

2.3.0 Affordable Housing Design:

Designer: Aaron L Aviles

Clients: Justin Nicolas, Luis Reyes

1/12/22

Period:3

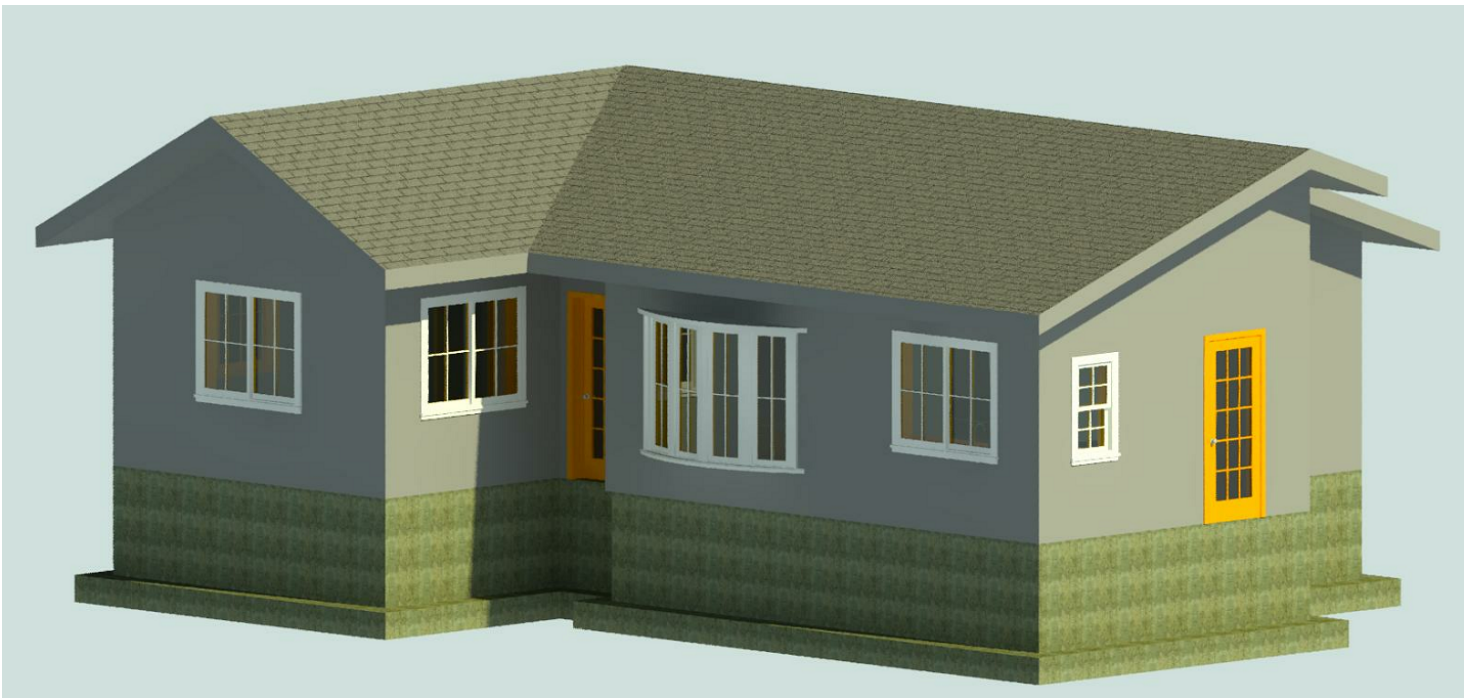


Table of Contents:

Introduction.....	2
Client Overview.....	4
Bubble Diagrams.....	5
Rough Floor Plan Sketches.....	6
Site Opportunities Map.....	8
Construction Documents.....	9
Summary.....	18

Introduction

This project of designing an Affordable housing project is located in Noblesville, Indiana, a small quiet and residential neighborhood. Although this particular lot is located at the corner of 10th street and Maple street right next to the Noblesville Planning Department. Other than that the property appears to be on a slightly busy street which produces noise pollution from traffic. The orientation of the property would be most desirable if it were facing North to take the full advantage of the Natural Light that comes from the South, but in front of the North facing side of the property is the Noblesville Planning department.

The weather of Noblesville Indiana is full. For the extra highs during the summer it may reach up to degrees of 94 fahrenheit and during the winter a low of -8 during the winter. The winds in this region will be coming from the west from December to February, then will change directions and come from the south from March to May and finally switch to coming from the south west from June to November.

Our clients Tanner Cahas and Dwight Cahas, new young parents raising a child of 5 years of age desired a house with ample space to play and have quality family time along with a large kitchen space to cook. Mr. Cahas and Mr. Cahas gave the designer a lot of creative freedom. At first they had wanted a larger house of 1070square ft and 2 bathrooms but we settled on a smaller house of 900 square feet an 2 bedrooms to maximize space for the kitchen, dining room and living room to accommodate this new thriving family.

Habitat for Humanity the Non-profit organization which allows for this construction has a handful of import guidelines which were the backbone for the design. For a house of 900 square feet the house may not exceed 2 bedrooms and 1 bathroom. For a house of 1070 square feet the house may not exceed 3 bedrooms and one and one-half bathrooms. For a house of 1230 square feet 4 bedroom. In addition to that a crawl space foundation of 4feet at a minimum. A house may not include things such as a basement, garage, or car port unless required by code.

Residential Codes included that the ceiling may be no lower than 7 feet unless in an addict space, and that at least 1 room must be 120 square feet of living space and the no habitable room smaller than 70 square feet. And no room may be less than 7 feet unless it is the kitchen.

Every Sleeping room should have an emergency exit space of 24 inches height and 20 inches width.

To have a green and sustainable project we oriented most of the most windows on the east and west side, but unfortunately had to sacrifice the south facing area of the wall to orient the building away from the Planning department. The goal of this project is to make a home that displays a sense of dignity and space to its owners.

DESIGNER: Aaron Aviles

CLIENT: Justin H. Nicolas and Luis Rea

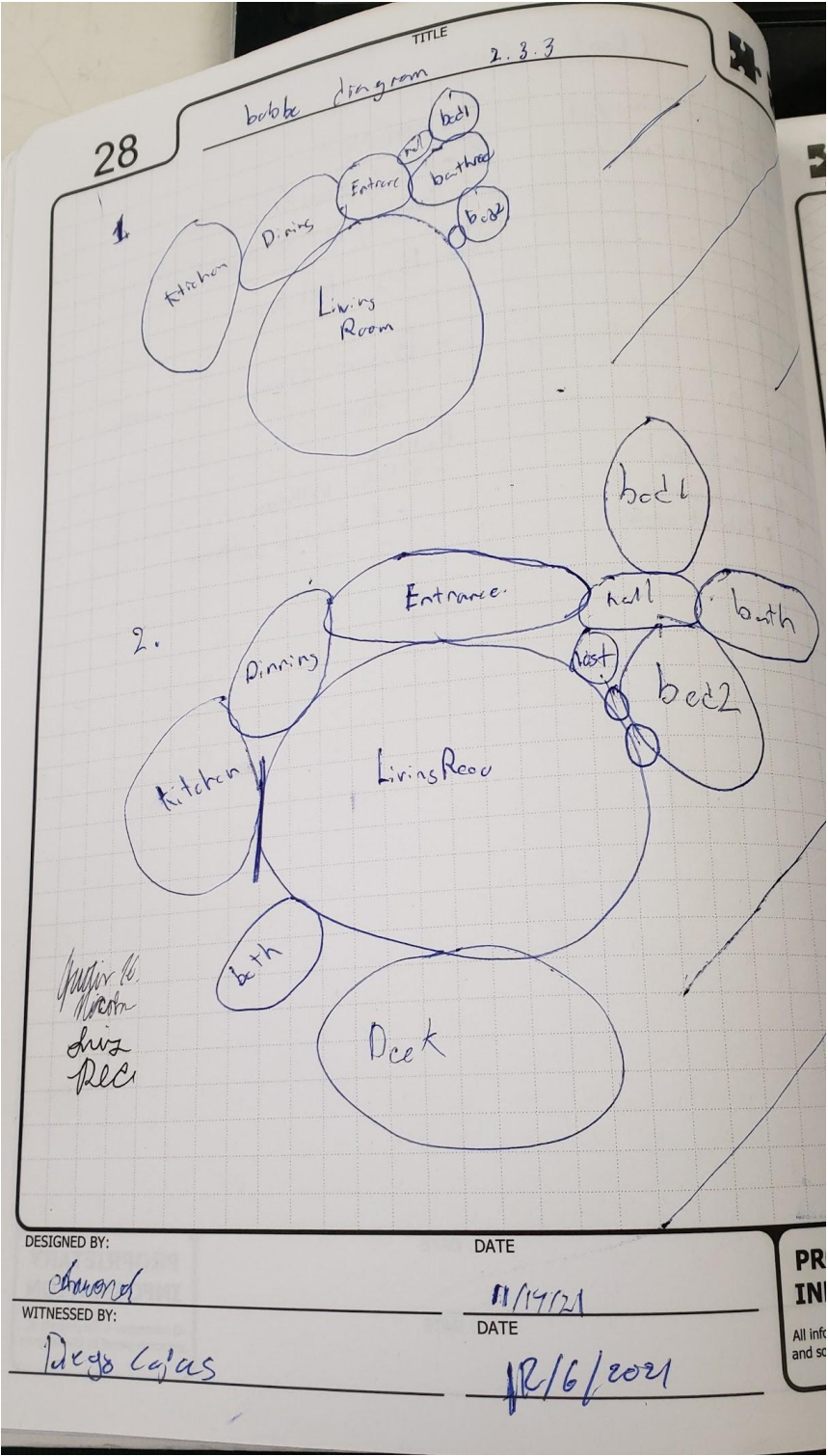
PLTW | Engineering

Client Survey (Affordable Home Design)

Family Information	
Adult Names/Ages	Tanner Cahas/21 Dwight Cahas/25
Occupations	Surfer by day TikTok star by night and professional spoon player
Child Names/Ages	Brody Cahas/5
Child Names/Ages	
Physical Disabilities	N/A
Other Special Needs	N/A
Pets	Chihuahua
Architectural Details	
House Style	Any
Number of Bedrooms	3
Number of Bathrooms	2
Square Footage	1070
Deck or Patio	Deck
Extra Storage	Garage
Leisure Activities	Cooking
Hobbies	Family time/board games
Entertainment	PC and office room
Equipment	
Special Needs	
Disabilities/illness	
Energy Saving/ LEED Concepts and Ideas	
Site Development	
Water Savings	
Energy Efficiency	
Materials Selection	
Indoor Environmental Quality	

Other Ideas	
--------------------	--

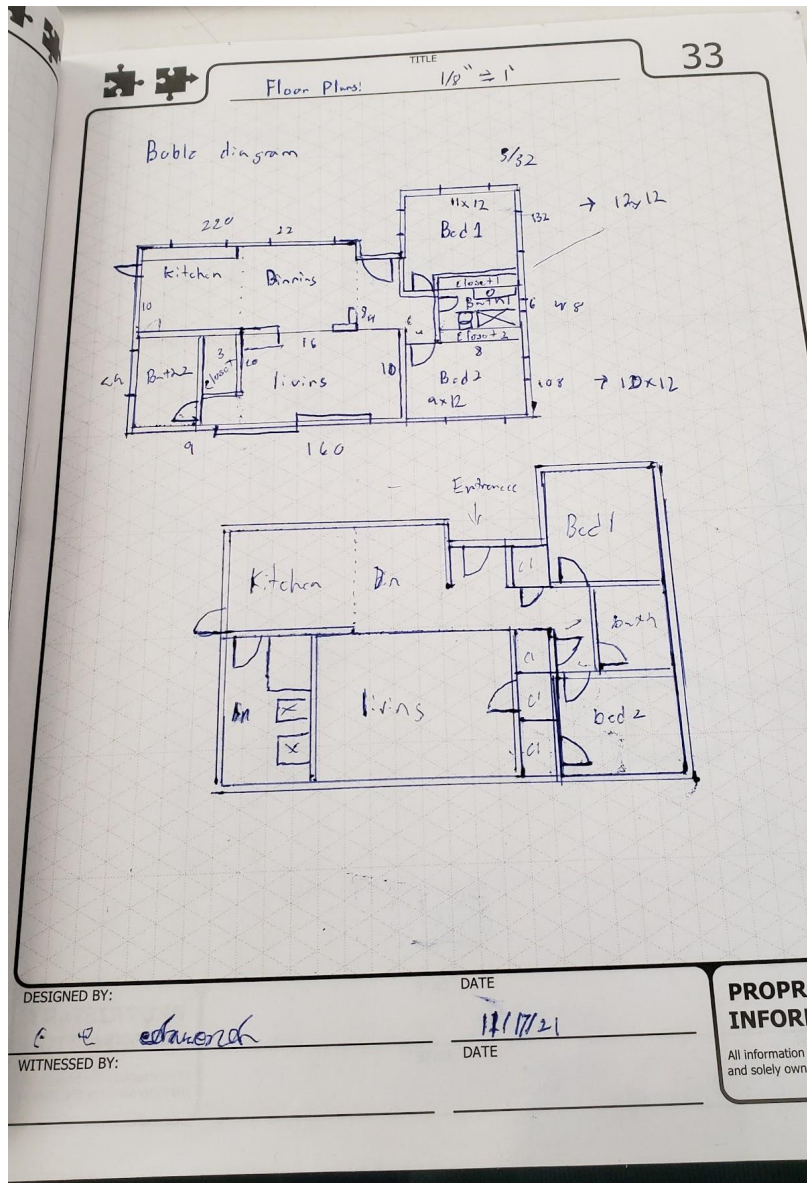
Bubble Diagrams



A hand-drawn floor plan of a house, oriented with the front entrance at the top. The plan includes the following rooms and features:

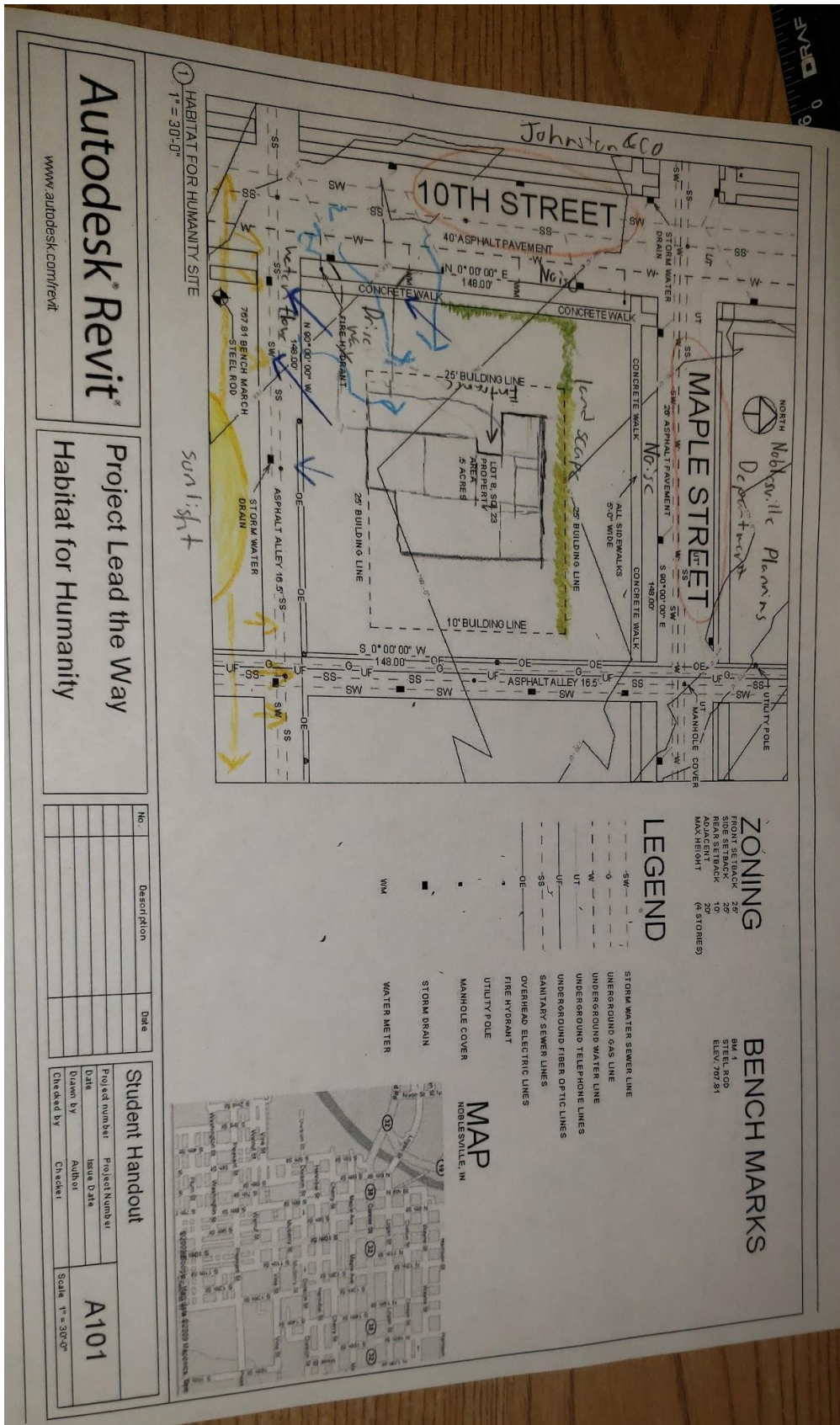
- Front Porch:** Located at the top center, with a width of 22'-0" and a depth of 9'-6".
- Living Room:** Located to the right of the front porch, with a width of 12'-0" and a depth of 12'-0". It contains a fireplace on the left wall and a television on the right wall.
- Dining Room:** Located to the left of the living room, with a width of 12'-0" and a depth of 12'-0". It contains a dining table and chairs.
- Kitchen:** Located to the left of the dining room, with a width of 12'-0" and a depth of 12'-0". It contains a sink, stove, and refrigerator.
- Breakfast Room:** Located to the left of the kitchen, with a width of 12'-0" and a depth of 12'-0". It contains a breakfast table and chairs.
- Living Room (Back):** Located at the bottom center, with a width of 12'-0" and a depth of 12'-0". It contains a fireplace on the left wall and a television on the right wall.
- Bedroom:** Located to the right of the back living room, with a width of 12'-0" and a depth of 12'-0". It contains a bed and a dresser.
- Bath:** Located to the right of the back living room, with a width of 12'-0" and a depth of 12'-0". It contains a bathtub and a toilet.
- Garage:** Located at the bottom left, with a width of 12'-0" and a depth of 12'-0". It contains a car.
- Front Yard:** Located at the top left, with a width of 22'-0" and a depth of 9'-6".
- Back Yard:** Located at the bottom right, with a width of 12'-0" and a depth of 12'-0".

The plan is drawn on a grid with dimensions in feet and inches. The rooms are labeled with their names, and the dimensions are written along the walls. The plan is oriented with the front entrance at the top.



Initial sketches:

Site Plan





① Bathroom
12" = 1'-0"



② DinningRoom
12" = 1'-0"



③ LivingRoom
12" = 1'-0"



www.autodesk.com/revit

Aaron Aviles
Affordable House Design

No.	Description	Date

Rending Sheet

Project number	Project Number	A100
Date	Issue Date	
Drawn by	Author	
Checked by	Checker	
		Scale 12" = 1'-0"



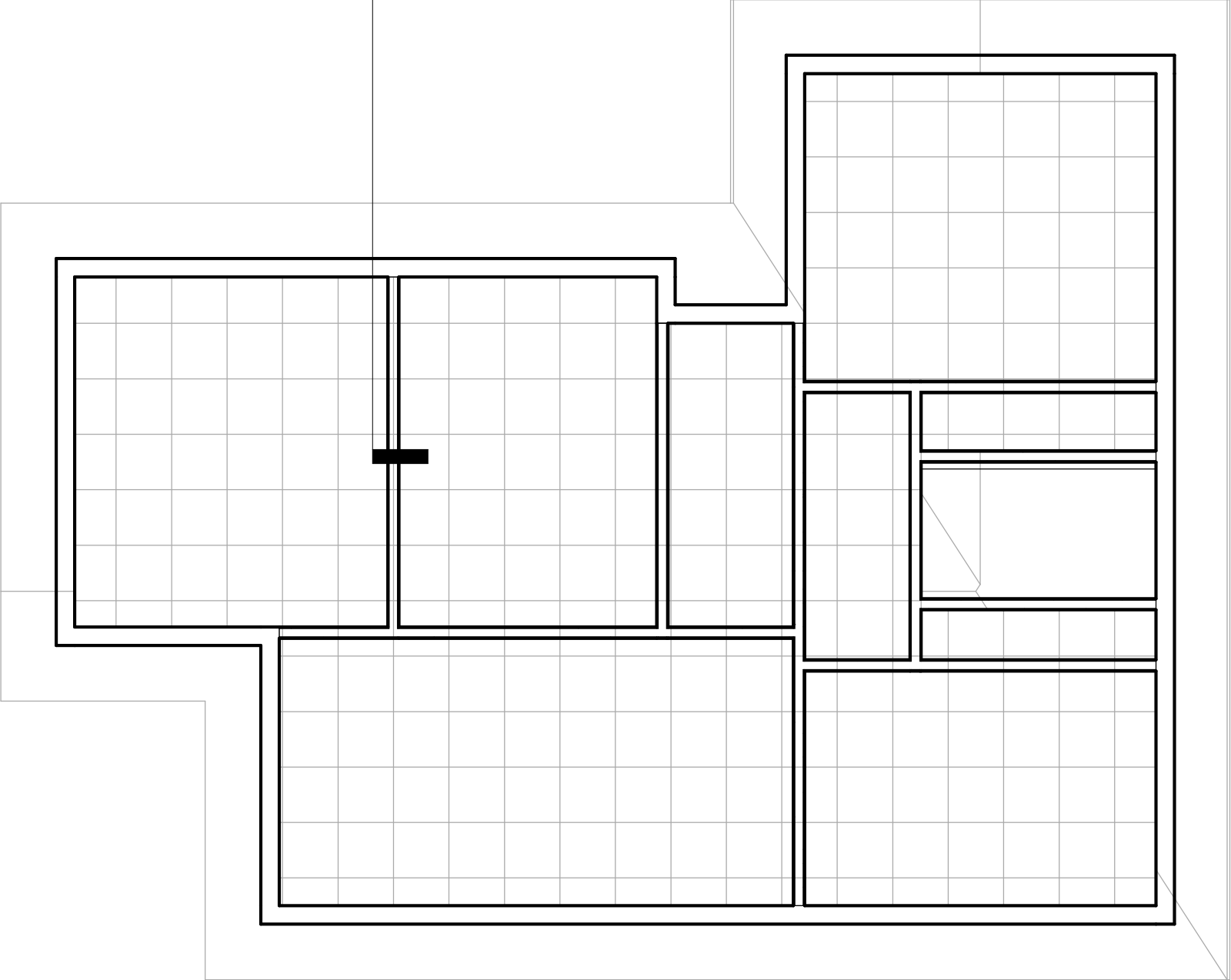
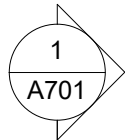
www.autodesk.com/revit

Aaron Aviles
Project Name

No.	Description	Date

Affordable House Design

Project number	Project Number	A101
Date	Issue Date	
Drawn by	Author	
Checked by	Checker	
Scale 3/16" = 1'-0"		



www.autodesk.com/revit

Aaron Aviles
Affordable House Design

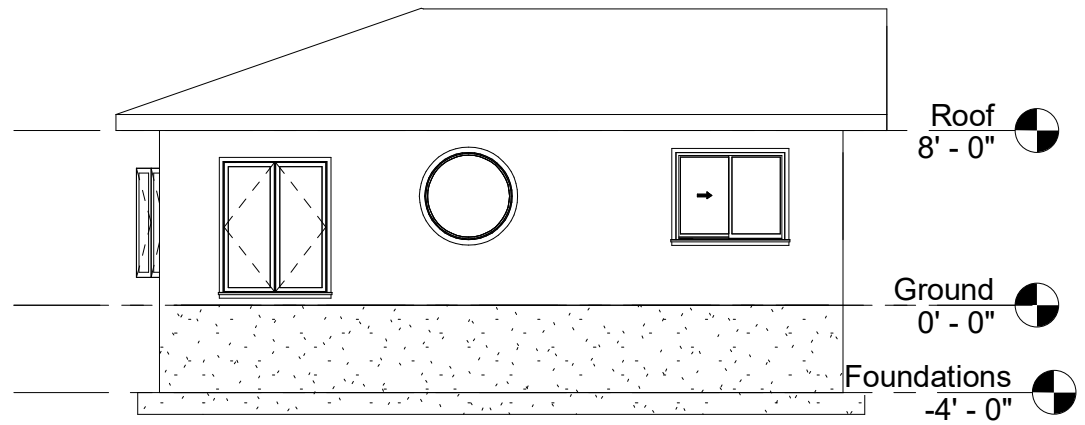
No.	Description	Date

Reflected Ceiling Plan

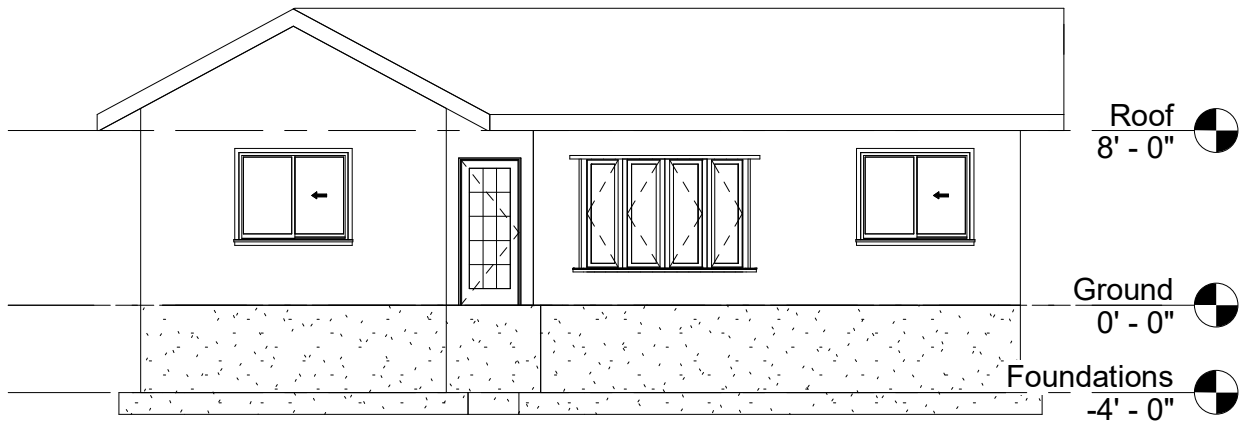
Project number	Project Number
Date	Issue Date
Drawn by	Author
Checked by	Checker

A201

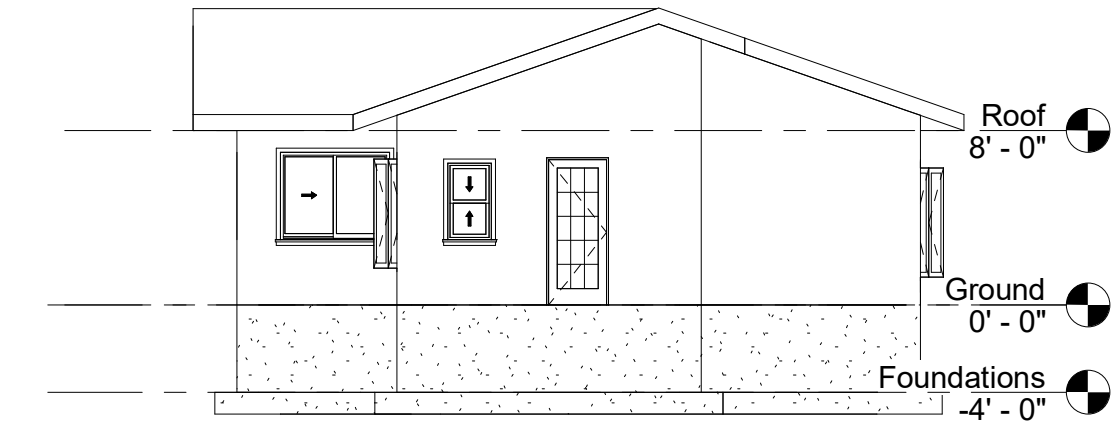
Scale 3/16" = 1'-0"



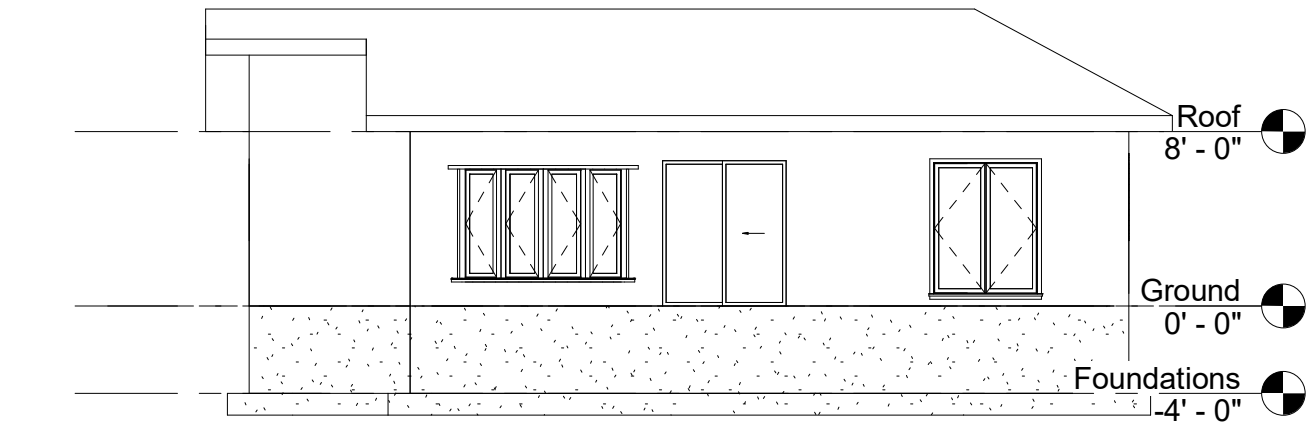
① East
1/8" = 1'-0"



② North
1/8" = 1'-0"



④ West
1/8" = 1'-0"



③ South
1/8" = 1'-0"



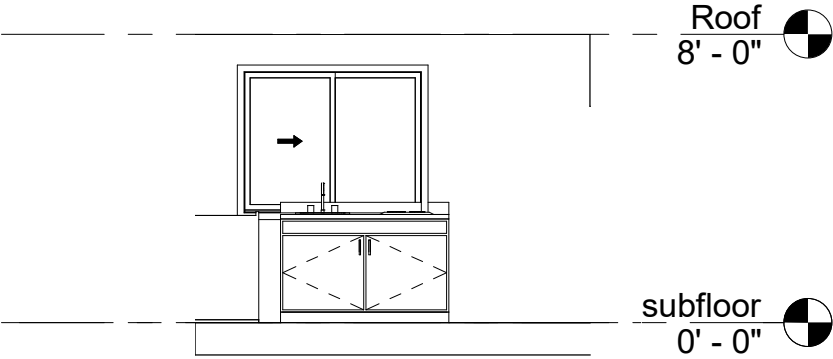
www.autodesk.com/revit

Aaron Aviles
Affordable House Design

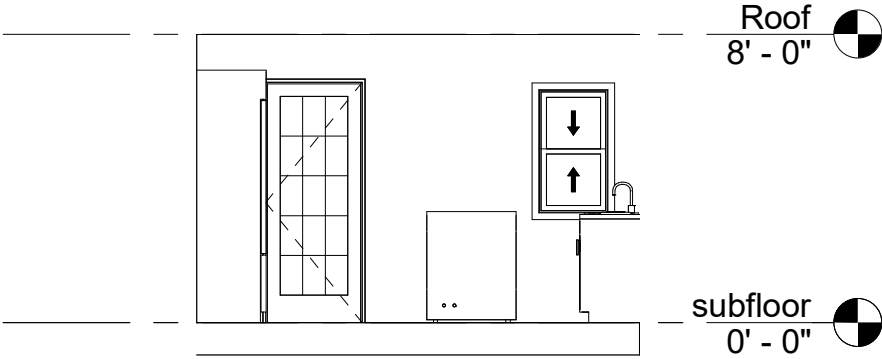
No.	Description	Date

Exterior Elevations		
Project number	Project Number	A401
Date	Issue Date	
Drawn by	Author	
Checked by	Checker	
Scale 1/8" = 1'-0"		

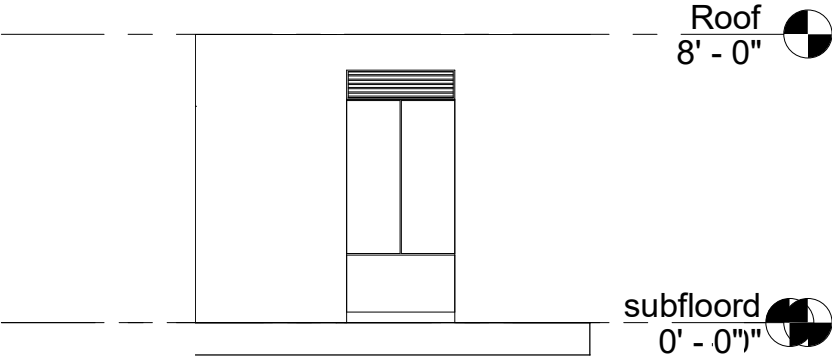
Kitchen



5 Kitchen North
3/16" = 1'-0"

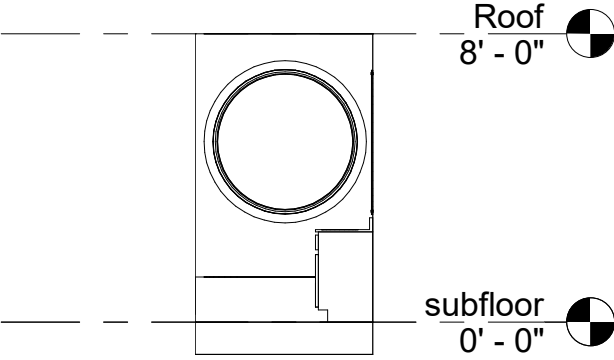


6 Kitchen West
3/16" = 1'-0"

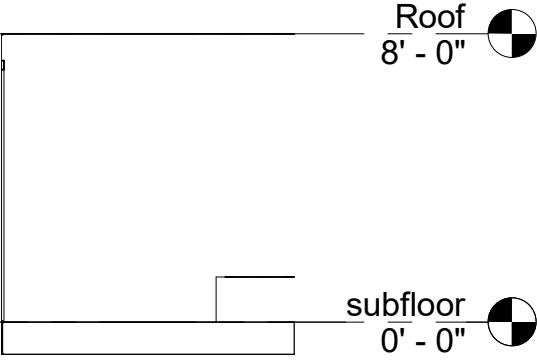


7 Kitchen South
3/16" = 1'-0"

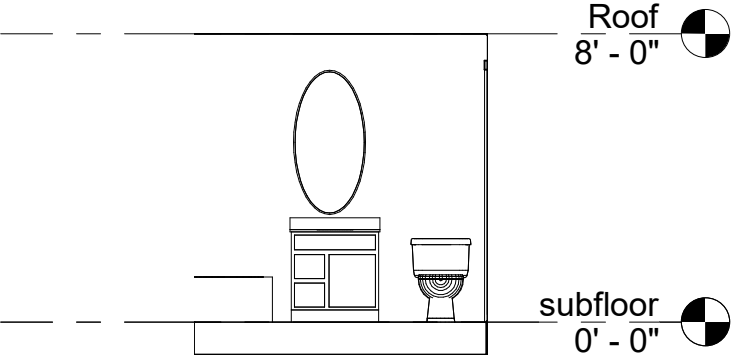
Bathroom



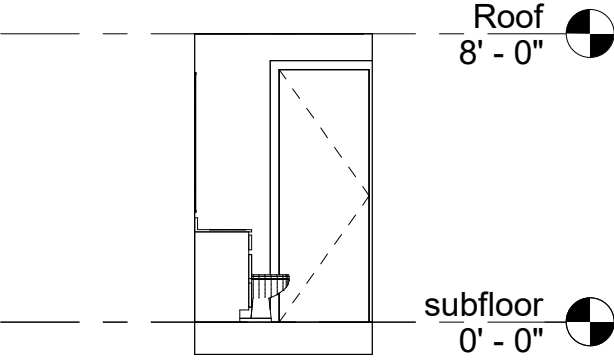
1 Bathroom East
3/16" = 1'-0"



2 Bathroom North
3/16" = 1'-0"



3 Bathroom South
3/16" = 1'-0"



4 Bathroom West
3/16" = 1'-0"



www.autodesk.com/revit

Aaron Aviles
Affordable House Design

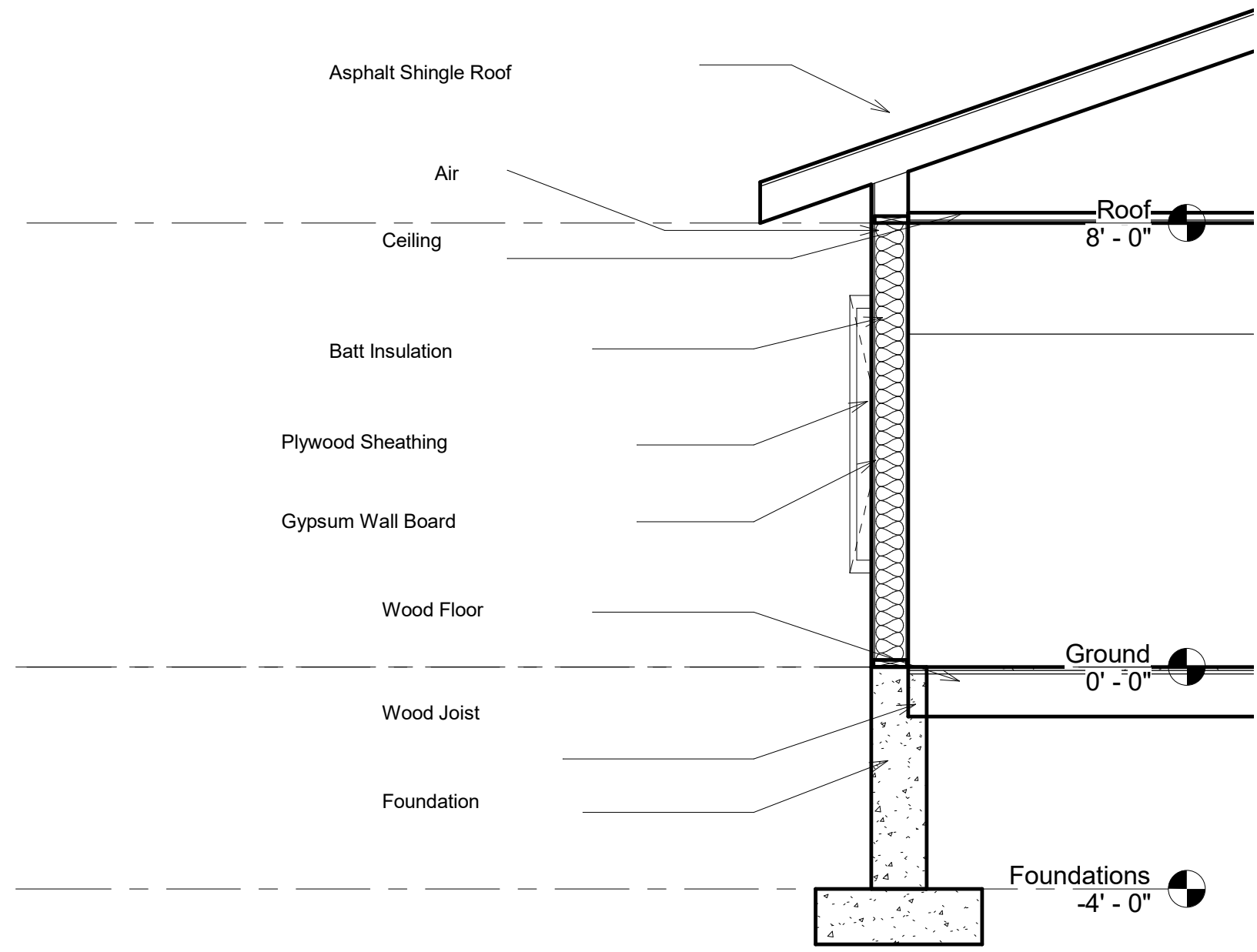
No.	Description	Date

Interior Elevations

Project number	Project Number
Date	Issue Date
Drawn by	Author
Checked by	Checker

A601

Scale 3/16" = 1'-0"



1 Wall Section
3/8" = 1'-0"



www.autodesk.com/revit

Aaron Aviles
Affordable House Design

No.	Description	Date

Wall Section		
Project number	Project Number	A701
Date	Issue Date	
Drawn by	Author	
Checked by	Checker	
		Scale 3/8" = 1'-0"

Room Schedule			
Area	Level	Number	Name
145 SF	Ground	1	Kitchen
122 SF	Ground	2	Dinning Room
180 SF	Ground	3	Living Room
107 SF	Ground	4	Bedroom
141 SF	Ground	5	Master Bedroom
42 SF	Ground	6	Bathroom

Door Schedule			
To Room: Name	Height	Width	Type
	6' - 8"	2' - 8"	Door-Interior-Single-Full Glass-Wood
Bathroom	7' - 0"	2' - 6"	30" x 84"
Living Room	6' - 8"	5' - 8"	68" x 80"
Bedroom	7' - 0"	2' - 10"	34" x 84"
Master Bedroom	7' - 0"	2' - 10"	34" x 84"
	6' - 8"	2' - 8"	Door-Interior-Single-Full Glass-Wood
	6' - 8"	5' - 8"	68" x 80"
Master Bedroom	6' - 8"	5' - 8"	68" x 80"

Window Schedule			
Width	Type	Height	To Room: Name
7' - 0"	84" x 60"	5' - 0"	
5' - 0"	60" x 48"	4' - 0"	Kitchen
5' - 0"	60" x 48"	4' - 0"	Master Bedroom
4' - 0"	48" Diameter	4' - 0"	
5' - 0"	60" x 48"	4' - 0"	
5' - 0"	60" x 48"	4' - 0"	
2' - 0"	24" x 42"	3' - 6"	Kitchen
7' - 0"	84" x 60"	5' - 0"	
4' - 9"	57" x 72"	6' - 0"	
4' - 9"	57" x 72"	6' - 0"	



AUTODESK[®]

www.autodesk.com/revit

Aaron Aviles

Affordable House Design

No.	Description	Date

Schedules

Project number	Project Number	A801
Date	Issue Date	
Drawn by	Author	
Checked by	Checker	Scale

Summary:

The project of the Affordable house Design for Clients Mr Cahas and Mr Cahas was successful in delivering on the 3 main desires of our Clients, A large kitchen, dining room, and living room to raise a proper family. We created an elegantly well lit family room that remains cool and not overly bright natural lighting. The Sun always hits the kitchen side and will wake up those living in the bedroom and put those to rest for habitants in the master bedroom. We met the Habitat for humanity guidelines by meeting the area bedroom and bathroom requirements of 900 square feet for a house of 2 bedrooms and 1 bathroom. Along with meeting the critique for having a room that is greater than 120 square feet and not having a room smaller than 70 square feet that is meant for habitable living. The Design provides an elegant solution to this set of critquary by not making any aspect of the house cramped and closed off. The floor is open and not convoluted. By far the most difficult aspect of this project was design, and trying to stay within the 900 square feet limitations set on the project by habitat for humanity. I believe that I could improve even further on design along with window placement and renders. The revit aspect of this project can always be improved as it is a skill that continues to grow.