

LEFT ELEVATION  
SCALE: 1/4 IN = 1 FT

UPPER FLOOR WALL HT 8'-1"

UPPER FLOOR  
FRAMING 12 5/8"

MAIN FLOOR  
WALL HT 10'-0"

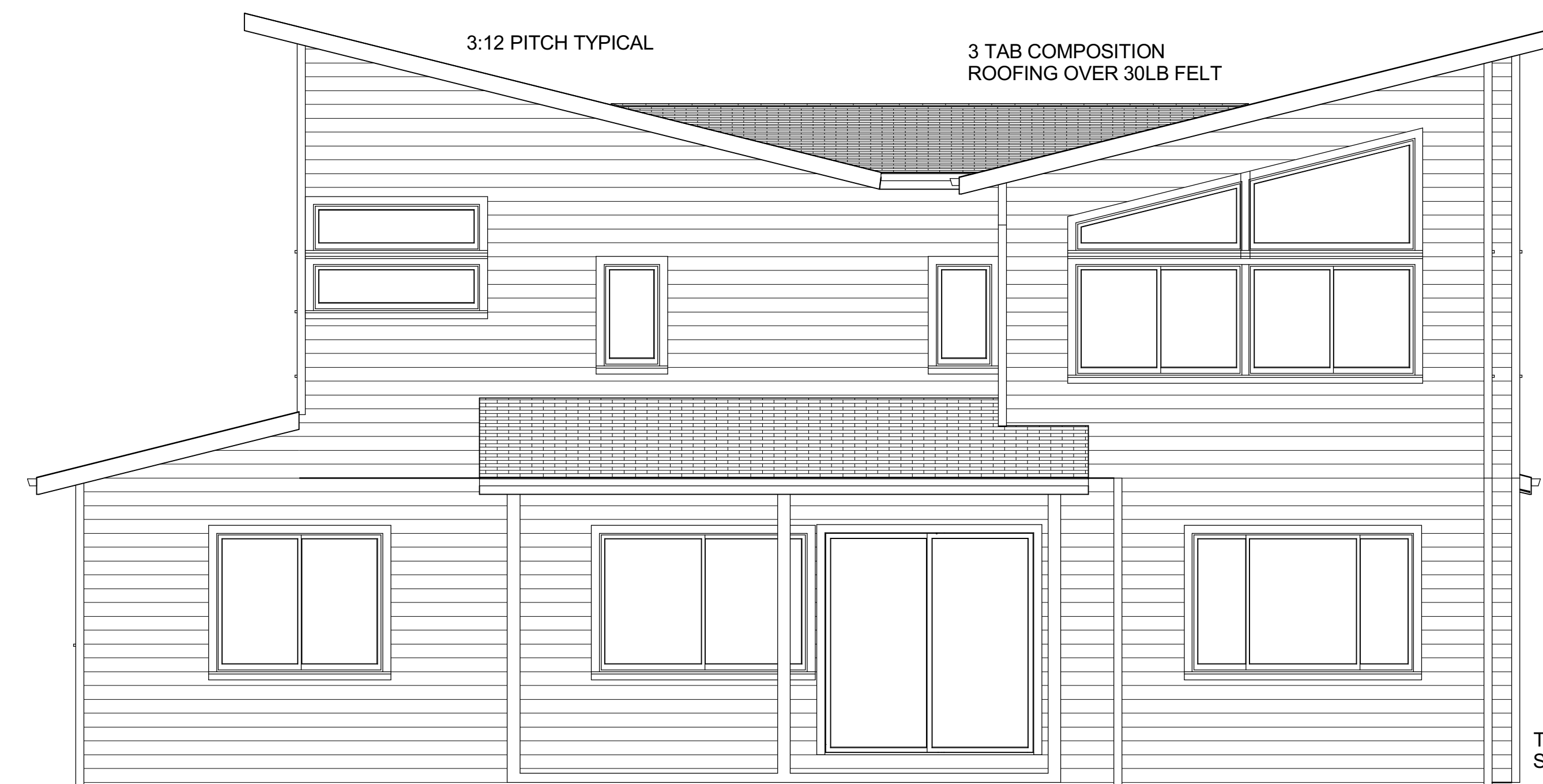
LOWER FLOOR  
FRAMING 12 5/8"



FRONT ELEVATION  
SCALE: 1/4 IN = 1 FT

16 X 8 GARAGE DOOR

9 X 8 GARAGE DOOR



REAR ELEVATION  
SCALE: 1/4 IN = 1 FT

(16) 8X16 FOUNDATION  
VENTS REQUIRED

3:12 PITCH TYPICAL

3 TAB COMPOSITION  
ROOFING OVER 30LB FELT

TOP OF  
SUBFLOOR  
1'-2"  
TOP OF FOUNDATION

TOP OF ROOF RIDGE

26'-8"

(12-14) 7X7 ROOF  
VENTS REQUIRED

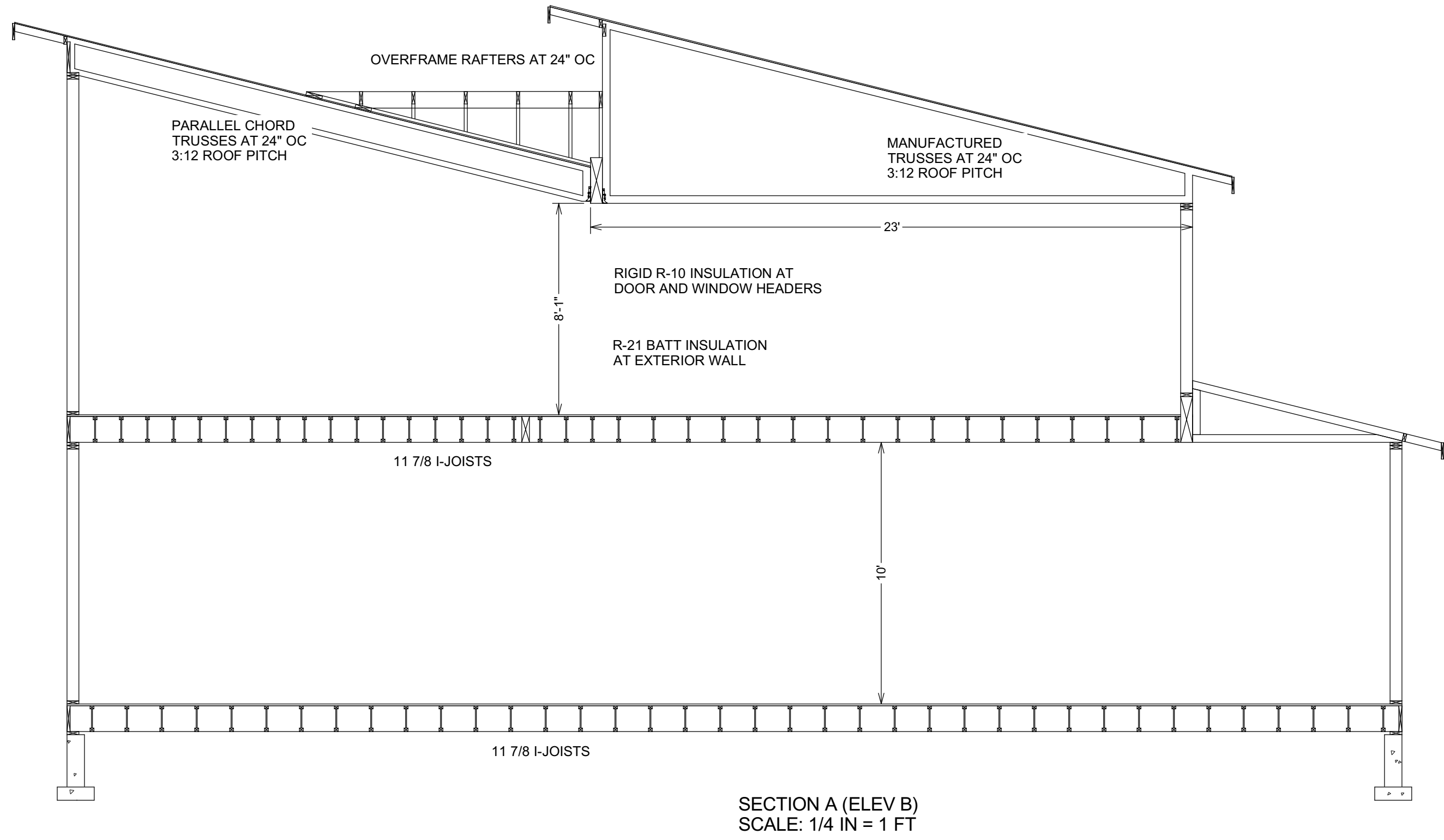


RIGHT ELEVATION  
SCALE: 1/4 IN = 1 FT

GARAGE RIGHT PLAN

APPROXIMATE FOOTAGE SUMMARY

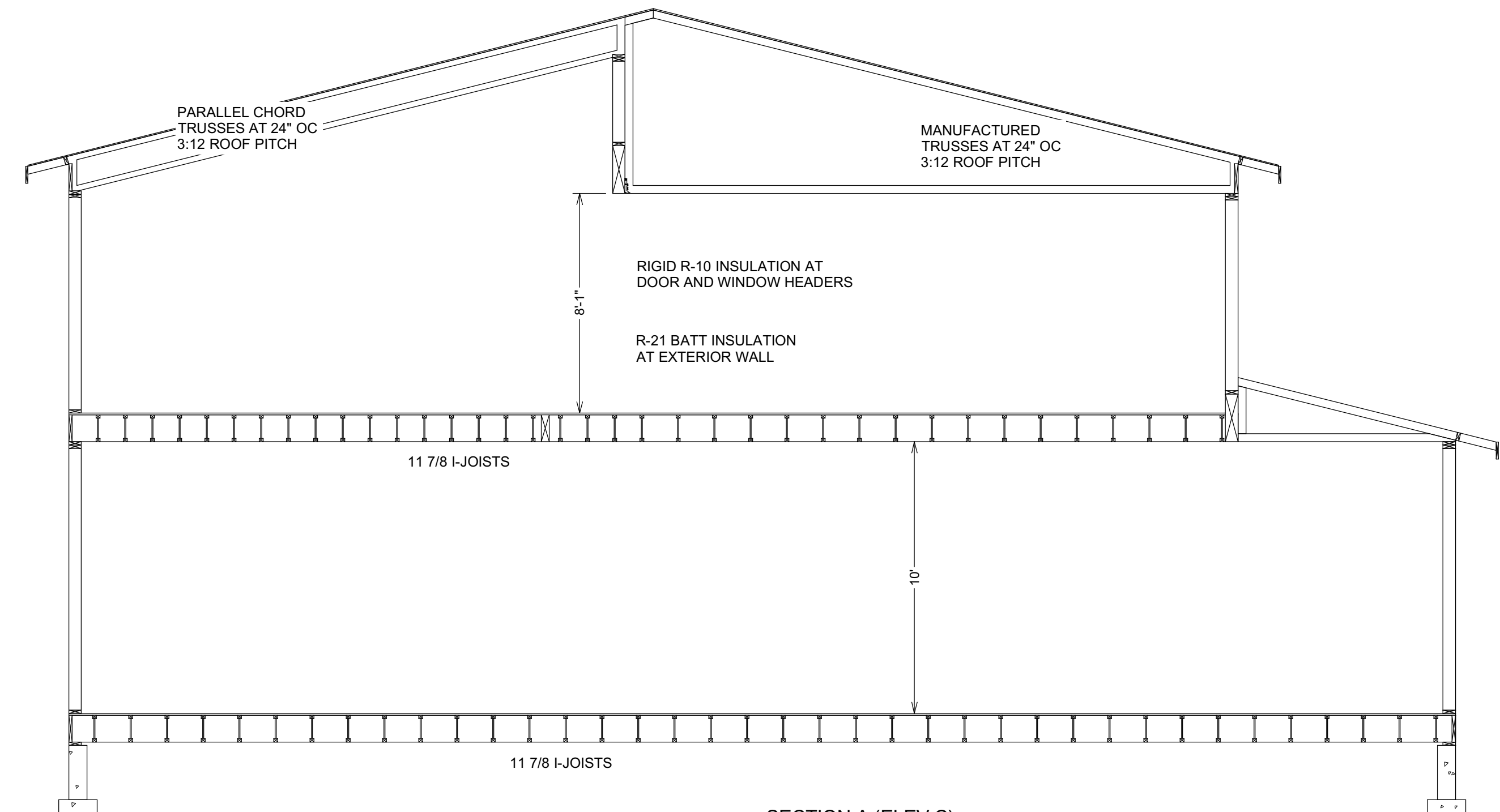
LOWER LEVEL LIVING	1883
UPPER LEVEL LIVING	1683
TOTAL LIVING	3566
GARAGE AREA	636
COVERED PORCHES	230



SECTION A (ELEV B)  
SCALE: 1/4 IN = 1 FT



ELEVATION B



SECTION A (ELEV C)  
SCALE: 1/4 IN = 1 FT

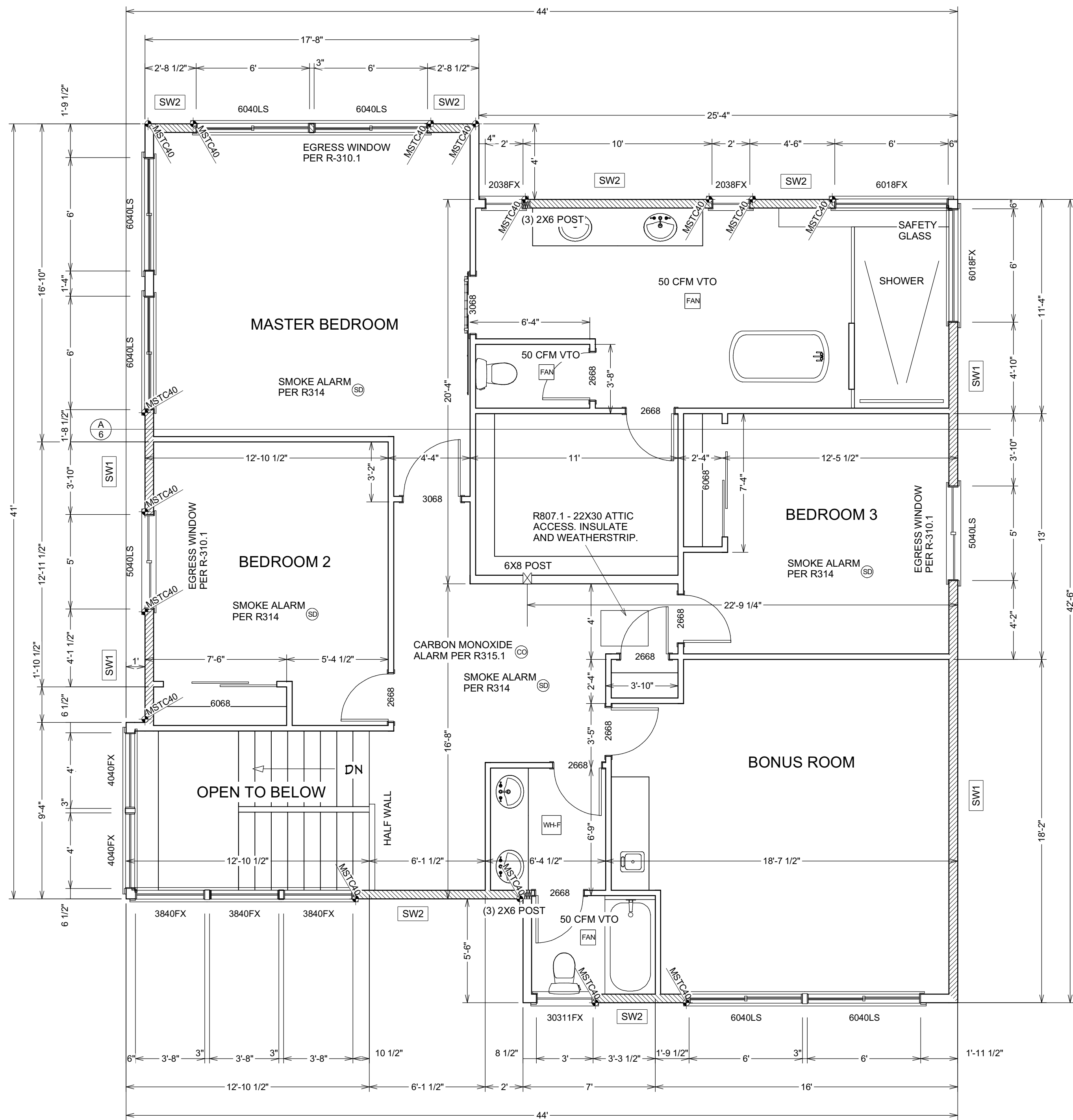


ELEVATION C

GARAGE RIGHT PLAN

LATERAL NOTES

- CONSTRUCTION OF EACH DIAPHRAGM TO BE PER THE STRUCTURAL NOTES ON SHEET S1
- ALL SHEAR WALL CONNECTIONS TO BE PER THE SHEAR WALL SCHEDULE
- SEE ADDITIONAL SHEAR WALL NOTES ON SHEET S1
- PLEASE NOTIFY UPSTATE ENGINEERING OF ANY STRUCTURAL PLAN REVISIONS, INCLUDING WINDOW /DOOR LOCATIONS, PRIOR TO INSPECTION



UPPER FLOOR PLAN  
SCALE 1/4"=1 FT

R311.3.1 Floor elevations at the required egress doors. Landings or finished floors at the required egress door shall be not more than 11/2 inches (38 mm) lower than the top of the threshold.  
Exception: The landing or floor on the exterior side shall be not more than 7/4 inches (196 mm) below the top of the threshold provided the door does not swing over the landing or floor.  
Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

R311.3.2 Floor elevations for other exterior doors. Doors other than the required egress door shall be provided with landings or floors not more than 7/4 inches (196 mm) below the top of the threshold.  
Exception: A top landing is not required where a stairway of not more than two risers is located on the exterior side of the door, provided that the door does not swing over the stairway.

SMOKE DETECTORS SHALL BE INSTALLED NOT LESS THAN 3 FT HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A TUB OR SHOWER. R314

IONIZATION SMOKE ALARMS:  
SHALL NOT BE INSTALLED LESS THAN 20 FT HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FT HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

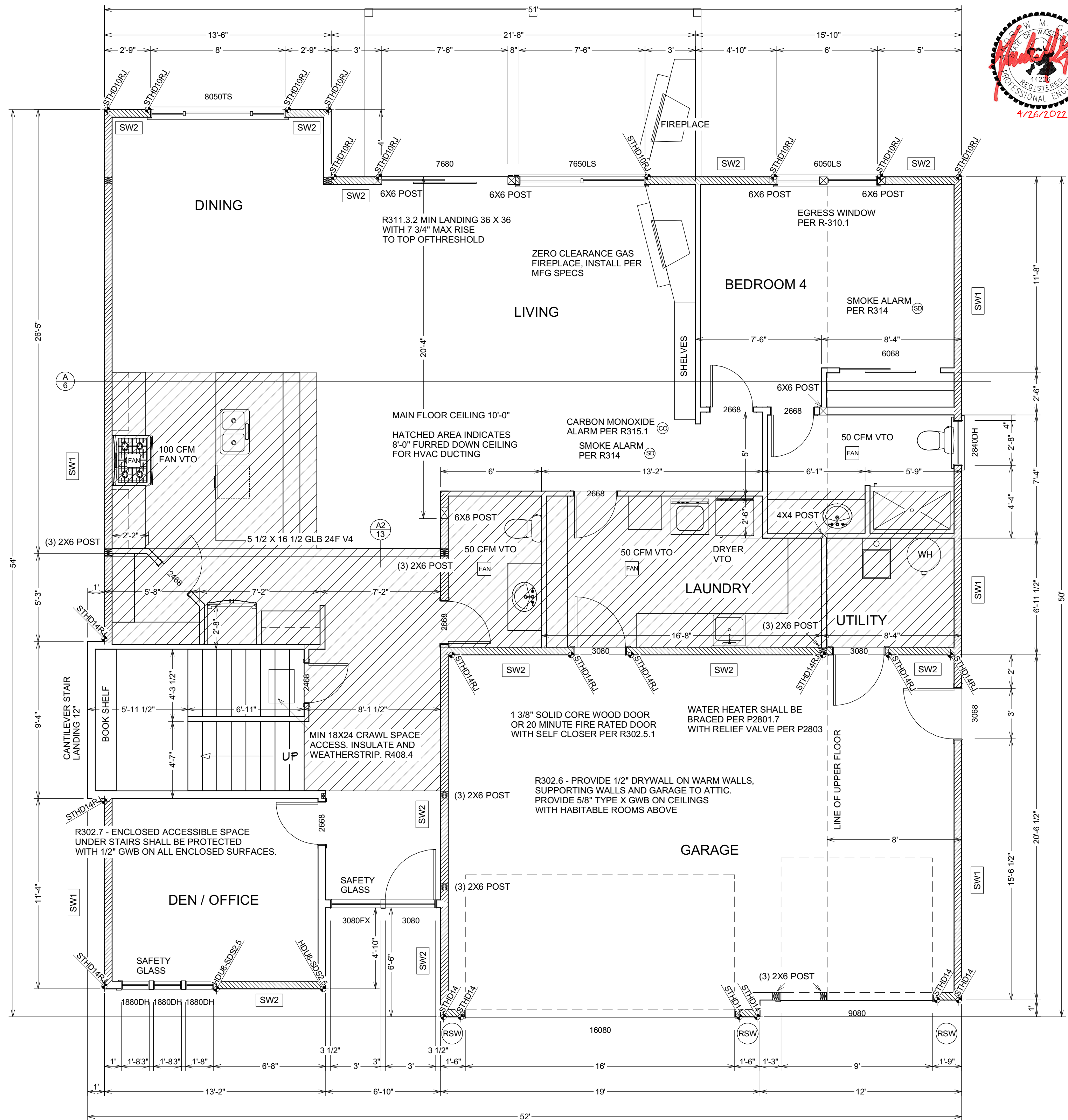
PHOTO ELECTRIC SMOKE ALARMS:  
SHALL NOT BE INSTALLED LESS THAN 6 FT HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

WHOLE HOUSE FAN PER M1507.3 IW 24 HR TIMER, R-4 DUCT INSULATION, AND 1.5 SONE RATING. VTO

ALL EXT WINDOW AND DOOR HDRS TO BE 4X8 DF #2 U.N.O.

LATERAL NOTES

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LOWER FLOOR PLAN  
SCALE 1/4"=1 FT

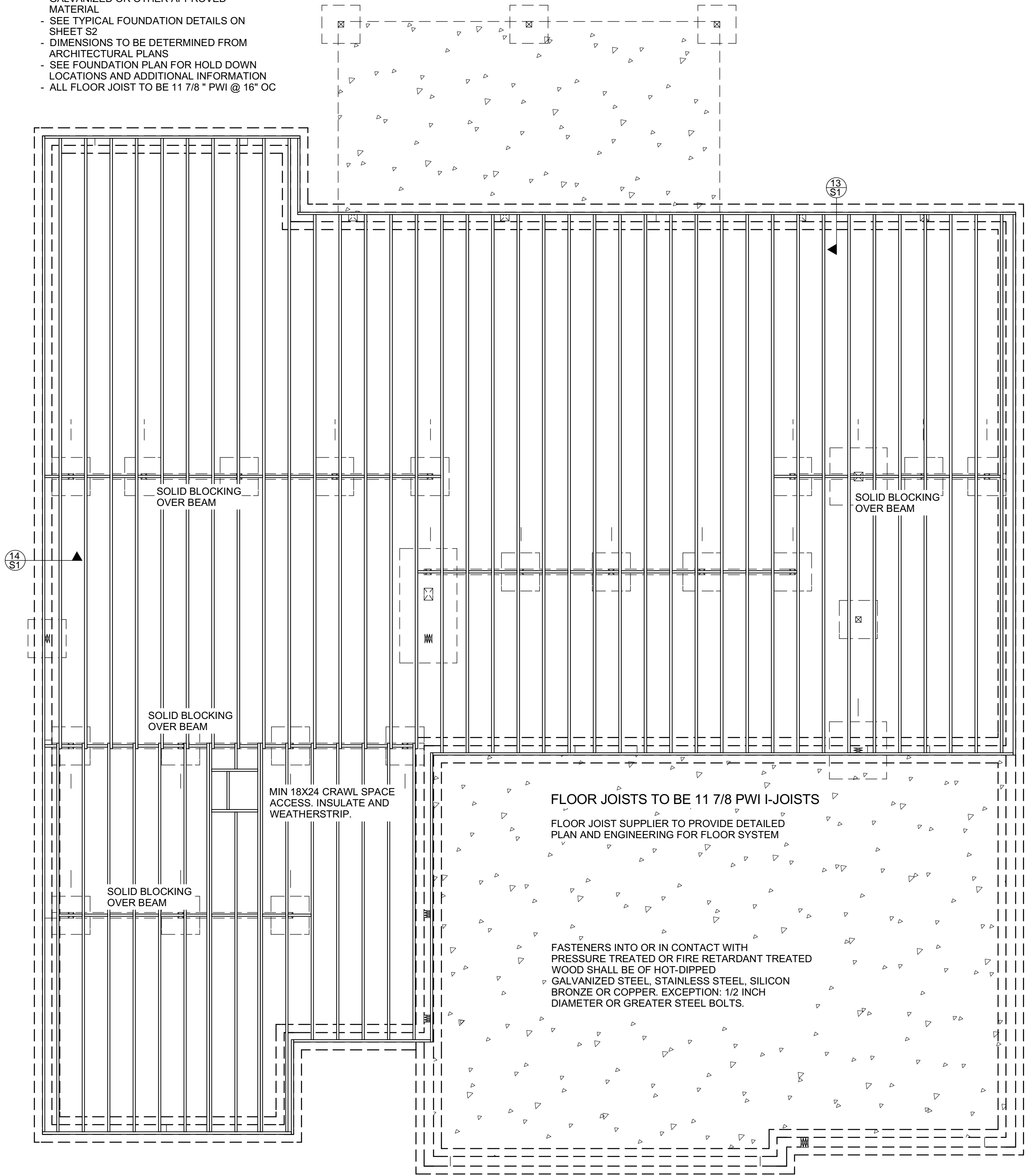
GARAGE RIGHT PLAN





LOWER FLOOR FRAMING NOTES

- ALL CRAWLSPACE POSTS TO BE 4X4 (4X6 @ SPLICES), UNO
- LUMBER IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER TO BE PRESSURE-TREATED
- HARDWARE AND FASTENERS IN CONTACT WITH CONCRETE, IN USE WITH PRESSURE-TREATED LUMBER AND/OR EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED OR OTHER APPROVED MATERIAL
- SEE TYPICAL FOUNDATION DETAILS ON SHEET S2
- DIMENSIONS TO BE DETERMINED FROM ARCHITECTURAL PLANS
- SEE FOUNDATION PLAN FOR HOLD DOWN LOCATIONS AND ADDITIONAL INFORMATION
- ALL FLOOR JOIST TO BE 11 7/8" PWI @ 16" OC

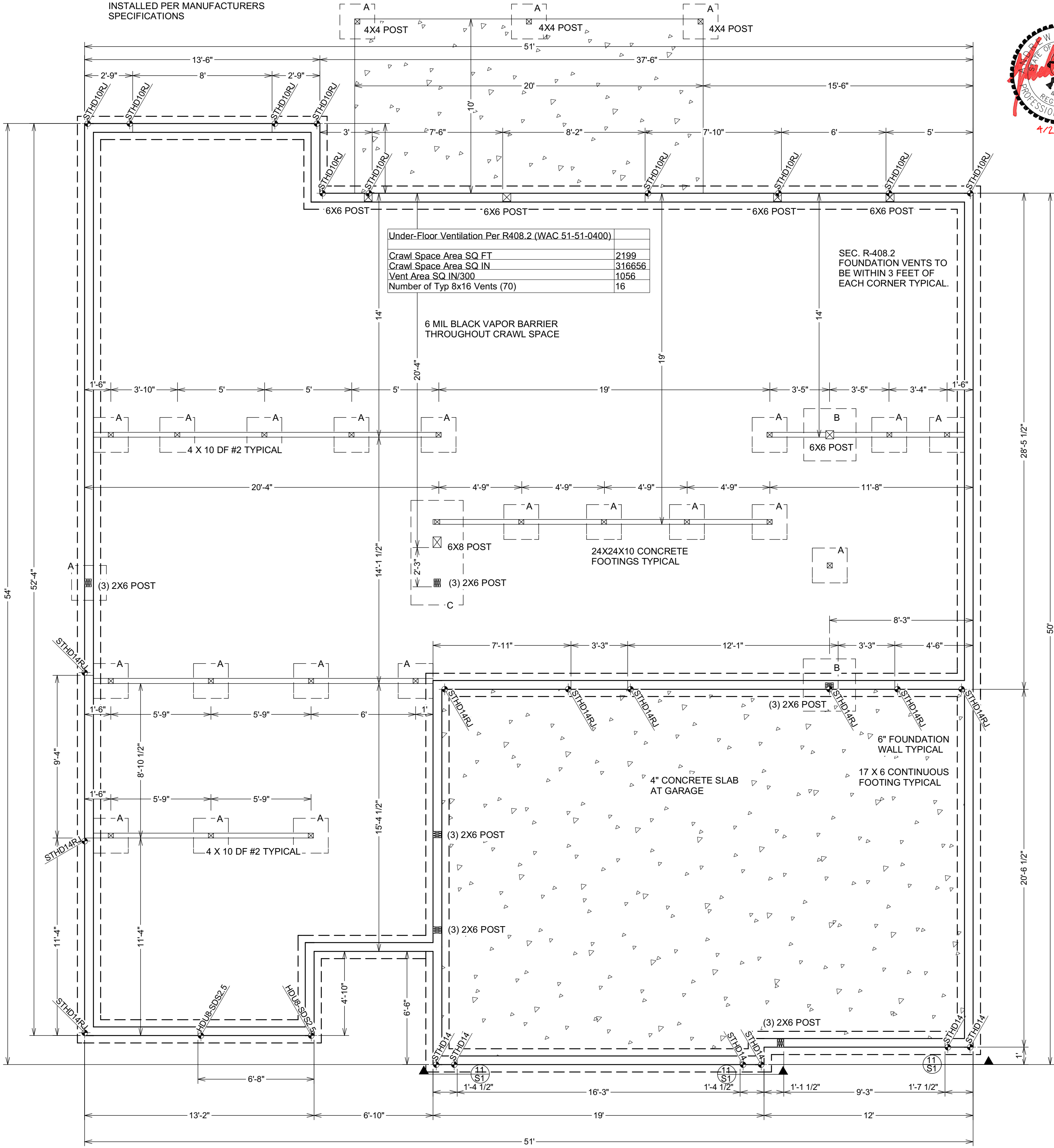


LOWER FLOOR FRAMING PLAN  
SCALE 1/4"=1 FT

- FOUNDATION NOTES
- LUMBER IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER TO BE PRESSURE-TREATED
  - HARDWARE AND FASTENERS IN CONTACT WITH CONCRETE, IN USE WITH PRESSURE-TREATED LUMBER AND/OR EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED OR OTHER APPROVED MATERIAL
  - SEE TYPICAL FOUNDATION DETAILS ON SHEET S2
  - ADDITIONAL DIMENSIONS TO BE DETERMINED FROM ARCHITECTURAL PLANS
  - EMBEDDED HOLD DOWNS TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS

FOOTING SCHEDULE

- FOOTING 'A':  
2'-0"x2'-0"x10" THICK CONC FTG  
W/ (3) #4 EA WAY
- FOOTING B:  
3'-0"x3'-0"x10" THICK CONC FTG  
W/ (3) #4 EA WAY
- FOOTING C:  
3'-0"x6'-0"x10" THICK CONC FTG  
W/ (3) #4 EA WAY



FOUNDATION PLAN  
SCALE 1/4"=1 FT

GARAGE RIGHT PLAN



- ALL BEAMS/HEADERS TO BE 4X8 DF#2 MINIMUM, UNO
- PREFABRICATED TRUSS DESIGN TO BE PROVIDED BY MANUFACTURER. ANY CHANGES RESULTING FROM TRUSS DESIGN TO BE PROVIDED TO UPDATE ENGINEERING, INC BEFORE PROCEEDING.
- ALL BEAMS/HEADERS TO BE SUPPORTED WITH DBL 2X POST EA END, UNO
- ALL POSTS TO BE SUPPORTED WITH LIKE POSTS TO FOUNDATION, UNO

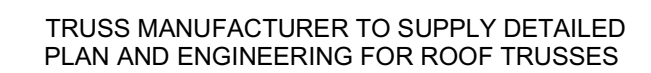
ATTIC VENTILATION: VENTED BLOCKING AND GABLE END VENTING IS NOT ALLOWED WHEN THE EXTERIOR WALL IS 5 FT OR LESS FROM THE PROPERTY LINE OR WHEN THE EAVE OR OVERHANG IS LESS THAN 5 FT FROM THE PROPERTY LINE.



TRUSS MANUFACTURER TO SUPPLY DETAILED  
PLAN AND ENGINEERING FOR ROOF TRUSSES

ROOF PLAN  
SCALE 1/4"=1 FT

- ALL BEAMS/HEADERS TO BE 4X8 DF#2 MINIMUM, UNO
- ALL BEAMS/HEADERS TO BE SUPPORTED WITH DBL 2X POST EA END, UNO
- LUMBER IN CONTACT WITH OR EXPOSED TO WEATHER TO BE PRESSURE-TREATED
- HARDWARE AND FASTENERS IN CONTACT WITH CONCRETE, IN USE WITH PRESSURE TREATED LUMBER, AND/OR EXPOSED TO THE WEATHER SHALL BE HOT DIPPED GALVANIZED OR OTHER APPROVED MATERIAL
- ALL FLOOR JOISTS TO BE 11 7/8" PWI @ 16"OC, UNO



UPPER FLOOR  
FRAMING PLAN  
SCALE 1/4"=1 FT



Project Information

Adair Enterprises  
Terrace

Messages / Results

Proposed UA is better than baseline by 5%

ANALYSIS SET UP

What code compliance pathway are you using?

Prescriptive Path Compliance with Option 1 (preferred)

Project Building Type?

New Construction

Occupancy Type?

R1 Single family homes and duplexes

Code Version?

WSEC 2018

Classification:

Medium Dwelling Unit - 3568 sq ft

Baseline Description:

Code Baseline - Baseline and proposed window areas are equal.

About Your Selection:

Up to 15 ft exempt window and 24 ft exempt door allowable

RESULTS - Comparison of Baseline and Proposed Design									
Component Performance, R occupancies					Proposed Design				
	U	Area	UA		U	Area	UA		
Doors U =	0.300	132	39.6		0.300	132	39.6		
Overhead Glazing U =	0.500	0	0.0		0.500	0	0.0		
Vertical Glazing U =	0.300	600	180.1		0.280	600	168.1		
Flat/Vaulted Ceilings U =	0.027	2,199	59.4		0.027	2,199	59.4		
Wall (above grade) U =	0.055	2,701	151.3		0.054	2,701	149.3		
Floors over Crawlspace U =	0.025	2,199	55.0		0.025	2,199	55.0		
Slab on Grade F =	0.540	0	0.0		0.540	0	0.0		
Below Grade Wall U =	0.042	0	0.0		0.042	0	0.0		
Below Grade Slab F =	0.070	0	0.0		0.070	0	0.0		
Target UA Total				494.1	Proposed UA Total				467.7
Target Credits				6.0	Proposed Credits				6.0
					from Tables 406.2 and 406.3				
					UA Percent Reduction				5%
					Difference				26.2
If the Proposed UA is the Target UA, and the Proposed Credits from Table 406.2 are 2, then the home meets the 2015 WSEC.									

Table R406.2 Fuel Normalization Credits					
System No.	Full Description	Select System Type	Fuel Normalization Credits	Energy Credits	Total Credits
2	For an initial heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.1(1)(c) or C403.3.2(1). OR Air to water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550050. Heat pump with electric resistance or fossil-fuel supplemental heat requires compliance with WSEC 403.1.2 "Heat Pump Supplementary Heat". Packaged Terminal Heat Pumps (PTAC-HTP) requires an HSPF tested value (See SBC Interpretation dated December 2020).	Heat Pump, air-to-air or air to water	1.0	5.0	6.0

Table R406.3 Energy Credits				
Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Option 1.3	0.5	U 0.28 Windows / R-38 floors or R-10 Fully insulated slab
2	Air Leakage Control and Efficient Ventilation		0.0	
3	High Efficiency HVAC	Option 3.5	1.5	Heat Pump: Air Source with min HSPF of 11
4	High Efficiency HVAC Distribution System	Option 4.2	1.0	Duct/distribution system in conditioned space per R403.3.7
5.1	Efficient Water Heating		0.0	
5.2-5.6	Efficient Water Heating	Option 5.5	2.0	Tier 3 Water Heater
6	Renewable Electric Energy	2,000 kWh	0.0	
7	Appliance Package		0.0	
Total Energy Credits			5.0	

\*Please refer to WSEC 2018 Table R406.3 for complete option descriptions

Floor (over crawl or exterior)				
Plan ID	Component Description	Ref.	Floor U	Area UA
10	R38 vented Joist 16oc (Option 1a-1c)	10-3	0.025	2,199 55
Sum of Area and UA				2,199 55

Slab on Grade (less than 2 feet below grade)				
Plan ID	Component Description	Ref.	Slab F	Slab Perim FP
11				
Sum of Perimeter and FP				0 0

Below Grade Walls and Slabs							
Plan ID	Component Description	Ref.	Wall U	Wall Area	Wall UA	Slab F	Slab UA
12							
Sum of Area, Length and UA				0	0.0	0	0

THERMAL ENVELOPE DETAILS - Proposed Design		
Conditioned Floor Area, Proposed Design	3,568 sq ft	
Classification	Medium Dwelling Unit	

Exterior Doors									
Plan ID	Component Description	Ref.	Door U	Qt.	Width Feet	Height Feet	Area	UA	
Exempt									
	Code Target, U=0.30	-	0.30	1	7	8	60	18.0	
	Code Target, U=0.30	-	0.30	3	3	8	72	21.6	
								0.0	
								0.0	
								0.0	
								0.0	
								0.0	
Sum of Area and UA								132	39.6
Exterior Doors Area Weighted U									0.280

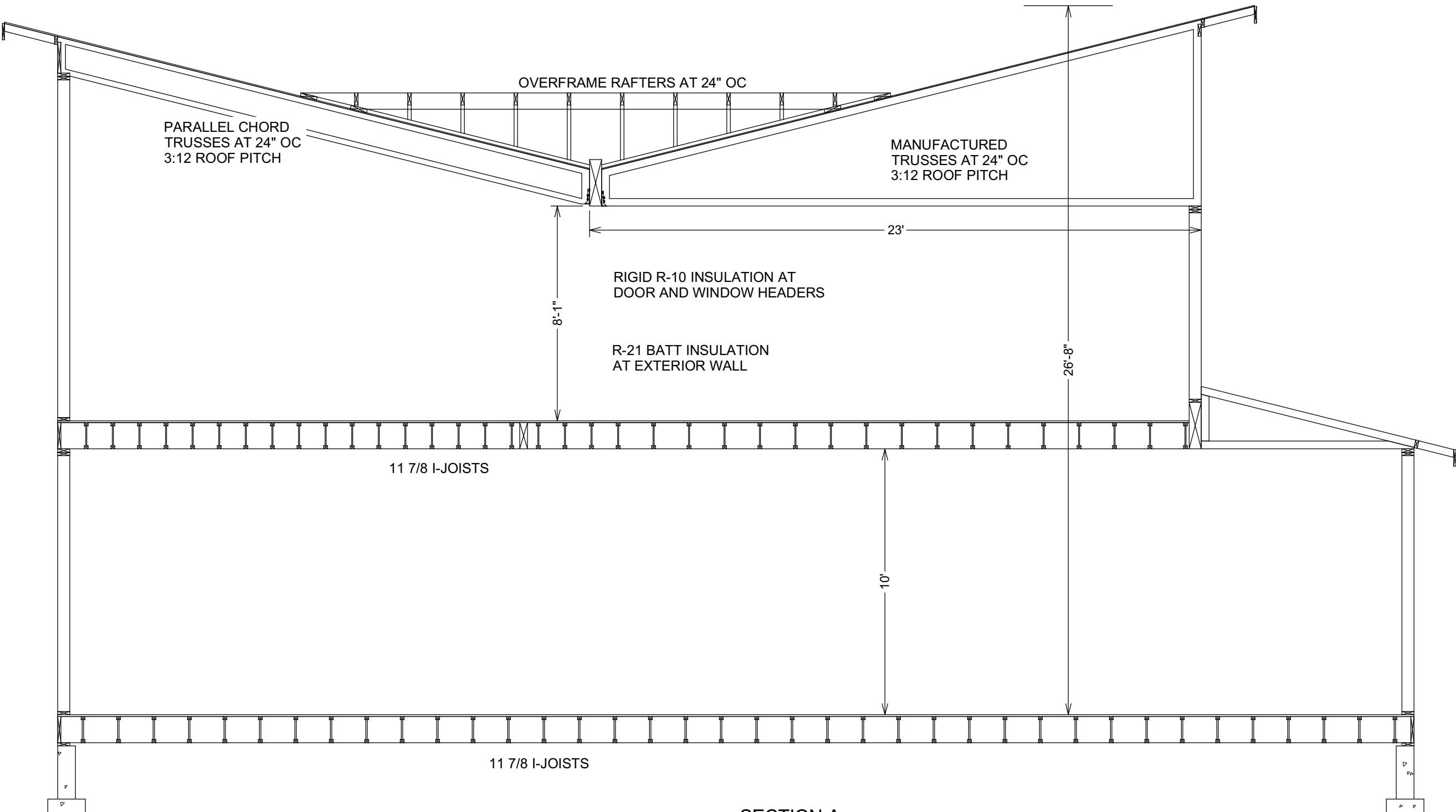
Overhead Glazing									
Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Height Feet	Area	UA	
								0	
								0	
								0	
Sum of Area and UA								0	0
Overhead Glazing Area Weighted U									

Vertical Glazing Schedule									
Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Height Feet	Area	UA	Rows to Show
Exempt									10
1	Option 1a: U=0.28	Table R406.2	0.28	3	1.0	8.00	40.0	11.20	
2	Option 1a: U=0.28	Table R406.2	0.28	1	3	8	24	6.72	
3	Option 1a: U=0.28	Table R406.2	0.28	1	2	4	11	2.99	
4	Option 1a: U=0.28	Table R406.2	0.28	1	6	5	30	8.40	
5	Option 1a: U=0.28	Table R406.2	0.28	1	7	5	35	9.80	
6	Option 1a: U=0.28	Table R406.2	0.28	1	8	5	40	11.20	
7	Option 1a: U=0.28	Table R406.2	0.28	3	3	4	44	12.32	
8	Option 1a: U=0.28	Table R406.2	0.28	1	3	3	12	3.36	
9	Option 1a: U=0.28	Table R406.2	0.28	6	6	4	144	40.32	
10	Option 1a: U=0.28	Table R406.2	0.28	2	5	4	40	11.20	
11	Option 1a: U=0.28	Table R406.2	0.28	10	6	1	100	28.00	
12	Option 1a: U=0.28	Table R406.2	0.28	2	2	3	15	4.11	
13	Option 1a: U=0.28	Table R406.2	0.28	2	4	4	32	8.96	
14	Option 1a: U=0.28	Table R406.2	0.28	2	4	1	13	3.73	
15	Option 1a: U=0.28	Table R406.2	0.28	3	3	1	18	5.13	
16									
Sum of Area and UA								600.3	168.1
Vertical Glazing Area Weighted U									0.280

Flat/Vaulted Ceilings				
Plan ID	Component Description	Ref.	Attic U	Area UA
17	R38 batt Vault vented 2x14 24oc	10-7	0.027	1,500 42.9
18	R49 blown Attic STD baffled (Code Target)	10-7	0.027	600 16.4
Sum of Area and UA				2,199 59.4

Walls (Above Grade)				
Plan ID	Component Description	Ref.	Wall U	Net Area UA
19	R21 cavity+R0 foam INT 2X6W Lap (Code Target)	10-5	0.054	2,701 146
Sum of Area and UA				2,701 146

Heating System Sizing Worksheet - Proposed Design		Try Out NEEA's SpecPro: <a href="https://beta.bulflow.com/resources/spec-pro-4478a-b0d">https://beta.bulflow.com/resources/spec-pro-4478a-b0d</a>
Nearest Weather Station		Bethel 2 W
Indoor Design Temperature		70 F
Outdoor Design Temperature		17 F
Design Temperature Difference (ΔT)		53 F
Conditioned Floor Area		3,568 sq ft
Conditioned Volume		32,224 cu ft
System Type		Heat Pump
Location of Ducts		Conditioned Space
Sum of UA, including exempt door and window		468
Envelope Heat Load		24,797 Btu / Hour
Sum of UA x ΔT		19,485 Btu / Hour
Air Leakage Heat Load		(Volume X 0.01 X ΔT X 0.01)
Building Design Heat Load		43,282 Btu / Hour
Air Leakage + Envelope Heat Load		43,282 Btu / Hour
Building and Duct Heat Load		43,282 Btu / Hour
For ducts located in unconditioned space: Sum of Building Heat Loads X 1.1		
For ducts located in conditioned space or business: Sum of Building Heat Loads X 1		
Maximum Heat Equipment Output		54,103 Btu / Hour
Building and Duct Heat Loads X 1.25 for heat pumps		
Building and Duct Heat Loads X 1.25 for all other systems		



### ENERGY COMPLIANCE CHOICES FOR THIS PROJECT

#### EFFICIENT BUILDING ENVELOPE: 1.3

Prescriptive compliance is based on Table R402.1.1 with the following modifications:  
Vertical fenestration U = 0.28  
Floor R-38  
Slab on grade R-10 perimeter and under entire slab  
Below grade slab R-10 perimeter and under entire slab

0.5 CREDITS

HIGH EFFICIENCY HVAC EQUIPMENT OPTION 3.5:  
Air-source centrally ducted heat pump with minimum HSPF of 11.0.

To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.

1.5 CREDITS

HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTION 4.2:  
All supply and return ducts located in an unconditioned attic shall be deeply buried in ceiling insulation in accordance with Section R403.3.7.

For mechanical equipment located outside the conditioned space, a maximum of 10 linear feet of return duct and 5 linear feet of supply duct connections to the equipment may be outside the deeply buried insulation. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices.

Duct leakage shall be limited to 3 cfm per 100 square feet of conditioned floor area.

Air handler(s) shall be located within the conditioned space.

0.5 CREDITS

#### EFFICIENT WATER HEATING OPTION: 5.5

Water heating system shall include one of the following:  
Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification

To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.

2.0 CREDITS

#### Mechanical Ventilation

This Project Floor Area 3566  
This Project Number of Bedrooms 4  
This Project Requires 90 CFM

Whole House Ventilation fresh air supply to be provided by exhaust fans

Table M1507.3.3(1)  
Continuous Whole House Mechanical Ventilation

Ft Area	0-1 Bdrs	2-3 Bdrs	4-5 Bdrs	6-7 Bdrs	>7 Bdrs
<1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120
4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
>7500	105	120	135	150	165

Table M1507.3.3(2)  
Runtime Percentage and Multiplying Factor

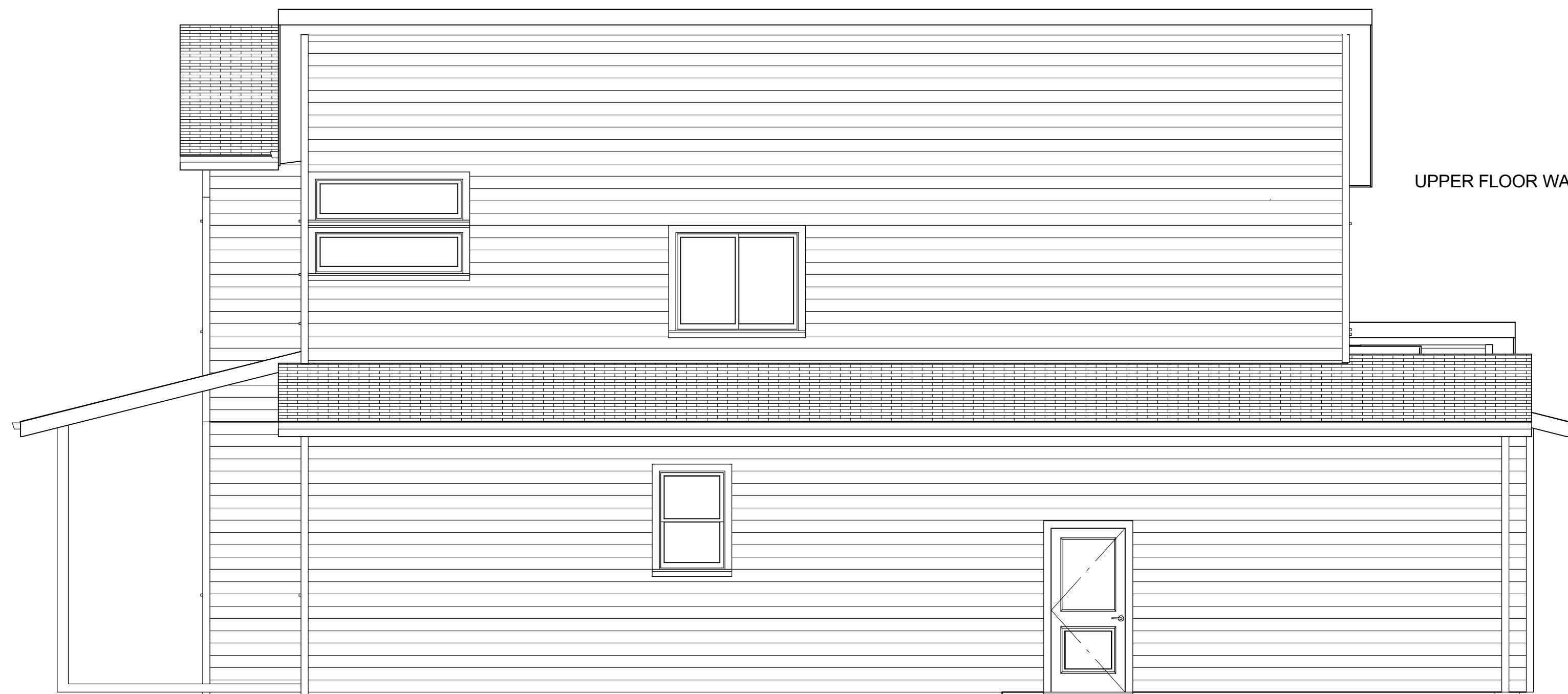
25%	33%	50%	66%	75%	100%
4	3	2	1.5	1.3	1

M1507.3.1 System design. The whole-house ventilation system shall consist of one or more supply or exhaust fans, or a combination of such, and associated ducts and controls. Local exhaust or supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered as providing supply ventilation.

M1507.3.2 System controls. The whole-house mechanical ventilation system shall be provided with controls that enable manual override.

M1507.3.3 Mechanical ventilation rate. The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate of not less than that determined in accordance with Table M1507.3.3(1).

Exception: The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25-percent of each 4-hour segment and the ventilation rate prescribed in Table M1507.3.3(1) is multiplied by the factor determined in accordance with Table M1507.3.3(2).



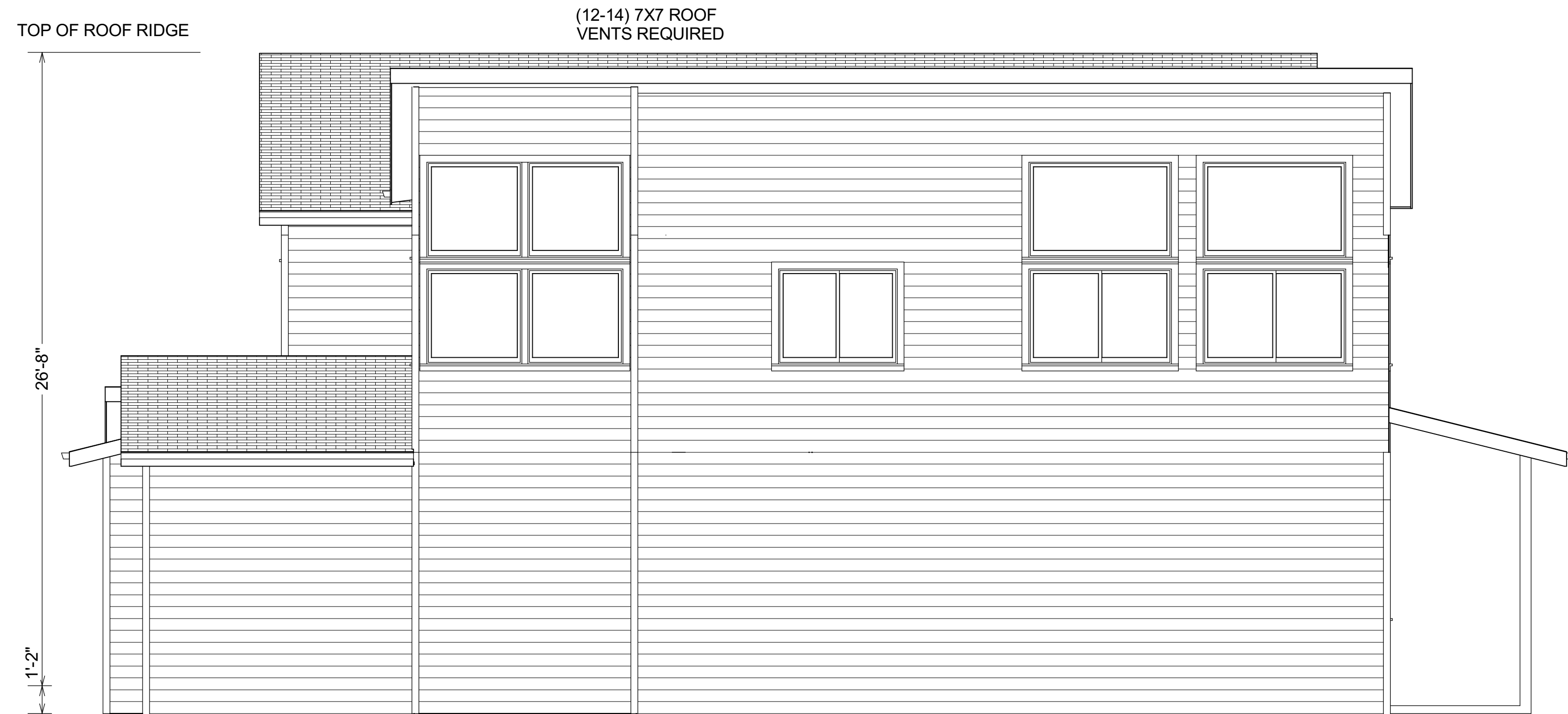
LEFT ELEVATION  
SCALE: 1/4 IN = 1 FT



FRONT ELEVATION  
SCALE: 1/4 IN = 1 FT



REAR ELEVATION  
SCALE: 1/4 IN = 1 FT



RIGHT ELEVATION  
SCALE: 1/4 IN = 1 FT

(16) 8X16 FOUNDATION  
VENTS REQUIRED

TOP OF  
SUBFLOOR  
1'-2"  
TOP OF FOUNDATION

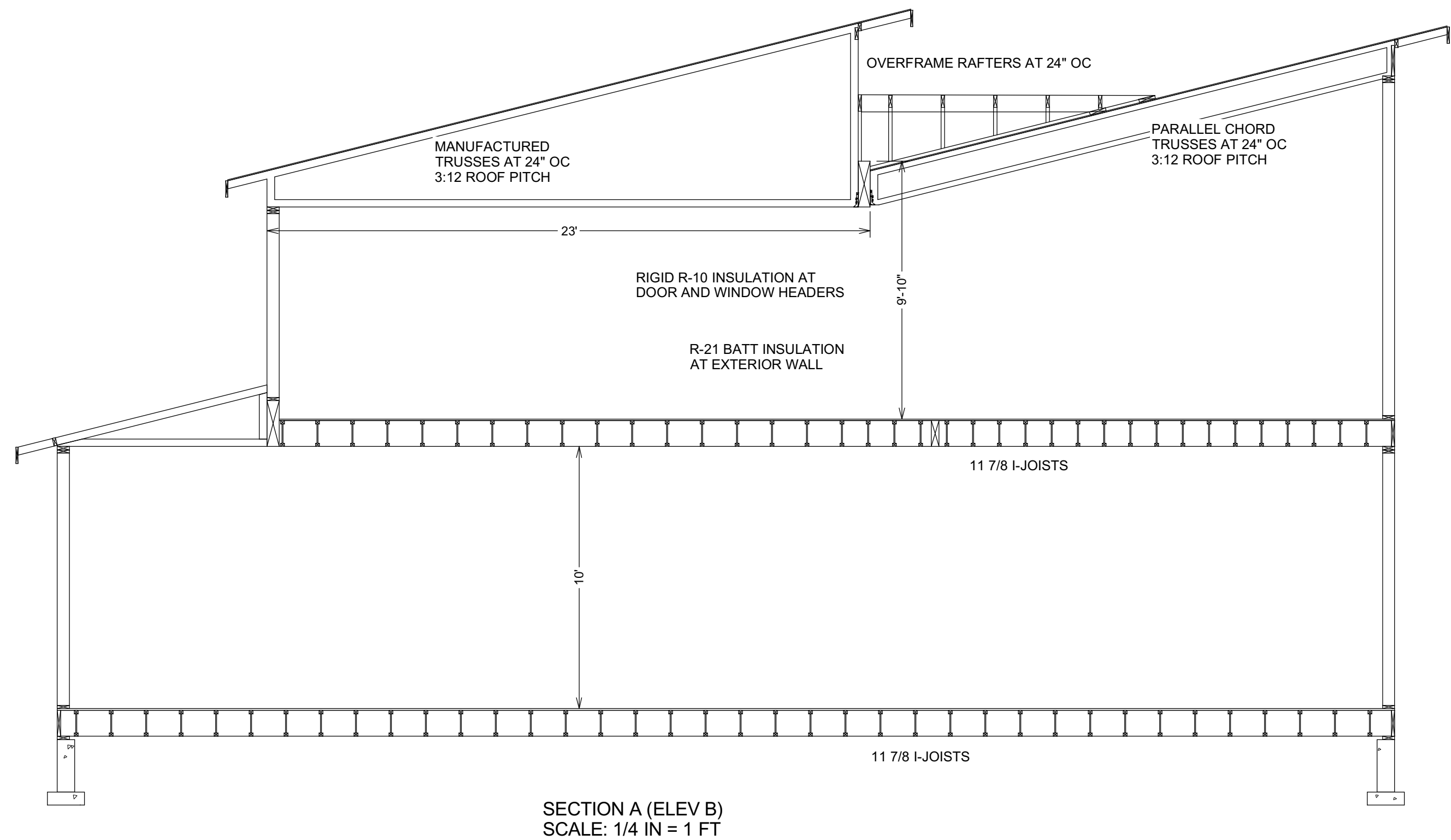
TOP OF ROOF RIDGE

(12-14) 7X7 ROOF  
VENTS REQUIRED

APPROXIMATE FOOTAGE SUMMARY

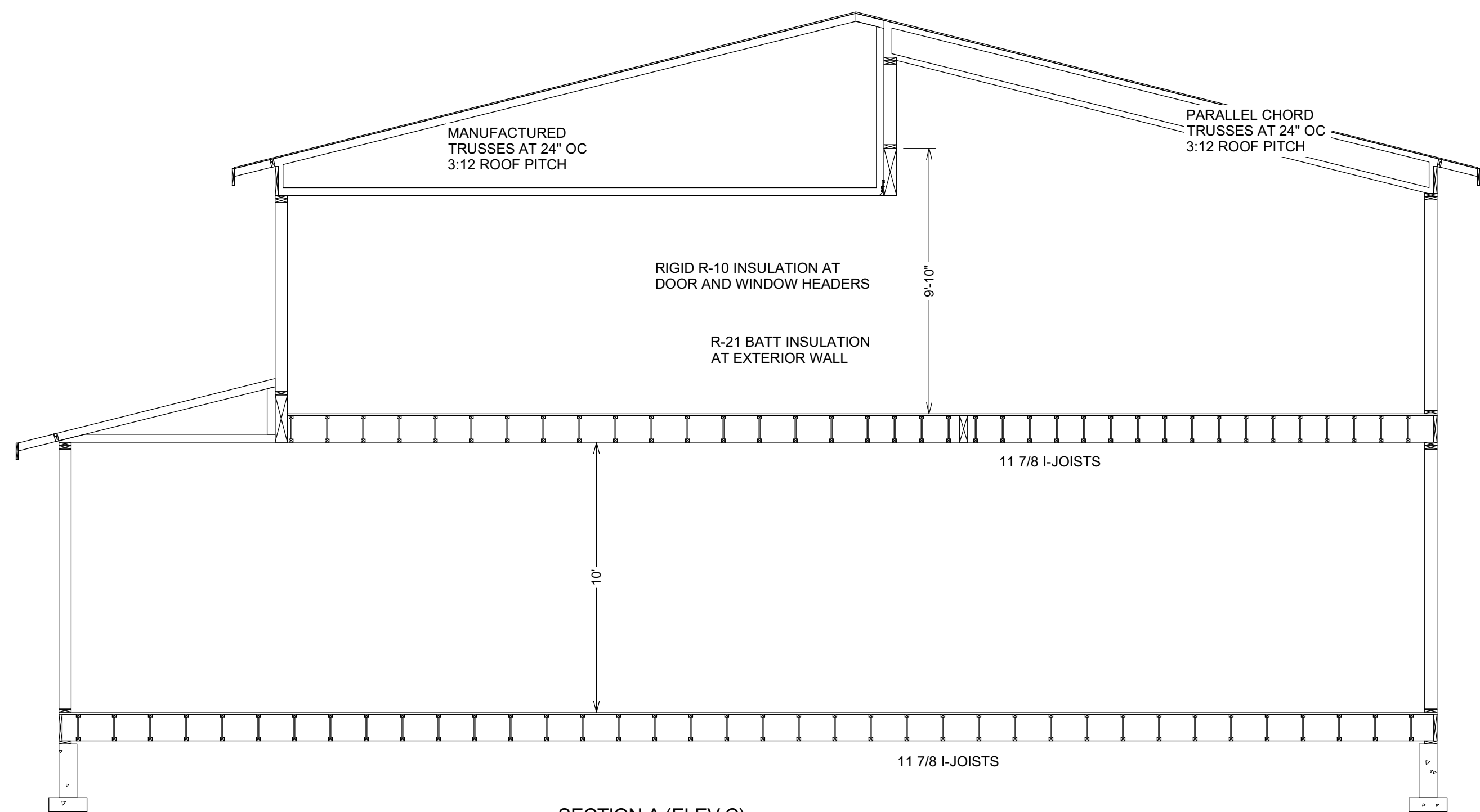
LOWER LEVEL LIVING	1883
UPPER LEVEL LIVING	1683
TOTAL LIVING	3566
GARAGE AREA	636
COVERED PORCHES	230

GARAGE LEFT PLAN



SECTION A (ELEV B)  
SCALE: 1/4 IN = 1 FT

ELEVATION B



SECTION A (ELEV C)  
SCALE: 1/4 IN = 1 FT

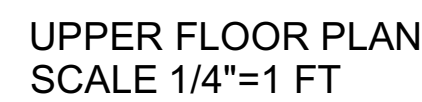
ELEVATION C



GARAGE LEFT PLAN



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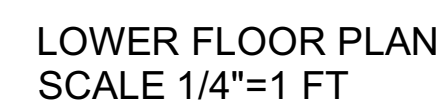
WH-F

ALL EXT WINDOW AND DOOR  
HDRS TO BE 4X8 DF #2 U.N.O

PHOTO ELECTRIC SMOKE ALARMS:  
SHALL NOT BE INSTALLED LESS THAN 6 FT  
HORIZONTALLY FROM A PERMANENTLY INSTALLED  
COOKING APPLIANCE.

**R311.3.2 Floor elevations for other exterior doors.**  
Doors other than the required egress door shall be provided with landings or floors not more than 7/4 inches (196 mm) below the top of the threshold.  
Exception: A top landing is not required where a stairway of not more than two risers is located on the exterior side of the door, provided that the door does not swing over the stairway.

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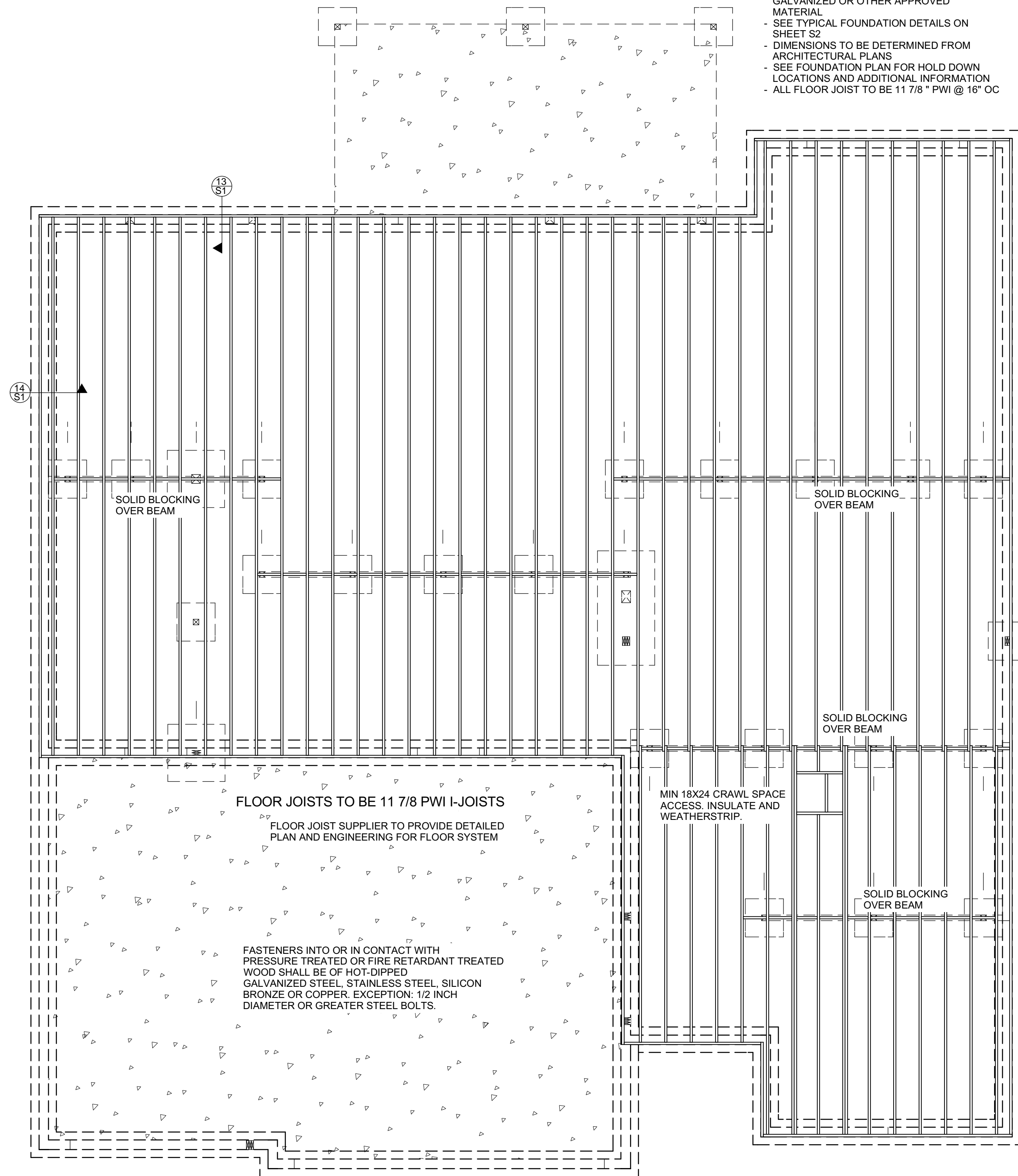


DAVID W. M. CALDWELL  
STATE OF WASHINGTON  
REGISTERED  
PROFESSIONAL ENGINEER  
44235  
4/26/2022



LOWER FLOOR FRAMING NOTES

- ALL CRAWLSPACE POSTS TO BE 4X4 (4X6 @ SPLICES), UNO
- LUMBER IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER TO BE PRESSURE-TREATED
- HARDWARE AND FASTENERS IN CONTACT WITH CONCRETE, IN USE WITH PRESSURE-TREATED LUMBER AND/OR EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED OR OTHER APPROVED MATERIAL
- SEE TYPICAL FOUNDATION DETAILS ON SHEET S2
- DIMENSIONS TO BE DETERMINED FROM ARCHITECTURAL PLANS
- SEE FOUNDATION PLAN FOR HOLD DOWN LOCATIONS AND ADDITIONAL INFORMATION
- ALL FLOOR JOIST TO BE 11 7/8" PWI @ 16" OC

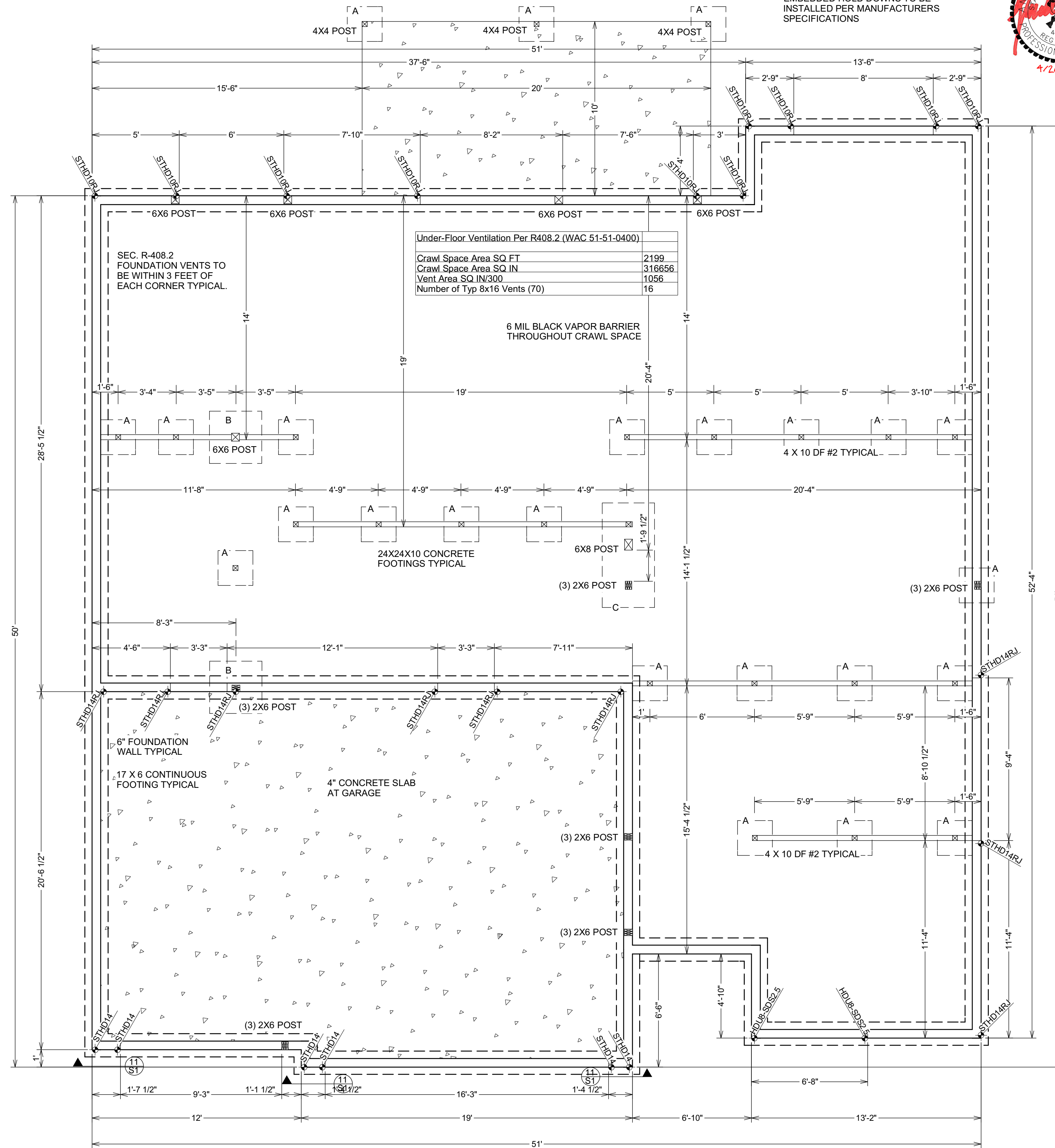


LOWER FLOOR FRAMING PLAN  
SCALE 1/4"=1 FT

FOOTING SCHEDULE

- FOOTING 'A':  
2'-0"X2'-0"X10" THICK CONC FTG  
W/ (3) #4 EA WAY
- FOOTING B:  
3'-0"X3'-0"X10" THICK CONC FTG  
W/ (3) #4 EA WAY
- FOOTING C:  
3'-0"X6'-0"X10" THICK CONC FTG  
W/ (3) #4 EA WAY

- FOUNDATION NOTES
- LUMBER IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER TO BE PRESSURE-TREATED
  - HARDWARE AND FASTENERS IN CONTACT WITH CONCRETE, IN USE WITH PRESSURE-TREATED LUMBER, AND/OR EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED OR OTHER APPROVED MATERIAL
  - SEE TYPICAL FOUNDATION DETAILS ON SHEET S2
  - ADDITIONAL DIMENSIONS TO BE DETERMINED FROM ARCHITECTURAL PLANS
  - EMBEDDED HOLD DOWNS TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS



FOUNDATION PLAN  
SCALE 1/4"=1 FT

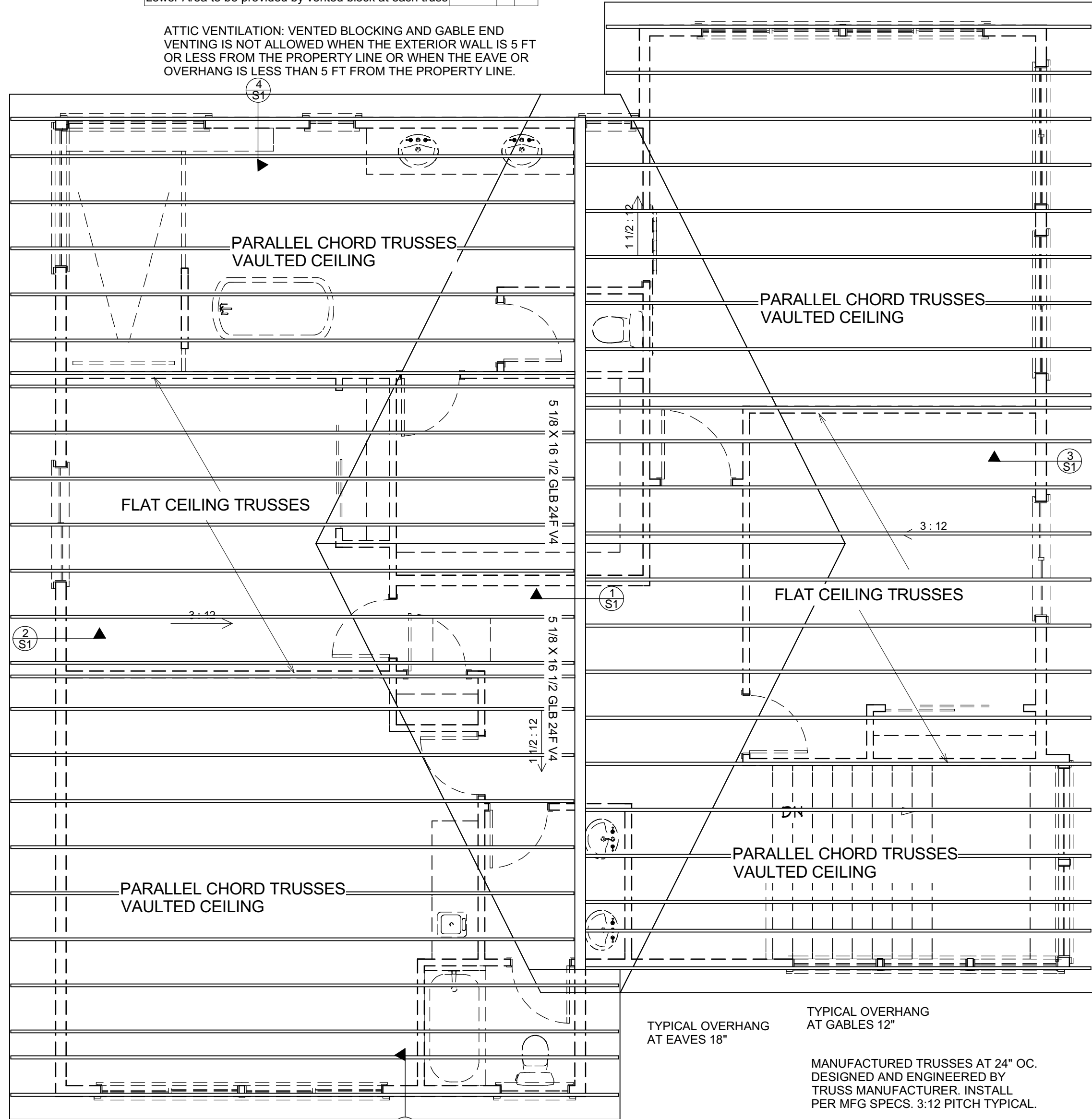
GARAGE LEFT PLAN

Upper Attic Ventilation Per R806.2			
Attic Area SQ. FT.	2199		
Attic Area SQ. IN.	316656		
Vent Area SQ. IN/300	1055.52		
Upper Area 40-50%	422	to	528
Number of Typ. Vents (36.75)	12	to	14
Lower Area to be provided by vented block at each truss			

ATTIC VENTILATION: VENTED BLOCKING AND GABLE END VENTING IS NOT ALLOWED WHEN THE EXTERIOR WALL IS 5 FT OR LESS FROM THE PROPERTY LINE OR WHEN THE EAVE OR OVERHANG IS LESS THAN 5 FT FROM THE PROPERTY LINE.

ROOF FRAMING NOTES

- ALL BEAMS/HEADERS TO BE 4X8 DF#2 MINIMUM, UNO
- PREFABRICATED TRUSS DESIGN TO BE PROVIDED BY MANUFACTURER. ANY CHANGES RESULTING FROM TRUSS DESIGN TO BE PROVIDED TO UPSTATE ENGINEERING, INC BEFORE PROCEEDING.
- ALL BEAMS/HEADERS TO BE SUPPORTED WITH DBL 2X POST EA END, UNO
- ALL POSTS TO BE SUPPORTED WITH LIKE POSTS TO FOUNDATION, UNO

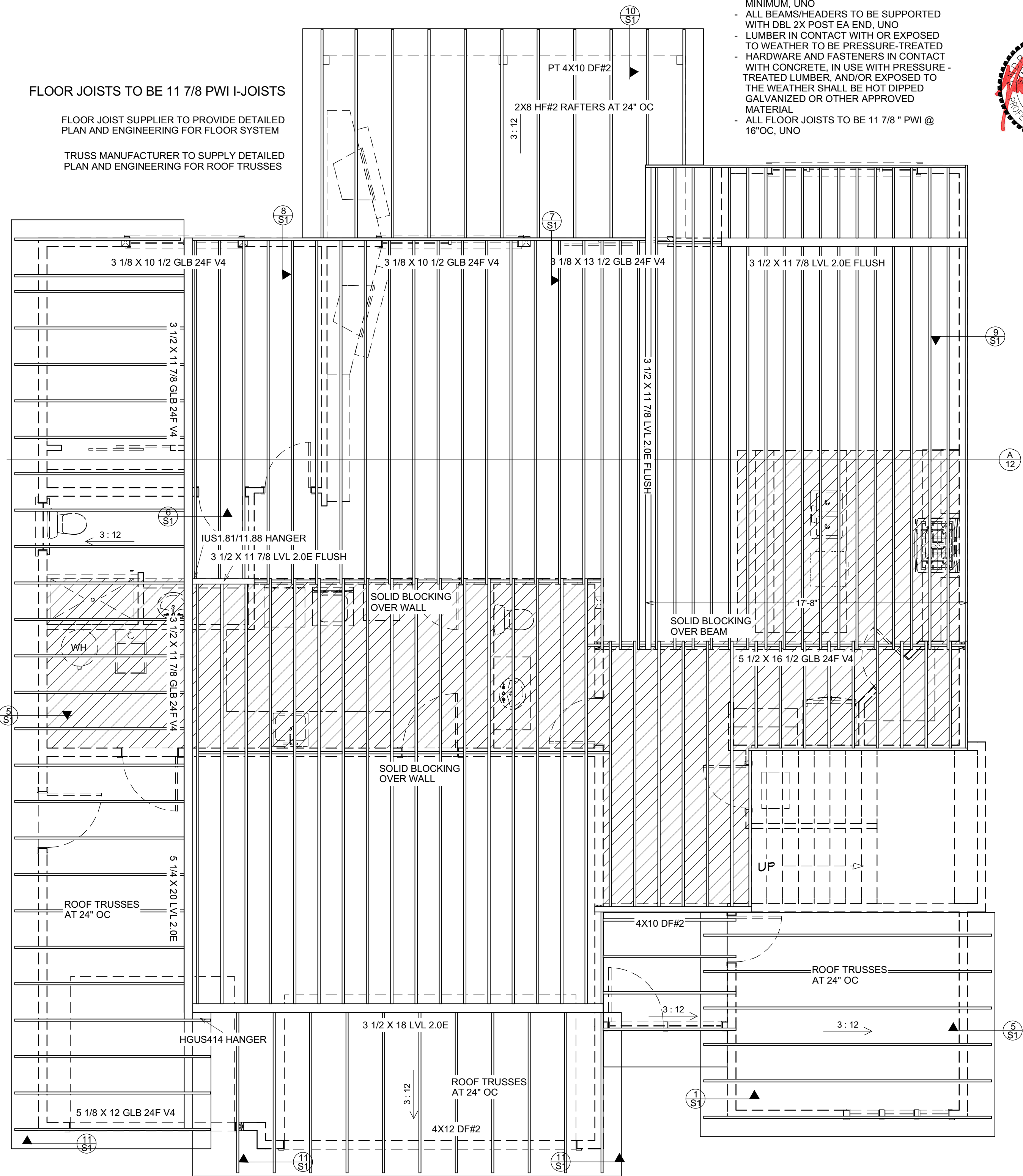


ROOF PLAN  
SCALE 1/4"=1 FT

FLOOR JOISTS TO BE 11 7/8 PWI I-JOISTS

FLOOR JOIST SUPPLIER TO PROVIDE DETAILED PLAN AND ENGINEERING FOR FLOOR SYSTEM

TRUSS MANUFACTURER TO SUPPLY DETAILED PLAN AND ENGINEERING FOR ROOF TRUSSES





Project Information

Adair Enterprises  
Terrace

Messages / Results

Proposed UA is better than baseline by 5%

ANALYSIS SET UP

What code compliance pathway are you using?

Prescriptive Path Compliance with Option 1 (preferred)

Project Building Type?

New Construction

Occupancy Type?

R3 Single family homes and duplexes

Code Version?

WSEC 2018

Classification:

Medium Dwelling Unit - 3568 sq ft

Baseline Description:

Code Baseline - Baseline and proposed window areas are equal.

About Your Selection:

Up to 15 ft exempt window and 24 ft exempt door allowable

RESULTS - Comparison of Baseline and Proposed Design									
Component Performance, R-occupancies					Proposed Design				
		Baseline		UA			Proposed		UA
		U	Area			U	Area		
Doors U =	0.300	132	39.6			0.300	132	39.6	
Overhead Glazing U =	0.500	0	0.0			0.500	0	0.0	
Vertical Glazing U =	0.300	600	180.1			0.280	600	168.1	
Flat/Vaulted Ceilings U =	0.027	2,199	59.4			0.027	2,199	59.4	
Wall (above grade) U =	0.055	2,701	151.3			0.054	2,701	145.9	
Floors over Crawlspace U =	0.025	2,199	63.8			0.025	2,199	55.0	
Slab on Grade F =	0.540	0	0.0			0	0	0.0	
Below Grade Wall U =	0.042	0	0.0			0.042	0	0.0	
Below Grade Slab F =	0.070	0	0.0			0	0	0.0	
Target UA Total				494.1	Proposed UA Total				467.9
Target Credits				6.0	Proposed Credits				6.0
					UA Percent Reduction				5%
					Difference				26.2
If the Proposed UA ≤ the Target UA, and the Proposed Credits from Table 406.2 are ≥ those required in Section R406.2, then the home meets the 2015 WSEC.									

Table R406.2 Fuel Normalization Credits					
System No.	Full Description	Select System Type	Fuel Normalization Credits	Energy Credits	Total Credits
2	For an initial heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.3(1)(c) or C403.3.3(2). OR Air-to-water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550050. Heat pump with electric resistance or fossil-fuel supplemental heat requires compliance with WSEC 403.1.2 "Heat Pump Supplementary Heat". Packaged Terminal Heat Pumps (PTAC-HTP) requires an HSPF tested value (See SBC Interpretation dated December 2020).	Heat Pump, air-to-air or air to water	1.0	5.0	6.0

Table R406.3 Energy Credits				
Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Option 1.3	0.5	U 0.28 Windows / R-38 floors or R-10 Fully insulated slab
2	Air Leakage Control and Efficient Ventilation		0.0	
3	High Efficiency HVAC	Option 3.5	1.5	Heat Pump; Air Source with min HSPF of 11
4	High Efficiency HVAC Distribution System	Option 4.2	1.0	Duct/distribution system in conditioned space per R403.3.7
5.1	Efficient Water Heating		0.0	
5.2-5.6	Efficient Water Heating	Option 5.5	2.0	Tier 3 Water Heater
6	Renewable Electric Energy	2,000 kWh	0.0	
7	Appliance Package		0.0	
Total Energy Credits			5.0	

\*Please refer to WSEC 2018 Table R406.3 for complete option descriptions

Floor (over crawl or exterior)				
Plan ID	Component Description	Ref.	Floor U	Area
10	R38 vented Joist 16oc (Option 1a-1c)	10-3	0.025	2,199
Sum of Area and UA				2,199

Slab on Grade (less than 2 feet below grade)				
Plan ID	Component Description	Ref.	Slab F	Area
Sum of Perimeter and FP				0

Below Grade Walls and Slabs							
Plan ID	Component Description	Ref.	Wall U	Wall Area	Wall UA	Slab F	Slab UA
Sum of Area, Length and UA							

THERMAL ENVELOPE DETAILS - Proposed Design									
Conditioned Floor Area, Proposed Design					3,568 sq ft				
Classification					Medium Dwelling Unit				
Exterior Doors									
Plan ID	Component Description	Ref.	Door U	Qt.	Width Feet	Height Feet	Area	UA	
Exempt	Code Target, U=0.30	-	0.30	1	7	8	60	18.0	0
	Code Target, U=0.30	-	0.30	3	3	8	72	21.6	0
							0	0.0	
							6	0.0	
							0	0.0	
							0	0.0	
Sum of Area and UA							132	39.6	
Exterior Doors Area Weighted U								0.300	

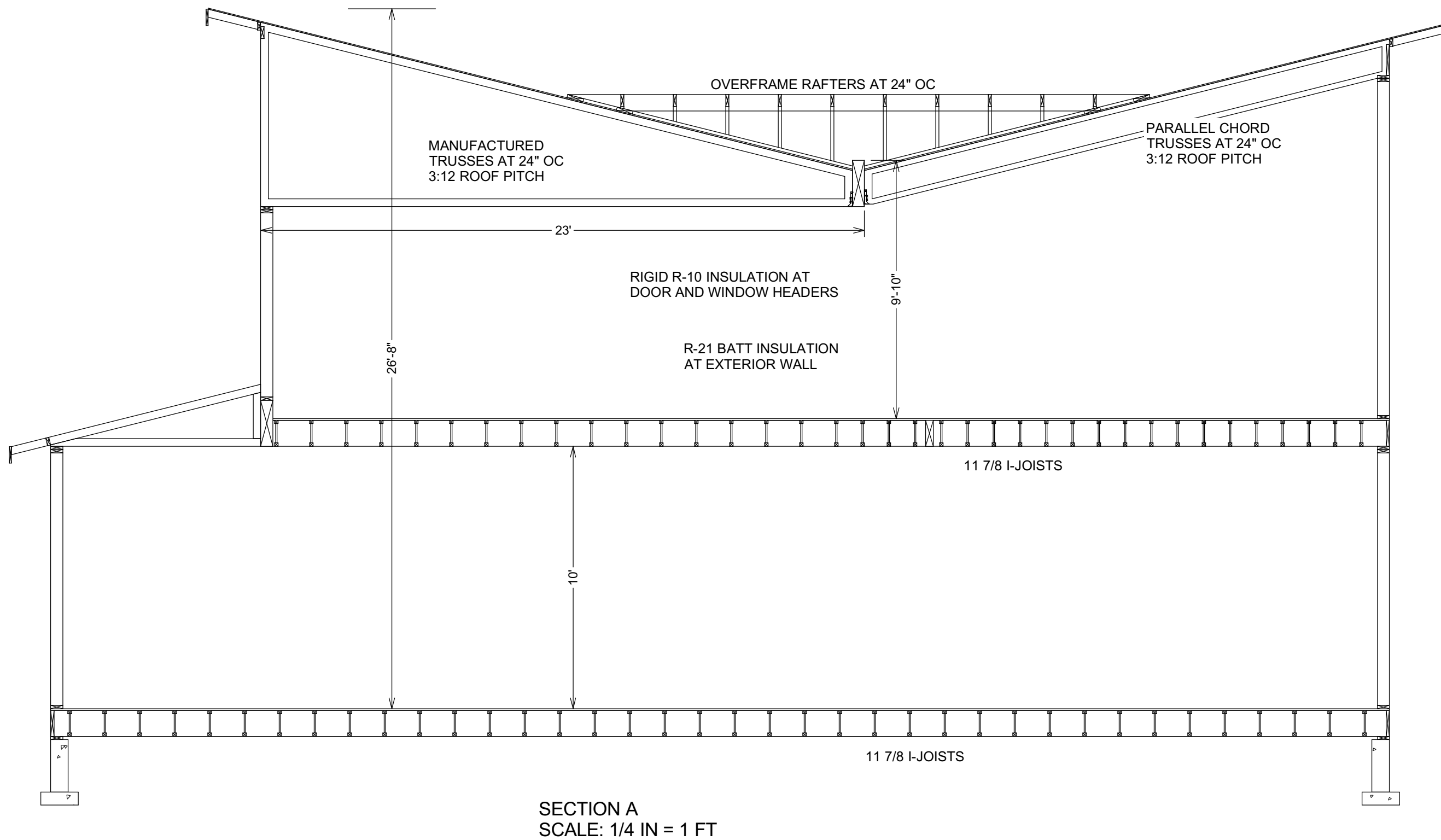
Overhead Glazing									
Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Height Feet	Area	UA	
Sum of Area and UA									
Overhead Glazing Area Weighted U									

Vertical Glazing Schedule										Rows to Show 16	
Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Height Feet	Area	UA			
Exempt											
1	Option 1a: U=0.28	Table 406.2	0.28	3	1.0	8.00	40.0	11.20			
2	Option 1a: U=0.28	Table 406.2	0.28	1	3	8	24	6.72			
3	Option 1a: U=0.28	Table 406.2	0.28	1	2	4	11	2.99			
4	Option 1a: U=0.28	Table 406.2	0.28	1	6	5	30	8.40			
5	Option 1a: U=0.28	Table 406.2	0.28	1	7	5	35	9.80			
6	Option 1a: U=0.28	Table 406.2	0.28	1	8	5	40	11.20			
7	Option 1a: U=0.28	Table 406.2	0.28	3	3	4	44	12.32			
8	Option 1a: U=0.28	Table 406.2	0.28	1	3	3	12	3.36			
9	Option 1a: U=0.28	Table 406.2	0.28	6	6	4	144	40.32			
10	Option 1a: U=0.28	Table 406.2	0.28	2	5	4	40	11.20			
11	Option 1a: U=0.28	Table 406.2	0.28	10	6	1	100	28.00			
12	Option 1a: U=0.28	Table 406.2	0.28	2	2	3	15	4.11			
13	Option 1a: U=0.28	Table 406.2	0.28	2	4	1	32	8.96			
14	Option 1a: U=0.28	Table 406.2	0.28	2	4	1	32	8.96			
15	Option 1a: U=0.28	Table 406.2	0.28	3	3	1	18	5.13			
16											
Sum of Area and UA							600.3	168.1			
Vertical Glazing Area Weighted U								0.280			

Flat/Vaulted Ceilings				
Plan ID	Component Description	Ref.	Attic U	Area
10	R38 batt Vault vented 2x14 24oc	10-7	0.027	1,500
11	R49 blown Attic STD baffled (Code Target)	10-7	0.027	600
Sum of Area and UA				2,199

Walls (Above Grade)				
Plan ID	Component Description	Ref.	Wall U	Area
10	R21 cavity+R9 foam INT 2X6W Lap (Code Target)	10-5	0.054	2,701
Sum of Area and UA				2,701

Heating System Sizing Worksheet - Proposed Design									
Nearest Weather Station					Bethel 2 W				
Indoor Design Temperature					70 F				
Outdoor Design Temperature					17 F				
Design Temperature Difference (ΔT)					53 F				
Conditioned Floor Area					3,568 sq ft				
Conditioned Volume					32,224 cu ft				
System Type					Heat Pump				
Location of Ducts					Conditioned Space				
Sum of UA, including exempt door and window					468				
Envelope Heat Load					24,797 Btu / Hour				
Sum of UA x ΔT					18,445 Btu / Hour				
Air Leakage Heat Load					(Volume X 0.01 X ΔT X 0.01)				
Building Design Heat Load					43,282 Btu / Hour				
Air Leakage + Envelope Heat Load					43,282 Btu / Hour				
Building and Duct Heat Load					54,103 Btu / Hour				
For ducts located in unconditioned space: Sum of Building Heat Loads X 1.1									
For ducts located in conditioned space or ductless: Sum of Building Heat Loads X 1									
Maximum Heat Equipment Output					54,103 Btu / Hour				
Building and Duct Heat Loads X 1.25 for heat pumps									
Building and Duct Heat Loads X 1.25 for all other systems									



### ENERGY COMPLIANCE CHOICES FOR THIS PROJECT

EFFICIENT BUILDING ENVELOPE: 1.3

Prescriptive compliance is based on Table R402.1.1 with the following modifications:  
Vertical fenestration U = 0.28  
Floor R-38  
Slab on grade R-10 perimeter and under entire slab  
Below grade slab R-10 perimeter and under entire slab

0.5 CREDITS

HIGH EFFICIENCY HVAC EQUIPMENT OPTION 3.5:  
Air-source centrally ducted heat pump with minimum HSPF of 11.0.

To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.

1.5 CREDITS

HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTION 4.2:  
All supply and return ducts located in an unconditioned attic shall be deeply buried in ceiling insulation in accordance with Section R403.3.7.

For mechanical equipment located outside the conditioned space, a maximum of 10 linear feet of return duct and 5 linear feet of supply duct connections to the equipment may be outside the deeply buried insulation. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices.

Duct leakage shall be limited to 3 cfm per 100 square feet of conditioned floor area.

Air handler(s) shall be located within the conditioned space.

0.5 CREDITS

EFFICIENT WATER HEATING OPTION: 5.5

Water heating system shall include one of the following:  
Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification

To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.

2.0 CREDITS



Mechanical Ventilation

This Project Floor Area 3568  
This Project Number of Bedrooms 4  
This Project Requires 90 CFM

Whole House Ventilation fresh air supply to be provided by exhaust fans

Table M1507.3.3(1)  
Continuous Whole House Mechanical Ventilation

Ft Area	0-1 Bdrs	2-3 Bdrs	4-5 Bdrs	6-7 Bdrs	>7 Bdrs
<1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120
4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
>7500	105	120	135	150	165

Table M1507.3.3(2)  
Runtime Percentage and Multiplying Factor

25%	33%	50%	66%	75%	100%
4	3	2	1.5	1.3	1

M1507.3.1 System design. The whole-house ventilation system shall consist of one or more supply or exhaust fans, or a combination of such, and associated ducts and controls. Local exhaust or supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered as providing supply ventilation.

M1507.3.2 System controls. The whole-house mechanical ventilation system shall be provided with controls that enable manual override.

M1507.3.3 Mechanical ventilation rate. The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate of not less than that determined in accordance with Table M1507.3.3(1).

Exception: The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25-percent of each 4-hour segment and the ventilation rate prescribed in Table M1507.3.3(1) is multiplied by the factor determined in accordance with Table M1507.3.3(2).



GENERAL NOTES

ALL CONSTRUCTION SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE, 2018 INTERNATIONAL BUILDING CODE, AND THE 2018 WASHINGTON STATE ENERGY CODE.

R-408.2 (WAC 51-51) UNDERFLOOR VENTILATION REQUIRES 1 SQ FT OF NET FREE CROSS VENTILATION FOR EACH 300 SQ FT OF UNDERFLOOR AREA COVERED.

R-408.4 UNDERFLOOR ACCESS: MINIMUM 18" X 24" CLEAR ACCESS THROUGH FLOOR, MIN 16" X 24" THROUGH EXT WALL.

R-317.1 WOOD FLOOR JOIST CLOSER THAN 18" AND WOOD GIRDERS CLOSER THAN 12" FROM THE EXPOSED GROUND MUST BE PRESSURE TREATED.

FASTENERS INTO OR IN CONTACT WITH PRESSURE TREATED OR FIRE RETARDANT TREATED WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. EXCEPTION: 1/2 INCH DIAMETER OR GREATER STEEL BOLTS.

R-806.2 ATTIC VENTILATION REQUIRES NET FREE CROSS VENTILATION 1/150 OF ATTIC AREA, OR 1/300 IF 40-50 PERCENT IS UPPER VENTILATION. VENTED BLOCKING AND GABLE END VENTING IS NOT ALLOWED WHEN THE EXTERIOR WALL IS 5 FT OR LESS FROM THE PROPERTY LINE OR WHEN THE EAVE OR OVERHANG IS LESS THAN 5 FT FROM THE PROPERTY LINE. WHEN APPLICABLE SEE D2

R-807 ATTIC ACCESS REQUIRES 22" X 30" MIN CLEAR OPENING IN A READILY ACCESSIBLE AREA. 30" MIN HEADROOM, INSULATE AND WEATHERSTRIP

R-310 EGRESS OPENINGS SHALL HAVE A SILL HEIGHT OF NOT MORE THAN 44" ABOVE THE FLOOR WITH A MIN OF 5.7 SQUARE FEET, A MIN WIDTH OF 20" AND A MIN HEIGHT OF 24".

R-314.3 INTERCONNECTED SMOKE ALARMS SHALL BE INSTALLED IN EACH SLEEPING ROOM, IN THE IMMEDIATE VICINITY OUTSIDE EACH SLEEPING AREA AND ON EACH STORY.

SMOKE DETECTORS SHALL BE INSTALLED NOT LESS THAN 3 FT HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A TUB OR SHOWER. R314

IONIZATION SMOKE ALARMS: SHALL NOT BE INSTALLED LESS THAN 20 FT HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FT HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

PHOTO ELECTRIC SMOKE ALARMS: SHALL NOT BE INSTALLED LESS THAN 6 FT HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

R315.1 CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.

R-308.4 SAFETY GLAZING IS REQUIRED AT ENCLOSURES FOR TUBS AND SHOWERS AND WHEN PLACED WITHIN 24" ARC OF EITHER VERTICAL EDGE OF DOOR AND GLAZING IS LESS THAN 60" ABOVE FLOOR.

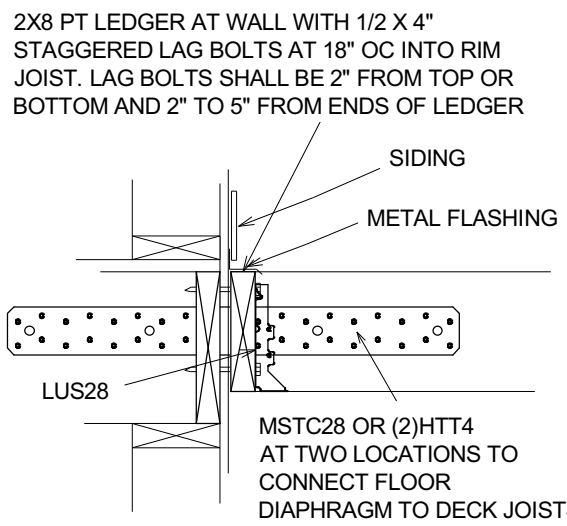
M-1503 RANGE HOOD SHALL DISCHARGE TO THE OUTDOORS THROUGH A SINGLE WALL DUCT THE DUCT SERVING THE HOOD SHALL HAVE A SMOOTH INTERIOR SURFACE. SHALL BE AIR TIGHT AND SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER.

R319.1 BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS. MIN SIZE 4 IN WITH 1/2 IN STROKE AND CONTRASTING BACKGROUND AND VISIBLE FROM STREET.

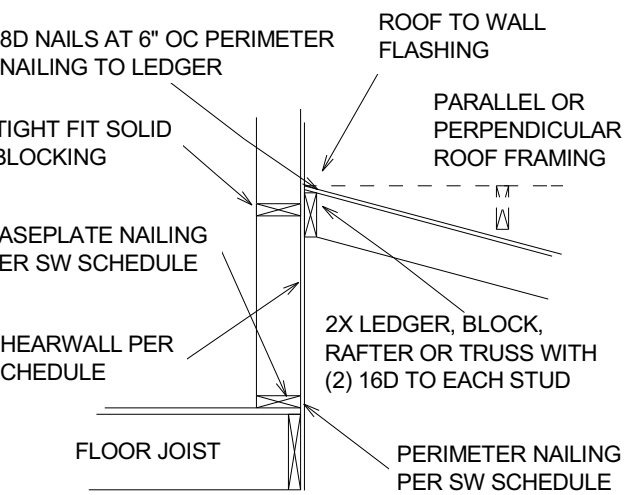
DESIGN CRITERIA

ROOF LIVE LOAD	25 - ROOF DEAD LOAD	15
FLOOR LIVE LOAD	40 - FLOOR DEAD LOAD	10
DECK LIVE LOAD	60 - DECK DEAD LOAD	10

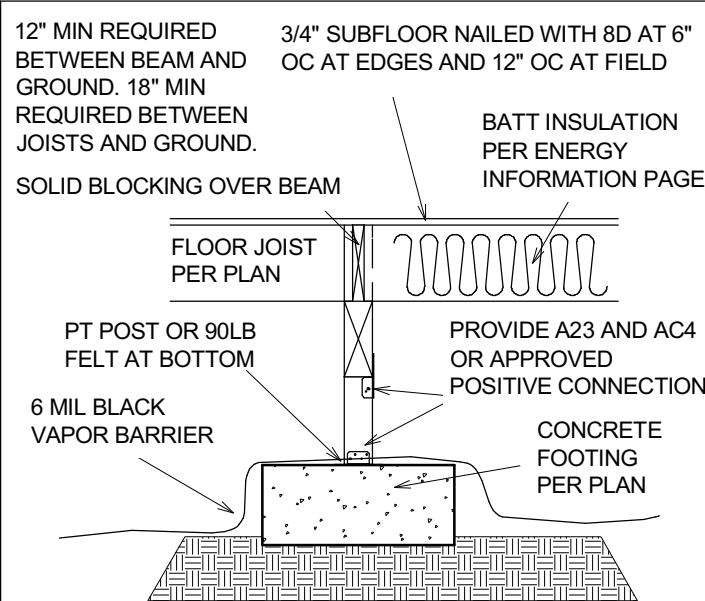
WIND SPEED BASIC / ULTIMATE 85 / 110  
SEISMIC CAT. D



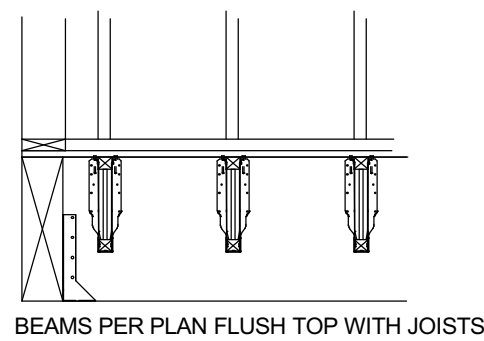
D4 DECK CONNECTION TO WALL



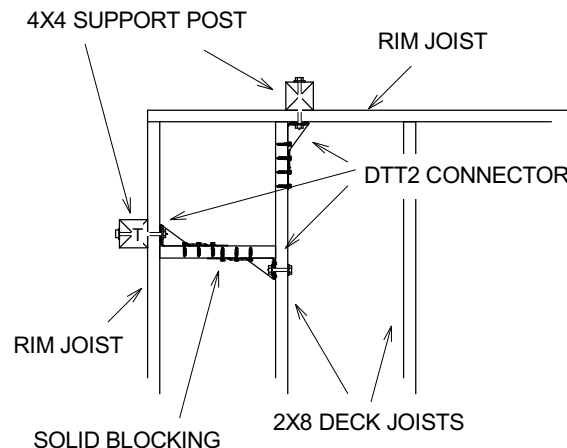
C4 TYPICAL PARALLEL OR PERPENDICULAR LOWER ROOF TO WALL CONNECTION



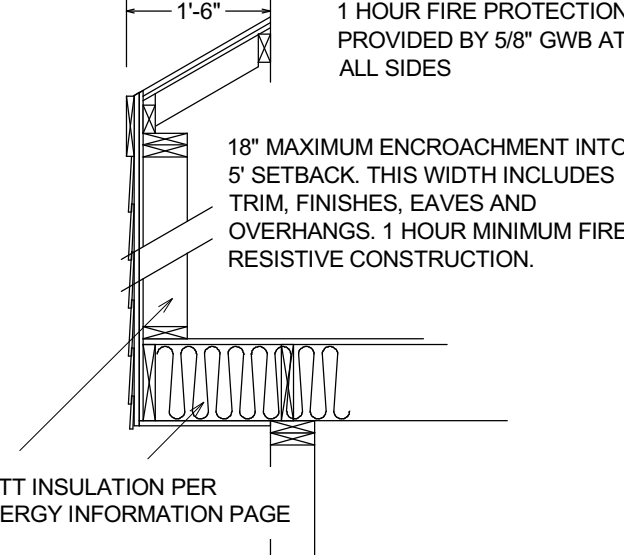
B4 CRAWL SPACE BEAM SUPPORT SECTION



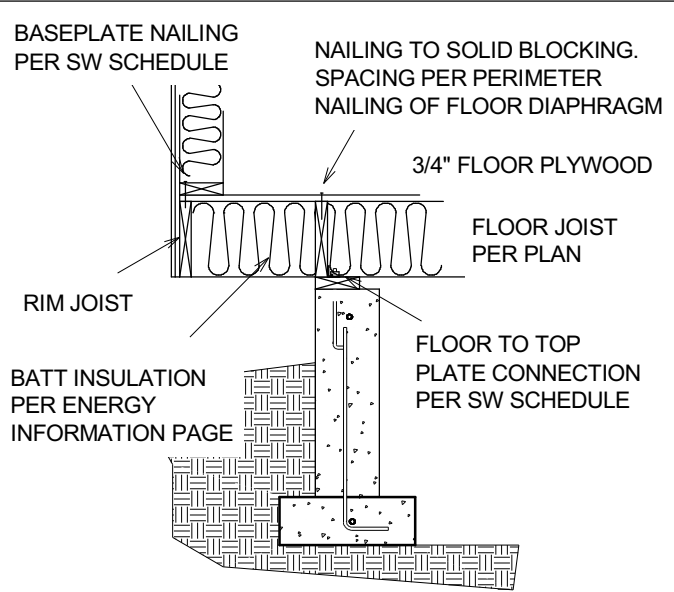
A3 GARAGE BEAMS



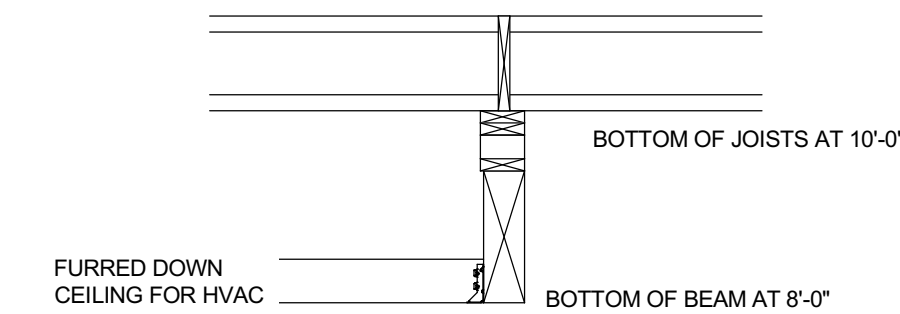
D3 4X4 DECK RAILING POST SUPPORT



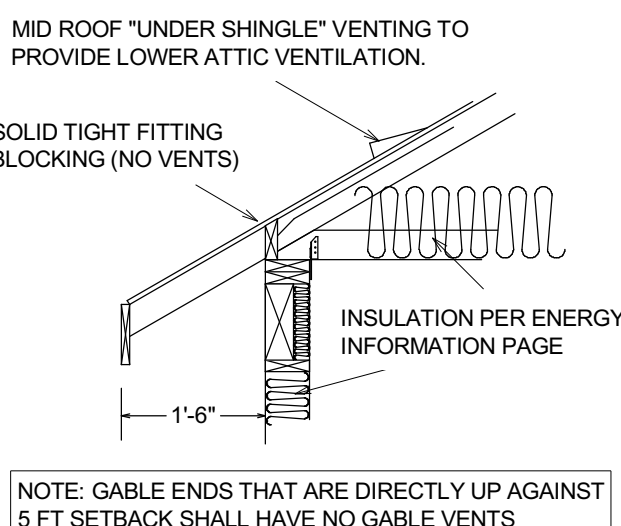
C3 18" CANTILEVER INTRUDING INTO 5 FT PROPERTY LINE SETBACK



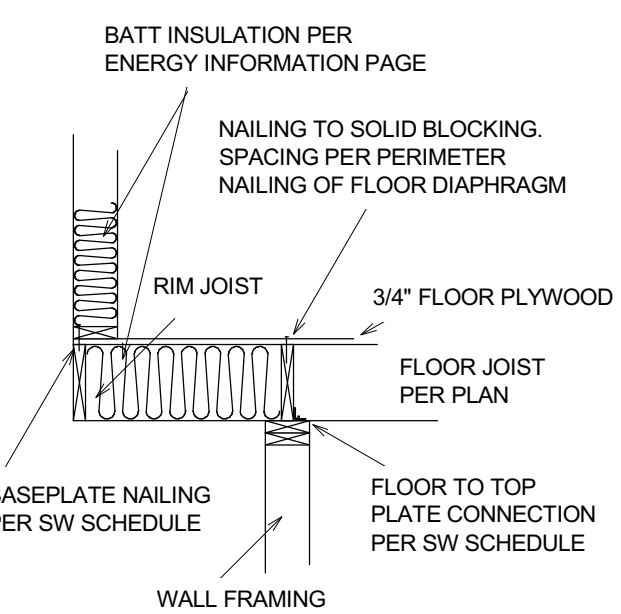
B3 CANTILEVER LOWER FLOOR



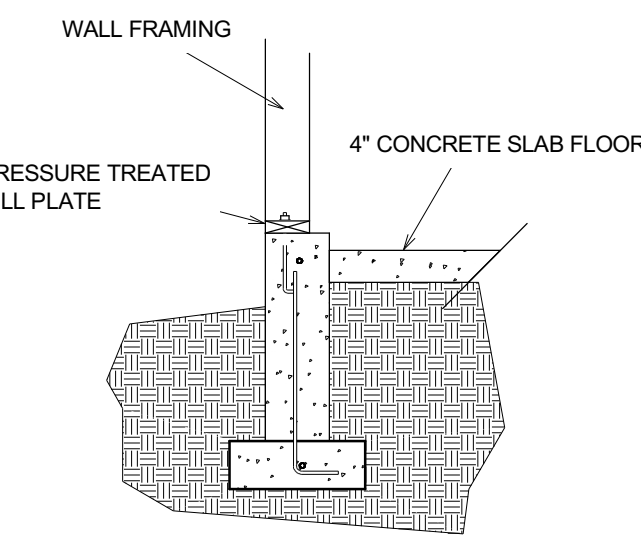
A2 BEAM FRAMING AT KITCHEN



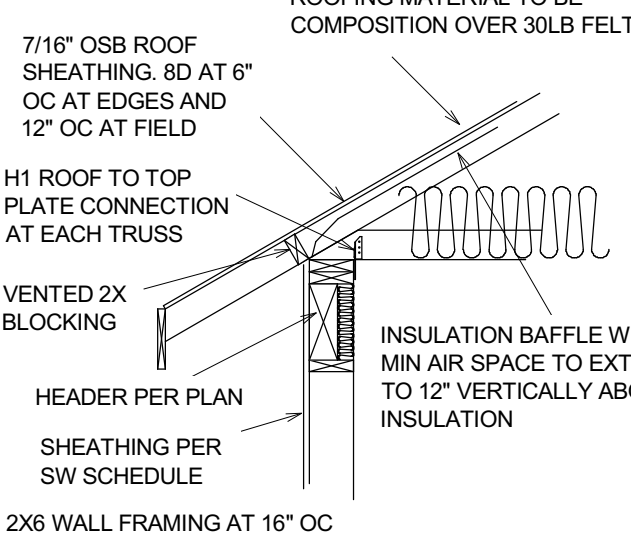
D2 ROOF OVERHANG INTRUDING INTO 5 FT PROPERTY LINE SETBACK



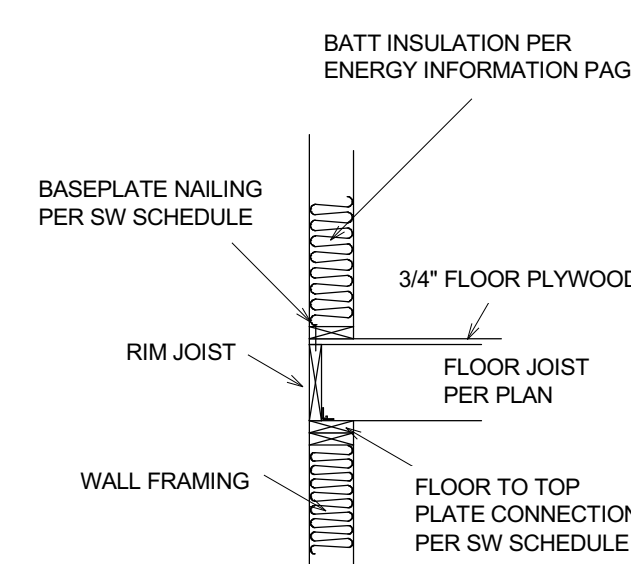
C2 CANTILEVER UPPER FLOOR



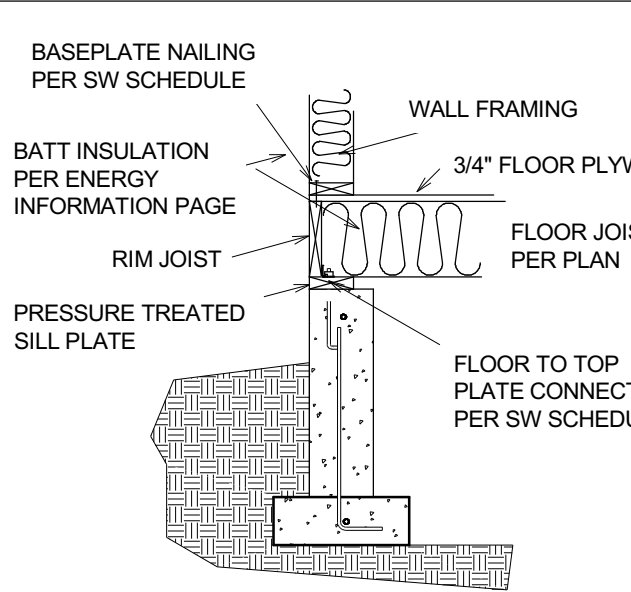
B2 FOUNDATION AT GARAGE SLAB FLOOR



D1 TYPICAL ROOF TO WALL AND HEADER SECTION



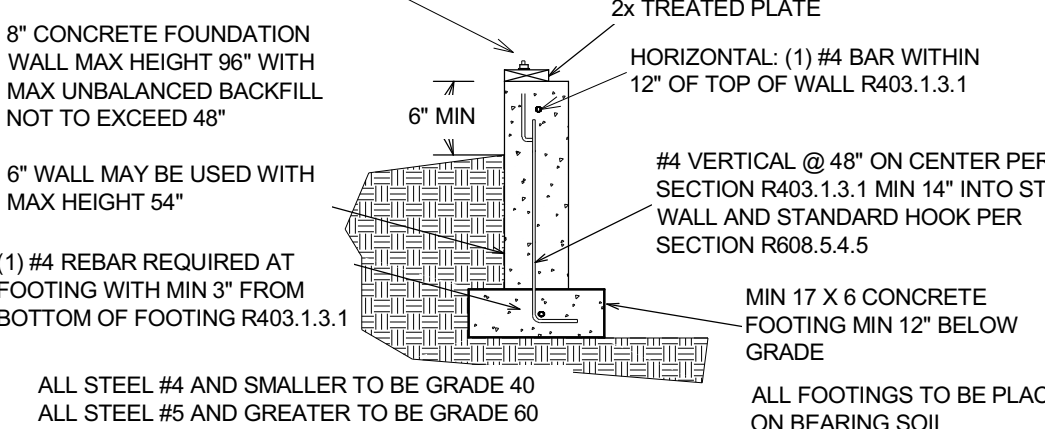
C1 TYPICAL UPPER FLOOR JOIST SECTION



B1 FOUNDATION AT FRAMED FLOOR JOIST

CAST-IN-PLACE ANCHOR BOLT TO BE 5/12" X 10" WITH 3 X 3 X 1/4 PLATE WASHERS AT 48" OC OR PER SW SCHEDULE. NO LESS THAN 4 1/2" AND NO MORE THAN 12" FROM EACH END. 7" MIN EMBEDMENT EXCEPT AS REQUIRED BY SW SCHEDULE.

MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE NOT LESS THAN 2500 PSI



A1 TYPICAL CONCRETE FOUNDATION ( 8 OR 6 INCH )

HOLDOWN SCHEDULE

MARK	HOLDOWN / STRAP *(1)	FASTENERS TO (2)-STUDS MIN U.N.O.	FOUNDATION ANCHOR *(1)(4)	COMMENTS
T-1	MSTC40	(8) - 16d sinkers to each connected element	N/A	
T-2	STHD14/14RJ	(38)(30) - 16d	N/A	
T-3	HDU8-SDS2.5	(20) - SDS 0.25x2.5 WOOD SCREWS	SSTB28	MIN. DF#2 4X POST

SHEARWALL SCHEDULE

MARK (2)	SHEATHING - APPLY TO 2x HF STUDS @ 16"o/c U.N.O. BELOW *(9)	SHEATHING EDGE NAILS *(5) ALL EDGES BLOCKED (do not penetrate past flush)	BASE PLATE NAILS *(5)	ROOF TO TOP PLATE, FLOOR TO TOP PLATE & SILL PLATE *(6)	SILL PLATE ANCHORS w/ 3" x 3" x 1/4" WASHERS *(8)
SW-1	7/16" OSB	8d @ 6" o/c (12" o/c field)	16d @ 12" o/c	H1 @ 24" o/c or A35 @ 24" o/c	5/8"Ox10" AB's @ 60" o/c
SW-2	7/16" OSB	8d @ 4" o/c (12" o/c field)	16d @ 8" o/c	A35 @ 24" o/c	5/8"Ox10" AB's @ 60" o/c
RSW	7/16" OSB	8d @ 4" o/c (12" o/c field)	SEE DETAIL 11/S1		

SHEAR WALL AND HOLDOWN NOTES

(1) HOLDOWNS TO BE SIMPSON OR EQUIVALENT WHERE EQUIVALENT IS PERMITTED. LOCATE HOLDOWNS AT ENDS OF SHEARWALLS, UNO. INSTALL PER MANUFACTURER RECOMMENDATIONS FOR FOUNDATION MINIMUM END DISTANCE AND EMBEDMENT. EXTEND, THICKEN, DEEPEN, ETC. FOUNDATION TO MEET THE MANUFACTURER'S SPECIFICATIONS.

(2) CONSTRUCT CRIPPLE WALLS AND PONY WALLS TO MATCH SPECIFICATIONS OF THE SHEAR WALL ABOVE. CONSTRUCT GABLE END WALLS TO MATCH SPECIFICATIONS OF THE SHEAR WALL BELOW. CONSTRUCT CLERESTORY WALLS PER SW-1, UNO. ALL EXTERIOR WALLS TO BE CONSTRUCTED PER SW-1, UNO.

(3) 3X OR DBL 2X SILL PLATE REQUIRED.

(4) USE THREADED ROD AND COUPLER AS REQUIRED.

(5) COMMON NAILS, UNO: 8d = 0.131" x 2 1/2," 10d = 0.148" x 3" 12d = 0.148" x 3 1/2," 16d = 0.148" x 3 1/2,"

(6) INSTALL H1 CLIPS AT EACH TRUSS/RAFTER END. INSTALL A35 @ 24" OC AT EACH GABLE END AND RIM JOIST (OR SOLID BLOCKING) TO TOP PLATE AND MUDDSILL CONNECTION, UNO. WHERE SPACING TIGHTER THAN 24" OC IS SPECIFIED, INSTALL A35 CLIPS FROM SOLID BLOCKING TO DBL TOP PLATE, AND INSTALL H1 H2.5 CLIPS TO EACH TRUSS/RAFTER END. LTP4, LTP5 or LS50 CAN BE SUBSTITUTED FOR A35 CLIPS PER SIMPSON. OR

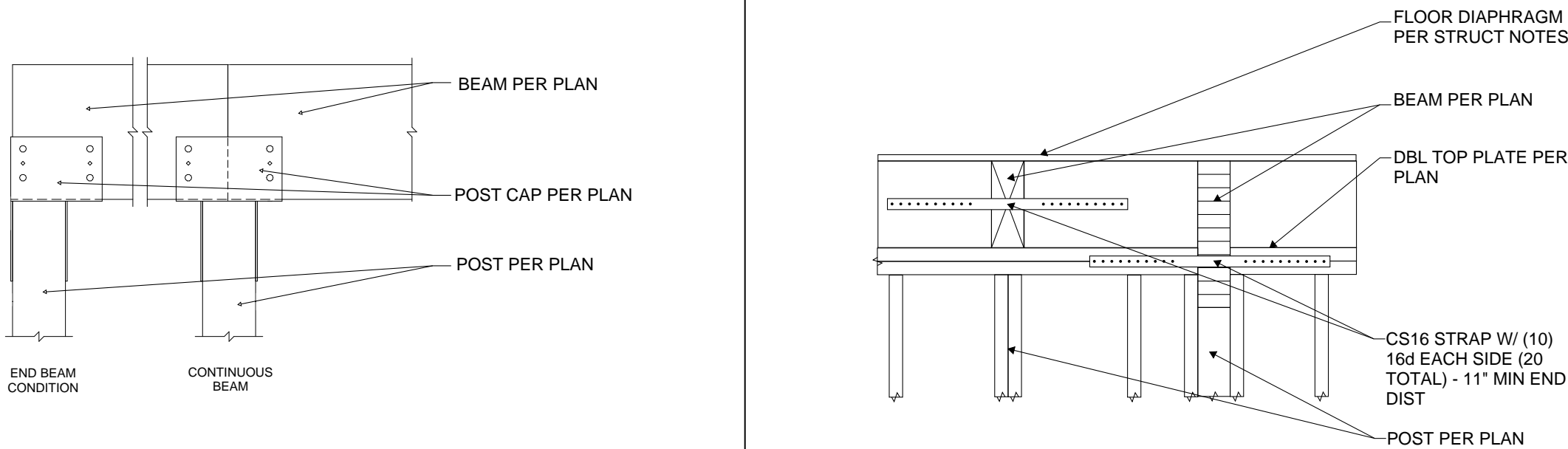
(7) MINIMUM 3X OR DBL 2X STUDS REQUIRED AT ABUTTING PANEL EDGES. DBL STUDS TO BE LAMINATED W/ (2) 16d @ 6" OC.

(8) ANCHOR BOLTS SHALL BE EMBEDDED 7" MINIMUM INTO CONCRETE. MIN (2) BOLTS PER PIECE WITH ONE BOLT LOCATED NOT MORE THAN 2" OR LESS THAN (7) BOLT DIAMETERS FROM EACH END OF THE PIECE. MUD SILL TO BE 2X MINIMUM AND PRESSURE-TREATED.

(9) ALL SHEATHING TO BE APA RATED. SEE GENERAL STRUCTURAL NOTES.

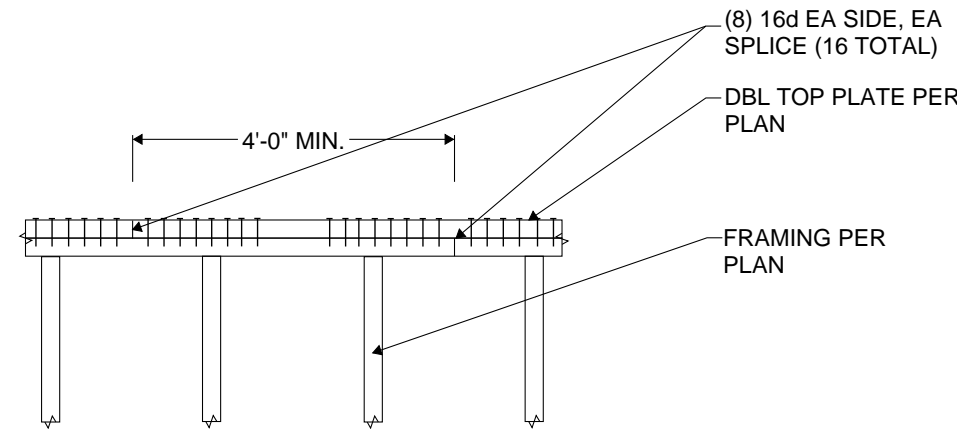




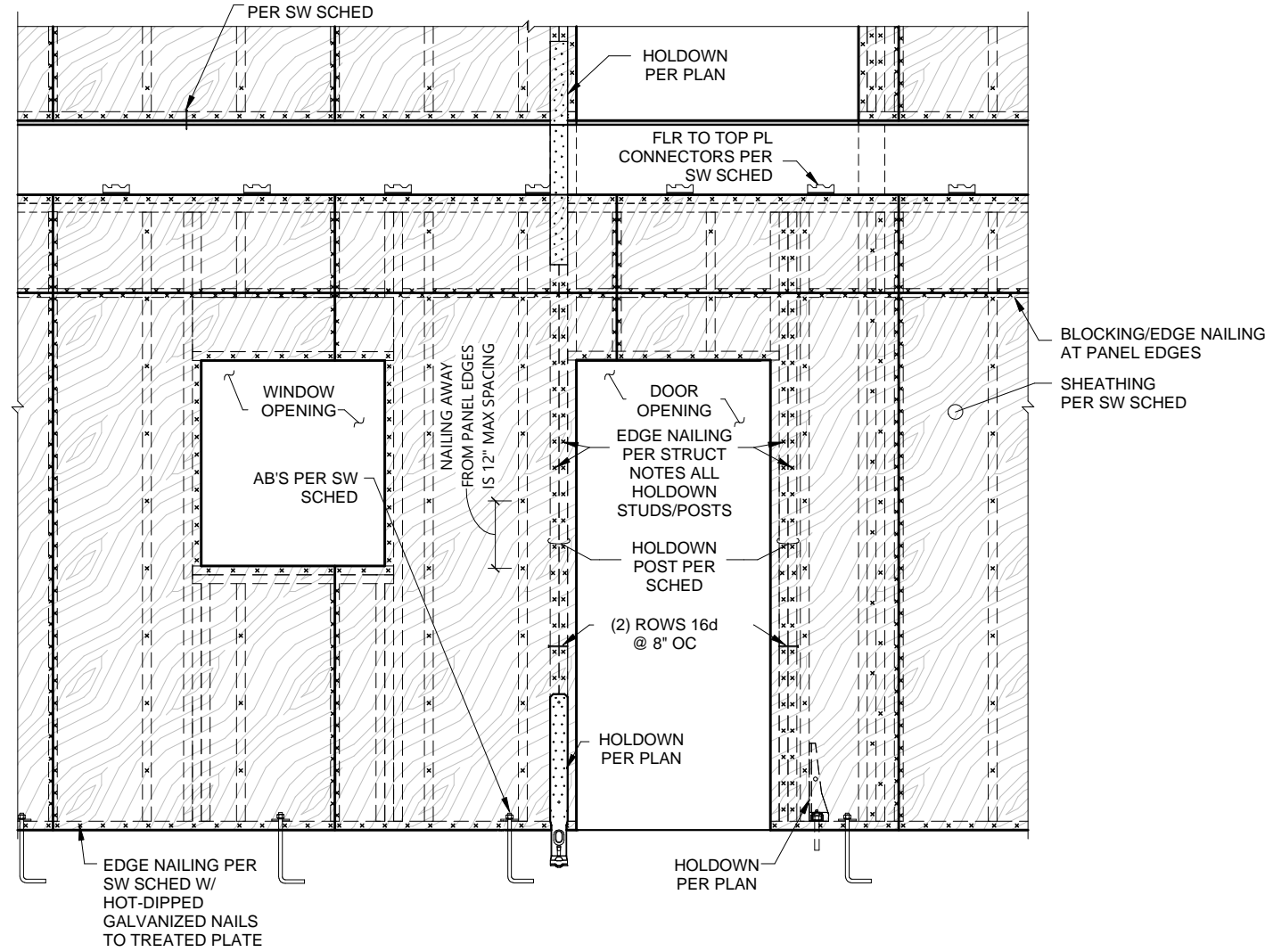


1  
S0  
TYPICAL POST & BEAM  
@ ISOLATED POST

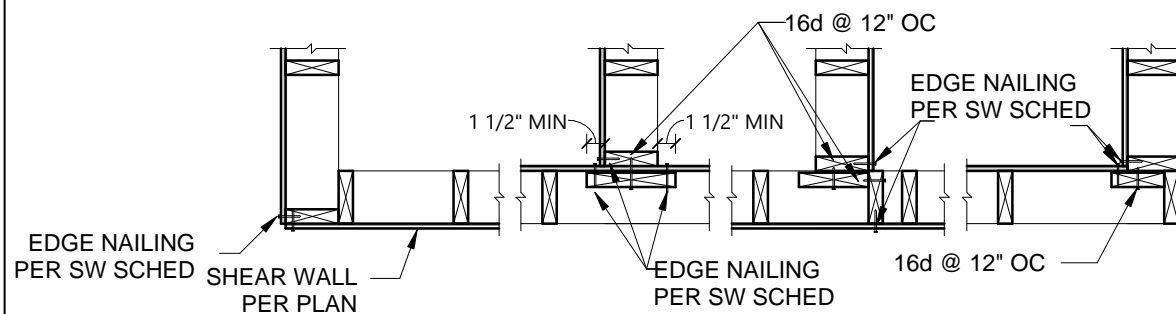
2  
S0  
TYPICAL POST & BEAM  
@ WALL



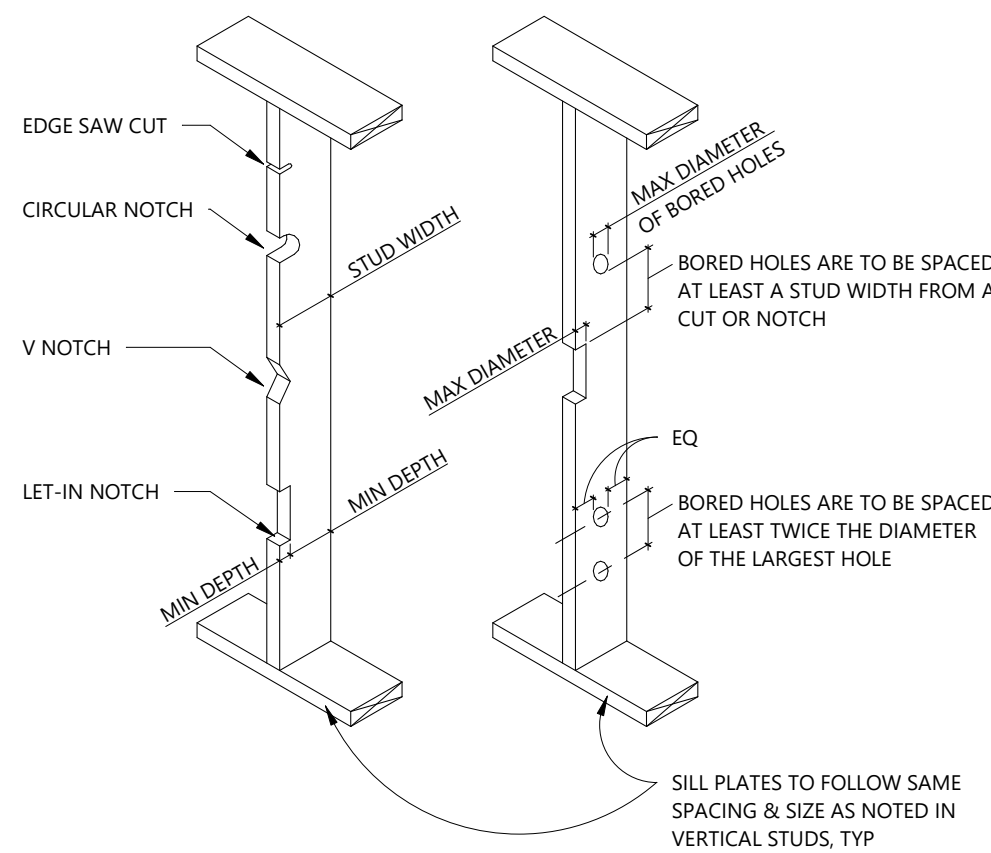
3  
S0  
TYPICAL TOP PLATE SPLICE



4  
S0  
TYPICAL SHEAR WALL  
CONSTRUCTION



5  
S0  
TYPICAL SHEAR WALL  
CORNER CONFIGURATIONS



6  
S0  
TYPICAL STUD PENETRATIONS

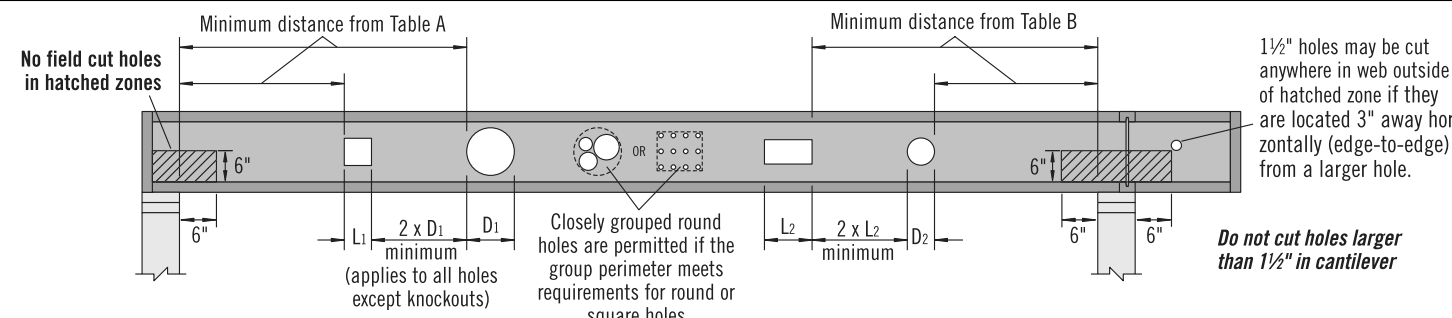


Table A, End Support: Minimum distance from edge of hole to inside face of nearest end support

Depth	TJI®	● Round Hole Size							■ Square or Rectangular Hole Size						
		1-0"	1-0"	1-6"	2-0"	2-6"	3-0"	5-6"	1-0"	1-6"	2-0"	2-6"	4-6"	5-0"	6-0"
11 1/4"	110	1-0"	1-0"	1-6"	2-0"	2-6"	3-0"	5-6"	1-0"	1-6"	2-0"	2-6"	4-6"	5-0"	6-0"
	210	1-0"	1-0"	1-6"	2-0"	2-6"	3-0"	5-6"	1-0"	1-6"	2-0"	2-6"	4-6"	5-0"	6-0"
	230	1-0"	1-0"	1-6"	2-0"	2-6"	3-0"	5-6"	1-0"	1-6"	2-0"	2-6"	4-6"	5-0"	6-0"
360	230	1-0"	1-0"	1-6"	2-0"	2-6"	3-0"	5-6"	1-0"	1-6"	2-0"	2-6"	4-6"	5-0"	6-0"
	360	1-6"	2-0"	3-0"	3-6"	4-6"	5-0"	7-0"	1-6"	2-6"	3-6"	4-6"	6-6"	6-6"	7-6"

Table B, Intermediate or Cantilever Support: Minimum distance from edge of hole to inside face of nearest intermediate or cantilever support

Depth	TJI®	● Round Hole Size							■ Square or Rectangular Hole Size						
		1-0"	1-0"	1-6"	2-6"	4-6"	4-6"	8-6"	1-0"	1-6"	2-6"	4-6"	7-0"	7-0"	9-6"
11 1/4"	110	1-0"	1-0"	1-6"	2-6"	3-0"	4-6"	9-0"	1-0"	2-0"	3-0"	4-6"	8-0"	8-0"	10-0"
	210	1-0"	1-0"	1-6"	2-6"	3-0"	4-6"	9-0"	1-0"	2-0"	3-0"	4-6"	8-0"	8-0"	10-0"
	230	1-0"	1-0"	1-6"	2-6"	3-0"	4-6"	9-0"	1-0"	2-0"	3-0"	4-6"	8-0"	8-0"	10-0"
360	230	1-0"	1-0"	1-6"	2-6"	3-0"	4-6"	9-0"	1-0"	2-0"	3-0"	4-6"	8-0"	8-0"	10-0"
	360	2-0"	3-0"	4-0"	5-6"	7-0"	7-6"	11-0"	2-0"	3-6"	5-0"	7-0"	9-6"	9-6"	11-0"

7  
S0  
TYPICAL I-JOIST PENETRATIONS

## GENERAL STRUCTURAL NOTES

**GENERAL** ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION, OR OTHER GOVERNING CODE, AS REQUIRED BY LOCAL JURISDICTION.

### DESIGN PARAMATERS

**WIND:**  
NOMINAL WIND SPEED – 85 MPH  
ULTIMATE WIND SPEED – 110 MPH  
WIND EXPOSURE, B

RISK CATEGORY II  
IMPORTANCE, I = 1.0  
K<sub>zt</sub> = 1.00

**SEISMIC:**  
EQUIVALENT LATERAL FORCE PROCEDURE  
IMPORTANCE, I<sub>e</sub> = 1.0  
SITE CLASS, D  
SEISMIC DESIGN CAT., D  
SEIS. FORCE RES. SYS, A.15.  
DESIGN BASE SHEAR = 14065 lbs  
RISK CATEGORY II

S<sub>s</sub> = 1.268  
S<sub>i</sub> = 0.443  
S<sub>DS</sub> = 1.01  
S<sub>RS</sub> = NA  
C<sub>s</sub> = 0.16  
R = 6.5

**LIVE LOADS:**  
ROOF 25 (SNOW)  
FLOOR 40 PSF  
DECKS 60 PSF

**INSPECTIONS** NO SPECIAL INSPECTIONS ARE REQUIRED. VERIFY INSPECTIONS REQUIRED WITH AUTHORITY HAVING JURISDICTION.

**SOILS** REPORT NOT PROVIDED.

**FOUNDATIONS** EXTEND FOOTING TO UNDISTURBED SOIL OF 2000 PSF BEARING CAPACITY. BOTTOM OF EXTERIOR FOOTING SHALL BE 1'-6" MINIMUM BELOW OUTSIDE FINISHED GRADE.

**COMPACTED FILL** SHOULD CONSIST OF PREDOMINATELY WELL-GRADED, GRANULAR SOIL, FREE OF ORGANIC MATERIAL AND DEBRIS. FILL SHOULD BE PLACED IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED BY ASTM D-1557 TEST PROCEDURES.

**CONCRETE** f'<sub>c</sub> = 2500 PSI MINIMUM 5/8", SACKS OF CEMENT PER CUBIC YARD OF CONCRETE AND A MAXIMUM OF 6.0 GALLONS OF WATER PER 94 LB SACK OF CEMENT. MAXIMUM SLUMP IS 4". SEGREGATION OF MATERIALS TO BE PREVENTED.

**REINFORCING STEEL** #5 BARS AND LARGER SHALL BE GRADE 60 DEFORMED BARS, AND #3 AND #4 BARS SHALL BE GRADE 40, IN ACCORDANCE WITH ASTM A-615. LAP SPLICES 32 BAR DIAMETERS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND SHALL BE 6X6 – W1.4 X W1.4. LAP ONE FULL MESH AT SPLICES.

**TIMBER FRAMING** SHALL MEET THE FOLLOWING MINIMUM STANDARDS:  
BEAMS AND POSTS (4x<sub>+</sub> AND GREATER): DF-L-#2  
JOISTS / STUDS (2x<sub>+</sub>): HF-#2 / STUD  
GLUE LAMINATED BEAMS (GLB) 24F-V4 (24F-V8 AT CANTILEVERS)  
PARALLAM BEAMS (PSL) 2.0E UNO

2x<sub>+</sub> TIMBER SHALL BE KILN DRIED. GRADES SHALL CONFORM TO "WWPA GRADING RULES FOR WESTERN LUMBER", LATEST EDITION. ROOF TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE T.P.I. AND THE IBC. ALL CONNECTIONS PER IBC TABLE 2304.10.1 (SEE BELOW).

**NOTE ALL BEAMS/HEADERS TO BE SUPPORTED BY MINIMUM DBL 2x POSTS AT EACH END, UNO**

**ROOF DIAPHRAGM** INSTALL MINIMUM 1/2" CDX PLYWOOD (32/16) OR 7/16" OSB SHEATHING. NAIL ALL SUPPORTED EDGES AND BOUNDARIES WITH 8d at 6" O.C., AND INTERIOR SUPPORTS WITH 8d at 12" O.C.; BLOCKING NOT REQUIRED.

**FLOOR DIAPHRAGM** INSTALL MINIMUM 23/32" T&G STURD-I-FLOOR (24oc) SHEATHING. GLUE AND NAIL ALL SUPPORTED EDGES AND BOUNDARIES WITH 10d at 6" O.C.; AND INTERIOR SUPPORTS WITH 10d at 12" O.C.; BLOCKING NOT REQUIRED.

**MISCELLANEOUS** THE CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS AT JOB SITE. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AS REQUIRED UNTIL ALL PERMANENT CONNECTIONS AND STIFFENINGS HAVE BEEN INSTALLED. DO NOT SCALE DRAWINGS. PRE-FABRICATED ELEMENTS TO BE HANDLED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

### MINIMUM FASTENING SCHEDULE (UNO) (PER 2018 IBC TABLE 2304.10.1

NO.	CONNECTION	NAILING, LOCATION (UNO)
1	BLOCKING BETWEEN JOIST/RAFTER OR TRUSSES TO TOP PLATE OR OTHER FRAMING ABOVE	(3) 8d, TOENAIL EACH END
2	BLOCKING BETWEEN JOIST/RAFTER OR TRUSSES NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	(2) 8d, TOENAIL EACH END
3	FLAT BLOCKING TO TRUSS AND WEB FILLER	16d FACE NAIL
4	JOISTS TO TOP PLATE OR GIRDER	(3) 8d, TOENAIL
5	CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (NO THRUST)	(3) 16d
6	COLLAR TIE TO JOIST/RAFTER	(3) 10d
7	ROOF TRUSS TO TOP PLATE	(3) 10d, TOENAIL
8	ROOF JOIST/RAFTER TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2" RIDGE BEAM	(2) 16d, END NAIL
9	STUD TO STUD (NOT AT SHEAR WALLS)	16d @ 24" O.C., FACE NAIL
10	CONTINUOUS HEADER TO STUD	(4) 8d, TOENAIL
11	TOP PLATE TO TOP PLATE, AT END JOINTS	(8) 16d, EACH SIDE OF END JOINT, FACE NAIL (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
12	SILL PLATE TO JOIST, RIM JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16d @ 16" O.C., FACE NAIL
13	SILL PLATE TO JOIST, RIM JOIST OR BLOCKING AT BRACED WALL PANELS	(3) 16d @ 16" O.C., FACE NAIL
14	STUD TO SILL PLATE	(4) 8d, TOENAIL OR (2) 16d, END NAIL*
15	TOP PLATE TO STUD	(2) 16d, END NAIL
16	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	(2) 16d, FACE NAIL
17	1" BRACE TO EACH STUD AND PLATE	(2) 8d, FACE NAIL
18	1" x 6" SHEATHING OR LESS TO EACH BEARING	(2) 8d, FACE NAIL
19	1" x 8" AND WIDER SHEATHING TO EACH BEARING	(3) 8d, FACE NAIL
20	JOIST TO SILL, TOP PLATE OR GIRDER	(3) 8d, TOENAIL
21	RIM JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	8d @ 6" O.C., TOENAIL
22	1" x 6" SUBFLOOR OR LESS TO EACH JOIST	(2) 8d, FACE NAIL
23	2" SUBFLOOR TO JOIST OR GIRDER	(2) 16d, BLIND AND FACE NAIL
24	2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	(2) 16d, EACH BEARING, FACE NAIL
25	BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d @ 32" O.C., FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES AND (2) 20d AT ENDS OF EACH SPLICE
26	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	(3) 16d, EACH JOIST OR RAFTER, FACE NAIL
27	JOIST TO RIM JOIST	(3) 16d, END NAIL
28	BRIDGING OR BLOCKING TO JOIST	(2) 8d, EACH END, TOENAIL

\*USE (4) 16d END NAIL STUDS TO TOP AND SILL PLATES AT 2x10 STUDS

UPSTATE STAMP



STRUCTURAL DESIGN  
TYPICAL DETAILS  
MINIMUM CONNECTIONS  
STRUCTURAL NOTES

ADAIR ENTERPRISES  
NEW SFR  
TERRACE PLAN

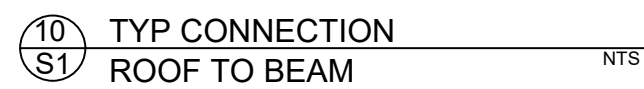
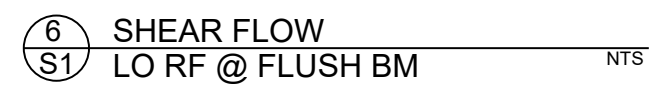
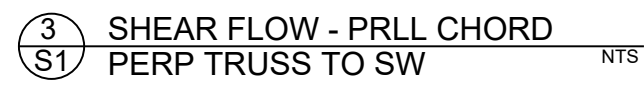
UPSTATE JOB# 1536  
DRAWN BY: JBG  
CHECKED BY: amg

REVISION DATE: 4/13/2022  
DESCRIPTION: VER 1


APPROVALS

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APPROVALS