

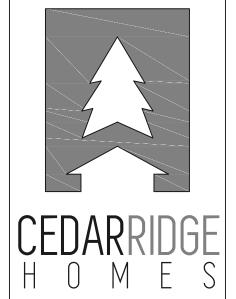
Plan Name
Wahkeena
Date
2/19/2018

Location

Lone Oak Estates

Lot 45 Battle Ground, WA

Total Sq Ft = 2,110



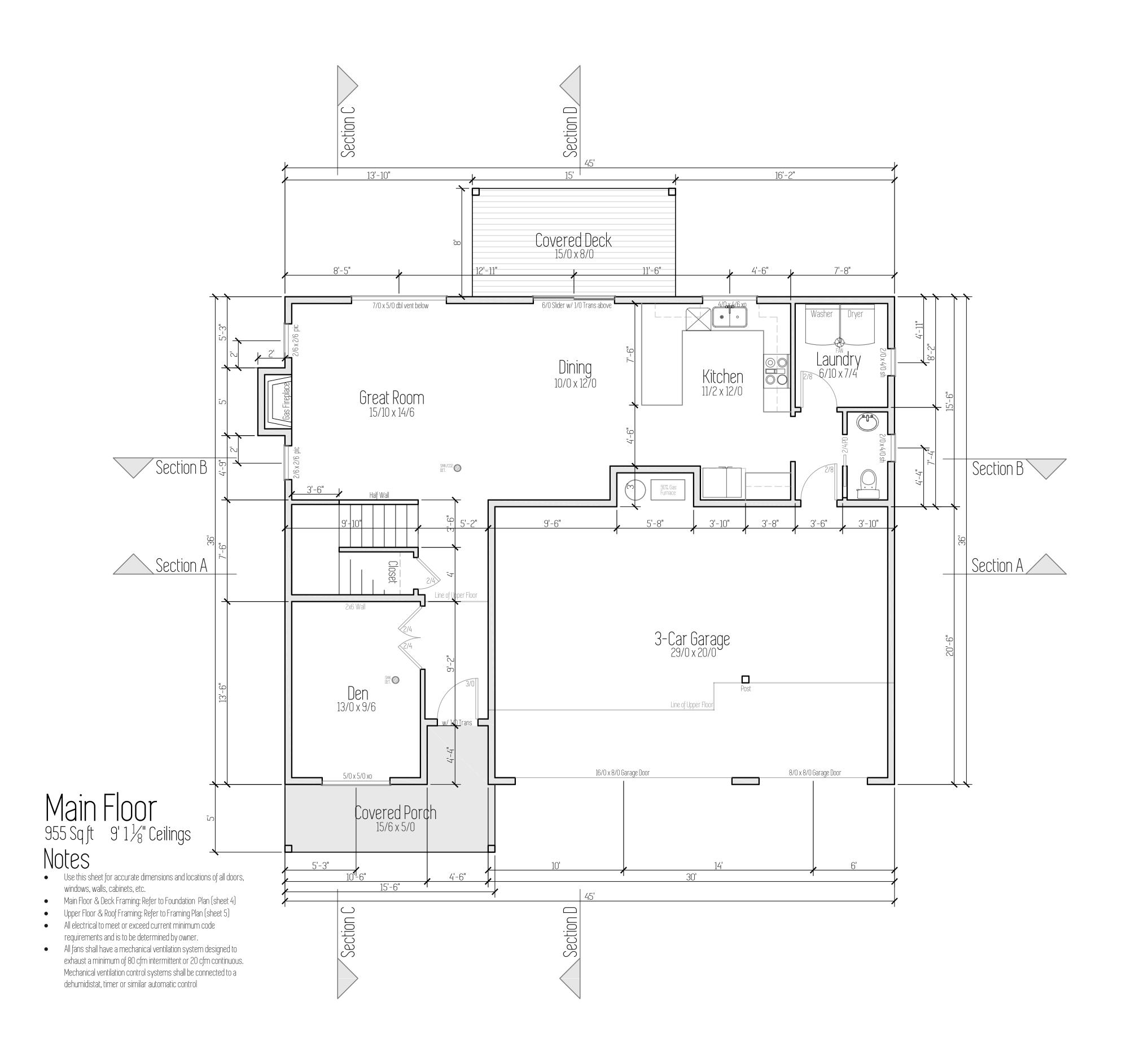
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Designed by:

TYSON GREY tyson@cedarridgehomes.us



Plan Name Wahkeena Date

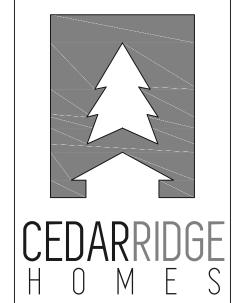
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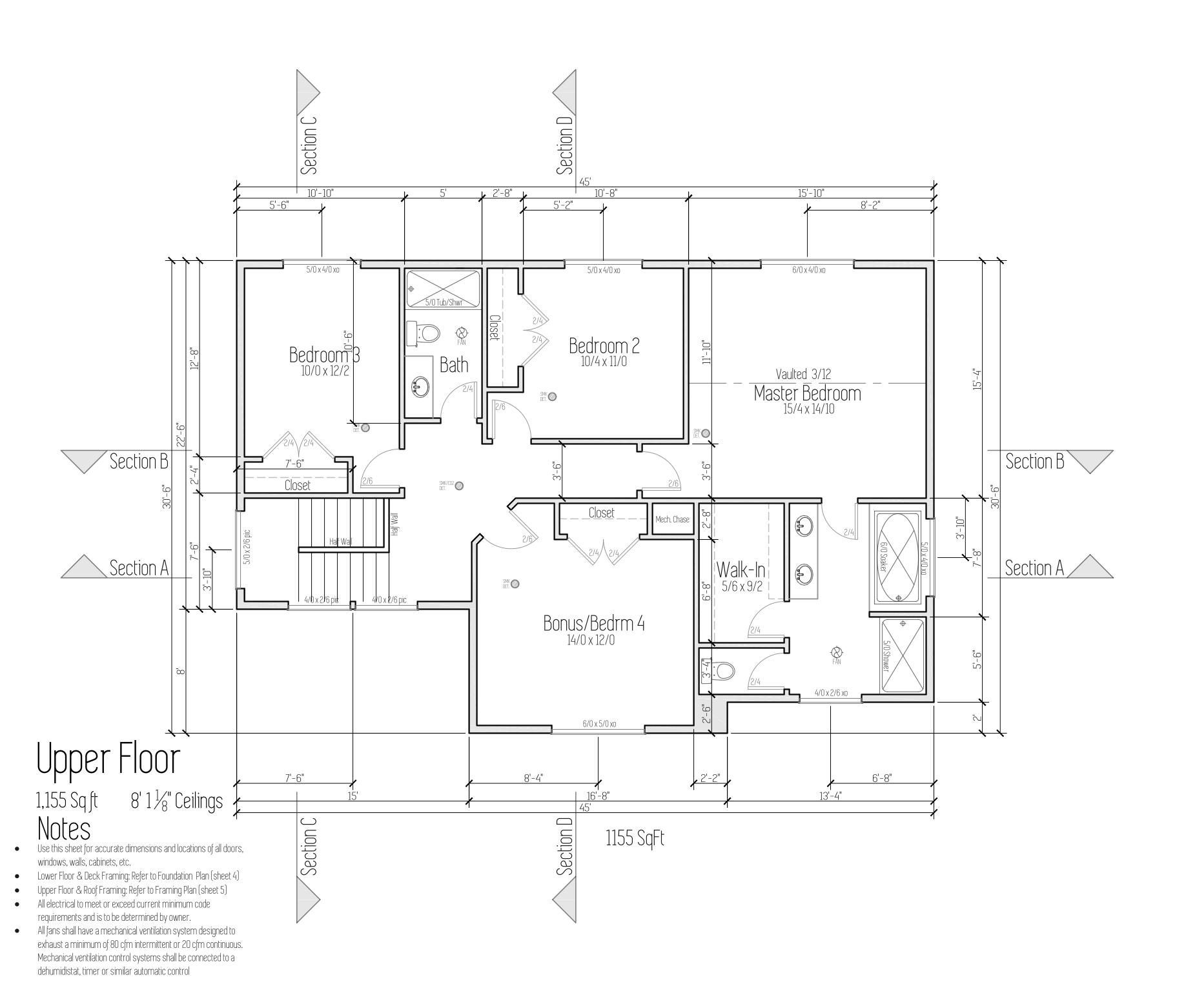


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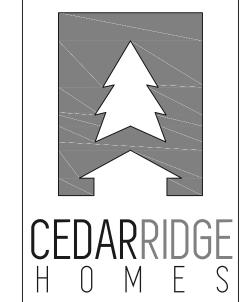
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# Foundation Notes

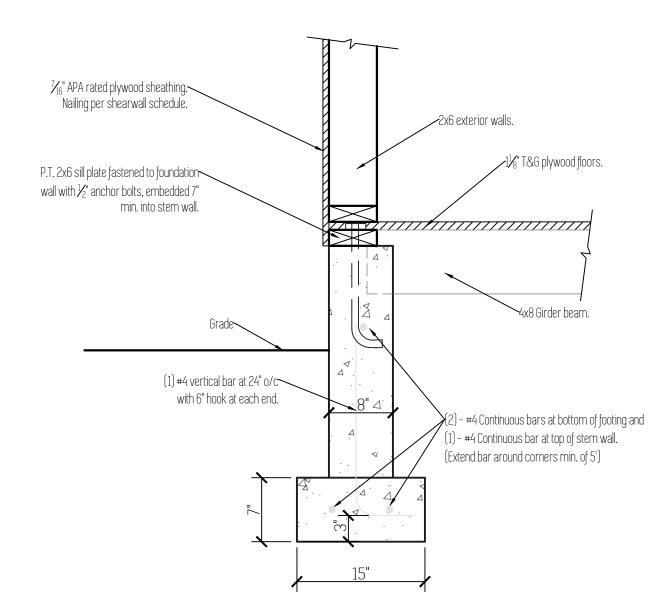
- Concrete: Minimum 28 day concrete strength = 2500 psi.
- Grade beams, piers and spread footings shall be poured onto undisturbed, native soil which is free from any material that will adversely affect the soil bearing pressure.
- Footings are to be on undisturbed soil with an assumed 1500 PSF
- All slabs to be supported with a min. of 4" of compacted crushed rock fill.
- Beam pockets in concrete walls to have a min.  $\frac{1}{2}$ " air space on sides, and min. 3" of bearing for all beams and girders.
- Typical pier pad to be 18" dia. x 8" concrete footing with 4x4 DF#2 post.
- Typical crawl space beam to be 4x8 DF#2. Single gusset plate to be used on both sides of attachment to post.
- Cover entire crawl space with 6 mil black visqueen vapor barrier.
- Excavate a min. of 18" below bottom of all beams.
- Install 15" x 7" closable FND vents in FND walls. Min 1 sq ft vented area for every 150 sq ft of crawl space.
- Refer to Shear Wall Schedule and Hold-Down Schedule for sill bolt spacing and hold-down size. (PAGE S1.0)

### Shear Wall Panel

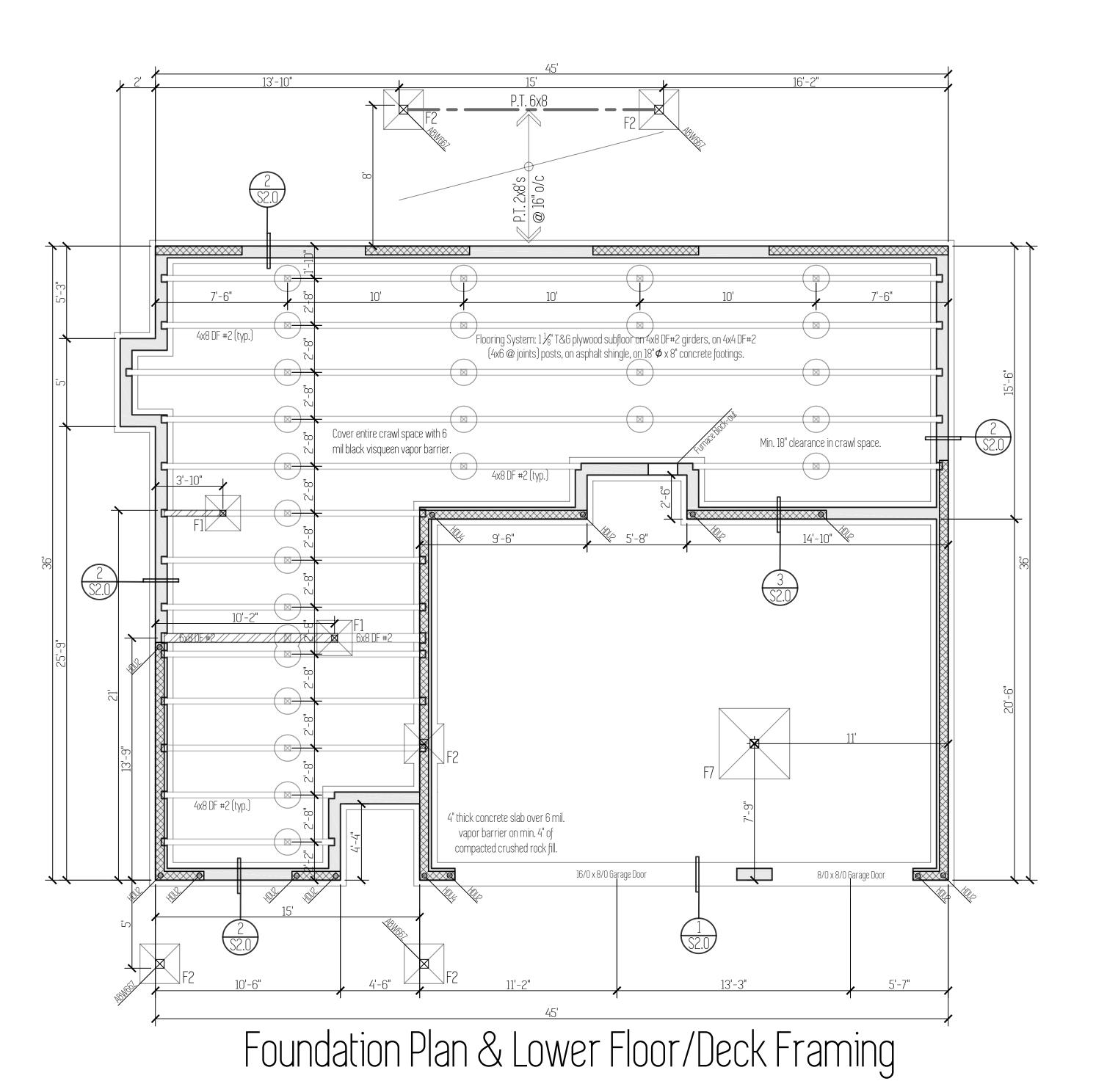
Interior Bearing Wall (above)

HoldDown

Footing	Schedule
F1	24" x 24" x 8" Concrete footing with (2) #4 bars each way.
F2	27" x 27" x 8" Concrete footing with (2) #4 bars each way.
F7	48" x 48" x 12" Concrete footing with (6) #4 bars each way.







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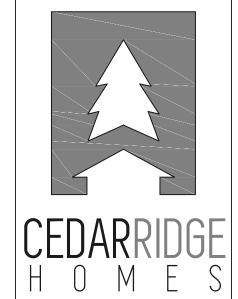
Battle Ground, WA

2,110

3d Ft = 2,110

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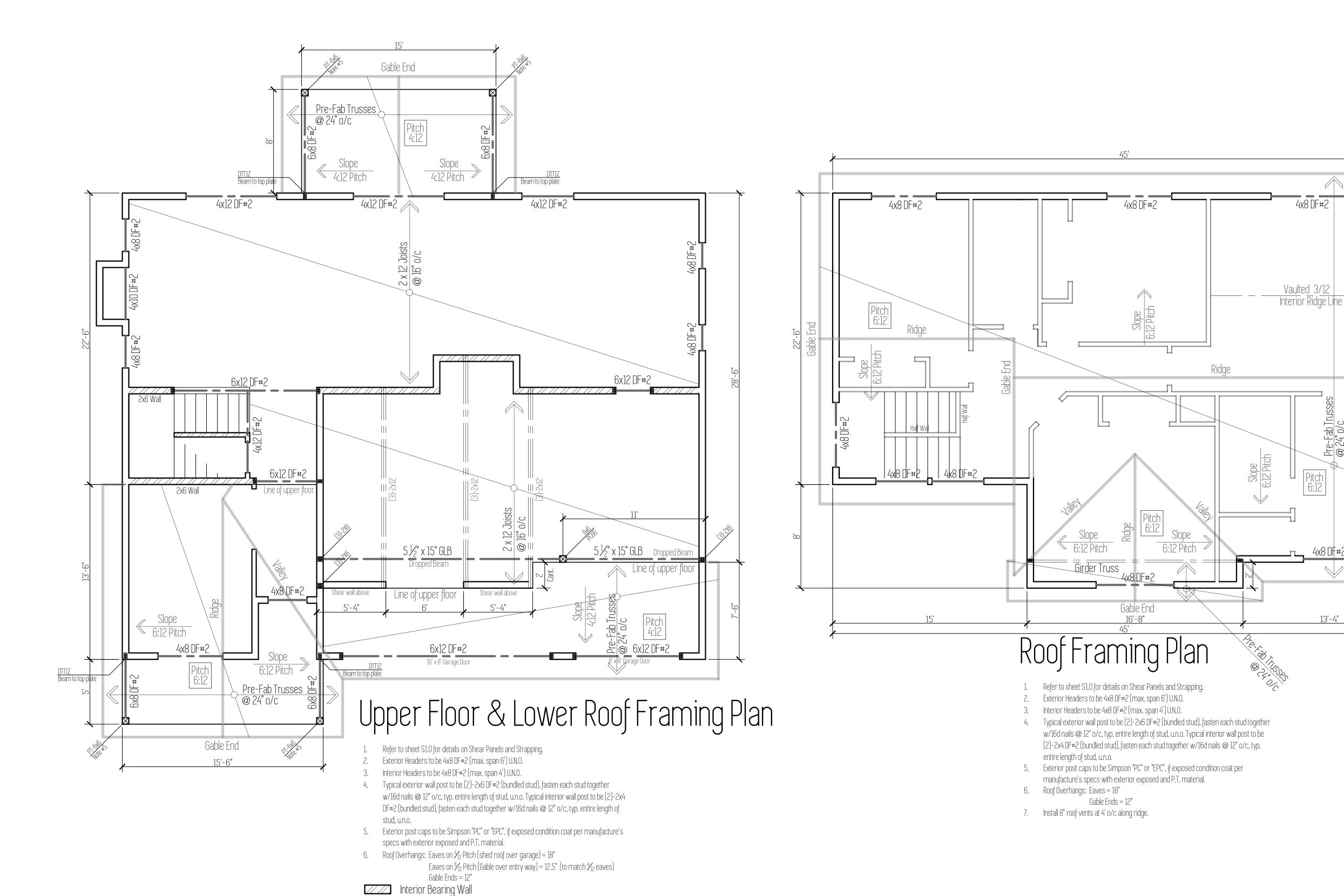


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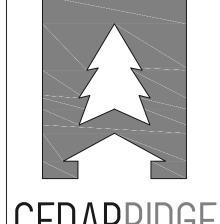
Plan Name Wahkeena Date 2/19/2018

2/19/2018 Location

Lone Oak Estates Lot 45

Battle Ground, WA

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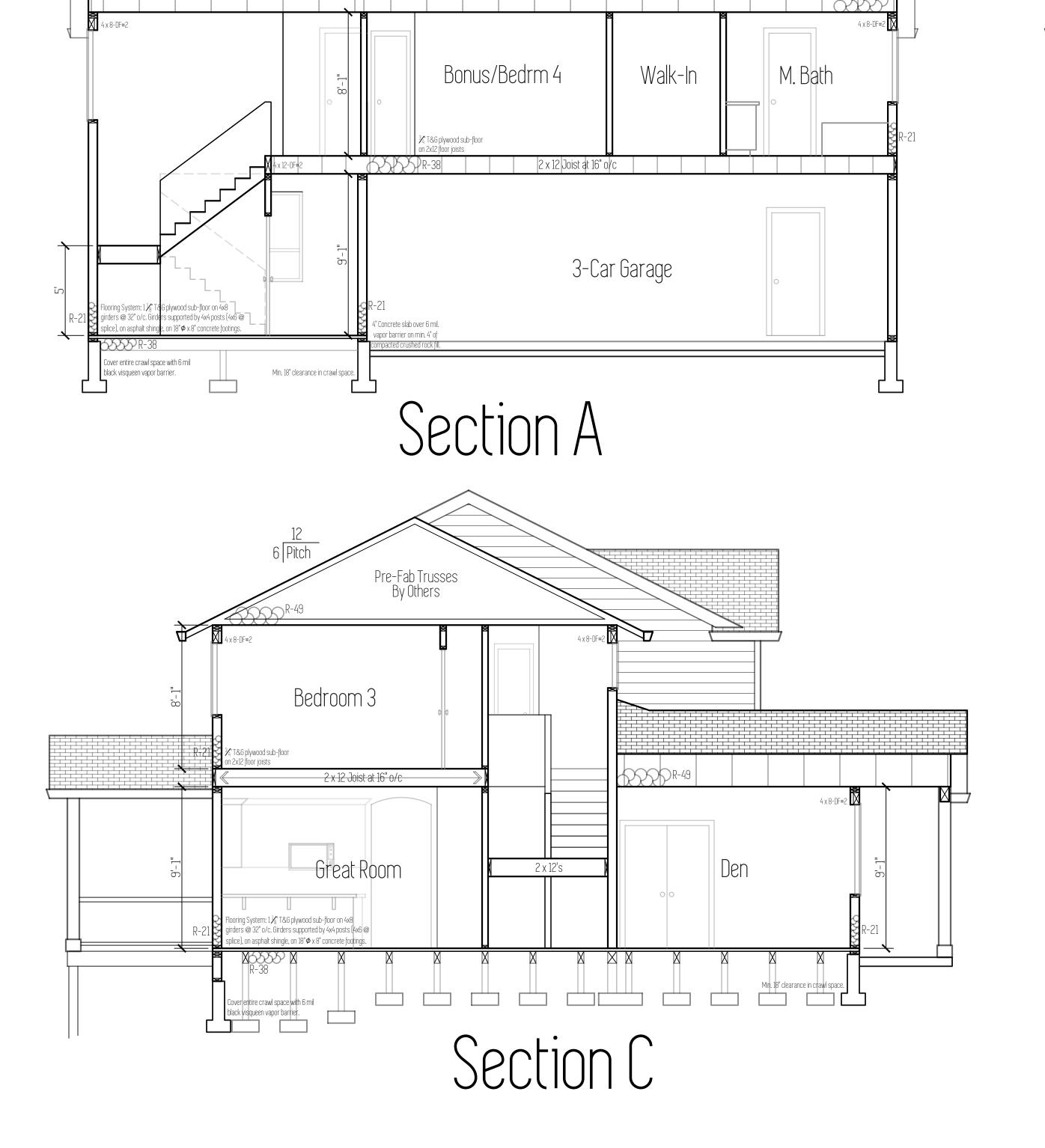
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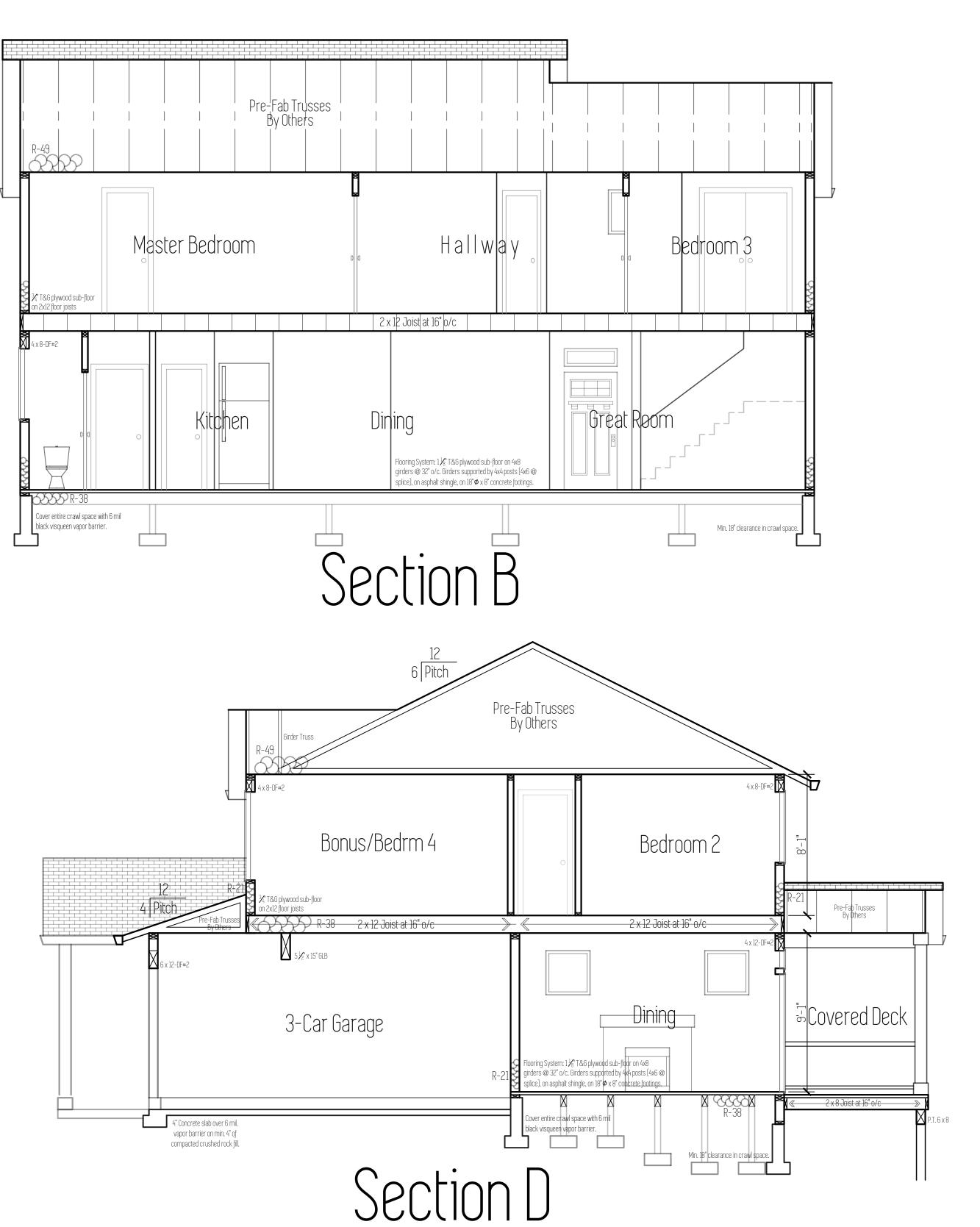
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Pre-Fab Trusses By Others



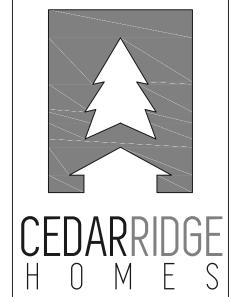
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## SUMMARY OF WORK:

LOCATION: LOAN OAK ESTATES LOT 45 BATTLE GROUND, WASHINGTON STRUCTURAL ANALYSIS AND DESIGN FOR SINGLE FAMILY RESIDENCE

## DESIGN LOADS:

USE OR OCCUPANCY OF BUILDINGS AND STRUCTURES RISK CATEGORY (ASCE TABLE 1.5-1): II WIND SPEED Vult: 135 MPH EXPOSURE 'B', Vasd = 105 MPH (OSSC EQUATION 16-33)

SEISMIC DESIGN CATEGORY: 'D' GROUND SNOW LOAD: 25 PSF (ROOF SNOW LOAD: 25 PSF)

ROOF DEAD LOAD: 15 PSF

FLOOR LIVE LOAD: 40 PSF FLOOR DEAD LOAD: 10 PSF

SOIL BEARING PRESSURE: 1500 PSF SOIL PASSIVE SOIL PRESSURE: 200 PSF

# FRAMING REQUIREMENTS:

2. ROOF SHEATHING TO BE <sup>15</sup>/<sub>30</sub>" APA RATED CDX SHEATHING OR OSB. INSTALL PANELS HORIZONTALLY. SPACE 8d NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES. FOR OTHER CONDITIONS, SPACE 8d NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS.

3. TYPICAL WALL SHEATHING (TSN) TO BE  $^{15}$  $^{32}$ " APA RATED CDX SHEATHING OR OSB. ALL PANEL EDGES TO BE BACKED WITH 2-INCH NOMINAL OR WIDER FRAMING, INSTALL PANELS HORIZONTALLY OR VERTICALLY, SPACE 8d NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES. FOR OTHER CONDITIONS AND PANEL THICKNESSES, SPACE 8d NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS.

4. FLOOR SHEATHING TO BE  $\frac{5}{8}$ " APA RATED CDX SHEATHING OR OSB. SPACE 8d NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES. FOR OTHER CONDITIONS, SPACE 8d NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS. 5. SILL PLATE TO BE 2X P.T. U.N.O. (REFER TO SILL BOLT SPACING IN SCHEDULE BELOW). 6. FOR NAIL SIZES REFER TO BELOW.

SHEAR WALL SCHEDULE: (1) (2) (4) SDPWS TABLE 4.3A						
PANEL NOTATION	SHEATHING THICKNESS (IN.)	NAILS/ SPACING	DBL. STUD CONN. (FACE NAIL)	SILL BOLT (5) SPACING	SHEAR CAPACITY (SEISMIC)	SHEAR CAPACITY (WIND)
D6	15/32" (8)	8d @ 6" O/C	16d @ 9" O/C	½" Ø @ 36" O/C	260 PLF	365 PLF
D4 (3)	15/32" (8)	8d @ 4" O/C	16d @ 6" O/C	½" Ø @ 24" O/C	380 PLF	532 PLF
D3 (3)	15/32" (8)	8d @ 3" O/C	16d @ 4" O/C	½" Ø @ 18" O/C	490 PLF	685 PLF
D2 <sup>(3)</sup>	15/32" (8)	8d @ 2" O/C	16d @ 3" O/C	½" Ø @ 16" O/C	640 PLF	895 PLF
E2 (6)	15/32" (8)	10d @ 2" O/C	N/A	½" Ø @ 14" O/C <sup>(6)</sup>	770 PLF	1077 PLF

(1) SHEATHING TO BE APA RATED SHEATHING OR OSB (GRADE C-C OR C-D STRUCTURAL II OR BETTER).

(2) ALL PANEL EDGES TO BE BACKED WITH 2-INCH NOMINAL OR WIDER FRAMING (DFL-#2). INSTALL PANELS EITHER (9) COMMON OR GALVANIZED BOX HORIZONTALLY OR VERTICALLY. SPACE NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES FOR STUDS SPACED 24" O.C. FOR OTHER CONDITIONS AND PANEL THICKNESSES, SPACE NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS. (3) FRAMING AT ADJOINING PANEL EDGES SHALL BE A SINGLE 3" NOMINAL MEMBER OR (2) 2-INCH NOMINAL MEMBER FASTENED TOGETHER WITH 16d NAILS (SPACING ABOVE) TYPICAL ENTIRE HEIGHT OF DBL. STUD. NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED 2" O.C.

(5) INSTALL 3" SQUARE X 1/4" STEEL PLATE WASHER. (6) FRAMING AT ADJOINING PANEL EDGES SHALL BE SINGLE 3X NOMINAL FRAMING MEMBERS AT EACH END OF THE PANEL. NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED 2" O.C. INSTALL MIN. 3X P.T. SILL PLATE, U.N.O. (7) GALVANIZED NAILS SHALL BE HOT-DIPPED OR TUMBLED.

(8) IF 7/6" NOMINAL THICK PLYWOOD OR OSB IS USED, STUDS TO BE SPACED AT 1'-4" O/C, TYPICAL.

(4) AT SHEAR WALL LOCATIONS, REFER RW/S1 AND FF/S1 FOR ROOF TO WALL AND FLOOR TO FLOOR FRAMING.

#### HOID-DOWN SCHEDIII F-(2)(3)(4)

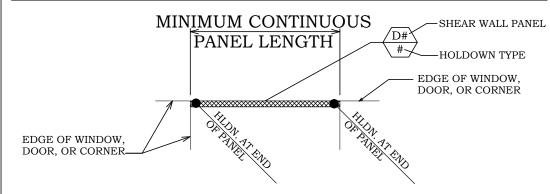
HOLD-DOWN SCHEDULE:			
HOLDOWN NOTATION	'SIMPSON' HOLDOWN TYPE	INSTALLATION INSTRUCTIONS	
2	HDU2 (3075#)	STD. 'SB $\frac{5}{8}$ X 24' MIN. 18" EMBEDMENT (le) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (2)2X6 DFL #2 WALL STUDS (MIN. 2 $\frac{2}{8}$ " EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.	
4	HDU4 (4565#)	STD. 'SB $\frac{5}{8}$ X 24' MIN. 18" EMBEDMENT (le) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (2)2X6 DFL#2 WALL STUDS (MIN. 2 $\frac{3}{4}$ " EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.	
5	HDU5 (5645#)	STD. 'SB $\frac{5}{8}$ X 24' MIN. 18" EMBEDMENT (le) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (2)2X6 DFL#2 WALL STUDS (MIN. $2\frac{3}{4}$ " EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.	
8	HDU8 (5980#,6970#, 7870#)	STD. 'SB $\frac{7}{8}$ X 24' MIN. 18" EMBEDMENT (le) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (3)2X6 DFL#2 WALL STUDS (MIN. $2\frac{3}{4}$ " EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.	
28	MSTC28	INSTALL STRAP ACROSS FLOOR LINE, INSTALL MIN. (8) 16d NAILS INTO DOUBLE WALL STUDS ABOVE FLOOR AND INTO DOUBLE WALL STUDS BELOW. CENTER STRAP ON STUDS TO INSTALL NAILS INTO MIDDLE THIRD OF STUD.	
40	MSTC40	INSTALL STRAP ACROSS FLOOR LINE, INSTALL MIN. (16) 16d NAILS INTO DOUBLE WALL STUDS ABOVE FLOOR AND INTO DOUBLE WALL STUDS BELOW. CENTER STRAP ON STUDS TO INSTALL NAILS INTO MIDDLE THIRD OF STUD.	

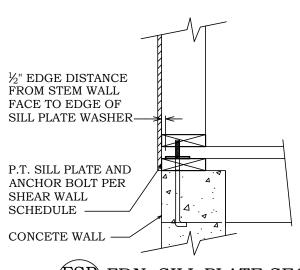
### NOTES:

(1) IN LIEU OF SIMPSON 'SSTB' BOLTS ANCHOR BOLTS TO BE A307 OR 'A36' THREADED ROD WITH STD. NUT AND 2" X 2" X %6" STEEL PLATE WASHER ON BOTTOM OF BOLT.

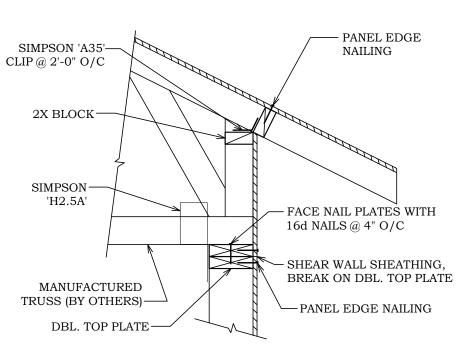
(2) HOLDOWNS TO BE FASTENED TO DOUBLE STUDS (CONTINUOUS FROM SILL PLATE TO DOUBLE TOP PLATE) AT PANEL ENDS. WALL STUDS SHOULD HAVE PANEL EDGE NAILING FROM SHEAR WALL SHEATHING.
(3) IF HOLDOWNS 2, 5, 6, AND 8 ARE INSTALLED FROM FLOOR TO FLOOR, REFER TO DETAIL FF/S1.
(4) U.N.O., INSTALL (1)-#4 CONTINUOUS HORIZONTAL TOP BAR 3" DOWN FROM TOP OF WALL AT ALL HOLDOWN ANCHORS. EXTEND BAR MIN. 5'-0" PAST HOLDOWN IN BOTH DIRECTIONS (BEND BAR AROUND AT CORNER CONDITION). FOR THIS 10'-0" SECTION INSTALL (1)-#4 VERTICAL BAR @ 24" O.C. TIE HOLDOWN ANCHOR TO HORIZONTAL TOP BAR.

### SHEAR WALL / HOLDOWN NOTATION DIAGRAM

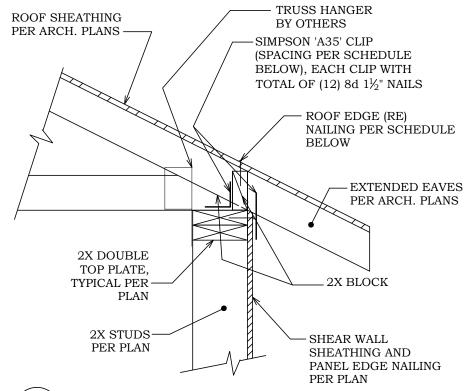




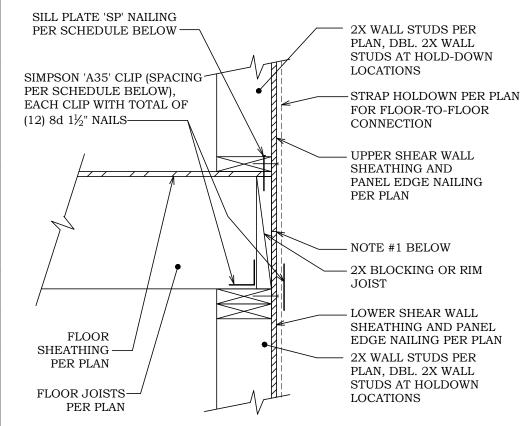
FSP FDN. SILL PLATE SECTION S1



# RW ROOF TO SHEAR WALL SECTION RAISED HEEL OPTION



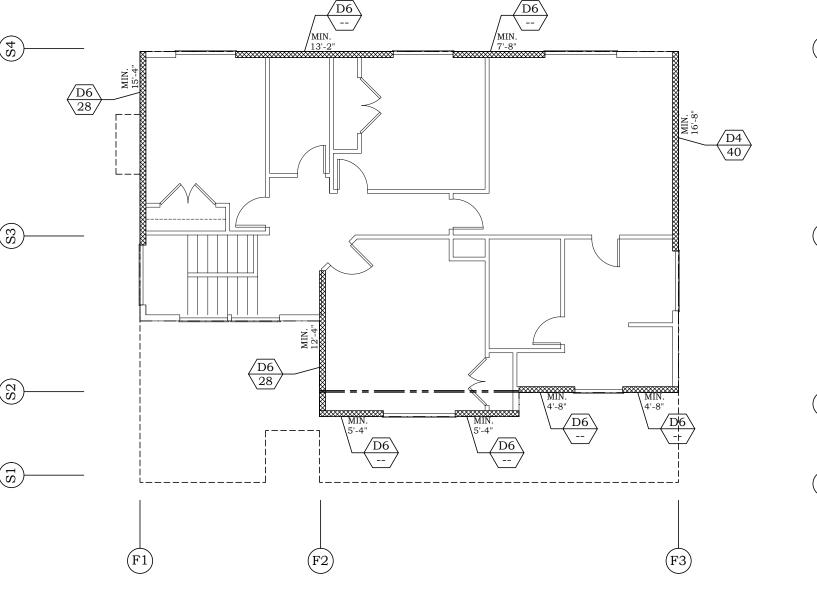


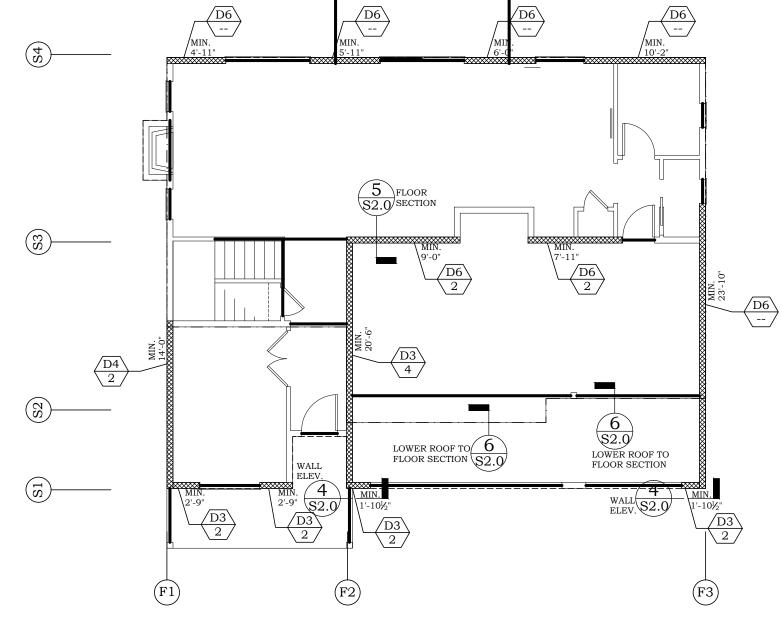


#### FF FLOOR TO FLOOR SECTION AT SHEAR WALL 1. IN LIEU OF CLIPS, BREAK SHEAR WALL PANELS AT BLOCKING OR RIM JOIST (INSTALL

PANEL EDGE NAILING AT BREAK).

PANEL TYPE	'SP' NAIL SPACING	SIMPSON CLIP SPACING	'RE' NAIL SPACING
D6	16d @ 8" O.C.	1'-8" O.C.	8d @ 8" O.C.
D4	16d @ 4" O.C.	1'-2" O.C.	8d @ 4" O.C.
D3	16d @ 3" O.C.	0'-11" O.C.	8d @ 3" O.C.
D2	16d @ 3" O.C.	8" O.C.	8d @ 2½" O.C.
E2	16d @ 2" O.C.	7" O.C.	8d @ 2" O.C.





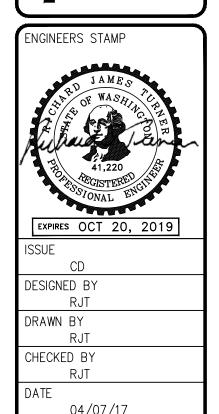
## UPPER FLOOR SHEARWALL PLAN

1. REFER TO FRAMING REQUIREMENTS FOR TYPICAL EXTERIOR SHEATHING AND NAILING, ROOF SHEATHING AND NAILING AND FLOOR SHEATHING AND NAILING REQUIREMENTS.

## MAIN FLOOR SHEARWALL PLAN

1. REFER TO FRAMING REQUIREMENTS FOR TYPICAL EXTERIOR SHEATHING AND NAILING, ROOF SHEATHING AND NAILING AND FLOOR SHEATHING AND NAILING REQUIREMENTS.

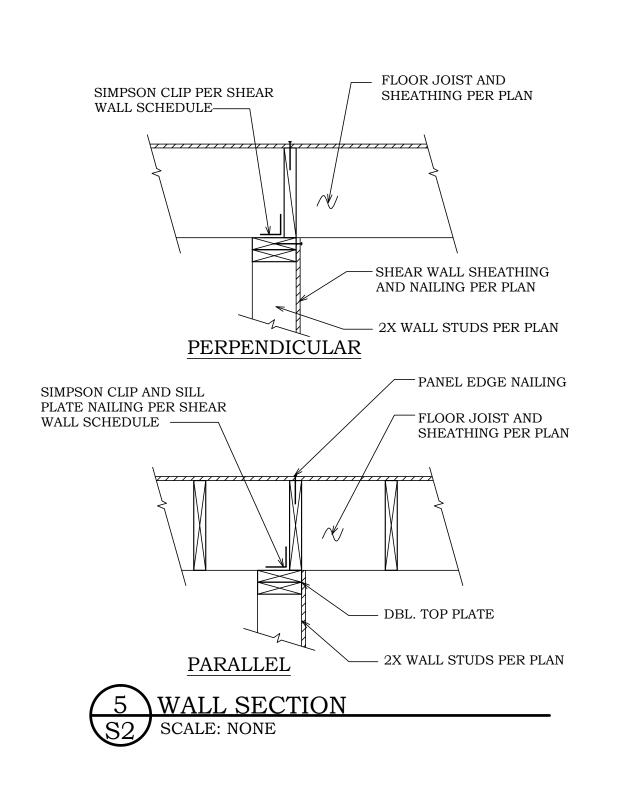


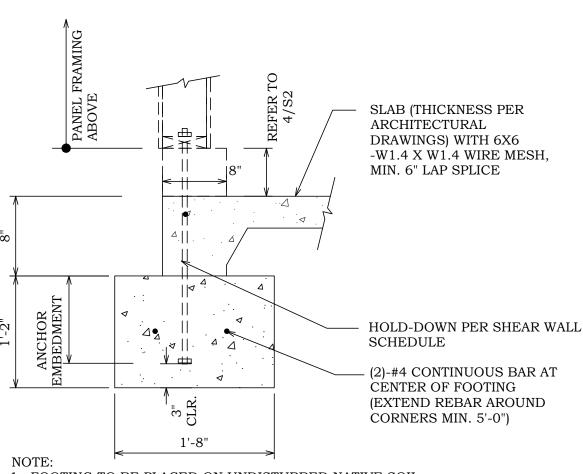


PROJECT NO.

SHEET NO.

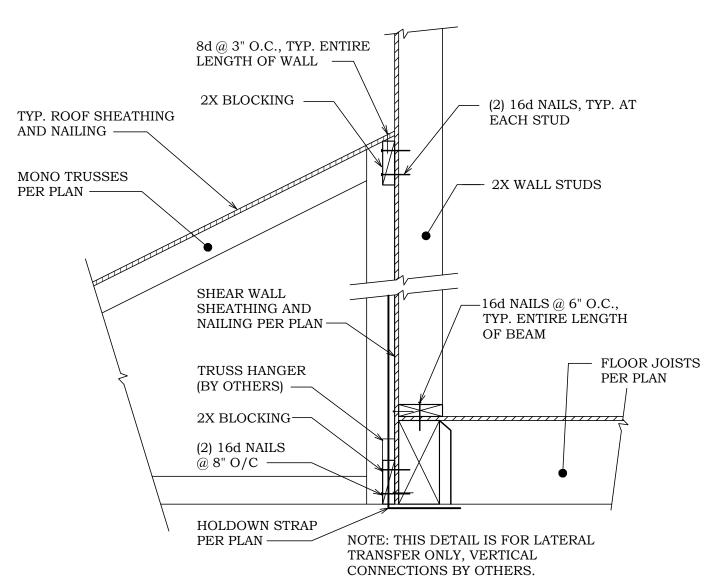
R17117



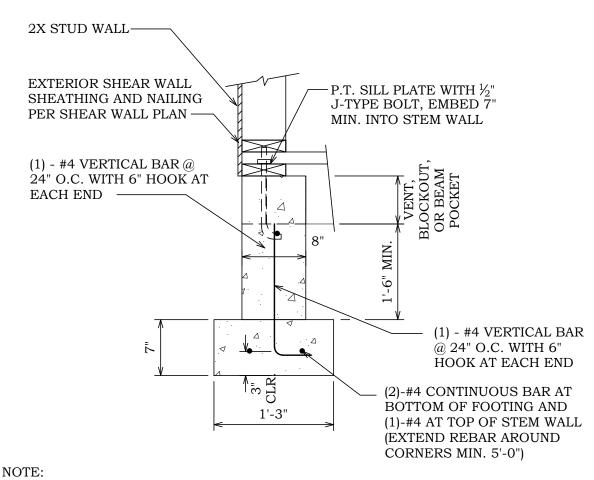


FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
 DRIVEWAY SURFACE NOT SHOWN.

FOOTING SECTION
SCALE: 1" = 1'-0"

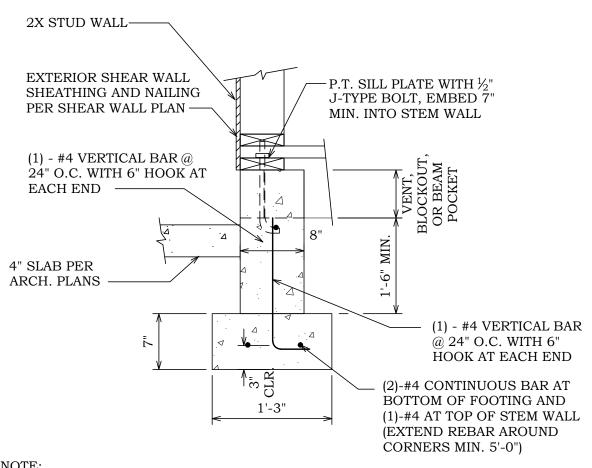


6 LOWER ROOF SECTION S2.0 SCALE: 1" = 1'-0"



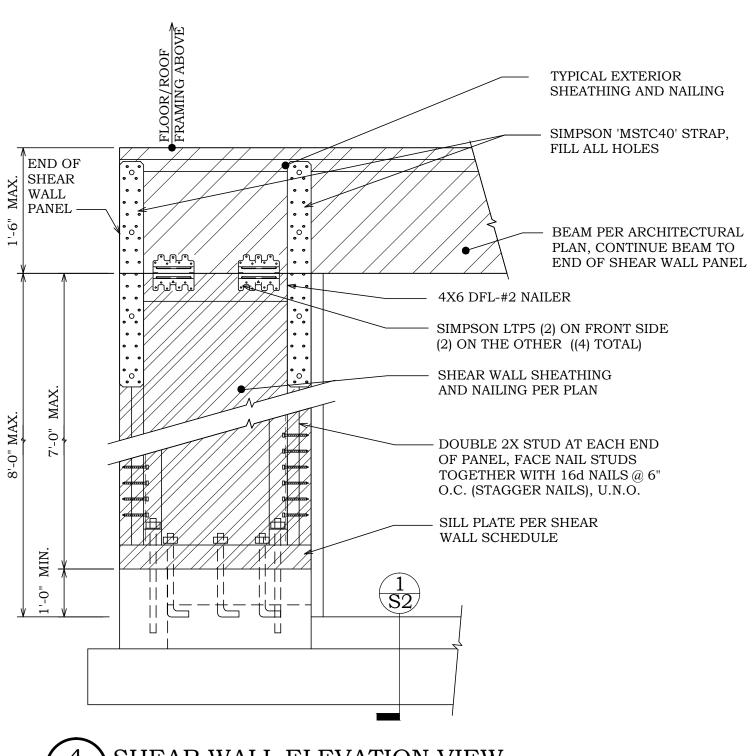
NOTE:
1. FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
2. REFER TO SHEAR WALL SCHEDULE SILL BOLT SPACING AT SHEAR WALL LOCATIONS.

2 FOOTING SECTION SCALE: NONE

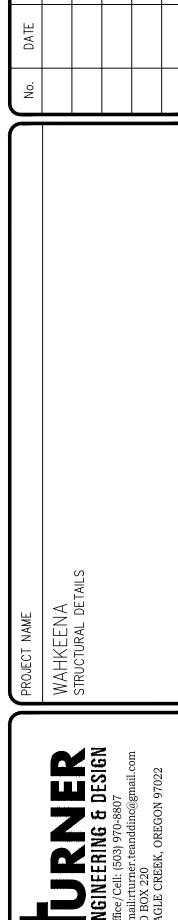


NOTE:
1. FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
2. REFER TO SHEAR WALL SCHEDULE SILL BOLT SPACING AT SHEAR WALL LOCATIONS.





4 SHEAR WALL ELEVATION VIEW SCALE: NONE



ENGINEERS STAMP

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CHECKED BY

PROJECT NO.

SHEET NO.

4/9/16

R17117

S2.0

DATE

# Insulation Specs

- All exposed insulation is to have a flame spread rating of less than 25 and a smoke density rating of less than 450.
- Perimeter concrete walls to be protected with rigid fiberboard insulation from top of concrete wall to not less than 24" below grade.
- Slab edge insulation is to be R-15.
- Heating ducts be insulated with R-8.
- Windows shall meet required U-factors for the contractors chosen path of compliance. See Table N1101.1(1)
- One exterior door may be insulated to a U-factor of 0.20, all other exterior doors cannot exceed 0.54.

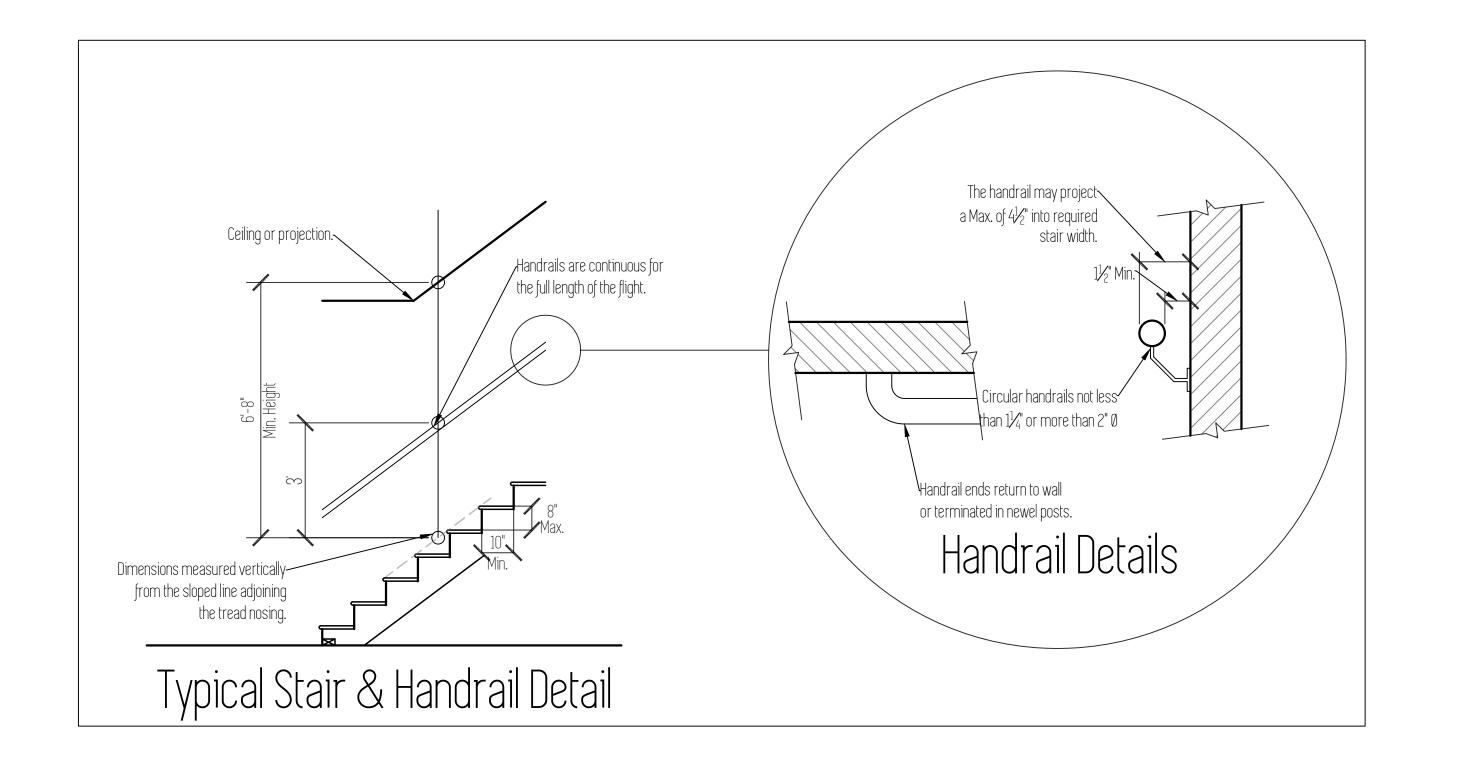
BUILDING COMPONENT	STANDARD	BASE CASE	LOG HOMES ONLY		
BUILDING COMPONENT	Required Performance	Equiv. Value <sup>b</sup>	Required Performance	Equiv. Value <sup>b</sup>	
Wall insulation—above grade	U-0.059 <sup>c</sup>	R-21 Intermediate <sup>c</sup>	Note d	Note d	
Wall insulation—below grade <sup>e</sup>	C-0.063	R-15/R-21	C-0.063	R-15/R-21	
Flat ceilings <sup>f</sup>	U-0.021	R-49	U-0.020	R-49 A <sup>h</sup>	
Vaulted ceilings <sup>g</sup>	U-0.033	R-30 Rafter or R-30A <sup>g,h</sup> Scissor Truss	U-0.027	R-38A <sup>h</sup>	
Underfloors	U-0.033	R-30	U-0.033	R-30	
Slab edge perimeter	F-0.520	R-15	F-0.520	R-15	
Heated slab interior <sup>i</sup>	n/a	R-10	n/a	R-10	
Windows <sup>j</sup>	U-0.30	U-0.30	U-0.30	U-0.30	
Window area limitation <sup>j, k</sup>	n/a	n/a	n/a	n/a	
Skylights <sup>l</sup>	U-0.50	U-0.50	U-0.50	U-0.50	
Exterior doors <sup>m</sup>	U-0.20	U-0.20	U-0.54	U-0.54	
Exterior doors with > 2.5 ft <sup>2</sup> glazing <sup>n</sup>	U-0.40	U-0.40	U-0.40	U-0.40	
Forced air duct insulation	n/a	R-8	n/a	R-8	

## TABLE N1101.1(2) ADDITIONAL MEASURES

	ADDITIONAL MEASURES					
res	1	High efficiency walls				
		Exterior walls—U-0.045/R-21 cavity insulation + R-5 continuous				
	189	Upgraded features				
	2	Exterior walls—U-0.057/R-23 intermediate or R-21 advanced, Framed floors—U-0.026/R-38, and Windows—U-0.28 (average UA)				
nse.		Upgraded features				
nent Mea	3	Exterior walls—U-0.055/R-23 intermediate or R-21 advanced, Flat ceiling <sup>e</sup> —U-0.017/R-60, and Framed floors—U-0.026/R-38				
og to		Super Insulated Windows and Attic OR Framed Floors				
Envelope Enhancement Measures (Select One)	Windows—U-0.22 (Triple Pane Low-e), and Flat ceilinge—U-0.017/R-60 or Framed floors—U-0.026/R-38					
ye		Air sealing home and ducts				
En	5	Mandatory air sealing of all wall coverings at top plate and air sealing checklist <sup>f</sup> , and Mechanical whole-building ventilation system with rates meeting M1503 or ASHRAE 62.2, and All ducts and air handlers contained within building envelope <sup>d</sup> or All ducts sealed with mastic <sup>b</sup>				
	6 -	High efficiency thermal envelope UA <sup>g</sup>				
		Proposed UA is 8% lower than the code UA				
	A	High efficiency HVAC system <sup>a</sup>				
Conservation Measure (Select One)		Gas-fired furnace or boiler AFUE 94%, or Air source heat pump HSPF 9.5/15.0 SEER cooling, or Ground source heat pump COP 3.5 or Energy Star rated				
	В	Ducted HVAC systems within conditioned space				
		All ducts and air handlers contained within building envelope <sup>d</sup> Cannot be combined with Measure 5				
	C -	Ductless heat pump				
		Ductless heat pump HSPF 10.0 in primary zone of dwelling				
		High efficiency water heater <sup>c</sup>				
	D '	Natural gas/propane water heater with UEF 0.85 OR Electric heat pump water heater Tier 1 Northern Climate Specification Product				
F 01		5				

For SI: 1 square foot =  $0.093 \text{ m}^2$ , 1 watt per square foot =  $10.8 \text{ W/m}^2$ .

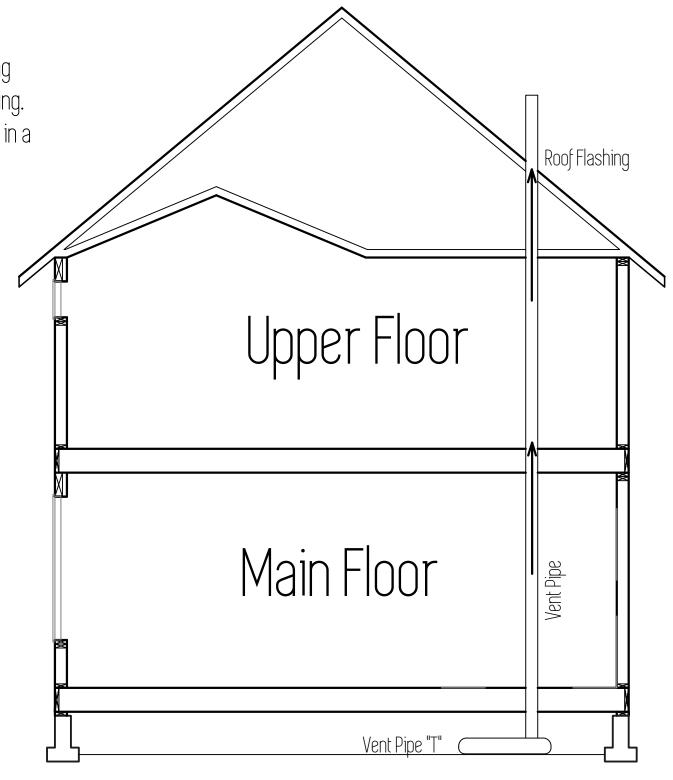
- a. Appliances located within the building thermal envelope shall have sealed combustion air installed. Combustion air shall be ducted directly from the
- b. All duct joints and seams sealed with listed mastic; tape is only allowed at appliance or equipment connections (for service and replacement). Meet sealing criteria of Performance Tested Comfort Systems program administered by the Bonneville Power Administration (BPA). c. Residential water heaters less than 55 gallon storage volume.
- d. A total of 5 percent of an HVAC system's ductwork shall be permitted to be located outside of the conditioned space. Ducts located outside the conditioned space shall have insulation installed as required in this code.
- e. The maximum vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless vaulted area has a U-factor no greater
- f. Continuous air barrier. Additional requirement for sealing of all interior vertical wall covering to top plate framing. Sealing with foam gasket, caulk or other approved sealant listed for sealing wall covering material to structural material (example: gypsum board to wood stud framing).
- g. Table N1104.1(1) Standard base case design, Code UA shall be at least 8 percent less than the Proposed UA. Buildings with fenestration less than 15 percent of the total vertical wall area may adjust the Code UA to have 15 percent of the wall area as fenestration.



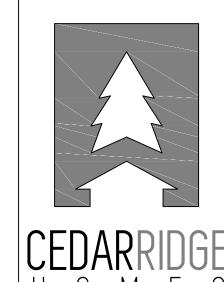
# Radon Passive System

## AF103.5.1.3 Vent Pipe

A plumbing tee or other approved connection shall be inserted horizontally beneath the sheeting and connected to a 3- or 4-inch-dia. fitting with a vertical vent pipe installed through the sheeting. The vent pipe shall be extended up through the building floors, terminate at least 12" above roof in a location at least 10' away from any window or other opening into the conditioned spaces of the building that is less than 2' below the exhaust point, and 10' from any window or other opening adjoining or adjacent buildings.



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Designed by:

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