

# MEASURING FOR CONSTRUCTION

BY LAUREN WINTER DAWSON



**BEAUTY IN NUMBERS  
MEASURING FOR CONSTRUCTION**

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**DE 124-102**

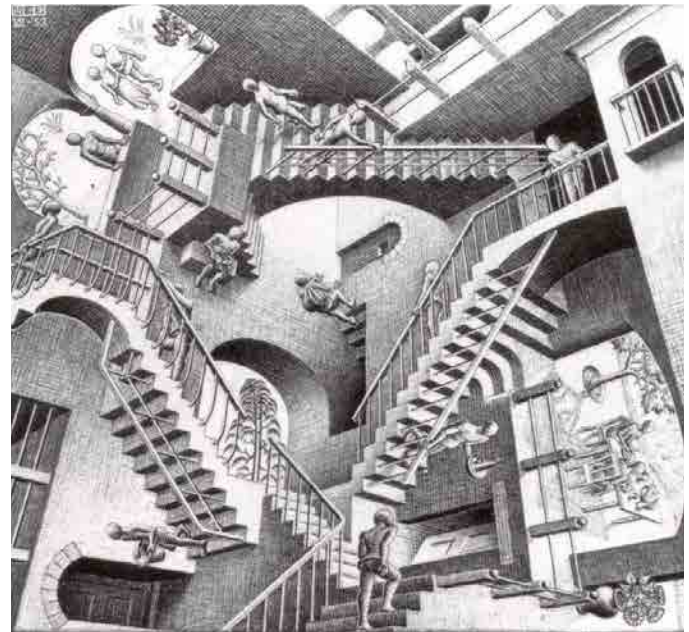
**PROFESSOR ROBIN DRAKE  
“A” AND “B” BREEZEWAY**





Taking in the many variables that go into construction, I decided to focus on the measurements and the reasons for those measurements. There is also a lot of different forms of construction from innovative to classic to modern, from high rises to one level, and from office buildings to homes. I chose to concentrate on home construction with stairs, ramps, porches and the home itself in the form of a room.

The initial inspiration was M.C. Escher's "Relativity" through his stairs. It started the idea of stairs and then it lead into ramps, a house and a porch.



Black and White are the fundamental colors for technical drawings that I wanted to imitate. The color red is used to help create that contrast.



I wanted a font that looked like it was a stencil that had been spray painted, so I chose "Stencil STD".

# MEASURING FOR CONSTRUCTION

Since a major material in home construction is wood, I wanted to use the texture of wood as a backdrop for the brand and the look.



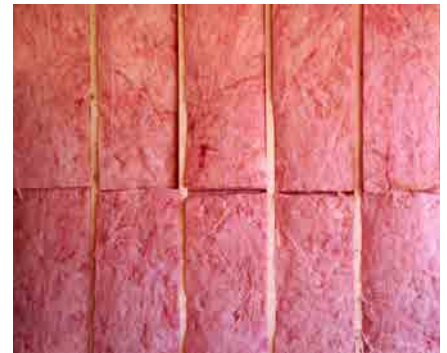


In order for the exhibit to be mobile, the exhibit is in pieces/sections. The materials used in this exhibit are many of the same ones used in construction, so they can be repurposed for construction projects.

# Some of the materials used

## Wood

2" x 4"  
4" x 4"  
2' x 2"



## Insulation

16" wide

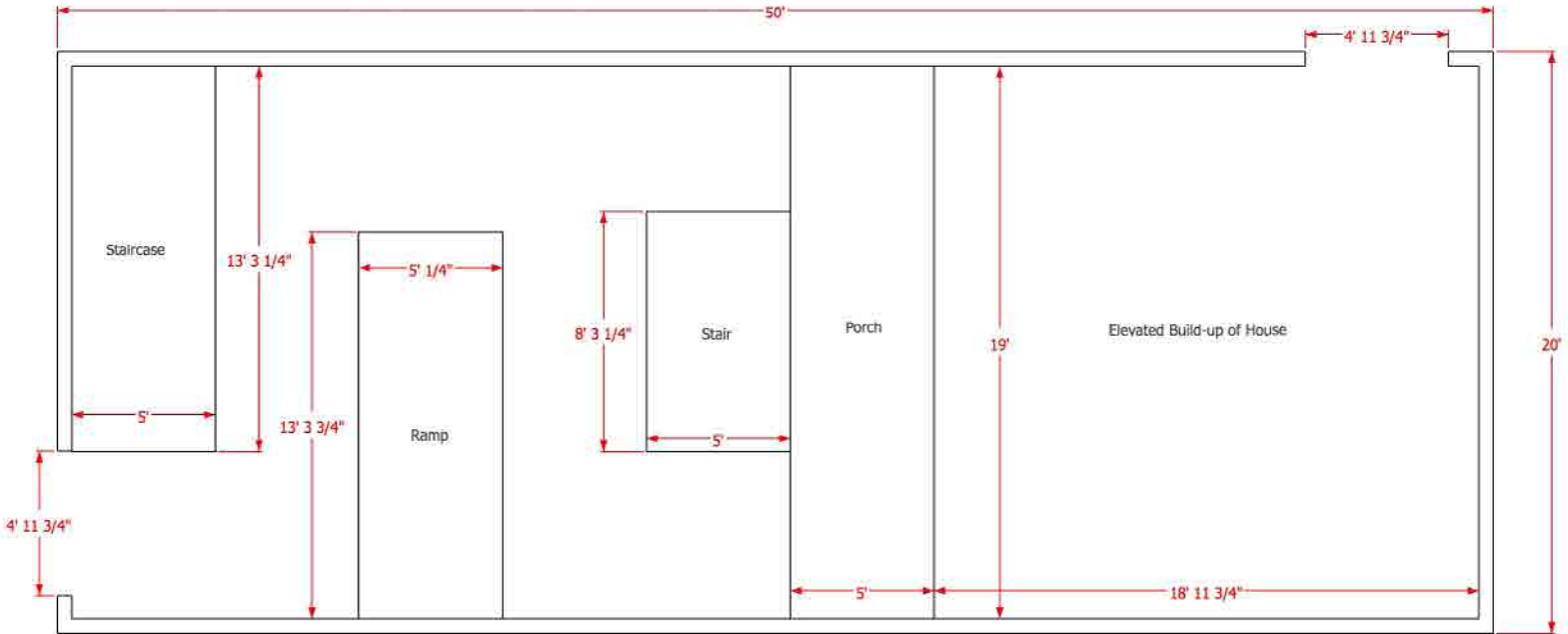
## Drywall

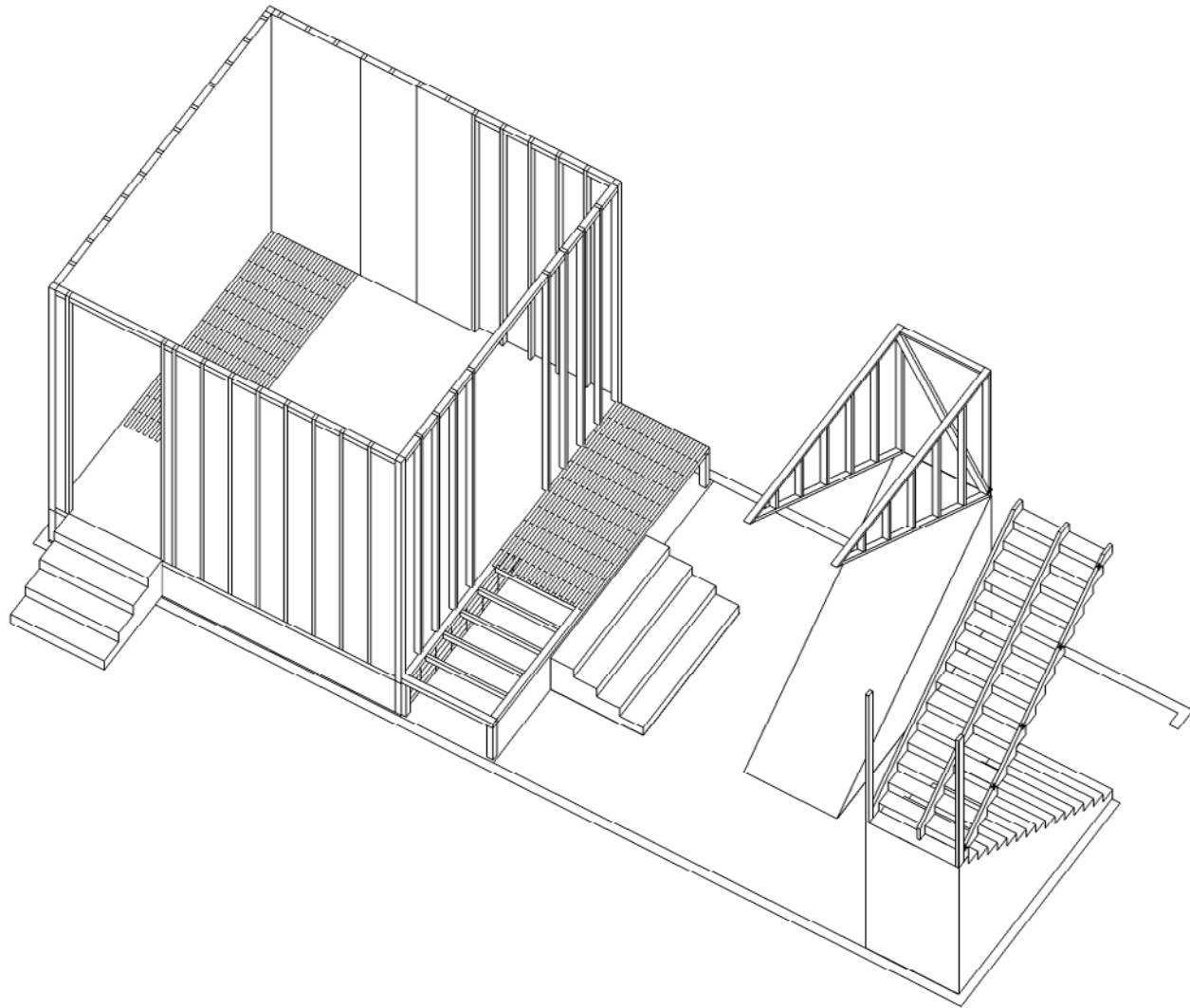
2' wide





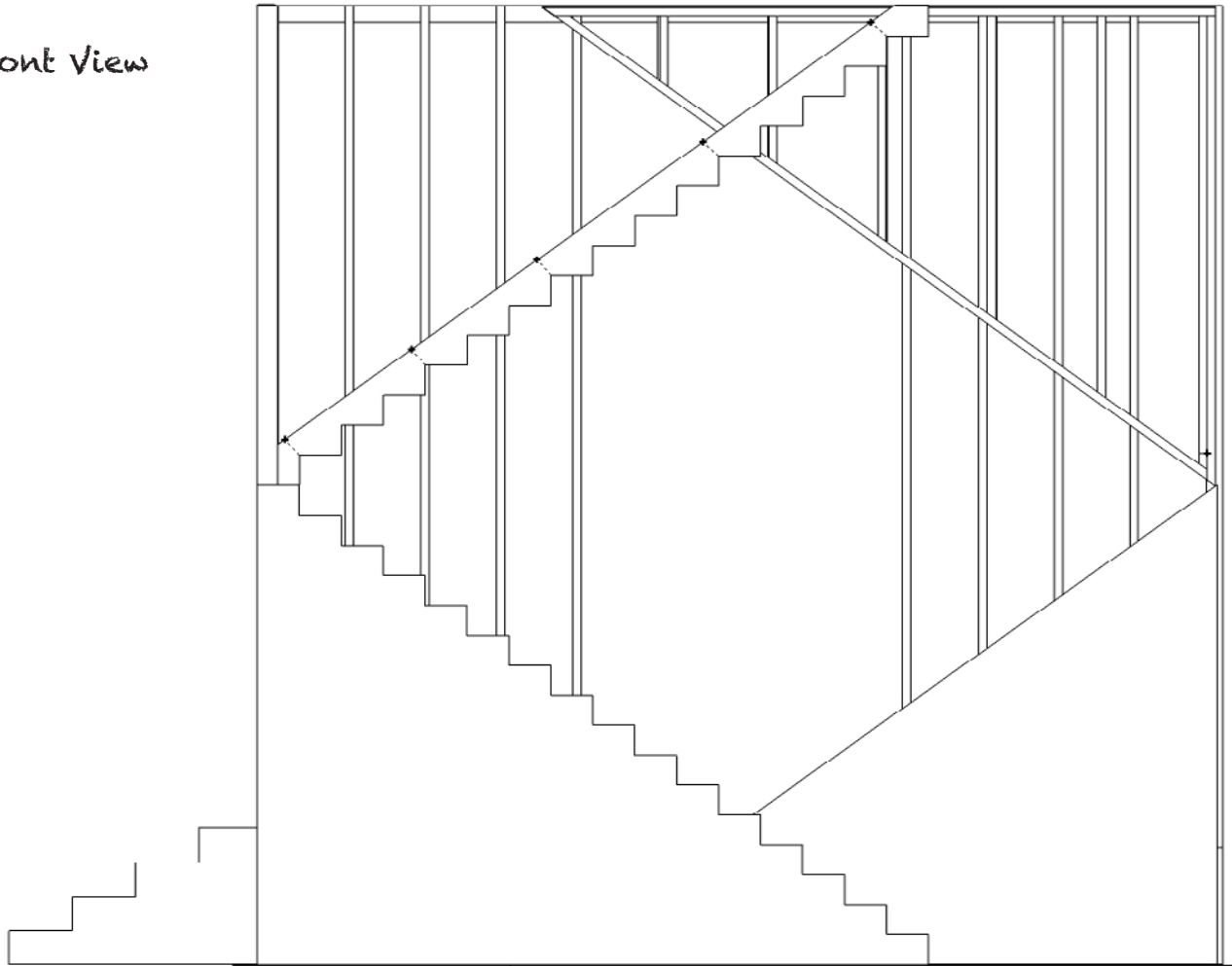
# Floor Plan



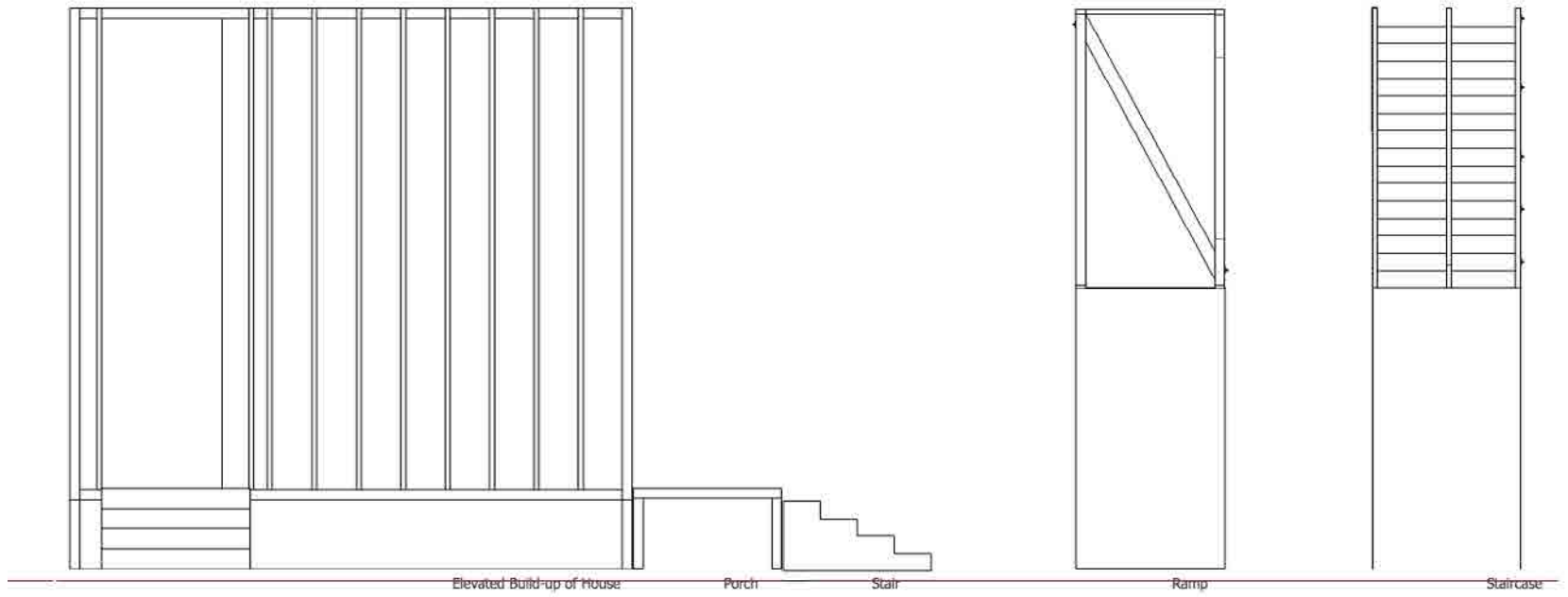




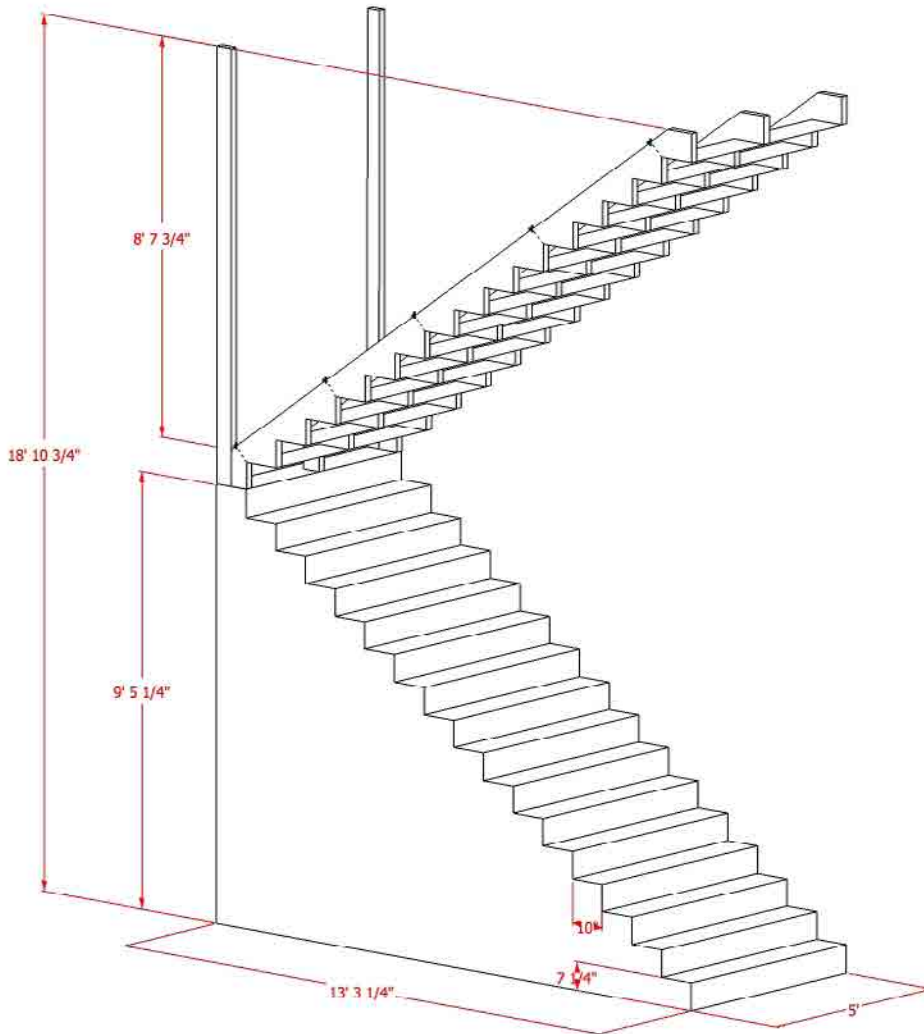
Front View



Left View



## Stairs



The stairs take on the quality of M.C. Escher's works with the upside-down effect. The upper staircase has been put upside-down, so that people can get a better view, to save space, and no one tries to really climb it. The bottom staircase allows the audience to climb onto it and get a new view on measuring for stairs. The solid aspect of the lower staircase is also for graphics and copy to be displayed.

Each stair's depth is 10" to allow for people's feet to actually be able to step onto. The height of each stair is about 7 1/4" in order for there to be a step-up without making it too much of a climb for people to get up. Having a minimum of 3 angled pieces allows for more support and less weak spots. The angle of the pieces of wood helps with the incline and helps with putting the pressure closer to the floor.

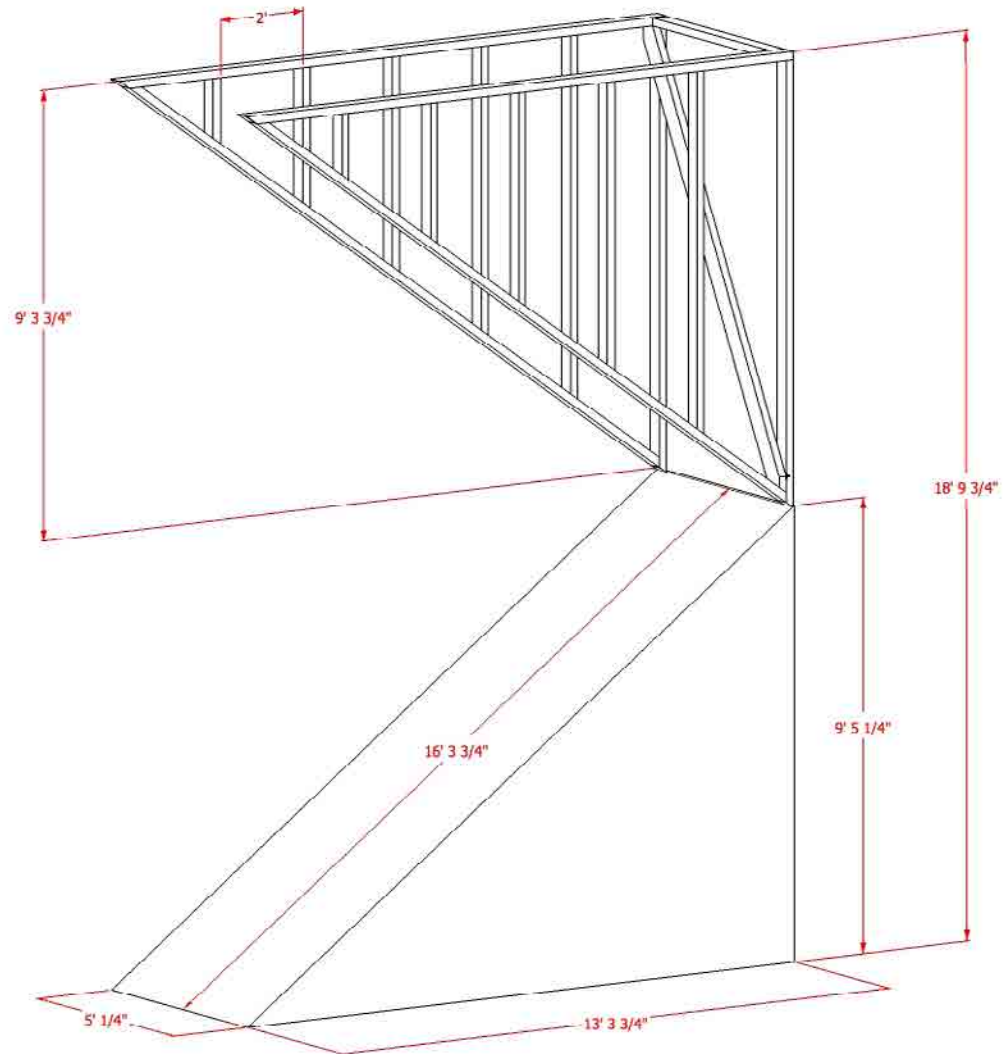


# Ramps

The Ramps also take on the quality of M.C. Escher's works with the upside-down effect. The top ramp has been put upside-down, so that people can get a better view, to save space, and no one tries to really climb it. Though a little steep, the lower ramp is solid for people to experience the measurements in action and to climb on to get a better view of the upper ramp, as well as to help display graphics and copy.

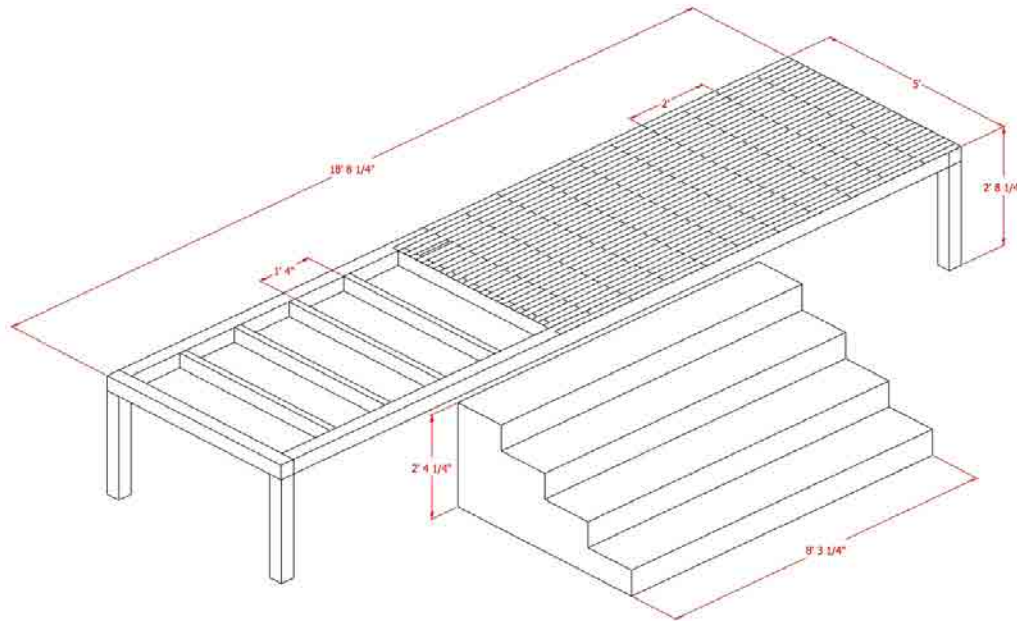
Ramps utilizes angles from basic geometry and trigonometry, along with measurements. Ramps use the height the ramp is against, as well as trigonometry to find out how far the ramp should go if the angle/steepness of the ramp is a specific measurement.

"SOHCAHTOA"



# Porch

The porch has an open part where wood planks are not covering the framing, so that people can view the framing that is used to build a porch. This open part is actually covered by plexi-glass, so that no one accidentally falls through and still allows people to see below.

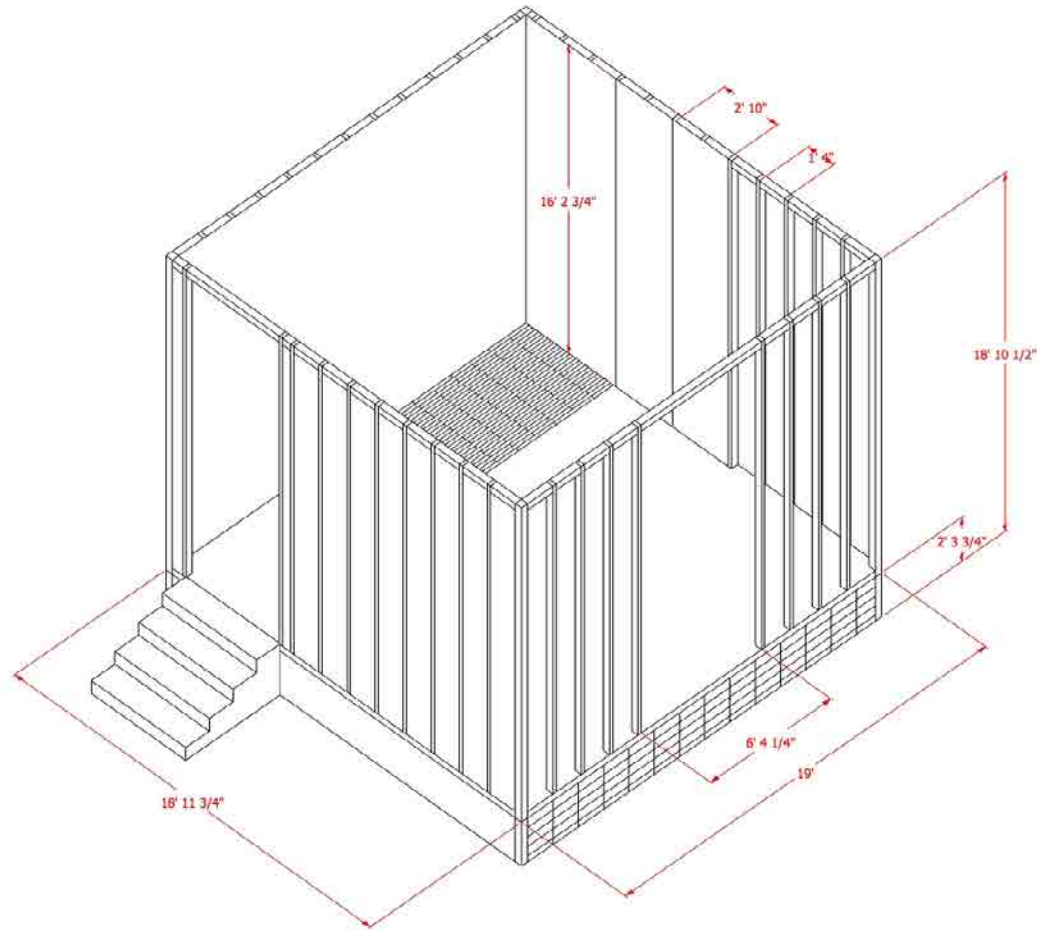


Porches can be built when a house is elevated from the ground. Typical of most framing for a house, the porch cross-beams are 16" (1' 4") apart from each other to give support. The depth of the porch must be at least 5' to allow for people to actually walk on, otherwise it is too small and no one can fit down the porch.

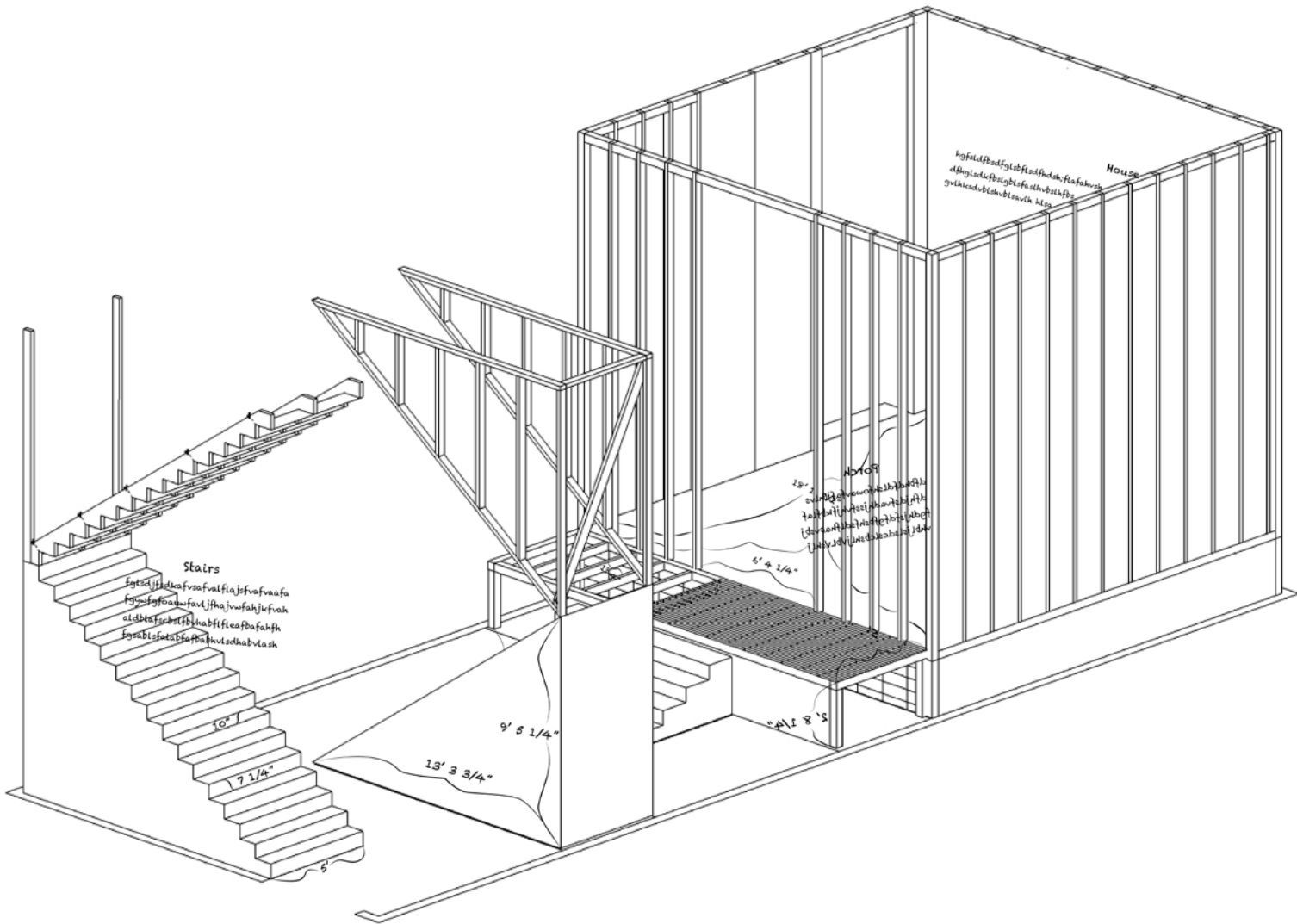


# House

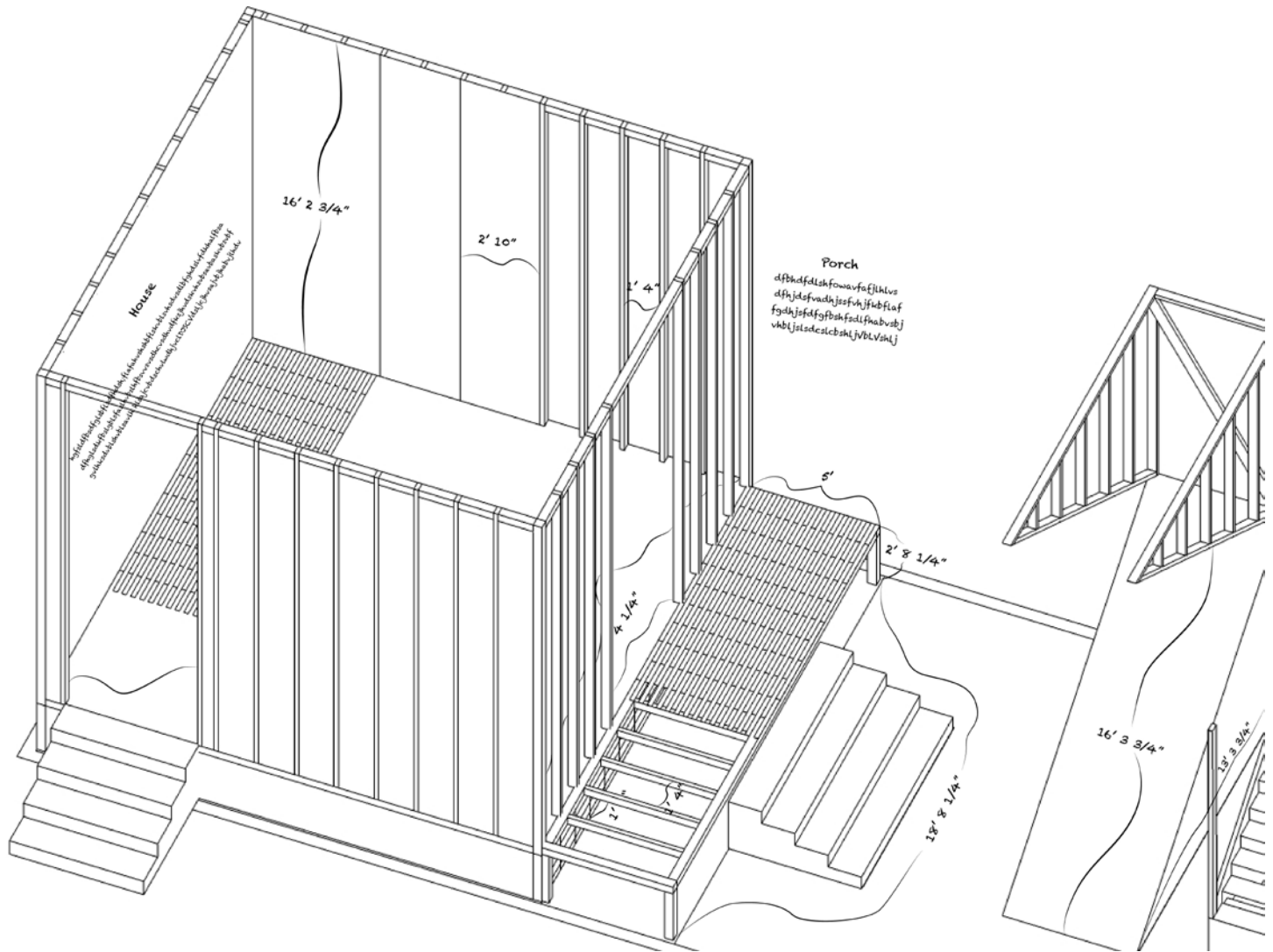
The house has many measurements that go into building one, from concrete/cinder blocks, wood framing, insulation, dry-wall, to flooring. The front of the house has exposed beams from the framework to allow the viewer to see the foundation of the house. The insulation is shown on both sides and it is covered with plexi-glass for the protection of the viewer. Most of the floor is open for people to view the framework below the floorboards, except for a portion of the floor in the back where wood flooring has been placed down. The two major increments of measurement for the house are 16" (1' 4") and 2'. They are for the distances between the beams, the width of the insulation and the width of the dry-wall.



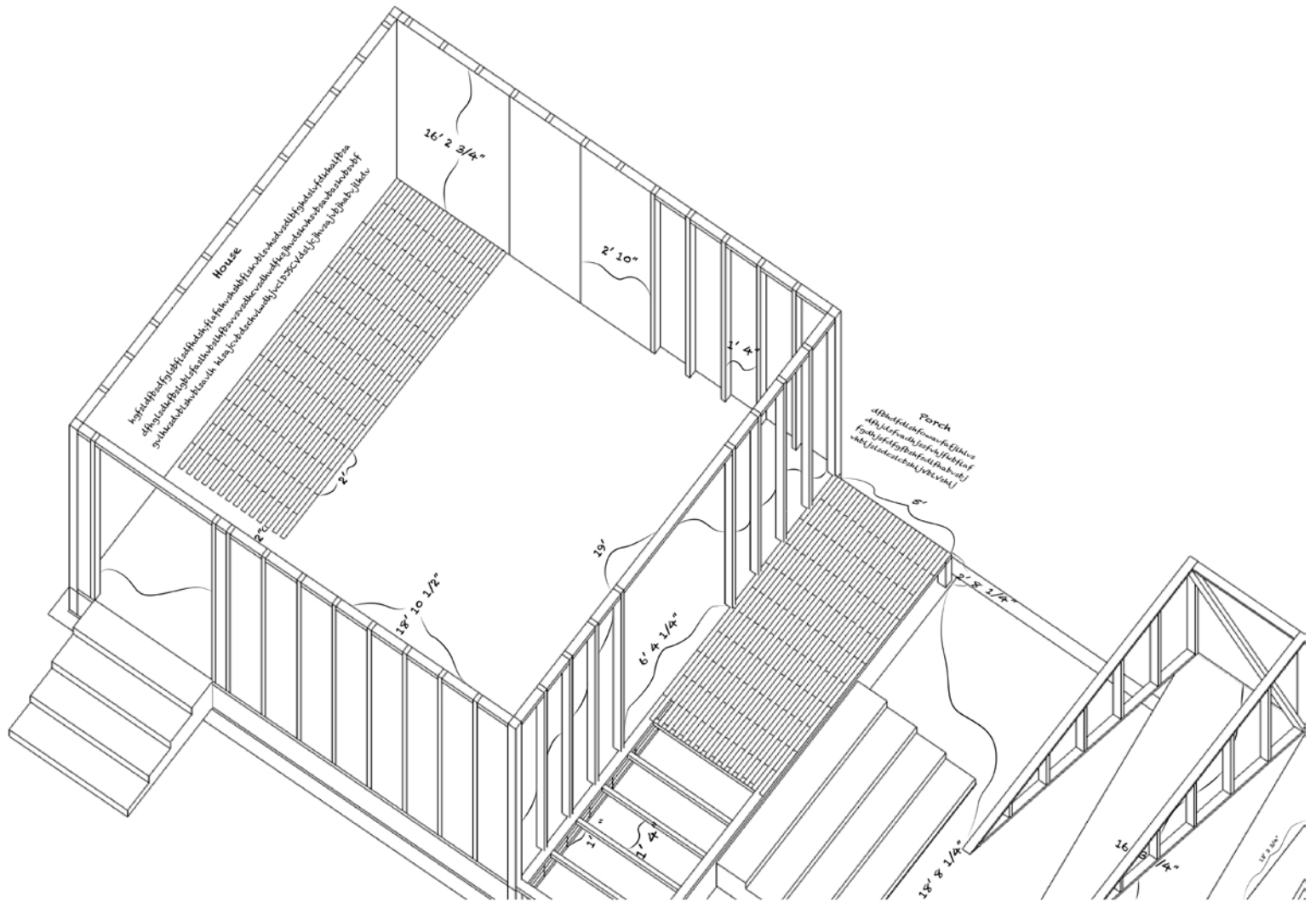




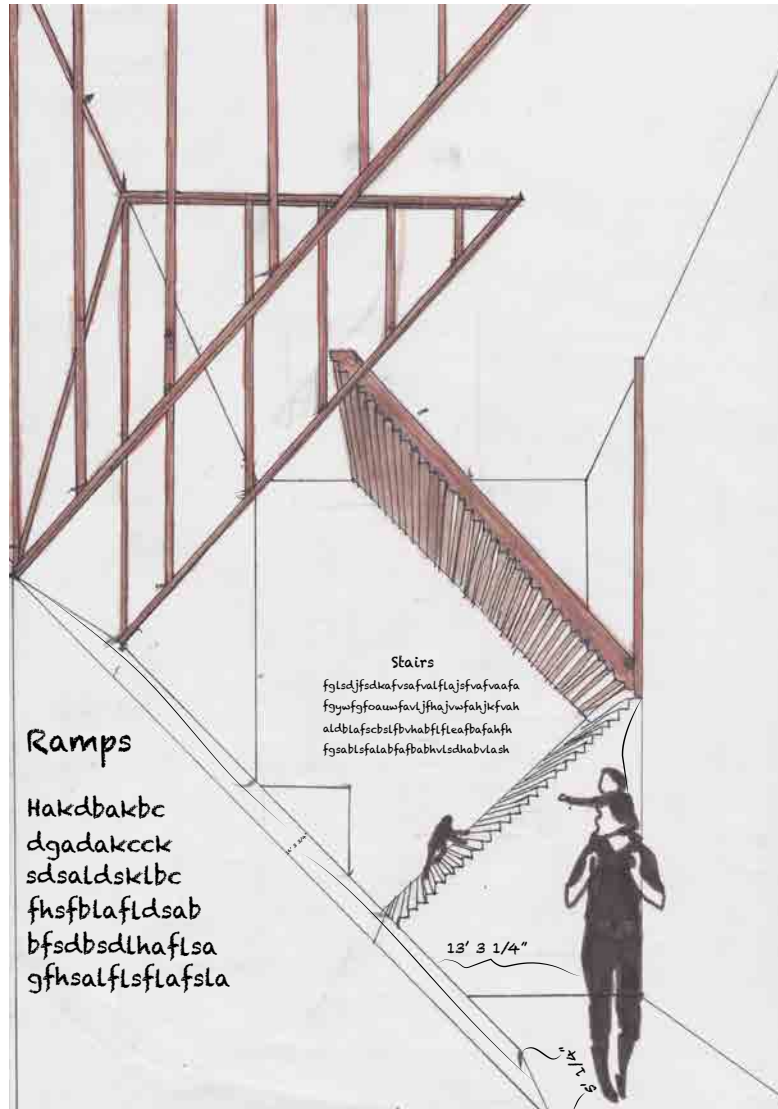








# 1 Point Perspective





## 2 Point Perspective



