
Alhambra High

Mr. Oscar Motta

Jacob Fain

pg. 2 — Sketches

pg. 9 — Multi-View Drawings

pg. 16 — Pictorial Drawings

pg. 19 — House Design Project Model

pg. 31 — Independent Work

Sketches

The following exercises were created to describe certain features of three dimensional objects in two dimensional views, and were completed with paper and pencil.

pg. 3 — Sketch of Classmate

- Introduction to shading/hatching, understanding proportions

pg. 4 — My House Plan Sketch

- Simple dimensioning and labeling using real-world measurements

pg. 5 — House Design Project Initial Sketch

- Introduction to building design, understanding limitations of space

pg. 6 — Exterior Finishes Sketches

- Isometric and front views, practicing detail

pg. 7 — Window Trim and Overhang Sketches

- Multi-view drawings of common elements of architectural design

pg. 8 — House Design Project Front Elevation Sketch

- Describing elevations derived from a floor plan

JACOB FAIN
JACOB FAIN
8/19/21
PER. 1

20
20



RYAN GOMEZ

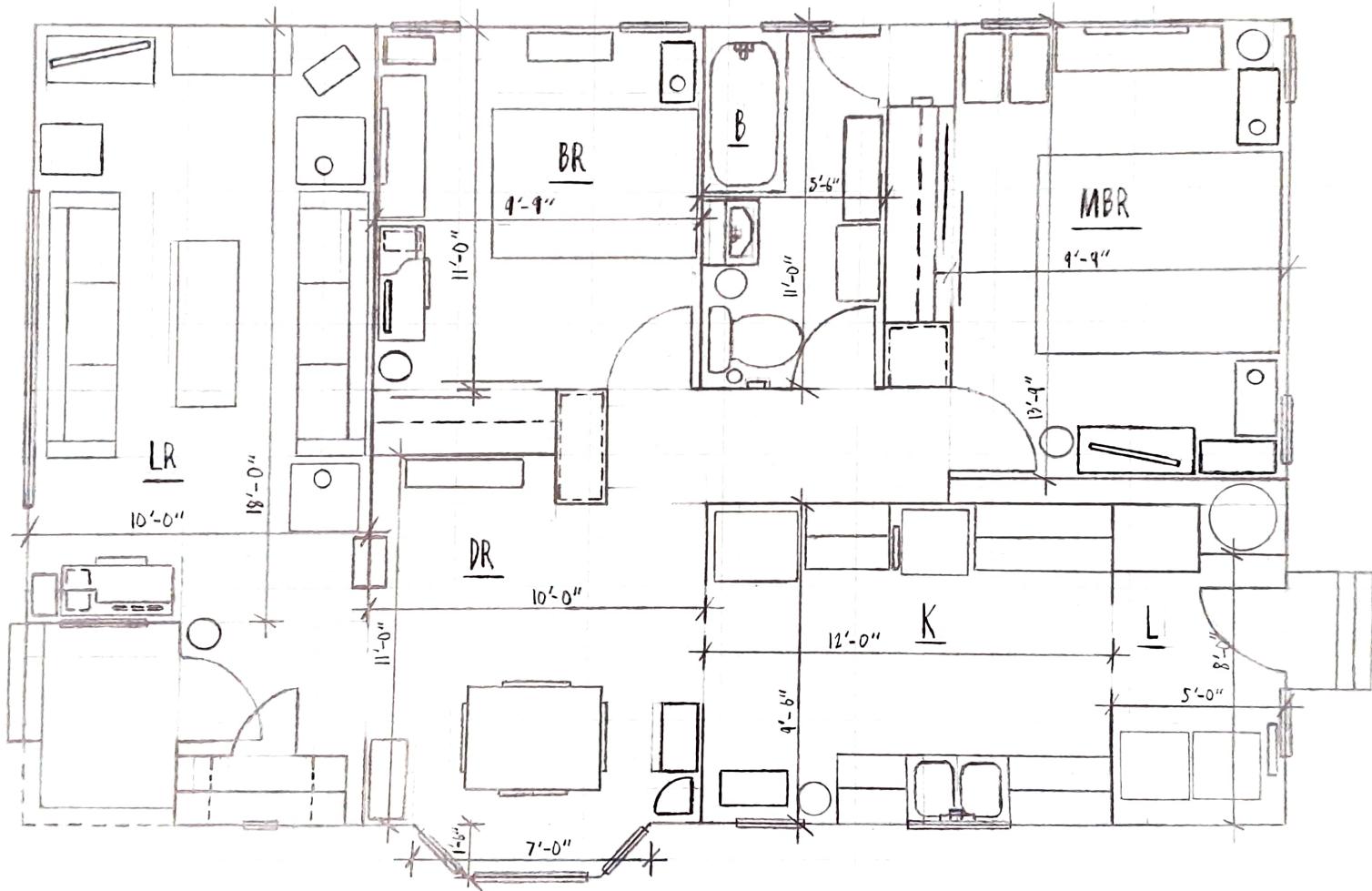
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11-5-21

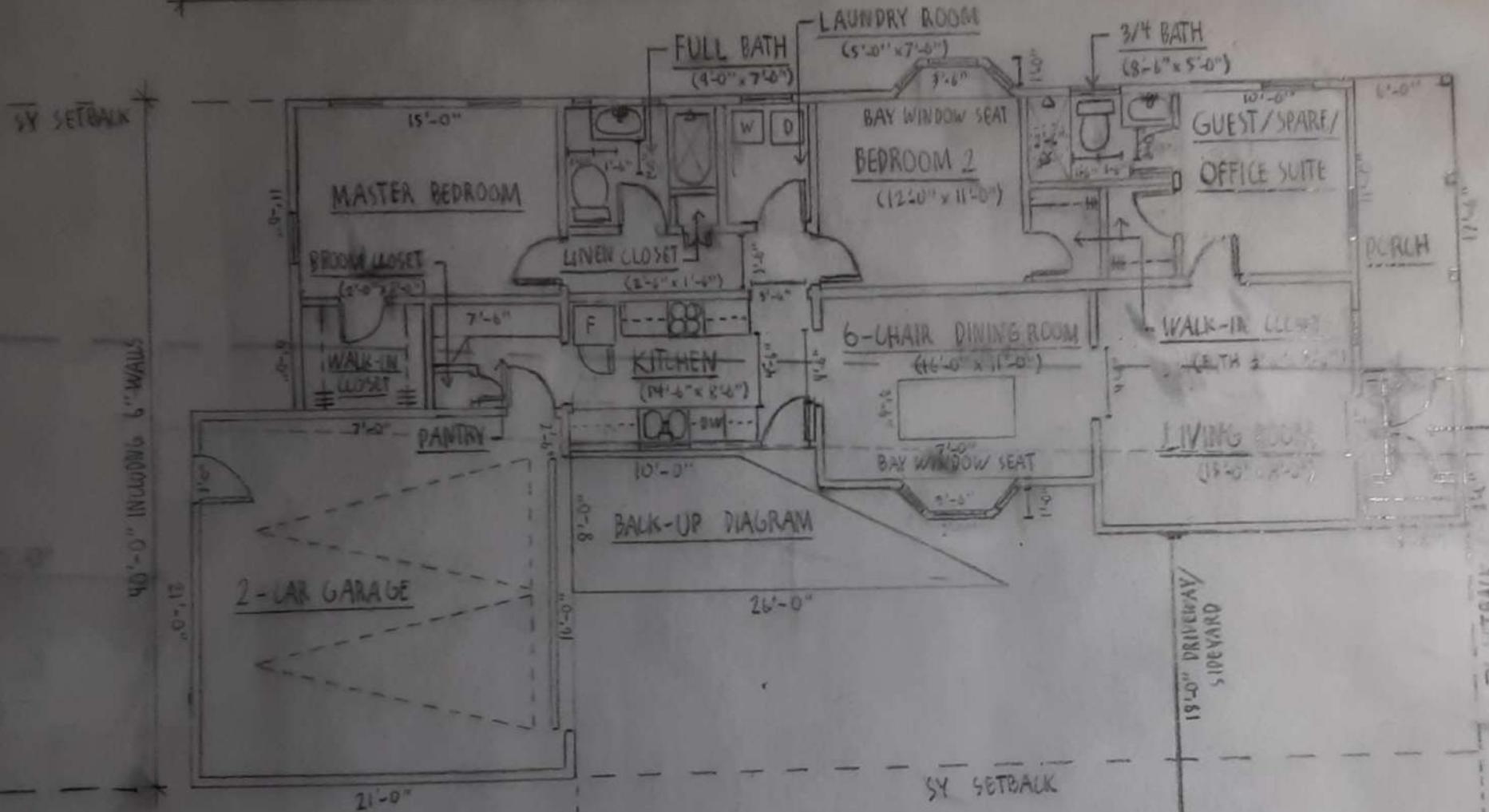
P1

MY FLOOR PLAN

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75'-0" INCLUDING 6" WALLS



JACOB FAIN

11-21-22

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JACOB FAIN

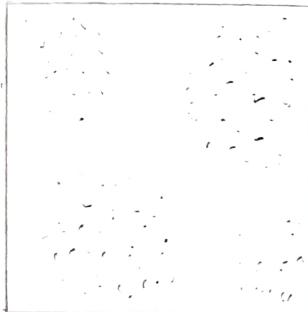
P1

3-24-22

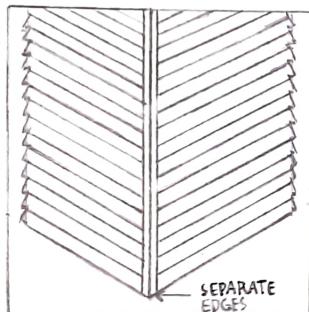
EXTERIOR FINISHES

25%

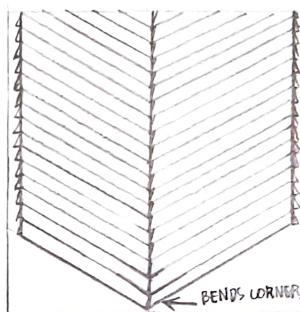
STUCCO (SAND FINISH)



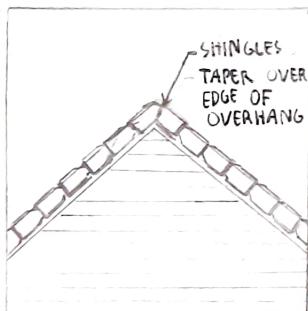
WOOD SIDING (VERTICAL CORNERS)



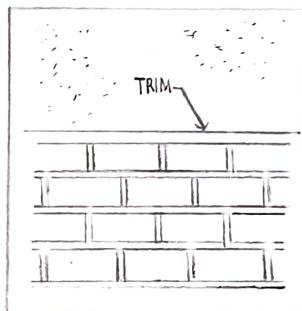
WOOD SIDING (WRAPPED CORNERS)



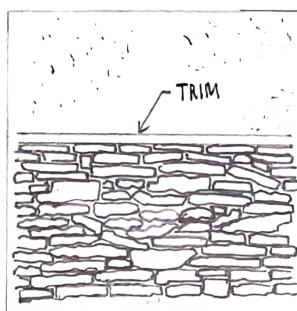
SHINGLES AT GABLE END



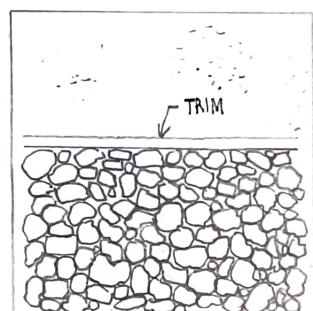
BRICK VENEER



LEDGE STONE VENEER



RIVER ROCK VENEER



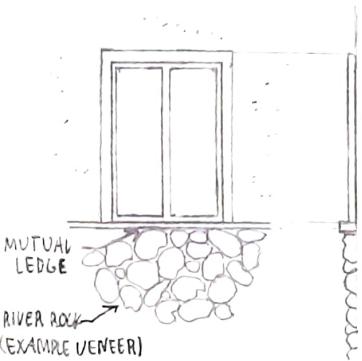
JACOB FAIN

4-7-22

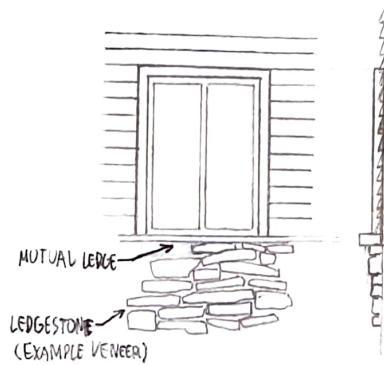
P1

WINDOW TRIM
+ OVERHANG
SKETCHES

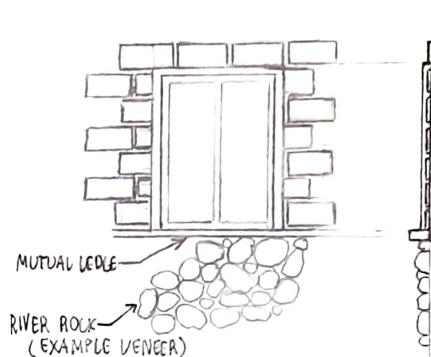
STUCCO TRIM



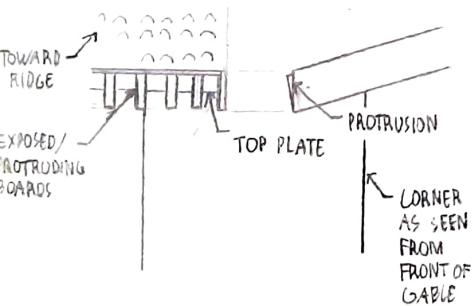
WOOD TRIM



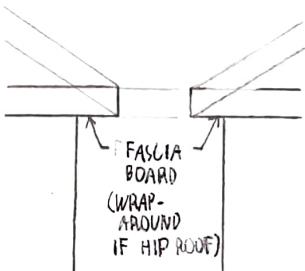
BRICK TRIM



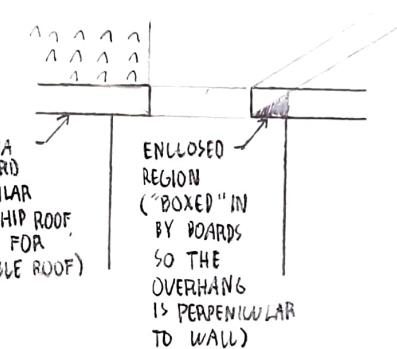
OPEN EAVE



CLOSED EAVE

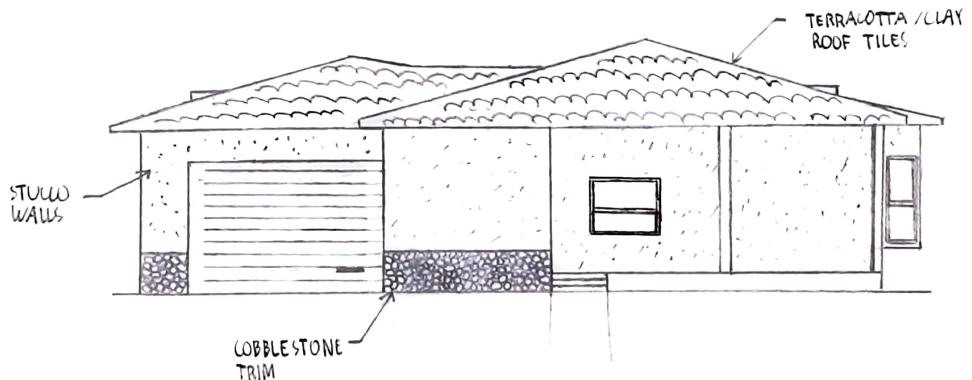


BOXED OVERHANG



JACOB FAIN
3 - 23 - 22
PI
FRONT ELEVATION
(MEDITERRANEAN)

20



Multi-View Drawings

The following exercises were created to explain three dimensional objects from multiple views. Some were completed with paper and pencil, and others through AutoCAD.

pg. 10 — “Block 9” Orthographic Sketches

- Introduction to projections, multi-view symmetry and reading a scale

pg. 11 — “Block 19” Orthographic Sketches

- Introduction to line types and weights, working with circles/centerlines

pg. 12 — House Design Project Site Plan

- Introduction to AutoCAD building design, leader lines and other labels

pg. 13 — House Design Project Floor Plan

- Translating paper drawings to AutoCAD

pg. 14 — House Design Project Roof Plan

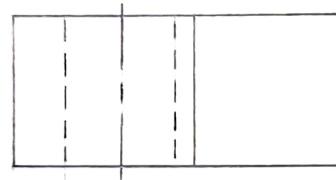
- Understanding attic ventilation, roof design and angles/intersections

pg. 15 — House Design Project Exterior Elevations

- Understanding “overlap” of sections of a three dimensional object

LFL

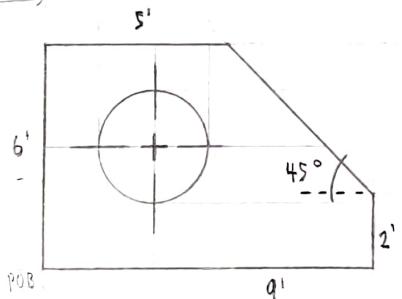
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NICE



TOP

$1\frac{1}{2}$

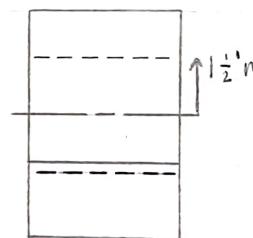
$12' - 6''$ →



FRONT

$1\frac{1}{4}$

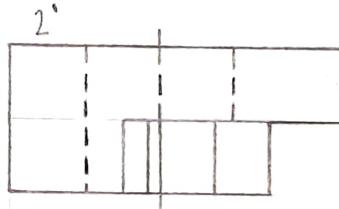
6'



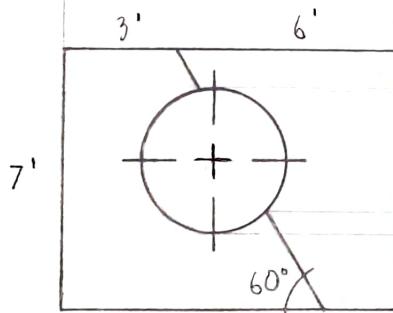
RIGHT

↑
 $7' - 6''$

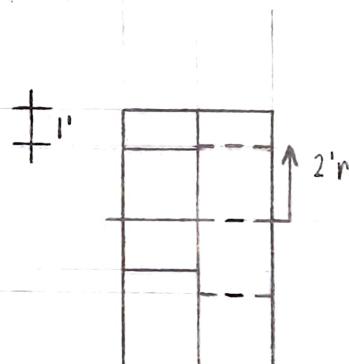
JACOB FAIN
9-20-21
PERI
ORTHO 19



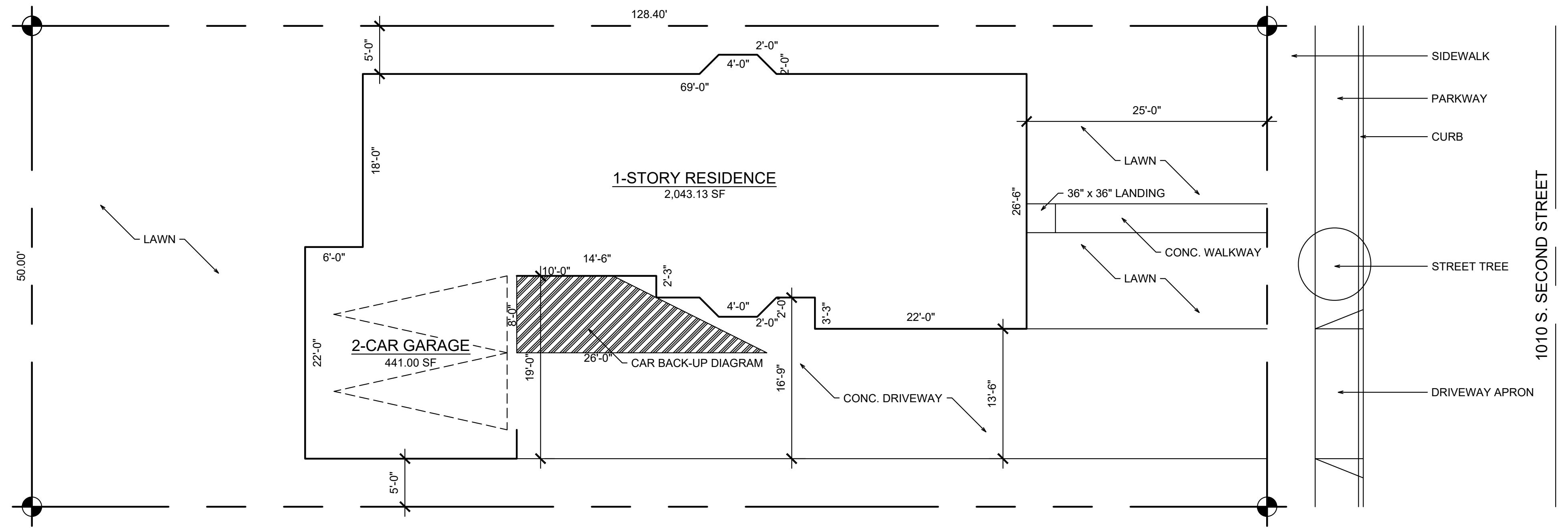
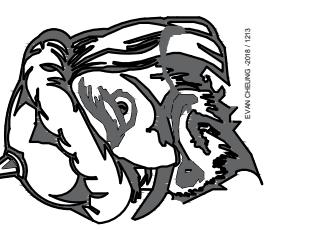
TOP



FRONT



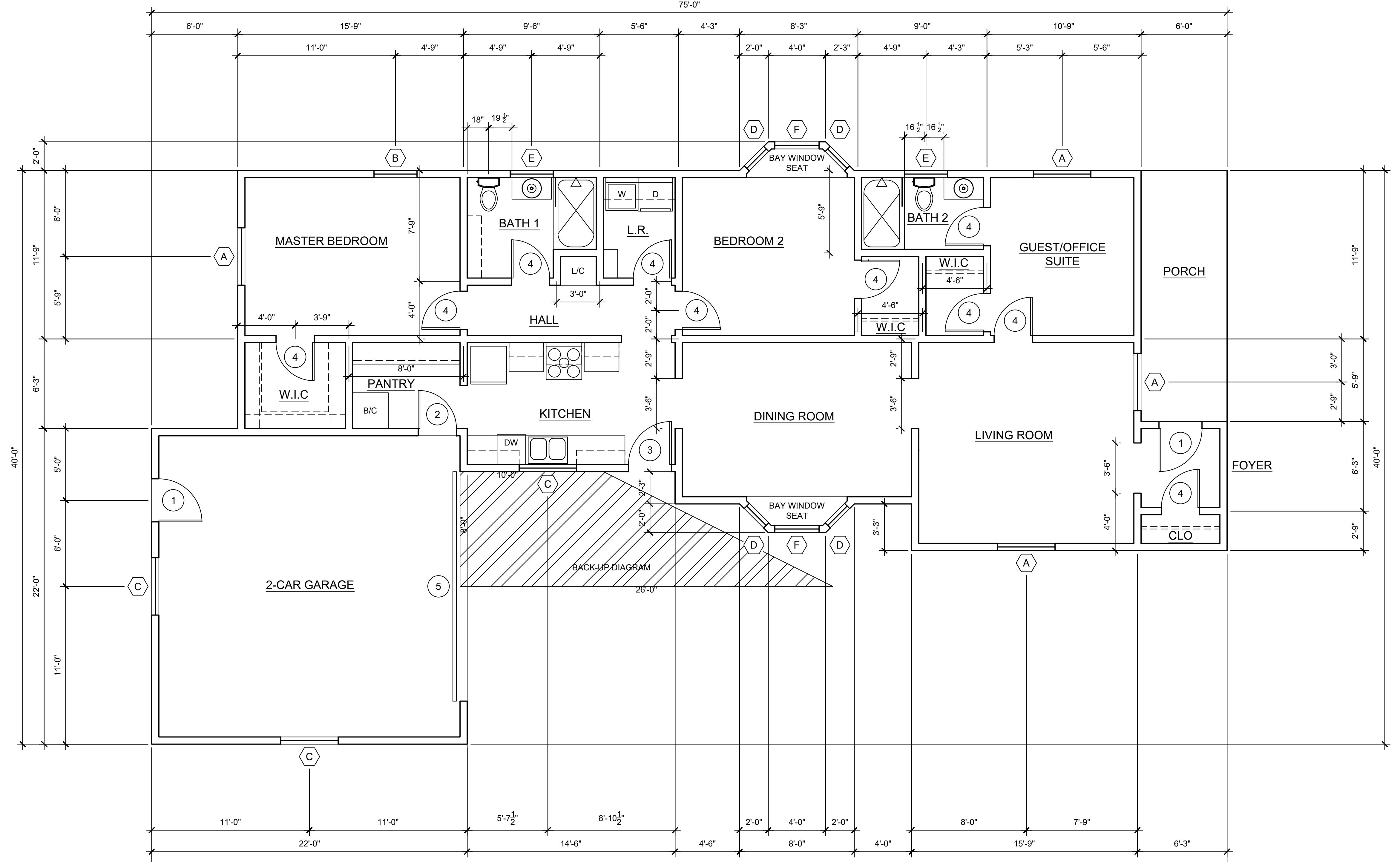
RIGHT



SITE PLAN

1/8" = 1'-0"

ABBREVIATIONS	SYMBOL LEGEND	VICINITY MAP	SHEET INDEX	GENERAL INFORMATION
			SHT	DESCRIPTION
ADJ. ADJACENT ALT. ALTERNATE A.B. ANCHOR BOLT APPR APPROVED BLKG BLOCKING B.S. BOTH SIDES BLDG BUILDING C.J. CEILING JOISTS COL COLUMN CONC. CONCRETE CMU. CONC. MASONRY UNIT CONT. CONTINUOUS or CONTINUE DIM. DIMENSION DBL. DOUBLE EA. EACH E.W.W.M. ELECT. WELDED WIRE MESH ELEV. ELEVATION EQ. EQUIPMENT EXT. EXTERIOR F.F. FINISH FLOOR F.G. FINISH GRADE F.J. FLOOR JOIST FTG. FOOTING G.I. GALVANIZED IRON GA. GAUGE GYP. BD. GYPSUM BOARD HT. HEIGHT HORIZ. HORIZONTAL JST. JOIST	LOUV. LOUVER M.B. MACHINE BOLT MAX. MAXIMUM MIN. MINIMUM N.G. NORMAL GRADE (N) NEW N.I.C. NOT IN CONTRACT N.T.S. NOT TO SCALE O.C. ON CENTER OPNG OPENING P.B.M.L. PAPER BACKED METAL LATCH PLT PLATE PLWD PLYWOOD R.R. ROOF RAFTER SHTG SHEATHING SQ. SQUARE STAGD STAGGERED STD. STANDARD STL. STEEL THK. THICK T&G TONGUE & GROOVE T&B TOP & BOTTOM T.P. TOP PLATE TYP. TYPICAL U.N.O. UNLESS NOTED OTHERWISE VERT. VERTICAL W.H. WATER HEATER W/ WITH WD. WOOD		<img alt="VICINITY MAP showing the project site's location relative to W. 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FLOOR PLAN

1/4" = 1'-0"

SYM.	WINDOW SCHEDULE							
	WIDTH	HEIGHT	TYPE	FRAME	GLASS	U - FACTOR	S.H.G.C.	REMARKS
A	4'-0"	4'-0"	HS	VINYL	CLEAR	.32	.25	
B	3'-0"	4'-0"	SH	VINYL	CLEAR	.32	.25	
C	4'-0"	3'-0"	SH	VINYL	CLEAR	.32	.25	
D	2'-0"	5'-0"	FX	VINYL	CLEAR	.32	.25	
E	3'-0"	1'-0"	SH	VINYL	FROSTED	.32	.25	TEMP. GLASS, TOP-OPENING
F	3'-0"	5'-0"	SH	VINYL	CLEAR	.32	.25	
G								
H								
J								

SYM.	DOOR SCHEDULE							
	WIDTH	HEIGHT	THK	TYPE	FRAME	U - FACTOR	S.H.G.C.	REMARKS
1	3'-0"	6'-8"	1 3/4"	SC	WOOD	A	A	SO
2	2'-8"	6'-8"	1 3/4"	SC	WOOD	A	A	SO, SELF-CLOSING
3	3'-0"	6'-8"	1 3/4"	SC	WOOD	A	A	SO, TEMP. GLASS
4	2'-8"	6'-8"	1 3/8"	HC	WOOD	A	A	INTERIOR DOORS
5	16'-0"	7'-0"	1 3/8"	GD	WOOD	A	A	
6								
7								
8								

DOOR & WINDOW ABBREVIATIONS:

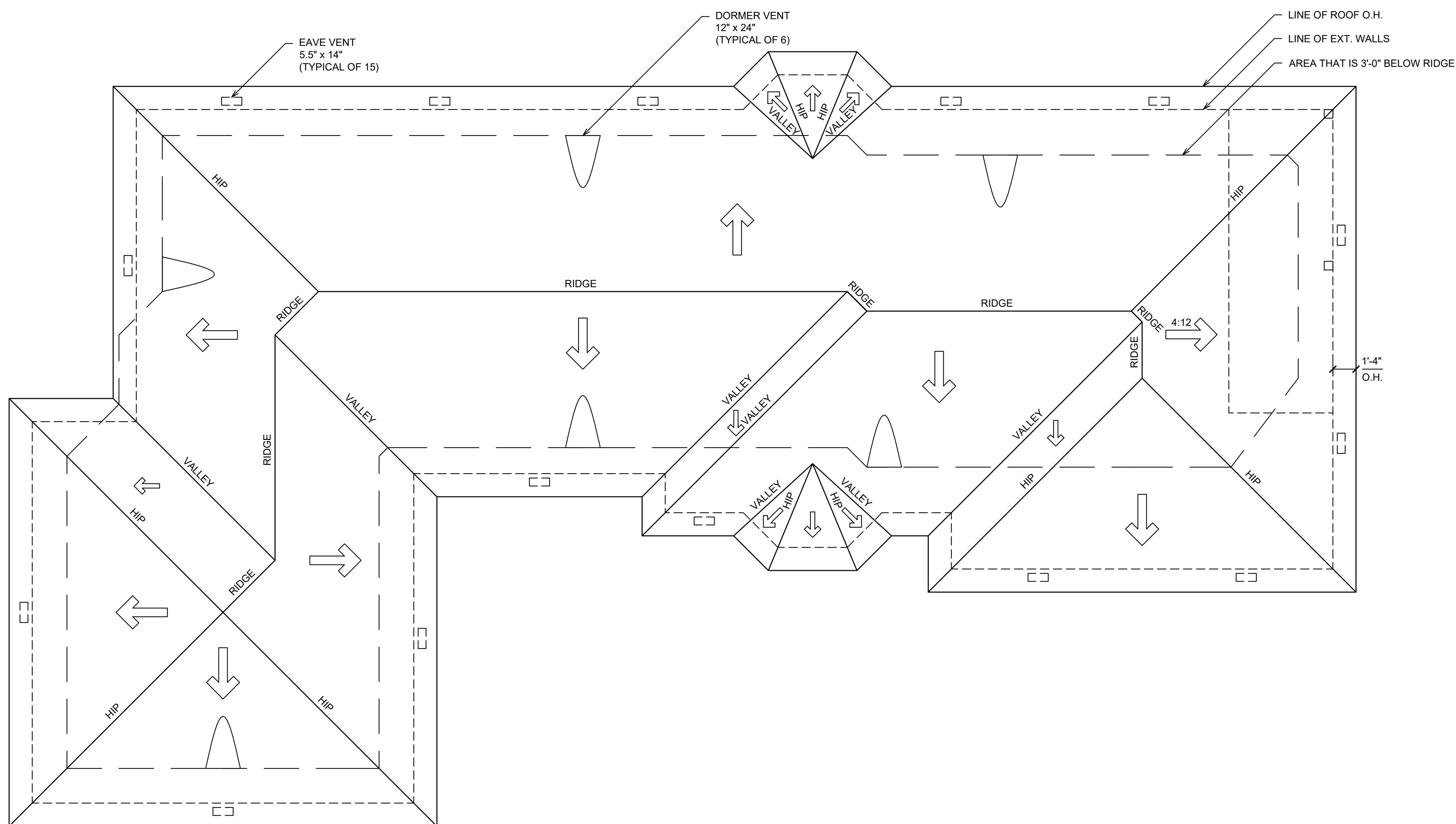
SC = SOLID CORE	SD = SLIDING DOOR
HC = HOLLOW CORE	FR = FRENCH
PD = POCKET DOOR	FR SL = FRENCH SLIDING
AC = ACCORDIAN DOOR	BF = BI-FOLDING
WR = WARDROBE	GAR = GARAGE

WINDOW SCHEDULE:

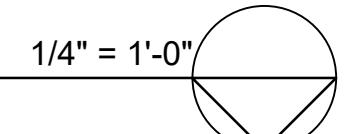
HS = HORIZ. SLIDING	GARD = GARDEN
SH = SINGLE HUNG	RT = ROUND TOP
DH = DOUBLE HUNG	HR = HALF ROUND
CASE = CASEMENT	QR = QUARTER ROUND
AW = AWNING	TR = TRANSUM

MISC.:

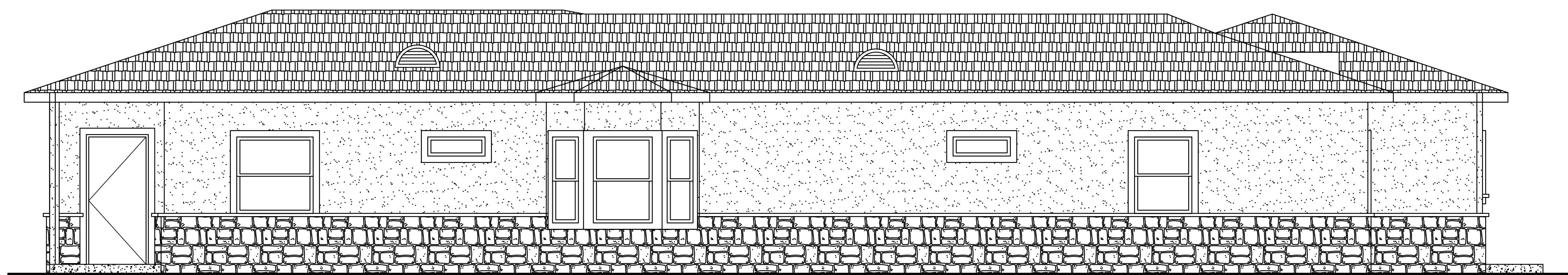
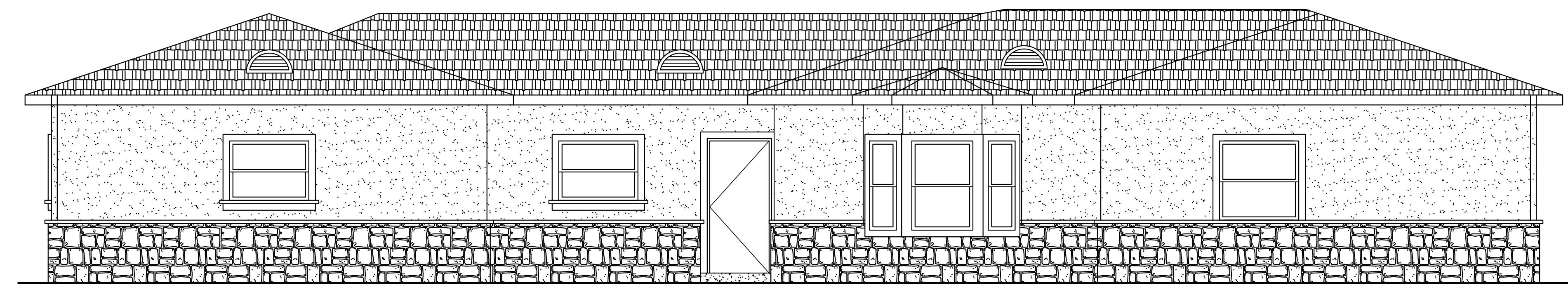
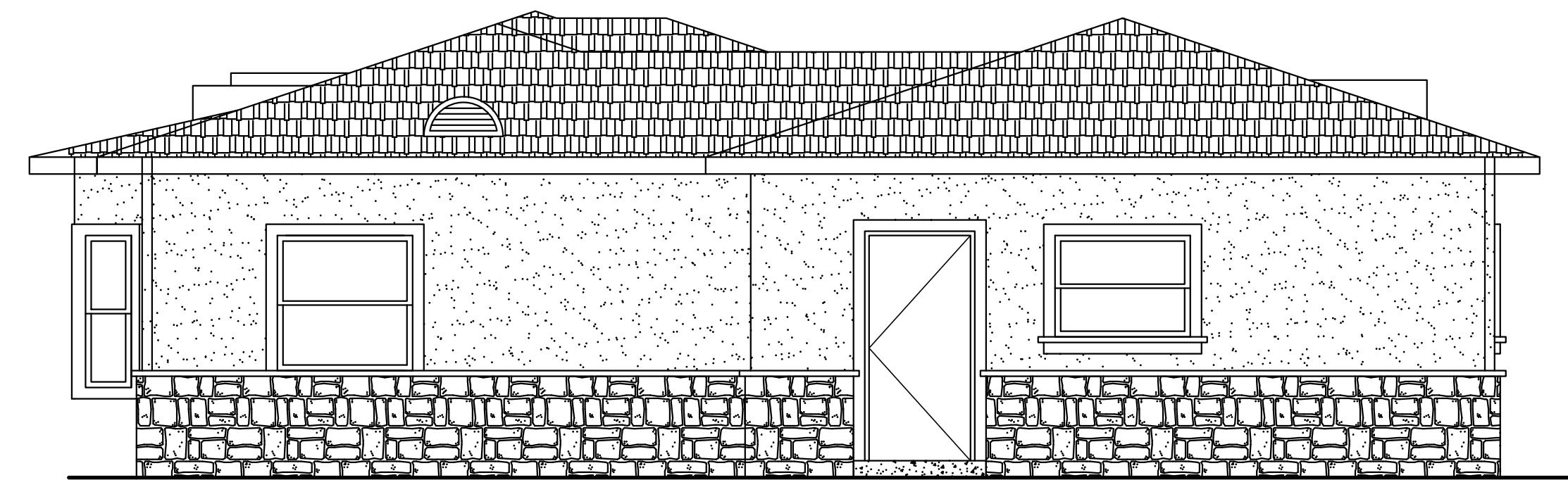
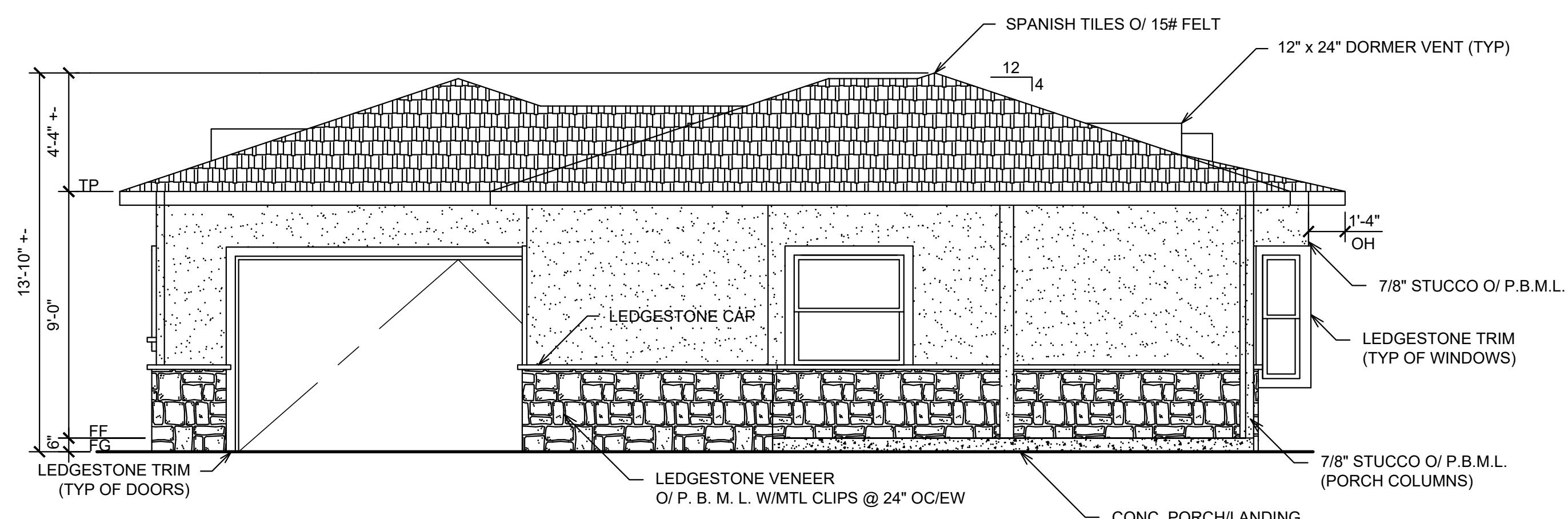
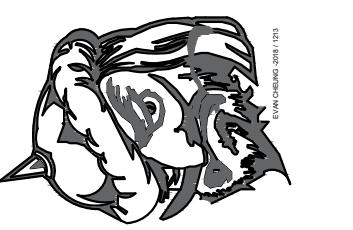
TEMP = TEMPERED	SO = SECURITY OPENING
X = OPERABLE SIDE	O = FIXED SIDE
(E) = EXISTING WINDOW	
(R) = REPLACE (E) WINDOW (CONTR. TO VERIFY SIZE)	



ROOF PLAN

1/4" = 1'-0"


ATTIC VENTILATION			
TOTAL ROOF AREA		VENTILATION REQUIRED (USING 50% RULE)	
2,409.29 SF		2,409.29 SF / 300 = 8.03 SF \rightarrow 3.21 SF = 40% OF 8.03 SF, 4.02 = 50% of 8.03 SF	
SYMBOL	DIMENSIONS	TYPE AND NUMBER OF	VENTILATION PROVIDED
	12" x 24"	DORMER VENTS: 6	DV: .62 SF x 6 = 3.72 SF (WITHIN 40%-50% OF 8.03 SF) EV: .30 SF x 15 = 4.50 SF (TOTAL MINUS DV = 4.31 SF)
	5.5" x 14"	EAVE VENTS: 15	TOTAL: 3.72 SF + 4.50 SF = 8.22 SF (EXCEEDS REQUIRED)



Pictorial Drawings

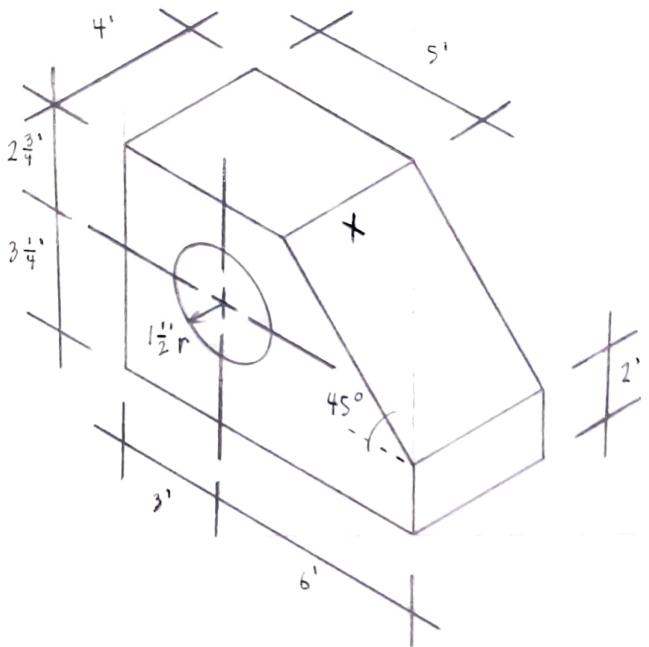
The following exercises were created to depict multiple faces of three dimensional objects from a single perspective, and were completed with paper and pencil.

pg. 17 — “Block 9” Isometric Sketch

- Introduction to isometric, depicting the same object in different ways

pg. 18 — “Block 19” Isometric Sketch

- Angles to isometrics, circles/ellipses



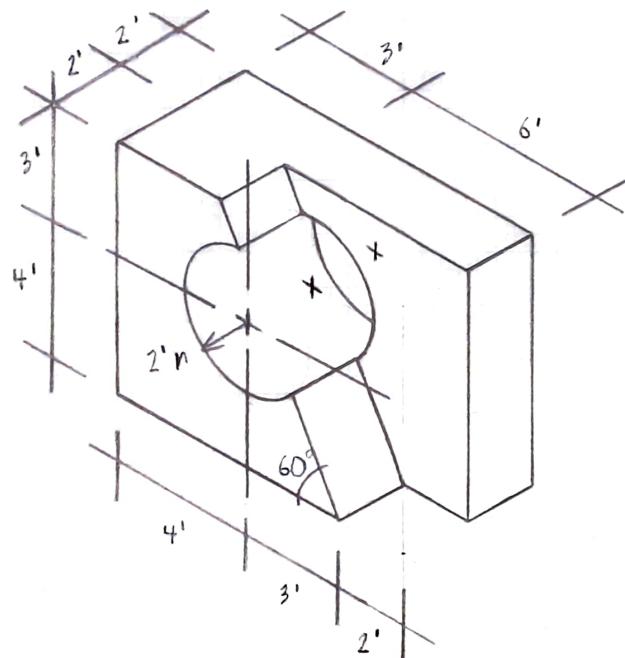
10
Nuts

JACOB FAIN

4-13-21

P1

BLOCK 14



House Design Project Model

The following images illustrate the translation of architectural plans into reality through prototyping/modeling, a process which was completed with pencil, glue, scale, straight-edge, X-acto knife, and foam board.

pg. 20 — Floor Plan Bird's-Eye View

pg. 21 — North Elevation

pg. 22 — East Elevation

pg. 23 — South Elevation

pg. 24 — West Elevation

pg. 25 — North/East Isometric View

pg. 26 — North/Top Isometric View

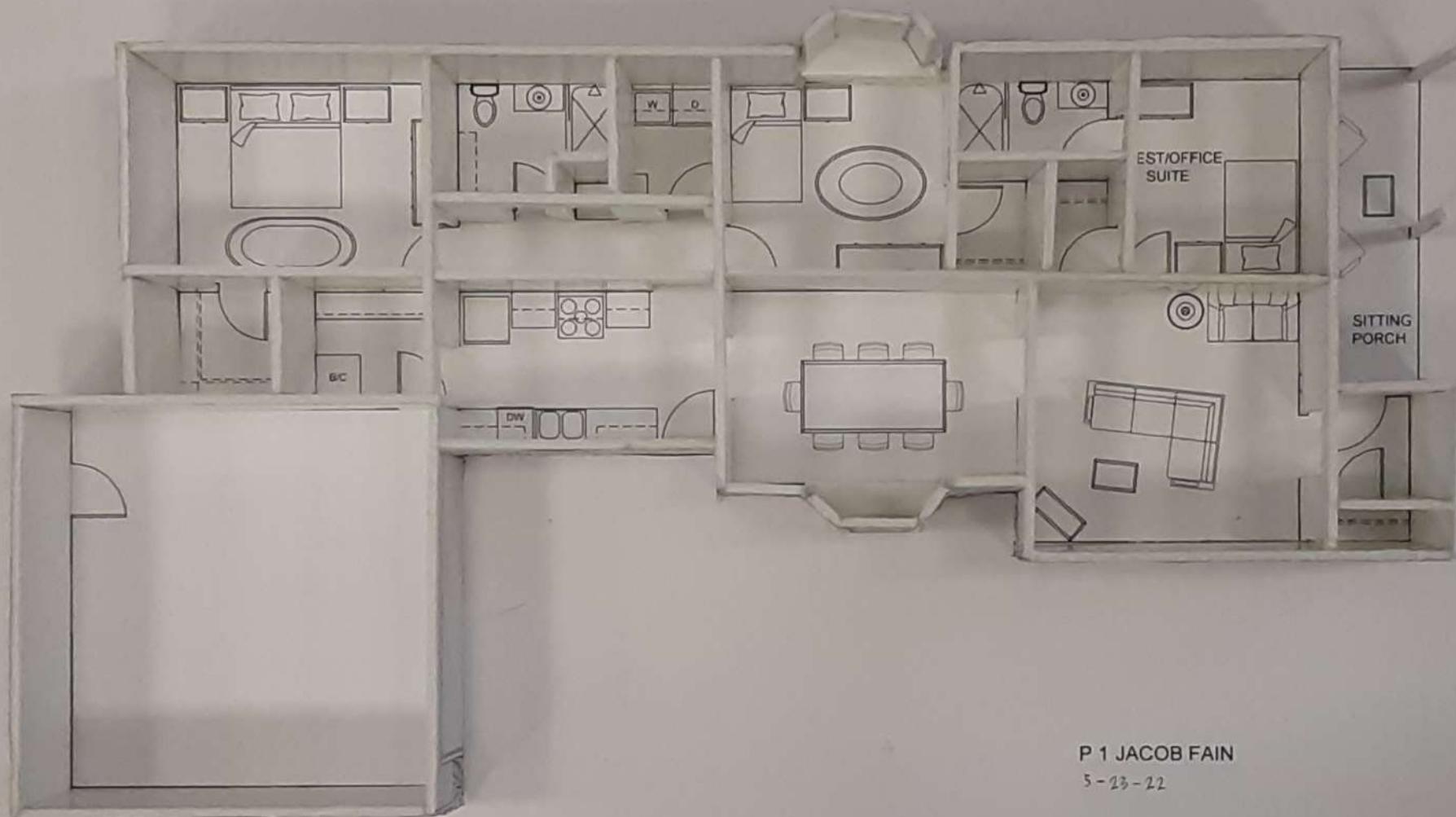
pg. 27 — North/West Isometric View

pg. 28 — South/East Isometric View

pg. 29 — South/Top Isometric View

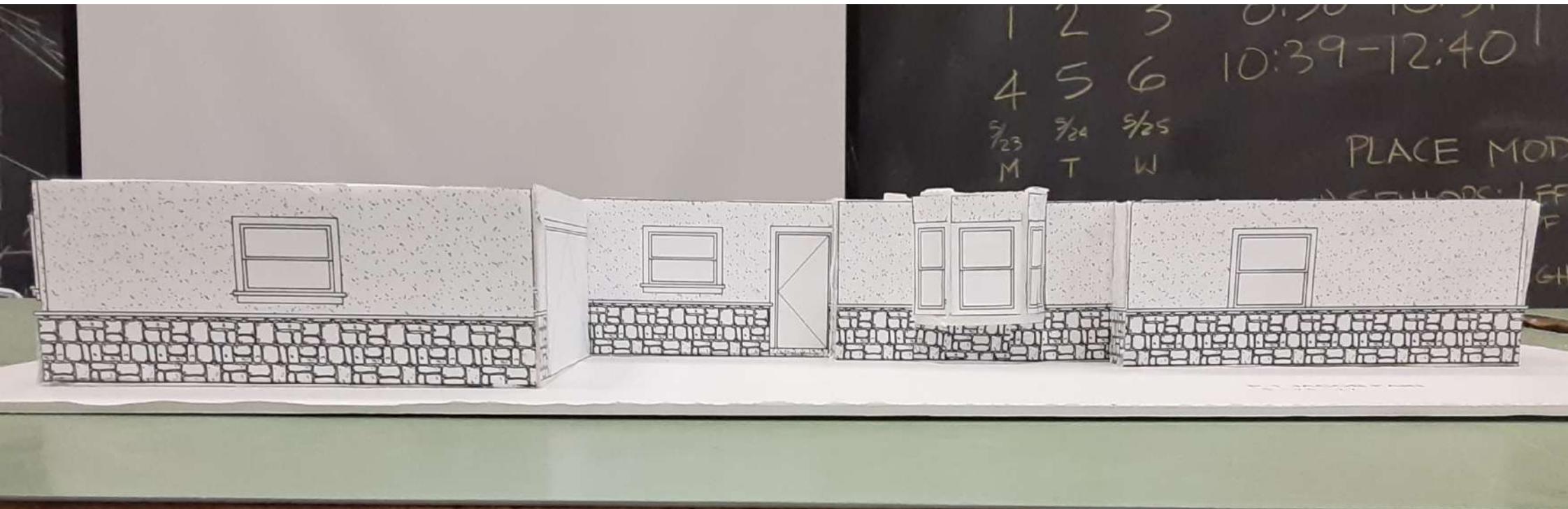
pg. 30 — South/West Isometric View

Collectively, the images demonstrate an understanding of building layout and scale, a comprehension of the three dimensionality of perpendicular and angled walls, and some ability to use tools to fashion and consolidate multiple parts of a building/object.

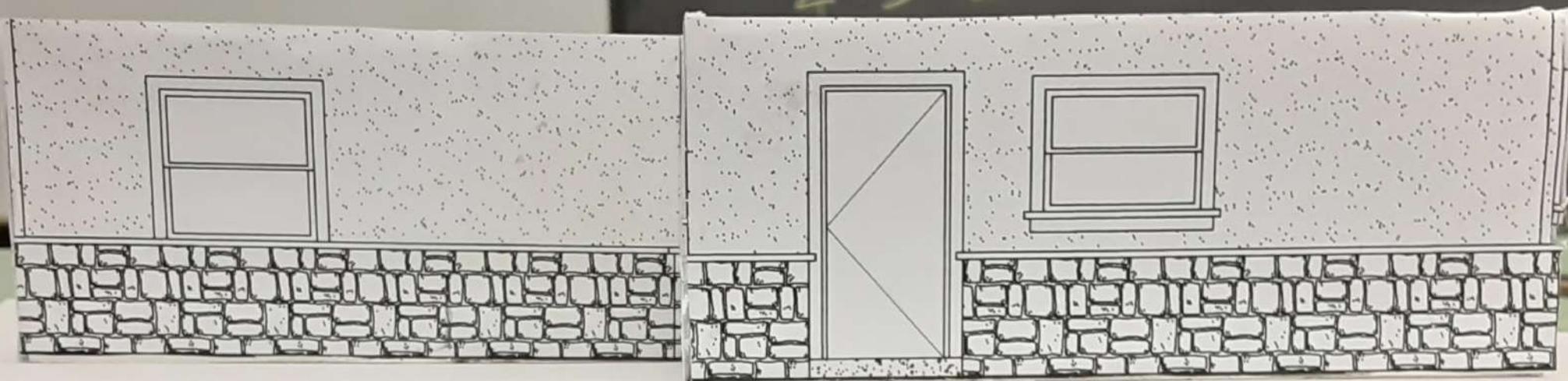


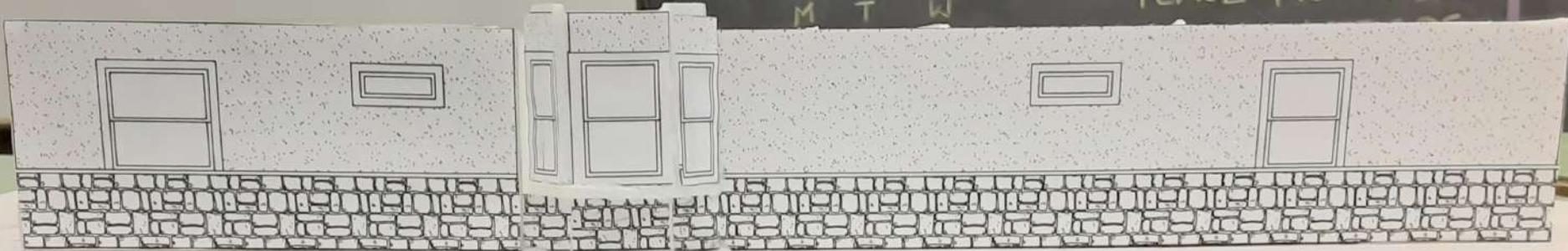
P 1 JACOB FAIN

5-23-22



1 2 3 0:20-10:30 | LEFT
4 5 6 10:39-12:40 |

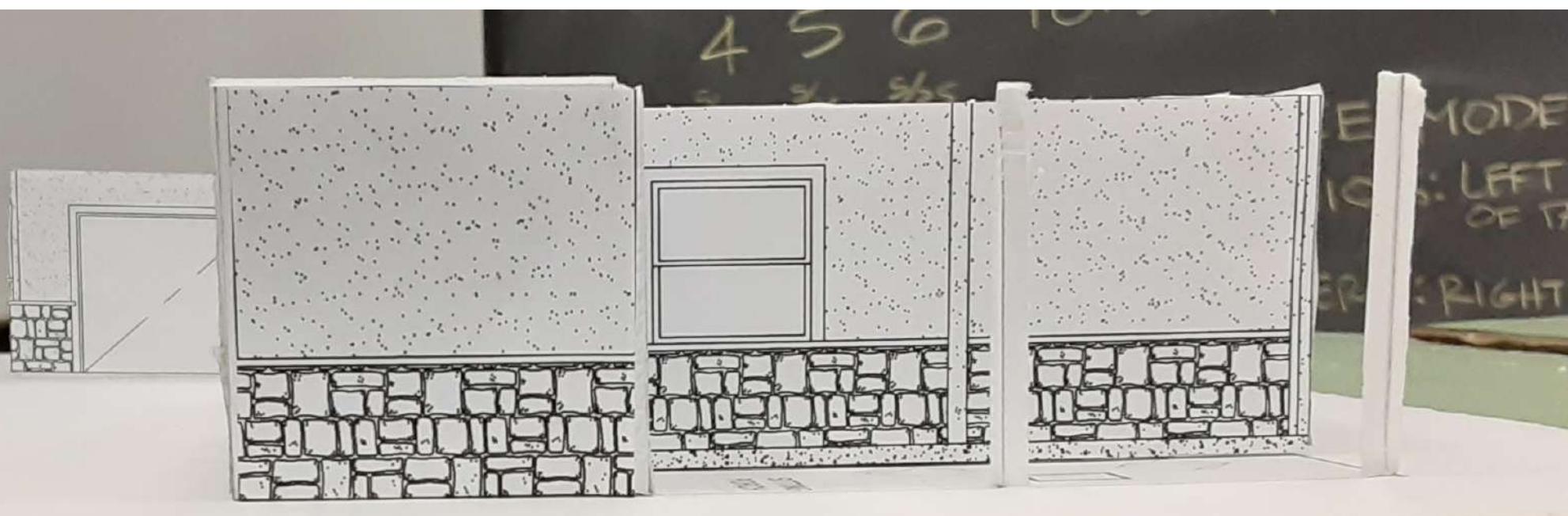


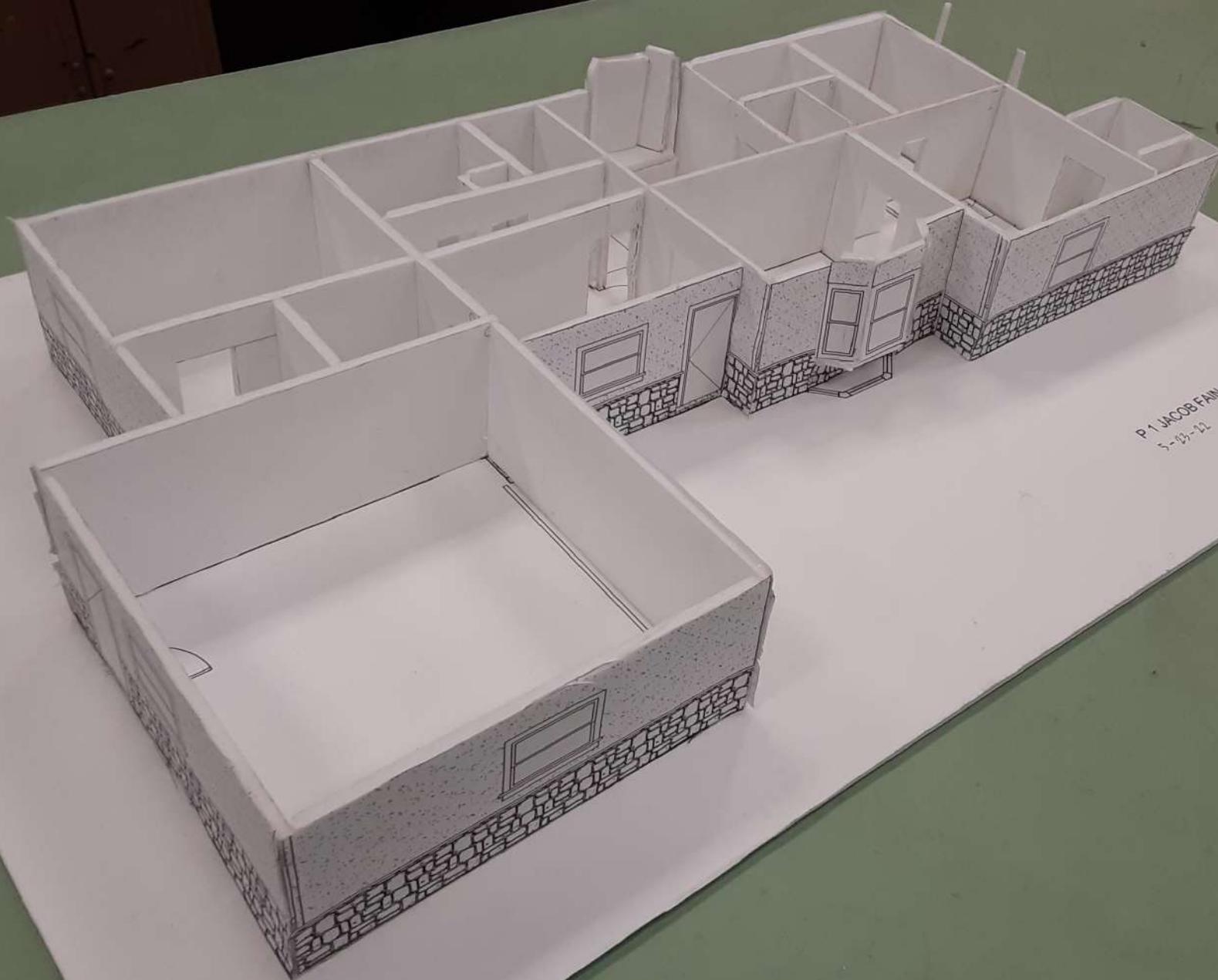


1	2	3	8:30 - 10:31	hours left
4	5	6	10:39 - 12:40	
$\frac{5}{23}$	$\frac{5}{24}$	$\frac{5}{25}$		
M	T	W		

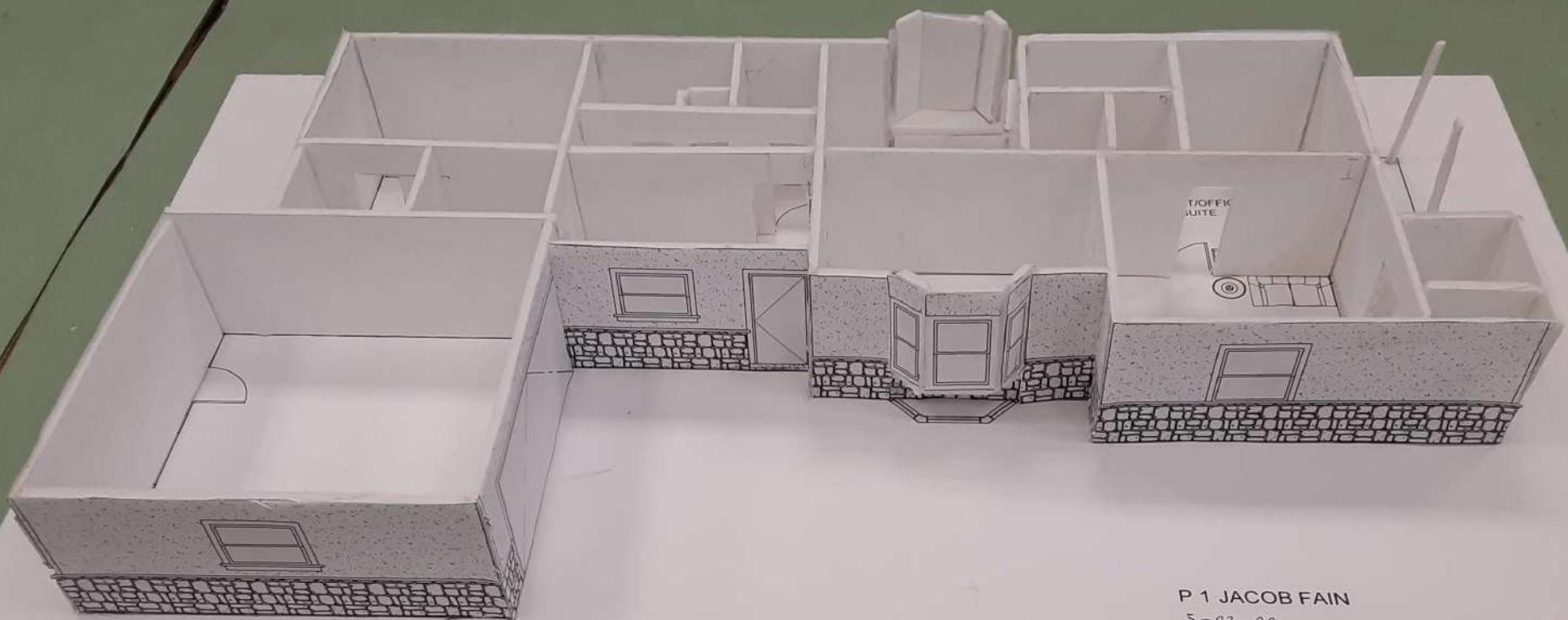
PLACE MODELS

PER 2,500
ROLL

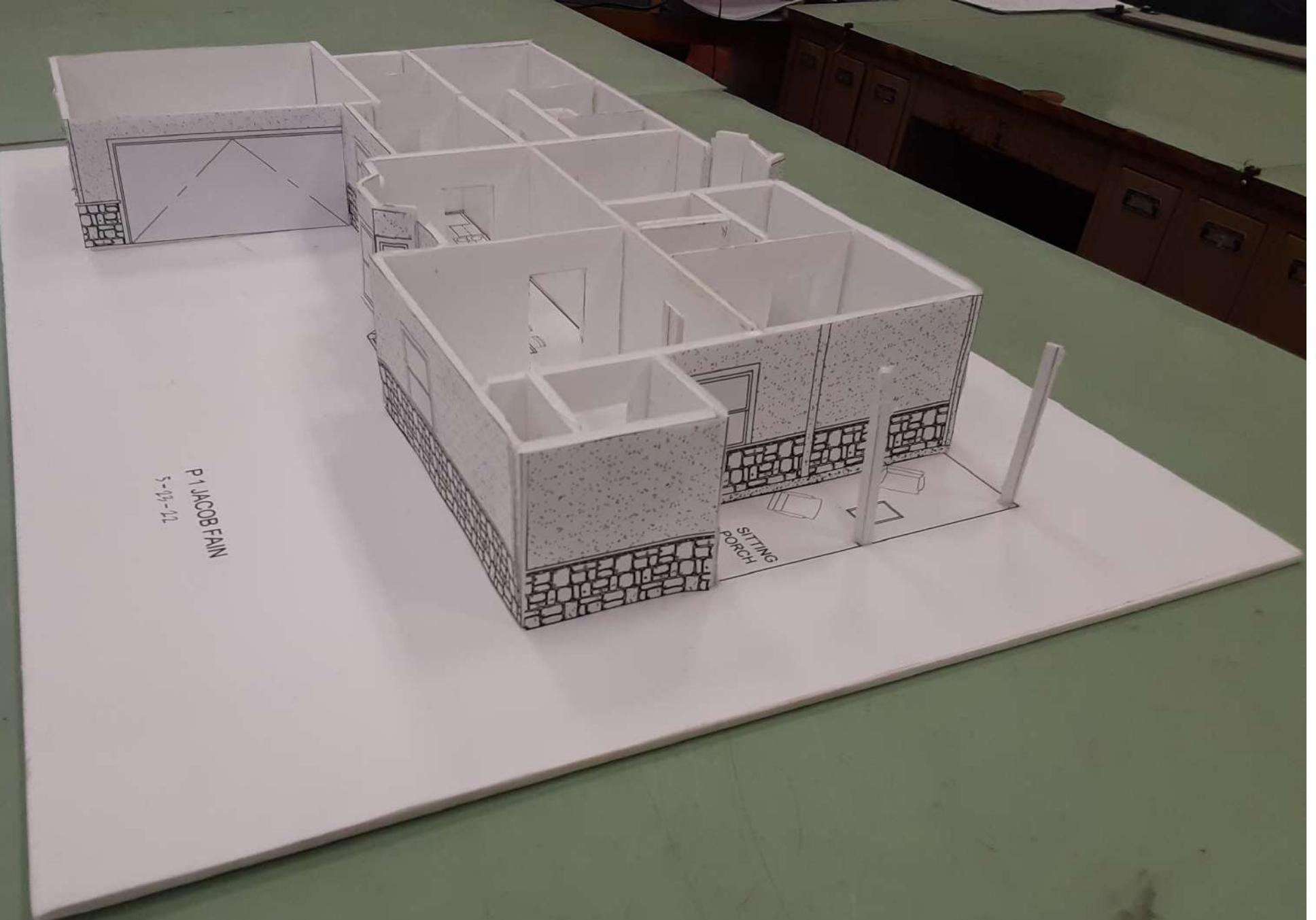


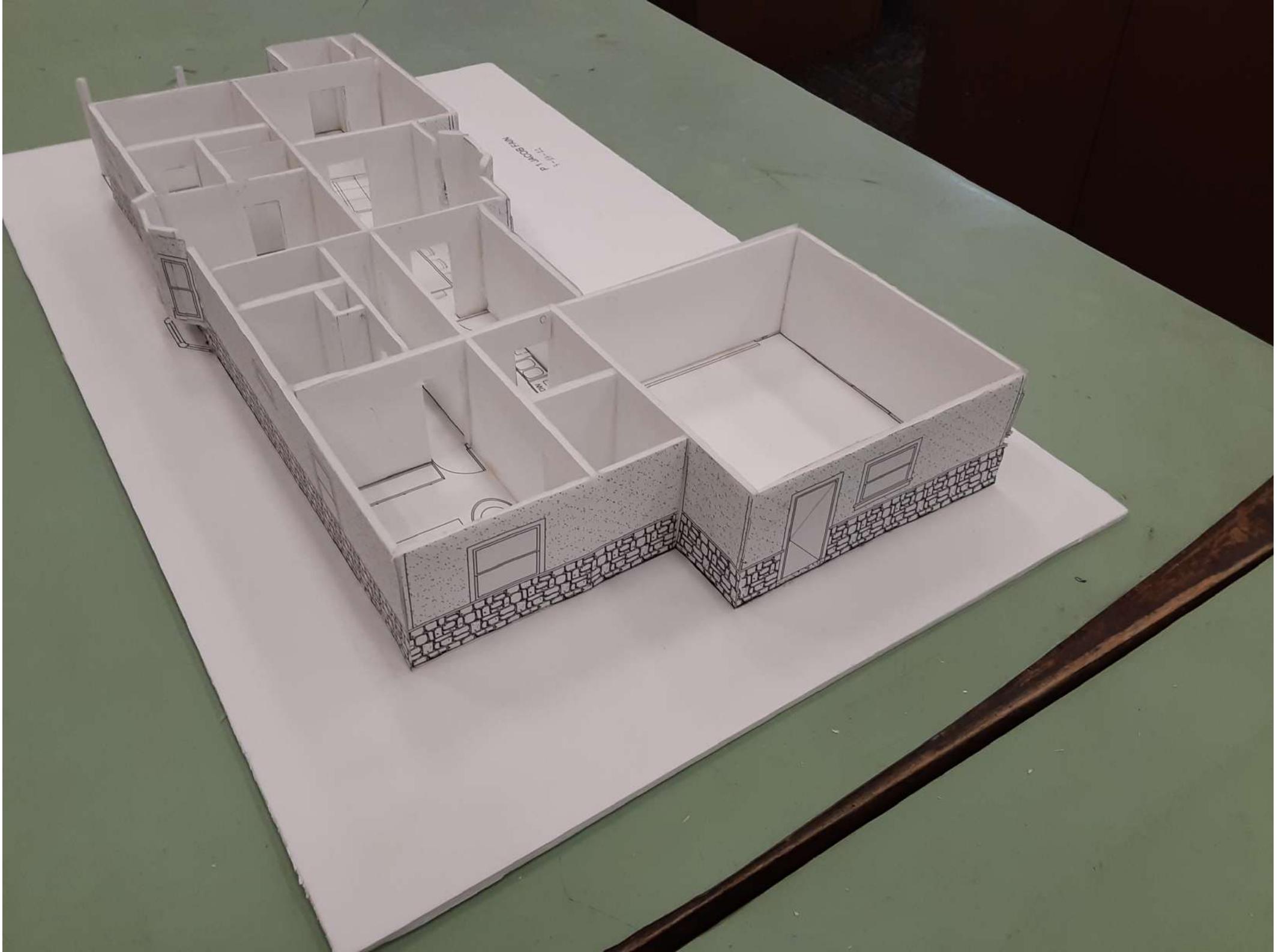


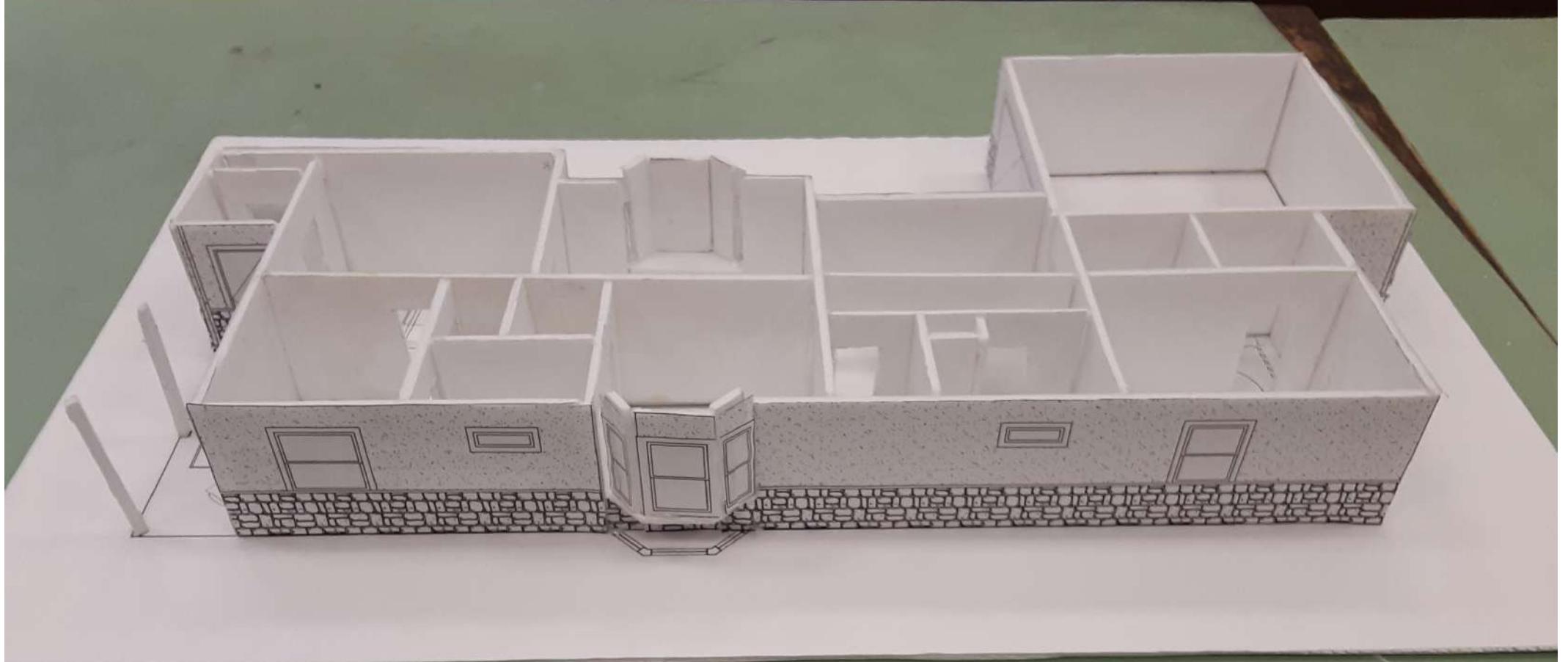
P1 JACOB FAIN
5-03-11

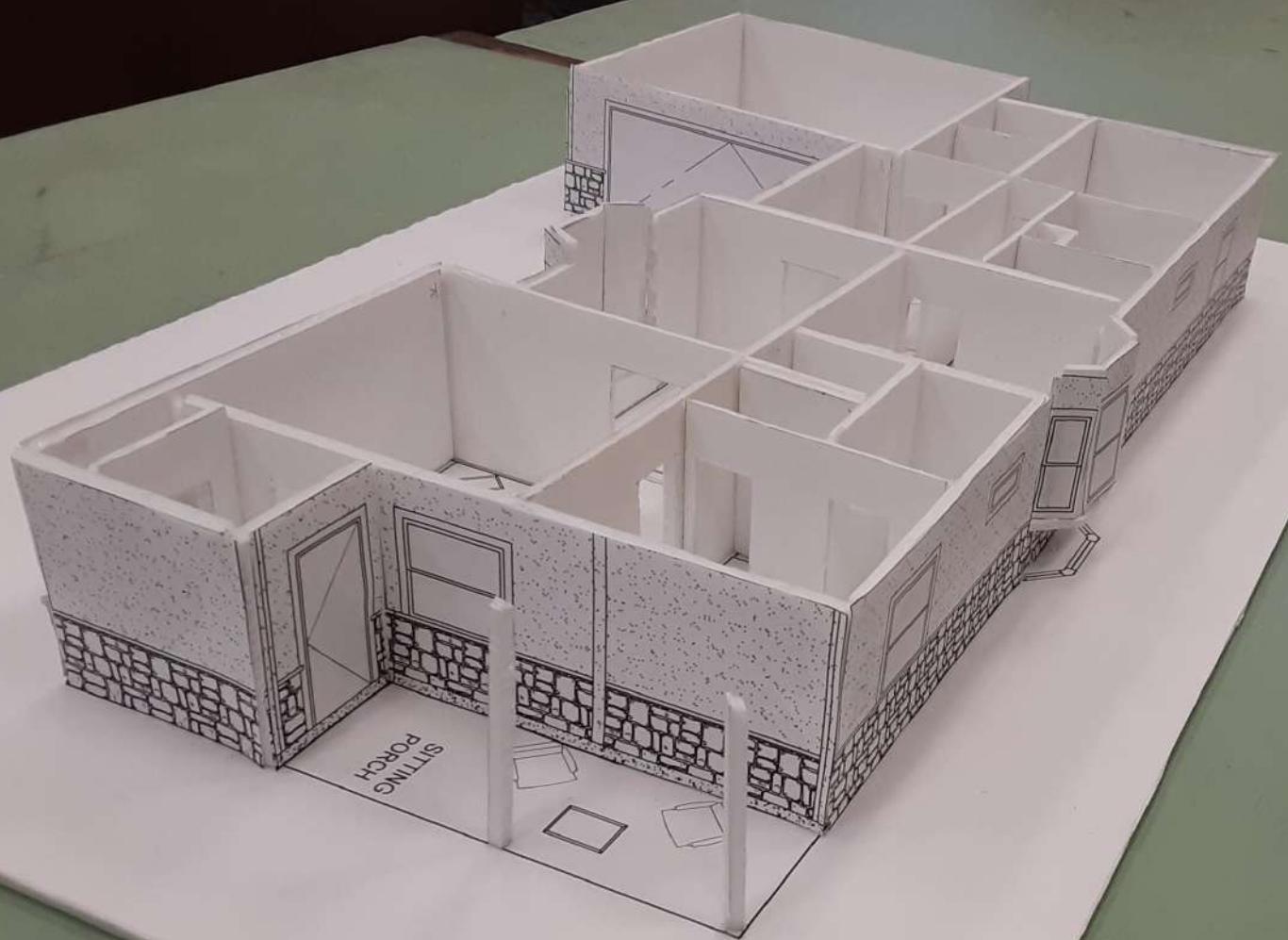


P 1 JACOB FAIN
5 - 23 - 22









Independent Work

The following exercises were performed recreationally to depict the size and components of certain machines, and were completed with graph paper, pencil, and a circle/square mixed stencil.

pg. 32 — “Anthro-mech” External Schematics

- Multi-view drawing of object with numerous angled components

pg. 33 — “Anthro-mech” Internal Schematics

- Understanding of “layers”/subsystems of an object, including notes

pg. 34 — Terex 33-19 “Titan” vs. UNSC M510 “Mammoth”

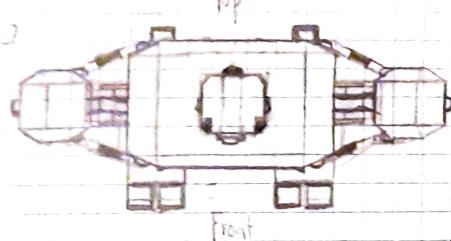
- Detailing, approximating proportions given only limited dimensions

“Anthro-mech” was a sci-fi inspired, humanoid robot I attempted to draft in seventh grade.

The Terex Titan is the former largest dump truck in the world. The UNSC Mammoth is a mobile headquarters used in the *Halo* video game franchise. I was only able to find length/height/width/weight measurements for both online, so I did my best to scale sections of each accordingly.

IR

Anthro-Mech / Multi-purpose - Variable Simian Remote Robot (MK1)



Front

(MK2, 2000)

B4

Military / Police: Heavy Assault Unit

Combustion: Medium Lifting / Recovery Unit or Vehicle

Search / Rescue: Hazardous Material

Space / Planetary Exploration: Micro-rover and Self-Expanding Platform

Dimensions:

Height: 20 ft

Width: 11 ft

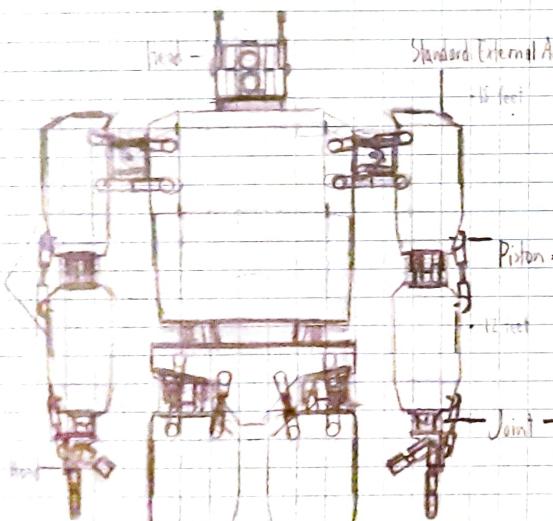
Depth: 4.8 ft

Weight: 8 tons

Side (Deployment)

The Anthro-Mech is a large
robotic unit, roughly 20 ft
in height. It has a very
unique, human-like design.

Back



Standard External Armor

16 feet

Piston

Joint

6 feet

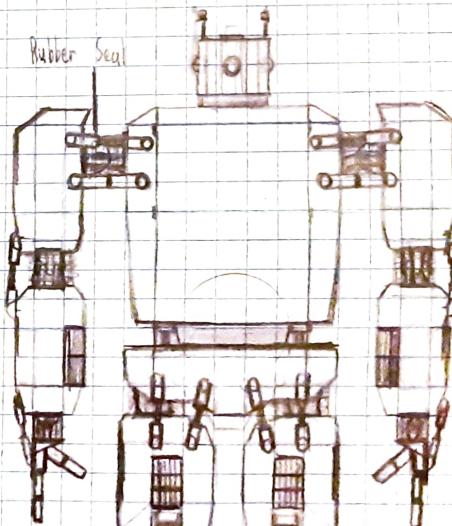
Av.

Human



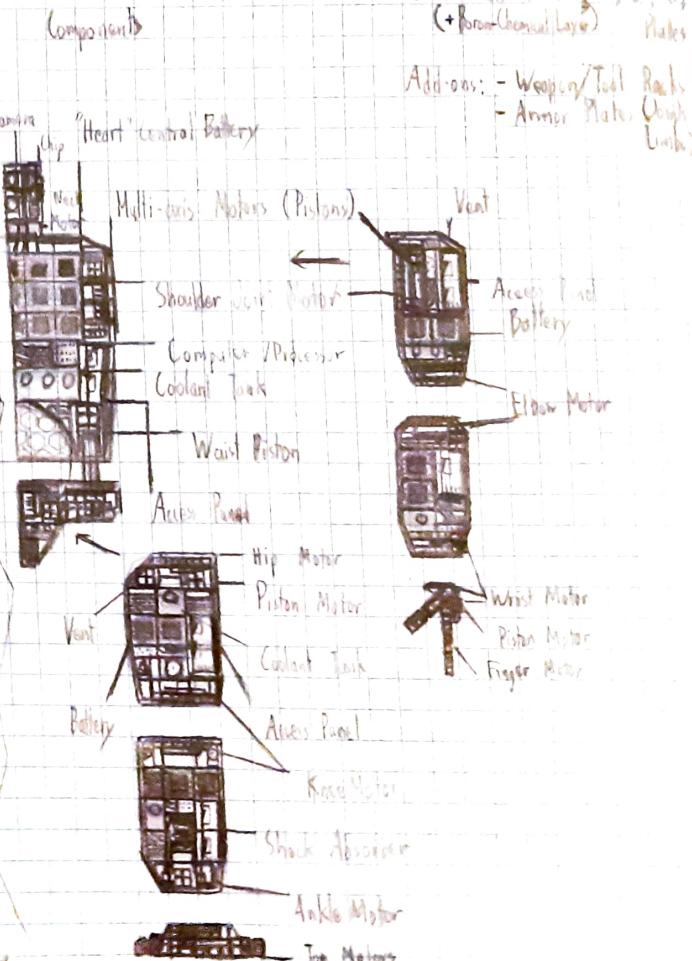
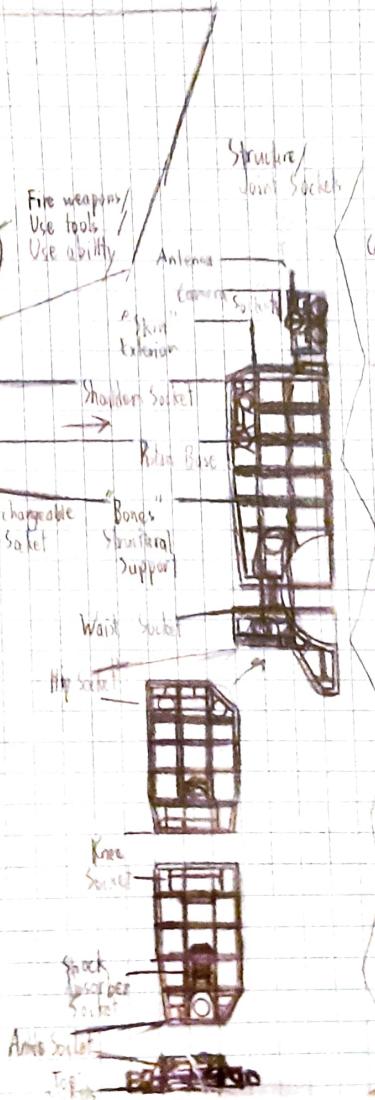
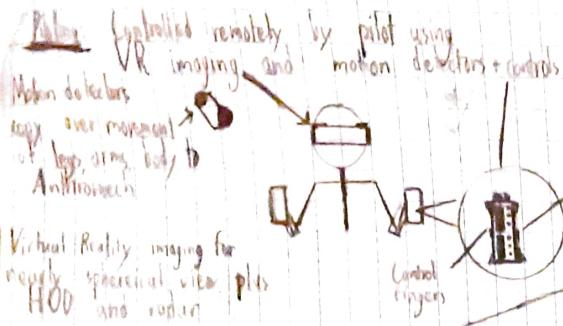
Rubber Seal

Vent



MK1 Anthro-mech Functions / Internal

MK2 = 1.5x proportional dimensions
MK3 = 2x proportional dimensions



Power Sources:

- Batteries
- Gas?
- Chem/EP
- Solar/Radiation?

Armor:

- $Ti_2 Mn_2 W, Al_2$
- Reinforced Carbon Fiber
- Internal Structure - Titanium/Carbon Fiber Rods
- Ductile+Rubber Polymer Seal

Variable Armor:

- Assault - $Ti_2 Mn_2 W, Al_2$
- Cr_2 Plates
- Hazard Resistant - $Ti_2 W_3 Cr_3$ (+ Boron-Chromium Layer) Plates

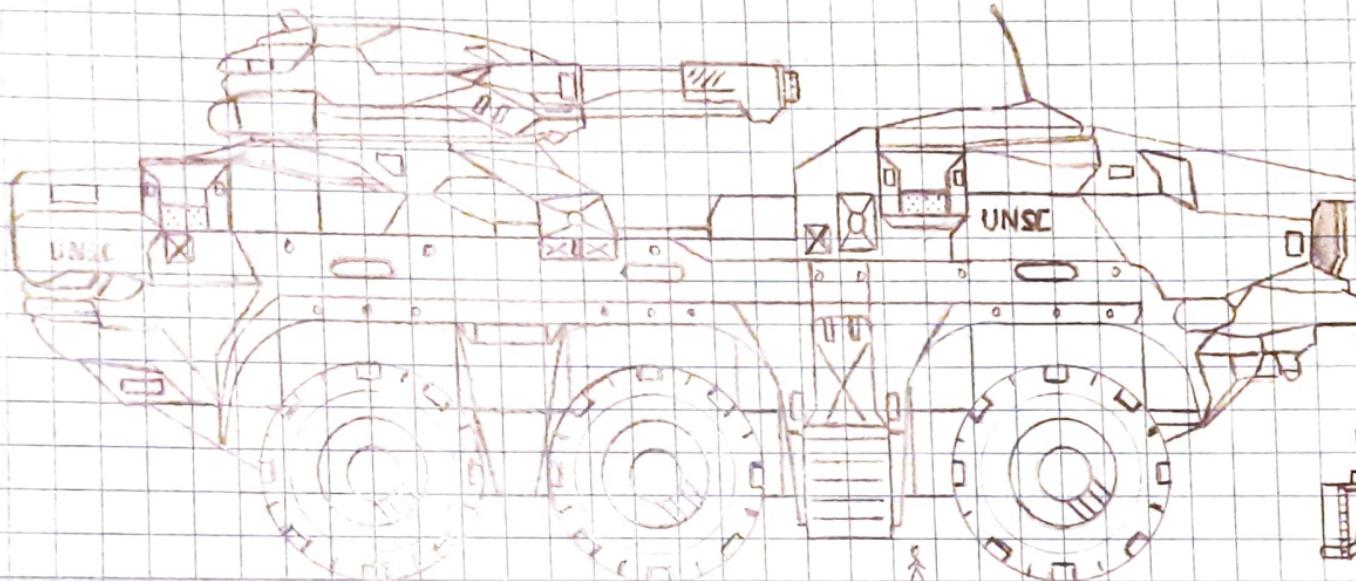
Add-ons:

- Weapon/Tool Racks
- Armor Plates (Ductile Lining)

UNSC M510 'Mammoth'

x 1m
2m

2-5-2022



Tenex 33-19 Titan

