U.S. DOE RES*check* Overview Training

Eric Makela, Britt/Makela Group

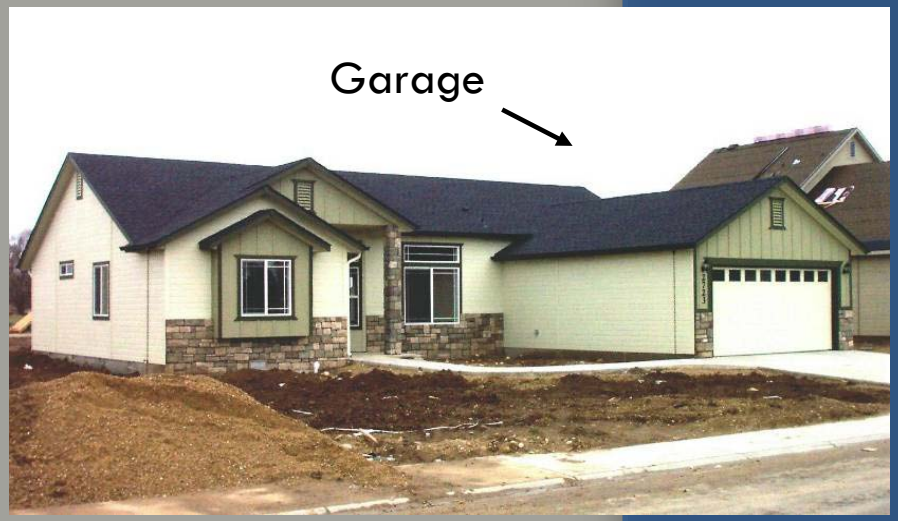
BRITT MAKELA GROUP, INC.

RES*check* Buildings

- One- and two-family residential – IECC/IRC
- Multi-family 3 Stories or Less

BRITT MAKELA GROUP, INC.

Types of Residential Projects that are Exempt from the IECC and RES*check*



- Unconditioned Spaces
- Very Low Energy
- Existing Buildings
- Unmodified Parts of Residence
- Historic Buildings

BRITT MAKELA GROUP, INC.

What is RES*check?*

- RES*check* is a computer program that can be used to demonstrate Energy Code Compliance
- The Software is self-contained
  - Energy Code book can be used as needed for reference only
- Relatively simple to use and very flexible

BRITT MAKELA GROUP, INC.

What Do I Need to Know?

Information you need to use REScheck:

- General Understanding of Windows-based Computer Programs
- Basic Information about the Builder and Home to be Constructed
- House Plans including Exterior Wall Areas, Glazing Areas, Roof/Ceiling Areas, Basement Wall Areas, etc.
- Insulation R-Values, NFRC Glazing and Door U-Values, etc.
- Heating and Cooling System Efficiencies

BRITT MAKELA GROUP, INC.

REScheck™
DOE's Building Energy Codes Program
Internet Address: www.energycodes.gov
Technical Support: www.energycodes.gov/help/helpdesk.php
Energy Efficiency and Renewable Energy · U.S. Department of Energy
Loading...
2:28 PM
10/12/2012

sample for presentation-jones casestudy.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | **Envelope** | **Mechanical**

Location

State: Nebraska

City: Omaha

Project Type

(●) New Construction ( ) Addition/Alteration

Building Characteristics

(●) 1- and 2-Family, Detached ( ) Multifamily

Conditioned Floor Area: 2415 ft2

[x] All ducts and air handlers located within conditioned spaces

Explanation of duct testing requirements...

Project Details (optional)

This information will appear on the compliance certificate.

Title/Site/Permit

Owner/Agent

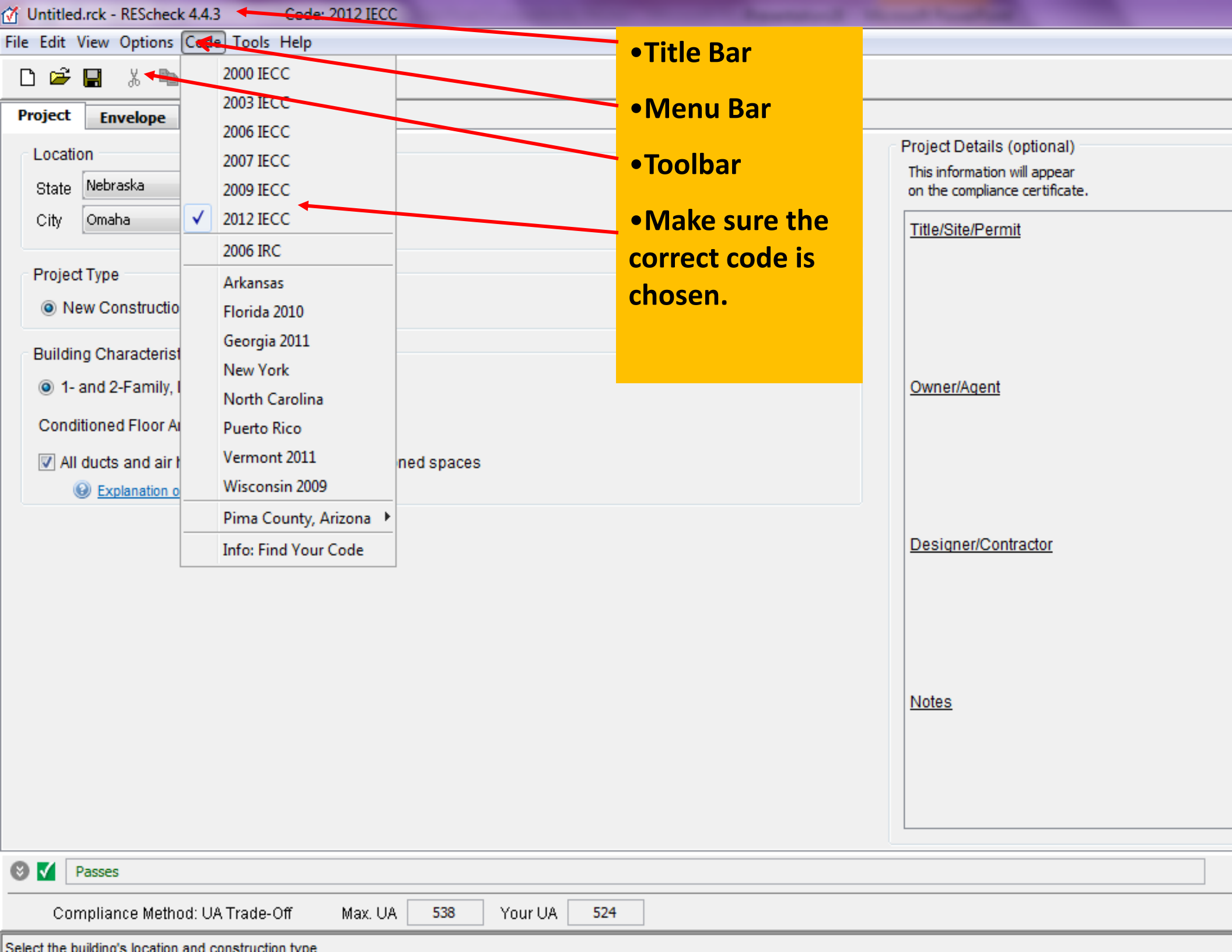
Designer/Contractor

Notes

Passes

Compliance Method: UA Trade-Off Max. UA 538 Your UA 524

Select the building's location and construction type


Untitled.rck - REScheck 4.4.3
Code: 2012 IECC
File Edit View Options Code Tools Help
2000 IECC
2003 IECC
2006 IECC
2007 IECC
2009 IECC
2012 IECC
2006 IRC
Arkansas
Florida 2010
Georgia 2011
New York
North Carolina
Puerto Rico
Vermont 2011
Wisconsin 2009
Pima County, Arizona
Info: Find Your Code
Project
Envelope
Location
State Nebraska
City Omaha
Project Type
New Constructio
Building Characterist
1- and 2-Family,
Conditioned Floor A
All ducts and air
ned spaces
Explanation o
Project Details (optional)
This information will appear on the compliance certificate.
Title/Site/Permit
Owner/Agent
Designer/Contractor
Notes
Passes
Compliance Method: UA Trade-Off
Max. UA 538
Your UA 524
Select the building's location and construction type
•Title Bar
•Menu Bar
•Toolbar
•Make sure the correct code is chosen.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Location

State: Nebraska

City: Omaha

Project Type

New Construction | Addition/Alteration

Building Characteristics

1- and 2-Family, Detached | Multifamily

Conditioned Floor Area: 2415 ft2

All ducts and air handlers located within conditioned spaces

Explanation of duct testing requirements...

-Pick project location

-Prefatory Project information

Project Details (optional)

This information will appear on the compliance certificate.

Title/Site/Permit

Owner/Agent

Designer/Contractor

Notes

No envelope assemblies specified

Compliance Method: UA Trade-Off Max. UA 0 Your UA 0

Select the building's location and construction type.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Compliance Method
Orientation (Envelope)
Comments/Description (Envelope)

✓ UA Trade-Off
Performance Alternative

Project

Ceiling Basement Floor Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49	0.0	0.568	1372	

Chose compliance method

Fails

Compliance Method: UA Trade-Off Max. UA 63 Your UA 1372

Enter the cavity insulation R-value (batt or blown)

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	

- Flat Ceiling or Scissor Truss
- Cathedral Ceiling
- Raised or Energy Truss
- Steel Truss
- Steel Joist/Rafter, 16" o.c.
- Steel Joist/Rafter, 24" o.c.
- Structural Insulated Panels (SIPs)
- Other (U-Factor Option)

Fill in buildin information

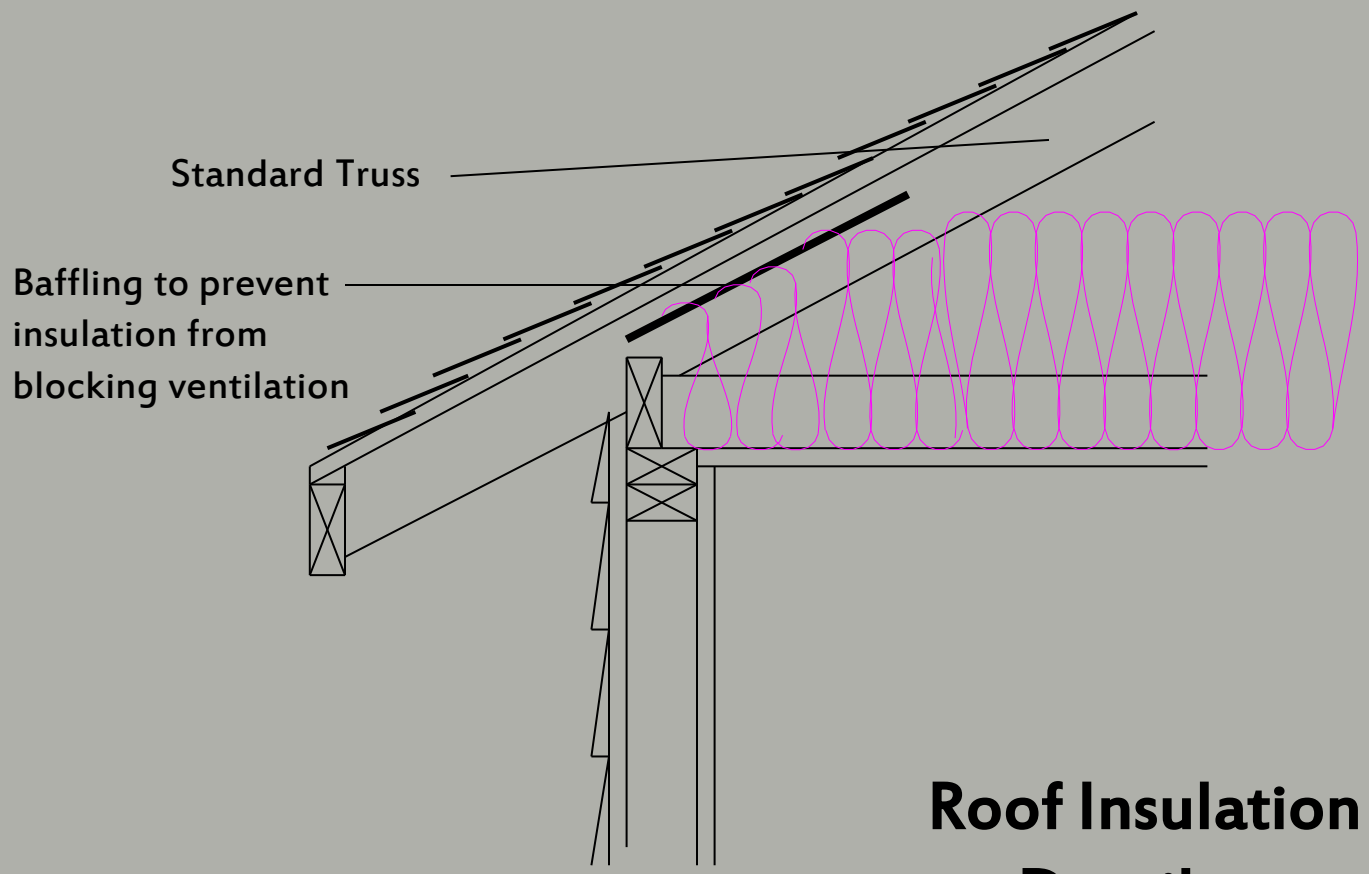
Drop down box → select assembly

Select your building component

Passes

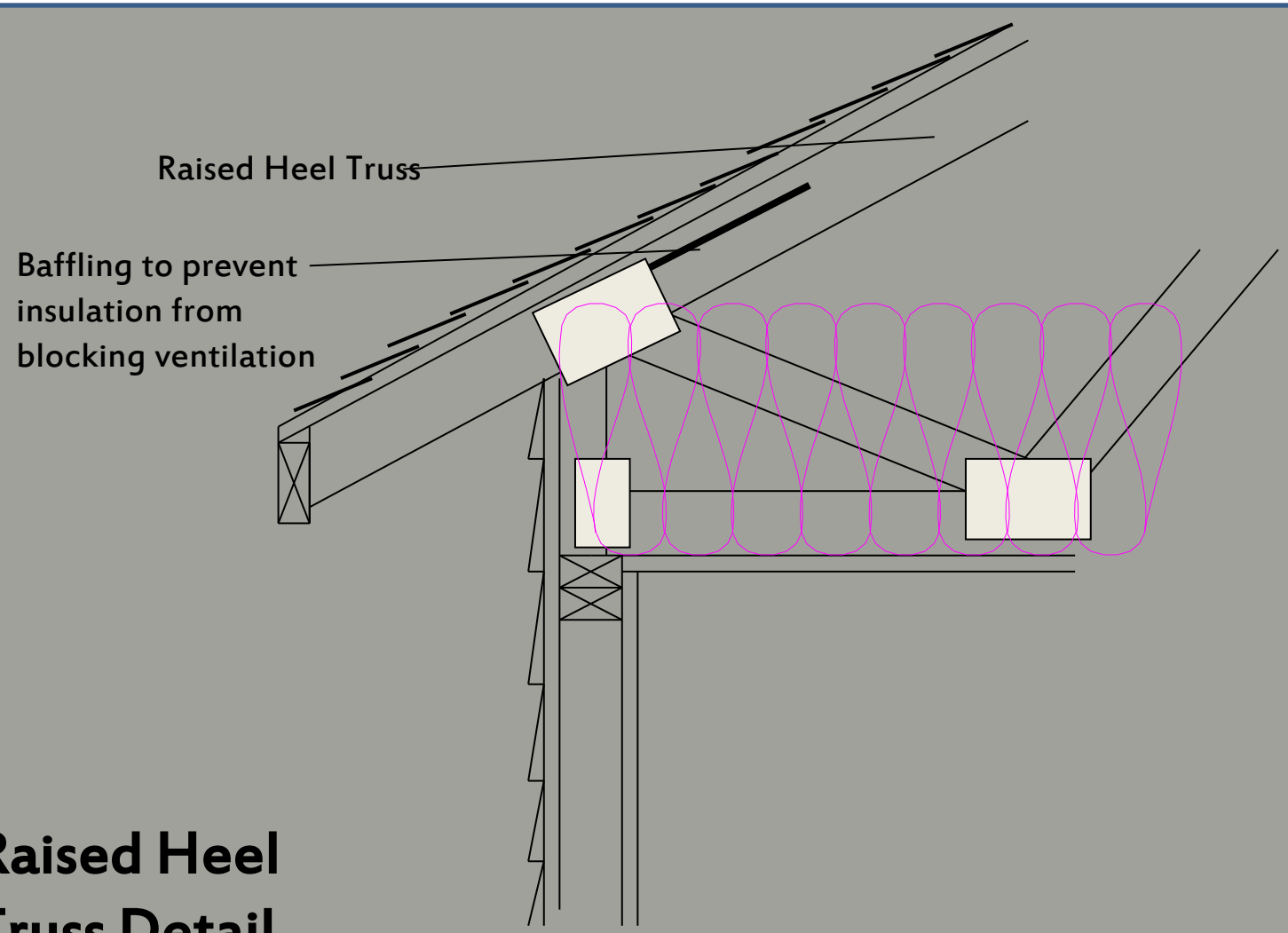
Compliance Method: UA Trade-Off Max. UA 63 Your UA 63

Click the Assembly fields to display a list of assembly choices



Roof Insulation Detail

BRITT MAKELA GROUP, INC.



Raised Heel Truss Detail

BRITT MAKELA GROUP, INC.

Roof/Ceiling

- Area of Roof/Ceiling (ft^2)
  - Measure at line of insulation
  - Flat ceiling - use floor area
  - Vaulted ceiling
    - Floor area x multiplier

Roof / Ceiling Pitch	Multiplier
2:12	1.01
3:12	1.03
4:12	1.05
5:12	1.08
6:12	1.12

BRITT MAKELA GROUP, INC.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	
2	Wall 1	Wood Frame, 16" o.c.	0	ft2	0.0	0.0	0.238	0	

- Wood Frame, 16" o.c.
- Wood Frame, 24" o .c.
- Steel Frame, 16" o.c.
- Steel Frame, 24" o.c.
- Solid Concrete or Masonry
- Masonry Block with Empty Cells
- Masonry Block with Integral Insulation
- Log
- Structural Insulated Panels
- Insulated Concrete Forms
- Other (U-Factor Option)

Input the wall

Select assembly

Complete insulation

Note: When calculating

options for orientation a

the total square footage

south side (or north side

Invalid Area(s)

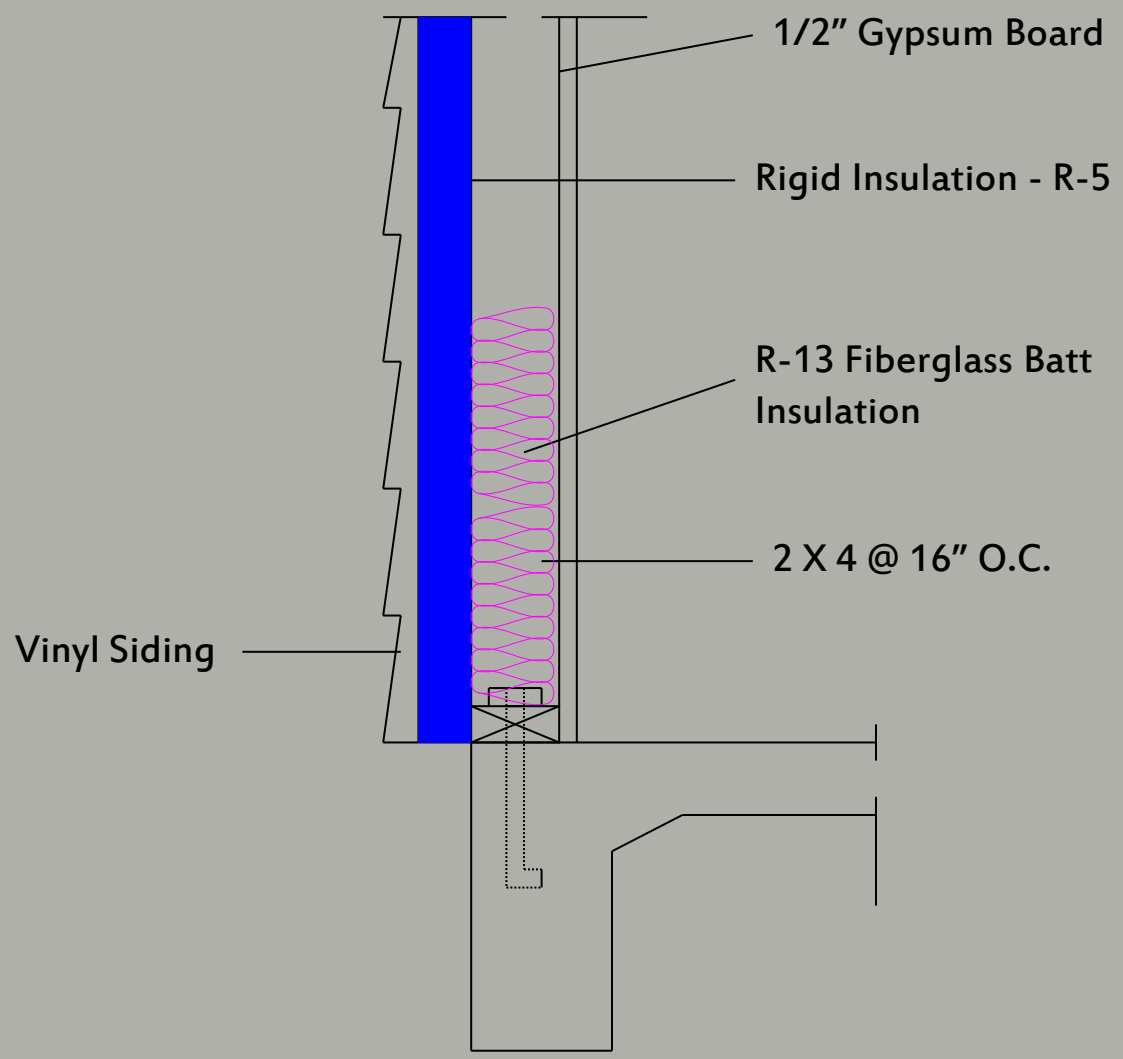
Compliance Method: UA Trade-Off Max. UA 63 Your UA 63

Click the Assembly fields to display a list of assembly choices

Exterior Walls

- All Above Grade Walls
  - Attic kneewalls
  - Garage walls
  - Skylight shaft walls
  - Below grade non-basement walls
  - Perimeter joist between floors
- Measure Gross Area (ft^2) of Each Wall Type
  - Perimeter X Wall Height = Gross Area

BRITT MAKELA GROUP, INC.



Wall Insulation Detail

BRITT MAKELA GROUP, INC.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	52	
3	Window 1	Click here to select Asse...	0	ft2			0.0	0	0.00

- Metal Frame
- Metal Frame with Thermal Break
- Wood Frame
- Vinyl Frame
- Other

With windows, make sure to input them in accordance with the wall they're on

Similarly with walls, one can enter the cumulative square footage of window space on a given wall.

Invalid assembly type(s)

Compliance Method: UA Trade-Off Max. UA 115 Your UA 115

Click the Assembly fields to display a list of assembly choices.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	51	
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40

Window is completed

Take note of UA and how U-factor and SHGC affect it

Passes

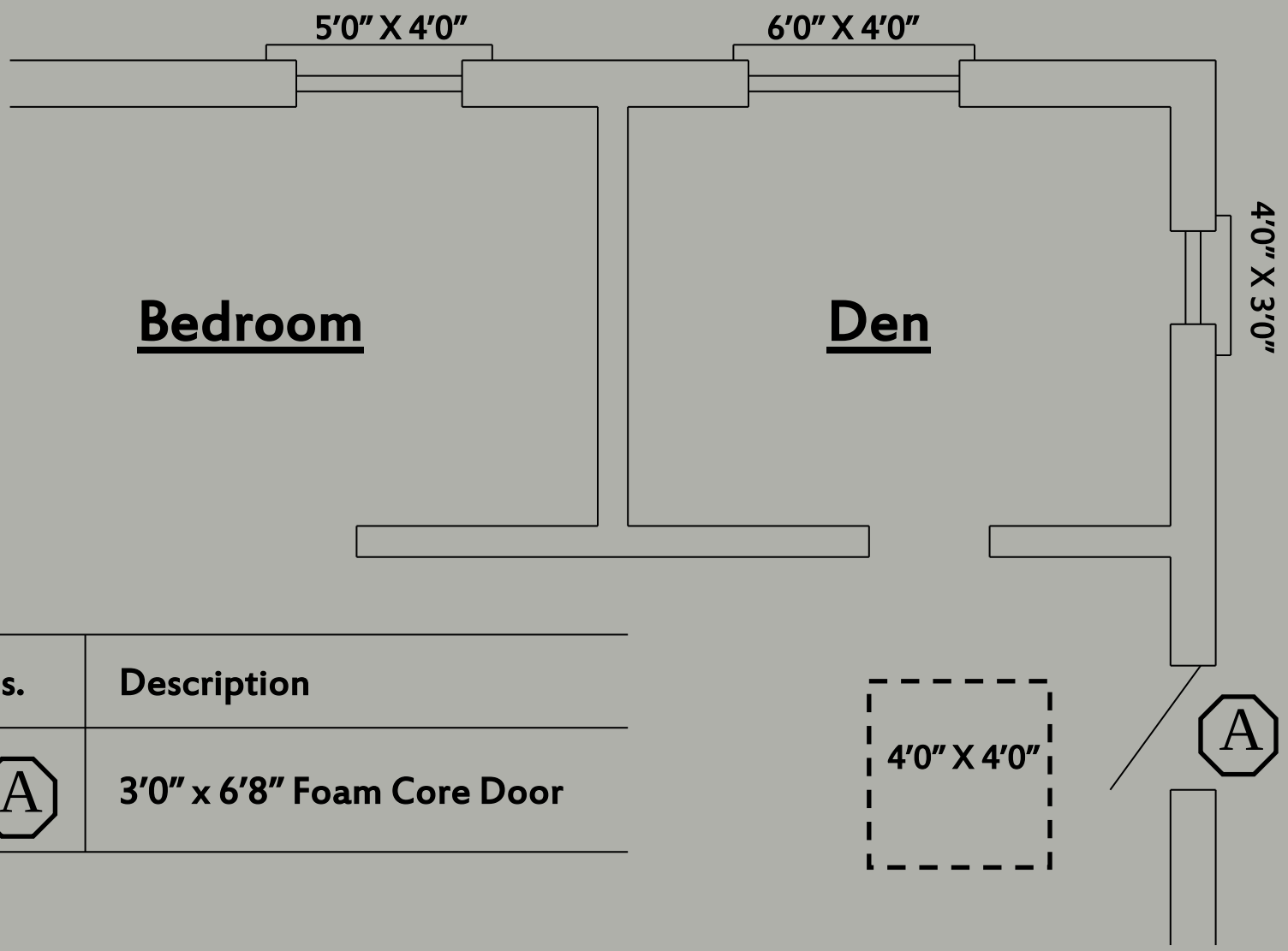
Compliance Method: UA Trade-Off Max. UA 212 Your UA 212

Fenestration Area

- Vertical Glazing
  - Only for glazing in conditioned space
  - Use rough opening
    - Floor plans
    - Glazing schedule
  - Odd shaped windows
    - Scale
- Skylights
  - Use rough opening
    - Floor plans
    - Glazing schedule

BRITT MAKELA GROUP, INC.

Window and Door Area



Des.	Description
A	3'0" x 6'8" Foam Core Door

BRITT MAKELA GROUP, INC.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29	
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40
4	Door 1	Solid	40	ft2			0.3	12	

Same rules that app
for doors, enter cum

Passes

Compliance Method: UA Trade-Off Max. UA 223 Your UA 222

Enter the U-factor of the door component

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29	
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40
4	Door 1	Solid	40	ft2			0.3	12	
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	48	
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	0	0.40

Invalid Area(s)

Compliance Method: UA Trade-Off Max. UA 271 Your UA 270

Enter the area of the window component in sq. ft

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC
	Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63	
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29	
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40
4	Door 1	Solid	40	ft2			0.3	12	
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37	
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40
7	Door 2	Solid	40	ft2			0.3	12	
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28	
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35	
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40

Notice- square f
windows and U-f
affecting UA. If t
problems with co
problem solve wi
factors in mind.

Passes

Compliance Method: UA Trade-Off Max. UA 389 Your UA 387

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63				
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29				
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40			
4	Door 1	Solid	40	ft2			0.3	12				
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37				
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40			
7	Door 2	Solid	40	ft2			0.3	12				
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28				
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35				
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40			
11	Basement Wall 1	Click here to select Asse...	0	ft2			0.0	0		0.0	0.0	0.0

Solid Concrete or Masonry
Masonry Block with Empty Cells
Masonry Block with Integral Insulation
Wood Frame
Insulated Concrete Forms
Other (U-Factor Option)

After walls and windows are put in run through with the basement walls.

N a g b

Invalid assembly type(s)

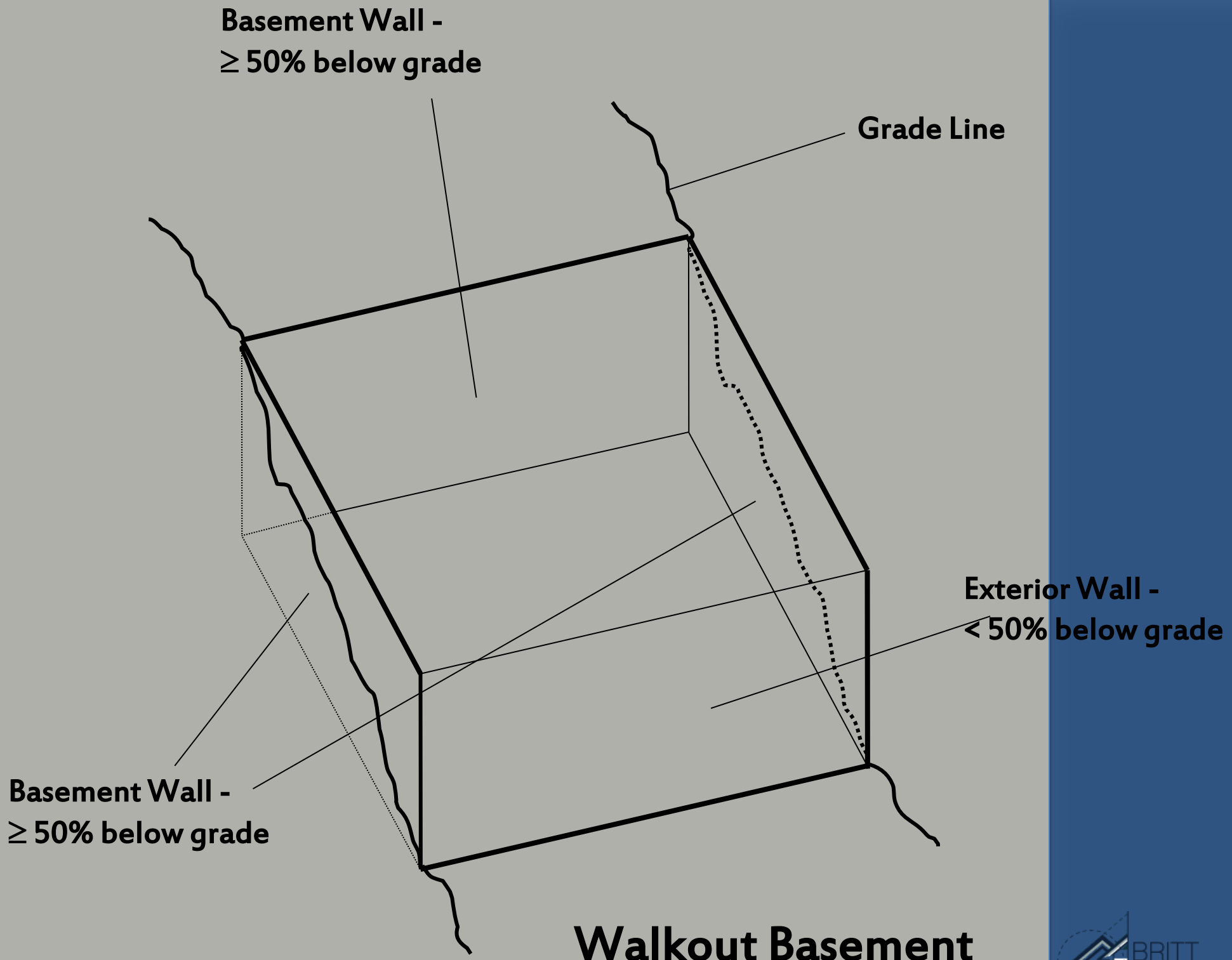
Compliance Method: UA Trade-Off Max. UA 389 Your UA 387

Click the Assembly fields to display a list of assembly choices

Basement Walls

- Determine if Wall is a Basement Wall
  - $\geq$ 50% Below Grade
- Measure Area of Each Wall (ft^2)
- Measure Insulation Placement
  - A - Top of foundation wall to top of footing
  - B - Grade line to top of footing
  - C - Depth of Insulation
- Walk-Out Basements
  - Basement Wall / Exterior Wall / Slab Edge

BRITT MAKELA GROUP, INC.



Walkout Basement

BRITT MAKELA GROUP, INC.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

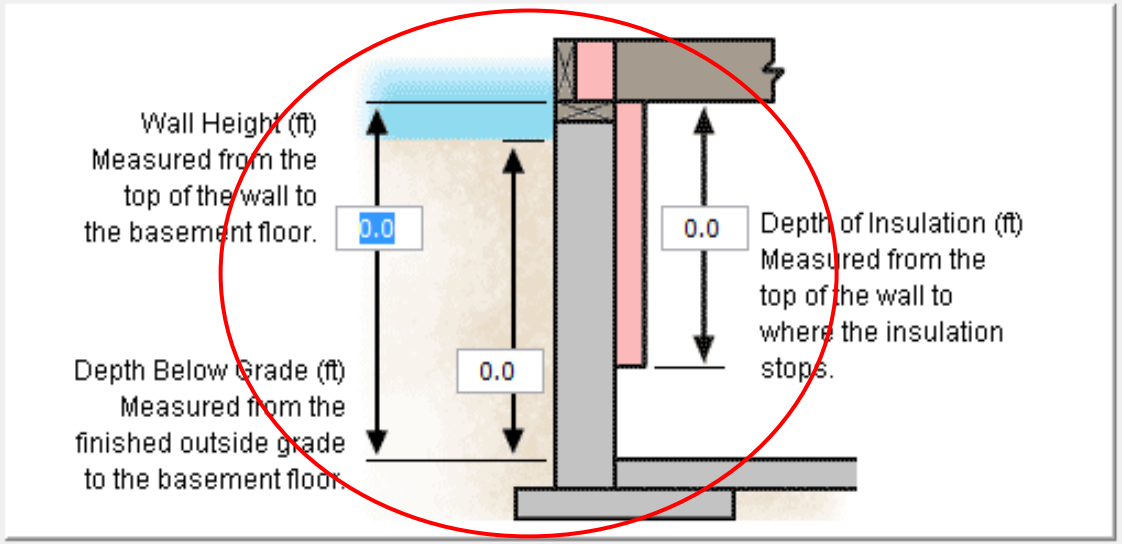
Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2								
2	Wall 1	Wood Frame, 16" o.c.	911	ft2								
3	Window 1	Vinyl Frame:Double Pane	369	ft2								
4	Door 1	Solid	40	ft2								
5	Wall 2	Wood Frame, 16" o.c.	834	ft2								
6	Window 2	Vinyl Frame:Double Pane	149	ft2								
7	Door 2	Solid	40	ft2								
8	Wall 3	Wood Frame, 16" o.c.	492	ft2								
9	Wall 4	Wood Frame, 16" o.c.	632	ft2								
10	Window 3	Vinyl Frame:Double Pane	15	ft2								
11	Basement Wall 1	Solid Concrete or Masonry	0	ft2								

Basement Walls

Enter the specified dimensions in feet (not inches) in the boxes provided.
A basement wall less than 50% below grade is considered an above-grade wall and must be entered using the Wall button.



OK | Cancel

Invalid assembly type(s)

Compliance Method: UA Trade-Off Max. UA 389 Your UA 387

Click the Assembly fields to display a list of assembly choices

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

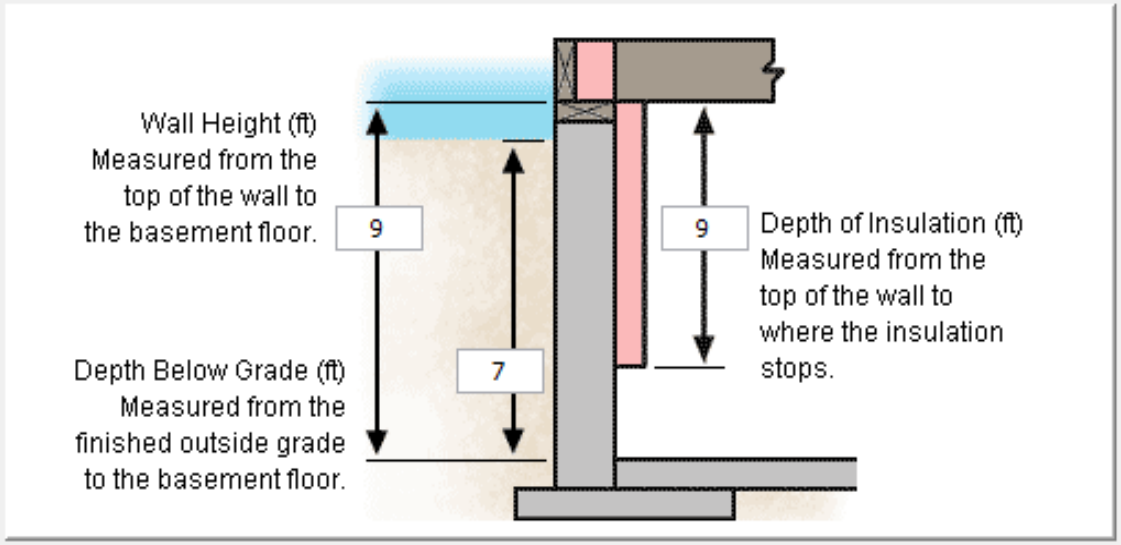
Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2								
2	Wall 1	Wood Frame, 16" o.c.	911	ft2								
3	Window 1	Vinyl Frame:Double Pane	369	ft2								
4	Door 1	Solid	40	ft2								
5	Wall 2	Wood Frame, 16" o.c.	834	ft2								
6	Window 2	Vinyl Frame:Double Pane	149	ft2								
7	Door 2	Solid	40	ft2								
8	Wall 3	Wood Frame, 16" o.c.	492	ft2								
9	Wall 4	Wood Frame, 16" o.c.	632	ft2								
10	Window 3	Vinyl Frame:Double Pane	15	ft2								
11	Basement Wall 1	Solid Concrete or Masonry	0	ft2								

Basement Walls

Enter the specified dimensions in feet (not inches) in the boxes provided.
A basement wall less than 50% below grade is considered an above-grade wall and must be entered using the Wall button.



OK | Cancel

Invalid assembly type(s)

Compliance Method: UA Trade-Off Max. UA 389 Your UA 387

Click the Assembly fields to display a list of assembly choices

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63				
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29				
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40			
4	Door 1	Solid	40	ft2			0.3	12				
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37				
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40			
7	Door 2	Solid	40	ft2			0.3	12				
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28				
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35				
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40			
11	Basement Wall 1	Solid Concrete or Masonry	1044	ft2	21.0	0.0	0.045	47		9.0	7.0	9.0
12	Floor 1	Click here to select Asse...	0	ft2			0.0	0				

- All-Wood Joist/Truss
  - Over Unconditioned Space
  - Over Outside Air
- Steel Frame, 16" o.c.
- Steel Frame, 24" o.c.
- Slab-On-Grade
- Structural Insulated Panels
- Other (U-Factor Option)

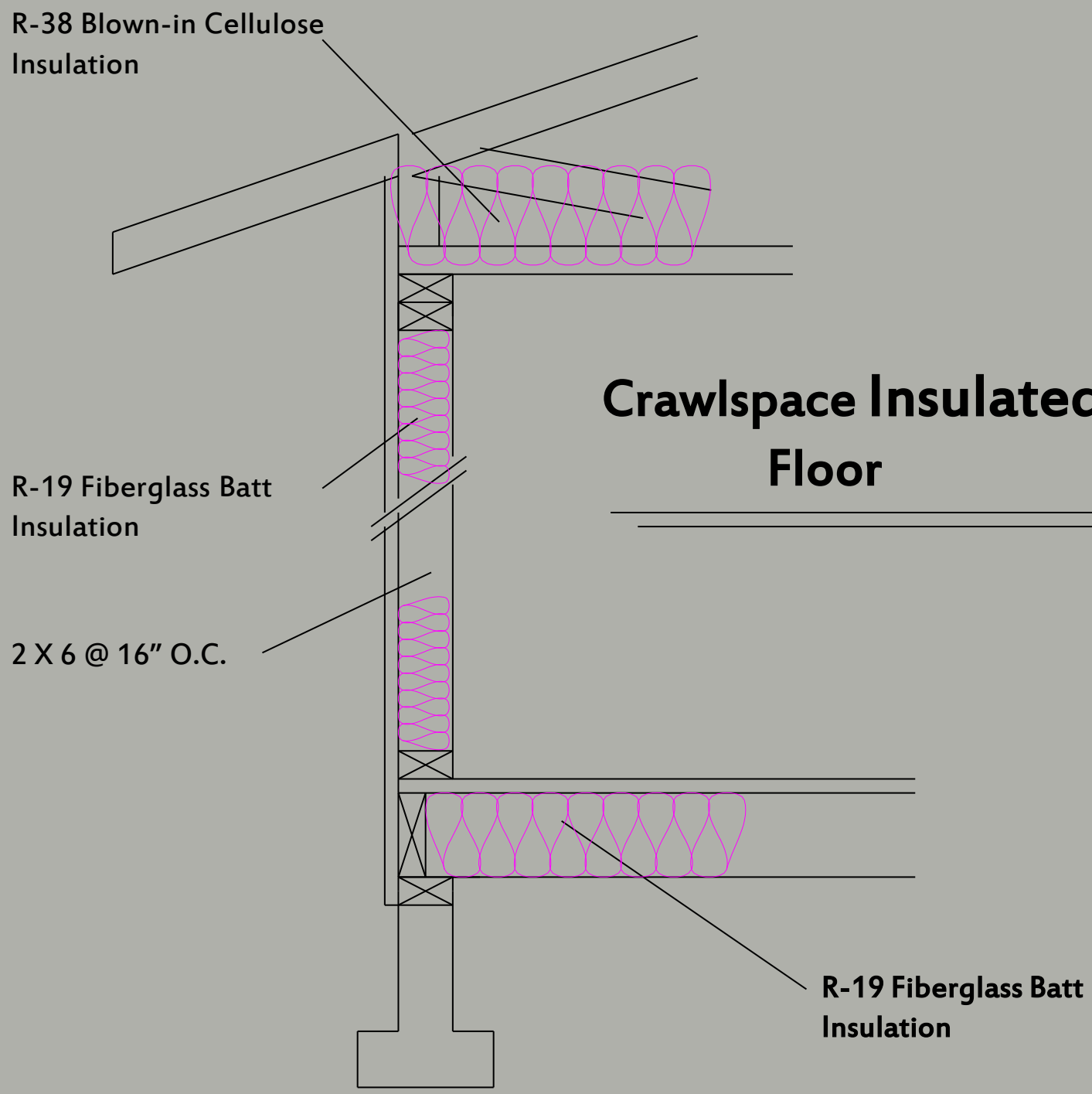
If you're building over an unconditioned crawls space, more than likely you will run into this combination

Invalid assembly type(s)

Compliance Method: UA Trade-Off Max. UA 441 Your UA 434

Click the Assembly fields to display a list of assembly choices

Crawlspace Insulated Floor



BRITT MAKELA GROUP, INC.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63				
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29				
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40			
4	Door 1	Solid	40	ft2			0.3	12				
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37				
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40			
7	Door 2	Solid	40	ft2			0.3	12				
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28				
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35				
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40			
11	Basement Wall 1	Solid Concrete or Masonry	1044	ft2	21.0	0.0	0.045	47		9.0	7.0	9.0
12	Floor 1	All-Wood Joist/Truss:Ove...	783	ft2	30.0	0.0	0.033	26				
13	Floor 2	Click here to select Asse...	0	ft2			0.0	0				

All-Wood Joist/Truss
Steel Frame, 16" o.c.
Steel Frame, 24" o.c.
Slab-On-Grade → Unheated / Heated
Structural Insulated Panels
Other (U-Factor Option)

In our case study we had both crawl space and slab on grad our house.

Invalid assembly type(s)

Compliance Method: UA Trade-Off Max. UA 467 Your UA 460

Click the Assembly fields to display a list of assembly choices

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63				
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29				
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40			
4	Door 1	Solid	40	ft2			0.4	16				
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37				
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40			
7	Door 2	Solid	40	ft2			0.4	16				
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28				
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35				
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40			
11	Basement Wall 1	Solid Concrete or Masonry	1044	ft2	21.0	0.0	0.045	47		9.0	7.0	9.0
12	Floor 1	All-Wood Joist/Truss:Ove...	783	ft2	30.0	0.0	0.033	26				
13	Floor 2	Slab-On-Grade:Unheated	93	ft		10.0	0.767	71				2.0

Looking at UA numbers, we see that the higher the number, the more weight it pulls in the house being energy efficient

Fails

Compliance Method: UA Trade-Off Max. UA 538 Your UA 539

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63				
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29				
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40			
4	Door 1	Solid	40	ft2			0.4	16				
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37				
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40			
7	Door 2	Solid	40	ft2			0.4	16				
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28				
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35				
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40			
11	Basement Wall 1	Solid Concrete or Masonry	1044	ft2	21.0	0.0	0.045	47		9.0	7.0	9.0
12	Floor 1	All-Wood Joist/Truss:Ove...	783	ft2	30.0	0.0	0.033	26				
13	Floor 2	Slab-On-Grade:Unheated	93	ft		10.0	0.767	71				2.0

-Mo
with
fac
-Inc
insu

Fails

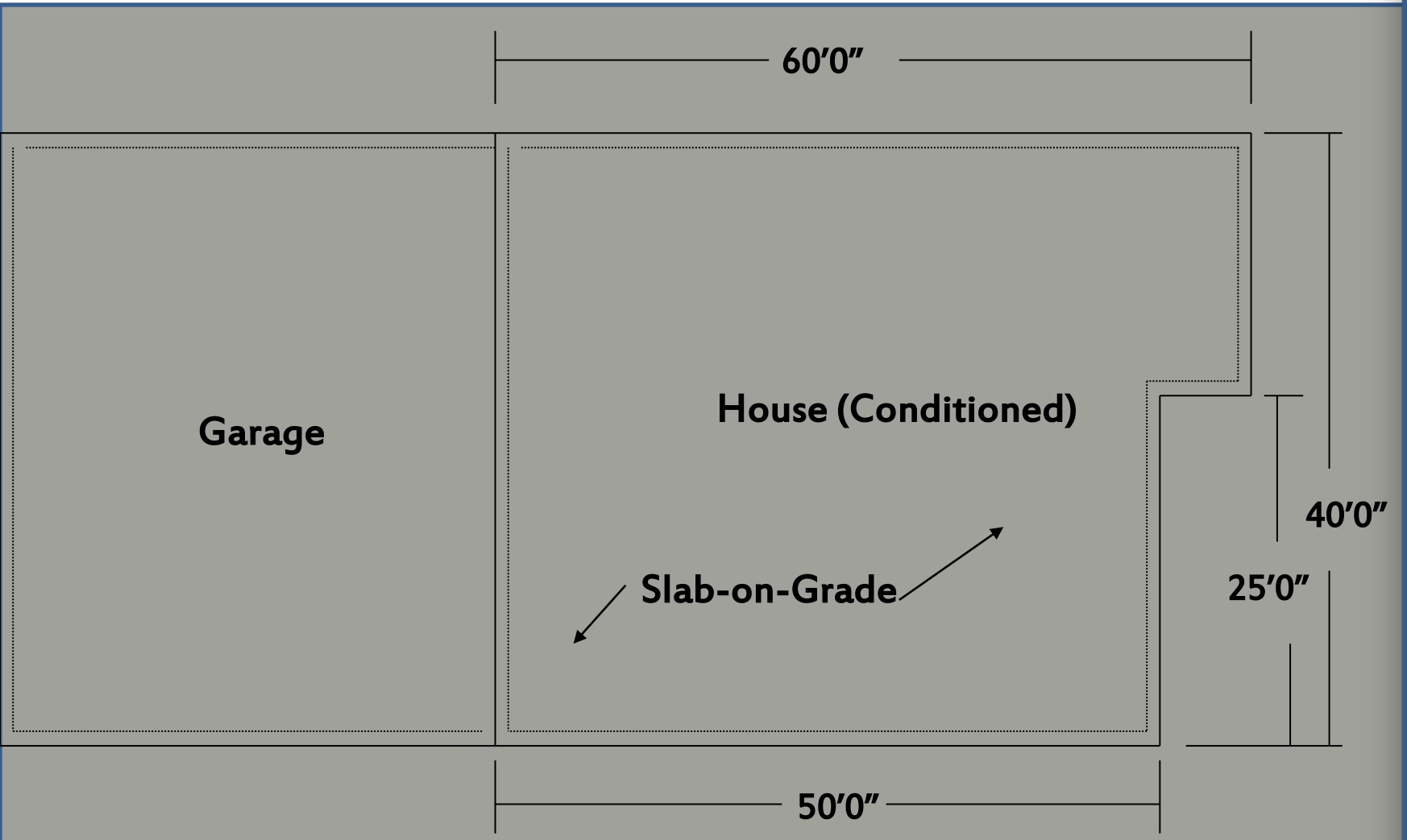
Compliance Method: UA Trade-Off Max. UA 538 Your UA 539

Slab-On-Grade Foundation

- Lineal Length for Perimeter
  - Exterior of slab edge
  - Between house and garage (if different from exterior)
- Use Dimension Lines
  - Can scale if necessary
- Use Foundation Plans or First Floor Plan
- Need Slab Insulation Depth

BRITT MAKELA GROUP, INC.

Slab-On-Grade Foundation



Foundation Plan

BRITT MAKELA GROUP, INC.

Untitled.rck - REScheck 4.4.3 Code: 2012 IECC

File Edit View Options Code Tools Help

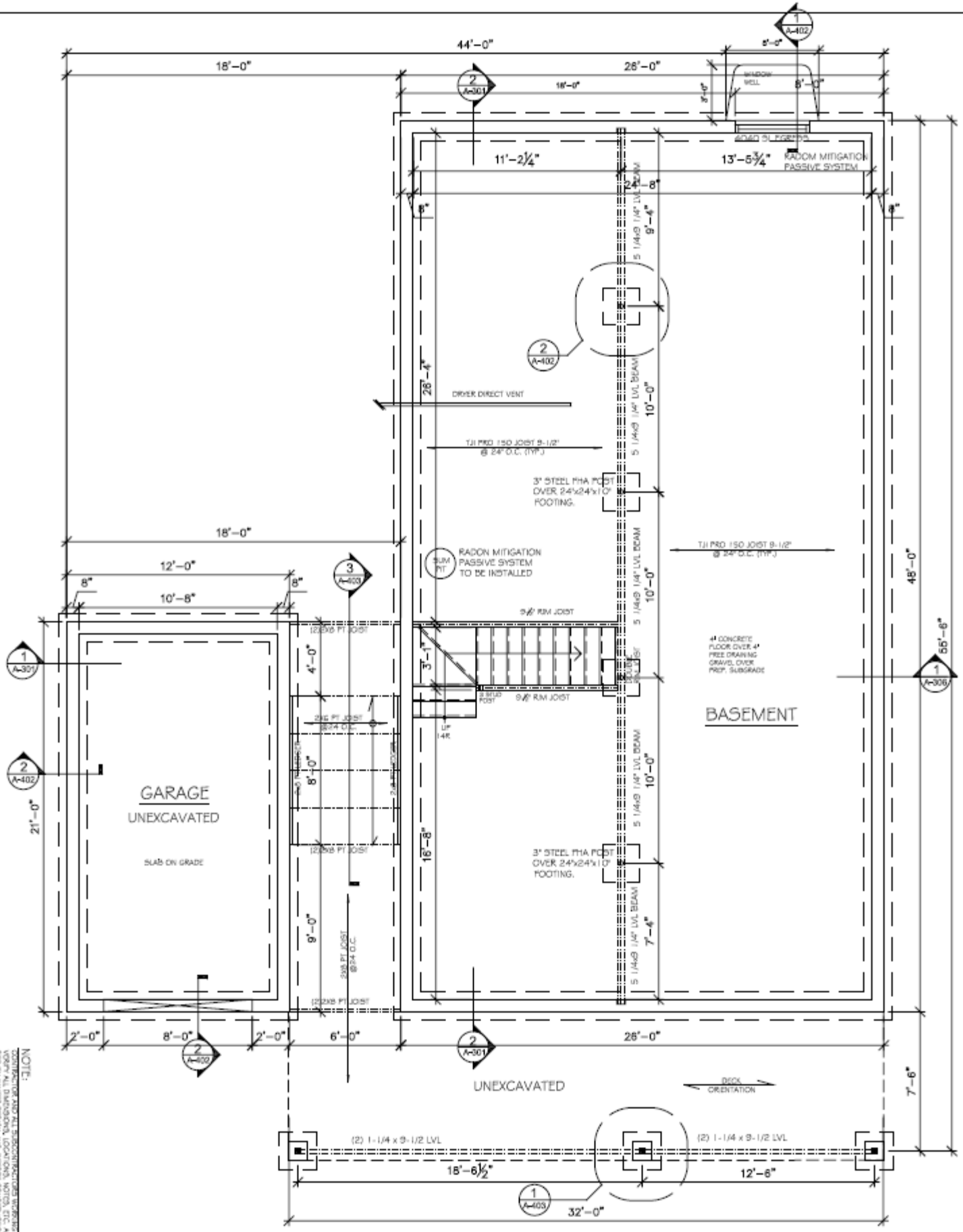
Project | Envelope | Mechanical

Ceiling | Skylight | Wall | Window | Door | Basement | Floor | Crawl Wall

	Component	Assembly	Gross Area		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)
	Building											
1	Ceiling 1	Flat Ceiling or Scissor Truss	2415	ft2	49.0	0.0	0.026	63				
2	Wall 1	Wood Frame, 16" o.c.	911	ft2	21.0	0.0	0.057	29				
3	Window 1	Vinyl Frame:Double Pane	369	ft2			0.32	118	0.40			
4	Door 1	Solid	40	ft2			0.3	12				
5	Wall 2	Wood Frame, 16" o.c.	834	ft2	21.0	0.0	0.057	37				
6	Window 2	Vinyl Frame:Double Pane	149	ft2			0.32	48	0.40			
7	Door 2	Solid	40	ft2			0.3	12				
8	Wall 3	Wood Frame, 16" o.c.	492	ft2	21.0	0.0	0.057	28				
9	Wall 4	Wood Frame, 16" o.c.	632	ft2	21.0	0.0	0.057	35				
10	Window 3	Vinyl Frame:Double Pane	15	ft2			0.32	5	0.40			
11	Basement Wall 1	Solid Concrete or Masonry	1044	ft2	21.0	0.0	0.045	47		9.0	7.0	9.0
12	Floor 1	All-Wood Joist/Truss:Ove...	783	ft2	30.0	0.0	0.033	26				
13	Floor 2	Slab-On-Grade:Unheated	93	ft		10.0	0.684	64				4.0

Passes

Compliance Method: UA Trade-Off Max. UA 538 Your UA 524

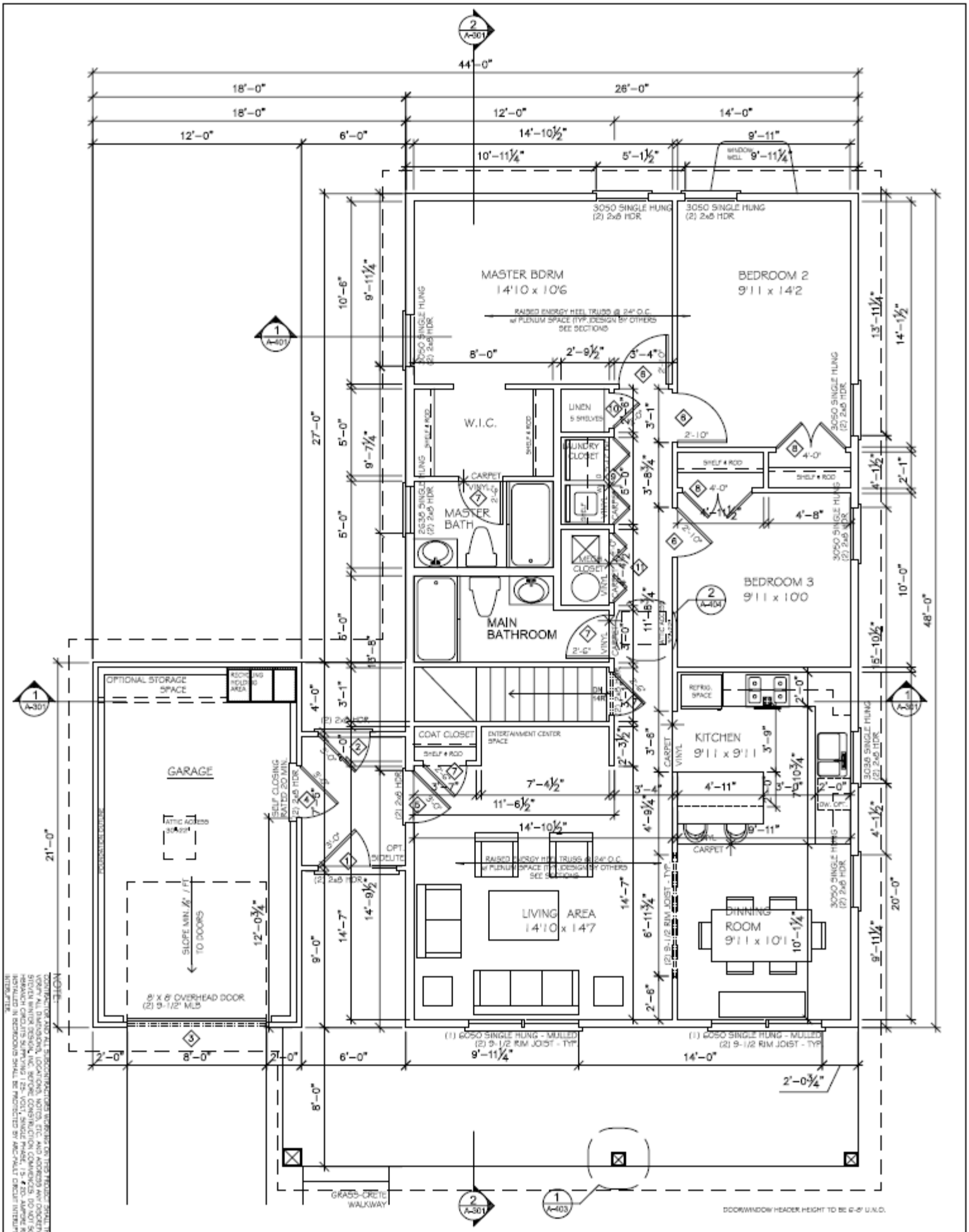


1 BASEMENT FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
CONTRACTOR AND ALL SUBCONTRACTORS WORKING ON THIS PROJECT SHALL THOROUGHLY REVIEW AND VERIFY ALL DIMENSIONS, LOCATIONS, NOTES, ETC. AND ADDRESS ANY DISCREPANCIES OR CONCERNS WITH STEVEN WINTER DESIGN, INC. BEFORE CONSTRUCTION COMMENCES. DO NOT SCALE DRAWINGS.
HEMMATCH CIRCUITS SUPPLYING 125- VOLT, SINGLE PHASE, 15 & 20- AMPERE RECEPTACLE OUTLETS INSTALLED IN BEDROOMS SHALL BE PROTECTED BY ARC-FAULT CIRCUIT INTERRUPTERS. AFI- ARC-FAULT INTERRUPTER.

NOT FOR CONSTRUCTION
UNLESS STAMPED



1 FIRST FLOOR

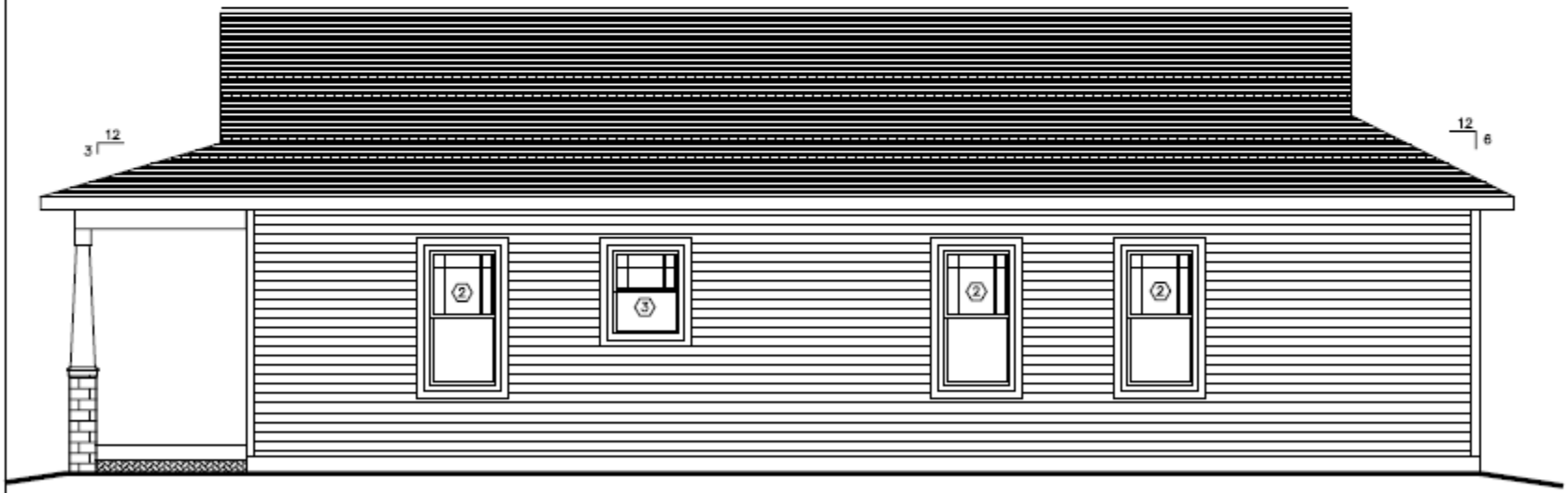
SCALE: 3/16" = 1'-0"

NOT FOR CONSTRUCTION

UNLESS STAMPED

1 FRONT ELEVATION

SCALE: 3/16" = 1'-0"



2 RIGHT ELEVATION

SCALE: 3/16" = 1'-0"

WINDOW SCHEDULE

Tag	Qty	Stock Size	Single Bin. Unit	R. Opening	Notes
1	2	[illegible]	[illegible]	[illegible]	MULLED SINGLE HUNG W/ SCREEN UPPER AND LOWER PRAIRIE GRID PATTERN
2	1	[illegible]	[illegible]	[illegible]	SINGLE HUNG W/ SCREEN UPPER PRAIRIE GRID PATTERN
3	1	[illegible]	[illegible]	[illegible]	AWNING / DOOR SIDELITE
4	2	[illegible]	[illegible]	[illegible]	SINGLE HUNG W/ SCREEN
5	1	[illegible]	[illegible]	[illegible]	SLIDING TEMPERED / EGRESS WINDOW @ WINDOW WELL

WINDOW REQUIREMENTS:
SUBSTITUTE: CONTRACTOR SERIES WINDOWS OR EQUAL.
LOW E (SCVOLEAR GLAZING, DOUBLE PANEL VINYL FRAME (SP-025, SRGC-E-21)
• CONTRACTOR SHALL REVIEW AND VERIFY SIZE, TYPE AND QUANTITY OF ITEMS LISTED ON SCHEDULES BEFORE ORDERING THEM.

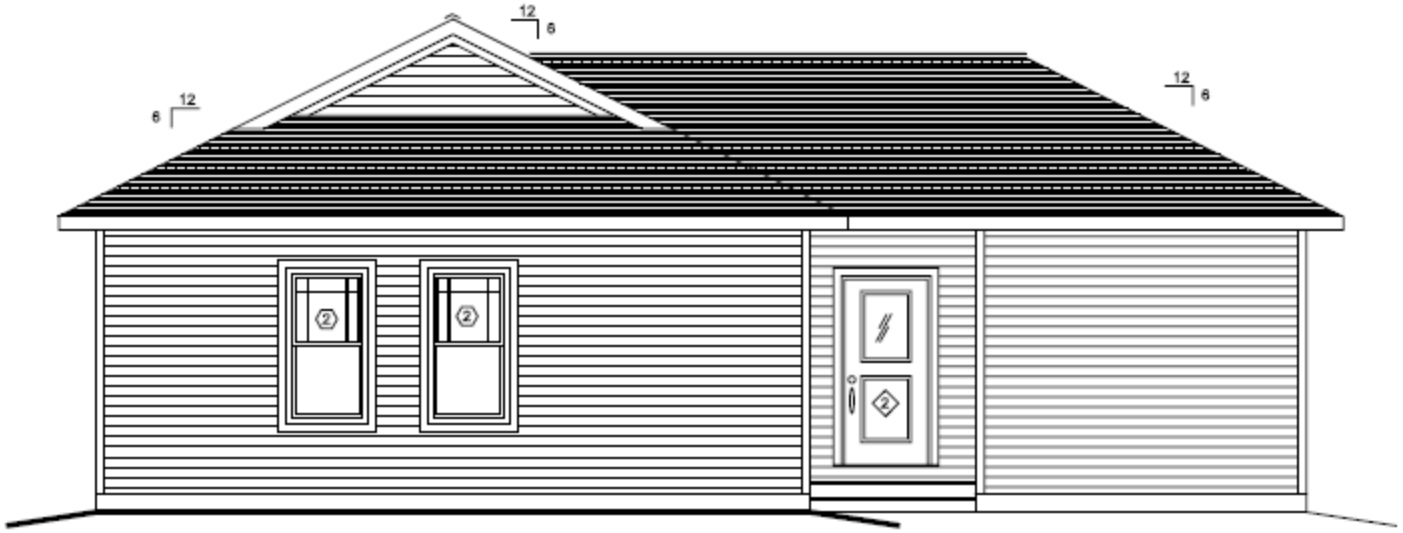
DOOR SCHEDULE

Tag	Qty	Door Size	Rough Opening	Notes
1	1	[illegible]	[illegible]	LIGHT SO STANLEY STEEL BUILDER SERIES W/ SIDE SEPC 1/2 SIDELITE
2	1	[illegible]	[illegible]	LIGHT SO STANLEY STEEL BUILDER SERIES
3	1	[illegible]	[illegible]	CLOPAY PREMIUM FLUSH PANEL INSUL. METAL OVERHEAD GARAGE DOOR W/ WINDOWS
4	1	[illegible]	[illegible]	LIGHT SO STANLEY STEEL BUILDER SERIES W/ SELF CLOSING (RATED 20 MIN)
5	1	[illegible]	[illegible]	LIVING ROOM ACCESS
6	3	[illegible]	[illegible]	SOLID CORE
7	4	[illegible]	[illegible]	
8	2	[illegible]	[illegible]	
9	1	[illegible]	[illegible]	BI-FOLD
10	1	[illegible]	[illegible]	
11	1	[illegible]	[illegible]	BI-FOLD HOLLOW CORE

DOOR REQUIREMENTS:
DOORS TO BE AS SPECIFIED OR EQUIVALENT.
• CONTRACTOR SHALL REVIEW AND VERIFY SIZE, TYPE AND QUANTITY OF ITEMS LISTED ON SCHEDULES BEFORE ORDERING THEM.
• INTERIOR DOORS TO BE "DRAFTMASTER MAGNETIC" OR EQUAL.
• EXTERIOR MAIN DOORS INSULATED TO R-VALUE OF R-8 OR GREATER. ALL GLAZING IN DOORS TO BE TEMPERED.

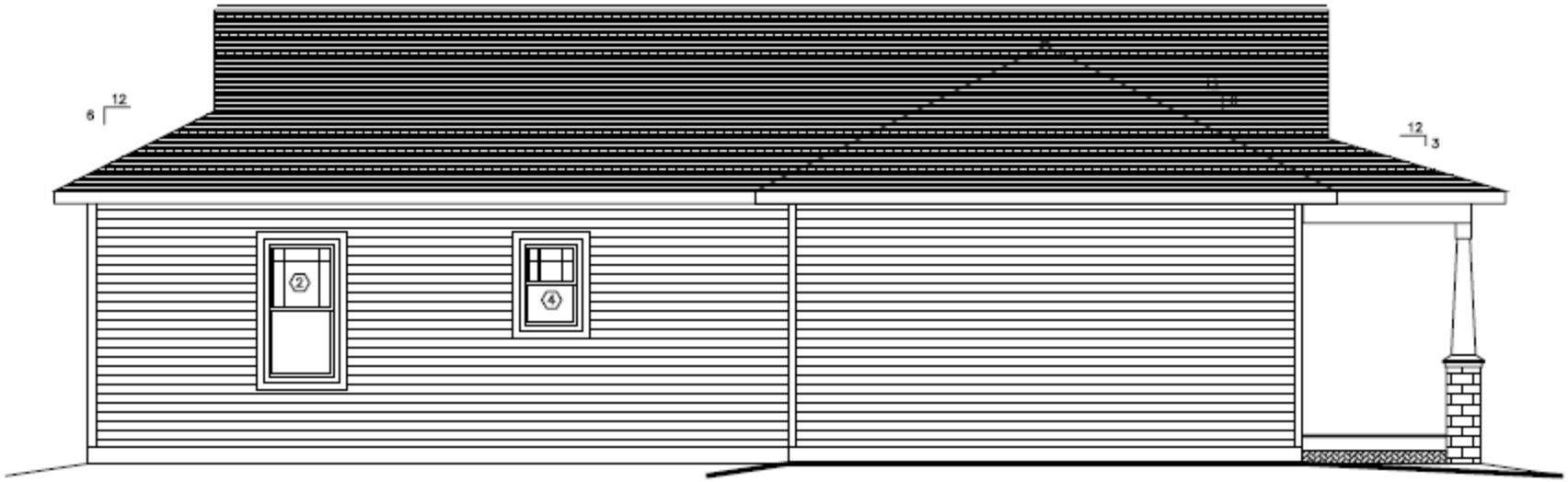
NOTE:
CONTRACTOR AND ALL SUBCONTRACTORS WORKING ON THIS PROJECT SHALL THOROUGHLY REVIEW AND VERIFY ALL DIMENSIONS, LOCATIONS, NOTES, ETC. AND ADDRESS ANY DISCREPANCIES OR CONCERNS WITH STEVEN WINTER DESIGN, INC. BEFORE CONSTRUCTION COMMENCES. DO NOT SCALE DRAWINGS.
HBRANCH CIRCUITS SUPPLYING 125- VOLT, SINGLE PHASE, 15- & 20- AMPERE RECEPTACLE OUTLETS INSTALLED IN BEDROOMS SHALL BE PROTECTED BY ARC-FAULT CIRCUIT INTERRUPTERS. AFI- ARC-FAULT INTERRUPTER.

NOT FOR CONSTRUCTION
UNLESS STAMPED



1 BACK ELEVATION

SCALE: 3/16" = 1'-0"



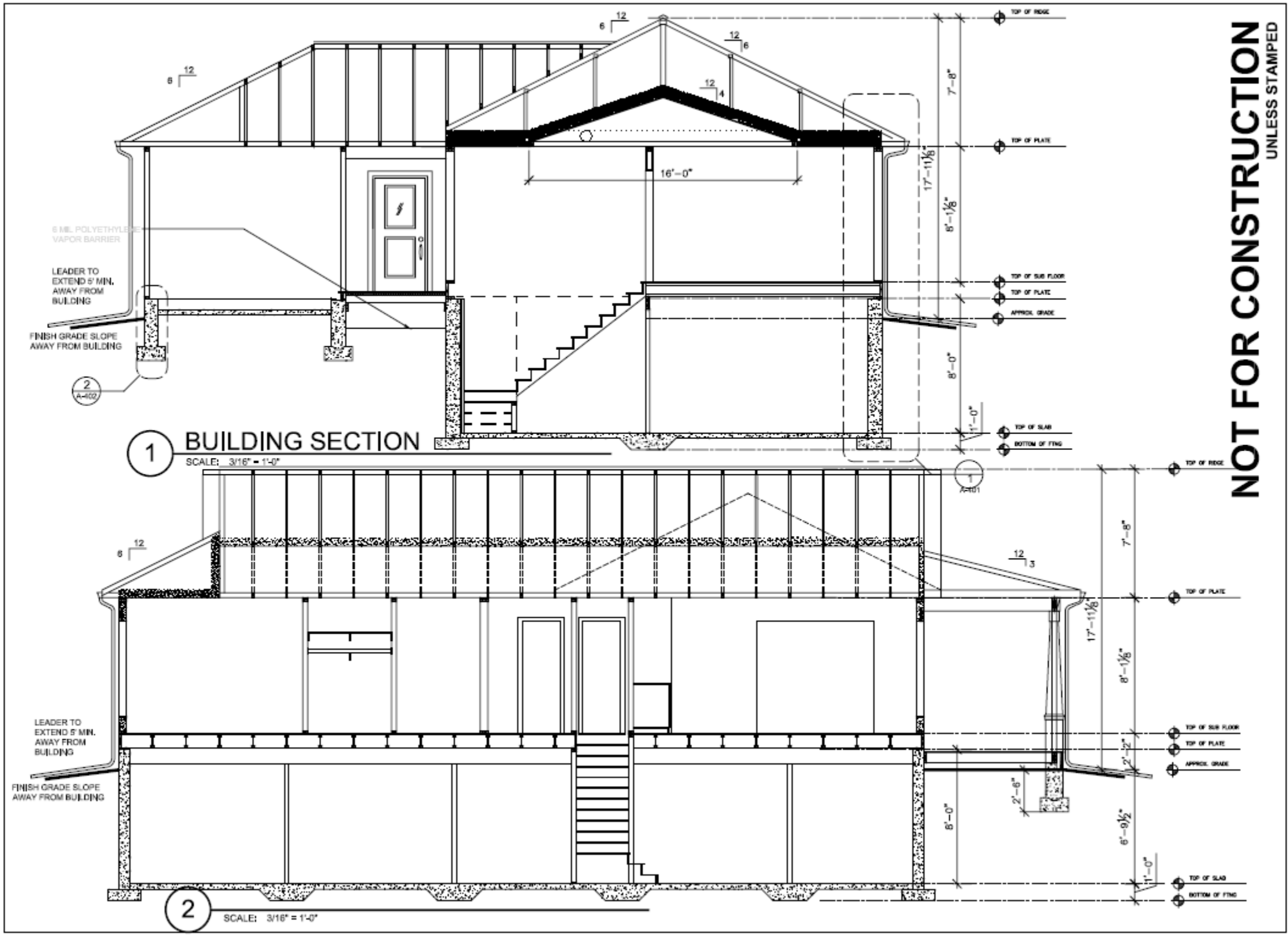
2 LEFT ELEVATION

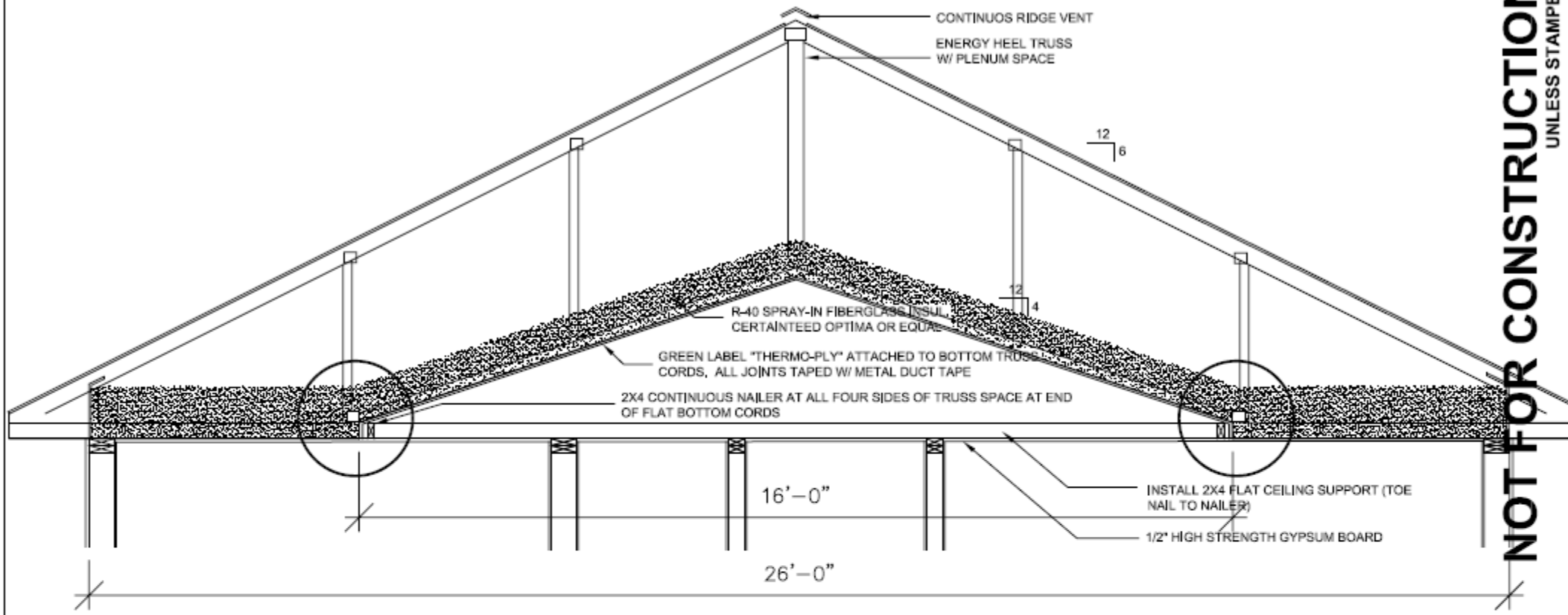
SCALE: 3/16" = 1'-0"

NOTE:

CONTRACTOR AND ALL SUBCONTRACTORS WORKING ON THIS PROJECT SHALL THOROUGHLY REVIEW AND VERIFY ALL DIMENSIONS, LOCATIONS, NOTES, ETC. AND ADDRESS ANY DISCREPANCIES OR CONCERNS WITH STEVEN WINTER DESIGN, INC. BEFORE CONSTRUCTION COMMENCES. DO NOT SCALE DRAWINGS. HBRANCH CIRCUITS SUPPLYING 125- VOLT, SINGLE PHASE, 15- & 20- AMPERE RECEPTACLE OUTLETS INSTALLED IN BEDROOMS SHALL BE PROTECTED BY ARC-FAULT CIRCUIT INTERRUPTORS. AFI- ARC-FAULT INTERRUPTER.

NOT FOR CONSTRUCTION
UNLESS STAMPED

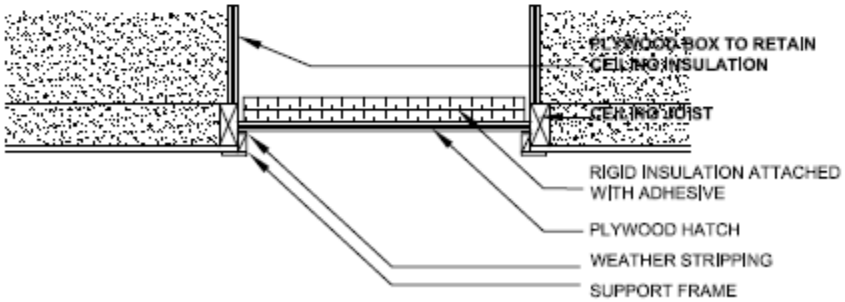

NOT FOR CONSTRUCTION
UNLESS STAMPED
1 BUILDING SECTION
SCALE: 3/16" = 1'-0"
2
SCALE: 3/16" = 1'-0"
TOP OF RIDGE
TOP OF PLATE
TOP OF SUB FLOOR
TOP OF PLATE
APPROX. GRADE
TOP OF SLAB
BOTTOM OF FTNG
16'-0"
17'-11⅛"
8'-1⅛"
7'-8"
8'-0"
1'-0"
6 MIL POLYETHYLENE VAPOR BARRIER
LEADER TO EXTEND 5' MIN. AWAY FROM BUILDING
FINISH GRADE SLOPE AWAY FROM BUILDING
2 A-402
1 A-101
2'-2"
2'-6"
6'-9½"



NOT FOR CONSTRUCTION
UNLESS STAMPED

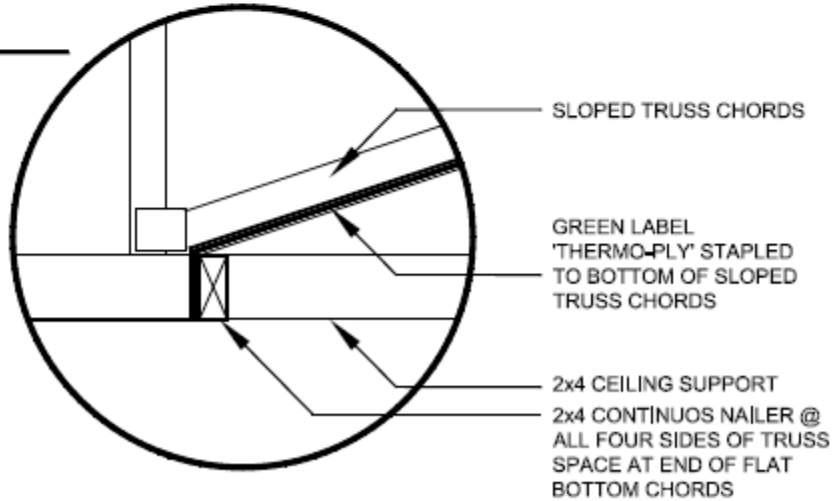
1 PLENUM TRUSS DETAIL

SCALE: 1/2" = 1'-0"



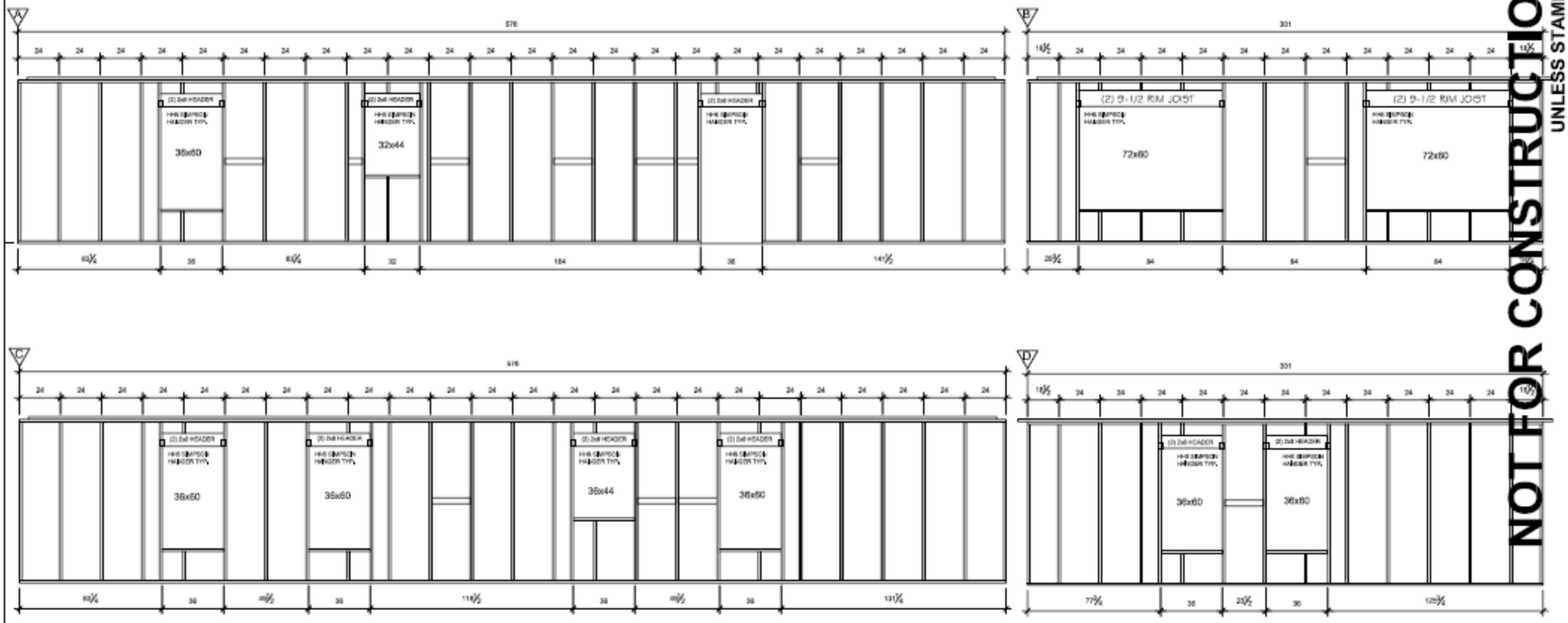
2 ATTIC HATCH DETAIL

SCALE: 1/2" = 1'-0"



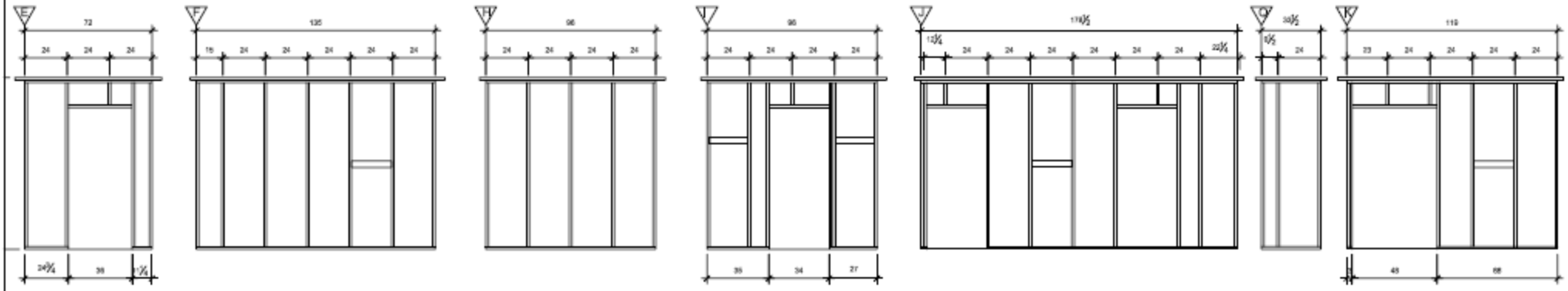
3 PLENUM DETAIL

SCALE: 1/2" = 1'-0"



1 EXTERIOR FRAMING

SCALE: 3/16" = 1'-0"

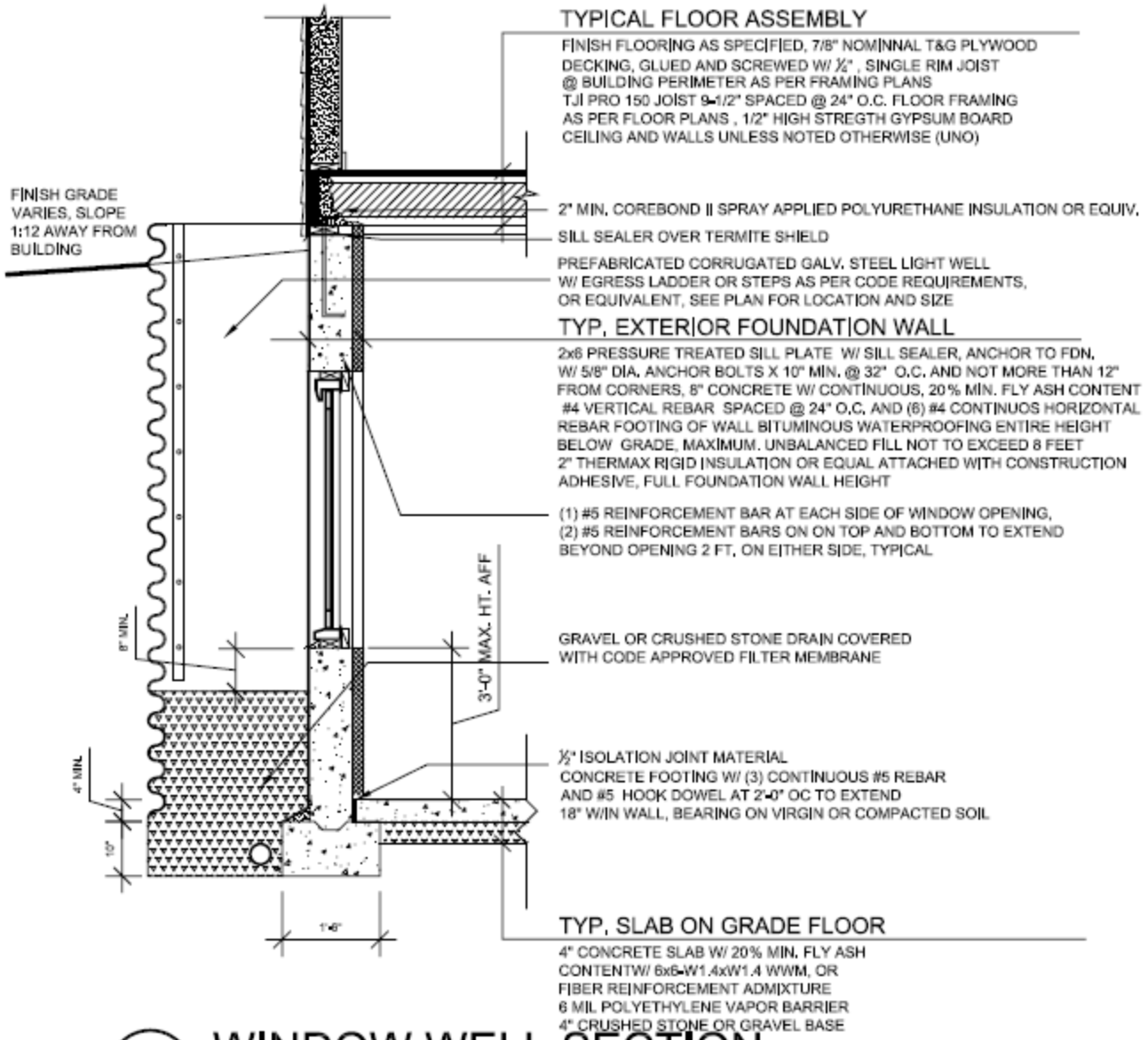


2 INTERIOR FRAMING

SCALE: 3/16" = 1'-0"

Note: 6'8" HEADER HIGH TYP.

NOT FOR CONSTRUCTION
UNLESS STAMPED



1 WINDOW WELL SECTION

SCALE: 1/2" = 1'-0"

BRITT MAKELA GROUP, INC.

WINDOW SCHEDULE

Tag	Qty	Stock Size	Single Dim. Unit	R. Opening	Notes
1	2	(2)3050	(2) 35½x59½	72x60	MULLED SINGLE HUNG W/ SCREEN UPPER AND LOWER PRARIE GRID PATTERN
2	1	3050	35½x59½	36x60	SINGLE HUNG W/ SCREEN UPPER PRARIE GRID PATTERN
3	1	3038	35½x47½	36x44	AWNING / DOOR SIDELITE
4	2	2838	31½x47½	32x44	SINGLE HUNG W/ SCREEN
5	1	4040	47½x47½	48x48	SLIDING TEMPERED / EGRESS WINDOW @ WINDOW WELL

WINDOW REQUIREMENTS :
SIMONTON, CONTRACTOR SERIES WINDOWS OR EQUAL
LOW E (SC)/CLEAR GLAZING, DOUBLE PANE, VINYL FRAME (U=0.33, SHGC=0.31)
- CONTRACTOR SHALL REVIEW AND VERIFY SIZE, TYPE AND QUANTITY OF ITEMS LISTED ON SCHEDULES BEFORE ORDERING THEM.

DOOR SCHEDULE

Tag	Qty	Door Size	Rough Opening	Notes
1	1	4'-2" x 6'-8"	4'-5-3/4" x 6'-10"	LK01 3'0 STANLEY STEEL BUILDER SERIES W/ SK0L S3TC 1'2 SIDELITE
2	1	3'-0" x 7'-0"	3'-2-1/4" x 6'-10"	LK01-K4C 3'0 STANLEY STEEL BUILDER SERIES
3	1	10'-0" x 7'-0"	10'-0" x 7'-0"	CLOPAY PREMIUM FLUSH PANEL INSUL. METAL OVERHEAD GARAGE DOOR W/ WINDOWS
4	1	3'-0" x 7'-0"	3'-2-1/4" x 6'-10"	LK01 3'0 STANLEY STEEL BUILDER SERIES W/ SELF CLOSING (RATED 20 MIN)
5	1	3'-0" x 7'-0"	3'-0" x 7'-0"	LIVING ROOM ACCESS
6	3	2'-10" x 6'-8"	2'-10" x 6'-8"	SOLID CORE
7	4	2'-6" x 6'-8"	2'-6" x 6'-8"	
8	2	4'-0" x 6'-8"	4'-0" x 6'-8"	
9	1	5'-0" x 6'-8"	5'-0" x 6'-8"	BI-FOLD
10	1	2'-0" x 6'-8"	2'-0" x 6'-8"	
11	1	4'-0" x 6'-8"	4'-0" x 6'-8"	BI-FOLD HOLLOW CORE

DOOR REQUIREMENTS :
DOORS TO BE AS SPECIFIED OR EQUIVALENT,
- CONTRACTOR SHALL REVIEW AND VERIFY SIZE, TYPE AND QUANTITY OF ITEMS LISTED ON SCHEDULES BEFORE ORDERING THEM.
- INTERIOR DOORS TO BE "CRAFTMASTER MASONITE" OR EQUAL
- EXTERIOR WALK DOORS INSULATED TO R-VALUE OF R-5 OR GREATER, ALL GLAZING IN DOORS TO BE TEMPERED.

BRITT MAKELA GROUP, INC.