



Development Plan for Agri-Business in Anthony Florida

Daniel Dein

December 5th, 2025

Contents:

1	Introduction	2
2	Site Location & Existing Conditions	2
3	Future Town Plans	4
4	Zoning	5
5	Site Location & Existing Conditions	5
6	Cut and Fill	7
7	Architectural Design	8
8	LEED Charrette-Style Development Plan	9
	References	10
	Appendix A – Physical Models	12
	Appendix B – Floor Plans	19
	Appendix C – Architecture Inspiration	20

1 Introduction

For this project, I made a full site plan for a 50-acre “agri-business” new development area in Anthony, Florida. The main idea behind the site is to keep the area’s agricultural roots while adding new uses and developments. There will be short-term housing, outdoor features, trails with workout stations, ponds, small farming areas, and markets. The property will also be able to host things like weddings, summer camps, conferences, while still being a great place to spend the day enjoying all the activities it offers.

The design includes 1/8” = 1’ to scale models of the following buildings/features: a barndominium, a greenhouse / dining space, a horse rink with a 4-stall barn, a one family cottage, a Japanese garden, a yoga tent and boat house. There is also a physical foamboard model of the full site at a scale of 1” = 90’, with laid out areas of where the development will be. This was also modeled in CAD software for precise measurements. I organized the layout based on considerations of the surrounding area. Larger buildings and gathering places were placed further inside of the properties and the less invasive buildings were placed near the properties edge. Public areas like the market and petting zoo are near the road for easy access. I also designed the layout to minimize damage to existing wildlife and forest areas.

This paper goes through the full development of this site, including existing site conditions, a designed architectural style, zoning requirements, environmental considerations, cut-and-fill estimates, and how the overall layout fits within the long-term goals of the owners and the surrounding community. The goal is to show how the site can support both agriculture and new uses without losing the natural feel of the property while perusing a LEED certification.

2 Site Location & Existing Conditions

The property is located in the small town of Anthony, Florida, which has a small population and older community compared to the larger cities nearby. There are about 144 people per square mile, which is about 1/3 of the average in Florida but has been increasing for the past three consecutive years [1]. Most of the area around the site is made up of single-family homes with a few areas of farmland. Overall, the region has a quiet, rural feel with a lack of developed areas. It’s important to understand the surrounding environment so the project can fit the character of the area and blend naturally with the town.

Directly to the West of the site, there is a large cow pasture, and there are about five neighboring homes to the North and East. The existing homes are separated from the plot

by existing trees. The project site itself is partly cleared, with a little more than half of the land already maintained, and the rest made up of wooded areas as shown in Figure 1 below. It is important to keep these wooded untouched as much as possible, especially near the areas closest to the neighboring houses. The wooded area will also act as natural buffers and help maintain privacy, reduces noise, and makes sure the new development fits in. Since the community is used to a mix of fields, trees, and open space, it made sense to keep as much of that feeling as possible.



Figure 1: Existing Plot Terrain

The land is mostly flat with about 15 - 20 feet of elevation change across the whole site, so the slopes won't cause serious run off and won't need major grading (Figure 2 below). This helped guide where certain features could go, like farms and ponds, while still keeping the land's natural shape. The public parts of the project, like the barndominium and greenhouse/dining area where there would be people gathering were placed deeper into the parcel and farther away from nearby homes. This will help avoid causing any disruptions and respect the existing neighborhood. Other design considerations will be discussed in the following sections.

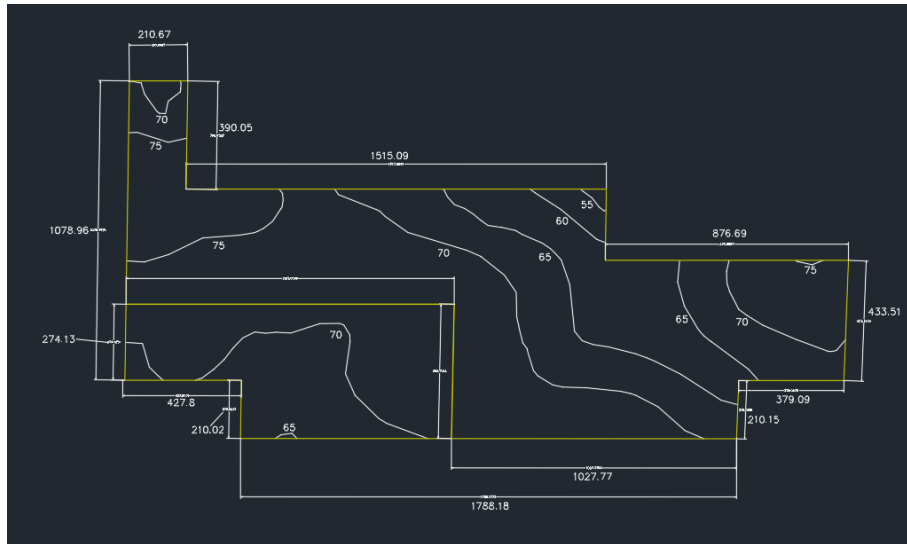


Figure 2: Plot Size and Topography

Understanding the surrounding environment is majorly important when designing a site. Every design choice was made to keep the development respectful of the people living nearby and the natural landscape that already exists. The natural buffers, the layout of the site, and overall feeling of the development will blend extremely well with the town and will be a really great addition. Keeping these things in mind helps the project work well for the investors while still fitting into the community around it.

3 Future Town Plans

The town of Anthony Florida does not have a 10 year growth plan or future goals but the county they are in, Marion County does have an extensive 2040 plan for growth and action. The town hasn't seen much growth in the past decade, less than ten new homes since 2010 [1]. I believe this is a great representation as to why new development should be promoted. Marion County's 2040 Plan had some key factors, focuses on improving quality of life, protecting the environment, and supporting small-scale economic development were all listed as top priorities [2]. This project fits well with those goals because it adds new uses to the land without changing the rural feel of the area. Most of the property stays open and agricultural, and the wooded areas will be mostly untouched.

The plan brings in things the county is trying to promote, such as more recreation, access to nature, and local activity. Trails, ponds, farming areas, petting zoos and event spaces give the property great value to this goal. Even though the site would be rented out for

events, it could still open to the community on certain weekends, offering something new for locals without building anything disruptive.

Overall, the project supports what the county wants for the future, balanced growth that helps the area without harming the environment or overwhelming the town. It brings in new opportunities but keeps the quiet, open character that town is known for.

4 Zoning

The entire property is zoned as A-1 Agricultural, which is meant to keep the land mostly rural while still allowing farming, single-family homes, greenhouses, barns, and other agricultural buildings [3]. This zoning fits well with the area, and it also helped guide a lot of the decisions made in the design, so everything stays within the rules and doesn't require any variances.

One of the biggest zoning requirements is the 25-foot setback on the front, sides, and rear of structures. Keeping the wooded buffers around the neighboring homes also helped naturally meet and even exceed these setback requirements without forcing buildings too close to property lines. The maximum density of A-1 is one dwelling per ten acres, so the barndominium and four cottages are in that limit as the plot is 50 acres. The height limit of 50 feet wasn't an issue either as the tallest building was about 28', which also matches the rural style of the surrounding area.

All the uses planned for the site's buildings are all permitted under A-1 zoning. The more public features such as the market and petting zoo or small events still fit the agricultural and low-impact zoning rules. Overall, the design keeps everything within the zoning rules, avoids the need for variances, and still manages to blend in with the environment and the community around it.

5 Site Design

I started the site layout by connecting the two entrance points and drawing in the roadway. Then, I put in the general locations for the main groups of buildings, but left exact building footprints, parking, flexible so they could be placed where they made the most sense. The design kept a lot of the existing wooded areas untouched, especially along the property edges next to neighboring houses. There was a Wildlife-Management-Area and Tree-Conservation-Area both placed in areas that would give buffers to neighboring properties. More active and noisier buildings were placed further in the parcel. The complete, to-scale site design is shown in Figure 3.



Figure 3: CAD site design

The farmers market and petting zoo are located right near the east entrance, so quick visitors don't have to drive through the whole site. The vineyard, horse-rink, and greenhouse/dining room, for the same reason, are located right at the south entrance so. The cottages, barndominium, and the Japanese garden are farther into the site where overnight guests and renters will be spending more time. The Japanese garden is made up of a 4,600 ft² pond that will hold koi fish and other Japanese style features like mossy rocks and small waterfalls. The garden also has a yoga tent which will hold classes for meditation and outdoor aerobics. This space also holds a boat house where materials for upkeeping will be kept. This space is viewed to be a calm, focus point of the entire site where people from all over can come and enjoy.

Another site aspect that is great for all visitors is the trail loop along the entire parcel which is tucked away from most buildings and roads. The trail has eight exercise nodes and only crosses the site road twice. Both crossings are near the entrances which works well because it allows for speed bumps and pedestrian lights to slow down traffic right at the entrance. This will set vehicles to have a slow speed across the whole site and make it safe for everyone. Each cottage has its own driveway and access to the trail while still being set back enough to keep a private feel from trail walkers. In total, the design has space for 76 parking spots (not including cottage driveways). This provides plenty of capacity for markets, events, and weekend visitors without pushing parking into the local roads.

Other features that are included are, the vineyard and greenhouse/dining room that were placed in areas without any trees so they get sun exposure. This area also has an outdoor

eating area as well as a trail to walk through the garden, horse-rink, and vineyard. The barndominium has a pool and hot tub and is located right next to the cow pasture. The main buildings were spread out so the site never feels crowded and private events can happen without overlapping public activities.

Overall, the layout was designed with thought back to the surrounding area, the A-1 zoning rules, and the county's growth goals. Preserving the tree buffers and placing noisy or public uses away from neighboring homes keeps the design low-impact and respectful of the town. The plan fits the zoning setbacks all while promoting the county's 2040 goals for balanced growth, recreation, and environmental protection. The site gives people places to visit and stay, supports farming and markets, and still protects what the neighborhood's small town feel.

6 Cut and Fill

The site sits on the Central Ridge soils part of Florida. This is made up of mostly well-drained sandy soils, Entisols, Alfisols and Ultisols with loamy subsoils in places [9]. Structurally, this means the sands dig easily, drain well, and make for strong foundations with proper compacting. For farming, the soils are suitable for crops and animal feeding [10]. This will significantly help reduce the amount of material being removed and replaced as the soil that is already suitable for the design.

I placed the buildings in locations that naturally kept the amount of cut and fill as low as possible. Most of the structures sit on the higher, flatter parts of the site, which not only helps protect them from natural flooding but also reduces how much grading is needed. I used the same idea for the farm and vineyard areas. They were placed in spots where water wouldn't naturally pool, so there would be less chance of puddling and less need to bring in extra soil. The lowest and steepest parts of the property were left as the wildlife management and tree conservation zone, which meant I didn't have to do any reshaping. All of these choices helped keep earthwork minimal and allowed the design to work with the natural terrain instead of fighting against it.

To estimate the cut and fill, I kept the calculations simple and based them on the main areas that would need to import or remove soil. The building pads, the pond, the paved parking, roads, and the walking trail are the areas I calculated. The goal is to reuse the soil that is removed in areas that need importing to minimize the soil costs. I treated the pond, parking, roads, and trail as material removed from those areas when grading. On the other

hand, I treated the building pads where we need level, compacted pads, as material to be placed and compacted [11].

Calculations:

1. Pond excavation (Cut)
 - a. Total volume = $4,600 \text{ ft}^2 \times 3 \text{ ft} = 13,800 \text{ ft}^3$
2. Parking (Cut)
 - a. Total volume = $22,800 \text{ ft}^2 \times 0.5 \text{ ft} = 11,400 \text{ ft}^3$
3. Roads (Cut)
 - a. Total volume = $72,000 \text{ ft}^2 \times 0.5 \text{ ft} = 36,000 \text{ ft}^3$
4. Building pads (Fill)
 - a. Total volume = $26,700 \text{ ft}^2 \times 0.5 \text{ ft} = 13,350 \text{ ft}^3$
5. Trail (Fill)
 - a. Total Volume (ft^3) = $57,100 \text{ ft}^2 \times 0.25 \text{ ft} = 14,275 \text{ ft}^3$

Results:

- Total cut : $61,200 \text{ ft}^3$
- Total fill required: $27,625 \text{ ft}^3$
- Net (cut – fill) = $61,200 - 27,625 = 33,575 \text{ ft}^3$

Based on these calculations, the site ends up with about 33,575 cubic feet of excess soil. This fits what I expected from the design, since most of the buildings and features were placed on higher ground and there isn't much need for importing soil to low spots. There is much more cut area as there is a pond, and the parking and roads need to be graded. The only areas that need to be filled are building pads which are relatively small. The extra material can be reused on site to fill areas, add small landscape berms, trail shoulders, or other filling areas that did not come up on the topographic map. The rest that is not needed, will need to be taken off site but the amount is manageable especially for a site this large. Overall, planning your design based on cut and fill operations make projects much more efficient and avoids unnecessary earthwork.

7 Architectural Design

The main inspiration for the architectural style came from a video the developer shared that showed a modern home with a clean white exterior, black highlights, and large windows. All physical models can be found in Appendix A and the inspiration buildings can be found in Appendix B. I used the developer's style as the starting point for the cottages. The cottages

are small, one-story home with two bedrooms, two bathrooms, and a kitchen. The design has a large front entrance with black-framed windows around all sides of the building to bring in natural light. There is also a back entrance that leads directly to the walking trail behind all the cottages. The exterior has white walls with dark wood accents and black trim around the windows. The walkway has concrete pads with gravel filling the spaces in between. The cottage feels simple, modern, and clean without taking away from the surrounding area.

The 4-stall barn follows that same modern-rural feel. I found inspiration from a barn in Scottsville, Virginia, where newer buildings mix modern with traditional farm buildings. This town had many similarities with the town of Anthony such as a more rural, farming environment [6]. The barn uses white wood paneling with black accents around the windows and pillars, which also ties it back to the cottage style. It still holds the values of the surrounding area while giving a more modern look to match what the county is pushing for in new projects.

The greenhouse and dining room area came from a mix of ideas. I wanted a welcoming entrance and a layout that gave guests different places to eat, both inside and outside. The outdoor dining space would be fenced in and has large sliding doors that can stay open on nice days but close when the weather is bad. This area is next to the gardens and vineyard, which would make eating there a fun experience. The greenhouse section is mostly glass, similar to a true greenhouse, with space for plants to grow while still allowing tables and seating inside. The main building includes a full kitchen to prepare and serve food. This space works both as a dining area and as a greenhouse.

All of these buildings follow the same general style, so the site feels connected. The white exteriors, black-framed windows, dark wood accents, and modern lines make the architecture feel new without taking away from the rural feel around the site. The mix of modern architecture and rural elements makes the site feel updated but still respectful of the existing community and landscape.

8 LEED Charrette-Style Development Plan

Wrapping up this project I wanted to look at the site through a LEED Charrette-Style and think about how the development could be more efficient, environmentally friendly, and community focused. Many of the choices I made, such as protecting wooded areas, keeping buildings away from neighbors, and spreading out different site builds, already support sustainable and low-impact development. However, there are some additions that can significantly help the surrounding community.

One of the biggest LEED-style ideas in this design is protecting the landscape. Most of the existing tree buffers were kept the same, and the lowest areas of the site were left untouched as a wildlife and conservation zone. This protects habitat and animals, and keeps the rural feel of the area. The site is also very walkable which is a LEED standard. The full loop trail lets people get around almost the whole property without driving, and can be used by community members and guests. Cars are still allowed, but the layout allows people to walk through the site.

There are also many ways to be more efficient with water and energy. The project could use drip irrigation for the garden and vineyard, and rainwater collection systems on all the buildings, especially the greenhouse/dinning room as it is next to the farms. Buildings could use efficient lighting and solar panels to cut back on energy uses. The farm can be used to produce fresh greens for the dining area which is another LEED-inspired idea.

Another big part of the plan is also the community's use. The farmers market, petting zoo, vineyard, trails, and Japanese garden all give people a ton of ways to enjoy the property. It supports local food, outdoor exercise, small events, and educational opportunities. Local colleges could also use the site for field trips, environmental studies, agriculture lessons, and recreation or wellness programs. This can give students hands-on learning experiences outside the classroom. This site protects what's already there, uses the land efficiently, and creates a healthy, enjoyable space for both guests and the surrounding community.

Overall, the development works well with the natural environment, keeps the rural feel, and still reaches the developers' goals. This LEED-style approach shows that the project can be sustainable, community-friendly, and respectful of the land while still offering a lot of new opportunities for the town.

References

[1]

"Stats and Demographics for the 32617 ZIP Code," *United States Zip Codes*, 2025.
<https://www.unitedstateszipcodes.org/32617/>

[2]

"Marion County 2040 Plan," *Marion County 2040 Plan*, 2024.
<https://marioncounty2040plan.com/> (accessed Nov. 26, 2025).

[3]

“Municode Library,” *Municode.com*, 2025.

https://library.municode.com/fl/marion_county/codes/land_development_code?nodeId=L_ADECO_ART4ZO_DIV2ZOCL_S4.2.3GEAGZOCL (accessed Nov. 26, 2025).

[4]

marlena, “How Japanese Pond Design Transformed Modern Water Gardens - Clear Waters,” *Clear Waters*, Aug. 03, 2025. <https://clearpond.com.au/artistic-pond-landscaping/how-japanese-pond-design-transformed-modern-water-gardens/> (accessed Nov. 29, 2025).

[5]

“36x48x10 4-Stall Barn in Scottsville, VA (ESB21125) - Superior Buildings,” *Superiorbuildings.net*, 2024. <https://www.superiorbuildings.net/job/36x48x10-horse-barn-in-scottsville-va-esb21125> (accessed Nov. 30, 2025).

[6]

“Town of Scottsville | Visit Charlottesville,” *Visit Charlottesville*, 2025. <https://www.visitcharlottesville.org/directory/town-of-scottsville/> (accessed Nov. 30, 2025).

[7]

“Greenhouse Dining Room ideas | greenhouse, garden room, outdoor rooms,” *Pinterest*, Mar. 26, 2013. <https://www.pinterest.com/mtgardens/greenhouse-dining-room/> (accessed Nov. 30, 2025).

[8]

“The Best Modern Cottage Plan Collection (2025) by Advanced House Plans,” *Advanced House Plans*, 2025. <https://advancedhouseplans.com/collections/modern-cottage-house-plans> (accessed Nov. 30, 2025).

[9]

UF Soil and Water Sciences Department, “General Soils Map of Florida - Soil and Water Sciences Department - University of Florida, Institute of Food and Agricultural Sciences - UF/IFAS,” *Ufl.edu*, 2019. <https://soils.ifas.ufl.edu/extension/soil-and-water-resources/general-soils-map-of-florida/>

[10]

“Guidance for Determining the Acceptability of Environmental Fate Studies Conducted with Foreign Soils | US EPA,” *US EPA*, Aug. 13, 2015. <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-determining-acceptability-environmental#fig4> (accessed Nov. 30, 2025).

[11]

TOPS Marketing, “Take-Off Professionals,” *TOPS*, May 19, 2020. <https://www.takeoffpros.com/blog/guide-to-cut-and-fill-maps/>

Appendix A – Physical Models



Site Design



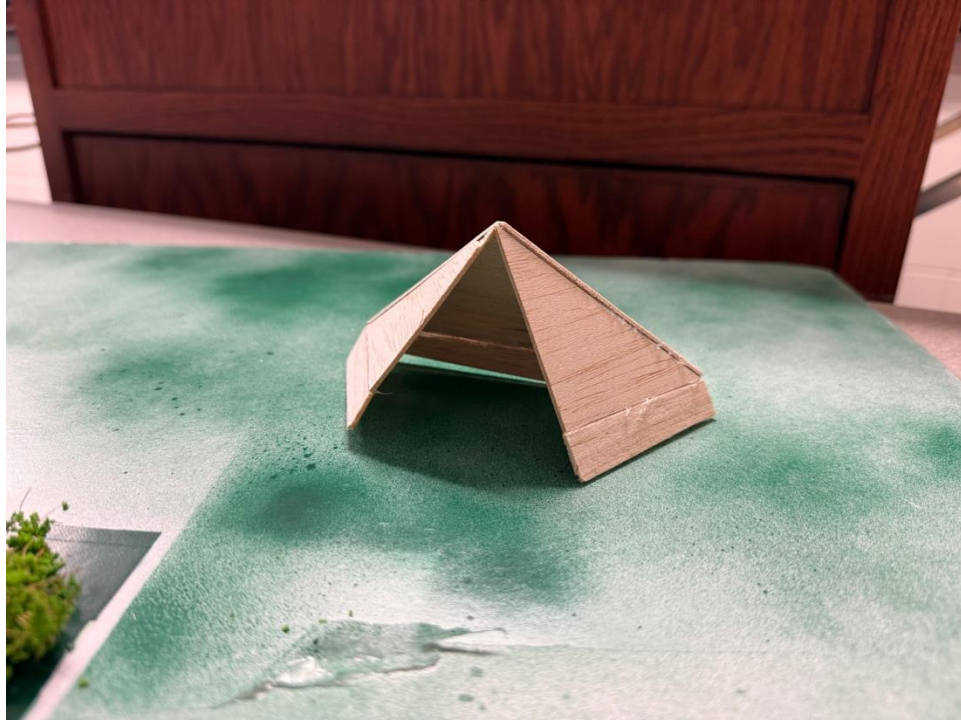
Site Design



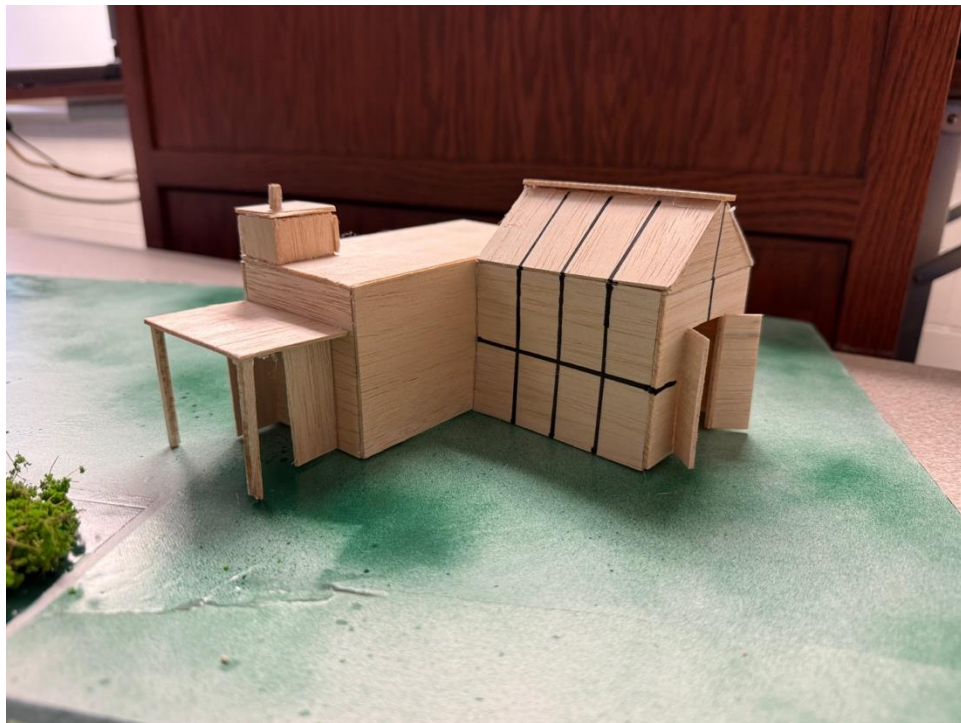
Site Design



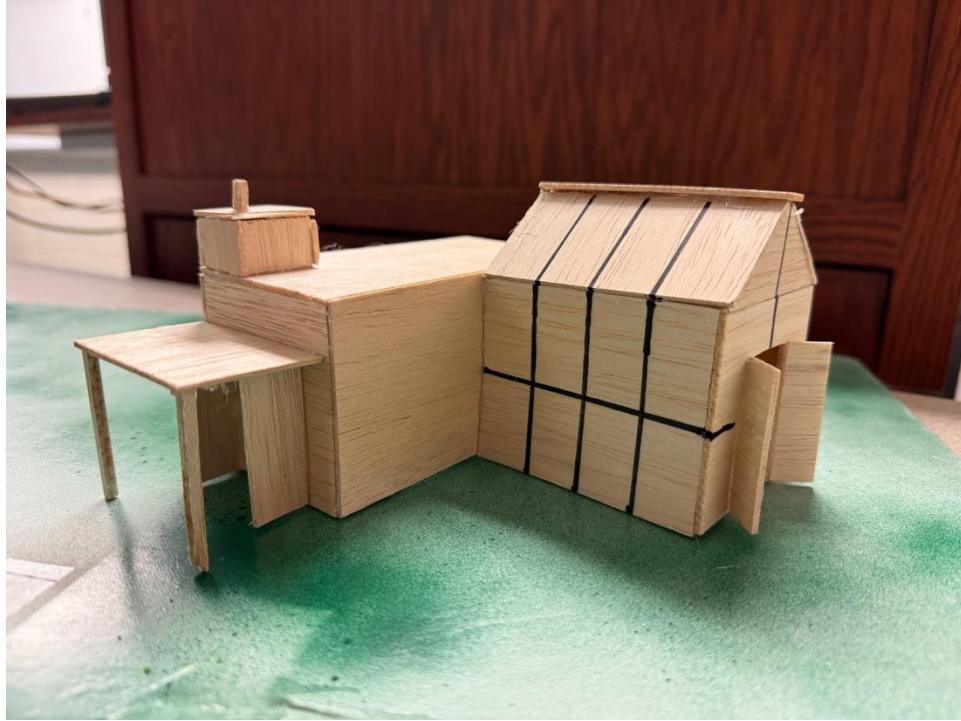
Barndominuim



Yoga Tent Near Japanese Garden



Greenhouse/Dinning Room



Greenhouse/Dinning Room



Greenhouse/Dinning Room



Barndominuim



Barndominuim



4-Stall Horse Barn

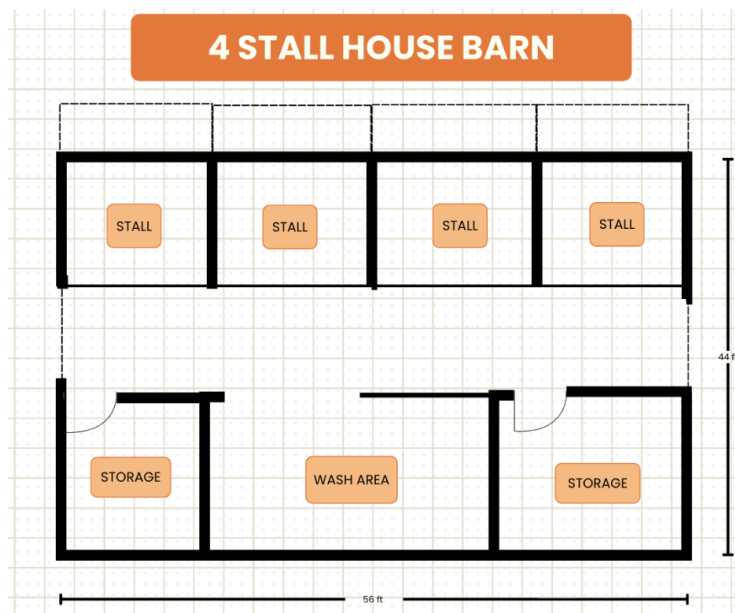


4-Stall Horse Barn

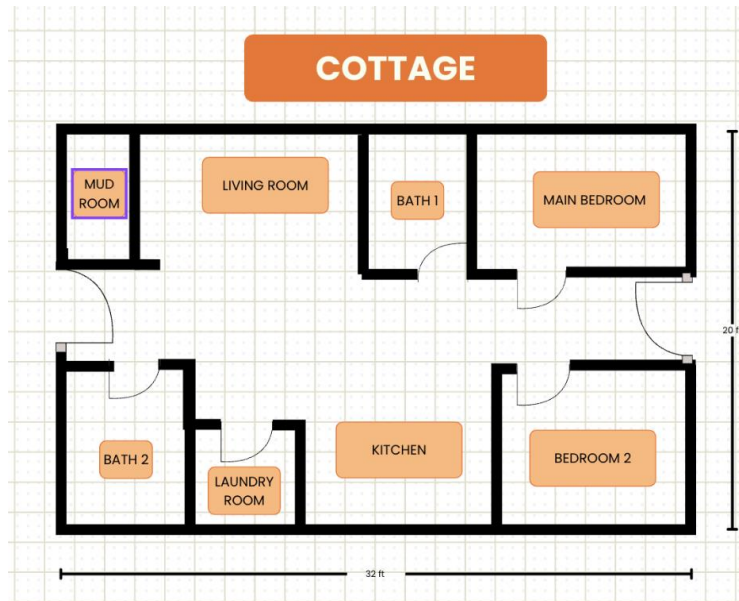


Cottage

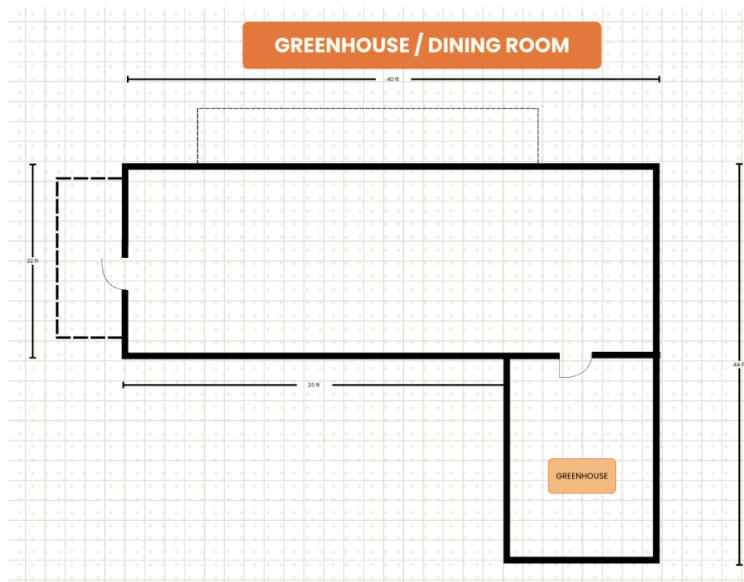
Appendix B – Floor Plans



4 Stall Barn Floor Plans



Cottage Floor Plans



Greenhouse/Dining Room Floor Plans

Appendix C – Architecture Inspiration



Four Stall Horse Barn [5].



Greenhouse/dinning room area [7].



Simple, modern cottage [8].