

THE RURAL OUTPATIENT VETERINARY CLINIC

R. O. V. C.





The Rural Clinic



DEDICATION

Thank you to the Family and
Friends who support and
believe in everything I do.

Special Thanks to my
family that no matter what,
support and push me to
achieve my dreams.

*Anna Gossett
Jeanne & David Gossett
Maria & Pedro Orpinel (RIP 2018)
Christine & Peter Orpinel*

COMMITTEE TEAM

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Aubrey Ray Pentecost

Co-Chair:

Carly McCord

Member:

Micheal O'Brien

Advisor:

Lori Teller

Professor:

Ray Holiday

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INTRODUCTION

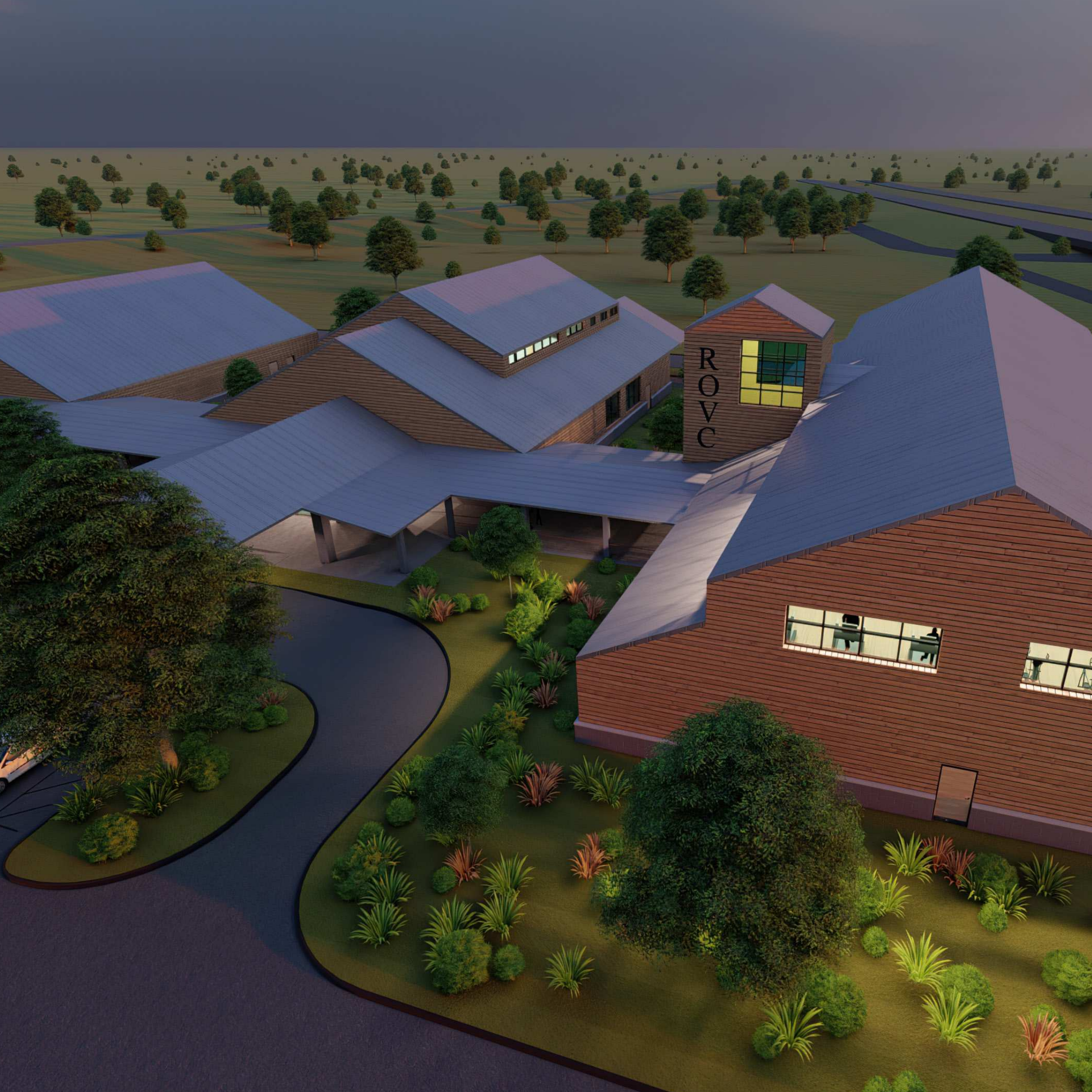
Traditionally, the wellbeing of animals and humans are kept as far away as possible, but what happens when these two types of facilities get close to one another?

The One Health Model tackles exactly that by bringing Human, Animal, and Environmental Health together.

Creating a facility that allows two clinics, one for Human and one for small Animals, will provide the proximity of bringing these two types of Healthcare together.

Cross Laminated Timber (CLT) will be the sustainable construction material to complete the One Health Model, with Environmental Health.

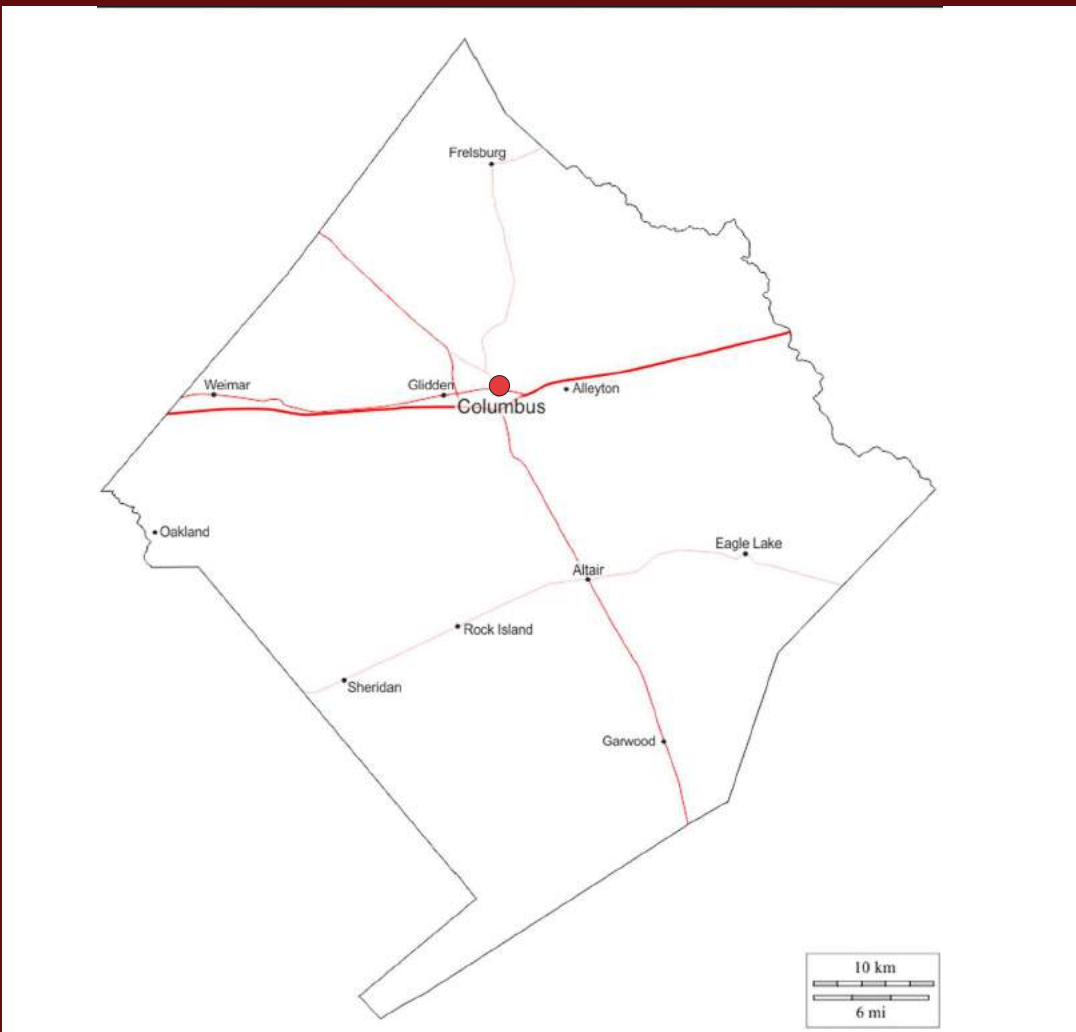




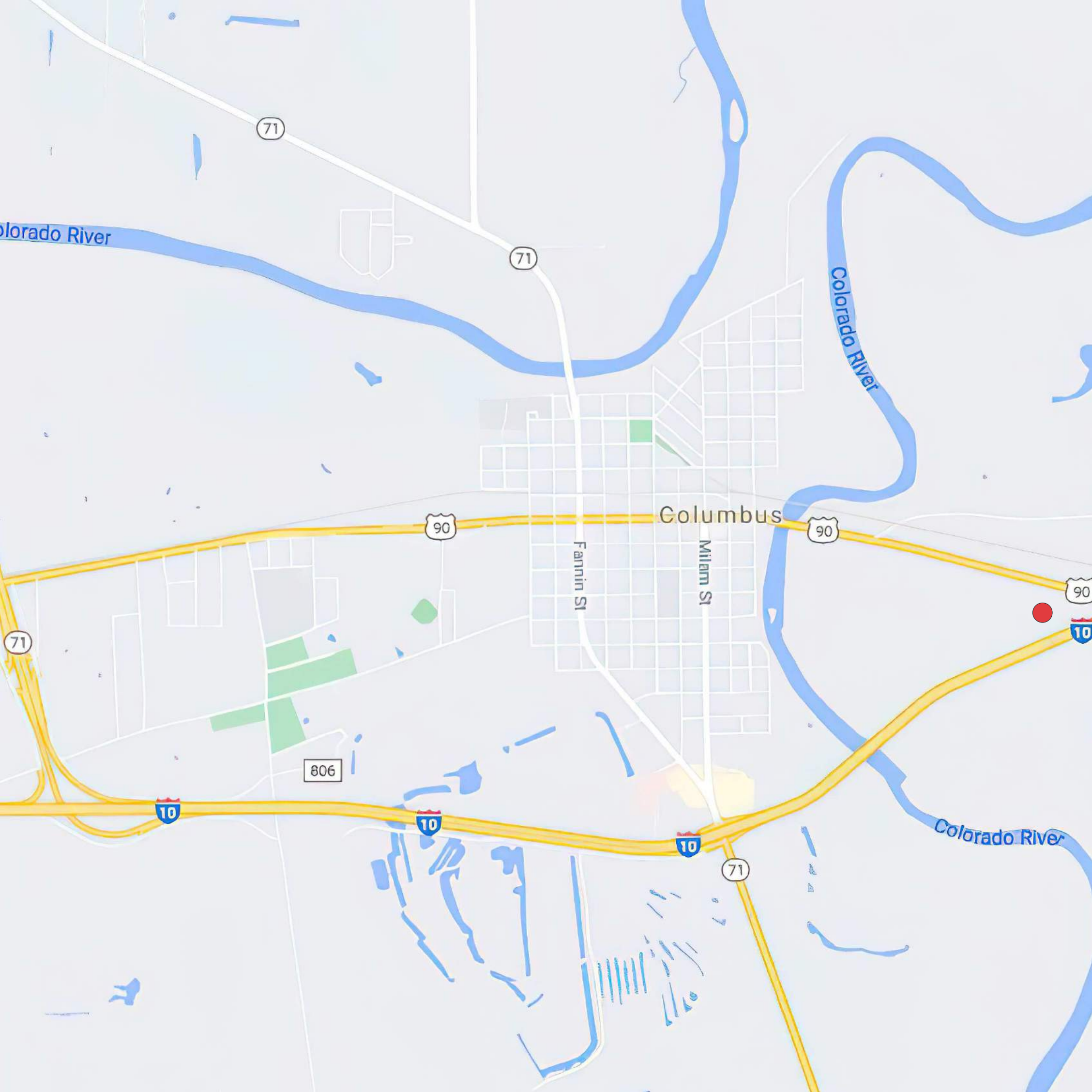
ROVC

SITE





Located in Columbus Texas, United States of America. Just West of Houston, Texas. One of the reasons for this project was to do it in a rural area, where care for people and animals would be more continent being closer together.



71

71

Colorado River

Colorado River

90

Columbus

90

Fannin St

Milam St

90

10

71

806

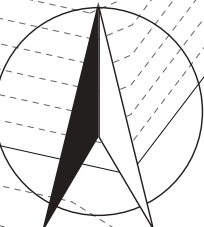
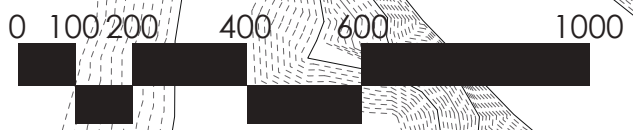
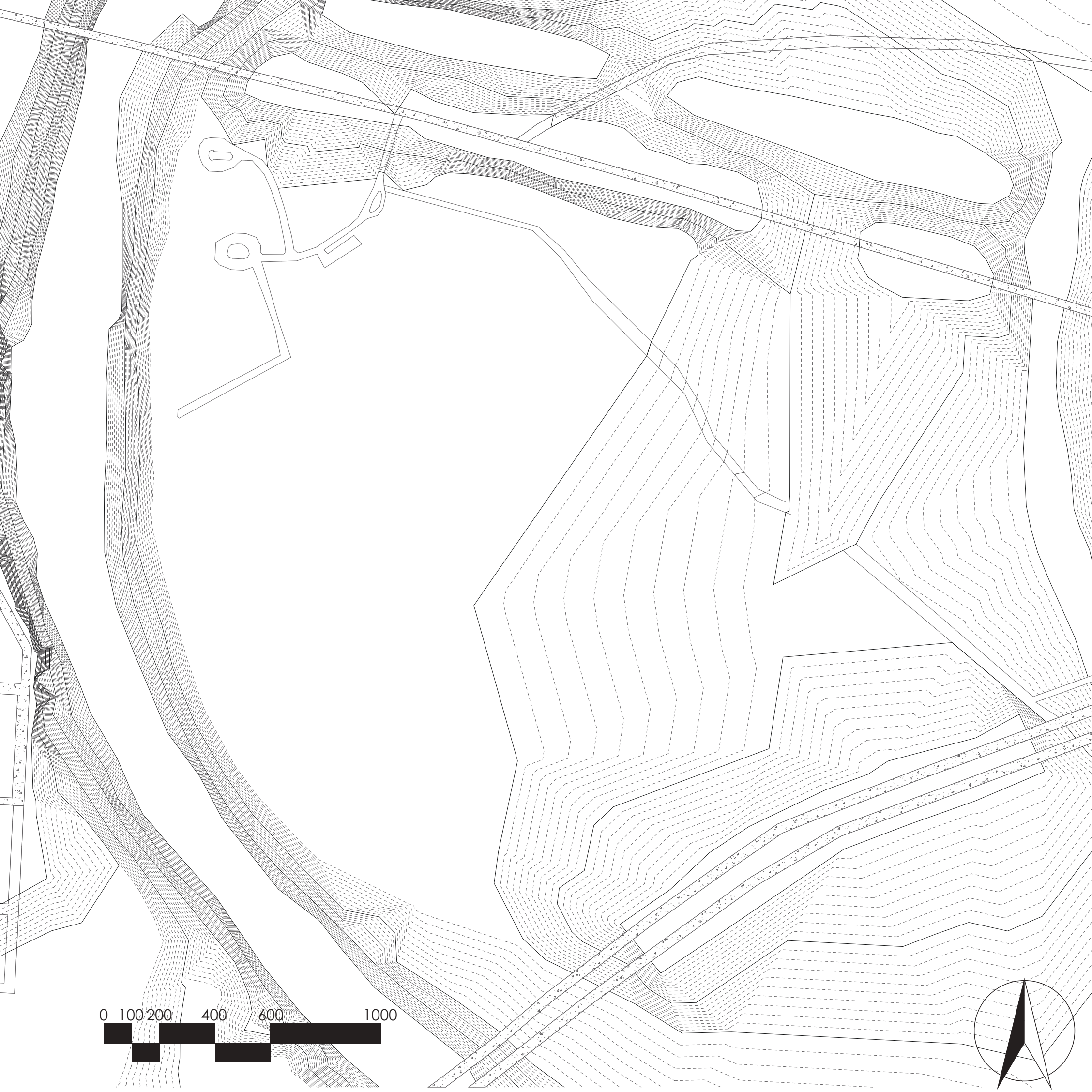
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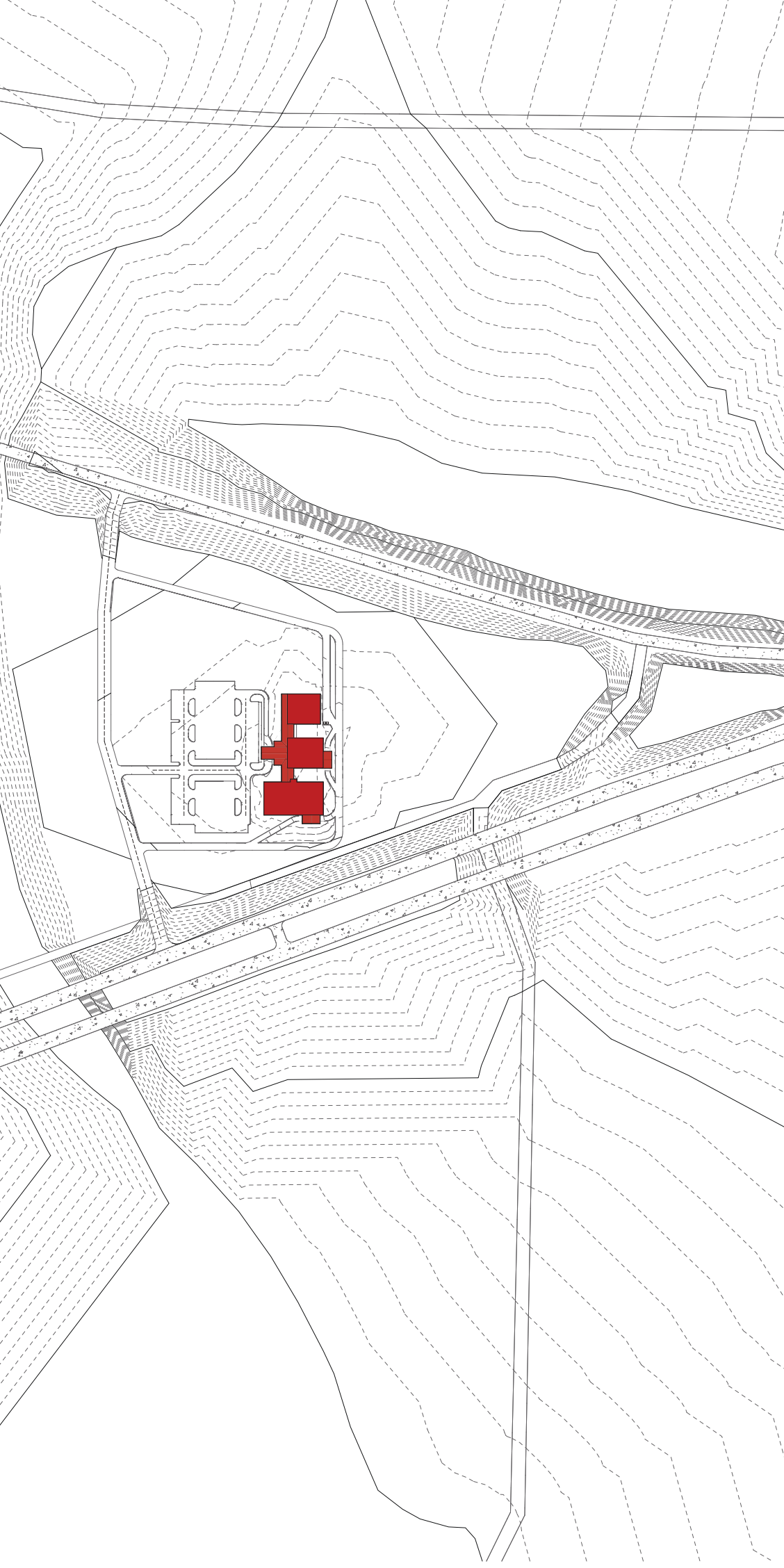
10

10

71

Colorado River





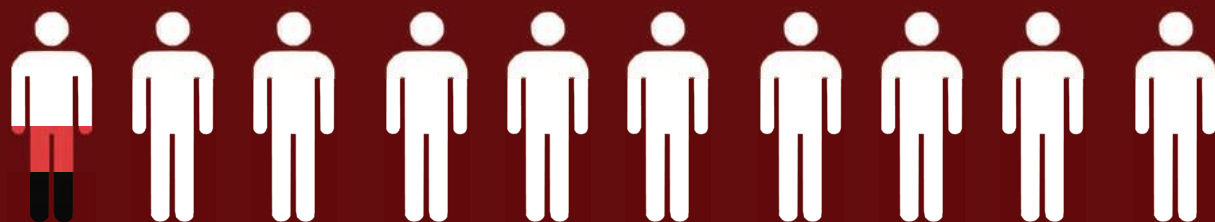
SITE PLAN

The location in Columbus, Texas to the West of Houston. The site location is between two major highways going into Columbus, I-10 to the South and I-90 to the North.



RESEARCH

Cancerous Death in the USA:



330,222,422 people
1,800,000 with cancer
606,520 deaths

Skin Cancer



5,600,350 cases
8,850 deaths
by the age of 70

Breast Cancer



279,100 cases
45,690 deaths

Endometrial Cancer



65,620 cases
12,590 deaths



People



Cases



Deaths

CANCER

Cancer is the second leading cause of Death in the United States, number one being Heart Disease.

Skin, Breast, and Endometrial Cancer being in the top ten most common cancers, as well as some of the easier to detect.

Others are: Lung, Prostate, Colon, Kidney, Bladder, Non-Hodgkin's Lymphoma, Thyroid

There are three forms of Skin Cancer, Basal Cell and Squamous Cell are more common, and are curable. Melanoma is much more deadly.

The BRCA Gene, Breast Cancer gene, increases the chances of Breast cancer, as well as making the host susceptible to other cancers, especially in the reproductive organs.

Population of Columbus



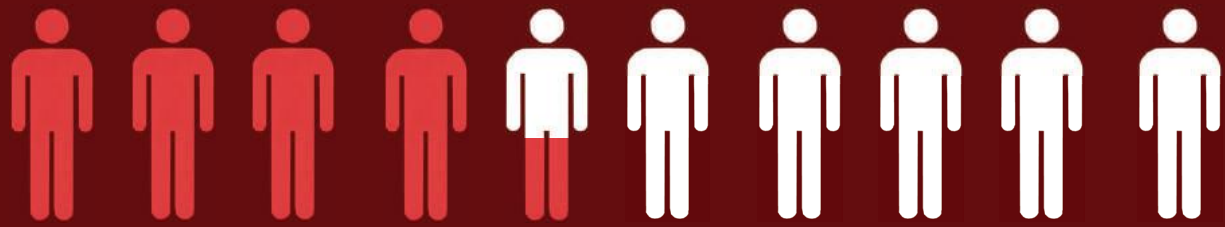
60-80
1,120
600 F
520 M
31%




40-55
710
400 F
310 M
20%



20-35
940
430 F
510 M
26%



0-15
850
380 F
470 M
23%

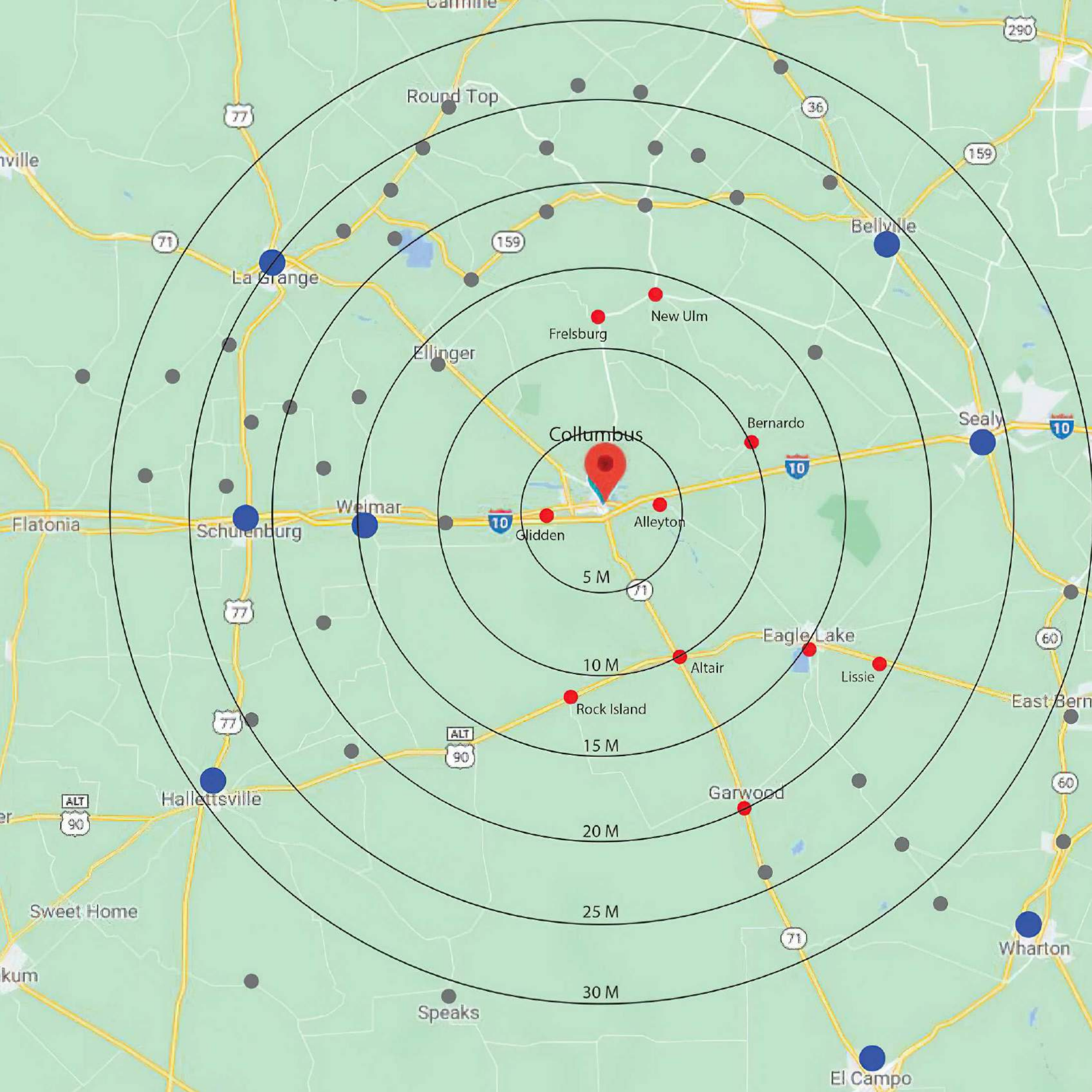
 49%
Men

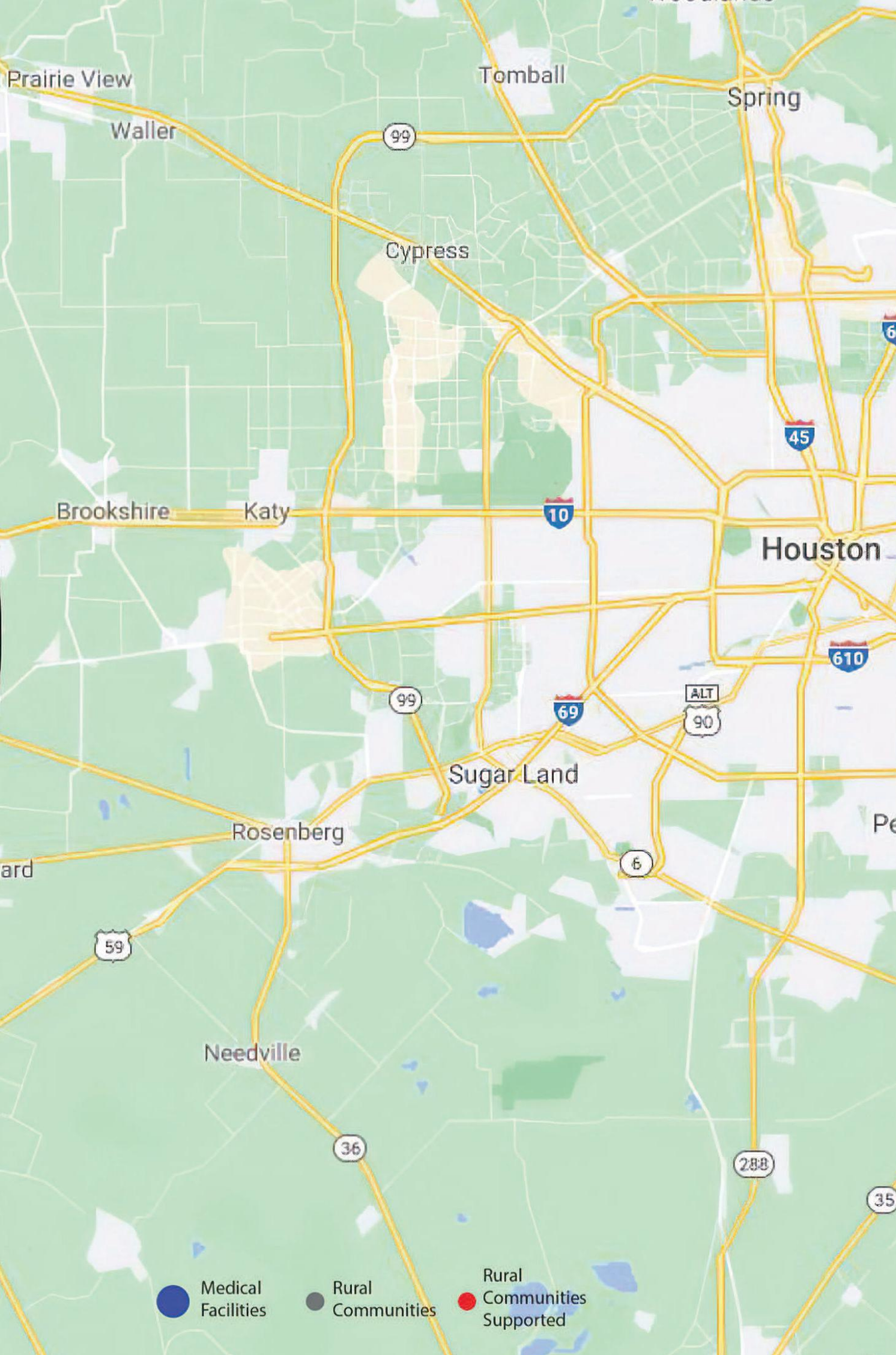
 51%
Women

DEMOGRAPHICS

There are 3,600 people living in Columbus as of 2020. With 51% being Female, and 49% being Male. The average age is 45.

For this reason, is why the facility would be providing the specialty prevention services as most adults that would be getting those types of cancers are above 40, and majority being women.





This type of facility is to support the Rural community, and not a large city. With Columbus being in center of an area that has very few medical facilities. This makes a perfect branch to reach out to other communities.

Estimating that the communities outlined in the map would be closer to Columbus than another community with a medical facility, these supported communities would increase the serving population from 3,600 people to about 13,000 people.



**ENVIRONMENTAL
HEALTH**



**ONE
HEALTH**



**HUMAN
HEALTH**



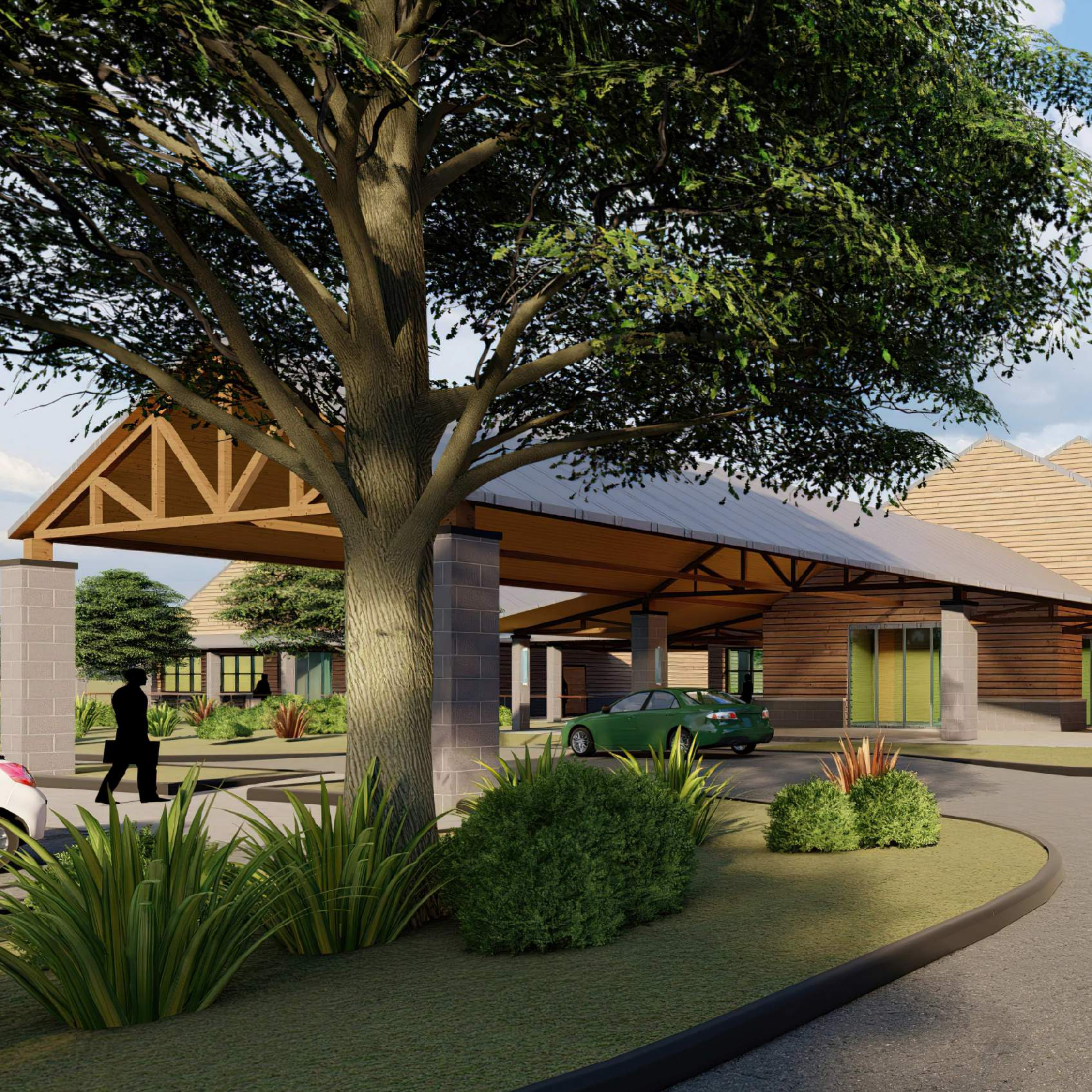
**ANIMAL
HEALTH**

ONE HEALTH

The One Health Model is the practice that includes everything Humans, Animals and the Environment all are under one health because we all effect the other.

The pet owner is responsible for the health of their animal, the animal takes notice and is affected by their health, and the health of both can be affected by the environment in which they live in. Creating a facility that creates a healthy environment where both animal owner and animal can come to and get wellness check-ups makes this connivent and attractive.

As this is in a Rural community, there is built in expansion for the larger cattle animals that owners would want to have taken care of.



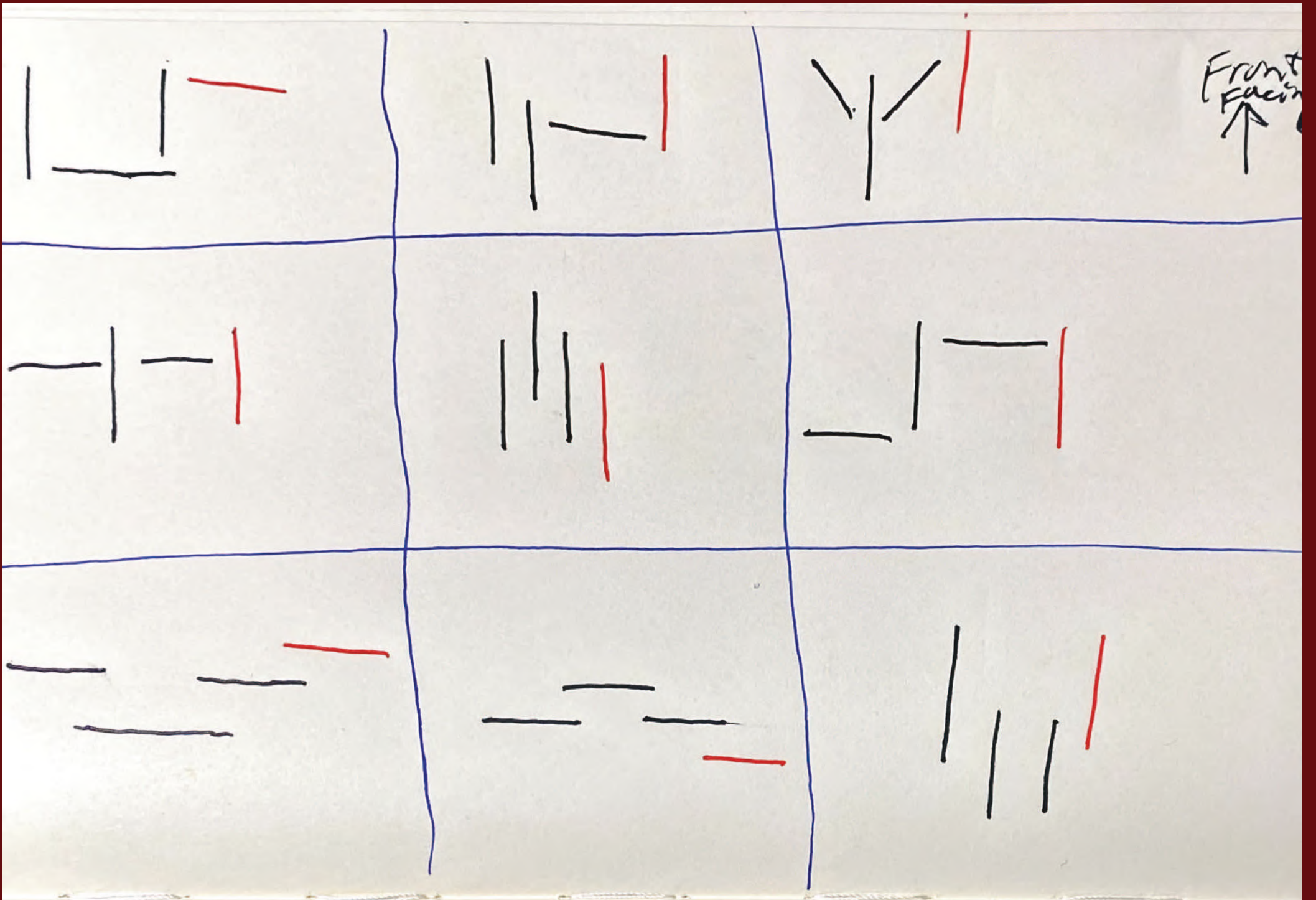




ROVC

ROVC

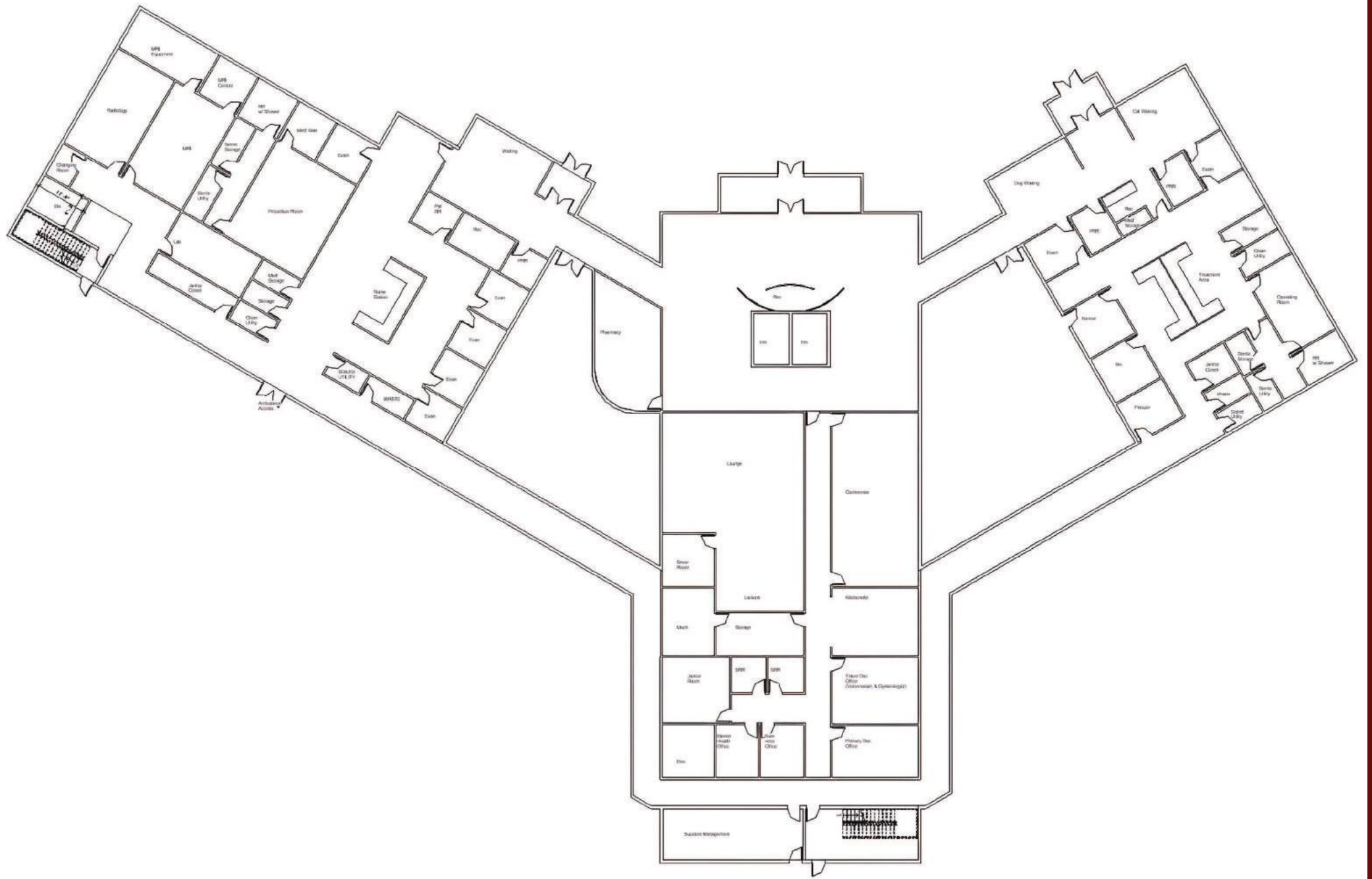
CONCEPT



After looking at how pet and human health could co-exist with one another, it was determined that the main functions of the facility would have to be separated.

Breaking the program into three groups, with a fourth option for future development for large animal health.

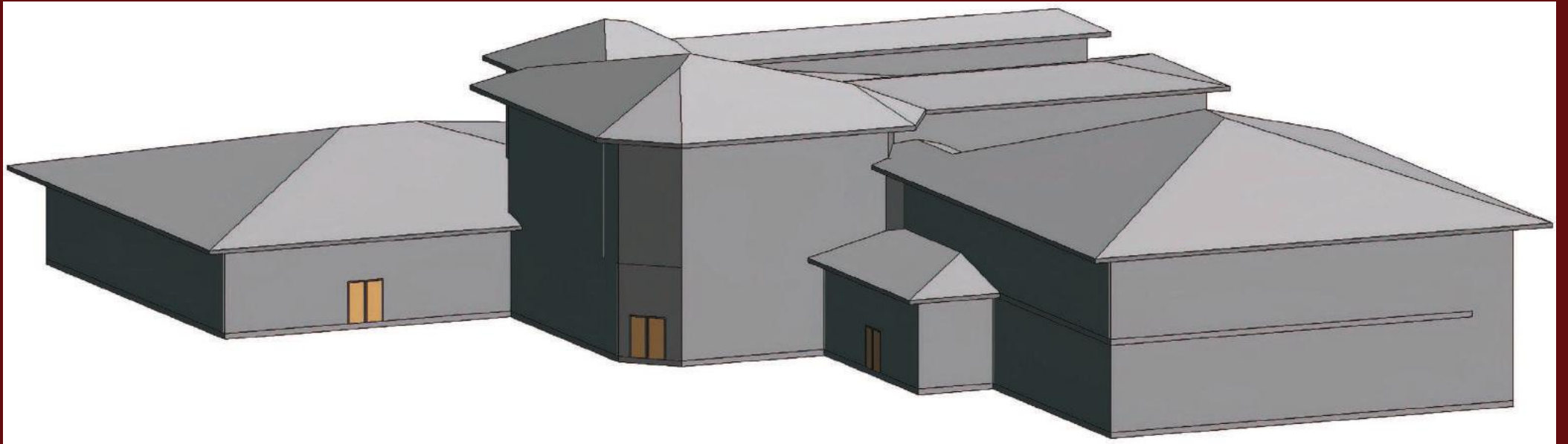
Human Clinic would have an ER, diagnostics, general Clinic, and physical therapy gym.
A shared administration with lodging for the visiting doctors.
A Veterinary Clinic.



The Internal Courtyard Concept

This first concept deals with connecting the different spaces with long corridors, creating interior courtyards for both the animal and human clinics. This would give a healing garden for patients and guest who are waiting for their loved ones, as well as give staff a place to come to distress. While it would give the animals a place to be off leash while they waited for their appointment. The Y-shape was to act like a funnel to the main entrance.

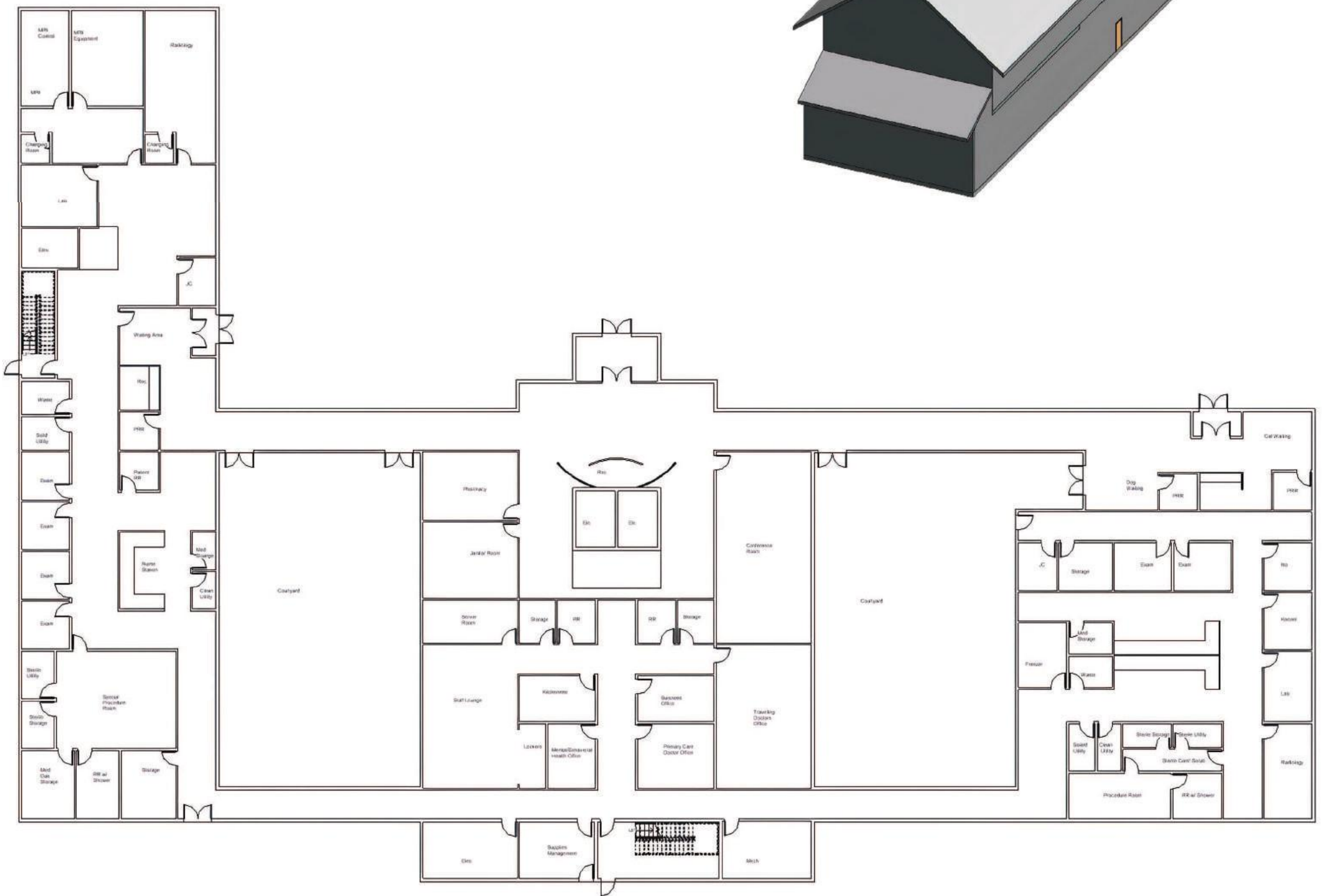
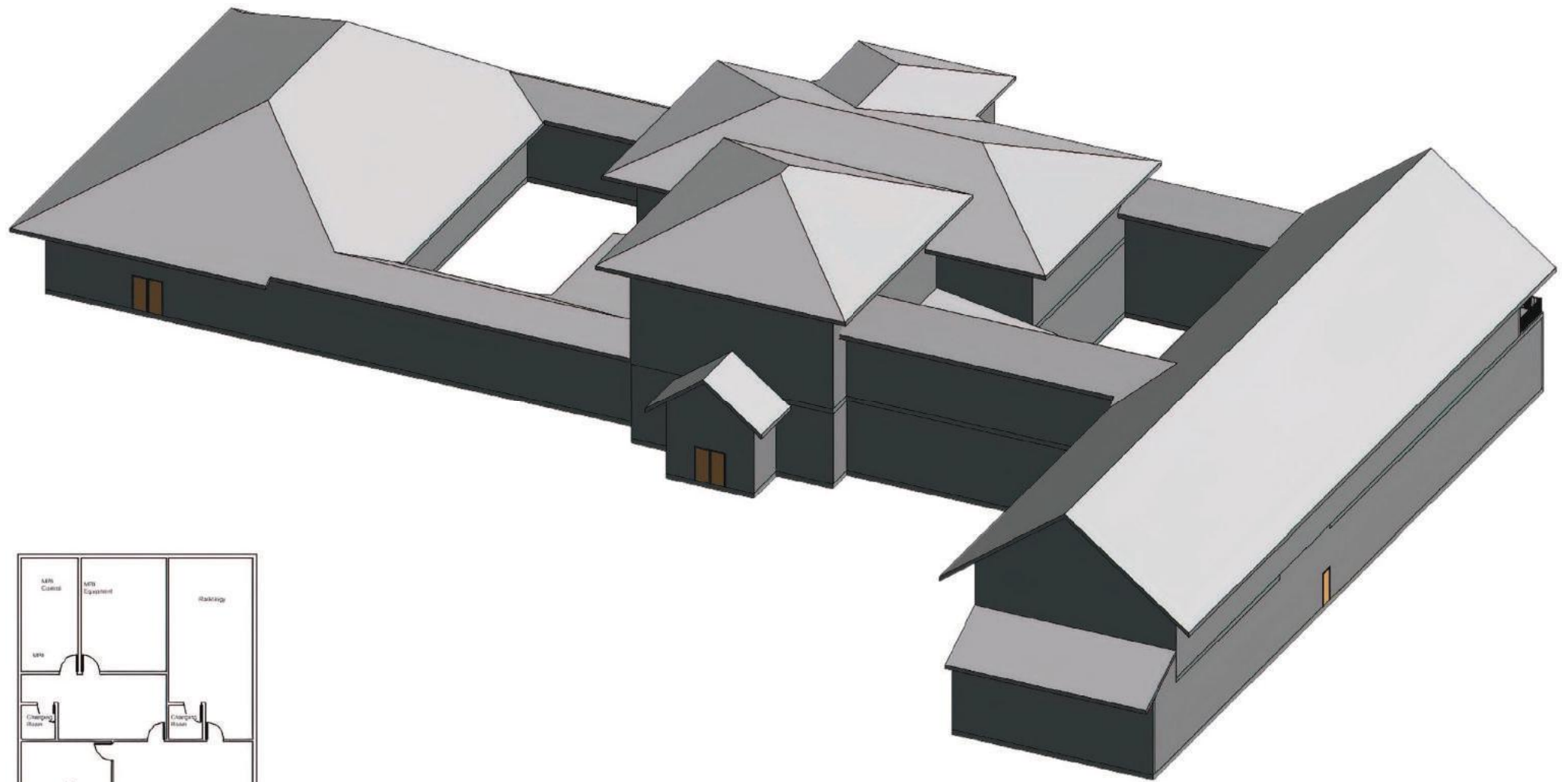
The play in the vertical was based on what would be seen as more important spaces that could use more natural light or would have more volume.



ONE MASS

The One Mass concept was to bring everything together into a singular building. Like all the concepts the Human and Animal Clinics are separated by the Administration. Having the Reception at an angle providing a transition between to horizontal and vertical layouts of the clinics.

Vertically playing with what function seemed to be the most important for way finding, the administration building, would be the tallest followed then by the actual volumes of the clinics.



Horizontal Connection

Much like the Interanal Courtyard concept, this concept is looking at bringing in an internal courtyard with each building being connected by corridors. With an L - shape to line the back up and create a drop-off station in the front of the administration building.

Verticality being specified to main areas, with the main lobby space at the highest followed by the volumes of the other main functions of the project.

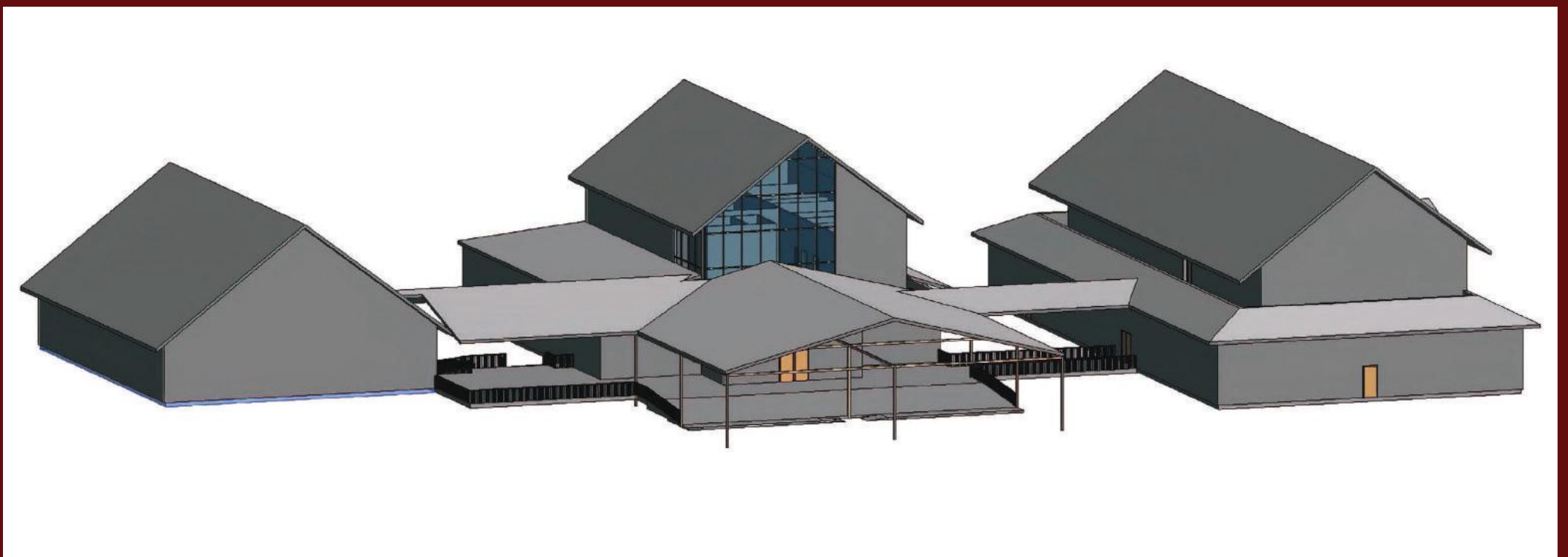
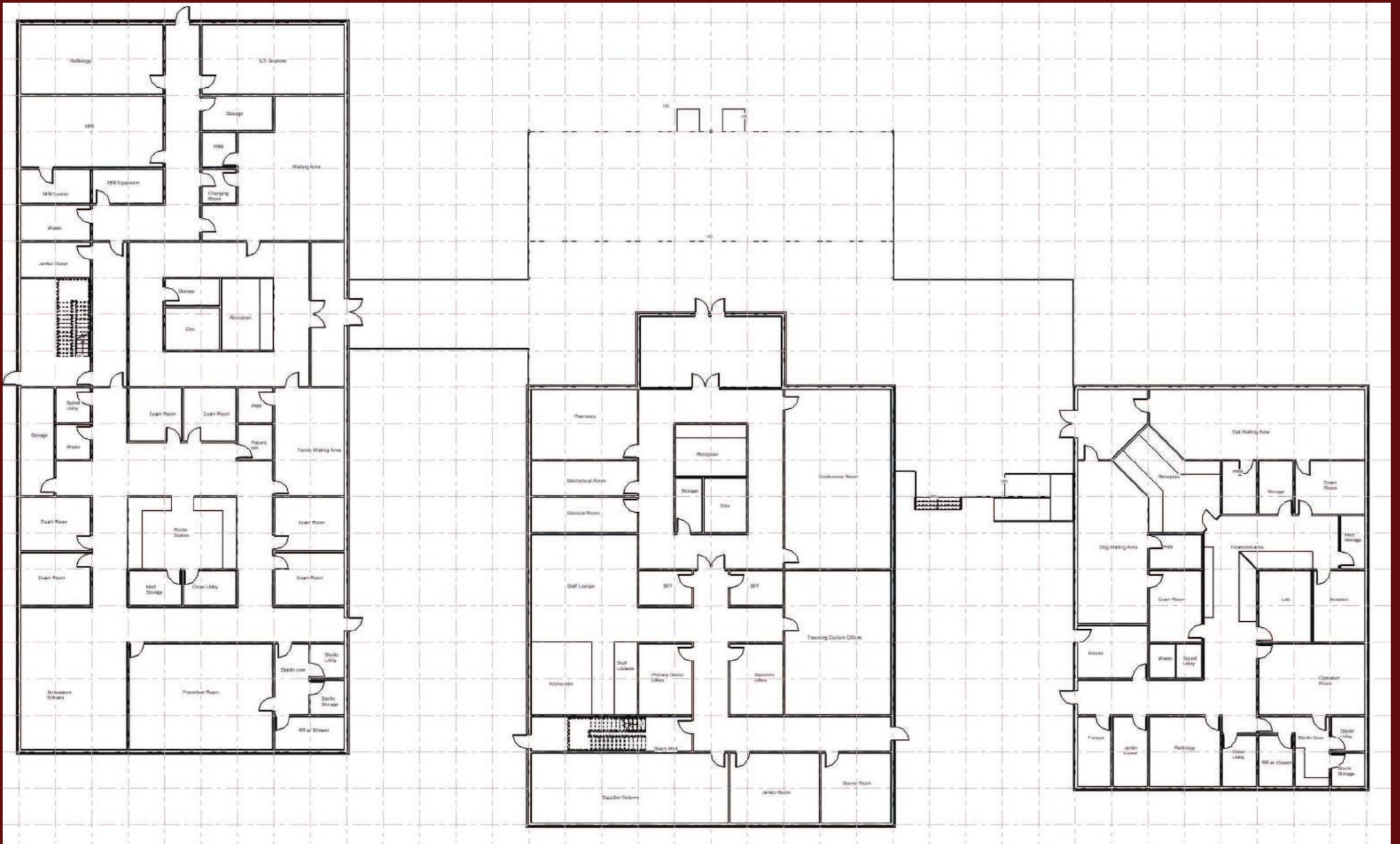


Form Concept

Texas Vernacular is the core of rural Texas, the Dog Trout form being apart of that. Buildings being split with a breeze way in between.

The Alley Log Cabin is a Dog Trout house originally built by Abraham Alley who was part of Stephen F. Austin's original 300 settlers and who had a significant roll in the Runaway Scrape. Which was the act of retreating from the Mexican army during 1836.





The Dog Trout Style

The Dog Trout concept takes the form of the Dog Trout style house to connect to the Texas Vernacular. This concept follows the Horizontal connection concept except with opening up the corridors to the elements. This creating open courtyards in between each building.

The Vertical now is evenly applied to what the function of the buildings are with the administration building being open to natural light, also showing that this would be the main building. Along with the covered drop-off area that would have the only way of accessing either building.

R.O.V.C.



DESIGN



WOOD INNOVATION
AND DESIGN CENTRE

- LECTURE THEATRE ↗
- GALLERY OF WOOD ←
- RESEARCH LAB →
- ELEVATOR ACCESS ↗
- EXIT TO 5TH AVE ←
- LECTURE THEATRE ↙
- ↗ ↘ ↙ ↚

CONSTRUCTION

Cross Laminated Timber (CLT) is a panel product made from gluing together layers of solid sawn lumber like 2x4 or 2x6. CLT is always going to be made in an odd number of layers creating a sandwich like effect.

The advantages of CLT is that it's quicker to install, reduces waste, cheaper to make, lighter meaning smaller foundation, and cheaper to install. Around 15% cheaper than steel or concrete.



A

A1

A2

A3

A4

B

B1

B2

B3

B4

C

C1

C2

C3

C4

D

D1

D2

D3

D4

E

E1

E2

E3

E4

F

F1

F2

1

1A

1B

1C

1D

2

2A

2B

2C

2D

3

3A

3B

3C

3D

4

4A

4B

4C

4D

5

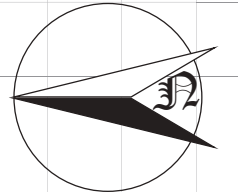
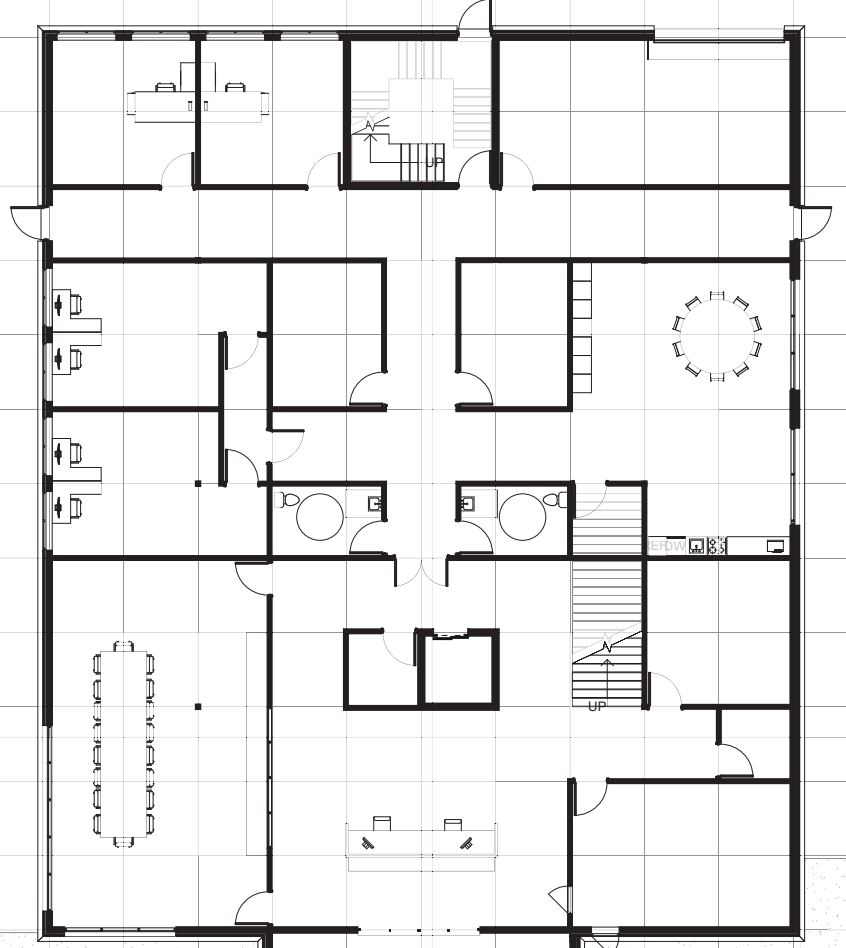
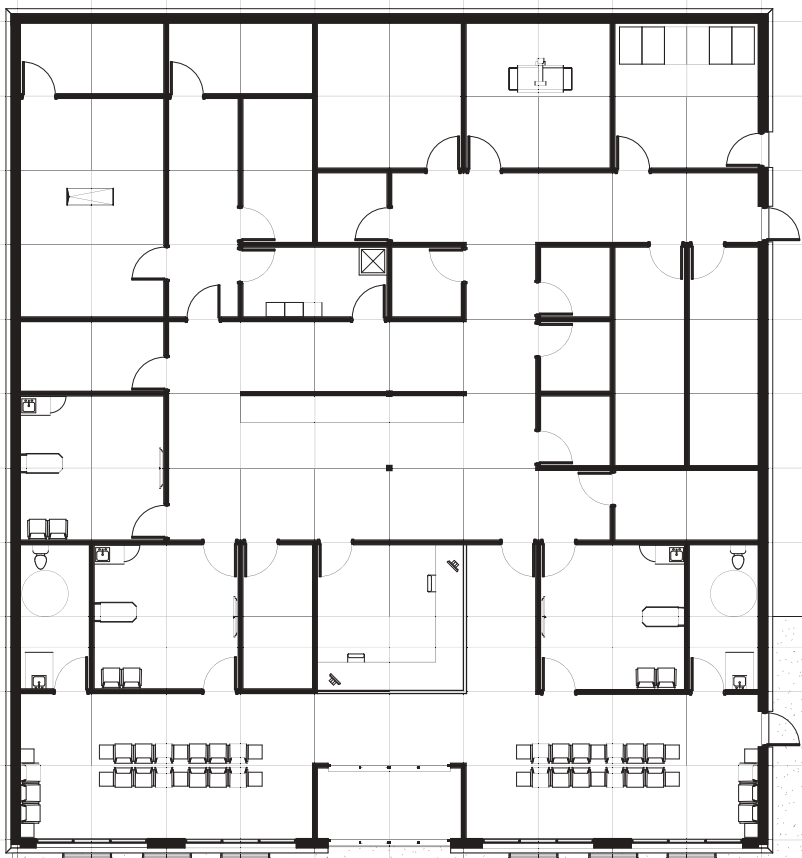
5A

5B

5C

5D

6

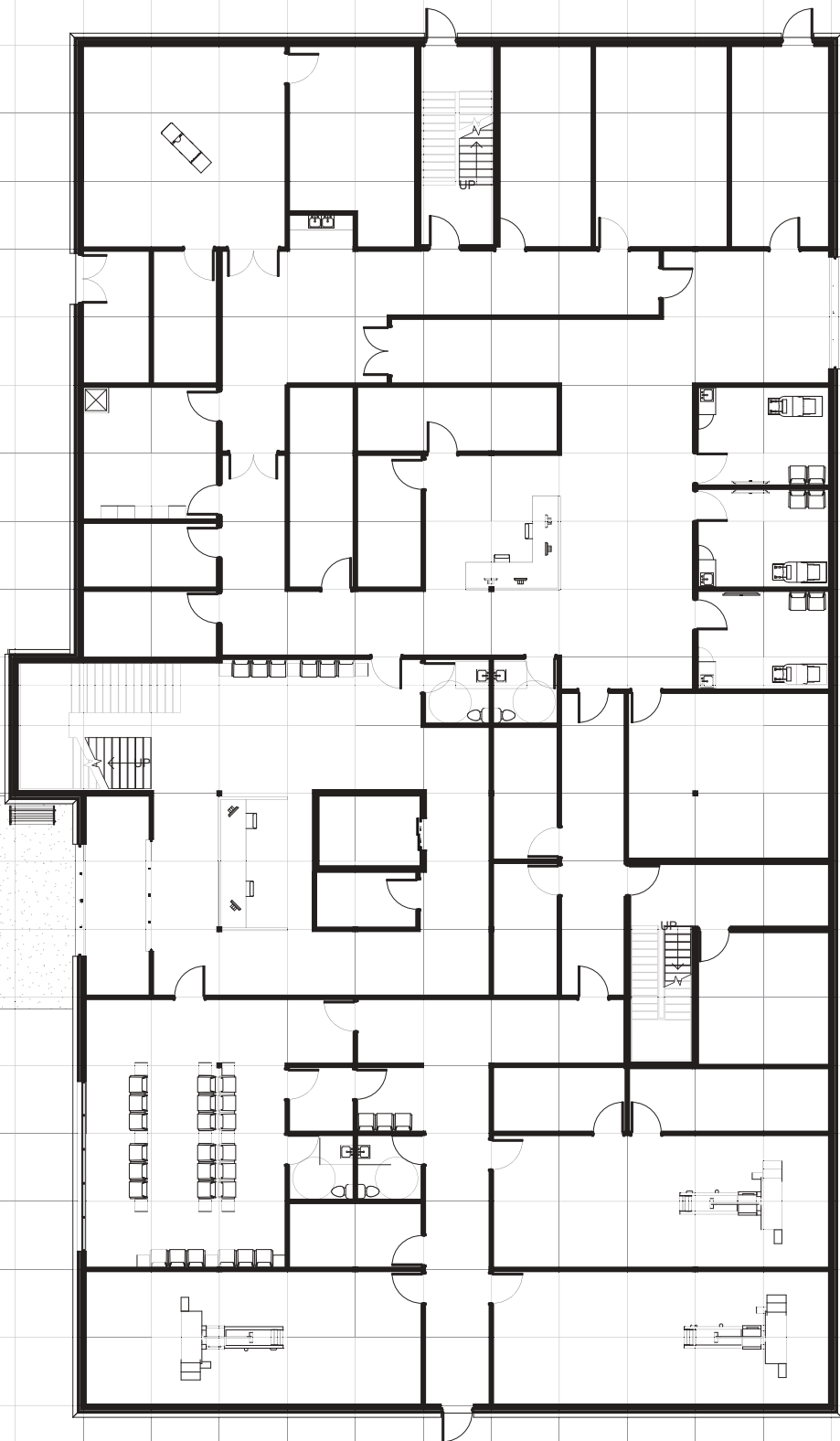


DN

DN

FIRST FLOOR

The First Floor of the R.O.V.C. contains a majority of the functions. Going from left to right, there's the Veterinary Clinic, Administration office, and the Emergency & Imaging Department.

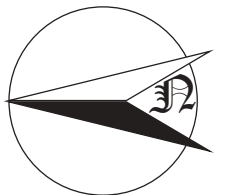




0 1 2 4 6 10



A: Facing Page
B: Following Page



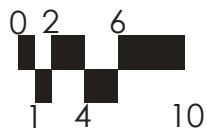
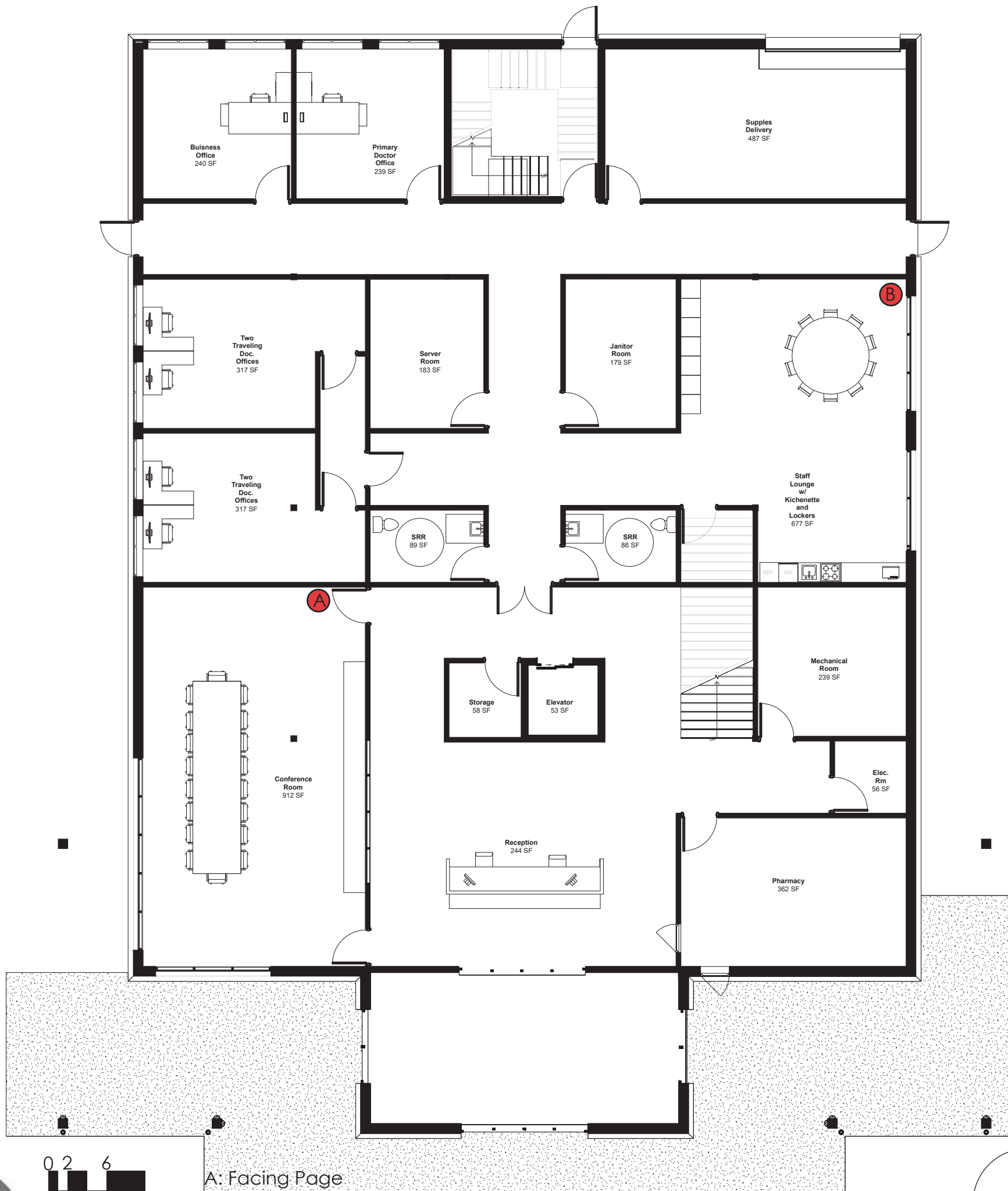
VETERINARY CLINIC

The Vet. clinic is used for small animals having separate waiting areas for cats and dogs, with an immediate access to a courtyard for the dog waiting area.









A: Facing Page
 B: Following Page



ADMINISTRATION

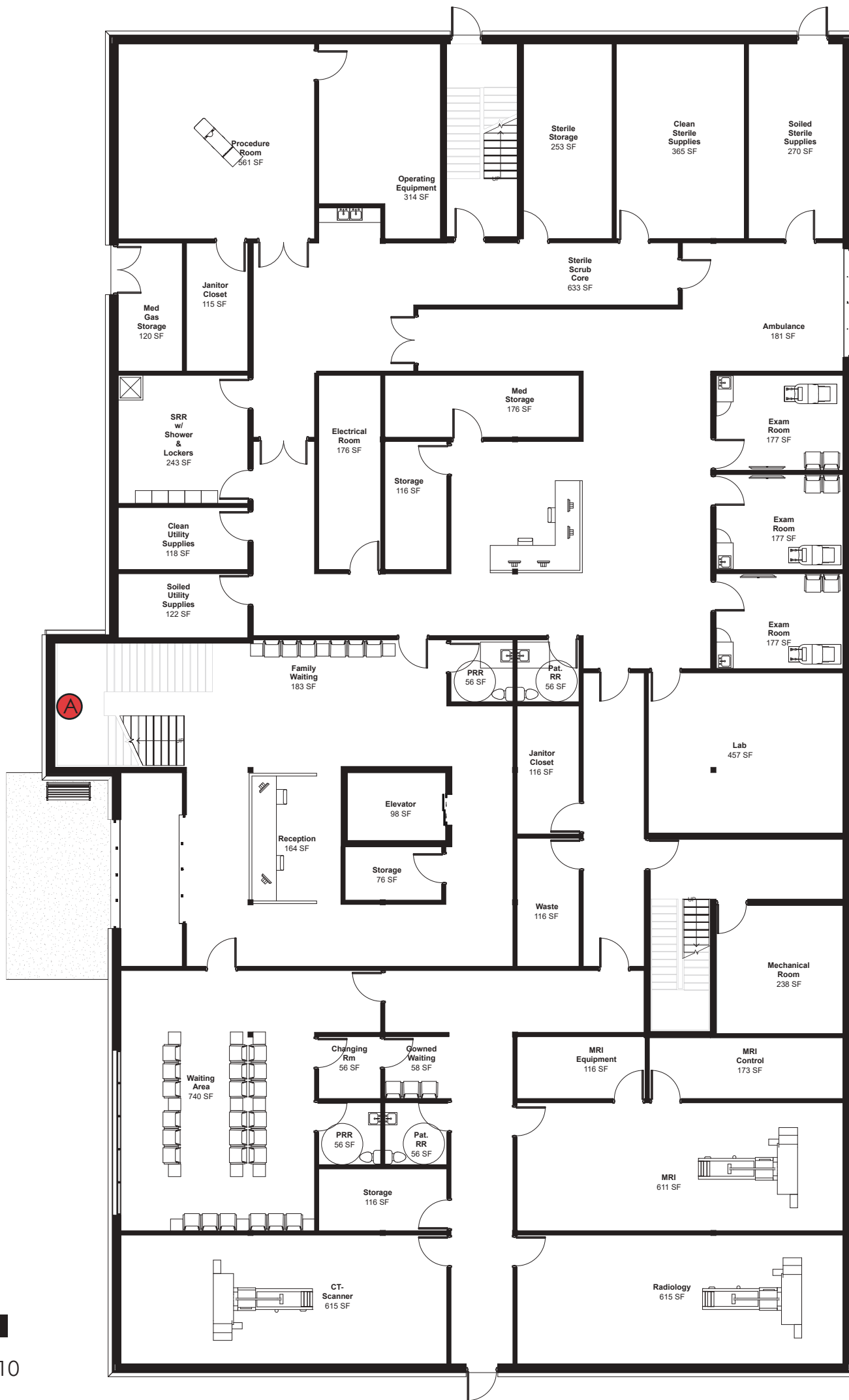


Since the facility will have traveling doctors visiting regularly, shared offices were created.

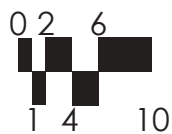


TAKE IT
EASY
LIVE
YOUR
LIFE

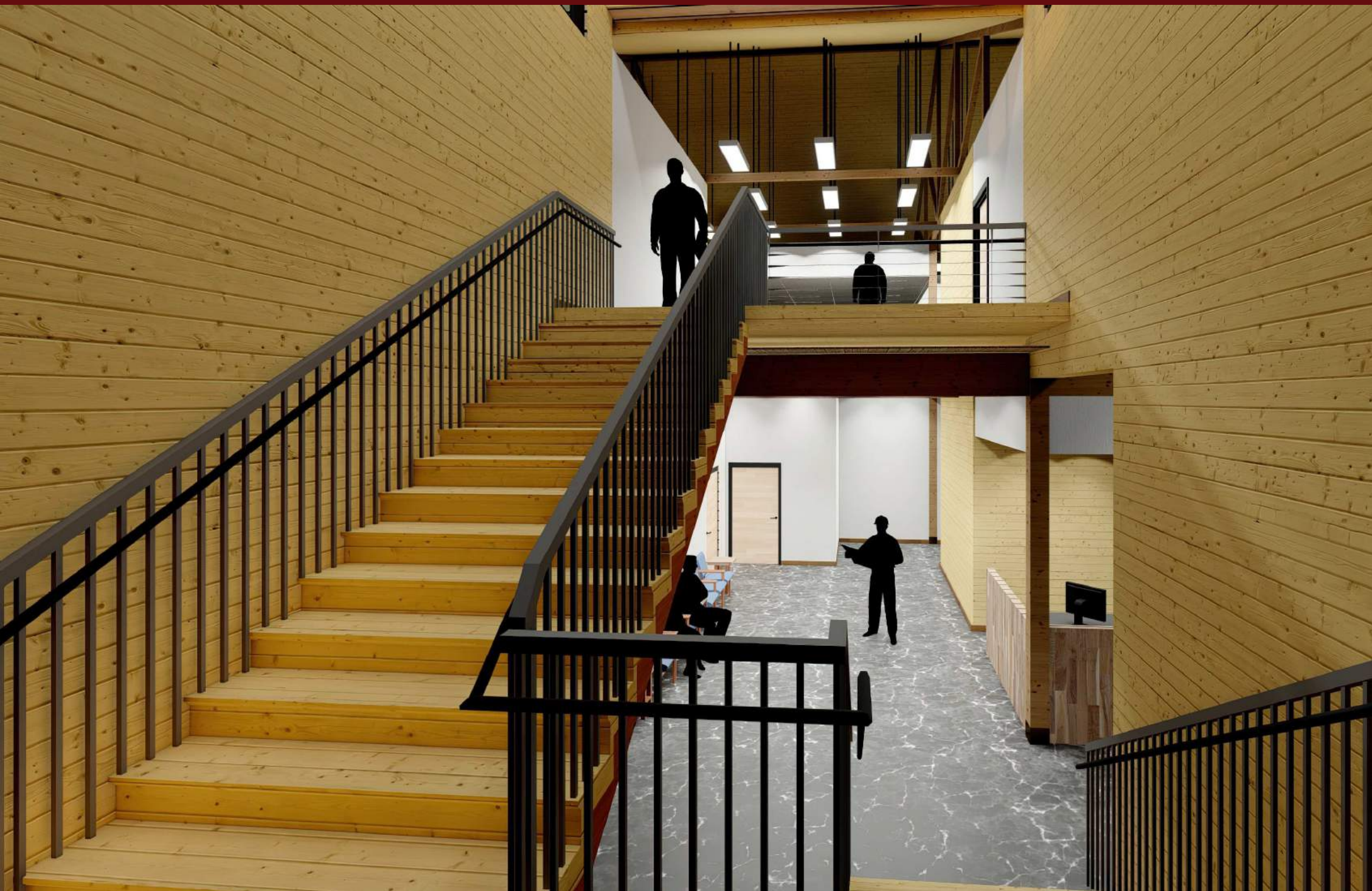




A: Facing Page
 B: Following Page



EMERGENCY & IMAGING







A

A1

A2

A3

A4

B

B1

B2

B3

B4

C

C1

C2

C3

C4

D

D1

D2

D3

D4

E

E1

E2

E3

E4

F

F1

F2

1

1A

1B

1C

1D

2

2A

2B

2C

2D

3

3A

3B

3C

3D

4

4A

4B

4C

4D

5

5A

5B

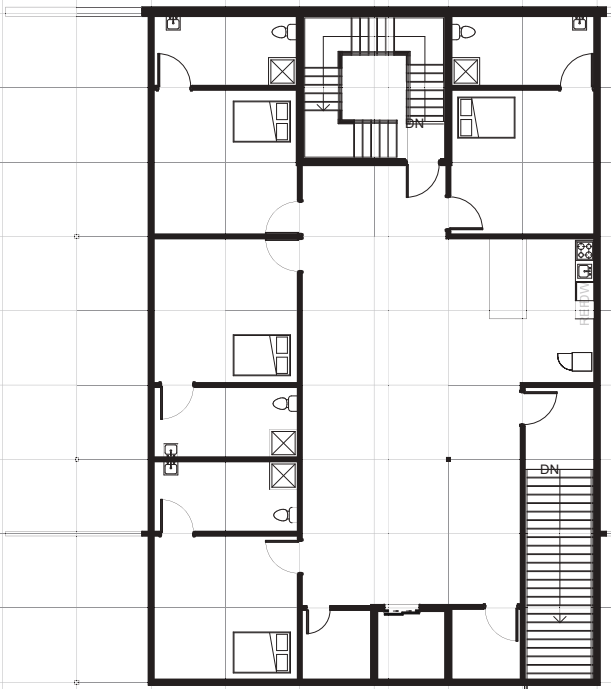
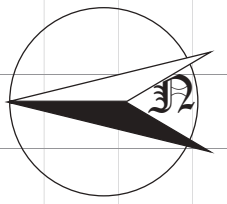
5C

5D

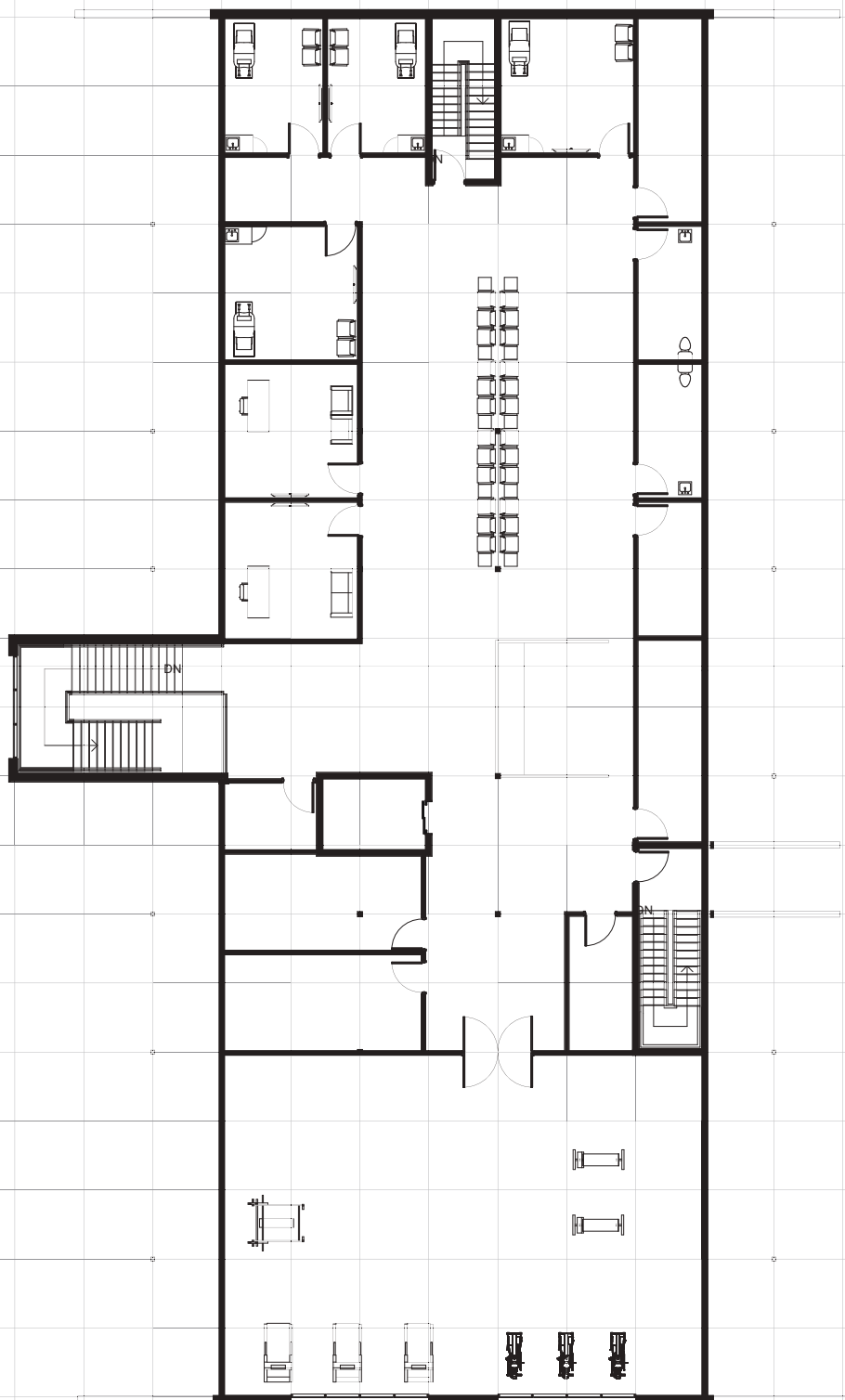
6

6A

6B

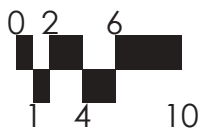


SECOND FLOOR



The Second Floor contains lodging for the visiting doctors in the administration building.

In the Human Clinic, there's a general clinic where the visiting doctors can do their checkups, utilize the physical therapy gym, as well as mental therapy rooms.

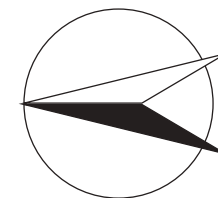
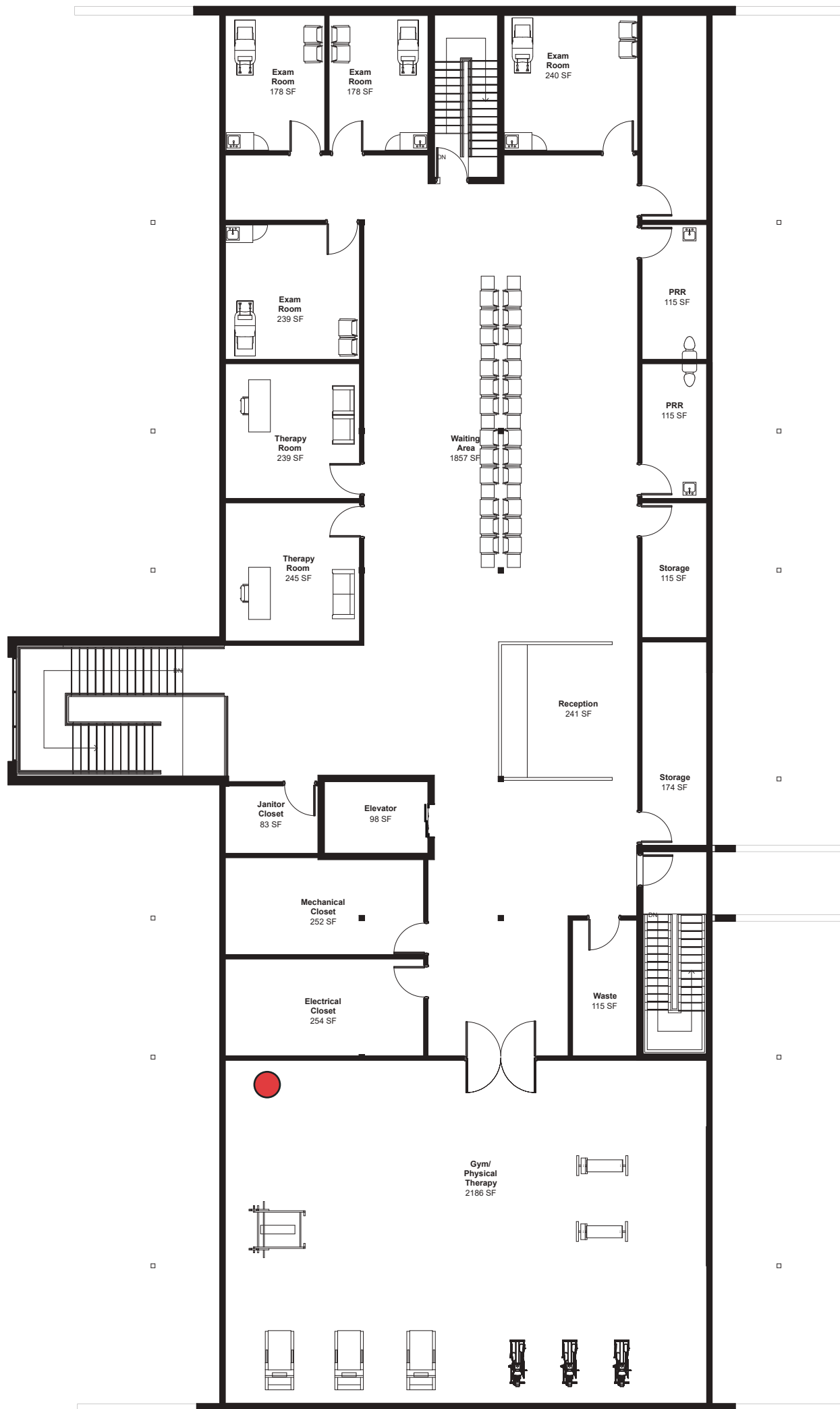
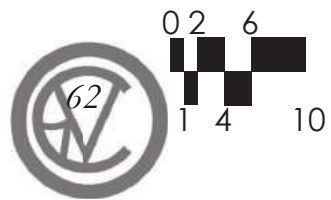


DOCTOR LODGING



In house lodging for the traveling doctors: Gynecologist, Veterinary & Vet. Tech., and Dermatologist.





OUTPATIENT CLINIC

An in house physical therapy gym and mental therapy, were important for people to be able to visit quickly instead of traveling to a larger facility.







R
O
V
E



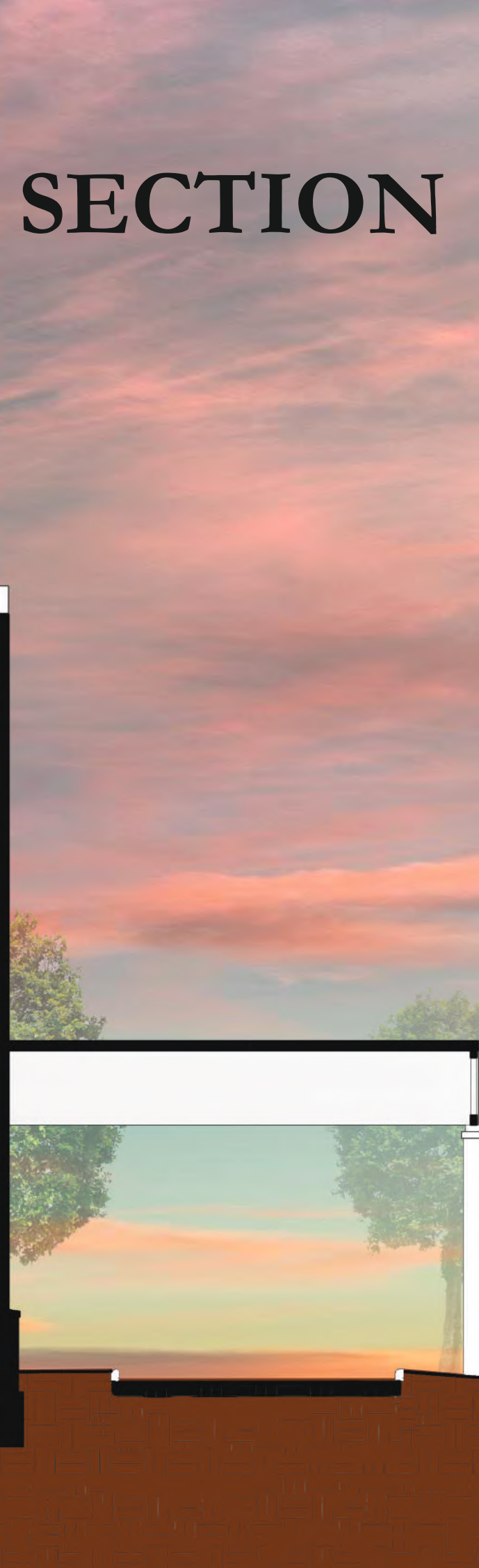
Elevator

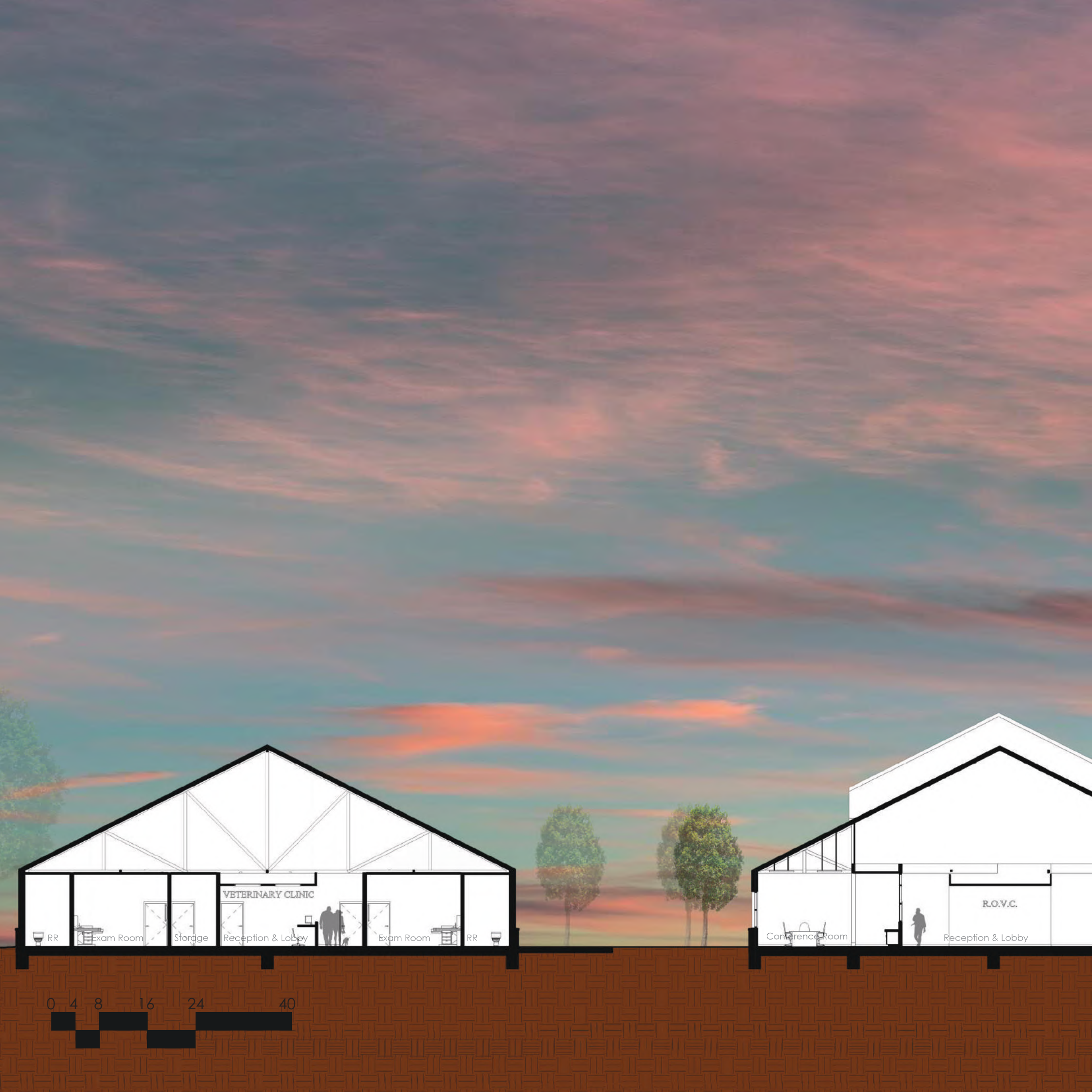
Reception & Lobby

Elevator

0 1 2 4 6 10

ADMINISTRATION SECTION





VETERINARY CLINIC

Reception & Lobby

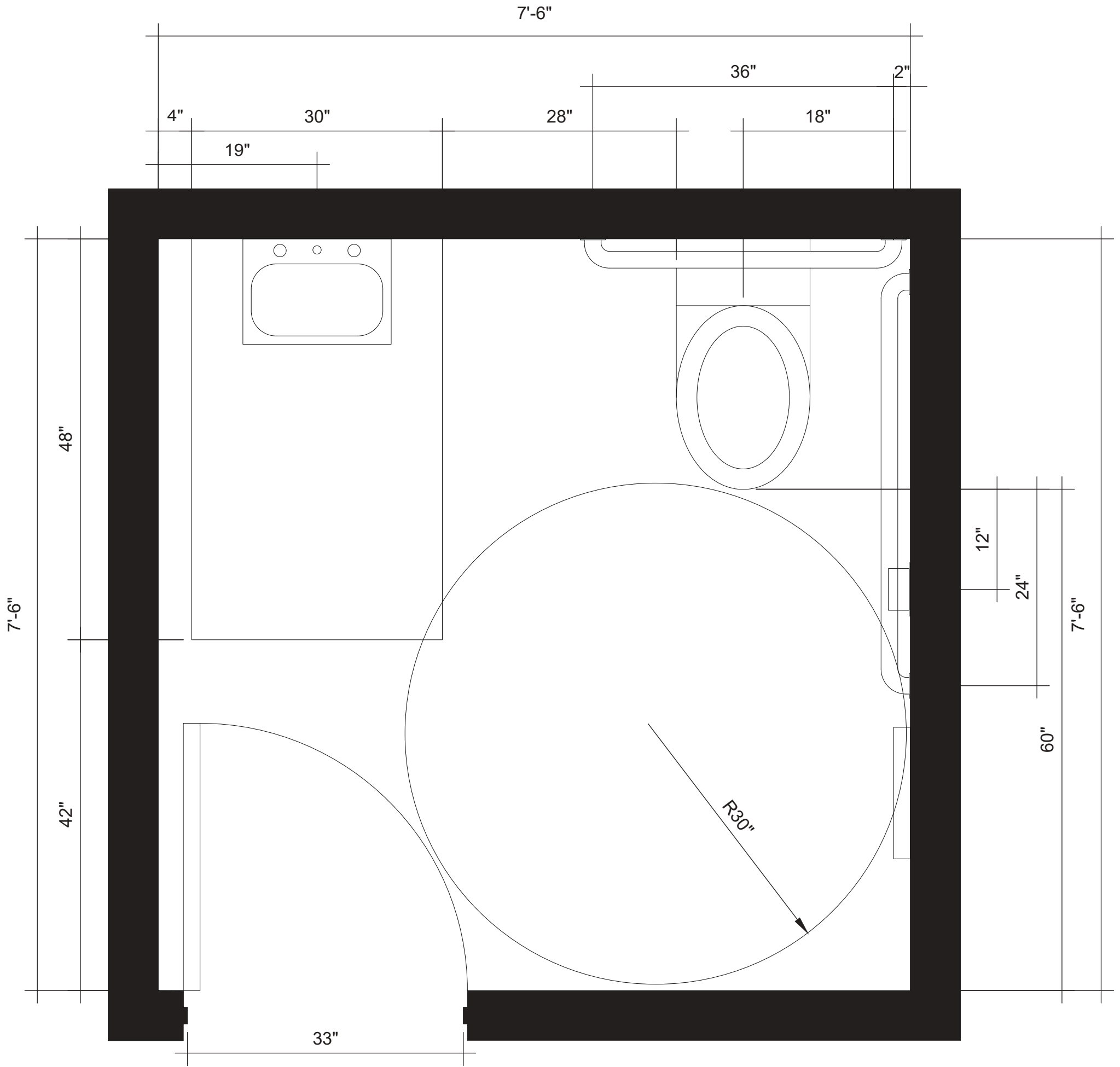
R.O.V.C.

Reception & Lobby

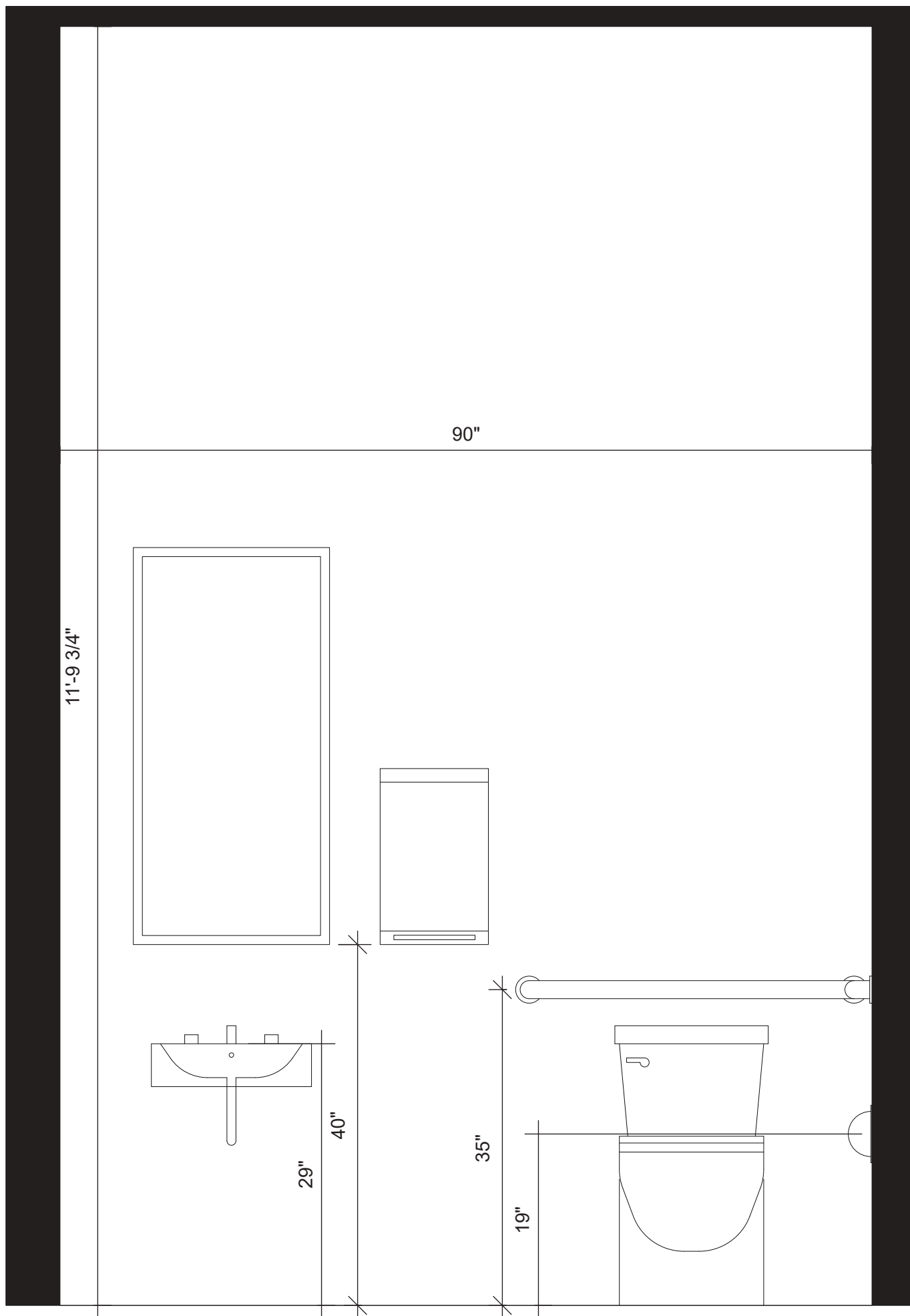
0 4 8 16 24 40

NORTH-SOUTH SECTION



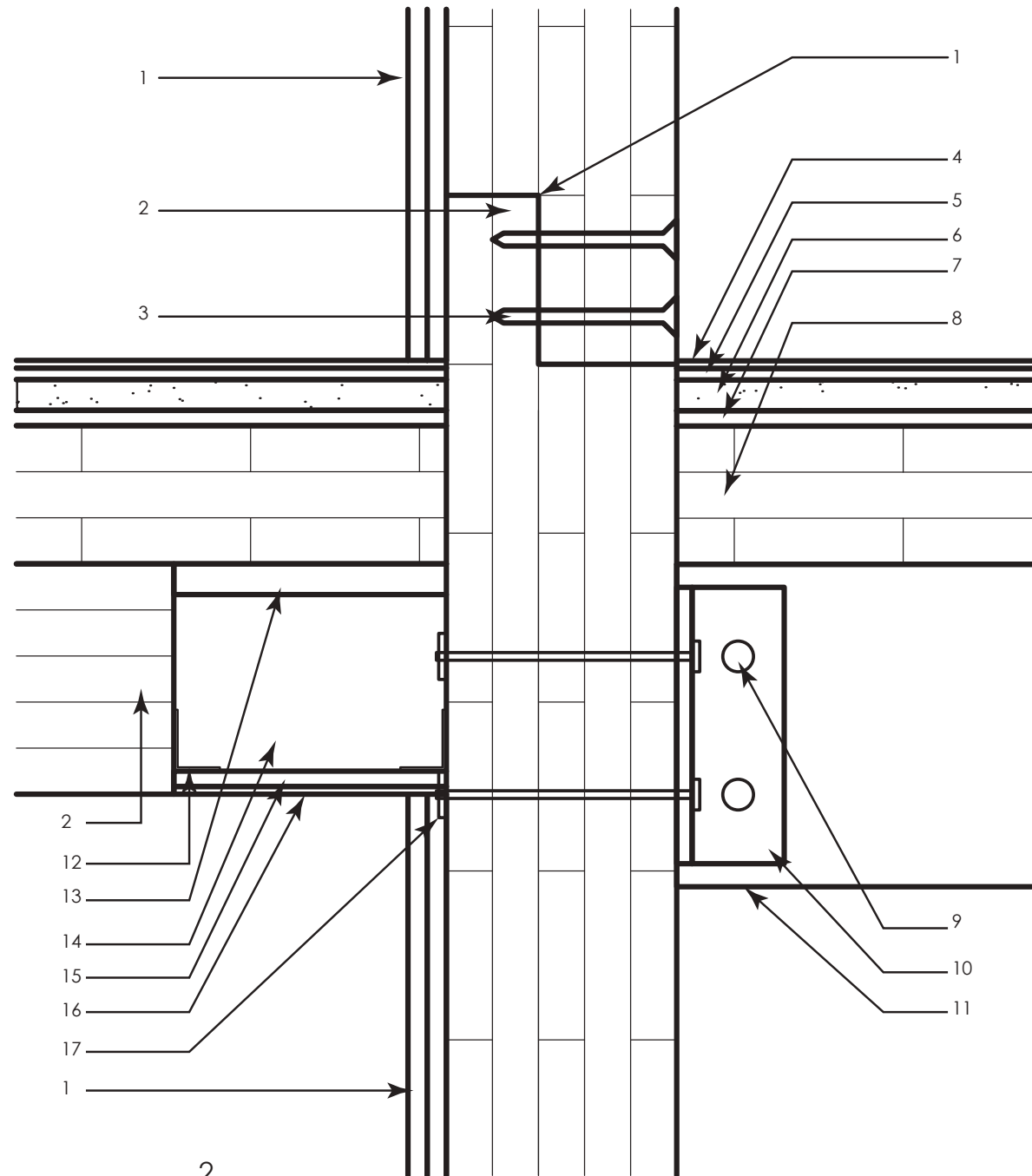


ADA RESTROOM

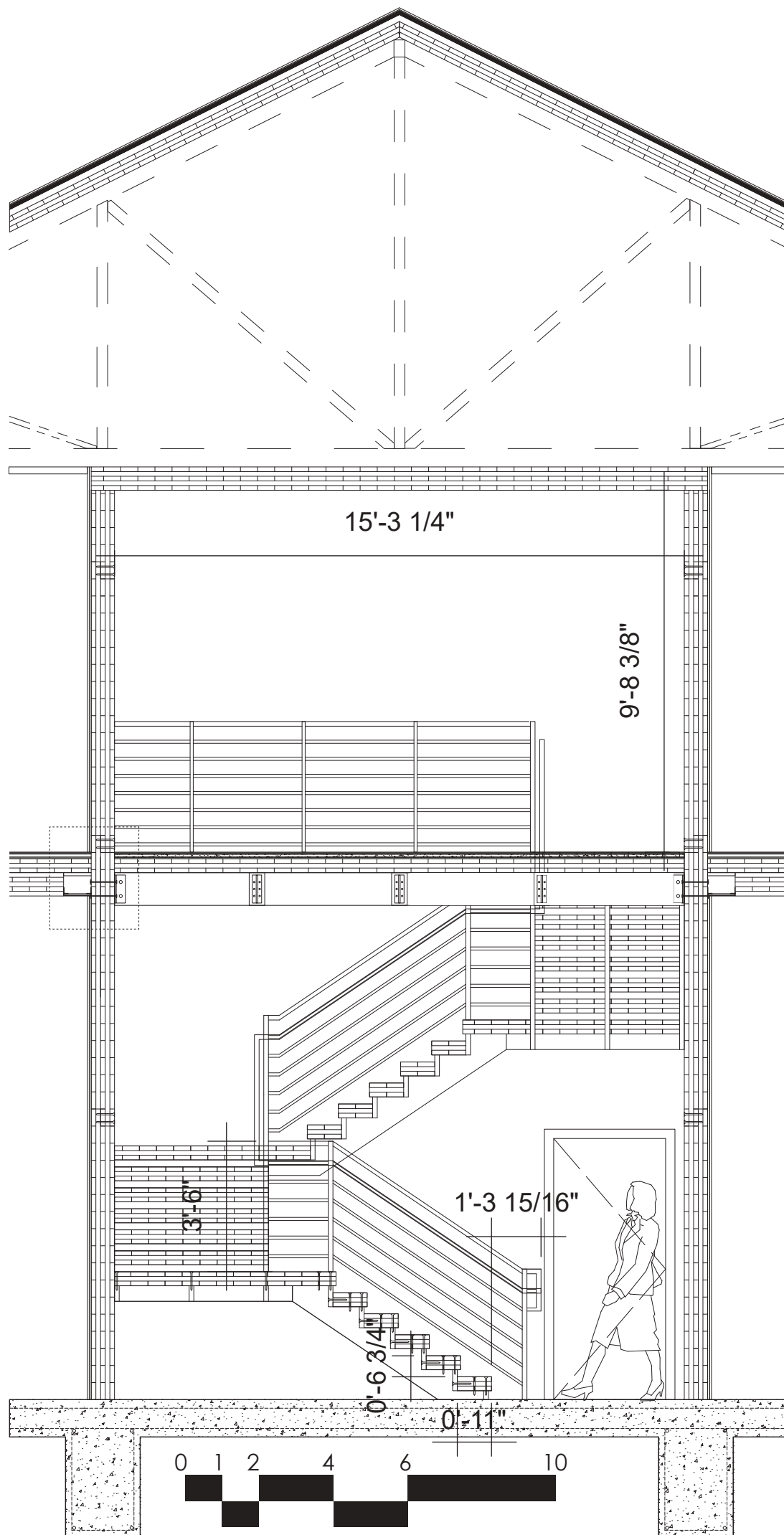


STAIR DETAIL

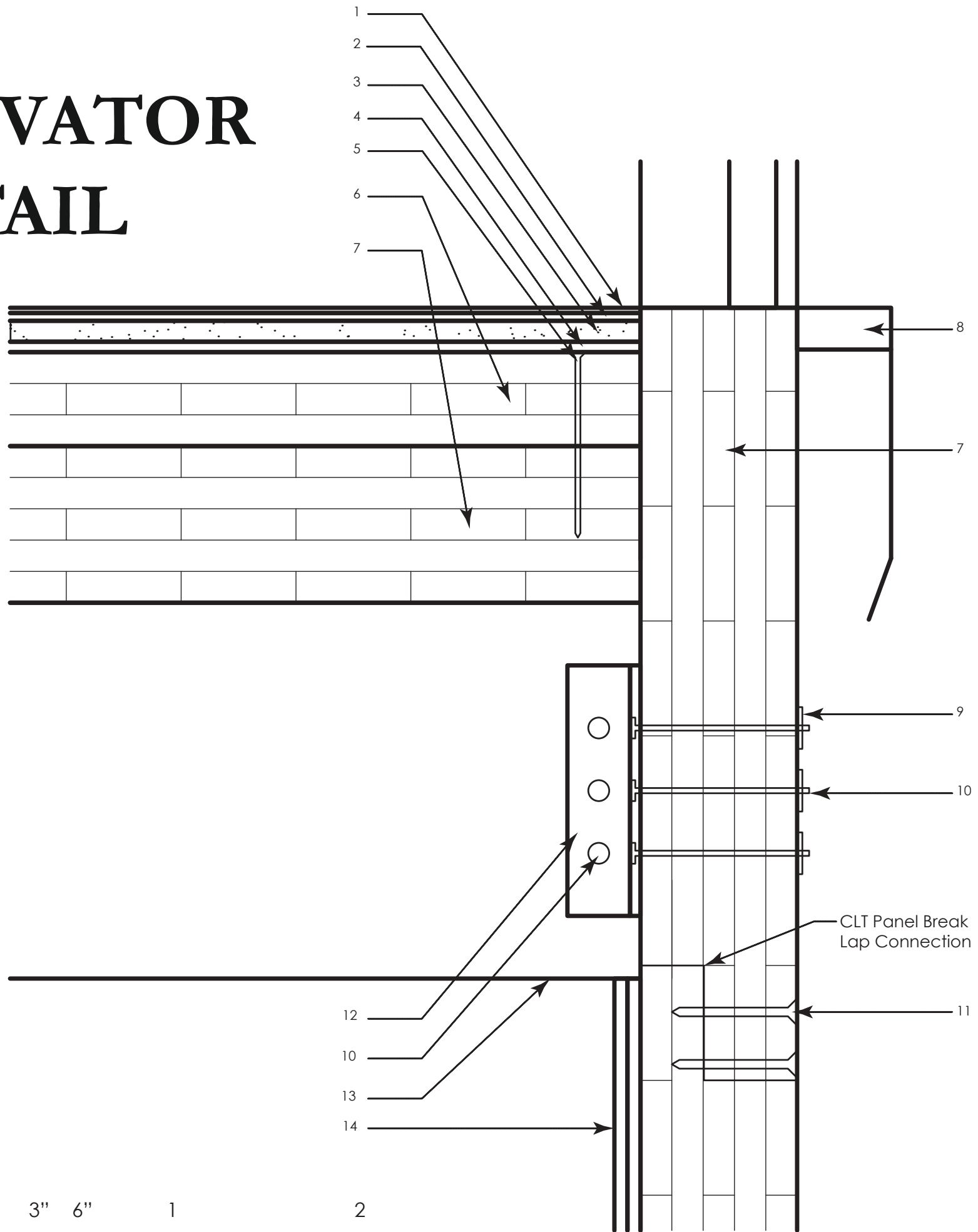
1. 2x5/8" Gypsum
2. 5-ply CLT
3. Self Tapping Screw
4. 1/4" Wood Flooring
5. 1/2" Underlay
6. 1" Concrete Topper
7. 1/2" Acustical Insulation
8. 3-ply CLT
9. Bolt
10. Imbedded Metal Plate
11. 2' Glulam Beam
12. Metal Bracket
13. Insulation
14. Utility Space
15. 1/2" Plywood
16. Wood Finish
17. Nut



STAIR SECTION

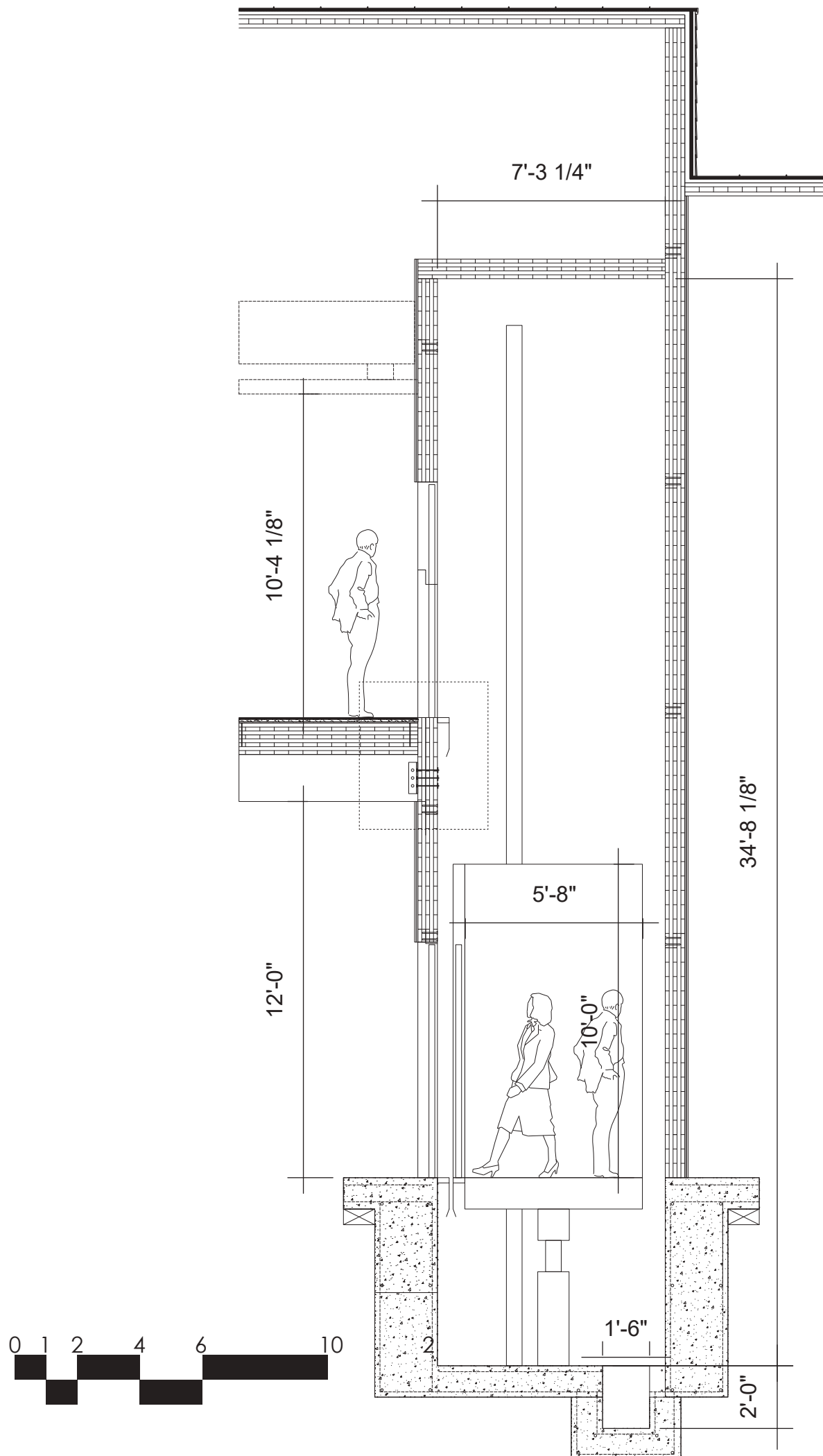


ELEVATOR DETAIL

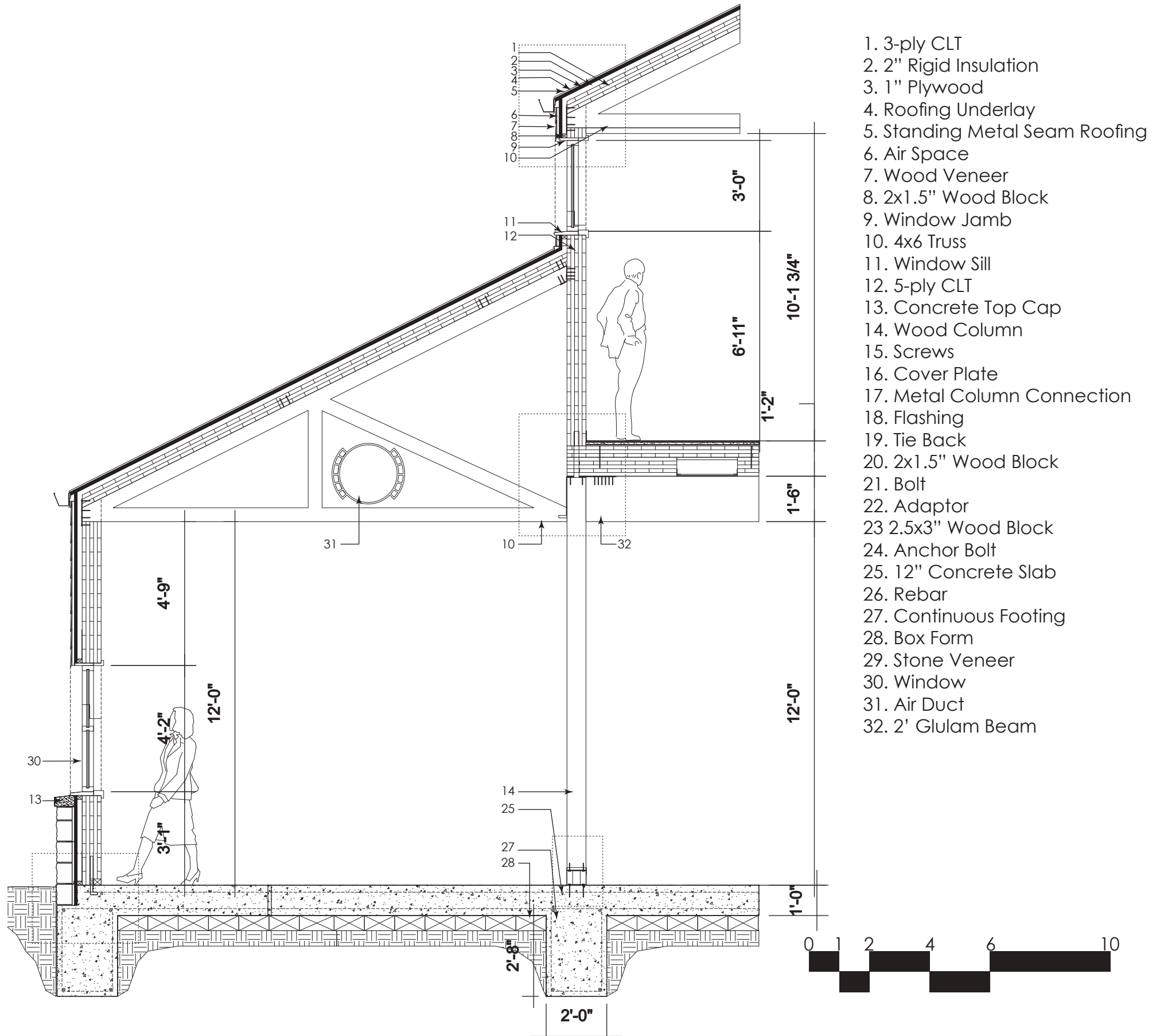


ELEVATOR SECTION

1. 1/4" Wood Flooring
2. 1/2" Underlay
3. 1" Concrete Topper
4. 1/2" Acustical Insulation
5. Self Tapping
6. 3-ply CLT
7. 5-ply CLT
8. Elevator Sill
9. Nut
10. Bolt
11. Self Tapping Screw
12. Imbedded Metal Plate
13. 2' Glulam Beam
14. 2x5/8" Gypsum

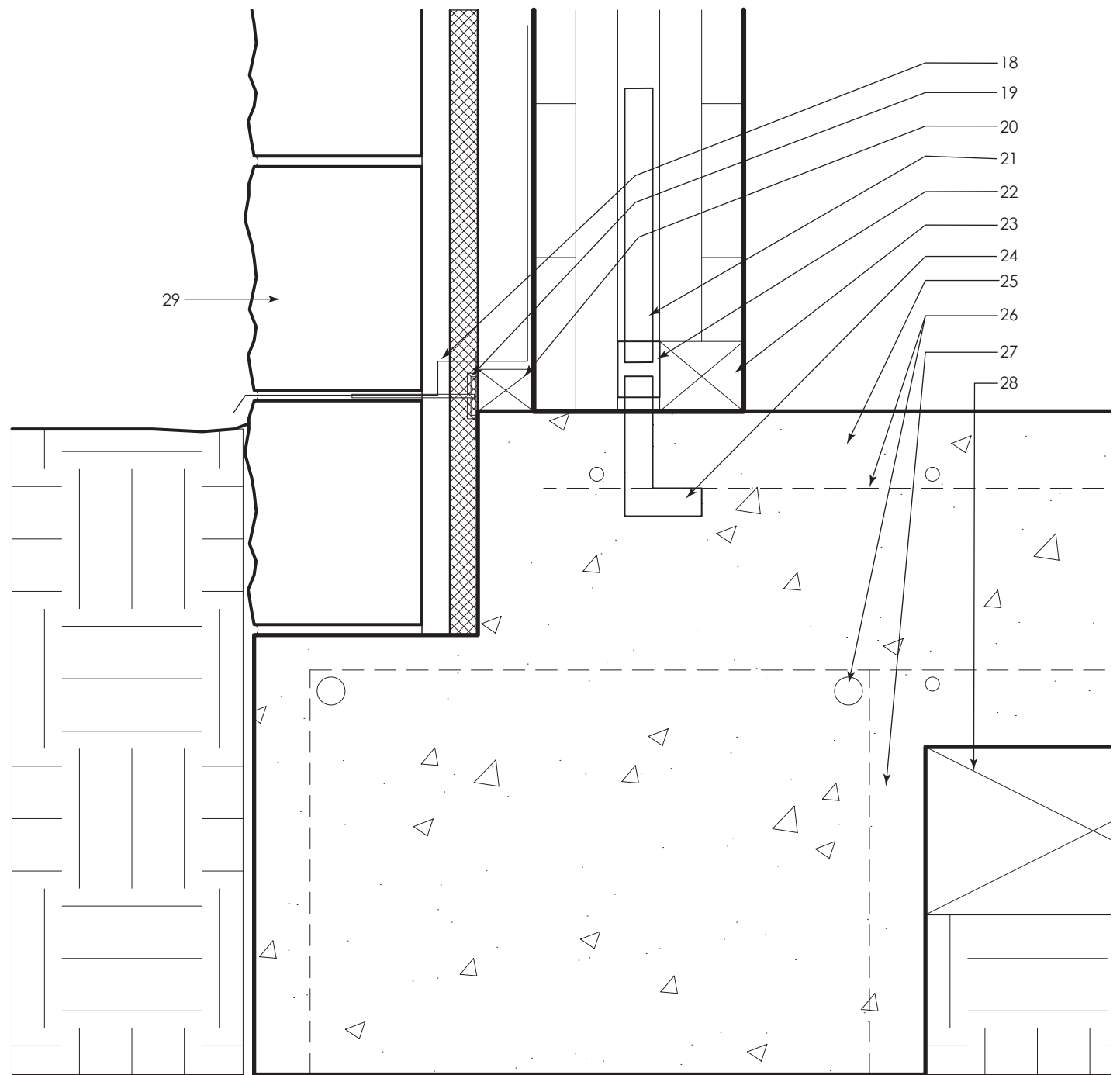
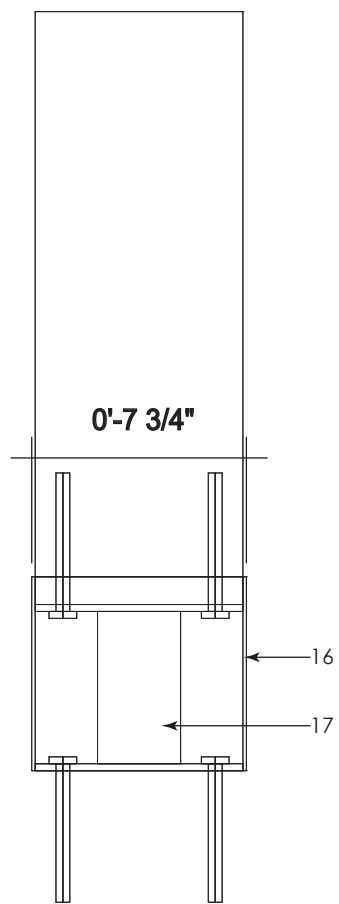
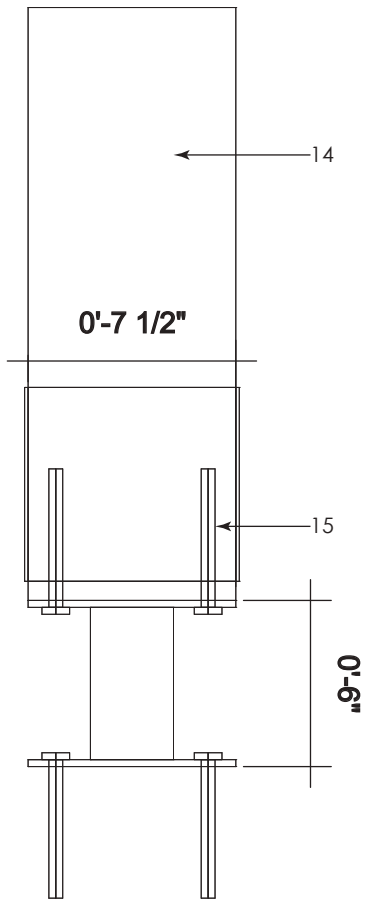


WALL SECTION

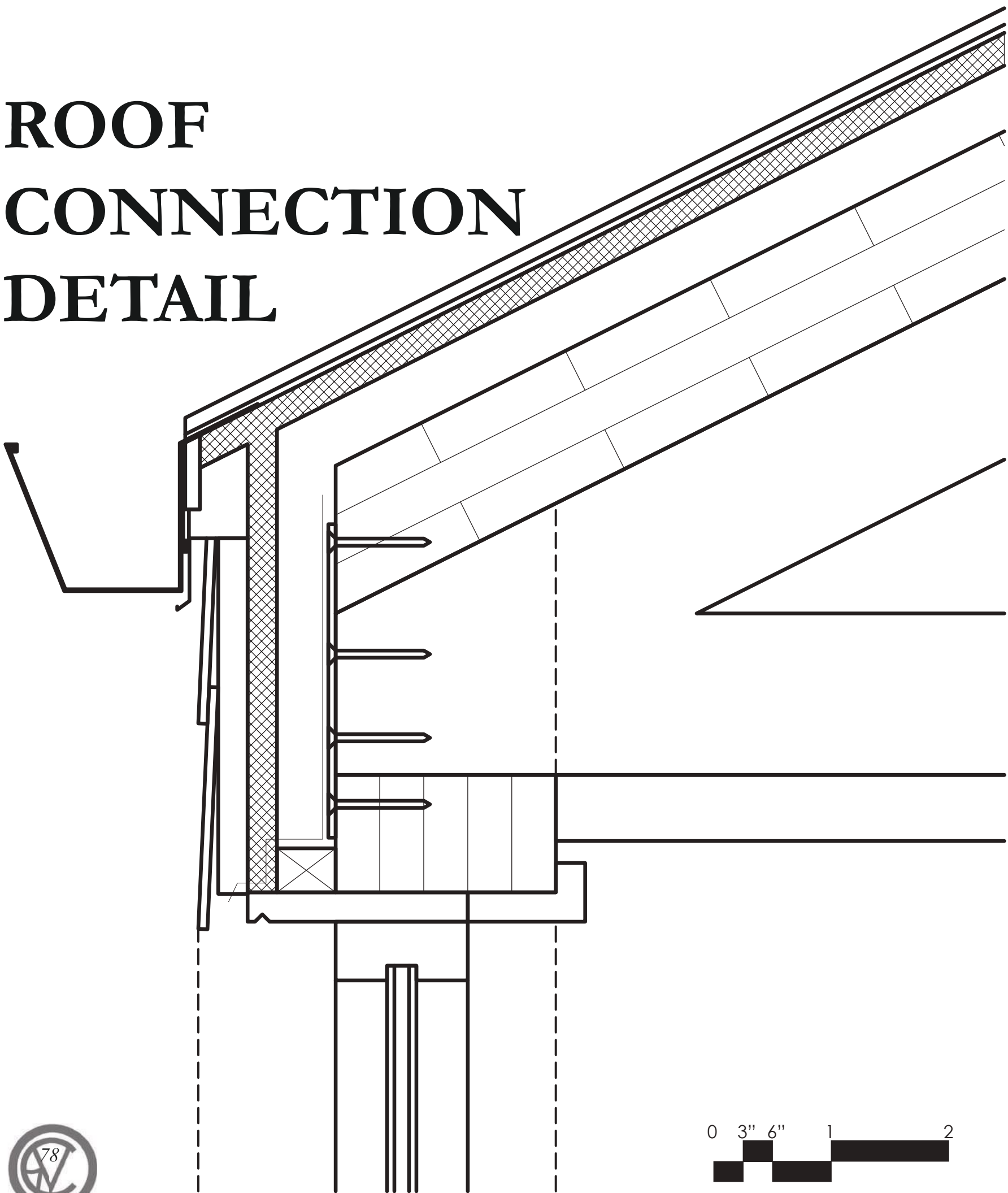


1. 3-ply CLT
2. 2" Rigid Insulation
3. 1" Plywood
4. Roofing Underlay
5. Standing Metal Seam Roofing
6. Air Space
7. Wood Veneer
8. 2x1.5" Wood Block
9. Window Jamb
10. 4x6 Truss
11. Window Sill
12. 5-ply CLT
13. Concrete Top Cap
14. Wood Column
15. Screws
16. Cover Plate
17. Metal Column Connection
18. Flashing
19. Tie Back
20. 2x1.5" Wood Block
21. Bolt
22. Adaptor
23. 2.5x3" Wood Block
24. Anchor Bolt
25. 12" Concrete Slab
26. Rebar
27. Continuous Footing
28. Box Form
29. Stone Veneer
30. Window
31. Air Duct
32. 2' Glulam Beam

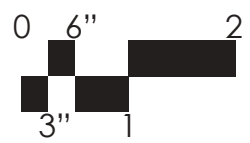
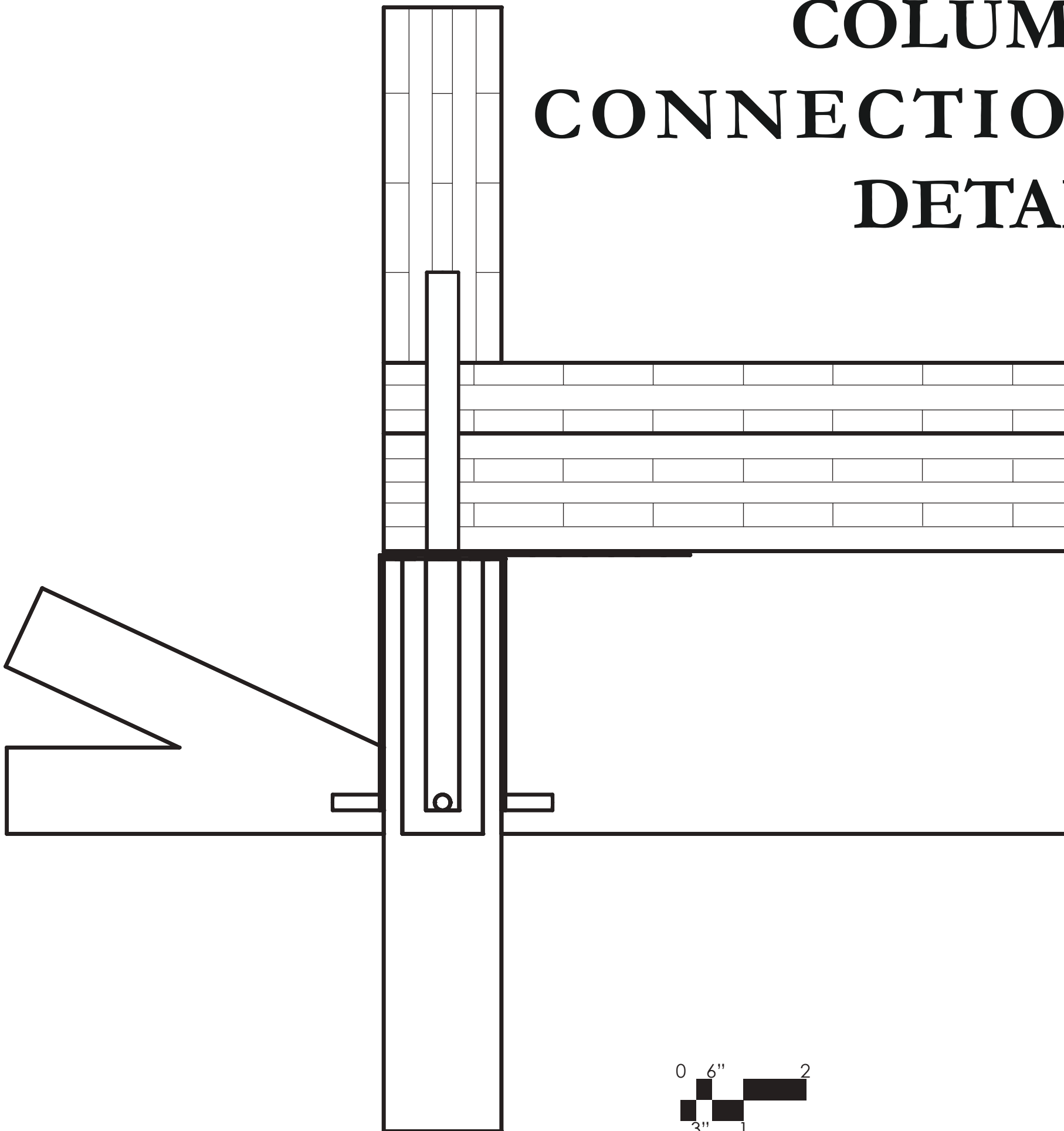
FOUNDATION DETAILS



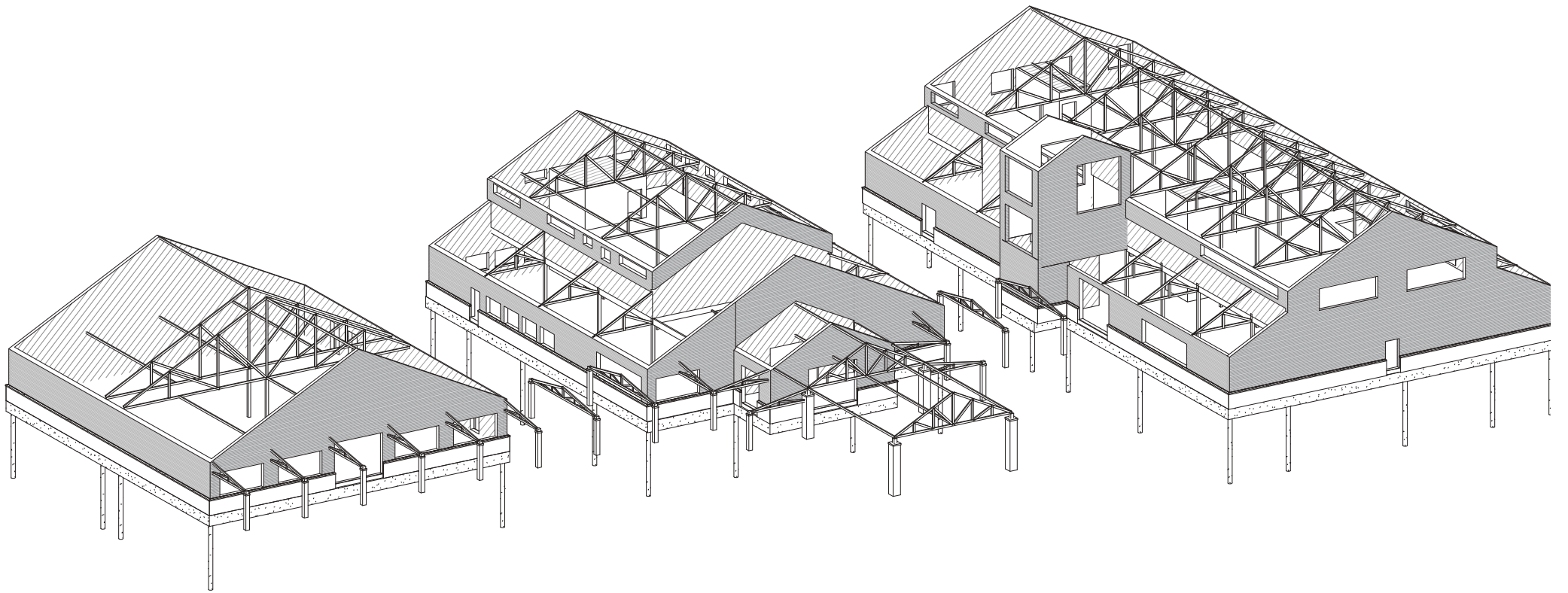
ROOF CONNECTION DETAIL



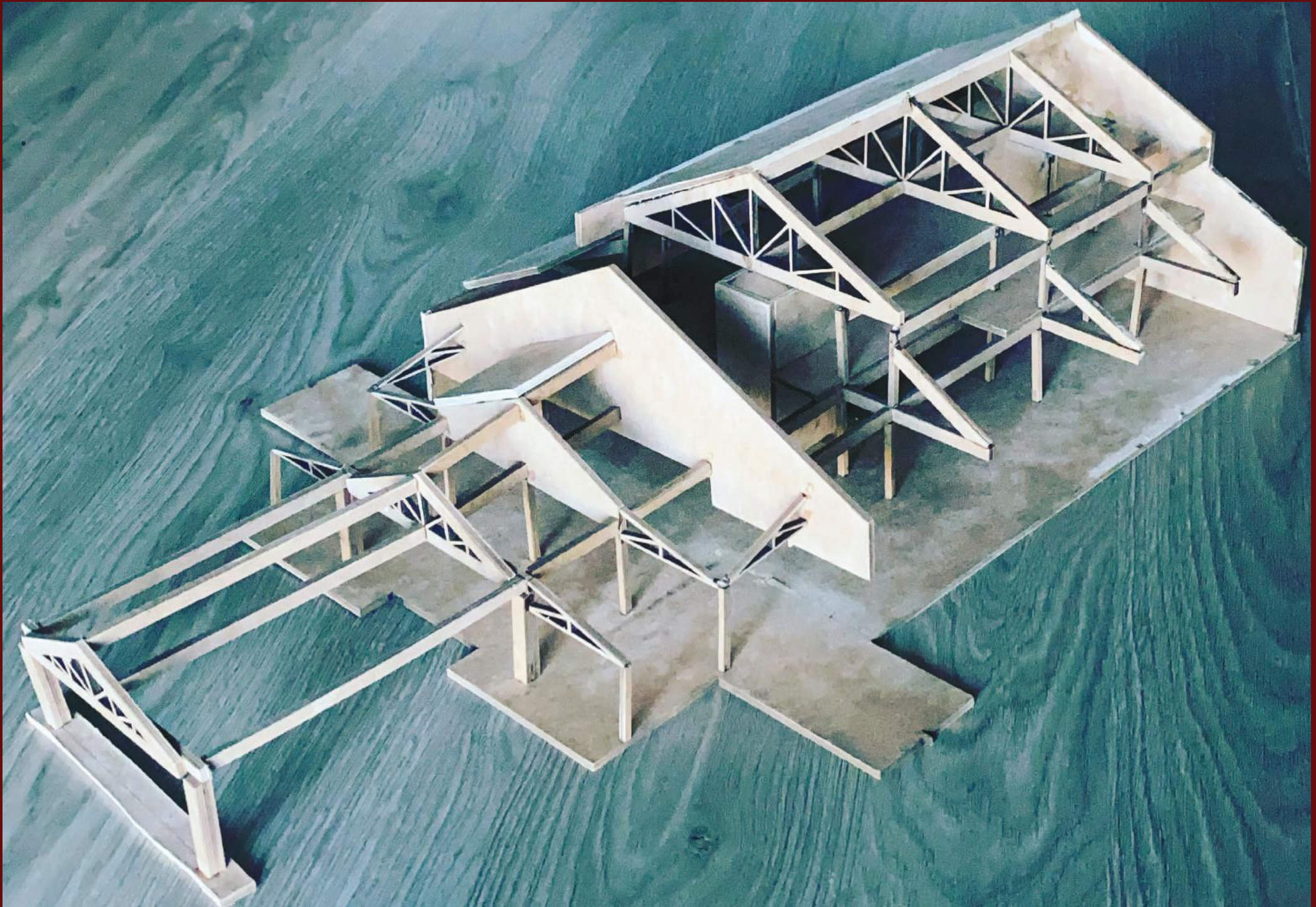
COLUMN CONNECTION DETAIL



3D STRUCTURE



STRUCTURE MODEL









CLOSING

There is a reason why this has been talked about but never done. Mainly, a veterinary and human clinic for sanitary reasons. Different animal phobias and allergens cannot be within the same building or at the least need to have a strong separation with no crossing between the two paths. Administration services could be grouped into one location.

A CLT wall is also great if used for multiple floors, the CLT can double as horizontal load transfer where there would normally be a beam.

The One Health Model can be done with respect to the separation of specific functions. Cross Laminated Timber is great building material for horizontal and load bearing construction.



Hope in the Distance

