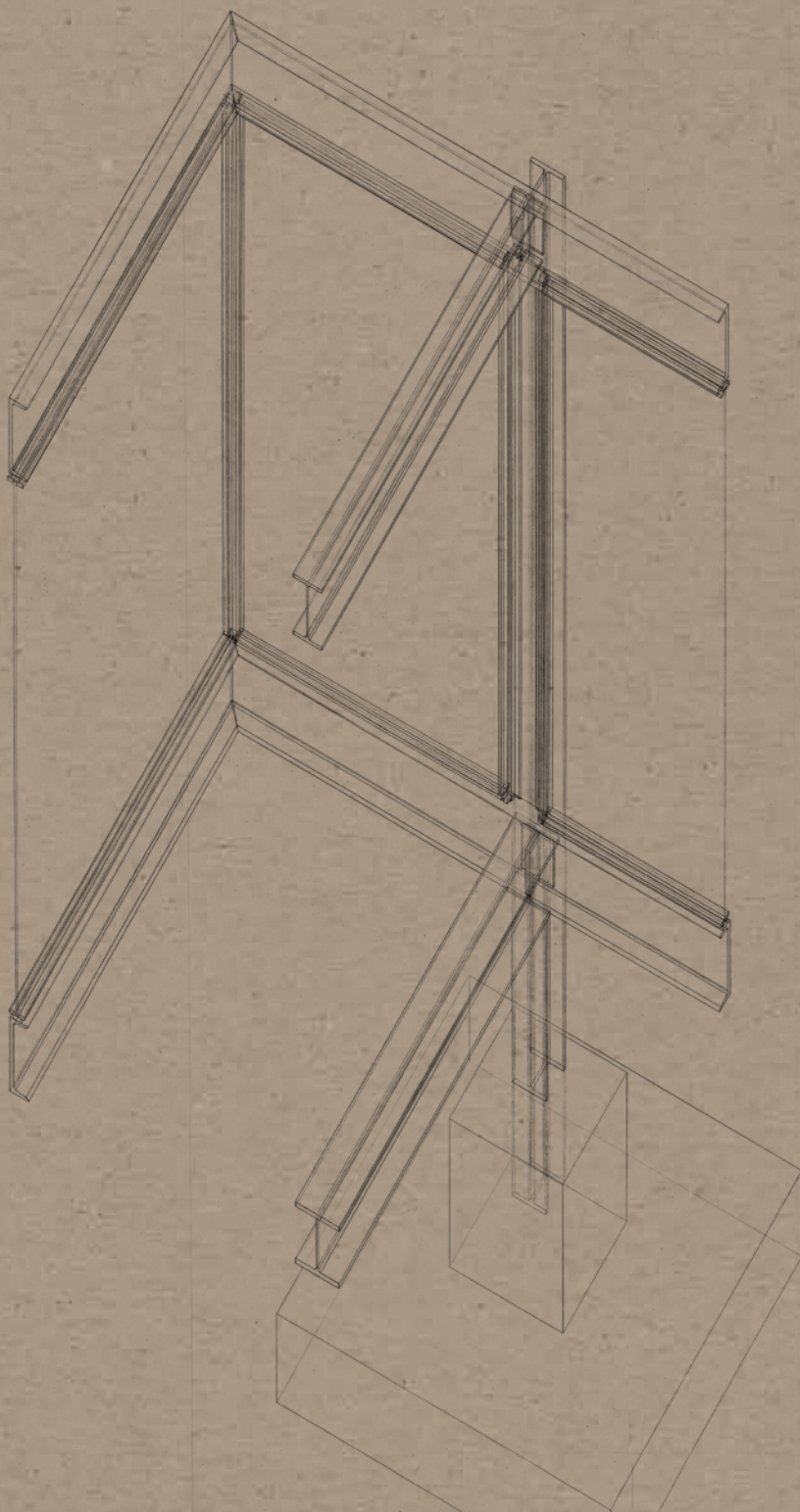


DOCTA MANUS DRAWING STRUCTURES



UE GC EPFL LAUSANNE / AUTUMN SEMESTER 2020
Guaïta, Baur, Fernández Ruiz, Fernández-Ordoñez

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Drawing constitutes a very powerful and critical tool of conceptual design. Drawing constructs thought, it acts as a communication interface between the work and the mind and between different disciplines; it is the most powerful language of communication in the working together between architects and engineers.

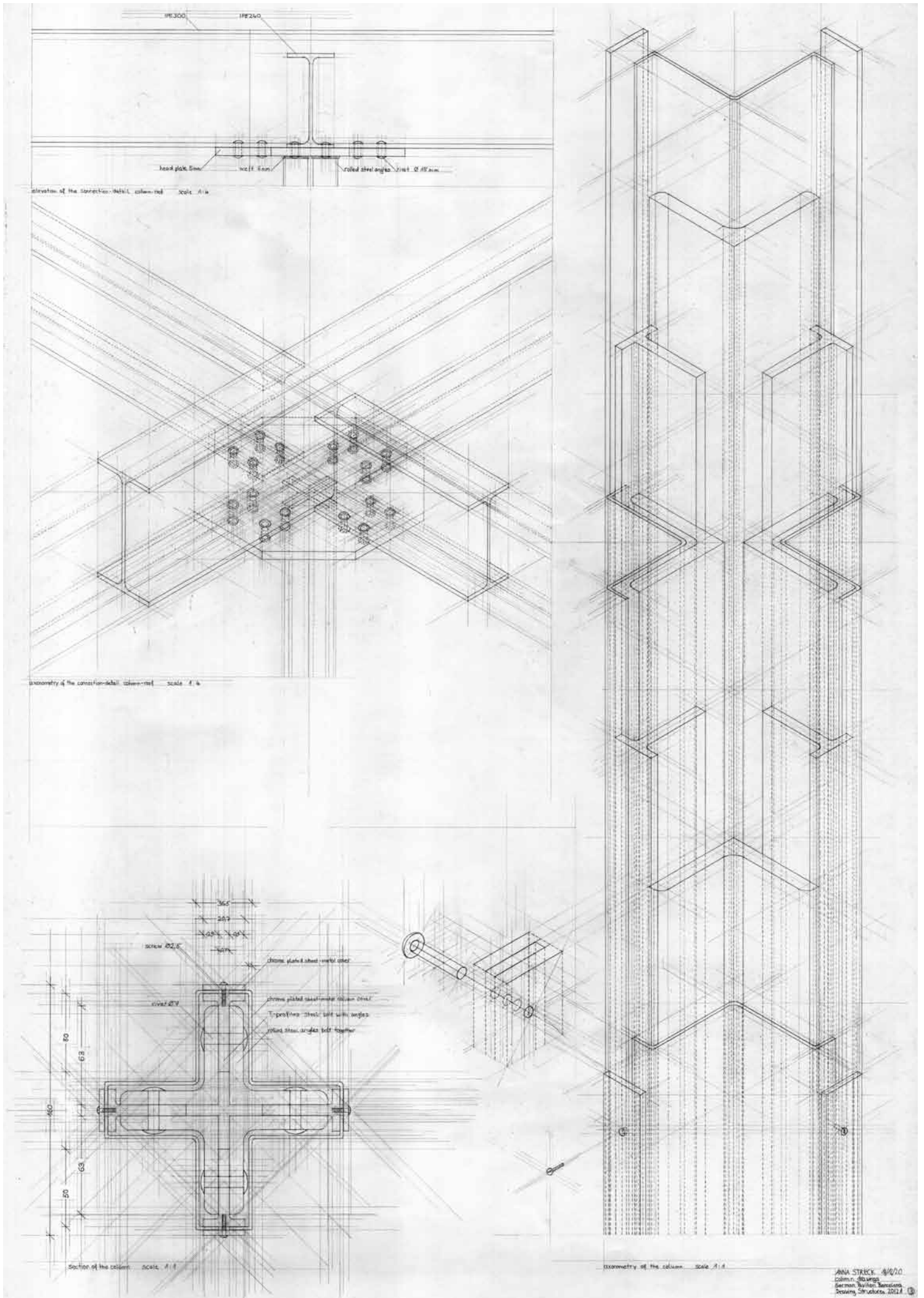
The UE *'Docta Manus — Drawing Structures'* introduces the basic drawing techniques: sketch, plan, section, elevation, axonometry, perspective. Based on these techniques, we further investigate analytical drawing methods capable of exploring structural concepts and their architectural solutions. Through hand drawing we analyze selected projects that embody an exemplary interplay of architecture and civil engineering, as e.g. the work of Mies van der Rohe, Luis Kahn / August Komendant, Jean Prouvé and Luigi Nervi.

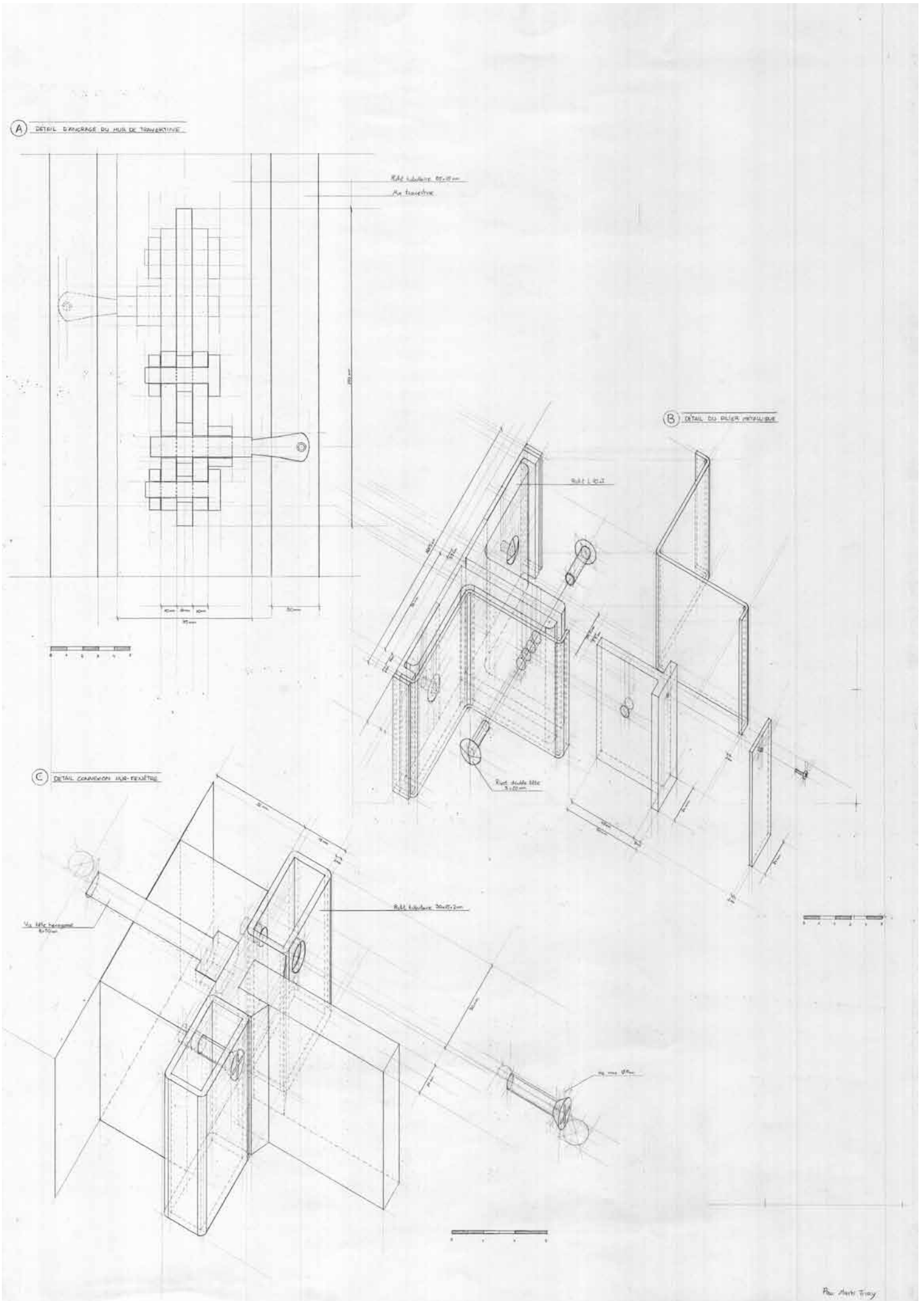
Our main focus lies on the load bearing structure and its tectonic and spatial articulation as common intersection between architecture and engineering. Through analysis, students enter into dialogue with construction in a direct way. They get a sense for the adequacy of tools and refinements of solutions. We investigate proportion, material innovation and tectonic articulation in relation to the structural idea and become aware of the importance of detail. Analysis takes apart and makes transparent the parameters and dependencies of the design process and opens the work into a condition of possibility.

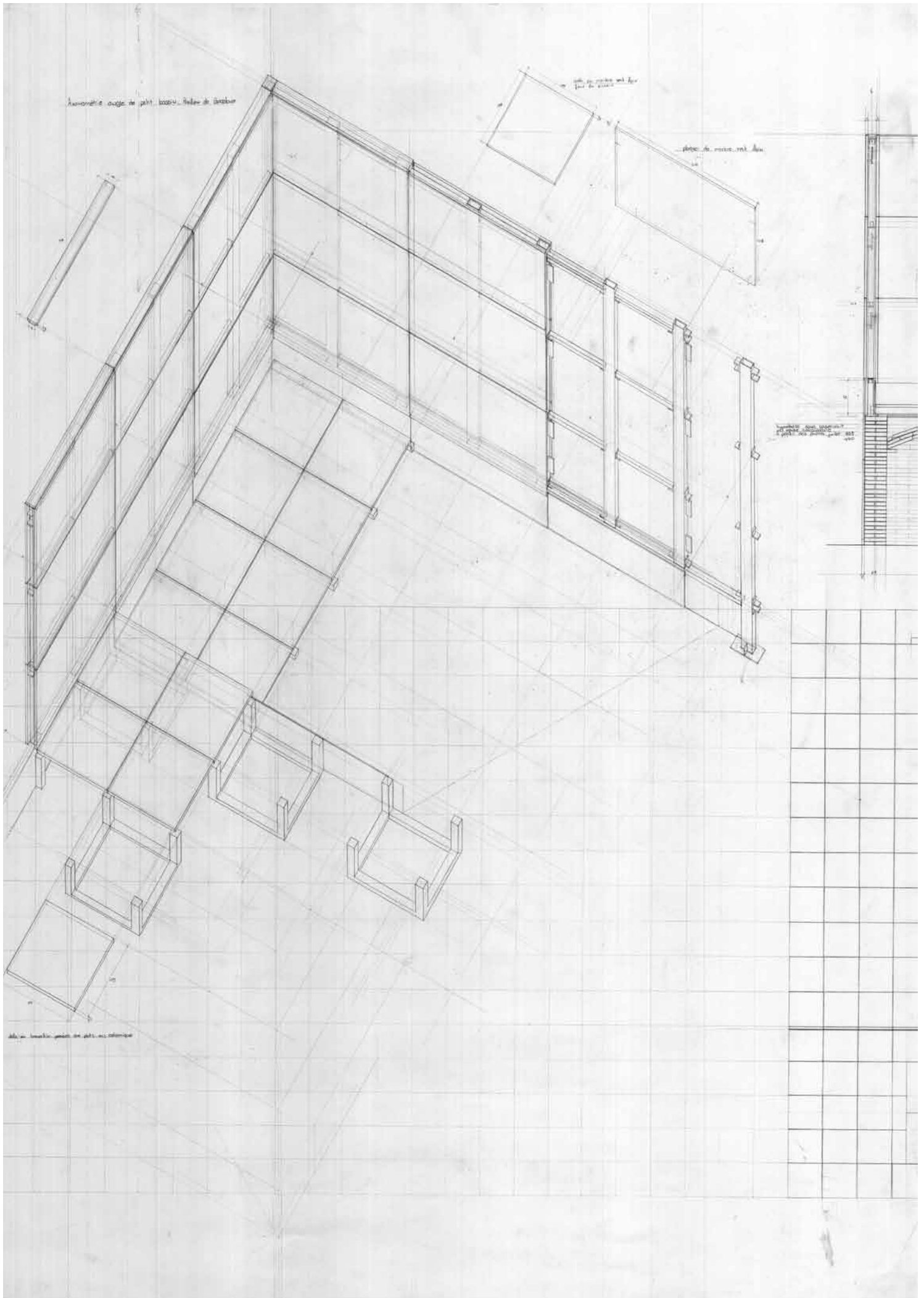
We draw by hand, as this is the most direct and immediate way of becoming aware of technique in relation to intention as it forces to take decisions. Drawing by hand is a cognitive process where the dynamic relation between doing and thinking is essential. That is why 'the more you draw, the more you see' and vice versa. The learning hand builds up tacit knowledge. The construction of points and lines on a sheet of paper sensitizes students to the notions of scale, size, proportion, transparency and composition; it makes them aware of the importance of detail as a key moment of construction, as a mediator relating a structure to the perceiving subject.

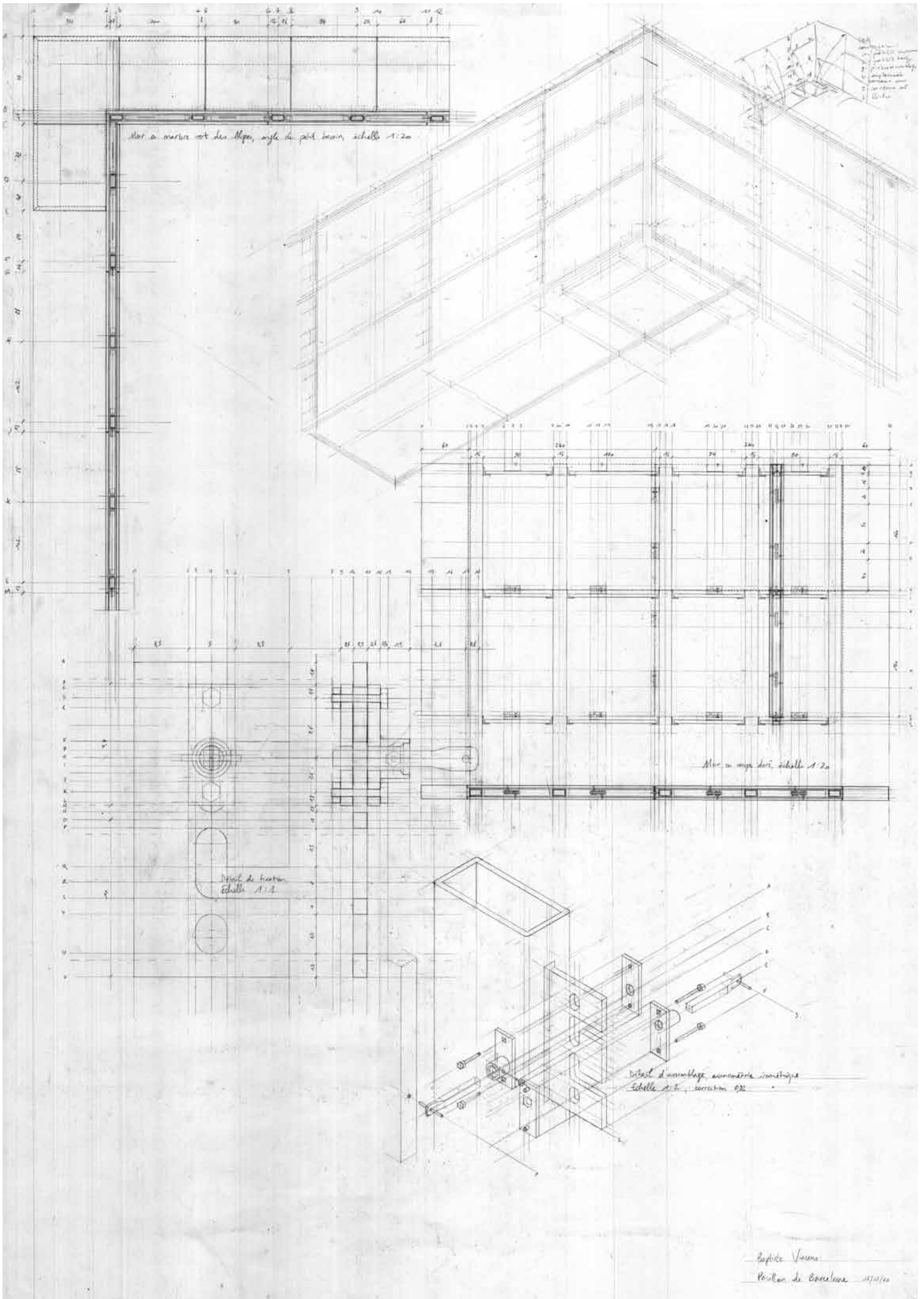
This first publication shows a selection of 24 working drawings from an atelier of 30 students in civil engineering and architecture that took place during the autumn semester 2020 at EPFL. Each student analyzed one out of five selected projects of Mies van der Rohe, exploring adequate scales, drawing types and techniques to understand the project's structure and construction principles. The drawings thus include dimensioning and fabrication notes up to catalogue of elements, mounting principles and sequence. The careful construction of layers of information by hand builds up into tactile working drawings that embody the spatial and tectonic ideas as well as the construction process of a structure. These 'meta-drawings' allow the observing eye to survey from one detail to another in a synchronous manner while integrating all information into a mental construction.

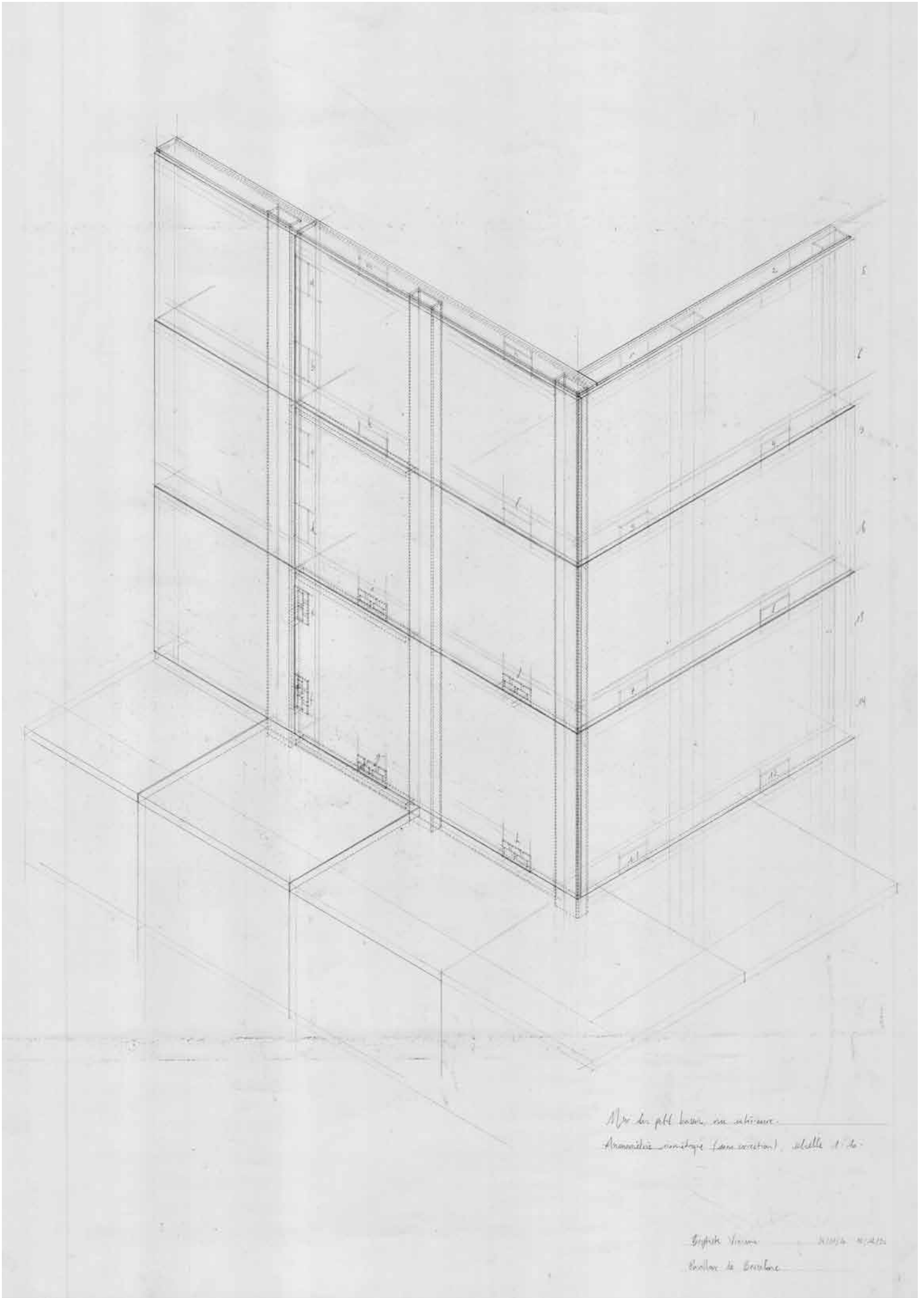
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BARCELONA, 1928-29 / 1983-86

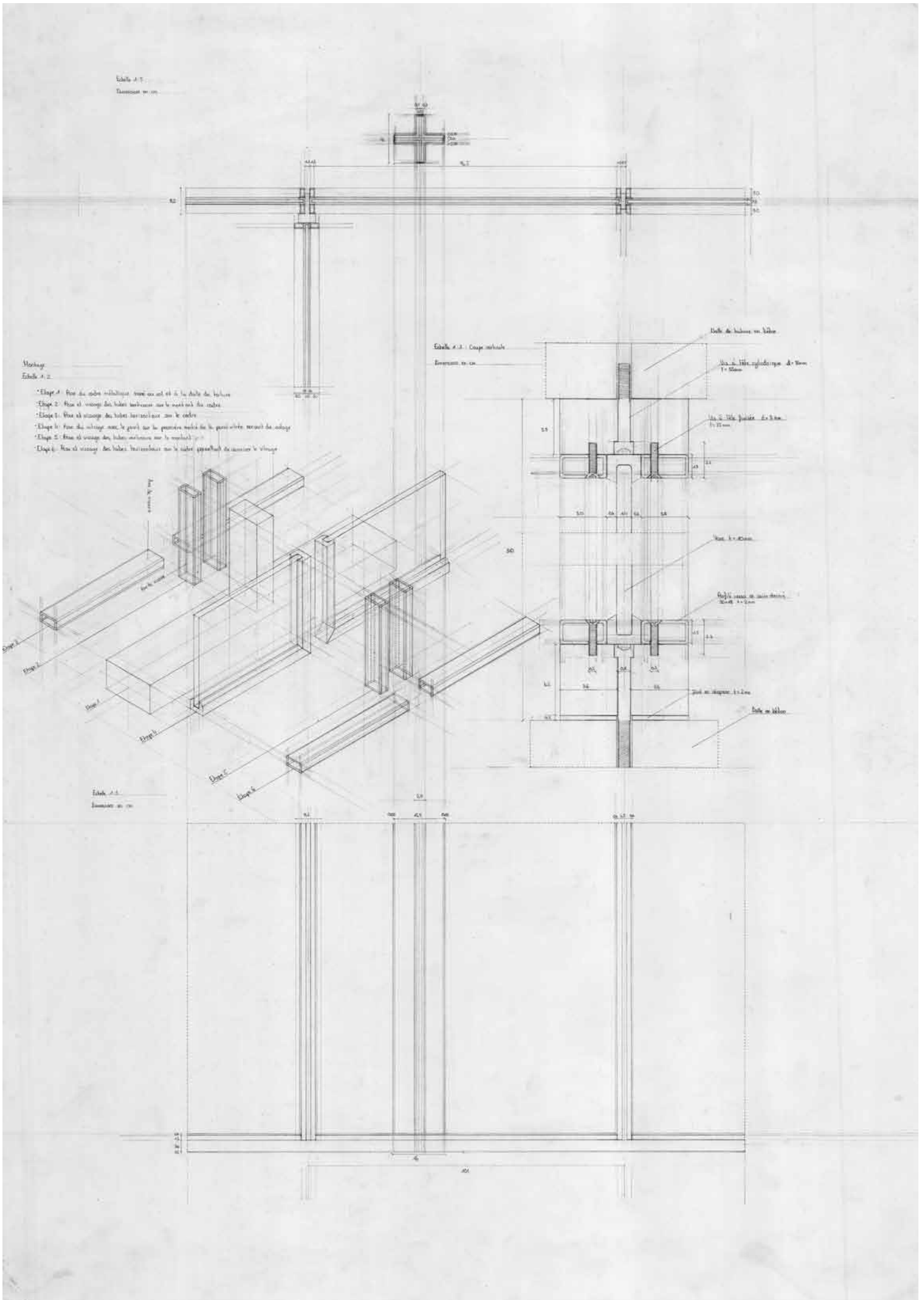


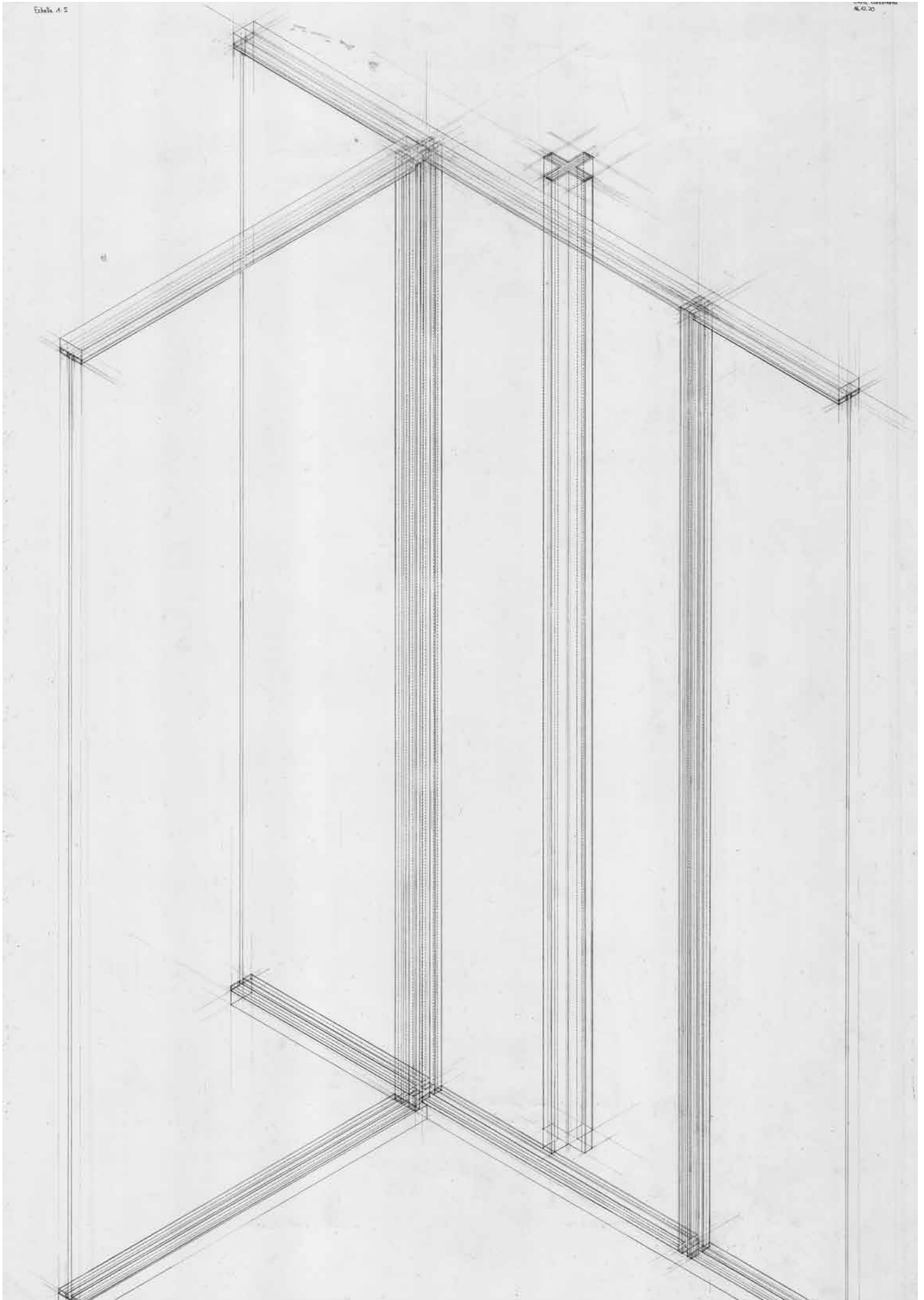




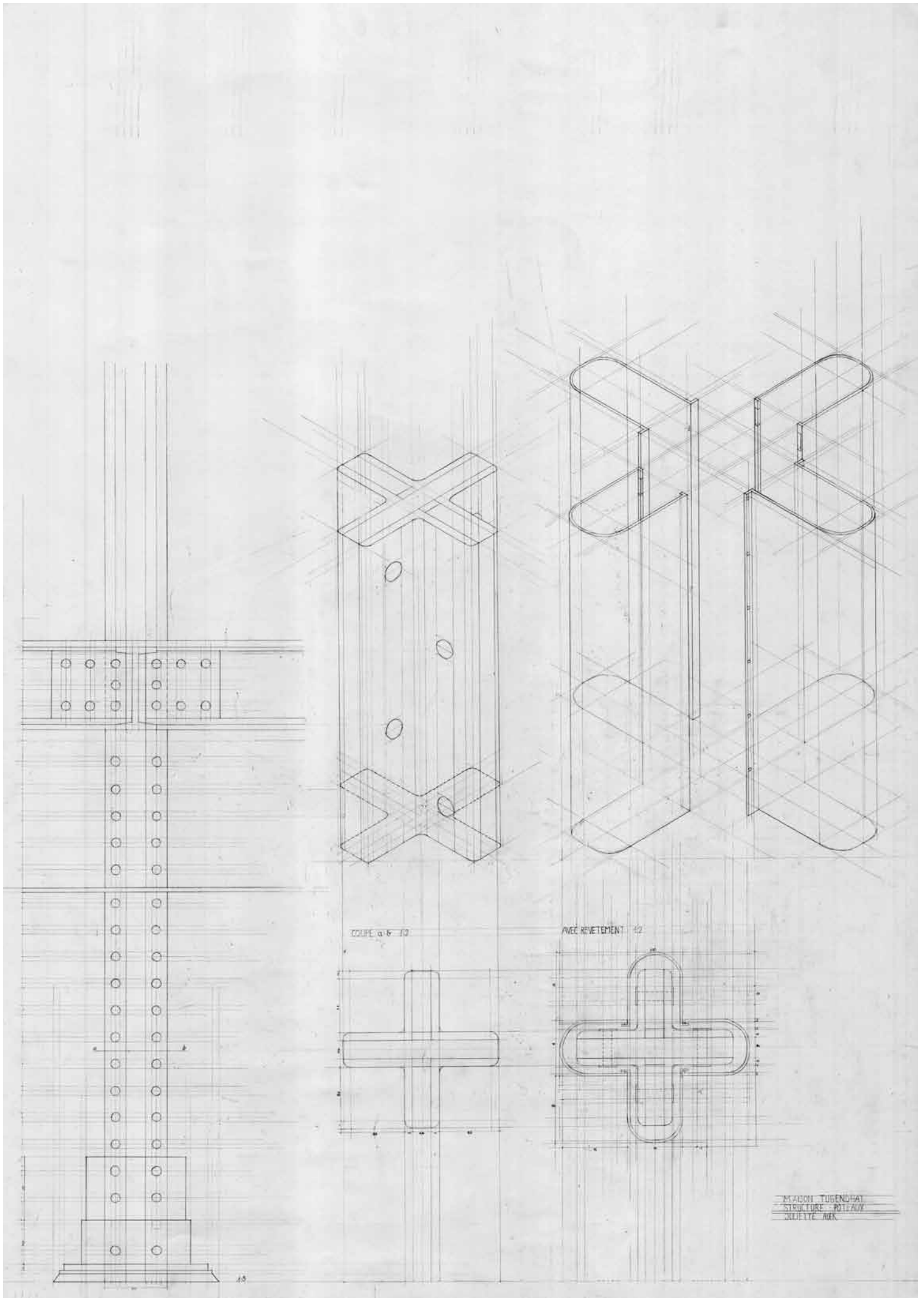




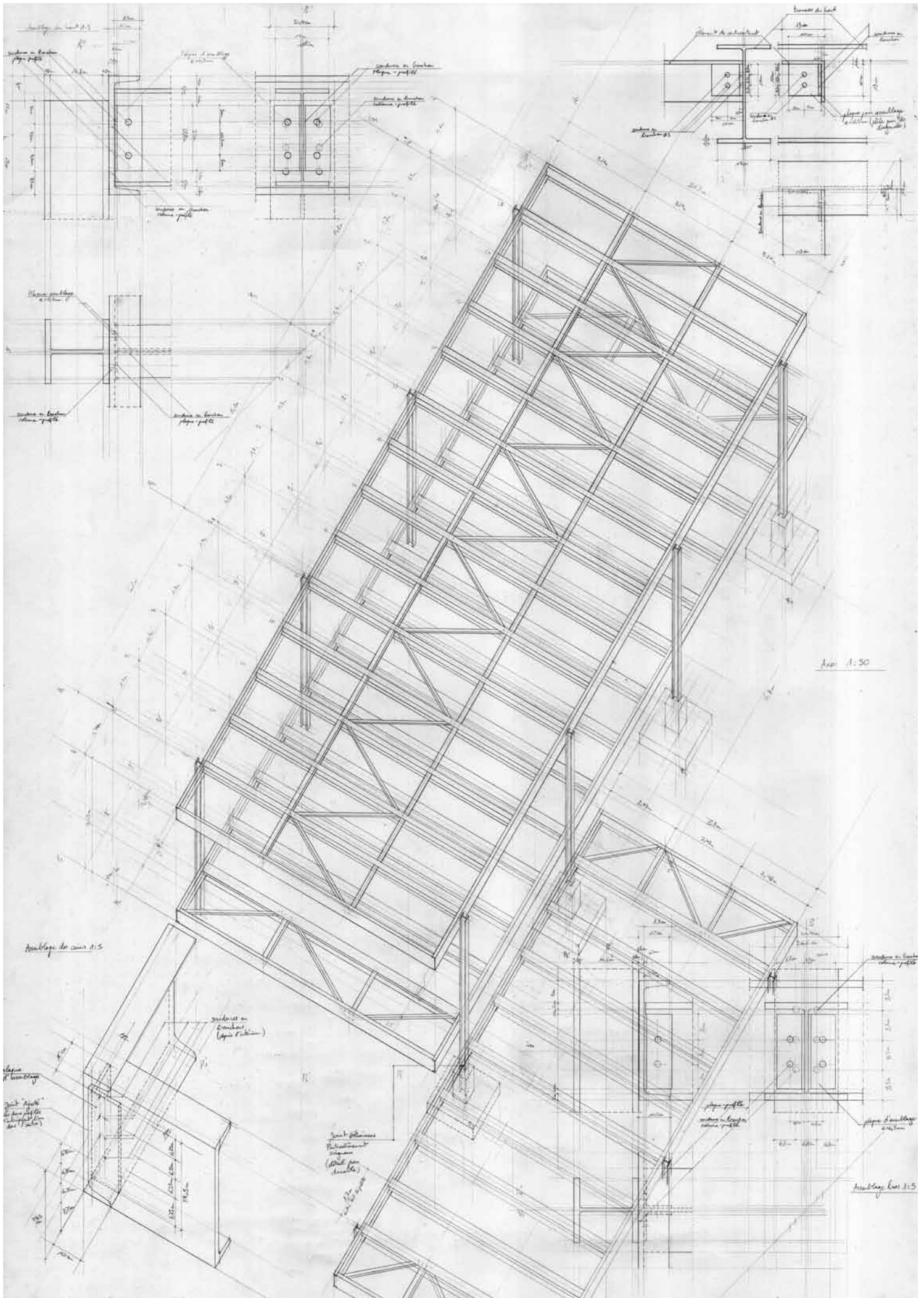


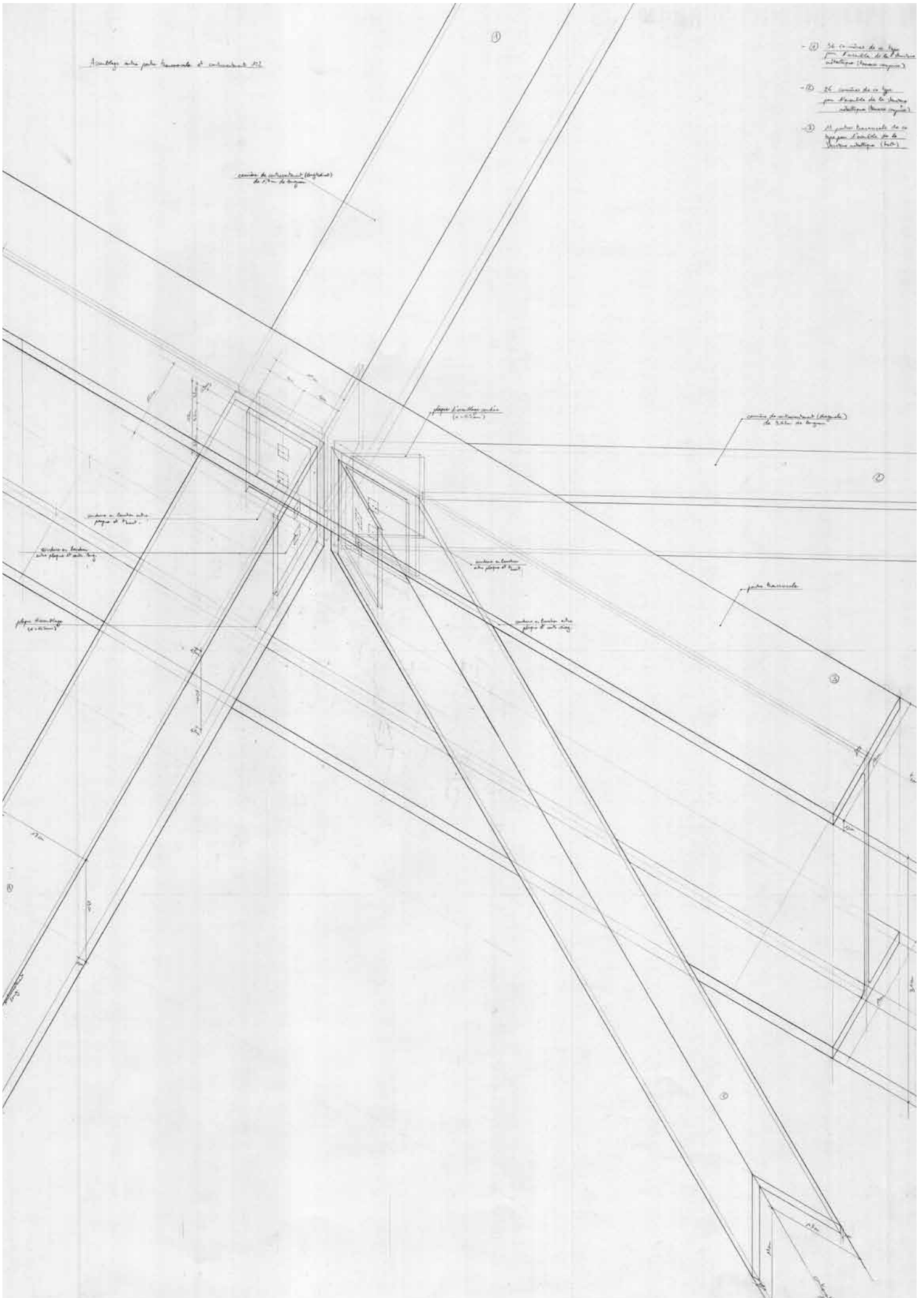


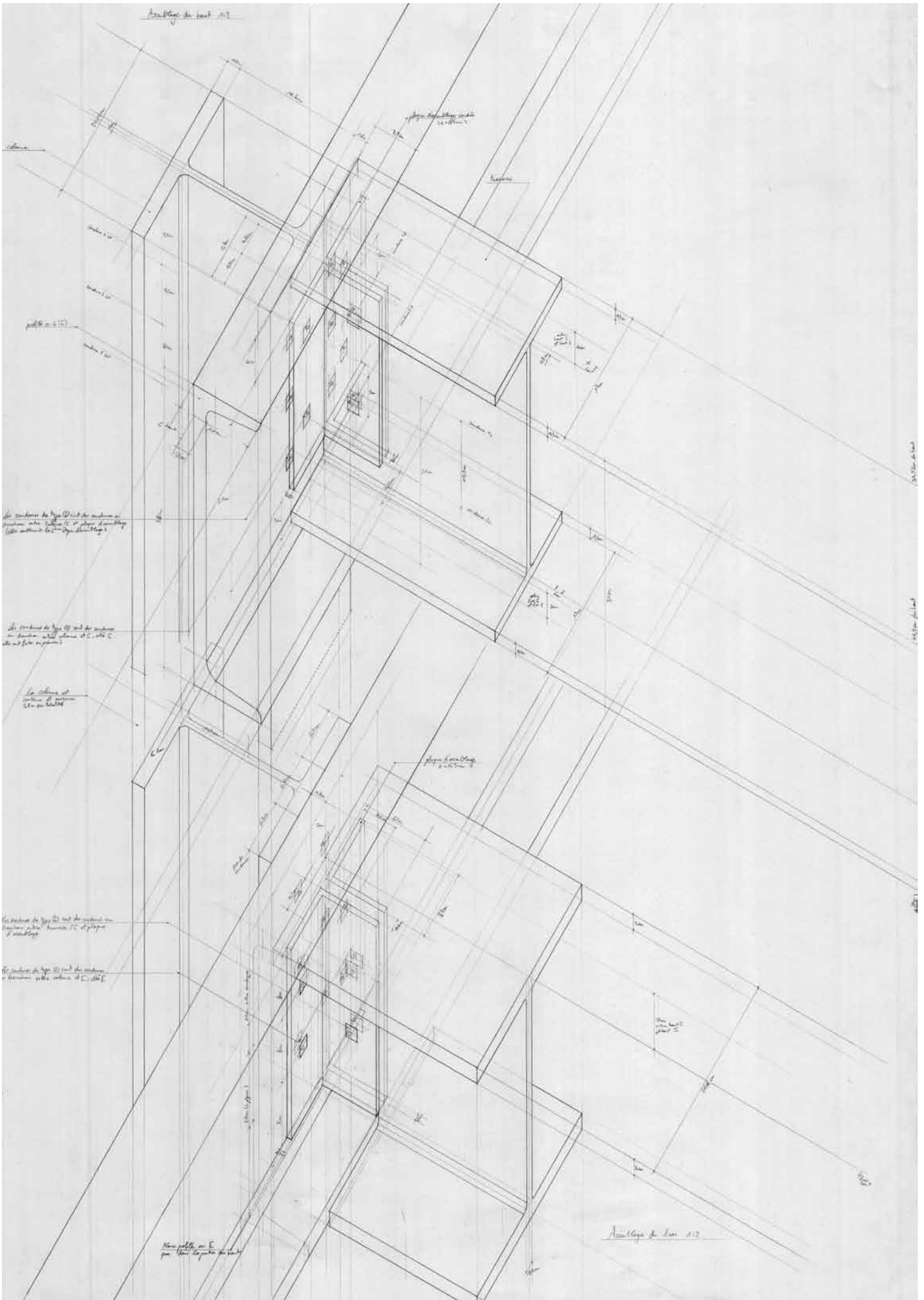
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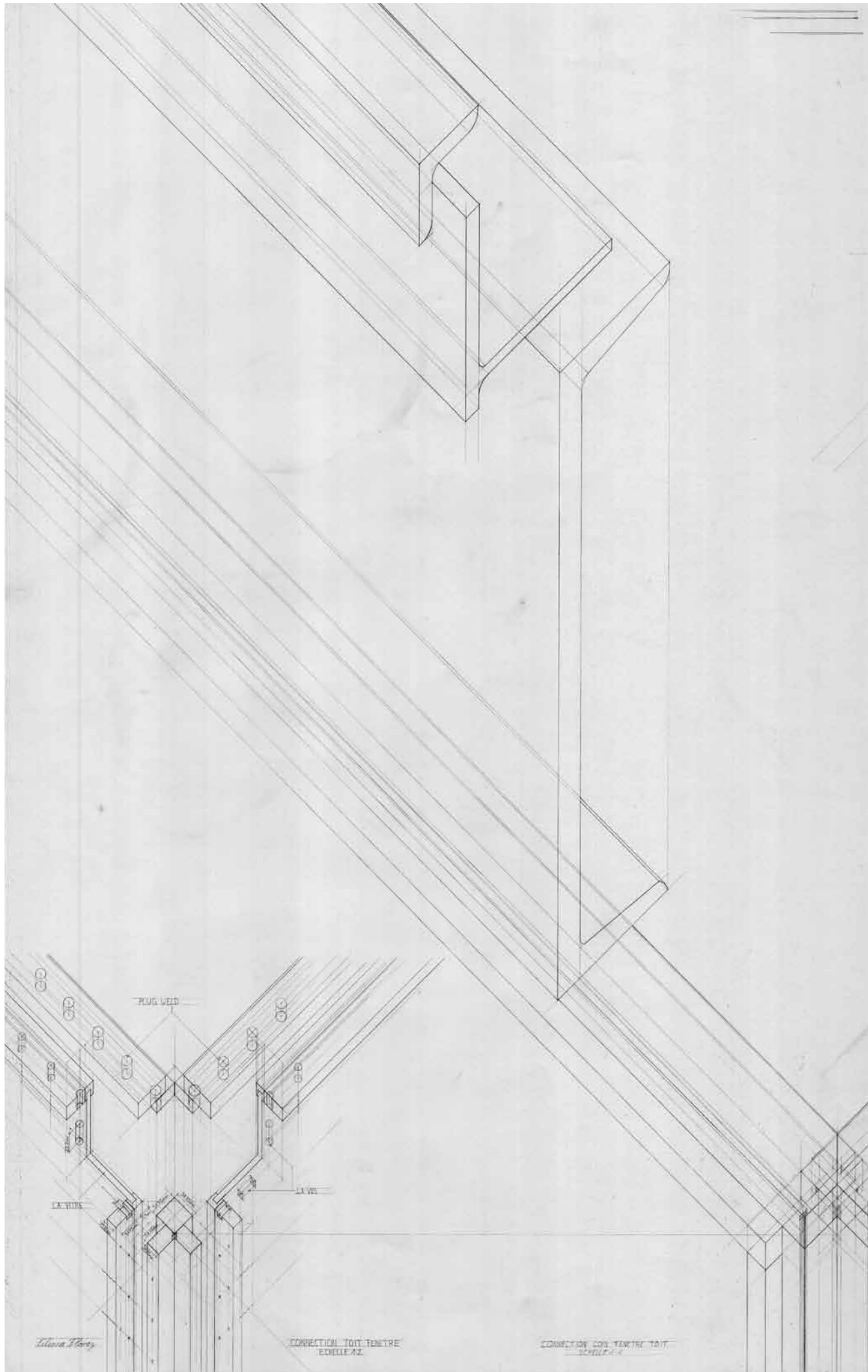


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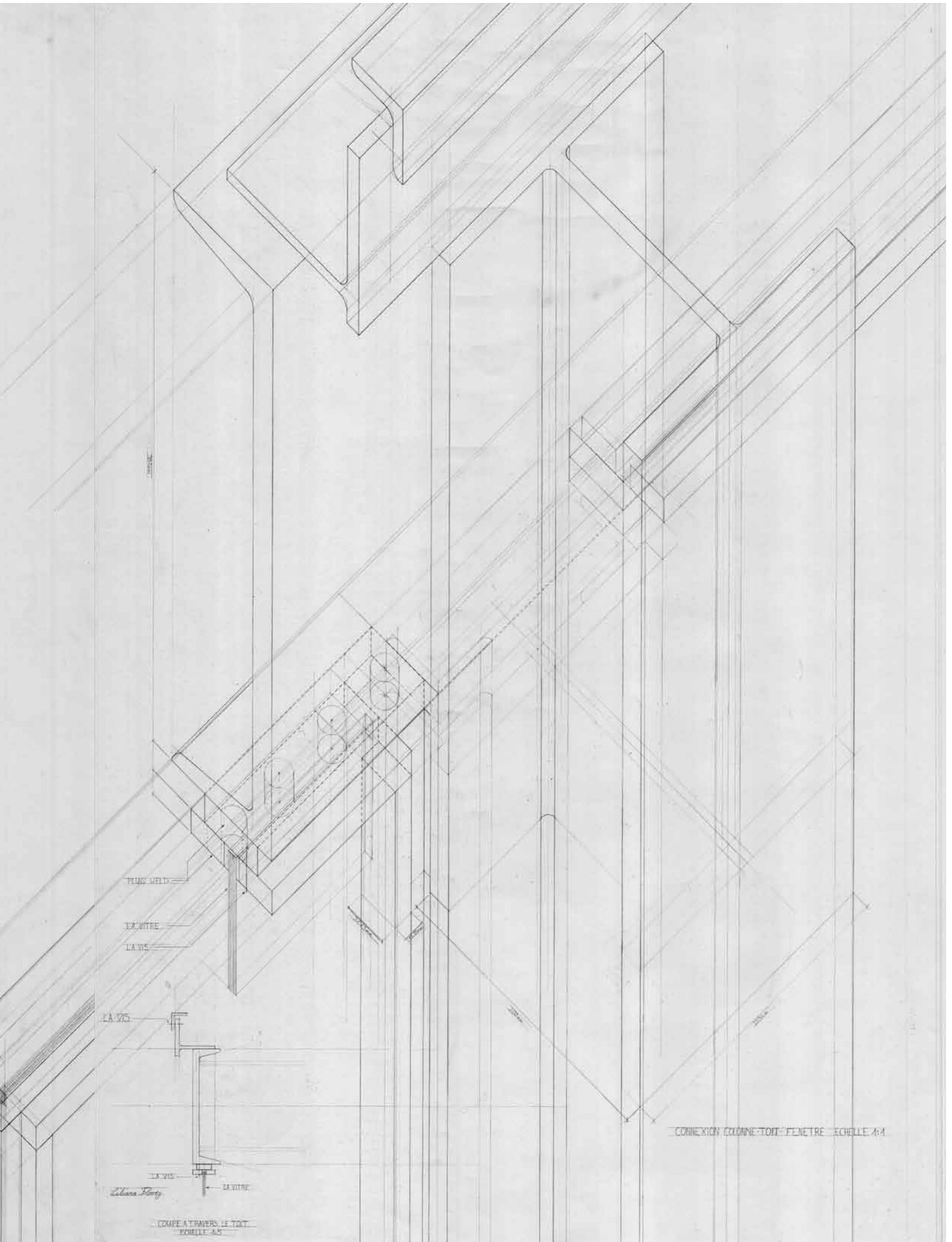


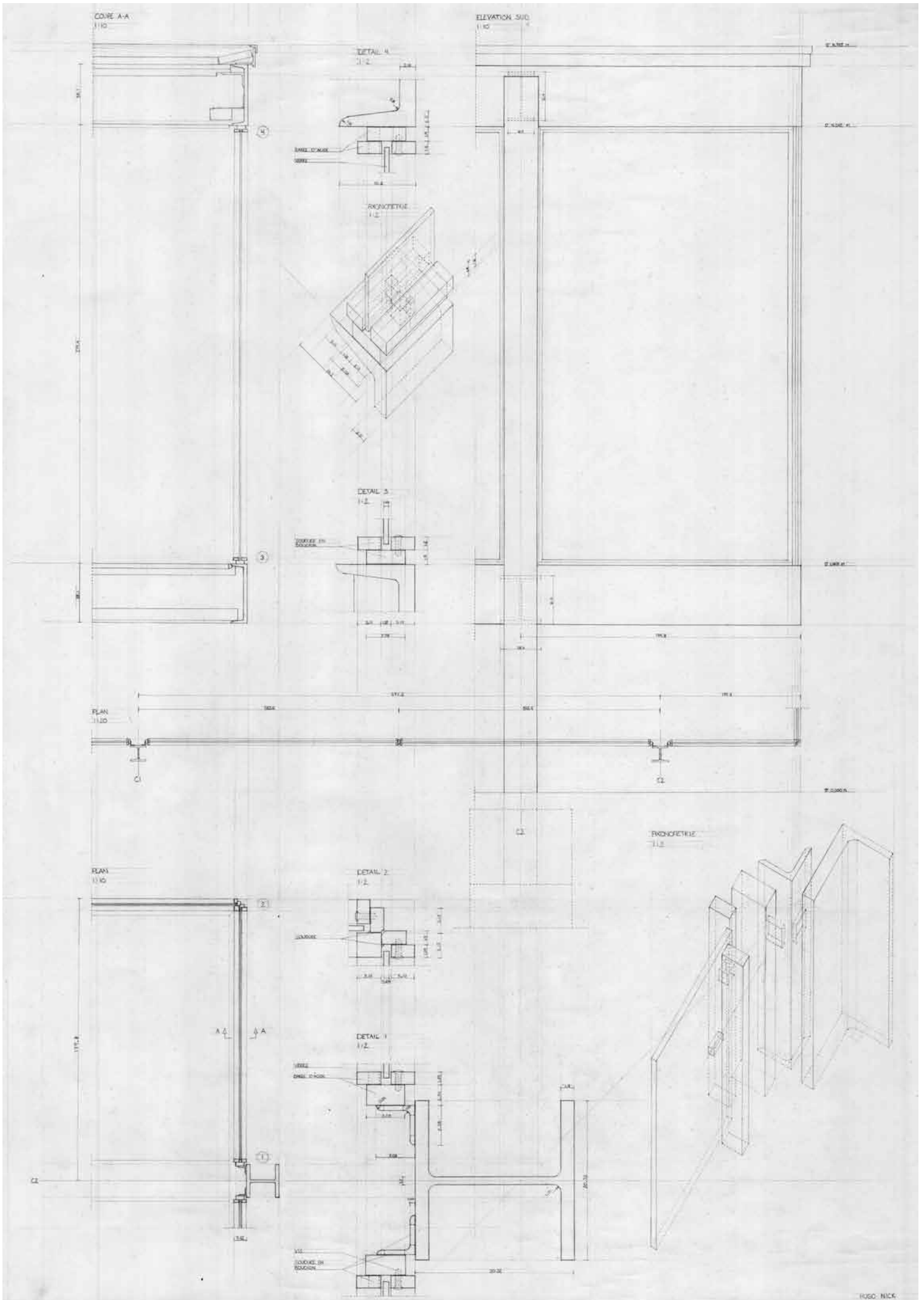


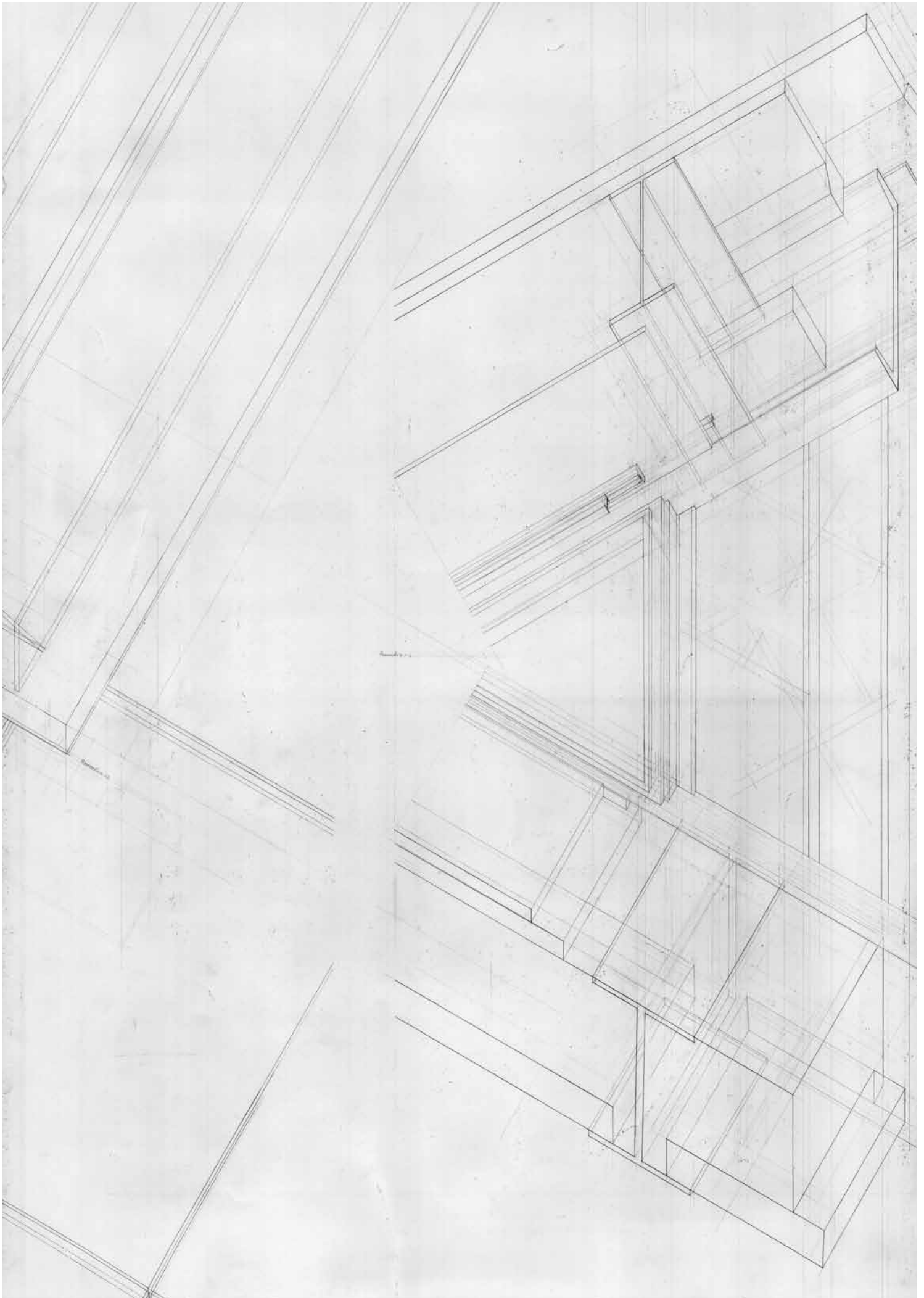
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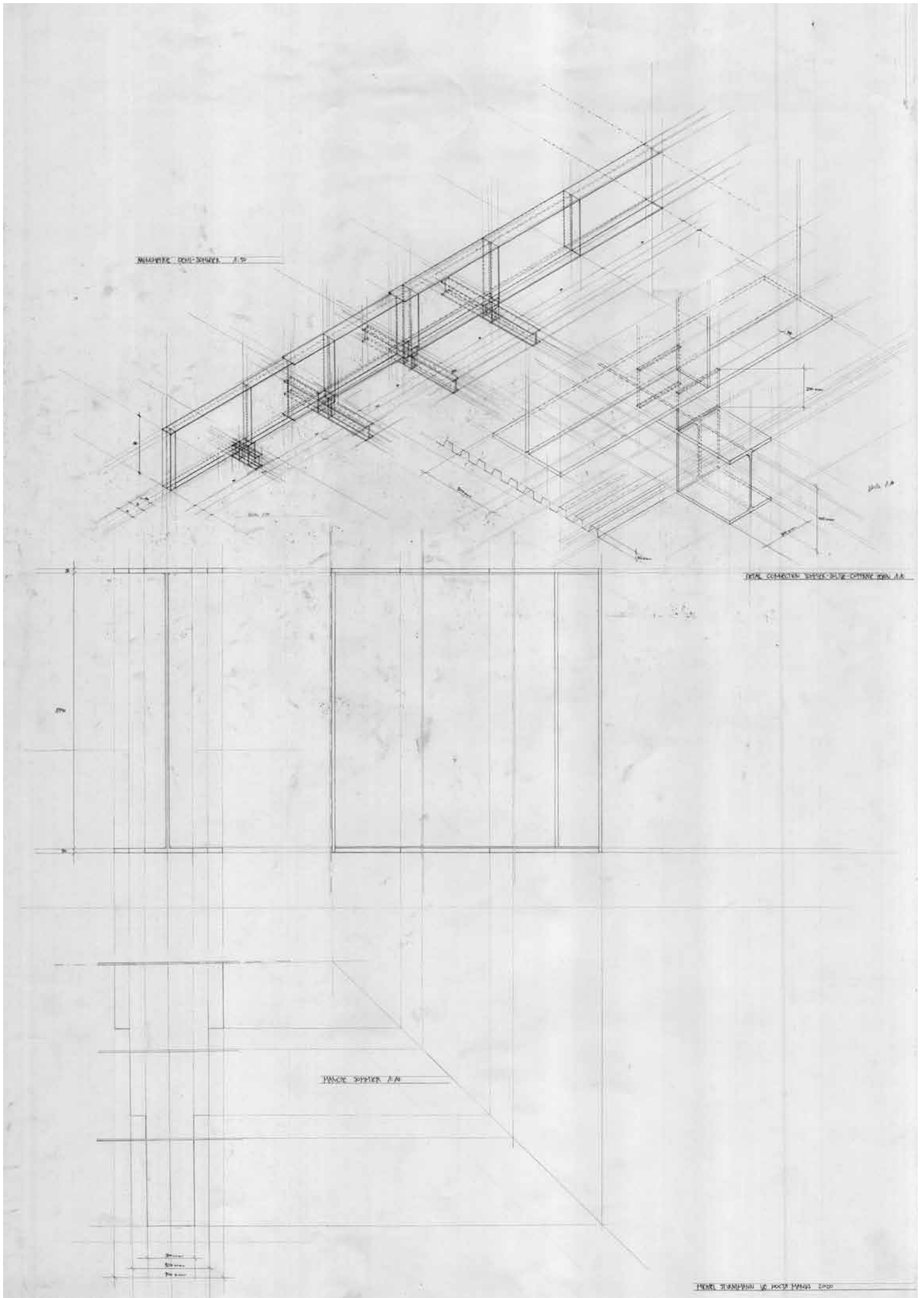
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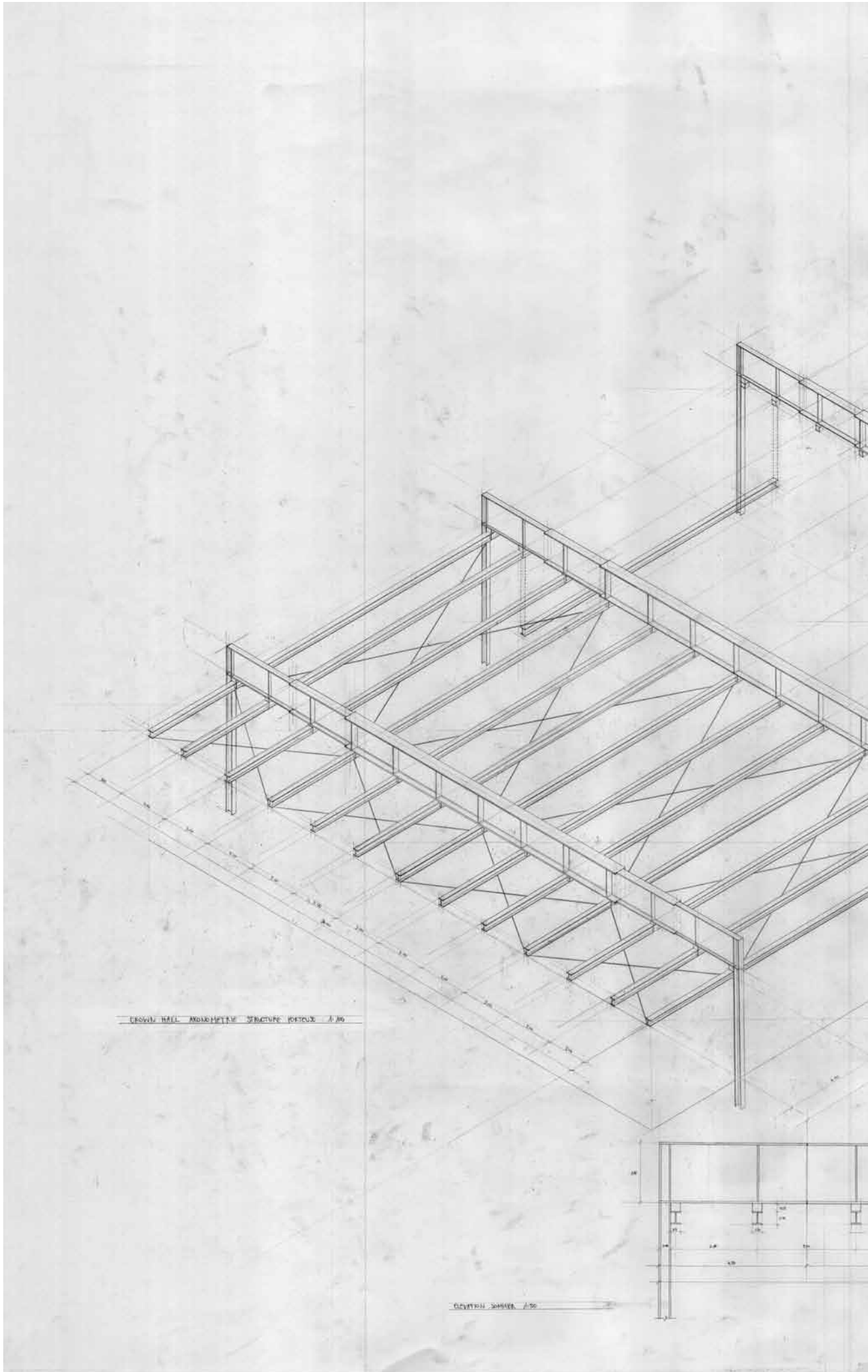






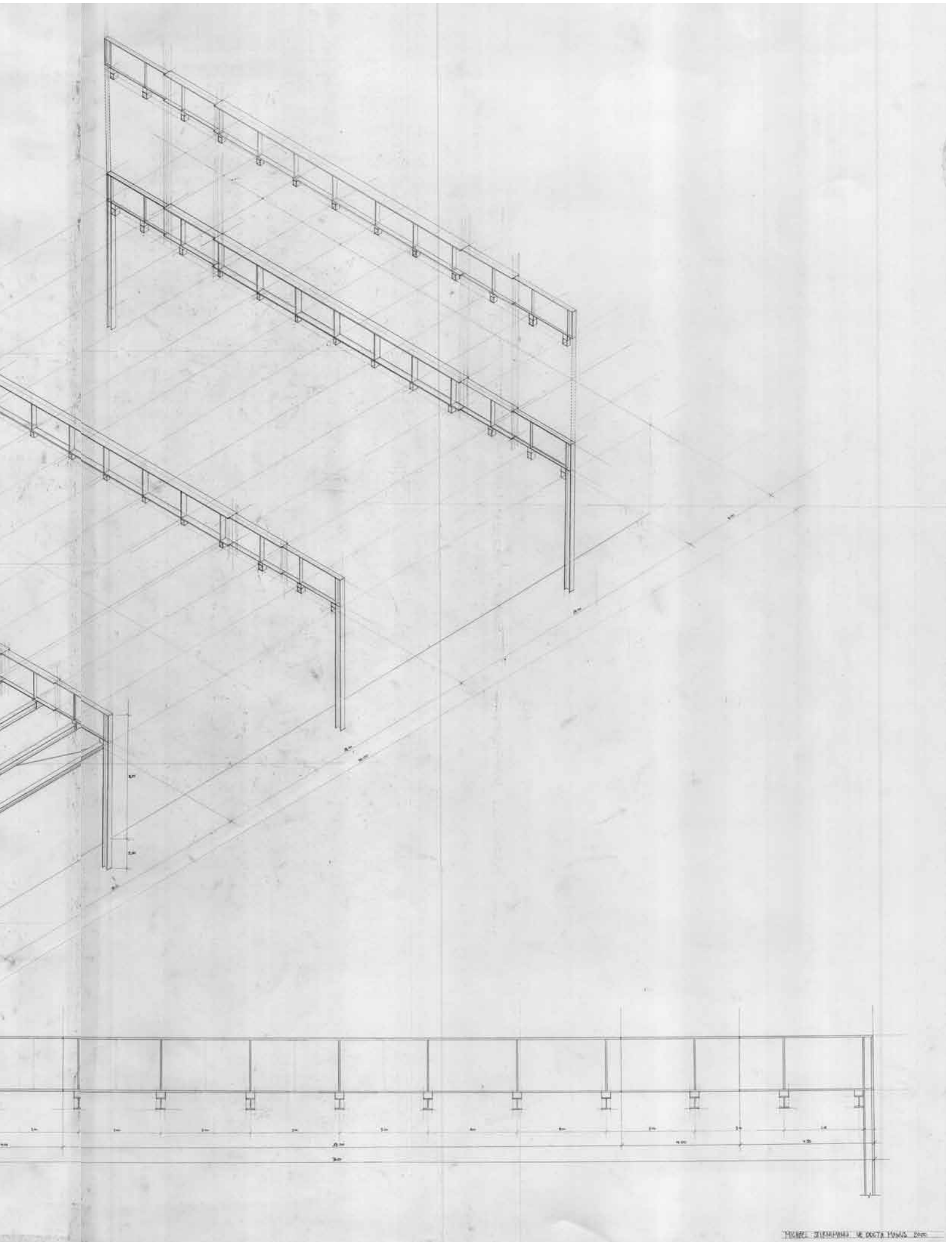
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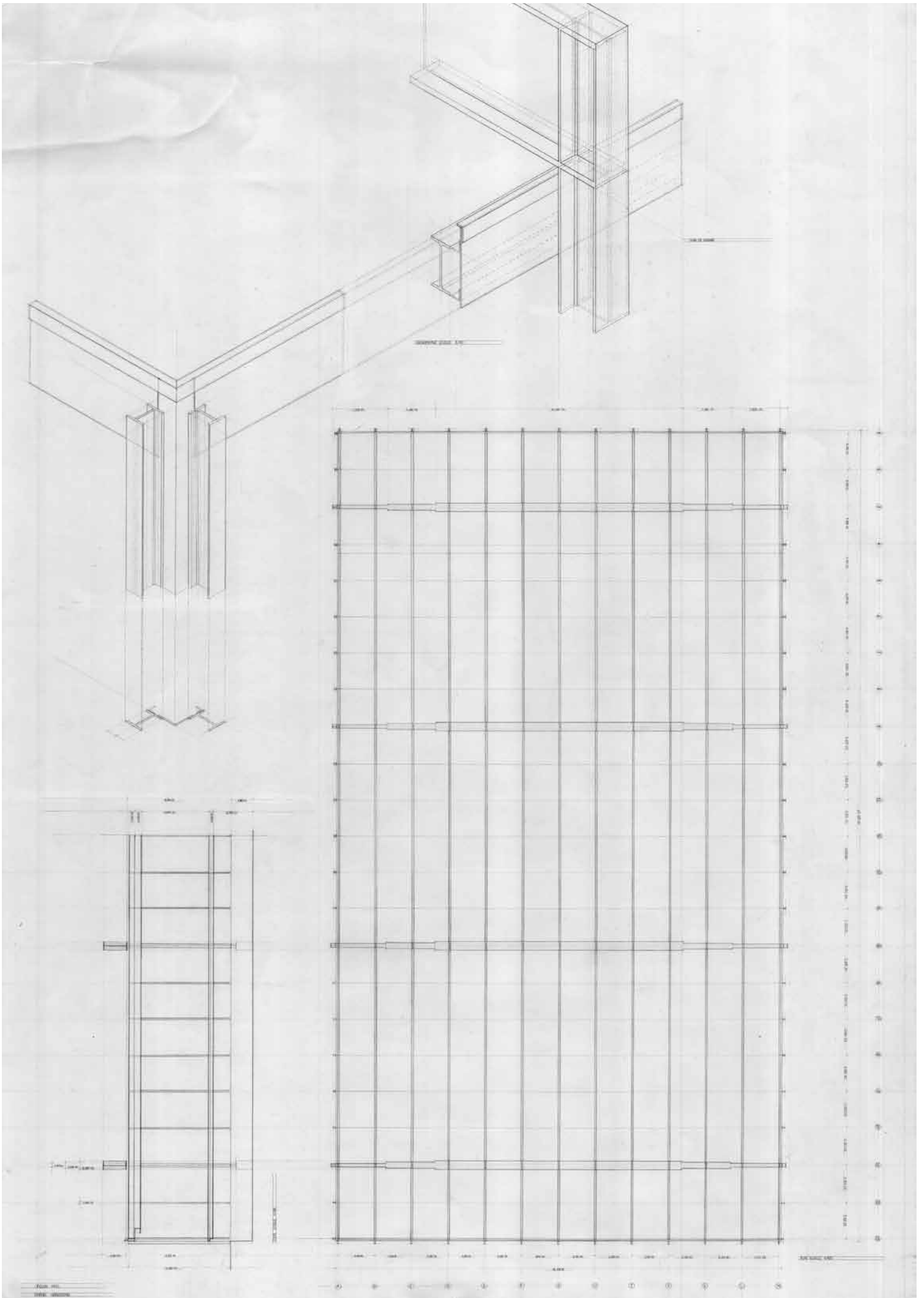


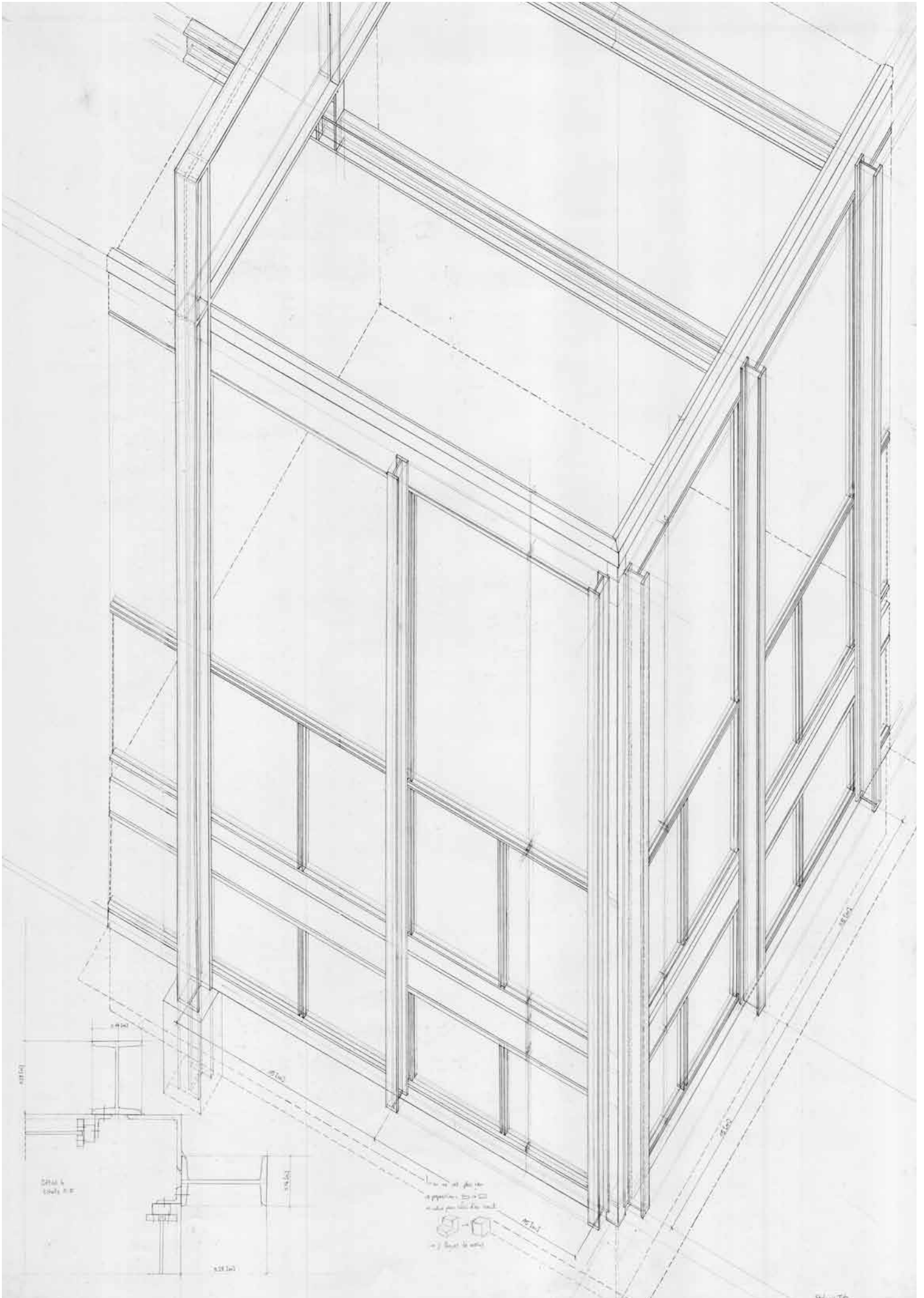


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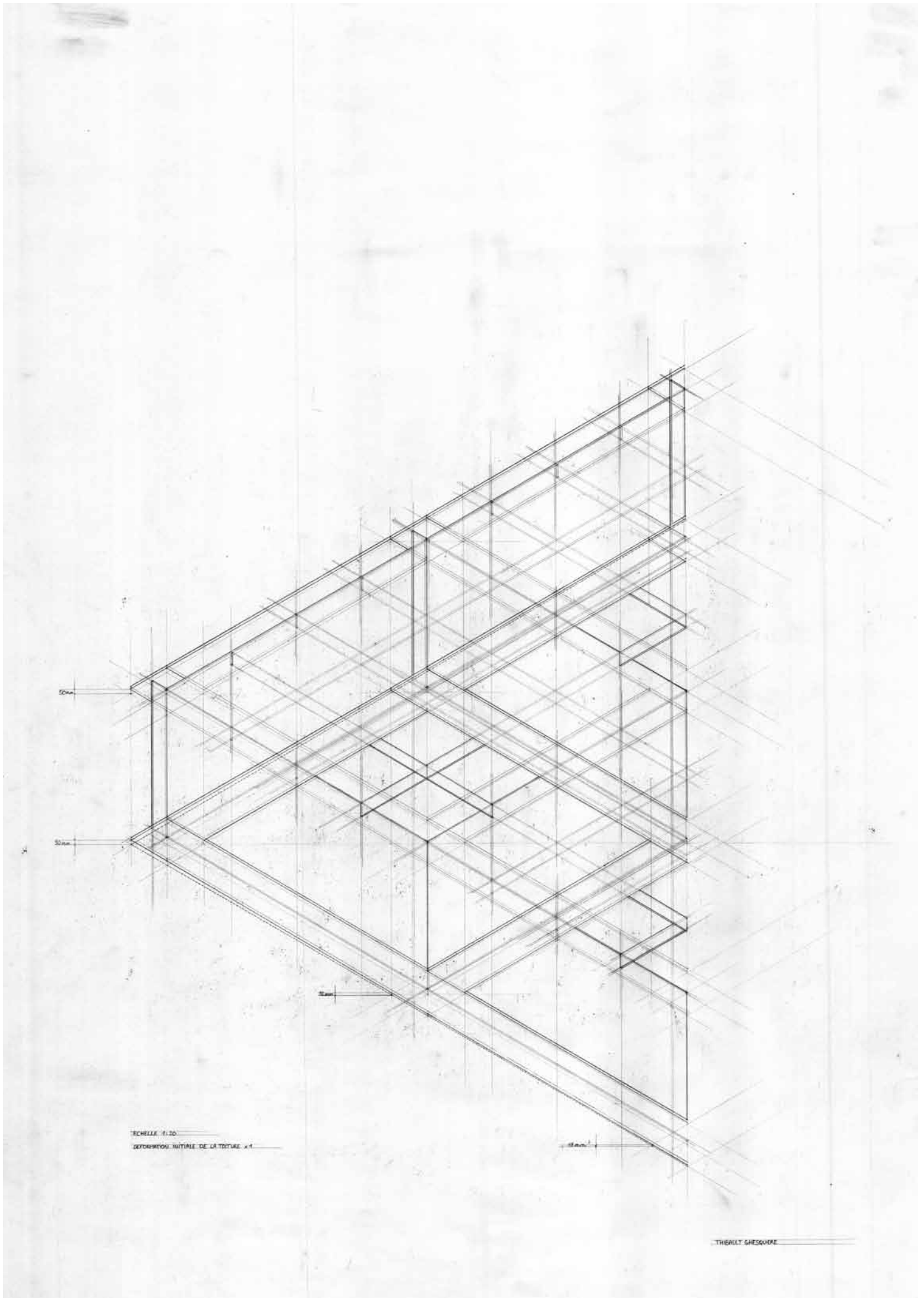
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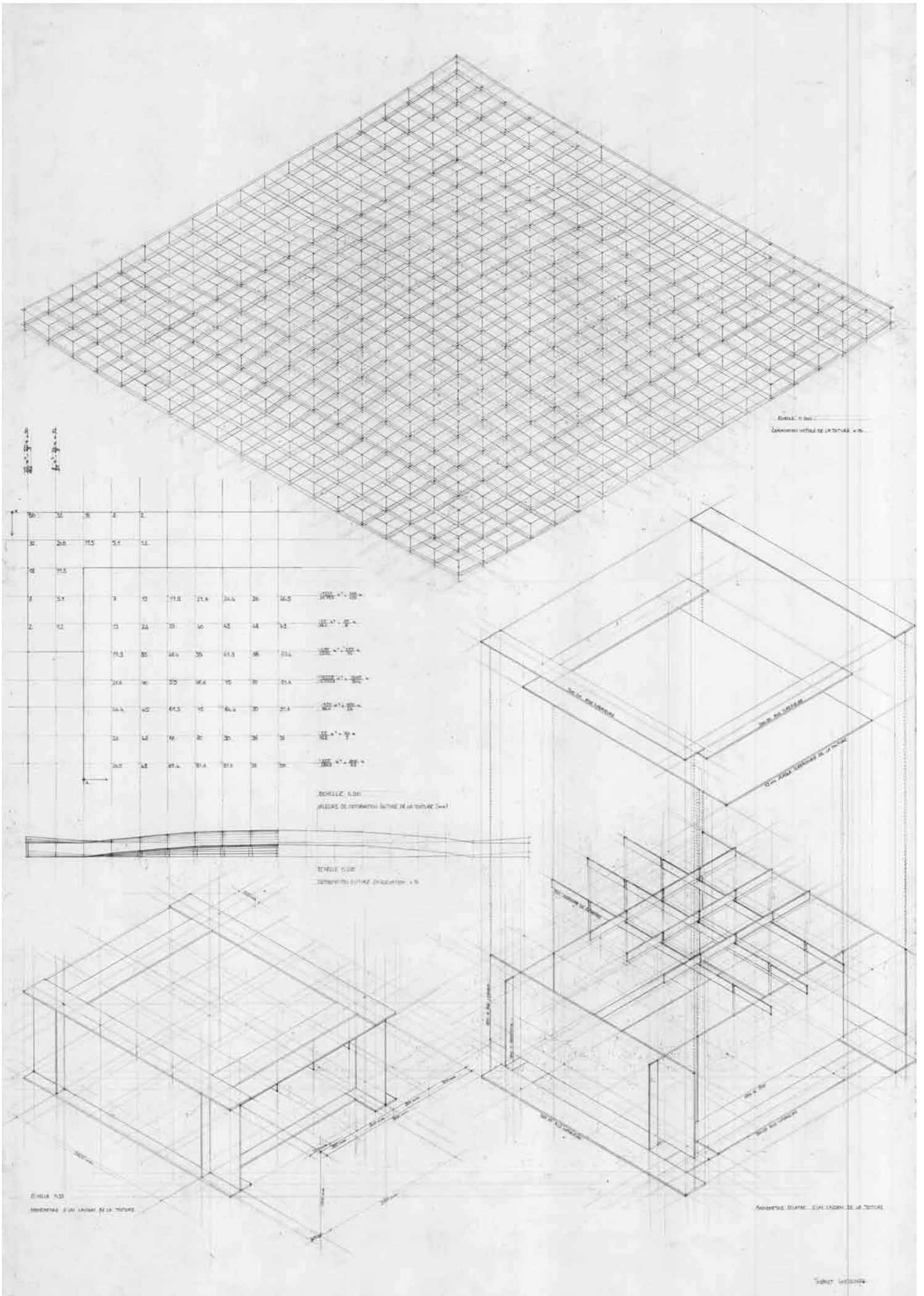


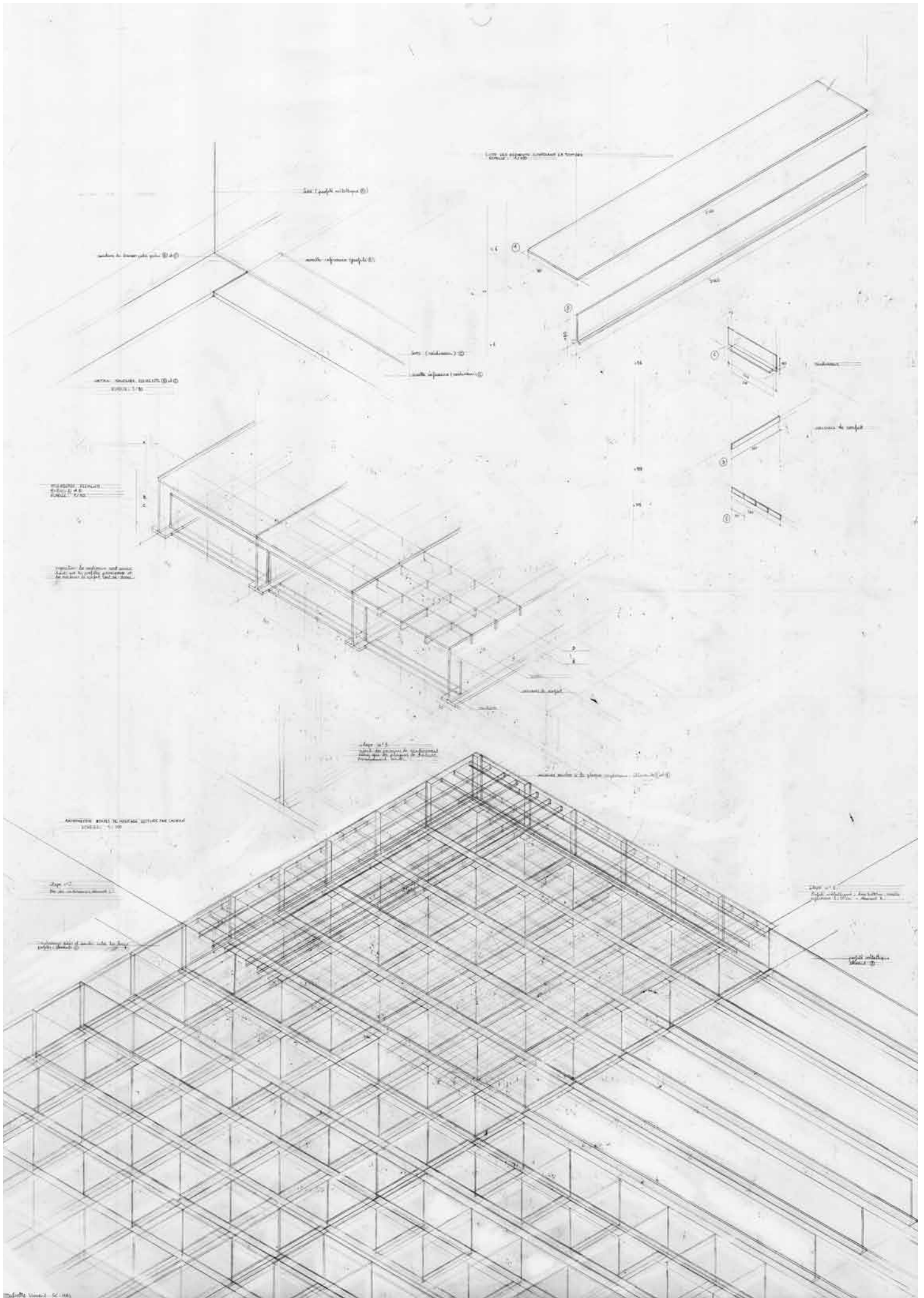


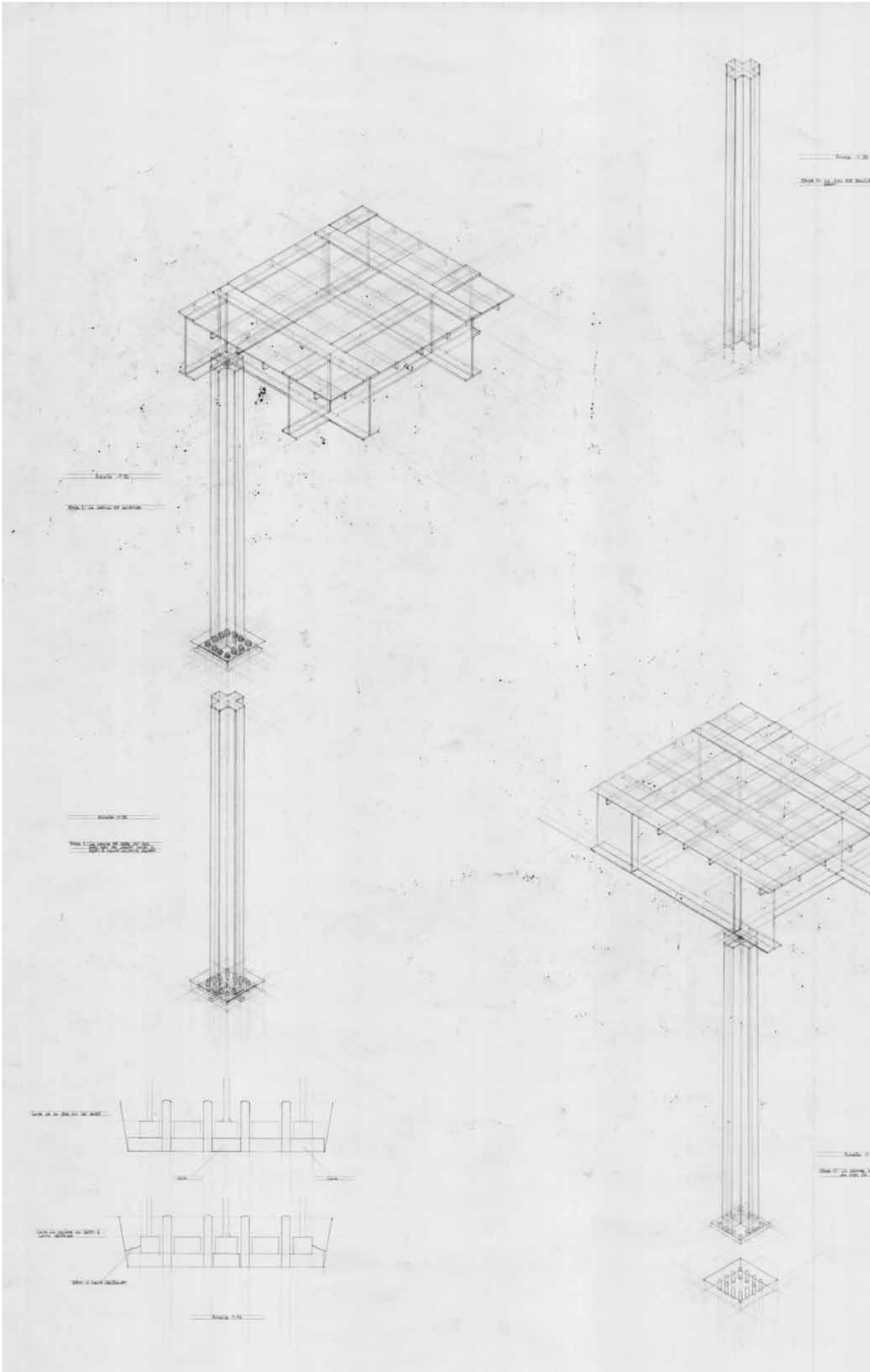


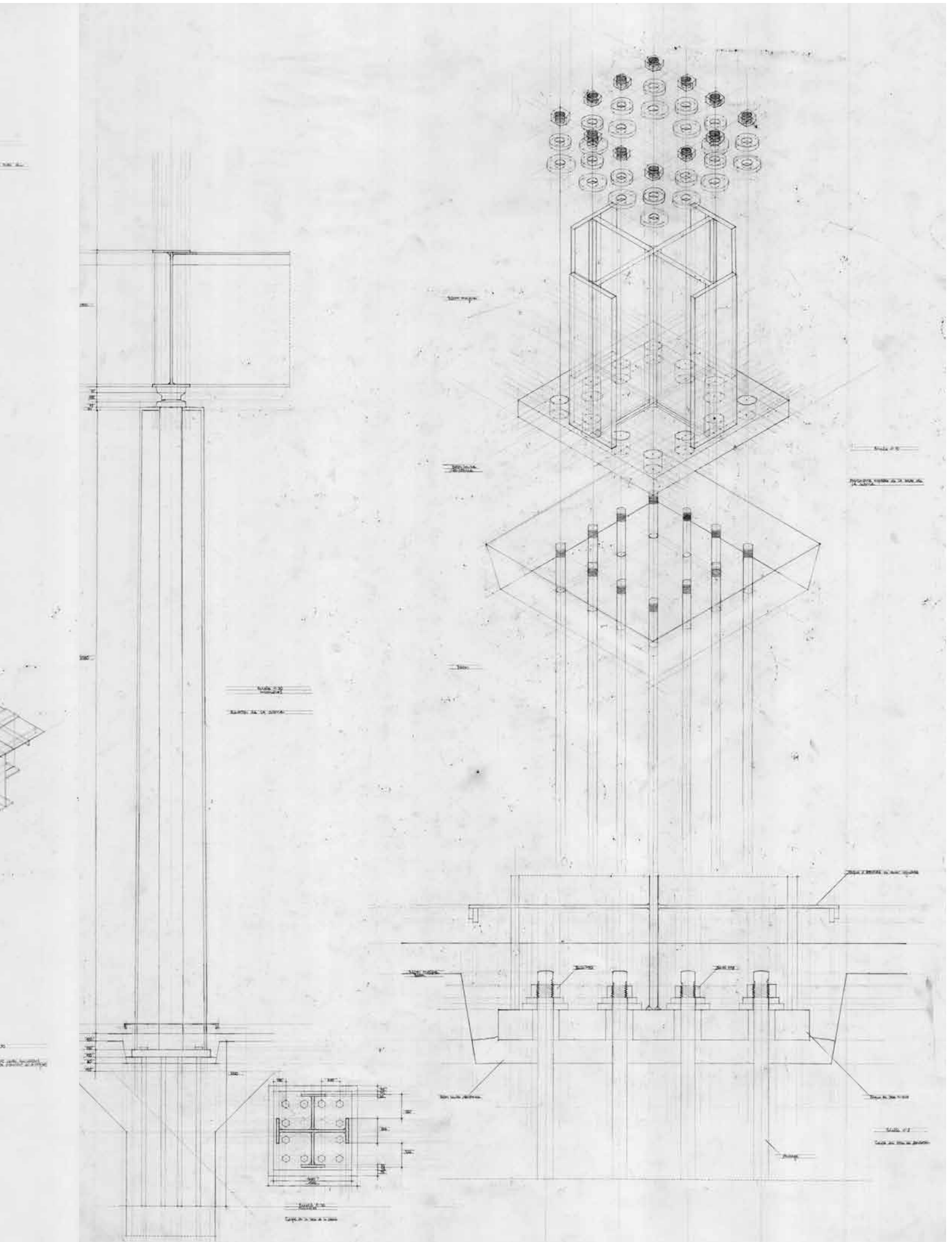
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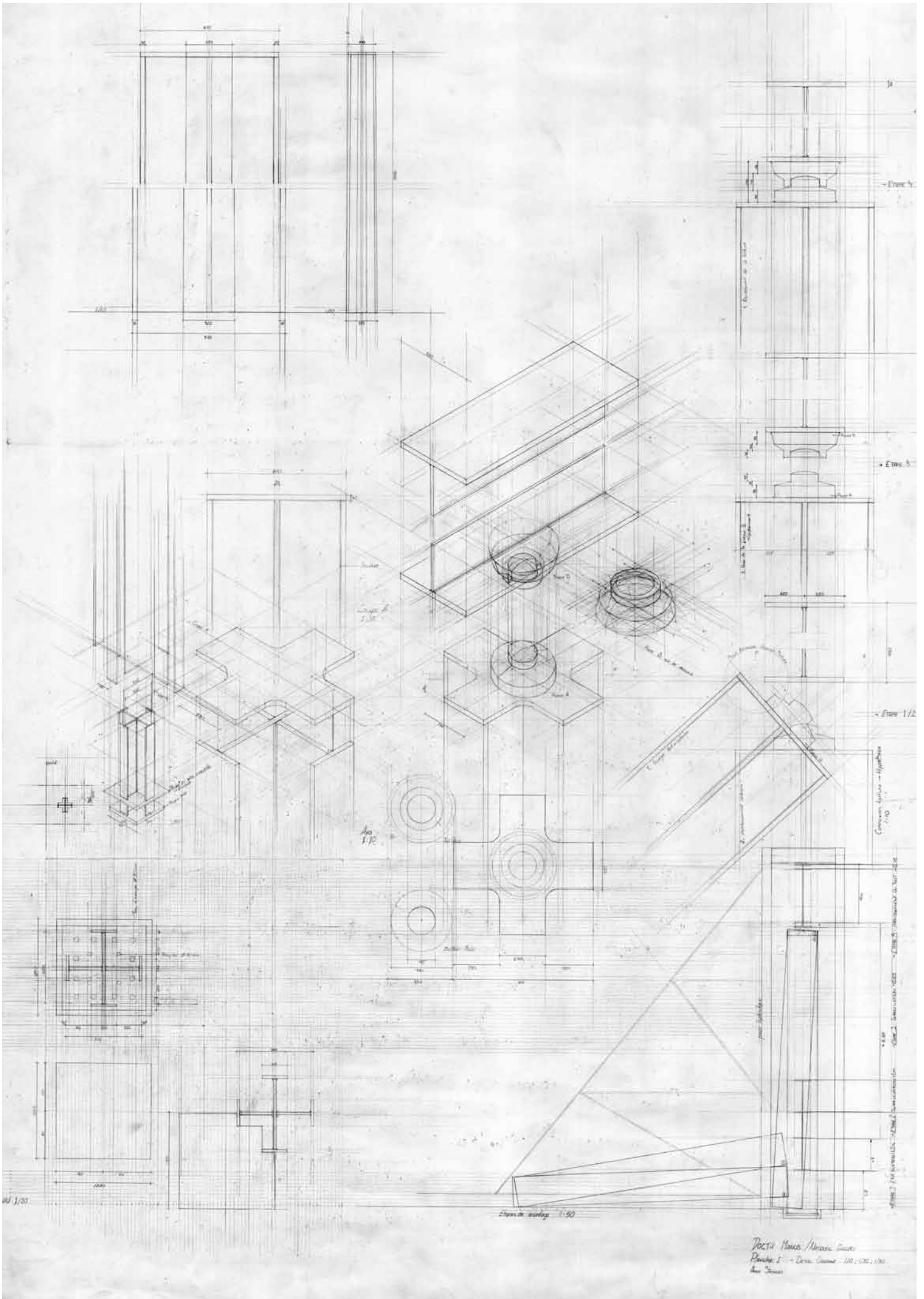


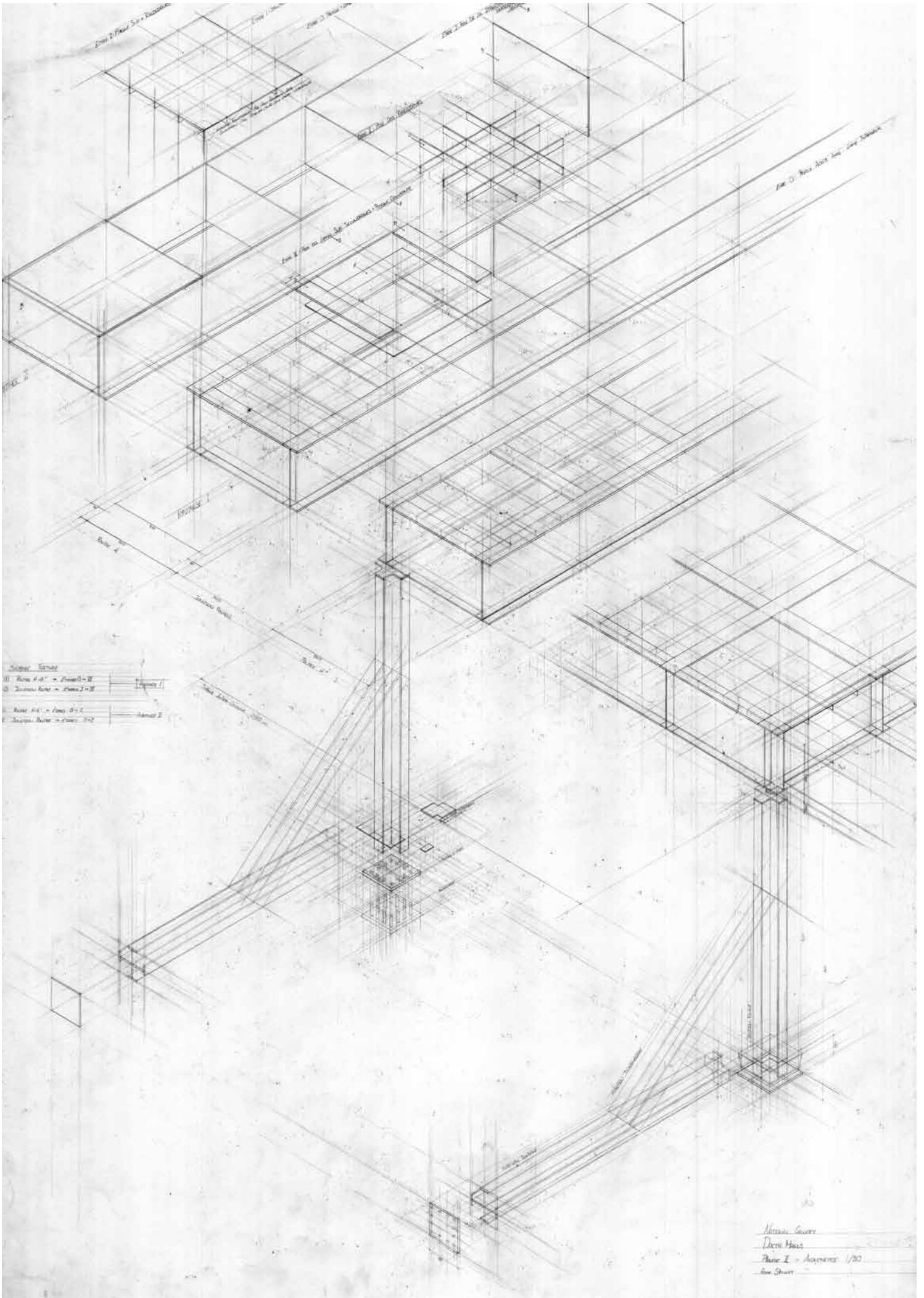












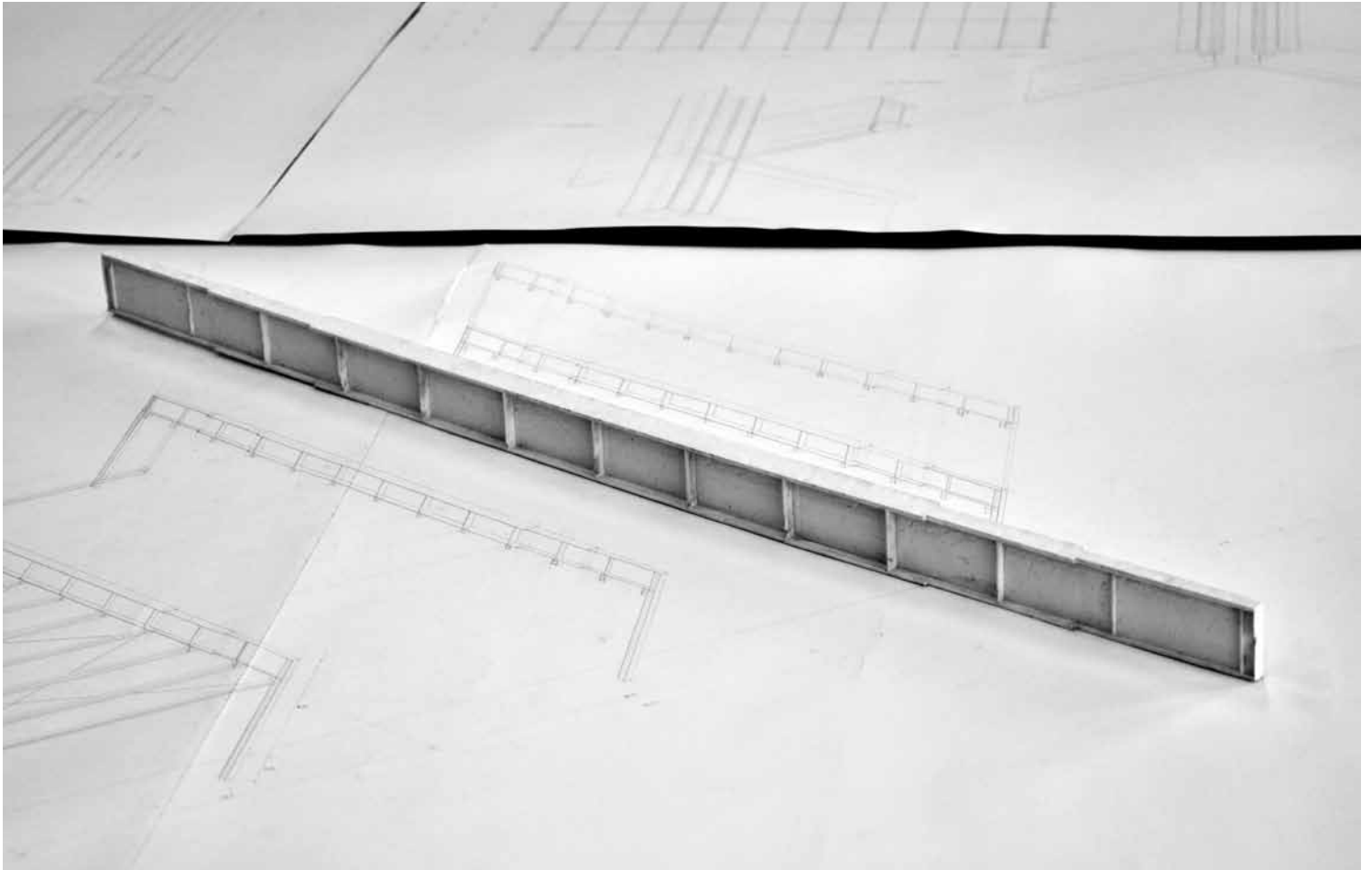


Photo: Ana Carvalho

DOCTA MANUS
DRAWING STRUCTURES

UE GC – EPFL

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