



04/29/25

Cover Page

A0.1

Campbell House

14575 W. 45th St. N.
Colwich, KS 67030

Permit #: TBD

Project Scope

FINISHED SQFT	
Basement	1,741
1st Floor	2,232
2nd Floor	1,735
	5,708

CONDITIONED SQFT	
Basement	2,143
1st Floor	2,232
2nd Floor	1,735
	6,110

UNCONDITIONED SQFT	
Garage	346
Sunroom	346
Decks	304
	996

Volume

CUBIC FT	
Basement	18,215
1st Trusses	3,348
1st Floor	20,088
2nd Trusses	3,348
2nd Floor	17,856
	62,855

Volume includes finished and unfinished spaces. It also includes open to below areas.

Material Estimates

Brick	4,514 sqft
Stone	196 lf
Shingles	4,717 sqft
Flatwork	3,380 sqft
Perimeter	285 lf
Windows	65
Doors	8
Gutters	311 lf

Material estimates are just **approximate** values that contractors can use to gauge the scale of the work. Not intended for final quotes.

Targets

THERMAL & AIR	
Slab	R 10
Foundation Wall	R 26
Framed Wall	R 33
Roof	R 64
Air Leakage	.6 ACH50

WINDOW	
U Value	0.18
SHGC	< 0.4
VT	> 0.5
Air Infiltration	0.1

South facing window wall to have higher SHGC than other windows in the house.

STRUCTURAL	
Deflection	L/480
Dead Load	15
Live Load	40
Roof Snow Load	20
Wind Load	115 / C
Site Class	D

Contacts

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Site Plan & Surveyor
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Project Data

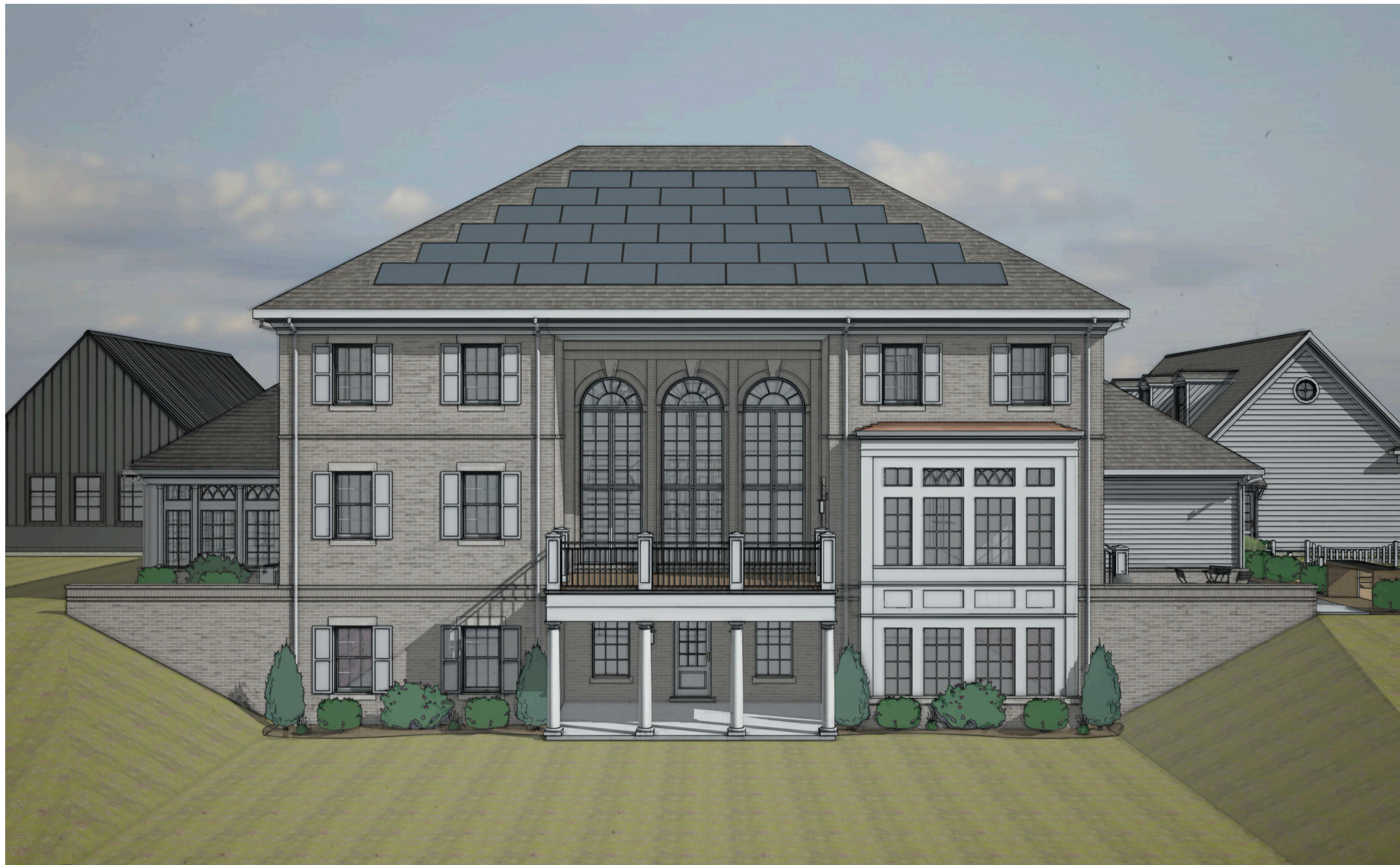
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North Render

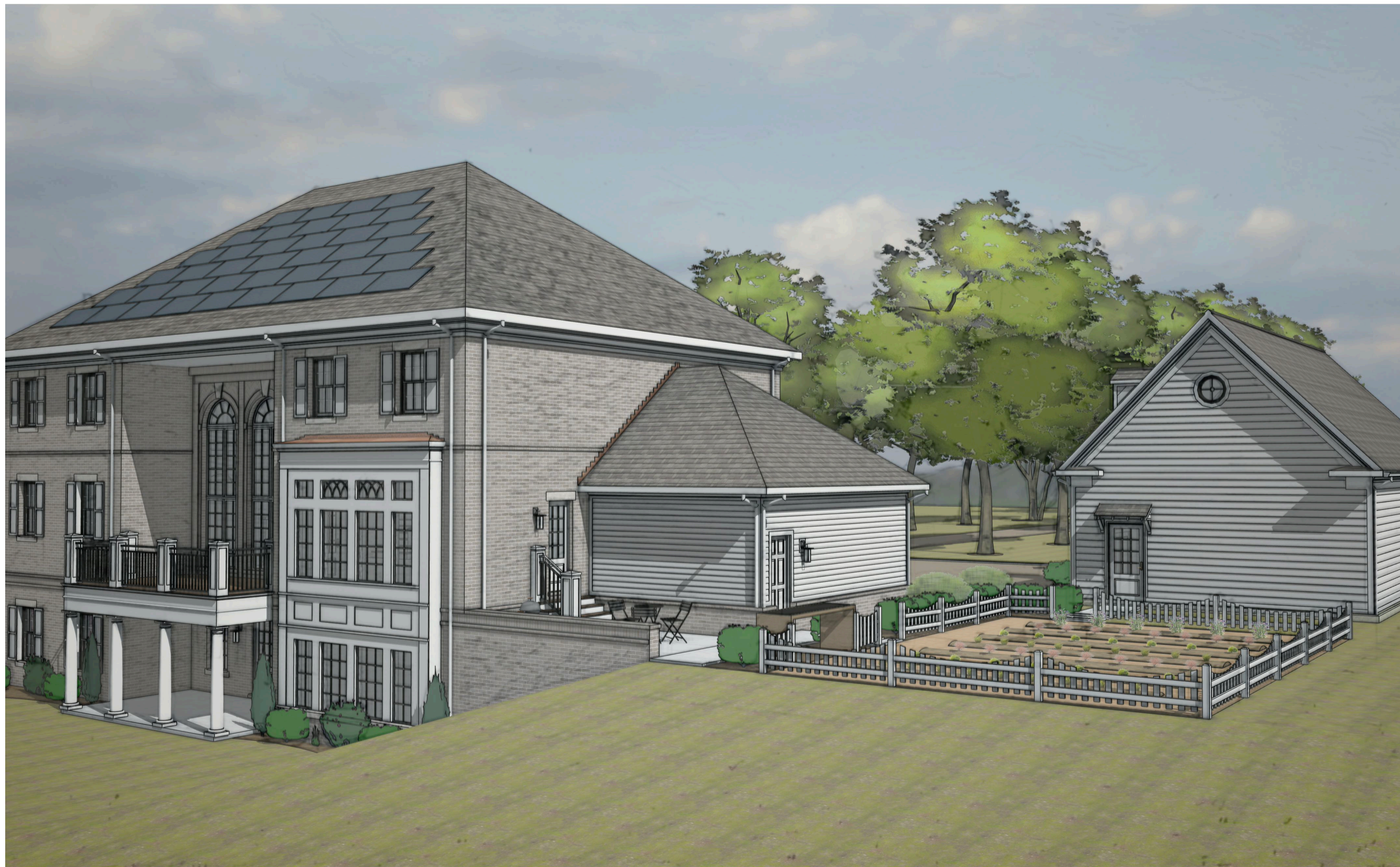
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South Render

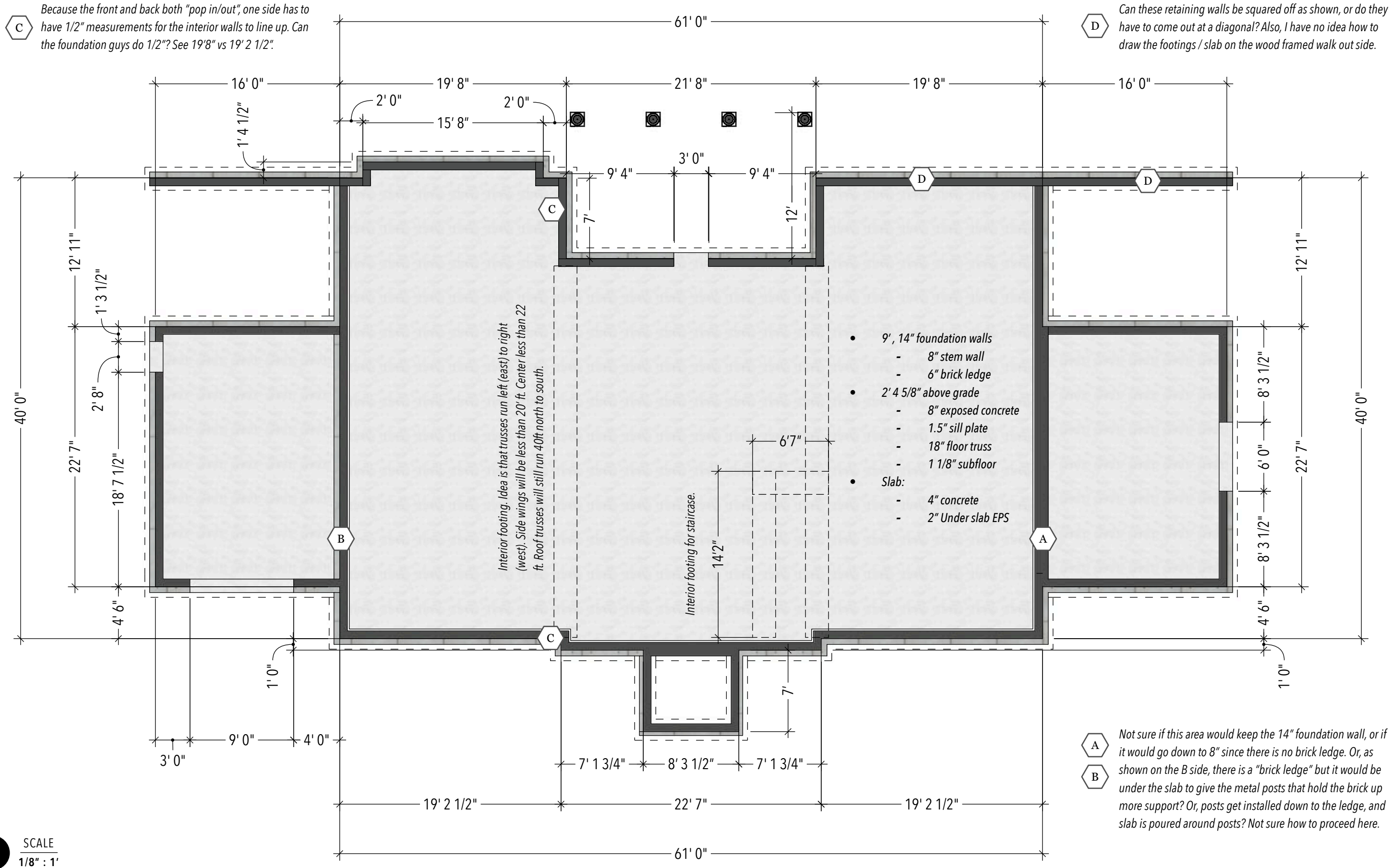
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South East Render

A0.5



C Because the front and back both "pop in/out", one side has to have 1/2" measurements for the interior walls to line up. Can the foundation guys do 1/2"? See 19'8" vs 19' 2 1/2".

D Can these retaining walls be squared off as shown, or do they have to come out at a diagonal? Also, I have no idea how to draw the footings / slab on the wood framed walk out side.

A Not sure if this area would keep the 14" foundation wall, or if it would go down to 8" since there is no brick ledge. Or, as shown on the B side, there is a "brick ledge" but it would be under the slab to give the metal posts that hold the brick up more support? Or, posts get installed down to the ledge, and slab is poured around posts? Not sure how to proceed here.

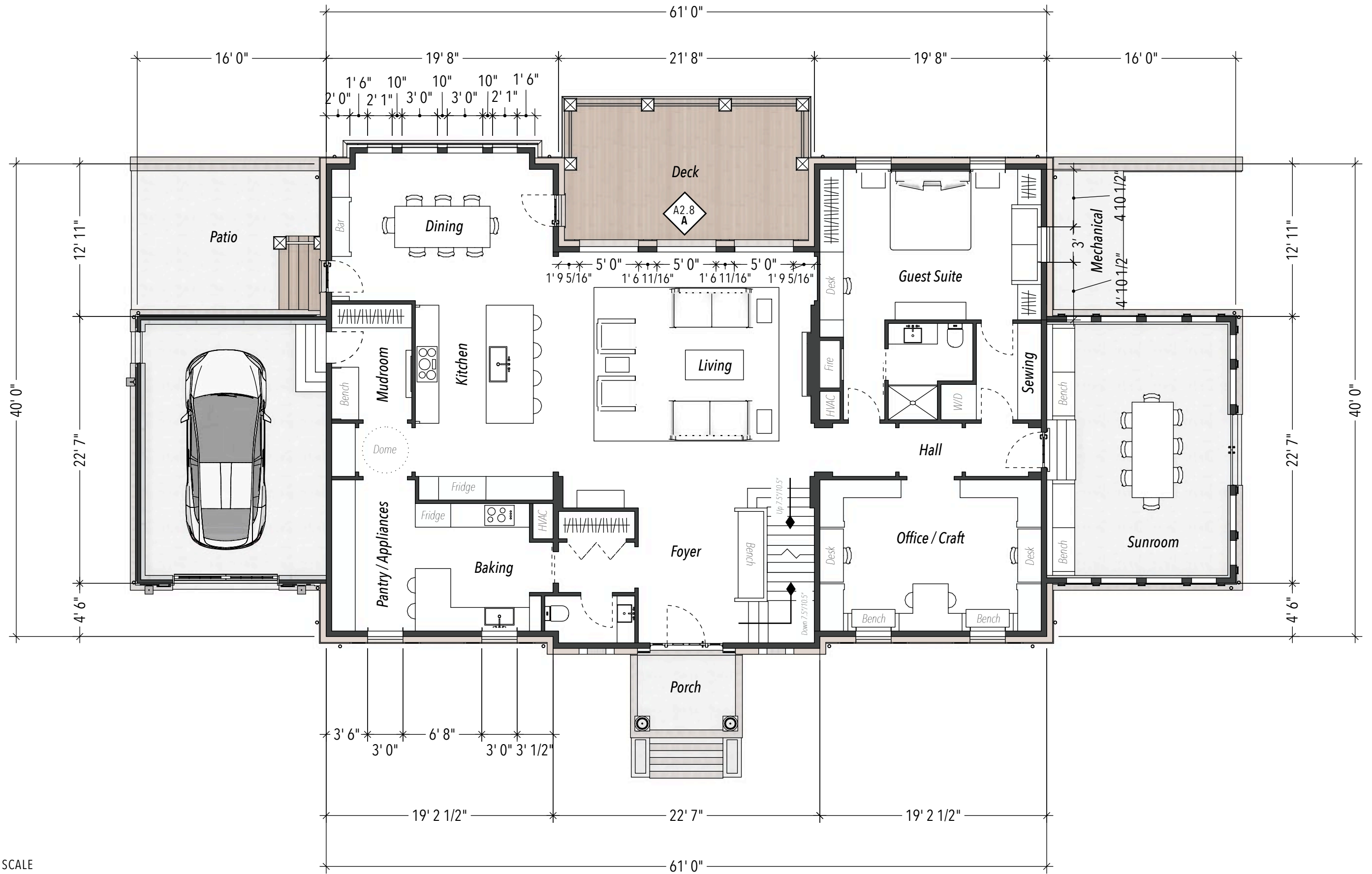
B

N
SCALE
1/8" : 1'

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Foundation Plans

A2.1



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1st Floor

A2.2

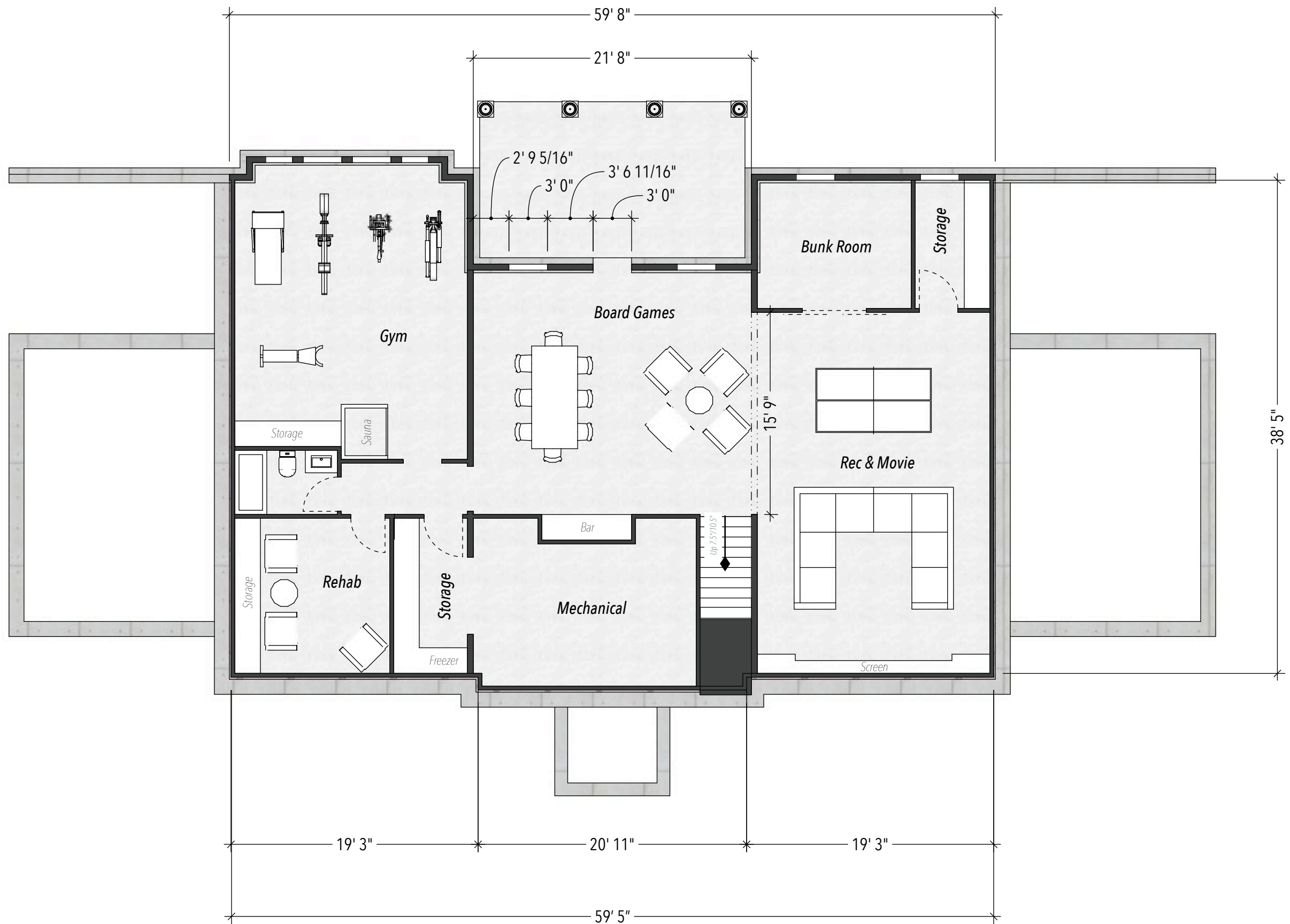


SCALE
1/8" : 1'

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2nd Floor

A2.3



SCALE
1/8" : 1'

05/01/25

Basement

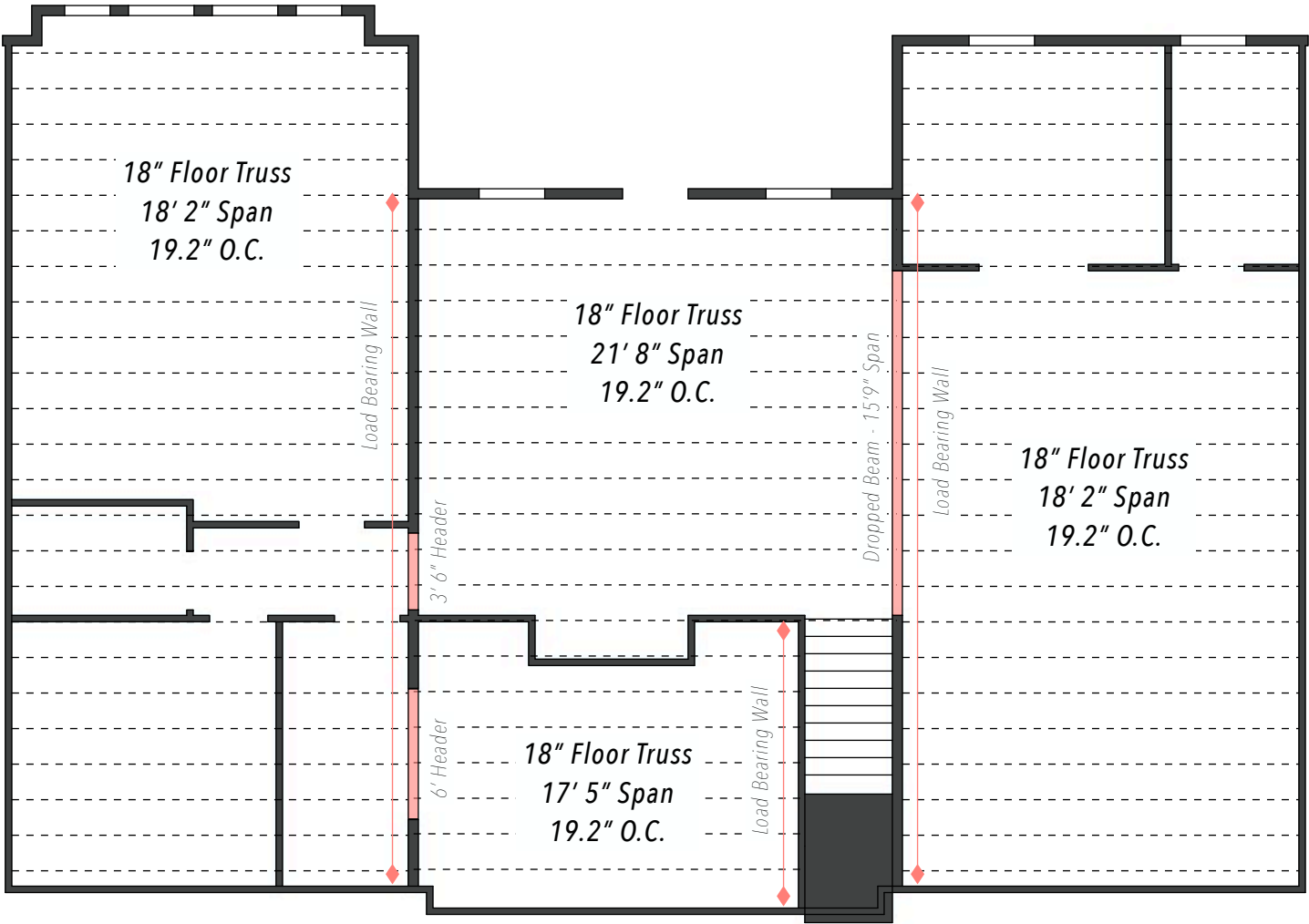
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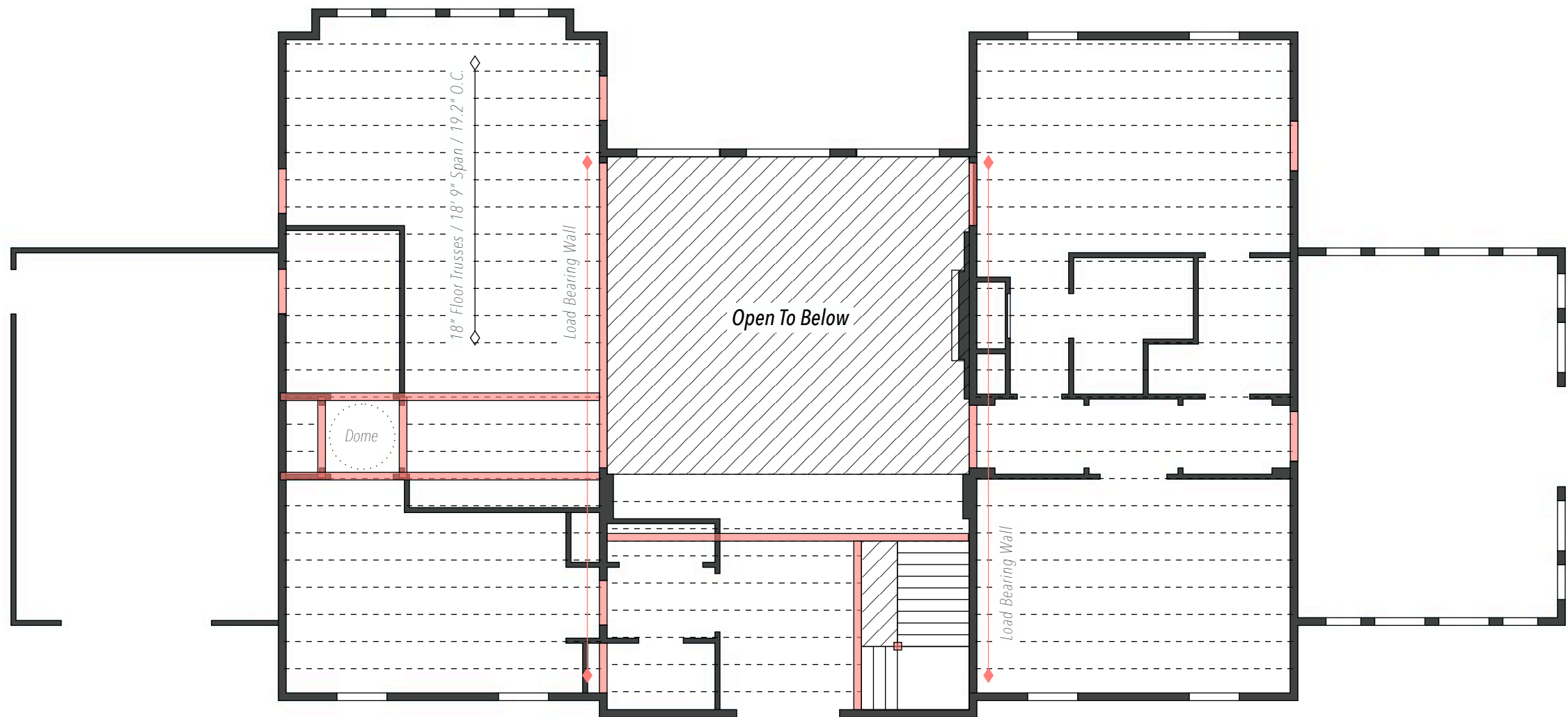
TODO

Truss spans shown reflect distance to interior basement wall. Sill plate on foundation wall is ~5.5" further.

TODO

Check span charts: Wings could be 24" OC and still meet L/480. With 1 1/8" subfloor, that should be stiff enough.



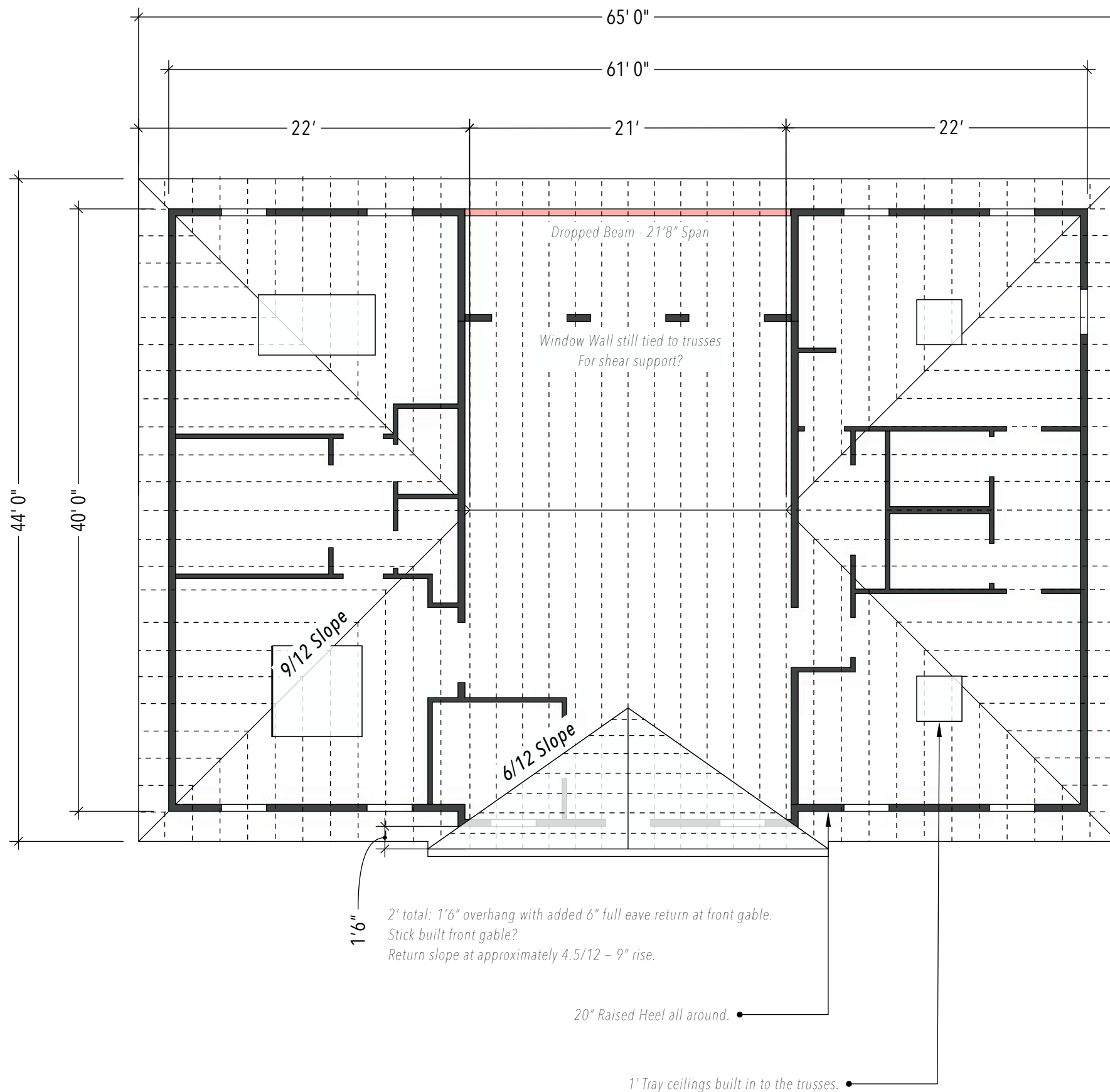


SCALE
1/8" : 1'

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2nd Floor Trusses

A2.6



Ventilation

SQ IN	
Needed	1171
Ridge	420
Eaves	751
Ratio	64/36

1. Ridge assumes max of 20NFVA/ft.
2. 5" hockey puck vents in each truss bay for ~7.3 NFVA per vent.
3. Linear vent under front gable.

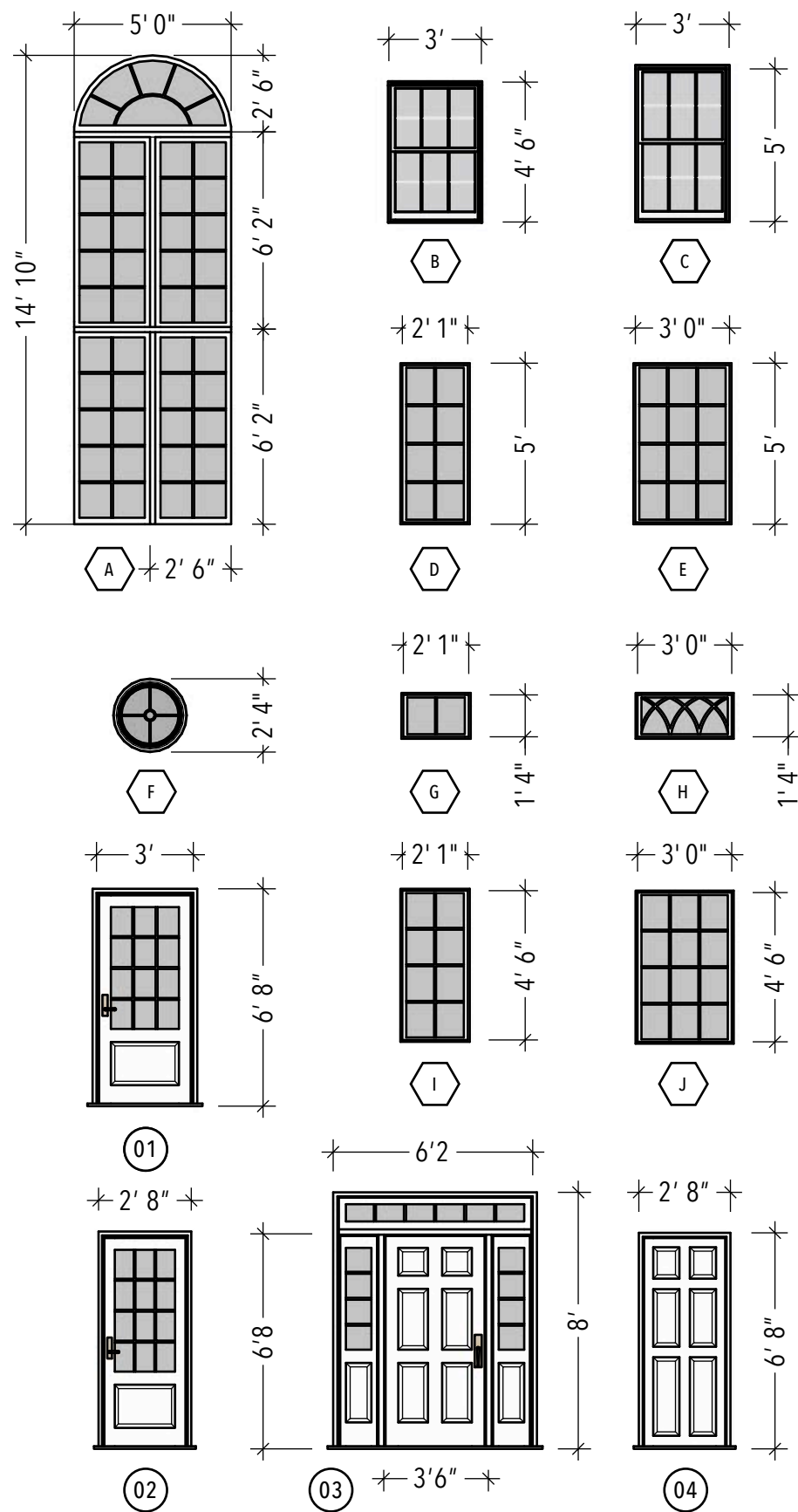


SCALE
1/8" : 1'

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Roof Trusses

A2.7



Windows

	WIDTH	HEIGHT	STYLE	QTY	NOTES
A	5'	14'10"	Picture	3	4 identical with vertical and horizontal mull. Arch on top.
B	3'	4'6"	Double Hung	9	
C	3'	5'	Double Hung	9	
D	2'1"	5'	Picture	4	
E	3'	5'	Picture	8	
F	2'4"	2'4"	Picture	2	
G	2'1"	1'4"	Picture	8	6 on Sunroom are double pane / vinyl.
H	3'	1'4"	Picture	10	8 on Sunroom are double pane / vinyl.
I	2'1"	4'6"	Picture	6	Double pane / vinyl.
J	3'	4'6"	Picture	6	Double pane / vinyl.

See A3:Elevations for sill heights.

WINDOWS	SQFT	NORTH	SOUTH	EAST	WEST	NOTES
65	833	13%	24%	N/A	5%	% is windows only conditioned walls of the house.

Doors

	WIDTH	HEIGHT	SWING	QTY	NOTES
01	3	6'8"	Left	3	Try to match glass height with nearby window sills on these.
02	2'8"	6'8"	Right	2	
03	6'2	8'	Left	1	
04	2'8"	6'8"	Left	2	

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Window & Door Schedule

A2.8



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North Elevation

A3.1

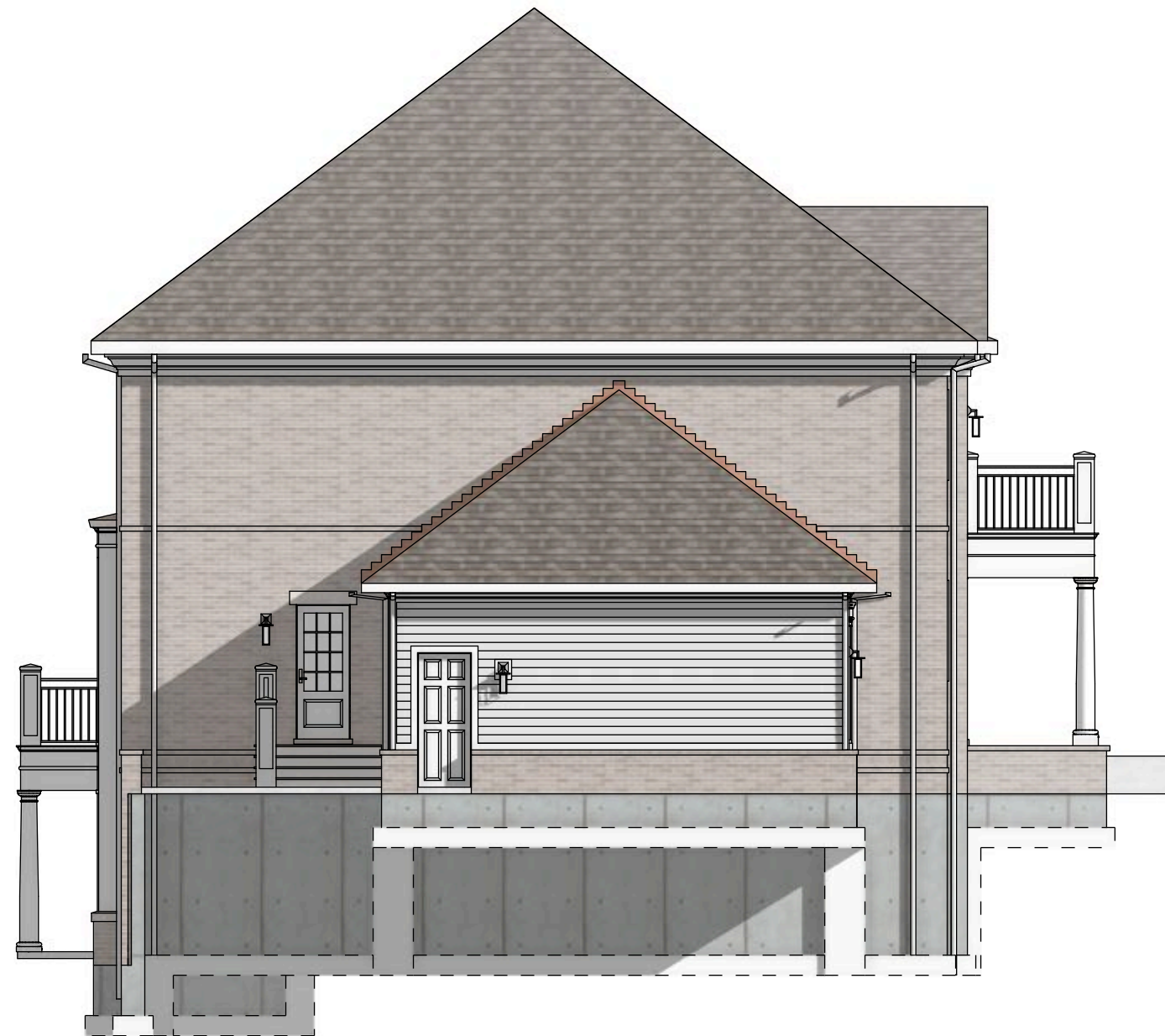
WINDOWS AS SHOWN ARE 14'10"
1 1/8" SUBFLOOR + 9' 1 1/4" WALLS + 18" TRUSS + 3/4" SUBFLOOR + 8' 1 1/8" WALLS
GIVES A TOTAL WALL HEIGHT OF 18' 10 1/4"
CURRENT PLANS SHOW WINDOW 3" ABOVE SUBFLOOR
WHICH LEAVES 3' 8 1/4" FROM TOP OF WINDOW TO CEILING



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South Elevation

A3.2



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East Elevation

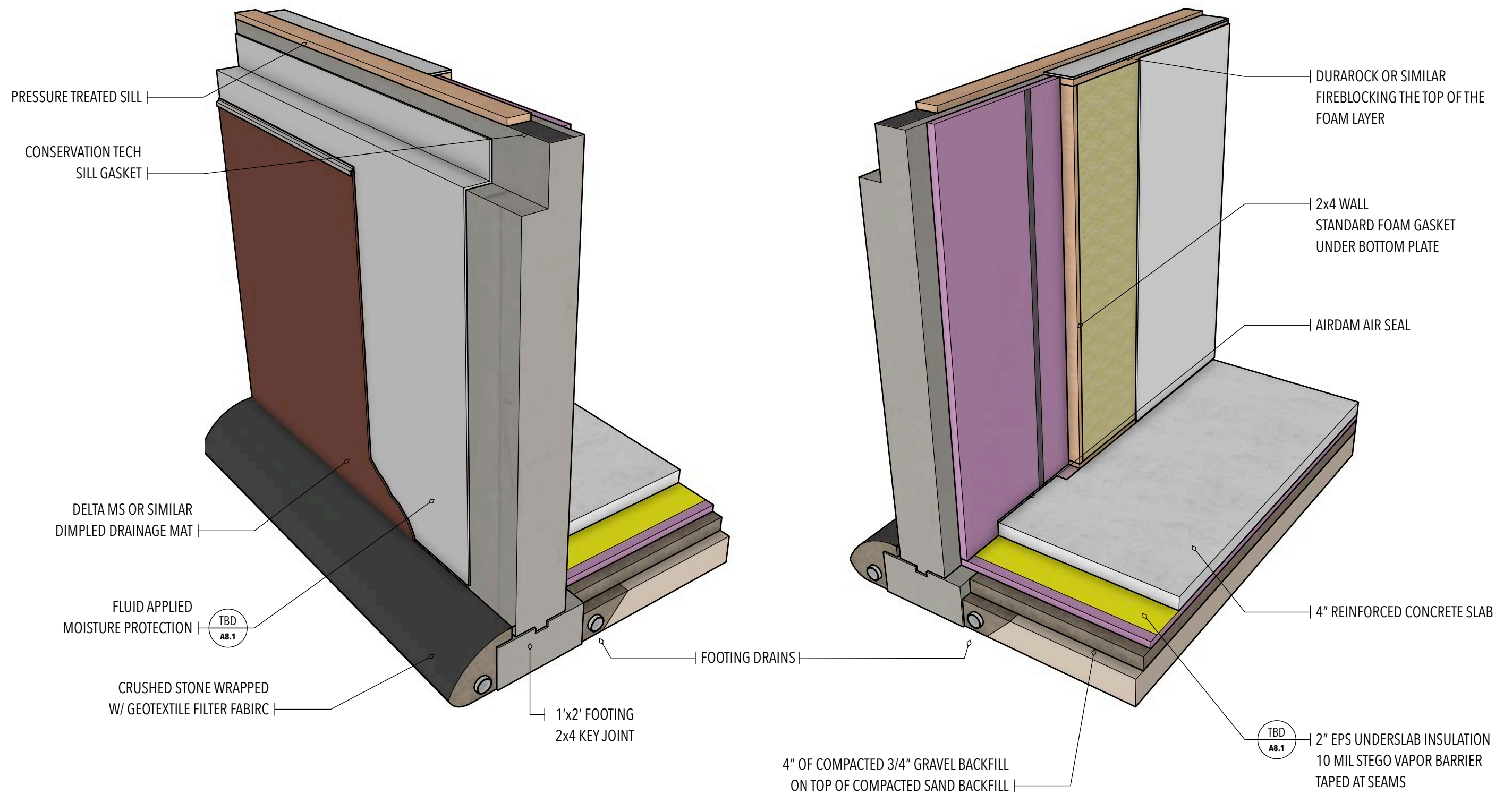
A3.3



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West Elevation

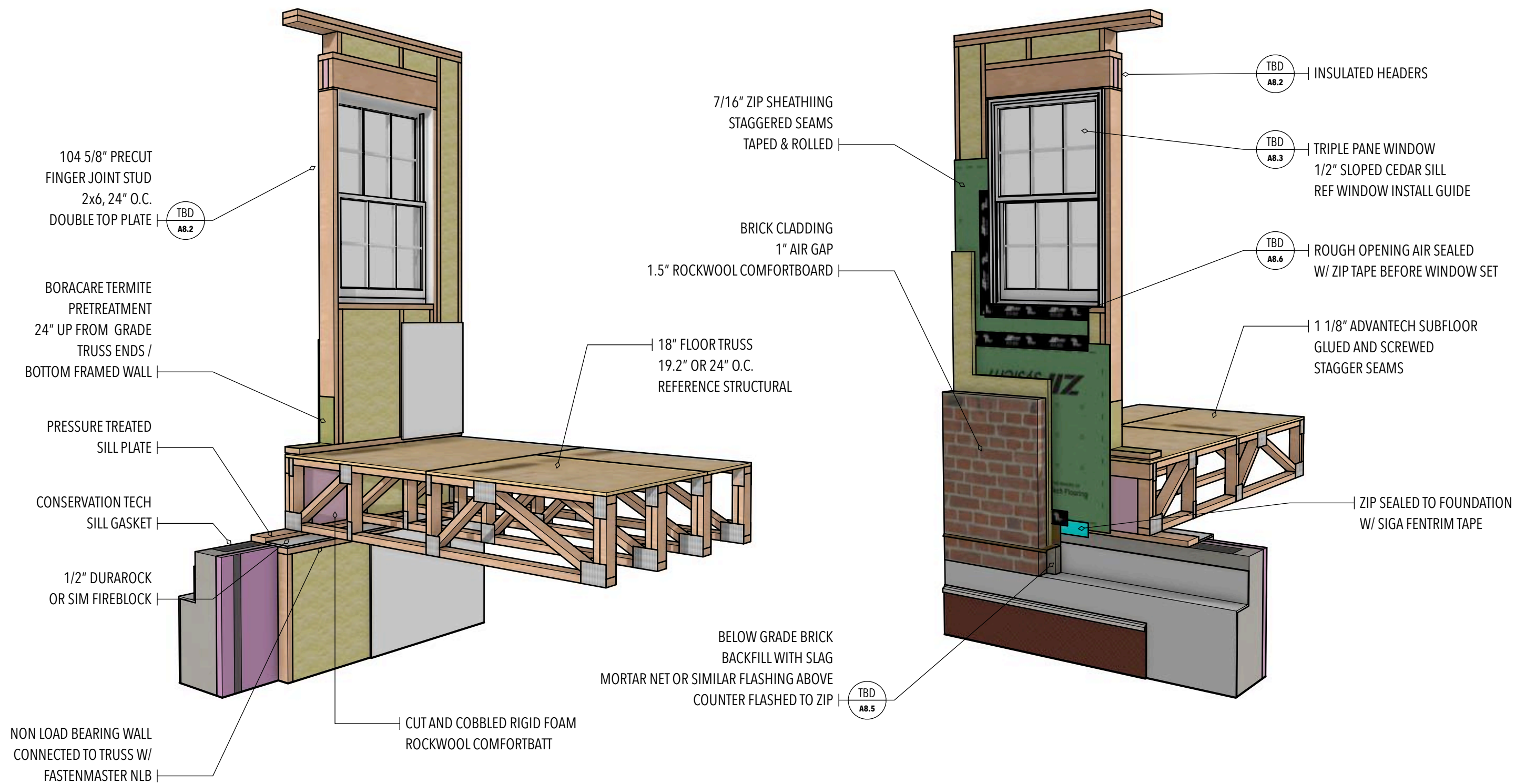
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Basement Wall Assembly

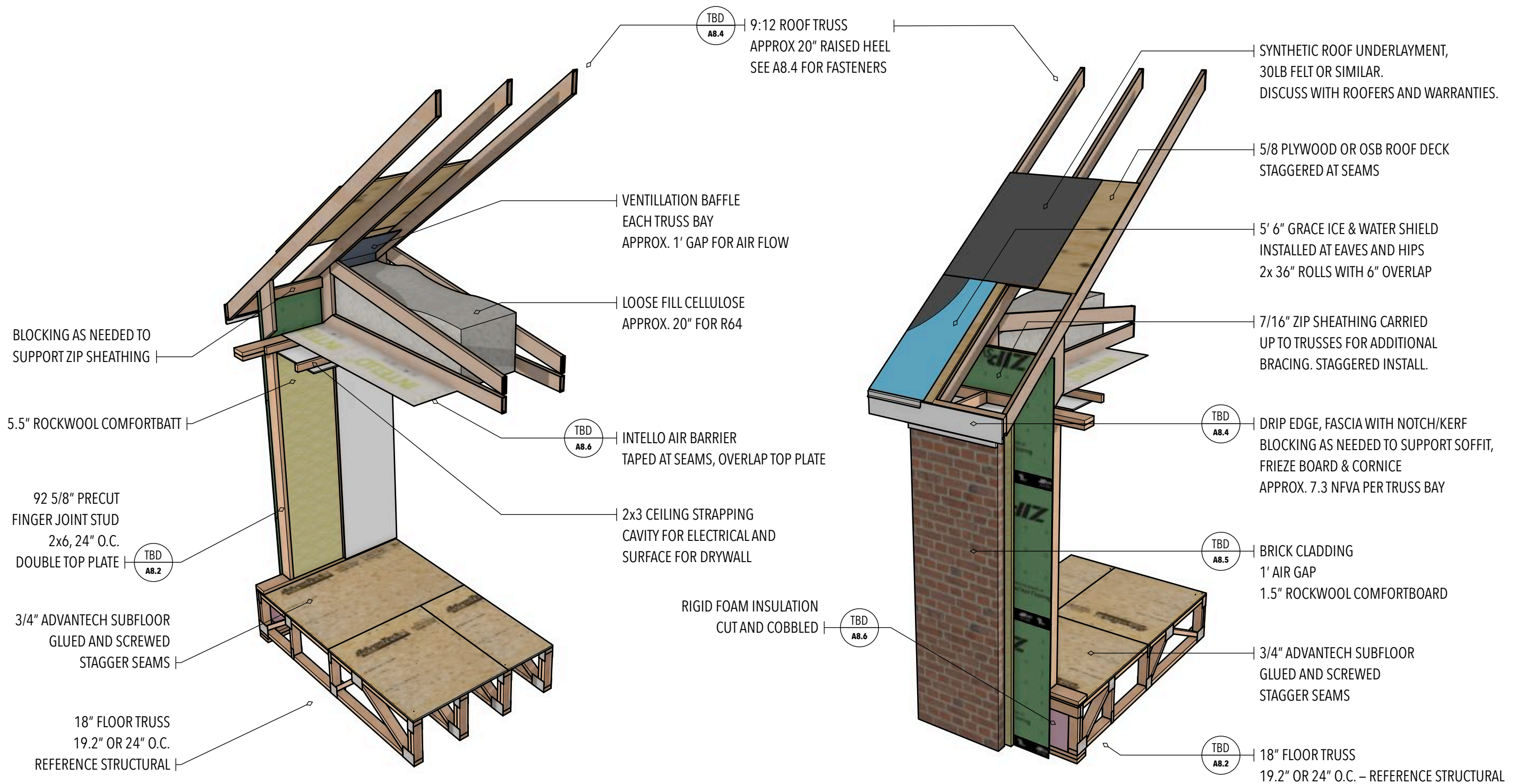
A4.1



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1st Floor Assembly

A4.2



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2nd Floor & Roof Assembly

A4.3

IN PROGRESS
Waiting on structural for foundation details.

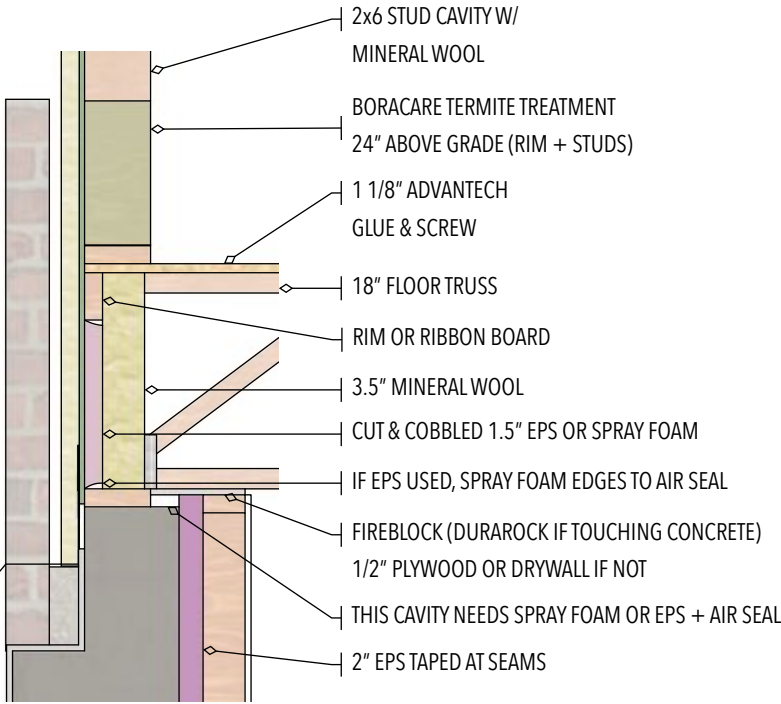
1 BRICK LEDGE DETAIL

IN PROGRESS
Waiting on structural for foundation details.

2 SLAB @ GARAGE DETAIL

IN PROGRESS
Waiting on structural for foundation details.

3 BASEMENT WALL DETAIL



4 RIM INSULATION DETAIL
SCALE: 3/4" = 1"

IN PROGRESS
Waiting on structural for walk out slab detail.

5 WALK OUT CORNER DETAIL

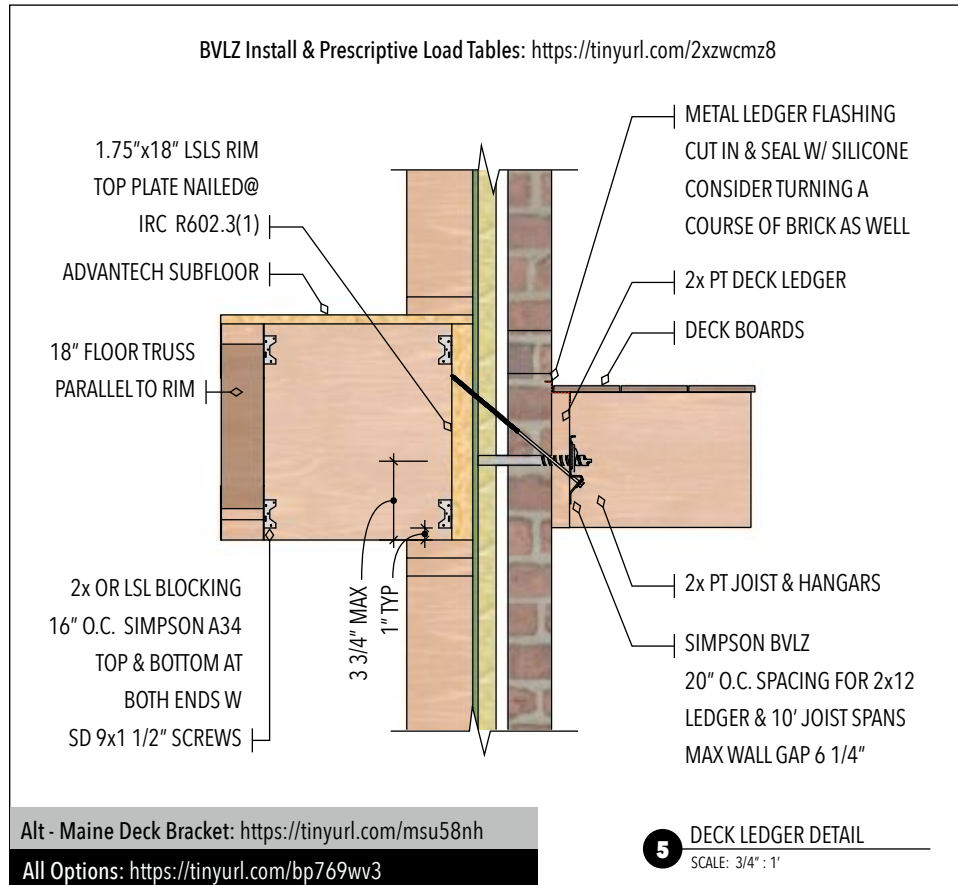
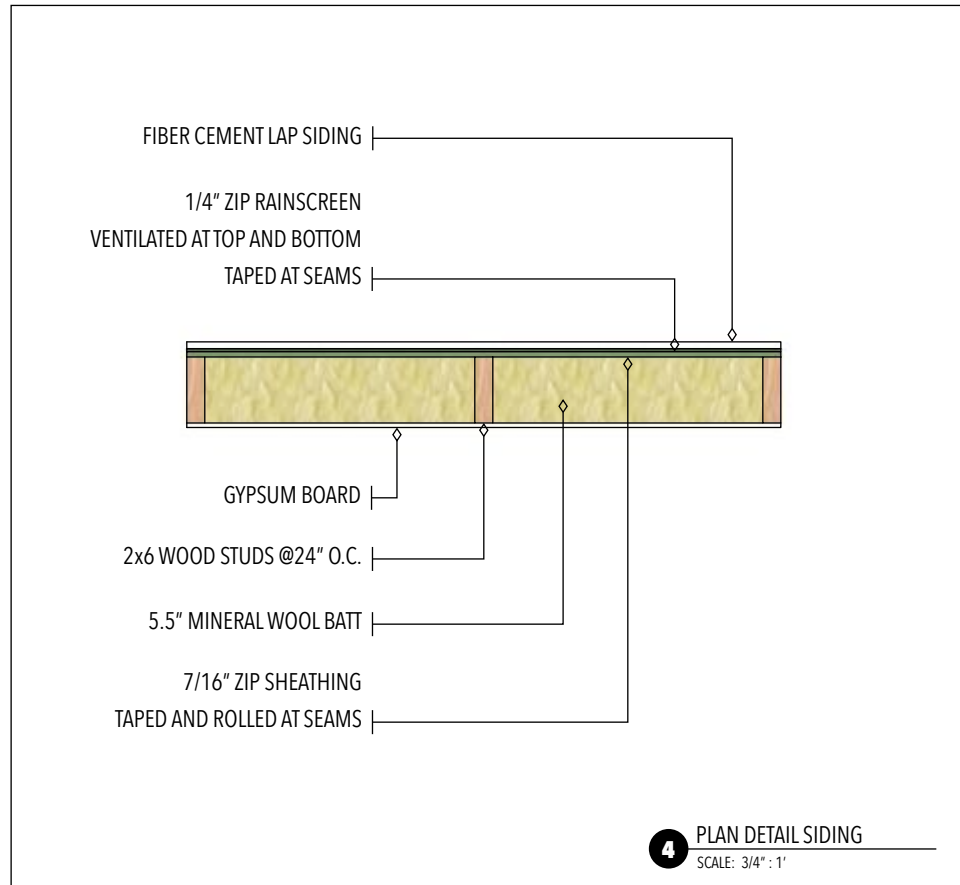
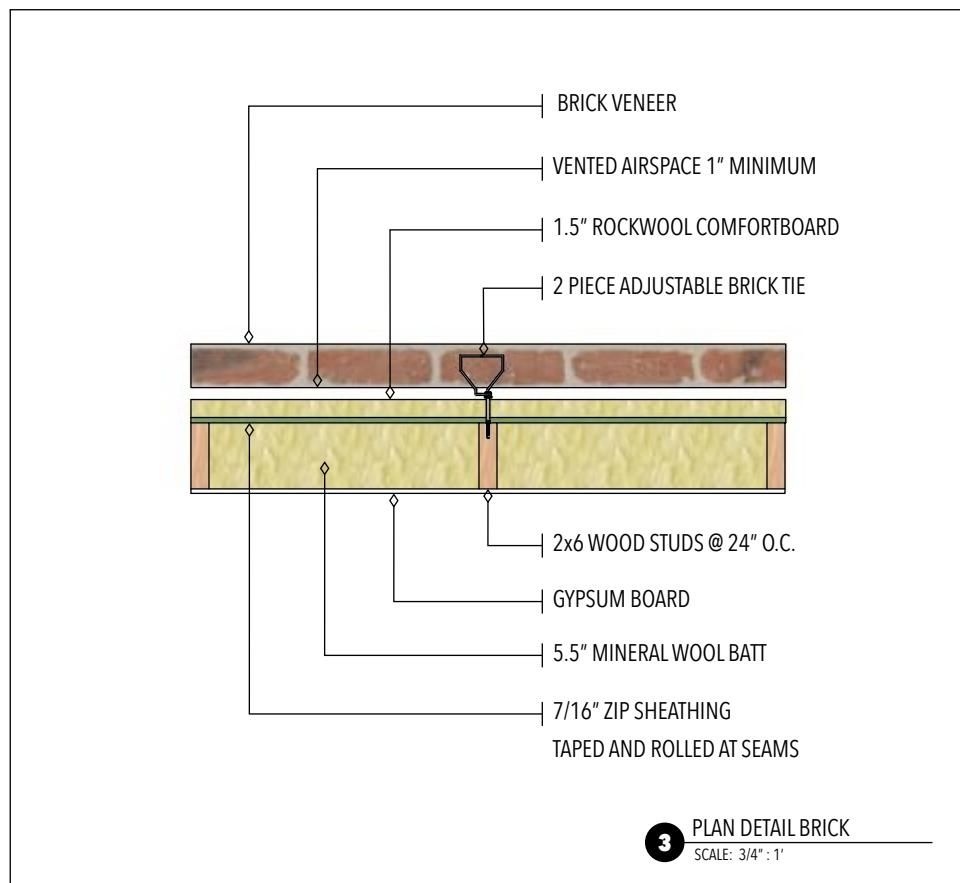
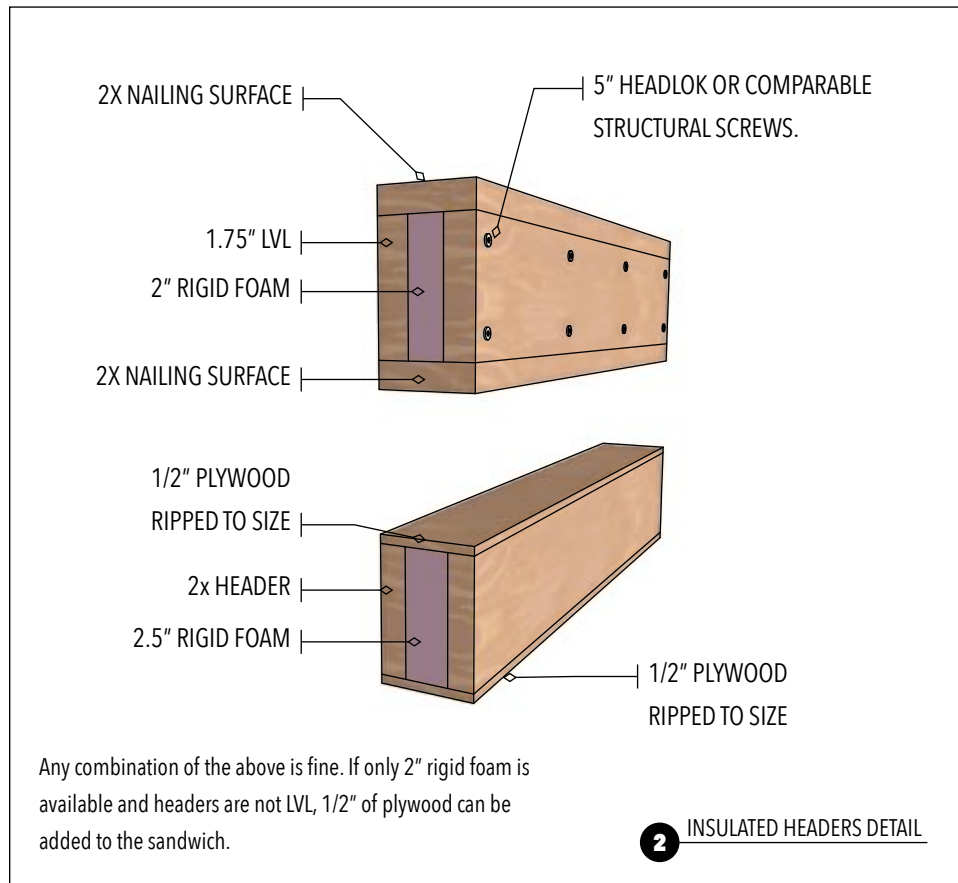
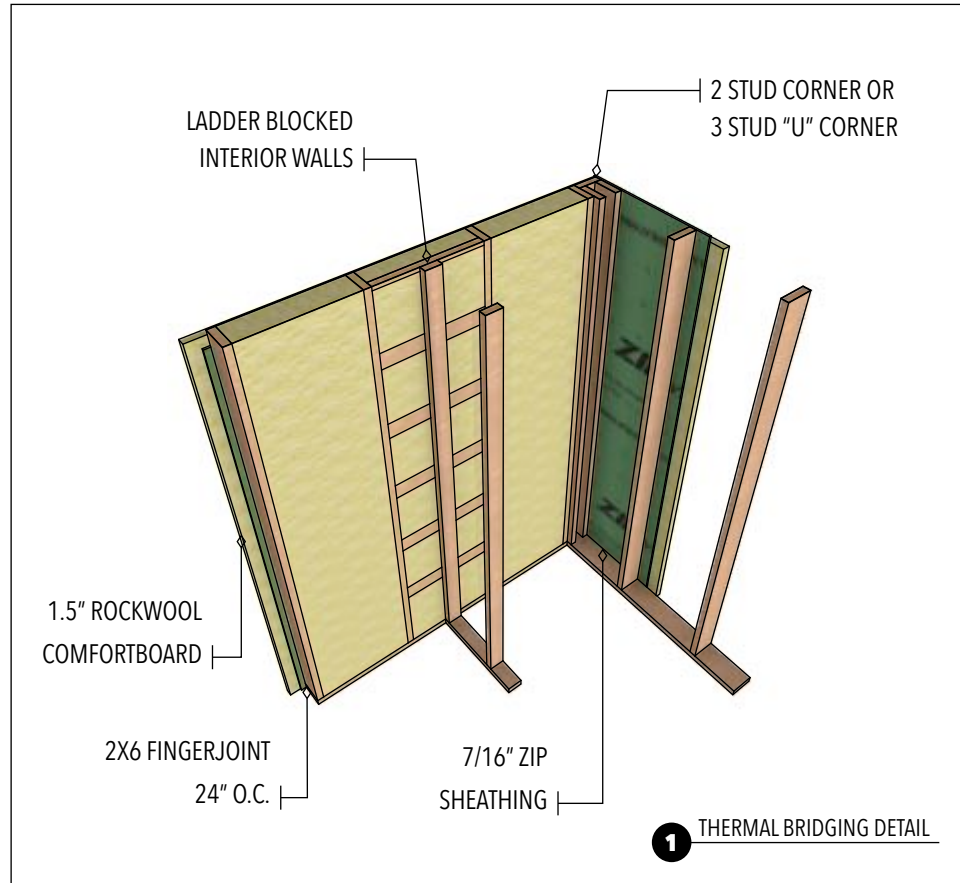
IN PROGRESS
Waiting on structural for foundation details.

6 WALK OUT SLAB DETAIL

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Foundation Details

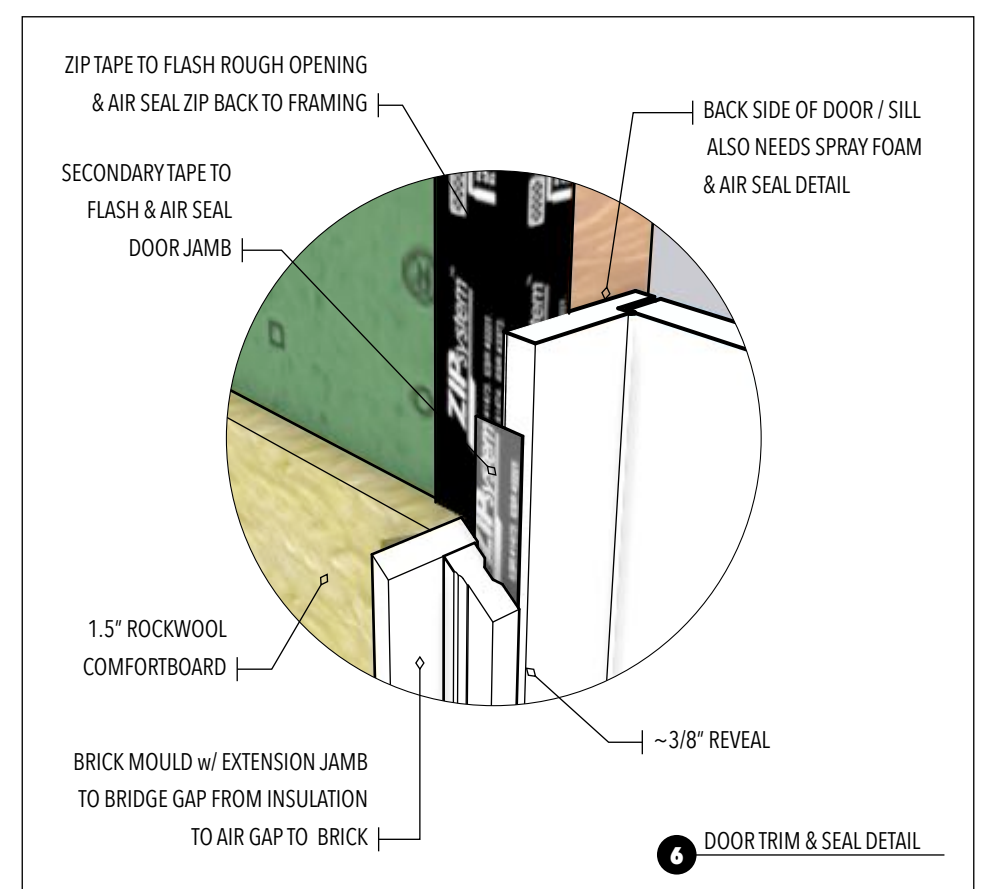
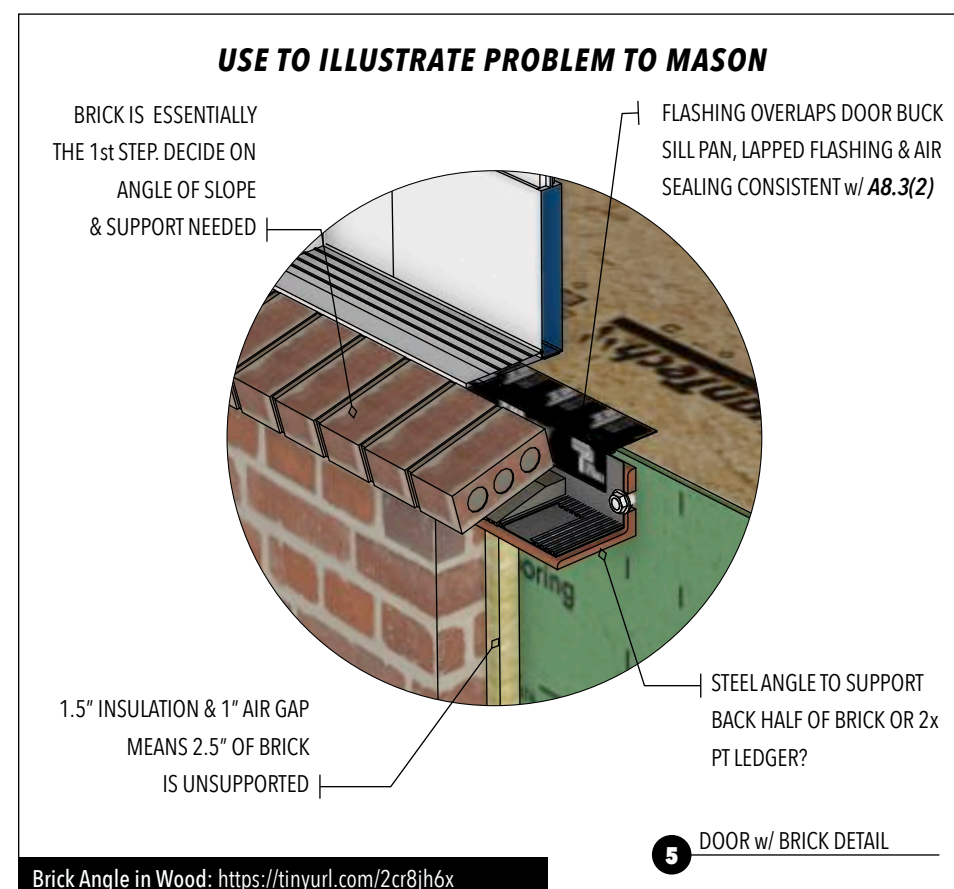
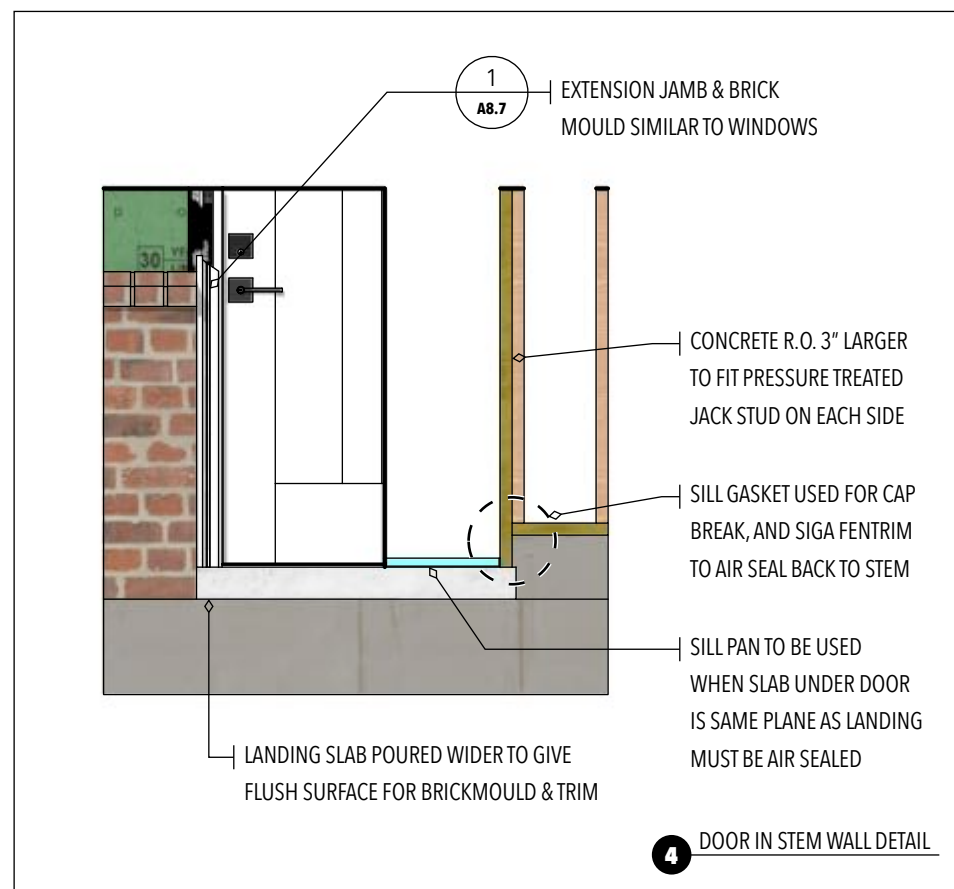
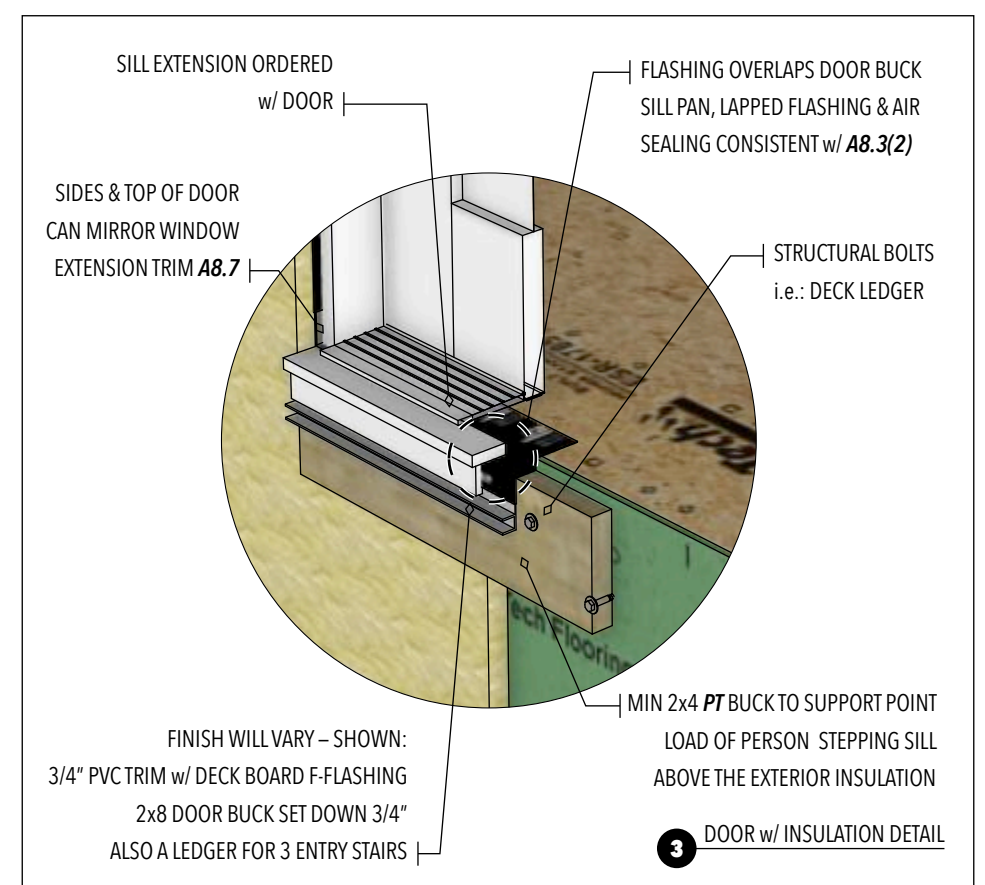
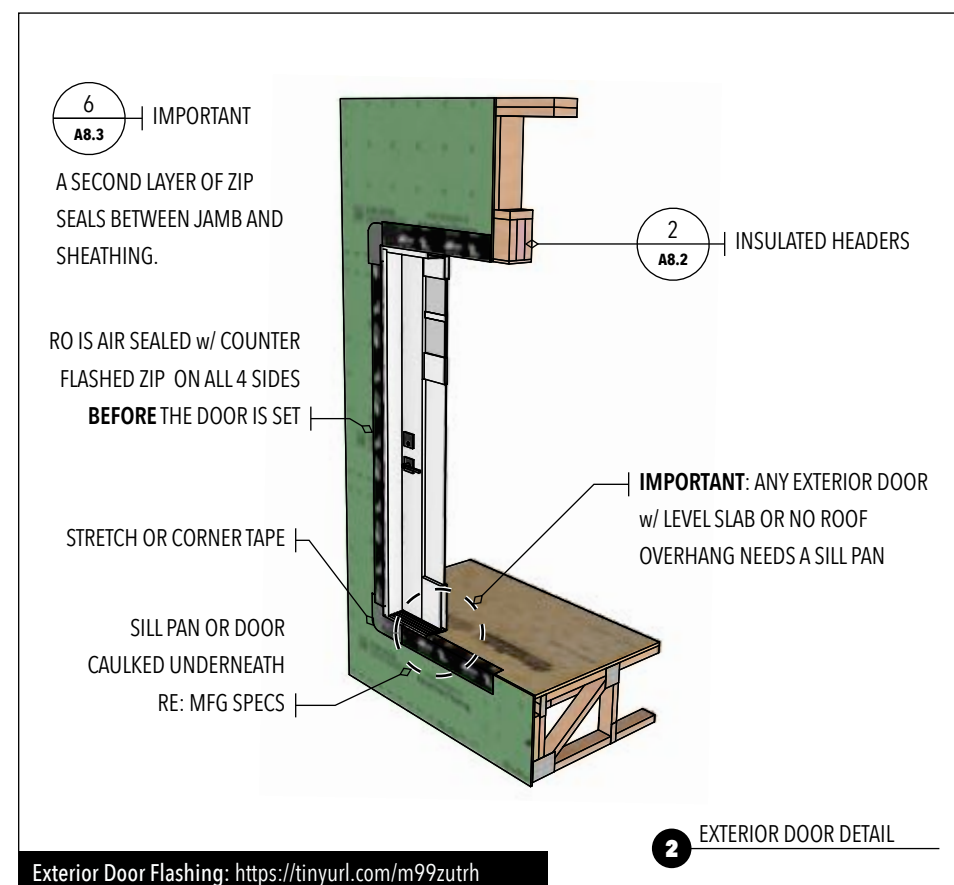
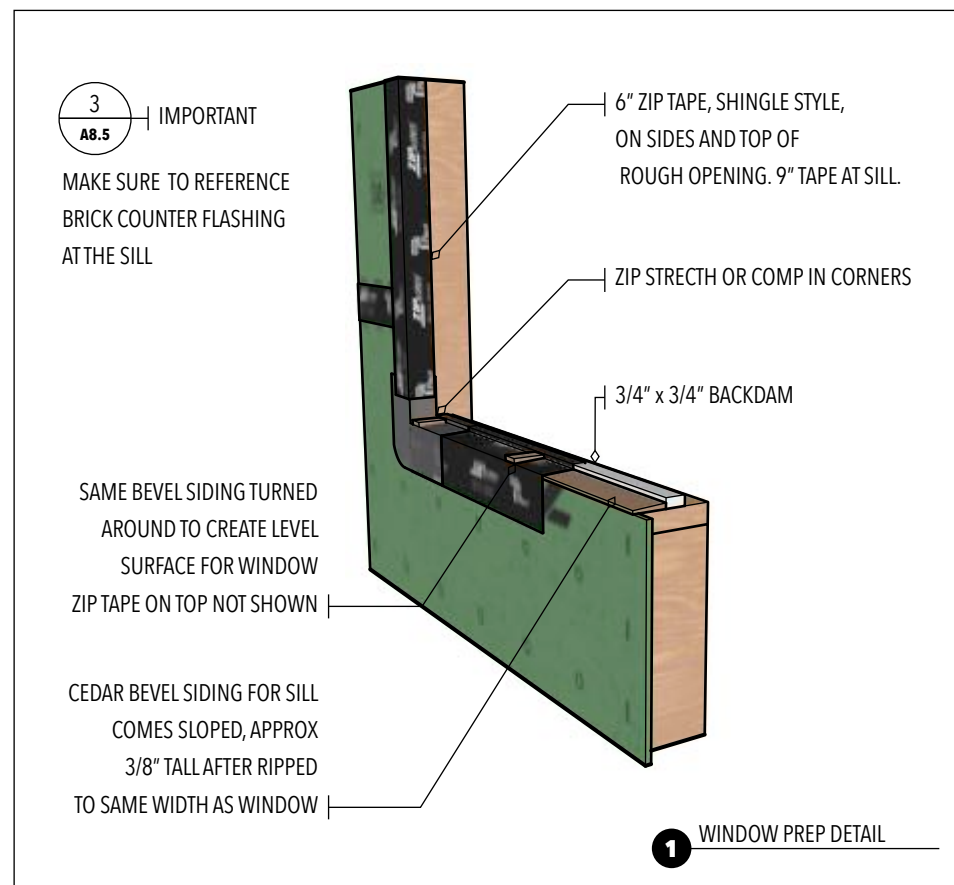
A8.1



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Framing Details

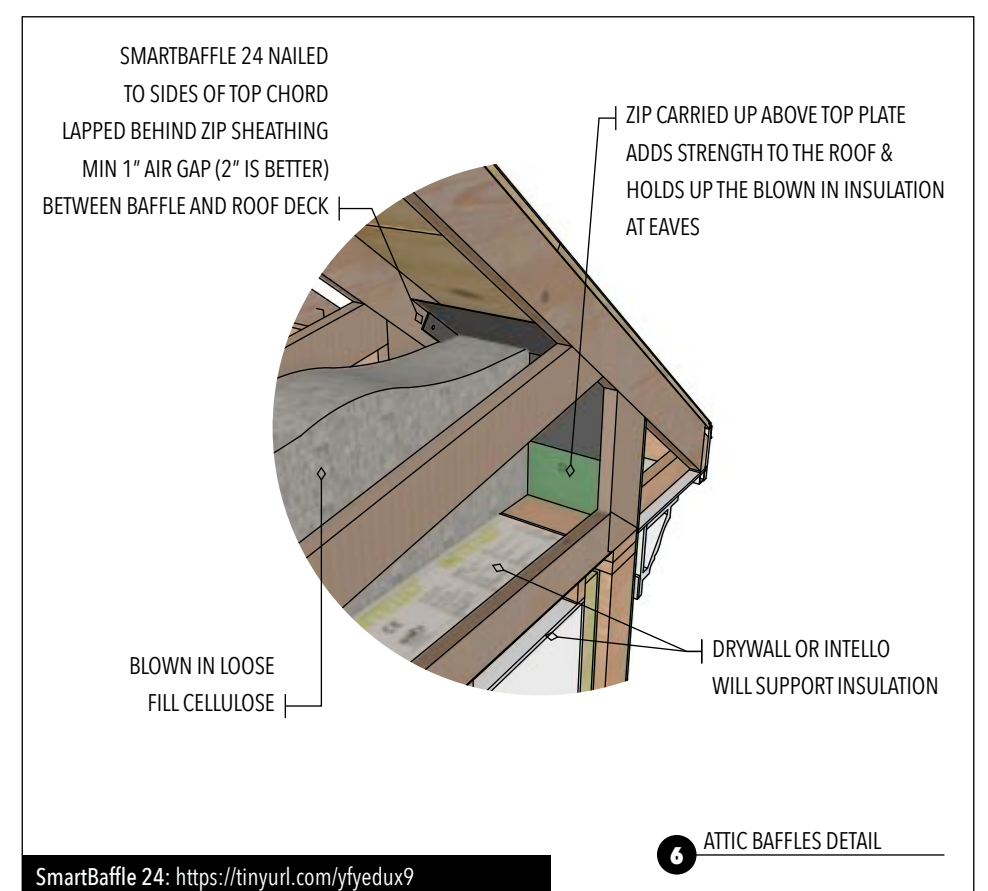
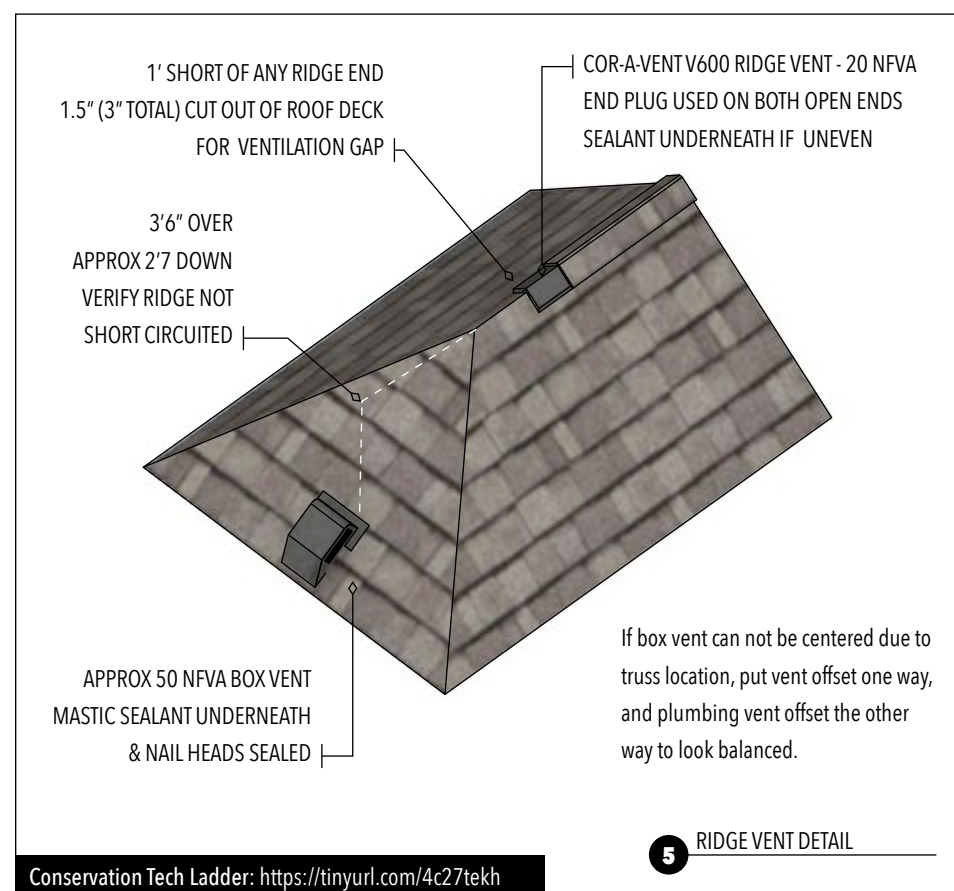
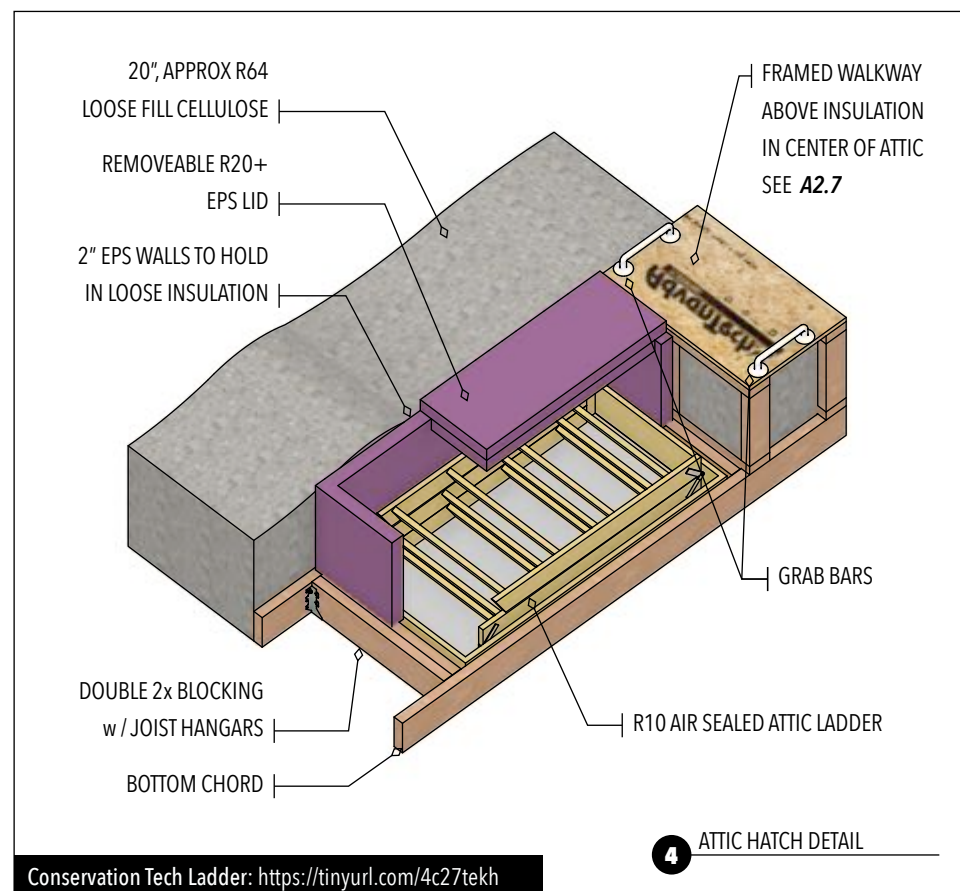
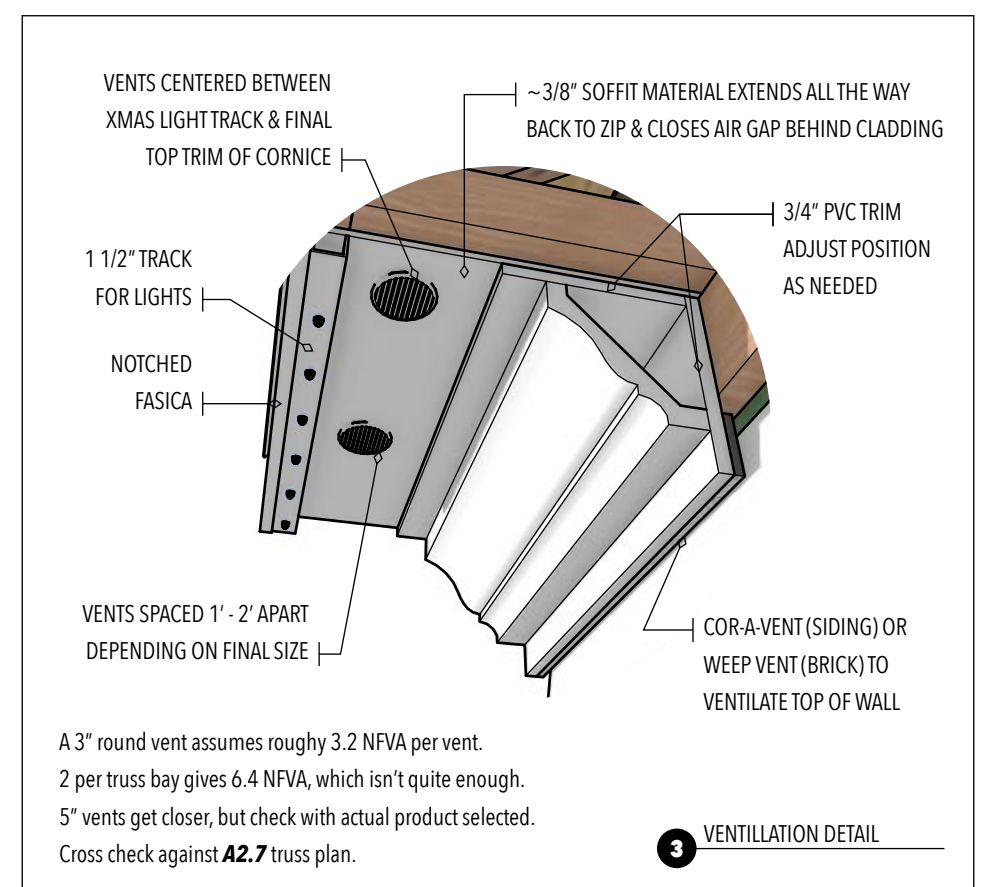
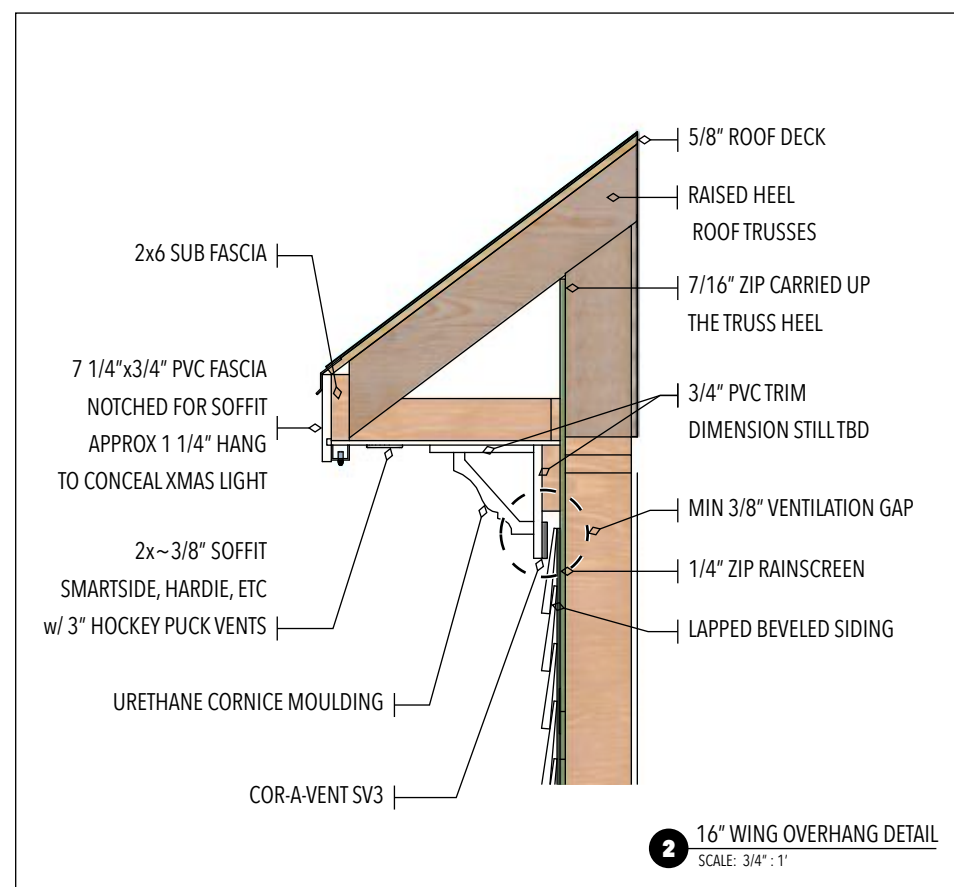
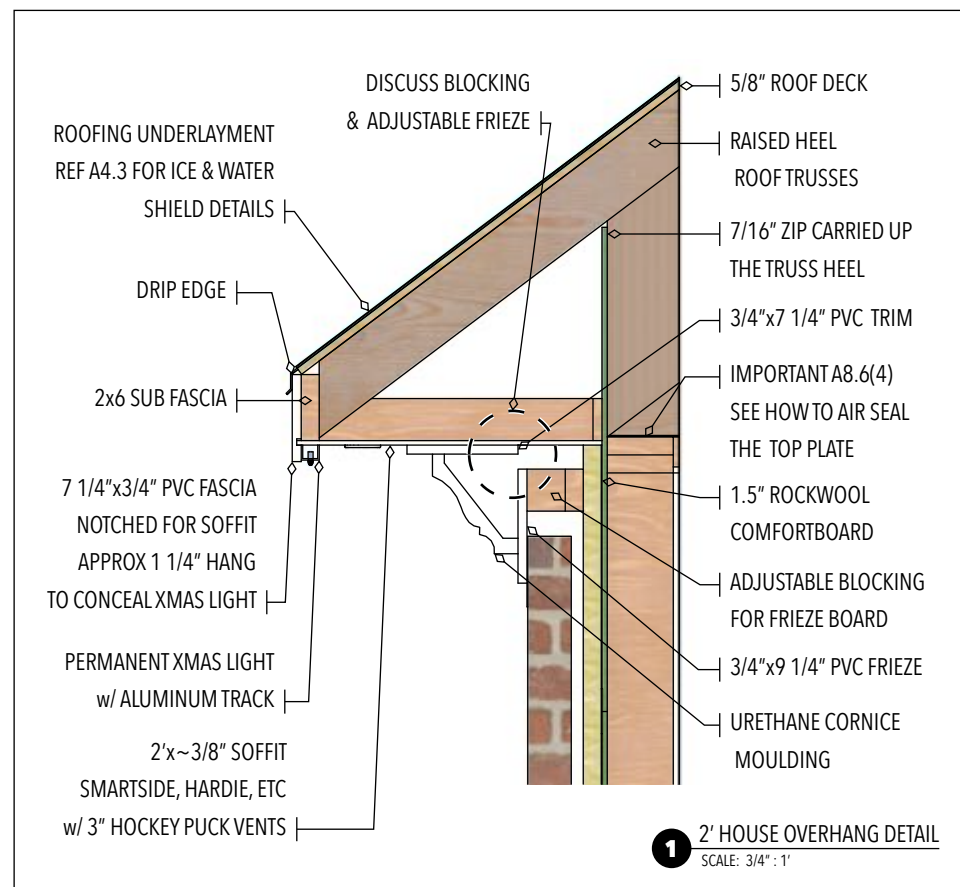
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Rough Openings

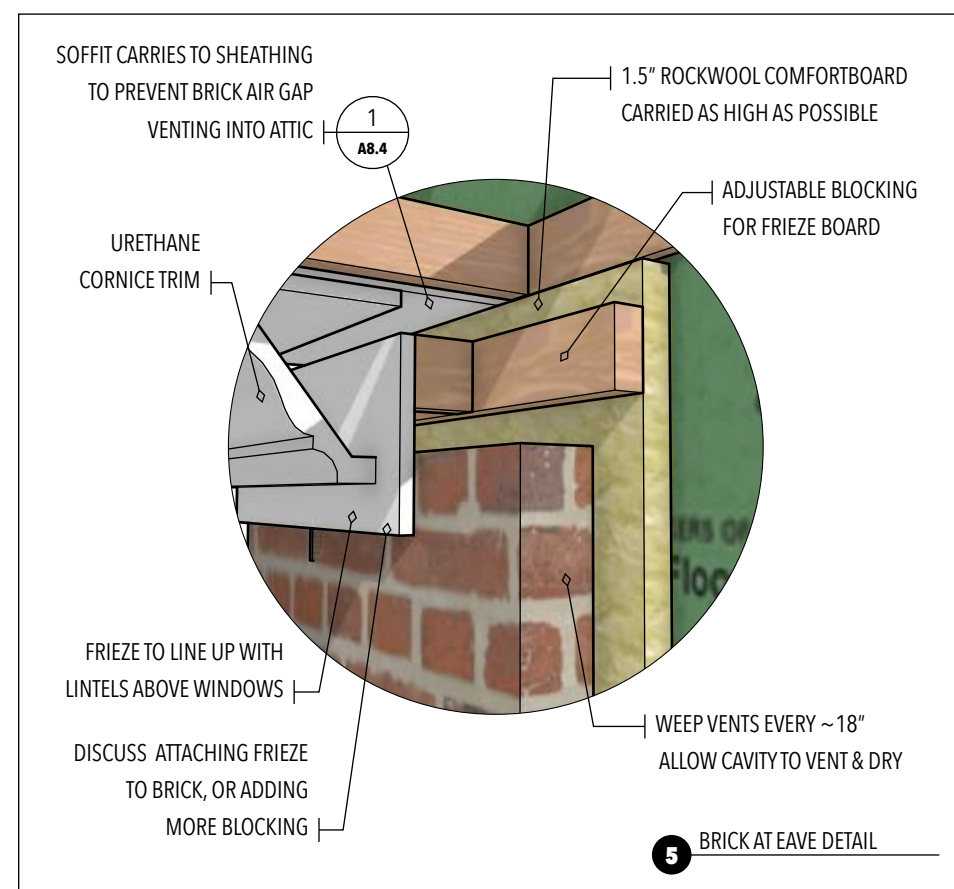
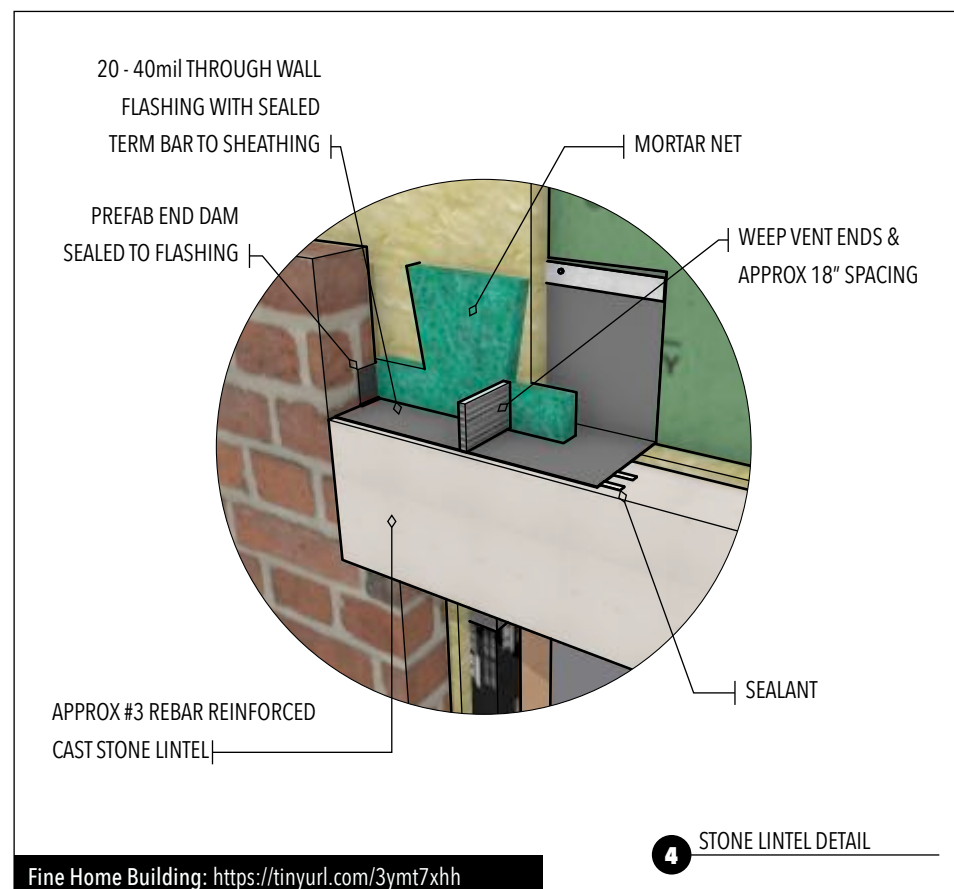
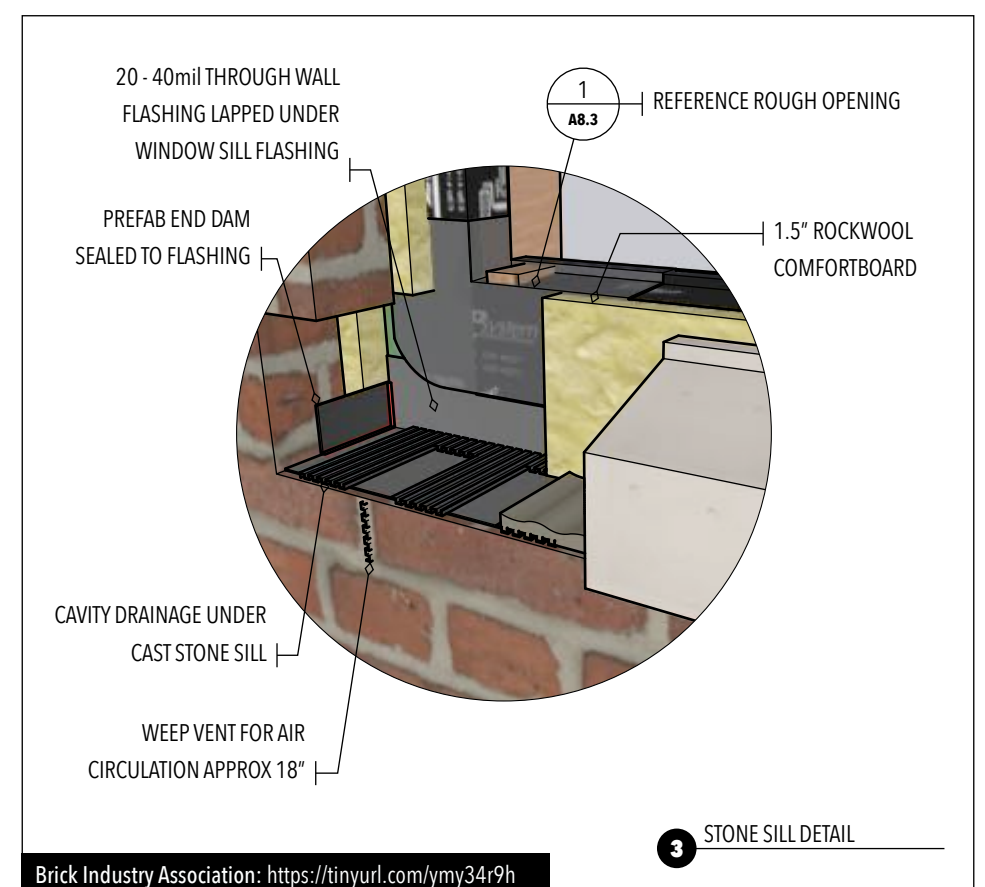
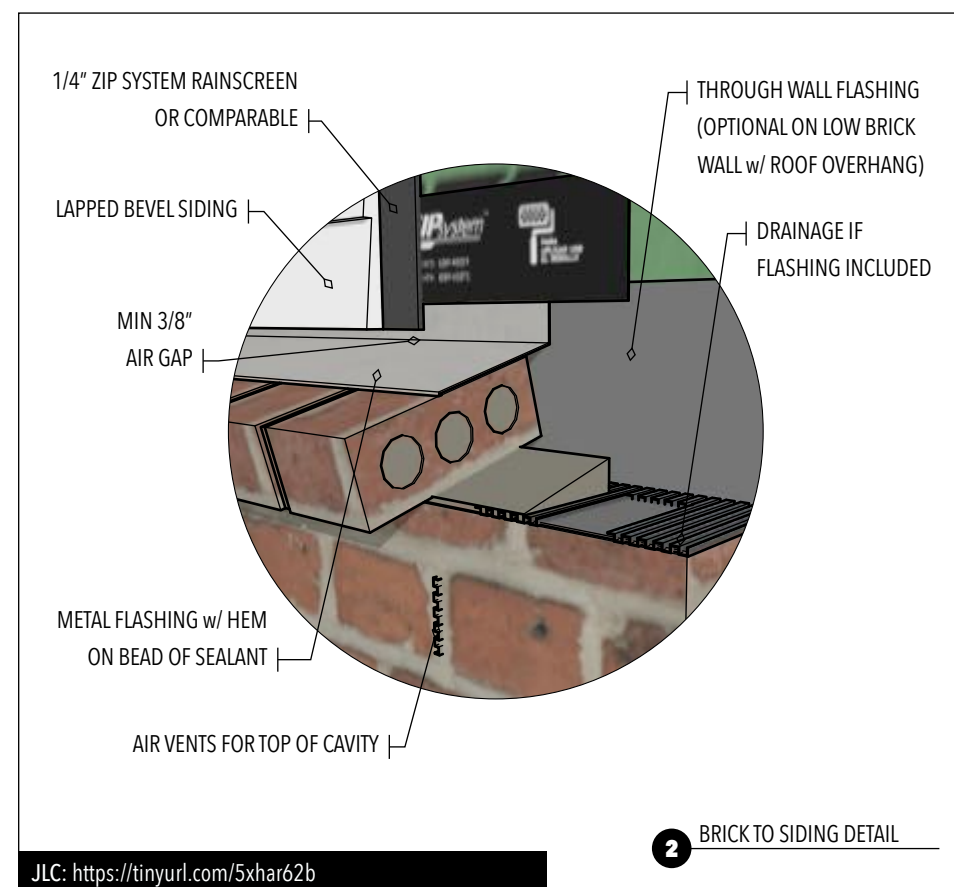
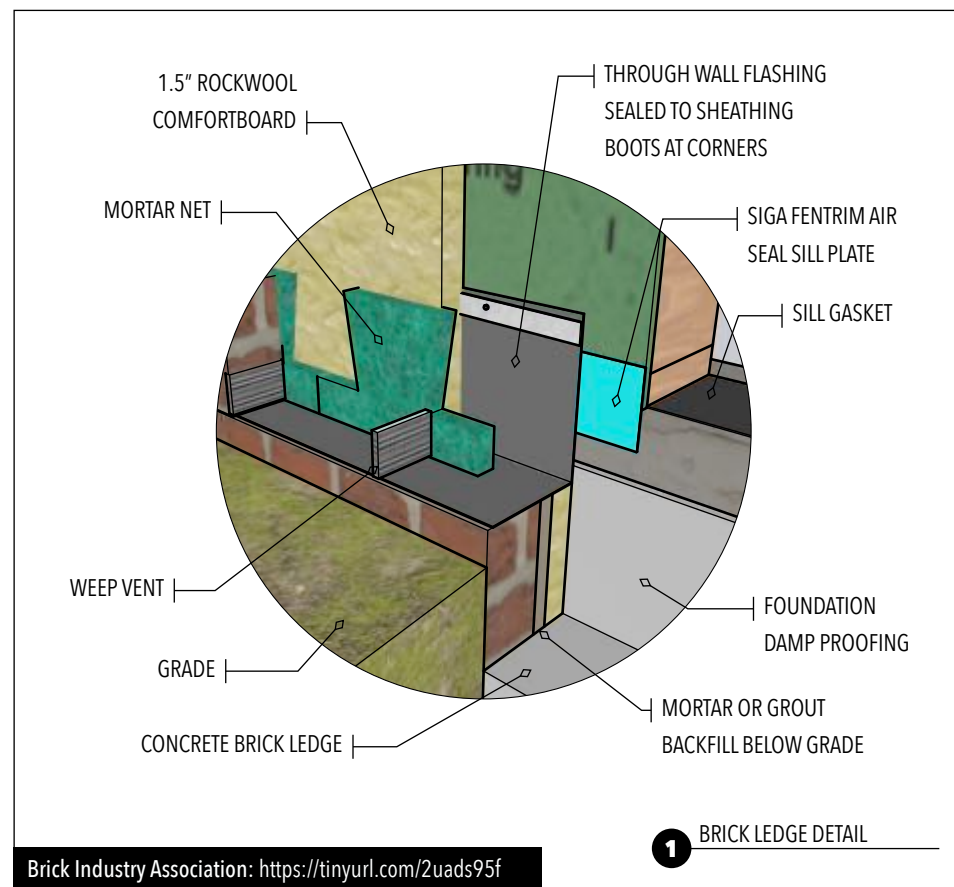
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Roof Details

A8.4

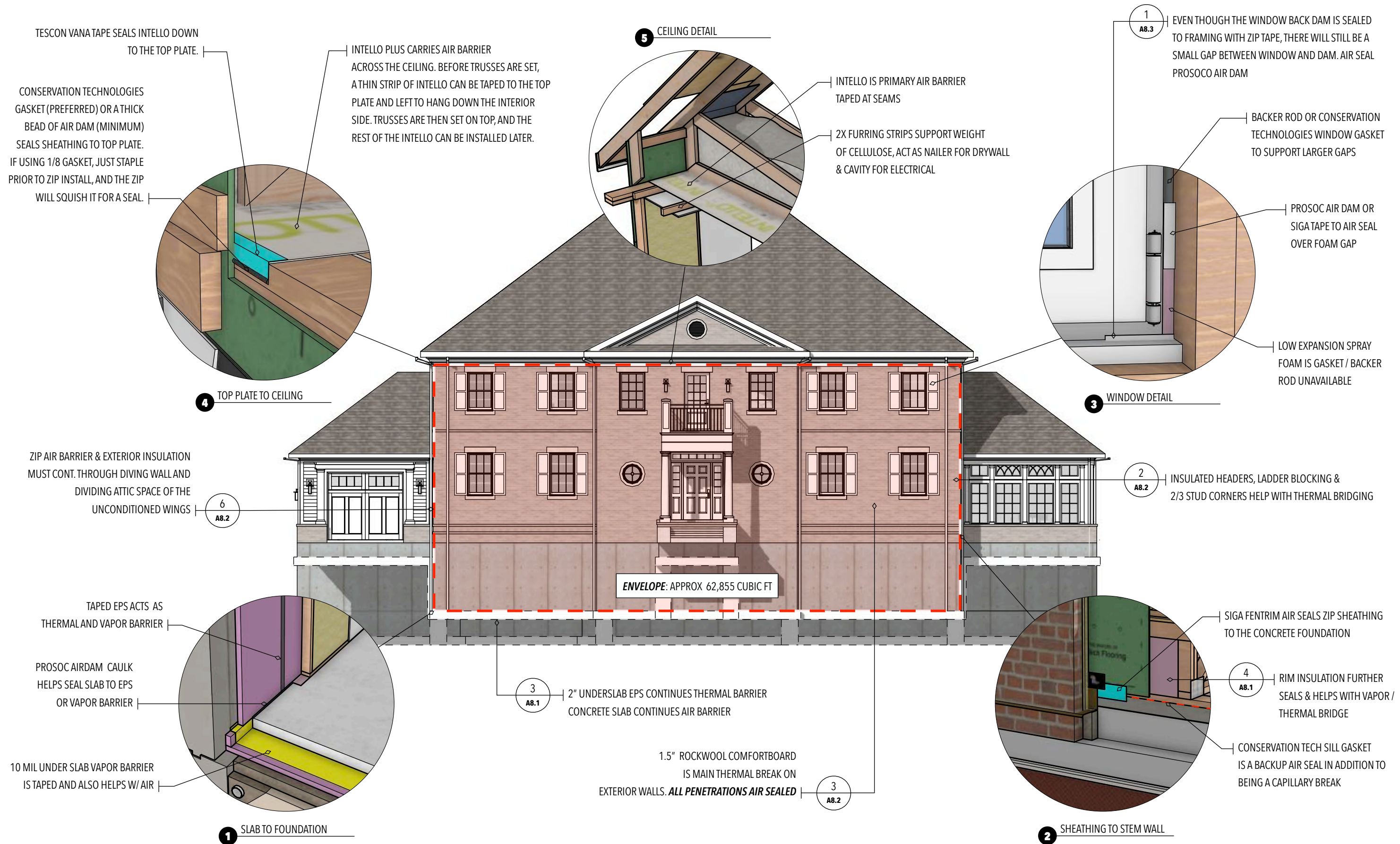


- ### GENERAL BRICK & STONE NOTES
1. Provide weep vents, every ~18", for ventilation and drainage from bottom of wall through to top of wall. Entry points are along the brick ledge and above lintels. Exit points are below sills and at the eaves.
 2. Through wall flashing at all transitions.
 3. Verify installation with final product selection. Use and types of sealants for dams, termination bars, below flashing, etc will vary by product.
 4. Default to type N mortar. Type S or another stronger mix can be used for below grade backfill.
 5. 2 piece adjustable brick ties will be required due to 1.5" of exterior Rockwool Comfortboard. See A8.2(3) for assembly.
 6. Follow guidelines from Brick Industry Association: <https://www.gobrick.com/media/file/28-brick-veneer-wood-stud-walls.pdf>

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Brick Cladding Details

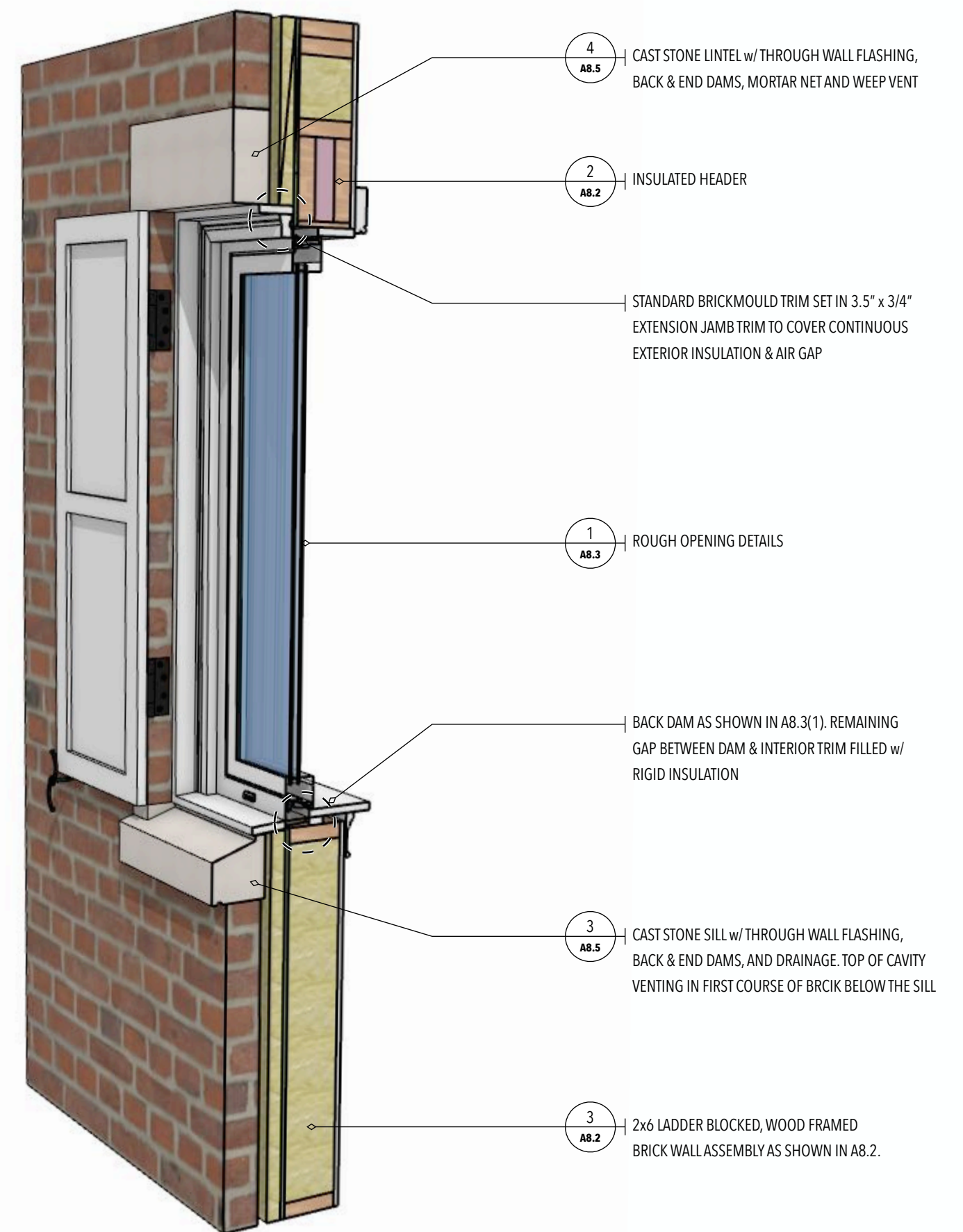
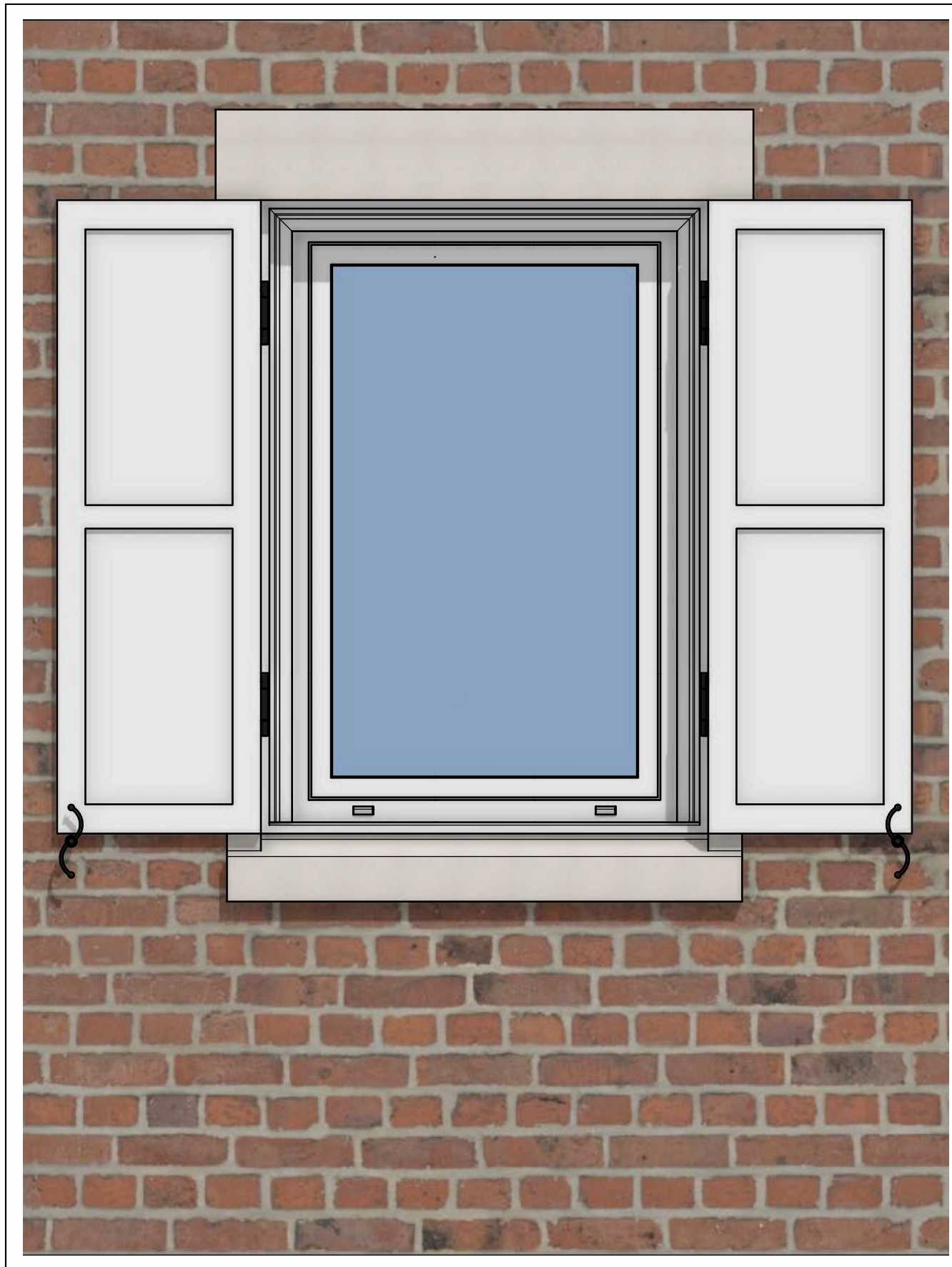
A8.5



07/01/25

Air Sealing & Thermal

A8.6



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Full Tilt Turn Window Assembly

A8.7

06/13/25

Front Porch

A8.8

06/13/25

Back Deck

A8.9

06/13/25

Dining Room Bump Out

A8.10

06/13/25

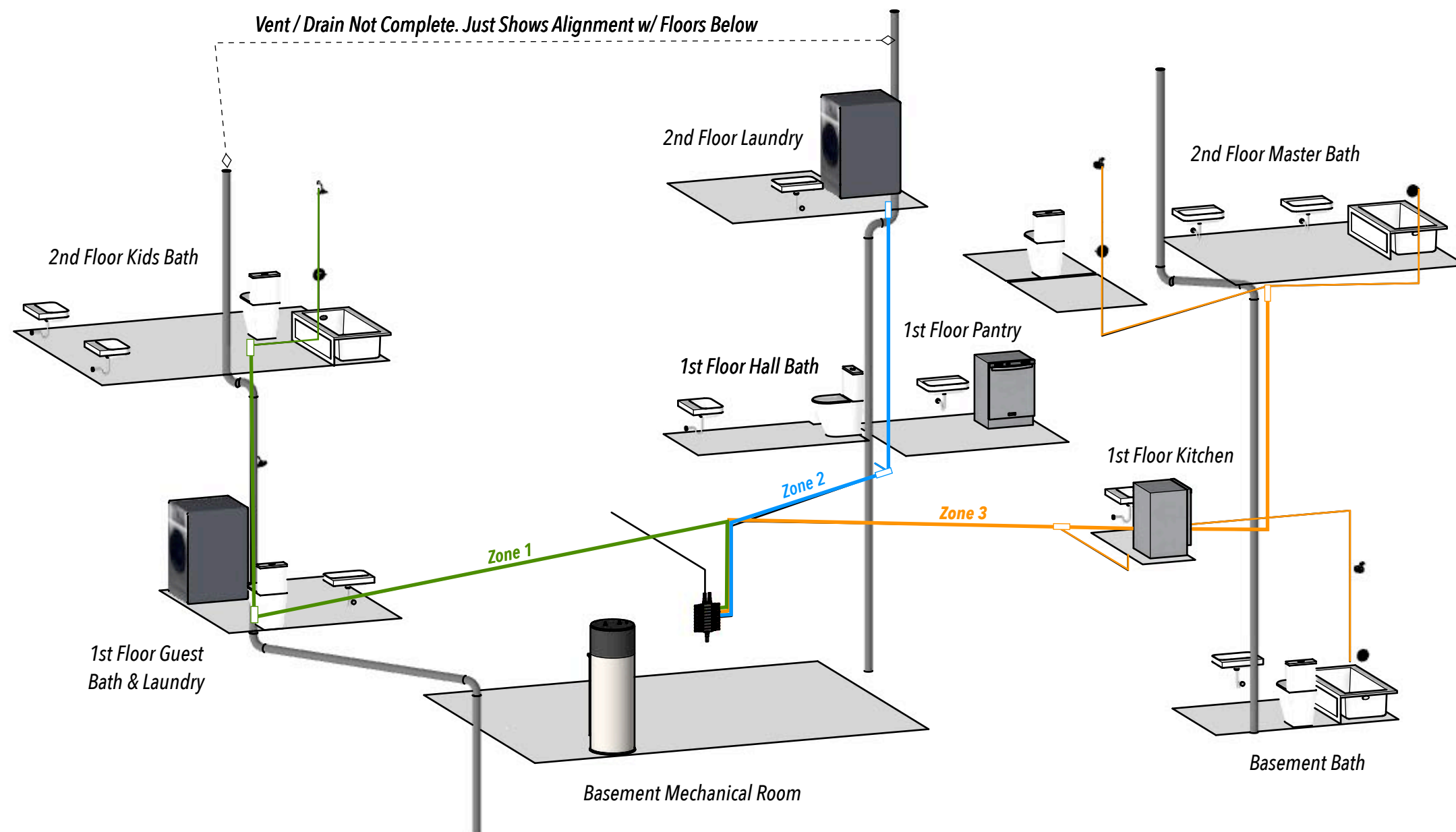
Wings To House Connection

A8.11

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Stone Profiles

A8.12



Zone 1 (41'6" Insulated 3/4", 15'1" Vertical)

30ft Insulated 3/4" to 1st Junction (3'7" vertical)

1st Junction:

3/4" Passthrough 3 Port 1/2" Multiport T

Insulated 3/4" Line Carries up 11'6" To 2nd Junction

2nd Junction:

3/4" to 1/2" 4 Port Multiport T

Zone 2 (27'8" Insulated 3/4", 15'5" Vertical)

16ft Insulated 3/4" to 1st Junction (3'9" vertical)

1st Junction:

3/4" Passthrough 3 Port 1/2" Multiport T

Insulated 3/4" Line Carries up 11'8" To 2nd Junction

2nd Junction:

3/4" to 1/2" 2 Port Multiport T

Zone 3 (37'2" Insulated 3/4", 15'3" Vertical)

17' 3" Insulated 3/4" to 1st Junction (3'9" vertical)

1st Junction:

3/4" Passthrough 2 Port 1/2" Multiport T

Insulated 3/4" Line Carries over 3'7" To 2nd Junction

2nd Junction:

3/4" Passthrough 3 Port 1/2" Multiport T

Insulated 3/4" Line Carries 16'4" (11'6" vertical)

3rd Junction:

3/4" Passthrough 4 Port 1/2" Multiport T

1. 1" service line coming from Well to house. Pressure tank needed. Discuss line sizing and irrigation options as well. Discuss drains, vents, and only 2 roof penetrations.

2. Main line branches in mechanical room. Manifold is either made with parts, or repurchased unit, with shut off valves. Branches include zones, reverse osmosis system, and outdoor faucets.

3. Also in mech room: HVAC; sump pump with sealed cover and radon mitigation; water softener (discuss options on septic); discuss back flow prevention and expansion tank.

4. Consider upgrades: adding bypass on hot water heater and water softener for service mode; flood detection like FloLogic; pressure gauges ; ball valve on water heater drain w/ permanent piping for easy draining.

5. PEX Targets: PEX A / Uponor Logic approach. Rigid / braced connections to fixtures. Avoid fittings and connections in walls except at multiport t junctions. Each multiport shown sits above a tray ceiling in the house, which allows for future inspection. Use gradual 90 degree bends in walls instead of joints. Showers and tubs to have access panels for those connections where possible.

6. Wait for final fixture selection before determining zones. If dual or multihead shower selected for master bath, it may be preferable to place the basement bathroom on its own zone instead of upsizing entire trunk to 1" or more.

7. Aiming to avoid the need for a recirculating pump. Discuss roughing in a return line from the 3/4" in master shower back to the mechanical room. This would allow later hookup if desired. Consider D'Mand pump with push button to activate system. Kitchen and master bath on same trunk since they are most used and likely to benefit from hot water already in the pipe.

05/09/25

Potential Zones, Questions & Notes

MPE2.1

Whole House

Approximately:

44 WSFU / 17 GPM

A 1" PEX supply line handles ~15-16GPM at under 100ft. Should be sufficient.

Zone 1

Guest Bath & Laundry	
Sink	1 WSFU
Toilet	2.5 WSFU
Shower	2 WSFU
Washing Machine	2 WSFU
	7.5 WSFU

Kids Bathroom	
Sink	1 WSFU
Sink	1 WSFU
Toilet	2.5 WSFU
Tub / Shower	2 WSFU
	6.5 WSFU

Approx 14 WSFU, or 8 GPM, total. A 3/4" line should supply this trunk.

Zone 2

Hall Bathroom	
Sink	1 WSFU
Toilet	2.5 WSFU
	3.5 WSFU

Baking Kitchen	
Sink	1.5 WSFU
Dishwasher	1.5 WSFU
	3 WSFU

Laundry Room	
Sink	1 WSFU
Washing Machine	2 WSFU
	3 WSFU

Approx 9.5 WSFU, or 6 GPM, total. A 3/4" line should supply this trunk.

Look into options to downsize everything or limit need above 1" supply pipe and 3/4" trunk lines. Low flow shower heads for basement and kids bathrooms, remove pot filler, etc if necessary.

Discuss irrigation off of separate well, or through house pressure tank and back out.

Zone 3

Kitchen	
Sink	1.5 WSFU
Dishwasher	1.5 WSFU
Pot Filler	1 WSFU
	4 WSFU

Basement Bathroom	
Sink	1 WSFU
Toilet	2.5 WSFU
Tub / Shower	2 WSFU
	5.5 WSFU

Master Bathroom	
Sink	1 WSFU
Sink	1 WSFU
Toilet	2.5 WSFU
Bathtub	2 WSFU
Shower	2 WSFU
Rain Shower	2.5 WSFU
	11 WSFU

Approx 20.5 WSFU, or 11 GPM, total. A 3/4" line could supply this trunk. Can also branch of the basement bathroom into a separate zone based on final master bath selections.

Hot Water to Master Shower (2 GPM)

55' 2" length as a home run, with 18' 11" vertical. Or, 3/4" trunk that runs about 36' 9" then a 1/2" pipe goes the remaining 18' 5".

Time To Hot Water	
Homerun	15.2s
Trunk Cold	25.95s
Trunk 30min	5.1s
Gallons Wasted	
Homerun	0.508
Trunk Cold	0.865
Trunk 30min	0.17

Hot Water to Kids Shower (2 GPM)

51' 7" length as a home run, with 18' 11" vertical. Or, 3/4" trunk that runs about 41' 8" then a 1/2" pipe goes the remaining 9' 11".

Time To Hot Water	
Homerun	14.25s
Trunk Cold	26.37s
Trunk 30min	2.7s
Gallons Wasted	
Homerun	0.475
Trunk Cold	0.879
Trunk 30min	0.091

05/09/25

Demand & Hot Water Calcs

MPE2.2

Step 1: General Electrical Load Requirements

ITEM	QTY	LOAD	NOTES
Indoor Sq Ft Area of Home	5,708	17,124VA	3VA per Sq. Ft., Based on NEC 2020 Article 220.12
Small Appliance Circuits	6	9,000VA	1,500ea. 2 kitchen, 2 baking area, 2 appliance garage
Laundry Circuits	2	3,000VA	GE Heat Pump is approximate 1,500
		29,124VA	

Ref: NEC Article 220.82(B)(1)

Step 2: Appliance & Motor Loads

ITEM	QTY	LOAD	NOTES
Dryers	0	0VA	Heat Pump Combo - Covered in Laundry Circuits
Ovens	2	16,000VA	GE Cafe Wall Mount (4,800), GE Induction Range (11,200)
Cooktop	1	10,000VA	Induction Cooktop
Microwave	2	3,800VA	Can get away with only 1 if needed
Heat Pump Water Heater	1	9,100VA	Rheem 65 gal Heat Pump Hybrid as reference
Dishwasher	2	3,200VA	Miele G5000 as reference
Garbage Disposal	2	2,000VA	1/2 HP In-Sink-Erator
Garage Door Opener	1	1,200VA	1/2 HP
EV Chargers	1	6,400VA	NEMA 14-30, 30amp240v
Infrared Sauna	1	2,200VA	
Misc	3	5,283VA	Sump & Well Pump, Freezer (20amp), Server Rack (20amp)
		59,183VA	

Ref: NEC Article 220.82(B)(2)

Step 3: Heating & Air

ITEM	LOAD
1.5 Ton Ducted Heat Pump	2,800VA
5kW Auxiliary Heat For 1.5 Ton	5,000VA
1 Ton Ducted Heat Pump	2,200VA
3kW Auxiliary Heat For 1 Ton	3,000VA
	13,000VA

Ref: NEC Article 220.82(B)(1)

Assumes smaller heating and cooling loads for near Passive House standards.
Worst case would be a 5 ton unit, which would have a ~7,500VA footprint with indoor and outdoor unit, and up to 22,500VA for 15kW aux.

Calculations

ITEM	LOAD
Total Step 1 & 2 Load	88,307VA
First 10kVA @ 100%	10,000VA
Remaining Step 1 & 2 Load	78,207VA
40% of Remaining Load	31,322VA
First 10kVA + 40% Load	41,322VA
HVAC Load (Non Demand) @ 100%	13,000VA
	54,322VA
	226A

Ref: NEC Article 220.82(A)

Online calculator: <https://ask-the-electrician.com/residential-electrical-load-calculation.html>

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Electrical Load Schedule

MPE2.3