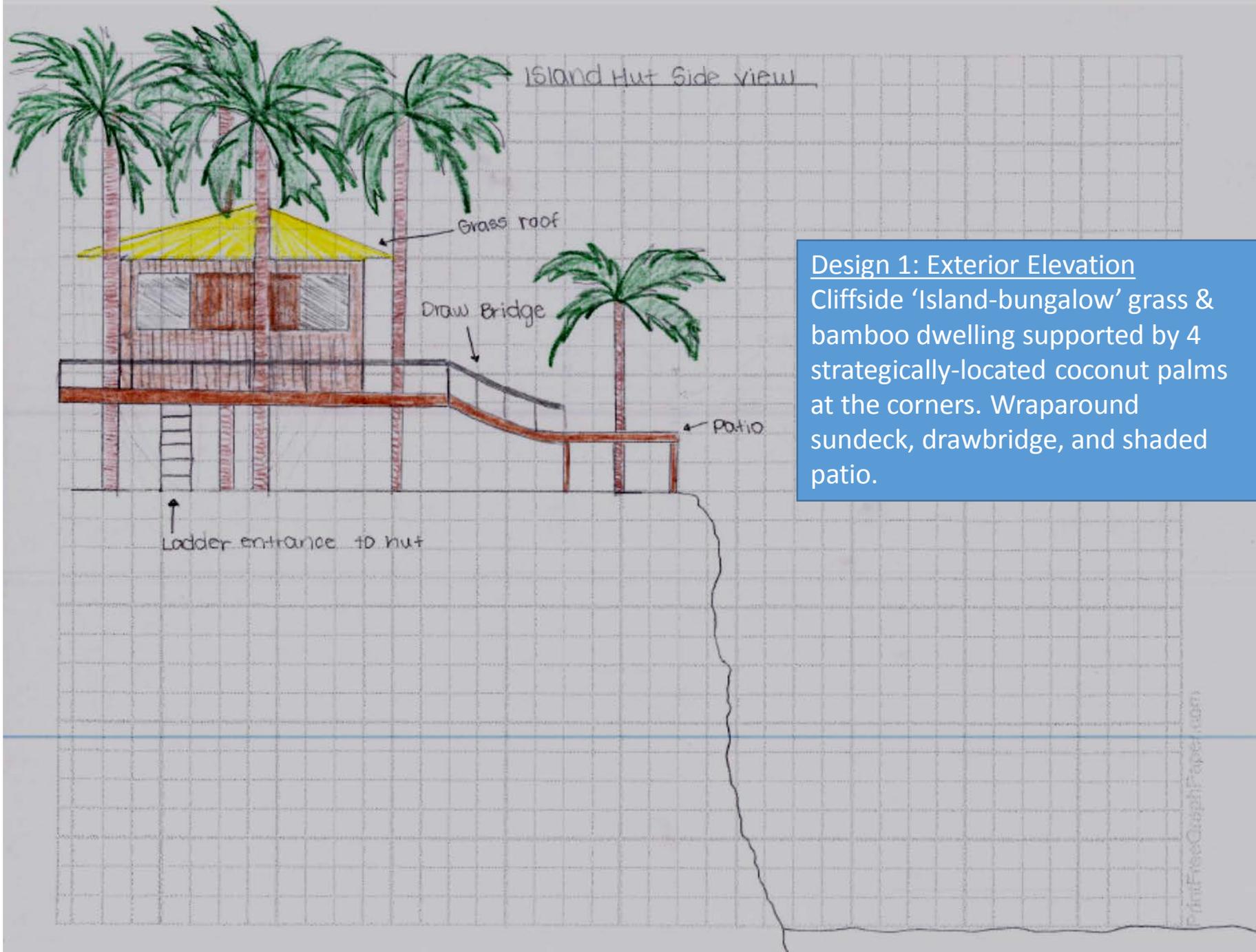


Civil Engineering & Architecture class

Island House Design Challenge:

“90 days have passed since being shipwrecked, and you realize you will not be rescued off your Island soon. Therefore, you decide to ‘upgrade’ your simple Hut.

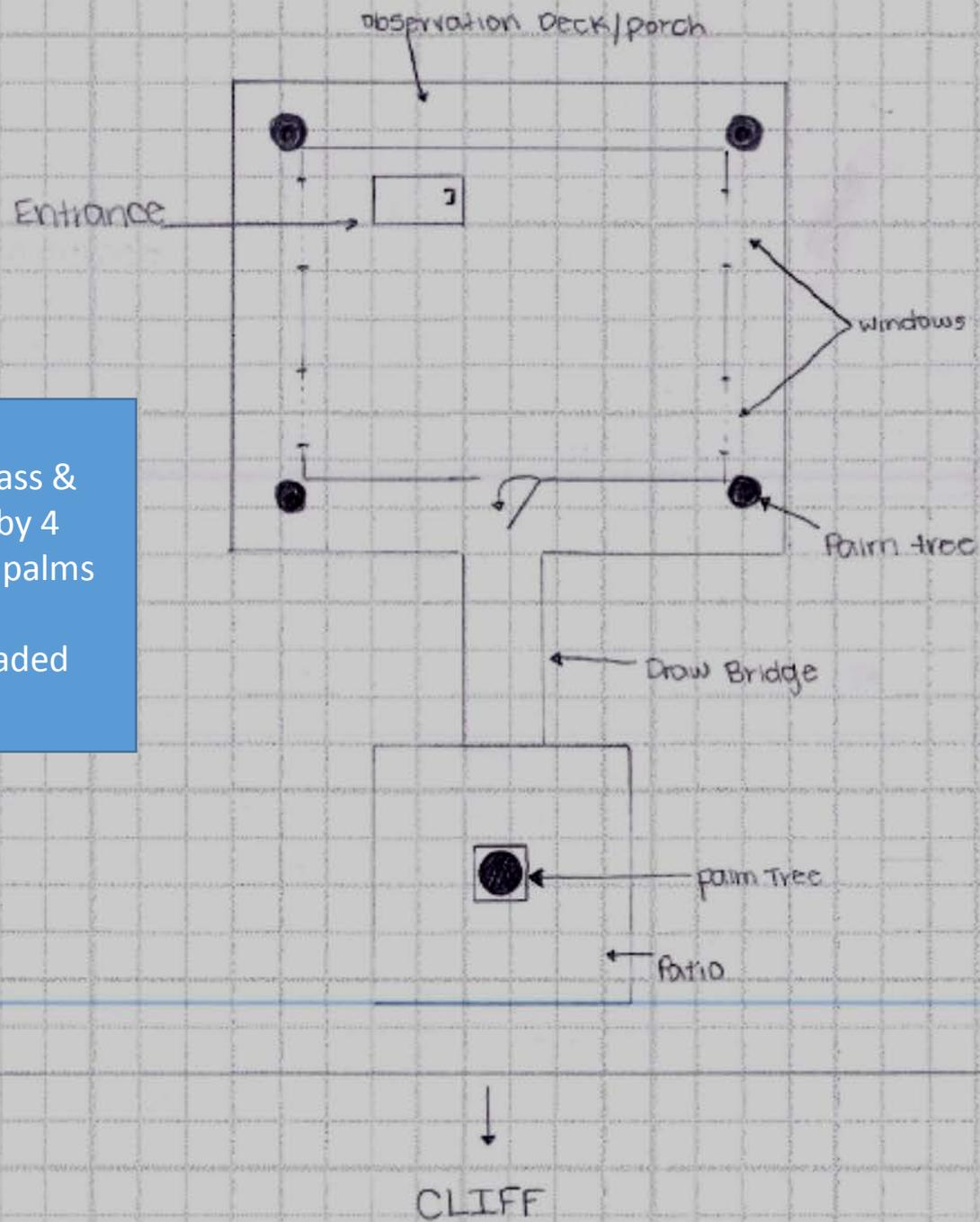
“Design and sketch a new Island dwelling built from native materials, having a maximum of 500 square feet living space, located on the 50-ft hill overlooking the ocean for potential rescue.



Design 1: Exterior Elevation
Cliffside 'Island-bungalow' grass & bamboo dwelling supported by 4 strategically-located coconut palms at the corners. Wraparound sundeck, drawbridge, and shaded patio.

Design 1: Plan View

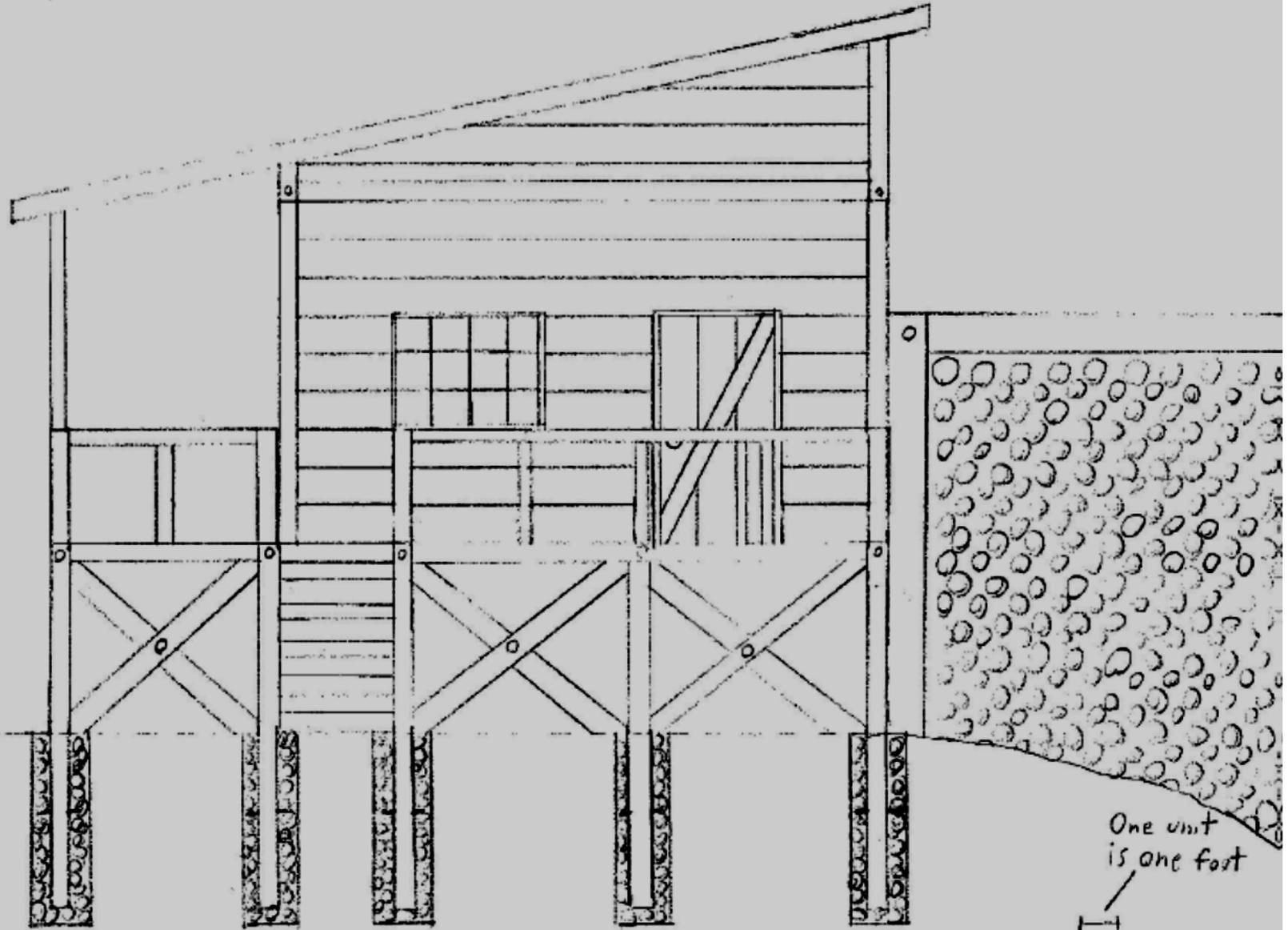
Cliffside 'Island-bungalow' grass & bamboo dwelling supported by 4 strategically-located coconut palms at the corners. Wraparound sundeck, drawbridge, and shaded patio.



Front

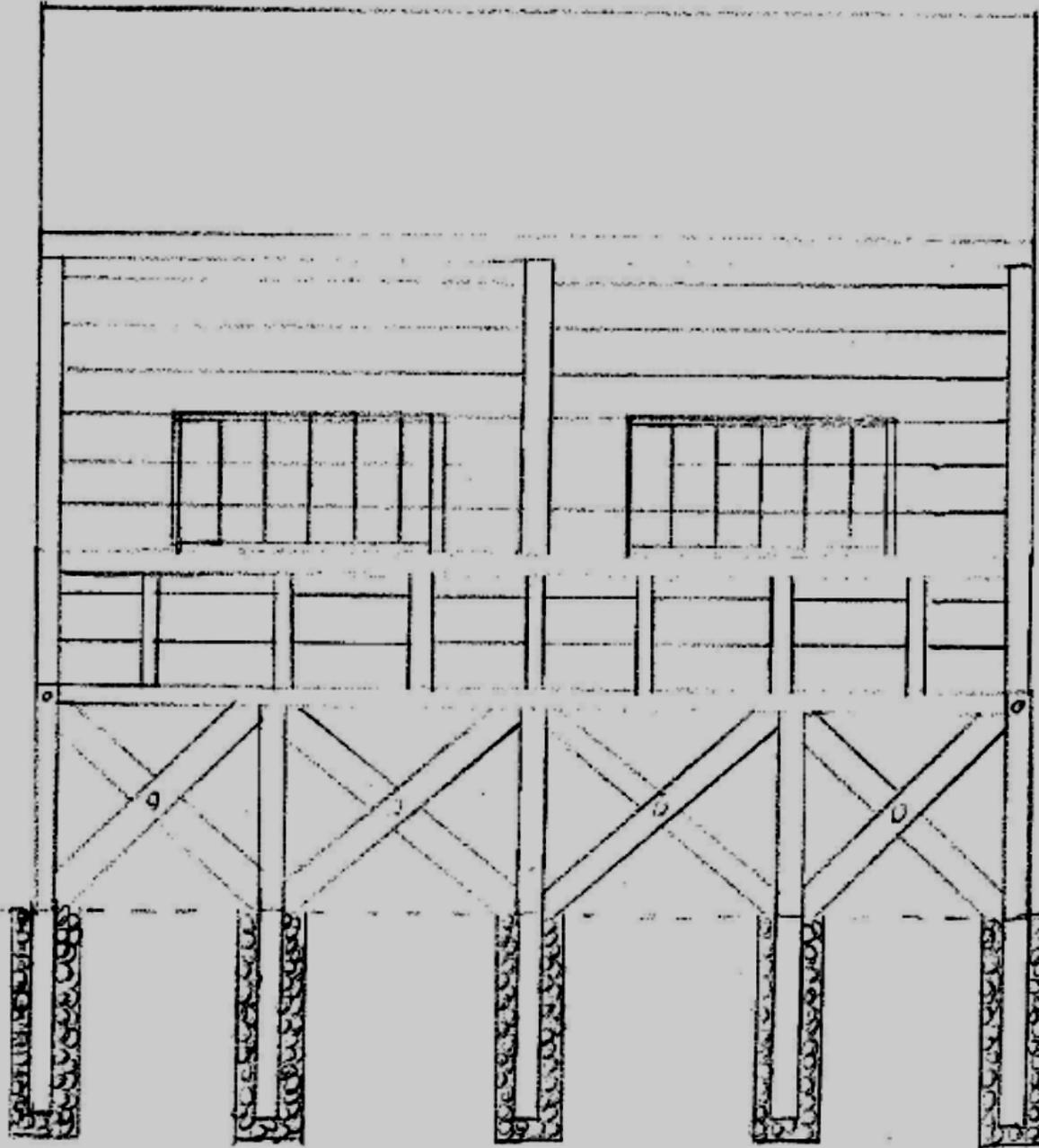
Hut
Upgrade

Design 2: Exterior Elevation
Rugged "Mountain" style
island dwelling made with
native wood planking,
supported on drilled stone
piles & stilt foundation.
Attached stone/masonry
water tank.



Left

Design 2: Exterior Elevation
Rugged "Mountain" style
island dwelling made with
native wood planking,
supported on drilled stone
piles & stilt foundation.
Attached stone/masonry
water tank.



One unit
is one foot

Site
Plan

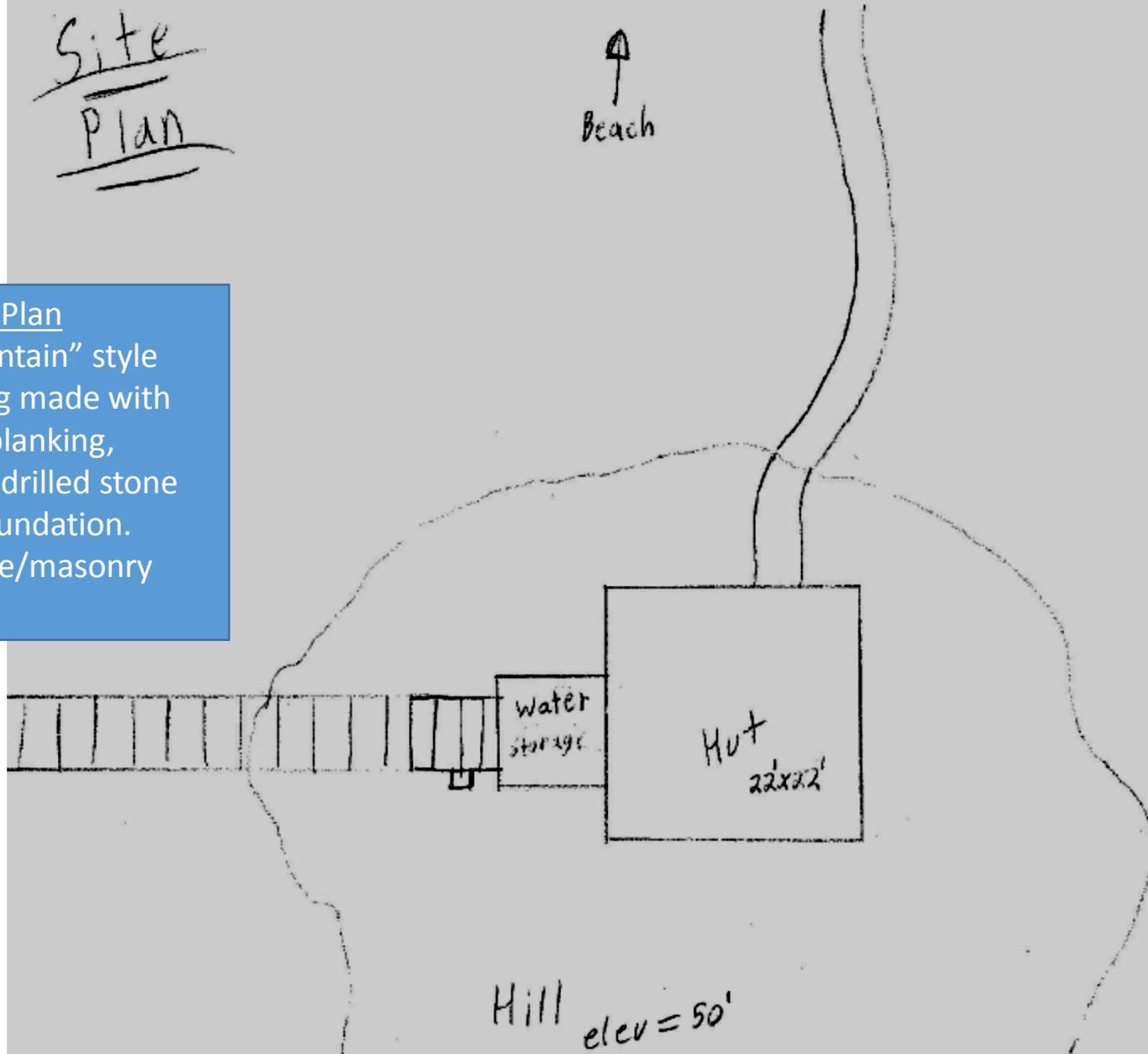
Hut
Upgrade

↑
Beach

*Not to scale!

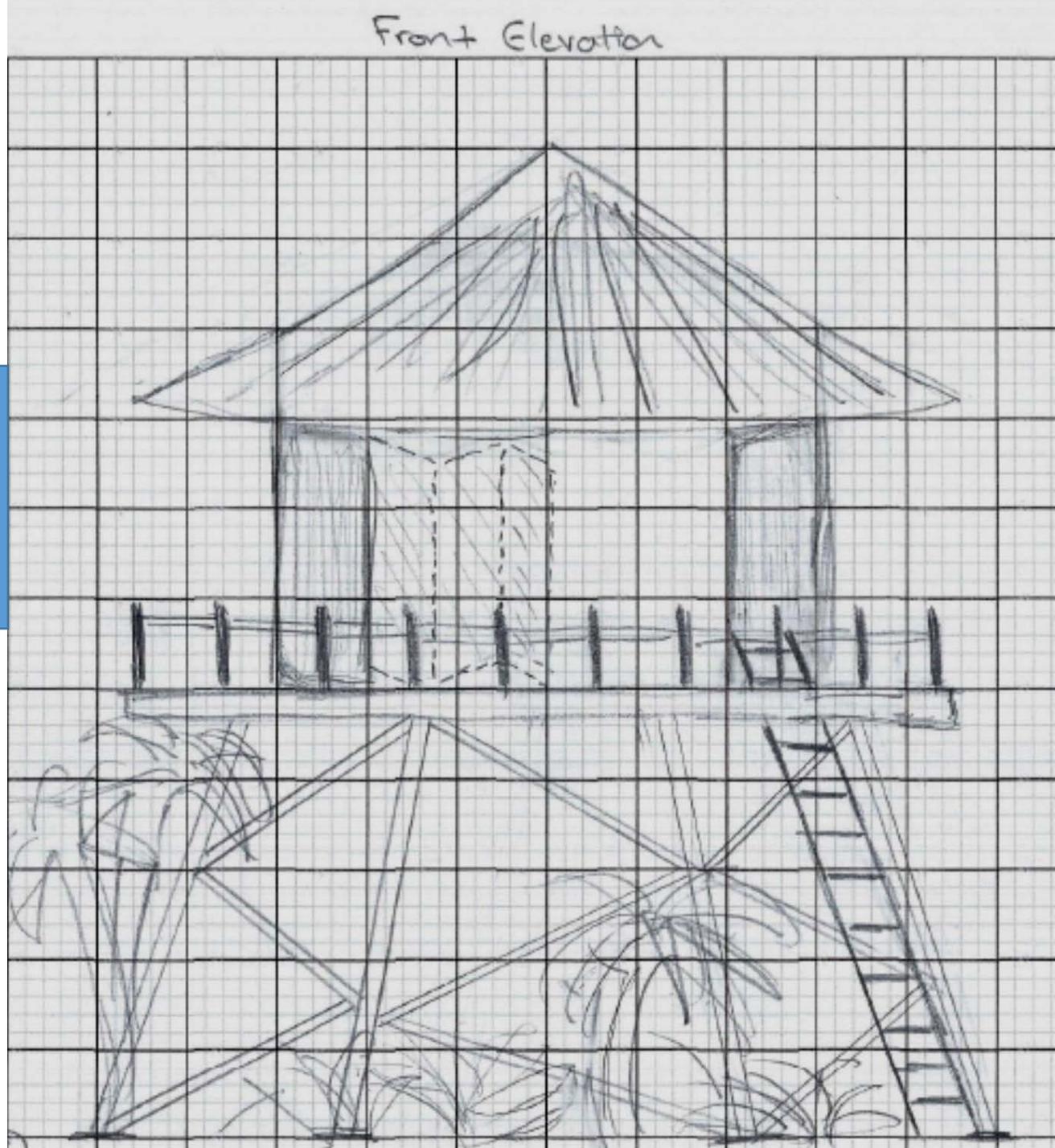
Design 2: Site Plan

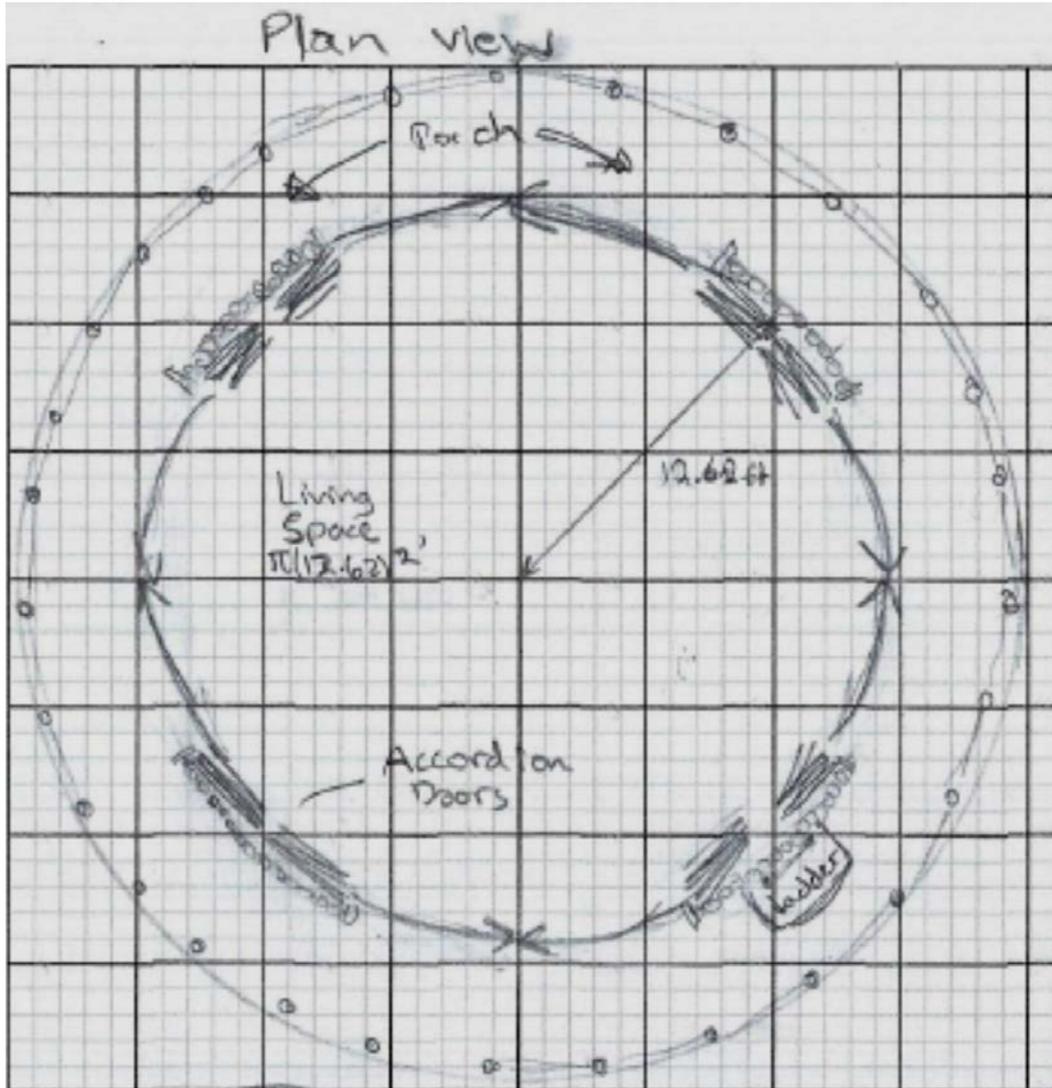
Rugged "Mountain" style island dwelling made with native wood planking, supported on drilled stone piles & stilt foundation. Attached stone/masonry water tank.



Hill elev = 50'

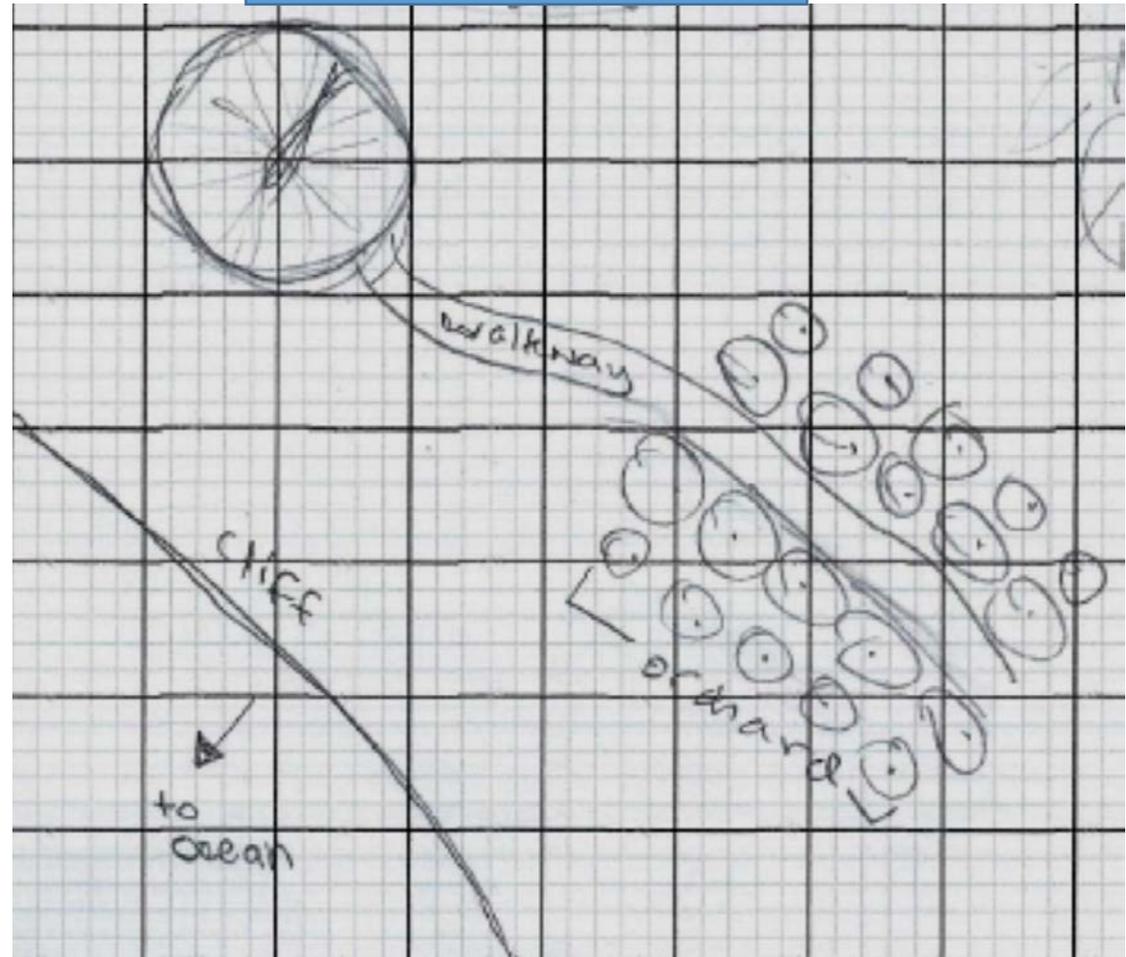
Design 3: Exterior Elevation
Elevated 'Circular-style' island dwelling on braced stilt foundation, with wraparound deck, accordion style doors, and fruit orchard



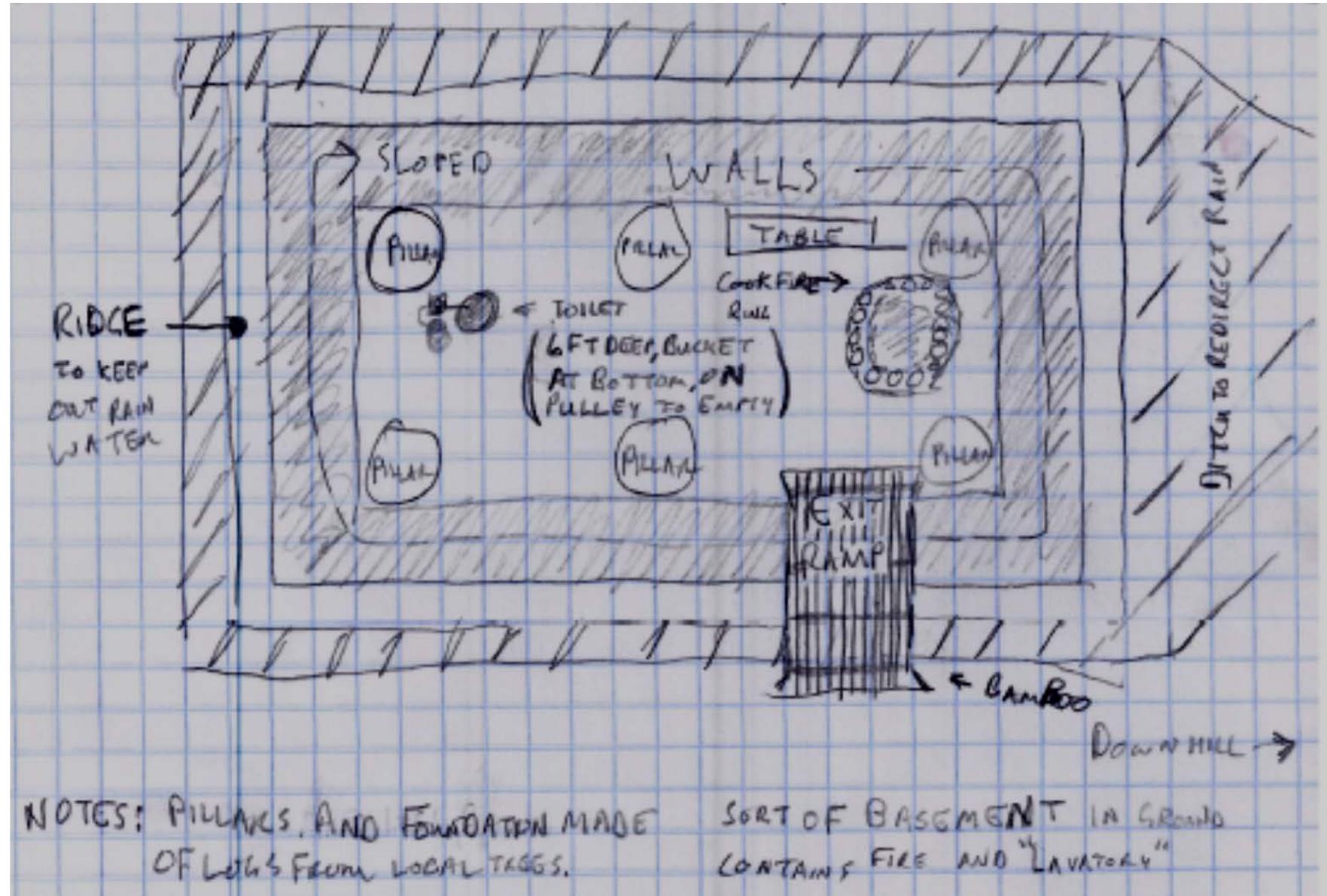


Design 3: Plan Views

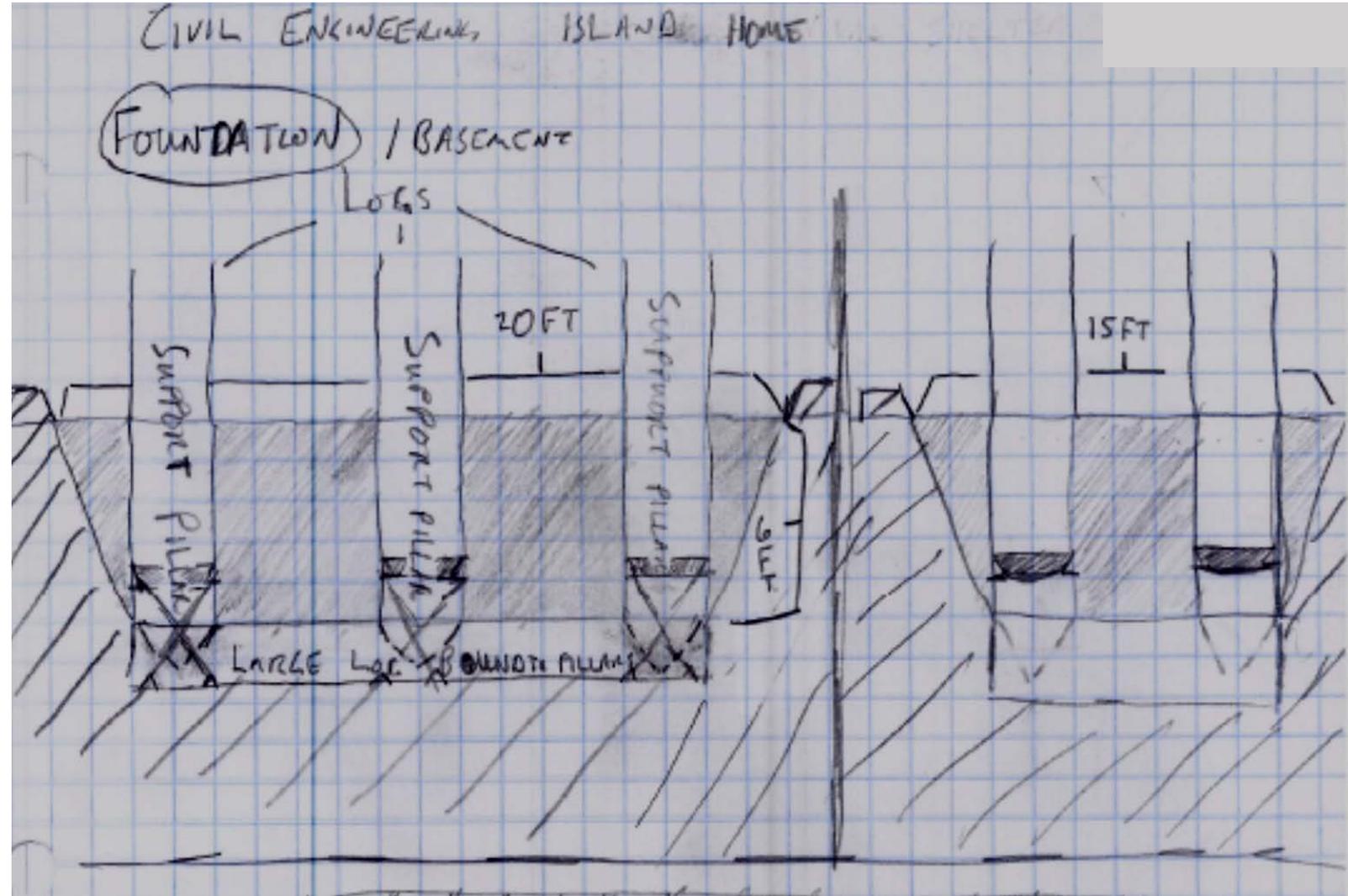
Elevated 'Circular-style' island dwelling on braced stilt foundation, with wraparound deck, accordion style doors, and fruit orchard



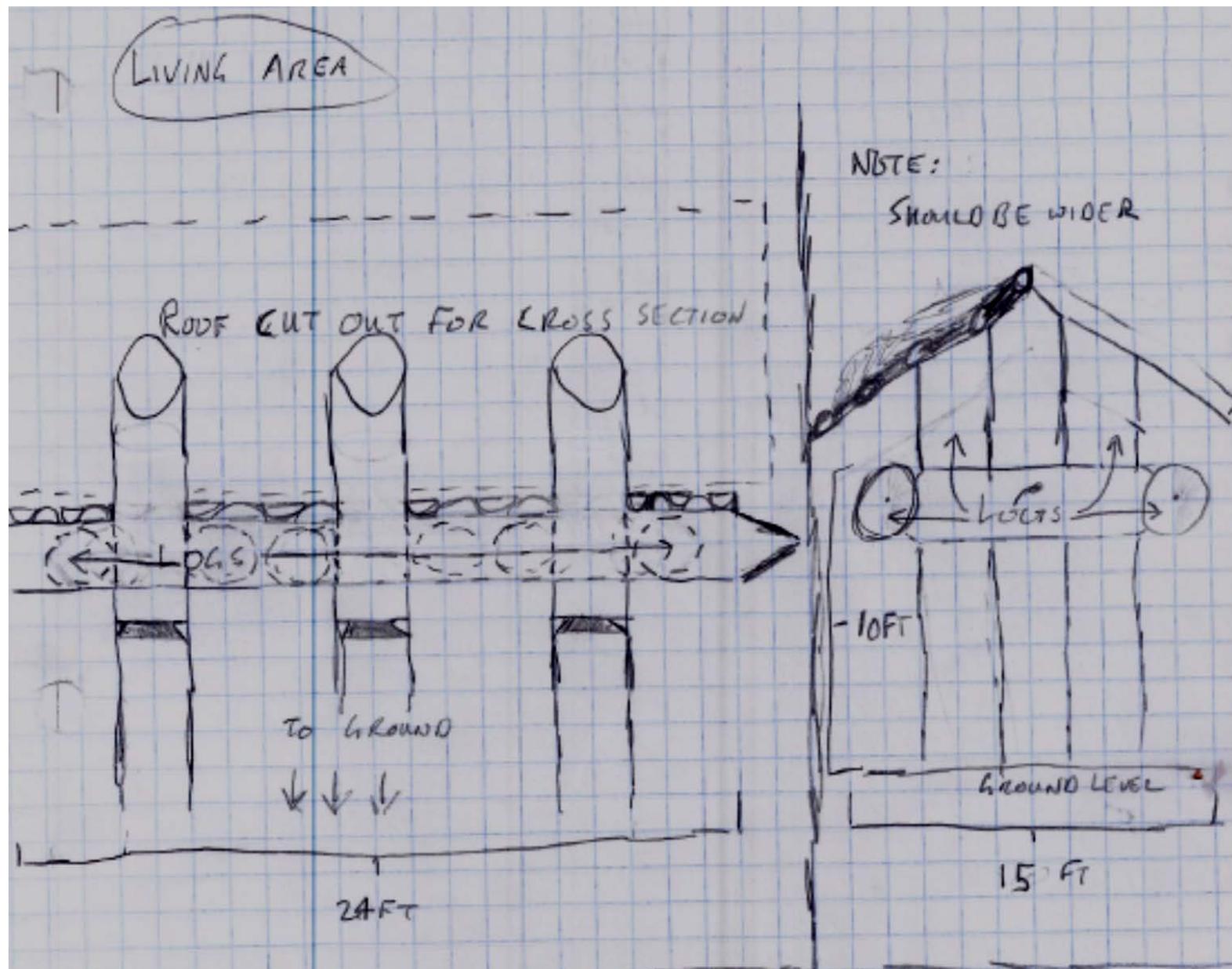
Design 4: Plan View
'Heavy Timber' island dwelling with driven support columns and exposed-beam log-style ceiling, 6-ft functioning basement, and stormwater management details.



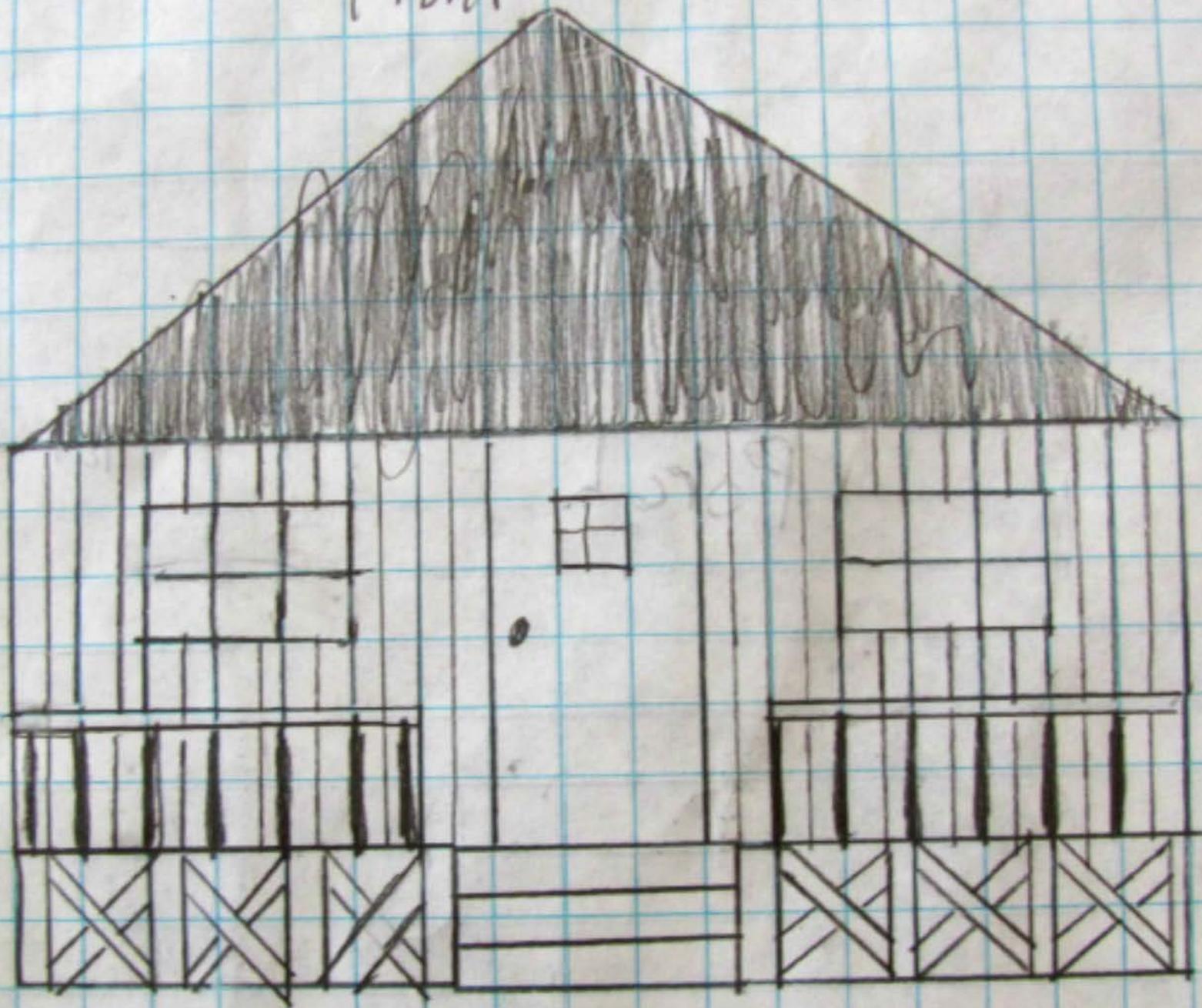
Design 4: Structural Details
'Heavy Timber' island dwelling with driven support columns and exposed-beam log-style ceiling, 6-ft functioning basement, and stormwater management details.



Design 4: Structural Details
'Heavy Timber' island dwelling with driven support columns and exposed-beam log-style ceiling, 6-ft functioning basement, and stormwater management details.

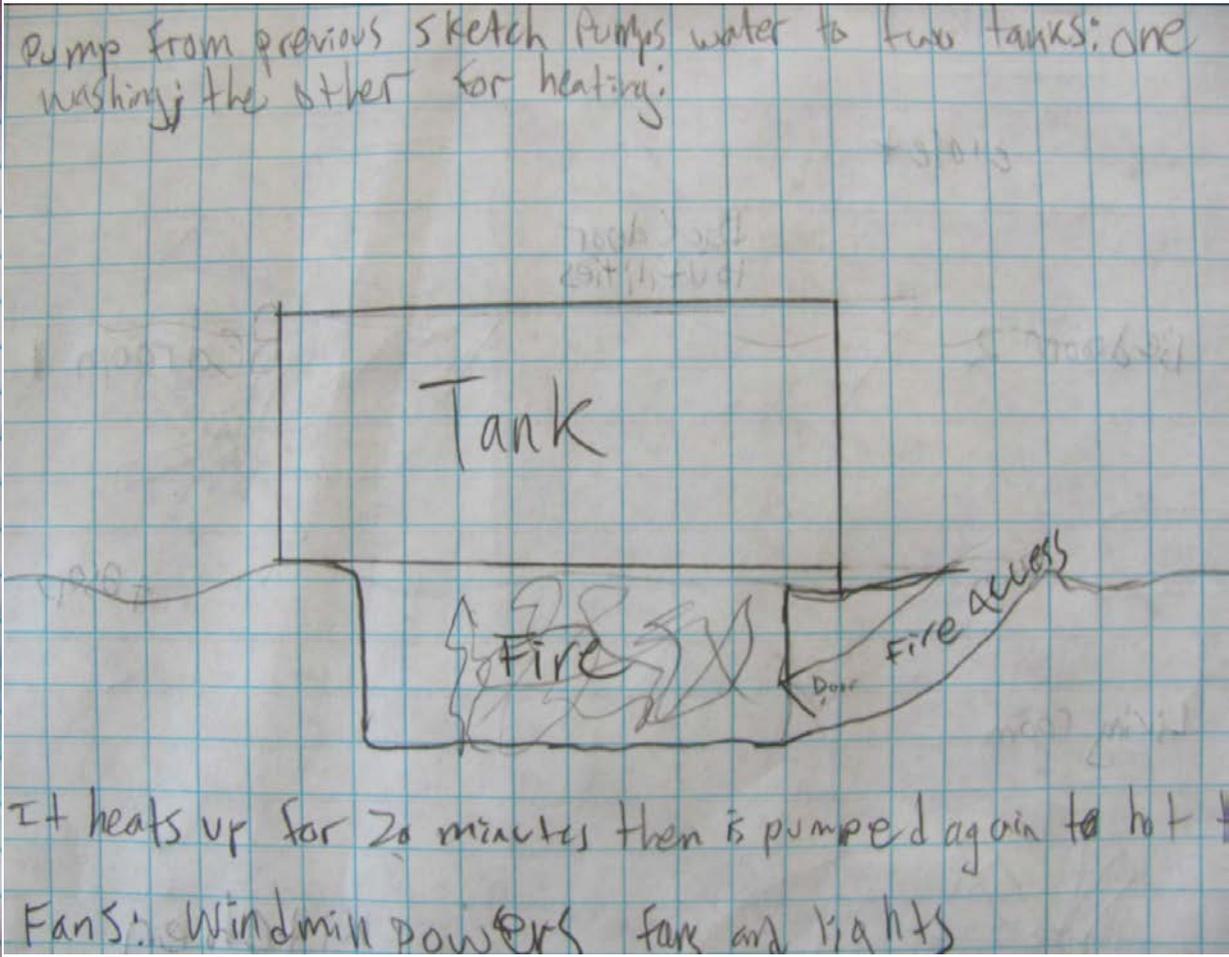
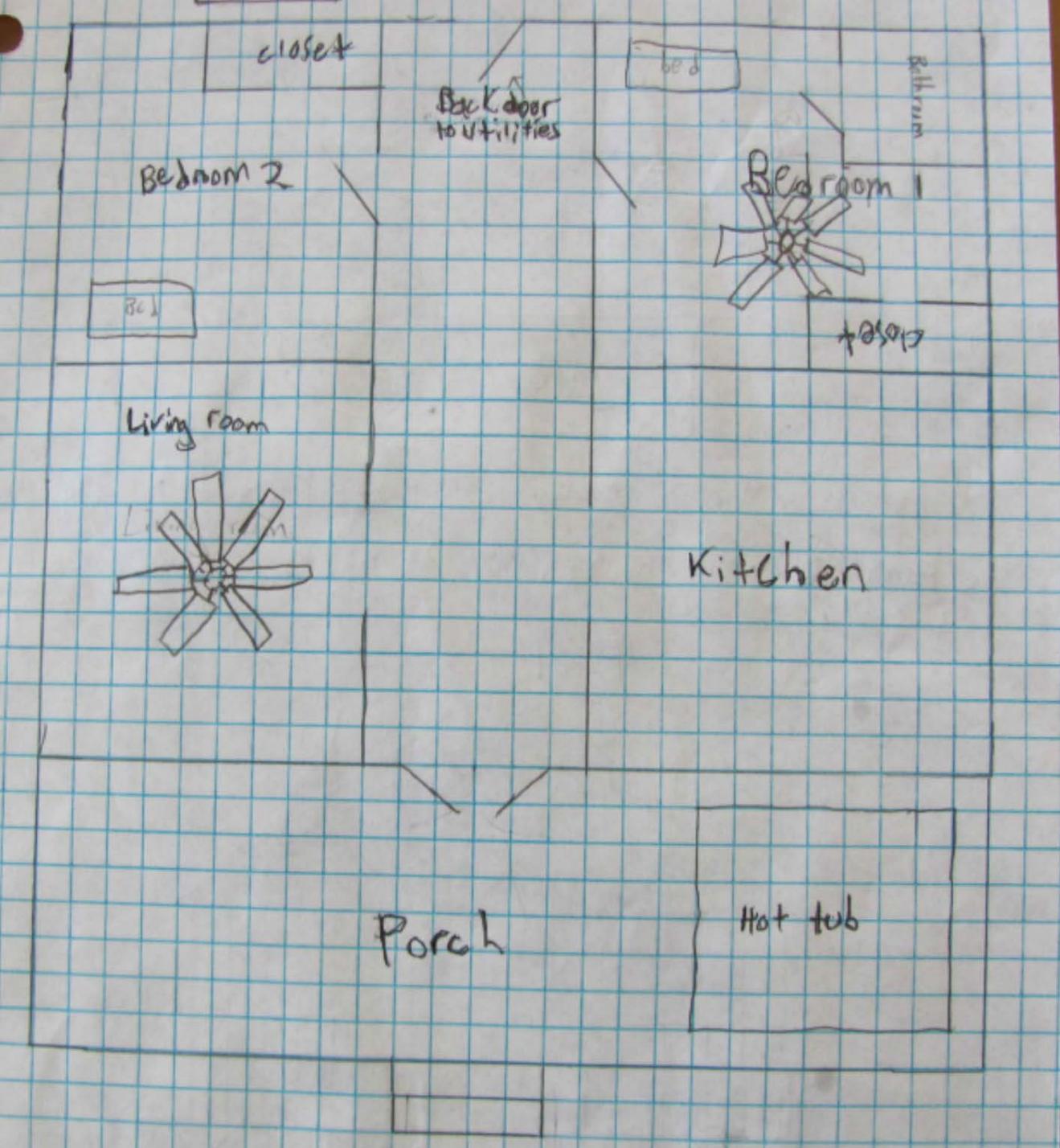


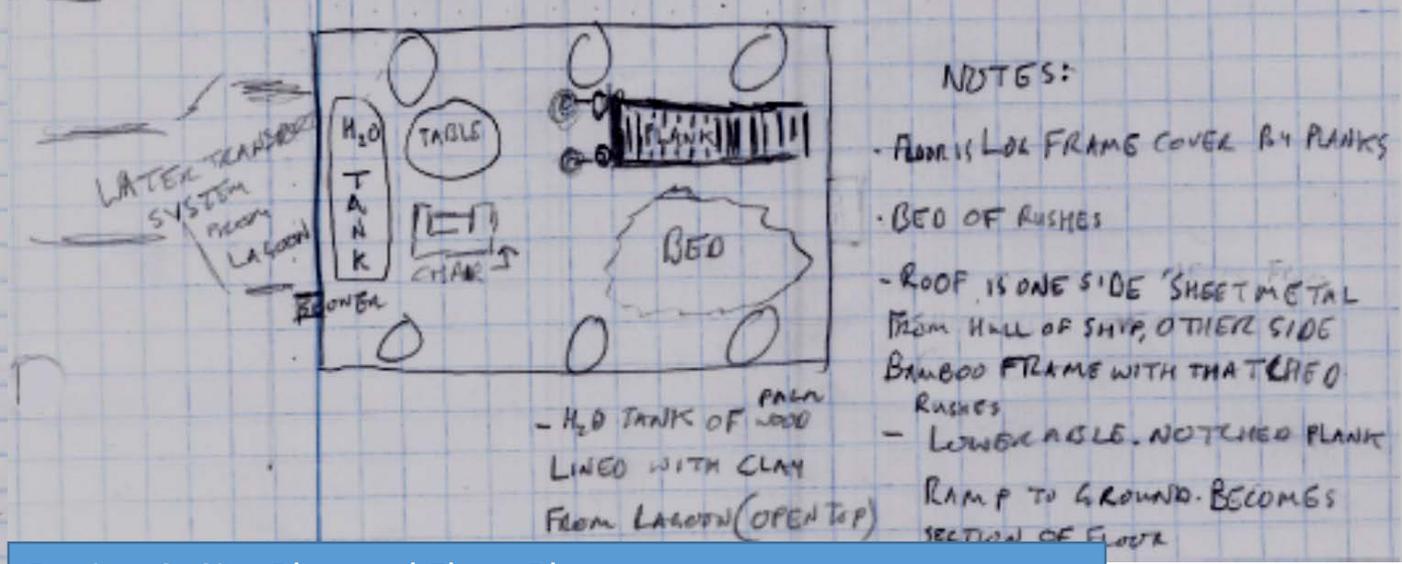
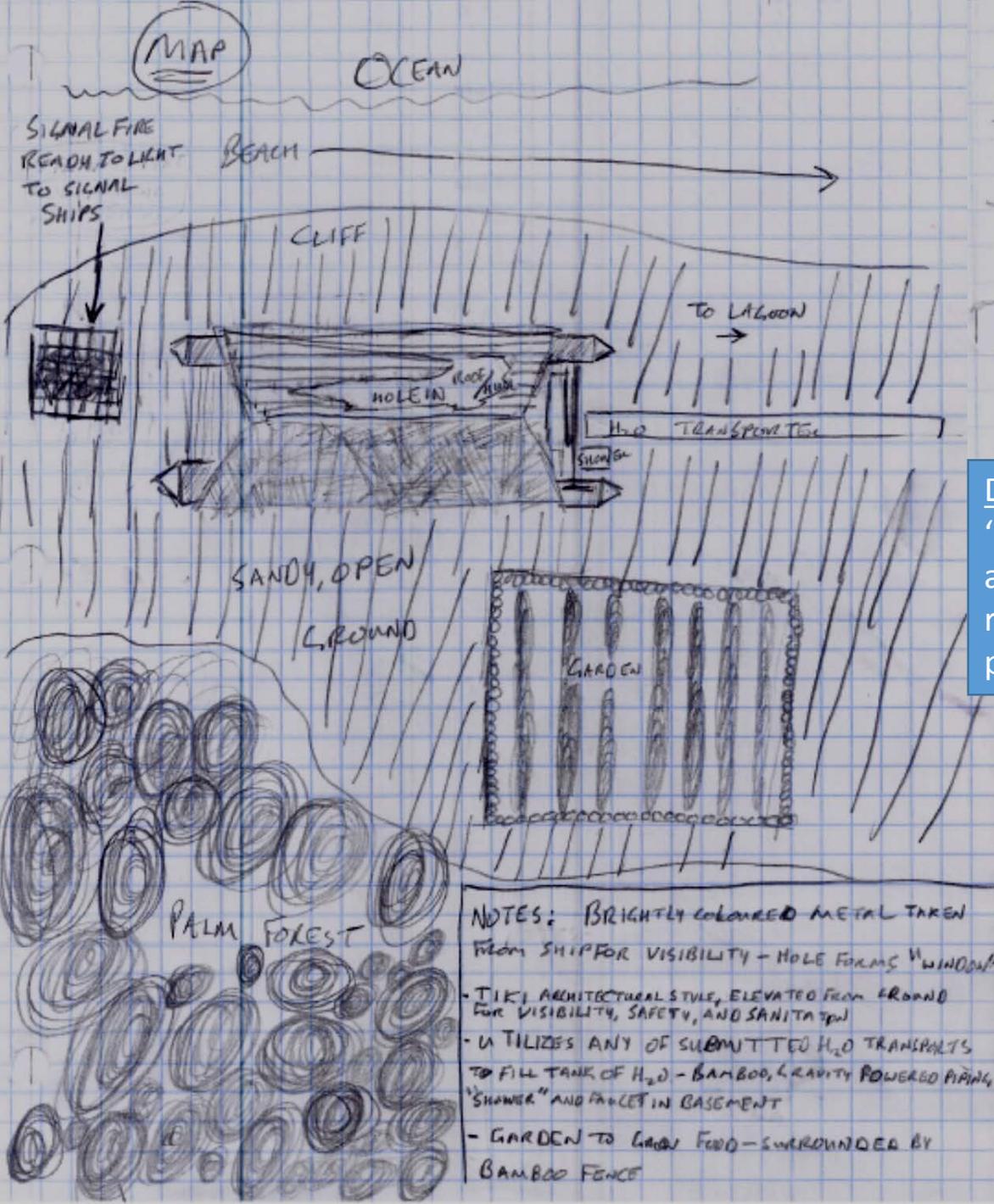
Front



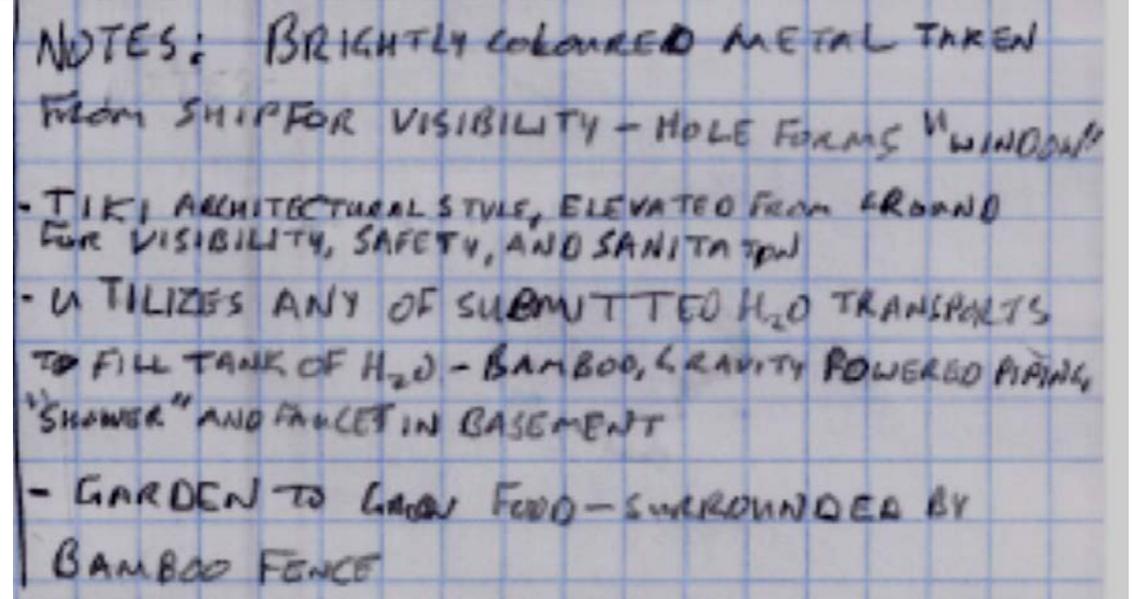
Design 5: Front Elevation
Rustic 'Farm Style' island dwelling with vertical board and batten wood exterior siding, full-width front porch, and built-in hot tub. Hot water system details shown.

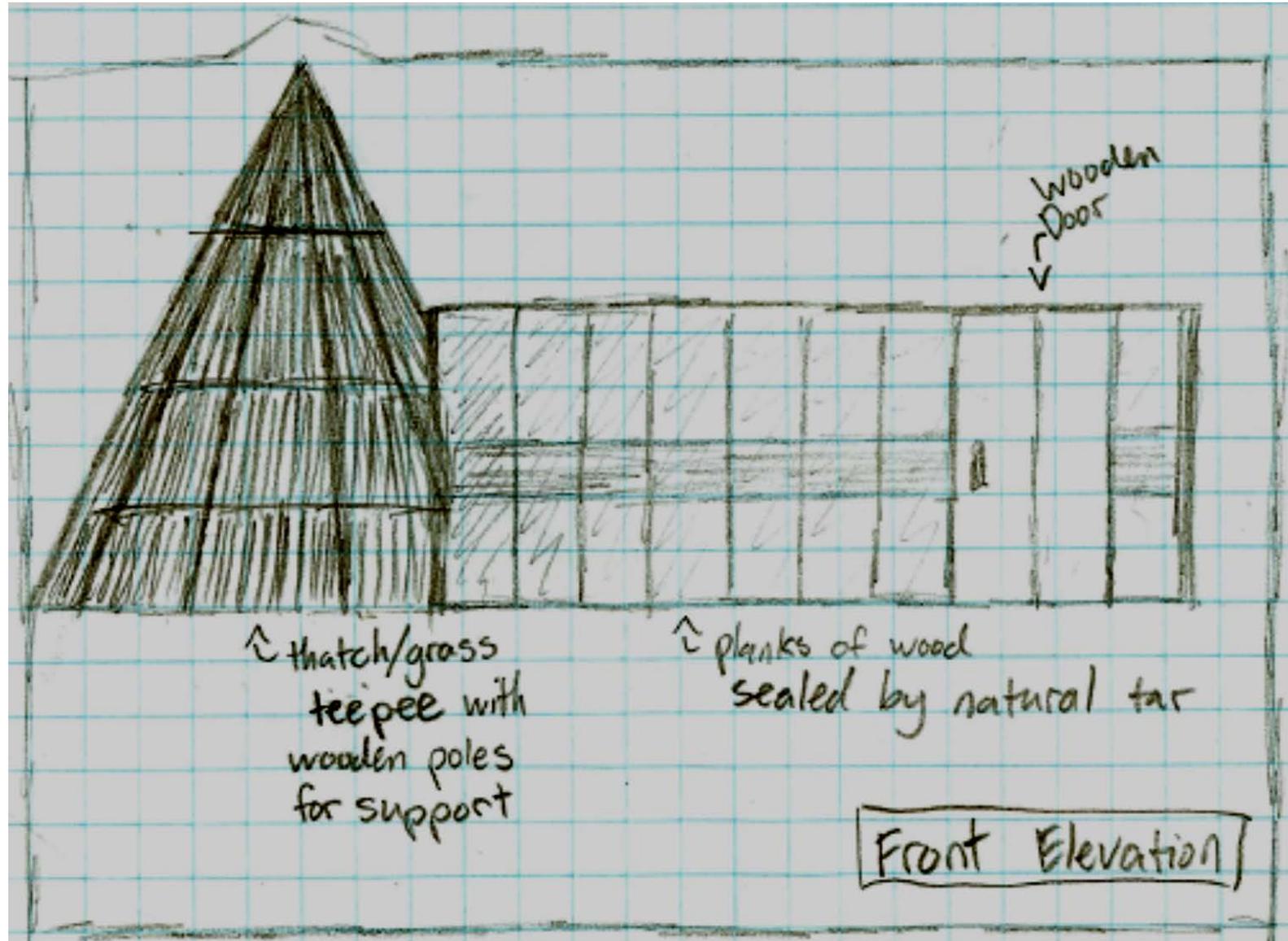
Design 5: Plan View & Hot Water Details
Rustic 'Farm Style' island dwelling with vertical board and batten wood exterior siding, full-width front porch, and built-in hot tub. Hot water system details shown.



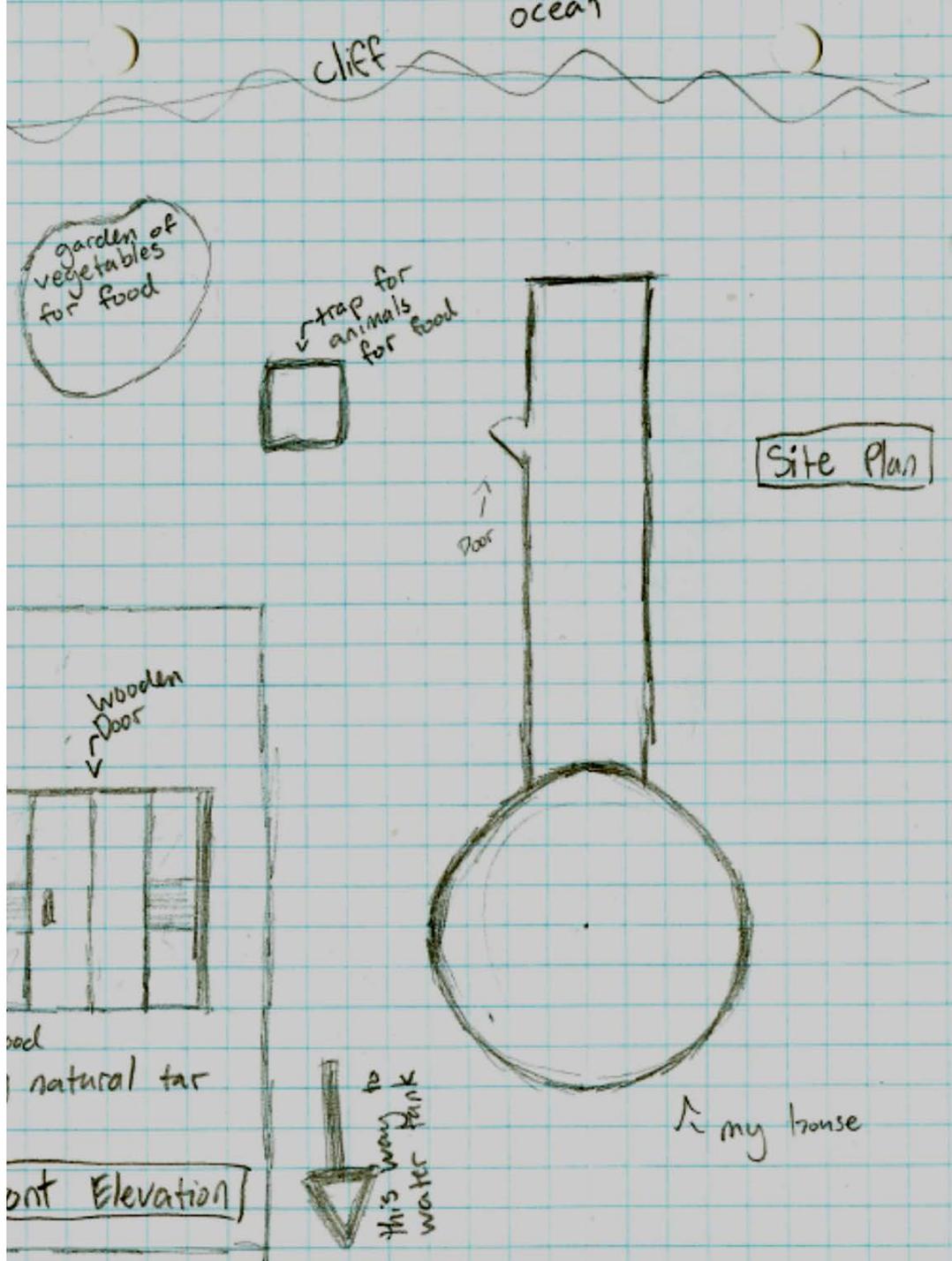


Design 6: Site Plan and Floor Plan
 'Tiki Style' Cliffside island dwelling made of logs, planking, and bamboo materials. Uses salvaged, reflective metal roofing on 1 side for rescue signaling. Fully furnished and plumbed interior, outdoor garden and signal fire.





Design 7: Exterior Elevation
Thatched 'Teepee Style'
Cliffside island dwelling, with
attached utility/storage room
built of heavy planking.
Outdoor vegetable garden and
wild-game trapping pit.

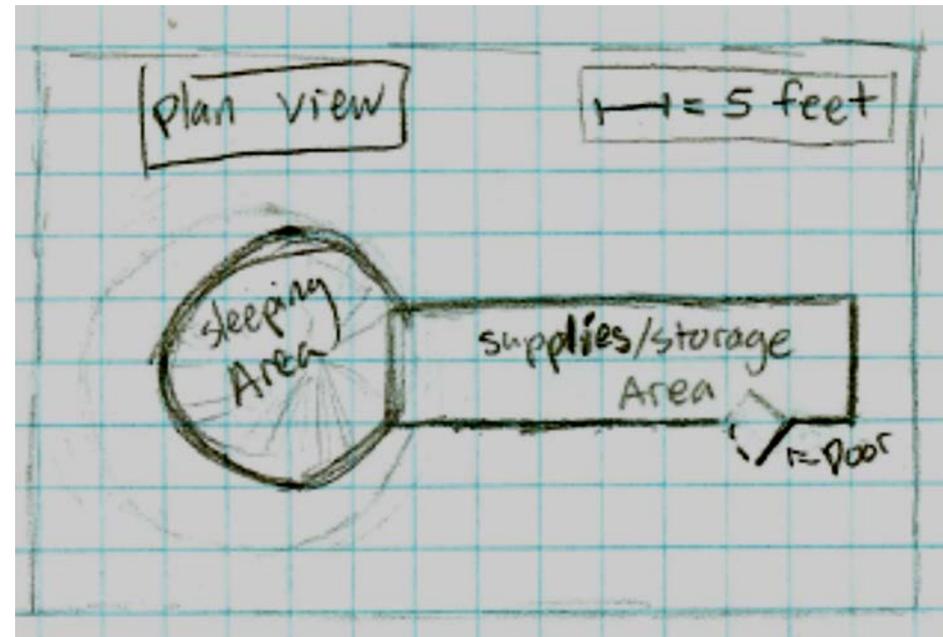


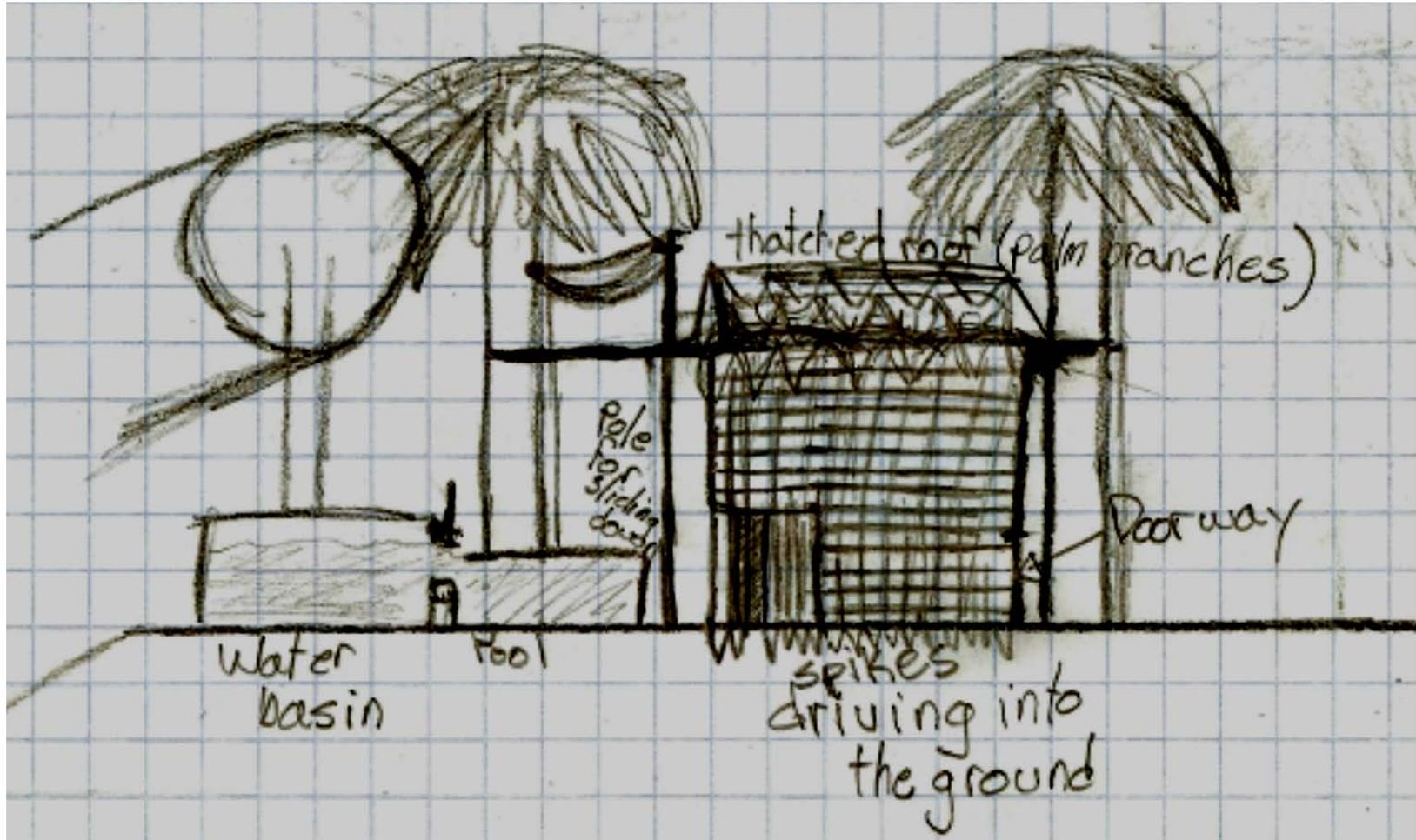
Design 7: Plan Views

Thatched 'Teepee Style'

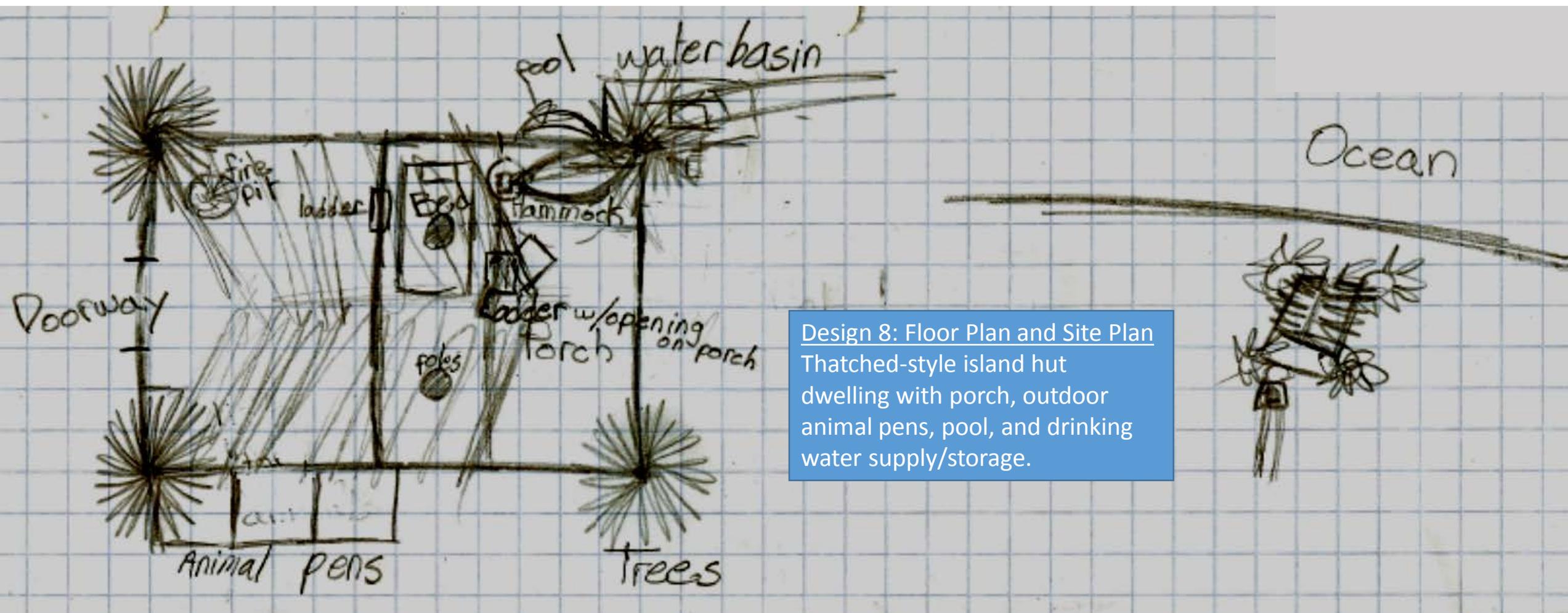
Cliffside island dwelling, with attached utility/storage room built of heavy planking.

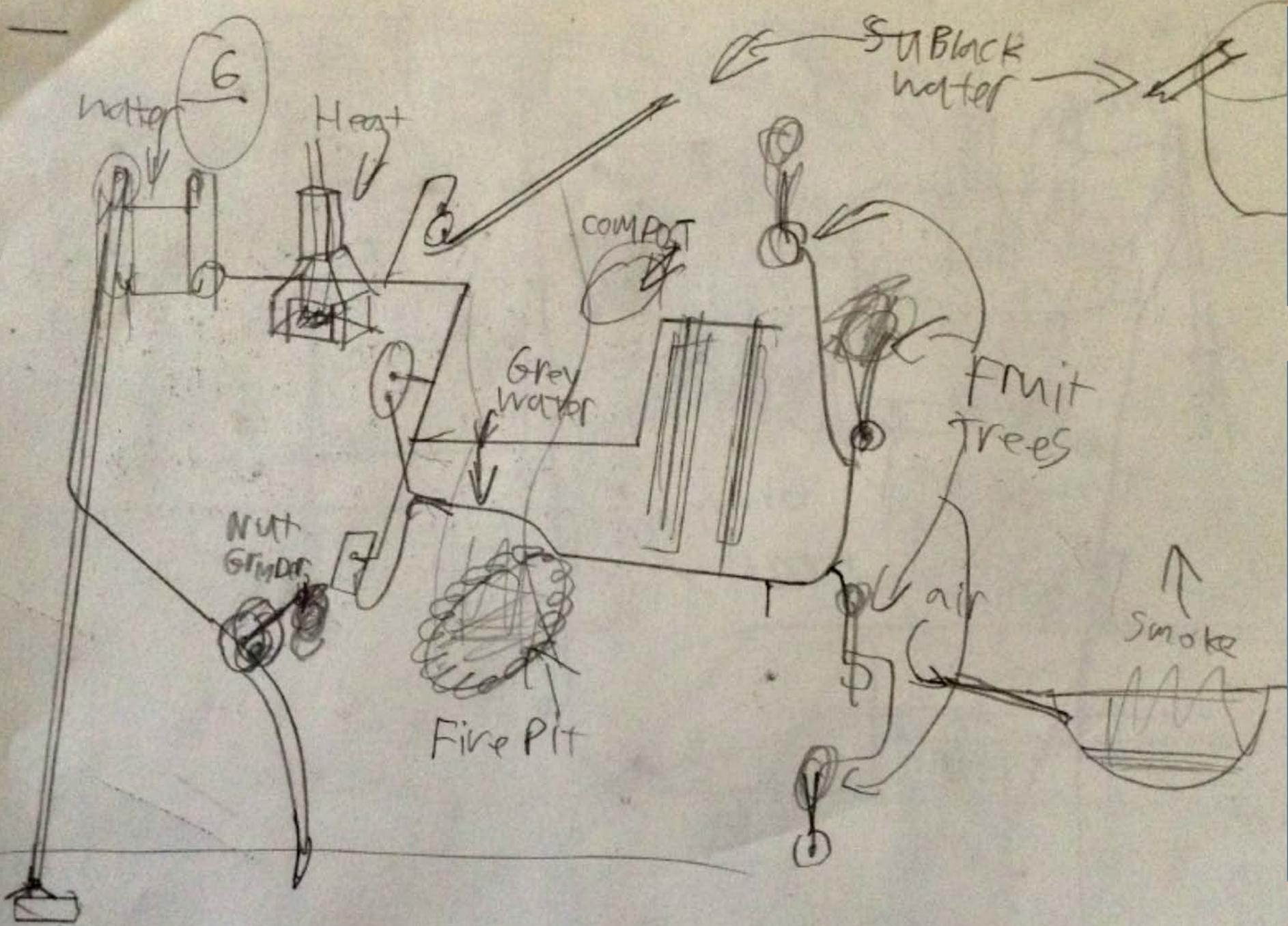
Outdoor vegetable garden and wild-game trapping pit.





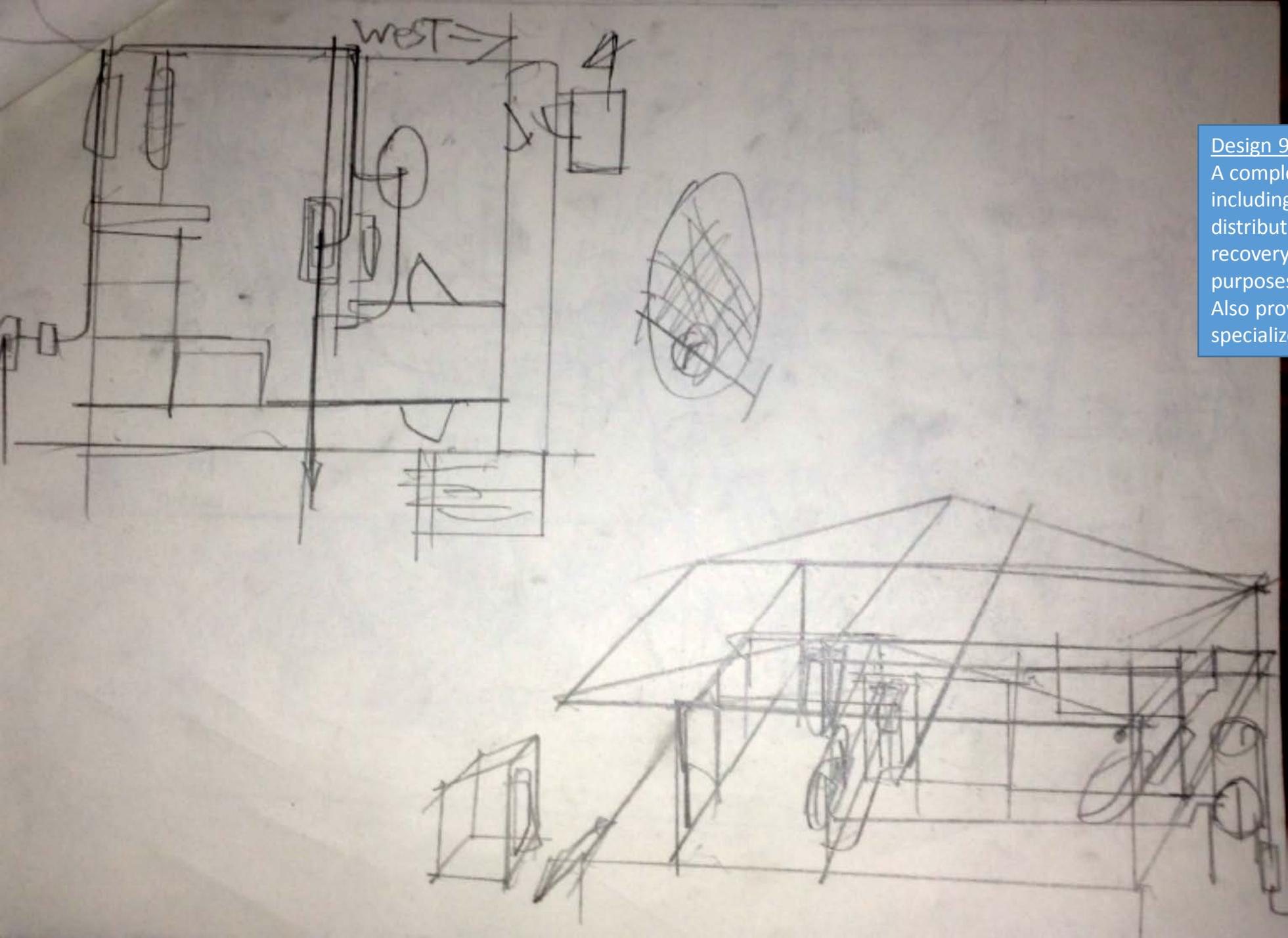
Design 8: Exterior Elevation
Thatched-style island hut dwelling with porch, outdoor animal pens, pool, and drinking water supply/storage.



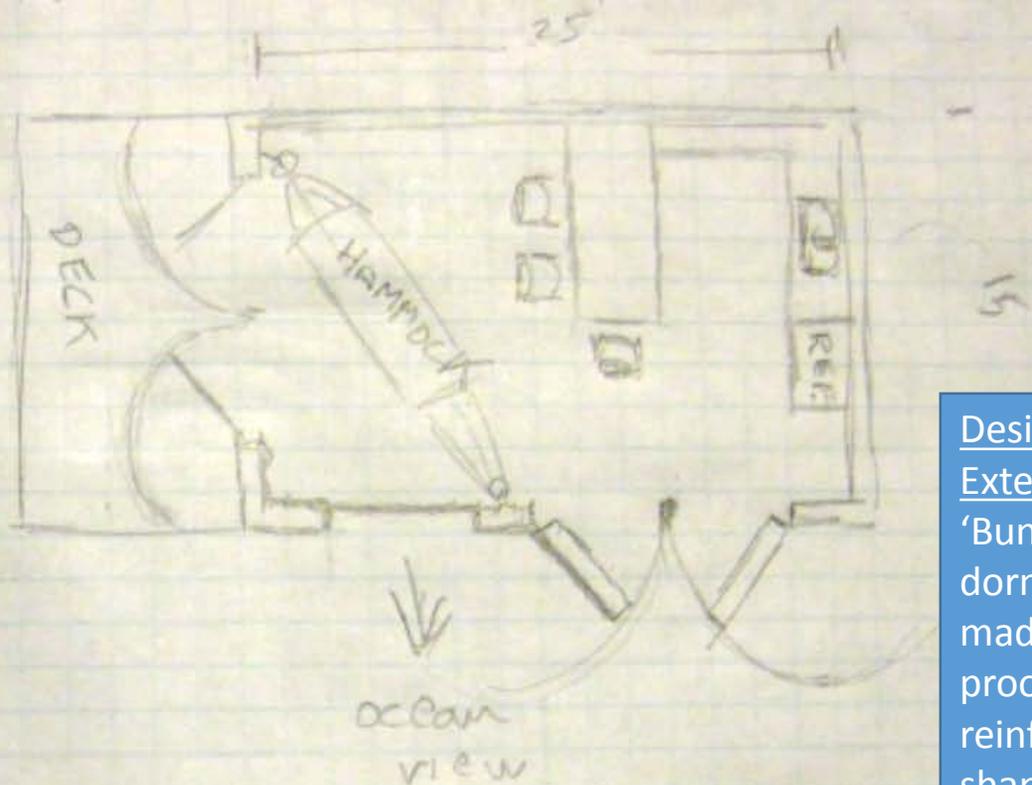


Design 9: Mechanical System Details
 A complete system of mechanical and plumbing details for a self-sustaining Island Shelter, including a pressurized water supply distribution system, a grey-water recovery & reuse scheme for agriculture purposes, and sewage water disposal. Also provisions for central heating and specialized food preparation equipment.

A System of Water and Grey Water drainage to Make a Self-sustaining Shelter on an Island
 Water is brought to the property by the winch system, refer to the last project. The water is stored in a holding tank. When the holding tank is filled it will empty into a distribution tank that will automatically pressurize the water system in the home. If the system is to overflow, the water in the main tank will run back down to the lagoon. A water wheel is attached downstream, which will power a nut grinder for making nut butter. The water is split to different appliances such as wash basins and a vegetable garden. The basins drain grey water to a tree grove. A separate water line will feed the toilet which will drain to a black water sewage hole a considerable distance from the premises. The pipes are made from the bamboo found on the island. A fire pit will be used to cook food and to signal for help. There is a fire place in the home for the heat if it gets cold.



Design 9: Floor Plan and Isometric Views
A complete, self-sustaining Island Shelter, including a pressurized water supply distribution system, a grey-water recovery & reuse scheme for agriculture purposes, and sewage water disposal. Also provisions for central heating and specialized food preparation equipment.



Design 10: Floor Plan and Exterior Elevations
'Bungalow-style' dormered island cottage made with hurricane-proof masonry and reinforced concrete. U-shaped kitchen with peninsula, heavy oak doors, bamboo paneling.

CONCRETE REINFORCED
FOUNDATION TO SURVIVE A
HURICANE. ADOBE BRICK WALLS
18" THICK WITH WOOD BAMBOO
WOOD PANELING ON ALL INSIDE
WALLS

Coconut Trees

Banana Trees

Palm Trees

Ceiling Fan in Kitchen / Living Room / Bedroom

Bamboo Trees

Bridge to lagoon

Windows

Living Room door solid oak, thick

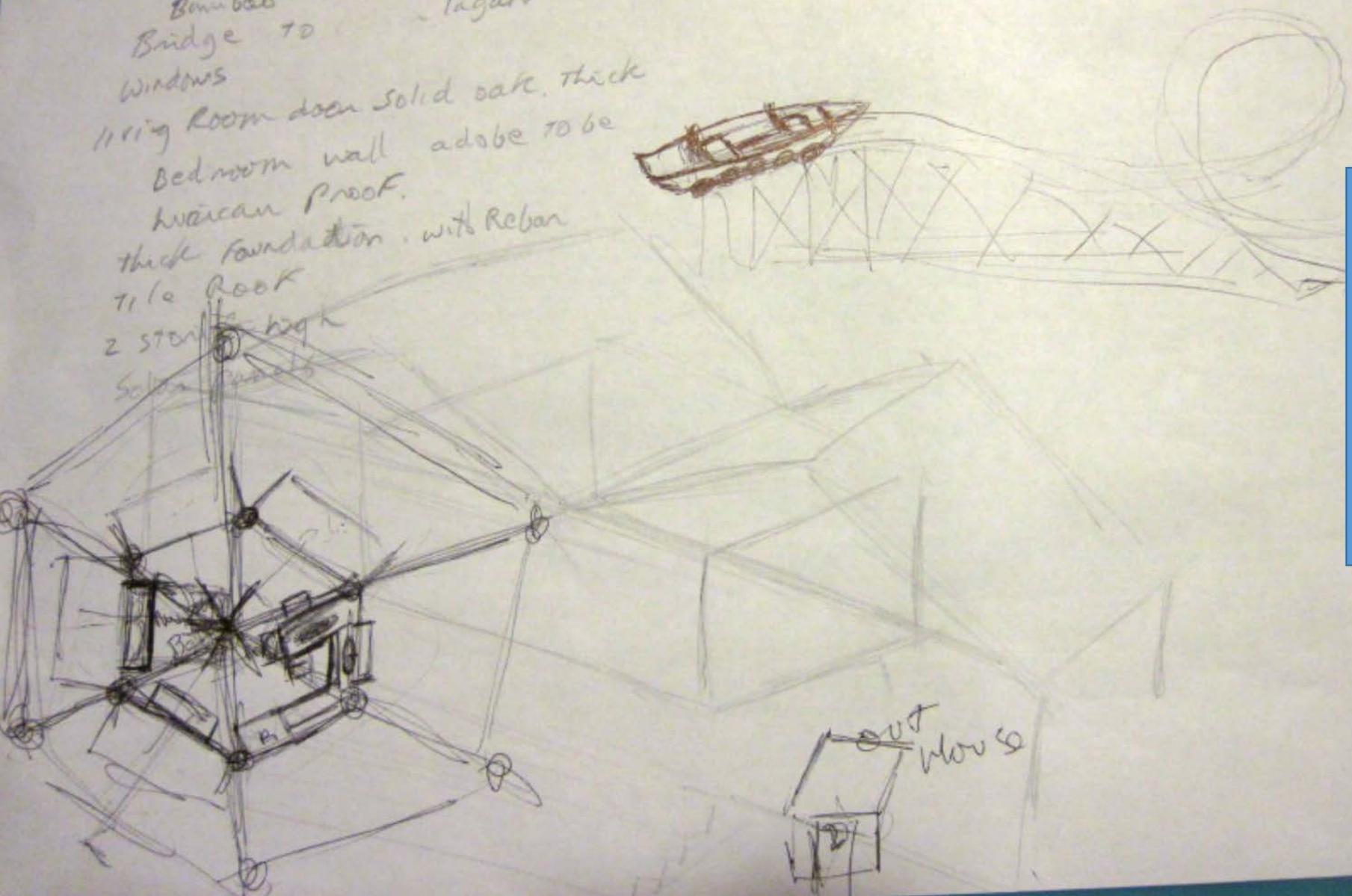
Bedroom wall adobe to be hurricane proof.

thick foundation with rebar

tile roof

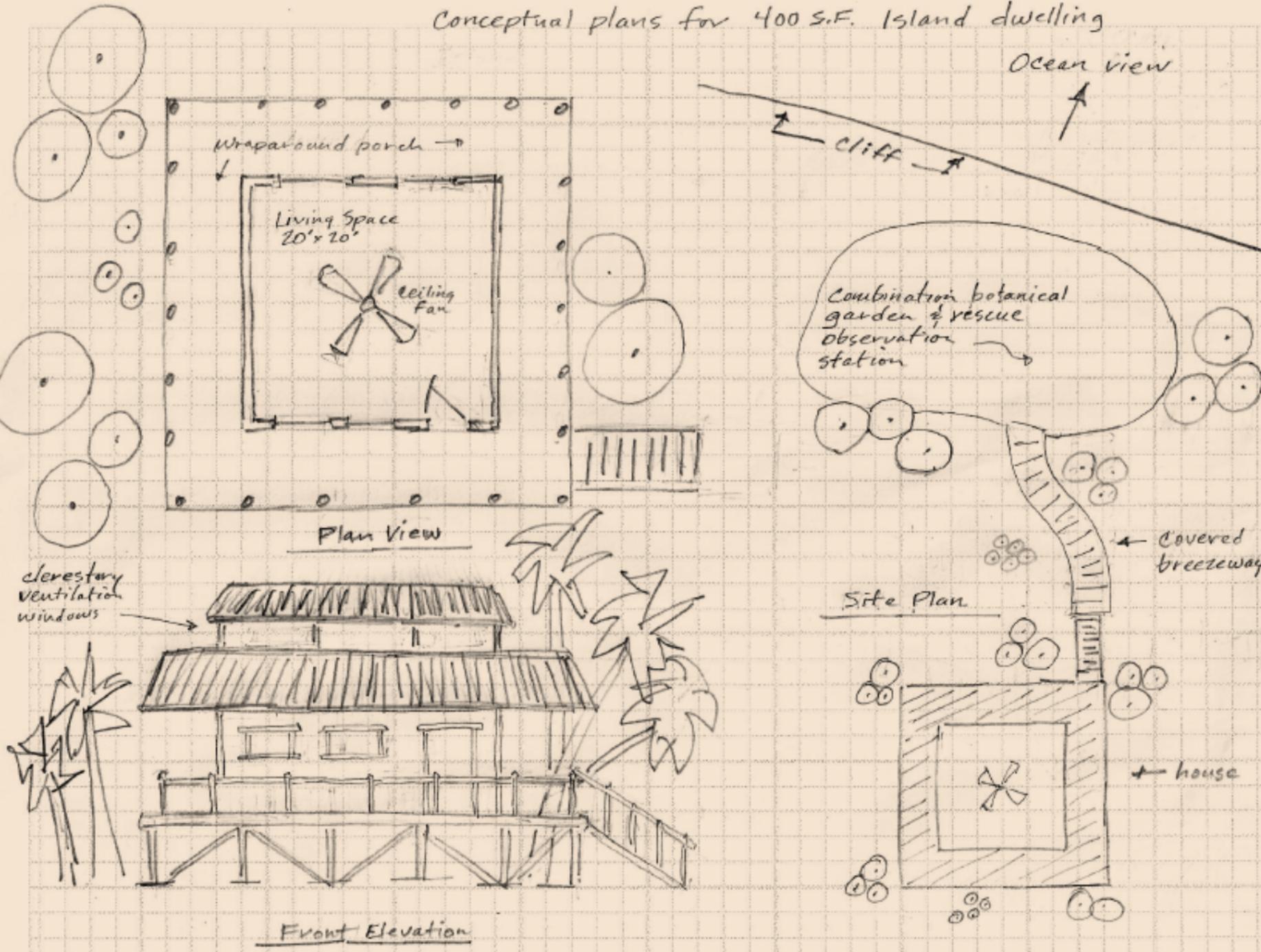
2 stories high

Solar panels



Design 10: Floor Plan and Exterior Elevations
 'Bungalow-style' dormered island cottage made with hurricane-proof masonry and reinforced concrete. U-shaped kitchen with peninsula, heavy oak doors, bamboo paneling.

Conceptual plans for 400 S.F. Island dwelling



Design 11: Floor Plan, Site Plan and Exterior Elevations 'Florida Keys' hut with wraparound deck, clerestory ventilation windows, covered breezeway and Cliffside garden.

The End