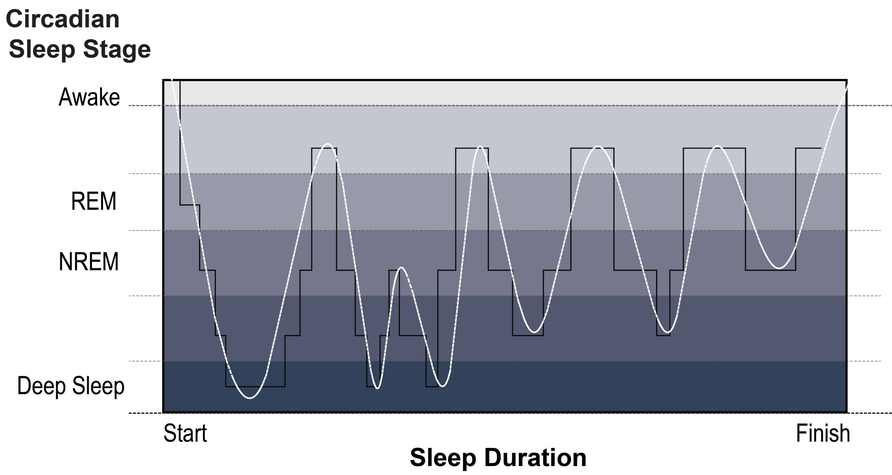
The Architecture of Sleep

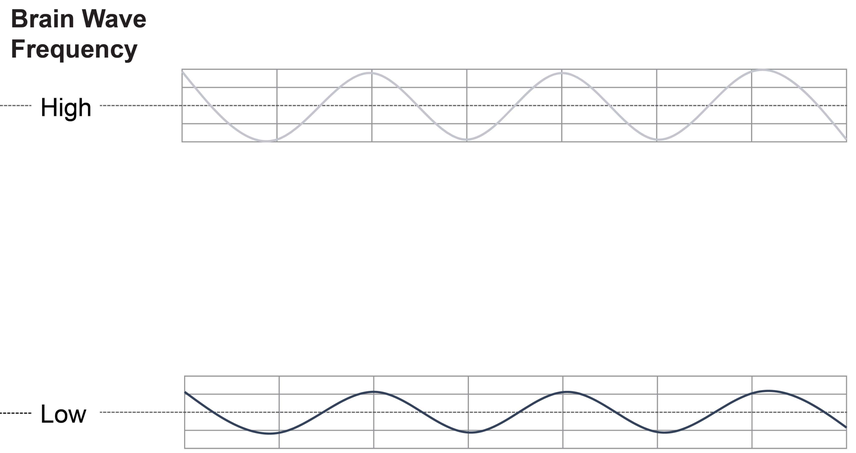
Spring 2010 Third Floor Lounge Installation

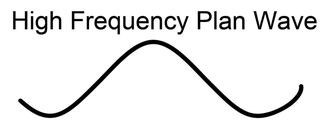
Andrew Bickell Jeff Frazier Brandon Hollis Michael Odum
Professor: Michael Cadwell

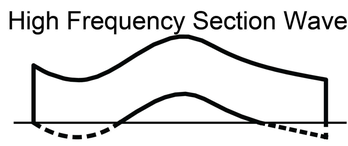
The Knowlton School of Architecture's third floor lounge is one of the most visited areas of the building. This is one of the main areas where students can sit, relax, and even catch up on some much needed sleep. 'The Architecture of Sleep' installation explores the science of sleep and relaxation, while offering hard working students another well appreciated bed away from home.

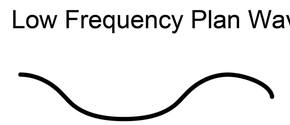
Circadian Brain Waves of Sleep Stages

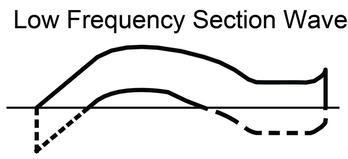


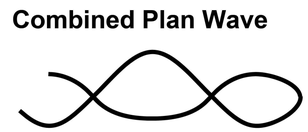


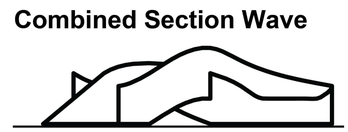






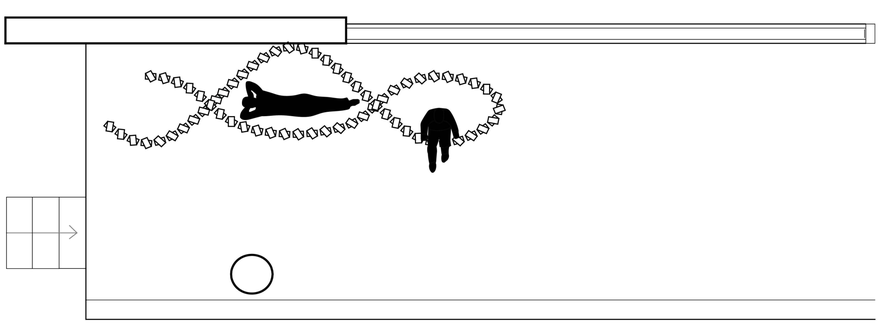






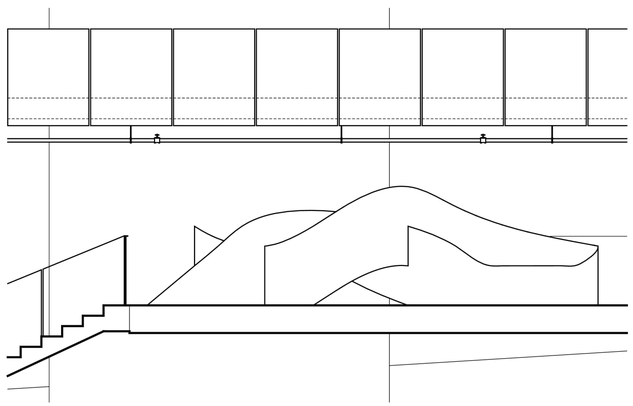
Installation Plan

Scale: 1/4" = 1'

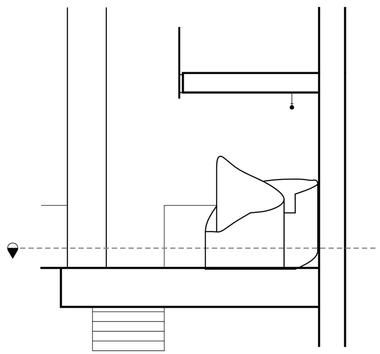


Installation Elevations

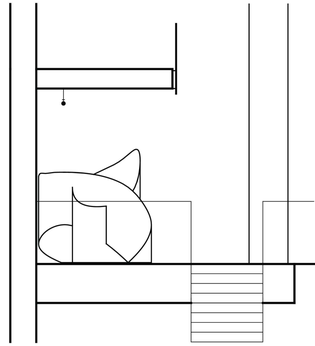
Scale: 1/4" = 1'



North



East



West




CAVALIERS



JEFF FRAZIER

THE [ELASTIC] CUBE

LANDSCAPE THREE • CAD, COLORED PENCIL • 24 x 36 • AU08



Jeff Frazier

The [Elastic] Cube

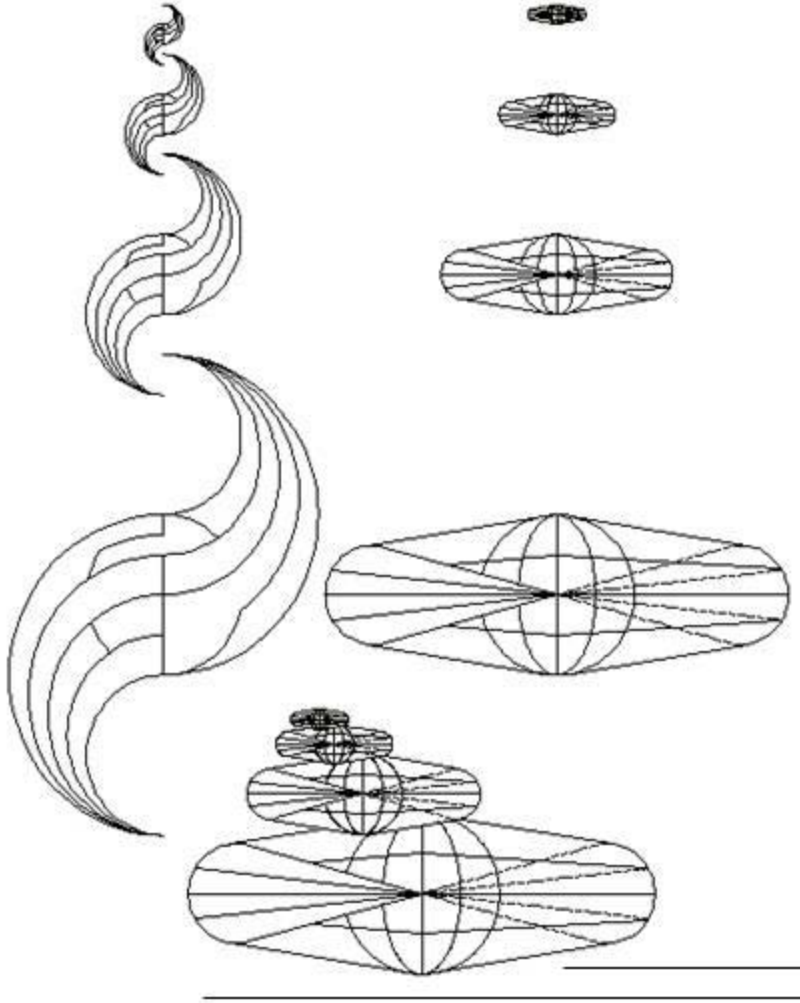
Process

My initial idea involving none cubic units led me to imagine how two very different forms could interlock. Families of proportional units would circulate through the landscape linked in a fractionally geometric pattern while maintaining their unique identities. I began to explore variations in the altitude of each unit while creating the visual impression of a suspended, multilevel exhibition space; altitude being inversely related to the size of the structure.

Landscape color

- Elevator system
- Enclosed walkway
- Exposed walkway
- Exhibition gallery
- Diverse garden
- Observation platform
- Indoor structure
- Trans level ramp
- Trans level stairs
- Water fountain Performance

Landscape size

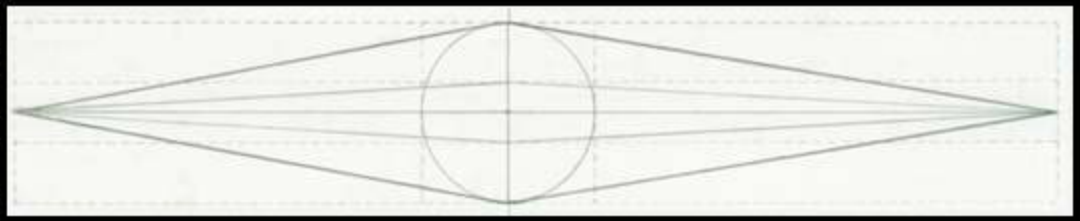


Jeff Frazier

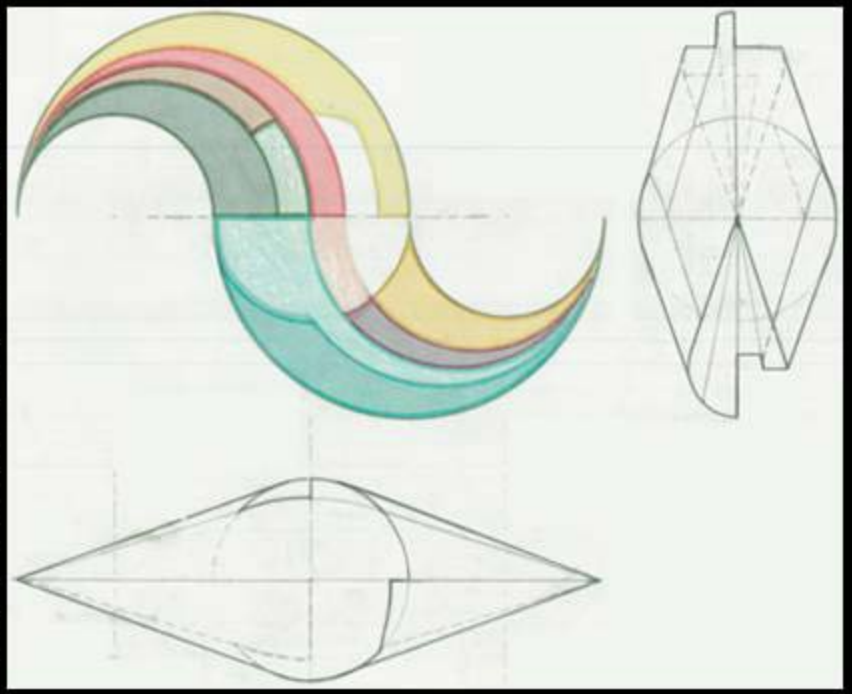
The [Elastic] Cube

Process

From the original perfect cube design I elongated the outer third sections horizontally then configured the section grid lines to one central point on each side of the cube.

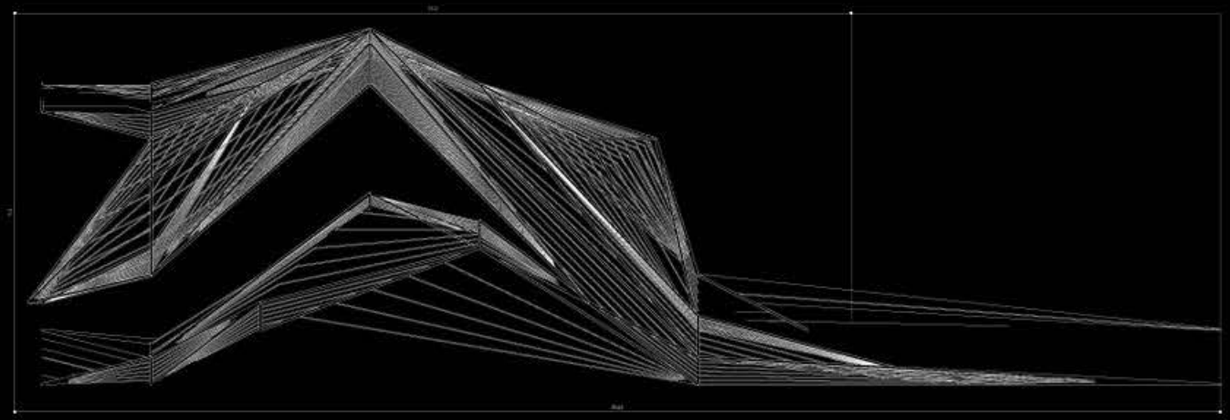


My goal was to leave the straight lines of the cube behind and design a three dimensional circuitous unit. From the radial width of the cube I used simple fractional geometry to arc the gridlines into the shape on the right. The central third of the cube was transformed from rectangular gridlines to spherical. With the new layout I reconstructed the foam model shapes while creating multiple volumes of space throughout the elastic cube.

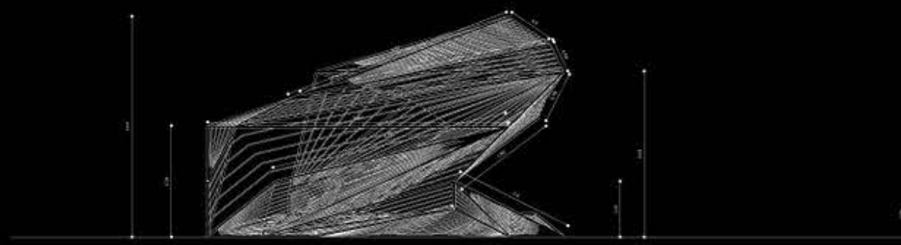




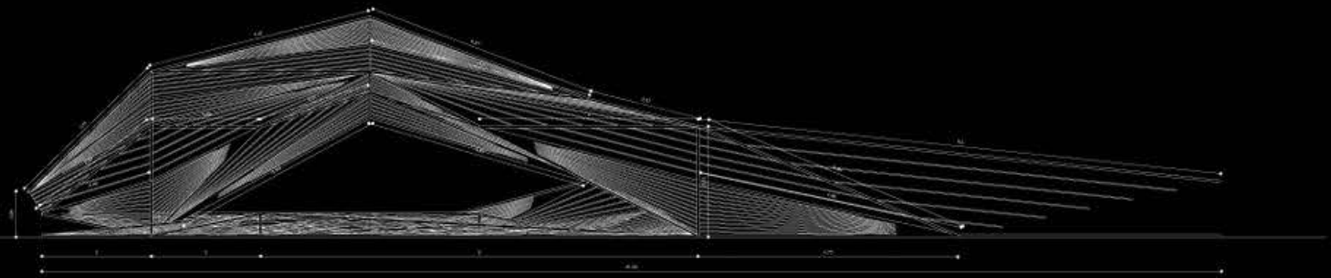
WIREFRAME STRUCTURE



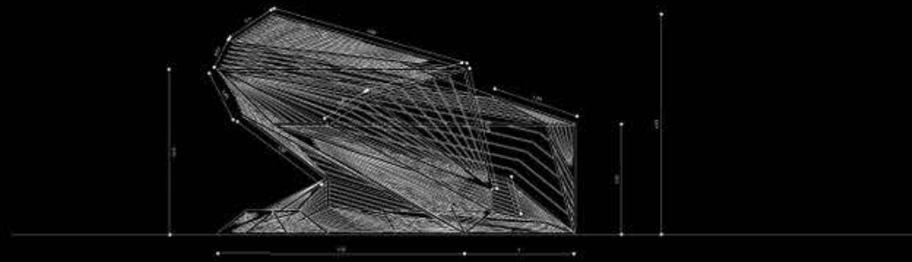
PLAN



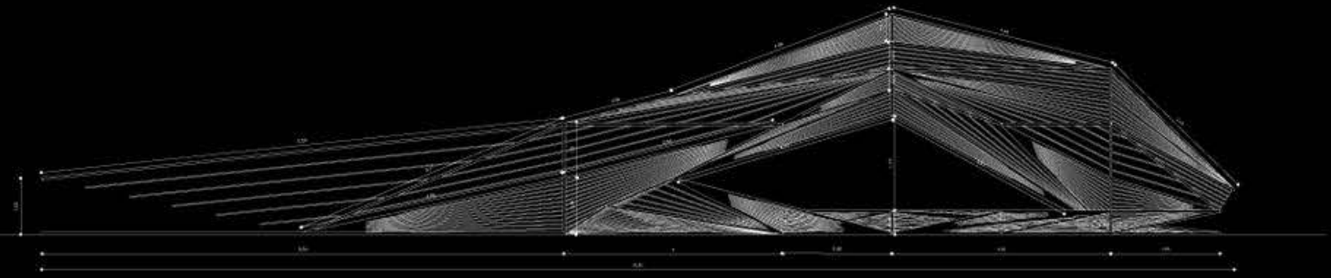
SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION

EMERGENT FLOWS

hydrodynamical military research center

Emergent Flows Research Center creates a consonant functionality of water, planting, circulation, and architecture as one seamless system. The architecture is an intensification of the ground condition, where each building stands alone as an object yet speaks of the interconnectivity of the landscape.

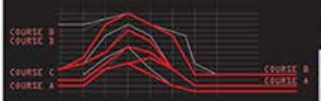
The conceptual master plan is strikingly similar to an estuary. The circulation flow begins as a single stream, and then broadens, branching out to form the borders of housing, administration, services, green spaces etc.

The diagrammatic approach begins from a single linal an axis extends from North to Southeast Kaskaskia, travailing through main land, while extending into many sinuous paths, creating a network of interlingling circulation; landscape and water. Emergent Flows is a dynamic relationship landscape and architecture.



Kaskaskia, Illinois

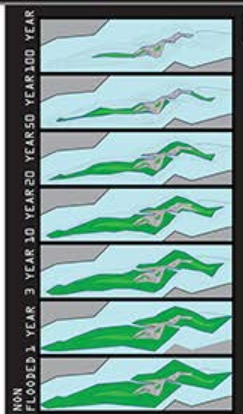
STREAM DYNAMICS



MESH MAPPING | PRIMARY | SECONDARY | REFINING

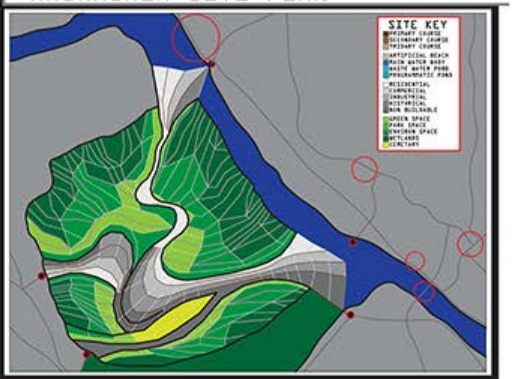


FLOOD CONDITIONS

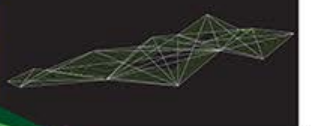


KASKASKIA SITE PLAN

1 MI = 3.7"

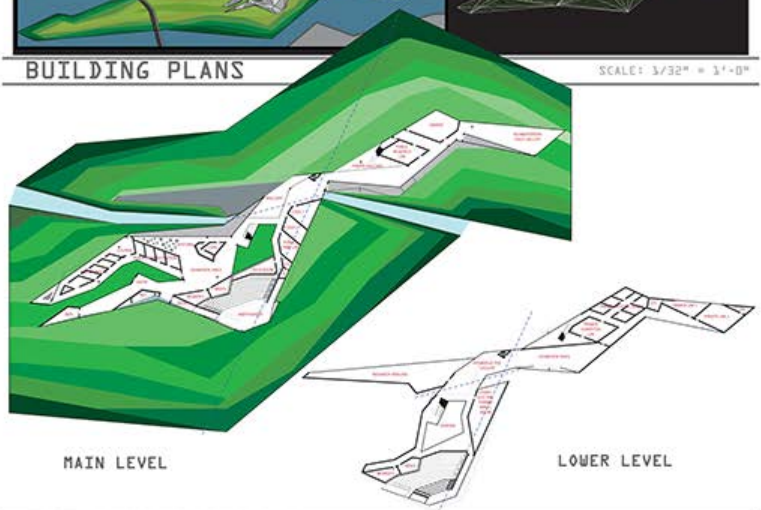






BUILDING PLANS

SCALE: 1/32" = 1'-0"



MAIN LEVEL

LOWER LEVEL

BUILDING SECTIONS

SCALE: 1/32" = 1'-0"



EMERGENT FLOWS | STREAM DYNAMICS

Emergent Flows begin from a single stream -- Kaskaskia's dendritic flood patterns extends from North Kaskaskia, traveling South through the Middle of the Island, merging with flows West to East from Missouri and draining back into the Mississippi River on the Southeast.

Emergent Flows enhances the inherent beauty of Kaskaskia by intensifying the characteristics of the existing fabric while creating a self-sustainable landscape for the future.

Along these lines, artificial topographies, rippled organizations of diverse water features and multiplicity of landscape and architectural structures consider to turn the linear character of the river body into a multi layered spatial domain.

The diagrammatic approach towards the design with material structures of the landscape architecture, infrastructure, agricultural spaces, research areas, and separation of private from public, creates a network of intermingling circulation, landscape and water. Much like the original drainage basin flows of the Mississippi River.



MESH MAPPING | PRIMARY FLOWS | SECONDARY FLOWS | DIAGRAM REFINING

These lines can potentially be used in order to trace part of the material strategies linking different plots

1st order dendritic drain paths

2nd order dendritic drain paths

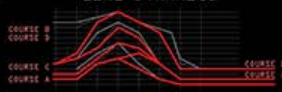
Mesh creates different opportunities to generate paths and pedestrian circulation following the natural topography and will be used as a connecting strategy with the rest of the plots



CHANNEL PATTERNS | DRAINAGE ORDERS | LINE DYNAMICS



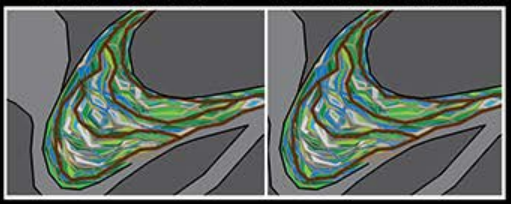




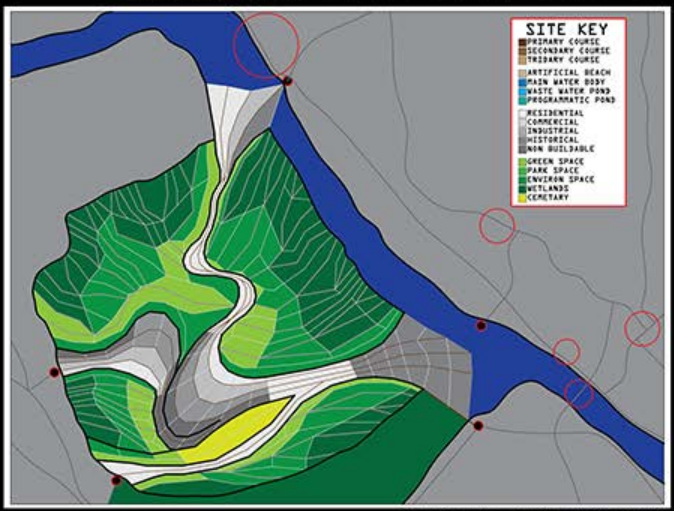
SECTIONAL CONCEPT



FLOODED CONDITION | NON-FLOODED CONDITION



KASKASKIA SITE PLAN | 1 MI = 3.7"

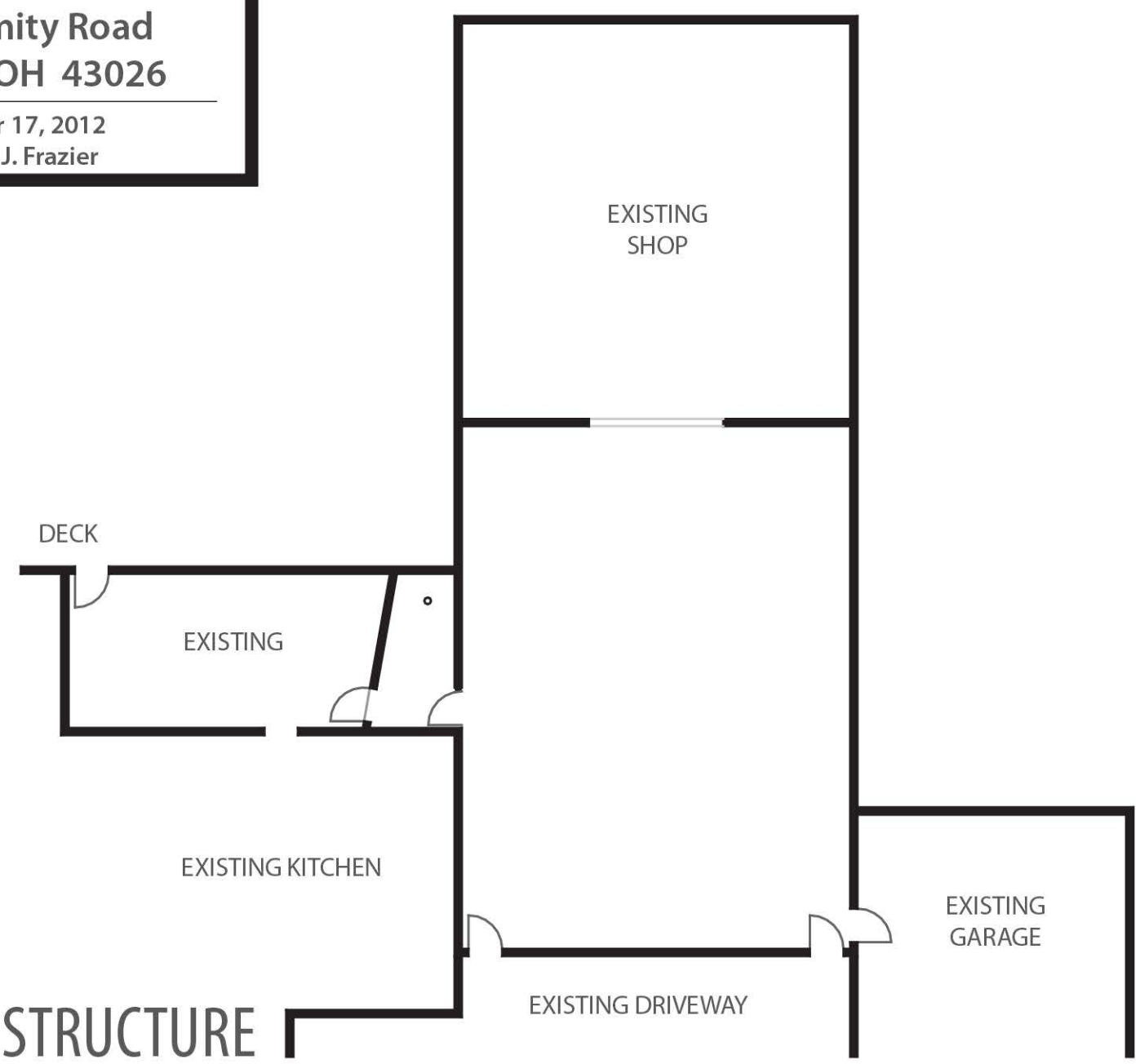


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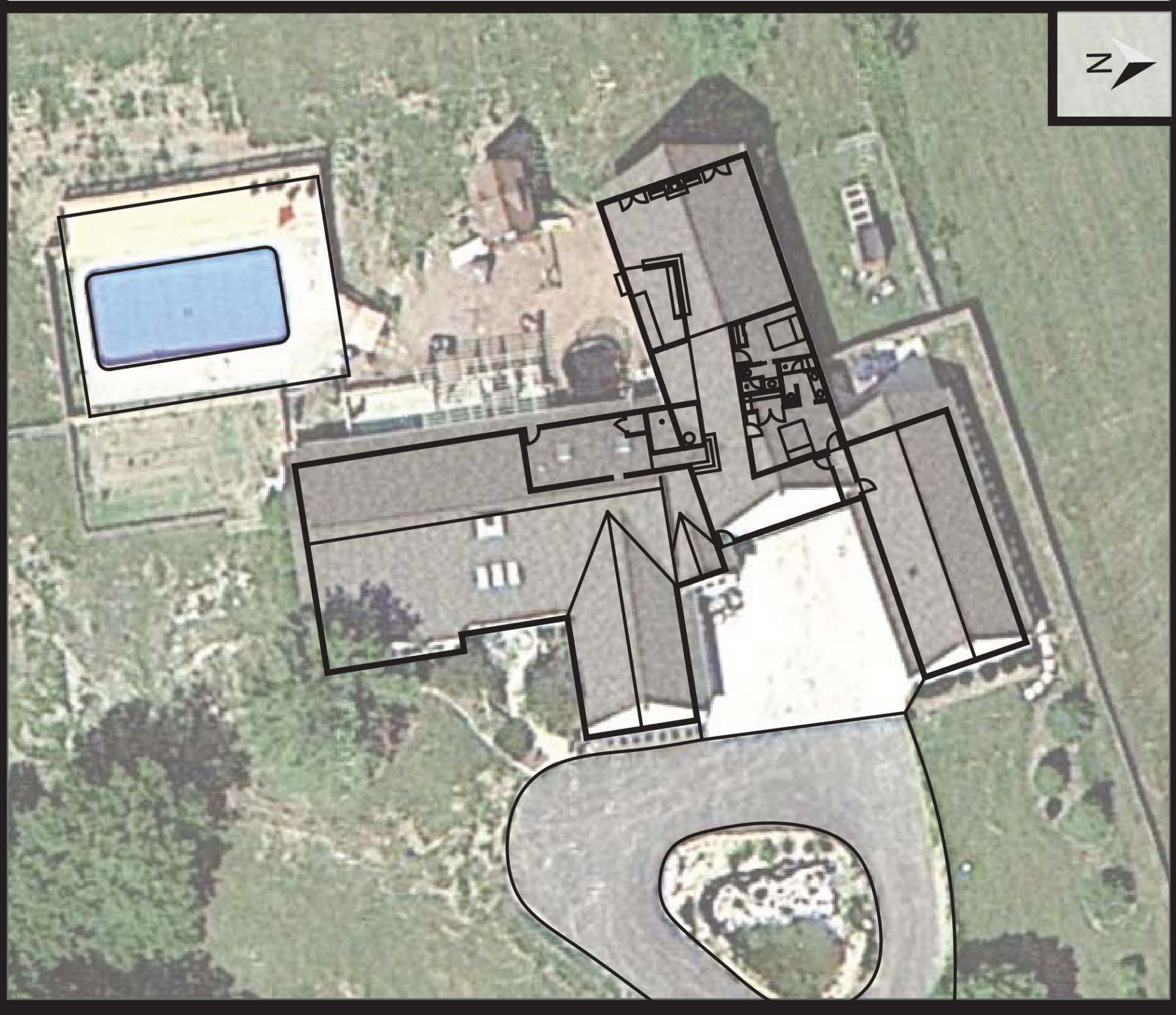
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October 17, 2012
Jeffrey J. Frazier



EXISTING STRUCTURE



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October 23, 2012
Jeffrey J. Frazier



REAR ACCESS

HEARTH /
GREAT ROOM

ENTERTAINMENT SPACE

WET BAR

DECK & POOL

SECOND
KITCHEN

FOYER

BEDROOM 2

BATH

EXISTING

MUD-ROOM

UTILITY

BEDROOM 1

EXISTING KITCHEN

NEW ENTRYWAY

OFFICE

GARAGE
ENTRY

EXISTING DRIVEWAY

FIRST LEVEL PLAN @ 6’

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ROOF OVERHANG

3096 5096 5096 3096

3096 3096 5096 3096 5096

FUTURE DECK

~22' VAULTED CEILING
(SEE SECTION A)

13' DROP DIVISION

DECK & POOL

5050

SPIRAL STAIR TO LOFT
(~22 STEPS)

3096 3096 3096 3096

13' DROP

4070 4070 4070 4070

*OPTION:
NEW ENTRY TO
MUD-ROOM TO
SIMPLIFY HALLWAY

MUD-ROOM

UTILITY

13' DROP

BATH

2050

*OPTION:
ADD UPPER
INTERIOR WINDOW TO
BRING NATURAL LIGHT
INTO HALLWAY SPACE

*OPTION:
REMOVE DOORS IN
HALLWAY TO IMPROVE
OPEN CIRCULATION

*OPTION:
SPACE AVAILABLE
FOR SECOND STAIR
TO LOFT / 2ND
STORY LOFT DECK

NEW ENTRYWAY

OFFICE

*OPTION:
CONTINUE VAULTED CEILING OR
LEAVE EXISTING TRUSSING @ 13'

GARAGE
ENTRY

3070 3070 3070 3070 3070 3070 3070

*OPTION:
MODIFY FACADE TO
DESIGNATE NEW ENTRY

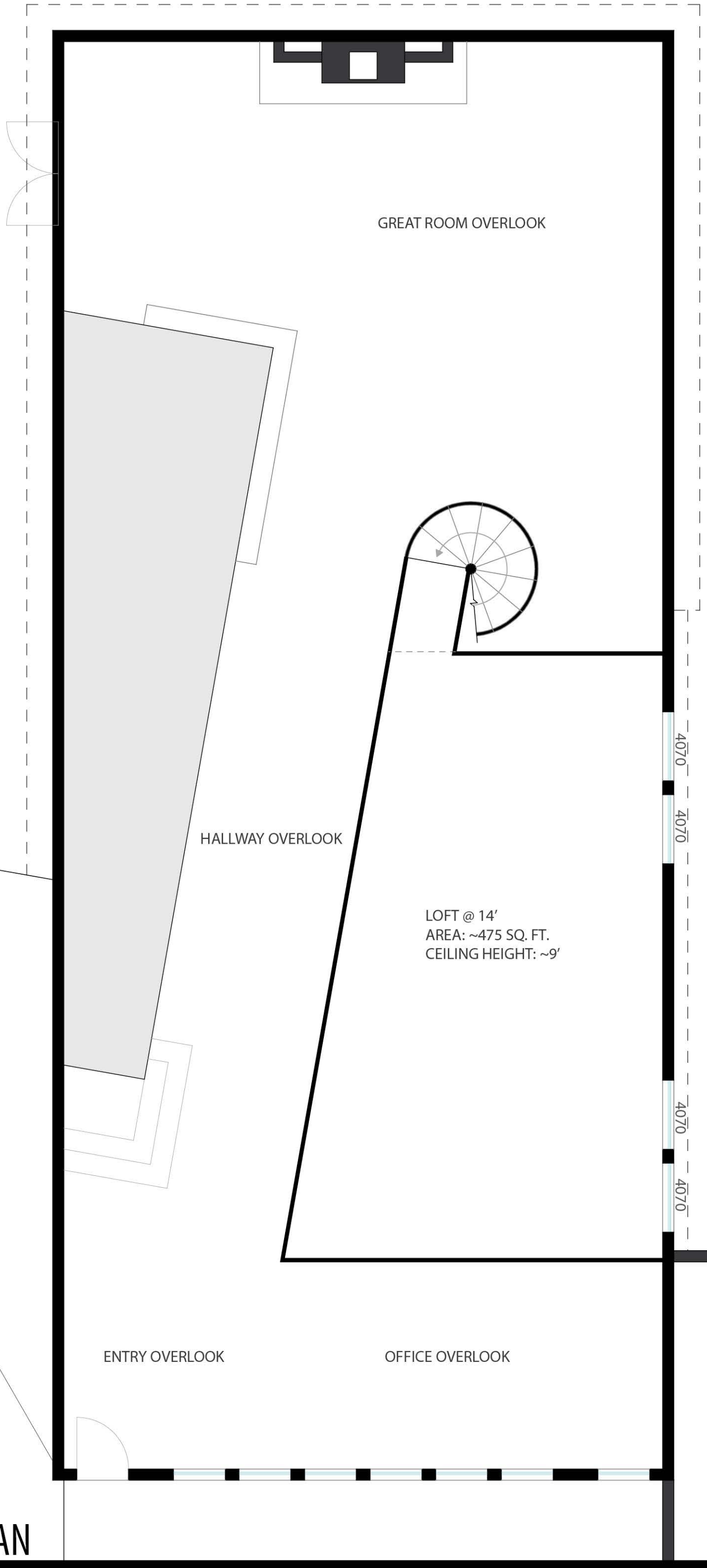
FIRST LEVEL DETAIL @ 6'

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SECOND LEVEL PLAN

Proposal Draft #2:

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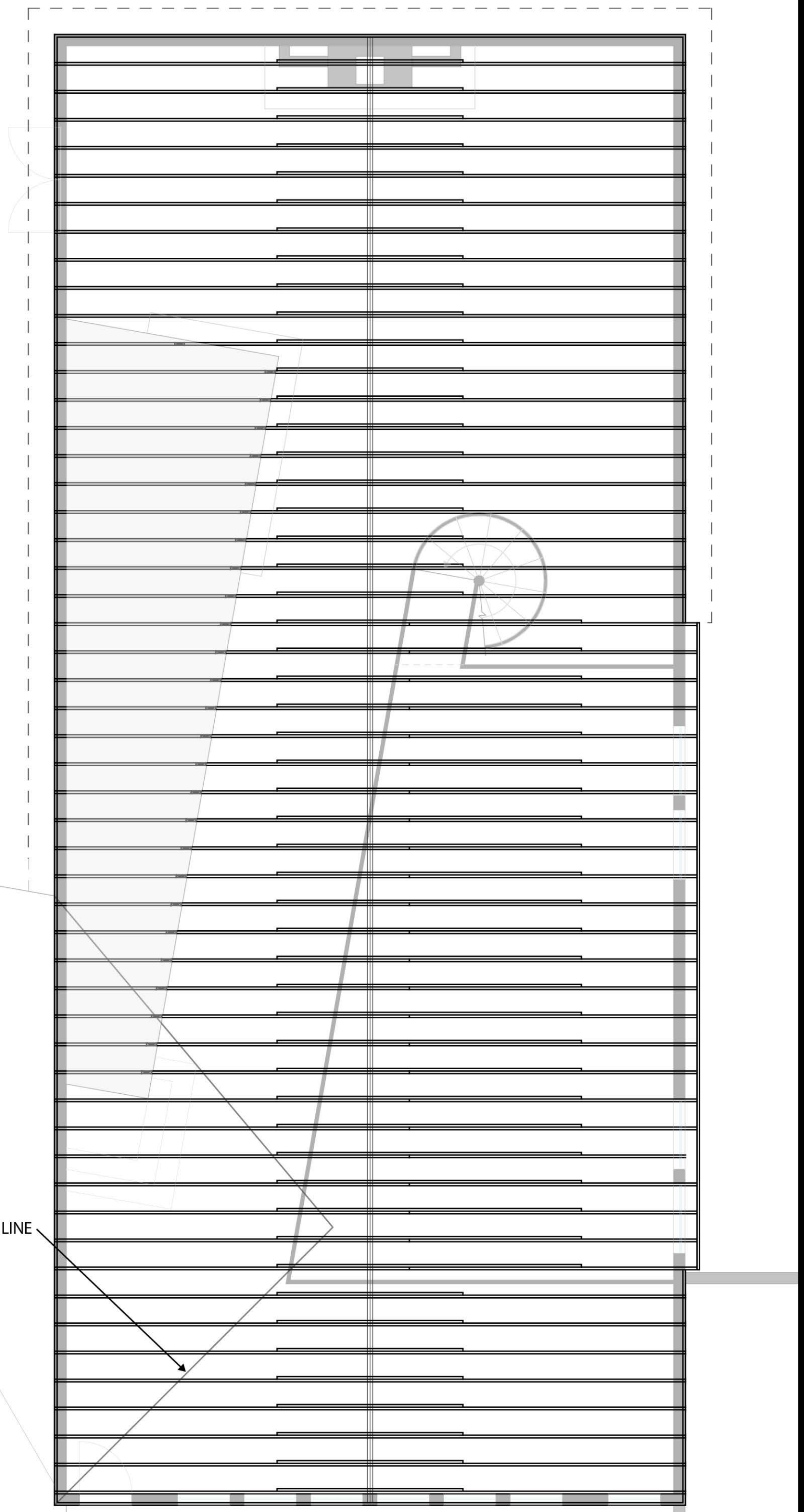
SECOND LEVEL DETAIL

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*SEE SECTIONS FOR VAULTED STRUCTURAL MODIFICATIONS

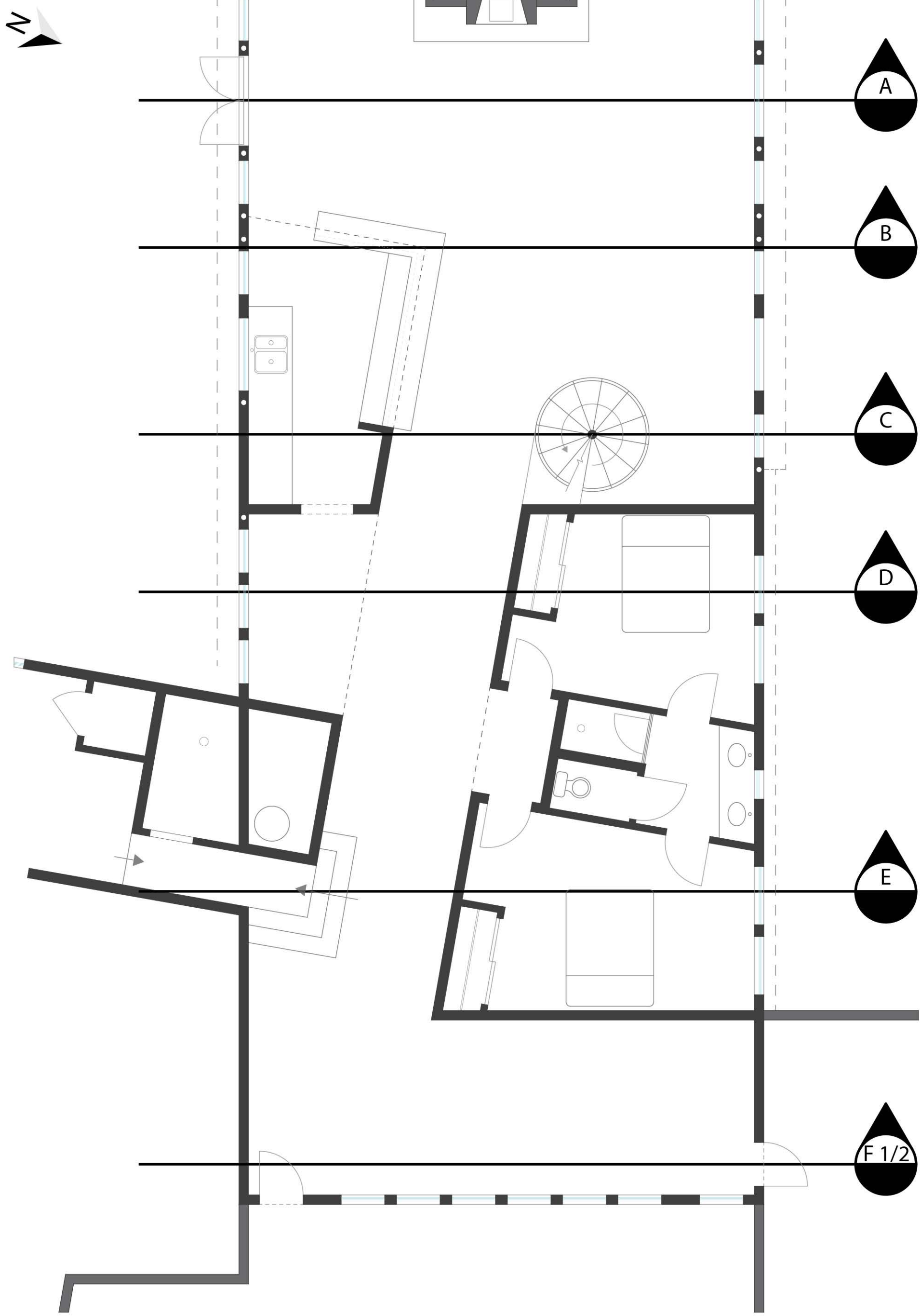


TRUSS / ROOF DETAIL

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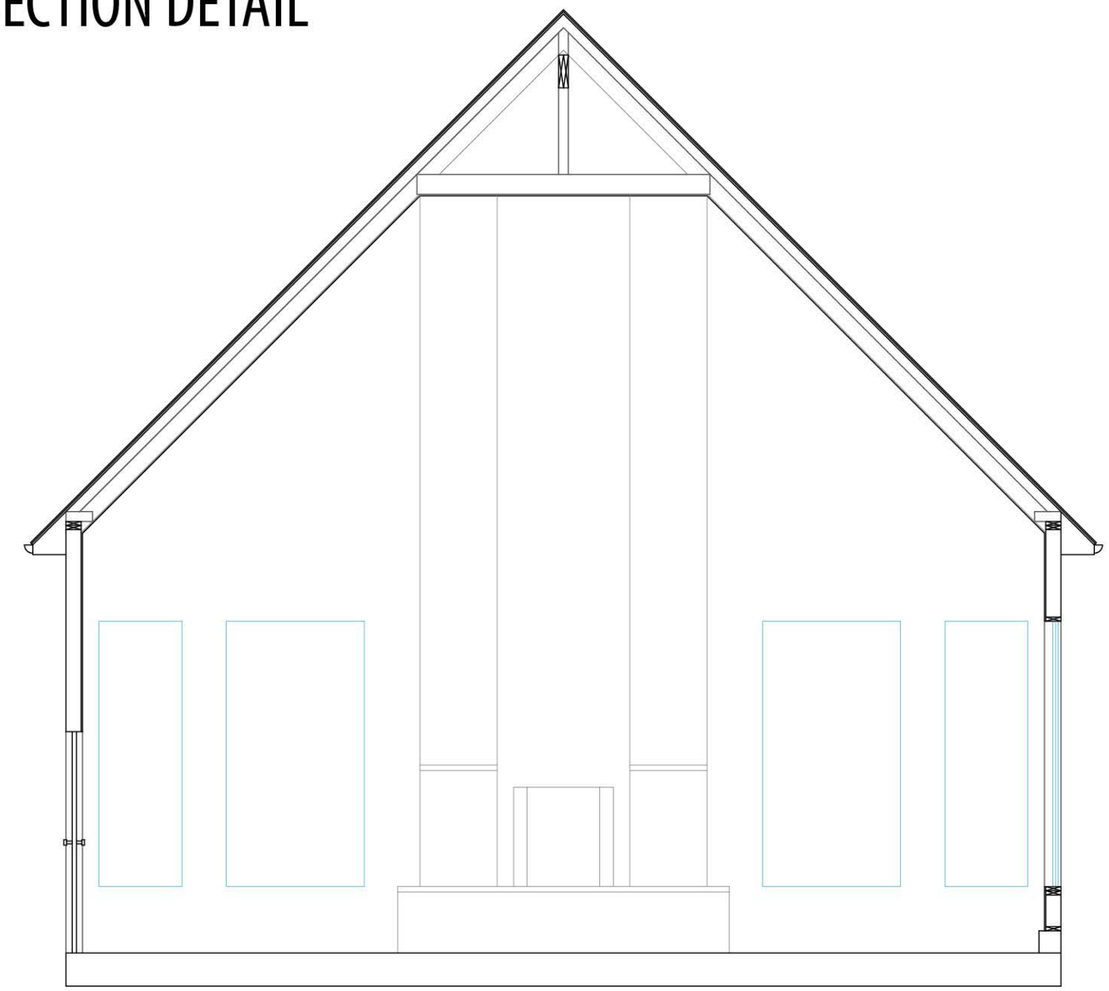
SECTION KEY

Proposal Draft #2:

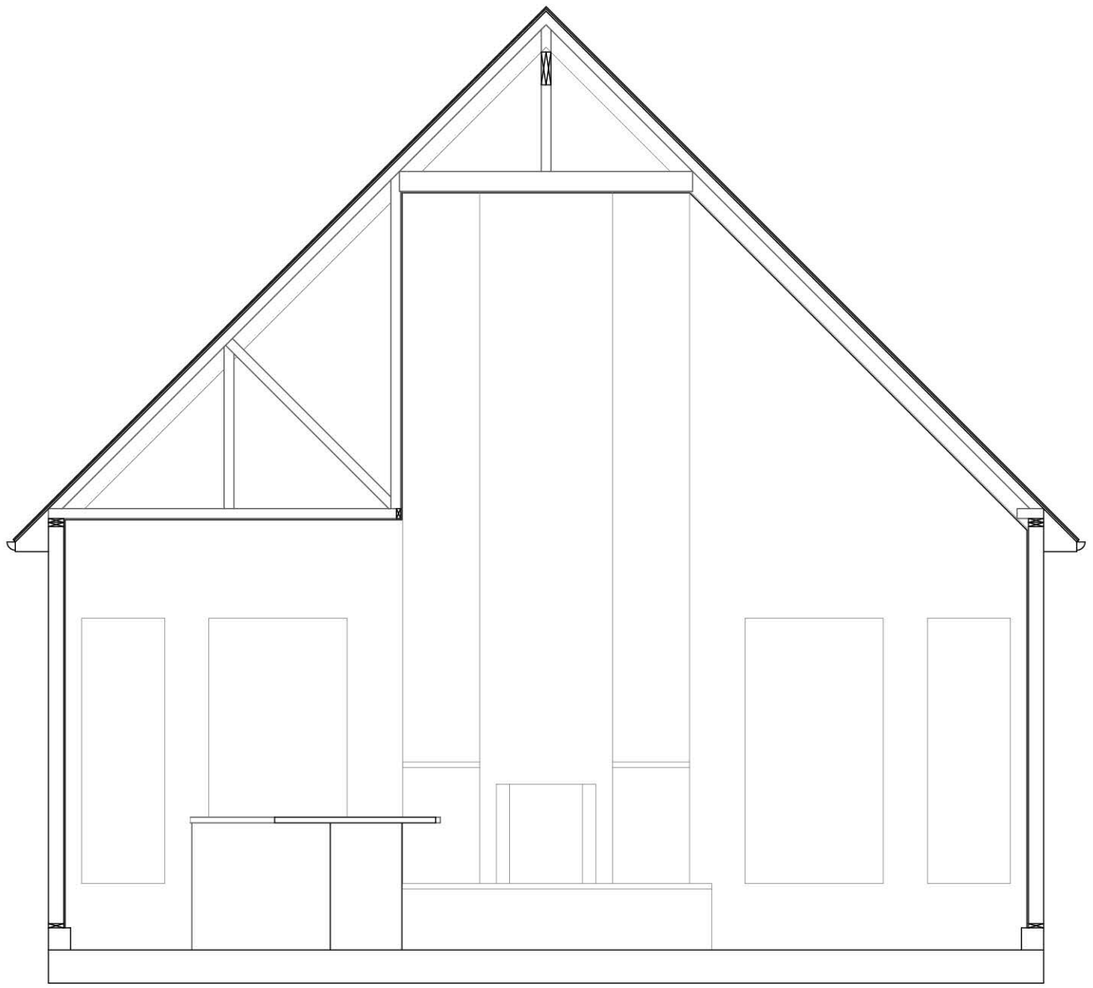
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SECTION DETAIL



A



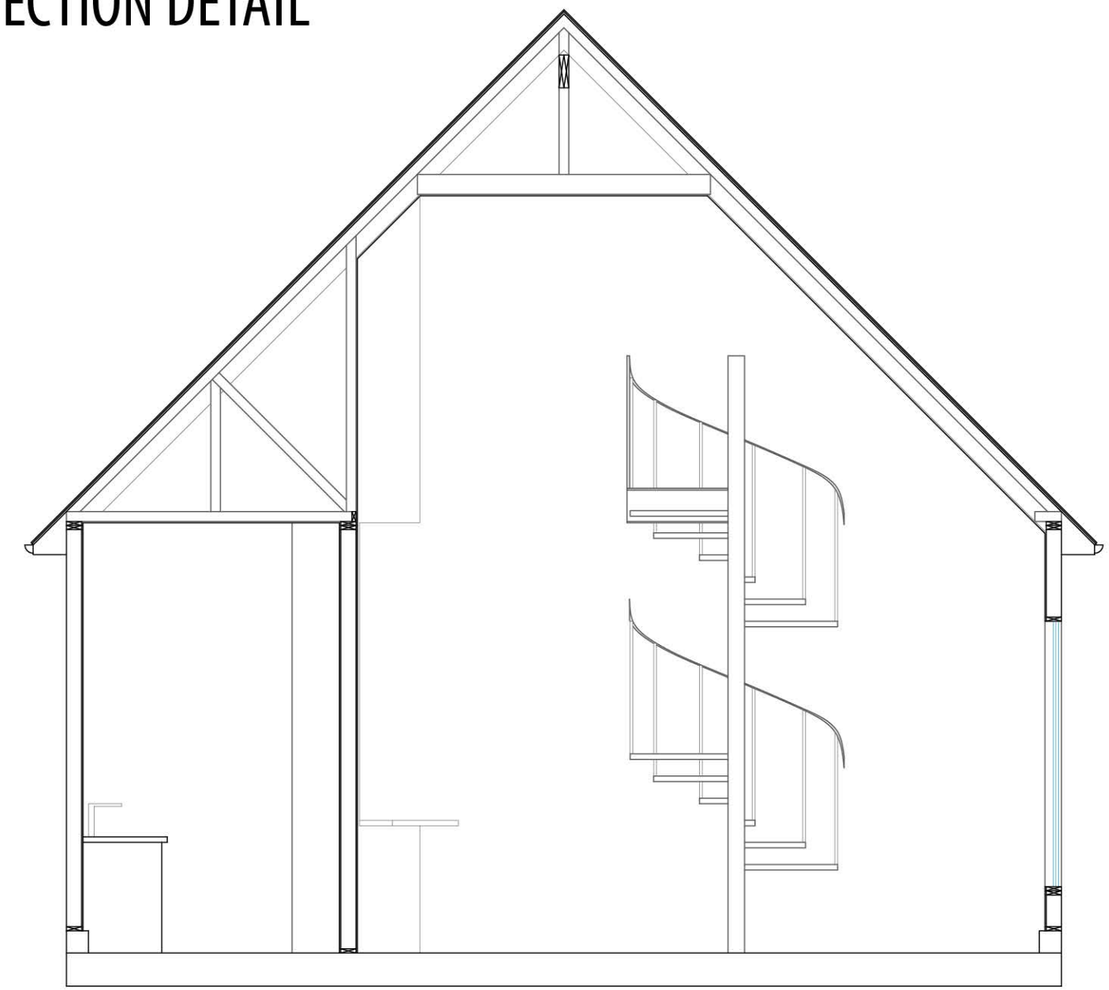
B

Proposal Draft #2:

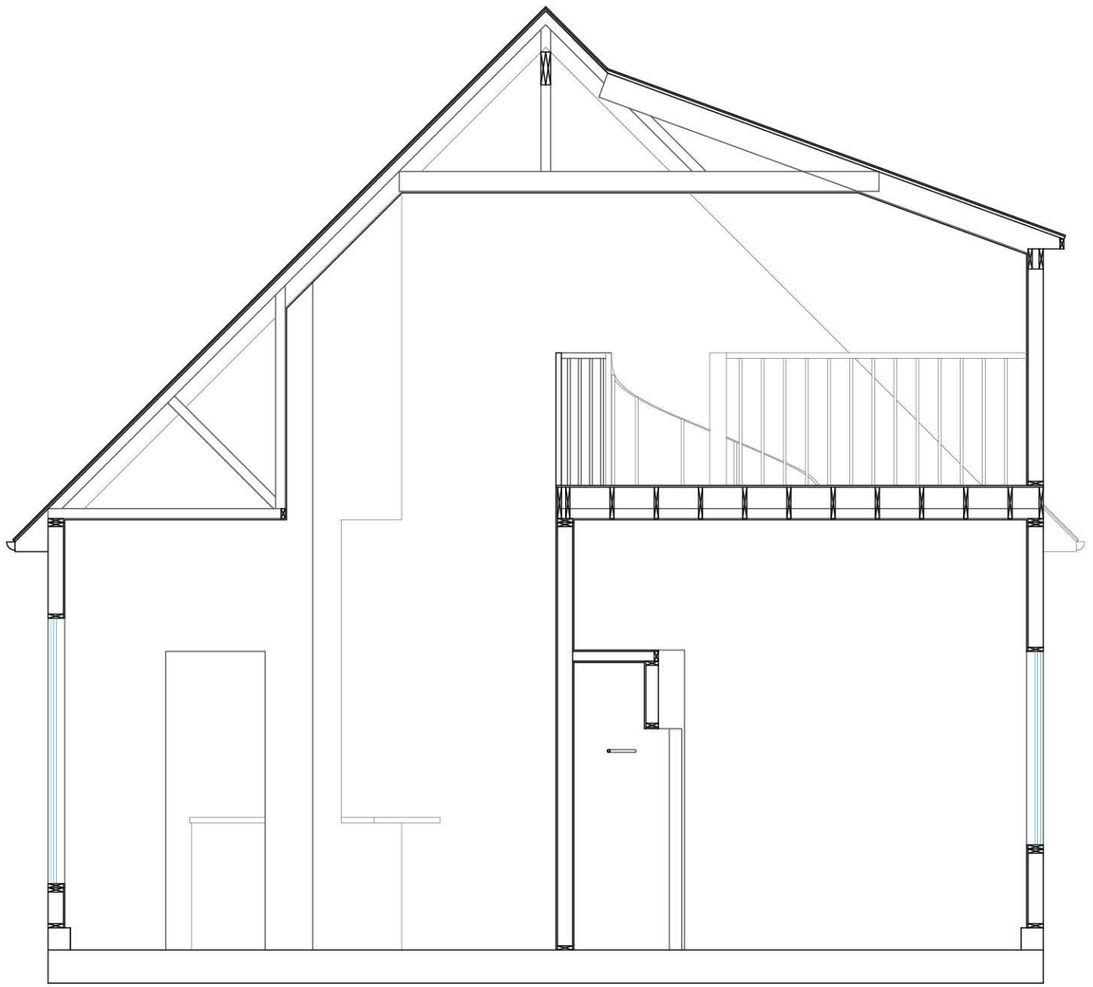
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SECTION DETAIL



C



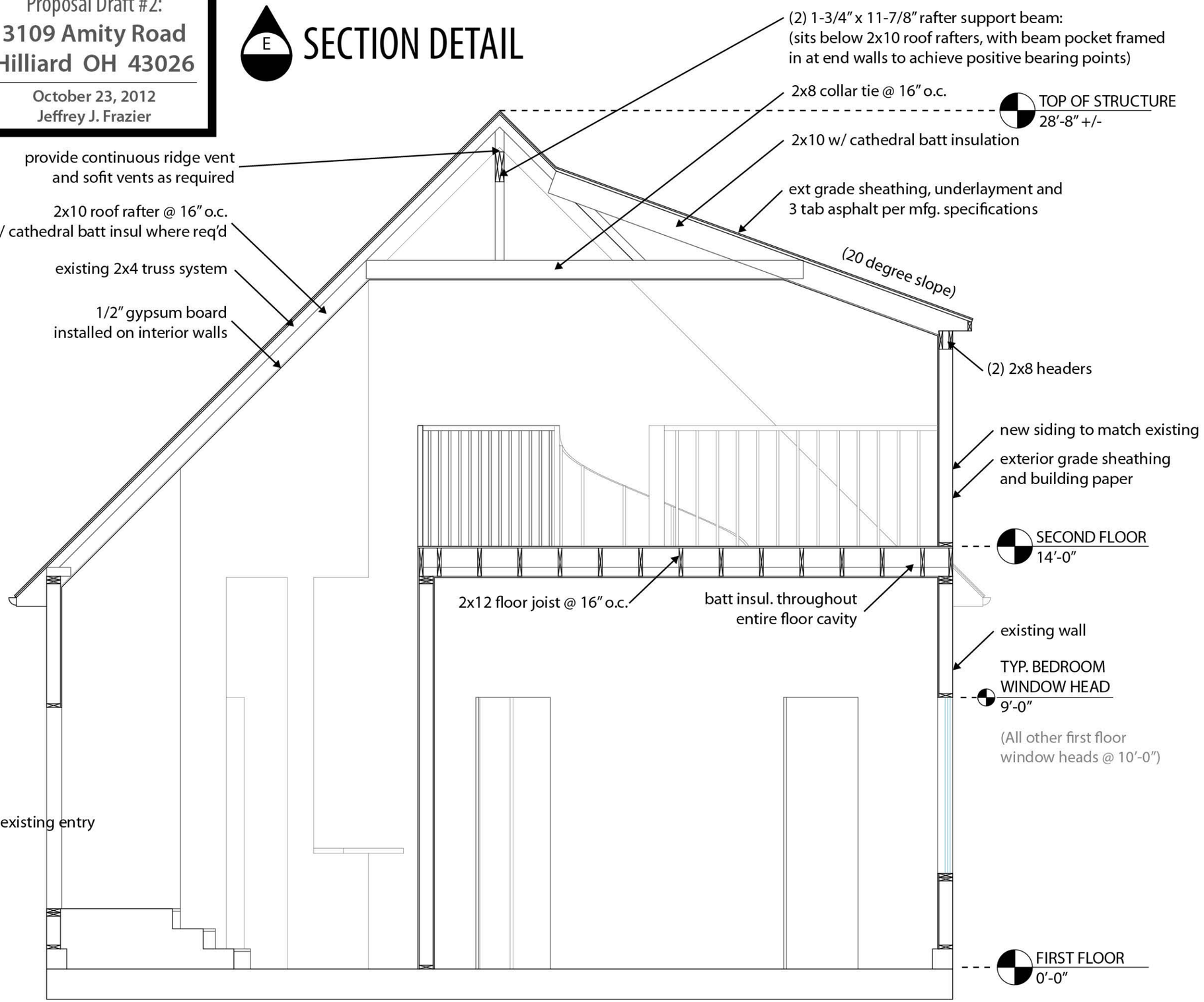
D

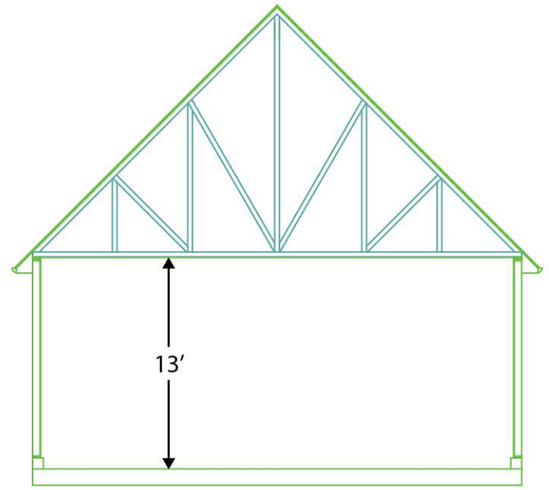
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E SECTION DETAIL





Existing Truss System:
2x10 roof rafters and 2x12 floor joists will be joined onto existing truss system to have a 16" o.c. minimum spacing. As new structural members are installed, existing vertical and diagonal truss members are to be removed. A new 2x8 collar tie will also be installed at 16" o.c. minimum to achieve a minimum head height of 9'-0".

American Wood Council Typical Detail:

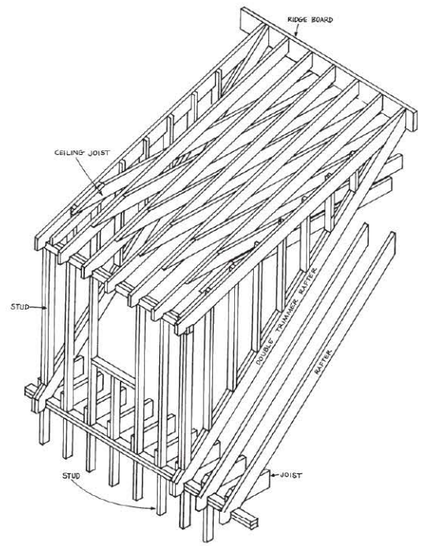
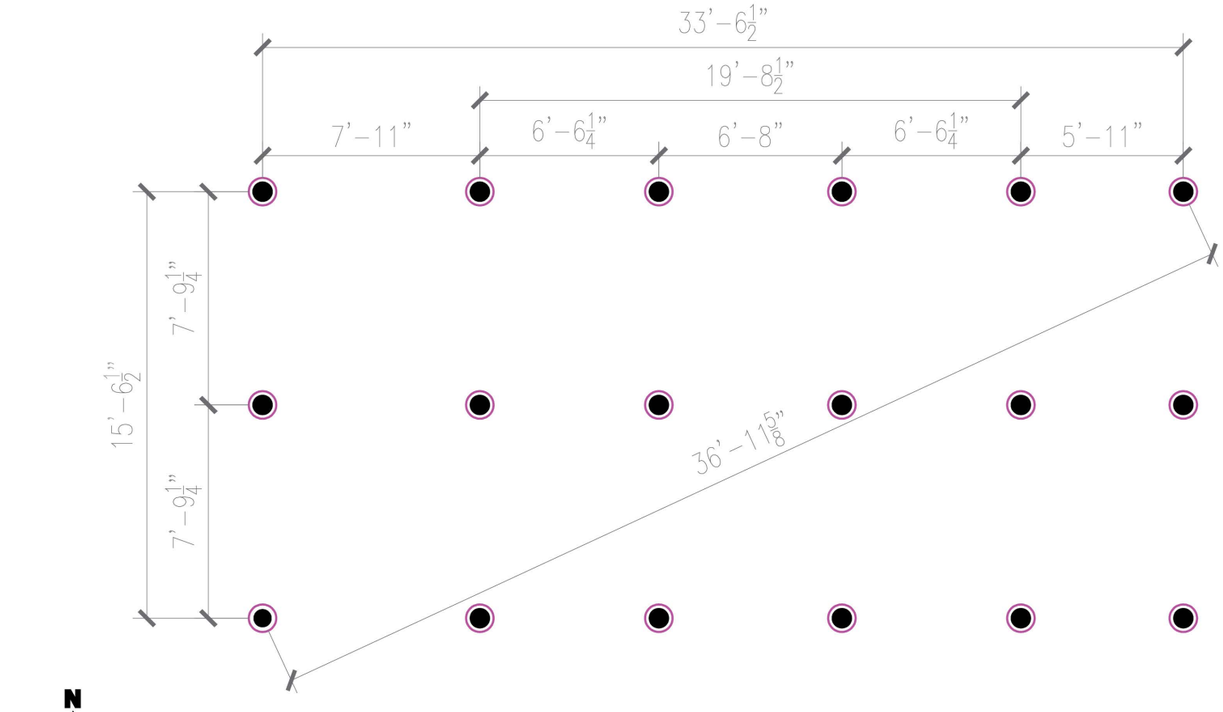
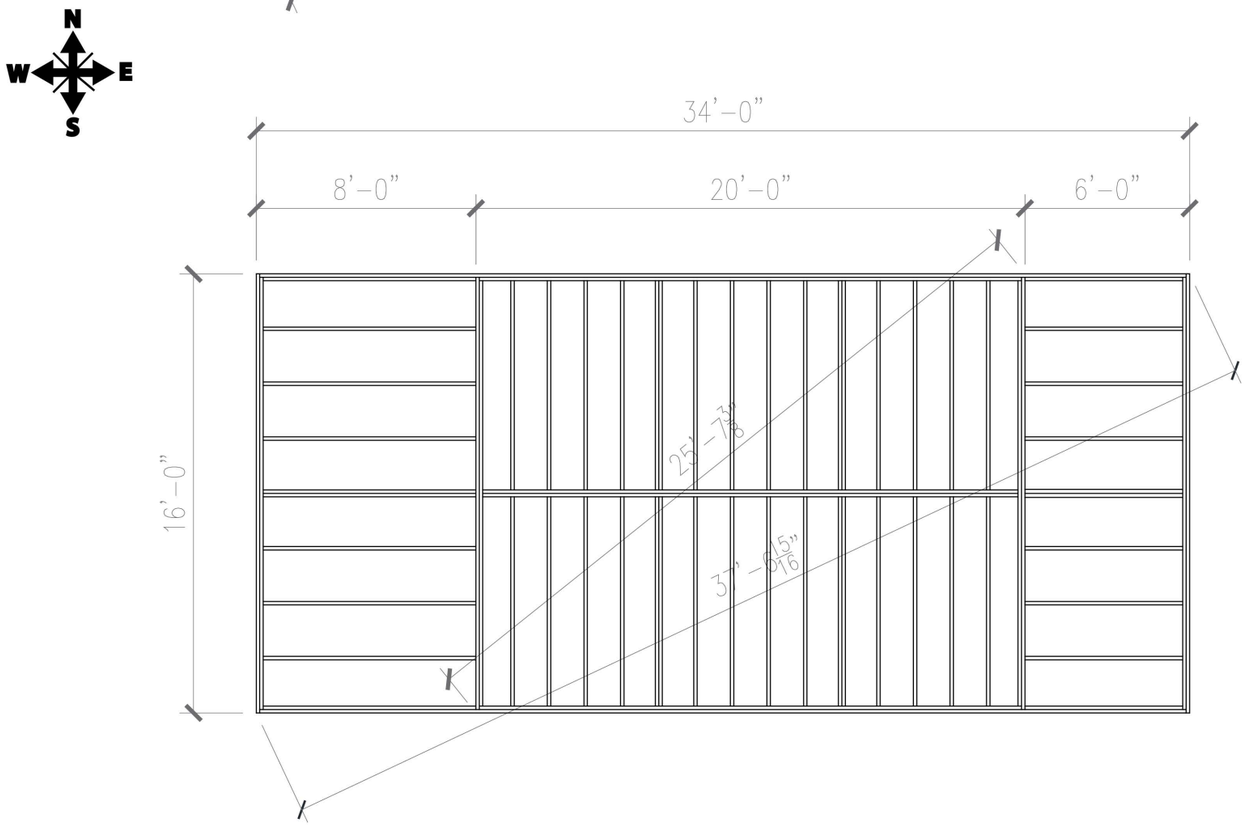
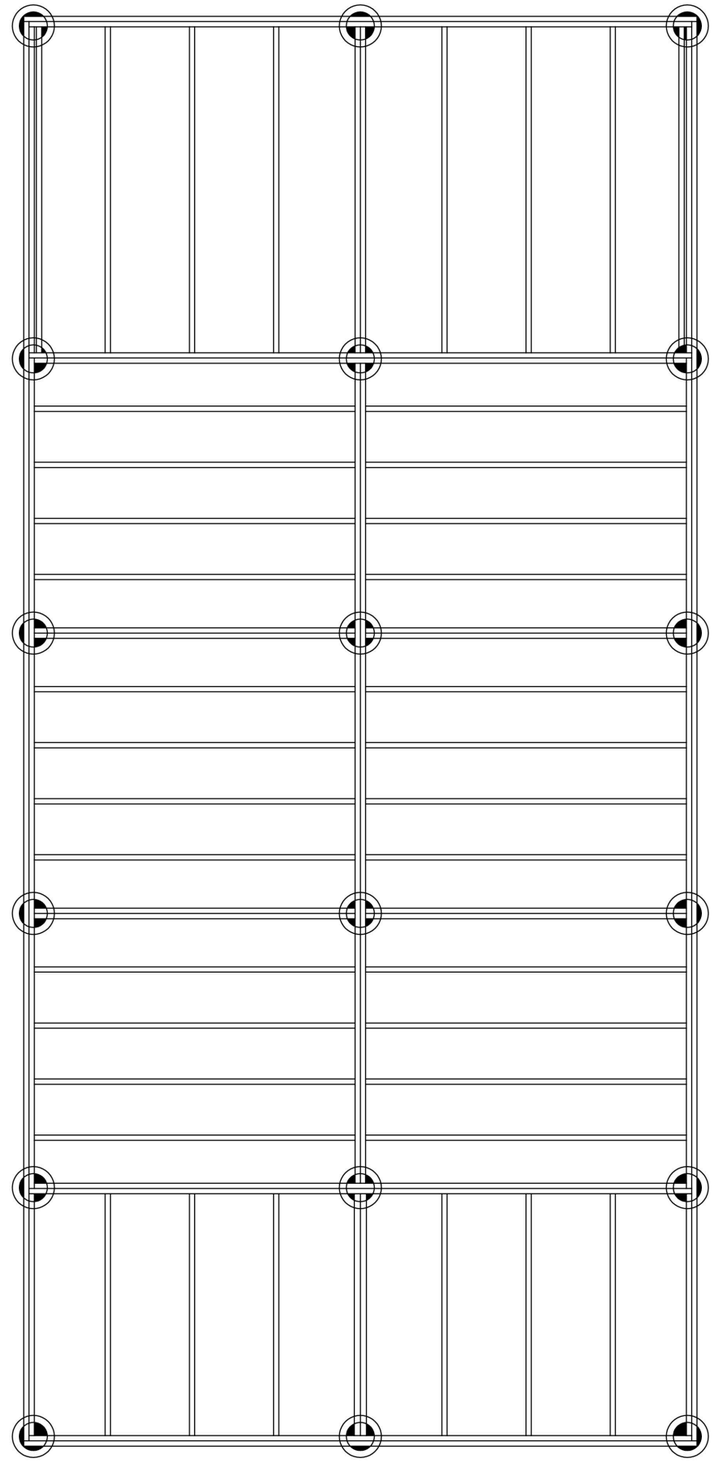


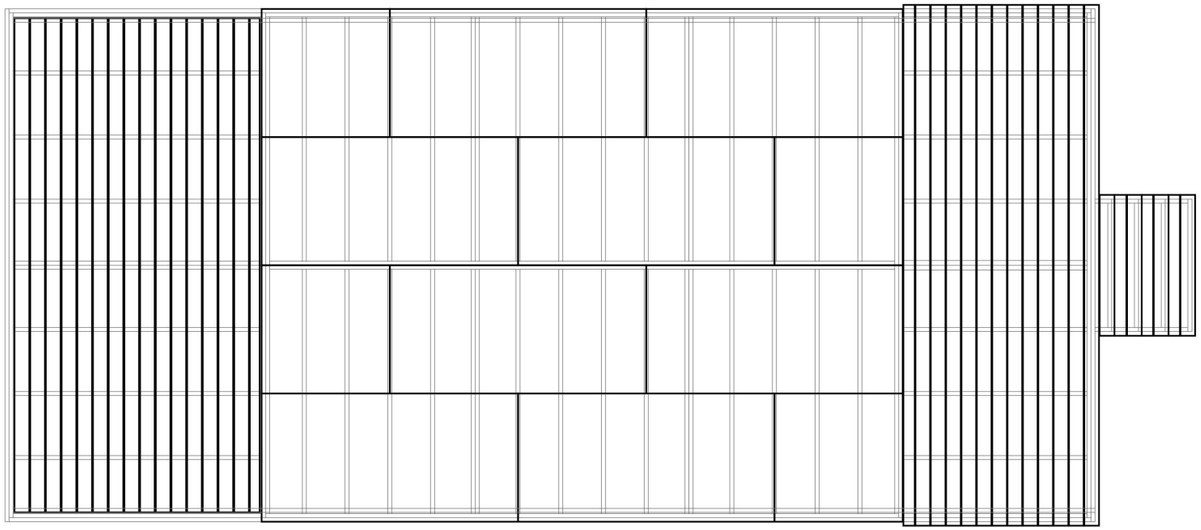
Figure 58: Shed Dormer Roof Framing

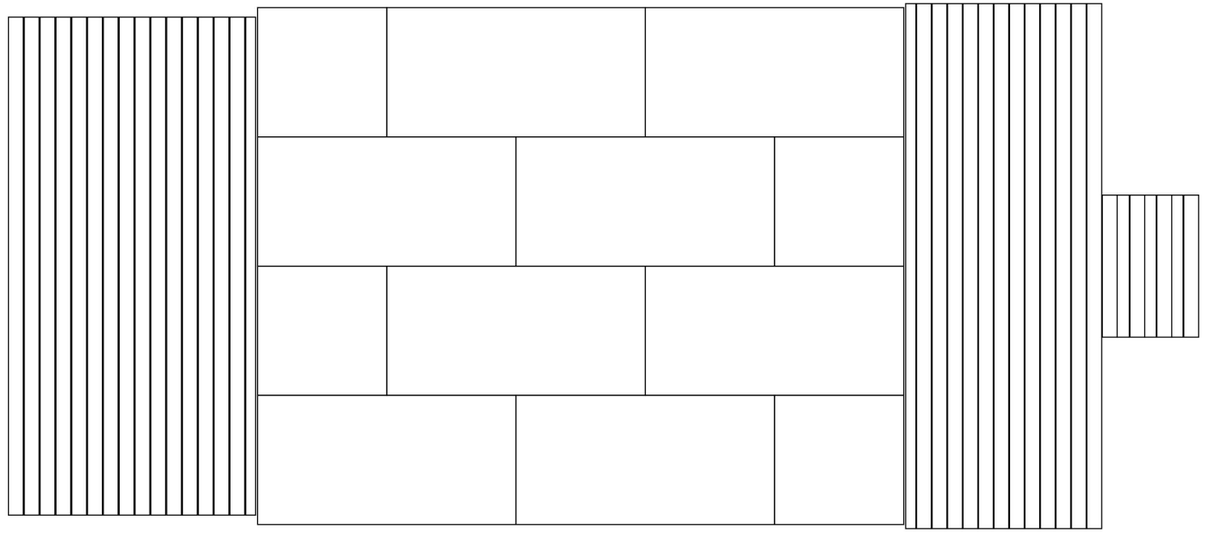




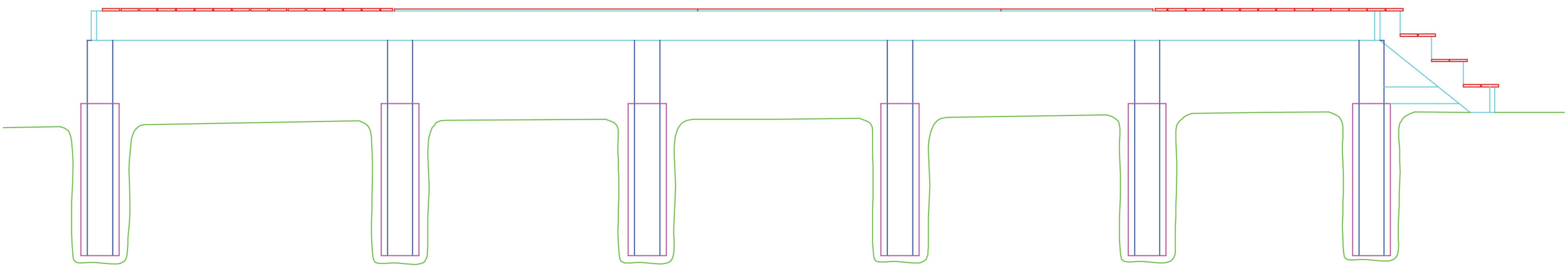


Mt. McCullough Homestead	PHASE 1.1 : Foundation & Base Floor Framing - PLAN	Tuesday August 21, 2012	Jeffrey J. Frazier

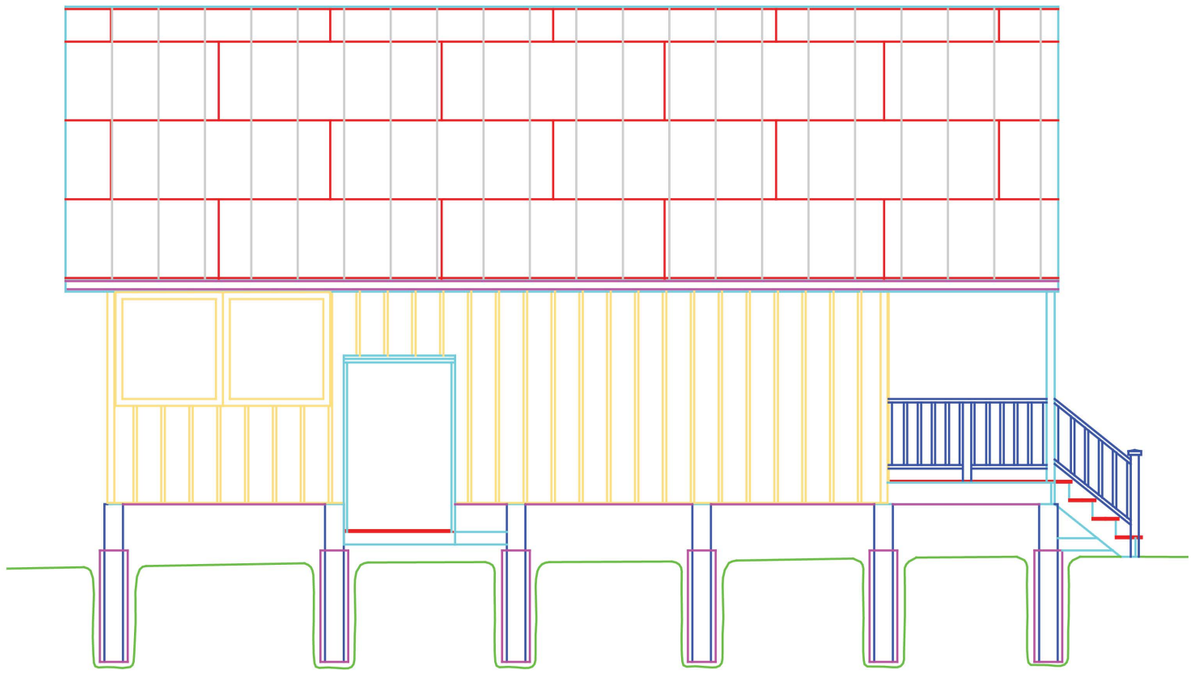




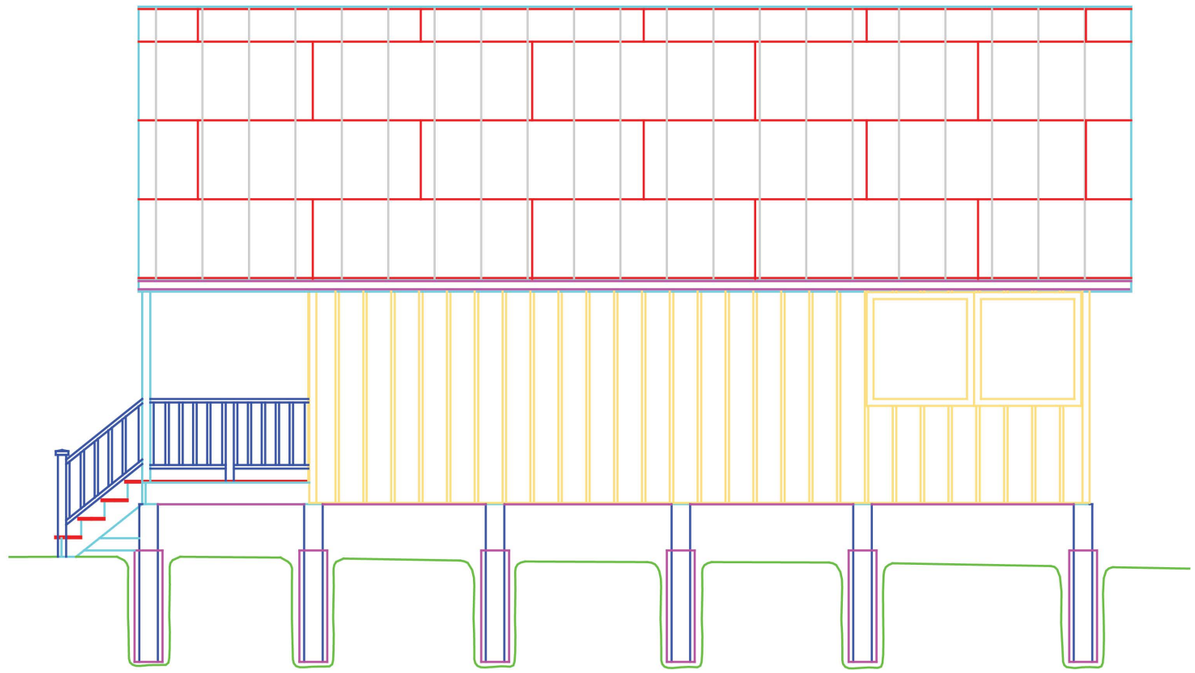




Mt. McCullough Homestead	PHASE 1.2 : First Level Floor Diaphram	Tuesday August 21, 2012	Jeffrey J. Frazier



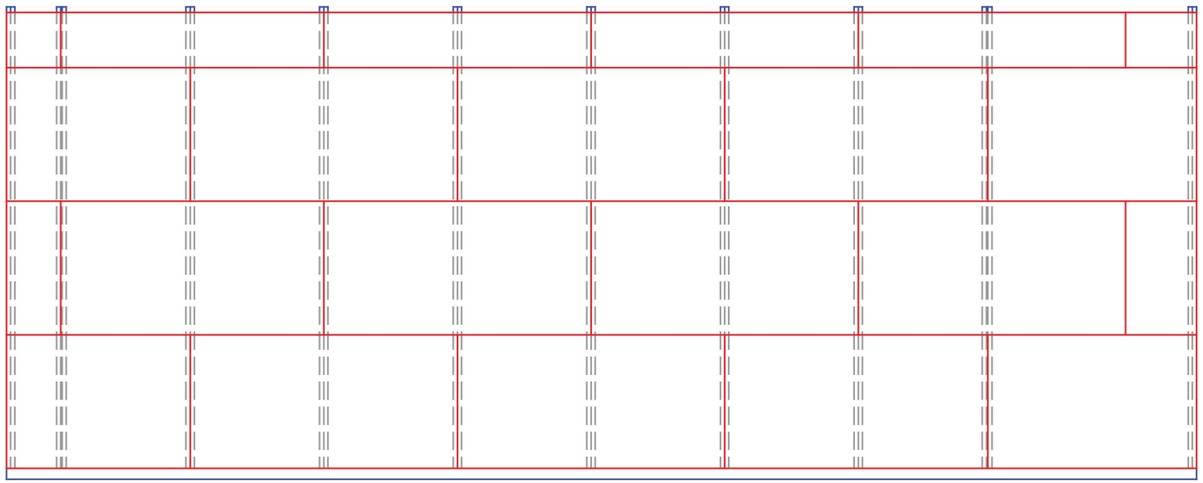
South Elevation



North Elevation

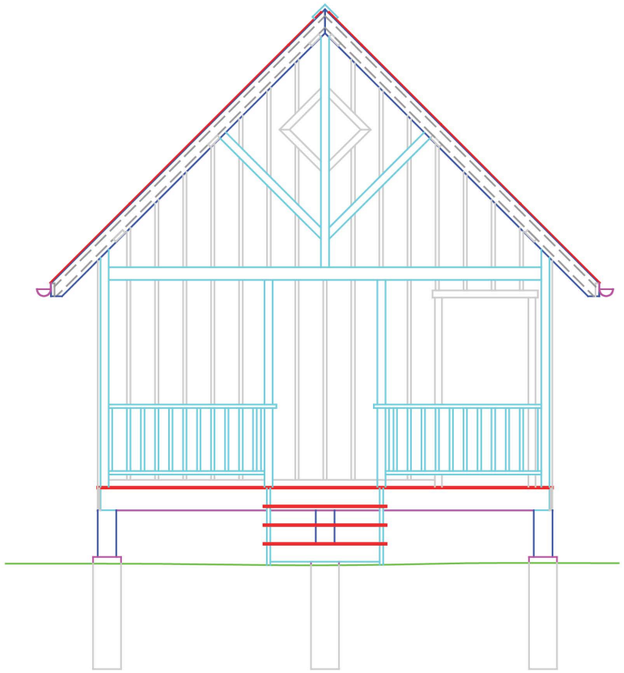


North Roof Plan

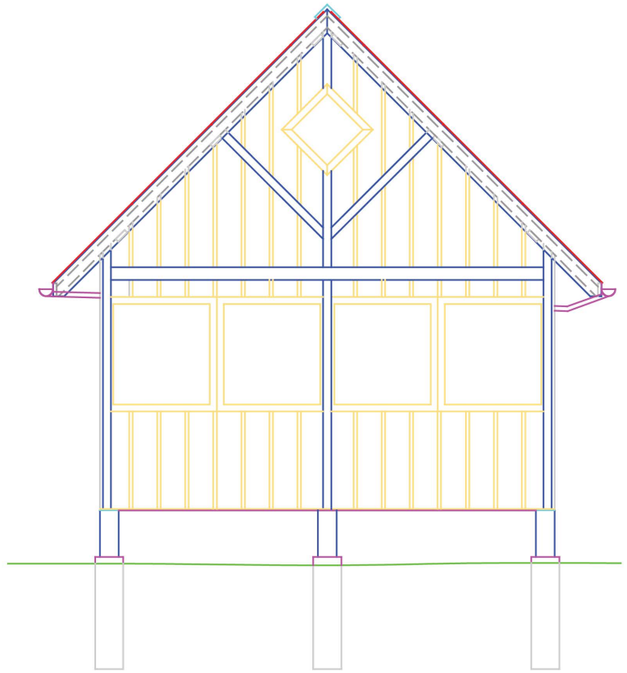


South Roof Plan

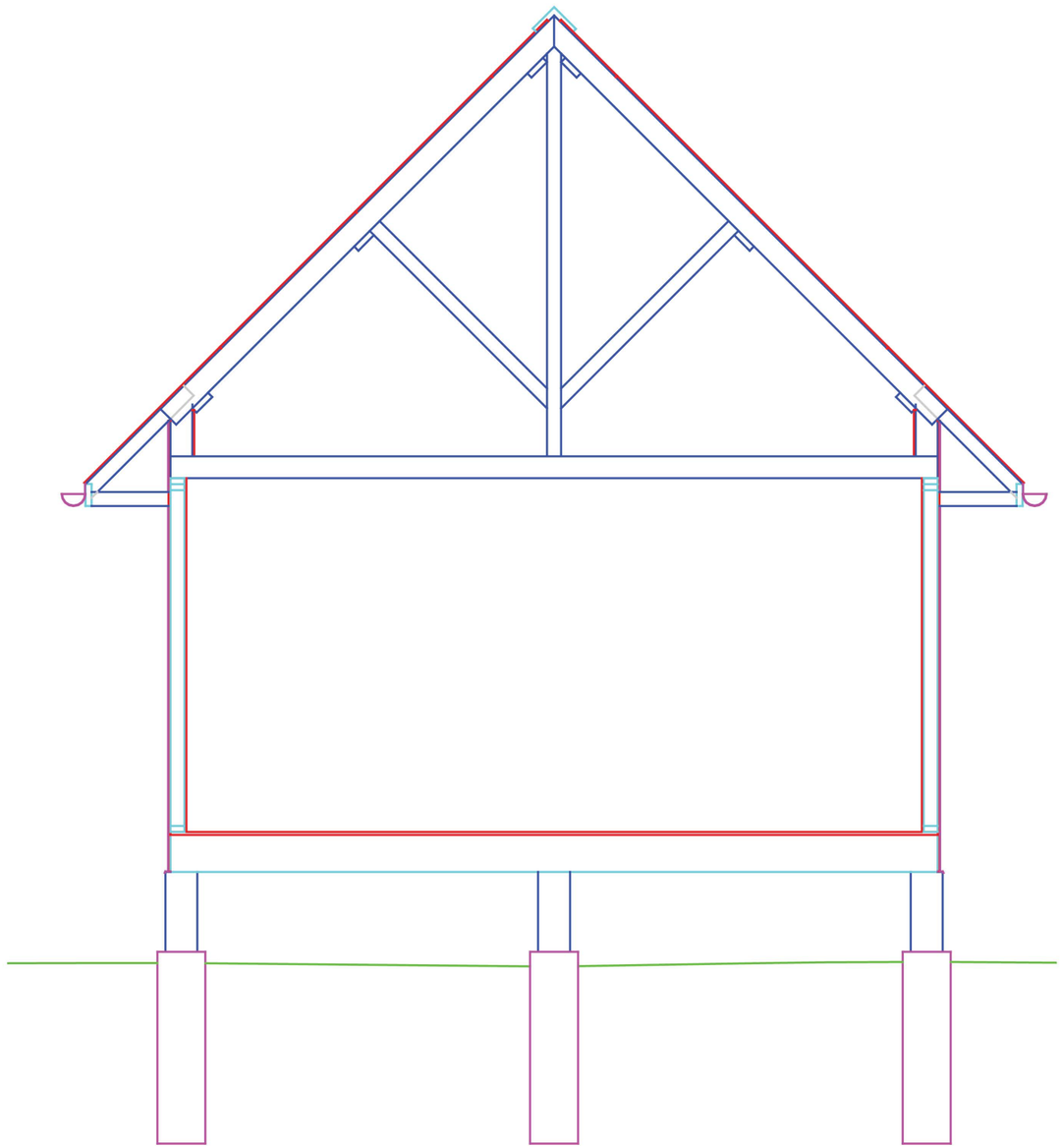
Front Elevation (sub windows)

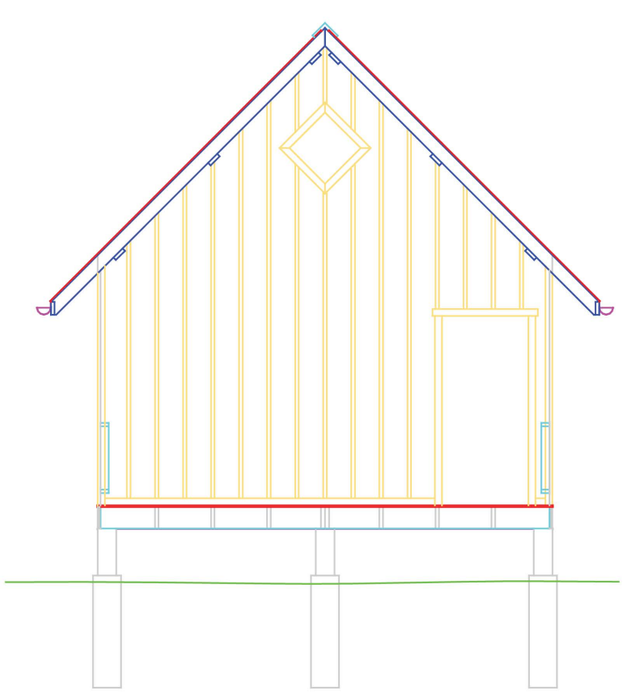


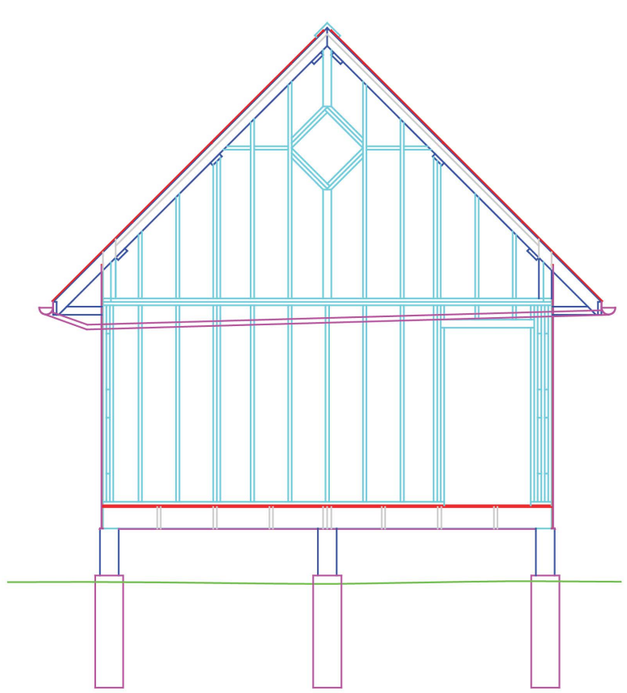
Rear Elevation (sub windows)

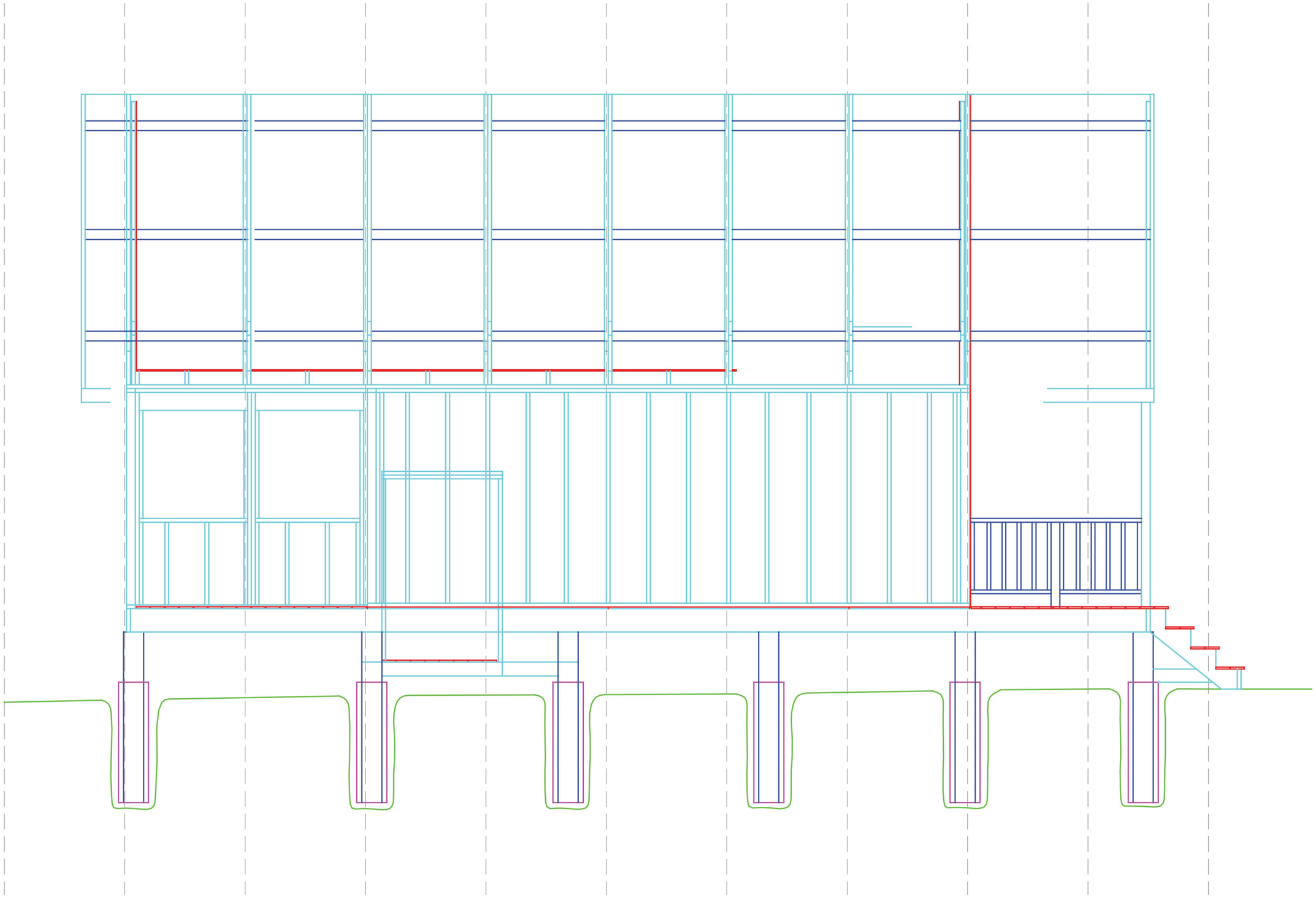


Standard Truss Section

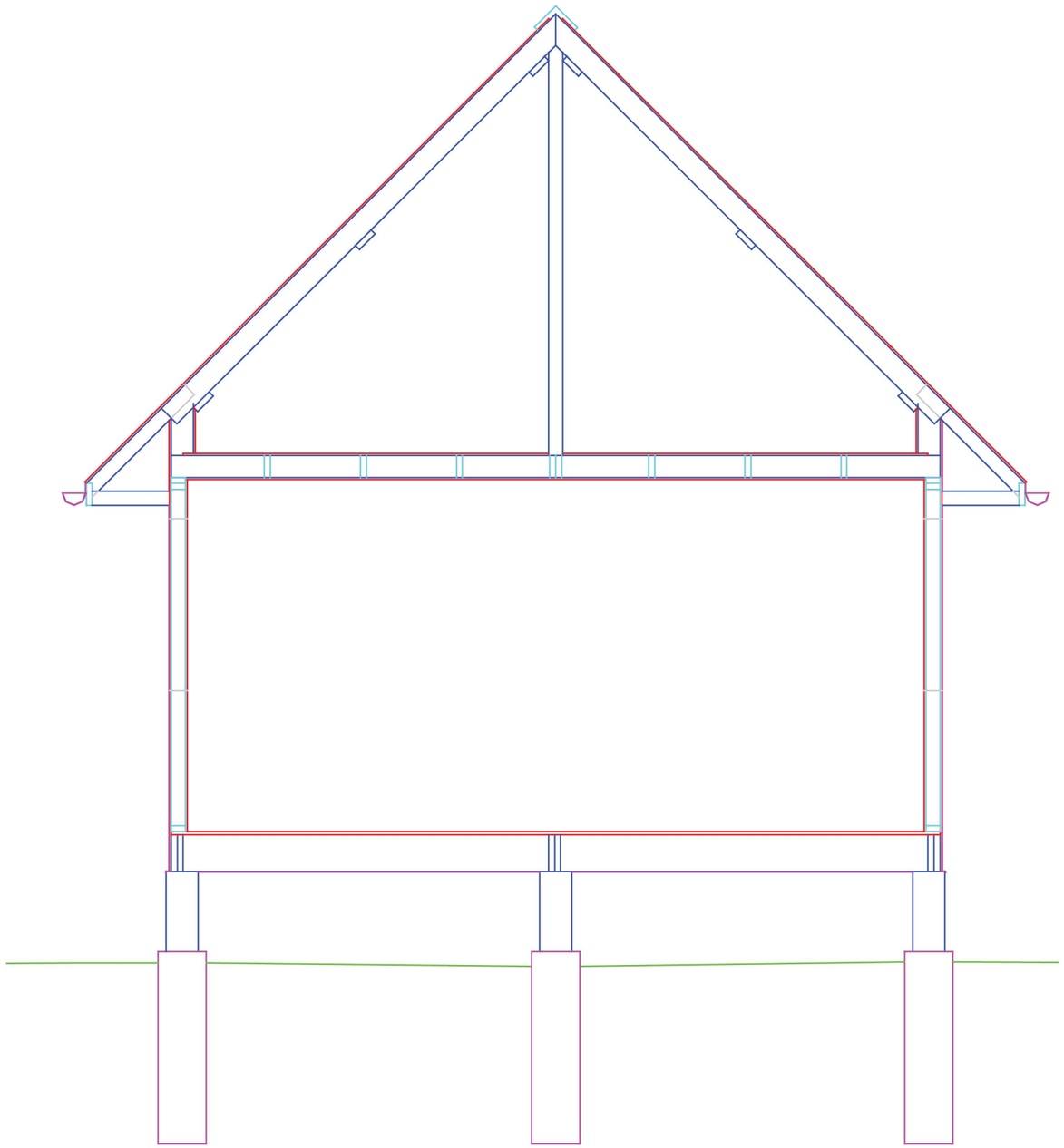


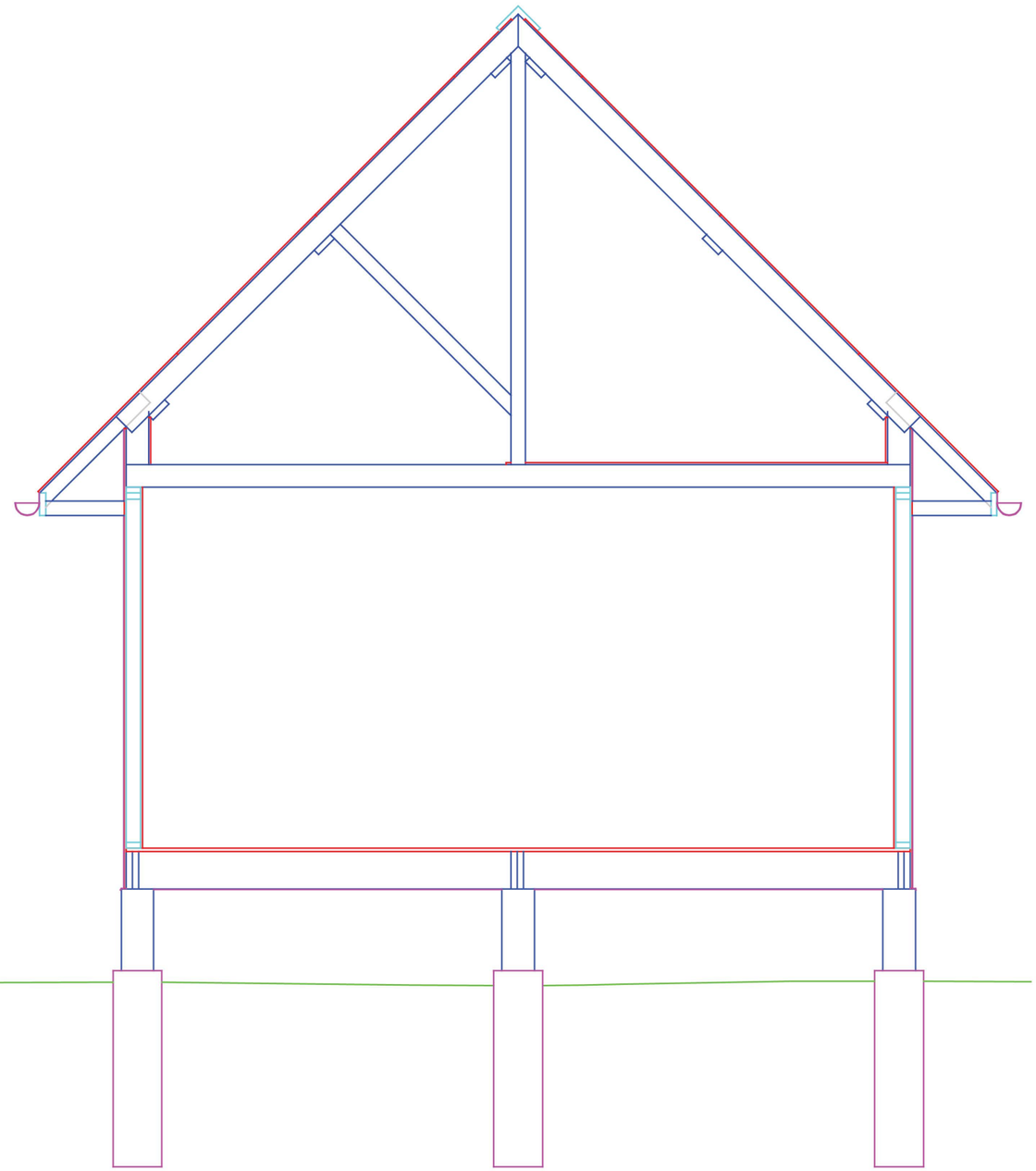


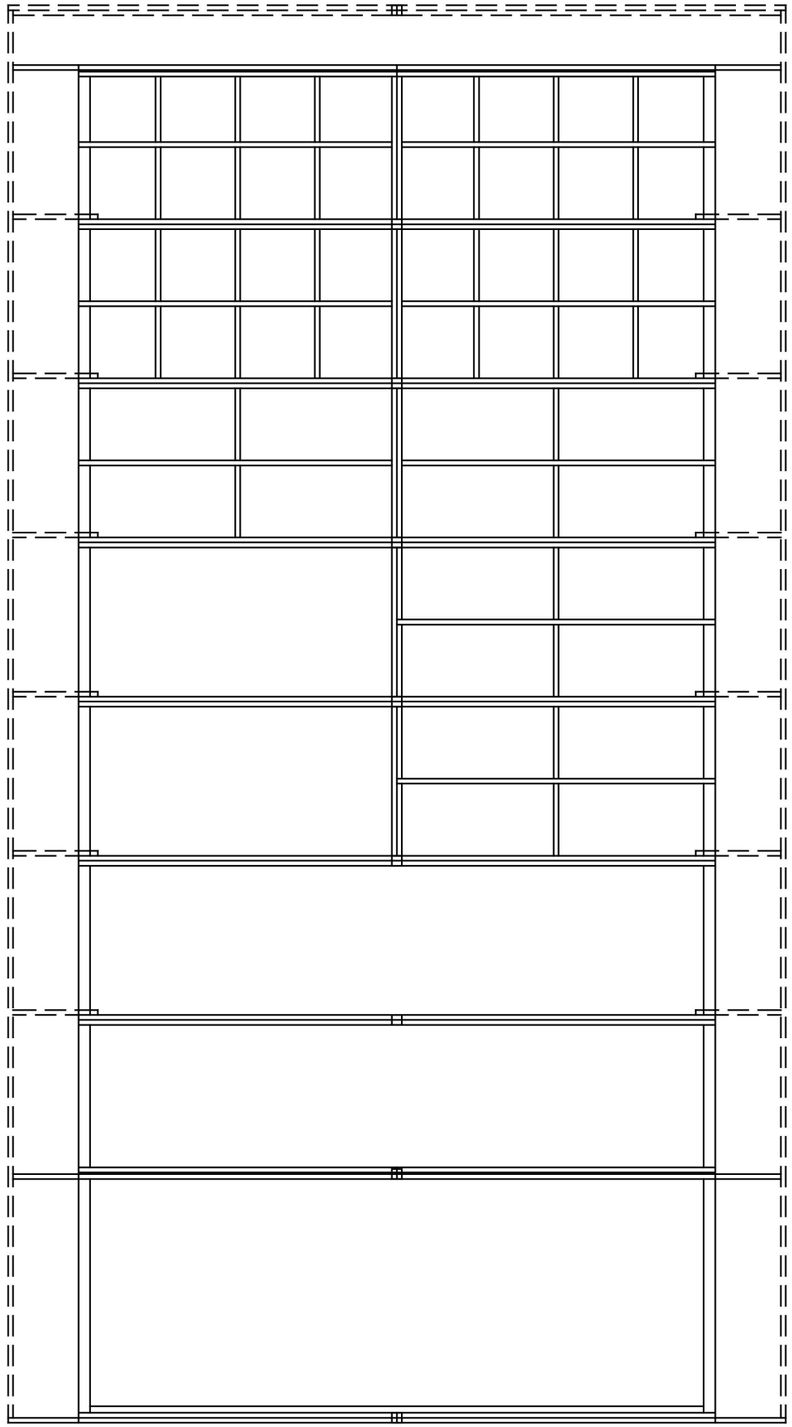


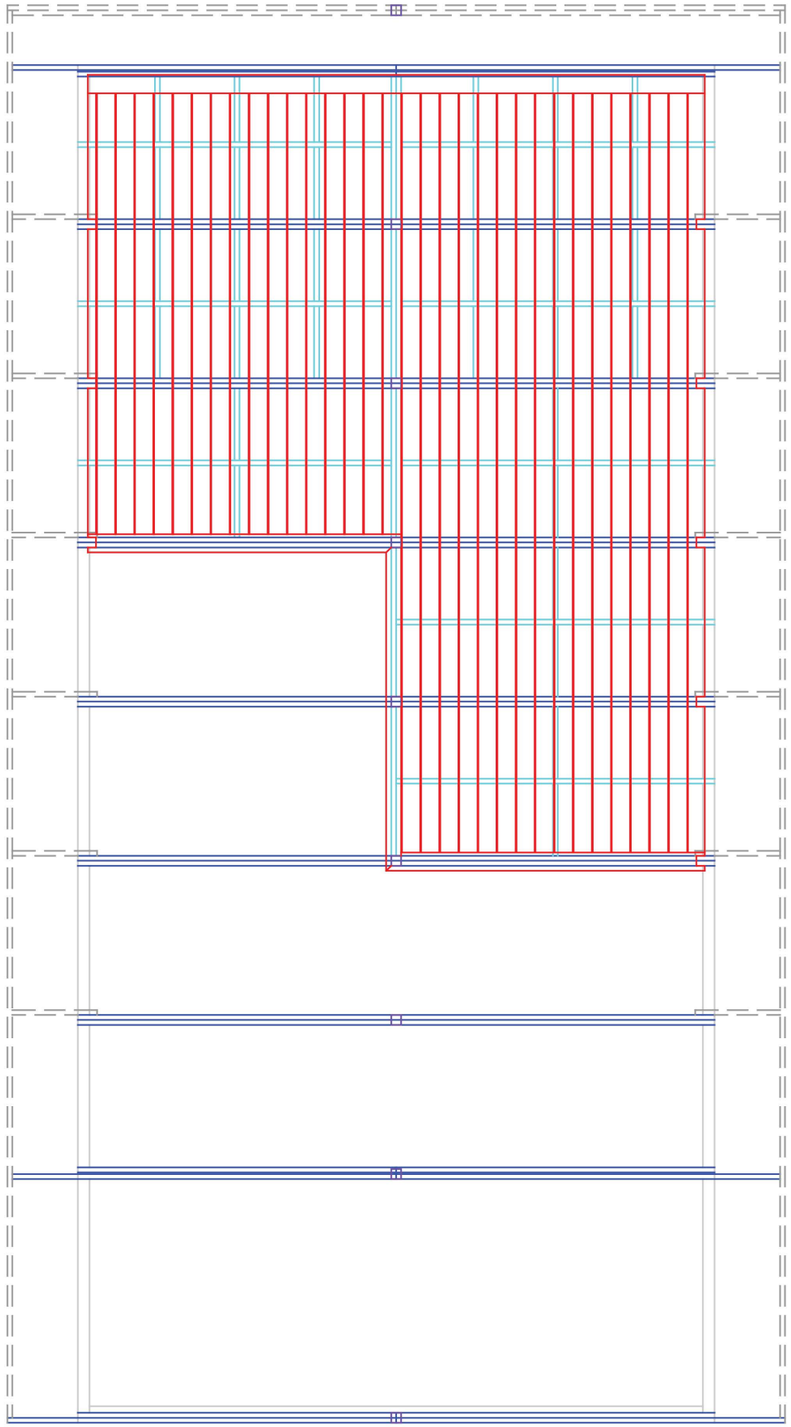


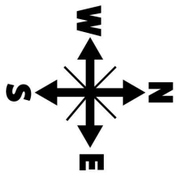
Mt. McCullough Homestead | PHASE x : Cabin Section Diagram | Tuesday August 21, 2012 | Jeffrey J. Frazier

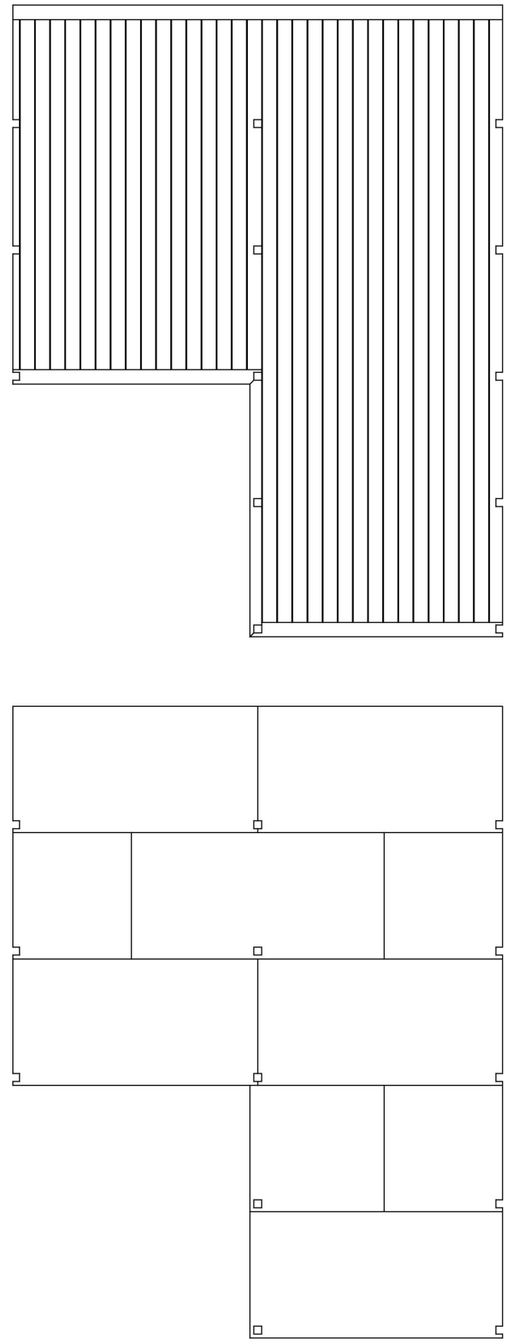




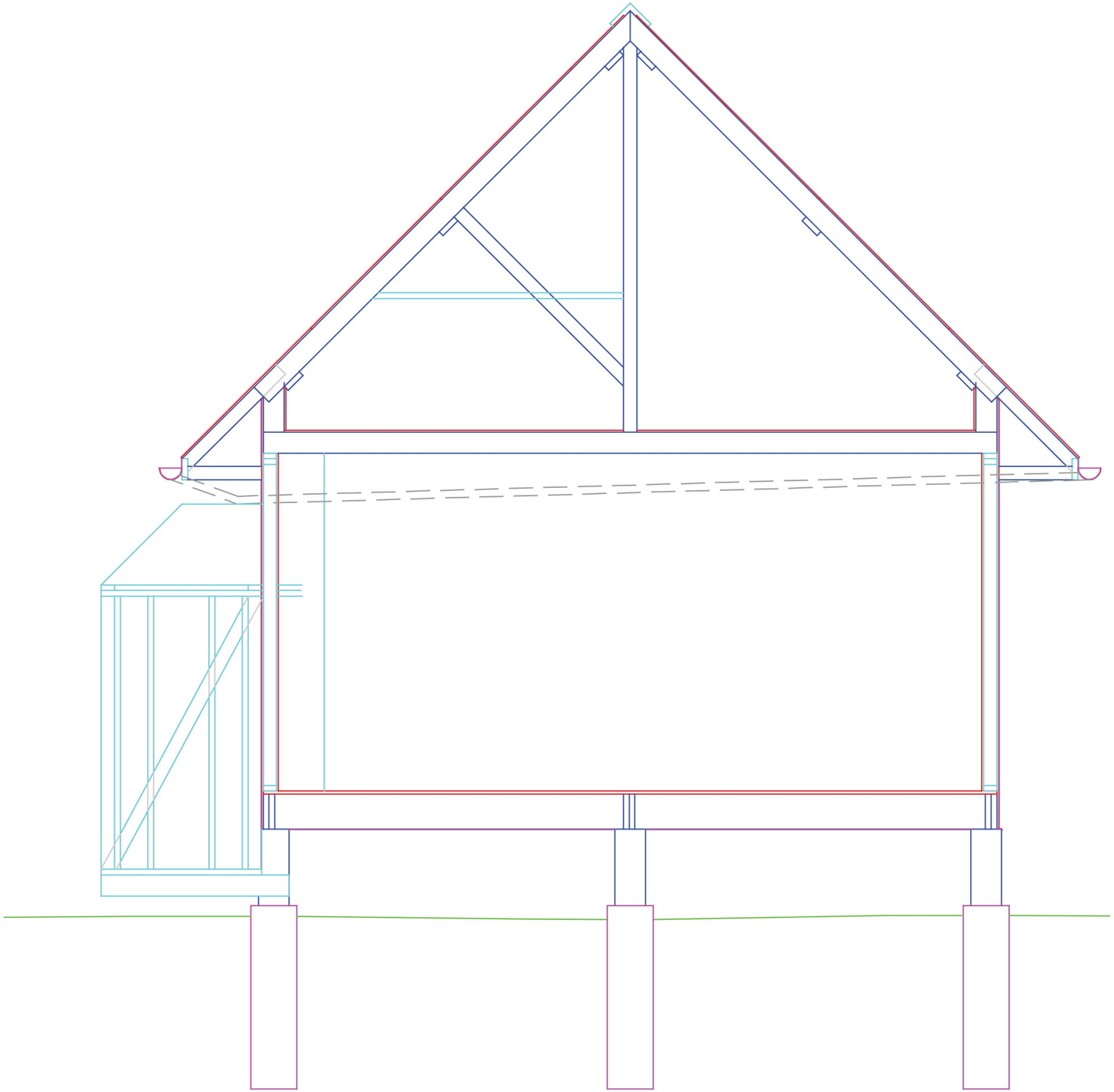


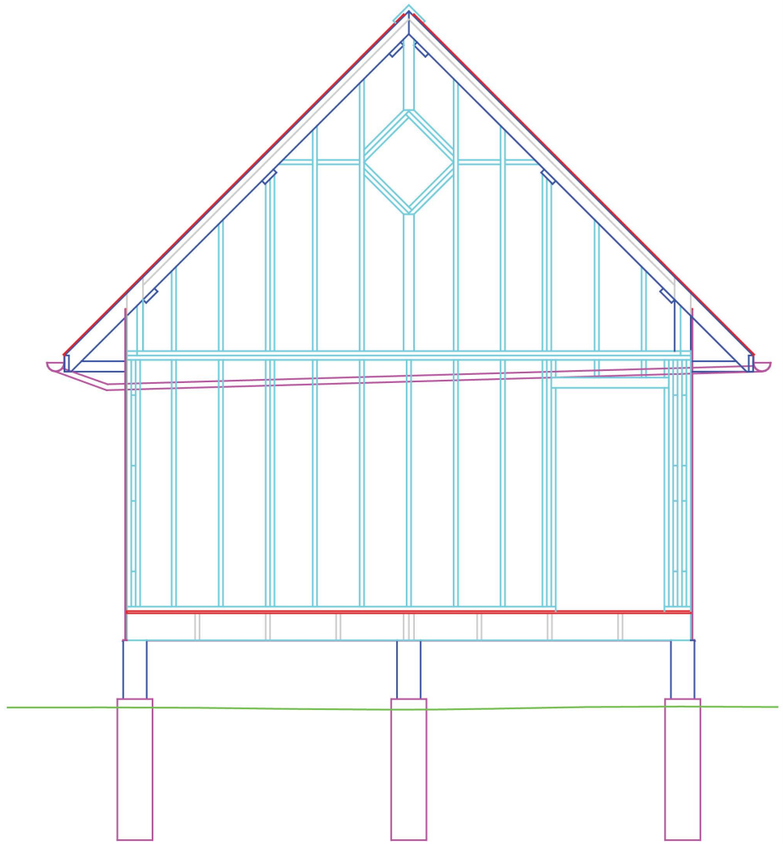






Mt. McCullough Homestead | PHASE x : Upper Loft Plan Drafts | Tuesday August 21, 2012 | Jeffrey J. Frazier





Mt. McCullough Homestead | PHASE 1 : Water Collection | Tuesday August 21, 2012 | Jeffrey J. Frazier