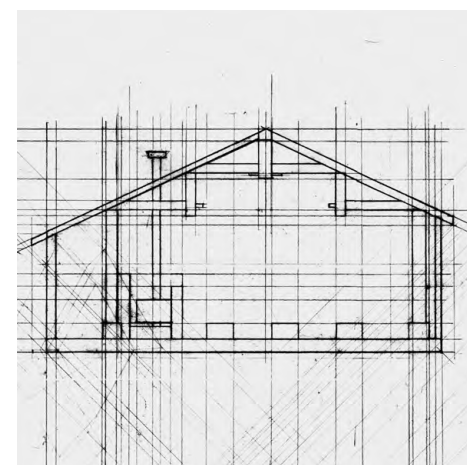
6. The Panel Wall



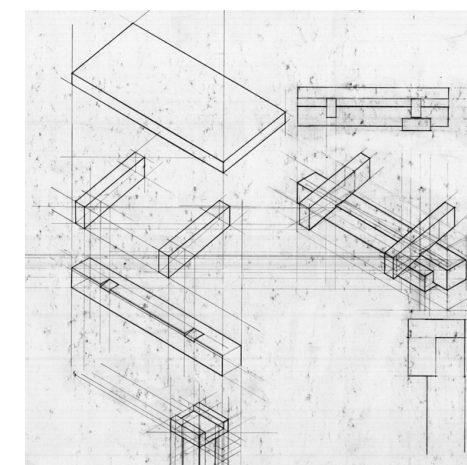
7. The Polycarbonate Wall



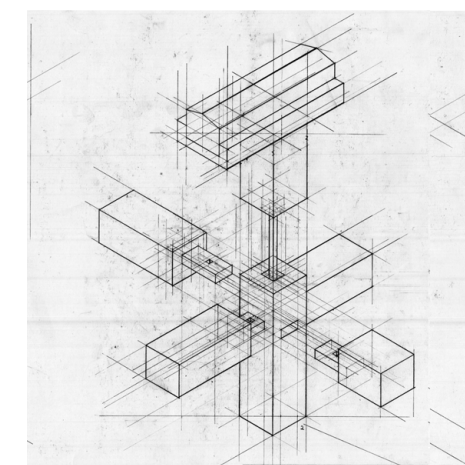
8. The Mound Wall



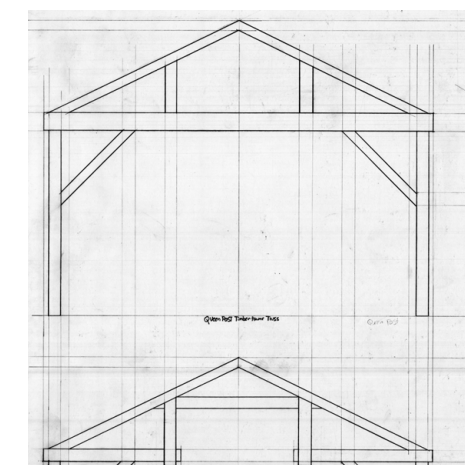
9. Frame and Wall



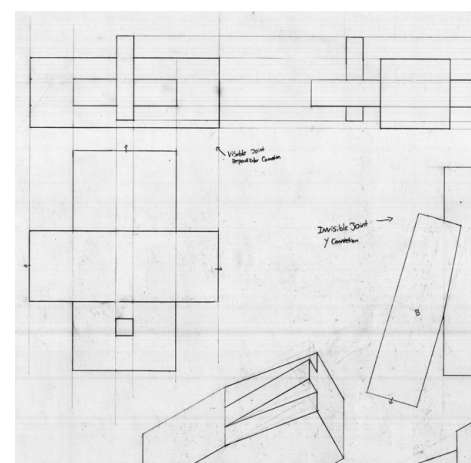
10. Joints From a Truss



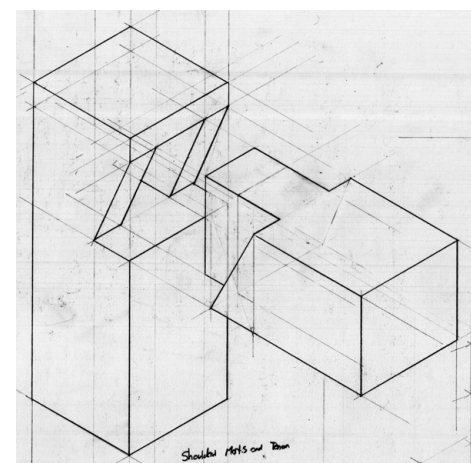
11. A Truss from Joints



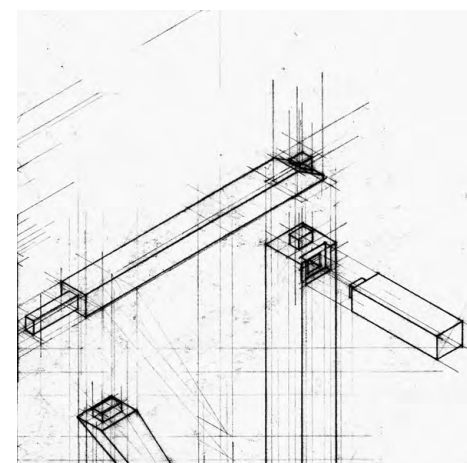
12. Standard Trusses



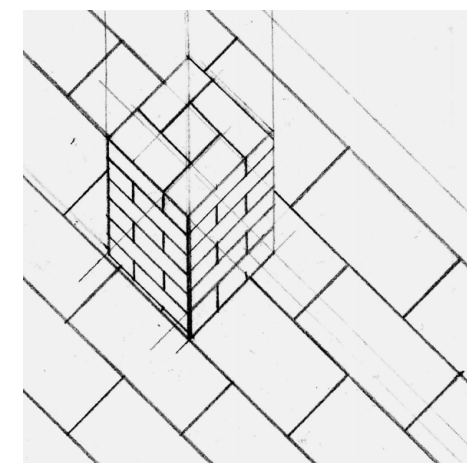
13. Prevalence of a Joint



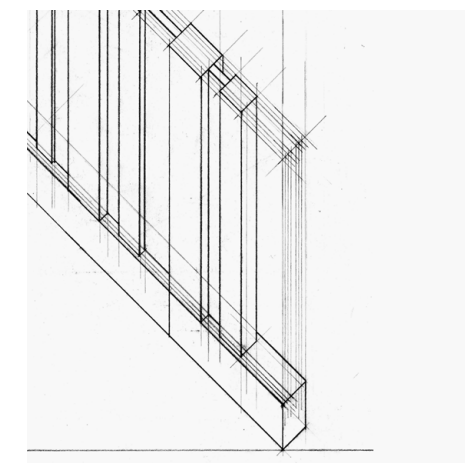
14. Truss Joints



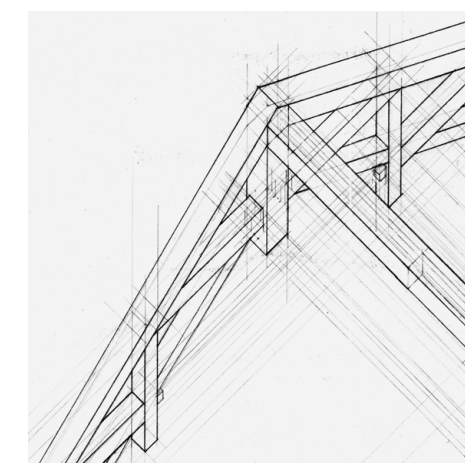
15. Frame in Joints, Truss, & Axon



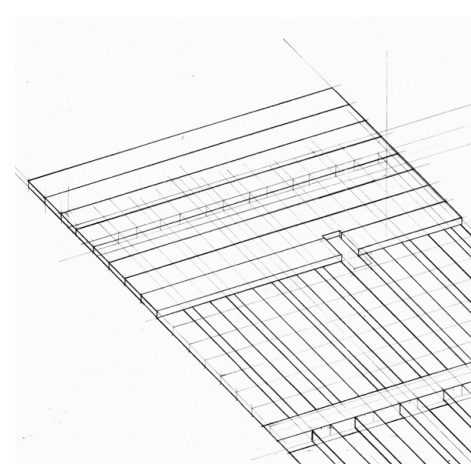
16. The Mound



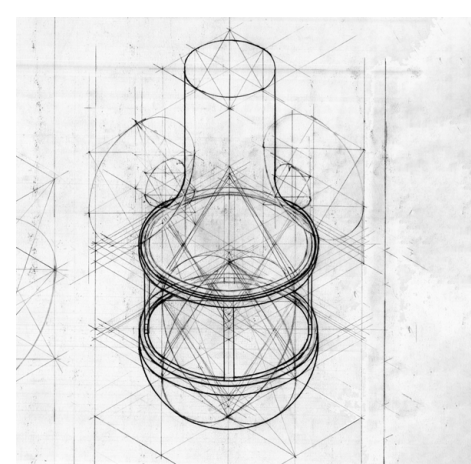
16. The Wall



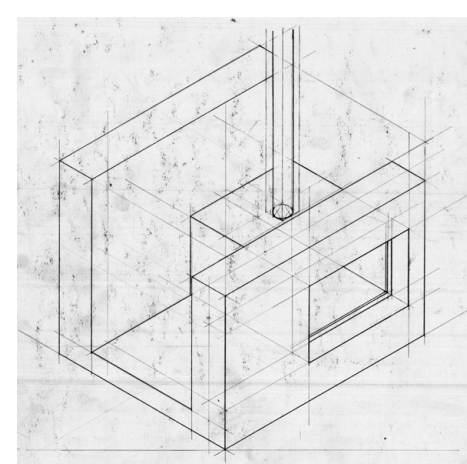
16. The Truss



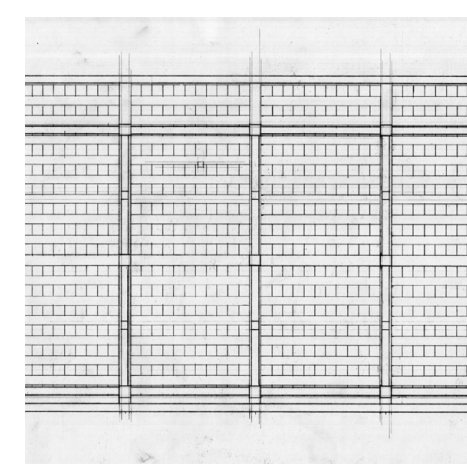
16. The Roof



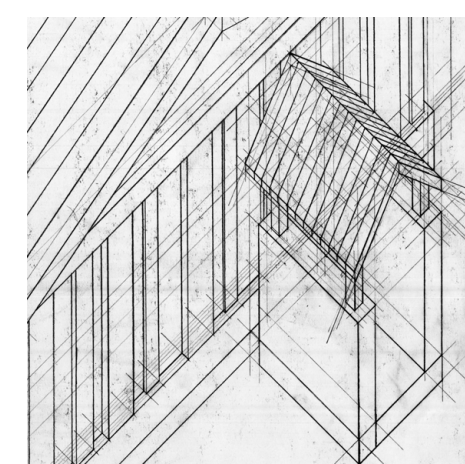
17. The Hanging Hearth



18. The Functional Hearth



19. Plan, Section, & Reflection

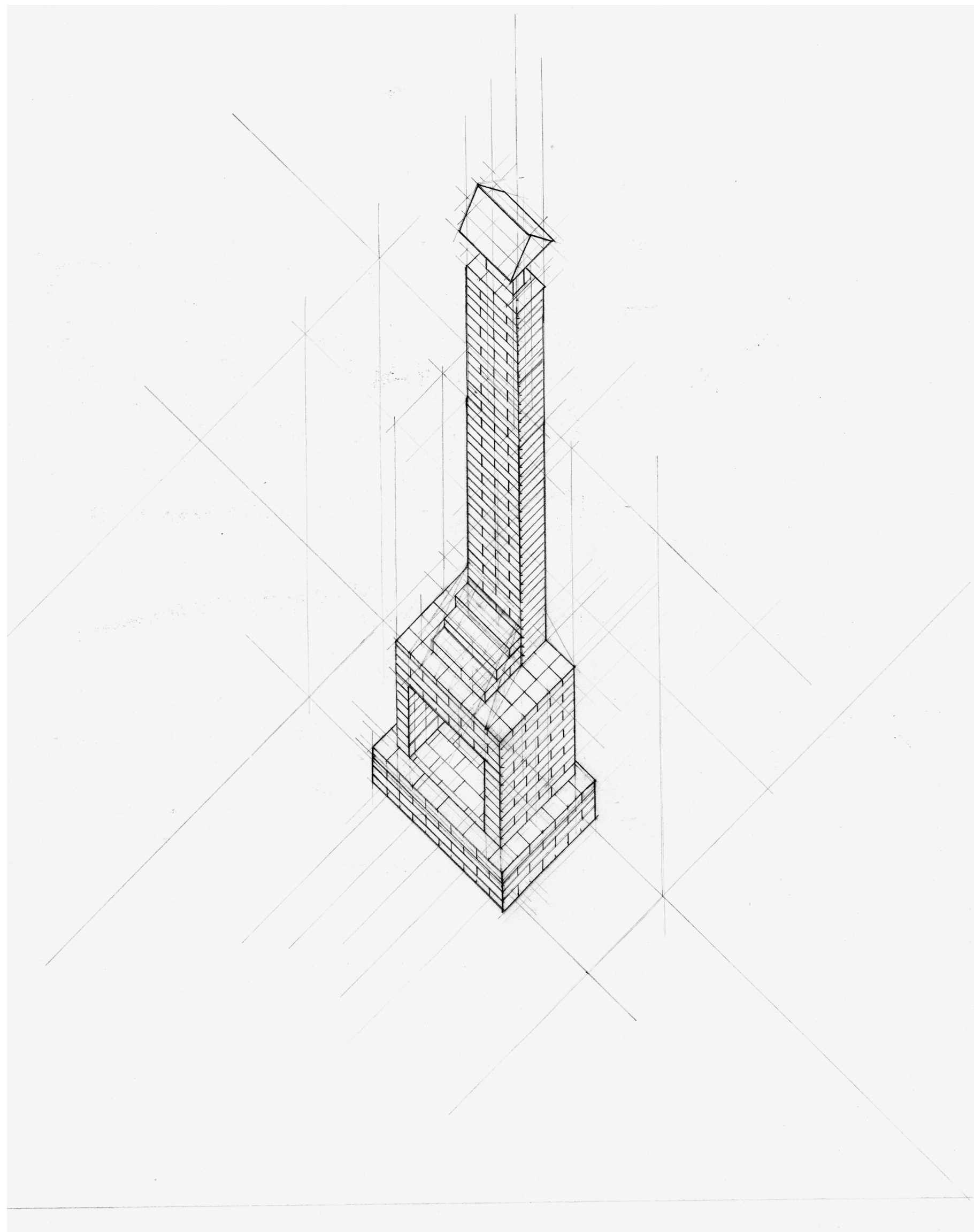


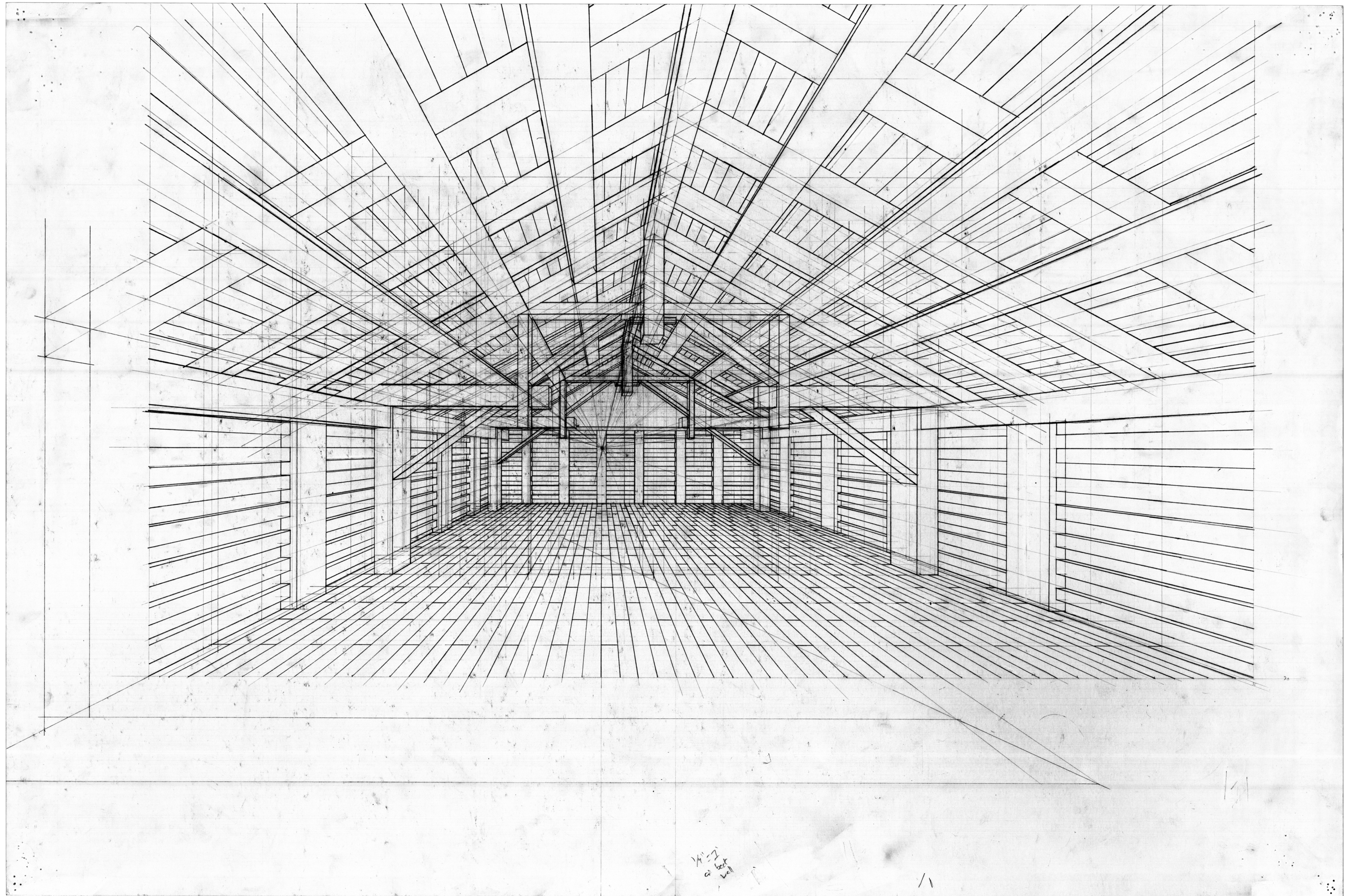
20. Transition and Connection

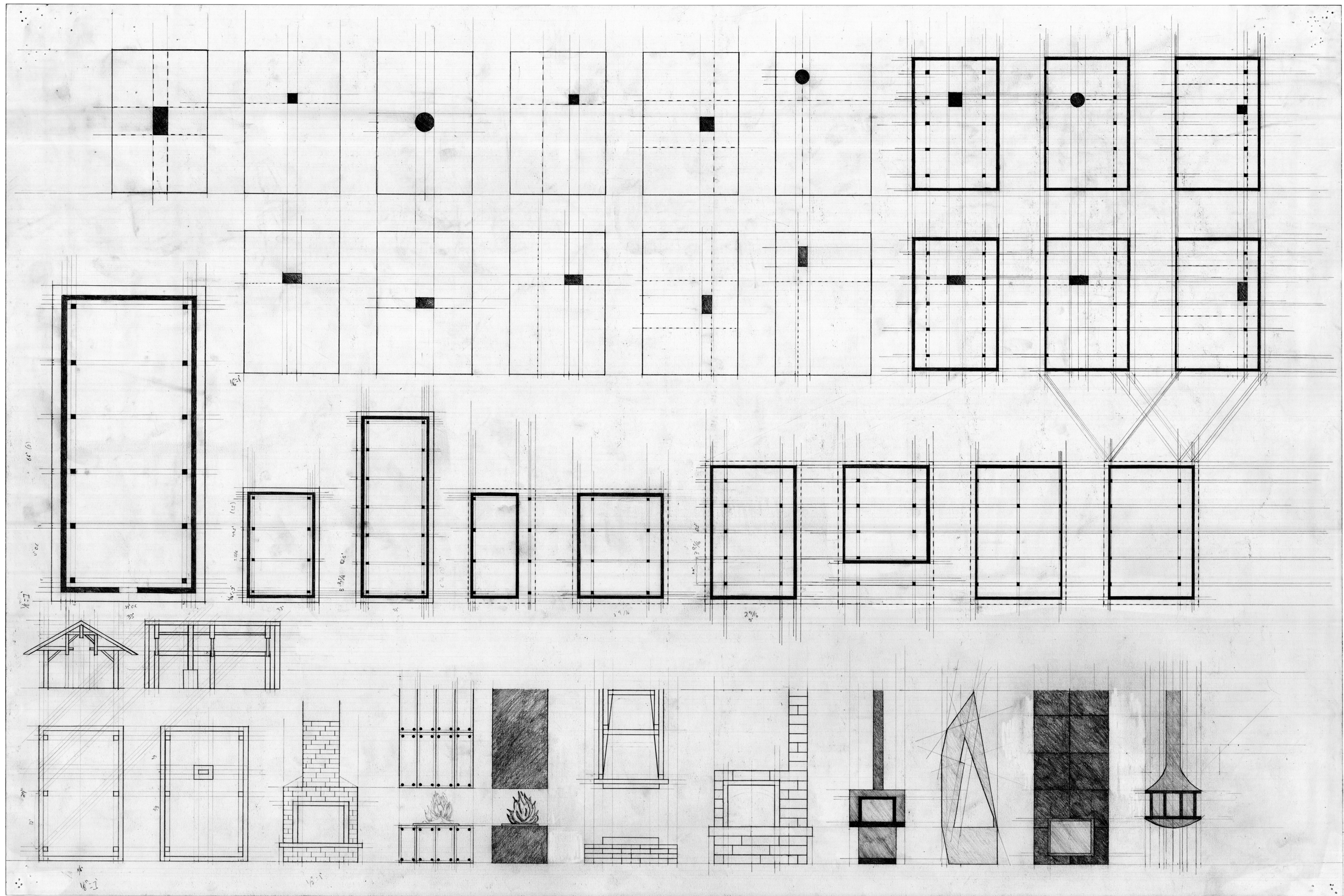


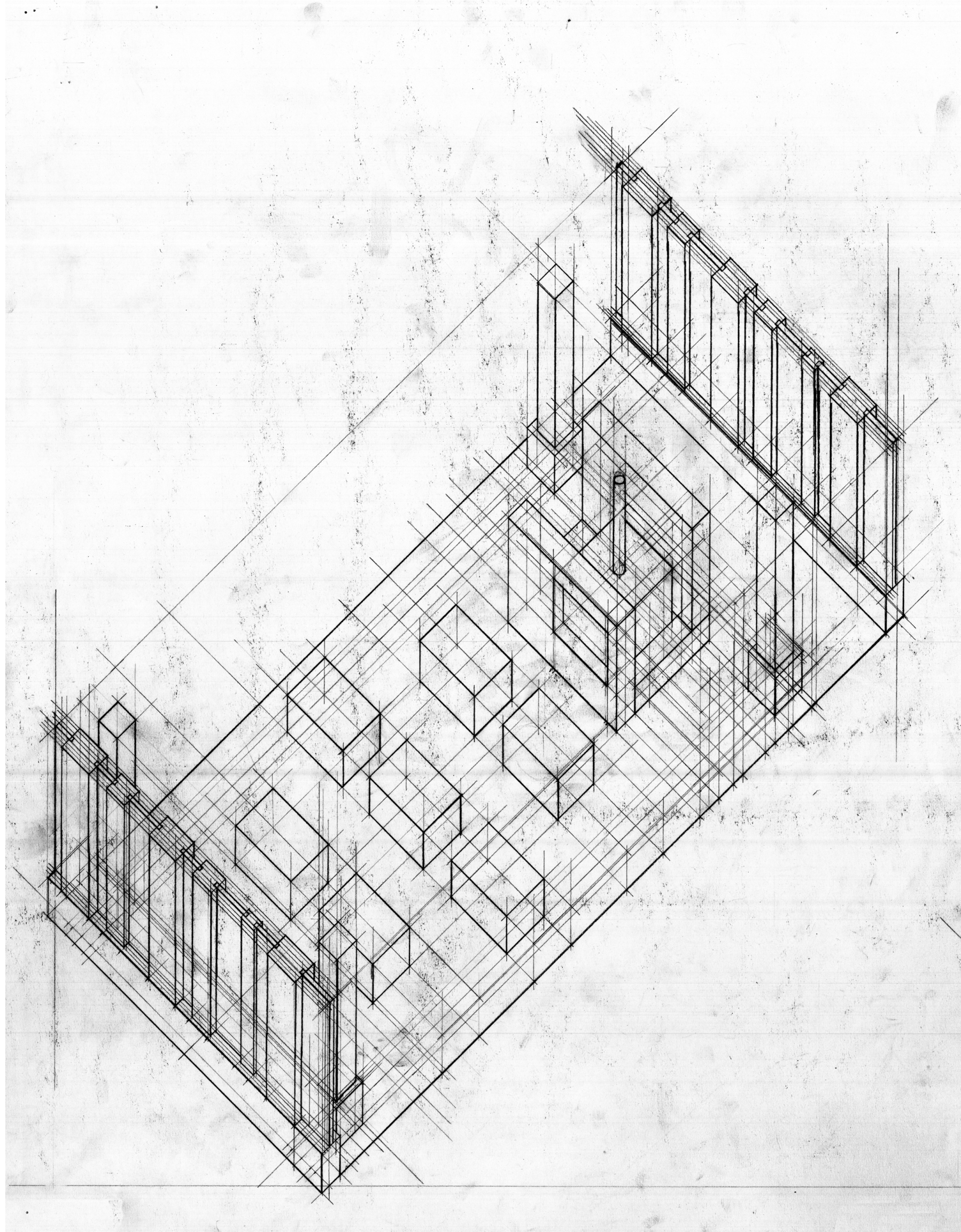
21. The Sky

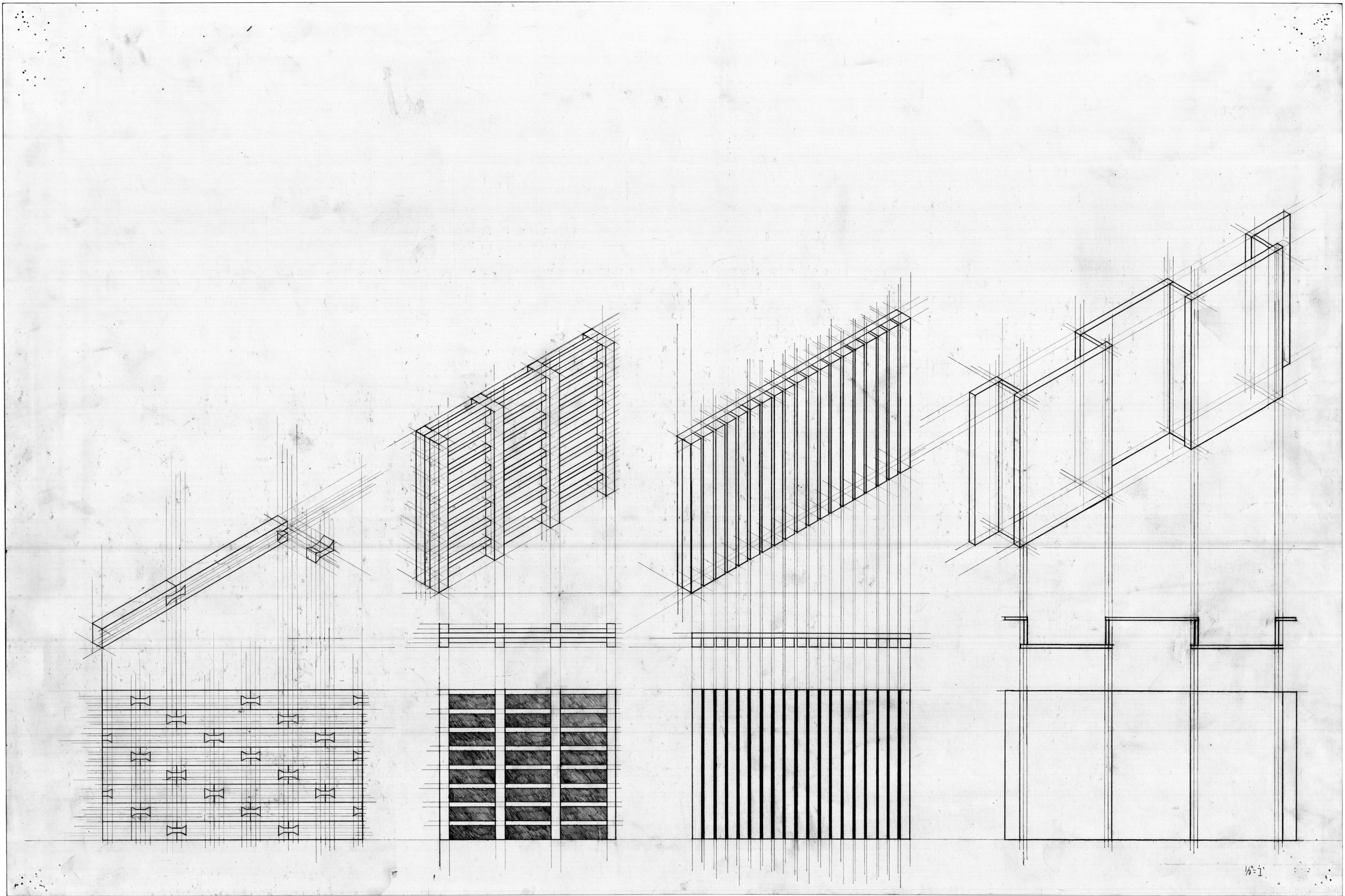
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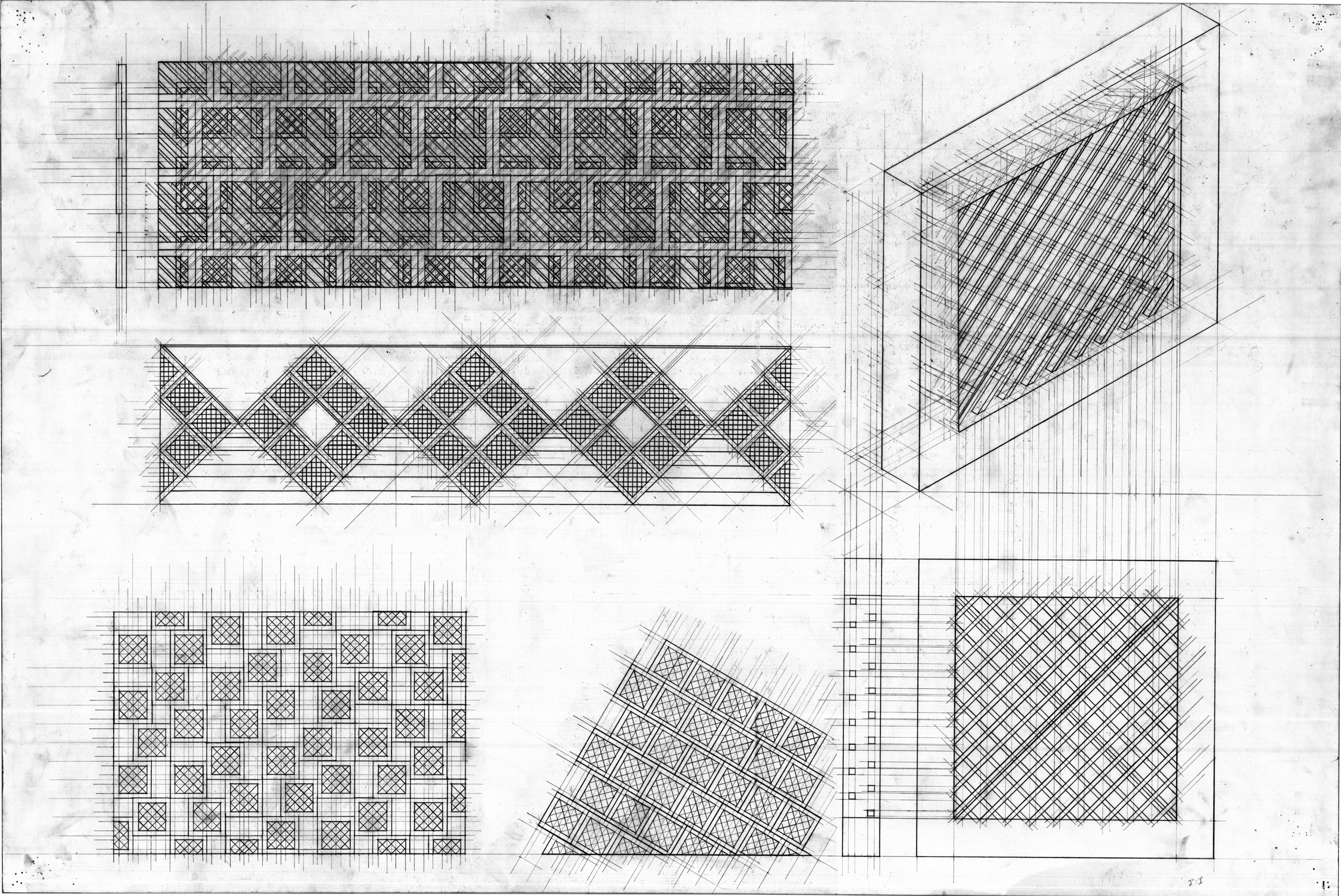


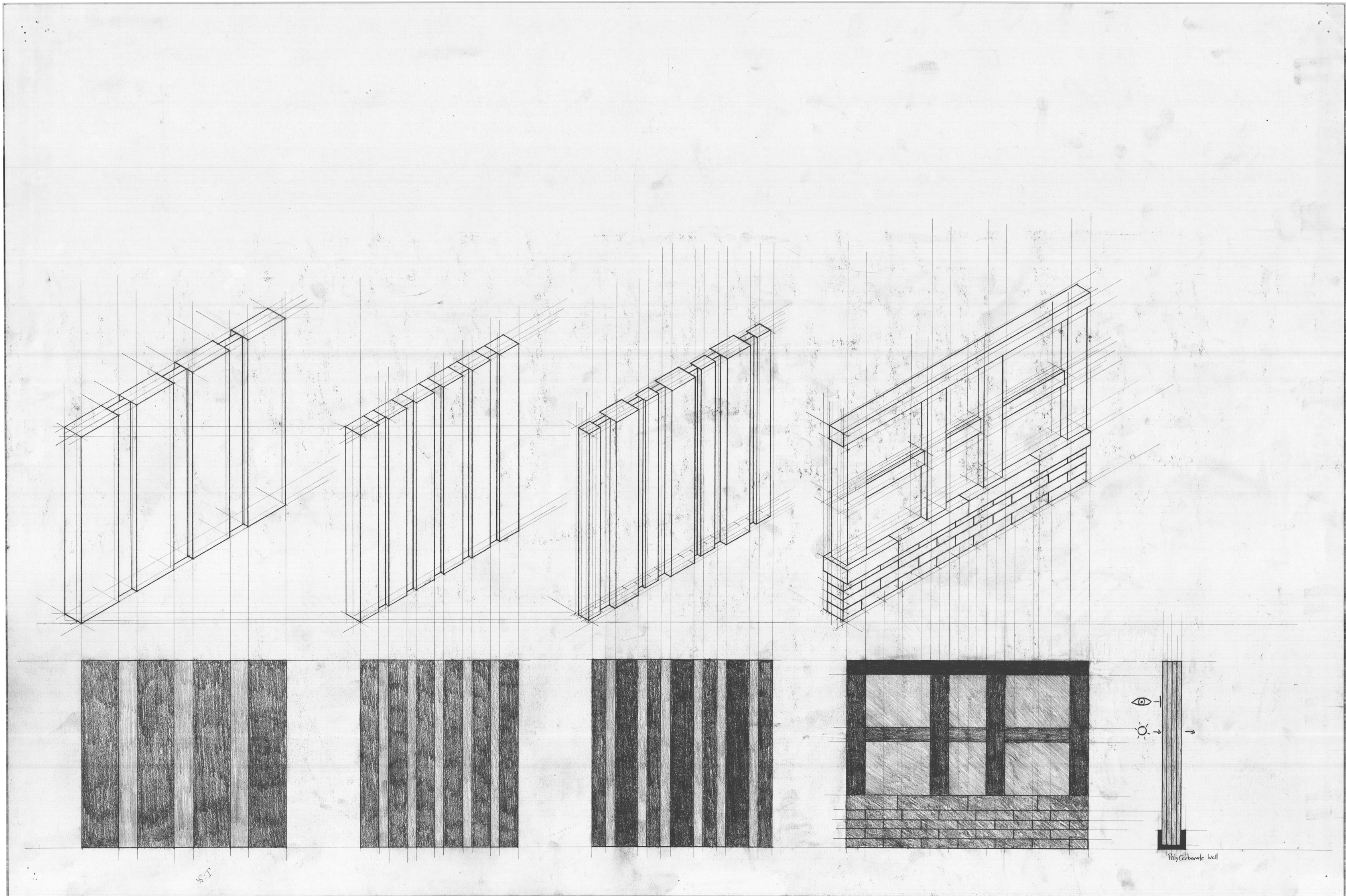


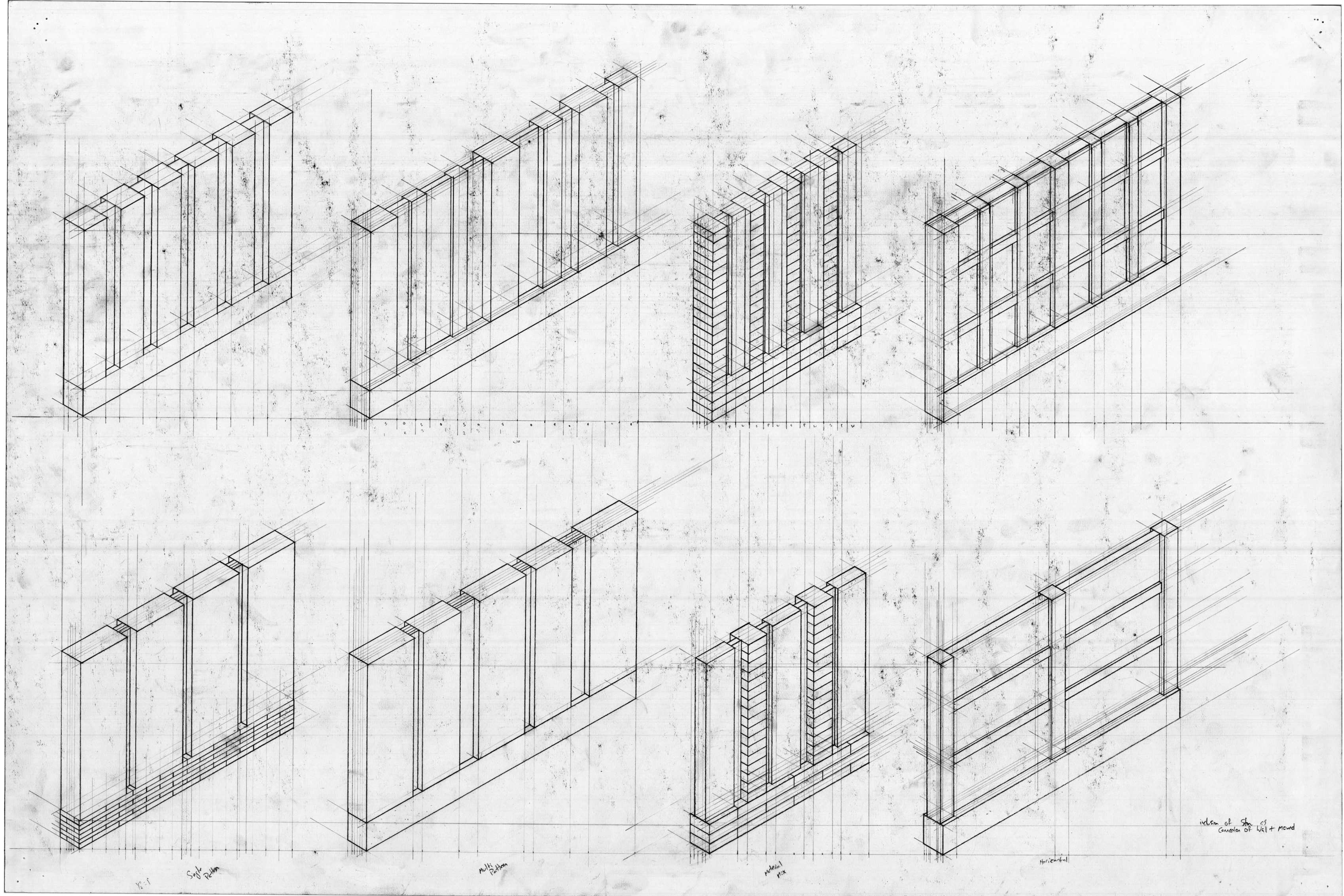


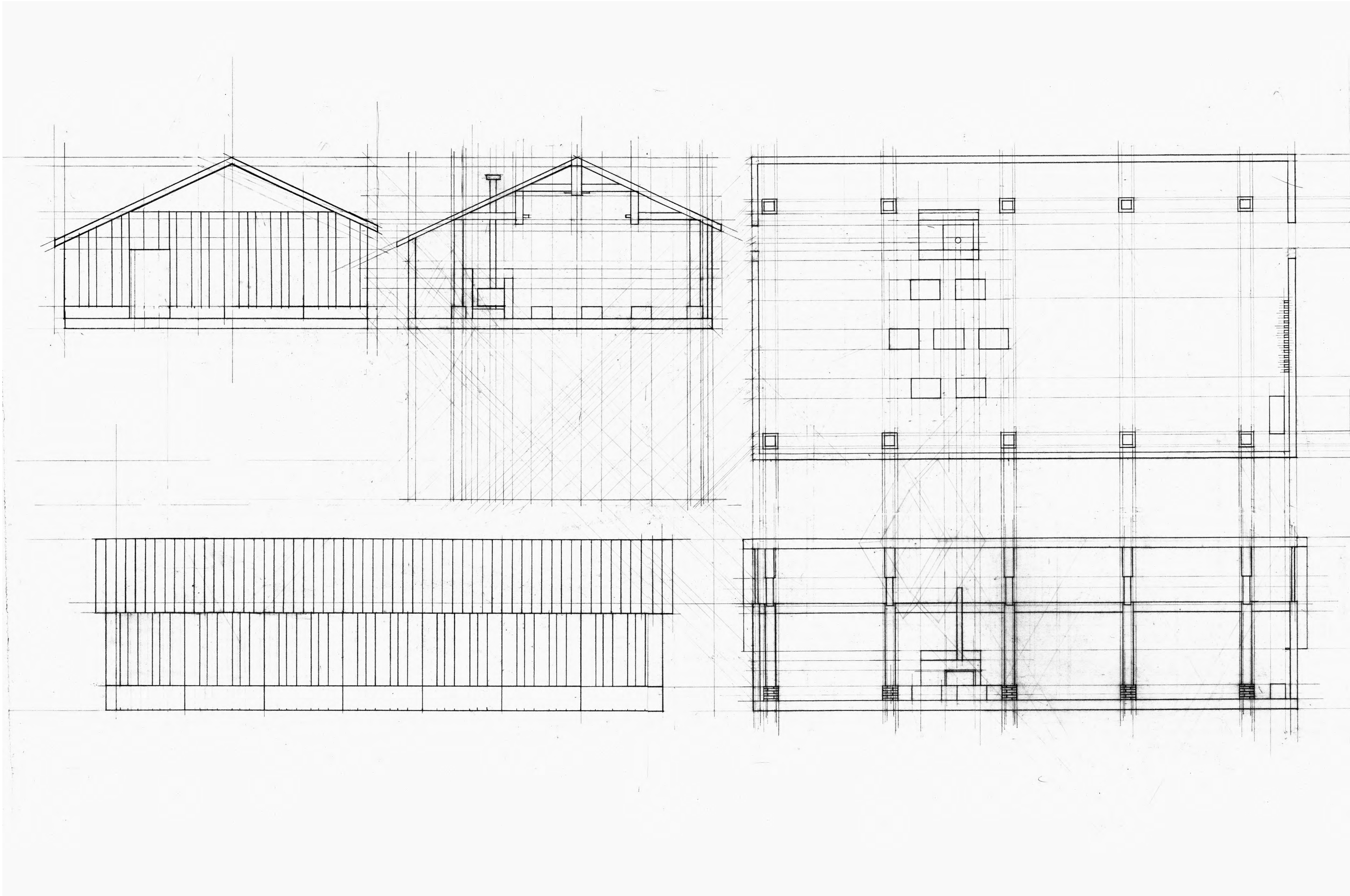


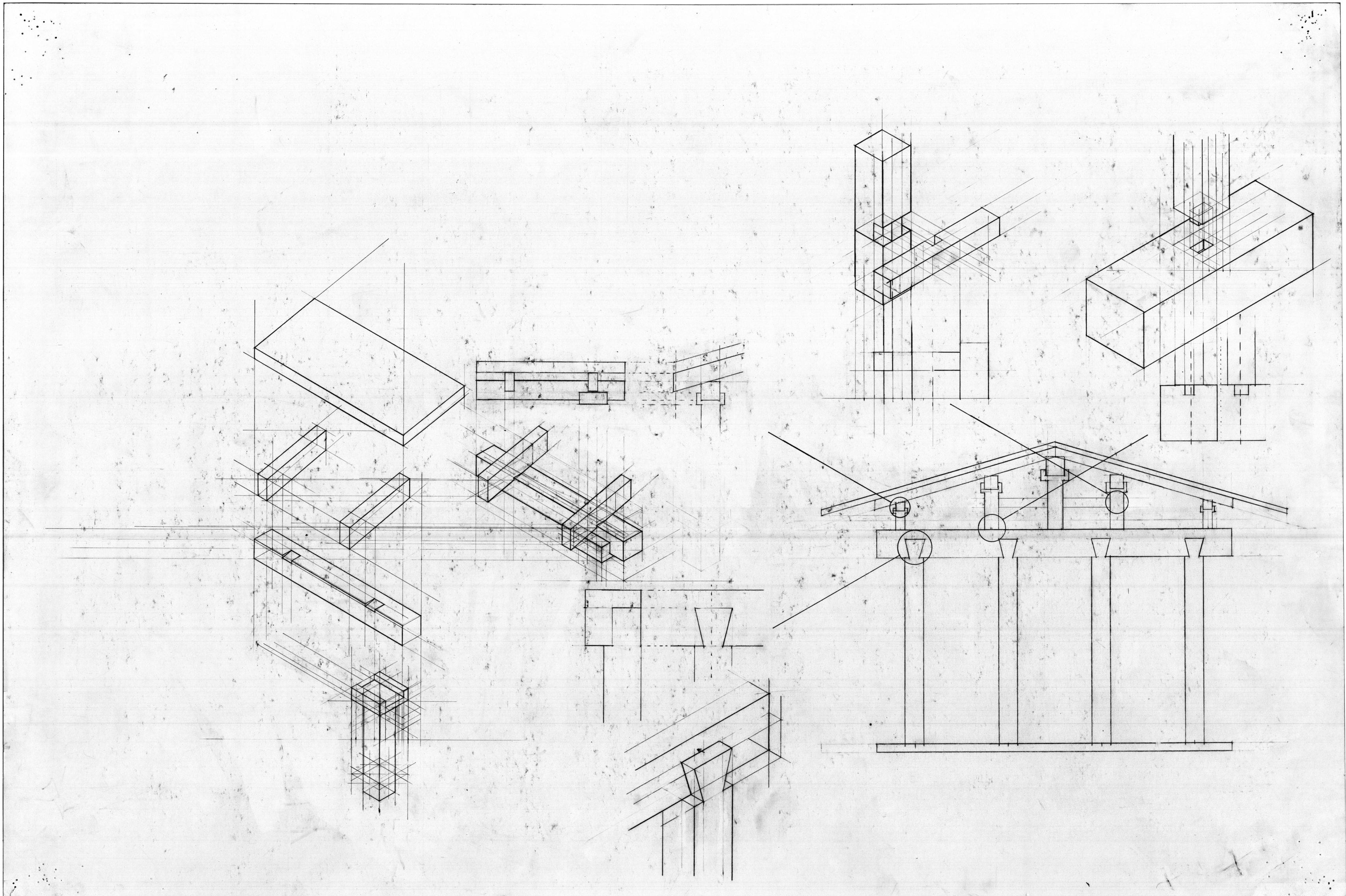


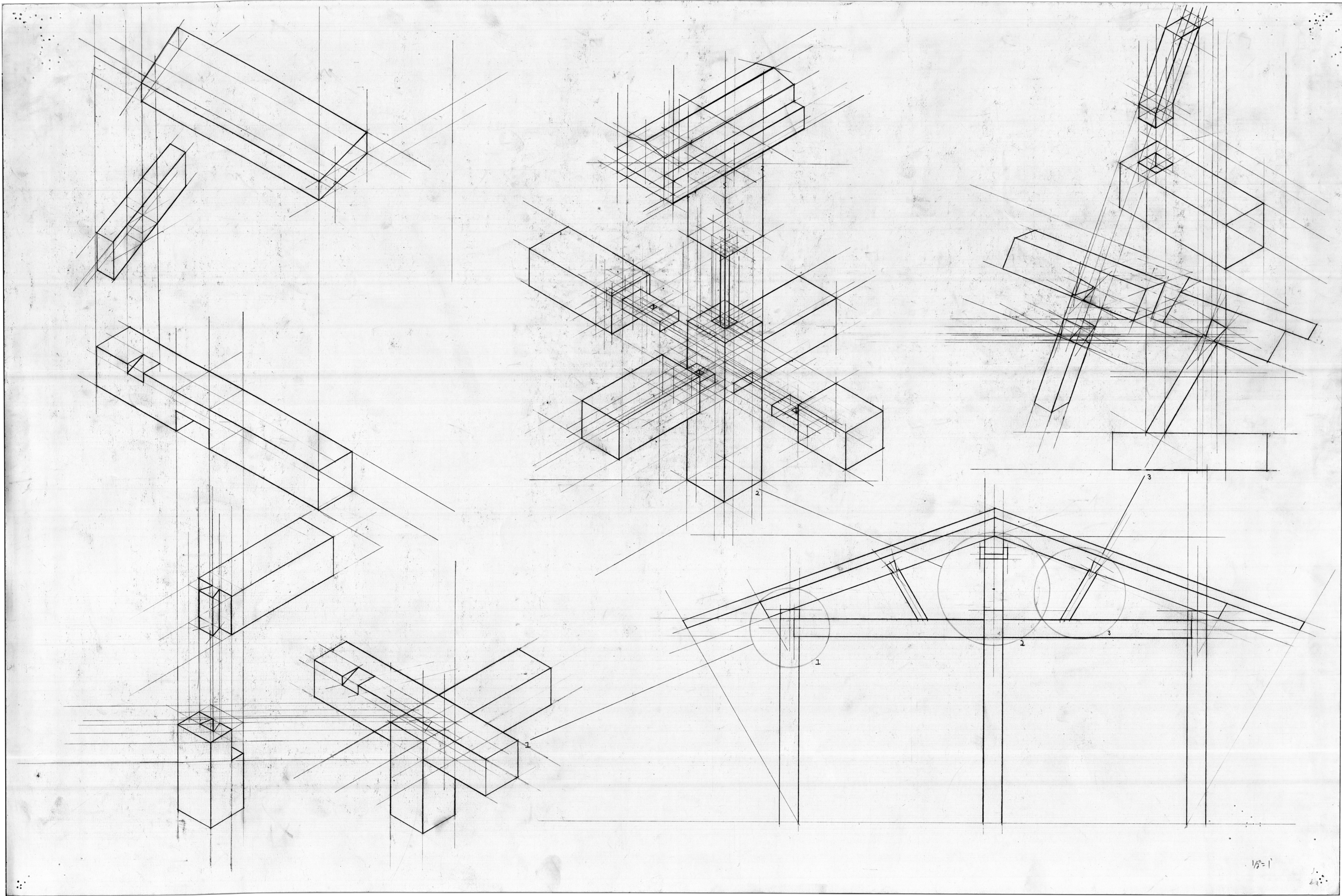


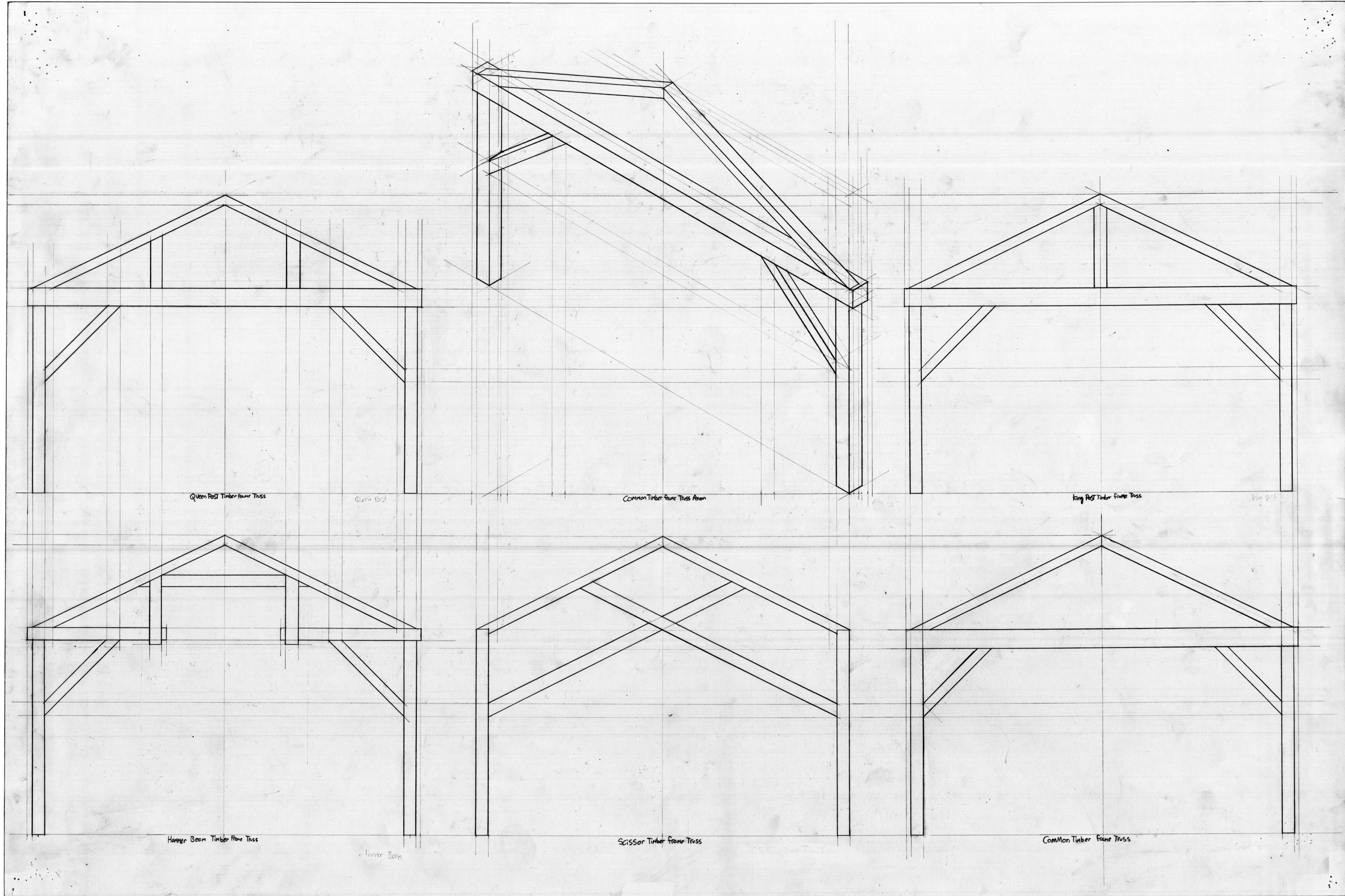


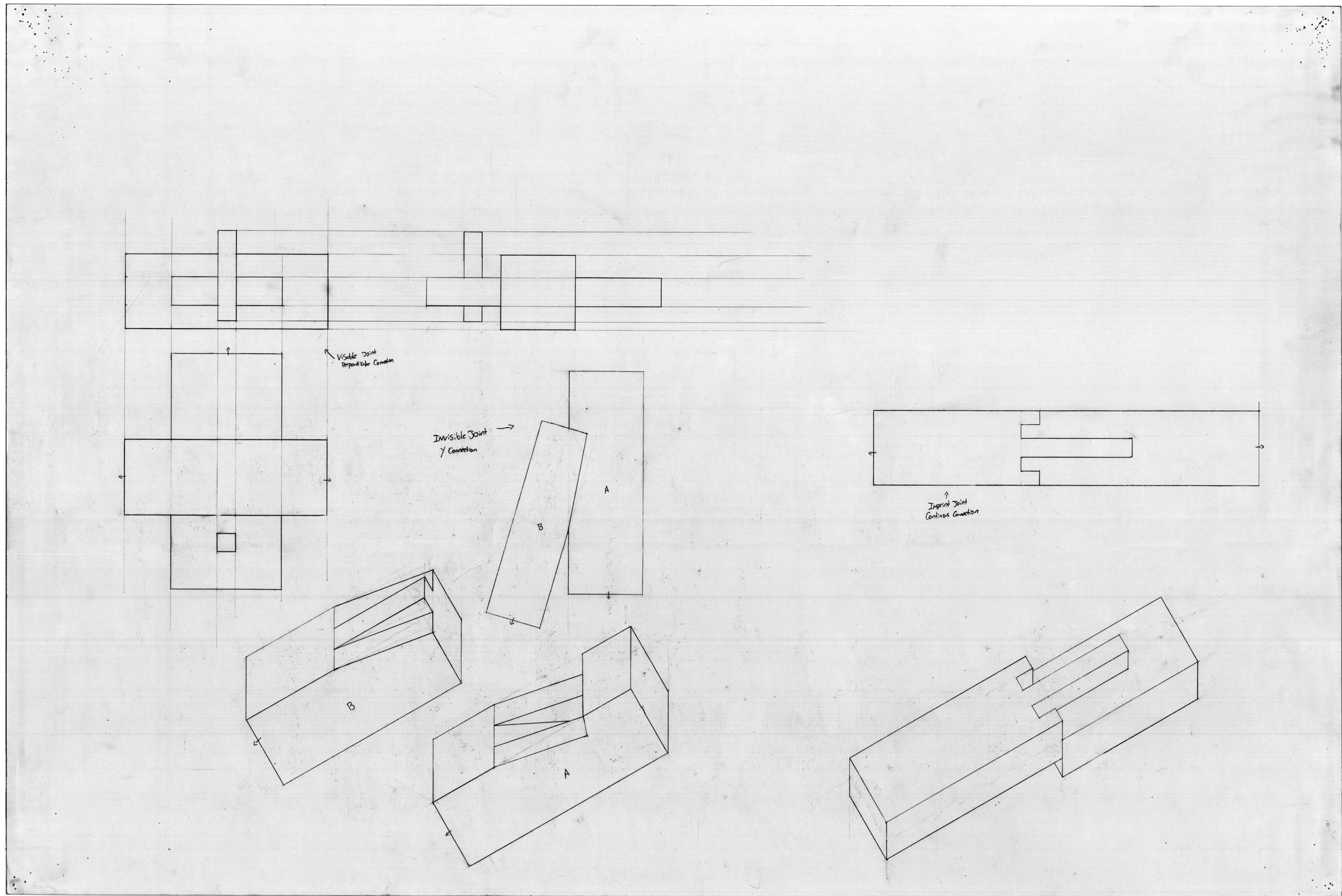


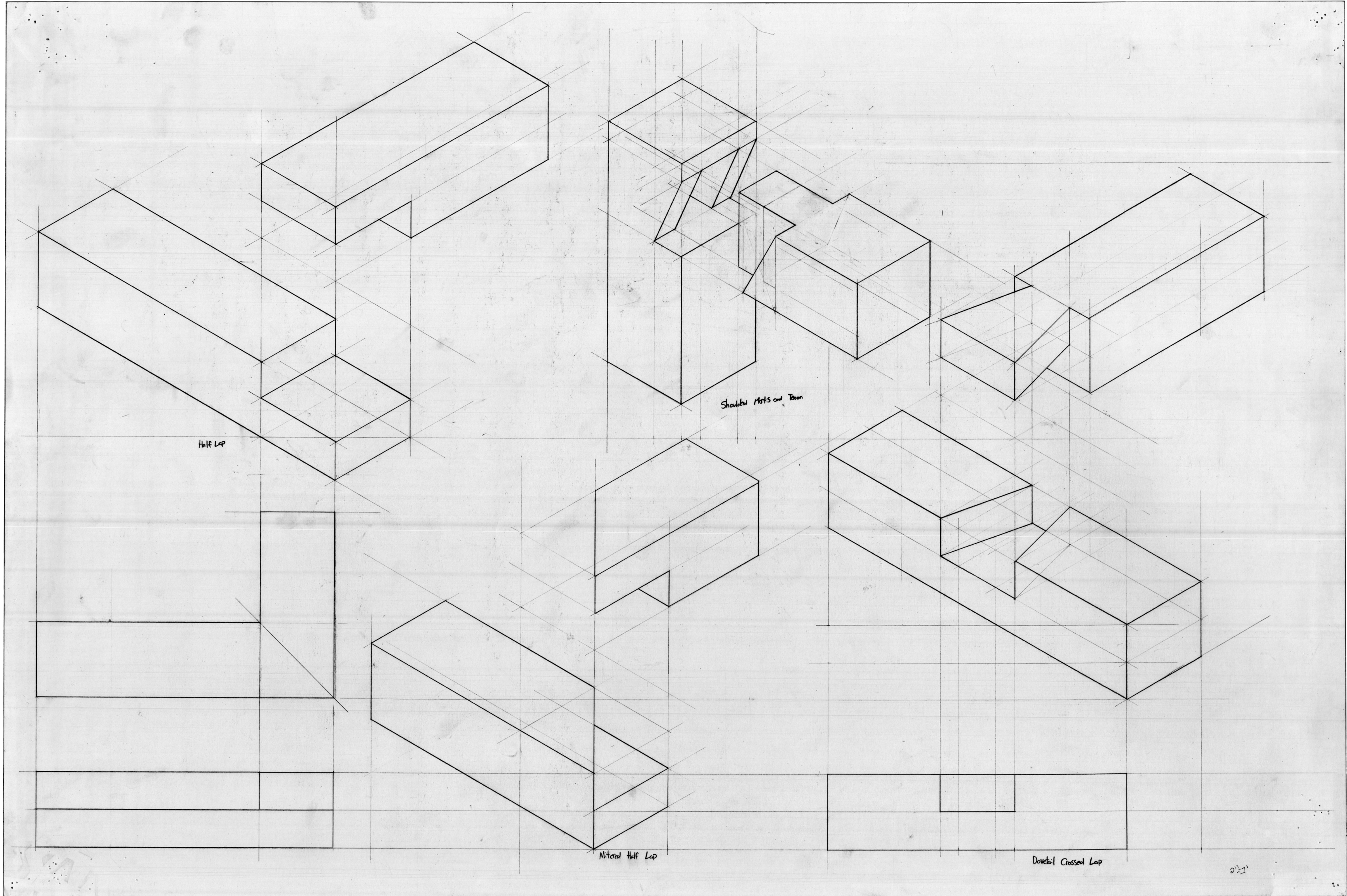


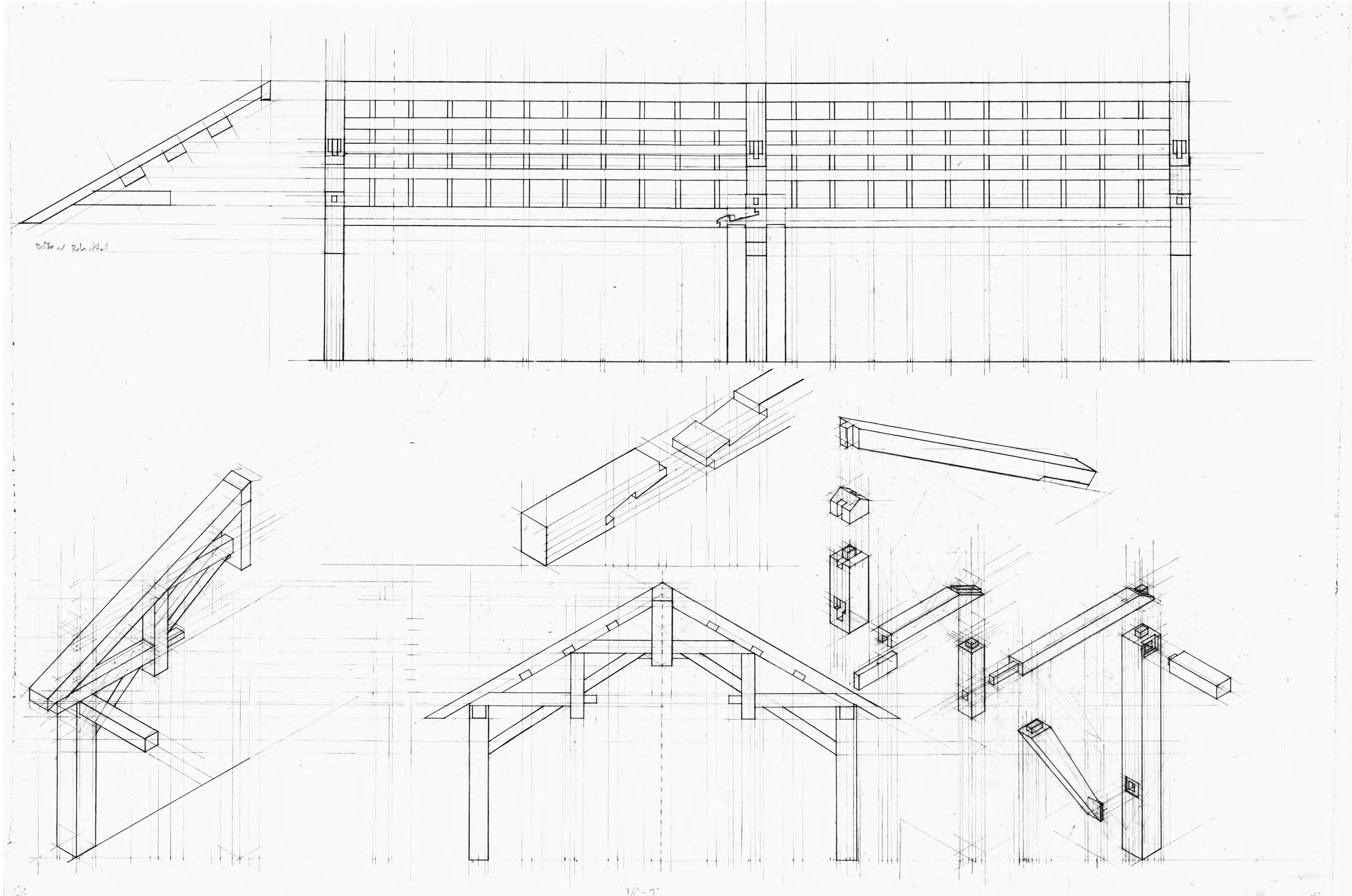


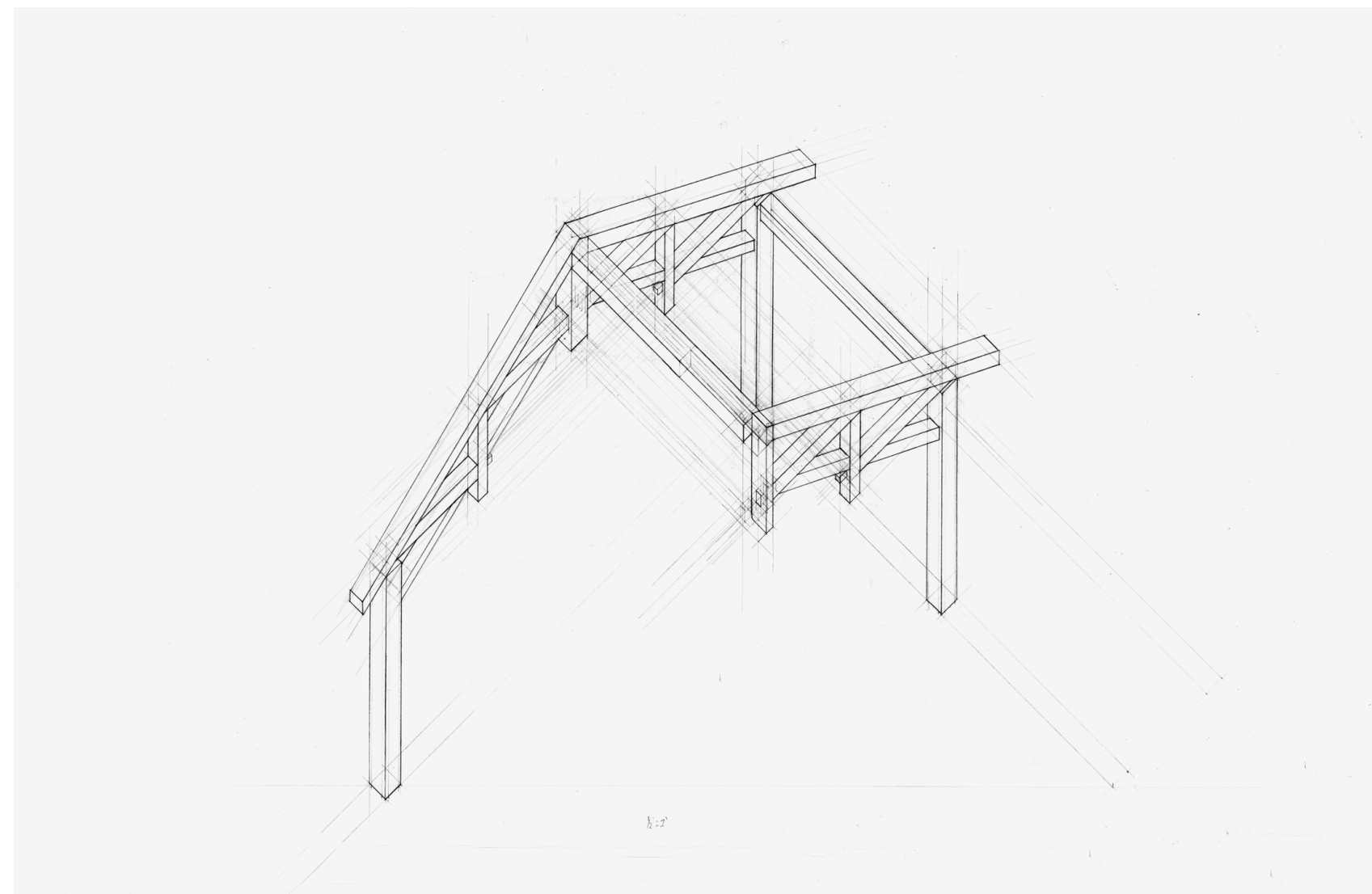
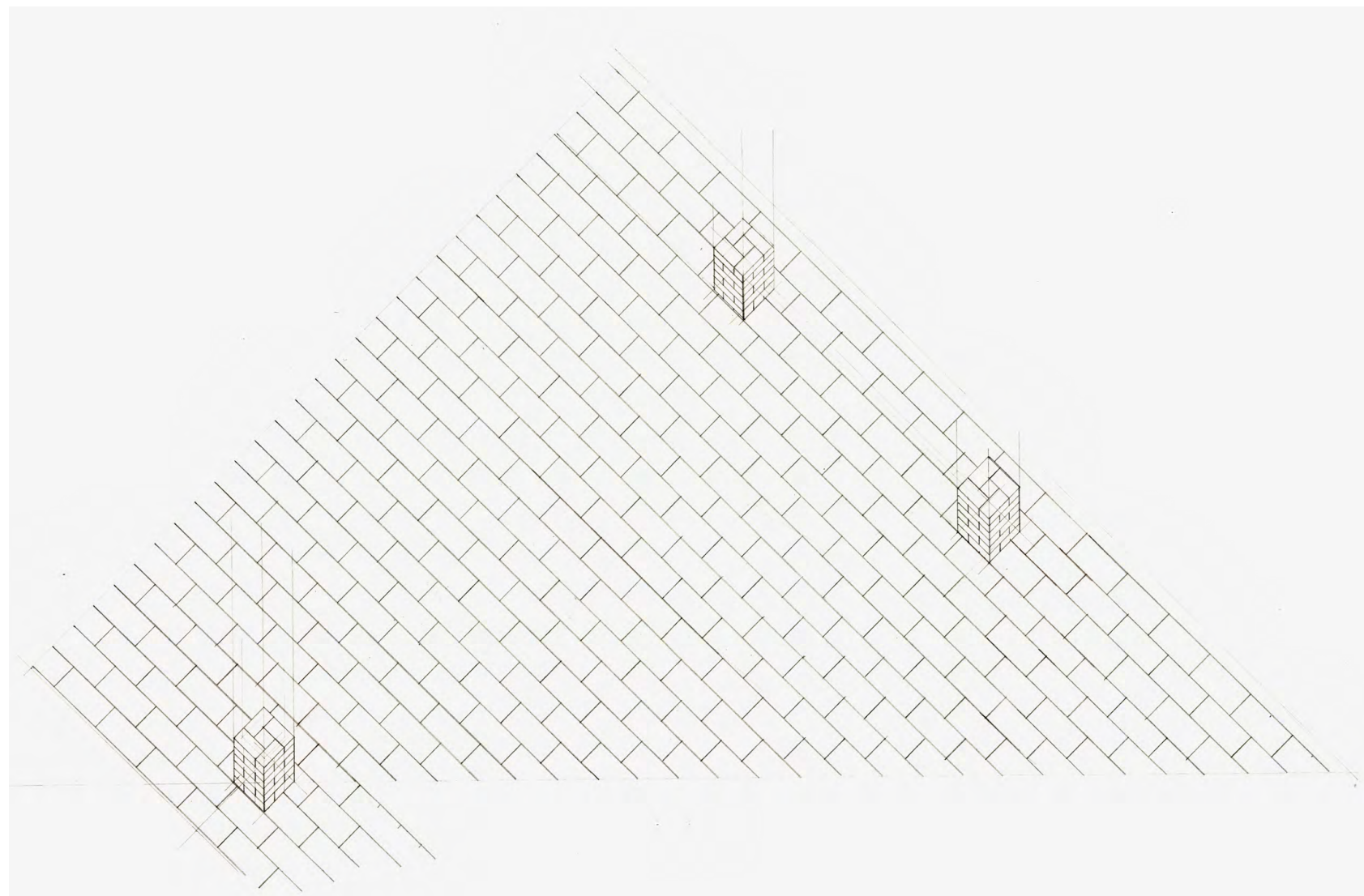
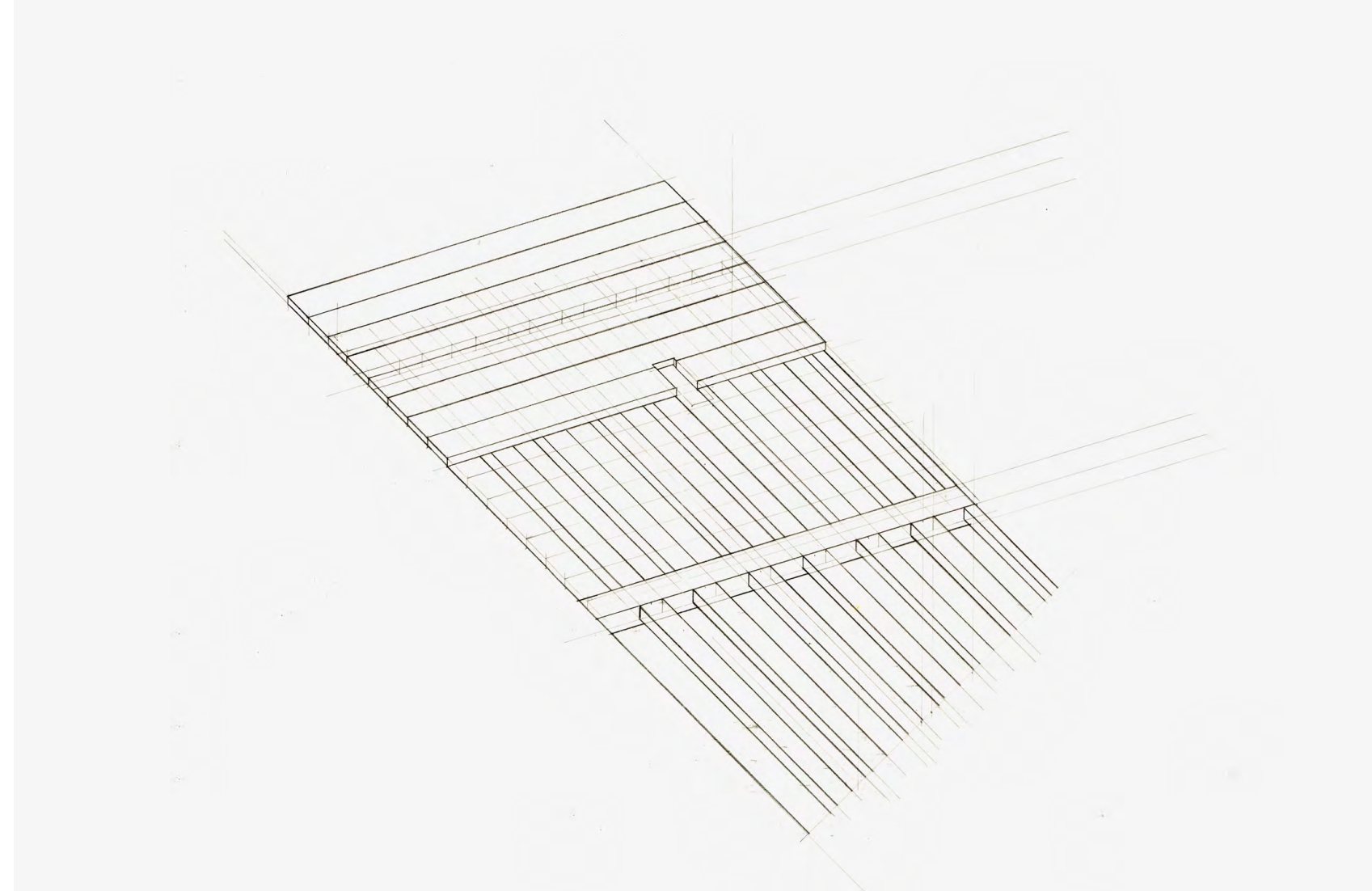
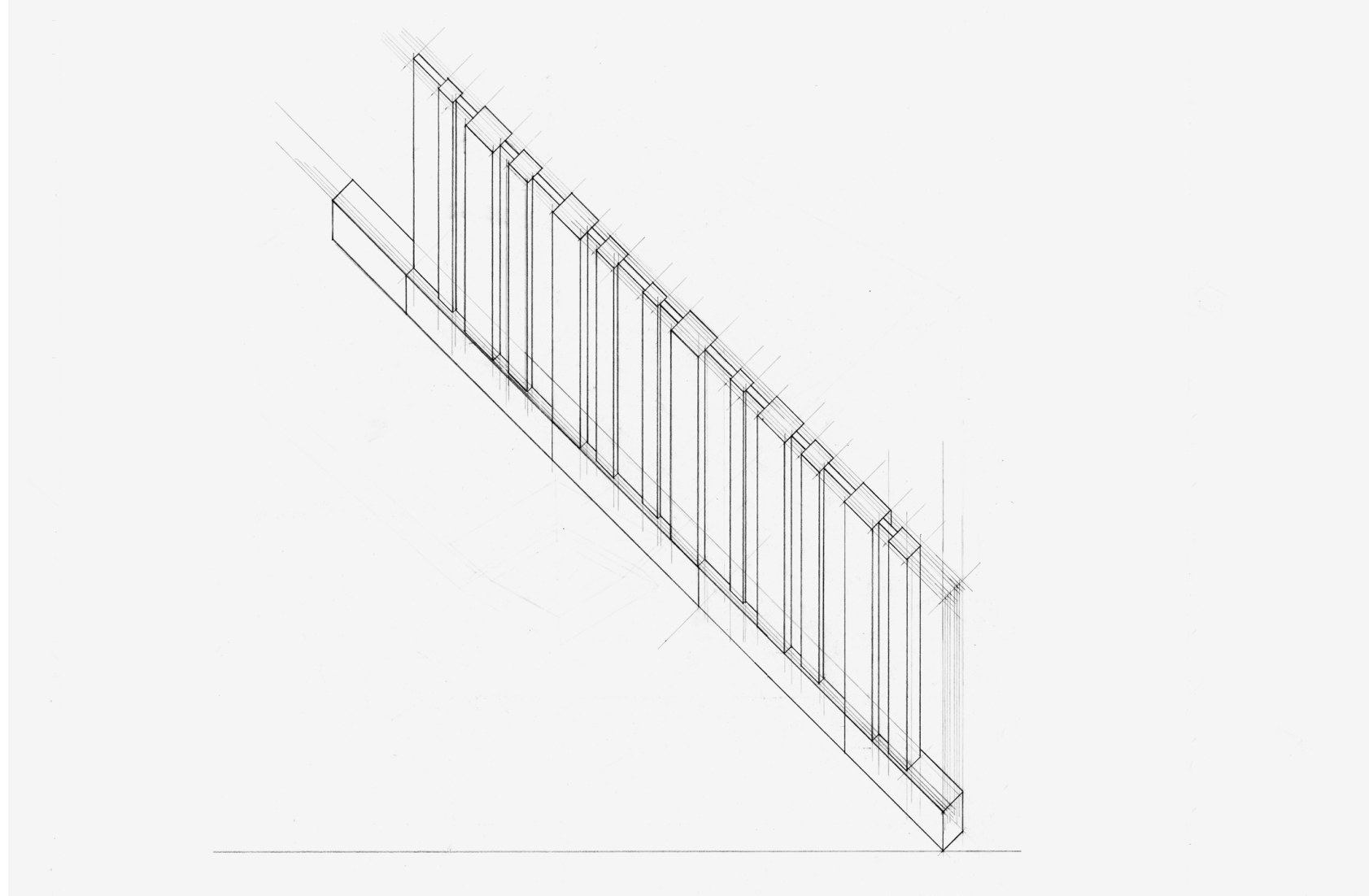


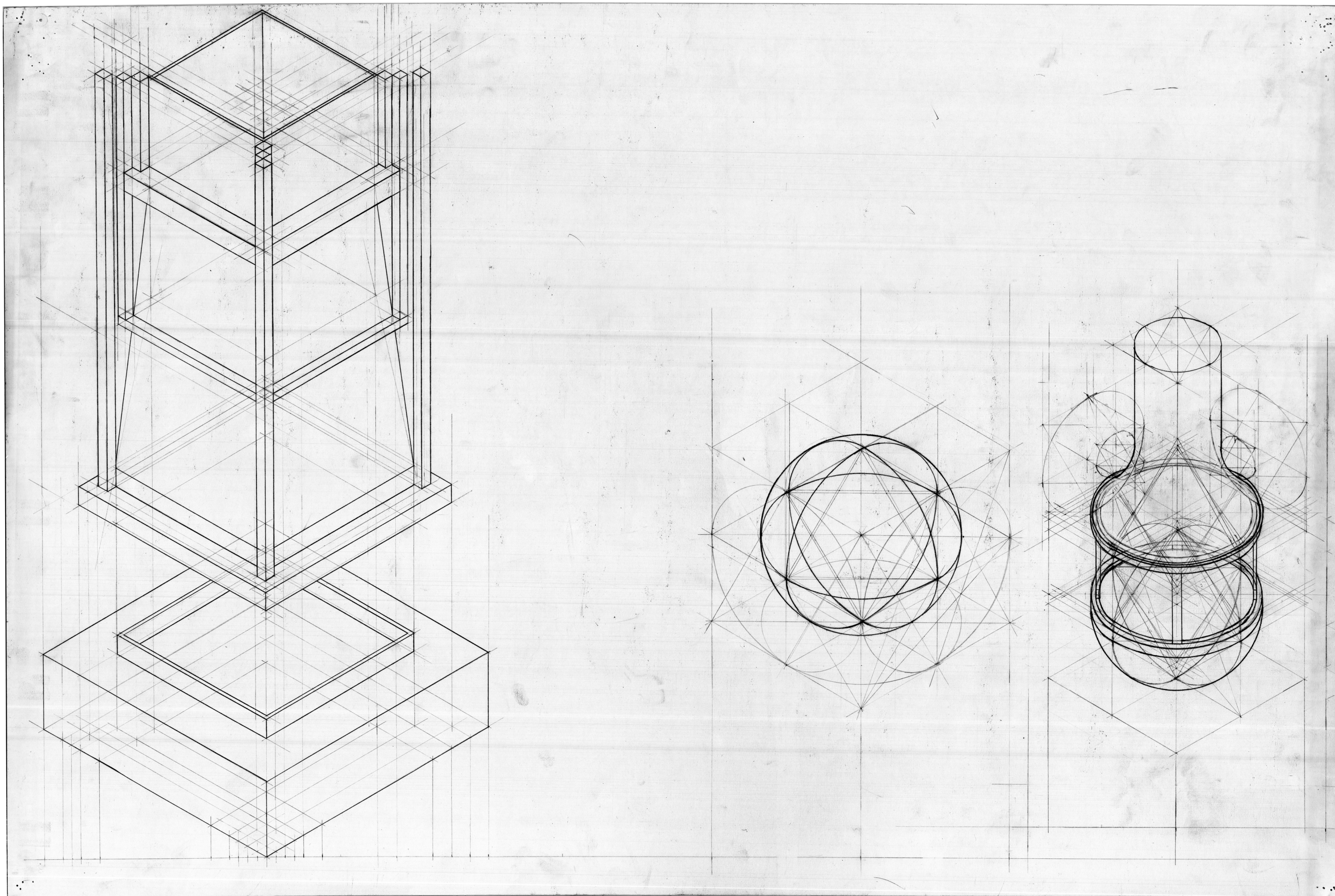


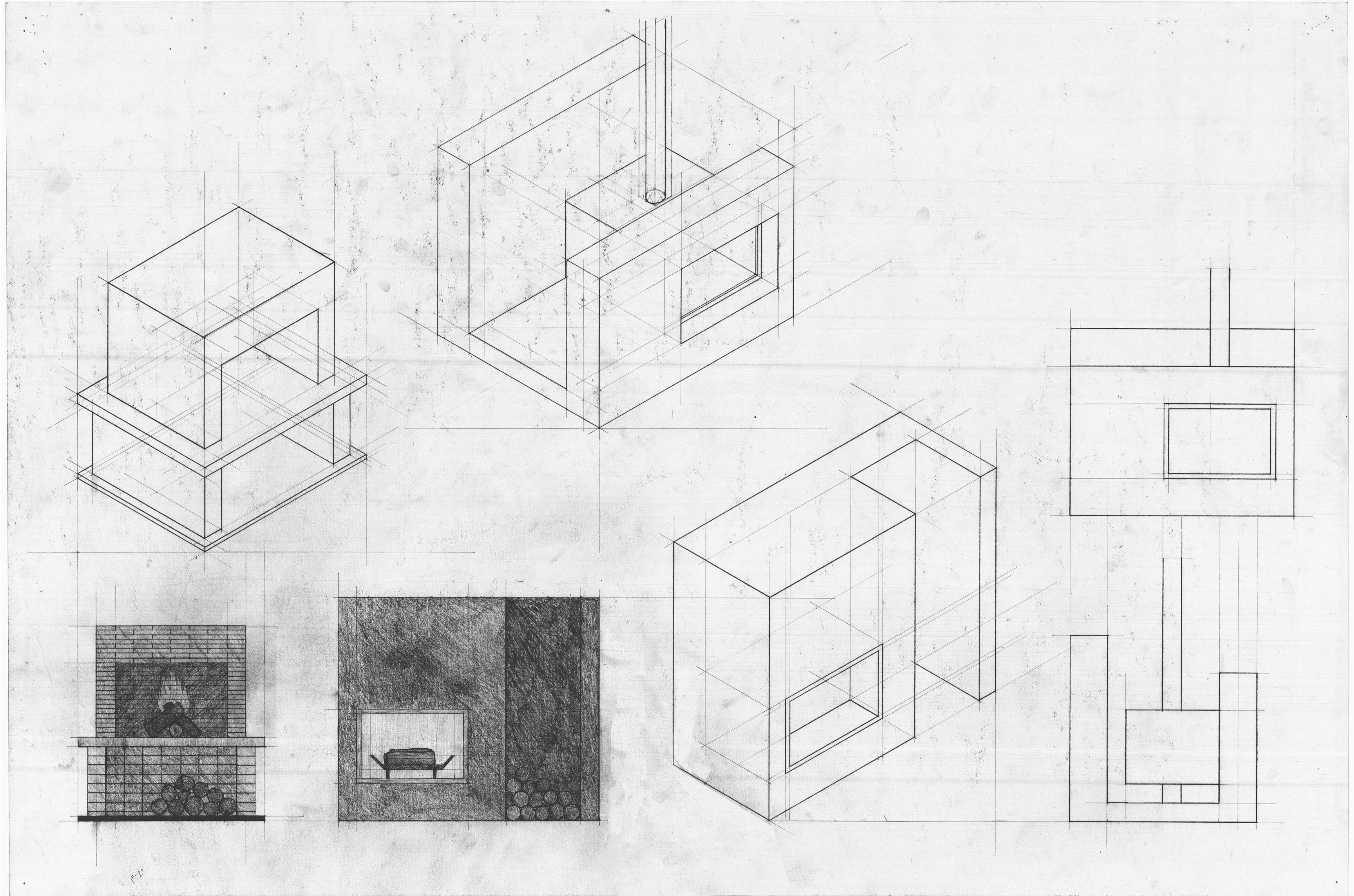


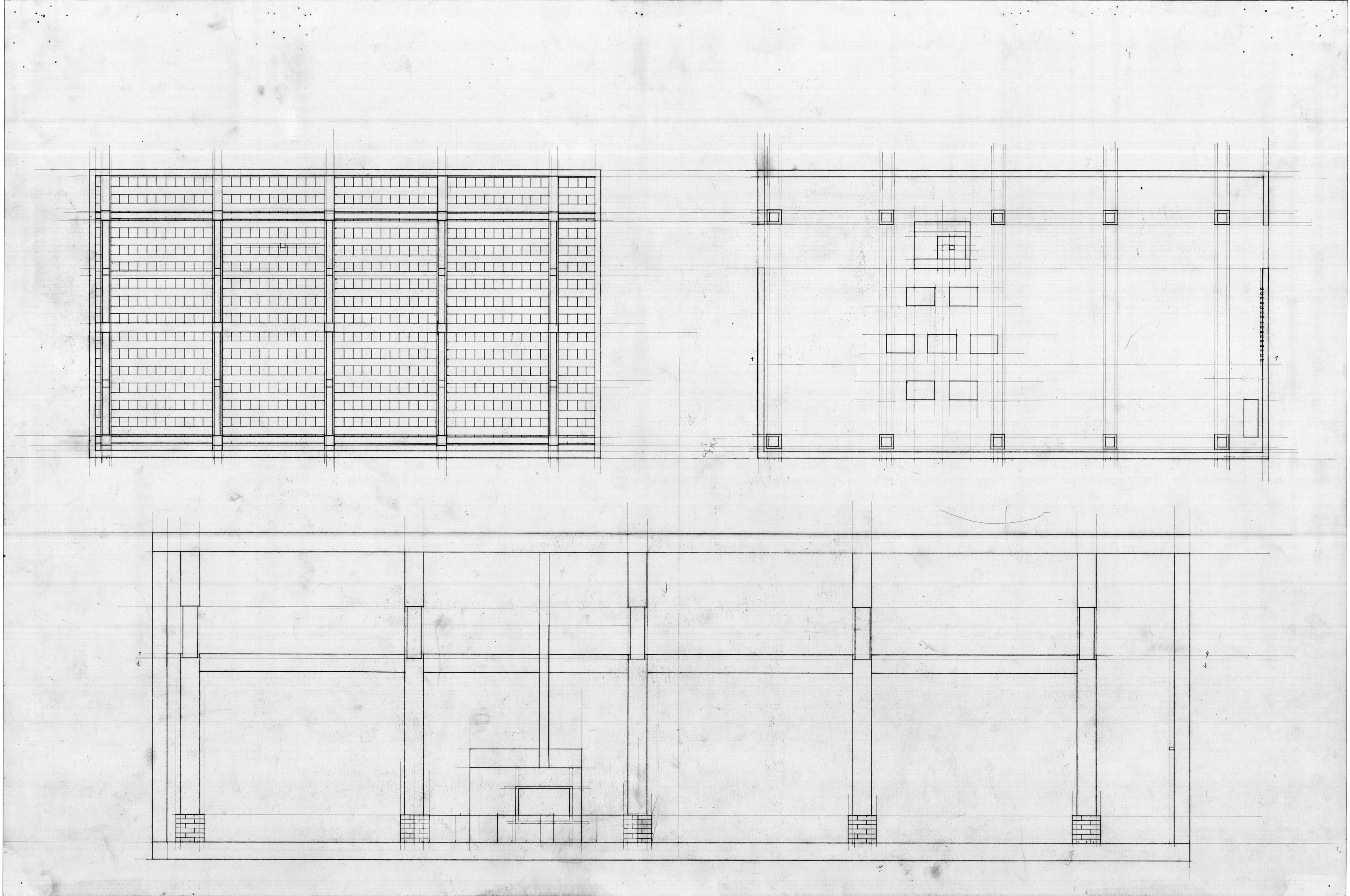


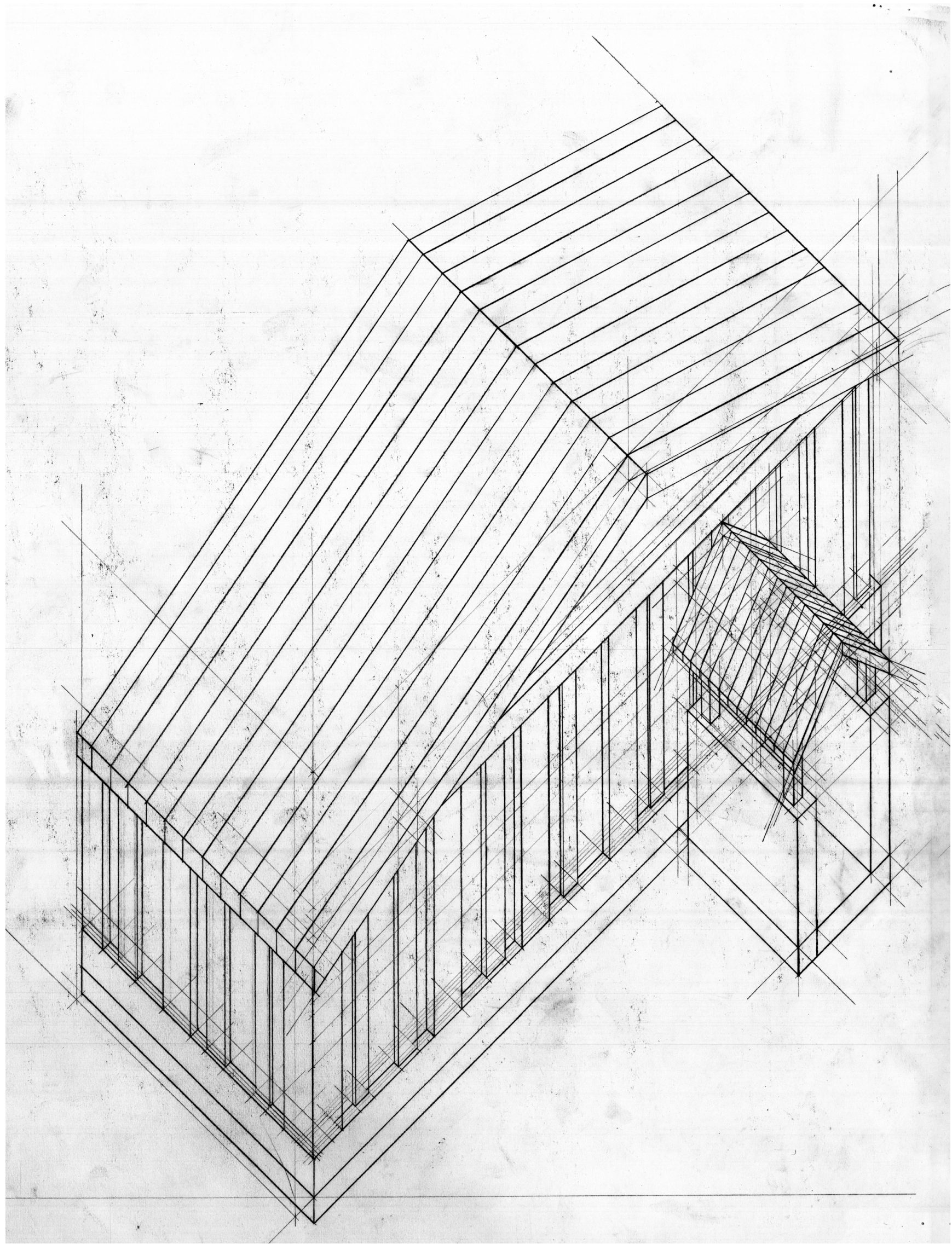


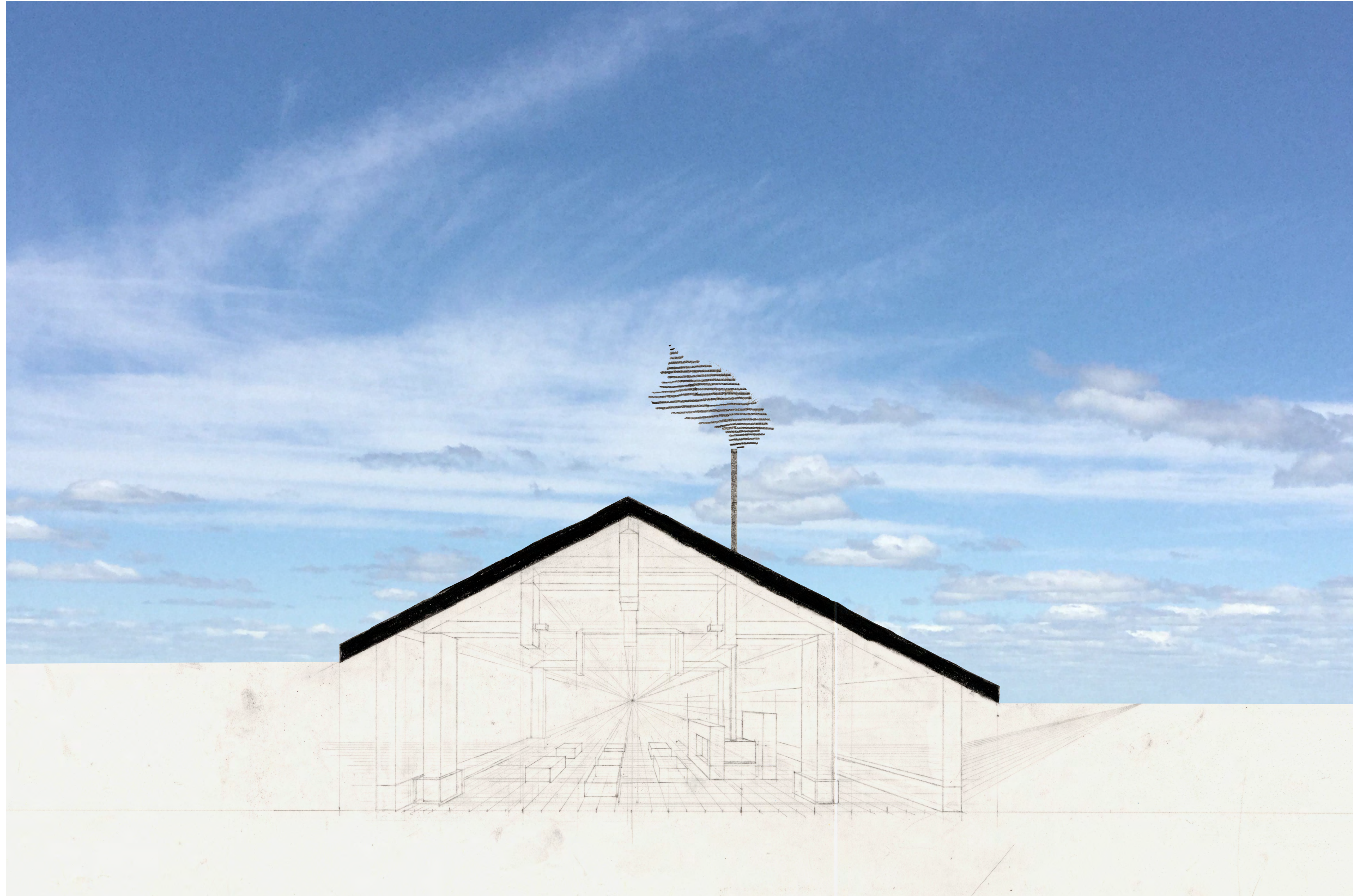












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Examples of the fireplace and its parts; a formed base, a hanging hood, and the chimney.

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