

Uganda School Project

by Joel Williams



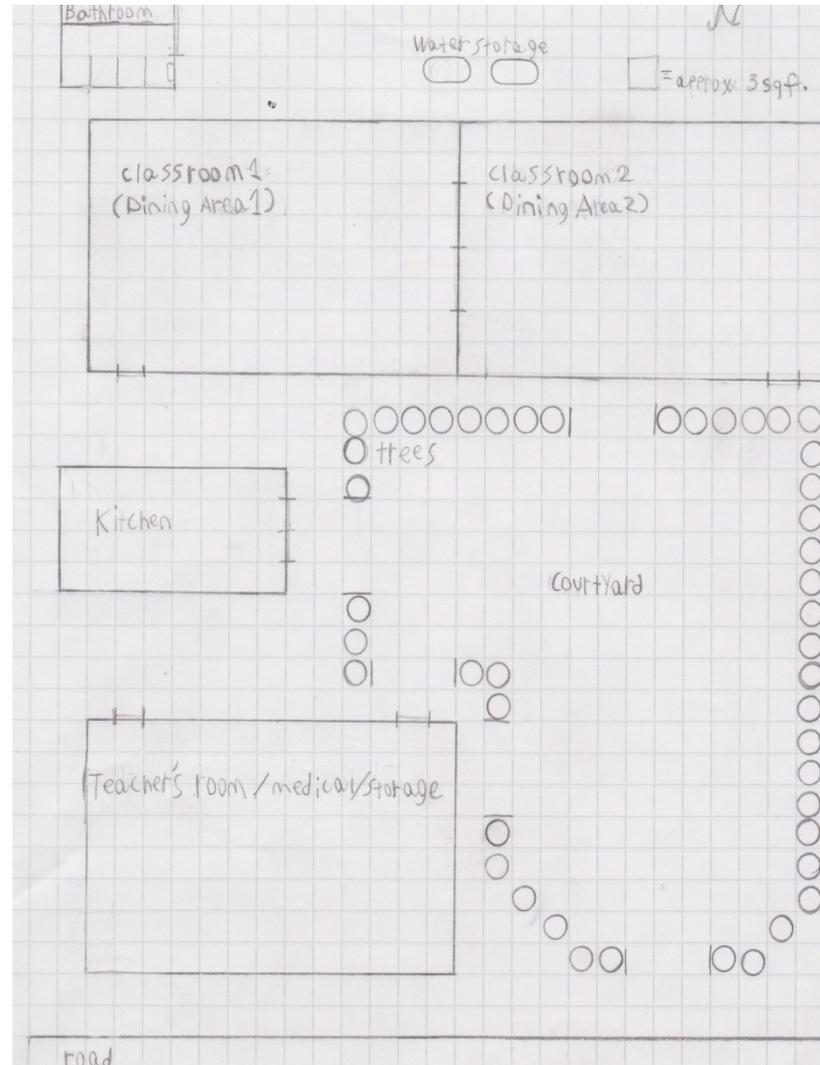
Design Considerations

- **Population:** 50% of Ugandans are under the age of 15.
- **Needs:** Children are often without enough food, clean drinking water, clothing, safe shelter, sanitary bathrooms, and medical care.
- **Transportation:** Children generally walk to school alone, sometimes for miles. Building near villages and walkways are best.
- **Climate:** The weather temperatures are mild as Uganda is on the equator and it is best to build facing north/south. Trees for shade on a site are very helpful. It can rain large amounts suddenly, but dry up quickly.
- **Resources:** Land in Uganda can be difficult to obtain and expensive. Making full use of small plots of land is important. Plumbing may be available, but it is helpful to collect and use rain water.
- **Community assistance:** There are many skilled workers to be hired who will bring valuable local information. This will also help the local economy.
- **Energy:** Solar and wind turbines are accessible and useable sources. Electricity is available, but unreliable.

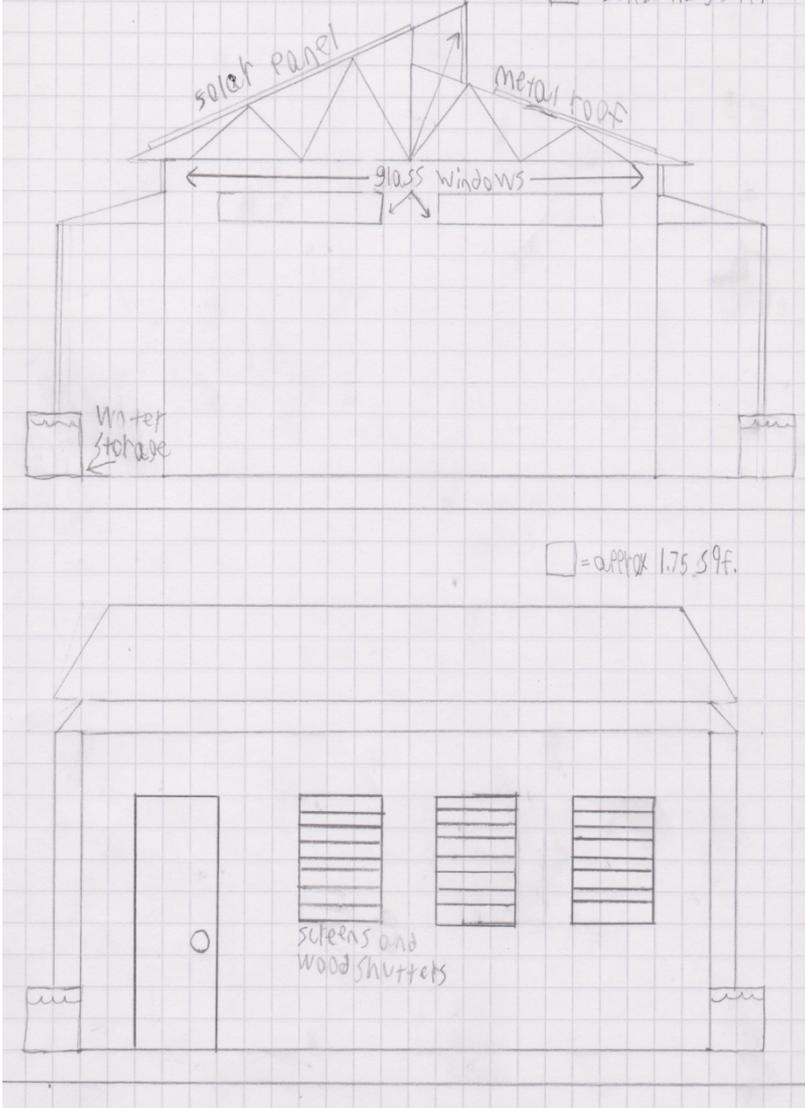
- **Building materials:** Locals use homemade red clay bricks, which are baked and dried. Other accessible and easy to use materials are interlocking stabilized soil bricks-ISSB (non-organic soil, cement and water pressed into blocks, shown below), metal and timber. Windows generally have wood or metal shutters, but use glass if affordable. Buildings are likely to have multiple uses, have to be ready to change uses as needed and be expanded as more people use them.



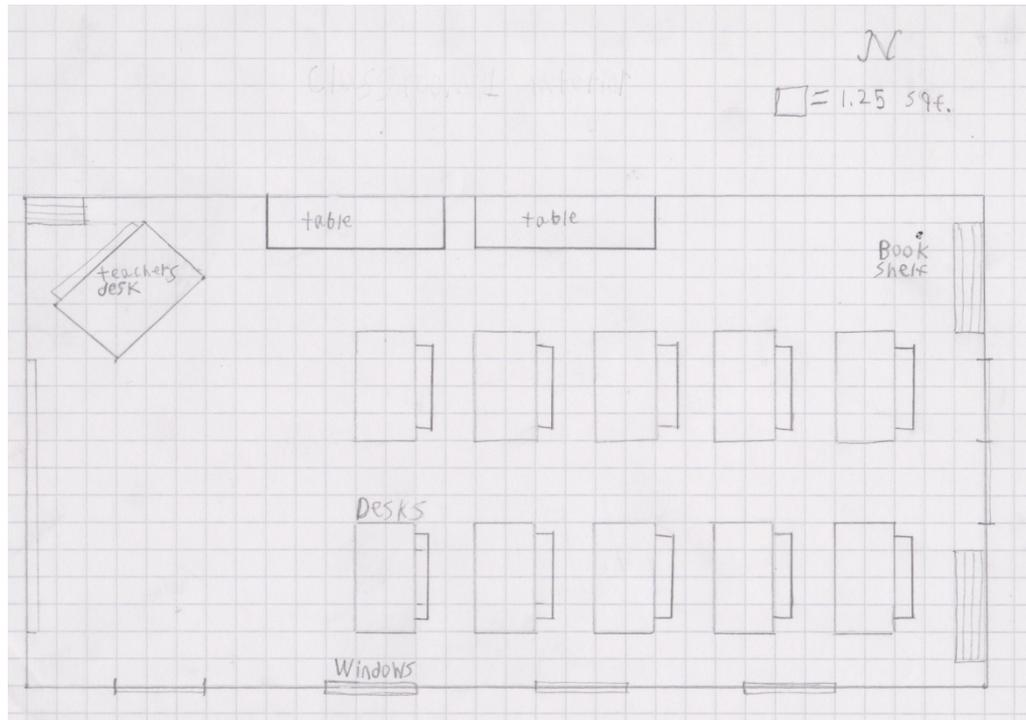
Uganda School Site Map



Classroom Exterior (side and front)



Classroom Interior (Classroom 1)



Samaritan's Hand Namuganga Springs of Life School

Sept., 2016 was a groundbreaking ceremony for a new school, sanctuary, kitchen, latrine, and well. The current kitchen is without walls (left). The school has 150 students in three classrooms, 2 without walls. Initially, they were all in one room with one teacher and four pencils total until they were each given one (right).



Amazima School in Jinja, Uganda (Katie Davis, Kisses from Katie)

A building project is now going on with 70 acres for a school which will hold 800 students, opening in 1/17 (left). Katie went to Uganda as a teenager, adopted 13 girls, started a school and a ministry to the Ugandan families. They offer education (right), meals, medical care, farming training for the men, and making and selling jewelry in their own businesses for the women.





SCHOOL IN DEVELOPING COUNTRY

Holly Scofield

10/19/16

Architectural Design

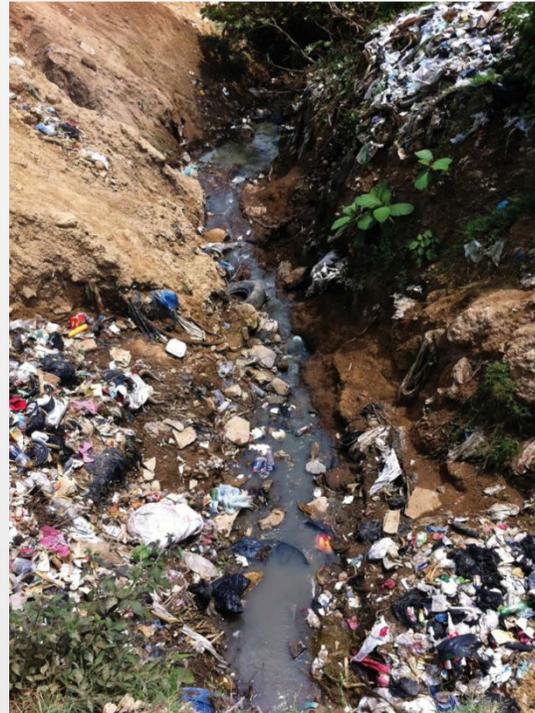
ABOUT THE SCHOOL

- ❖ Located in Guatemala in South America
- ❖ Guatemala has a lot of trash, so we found a way to clean up some of the trash and reuse it for something good.
- ❖ The building is constructed out of mostly plastic bottles filled with sand and trash, then covered in cement
- ❖ This keeps the building cool all year long
- ❖ It also makes the building bullet proof, earthquake proof and fire proof

GIRL
STUFFING
TRASH TO
MAKE 1 OF
THE BOTTLES
OR "ECO
BRICKS"



THIS IS WHAT
THEIR
ENVIRONMENT
LOOKS LIKE. A
RIVER FILLED
WITH TRASH



A
CONSTRUCTED
BOTTLE WALL,
WITH EMPTY
COLLECTED
BOTTLES



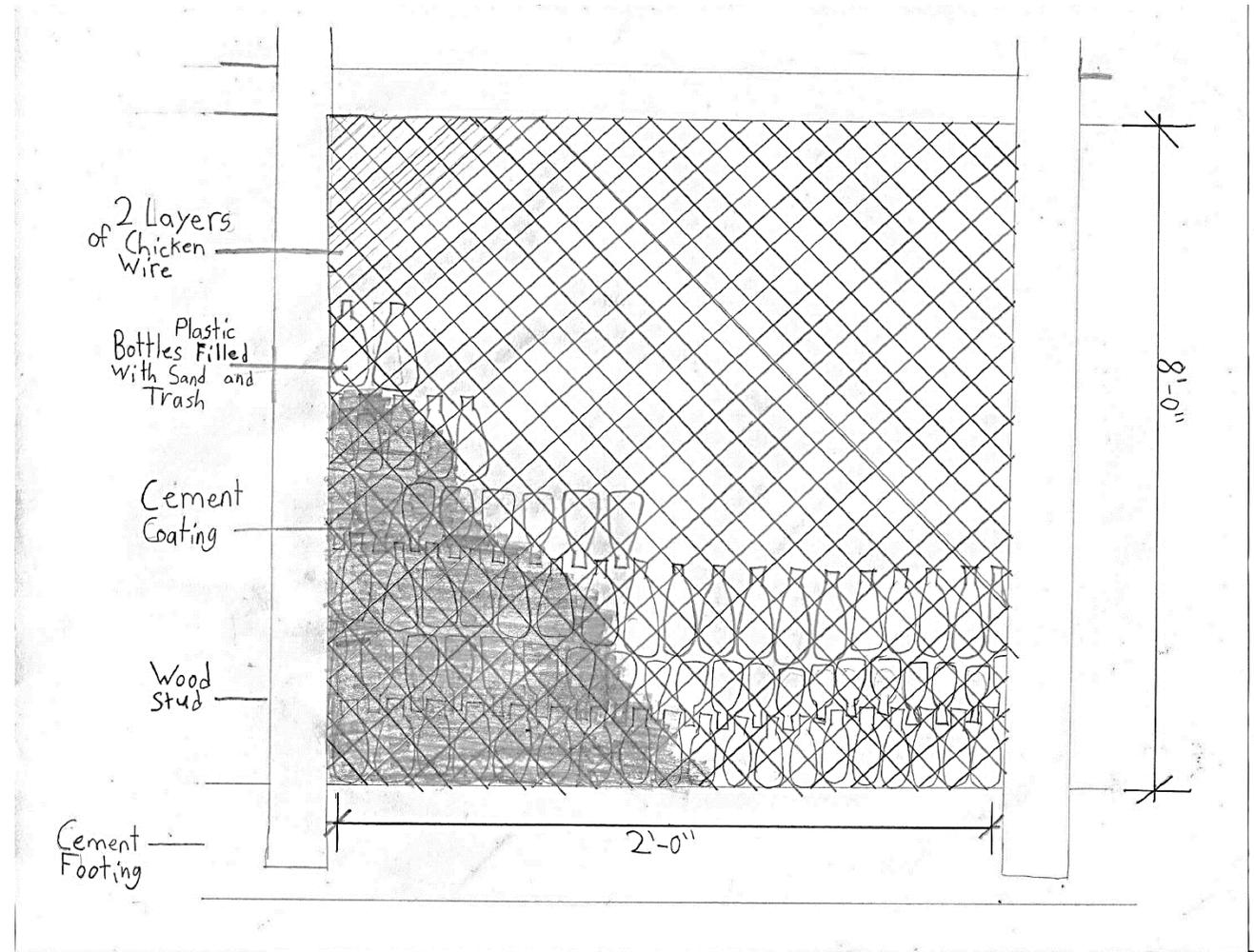
CONSTRUCTION DETAIL SKETCH

This is a sketch showing how the walls are made.

The bottles are placed between 2 layers of chicken wire between wood studs. Then covered in cement.

Main Materials

- ❖ Plastic bottles
- ❖ Sand
- ❖ Trash
- ❖ Chicken wire
- ❖ Cement
- ❖ Wood studs

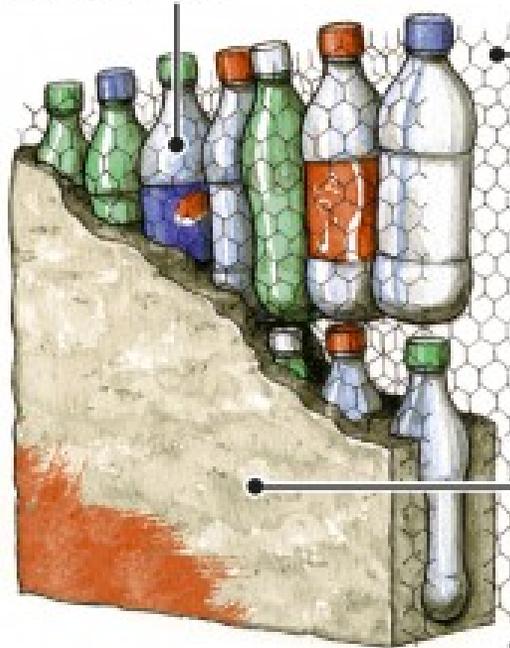


CONSTRUCTION PHOTOS

Building a bottle wall

Bottles

Students and volunteers stuff the plastic bottles with plastic bags and other insulating trash. More bags fill in the gaps between bottles.



Chicken wire

The bottles were bound between layers of chicken wire, which are attached to a metal frame.

Concrete

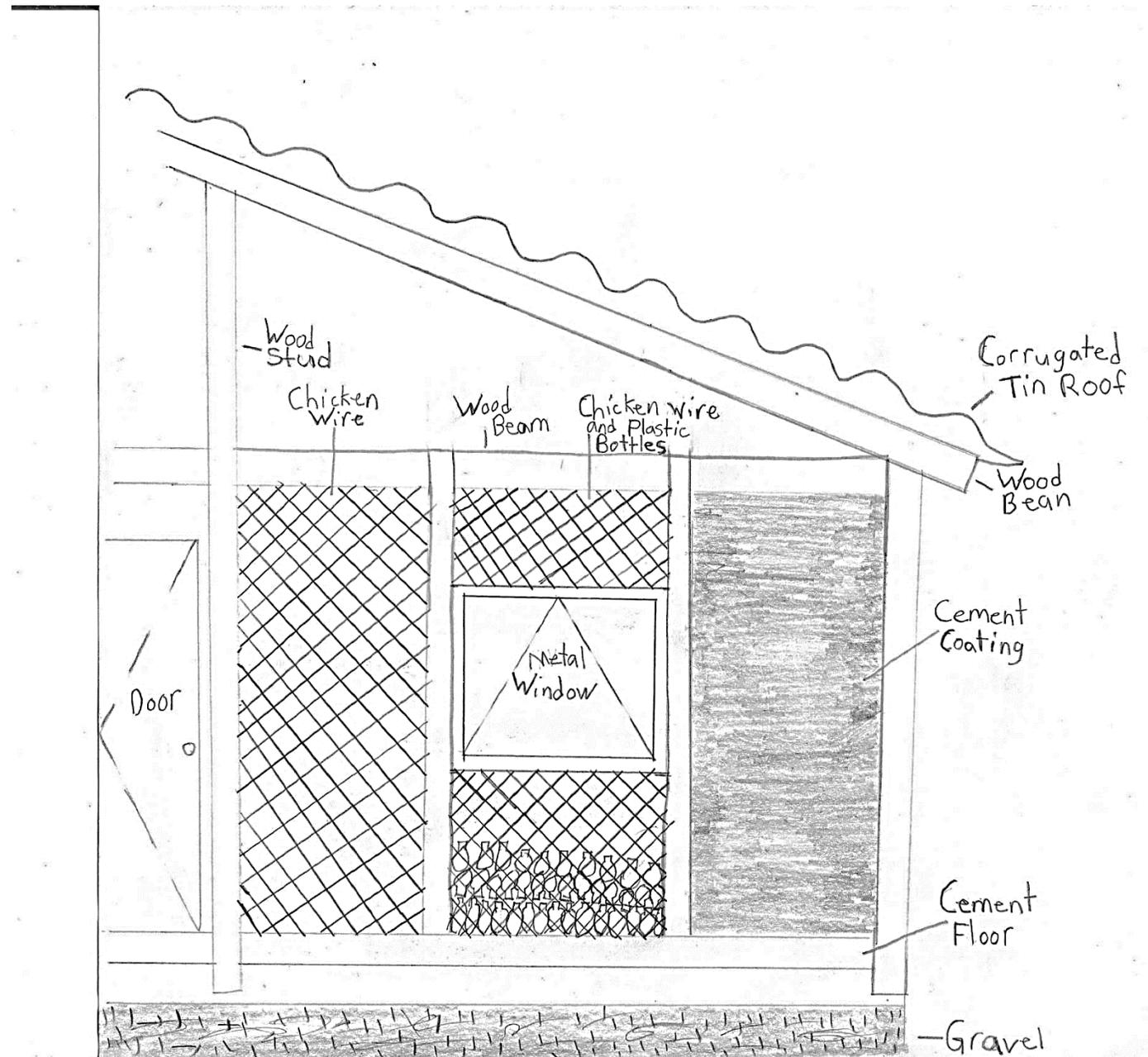
Up to three layers of cement mixed with sand were applied to the outside of the bottles, with orange paint adding the finishing touch.

ERIC BAKER/THE OREGONIAN



BUILDING STEPS

1. Dig foundation and cover in gravel. Then pour cement foundation. Then build frame with wood studs.
2. Floors are made of cement.
3. Attach chicken wire to studs
4. Fill with bottles filled with sand and trash.
5. Cover walls with cement
6. Attach corrugated tin roof

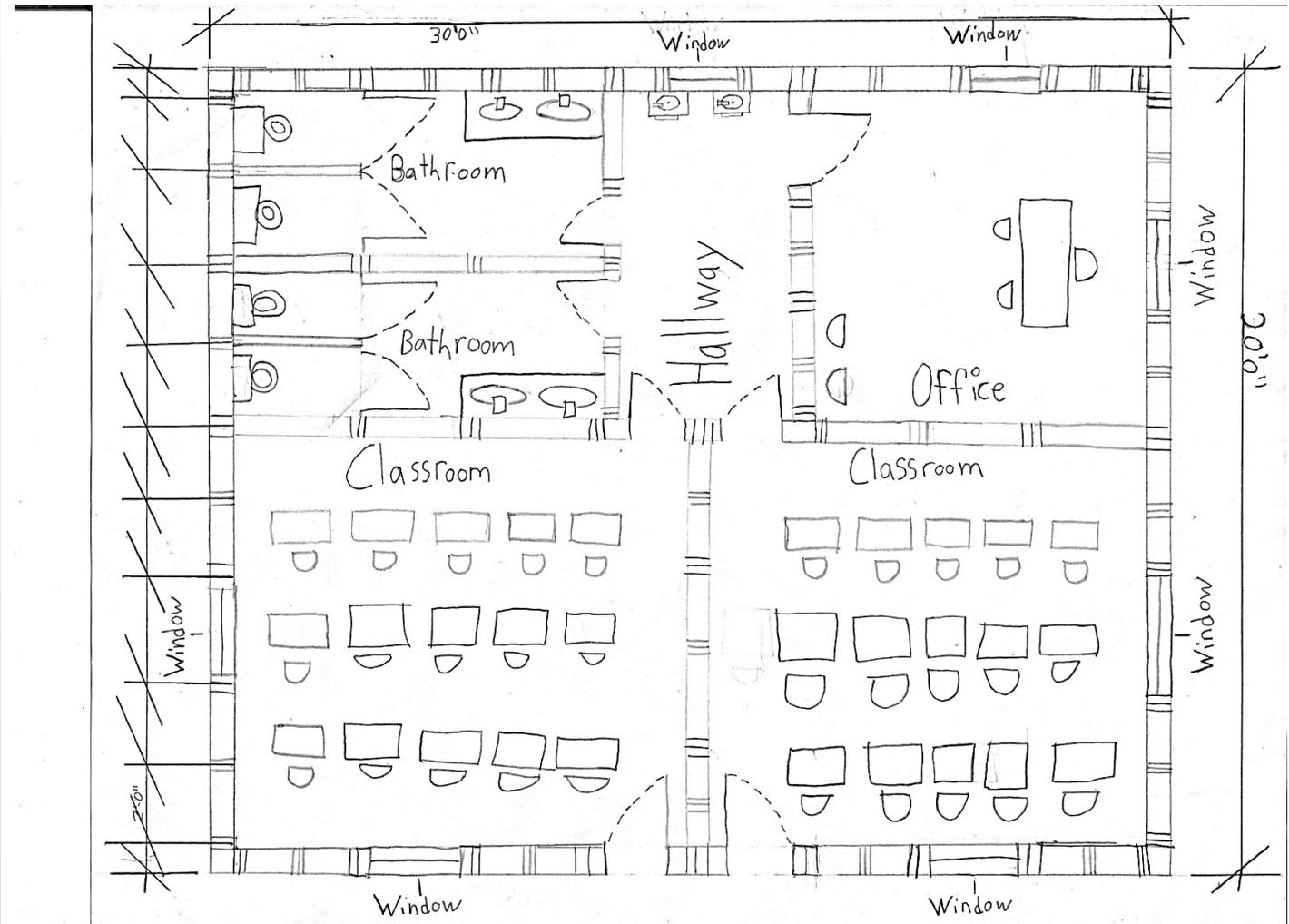


CONSTRUCTION PHOTOS



FLOOR PLAN

- ❖ 2 classrooms
- ❖ 2 bathrooms down a hallway
- ❖ 1 teacher office
- ❖ 2 inside drinking fountains



SCHOOL WALK-THROUGH

There are 2 classrooms, each with their own entry and hallway door. Each classroom holds 15 students, for a total of 30 students. Each classroom has a chalkboard.

There are 2 bathrooms, each with 2 stalls and sinks.

Across the hallway is the teacher office.

In the hallway is 2 drinking fountains.

There are 7 metal windows in the school that open for air circulation.

SCHOOL DETAILS

CHALKBOARD



DESKS, 1 FOR EACH STUDENT



PLUMBING FIXTURES

SET UP IN EACH BATHROOM
STALL



DRINKING FOUNTAINS



FRONT OF THE SCHOOL

The front of my school would look similar to this.

After the walls are cemented, the walls are painted.

This picture shows the cement walls and corrugated tin roof.





THANK YOU FOR YOUR TIME

Hope you enjoyed by presentation

Third World School

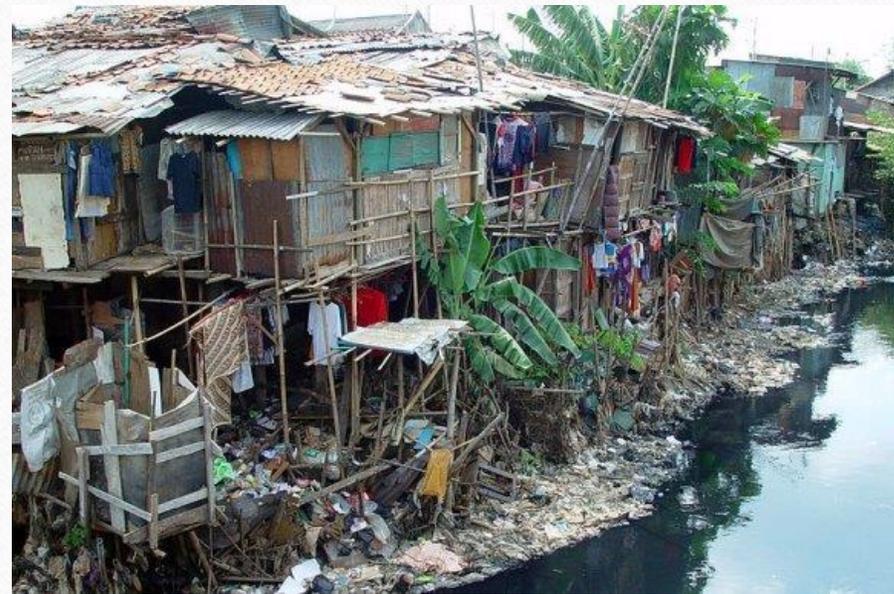
Christian Sevilla

Mr. Johansson

Architectural Design

So this presentation is to start a project in Africa or another third world country, their necessity is what drives me to do this. I strongly believe we can help other countries with this project.

The Problem



As you can see here the lack of education leads to a life that endangers children and causes many other kids to die from starvation.

Other reasons

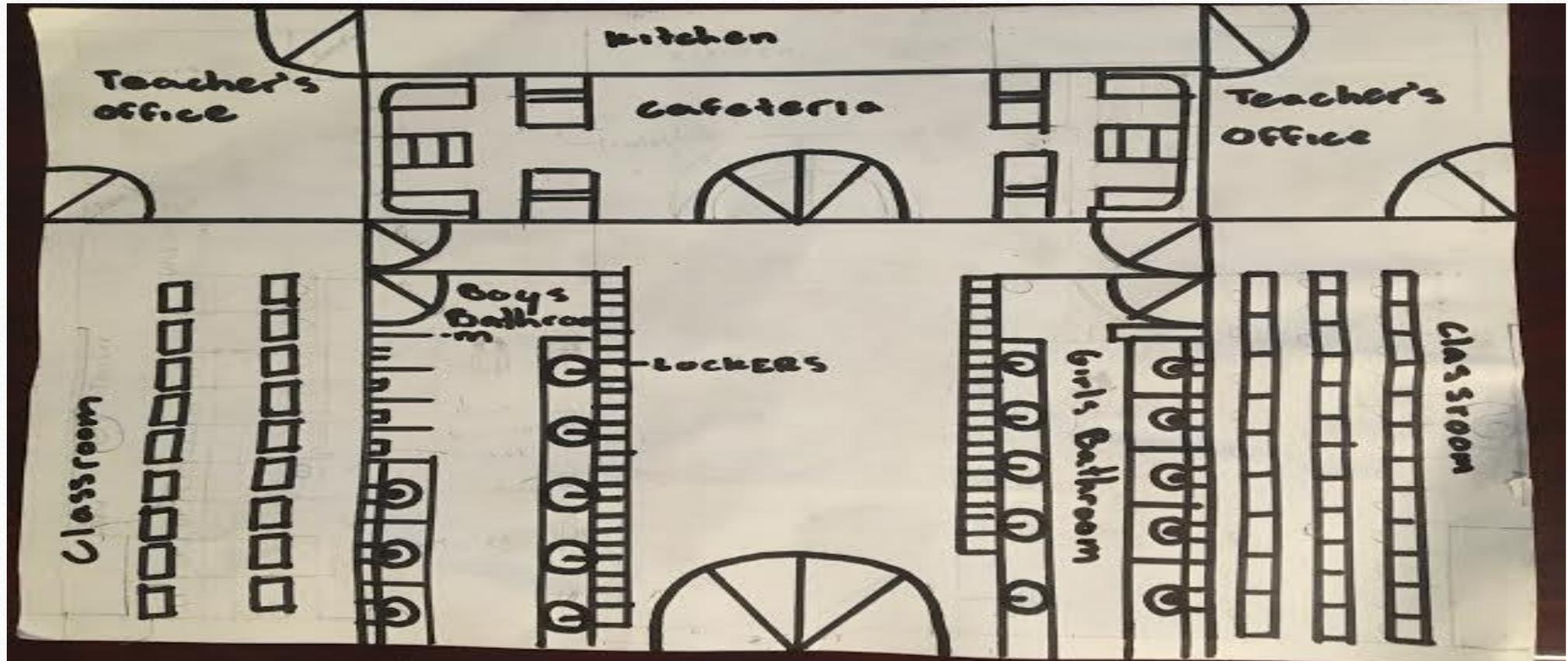
Educated girls and women are less vulnerable to HIV infection, human trafficking and other forms of exploitation and more likely to marry later and have fewer children. An education can help decrease the spreading of infectious diseases.

Children born to educated mothers are less likely to be stunted or malnourished. In fact, each additional year of maternal education helps reduce the child mortality rate by 2%.

These are just 2 of the many reasons why education is important.

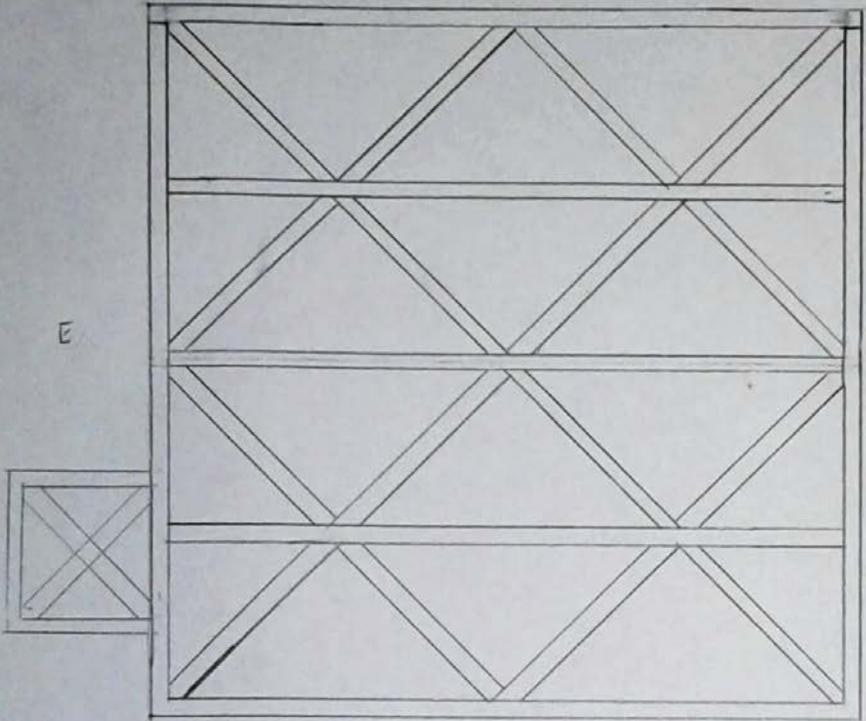
The School

This is just a simple sketch of my main project



roof plan

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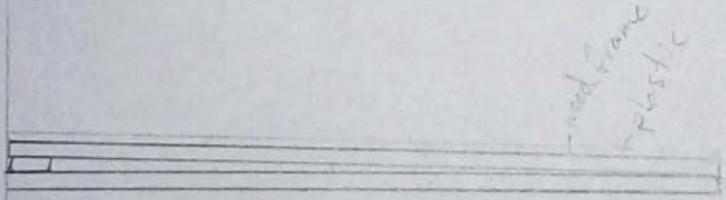


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W

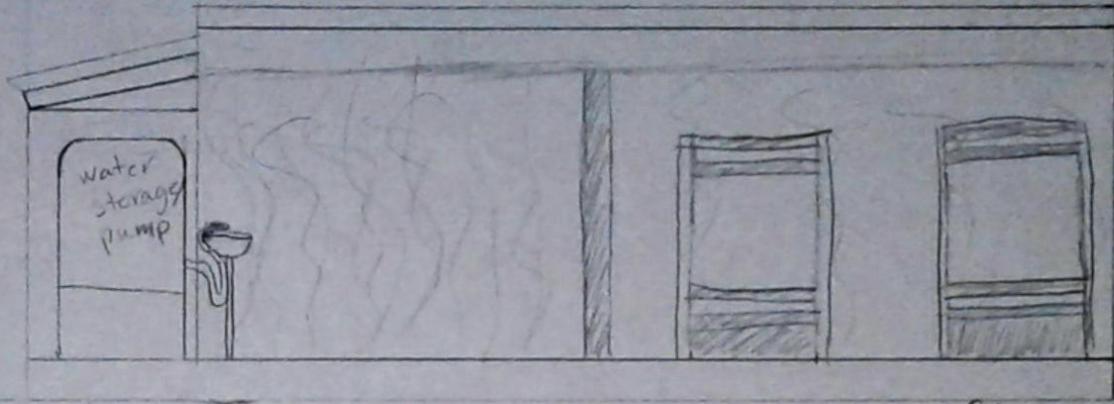
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side view of roof trusses



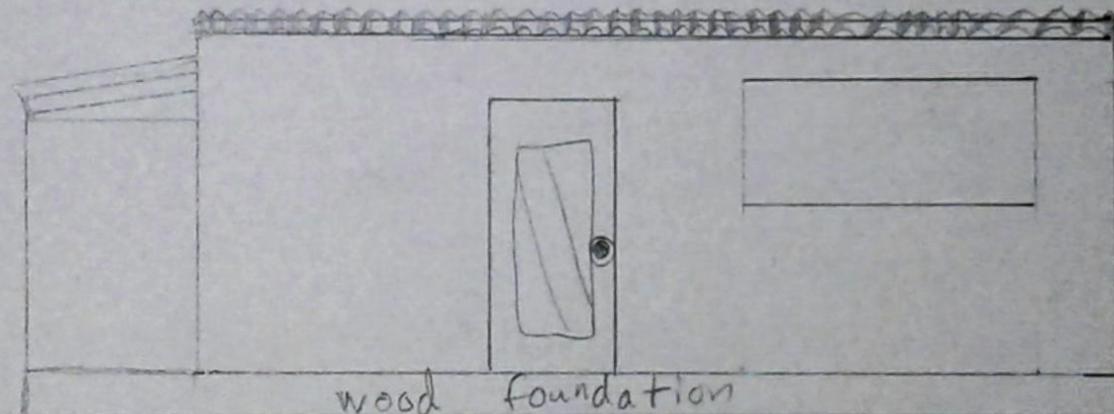
wood frame
plastic

north elevation



floor line

inside
outside

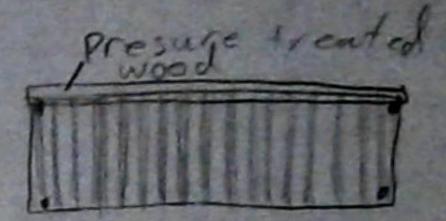
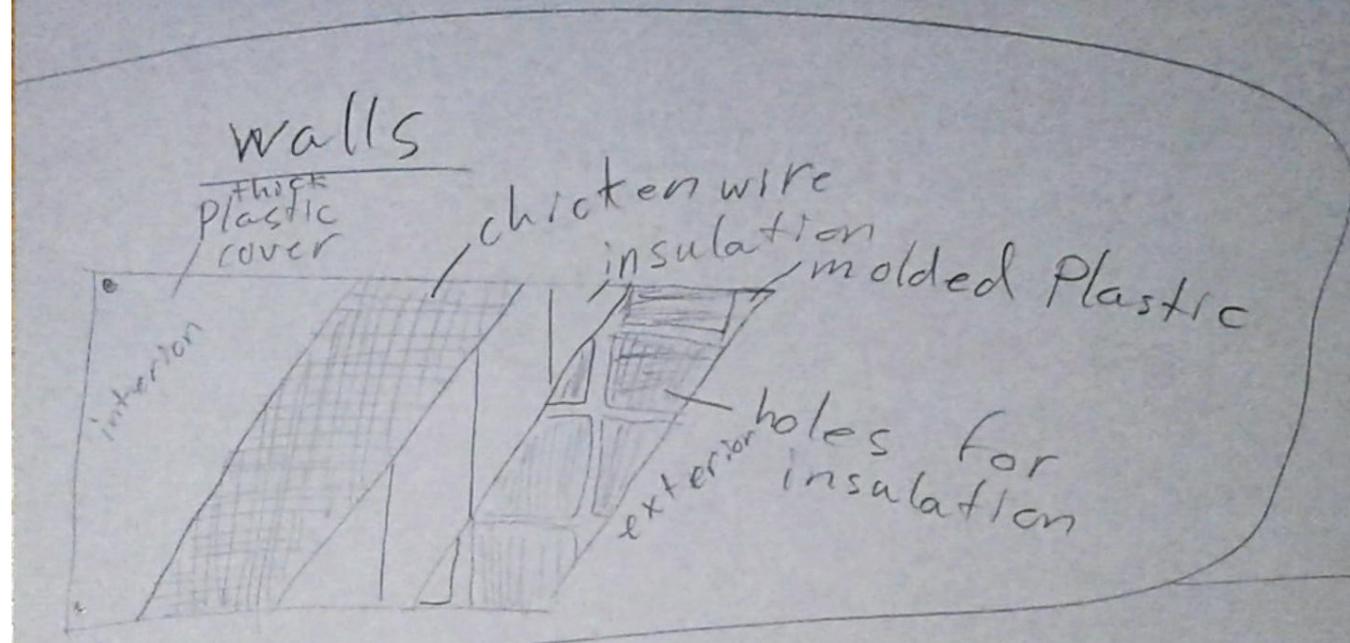


wood foundation

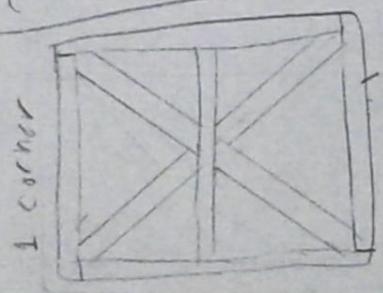
floor line

How to construct notes

north facing window

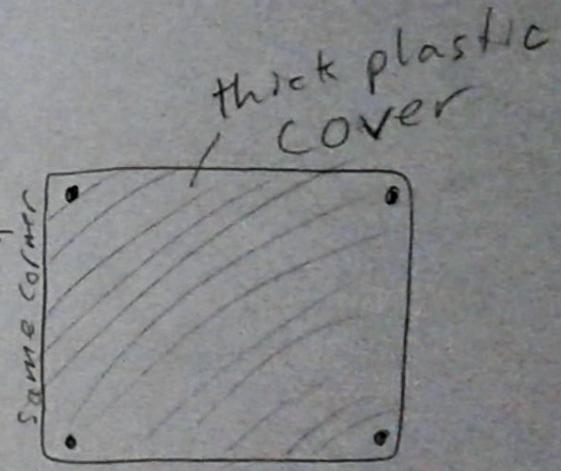


Floors



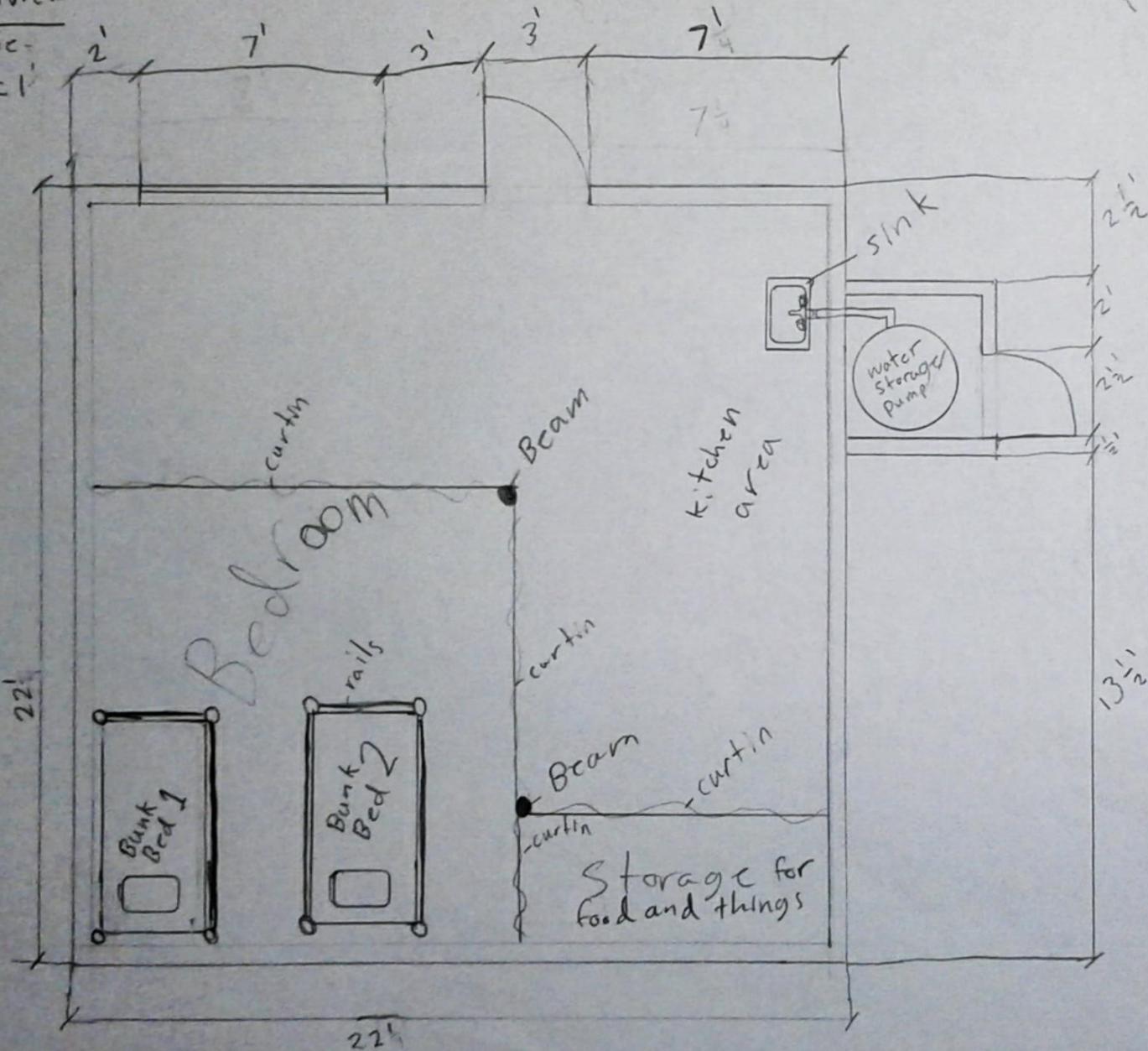
soft wood
4x6"

on top of base

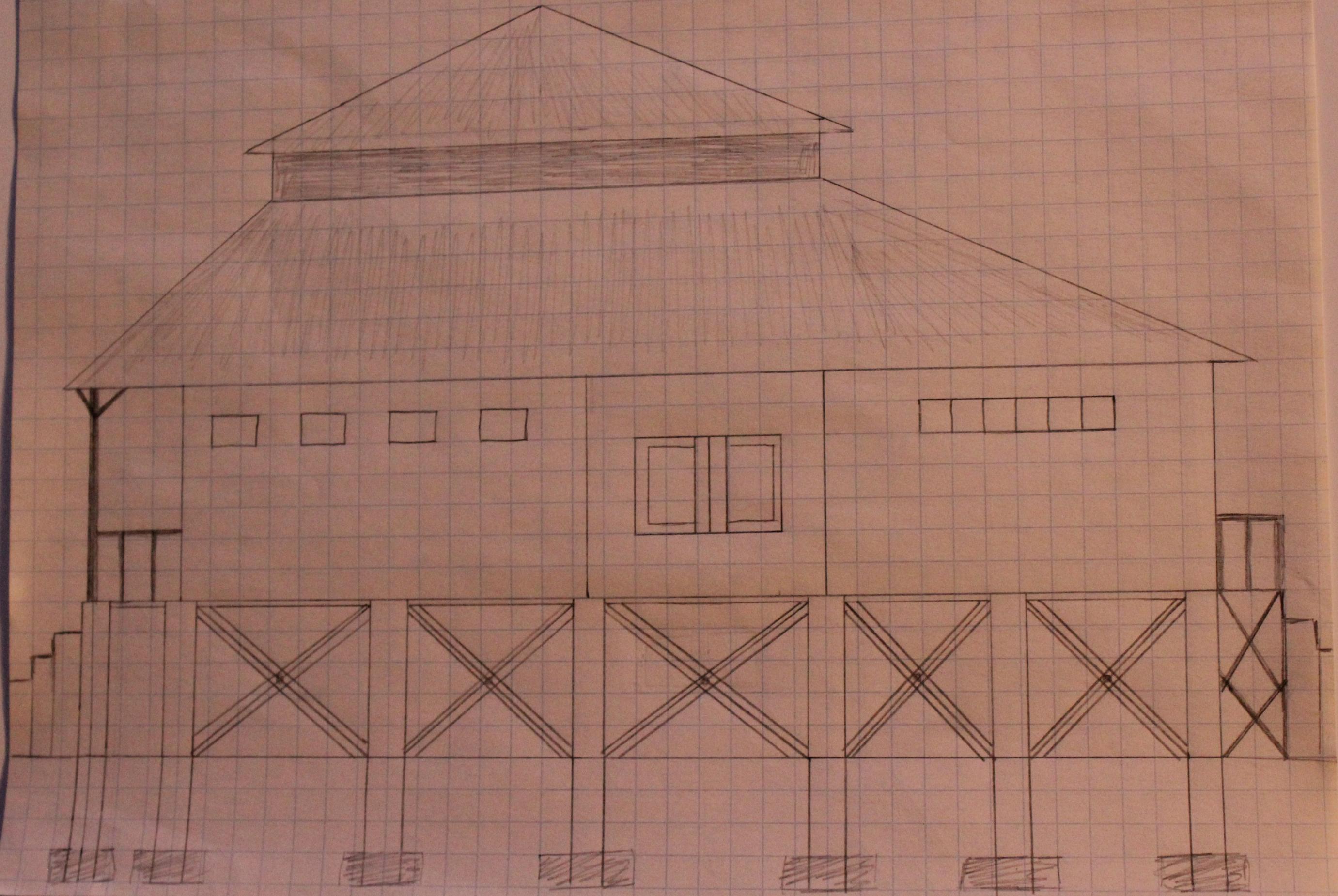


planview

scale -
 $\frac{1}{4}'' = 1'$

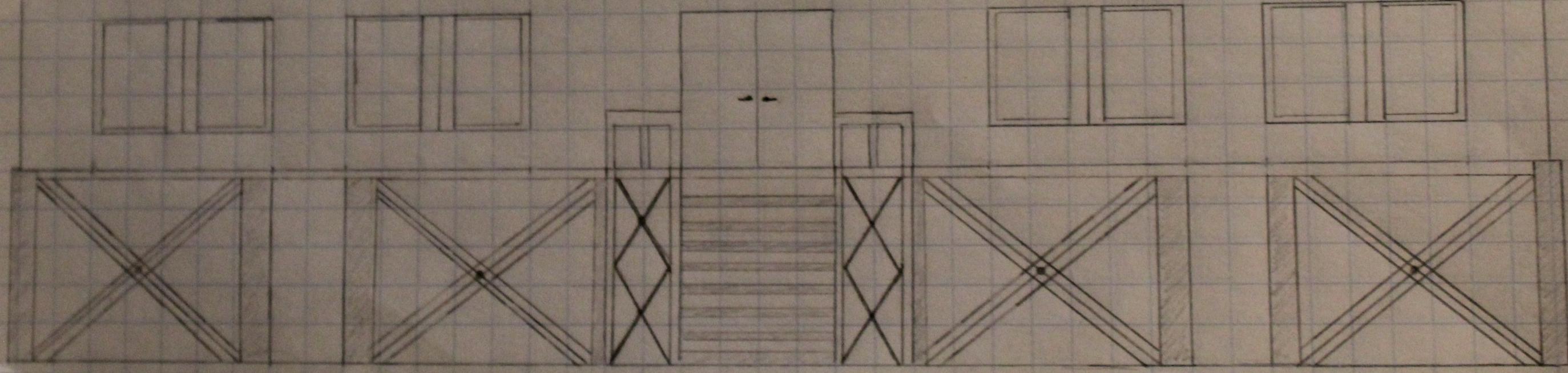
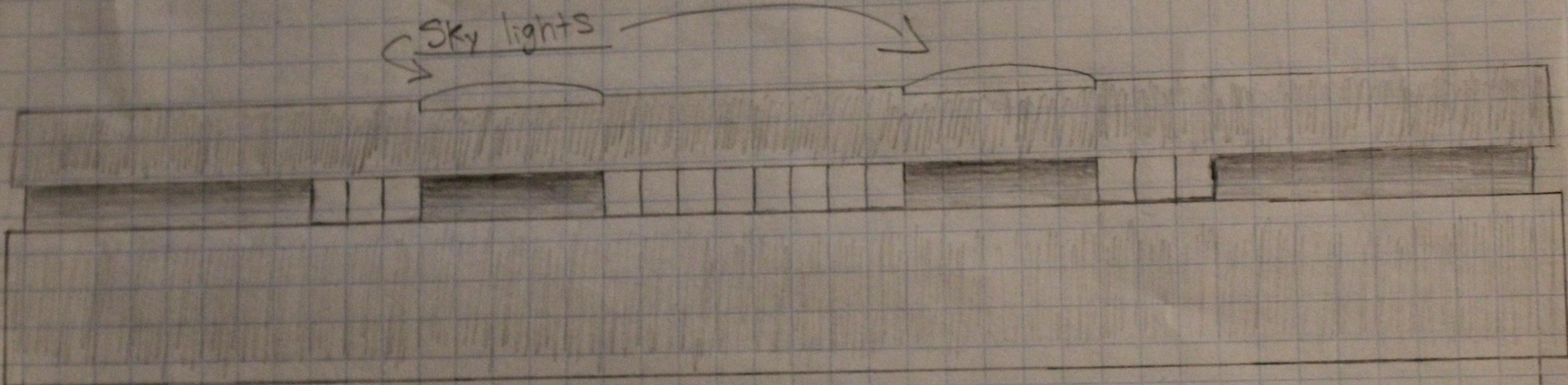


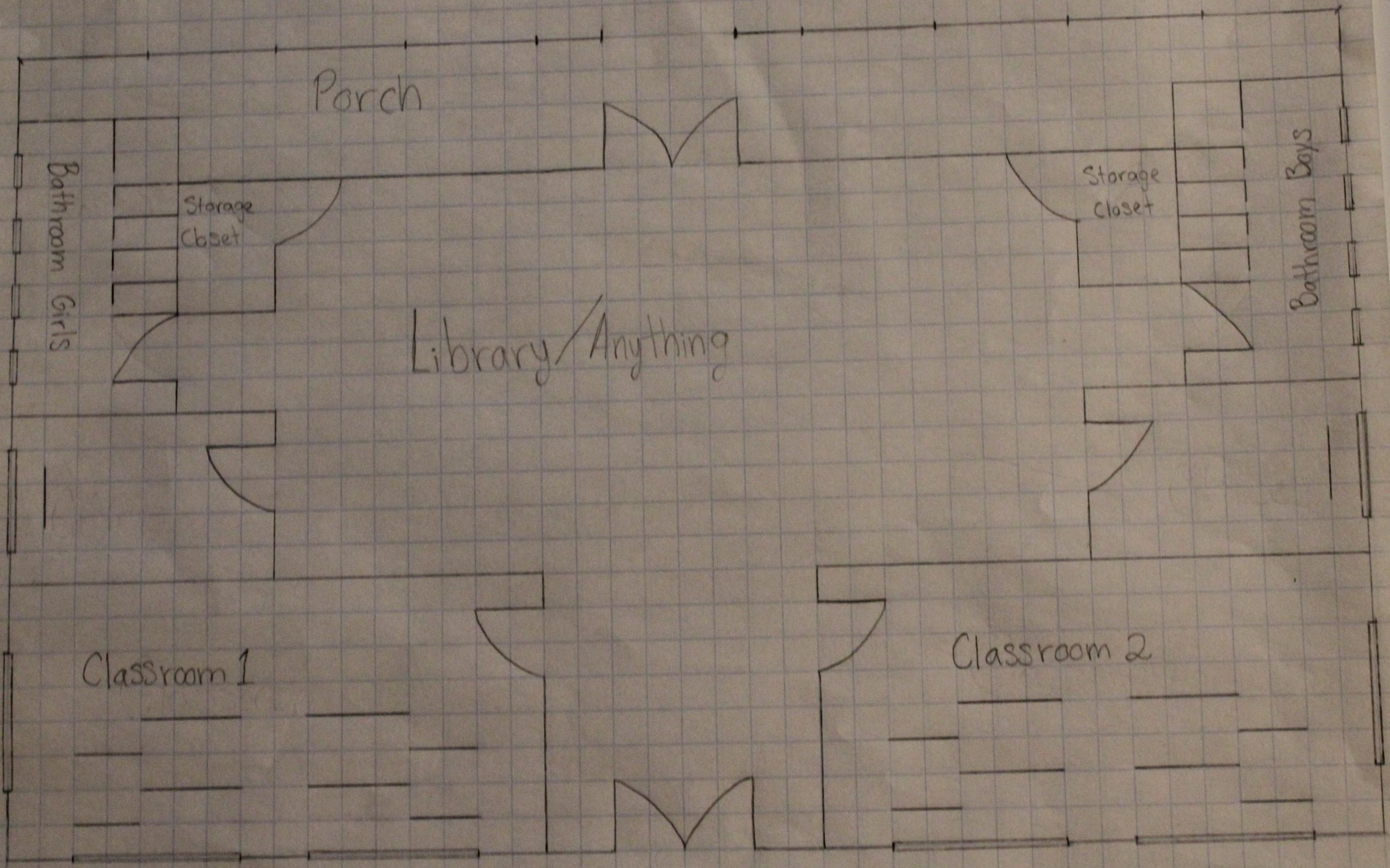
family
of 4
San Diego
climate



Front

Sky lights





Porch

Bathroom Girls

Storage Closet

Library / Anything

Storage Closet

Bathroom Boys

Classroom 1

Classroom 2