

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT <i>Jennifer Arnold</i>	PROJECT NO(S). <i>MISC-16-04</i>	
NON-REFUNDABLE FEE(S)	REFUNDABLE DEPOSIT(S) <i>\$1,050</i>	TOTAL <i>\$1,050</i>

Type of Review (Please check all that apply):

- | | | |
|--|---|--|
| <input type="checkbox"/> Annexation (ANX) | <input type="checkbox"/> Historic Review | <input type="checkbox"/> Subdivision (SUB) |
| <input type="checkbox"/> Appeal and Review (AP) * | <input type="checkbox"/> Legislative Plan or Change | <input type="checkbox"/> Temporary Uses * |
| <input type="checkbox"/> Conditional Use (CUP) | <input type="checkbox"/> Lot Line Adjustment (LLA) */** | <input type="checkbox"/> Time Extension * |
| <input type="checkbox"/> Design Review (DR) | <input type="checkbox"/> Minor Partition (MIP) (Preliminary Plat or Plan) | <input type="checkbox"/> Variance (VAR) |
| <input type="checkbox"/> Easement Vacation | <input type="checkbox"/> Non-Conforming Lots, Uses & Structures | <input type="checkbox"/> Water Resource Area Protection/Single Lot (WAP) |
| <input type="checkbox"/> Extraterritorial Ext. of Utilities | <input type="checkbox"/> Planned Unit Development (PUD) | <input type="checkbox"/> Water Resource Area Protection/Wetland (WAP) |
| <input type="checkbox"/> Final Plat or Plan (FP) | <input type="checkbox"/> Pre-Application Conference (PA) */** | <input type="checkbox"/> Willamette & Tualatin River Greenway (WRG) |
| <input checked="" type="checkbox"/> Flood Management Area | <input type="checkbox"/> Street Vacation | <input type="checkbox"/> Zone Change |
| <input type="checkbox"/> Hillside Protection & Erosion Control | | |

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

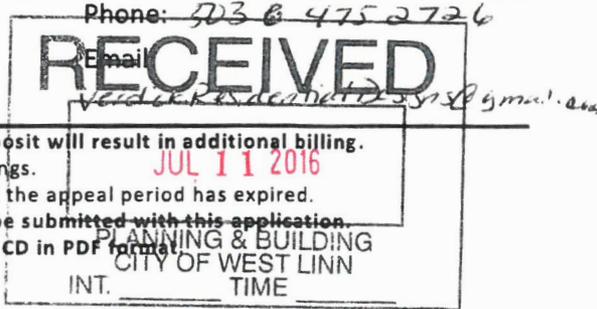
Site Location/Address: <i>5688 River St. West Linn, OR 97068</i>	Assessor's Map No.:
	Tax Lot(s): <i>22E 30AC 01605</i>
	Total Land Area: <i>18,876 SF</i>

Brief Description of Proposal: *Addition to the back -2285F
Enclose the front entry porch 385F*

Applicant Name: <i>David Erant</i> <small>(please print)</small> Address: <i>5688 River St</i> City State Zip: <i>West Linn, OR 97068</i>	Phone: <i>971 336 8286</i> Email: <i>derant@gmail.com</i>
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Owner Name (required): <i>David Erant</i> <small>(please print)</small> Address: City State Zip:	Phone: Email:
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Consultant Name: <i>Rachel Verolick</i> <small>(please print)</small> Address: <i>PO Box 302</i> City State Zip: <i>Lake Oswego, OR 97034</i>	Phone: <i>503 647 5272</i> Email: <i>Verolick.Rachel@cityofwestlinn.gov</i>
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1. All application fees are non-refundable (excluding deposit). Any overruns to deposit will result in additional billing.
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format. If large sets of plans are required in application please submit only two sets.

* No CD required / ** Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

<i>Rachel Verolick</i>	<i>7-11-16</i>	
Applicant's signature	Date	Owner's signature (required)
		Date

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STAFF CONTACT <i>Jennifer Arnold</i>	PROJECT NO(S). <i>MISC-16-04</i>	
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| <input checked="" type="checkbox"/> Flood Management Area | <input type="checkbox"/> Street Vacation | <input type="checkbox"/> Zone Change |
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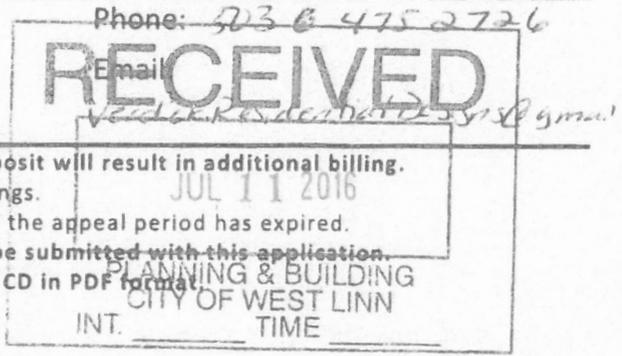
Site Location/Address: <i>5688 River St West Linn, OR 97068</i>	Assessor's Map No.:
	Tax Lot(s): <i>22E 30AC 01605</i>
	Total Land Area: <i>18,876 SF</i>

Brief Description of Proposal: *Addition to the back -225SF
Enlarge the front entry porch 385SF*

Applicant Name: <i>David Ercut</i> <small>(please print)</small>	Phone: <i>971 336 8286</i>
Address: <i>5688 River St</i>	Email:
City State Zip: <i>West Linn, OR 97068</i>	<i>dercut@gmail.com</i>

Owner Name (required): <i>David Ercut</i> <small>(please print)</small>	Phone:
Address:	Email:
City State Zip:	

Consultant Name: <i>Rachel Verdick</i> <small>(please print)</small>	Phone: <i>503 647 5272</i>
Address: <i>PO Box 302</i>	Email:
City State Zip: <i>Lake Oswego, OR 97034</i>	<i>verdickr@westlinnoregon.gov</i>



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<i>Rachel Verdick</i>	<i>7-11-16</i>	<i>David M. Ercut</i>	<i>7-11-16</i>
Applicant's signature	Date	Owner's signature (required)	Date

FLOOD MANAGEMENT AREAS

The purpose of these comments in response to sections within Chapter 27, Flood Management Areas, City of West Linn, applies to the application materials and proposed residential improvements at **5688 River Street**.

27.050 APPLICATION

Applications for a flood management area permit must include the following:

- A. A pre-application conference as a prerequisite to the filing of the application.

[A pre-application conference was held on June 16, 2016.](#)

- B. An application initiated by the property owner, or the owner's authorized agent, and accompanied by the appropriate fee.

[An application and fee shall be submitted to the City.](#)

- C. An application submittal that includes the completed application form, one copy of written responses addressing CDC [27.060](#), [27.070](#), [27.080](#) (if applicable), and [27.090](#) (if applicable), one copy of all maps and plans at the original scale, one copy of all maps and plans reduced to a paper size not greater than 11 inches by 17 inches, and a copy in a digital format acceptable to the City.

[The application materials will include the above.](#)

- D. A map of the property indicating the nature of the proposed alteration and its relationship to property zones, structures, trees, and any other pertinent features.

[Information pursuant this requirement is included with the application.](#)

- E. Information regarding the elevation of the site prior to development, the base flood elevation data for subdivisions (if applicable), and a description of water course alterations, if proposed.

[This information is provided primarily within the Elevation Certificate, dated: 12/14/2015.](#)

- F. A topographic map of the site at contour intervals of five feet or less showing a delineation of the flood management area, which includes, but is not limited to, areas shown on the Flood Management Area map. The City Engineer or Building Official, as applicable, may, at his/her discretion, require the map to be prepared by a registered land surveyor to ensure accuracy. A written narrative explaining the reason why the owner wishes to alter the floodplain shall accompany the site plan map.

[A topographic map is provided within the application materials.](#)

- G. The elevation in relation to mean sea level, of the lowest floor (including basement) of all structures.

[This information is provided within the Elevation Certificate, above mentioned.](#)

H. The elevation in relation to mean sea level to which any structure has been flood-proofed (non-residential only). (Ord. 1622 § 10, 2014; Ord. 1636 § 24, 2014)

All elevations are on the Vertical Datum: NAVD 1988, unless otherwise shown.

27.060 APPROVAL CRITERIA

The Planning Director shall make written findings with respect to the following criteria when approving, approving with conditions, or denying an application for development in flood management areas:

A. Development, excavation, and fill shall be performed in a manner to maintain or increase flood storage and conveyance capacity and not increase design flood elevations.

No work is proposed which will increase design flood elevations.

B. No net fill increase in any floodplain is allowed. All fill placed in a floodplain shall be balanced with an equal amount of soil material removal. Excavation areas shall not exceed fill areas by more than 50 percent of the square footage. Any excavation below the ordinary high water line shall not count toward compensating for fill.

No net fill increase in the floodplain is proposed.

C. Excavation to balance a fill shall be located on the same lot or parcel as the fill unless it is not reasonable or practicable to do so. In such cases, the excavation shall be located in the same drainage basin and as close as possible to the fill site, so long as the proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis.

No fill is proposed on the subject property.

D. Minimum finished floor elevations must be at least one foot above the design flood height or highest flood of record, whichever is higher, for new habitable structures in the flood area.

Finished floor elevations will remain 2.0 feet above Base Flood Elevation.

E. Temporary fills permitted during construction shall be removed.

No temporary fills are proposed.

F. Prohibit encroachments, including fill, new construction, substantial improvements, and other development in floodways unless certification by a professional civil engineer licensed to practice in the State of Oregon is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

There will be no encroachments into the floodway by the improvements of this project.

G. All proposed improvements to the floodplain or floodway which might impact the flood-carrying capacity of the river shall be designed by a professional civil engineer licensed to practice in the State of Oregon.

There are no proposed improvements of this project which might impact the flood-carrying capacity of the river.

H. New culverts, stream crossings, and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

There are no new culverts, stream crossings or transportation projects which are a part of the residential improvement project.

I. Excavation and fill required for the construction of detention facilities or structures, and other facilities, such as levees, specifically shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable land.

There are no detention facilities or levees which are a part of this residential improvement project.

J. The applicant shall provide evidence that all necessary permits have been obtained from those federal, State, or local governmental agencies from which prior approval is required. (Ord. 1522, 2005; Ord. 1635 § 15, 2014; Ord. 1636 § 25, 2014)

The applicant will provide all evidence relevant permits.

27.065 INTERPRETATION OF FLOOD BOUNDARIES

The Planning Director shall make interpretations, where needed, as to exact location of the boundaries of the flood hazard area (for example, where there appears to be a conflict between mapped boundaries and the actual filed condition). Any person contesting the location of the boundary may appeal the Planning Director's interpretation pursuant to CDC [01.060](#). (Ord. 1522, 2005)

27.070 CONSTRUCTION MATERIALS AND METHODS

A. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage using methods and practices that minimize flood damage.

All new improvements as necessary will be constructed with materials resistant to flood damage.

B. Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

All service facilities will be designed and constructed and/or otherwise elevated to prevent water from entering during conditions of flooding.

C. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

All such water supply systems of this project will be designed accordingly.

D. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.

All such sanitary sewage systems of this project will be designed accordingly.

E. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

There are no on-site waste disposal systems which are a part of this residential improvement project.

F. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

All new construction and improvements shall be designed and constructed accordingly.

27.080 RESIDENTIAL CONSTRUCTION

A. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to at least one foot above the base flood elevation.

The residence located at 5688 River St. is an existing residence. The proposed addition includes 38 SF at the front (enclosing the existing deck to create a front entry), and 228 SF at the rear expanding the living and dining rooms. Both of these additions will have the lowest floor elevated to two (2.0) feet above the Base Flood Elevation.

B. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must be certified by either a professional civil engineer or an architect licensed to practice in the State of Oregon, and must meet or exceed the following minimum criteria:

1. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

All existing and new crawlspaces will meet or exceed the opening requirement for foundation vents.

2. The bottom of all openings shall be no higher than one foot above grade.

The foundation vents will be located one (1) foot above grade.

3. Openings may be equipped with screens, louvers, or other coverings or devices; provided, that they permit the automatic entry or exit of floodwaters.

At this time, we expect the foundation vents will have screens to prevent rodents from entering the crawl space; but, will allow floodwaters to enter or exit the crawl space.

4. Fully enclosed areas below the base flood elevation shall only be used for parking, access, and limited storage.

No fully enclosed areas below Base Flood Elevation are proposed for this project.

5. Service equipment (e.g., furnaces, water heaters, washer/dryers, etc.) is not permitted below the base flood elevation.

No such service equipment is proposed below Base Flood Elevation for this project.

6. All walls, floors, and ceiling materials located below the base flood elevation must be unfinished and constructed of materials resistant to flood damage.

All walls, etc. below Base Flood Elevation will be constructed of materials resistant to flood damage.

C. Crawlspace. Crawlspace are a commonly used method of elevating buildings in special flood hazard areas (SFHAs) to or above the base flood elevation (BFE), and are allowed subject to the following requirements:

The subject project is within an AE Flood Zone, not within a Special Flood Hazard Area (SFHA); accordingly, the following items do not apply.

1. The building is subject to the Flood-Resistant Construction provisions of the Oregon Residential Specialty Code.
2. They shall be designed by a professional engineer or architect licensed to practice in the State of Oregon to meet the standards contained in the most current Federal Emergency Management Agency's (FEMA) Technical Bulletin.
3. The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
4. Flood vent openings shall be provided on at least two sides that equalize hydrostatic pressures by allowing for the automatic entry and exit of floodwaters. The total area of the flood vent openings must be no less than one square inch for each square foot of enclosed area. The bottom of each flood vent opening can be no more than one foot above the lowest adjacent exterior grade. For guidance on flood openings, see FEMA Technical Bulletin 1-93, Openings in Foundation Walls.
5. Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls (studs and sheathing), but also any joists, insulation, or other materials that extend below the BFE. For more detailed guidance on flood-resistant materials see FEMA Technical Bulletin 2-93, Flood-Resistant Materials Requirements.
6. Utility systems within the crawlspace must be elevated above BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters. For further guidance on the placement of building utility systems in crawlspaces, see FEMA 348, Protecting Building Utilities From Flood Damage. Flood-resistant materials and utilities, access, and ventilation openings in crawlspaces are further addressed in this bulletin.
7. The interior grade of a crawlspace below the BFE must not be more than two feet below the lowest adjacent exterior grade (LAG).
8. The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall, must not exceed four feet at any point. This limitation will also prevent these crawlspaces from being converted into habitable spaces.
9. There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. Possible options include natural drainage through porous, well-drained soils and drainage systems such as low-point drains, perforated pipes, drainage tiles, or gravel or crushed stone drainage by gravity.
10. The velocity of floodwaters at the site should not exceed five feet per second for any crawlspace. For velocities in excess of five feet per second, other foundation types should be used.
11. For more detailed information refer to FEMA Technical Bulletin 11-01 or the most current edition.

12. The use of below-grade crawlspaces to elevate the building to one foot above the BFE may cause an increase in flood insurance premiums, which are beyond the control of the City.

D. A poured slab placed over fill can be used to elevate the lowest floor of a structure above the base flood elevation. However, when a building site is filled, it is still in the floodplain and no basements are permitted.

E. Placing a structure on piers, piles, and posts is allowed provided supporting members are designed to resist hydrostatic and hydrodynamic forces. (Ord. 1565, 2008)

Structural Calculations for Eraut Residence 5688 River Dr West Linn, OR July 8, 2016

DESIGN CODE

2014 Oregon Residential Specialty Code

LOADS

Gravity Loads	25 psf SL
	40 psf LL
Wind	120 mph, Exposure "B"
Seismic, Sds	0.76

SCOPE OF WORK

These calculations are for an addition to an existing two-story wood framed residence.



EXPIRES: 12/31/20



(503) 968-9994 p (503) 968-8444 f

BY	_____	DATE	_____
REV	_____	DATE	_____
JOB NO	_____	16207	_____
SHEET	_____	OF	_____

Rafters over Master Bedroom:

R1

$$L = 21' - 6''$$

$$W = (15 + 25)(1') = 40 \text{ plf}$$

See p. 6

⇒ 2x12 DF # 2 @ 12" OC

(N) Sister Rafters over Living room Clerestory:

$$R2 \quad l = 11'6''$$
$$w = (15+25)(2') = 80 \text{ plf}$$
$$M = \frac{80 \text{ plf} (11.5')^2}{8} = 1323' \#$$

→ 2x10 DF#2 Sister Rafters @ 24" OC

Beam Below Clerestory:

$$B1 \quad l = 13'-0''$$
$$w = (15+25)\left(\frac{26'}{2}\right) = 195 \text{ plf} + 325 \text{ plf}$$

sep. $\frac{1}{2}$

⇒ 6x12 DF#2

(N) Beam over Living Area:

$$L = 17'-0''$$

B2

$$W = (15+40)\left(\frac{4'}{2}\right) = 105 \text{ plf} + 280 \text{ plf}$$

$$P = (15+25)\left(\frac{20'}{2}\right)\left(\frac{15'}{2}\right) = 1125\# + 1875\# @ 10'$$

Family Rm Ridge

$$+ 1270 + 2110\# @ 5.5'$$

Rm below crstg

seep. 10

⇒ GL 5½ x 15

(N) Beam over Dining:

B4

$$L = 9'-6''$$

$$W = (15+25)\left(\frac{13'}{2} + \frac{10'}{2}\right) = 460 \text{ plf}$$

$$M = \frac{460 \text{ plf} (9.5')^2}{8} = 5190\#$$

⇒ 6x10 DF#2

(N) Beam over kitchen:

B3 $l = 15'-0''$

$$w_1 = (15+40)\left(\frac{16'}{2}\right) = 120 + 320 \text{ plf}$$

$$w_2 = (15+40)\left(\frac{10'}{2}\right) = 75 \text{ plf} + 200 \text{ plf} \quad \text{from } 0' \text{ to } 4'$$

seep. 12

$$P = 1125\# + 1875\# @ 4'$$

(E) family ridge

$\Rightarrow 5\frac{1}{2} \times 10\frac{1}{2}$ GL

(N) Header beneath kitchen beam:

H1 $l = 6'-0''$

$$P = 1991\#$$

$$M = \frac{1991\# (6')}{4} = 2987'\#$$

$\Rightarrow 4 \times 10$ DF#2

$$M_2 = 4492'\#$$

Master Bedroom Floor Joists:

J1 $l = 19'-0"$

$$w = (15 + 40)(1') = 15 \text{ plf} + 40 \text{ plf}$$

see p. 14

\Rightarrow 2x12 DF#2 @ 12"oc

(N) Garage Header:

H2 $l = 16'-0"$

$$w = (15 + 25)\left(\frac{26'}{2}\right) + 8 \text{ psf}(8') = 259 \text{ plf} + 325 \text{ plf}$$

see p. 16

\Rightarrow GL $5\frac{1}{2} \times 13\frac{1}{2}$ 24F-V4

Wood Beam

File = z:\projects\2016PR~1\16207E~1\calcs.ec6
 ENERCALC, INC. 1983-2015, Build:6.15.12.9, Ver:6.15.12.9
 Licensee : hayden consulting engineers

Lic. # : KW-06005543

Description : Rafters over Bedroom

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE 7-10

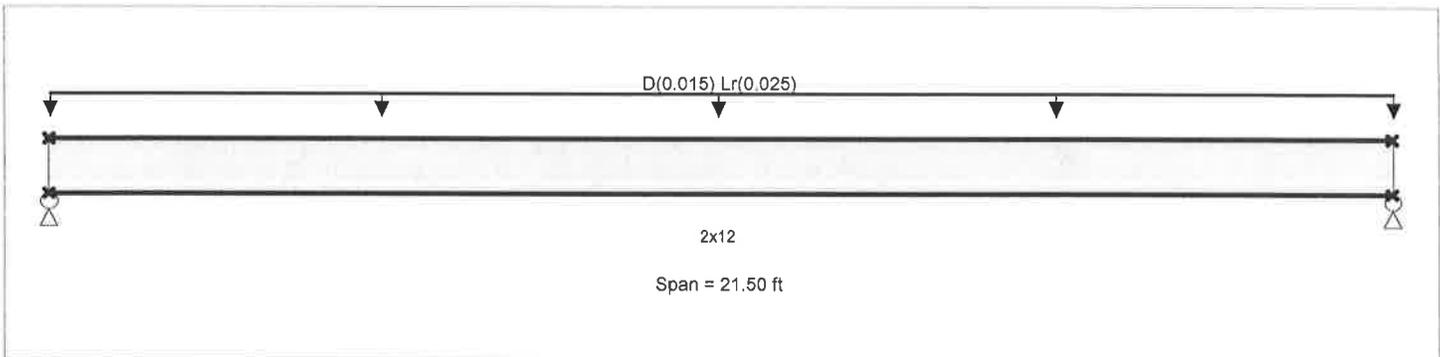
Material Properties

Analysis Method : Allowable Stress Design
 Load Combination ASCE 7-10

Fb - Tension	900 psi	E : Modulus of Elasticity	
Fb - Compr	900 psi	Ebend- xx	1600ksi
Fc - Prll	1350 psi	Eminbend - xx	580ksi
Fc - Perp	625 psi		
Fv	180 psi		
Ft	575 psi	Density	31.2pcf

Wood Species : Douglas Fir - Larch
 Wood Grade : No.2

Beam Bracing : Beam is Fully Braced against lateral-torsion buckling



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.0150, Lr = 0.0250, Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.779 : 1	Maximum Shear Stress Ratio =	0.156 : 1
Section used for this span	2x12	Section used for this span	2x12
fb : Actual =	876.56 psi	fv : Actual =	35.15 psi
FB : Allowable =	1,125.00 psi	Fv : Allowable =	225.00 psi
Load Combination =	+D+Lr+H	Load Combination =	+D+Lr+H
Location of maximum on span =	10.750ft	Location of maximum on span =	20.637 ft
Span # where maximum occurs =	Span # 1	Span # where maximum occurs =	Span # 1
Maximum Deflection			
Max Downward Transient Deflection	0.425 in	Ratio =	607
Max Upward Transient Deflection	0.000 in	Ratio =	0 < 360
Max Downward Total Deflection	0.679 in	Ratio =	379
Max Upward Total Deflection	0.000 in	Ratio =	0 < 180

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values								
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v					
+D+H	Length = 21.50 ft	1	0.406	0.081	0.90	1.000	1.00	1.00	1.00	1.00	1.00	1.00	0.87	328.71	810.00	0.00	0.00	0.00	0.00	0.00	162.00	
+D+L+H	Length = 21.50 ft	1	0.365	0.073	1.00	1.000	1.00	1.00	1.00	1.00	1.00	1.00	0.87	328.71	900.00	0.00	0.00	0.00	0.00	0.00	0.00	180.00
+D+Lr+H	Length = 21.50 ft	1	0.779	0.156	1.25	1.000	1.00	1.00	1.00	1.00	1.00	1.00	2.31	876.56	1125.00	0.00	0.00	0.00	0.40	35.15	0.00	225.00
+D+S+H	Length = 21.50 ft	1	0.318	0.064	1.15	1.000	1.00	1.00	1.00	1.00	1.00	1.00	0.87	328.71	1035.00	0.00	0.00	0.00	0.00	0.00	0.00	207.00
+D+0.750Lr+0.750L+H	Length = 21.50 ft	1	0.657	0.132	1.25	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.95	739.60	1125.00	0.00	0.00	0.00	0.33	29.66	0.00	225.00
+D+0.750L+0.750S+H	Length = 21.50 ft	1	0.318	0.064	1.15	1.000	1.00	1.00	1.00	1.00	1.00	1.00	0.87	328.71	1035.00	0.00	0.00	0.00	0.00	0.00	0.00	207.00

Wood Beam

File = z:\projects\2016PR-1\16207E-1\calcs.ec6
 ENERCALC, INC. 1983-2015, Build:6.15.12.9, Ver:6.15.12.9
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Description : Rafters over Bedroom

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	f _b	F _b	V	f _v	F _v
+D+0.60W+H	Length = 21.50 ft	1	0.228	0.046	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.87	328.71	1440.00	0.00	0.00	0.00
+D+0.70E+H	Length = 21.50 ft	1	0.228	0.046	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.87	328.71	1440.00	0.00	0.00	0.00
+D+0.750Lr+0.750L+0.450W+H	Length = 21.50 ft	1	0.514	0.103	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.95	739.60	1440.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.450W+H	Length = 21.50 ft	1	0.228	0.046	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.87	328.71	1440.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.5250E+H	Length = 21.50 ft	1	0.228	0.046	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.87	328.71	1440.00	0.00	0.00	0.00
+0.60D+0.60W+0.60H	Length = 21.50 ft	1	0.137	0.027	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.52	197.23	1440.00	0.00	0.00	0.00
+0.60D+0.70E+0.60H	Length = 21.50 ft	1	0.137	0.027	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.52	197.23	1440.00	0.00	0.00	0.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr+H	1	0.6793	10.828		0.0000	0.000

Vertical Reactions

Load Combination	Support 1	Support 2
Overall MAXimum	0.430	0.430
Overall MINimum	0.097	0.097
+D+H	0.161	0.161
+D+L+H	0.161	0.161
+D+Lr+H	0.430	0.430
+D+S+H	0.161	0.161
+D+0.750Lr+0.750L+H	0.363	0.363
+D+0.750L+0.750S+H	0.161	0.161
+D+0.60W+H	0.161	0.161
+D+0.70E+H	0.161	0.161
+D+0.750Lr+0.750L+0.450W+H	0.363	0.363
+D+0.750L+0.750S+0.450W+H	0.161	0.161
+D+0.750L+0.750S+0.5250E+H	0.161	0.161
+0.60D+0.60W+0.60H	0.097	0.097
+0.60D+0.70E+0.60H	0.097	0.097
D Only	0.161	0.161
Lr Only	0.269	0.269
L Only		
S Only		
W Only		
E Only		
H Only		

Wood Beam

File = z:\projects\2016PR-1\16207E-1\calcs.ec6
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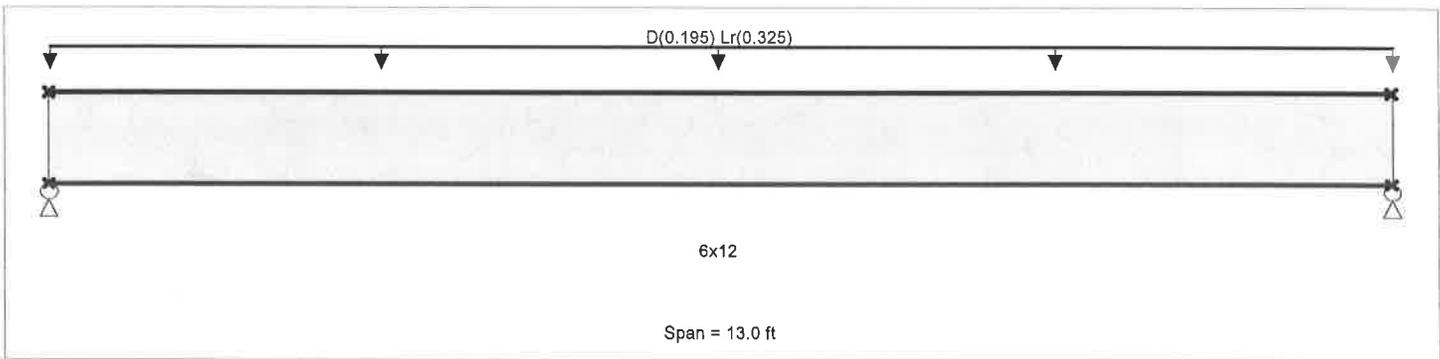
Description : Beam below clerestory

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Fb - Tension	875.0 psi	E : Modulus of Elasticity	
Load Combination ASCE 7-10	Fb - Compr	875.0 psi	Ebend- xx	1,300.0ksi
	Fc - Prll	600.0 psi	Eminbend - xx	470.0ksi
Wood Species : Douglas Fir - Larch	Fc - Perp	625.0 psi		
Wood Grade : No.2	Fv	170.0 psi		
	Ft	425.0 psi	Density	31.20pcf
Beam Bracing : Beam is Fully Braced against lateral-torsion buckling			Repetitive Member Stress Increase	



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.1950, Lr = 0.3250, Tributary Width = 1.0 ft

DESIGN SUMMARY

				Design OK			
Maximum Bending Stress Ratio	=	0.864	1	Maximum Shear Stress Ratio	=	0.322	1
Section used for this span		6x12		Section used for this span		6x12	
fb : Actual	=	1,087.36 psi		fv : Actual	=	68.46 psi	
FB : Allowable	=	1,257.81 psi		Fv : Allowable	=	212.50 psi	
Load Combination		+D+Lr+H		Load Combination		+D+Lr+H	
Location of maximum on span	=	6.500ft		Location of maximum on span	=	12.051 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.232 in	Ratio = 672				
Max Upward Transient Deflection		0.000 in	Ratio = 0 < 360				
Max Downward Total Deflection		0.371 in	Ratio = 420				
Max Upward Total Deflection		0.000 in	Ratio = 0 < 180				

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios									Moment Values			Shear Values					
			M	V	C _d	C _{FN}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v			
+D+H	Length = 13.0 ft	1	0.450	0.168	0.90	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	905.63	0.00	0.00	0.00	0.00	0.00	153.00
+D+L+H	Length = 13.0 ft	1	0.405	0.151	1.00	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1006.25	0.00	0.00	0.00	0.00	0.00	170.00
+D+Lr+H	Length = 13.0 ft	1	0.864	0.322	1.25	1.000	1.00	1.15	1.00	1.00	1.00	10.99	1,087.36	1257.81	0.00	0.00	0.00	2.89	68.46	212.50
+D+S+H	Length = 13.0 ft	1	0.352	0.131	1.15	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1157.19	0.00	0.00	0.00	0.00	0.00	195.50
+D+0.750Lr+0.750L+H	Length = 13.0 ft	1	0.729	0.272	1.25	1.000	1.00	1.15	1.00	1.00	1.00	9.27	917.46	1257.81	0.00	0.00	0.00	2.44	57.76	212.50
+D+0.750L+0.750S+H	Length = 13.0 ft	1	0.352	0.131	1.15	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1157.19	0.00	0.00	0.00	0.00	0.00	195.50

8

Wood Beam

File = z:\projects\2016PR-1116207E-1\calcs.ec6
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Description : Beam below clerestory

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	f _v	F' _v
+D+0.60W+H	Length = 13.0 ft	1	0.253	0.094	1.60	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1610.00	0.00	0.00	0.00
+D+0.70E+H	Length = 13.0 ft	1	0.253	0.094	1.60	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1610.00	0.00	0.00	0.00
+D+0.750Lr+0.750L+0.450W+H	Length = 13.0 ft	1	0.570	0.212	1.60	1.000	1.00	1.15	1.00	1.00	1.00	9.27	917.46	1610.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.450W+H	Length = 13.0 ft	1	0.253	0.094	1.60	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1610.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.5250E+H	Length = 13.0 ft	1	0.253	0.094	1.60	1.000	1.00	1.15	1.00	1.00	1.00	4.12	407.76	1610.00	0.00	0.00	0.00
+0.60D+0.60W+0.60H	Length = 13.0 ft	1	0.152	0.057	1.60	1.000	1.00	1.15	1.00	1.00	1.00	2.47	244.66	1610.00	0.00	0.00	0.00
+0.60D+0.70E+0.60H	Length = 13.0 ft	1	0.152	0.057	1.60	1.000	1.00	1.15	1.00	1.00	1.00	2.47	244.66	1610.00	0.00	0.00	0.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr+H	1	0.3709	6.547		0.0000	0.000

Vertical Reactions

Load Combination	Support 1	Support 2
Overall MAXimum	3.380	3.380
Overall MINimum	0.761	0.761
+D+H	1.268	1.268
+D+L+H	1.268	1.268
+D+Lr+H	3.380	3.380
+D+S+H	1.268	1.268
+D+0.750Lr+0.750L+H	2.852	2.852
+D+0.750L+0.750S+H	1.268	1.268
+D+0.60W+H	1.268	1.268
+D+0.70E+H	1.268	1.268
+D+0.750Lr+0.750L+0.450W+H	2.852	2.852
+D+0.750L+0.750S+0.450W+H	1.268	1.268
+D+0.750L+0.750S+0.5250E+H	1.268	1.268
+0.60D+0.60W+0.60H	0.761	0.761
+0.60D+0.70E+0.60H	0.761	0.761
D Only	1.268	1.268
Lr Only	2.113	2.113
L Only		
S Only		
W Only		
E Only		
H Only		

Wood Beam

Lic. #: KW-06005543

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 ENERCALC, INC. 1983-2015, Build:6.15.12.9, Ver:6.15.12.9
 Licensee : hayden consulting engineers

Description : Beam over Living Area

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE 7-10

Material Properties

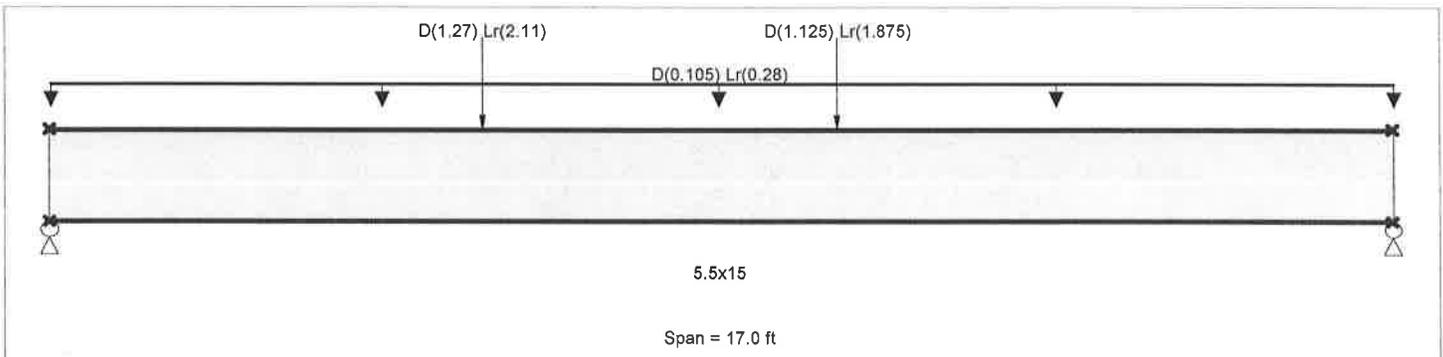
Analysis Method : Allowable Stress Design
 Load Combination ASCE 7-10

Wood Species : DF/DF
 Wood Grade : 24F - V4

Fb - Tension 2,400.0 psi
 Fb - Compr 1,850.0 psi
 Fc - Prll 1,650.0 psi
 Fc - Perp 650.0 psi
 Fv 265.0 psi
 Ft 1,100.0 psi

E : Modulus of Elasticity
 Ebend-xx 1,800.0 ksi
 Eminbend-xx 950.0 ksi
 Ebend-yy 1,600.0 ksi
 Eminbend-yy 850.0 ksi
 Density 31.20 pcf

Beam Bracing : Beam is Fully Braced against lateral-torsion buckling



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.1050, Lr = 0.280, Tributary Width = 1.0 ft
 Point Load : D = 1.125, Lr = 1.875 k @ 10.0 ft
 Point Load : D = 1.270, Lr = 2.110 k @ 5.50 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.660	1	Maximum Shear Stress Ratio =	0.347	: 1
Section used for this span	5.5x15		Section used for this span	5.5x15	
fb : Actual =	1,962.43	psi	f _v : Actual =	114.85	psi
FB : Allowable =	2,975.37	psi	F _v : Allowable =	331.25	psi
Load Combination	+D+Lr+H		Load Combination	+D+Lr+H	
Location of maximum on span =	8.872	ft	Location of maximum on span =	0.000	ft
Span # where maximum occurs =	Span # 1		Span # where maximum occurs =	Span # 1	
Maximum Deflection					
Max Downward Transient Deflection	0.417	in	Ratio =	488	
Max Upward Transient Deflection	0.000	in	Ratio =	0	<360
Max Downward Total Deflection	0.625	in	Ratio =	326	
Max Upward Total Deflection	0.000	in	Ratio =	0	<180

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values						
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	f _b	F' _b	V	f _v	F' _v			
+D+H	Length = 17.0 ft	1	0.305	0.159	0.90	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	2142.26	0.00	0.00	0.00	2.08	37.90	238.50
+D+L+H	Length = 17.0 ft	1	0.275	0.143	1.00	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	2380.29	0.00	0.00	0.00	2.08	37.90	265.00
+D+Lr+H	Length = 17.0 ft	1	0.660	0.347	1.25	0.992	1.00	1.00	1.00	1.00	1.00	33.73	1,962.43	2975.37	0.00	0.00	0.00	6.32	114.85	331.25
+D+S+H	Length = 17.0 ft	1	0.239	0.124	1.15	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	2737.34	0.00	0.00	0.00	2.08	37.90	304.75
+D+0.750Lr+0.750L+H	Length = 17.0 ft	1	0.550	0.289	1.25	0.992	1.00	1.00	1.00	1.00	1.00	28.11	1,635.24	2975.37	0.00	0.00	0.00	5.26	95.61	331.25

Wood Beam

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Lic. # : KW-06005543

Description : Beam over Living Area

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values						
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v			
+D+0.750L+0.750S+H	Length = 17.0 ft	1	0.239	0.124	1.15	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	2737.34	0.00	0.00	0.00	2.08	37.90	304.75
+D+0.60W+H	Length = 17.0 ft	1	0.172	0.089	1.60	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	3808.47	0.00	0.00	0.00	2.08	37.90	424.00
+D+0.70E+H	Length = 17.0 ft	1	0.172	0.089	1.60	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	3808.47	0.00	0.00	0.00	2.08	37.90	424.00
+D+0.750Lr+0.750L+0.450W+H	Length = 17.0 ft	1	0.429	0.225	1.60	0.992	1.00	1.00	1.00	1.00	1.00	28.11	1,635.24	3808.47	0.00	0.00	0.00	5.26	95.61	424.00
+D+0.750L+0.750S+0.450W+H	Length = 17.0 ft	1	0.172	0.089	1.60	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	3808.47	0.00	0.00	0.00	2.08	37.90	424.00
+D+0.750L+0.750S+0.5250E+H	Length = 17.0 ft	1	0.172	0.089	1.60	0.992	1.00	1.00	1.00	1.00	1.00	11.24	653.74	3808.47	0.00	0.00	0.00	2.08	37.90	424.00
+0.60D+0.60W+0.60H	Length = 17.0 ft	1	0.103	0.054	1.60	0.992	1.00	1.00	1.00	1.00	1.00	6.74	392.24	3808.47	0.00	0.00	0.00	1.25	22.74	424.00
+0.60D+0.70E+0.60H	Length = 17.0 ft	1	0.103	0.054	1.60	0.992	1.00	1.00	1.00	1.00	1.00	6.74	392.24	3808.47	0.00	0.00	0.00	1.25	22.74	424.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr+H	1	0.6250	8.438		0.0000	0.000

Vertical Reactions

Load Combination	Support 1	Support 2
Overall MAXimum	6.794	6.131
Overall MINimum	1.329	1.179
+D+H	2.215	1.965
+D+L+H	2.215	1.965
+D+Lr+H	6.794	6.131
+D+S+H	2.215	1.965
+D+0.750Lr+0.750L+H	5.649	5.089
+D+0.750L+0.750S+H	2.215	1.965
+D+0.60W+H	2.215	1.965
+D+0.70E+H	2.215	1.965
+D+0.750Lr+0.750L+0.450W+H	5.649	5.089
+D+0.750L+0.750S+0.450W+H	2.215	1.965
+D+0.750L+0.750S+0.5250E+H	2.215	1.965
+0.60D+0.60W+0.60H	1.329	1.179
+0.60D+0.70E+0.60H	1.329	1.179
D Only	2.215	1.965
Lr Only	4.579	4.166
L Only		
S Only		
W Only		
E Only		
H Only		

Support notation : Far left is #1

Values in KIPS

Wood Beam

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Description : Beam over Kitchen

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE 7-10

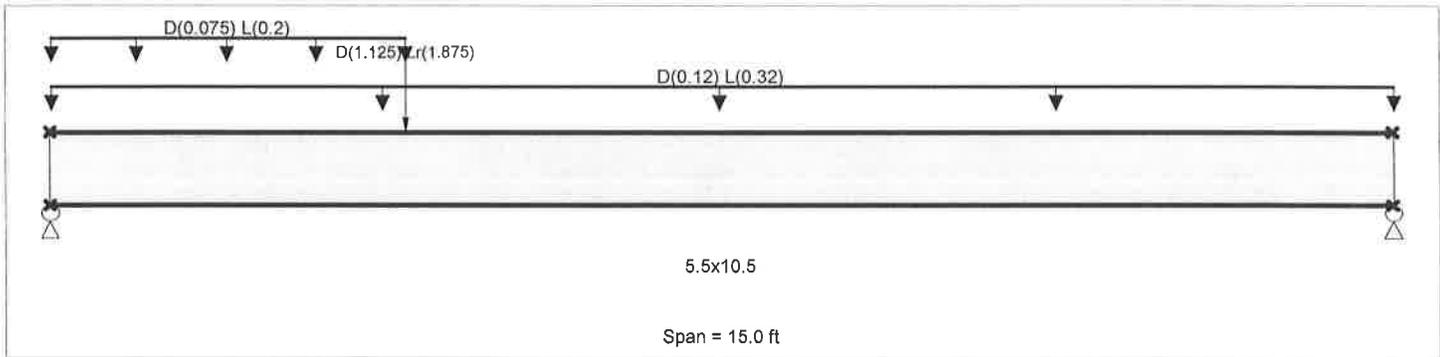
Material Properties

Analysis Method : Allowable Stress Design
 Load Combination ASCE 7-10

Wood Species : DF/DF
 Wood Grade : 24F - V4

Beam Bracing : Beam is Fully Braced against lateral-torsion buckling

Fb - Tension	2,400.0 psi	E : Modulus of Elasticity	
Fb - Compr	1,850.0 psi	Ebend- xx	1,800.0 ksi
Fc - Prll	1,650.0 psi	Eminbend - xx	950.0 ksi
Fc - Perp	650.0 psi	Ebend- yy	1,600.0 ksi
Fv	265.0 psi	Eminbend - yy	850.0 ksi
Ft	1,100.0 psi	Density	31.20 pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.120, L = 0.320, Tributary Width = 1.0 ft
 Uniform Load : D = 0.0750, L = 0.20 k/ft, Extent = 0.0 -->> 4.0 ft, Tributary Width = 1.0 ft
 Point Load : D = 1.125, Lr = 1.875 k @ 4.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.789	1	Maximum Shear Stress Ratio	=	0.440	: 1
Section used for this span		5.5x10.5		Section used for this span		5.5x10.5	
fb : Actual	=	1,894.07 psi		fv : Actual	=	116.65 psi	
FB : Allowable	=	2,400.00 psi		Fv : Allowable	=	265.00 psi	
Load Combination		+D+L+H		Load Combination		+D+L+H	
Location of maximum on span	=	6.460 ft		Location of maximum on span	=	0.000 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.423 in	Ratio =	425			
Max Upward Transient Deflection		0.000 in	Ratio =	0 < 360			
Max Downward Total Deflection		0.712 in	Ratio =	252			
Max Upward Total Deflection		0.000 in	Ratio =	0 < 180			

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values						
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v			
+D+H	Length = 15.0 ft	1	0.352	0.199	0.90	1.000	1.00	1.00	1.00	1.00	1.00	6.41	760.72	2160.00	0.00	0.00	0.00	1.82	47.40	238.50
+D+L+H	Length = 15.0 ft	1	0.789	0.440	1.00	1.000	1.00	1.00	1.00	1.00	1.00	15.95	1,894.07	2400.00	0.00	0.00	0.00	4.49	116.65	265.00
+D+Lr+H	Length = 15.0 ft	1	0.470	0.251	1.25	1.000	1.00	1.00	1.00	1.00	1.00	11.87	1,409.49	3000.00	0.00	0.00	0.00	3.20	83.11	331.25
+D+S+H	Length = 15.0 ft	1	0.276	0.156	1.15	1.000	1.00	1.00	1.00	1.00	1.00	6.41	760.72	2760.00	0.00	0.00	0.00	1.82	47.40	304.75
+D+0.750Lr+0.750L+H	Length = 15.0 ft	1	0.671	0.381	1.25	1.000	1.00	1.00	1.00	1.00	1.00	16.97	2,014.43	3000.00	0.00	0.00	0.00	4.86	126.13	331.25

12

Wood Beam

File = z:\projects\2016PR-1\16207E-1\calcs.ec6
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Description : Beam over Kitchen

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v
+D+0.750L+0.750S+H	Length = 15.0 ft	1	0.582	0.326	1.15	1.000	1.00	1.00	1.00	1.00	1.00	13.52	1,605.34	2760.00	3.82	99.34	304.75
+D+0.60W+H	Length = 15.0 ft	1	0.198	0.112	1.60	1.000	1.00	1.00	1.00	1.00	1.00	6.41	760.72	3840.00	1.82	47.40	424.00
+D+0.70E+H	Length = 15.0 ft	1	0.198	0.112	1.60	1.000	1.00	1.00	1.00	1.00	1.00	6.41	760.72	3840.00	1.82	47.40	424.00
+D+0.750Lr+0.750L+0.450W+H	Length = 15.0 ft	1	0.525	0.297	1.60	1.000	1.00	1.00	1.00	1.00	1.00	16.97	2,014.43	3840.00	4.86	126.13	424.00
+D+0.750L+0.750S+0.450W+H	Length = 15.0 ft	1	0.418	0.234	1.60	1.000	1.00	1.00	1.00	1.00	1.00	13.52	1,605.34	3840.00	3.82	99.34	424.00
+D+0.750L+0.750S+0.5250E+H	Length = 15.0 ft	1	0.418	0.234	1.60	1.000	1.00	1.00	1.00	1.00	1.00	13.52	1,605.34	3840.00	3.82	99.34	424.00
+0.60D+0.60W+0.60H	Length = 15.0 ft	1	0.119	0.067	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.84	456.43	3840.00	1.09	28.44	424.00
+0.60D+0.70E+0.60H	Length = 15.0 ft	1	0.119	0.067	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.84	456.43	3840.00	1.09	28.44	424.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750Lr+0.750L+0.450W+H	1	0.7123	7.172		0.0000	0.000

Vertical Reactions

Load Combination	Support 1	Support 2
Overall MAXimum	5.336	3.747
Overall MINimum	1.191	0.500
+D+H	1.985	1.240
+D+L+H	5.078	3.747
+D+Lr+H	3.360	1.740
+D+S+H	1.985	1.240
+D+0.750Lr+0.750L+H	5.336	3.495
+D+0.750L+0.750S+H	4.305	3.120
+D+0.60W+H	1.985	1.240
+D+0.70E+H	1.985	1.240
+D+0.750Lr+0.750L+0.450W+H	5.336	3.495
+D+0.750L+0.750S+0.450W+H	4.305	3.120
+D+0.750L+0.750S+0.5250E+H	4.305	3.120
+0.60D+0.60W+0.60H	1.191	0.744
+0.60D+0.70E+0.60H	1.191	0.744
D Only	1.985	1.240
Lr Only	1.375	0.500
L Only	3.093	2.507
S Only		
W Only		
E Only		
H Only		

Wood Beam

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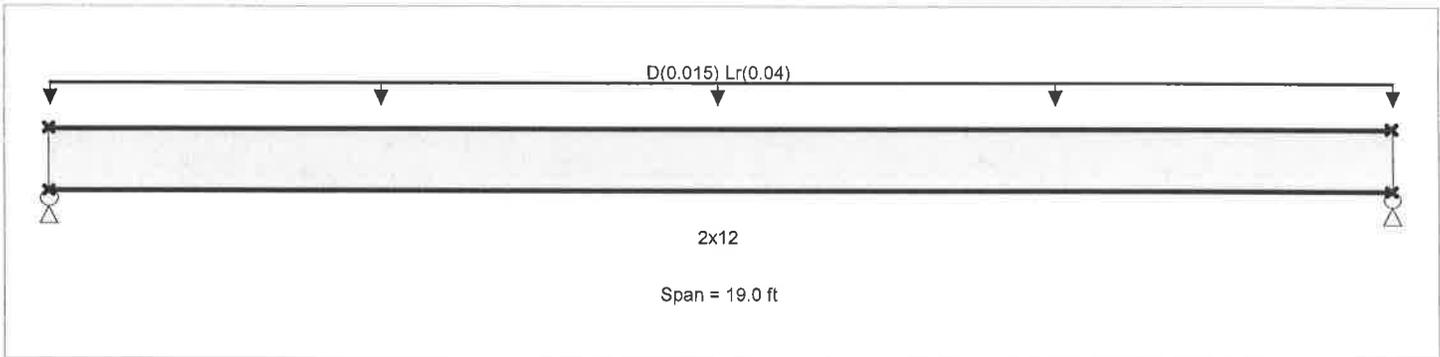
Description : Master Bed Floor joists

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Fb - Tension	900.0 psi	E : Modulus of Elasticity
Load Combination ASCE 7-10	Fb - Compr	900.0 psi	Ebend - xx
	Fc - Prll	1,350.0 psi	Eminbend - xx
Wood Species : Douglas Fir - Larch	Fc - Perp	625.0 psi	
Wood Grade : No.2	Fv	180.0 psi	
	Ft	575.0 psi	Density
Beam Bracing : Beam is Fully Braced against lateral-torsion buckling			Repetitive Member Stress Increase



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.0150, Lr = 0.040 , Tributary Width = 1.0 ft

DESIGN SUMMARY

				Design OK			
Maximum Bending Stress Ratio	=	0.728	1	Maximum Shear Stress Ratio	=	0.187	1
Section used for this span		2x12		Section used for this span		2x12	
fb : Actual	=	941.27 psi		fv : Actual	=	42.04 psi	
FB : Allowable	=	1,293.75 psi		Fv : Allowable	=	225.00 psi	
Load Combination		+D+Lr+H		Load Combination		+D+Lr+H	
Location of maximum on span	=	9.500 ft		Location of maximum on span	=	18.099 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.414 in	Ratio = 550				
Max Upward Transient Deflection		0.000 in	Ratio = 0 < 360				
Max Downward Total Deflection		0.570 in	Ratio = 400				
Max Upward Total Deflection		0.000 in	Ratio = 0 < 180				

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{FN}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v
+D+H	Length = 19.0 ft	1	0.276	0.071	0.90	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	931.50	0.13	11.46	162.00
+D+L+H	Length = 19.0 ft	1	0.248	0.064	1.00	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1035.00	0.13	11.46	180.00
+D+Lr+H	Length = 19.0 ft	1	0.728	0.187	1.25	1.000	1.00	1.15	1.00	1.00	1.00	2.48	941.27	1293.75	0.47	42.04	225.00
+D+S+H	Length = 19.0 ft	1	0.216	0.055	1.15	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1190.25	0.13	11.46	207.00
+D+0.750Lr+0.750L+H	Length = 19.0 ft	1	0.595	0.153	1.25	1.000	1.00	1.15	1.00	1.00	1.00	2.03	770.13	1293.75	0.39	34.39	225.00
+D+0.750L+0.750S+H	Length = 19.0 ft	1	0.216	0.055	1.15	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1190.25	0.13	11.46	207.00

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Wood Beam

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Description : Master Bed Floor joists

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{FN}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v
+D+0.60W+H	Length = 19.0 ft	1	0.155	0.040	1.60	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1656.00	0.00	0.00	0.00
+D+0.70E+H	Length = 19.0 ft	1	0.155	0.040	1.60	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1656.00	0.00	0.00	0.00
+D+0.750Lr+0.750L+0.450W+H	Length = 19.0 ft	1	0.465	0.119	1.60	1.000	1.00	1.15	1.00	1.00	1.00	2.03	770.13	1656.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.450W+H	Length = 19.0 ft	1	0.155	0.040	1.60	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1656.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.5250E+H	Length = 19.0 ft	1	0.155	0.040	1.60	1.000	1.00	1.15	1.00	1.00	1.00	0.68	256.71	1656.00	0.00	0.00	0.00
+0.60D+0.60W+0.60H	Length = 19.0 ft	1	0.093	0.024	1.60	1.000	1.00	1.15	1.00	1.00	1.00	0.41	154.03	1656.00	0.00	0.00	0.00
+0.60D+0.70E+0.60H	Length = 19.0 ft	1	0.093	0.024	1.60	1.000	1.00	1.15	1.00	1.00	1.00	0.41	154.03	1656.00	0.00	0.00	0.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr+H	1	0.5696	9.569		0.0000	0.000

Vertical Reactions

Load Combination	Support 1	Support 2
Overall MAXimum	0.523	0.523
Overall MINimum	0.086	0.086
+D+H	0.143	0.143
+D+L+H	0.143	0.143
+D+Lr+H	0.523	0.523
+D+S+H	0.143	0.143
+D+0.750Lr+0.750L+H	0.428	0.428
+D+0.750L+0.750S+H	0.143	0.143
+D+0.60W+H	0.143	0.143
+D+0.70E+H	0.143	0.143
+D+0.750Lr+0.750L+0.450W+H	0.428	0.428
+D+0.750L+0.750S+0.450W+H	0.143	0.143
+D+0.750L+0.750S+0.5250E+H	0.143	0.143
+0.60D+0.60W+0.60H	0.086	0.086
+0.60D+0.70E+0.60H	0.086	0.086
D Only	0.143	0.143
Lr Only	0.380	0.380
L Only		
S Only		
W Only		
E Only		
H Only		

Support notation : Far left is #1

Values in KIPS

Wood Beam

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Description : Garage Beam

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE 7-10

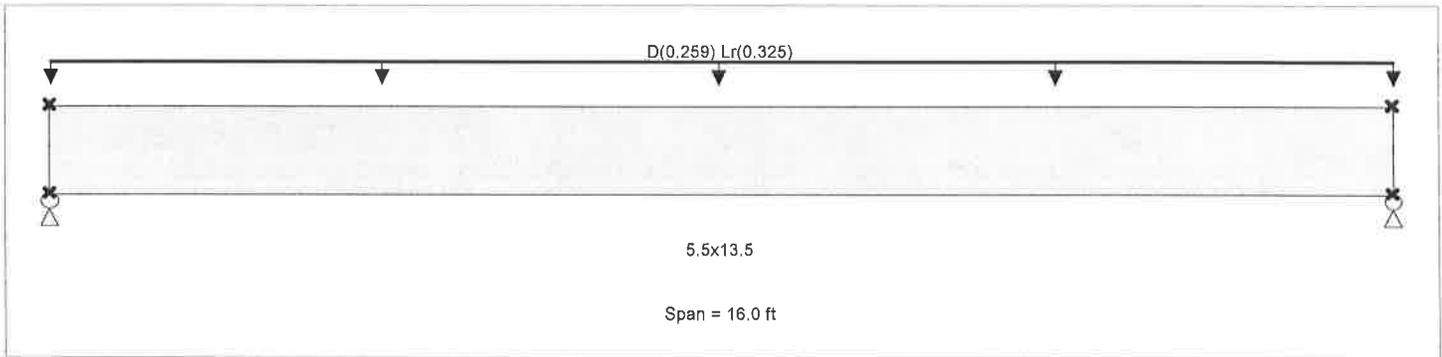
Material Properties

Analysis Method : Allowable Stress Design
 Load Combination ASCE 7-10

Wood Species : DF/DF
 Wood Grade : 24F - V4

Beam Bracing : Completely Unbraced

Fb - Tension	2400 psi	E : Modulus of Elasticity	
Fb - Compr	1850 psi	Ebend- xx	1800 ksi
Fc - Prll	1650 psi	Eminbend - xx	950 ksi
Fc - Perp	650 psi	Ebend- yy	1600 ksi
Fv	265 psi	Eminbend - yy	850 ksi
Ft	1100 psi	Density	31.2 pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.2590, Lr = 0.3250, Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.455	1	Maximum Shear Stress Ratio	=	0.245	: 1
Section used for this span		5.5x13.5		Section used for this span		5.5x13.5	
fb : Actual	=	1,342.35 psi		fv : Actual	=	81.29 psi	
FB : Allowable	=	2,951.35 psi		Fv : Allowable	=	331.25 psi	
Load Combination		+D+Lr+H		Load Combination		+D+Lr+H	
Location of maximum on span	=	8.000 ft		Location of maximum on span	=	14.891 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.237 in	Ratio =	808			
Max Upward Transient Deflection		0.000 in	Ratio =	0 < 360			
Max Downward Total Deflection		0.427 in	Ratio =	449			
Max Upward Total Deflection		0.000 in	Ratio =	0 < 180			

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios									Moment Values			Shear Values			
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v	
+D+H	Length = 16.0 ft	1	0.279	0.151	0.90	1.000	1.00	1.00	1.00	1.00	0.99	8.29	595.32	2136.63	0.00	1.78	36.05	238.50
+D+L+H	Length = 16.0 ft	1				1.000	1.00	1.00	1.00	1.00	0.99			0.00	0.00	0.00	0.00	0.00
+D+Lr+H	Length = 16.0 ft	1	0.251	0.136	1.00	1.000	1.00	1.00	1.00	1.00	0.99	8.29	595.32	2370.53	1.78	36.05	265.00	
+D+Lr+H	Length = 16.0 ft	1	0.455	0.245	1.25	1.000	1.00	1.00	1.00	1.00	0.98	18.69	1,342.35	2951.35	4.02	81.29	331.25	
+D+S+H	Length = 16.0 ft	1				1.000	1.00	1.00	1.00	1.00	0.98			0.00	0.00	0.00	0.00	
+D+0.750Lr+0.750L+H	Length = 16.0 ft	1	0.219	0.118	1.15	1.000	1.00	1.00	1.00	1.00	0.99	8.29	595.32	2719.73	1.78	36.05	304.75	
+D+0.750Lr+0.750L+H	Length = 16.0 ft	1	0.392	0.211	1.25	1.000	1.00	1.00	1.00	1.00	0.98	16.09	1,155.59	2951.35	3.46	69.98	331.25	
+D+0.750L+0.750S+H	Length = 16.0 ft	1				1.000	1.00	1.00	1.00	1.00	0.98			0.00	0.00	0.00	0.00	
+D+0.750L+0.750S+H	Length = 16.0 ft	1	0.219	0.118	1.15	1.000	1.00	1.00	1.00	1.00	0.99	8.29	595.32	2719.73	1.78	36.05	304.75	

Wood Beam

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Description : Garage Beam

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values					
			M	V	C _d	C _{FV}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	Fv		
+D+0.60W+H	Length = 16.0 ft	1	0.159	0.085	1.60	1.000	1.00	1.00	1.00	1.00	0.99			0.00	0.00	0.00	0.00	0.00	0.00
+D+0.70E+H	Length = 16.0 ft	1	0.159	0.085	1.60	1.000	1.00	1.00	1.00	1.00	0.98	8.29	595.32	3753.57	1.78	36.05	424.00	0.00	0.00
+D+0.750Lr+0.750L+0.450W+H	Length = 16.0 ft	1	0.308	0.165	1.60	1.000	1.00	1.00	1.00	1.00	0.98	16.09	1,155.59	3753.57	3.46	69.98	424.00	0.00	0.00
+D+0.750L+0.750S+0.450W+H	Length = 16.0 ft	1	0.159	0.085	1.60	1.000	1.00	1.00	1.00	1.00	0.98	8.29	595.32	3753.57	1.78	36.05	424.00	0.00	0.00
+D+0.750L+0.750S+0.5250E+H	Length = 16.0 ft	1	0.159	0.085	1.60	1.000	1.00	1.00	1.00	1.00	0.98	8.29	595.32	3753.57	1.78	36.05	424.00	0.00	0.00
+0.60D+0.60W+0.60H	Length = 16.0 ft	1	0.095	0.051	1.60	1.000	1.00	1.00	1.00	1.00	0.98	4.97	357.19	3753.57	1.07	21.63	424.00	0.00	0.00
+0.60D+0.70E+0.60H	Length = 16.0 ft	1	0.095	0.051	1.60	1.000	1.00	1.00	1.00	1.00	0.98	4.97	357.19	3753.57	1.07	21.63	424.00	0.00	0.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr+H	1	0.4267	8.058		0.0000	0.000

Vertical Reactions

Load Combination	Support 1	Support 2
Overall MAXimum	4.672	4.672
Overall MINimum	1.243	1.243
+D+H	2.072	2.072
+D+L+H	2.072	2.072
+D+Lr+H	4.672	4.672
+D+S+H	2.072	2.072
+D+0.750Lr+0.750L+H	4.022	4.022
+D+0.750L+0.750S+H	2.072	2.072
+D+0.60W+H	2.072	2.072
+D+0.70E+H	2.072	2.072
+D+0.750Lr+0.750L+0.450W+H	4.022	4.022
+D+0.750L+0.750S+0.450W+H	2.072	2.072
+D+0.750L+0.750S+0.5250E+H	2.072	2.072
+0.60D+0.60W+0.60H	1.243	1.243
+0.60D+0.70E+0.60H	1.243	1.243
D Only	2.072	2.072
Lr Only	2.600	2.600
L Only		
S Only		
W Only		
E Only		
H Only		

Support notation : Far left is #1

Values in KIPS

(N) Ftg e B2 + B4:

$$P = 460 \text{ plf} \left(\frac{9.5'}{2} \right) + 6794 \# \\ = 8979 \#$$

$$A_{reqd} = \frac{8979 \#}{1500 \text{ psf}} = 6 \text{ ft}^2$$

⇒ 30" sq ftg w/ (3) #4 each way

Ftgs e Opp end B2:

$$P = 6131 \#$$

$$A_{reqd} = \frac{6131 \#}{1500 \text{ psf}} = 4.0 \text{ ft}^2$$

⇒ 24" sq ftg w/ (3) #4 each way

Ftgs e B1:

$$P = (195 \text{ plf} + 325 \text{ plf}) \left(\frac{13'}{2} \right) = 3380 \#$$

$$A_{reqd} = \frac{3380 \#}{1500 \text{ psf}} = 2.3 \text{ ft}^2$$

⇒ 18" sq ftg w/ (2) #4 each way

Qty e B3:

$$P = 6453\#$$

$$Area_{reqd} = \frac{6453\#}{1500\text{psf}} = 4.3\text{ft}^2$$

⇒ 26" sq Qty w/ (3) # each way

Lateral Analysis:

Wind loads:

$$\begin{aligned} p_s &= Z K_z p_{s30} \\ &= 1.0(1.0)(31.6 \text{ psf})(0.6) \\ &= 19 \text{ psf walls} \\ &= 5 \text{ psf roof} \end{aligned}$$

$$Z = 1.0$$

$$K_z = 1.0$$

$$\begin{aligned} p_{s30} &= 31.6 \text{ psf walls} \\ &= 8.3 \text{ psf roof} \end{aligned}$$

2nd floor loads:

$$V_{1-2} = 5 \text{ psf}(9') + 19 \text{ psf}\left(\frac{8'}{2}\right) = 121 \text{ plf}$$

$$V_{2-3} = 5 \text{ psf}(6') + 19 \text{ psf}\left(\frac{8'}{2}\right) = 106 \text{ plf}$$

$$V_{3-4} = 19 \text{ psf}\left(\frac{5'}{2}\right) = 48 \text{ plf}$$

$$V_{A-B} = 19 \text{ psf}\left(\frac{8'}{2} + \frac{8'}{2}\right) = 152 \text{ plf}$$

$$V_{B-C} = 19 \text{ psf}\left(\frac{8'}{2} + \frac{8'}{2}\right) = 152 \text{ plf}$$

1st floor loads:

$$V_{1-3} = 19 \text{ psf}\left(\frac{8'}{2} + \frac{8'}{2}\right) = 152 \text{ plf}$$

$$V_{3-4} = 19 \text{ psf}\left(\frac{8'}{2}\right) + 5 \text{ psf}(8') = 116 \text{ plf}$$

$$V_{4-5} = 19 \text{ psf}\left(\frac{8'}{2}\right) + 5 \text{ psf}(6') = 106 \text{ plf}$$

$$V_{A-C} = 19 \text{ psf}\left(\frac{8'}{2} + \frac{8'}{2}\right) = 152 \text{ plf}$$

$$V_{A.1-A} = 19 \text{ psf}\left(\frac{8'}{2} + \frac{4'}{2}\right) = 114 \text{ plf} \quad \text{A.1 cantilevered off (A)}$$

2nd Floor Walls:

$$\text{Grid (A)} \quad V = 152 \text{ plf} \left(\frac{21'}{2} \right) = 1596 \#$$

$$\Sigma L = 4.67' + 4.33' = 9'$$

$$V = \frac{1596 \#}{9'} = 177 \text{ plf}$$

$$T = \frac{177 \text{ plf} (4.33') (8') - 8 \text{ psf} (8') (4.33')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right) - 15 \text{ psf} \left(\frac{12'}{2} \right) (4.33')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{4.33'}$$

$$= 951 \#$$

→ 1/2" Ply w/ 8d @ 6" OC edges & LSTA18 strap to beam below each end lock wall

$$\text{Grid (B)} \quad V = 152 \text{ plf} \left(\frac{21'}{2} + \frac{23'}{2} \right) = 3344 \#$$

$$\Sigma L = 7' + 10'$$

$$V = \frac{3344 \#}{17'} = 197 \text{ plf}$$

$$T = \frac{197 \text{ plf} (7') (15') - 8 \text{ psf} (15') (7')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right) - 15 \text{ psf} \left(\frac{23'}{2} \right) (7')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{7'}$$

$$= 2656 \# @ 7' \text{ wall}$$

$$= 1724 \# @ 10' \text{ wall}$$

→ 1/2" Ply w/ 8d @ 6" OC edges & LSTI49 strap to wall below

End floor walls cont.

$$\text{Grid } \textcircled{C} \quad V = 152 \text{ plf } \left(\frac{231}{2} \right) = 1748 \#$$

Use Simpson Strong-wall Wood Shearwalls each end

$$V = \frac{1748 \#}{2 \text{ panels}} = 874 \# / \text{panel}$$

2nd Floor Walls Cont.

$$\text{Grid ①} \quad V = 121 \text{ plf} \left(\frac{20'}{2} \right) = 1210 \#$$

$$\Sigma L = 25'$$

$$\gamma = \frac{1210 \#}{25'} = 49 \text{ plf}$$

No OT by obsv

\Rightarrow $\frac{1}{2}$ " Ply w/ 8d @ 6" OC edges

$$\text{Grid ②} \quad V = 121 \text{ plf} \left(\frac{20'}{2} \right) + 106 \text{ plf} \left(\frac{8'}{2} \right) = 1634 \#$$

$$\Sigma L = 19.5'$$

$$\gamma = \frac{1634 \#}{19.5'} = 84 \text{ plf}$$

$$T = \frac{1634 \# (13') - 8 \text{ psf} (13') (19.5')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right) - 15 \text{ psf} (4') (19.5')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{19.5'}$$

$$= 18 \# \quad \therefore \text{HD not reqd}$$

\Rightarrow $\frac{1}{2}$ " Ply w/ 8d @ 6" OC edges

2nd floor walls cont.

$$\text{Grid } \textcircled{3} \quad V = 106 \text{plf} \left(\frac{8'}{2}\right) + 48 \text{plf} \left(\frac{13'}{2}\right) = 736 \#$$

$$\Sigma L = 8.5' + 11' = 19.5'$$

$$V = \frac{736 \#}{19.5'} = 38 \text{plf}$$

No OT by obsv

→ 1/2" Ply w/ 8 @ 6" OC edges

$$\text{Grid } \textcircled{4} \quad V = 48 \text{plf} \left(\frac{13'}{2}\right) = 312 \#$$

$$\Sigma L = 13'$$

$$V = \frac{312 \#}{13'} = 24 \text{plf}$$

No OT by obsv

→ 1/2" Ply w/ 8 @ 6" OC edges

1st Floor Walls:

A.1 cantilevered off A

$$\text{Grid (A)} \quad V = 152 \text{ pcf} \left(\frac{21'}{2} \right) + 114 \text{ pcf} (10') + 1596 \# = 4332 \#$$

$$\Sigma l = 4' + 5' = 9'$$

$$V = \frac{4332 \#}{9'} = 481 \text{ pcf}$$

$$T = \frac{481 \text{ pcf} (4') (8') - 8 \text{ pcf} (8') (4')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right) - 15 \text{ pcf} \left(\frac{12'}{2} \right) (4')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{4'}$$

$$= 3521 \#$$

⇒ 1/2" Ply w/ 8d @ 4" o.c. edges & HDU @ each end
each wall

$$\text{Grid (B)} \quad V = 152 \text{ pcf} \left(\frac{21'}{2} + \frac{23'}{2} \right) + 3344 \# = 6688 \#$$

$$\Sigma l = 13.5'$$

$$V = \frac{6688 \#}{13.5'} = 495 \text{ pcf}$$

$$T = \frac{495 \text{ pcf} (8') (13.5')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{13.5'} + 2656 \# \text{ @ 7' wall}$$

or
1724 # @ 10' wall

$$= 6330 \# \quad \text{or} \quad 5398 \#$$

1st Floor Walls cont.

$$\text{Grid } \textcircled{E} \quad V = 152 \text{ pcf } \left(\frac{23'}{2} \right) + 1748 \# = 3496 \#$$

Simpson Strong-Wall Wood Shearwalls

$$V = \frac{3496 \#}{2 \text{ panels}} = 1748 \#/\text{panel}$$

$$- 8 \text{ pcf } (17') (4') (1.5') \left(\frac{2}{3} \right) \\ \text{return wall} \\ - 15 (10') (4') (1.5') \left(\frac{2}{3} \right)$$

$$T = \frac{874 \# (17') + 874 \# (8') - 8 \text{ pcf } (17') (1.5')^2 \left(\frac{1}{3} \right) \left(\frac{2}{3} \right) - 15 \text{ pcf } \left(\frac{24'}{2} \right) (1.5')^2 \left(\frac{1}{3} \right)}{1.5'}$$

$$= 12642 \#$$

1st Floor Cont.

$$\text{Grid ①} \quad V = 152 \text{ plf} \left(\frac{20'}{2} \right) + 1210 \# = 2730 \#$$

$$\Sigma L = 11' + 12'$$

$$V = \frac{2730 \#}{23'} = 119 \text{ plf}$$

$$T = \frac{119 \text{ plf} (11') (8') - 8 \text{ psf} (8') (11')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right) - 15 \text{ psf} \left(\frac{12'}{2} \right) (11')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{11'}$$

$$= 385 \# \quad \therefore \text{HD not reqd}$$

⇒ 1/2" Ply w/ 8d e 6" OC edges

$$\text{Grid ②} \quad V = 152 \text{ plf} \left(\frac{20'}{2} + \frac{8'}{2} \right) + 1634 \# = 3762 \#$$

$$\Sigma L = 18'$$

$$V = \frac{3762 \#}{18'} = 209 \text{ plf}$$

$$T = \frac{3762 \# (8') - 8 \text{ psf} (8') (18')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right) - 15 \text{ psf} \left(\frac{20'}{2} \right) (18')^2 \left(\frac{1}{2} \right) \left(\frac{2}{3} \right)}{18'}$$

$$= 382 \# \quad \therefore \text{HD not reqd}$$

⇒ 1/2" Ply w/ 8d e 6" OC edges

1st Floor Cont

$$\text{Grid } \textcircled{3} \quad V = 152 \text{ plf} \left(\frac{8'}{2}\right) + 116 \text{ plf} \left(\frac{13'}{2}\right) + 736 \# = 2098 \#$$

$$\Sigma L = 13'$$

$$\gamma = \frac{2098 \#}{13'} = 161 \text{ plf}$$

$$T = \frac{2098 \# (8') - 8 \text{ psf} (8') (13')^2 \left(\frac{1}{8}\right) \left(\frac{2}{3}\right) - 15 \text{ psf} \left(\frac{10'}{2}\right) (4') (13') \left(\frac{2}{3}\right)}{13'}$$

$$= 811 \# \therefore \therefore \text{HD not reqd}$$

\Rightarrow $\frac{1}{2}$ " Ply w/ 8d @ 6" OC edges

$$\text{Grid } \textcircled{4} \quad V = 116 \text{ plf} \left(\frac{13'}{2}\right) + 106 \text{ plf} \left(\frac{12'}{2}\right) = 1390 \#$$

$$\Sigma L = 10'$$

$$\gamma = \frac{1390 \#}{10'} = 139 \text{ plf}$$

$$T = \frac{1390 \# (8') - 8 \text{ psf} (8') (10')^2 \left(\frac{1}{8}\right) \left(\frac{2}{3}\right) - 15 \text{ psf} \left(\frac{10'}{2}\right) (4') (10') \left(\frac{2}{3}\right)}{10'}$$

$$= 697 \# \therefore \therefore \text{HD not reqd}$$

\Rightarrow $\frac{1}{2}$ " Ply w/ 8d @ 6" OC edges

1st Floor Cont

Grid (5)

$$V = 10 \text{ op } 1 \text{ f} \left(\frac{12'}{2} \right) = 636 \#$$

$$2L = 10' + 10' = 20'$$

$$r = \frac{636 \#}{20'} = 32 \text{ p } 1 \text{ f}$$

No OT by obsv

→ 1/2" Ply w/ sd e 6" OC edges

ERAUT REMODEL

PROJECT DESCRIPTION

EXPAND THE LIVING ROOM AND ADD A MASTER SUITE ABOVE THE GARAGE. IN ADDITION CREATE AN ENTRY BY BRINGING FORWARD THE EXISTING FRONT PORCH AND ENTRY.

CONTACT LIST

OWNERS: DAVE AND AMY ERAUT
5688 RIVER ST.
WEST LINN, OR 97068

BUILDING DESIGNER:

VERDICK RESIDENTIAL DESIGNS
CONTACT: RACHEL VERDICK
TEL: (503) 475-2126
EMAIL: VERDICKRESIDENTIALDESIGNS@GMAIL.COM

CONTRACTOR:

STRUCTURAL ENGINEER:
GABI MILLER
HAYDEN CONSULTING ENGINEERS
TEL: (503) 986-9994
EMAIL: gmiller@hayden-engineers.com

CIVIL ENGINEER:

GARY BUFORD
BUFORD ASSOCIATES, LLC
415 NORTH STATE ST.
LAKE OSWEGO, OR 97034
(503) 635-3511

PROJECT INFORMATION

ADDRESS: 5688 RIVER DR.
WEST LINN, OR 97068

JURISDICTION: WEST LINN

LOT SIZE: 18,876 SF
TAX LOT ID: 22E30AC01605
YEAR BUILT: 1978
ZONE: R-10

EXISTING LIVING: 1650 SF
NEW LIVING: 1016 SF
TOTAL LIVING: 2666 SF
GARAGE: 457 SF

FLOOR AREA:

(E) FLOOR AREA (INCL. GARAGE & COVERED BACK DECK): 1962 SF
(N) FLOOR AREA: 266 SF
TOTAL FLOOR AREA: 2228 SF / 11.8%

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CODE NOTES, ENERGY ENHANCEMENTS

Permits: Building/Structural Permit for new.
Mechanical, Electrical, and Plumbing permits will be pulled later by trade contractors.

Codes: 2014 ORSC based on the 2009 IRC & ASCE 7-10 for lateral engineering.

Roof Snow Load = 25psf
Floor Live Load = 40 psf
Wind: 120 mph ultimate, exposure B.
Seismic: Zone D-2, Site Class D = "stiff soil", SDS= .12 R=6.5

Occupancy: Addition to house = R-3

Construction: Conventional wood framed construction.

Foundation: Footings are to be on undisturbed level soil, min. 18" below grade for frost

Soil Bearing assumed to be 1500psf min.
Concrete: F'c= 2500psi min 28day compressive strength typical.
F'c= 3000psi min. if exposed to weather

Reinforcing Rebar to be ASTM A-615 Grade 60. 1#4 ftg, 1#4 top of wall, #4 vert at 4'oc.
Cover Crawl Space with 6mil black visqueen vapor barrier.

Post and beam - 1-1/8" flooring on 4x8 at 32"oc on 4x4 post (4x6 at splices) on 8"x18" ftg
Foundation Vents required - 1sf/150sf crawl space, near corners for cross ventilation.

All wood in contact with concrete to be pressure treated or protected with roofing shingle.

Framing: Sill Plates: HF2 or DF2, PT if in contact with concrete.

Glu-lam Beam - 24F-V4

Headers - DF#2

Studs - 2x6 @ 16"oc Stud Grade

Exterior Wall Sheathing: 7/16" OSB/Plywood with 8d at 6/12 nailing, block all edges, UNO

Floor: F&B w/ 4x8 at 32"oc, with 4x4 posts, (4x6 at splice)

Floor Sheathing: 1-1/8" T&G OSB/Plywood floor sheathing

Roof Sheathing: 7/16" OSB/Plywood roof rated sheathing to span 24", 8d at 6/12"oc.

Roof Trusses - Pre-engineered & pre-manufactured, 2'oc max, H-1 or H2.5 at ends

30 year asphalt Architectural Shingle on 30lb felt paper.

Roof: Provide attic ventilation using vented eave blocks and roof vents

Insulation: Roof R-49, Walls R-21, Underfloor R-30.

Drywall: 1/2" drywall with 7d cooler nails

Siding: Hardi-plank lap siding on approved rain-screen vapor barrier "Tyvek", or equivalent

Smoke & CO: One combination smoke detector & CO detector each floor, smoke detector in each bedroom.

Radon: Provide 3" ABS from below crawl space visqueen and vented up through the roof for future radon mitigation measures.

Energy: Large Additions must meet requirements of Table N1101.1(2)

Envelope Enhancement Measure 2:

Conservation Measure A:

GENERAL NOTES

- THE DRAWINGS ENCLOSED ARE FOR DESIGN INTENT ONLY. THE BUILDING DESIGNER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, OR SEQUENCING OF TRADES INVOLVED.
- ALL CONSTRUCTION SHALL COMPLY WITH 2014 EDITION OF THE STATE OF OREGON RESIDENTIAL, OREGON ELECTRICAL, PLUMBING AND MECHANICAL SPECIALTY CODES (2014 ORSC, 2014 OPSC, 2014 OESP, 2014 OMSC) ADOPTED BY THE STATE OF OREGON.
- OWNER/CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SIT CONDITIONS BEFORE STARTING WORK. THE OWNER/CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES, CHANGES, OMISSIONS, OR SUBSTITUTIONS. ALL WORKMANSHIP SHALL CONFORM TO THE ORSC OREGON RESIDENTIAL SPECIALTY CODE.
- OWNER/CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, AND PROTECT OR RELOCATE THEM AS NECESSARY.
- IN THE EVENT THERE IS A DISCREPANCY IN THESE DRAWINGS AND THE ACTUAL FIELD CONDITIONS, PRIOR TO CONTINUING WITH THE WORK, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER OR STRUCTURAL ENGINEER IN WRITING BY INDICATING WHERE THE DISCREPANCY EXISTS AND THE DESIGNER WILL RESPOND IN WRITING WITHIN 5 WORKING DAYS.
- DO NOT SCALE DRAWINGS. LARGER SCALE DETAIL DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADES AND THAT NO SUBSEQUENT TRADE DAMAGES WORK COMPLETED BY A PREVIOUS TRADE.
- OWNER/CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THE WORK ON THESE PLANS. THEY ARE RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION AND FOR MEETING SAFETY REQUIREMENTS.
- THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR METHODS AND SEQUENCES OF ASSEMBLING THE STRUCTURE. THE OWNER/ CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND PRIOR TO COMPLETION OF ALL WALLS, ROOFS, AND FLOOR DIAPHRAGMS.
- DIMENSIONS ARE GIVEN FROM ESTABLISHED REFERENCE POINTS AND ARE NOT CONTINUOUS. ALL TRADES SHOULD LAY OUT THEIR RESPECTIVE WORK FROM THE SAME REFERENCE POINTS. CRITICAL DIMENSIONS ARE SHOWN. SPACES WITHOUT DIMENSIONS MAY BE ADJUSTED TO SUIT FIELD CONDITIONS.
 - WOOD FRAMING IS DIMENSIONED TO THE FACE OF STUD AT THE EXTERIOR AND THE FINISH FACE AT INTERIOR UNLESS SPECIFICALLY NOTED OTHERWISE.
 - CONCRETE MASONRY ARE DIMENSIONED TO THE FACE OF MATERIAL.
 - COLUMNS AND POSTS ARE DIMENSIONED TO THE CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
 - DOORS ARE DIMENSIONED TO THE EDGE OF THE DOOR OPENING OR THE CENTERLINE OF THE DOOR.
 - WINDOWS ARE DIMENSIONED TO THE EDGE OF THE WINDOW FRAME OR TO THE CENTERLINE OF THE WINDOW.
- THESE DRAWINGS ARE THE SOLE PROPERTY OF VERDICK RESIDENTIAL DESIGNS AND CANNOT BE REPRODUCED WITHOUT PRIOR CONSENT OF VERDICK RESIDENTIAL DESIGNS.
- NEW CONSTRUCTION SHALL COMPLY WITH THE PRESCRIPTIVE STANDARDS OF THE 2010 OREGON RESIDENTIAL ENERGY CODE, SUMMARIZED BELOW AS IT APPLIES TO THIS PROJECT (SEE PAGE A-2 FOR SPECIFIC ENVELOPE ENHANCEMENTS AND CONSERVATION MEASURES):

WINDOWS (MINIMUM)	U-0.35
SKYLIGHTS	U-0.60
WALL INSULATIONS (MINIMUM)	R-21
FLAT CEILINGS (MINIMUM)	R-49
SLOPED CEILINGS (MINIMUM)	R-38
UNDER FLOOR INSULATION (MINIMUM)	R-30
EXTERIOR DOORS w/ >2.5 FT2 GLAZING	U-0.40
FORCED AIR DUCT INSULATION	R-8
- INSTALL POLYISOCYANURATE FOAM TYPE INSULATION AT FLOOR AND PLATE LINES, OPENINGS IN PLATES, CORNER STUD CAVITIES AND AROUND DOOR AND WINDOW ROUGH OPENING CAVITIES.
- INSTALL WATERPROOF GYPSUM BOARD AT ALL WATER SPLASH AREAS TO MINIMUM 10" ABOVE SHOWER DRAINS.
- INSULATE WASTE LINES FOR SOUND CONTROL.
- EXHAUST ALL VENTS AND FANS DIRECTLY TO OUTSIDE VIA METAL DUCTS, PROVIDE 90 CFM (MIN) FANS TO PROVIDE 5 AIR CHANGES PER HOUR IN BATHS CONTAINING TUB AND / OR SHOWER AND IN LAUNDRY ROOMS.
- ALL RECESSED LIGHTS IN INSULATED CEILINGS TO HAVE THE I.C. LABEL.



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

Project Overview

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

DATE:

7/11/2016

SCALE:

SHEET:

1

GENERAL NOTES

DESIGN STANDARD

2014 OREGON RESIDENTIAL STRUCTURAL CODE

DESIGN CRITERIA

1. DESIGN SNOW LOADS, UNLESS NOTED OTHERWISE:
 - a. ROOF 25 PSF MINIMUM ROOF SNOW LOAD
 - b. SNOW BUILDUP ASCE 7-10
2. DESIGN LATERAL LOADS, UNLESS NOTED OTHERWISE:
 - a. WIND 2014 OREGON STRUCTURAL SPECIALTY CODE
120 MPH, EXPOSURE "B"
 - b. SEISMIC OREGON STRUCTURAL SPECIALTY CODE
SEISMIC DESIGN CATEGORY D
SITE CLASSIFICATION D, USE GROUP II

GENERAL

1. VERIFY DIMENSIONS AND CONDITIONS WITH THE ARCHITECTURAL DRAWINGS. FIELD VERIFY DIMENSIONS AND ELEVATIONS RELATIVE TO THE EXISTING STRUCTURE PRIOR TO FABRICATION OF MATERIALS.
2. ADEQUATELY BRACE STRUCTURE AND ALL STRUCTURAL COMPONENTS AGAINST WIND, LATERAL, EARTH, AND SEISMIC FORCES UNTIL THE PERMANENT LATERAL FORCE-RESISTING SYSTEMS HAVE BEEN INSTALLED.
3. PROVIDE BLOCKING BETWEEN STUDS (OR OTHER MEANS OF BRACING) AT WOOD BEARING WALLS TO PREVENT STUD BUCKLING PRIOR TO INSTALLATION OF GYPSUM WALLBOARD.

FOUNDATIONS

1. FOUNDATION SIZES BASED ON ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF (DEAD + LIVE) WITH AN ALLOWABLE ONE-THIRD INCREASE FOR WIND AND SEISMIC.
2. PLACE FOOTINGS ON FIRM, UNDISTURBED NATIVE SOIL.
3. LOCATE BOTTOM OF FOOTINGS A MINIMUM OF 1' - 6" BELOW FINISH GRADE.
4. REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
5. CONCRETE MIX DESIGN - UNLESS NOTED OTHERWISE, ALL CONCRETE STRENGTHS SHALL BE:
 - 2,500 PSI FOR FOOTINGS
 - 3,000 PSI ALL OTHER CONCRETE

FRAMING LUMBER

- 1 LUMBER SPECIES: DOUGLAS FIR-LARCH (HEMLOCK-FIR FOR PRESSURE TREATED MATERIAL), GRADE LUMBER ACCORDING TO RULES OF WEST COAST LUMBER INSPECTION BUREAU (WCLIB).
- 2 LUMBER GRADES:

SIZE CLASSIFICATION	GRADE
• A. WALL STUDS	NO. 2
• D. JOISTS	NO. 2
• E. BEAMS	NO. 2
• F. POSTS	NO. 1
• G. BLOCKING, PLATES, BRIDGING	STANDARD OR BETTER OR STUD GRADE
- 1 MAXIMUM MOISTURE CONTENT: 19% AT 3X OR LESS (LEAST DIMENSIONS) MEMBERS.

SHEARWALLS

- 1 TYPE 1: 1/2" PLY WITH 8D AT 6" OC EDGES, 12" OC FIELD, APA RATED 24/0 OR BETTER. PROVIDE 2X SILL PLATE WITH 1/2" DIA X 8" EMBED AB'S AT 32" OC TYP.
- 2 TYPE 2: 1/2" PLY WITH 8D AT 4" OC EDGES, 12" OC FIELD, APA RATED 24/0 OR BETTER. PROVIDE 2X SILL PLATE WITH 1/2" DIA X 8" EMBED AB'S AT 24" OC TYP.
- 3 INSTALL 1/2" DIA TITEN HD AB'S AT SHEARWALLS ON EXISTING FOUNDATION AS NEEDED TO PROVIDE REQUIRED AB SPACING.
- 4 HOLD-DOWNS: THROUGH BOLT TO EXISTING FOUNDATION PER FOUNDATION DETAIL. PROVIDE SIMPSON SSBT20 AT HDU 4 HOLD-DOWN TO NEW FOUNDATION.
- 5 SIMPSON STRONG-WALL SHEAR PANELS: INSTALL IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND DETAILS.

PLYWOOD SHEATHING

- 1 PLYWOOD MATERIAL:
 - a GRADE: C-D, UNLESS NOTED OTHERWISE.
 - b MANUFACTURED WITH EXTERIOR GLUE ACCORDING TO UNITED STATES PRODUCT STANDARD PS 1-96.
 - c SHALL BEAR THE AMERICAN PLYWOOD ASSOCIATION (APA) TRADEMARK.
- 2 NAILS IN CONTACT WITH PRESSURE-TREATED LUMBER SHALL BE STAINLESS STEEL.
- 3 ALL FLOOR SHEATHING SHALL BE GLUED TO THE SUPPORTING MEMBERS.
- 4 SUBSTITUTION OF ORIENTED STRAND BOARD (OSB) FOR PLYWOOD IS ACCEPTABLE IF THE OSB:
 - a CONFORMS WITH APA PERFORMANCE STANDARDS FOR WOOD BASED STRUCTURAL PANELS PRP-105 AND UNITED STATES PRODUCT STANDARD PS 2-92.
 - b IS MANUFACTURED WITH EXTERIOR GLUE.
 - c HAS A LOAD/SPAN RATING INDEX EQUAL TO PLYWOOD.
 - d BEARS THE APA TRADEMARK.
- 5 PROVIDE PRESSURE-TREATED PLYWOOD WHERE INDICATED ON DRAWINGS. CONFORM WITH AWPB SANDARD C-9. MARK SHEETS WITH AWPB.
- 6 SHEATHING TYPES:

a FLOOR SHEATHING	3/4" INDEX 32/16
b ROOF SHEATHING	1/2" INDEX 24/0
c WALLS	1/2" INDEX 24/0
- 7 PLYWOOD LAYOUT AND INSTALLATION:
 - a LAY OUT PLYWOOD SHEATHING WITH END JOINTS STAGGERED, UNLESS NOTED OTHERWISE.
 - b LAY OUT PLYWOOD TO ELIMINATE WIDTHS LESS THAN 1'-0" AT ROOFS, OR LESS THAN 2'-0" AT FLOORS, UNLESS ALL EDGES OF UNDERSIZED PIECES ARE SUPPORTED BY BLOCKING.
 - c PROVIDE PANEL SPACINGS ACCORDING TO APA RECOMMENDATIONS.
 - d BLOCK SHEAR WALL SHEATHING WITH 3 X FLAT BLOCKING AT ALL EDGES.
 - e NAIL ACCORDING TO SCHEDULE AND DRAWINGS.
- 8 PROTECT FLOOR AND ROOF SHEATHING FROM EXTREME WET CONDITIONS.

GLUE LAMINATED MEMBERS

1. MEMBER SPECIES: WESTERN
2. MEMBER GRADE: 24F-V4.
3. MATERIAL STANDARDS:
 - a. ALLOWABLE STRESSES: AITC 117.
 - b. MANUFACTURE AND FABRICATION: AITC A190.1
4. MANUFACTURE AND FABRICATION:
 - a. FABRICATE WITH WATERPROOF GLUES.
 - b. SHAPE TOP OF MEMBERS TO ROOF SLOPE. ADD LAMINATIONS AS REQUIRED FOR SHAPING.
 - c. PROVIDE STANDARD 3500 FOOT RADIUS CAMBER, UNLESS NOTED OTHERWISE ON DRAWINGS.
5. IDENTIFY MEMBERS WITH THE APA-EWS MARK OF AMERICAN WOOD SYSTEMS OR MEMBER INSPECTION IS REQUIRED BY AN INDEPENDENT TESTING LAB.
6. ERECT MEMBERS ACCORDING TO AITC SPECIFICATIONS.

NAILING AND CONNECTION SCHEDULE

- 1 MINIMUM NUMBER OF NAILS FOR WOOD MEMBERS, UNLESS NOTED OTHERWISE ON DRAWINGS.
- 2 NAILS AND SCREWS IN CONTACT WITH PRESSURE-TREATED LUMBER SHALL BE STAINLESS STEEL OR HOT-DIP GALVANIZED.
- 3 NAIL TYPE: BOX OR SINKER, UNLESS NOTED OTHERWISE ON DRAWINGS.

CONNECTION	NAILS
STUDS TO PLATES - END NAIL	(2) 16d COMMON OR (3) 10d
OR STUDS TO PLATES - TOE NAIL	(4) 10d
TOP PLATES & BOTTOM PLATES	
-SPIKE TOGETHER	10d AT 8" OC
-LAP AND INTERSECTIONS	(4) 10d EACH SIDE JOINT
FLOOR, ROOF, CEILING JOISTS	
-TO PLATES OR BEAMS - TOE NAIL	(2) 10d
BLOCKING TO PLATE - TOE NAIL	(2) 10d
BLOCKING TO JOISTS - EACH END	(2) 10d
CORNER STUDS	10d AT 12" OC
2X LAMINATED BEAMS	10d AT 12" 2 ROWS STAGGERED
PLYWOOD SHEATHING CONNECTIONS (ALL NAILS COMMON UNLESS NOTED OTHERWISE)	

- 1 NAILS IN CONTACT WITH PRESSURE-TREATED LUMBER TO BE STAINLESS STEEL OR HOT-DIP GALVANIZED.

2 ROOF SHEATHING AND FLOOR

- a BLOCK ALL EDGES WITH 2 X 4 FLATS WHERE NOTED ON DRAWINGS

b NAILING:

AT EDGES OF EACH SHEET, BLOCKING & WALLS	8d AT 6" OC
AT INTERIOR OF SHEETS	8d AT 12" OC
AT BOUNDARIES OF ROOF	8d AT 6" OC

1 WALL SHEATHING

- a BLOCKING ALL EDGES NOT SUPPORTED BY FRAMING MEMBERS WITH 2 X 4 FLATS, MIN.

- b NAILING (UNLESS NOTED OTHERWISE ON SHEAR WALL SCHEDULE):

AT EDGES OF EACH SHEET TO STUDS, BLOCKING & PLATES	8d AT 6" OC
AT INTERIOR OF EACH SHEET	8d AT 12" OC
AT BOUNDARIES OF WALL	8d AT 6" OC

OTHER WOOD CONNECTIONS

- 1 FRAMING CONNECTORS: SIMPSON STRONG-TIE OR APPROVED.
 - a FILL ALL NAIL HOLES WITH NAILS AS SPECIFIED BY THE CONNECTOR MANUFACTURER, UNLESS NOTED OTHERWISE.
 - b CONNECTIONS IN CONTACT WITH PRESSURE-TREATED LUMBER SHALL BE STAINLESS STEEL OR HOT-DIP GALVANIZED.
 - c HANGERS TO DEVELOP BENDING STRENGTH OF MEMBERS, UNLESS NOTED OTHERWISE ON DRAWINGS.
- 2 ANCHOR BOLTS: ASTM F1554 (GRADE 36).
- 3 PROVIDE STAINLESS STEEL OR HOT-DIP GLAVANIZED ANCHOR BOLTS, LAG BOLTS, EXPANSION ANCHORS, PLATE WASHERS AND THREADED RODS IN CONTACT WITH PRESSURE-TREATED LUMBER.
- 4 PROVIDE STANDARD PLATE WASHERS UNDER HEADS OR NUTS OF BOLTS BEARING ON WOOD. SEE SHEAR WALL SCHEDULE FOR SQUARE WASHER REQUIREMENTS AT SHEAR WALLS.
- 5 ANCHOR ALL SILL PLATES WITH 1/4"x3"x3" PLATE WASHERS AND WITH A MINIMUM OF 3 ANCHORS PER PIECE.
- 6 MINIMUM SIZE AND MAXIMUM SPACING OF PLATE OR LEDGER CONNECTIONS:
 - a PLATES TO CONCRETE
 - FOUNDATION WALLS: 1/2" DIAMETER x 8" EMBED ANCHOR BOLT AT 4'-0" OC
 - 1 LAG BOLT
 - a PRE-DRILLED LEAD AND CLEARANCE HOLES FOR LAGS:
 - i. PROVIDE CLEARANCE HOLE FOR SHANK, WITH DIAMETER EQUAL TO SHANK DIAMETER, DEPTH EQUAL TO LENGTH OF UNTHREADED SHANK.
 - ii. PROVIDE LEAD HOLE FOR THE THREADED PORTION, WITH LENGTH EQUAL TO AT LEAST LENGTH OF THREADED PORTION, WITH DIAMETER AS FOLLOWS:
 - 3/8" DIAMETER BOLT = 1/2" DIAMETER HOLE
 - 1/2" DIAMETER BOLT = 5/16" DIAMETER HOLE
 - 5/8" DIAMETER BOLT = 7/16" DIAMETER HOLE
 - 3/4" DIAMETER BOLT = 1/2" DIAMETER HOLE
 - a SOAP THREADS OF LAGS IMMEDIATELY PRIOR TO INSTALLATION.
 - b INSTALL LAG BOLTS WITH HAND WRENCH ONLY.

SPECIAL INSPECTIONS

1. SIMPSON TITEN-HD AB'S SHALL BE INSTALLED AND SPECIALLY INSPECTED PER ICC REPORT ESR-2713.



Client: Dave & Amy Eraut
5666 River Dr
West Linn, OR 97068

STRUCTURAL NOTES

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

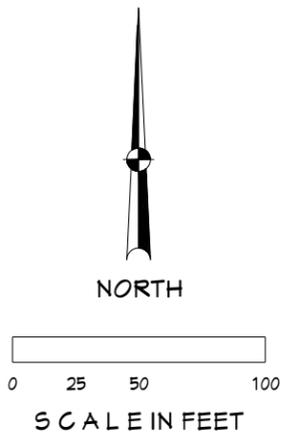
DATE:

7/11/2016

SCALE:

SHEET:

2



- LEGEND :**
- DENOTES PROPERTY LINE - BOUNDARY
 - DENOTES LOT LINE OR ROAD R/W
 - DENOTES MONUMENT FOUND, AS NOTED
 - IR IRON ROD
 - IP IRON PIPE
 - PLAT DENOTES PLAT DATA
 - MEAS DENOTES MEASURED DISTANCE
 - (1) INDICATES SOUND OF IP/IR UNDER SIDEWALK
 - EXISTING HOUSE AND GARAGE
 - EXISTING DECK
 - ADDITION TO HOUSE
 - ADDITION TO DECK

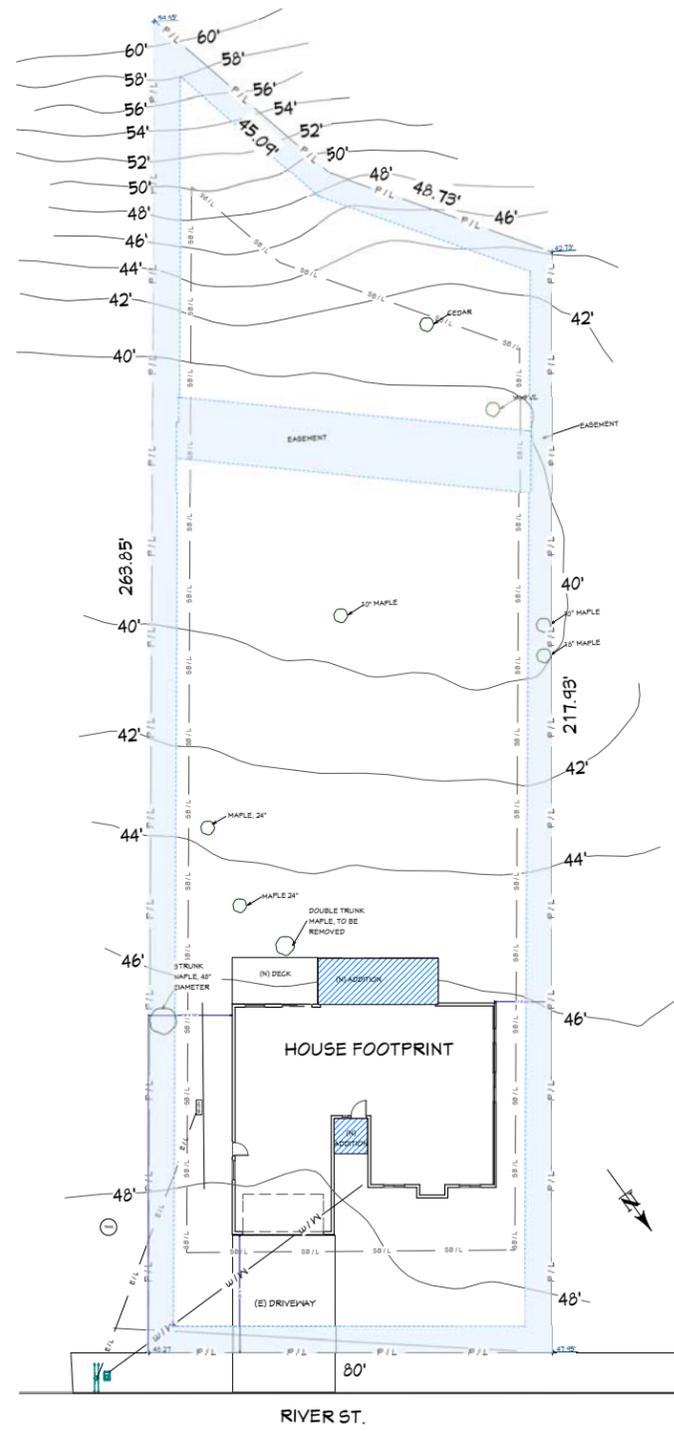
REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
SEPTEMBER 23, 1971
GARY M. BUFORD
1148
DATE OF RENEWAL: 12/31/2011

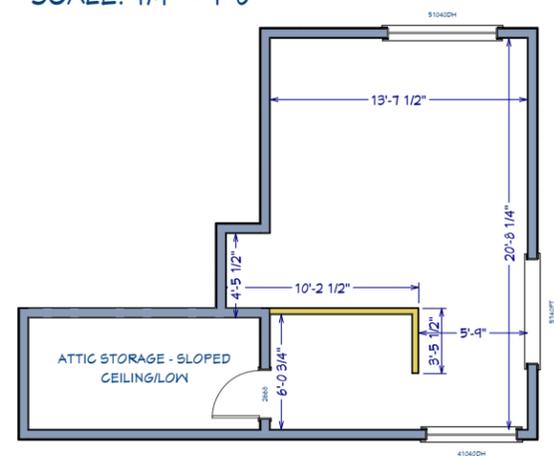
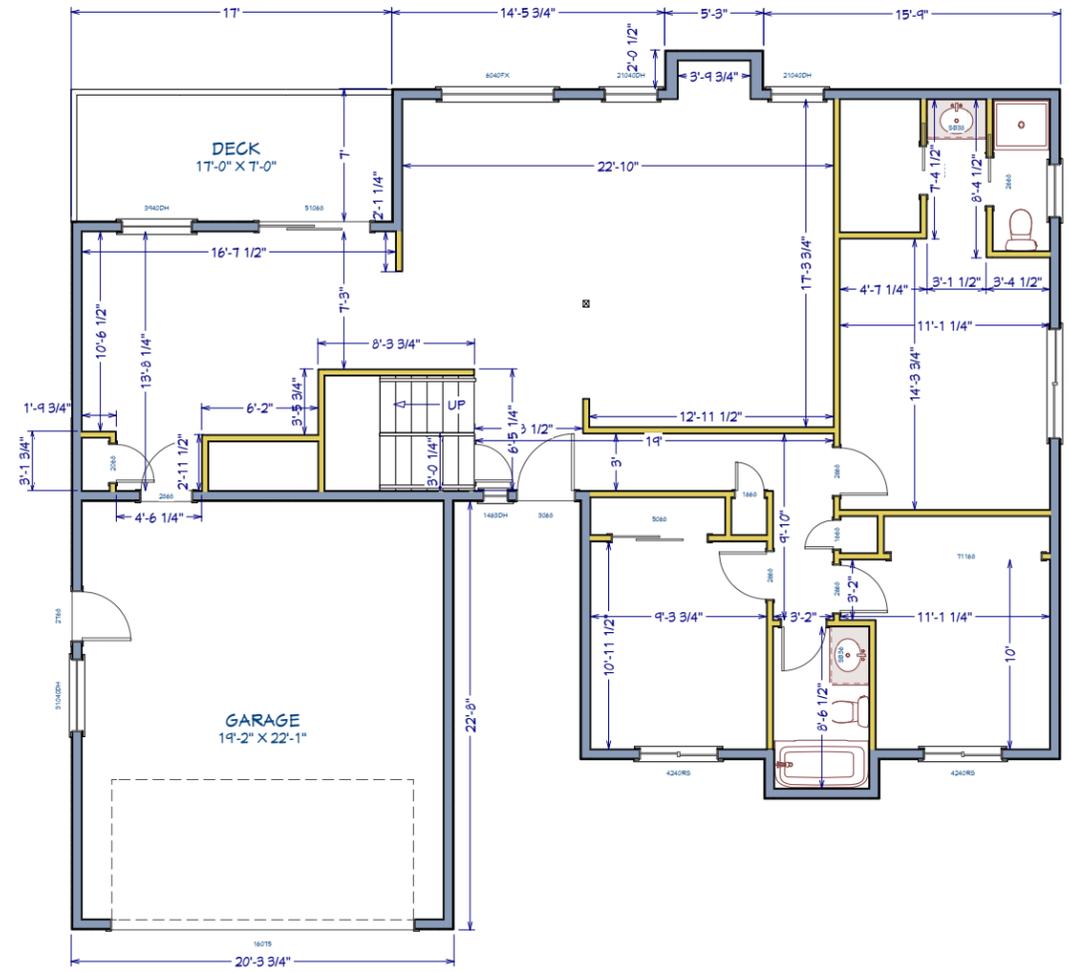
SURVEY to LOCATE RESIDENCE
LOT 5, ARBORDALE, PLAT No. 2263
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

PREPARED FOR:
DAVID ERAUT
5688 RIVER STREET
WEST LINN, OREGON 97068 (971) 336-8286
CIVIL ENGINEERS LAND SURVEYORS

BUFORD ASSOCIATES, INC.
415 NORTH STATE STREET
LAKE OSWEGO, OREGON 97034 (503) 635-3511
REC NO. L1659.14 (L1659PL.DWG) JUNE 30, 2016



SITE PLAN
SCALE: 1/15" = 1' 0"



WALL LEGEND

	(E) 6" EXTERIOR WALL
	(E) 4" INTERIOR WALL
	(E) 6" EXTERIOR WALL
	(N) 4" INTERIOR WALL
	(N) 6" INTERIOR WALL
	(N) 6" EXTERIOR WALL
	(N) 6" SHEAR WALL TYPE 1
	(N) 6" SHEAR WALL TYPE 2
	WALL TO BE DEMOLISHED
	(E) FOUNDATION WALL
	(N) FOUNDATION WALL



Client: Dave & Amy Erout
5688 River Dr
West Linn, OR 97068

SITE PLAN & AS BUILT

Drawings provided by:
Rachel Verdick
Verdick Residential Designs

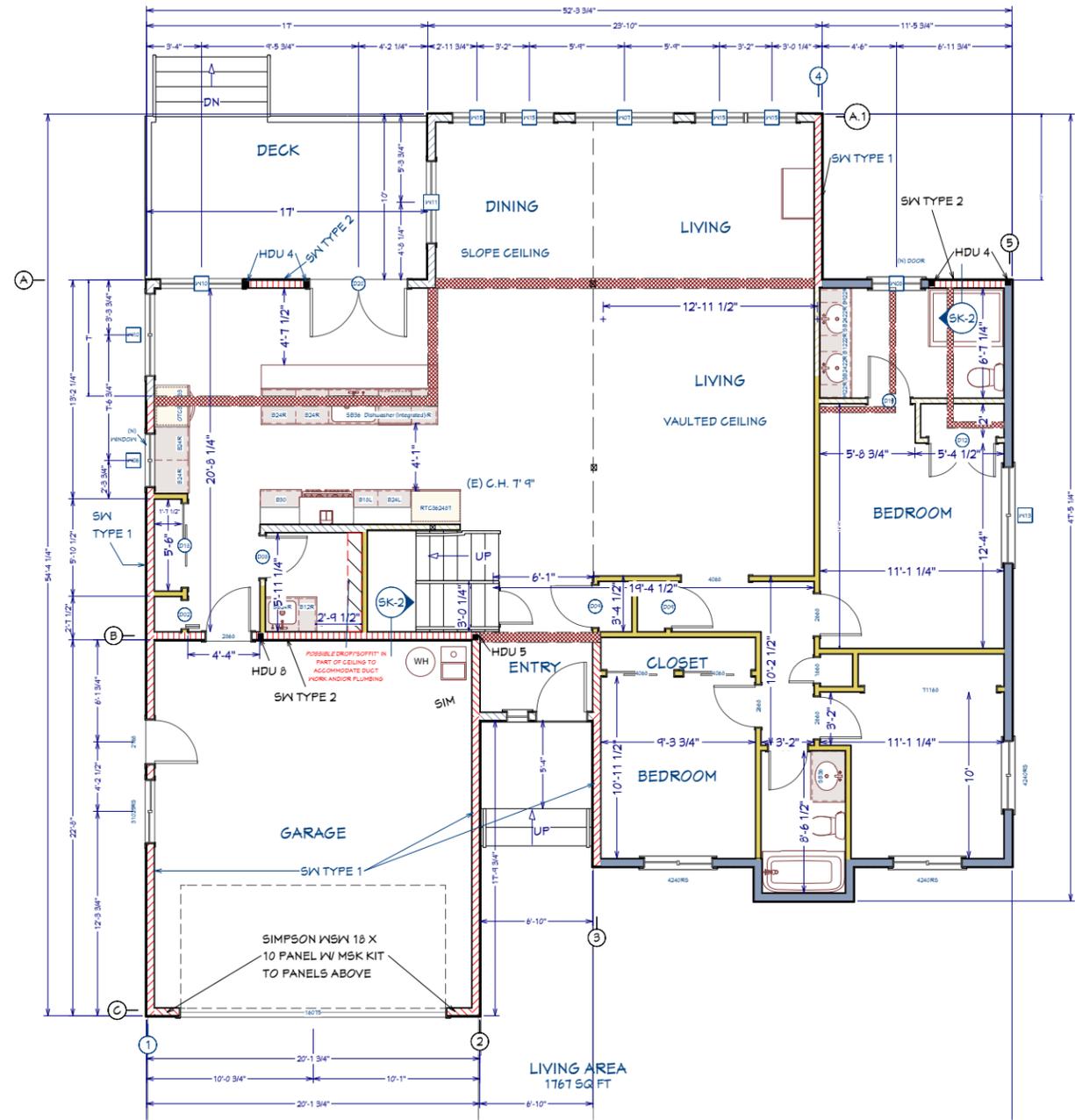
DATE:

7/11/2016

SCALE:

SHEET:

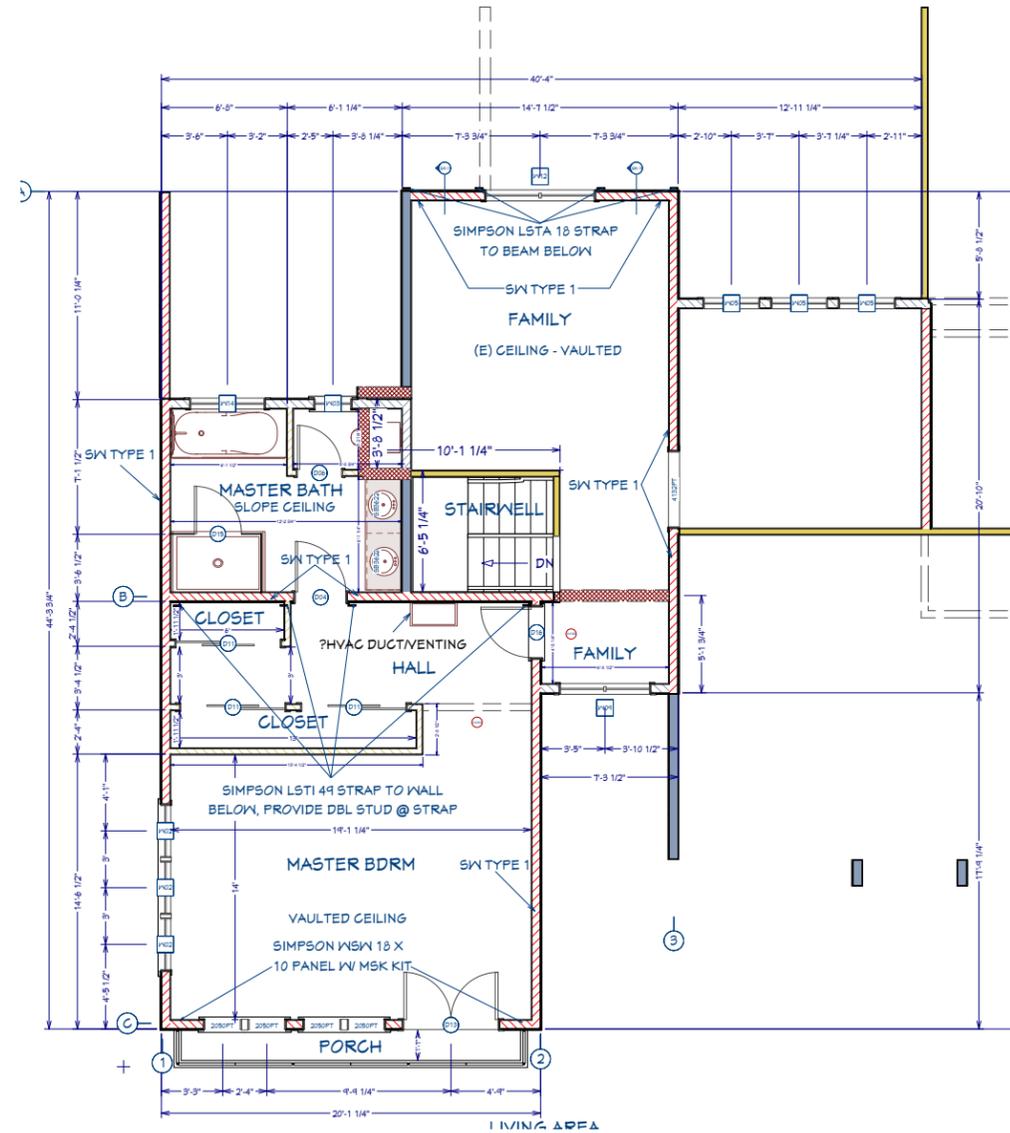
4



LATERAL PLAN: FIRST FLOOR
SCALE: 1/4" = 1' 0"

ROOF SHTG: 1/2" W 8d @ 6" OC EDGES & 12" OC FIELD APA RATED 24/0

FLOOR SHTG: 3/4" PLY GLUED & NAILED W 10d @ 6" OC EDGES. 12" OC FIELD APA RATED 32/16 OR BETTER



LATERAL PLAN: SECOND FLOOR
SCALE: 1/4" = 1' 0"

WALL LEGEND

	(E) 6" EXTERIOR WALL
	(E) 4" INTERIOR WALL
	(E) 6" EXTERIOR WALL
	(N) 4" INTERIOR WALL
	(N) 6" INTERIOR WALL
	(N) 6" EXTERIOR WALL
	(N) 6" SHEAR WALL TYPE 1
	(N) 6" SHEAR WALL TYPE 2
	WALL TO BE DEMOLISHED
	(E) FOUNDATION WALL
	(N) FOUNDATION WALL

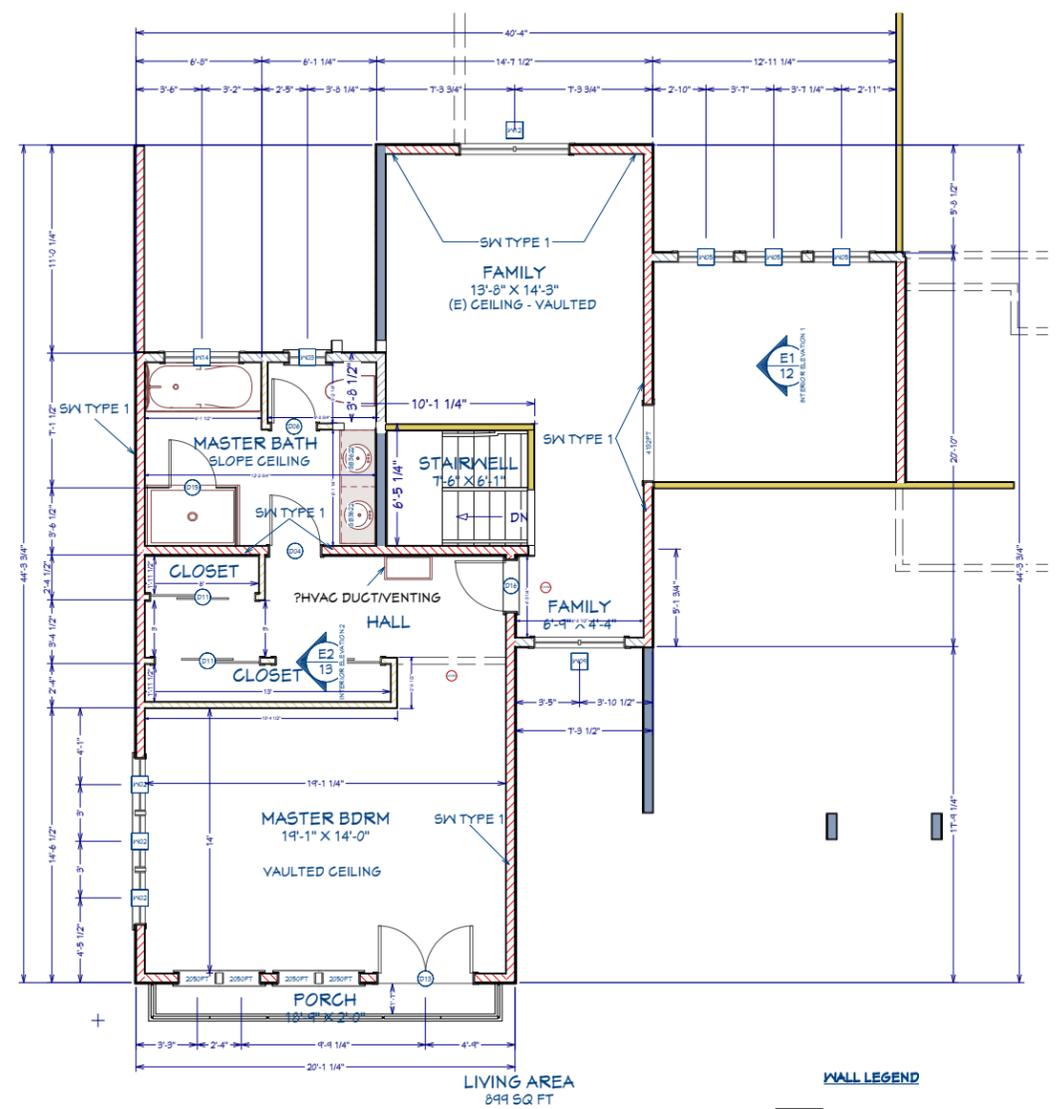
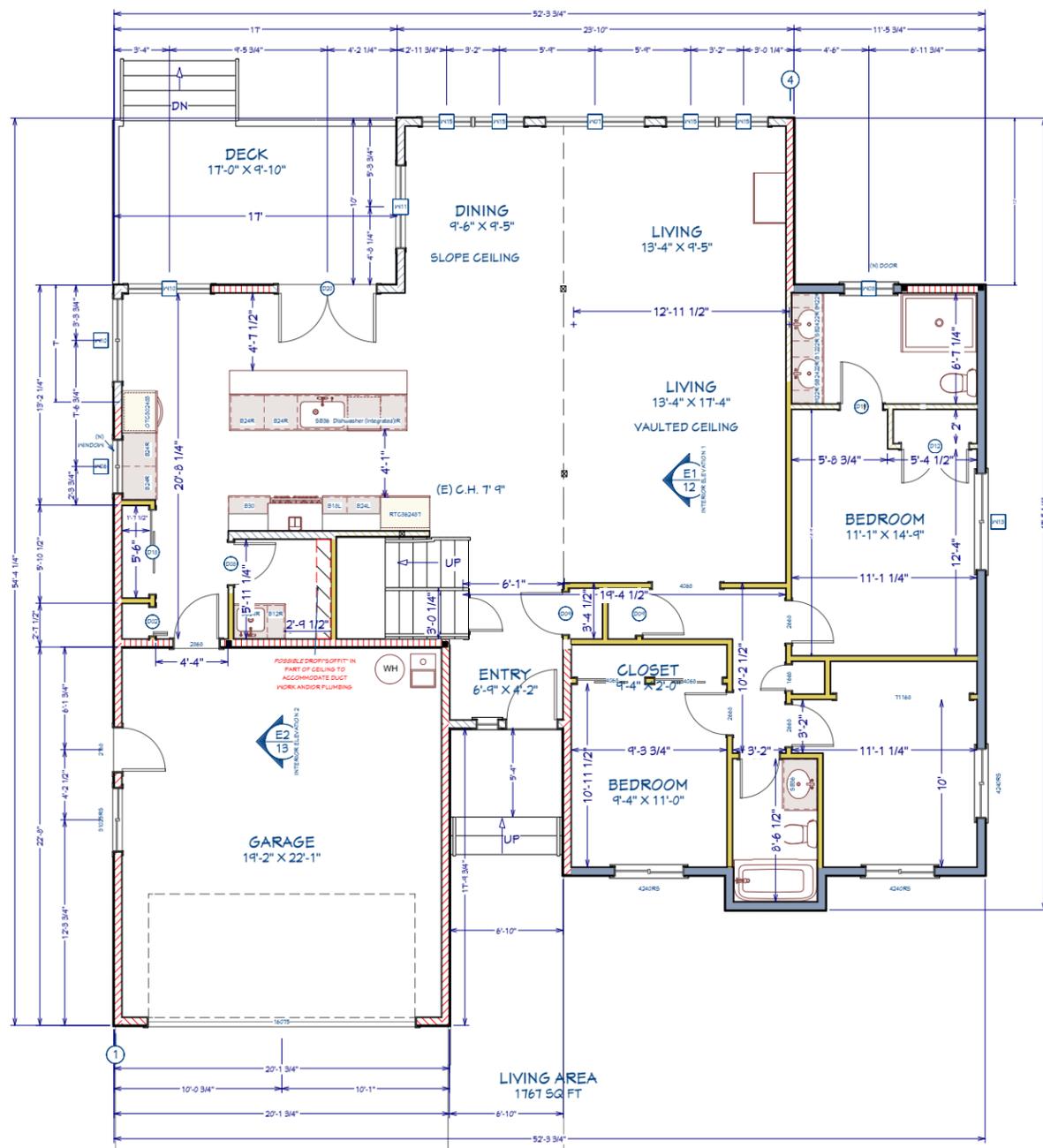


Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

LATERAL PLANS

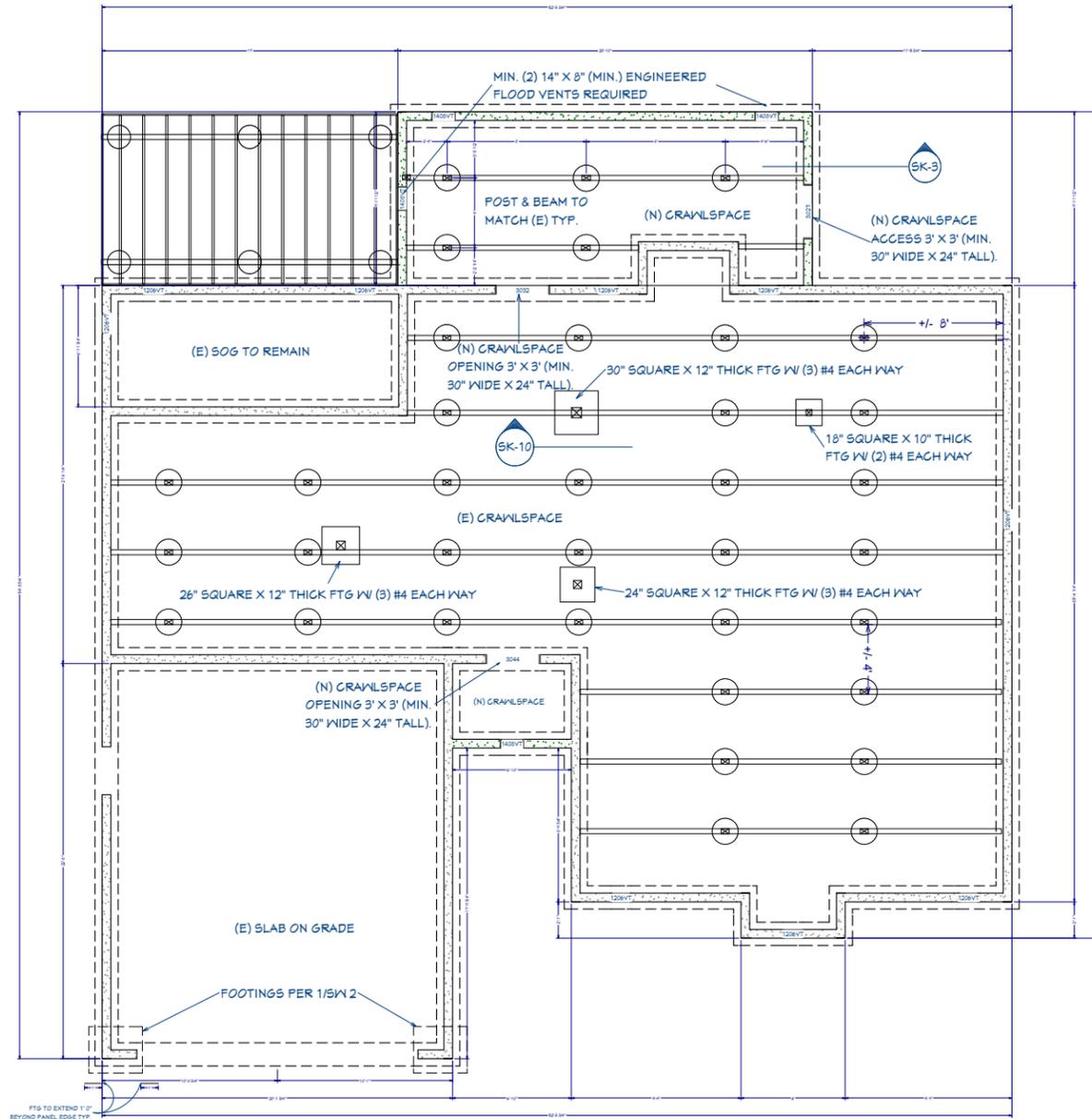
DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

DATE:
7/11/2016
SCALE:
SHEET:
5



WALL LEGEND

	(E) 6" EXTERIOR WALL
	(E) 4" INTERIOR WALL
	(E) 6" EXTERIOR WALL
	(N) 4" INTERIOR WALL
	(N) 6" INTERIOR WALL
	(N) 6" EXTERIOR WALL
	(N) 6" SHEAR WALL TYPE 1
	(N) 6" SHEAR WALL TYPE 2
	WALL TO BE DEMOLISHED
	(E) FOUNDATION WALL
	(N) FOUNDATION WALL



POST SPOT FOOTINGS TO MATCH POSTS ABOVE TYP.

FOUNDATION PLAN
SCALE: 1/4" = 1' 0"

FLOOD VENT NOTES:

-A minimum of (2) openings are required with a total minimum net area of 228 square inches to accommodate the 228 SF addition. 14"x8" engineered flood vents meeting FEMA standards would fulfill this requirement.

-The bottom of all openings shall be no higher than one foot above grade.

-Opening must be equipped with screens, louvers or other coverings or devices; provided that they permit the automatic entry of exit of floodwaters.

-Service equipment (e.g. furnaces, water heaters, washer/dryer etc.) is not permitted below the base flood elevation.

-All walls, floors and ceiling materials located below the base flood elevation must be unfinished and constructed of materials resistant to flood damage.

WALL LEGEND	
	(E) 6" EXTERIOR WALL
	(E) 4" INTERIOR WALL
	(E) 6" EXTERIOR WALL
	(N) 4" INTERIOR WALL
	(N) 6" INTERIOR WALL
	(N) 6" EXTERIOR WALL
	(N) 6" SHEAR WALL TYPE 1
	(N) 6" SHEAR WALL TYPE 2
	WALL TO BE DEMOLISHED
	(E) FOUNDATION WALL
	(N) FOUNDATION WALL



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

FOUNDATION PLAN

DRAWINGS PROVIDED BY:
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Verdick Residential Designs

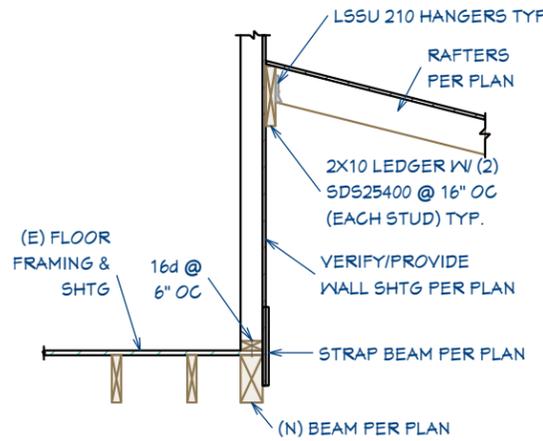
DATE:

7/11/2016

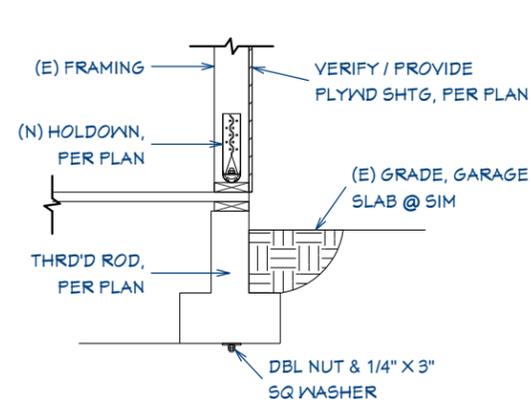
SCALE:

SHEET:

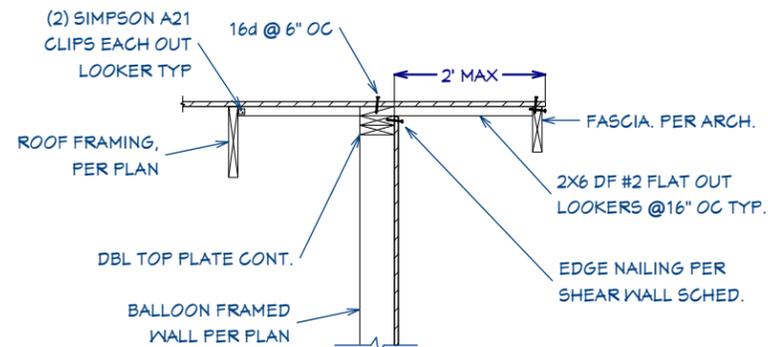
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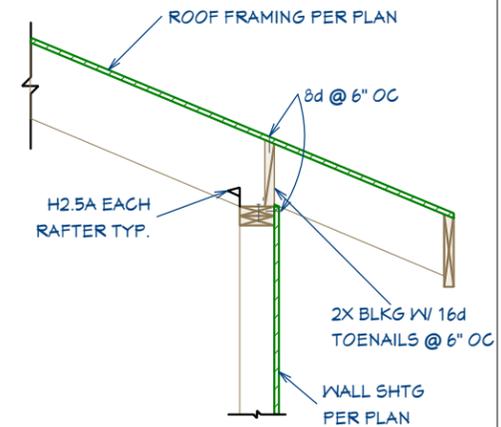
SK 1 SECTION @ STRAP BEAM
SCALE: 1" = 1' 0"



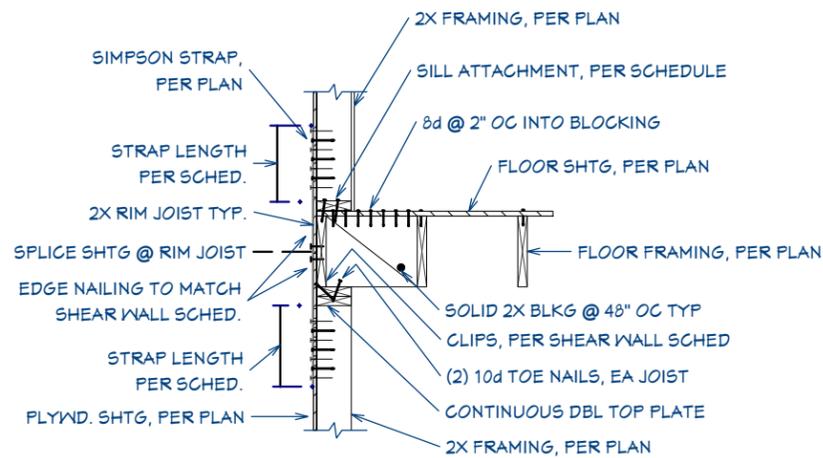
SK 2 SECTION: FOUNDATION
SCALE: 1" = 1' 0"



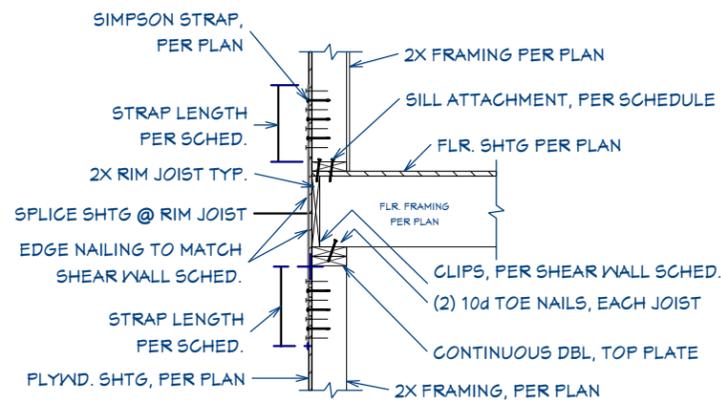
SK 3 SECTION: ROOF
SCALE: 1" = 1' 0"



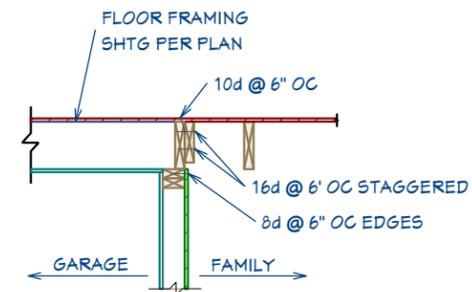
SK 4 SECTION: ROOF
SCALE: 1" = 1' 0"



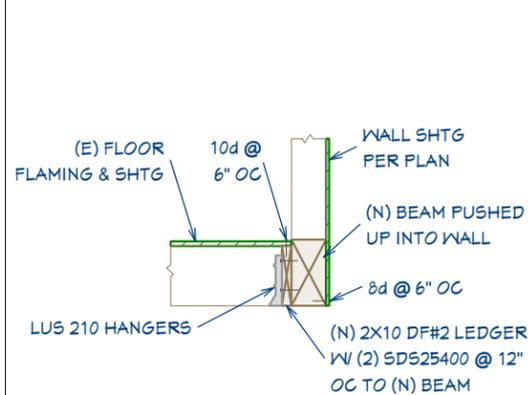
SK 5 SECTION: FLOOR
SCALE: 1" = 1' 0"



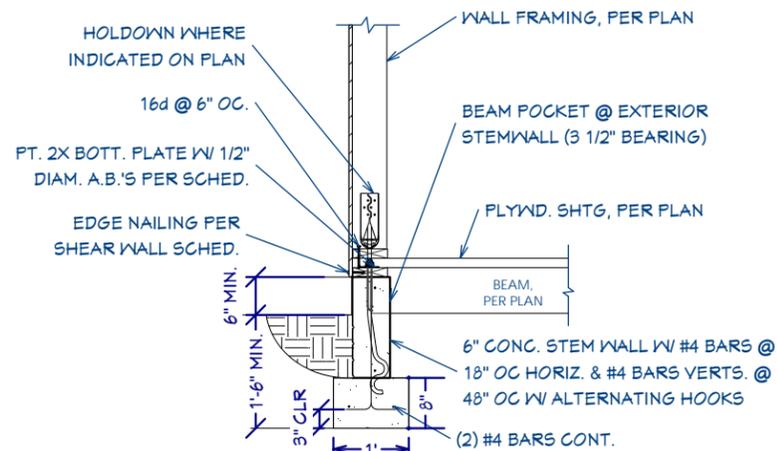
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SCALE: 1" = 1' 0"



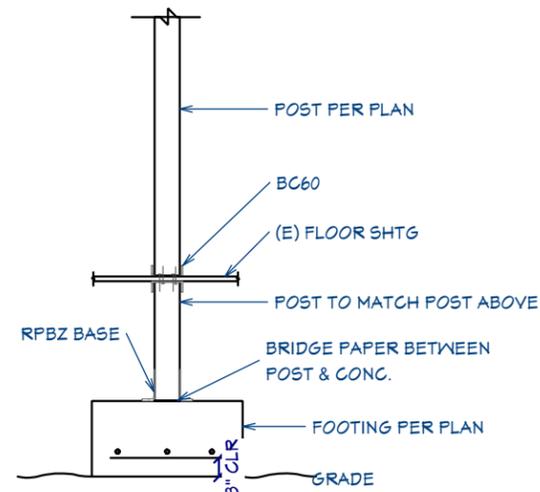
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SCALE: 1" = 1' 0"



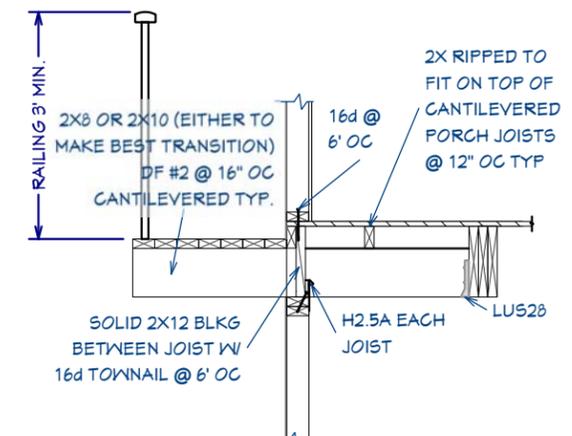
SK 8 SECTION: FLOOR
SCALE: 1" = 1' 0"



SK 9 SECTION: FOOTING
SCALE: 1" = 1' 0"



SK 10 SECTION: FOOTING
SCALE: 1" = 1' 0"



SK 11 SECTION: CANTILEVERED DECK
SCALE: 1" = 1' 0"

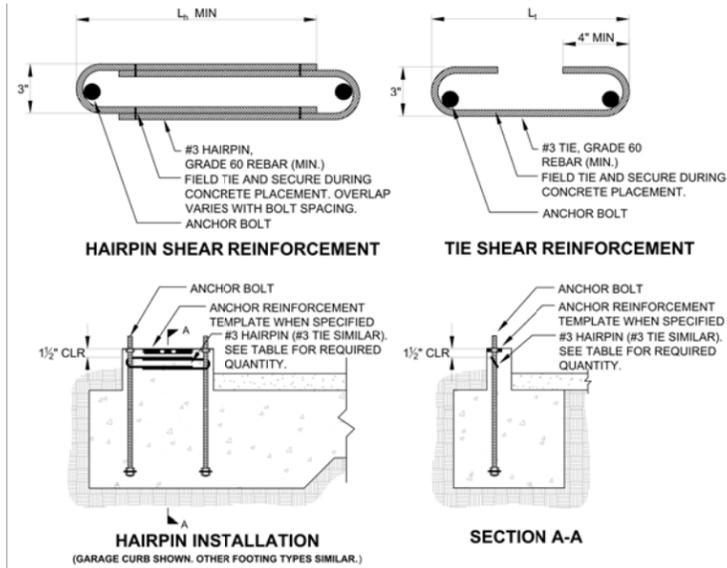


Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

DETAILS

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

DATE:	7/11/2016
SCALE:	
SHEET:	9



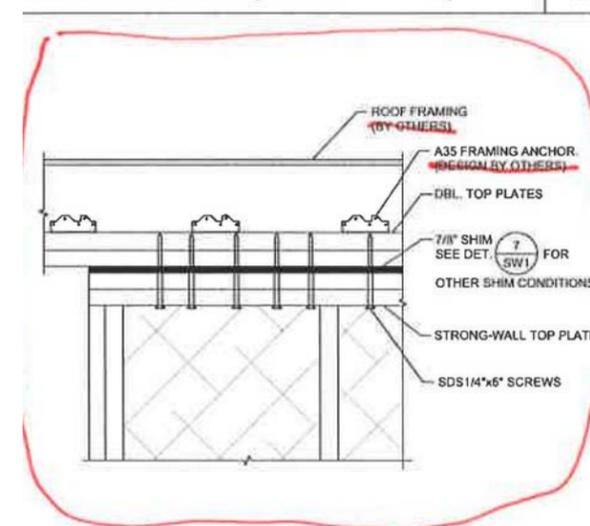
MODEL	L ₁ OR L ₂ (in.)	SEISMIC ³		WIND ⁴		ASD ALLOWABLE SHEAR LOAD, V (lbs.) ⁵	
		SHEAR REINFORCEMENT	MINIMUM CURB/STEMWALL WIDTH (in.)	SHEAR REINFORCEMENT	MINIMUM CURB/STEMWALL WIDTH (in.)	UNCRAKED	CRACKED
SWSB12	10 1/2	(1) #3 TIE	6	SEE NOTE 5	6	1035	740
SWSB18	15	(1) #3 HAIRPIN	6	(1) #3 HAIRPIN	6	HAIRPIN REINFORCEMENT ACHIEVES MAXIMUM ALLOWABLE SHEAR LOAD OF THE SWSB	
SWSB24	19	(1) #3 HAIRPIN	6	(1) #3 HAIRPIN	6		

- NOTES:
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318-11 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
 2. TIE OR HAIRPIN REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
 3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
 4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
 5. USE (1) #3 TIE FOR SWSB12 WHEN WALL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
 6. WHEN USING THE ANCHOR REINFORCEMENT TEMPLATE, THE #3 TIE REQUIRED FOR THE SWSB12 MAY BE OMITTED, AND THE SHEAR REINFORCEMENT FOR THE SWSB18 MAY BE REDUCED FROM (1) #3 HAIRPIN TO (1) #3 TIE.

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

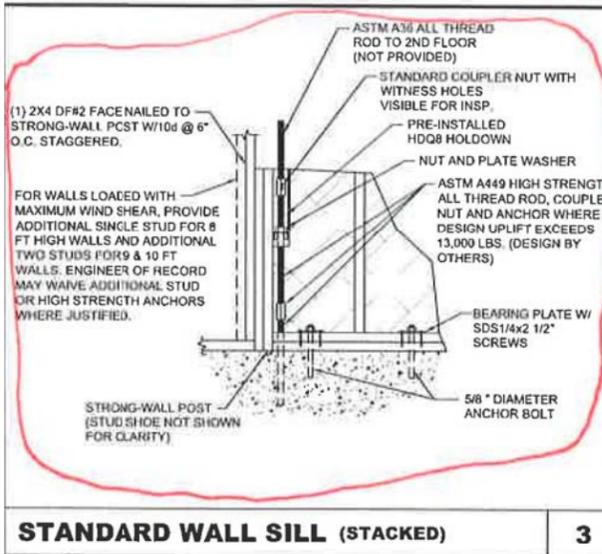
STRONG-WALL® SB SHEAR ANCHORAGE SCHEDULE AND DETAILS

5



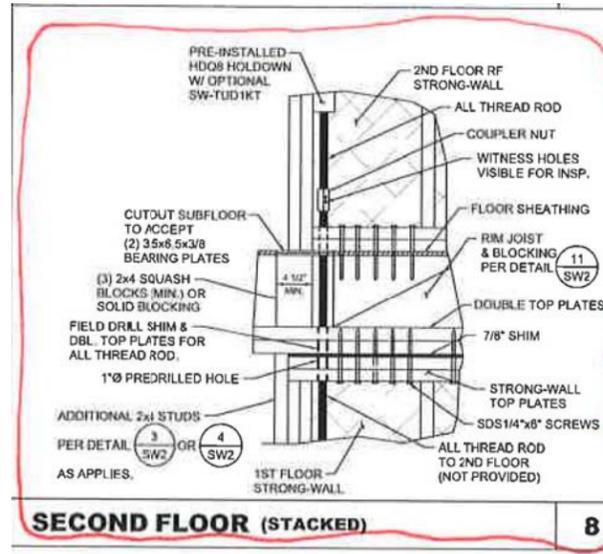
TOP PLATE CONNECTION

12



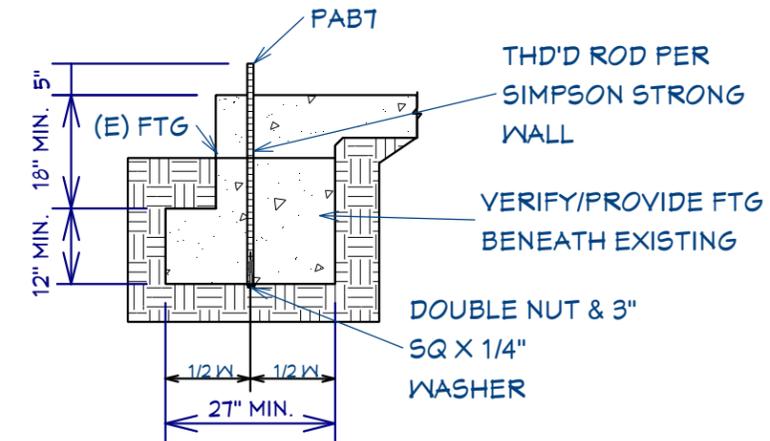
STANDARD WALL SILL (STACKED)

3

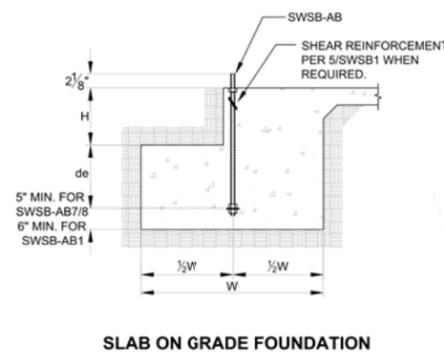


SECOND FLOOR (STACKED)

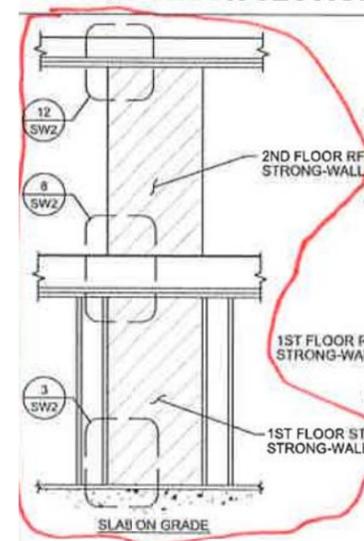
8



FROM DETAIL 1 ON SW 2
SCALE: 1" = 1' 0"



SLAB ON GRADE FOUNDATION



STACKED STRONG-WALL®



Client: Dave & Amy Eraut
5666 River Dr
West Linn, OR 97068

SHEAR WALL DETAIL

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

DATE:

7/11/2016

SCALE:

SHEET:

10

STRONG-WALL® SB SECOND-STORY WALLS - STACKED APPLICATION

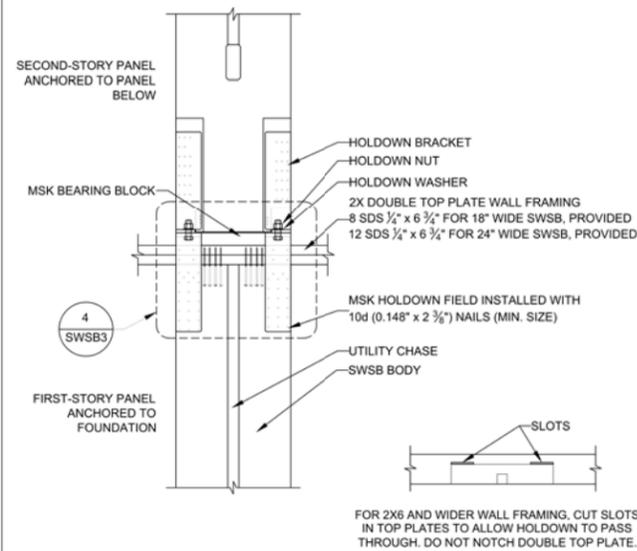
MODEL NO.	W (in)	H (in)	NUMBER OF SCREWS IN TOP OF WALL	TOTAL WALL WEIGHT (lbs)
SWSB12x9	12	105 1/4	6	125
SWSB18x9	18	105 1/4	8	180
SWSB24x9	24	105 1/4	12	240
SWSB18x10	18	117 1/4	8	200
SWSB24x10	24	117 1/4	12	265
SWSB18x11	18	129 1/4	8	215
SWSB24x11	24	129 1/4	12	290
SWSB18x12	18	141 1/4	8	235
SWSB24x12	24	141 1/4	12	315

- ALL PANELS COME WITH TWO PRE-ATTACHED HOLD-DOWNS, TWO SLOTTED HEX NUTS, TWO WASHERS, SDS 1/2"x6 3/4" SCREWS (IN QUANTITIES INDICATED IN TABLE), AND INSTALLATION INSTRUCTIONS.
- ORDER SWSB-MSK SEPARATELY FOR TWO-STORY STACKED APPLICATIONS. KIT INCLUDES TWO MULTI-STORY KIT HOLD-DOWNS, LSL BEARING BLOCK (LENGTH CORRESPONDS TO PANEL WIDTH), AND INSTALLATION INSTRUCTIONS.
- ALL PANELS ARE 3 1/2" THICK.

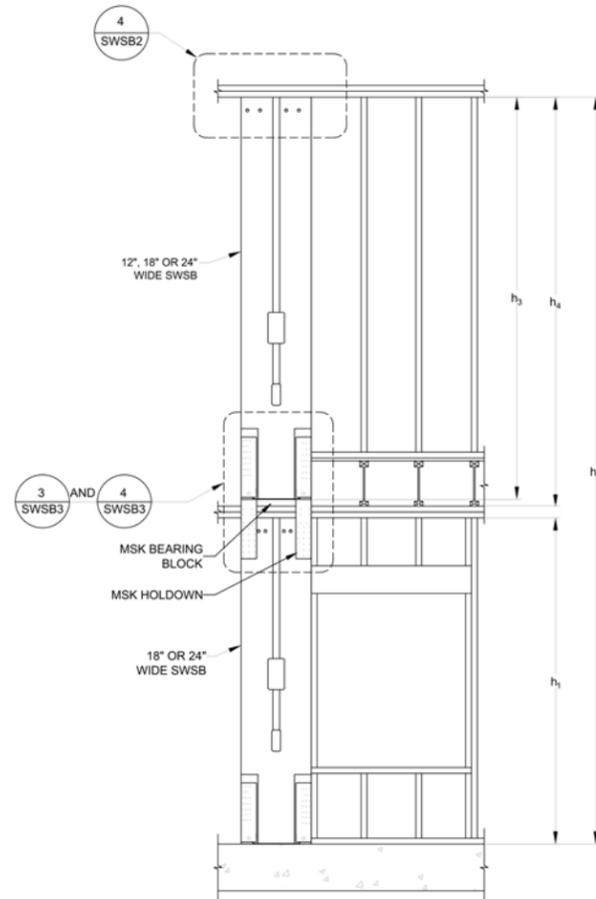
STRONG-WALL® SB FIRST-STORY WALLS-STACKED APPLICATION

MODEL NO.	W (in)	H (in)	ANCHOR BOLTS		NUMBER OF SCREWS IN TOP OF WALL	TOTAL WALL WEIGHT (lbs)
			QUANTITY	DIA. (in)		
SWSB18x8	18	93 1/4	2	7/8	8	165
SWSB24x8	24	93 1/4	2	1	12	220
SWSB18x9	18	105 1/4	2	7/8	8	180
SWSB24x9	24	105 1/4	2	1	12	240
SWSB18x10	18	117 1/4	2	7/8	8	200
SWSB24x10	24	117 1/4	2	1	12	265
SWSB18x11	18	129 1/4	2	7/8	8	215
SWSB24x11	24	129 1/4	2	1	12	290
SWSB18x12	18	141 1/4	2	7/8	8	235
SWSB24x12	24	141 1/4	2	1	12	315

- ALL PANELS COME WITH TWO PRE-ATTACHED HOLD-DOWNS, TWO SLOTTED HEX NUTS, TWO FLAT WASHERS, SDS 1/2"x6 3/4" SCREWS (IN QUANTITIES INDICATED IN TABLE), AND INSTALLATION INSTRUCTIONS.
- ALL PANELS ARE 3 1/2" THICK.



TWO-STORY STACKED SWSB MODELS



NOTES:

1ST STORY SWSB MUST BE THE SAME WIDTH OR WIDER THAN THE 2ND STORY SWSB

JOIST AND SHEATHING MAY BE ATTACHED TO SWSB WITH JOIST HANGER AND LEDGER. LOAD TRANSFER IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL OF RECORD.

SWSB MULTI-STORY KIT INCLUDES MSK BEARING BLOCK AND MSK HOLD-DOWN BRACKET

LEGEND:

h_1 = 1ST STORY SWSB HEIGHT, TOP OF CONCRETE TO UNDERSIDE OF 1ST STORY TOP PLATES (INCHES)

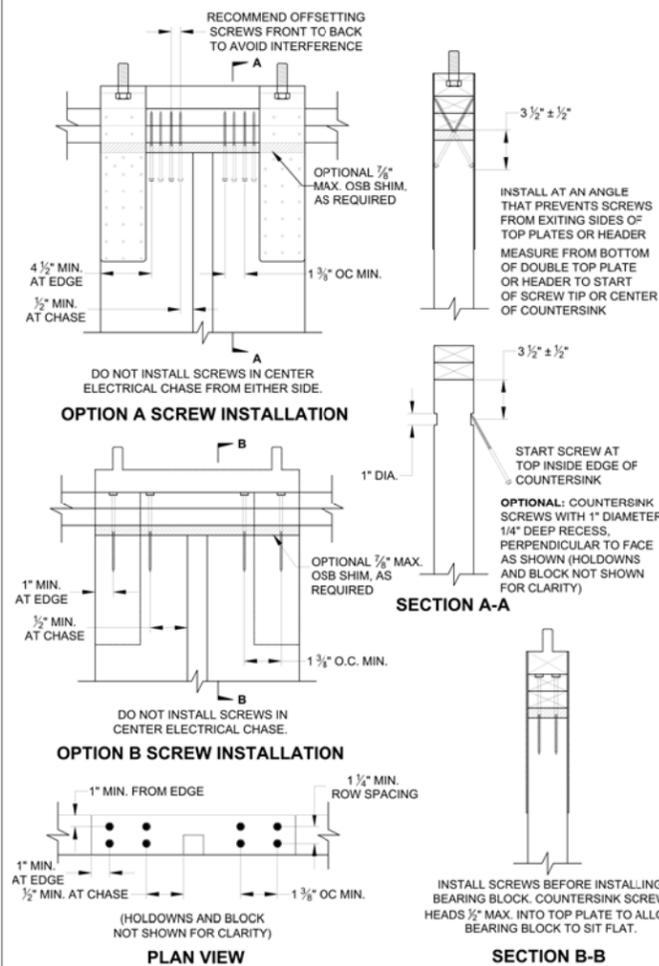
h_2 = TOTAL ASSEMBLY HEIGHT, TOP OF CONCRETE TO UNDERSIDE OF 2ND STORY TOP PLATES (INCHES)

$h_3 = h_2 - 2"$ (IN.) = 2ND STORY SWSB HEIGHT, TOP OF BEARING BLOCK TO BOTTOM OF 2ND STORY TOP PLATES

h_4 = TOP OF 1ST STORY TOP PLATES TO UNDERSIDE OF 2ND STORY TOP PLATES (IN.)

TWO-STORY STACKED ELEVATION

1 TWO-STORY STACKED INSTALLATION



2 TWO-STORY STACKED SCREW SPACING OPTIONS

3

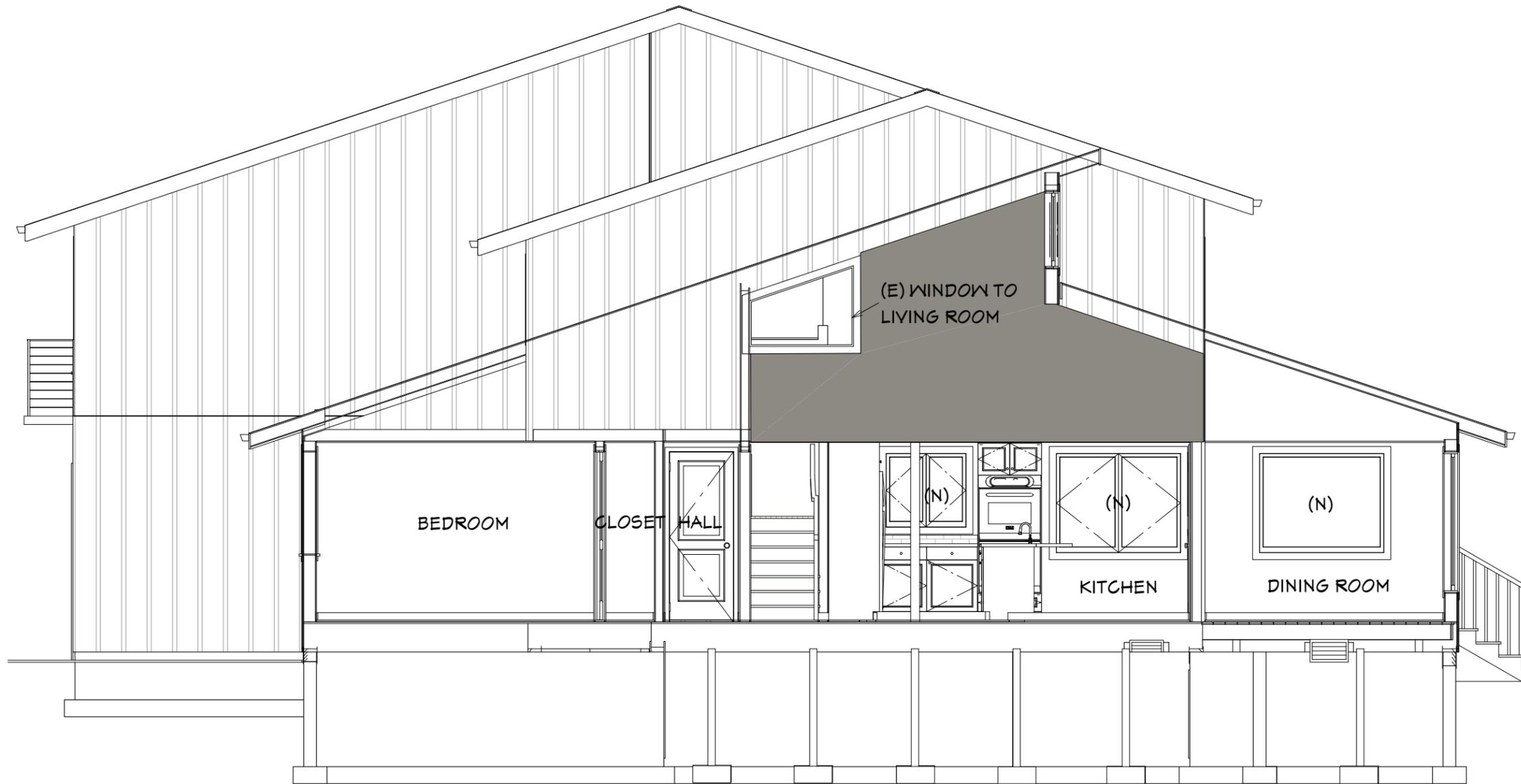


Client: Dave & Amy Eraut
5666 River Dr
West Linn, OR 97068

SHEAR WALL DETAIL

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

DATE:
7/11/2016
SCALE:
SHEET:
11



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

WINDOW SCHEDULE									
NUMBER	LABEL	QTY	FLOOR	SIZE	WIDTH	HEIGHT	DESCRIPTION	EGRESS	COMMENTS
W01	1463FX	1	1	1463FX	16"	75"	FIXED GLASS		
W02	210245C	3	2	210245C	33 3/4"	28"	SNGL CASEMENT-HR		
W03	20305C	1	2	20305C	24"	36"	SNGL CASEMENT-HR		
W04	3020FX	3	3	3020FX	36"	24"	FIXED GLASS		
W05	30305C	3	2	30305C	36"	36"	SNGL CASEMENT-HR		
W06	3330DC	1	1	3330DC	34"	36"	DBL CASEMENT-LHL/RHR		
W07	6056FX	1	1	6056FX	72"	66"	FIXED GLASS		
W08	30405C	1	1	30405C	36"	48"	SNGL CASEMENT-HR		
W09	41030DC	1	2	41030DC	58"	36"	DBL CASEMENT-LHL/RHR		
W10	5040DC	2	1	5040DC	60"	48"	DBL CASEMENT-LHL/RHR		
W11	5040FX	1	1	5040FX	60"	48"	FIXED GLASS		
W12	51030DC	1	2	51030DC	70"	36"	DBL CASEMENT-LHL/RHR		
W13	51030RS	1	1	51030RS	70"	36"	RIGHT SLIDING		
W14	4030DC	1	2	4030DC	48"	36"	DBL CASEMENT-LHL/RHR		
W15	3056FX	4	1	3056FX	36"	66"	FIXED GLASS		

NOTE:
VERIFY WITH OWNER NEW WINDOWS AND DOOR,
STYLE TYPE AND SIZES.

DOOR SCHEDULE									
NUMBER	LABEL	QTY	FLOOR	SIZE	WIDTH	HEIGHT	DESCRIPTION	THICKNESS	COMMENTS
D02	1868	1	1	1868 R	20"	80"	2 DR. BIFOLD-SLAB	1 3/8"	
D04	2868	1	2	2868 L IN	32"	80"	HINGED-DOOR P04	1 3/8"	
D06	2468	1	2	2468 L IN	28"	80"	HINGED-DOOR P04	1 3/8"	
D08	2668	1	1	2668 L IN	30"	80"	HINGED-SLAB	1 3/8"	
D09	2668	2	1	2668 R IN	30"	80"	HINGED-DOOR P04	1 3/8"	
D11	5668	3	2	5668 R IN	66"	80"	SLIDER-DOOR P04	1 3/8"	
D12	4068	1	1	4068 L/R IN	48"	80"	DOUBLE HINGED-DOOR P04	1 3/8"	
D13	5068	1	2	5068 L/R EX	60"	80"	EXT. DOUBLE HINGED-GLASS	1 3/4"	
D14	3068	1	1	3068 R EX	36"	80"	EXT. HINGED-DOOR E20	1 3/4"	
D15	2668	1	2	2668 L IN	30"	80"	HINGED-GLASS DOOR SC02	1 3/8"	
D16	2868	1	2	2868 R IN	32"	80"	HINGED-SLAB	1 3/8"	
D18	5068	1	1	5068 L IN	60"	80"	SLIDER-GLASS	1 3/8"	
D19	2668	1	1	2668 L IN	30"	80"	HINGED-DOOR P04	1 3/8"	
D20	51068	1	1	51068 L/R EX	70"	80"	EXT. DOUBLE HINGED-GLASS	1 3/4"	



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

INTERIOR ELEVATION &
SCHEDULES

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

DATE:

7/11/2016

SCALE:

SHEET:

12

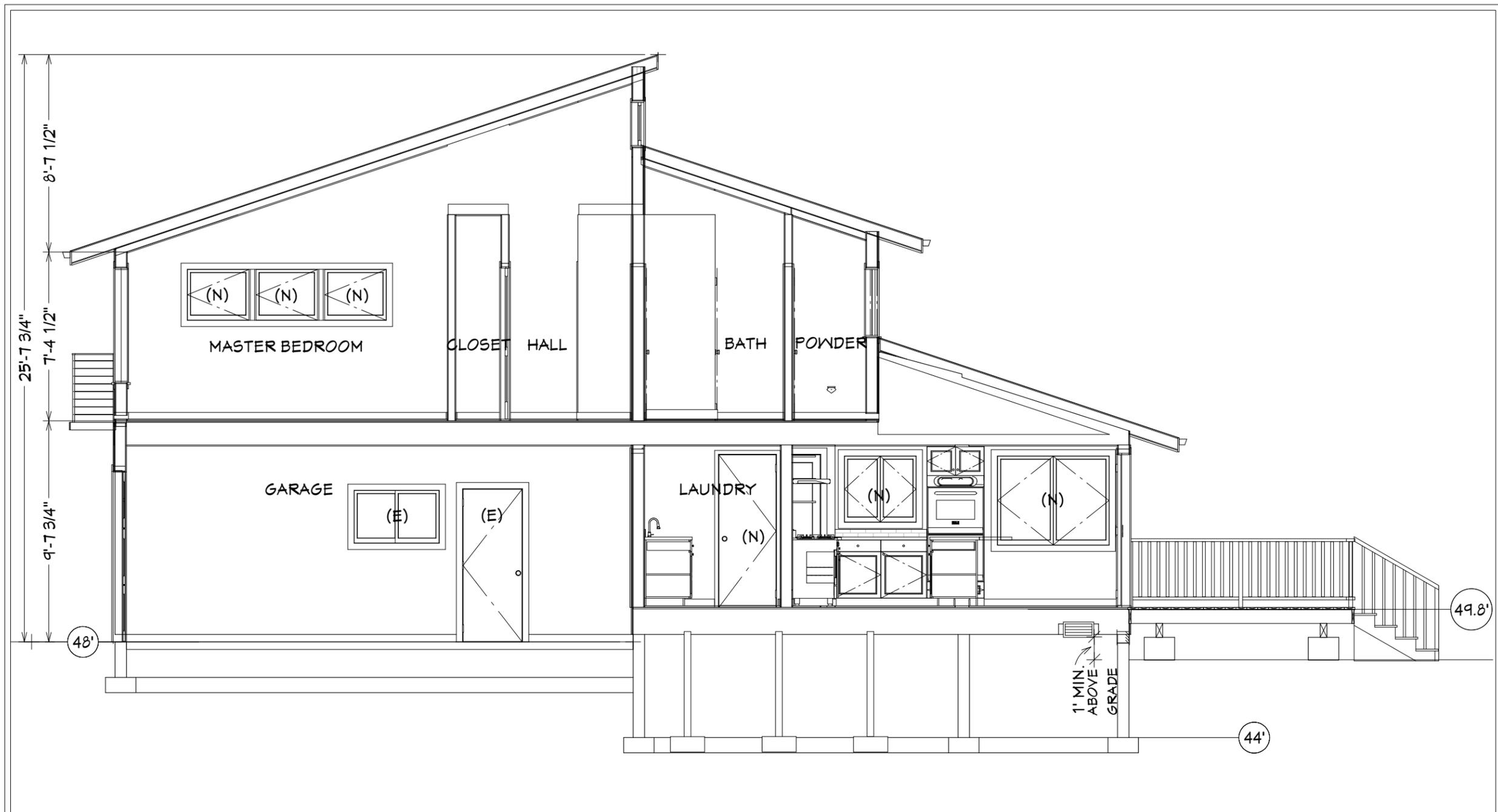


Client: Dave & Amy Eraut
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West Linn, OR 97068

INTERIOR ELEVATION &
ELEVATION DATA

DRAWINGS PROVIDED BY:
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Verdick Residential Designs

DATE:
7/11/2016
SCALE:
SHEET:
13

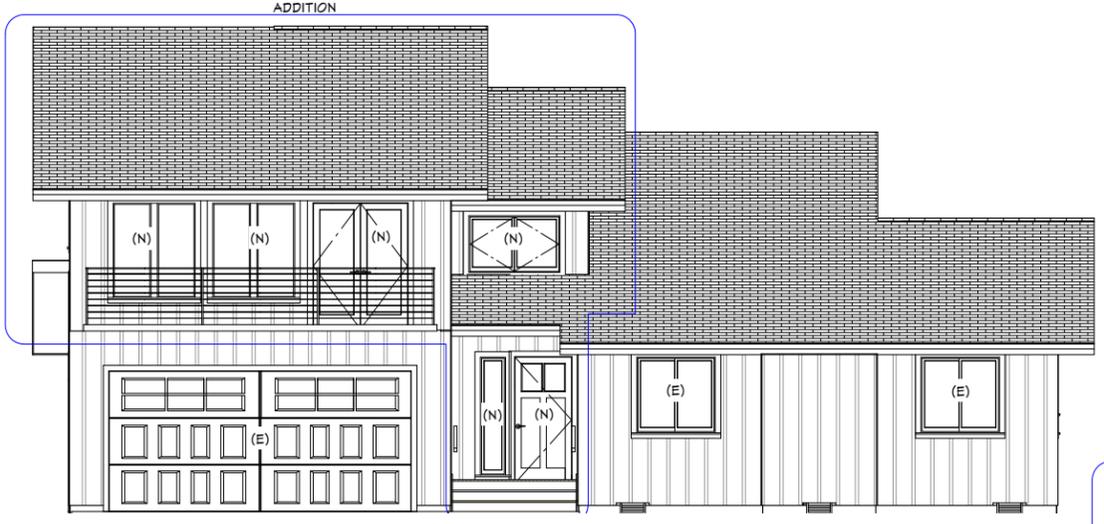


INTERIOR ELEVATION 2
SCALE: 1/2" = 1' 0"

ELEVATION DATA (TAKEN FROM THE ELEVATION SURVEY DATED 12/14/15):

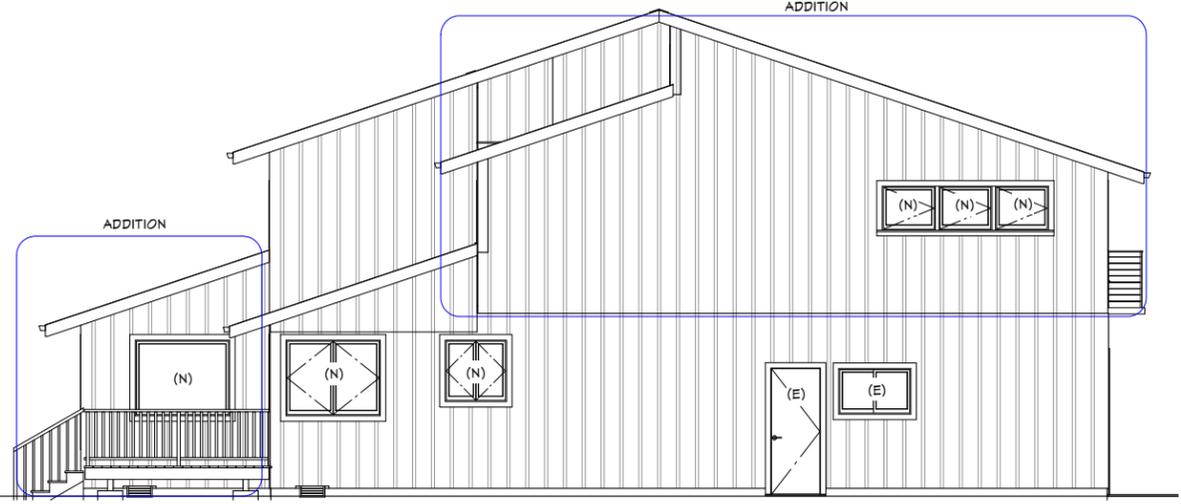
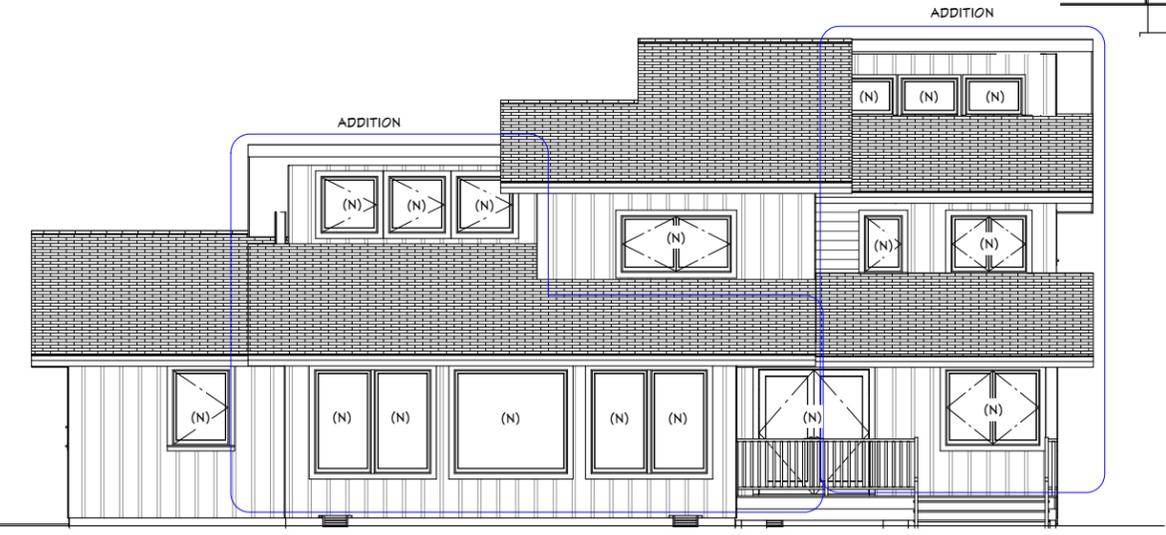
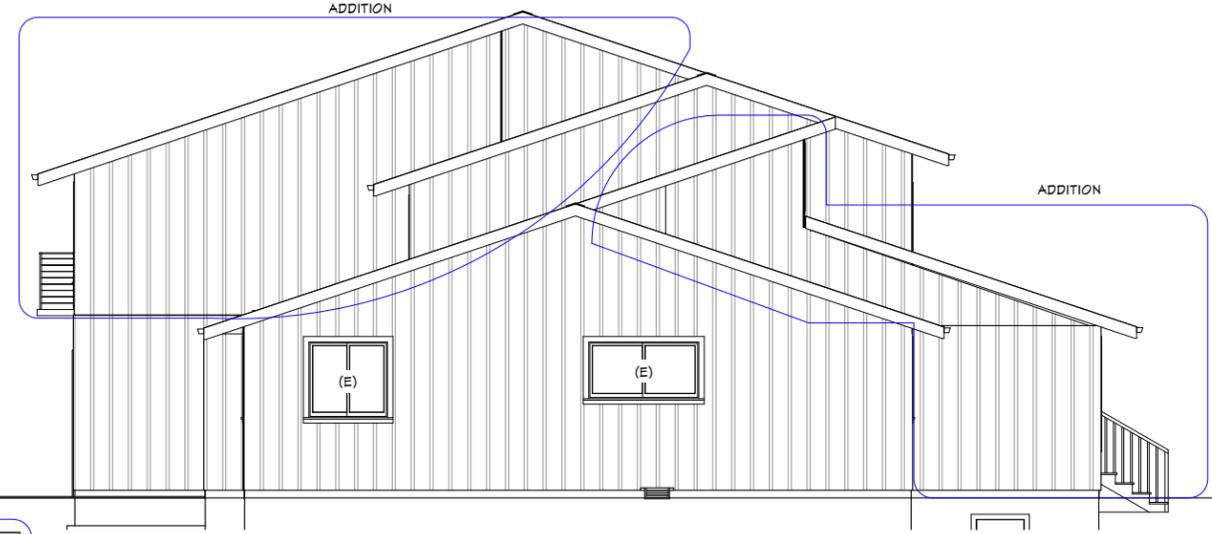
a) Top of bottom floor (including crawlspace, etc.)	44.0	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
b) Top of the next higher floor	49.8	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
c) Bottom of the lowest horizontal structural member (V Zones only)	N/A	<input type="checkbox"/> feet	<input type="checkbox"/> meters
d) Attached garage (top of slab)	48.0	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	50.0	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
f) Lowest adjacent (finished) grade next to building (LAG)	45.1	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
g) Highest adjacent (finished) grade next to building (HAG)	47.9	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	45.1	<input type="checkbox"/> feet	<input type="checkbox"/> meters

Check the measurement used.



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

- NOTES:**
- ALL OVERHANGS TO EXTEND TO 2' 0" TYP.
 - NEW ROOF FOR ENTIRE HOUSE, OWNERS CHOICE
 - NEW SIDING FOR ENTIRE HOUSE, OWNERS CHOICE



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

ELEVATIONS

DRAWINGS PROVIDED BY:
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Verdick Residential Designs

DATE:	7/11/2016
SCALE:	
SHEET:	14

ERAUT REMODEL

PROJECT DESCRIPTION

EXPAND THE LIVING ROOM AND ADD A MASTER SUITE ABOVE THE GARAGE. IN ADDITION CREATE AN ENTRY BY BRINGING FORWARD THE EXISTING FRONT PORCH AND ENTRY.

CONTACT LIST

OWNERS: DAVE AND AMY ERAUT
5688 RIVER ST.
WEST LINN, OR 97068

BUILDING DESIGNER:
VERDICK RESIDENTIAL DESIGNS
CONTACT: RACHEL VERDICK
TEL: (503) 475-2726
EMAIL: VERDICKRESIDENTIALDESIGNS@GMAIL.COM

CONTRACTOR:

STRUCTURAL ENGINEER:
GABI MILLER
HAYDEN CONSULTING ENGINEERS
TEL: (503) 986-9994
EMAIL: gmiller@hayden-engineers.com

CIVIL ENGINEER:
GARY BUFORD
BUFORD ASSOCIATES, LLC
415 NORTH STATE ST.
LAKE OSWEGO, OR 97034
(503) 635-3511

PROJECT INFORMATION

ADDRESS: 5688 RIVER DR.
WEST LINN, OR 97068

JURISDICTION: WEST LINN

LOT SIZE: 18,876 SF
TAX LOT ID: 22E30AC01605
YEAR BUILT: 1978
ZONE: R-10

EXISTING LIVING: 1650 SF
NEW LIVING: 1016 SF
TOTAL LIVING: 2666 SF
GARAGE: 457 SF

FLOOR AREA:
(E) FLOOR AREA (INCL. GARAGE & COVERED BACK DECK): 1962 SF
(N) FLOOR AREA: 266 SF
TOTAL FLOOR AREA: 2228 SF / 11.8%

INDEX

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PAGE 7 FLOOR PLANS
PAGE 8 FOUNDATION PLAN
PAGE 9 SECTION DETAILS
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PAGE 13 INTERIOR ELEVATION 2 & ELEVATION DATA
PAGE 14 EXTERIOR ELEVATIONS



CODE NOTES, ENERGY ENHANCEMENTS

Permits: Building/Structural Permit for now.
Mechanical, Electrical, and Plumbing permits will be pulled later by trade contractors.

Codes: 2014 ORSC based on the 2009 IRC & ASCE 7-10 for lateral engineering.
Roof Snow Load = 25psf
Floor Live Load = 40 psf
Wind: 120 mph ultimate, exposure B.
Seismic: Zone D-2, Site Class D = "stiff soil", SDS=.12 R=6.5

Occupancy: Addition to house = R-3

Construction: Conventional wood framed construction.

Foundation: Footings are to be on undisturbed level soil, min. 18" below grade for frost
Soil Bearing assumed to be 1500psf min.
Concrete: F'c= 2500psi min 28day compressive strength typical.
F'c= 3000psi min. if exposed to weather
Reinforcing Rebar to be ASTM A-615 Grade 60. 1#4 ftg, 1#4 top of wall, #4 vert at 4'oc.
Cover Crawl Space with 6mil black visqueen vapor barrier.
Post and beam - 1-1/8" flooring on 4x8 at 32"oc on 4x4 post (4x6 at splices) on 8"x18" ftg
Foundation Vents required - 1sf/150sf crawl space, near corners for cross ventilation.
All wood in contact with concrete to be pressure treated or protected with roofing shingle.

Framing: Sill Plates: HF2 or DF2, PT if in contact with concrete.
Glu-lam Beam - 24F-V4
Headers - DF#2
Studs - 2x6 @ 16"oc Stud Grade
Exterior Wall Sheathing: 7/16" OSB/Plywood with 8d at 6/12 nailing, block all edges, UNO
Floor: P&B w/ 4x8 at 32"oc, with 4x4 posts, (4x6 at splice)
Floor Sheathing: 1-1/8" T&G OSB/Plywood floor sheathing
Roof Sheathing: 7/16" OSB/Plywood roof rated sheathing to span 24", 8d at 6/12"oc.
Roof Trusses - Pre-engineered & pre-manufactured, 2'oc max, H-1 or H2.5 at ends

Roof: 30 year asphalt Architectural Shingle on 30lb felt paper.
Provide attic ventilation using vented eave blocks and roof vents

Insulation: Roof R-49, Walls R-21, Underfloor R-30.

Drywall: 1/2" drywall with Td cooler nails

Siding: Hardi-plank lap siding on approved rain-screen vapor barrier "Tyvek", or equivalent

Smoke & CO: One combination smoke detector & CO detector each floor, smoke detector in each bedroom.

Radon: Provide 3" ABS from below crawl space visqueen and vented up through the roof for future radon mitigation measures.

Energy: Large Additions must meet requirements of Table N1101.1(2)
Envelope Enhancement Measure 2:
Conservation Measure A:

GENERAL NOTES

1. THE DRAWINGS ENCLOSED ARE FOR DESIGN INTENT ONLY. THE BUILDING DESIGNER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, OR SEQUENCING OF TRADES INVOLVED.
2. ALL CONSTRUCTION SHALL COMPLY WITH 2014 EDITION OF THE STATE OF OREGON RESIDENTIAL, OREGON ELECTRICAL, PLUMBING AND MECHANICAL SPECIALTY CODES (2014 ORSC, 2014 OPSC, 2014 OESP, 2014 OMSC) ADOPTED BY THE STATE OF OREGON.
3. OWNER/CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SIT CONDITIONS BEFORE STARTING WORK. THE OWNER/CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES, CHANGES, OMISSIONS, OR SUBSTITUTIONS. ALL WORKMANSHIP SHALL CONFORM TO THE ORSC OREGON RESIDENTIAL SPECIALTY CODE.
4. OWNER/CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, AND PROTECT OR RELOCATE THEM AS NECESSARY.
5. IN THE EVENT THERE IS A DISCREPANCY IN THESE DRAWINGS AND THE ACTUAL FIELD CONDITIONS, PRIOR TO CONTINUING WITH THE WORK, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER OR STRUCTURAL ENGINEER IN WRITING BY INDICATING WHERE THE DISCREPANCY EXISTS AND THE DESIGNER WILL RESPOND IN WRITING WITHIN 5 WORKING DAYS.
6. DO NOT SCALE DRAWINGS. LARGER SCALE DETAIL DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
7. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADES AND THAT NO SUBSEQUENT TRADE DAMAGES WORK COMPLETED BY A PREVIOUS TRADE.
8. OWNER/CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THE WORK ON THESE PLANS. THEY ARE RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION AND FOR MEETING SAFETY REQUIREMENTS.
9. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR METHODS AND SEQUENCES OF ASSEMBLING THE STRUCTURE. THE OWNER/ CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND PRIOR TO COMPLETION OF ALL WALLS, ROOFS, AND FLOOR DIAPHRAGMS.
10. DIMENSIONS ARE GIVEN FROM ESTABLISHED REFERENCE POINTS AND ARE NOT CONTINUOUS. ALL TRADES SHOULD LAY OUT THEIR RESPECTIVE WORK FROM THE SAME REFERENCE POINTS. CRITICAL DIMENSIONS ARE SHOWN. SPACES WITHOUT DIMENSIONS MAY BE ADJUSTED TO SUIT FIELD CONDITIONS.
 - A. WOOD FRAMING IS DIMENSIONED TO THE FACE OF STUD AT THE EXTERIOR AND THE FINISH FACE AT INTERIOR UNLESS SPECIFICALLY NOTED OTHERWISE.
 - B. CONCRETE MASONRY ARE DIMENSIONED TO THE FACE OF MATERIAL.
 - C. COLUMNS AND POSTS ARE DIMENSIONED TO THE CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
 - D. DOORS ARE DIMENSIONED TO THE EDGE OF THE DOOR OPENING OR THE CENTERLINE OF THE DOOR.
 - E. WINDOWS ARE DIMENSIONED TO THE EDGE OF THE WINDOW FRAME OR TO THE CENTERLINE OF THE WINDOW.
8. THESE DRAWINGS ARE THE SOLE PROPERTY OF VERDICK RESIDENTIAL DESIGNS AND CANNOT BE REPRODUCED WITHOUT PRIOR CONSENT OF VERDICK RESIDENTIAL DESIGNS.
9. NEW CONSTRUCTION SHALL COMPLY WITH THE PRESCRIPTIVE STANDARDS OF THE 2010 OREGON RESIDENTIAL ENERGY CODE, SUMMARIZED BELOW AS IT APPLIES TO THIS PROJECT (SEE PAGE A-2 FOR SPECIFIC ENVELOP ENHANCEMENTS AND CONSERVATION MEASURES):

WINDOWS (MINIMUM)	U-0.35
SKYLIGHTS	U-0.60
WALL INSULATIONS (MINIMUM)	R-21
FLAT CEILINGS (MINIMUM)	R-49
SLOPED CEILINGS (MINIMUM)	R-38
UNDER FLOOR INSULATION (MINIMUM)	R-30
EXTERIOR DOORS w/ >2.5 FT2 GLAZING	U-0.40
FORCED AIR DUCT INSULATION	R-8
10. INSTALL POLYISOCYANURATE FOAM TYPE INSULATION AT FLOOR AND PLATE LINES, OPENINGS IN PLATES, CORNER STUD CAVITIES AND AROUND DOOR AND WINDOW ROUGH OPENING CAVITIES.
11. INSTALL WATERPROOF GYPSUM BOARD AT ALL WATER SPLASH AREAS TO MINIMUM 70" ABOVE SHOWER DRAINS.
12. INSULATE WASTE LINES FOR SOUND CONTROL.
13. EXHAUST ALL VENTS AND FANS DIRECTLY TO OUTSIDE VIA METAL DUCTS, PROVIDE 90 CFM (MIN) FANS TO PROVIDE 5 AIR CHANGES PER HOUR IN BATHS CONTAINING TUB AND / OR SHOWER AND IN LAUNDRY ROOMS.
14. ALL RECESSED LIGHTS IN INSULATED CEILINGS TO HAVE THE I.C. LABEL.



Client: Dave & Amy Eрут
5688 River Dr
West Linn, OR 97068

Project Overview

DRAWINGS PROVIDED BY:
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Verdick Residential Designs

DATE:

7/10/2016

SCALE:

SHEET:

1

GENERAL NOTES

DESIGN STANDARD

2014 OREGON RESIDENTIAL STRUCTURAL CODE

DESIGN CRITERIA

1. DESIGN SNOW LOADS, UNLESS NOTED OTHERWISE:
 - a. ROOF 25 PSF MINIMUM ROOF SNOW LOAD
 - b. SNOW BUILDUP ASCE 7-10
2. DESIGN LATERAL LOADS, UNLESS NOTED OTHERWISE:
 - a. WIND 2014 OREGON STRUCTURAL SPECIALTY CODE
120 MPH, EXPOSURE "B"
 - b. SEISMIC OREGON STRUCTURAL SPECIALTY CODE
SEISMIC DESIGN CATEGORY D
SITE CLASSIFICATION D, USE GROUP II

GENERAL

1. VERIFY DIMENSIONS AND CONDITIONS WITH THE ARCHITECTURAL DRAWINGS. FIELD VERIFY DIMENSIONS AND ELEVATIONS RELATIVE TO THE EXISTING STRUCTURE PRIOR TO FABRICATION OF MATERIALS.
2. ADEQUATELY BRACE STRUCTURE AND ALL STRUCTURAL COMPONENTS AGAINST WIND, LATERAL, EARTH, AND SEISMIC FORCES UNTIL THE PERMANENT LATERAL FORCE-RESISTING SYSTEMS HAVE BEEN INSTALLED.
3. PROVIDE BLOCKING BETWEEN STUDS (OR OTHER MEANS OF BRACING) AT WOOD BEARING WALLS TO PREVENT STUD BUCKLING PRIOR TO INSTALLATION OF GYPSUM WALLBOARD.

FOUNDATIONS

1. FOUNDATION SIZES BASED ON ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF (DEAD + LIVE) WITH AN ALLOWABLE ONE-THIRD INCREASE FOR WIND AND SEISMIC.
2. PLACE FOOTINGS ON FIRM, UNDISTURBED NATIVE SOIL.
3. LOCATE BOTTOM OF FOOTINGS A MINIMUM OF 1' - 6" BELOW FINISH GRADE.
4. REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
5. CONCRETE MIX DESIGN - UNLESS NOTED OTHERWISE, ALL CONCRETE STRENGTHS SHALL BE:
2,500 PSI FOR FOOTINGS
3,000 PSI ALL OTHER CONCRETE

FRAMING LUMBER

- 1 LUMBER SPECIES: DOUGLAS FIR-LARCH (HEMLOCK-FIR FOR PRESSURE TREATED MATERIAL), GRADE LUMBER ACCORDING TO RULES OF WEST COAST LUMBER INSPECTION BUREAU (WCLIB).
- 2 LUMBER GRADES:

SIZE CLASSIFICATION	GRADE
• A. WALL STUDS	NO. 2
• D. JOISTS	NO. 2
• E. BEAMS	NO. 2
• F. POSTS	NO. 1
• G. BLOCKING, PLATES, BRIDGING	STANDARD OR BETTER OR STUD GRADE
- 1 MAXIMUM MOISTURE CONTENT: 19% AT 3X OR LESS (LEAST DIMENSIONS) MEMBERS.

SHEARWALLS

- 1 TYPE 1: ½" PLY WITH 8D AT 6" OC EDGES, 12" OC FIELD, APA RATED 24/0 OR BETTER. PROVIDE 2X SILL PLATE WITH ½" DIA X 8" EMBED AB'S AT 32" OC TYP.
- 2 TYPE 2: ½" PLY WITH 8D AT 4" OC EDGES, 12" OC FIELD, APA RATED 24/0 OR BETTER. PROVIDE 2X SILL PLATE WITH ½" DIA X 8" EMBED AB'S AT 24" OC TYP.
- 3 INSTALL ½" DIA TITEN HD AB'S AT SHEARWALLS ON EXISTING FOUNDATION AS NEEDED TO PROVIDE REQUIRED AB SPACING.
- 4 HOLDDOWNS: THROUGH BOLT TO EXISTING FOUNDATION PER FOUNDATION DETAIL. PROVIDE SIMPSON SSTB20 AT HDU 4 HOLDDOWN TO NEW FOUNDATION.
- 5 SIMPSON STRONG-WALL SHEAR PANELS: INSTALL IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND DETAILS.

PLYWOOD SHEATHING

- 1 PLYWOOD MATERIAL:
 - a GRADE: C-D, UNLESS NOTED OTHERWISE.
 - b MANUFACTURED WITH EXTERIOR GLUE ACCORDING TO UNITED STATES PRODUCT STANDARD PS 1-96.
 - c SHALL BEAR THE AMERICAN PLYWOOD ASSOCIATION (APA) TRADEMARK.
- 2 NAILS IN CONTACT WITH PRESSURE-TREATED LUMBER SHALL BE STAINLESS STEEL.
- 3 ALL FLOOR SHEATHING SHALL BE GLUED TO THE SUPPORTING MEMBERS.
- 4 SUBSTITUTION OF ORIENTED STRAND BOARD (OSB) FOR PLYWOOD IS ACCEPTABLE IF THE OSB:
 - a CONFORMS WITH APA PERFORMANCE STANDARDS FOR WOOD BASED STRUCTURAL PANELS PRP-105 AND UNITED STATES PRODUCT STANDARD PS 2-92.
 - b IS MANUFACTURED WITH EXTERIOR GLUE.
 - c HAS A LOAD/SPAN RATING INDEX EQUAL TO PLYWOOD.
 - d BEARS THE APA TRADEMARK.
- 5 PROVIDE PRESSURE-TREATED PLYWOOD WHERE INDICATED ON DRAWINGS. CONFORM WITH AWPB SANDARD C-9. MARK SHEETS WITH AWPB.
- 6 SHEATHING TYPES:
 - a FLOOR SHEATHING ¾" INDEX 32/16
 - b ROOF SHEATHING ½" INDEX 24/0
 - c WALLS ½" INDEX 24/0
- 7 PLYWOOD LAYOUT AND INSTALLATION:
 - a LAY OUT PLYWOOD SHEATHING WITH END JOINTS STAGGERED, UNLESS NOTED OTHERWISE.
 - b LAY OUT PLYWOOD TO ELIMINATE WIDTHS LESS THAN 1'-0" AT ROOFS, OR LESS THAN 2'-0" AT FLOORS, UNLESS ALL EDGES OF UNDERSIZED PIECES ARE SUPPORTED BY BLOCKING.
 - c PROVIDE PANEL SPACINGS ACCORDING TO APA RECOMMENDATIONS.
 - d BLOCK SHEAR WALL SHEATHING WITH 3 X FLAT BLOCKING AT ALL EDGES.
 - e NAIL ACCORDING TO SCHEDULE AND DRAWINGS.
- 8 PROTECT FLOOR AND ROOF SHEATHING FROM EXTREME WET CONDITIONS.

GLUE LAMINATED MEMBERS

1. MEMBER SPECIES: WESTERN
2. MEMBER GRADE: 24F-V4.
3. MATERIAL STANDARDS:
 - a. ALLOWABLE STRESSES: AITC 117.
 - b. MANUFACTURE AND FABRICATION: AITC A190.1
 - c. MANUFACTURE AND FABRICATION:
 - a. FABRICATE WITH WATERPROOF GLUES.
 - b. SHAPE TOP OF MEMBERS TO ROOF SLOPE. ADD LAMINATIONS AS REQUIRED FOR SHAPING.
 - c. PROVIDE STANDARD 3500 FOOT RADIUS CAMBER, UNLESS NOTED OTHERWISE ON DRAWINGS.
 - d. IDENTIFY MEMBERS WITH THE APA-EWS MARK OF AMERICAN WOOD SYSTEMS OR MEMBER INSPECTION IS REQUIRED BY AN INDEPENDENT TESTING LAB.
 - e. ERECT MEMBERS ACCORDING TO AITC SPECIFICATIONS.

NAILING AND CONNECTION SCHEDULE

- 1 MINIMUM NUMBER OF NAILS FOR WOOD MEMBERS, UNLESS NOTED OTHERWISE ON DRAWINGS.
- 2 NAILS AND SCREWS IN CONTACT WITH PRESSURE-TREATED LUMBER SHALL BE STAINLESS STEEL OR HOT-DIP GALVANIZED.
- 3 NAIL TYPE: BOX OR SINKER, UNLESS NOTED OTHERWISE ON DRAWINGS.

CONNECTION	NAILS
STUDS TO PLATES - END NAIL	(2) 16d COMMON OR (3) 10d
OR STUDS TO PLATES - TOE NAIL	(4) 10d
TOP PLATES & BOTTOM PLATES	
-SPIKE TOGETHER	10d AT 8" OC
-LAP AND INTERSECTIONS	(4) 10d EACH SIDE JOINT
FLOOR, ROOF, CEILING JOISTS	
-TO PLATES OR BEAMS - TOE NAIL	(2) 10d
BLOCKING TO PLATE - TOE NAIL	(2) 10d
BLOCKING TO JOISTS - EACH END	(2) 10d
CORNER STUDS	10d AT 12" OC
2X LAMINATED BEAMS	10d AT 12" 2 ROWS STAGGERED
PLYWOOD SHEATHING CONNECTIONS (ALL NAILS COMMON UNLESS NOTED OTHERWISE)	

- 1 NAILS IN CONTACT WITH PRESSURE-TREATED LUMBER TO BE STAINLESS STEEL OR HOT-DIP GALVANIZED.
- 2 ROOF SHEATHING AND FLOOR
 - a BLOCK ALL EDGES WITH 2 X 4 FLATS WHERE NOTED ON DRAWINGS
 - b NAILING:

AT EDGES OF EACH SHEET, BLOCKING & WALLS	8d AT 6" OC
AT INTERIOR OF SHEETS	8d AT 12" OC
AT BOUNDARIES OF ROOF	8d AT 6" OC

- 1 WALL SHEATHING
 - a BLOCKING ALL EDGES NOT SUPPORTED BY FRAMING MEMBERS WITH 2 X 4 FLATS, MIN.
 - b NAILING (UNLESS NOTED OTHERWISE ON SHEAR WALL SCHEDULE):

AT EDGES OF EACH SHEET TO STUDS, BLOCKING & PLATES	8d AT 6" OC
AT INTERIOR OF EACH SHEET	8d AT 12" OC
AT BOUNDARIES OF WALL	8d AT 6" OC

OTHER WOOD CONNECTIONS

- 1 FRAMING CONNECTORS: SIMPSON STRONG-TIE OR APPROVED.
 - a FILL ALL NAIL HOLES WITH NAILS AS SPECIFIED BY THE CONNECTOR MANUFACTURER, UNLESS NOTED OTHERWISE.
 - b CONNECTIONS IN CONTACT WITH PRESSURE-TREATED LUMBER SHALL BE STAINLESS STEEL OR HOT-DIP GALVANIZED.
 - c HANGERS TO DEVELOP BENDING STRENGTH OF MEMBERS, UNLESS NOTED OTHERWISE ON DRAWINGS.
- 2 ANCHOR BOLTS: ASTM F1554 (GRADE 36).
- 3 PROVIDE STAINLESS STEEL OR HOT-DIP GALVANIZED ANCHOR BOLTS, LAG BOLTS, EXPANSION ANCHORS, PLATE WASHERS AND THREADED RODS IN CONTACT WITH PRESSURE-TREATED LUMBER.
- 4 PROVIDE STANDARD PLATE WASHERS UNDER HEADS OR NUTS OF BOLTS BEARING ON WOOD. SEE SHEAR WALL SCHEDULE FOR SQUARE WASHER REQUIREMENTS AT SHEAR WALLS.
- 5 ANCHOR ALL SILL PLATES WITH ¼"x3"x3" PLATE WASHERS AND WITH A MINIMUM OF 3 ANCHORS PER PIECE.
- 6 MINIMUM SIZE AND MAXIMUM SPACING OF PLATE OR LEDGER CONNECTIONS:
 - a PLATES TO CONCRETE
- FOUNDATION WALLS:

1/2" DIAMETER x 8" EMBED ANCHOR BOLT	AT 4'-0" OC
--------------------------------------	-------------
- 1 LAG BOLT
 - a PRE-DRILLED LEAD AND CLEARANCE HOLES FOR LAGS:
 - i. PROVIDE CLEARANCE HOLE FOR SHANK, WITH DIAMETER EQUAL TO SHANK DIAMETER, DEPTH EQUAL TO LENGTH OF UNTHREADED SHANK.
 - ii. PROVIDE LEAD HOLE FOR THE THREADED PORTION, WITH LENGTH EQUAL TO AT LEAST LENGTH OF THREADED PORTION, WITH DIAMETER AS FOLLOWS:

3/8" DIAMETER BOLT = ¼" DIAMETER HOLE
½" DIAMETER BOLT = 5/16" DIAMETER HOLE
5/8" DIAMETER BOLT = 7/16" DIAMETER HOLE
¾" DIAMETER BOLT = ½" DIAMETER HOLE
 - a SOAP THREADS OF LAGS IMMEDIATELY PRIOR TO INSTALLATION.
 - b INSTALL LAG BOLTS WITH HAND WRENCH ONLY.

SPECIAL INSPECTIONS

1. SIMPSON TITEN-HD AB'S SHALL BE INSTALLED AND SPECIALLY INSPECTED PER ICC REPORT ESR-2713.



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

STRUCTURAL NOTES

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

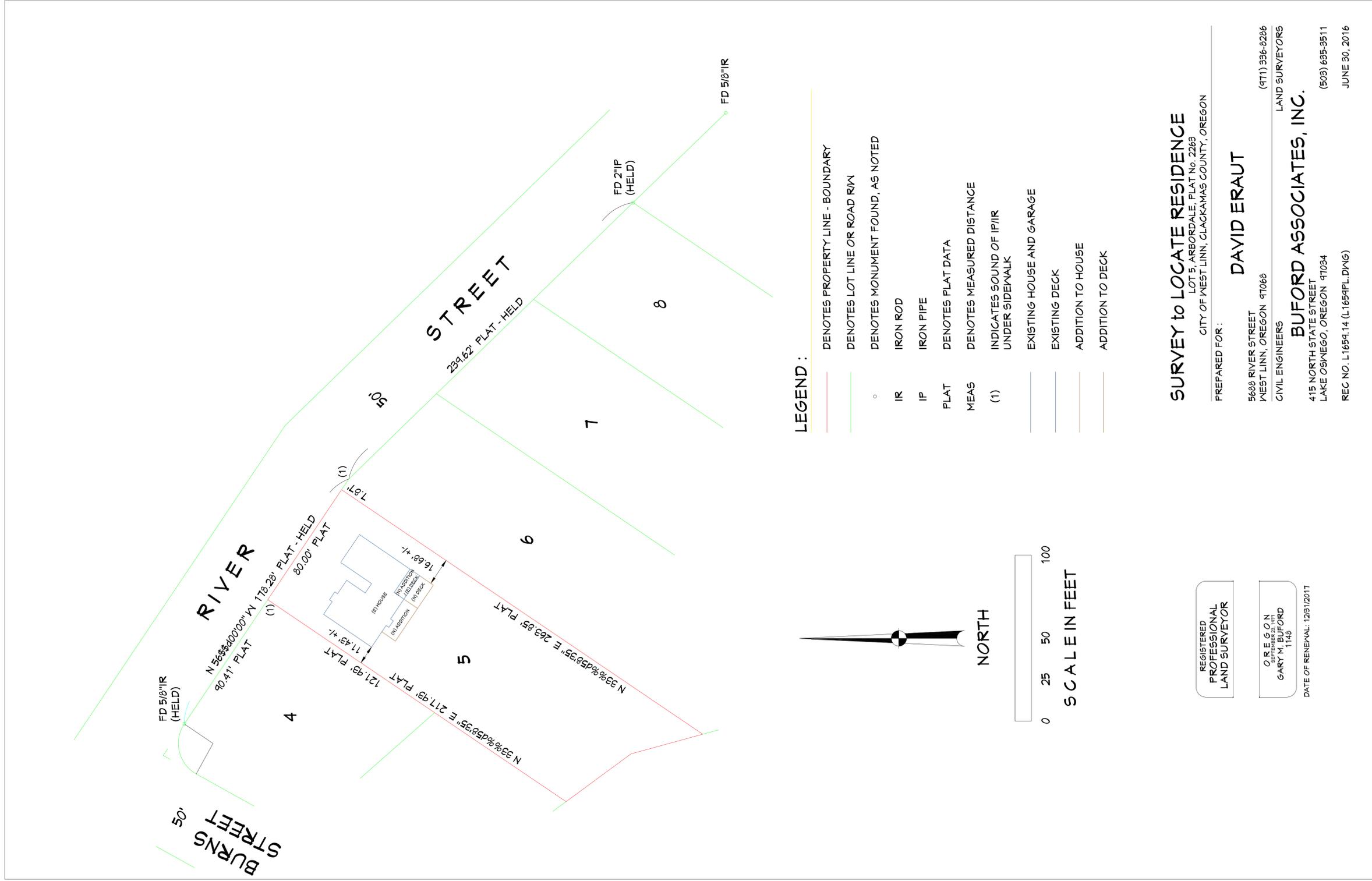
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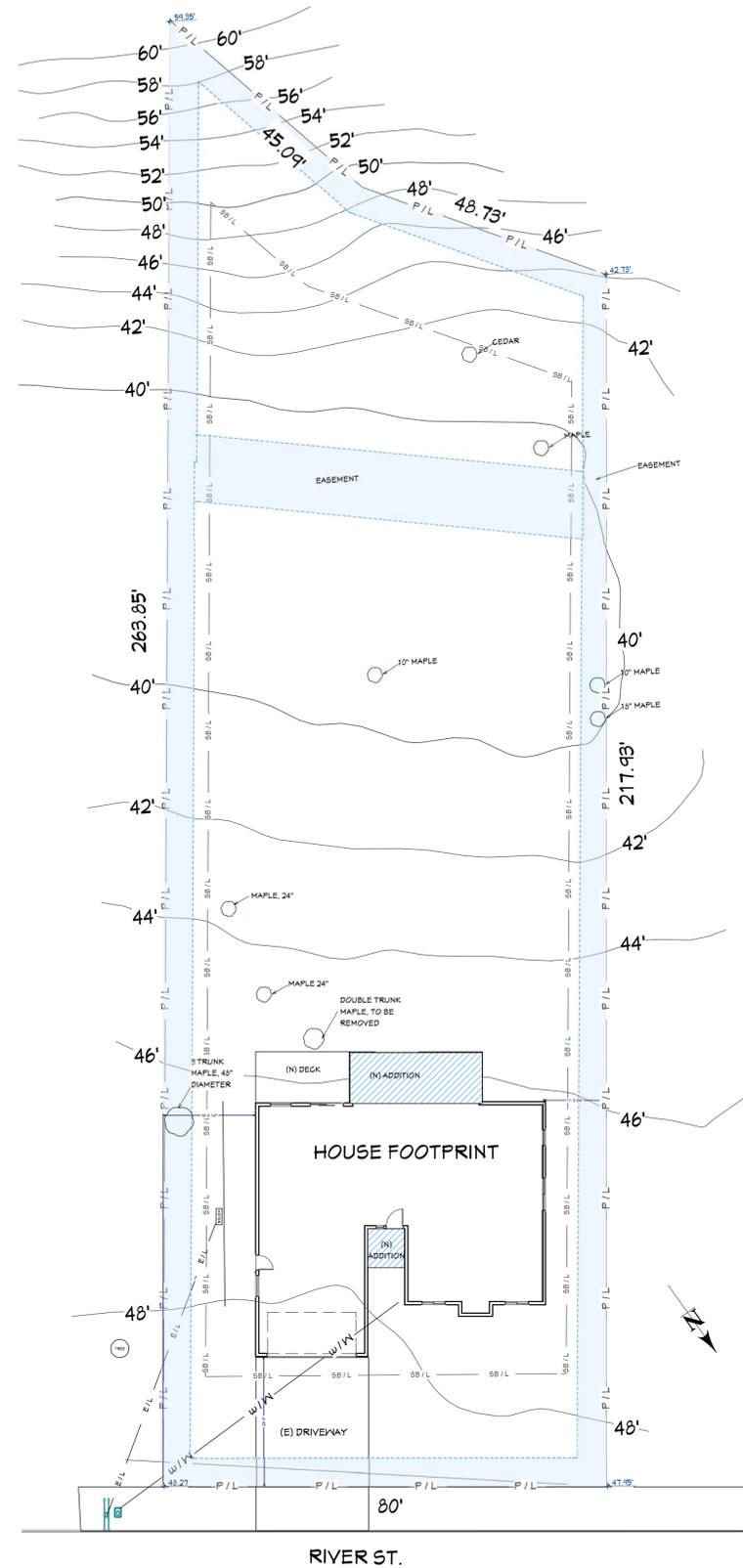
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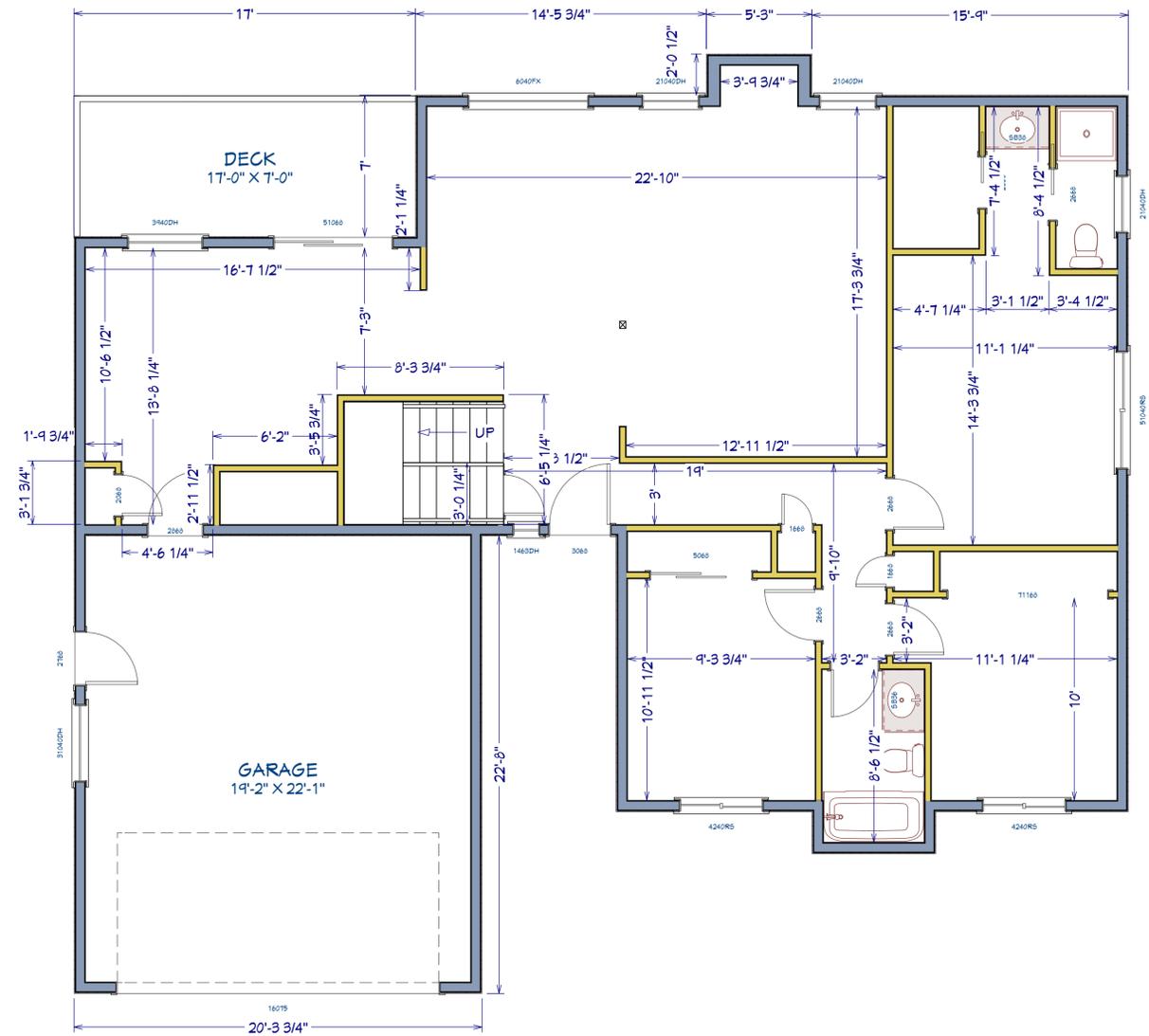
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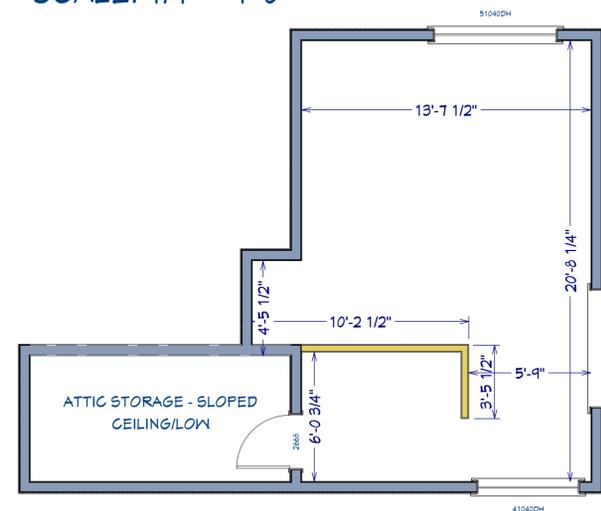




SITE PLAN
SCALE: 1/15" = 1' 0"



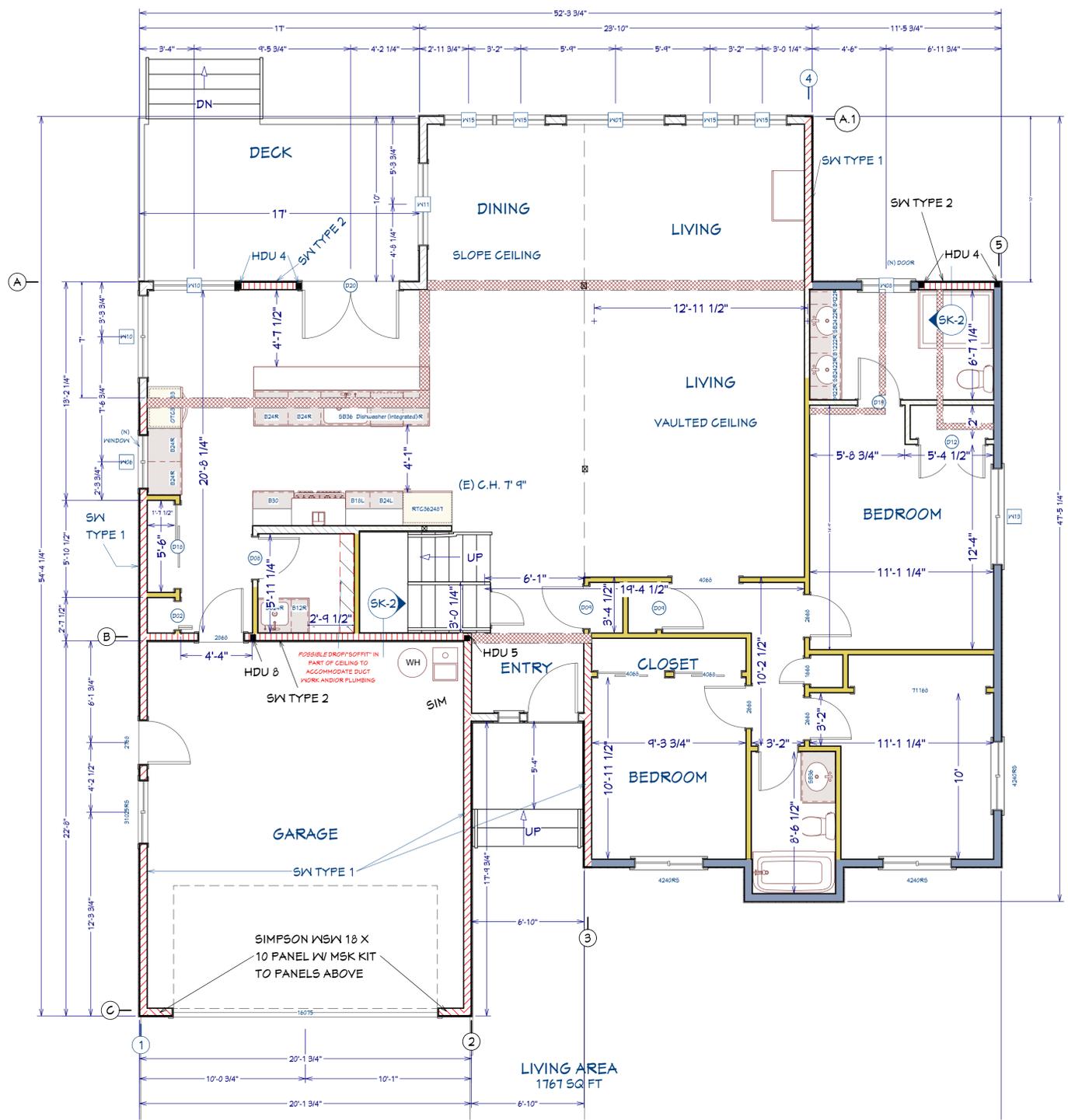
AS BUILT: FIRST FLOOR
SCALE: 1/4" = 1' 0"



AS BUILT: SECOND FLOOR
SCALE: 1/4" = 1' 0"

WALL LEGEND

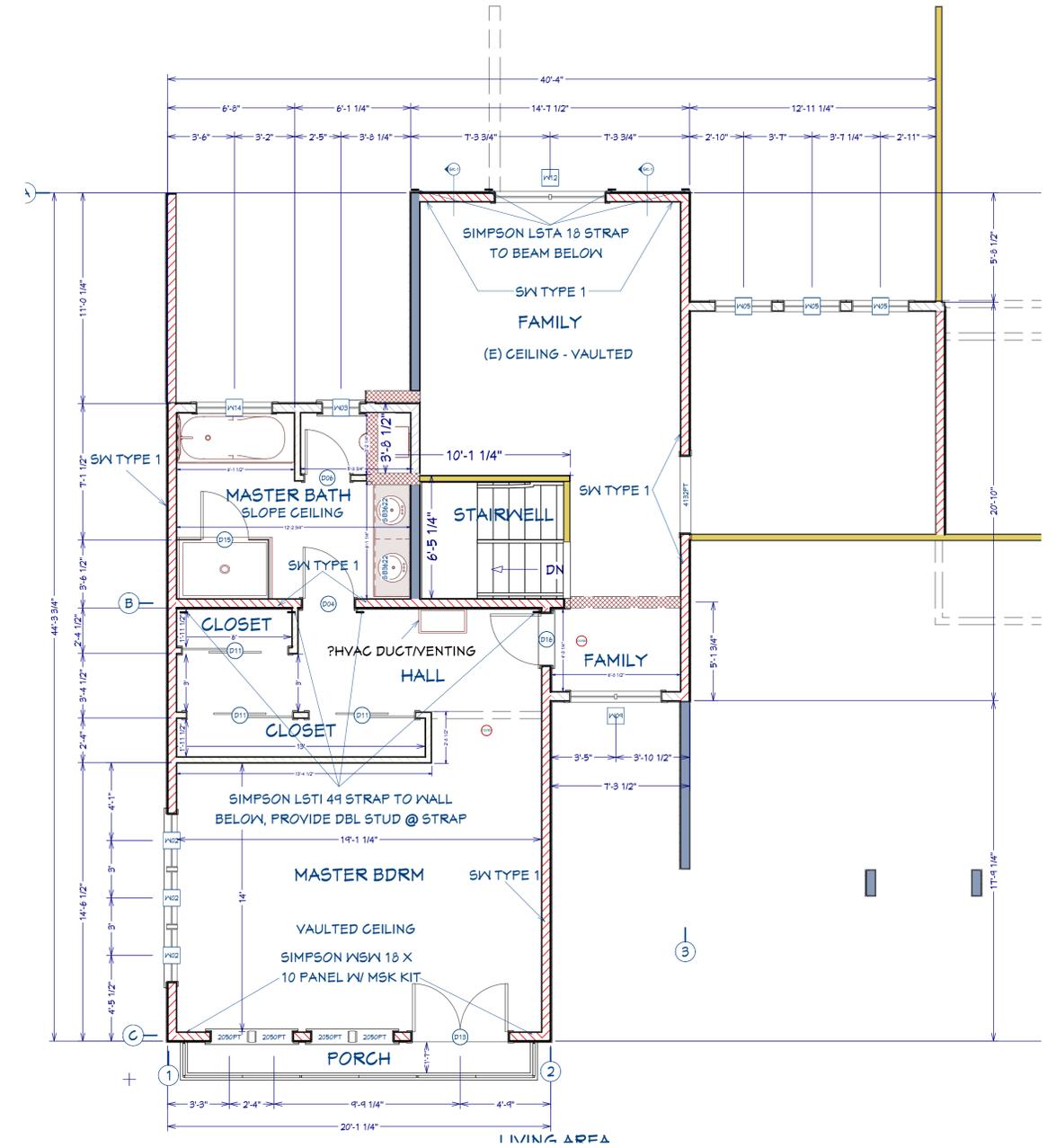
	(E) 6" EXTERIOR WALL
	(E) 4" INTERIOR WALL
	(E) 6" EXTERIOR WALL
	(N) 4" INTERIOR WALL
	(N) 6" INTERIOR WALL
	(N) 6" EXTERIOR WALL
	(N) 6" SHEAR WALL TYPE 1
	(N) 6" SHEAR WALL TYPE 2
	WALL TO BE DEMOLISHED
	(E) FOUNDATION WALL
	(N) FOUNDATION WALL



LATERAL PLAN: FIRST FLOOR
SCALE: 1/4" = 1' 0"

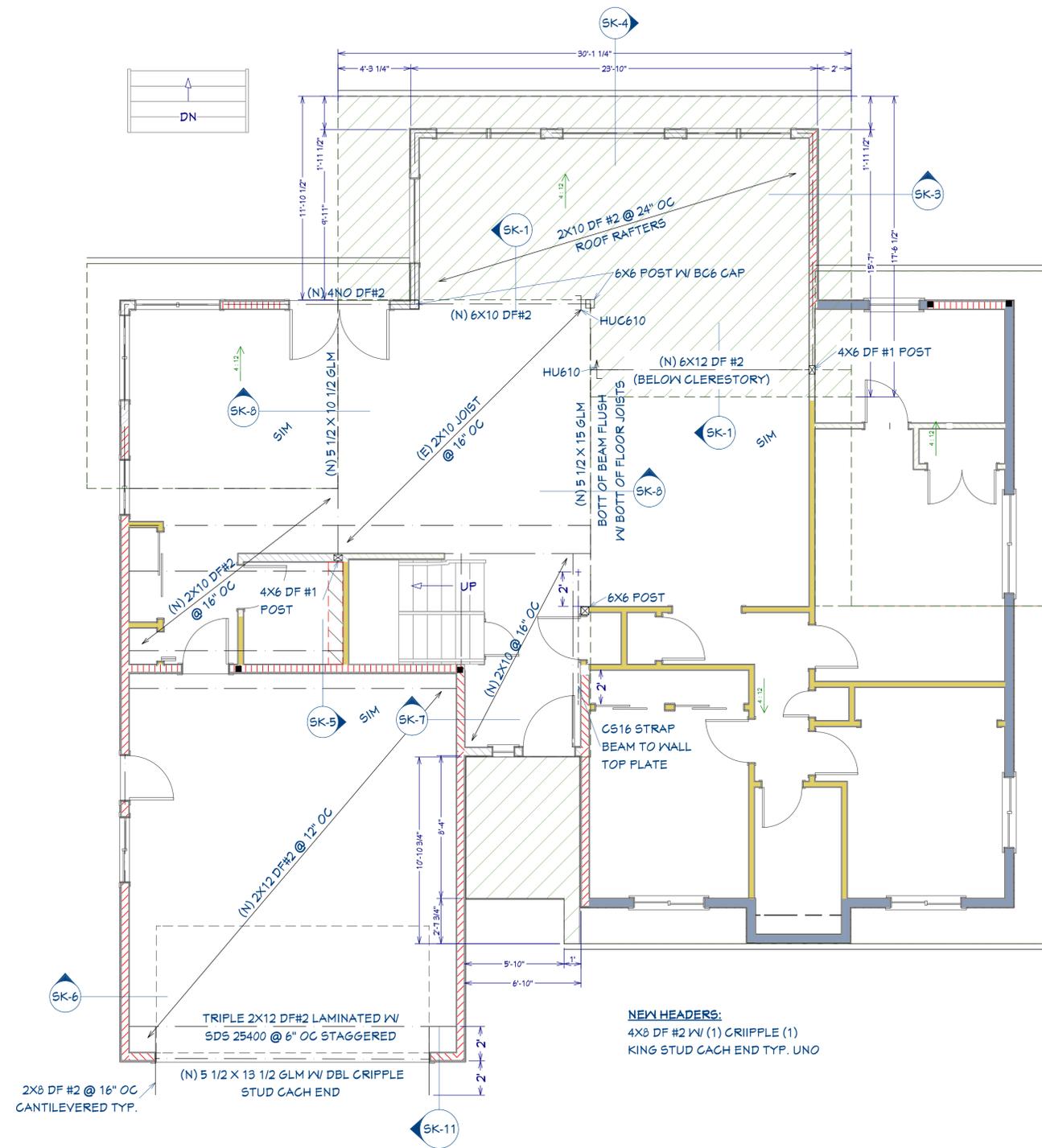
ROOF SHTG: 1/2" W/ 8d @ 6" OC EDGES & 12"
OC FIELD APA RATED 24/0

FLOOR SHTG: 3/4" PLY GLUED & NAILED W/ 10d
@6" OC EDGES. 12" OC FIELD APA RATED 32/16
OR BETTER

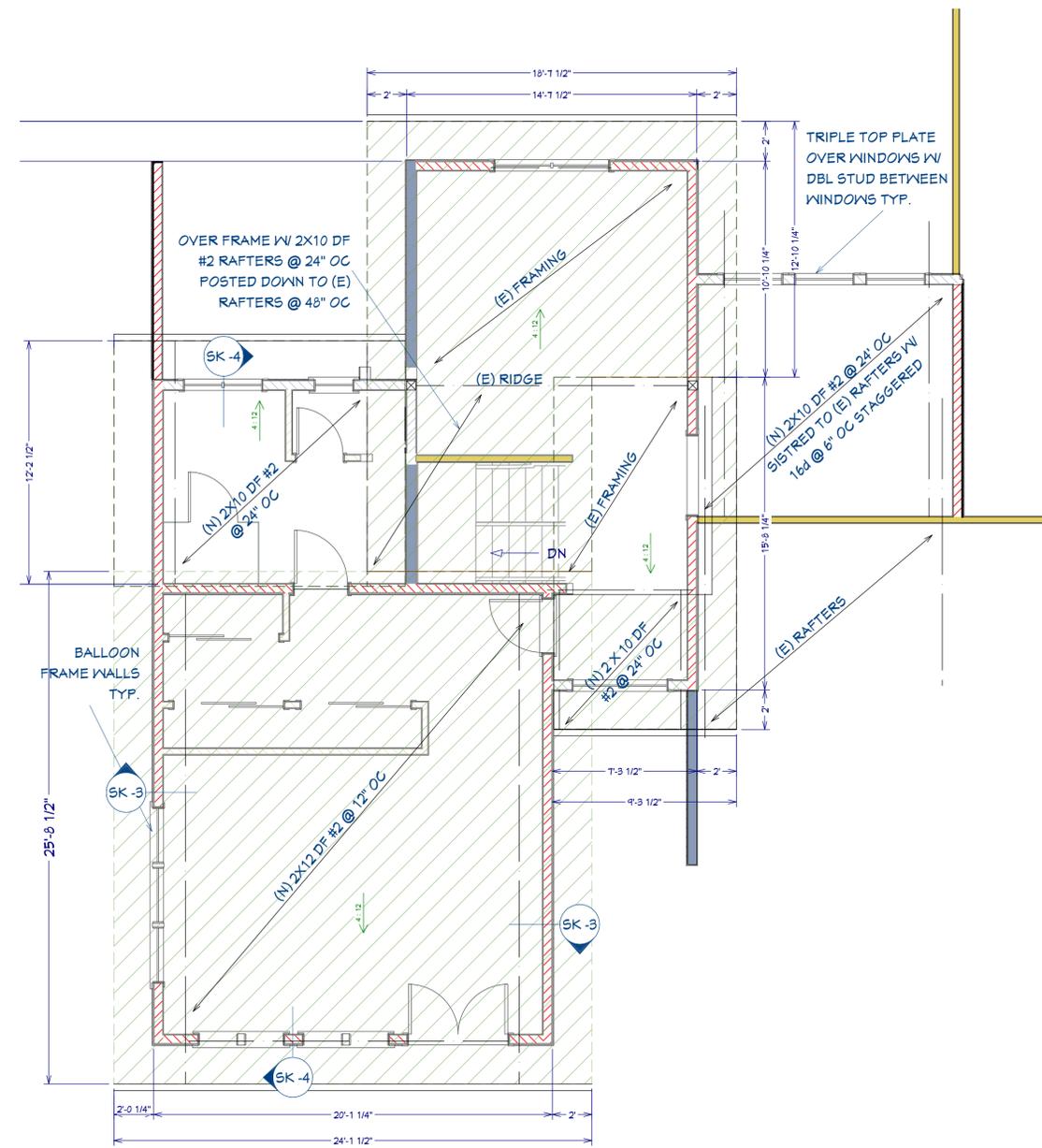


LATERAL PLAN: SECOND FLOOR
SCALE: 1/4" = 1' 0"

- WALL LEGEND**
- (E) 6" EXTERIOR WALL
 - (E) 4" INTERIOR WALL
 - (E) 6" EXTERIOR WALL
 - (N) 4" INTERIOR WALL
 - (N) 6" INTERIOR WALL
 - (N) 6" EXTERIOR WALL
 - (N) 6" SHEAR WALL TYPE 1
 - (N) 6" SHEAR WALL TYPE 2
 - WALL TO BE DEMOLISHED
 - (E) FOUNDATION WALL
 - (N) FOUNDATION WALL



SECOND FLOOR FRAMING & LOW ROOF SHOWN ON 1ST FLOOR WALLS
 SCALE: 1/4" = 1' 0"

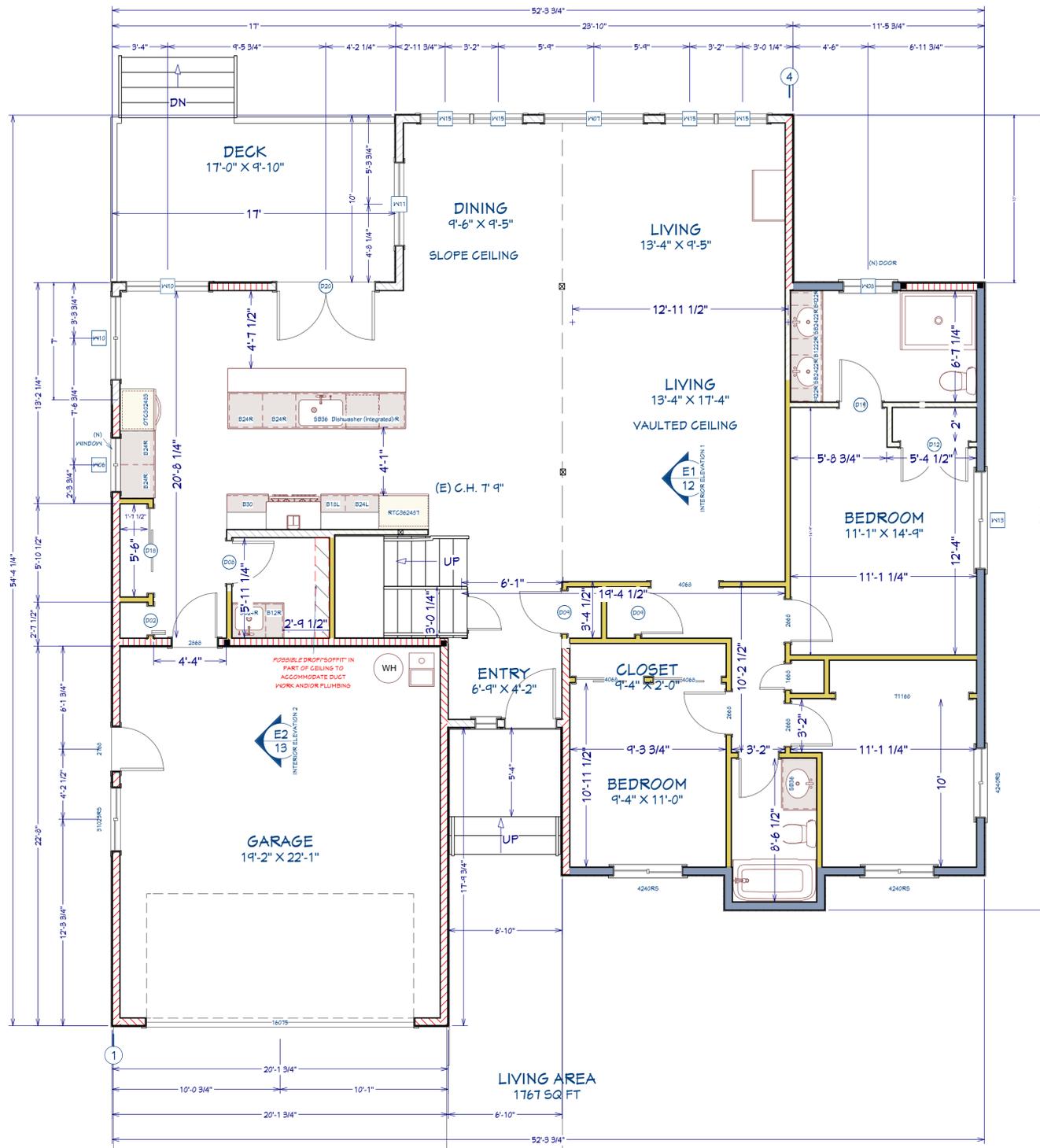


UPPER ROOF FRAMING ON 2ND FLOOR WALLS
 SCALE: 1/4" = 1' 0"

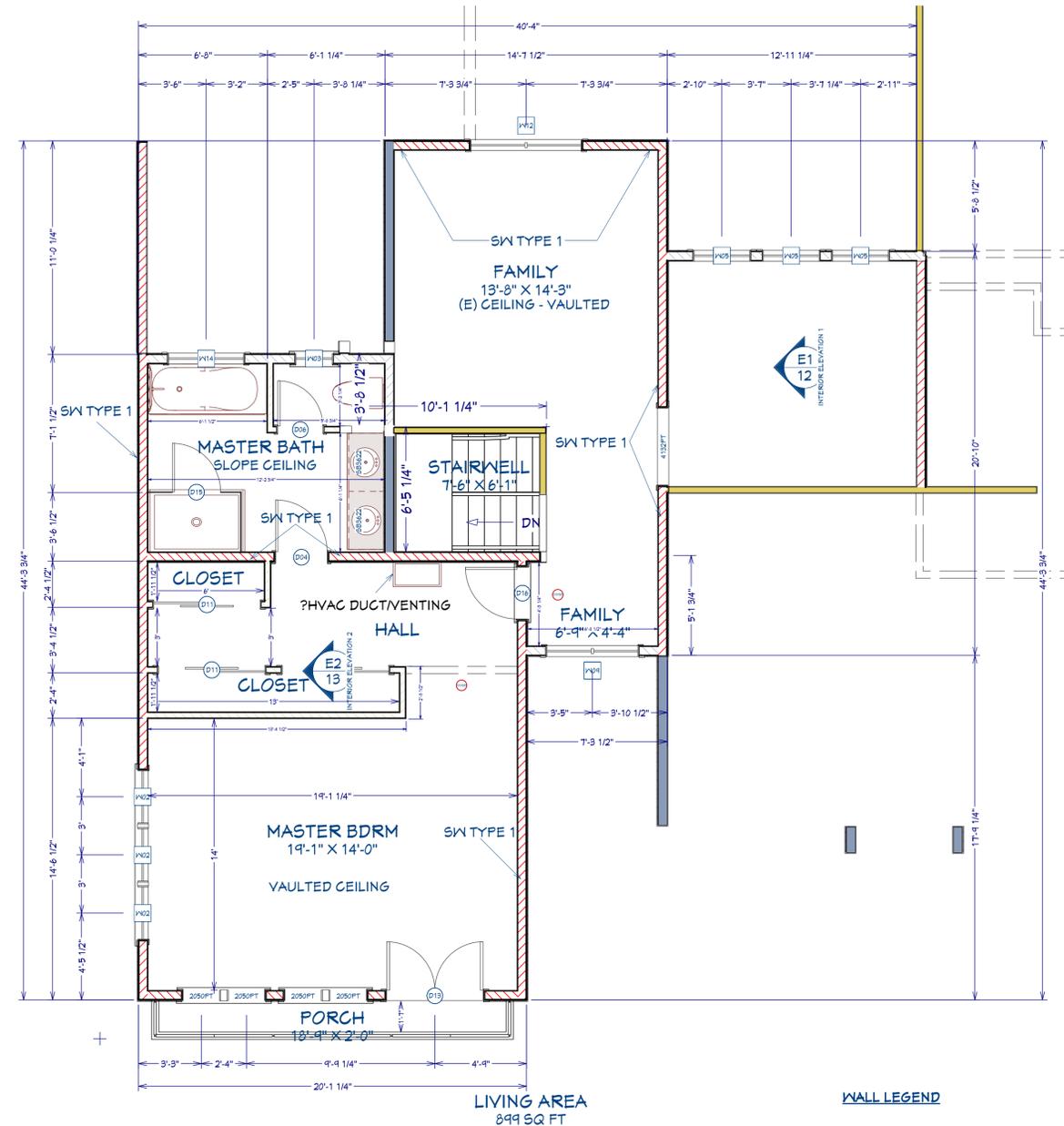
 = (N) ROOF AREA

WALL LEGEND

	(E) 6" EXTERIOR WALL
	(E) 4" INTERIOR WALL
	(E) 6" EXTERIOR WALL
	(N) 4" INTERIOR WALL
	(N) 6" INTERIOR WALL
	(N) 6" EXTERIOR WALL
	(N) 6" SHEAR WALL TYPE 1
	(N) 6" SHEAR WALL TYPE 2
	WALL TO BE DEMOLISHED
	(E) FOUNDATION WALL
	(N) FOUNDATION WALL



FLOOR PLAN: FIRST FLOOR
 SCALE: 1/4" = 1' 0"



FLOOR PLAN: SECOND FLOOR
 SCALE: 1/4" = 1' 0"

- WALL LEGEND**
- (E) 6" EXTERIOR WALL
 - (E) 4" INTERIOR WALL
 - (E) 6" EXTERIOR WALL
 - (N) 4" INTERIOR WALL
 - (N) 6" INTERIOR WALL
 - (N) 6" EXTERIOR WALL
 - (N) 6" SHEAR WALL TYPE 1
 - (N) 6" SHEAR WALL TYPE 2
 - (E) FOUNDATION WALL
 - (N) FOUNDATION WALL



Client: **Dave & Amy Eraut**
 5688 River Dr
 West Linn, OR 97068

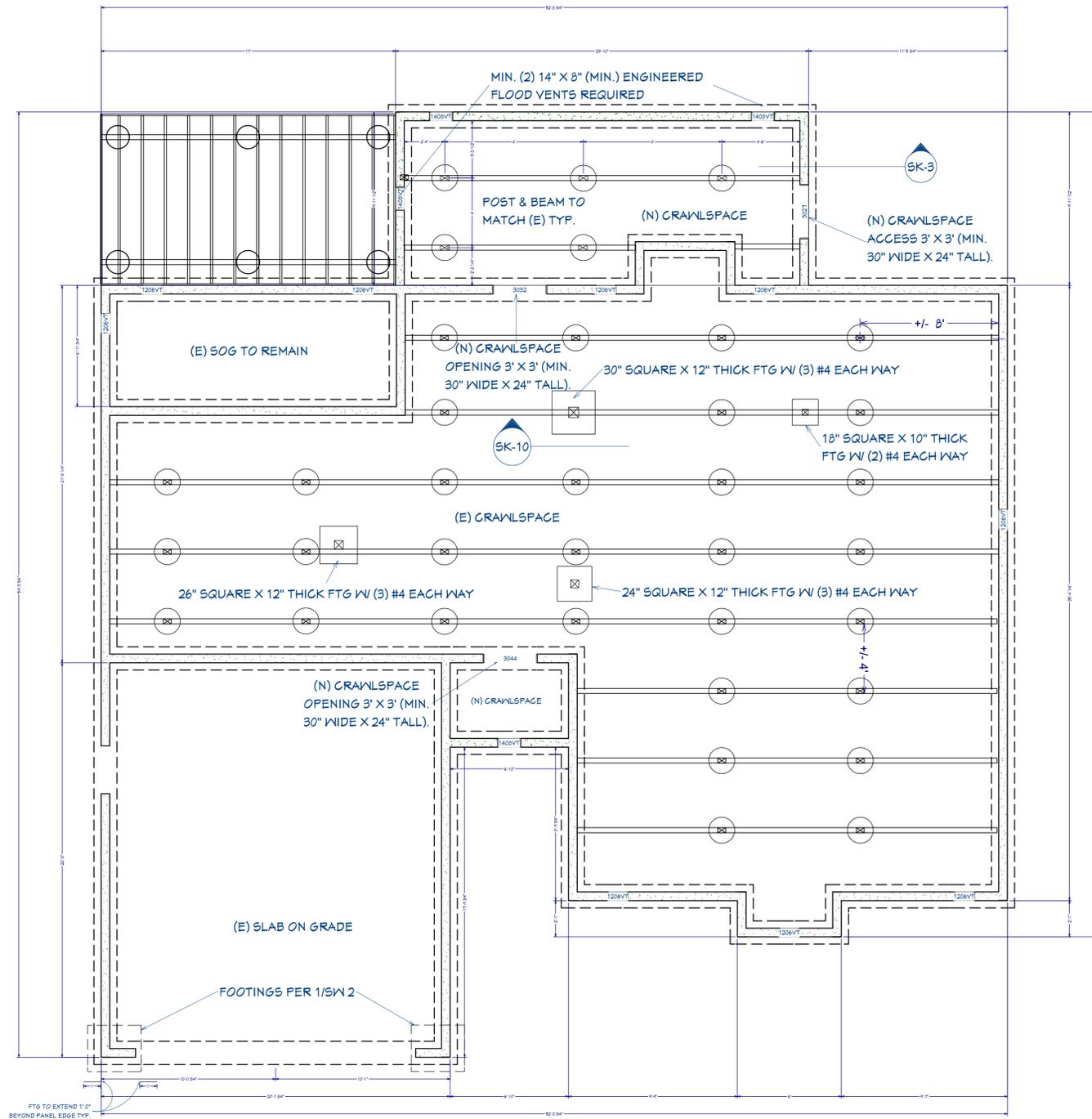
FLOOR PLAN

DRAWINGS PROVIDED BY:
Rachel Verdick
 Verdick Residential Designs

DATE:
 7/10/2016

SCALE:

SHEET:
7



FOUNDATION PLAN
SCALE: 1/4" = 1' 0"

FLOOD VENT NOTES:

-A minimum of (2) openings are required with a total minimum net area of 228 square inches to accommodate the 228 SF addition. 14"x8" engineered flood vents meeting FEMA standards would fulfill this requirement.

-The bottom of all openings shall be no higher than one foot above grade.

-Opening must be equipped with screens, louvers or other coverings or devices; provided that they permit the automatic entry of exit of floodwaters.

-Service equipment (e.g. furnaces, water heaters, washer/dryer etc.) is not permitted below the base flood elevation.

-All walls, floors and ceiling materials located below the base flood elevation must be unfinished and constructed of materials resistant to flood damage.

POST SPOT FOOTINGS TO MATCH POSTS ABOVE TYP.

WALL LEGEND

- (E) 6" EXTERIOR WALL
- (E) 4" INTERIOR WALL
- (E) 6" EXTERIOR WALL
- (N) 4" INTERIOR WALL
- (N) 6" INTERIOR WALL
- (N) 6" EXTERIOR WALL
- (N) 6" SHEAR WALL TYPE 1
- (N) 6" SHEAR WALL TYPE 2
- WALL TO BE DEMOLISHED
- (E) FOUNDATION WALL
- (N) FOUNDATION WALL



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

FOUNDATION PLAN

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

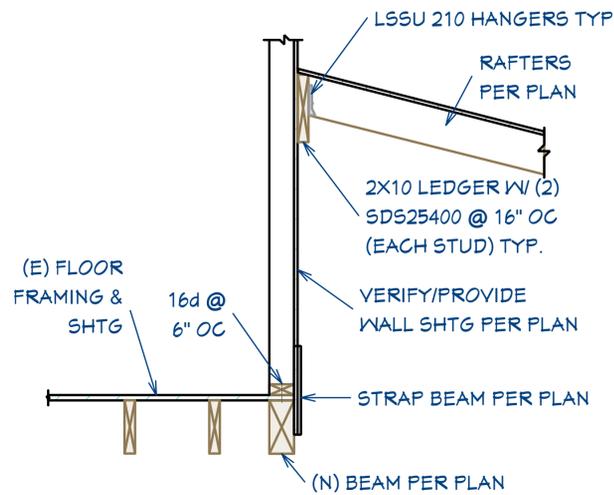
DATE:

7/10/2016

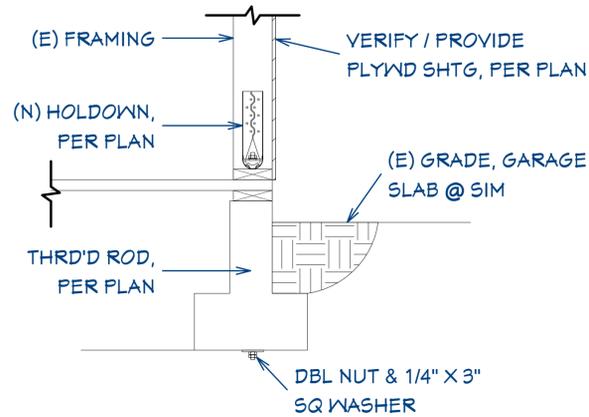
SCALE:

SHEET:

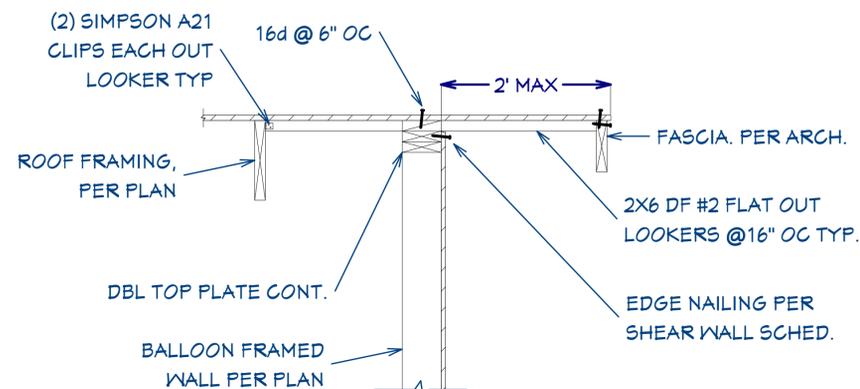
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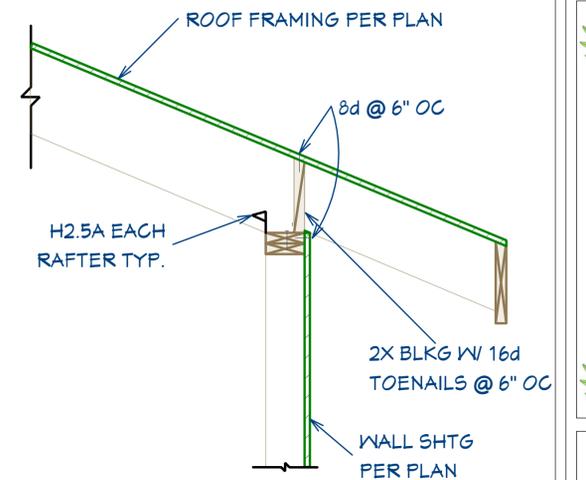
SK 1 SECTION @ STRAP BEAM
SCALE: 1" = 1' 0"



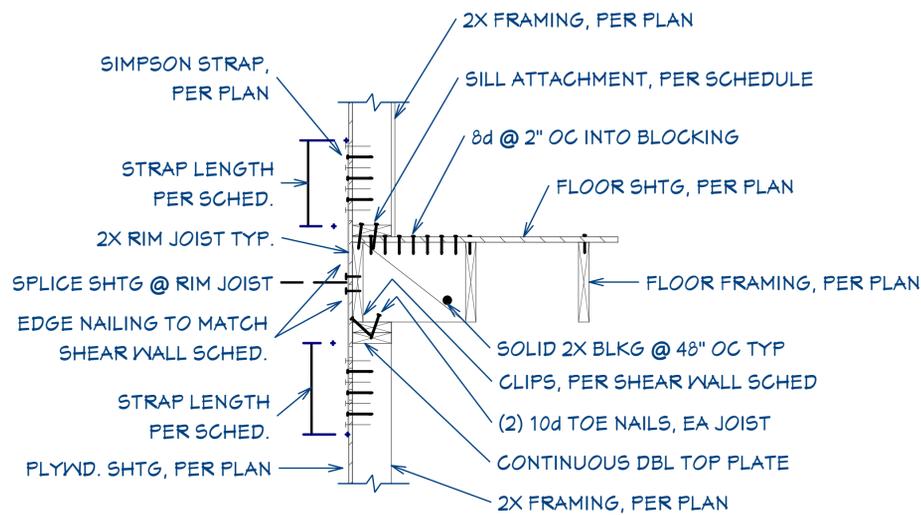
SK 2 SECTION: FOUNDATION
SCALE: 1" = 1' 0"



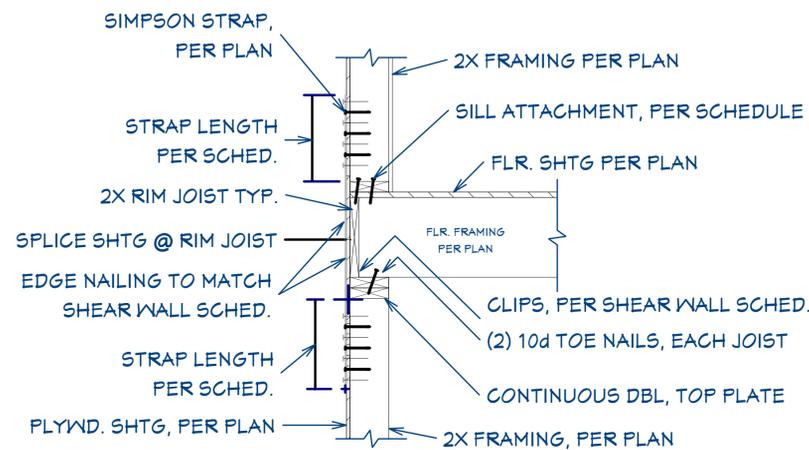
SK 3 SECTION: ROOF
SCALE: 1" = 1' 0"



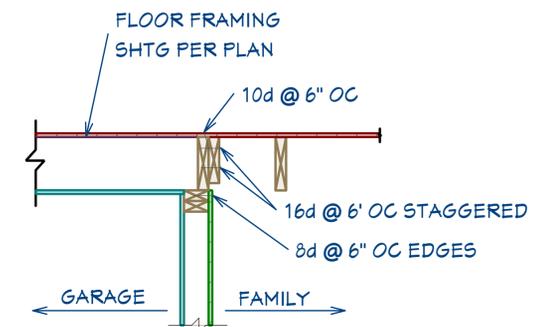
SK 4 SECTION: ROOF
SCALE: 1" = 1' 0"



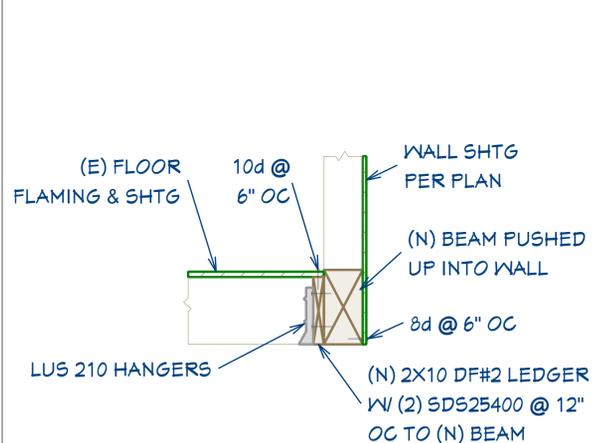
SK 5 SECTION: FLOOR
SCALE: 1" = 1' 0"



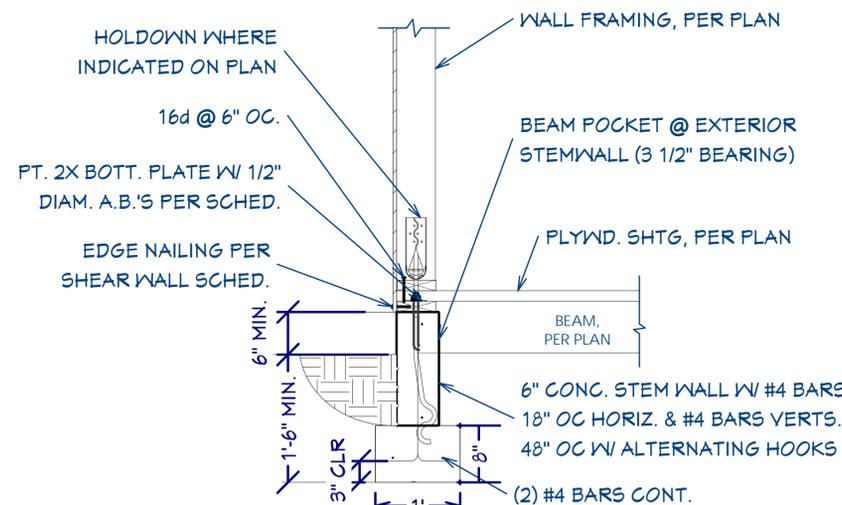
SK 6 SECTION: FLOOR
SCALE: 1" = 1' 0"



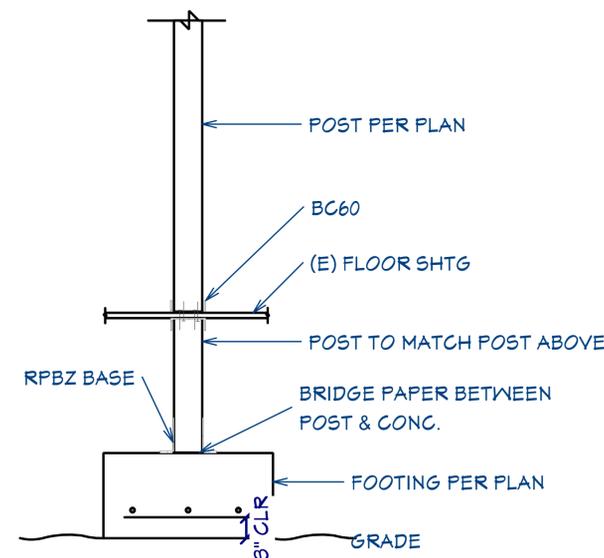
SK 7 SECTION: FLOOR
SCALE: 1" = 1' 0"



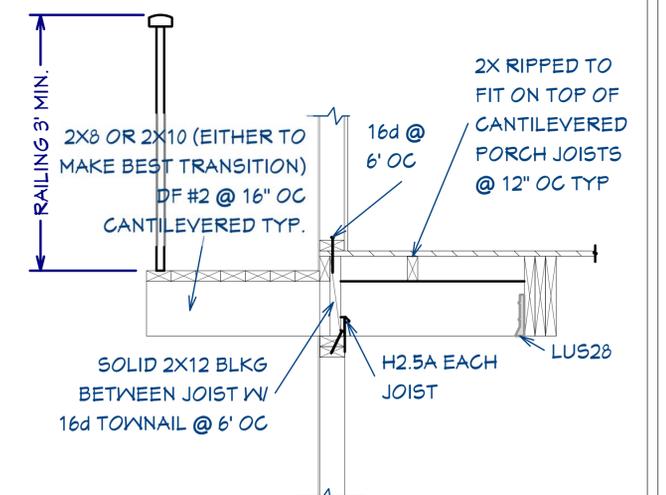
SK 8 SECTION: FLOOR
SCALE: 1" = 1' 0"



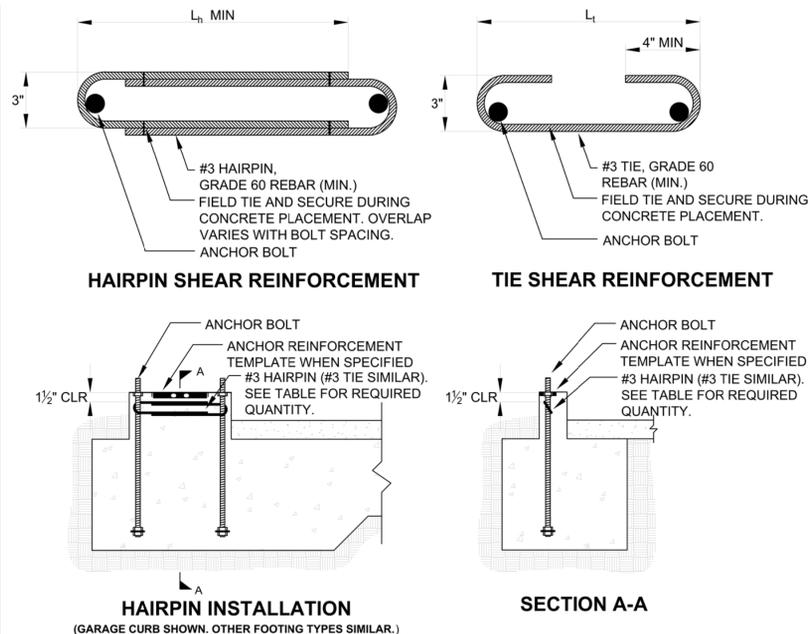
SK 9 SECTION: FOOTING
SCALE: 1" = 1' 0"



SK 10 SECTION: FOOTING
SCALE: 1" = 1' 0"



SK 11 SECTION: CANTILEVERED DECK
SCALE: 1" = 1' 0"

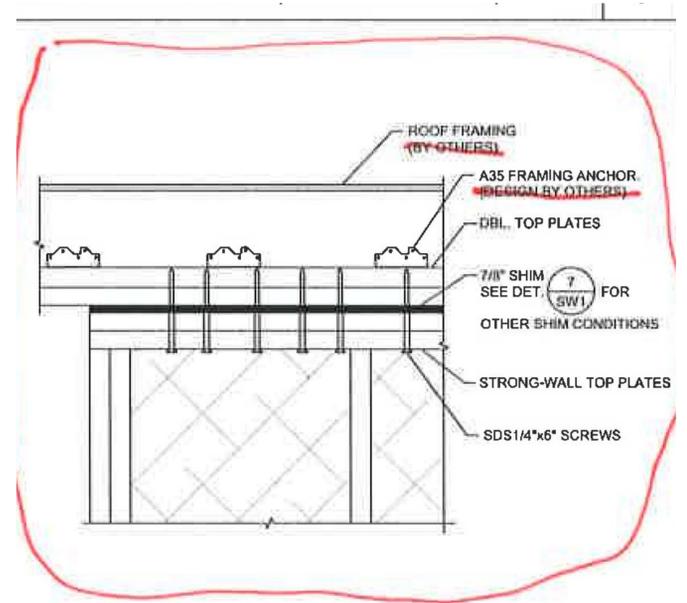


MODEL	L ₁ OR L _h (in.)	SEISMIC ³		WIND ⁴		ASD ALLOWABLE SHEAR LOAD, V (lbs.) ⁵	
		SHEAR REINFORCEMENT	MINIMUM CURB/STEMWALL WIDTH (in.)	SHEAR REINFORCEMENT	MINIMUM CURB/STEMWALL WIDTH (in.)	UNCRAKED	CRACKED
SWSB12	10 1/4	(1) #3 TIE	6	SEE NOTE 5	6	1035	740
SWSB18	15	(1) #3 HAIRPIN	6	(1) #3 HAIRPIN	6	HAIRPIN REINFORCEMENT ACHIEVES MAXIMUM ALLOWABLE SHEAR LOAD OF THE SWSB	
SWSB24	19	(1) #3 HAIRPIN	6	(1) #3 HAIRPIN	6		

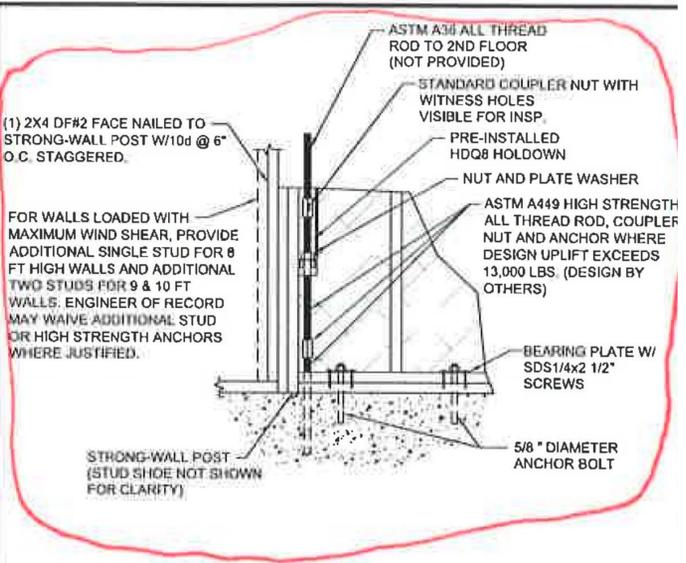
- NOTES:
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318-11 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
 2. TIE OR HAIRPIN REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
 3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
 4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
 5. USE (1) #3 TIE FOR SWSB12 WHEN WALL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
 6. WHEN USING THE ANCHOR REINFORCEMENT TEMPLATE, THE #3 TIE REQUIRED FOR THE SWSB12 MAY BE OMITTED, AND THE SHEAR REINFORCEMENT FOR THE SWSB18 MAY BE REDUCED FROM (1) #3 HAIRPIN TO (1) #3 TIE.

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

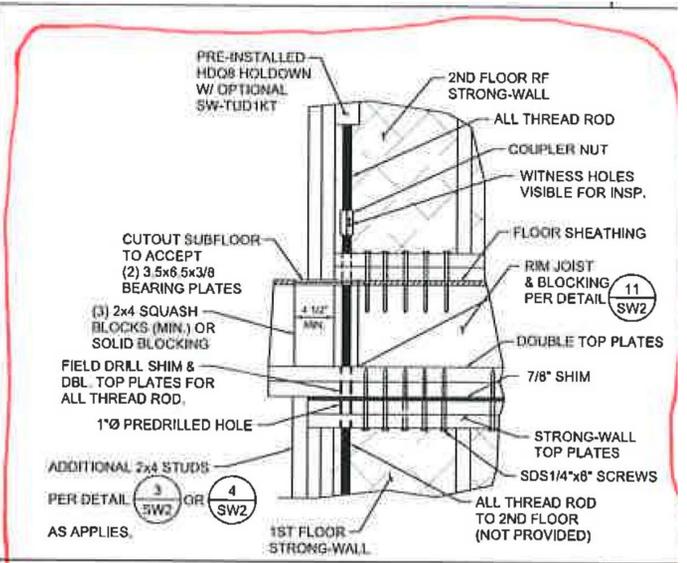
STRONG-WALL® SB SHEAR ANCHORAGE SCHEDULE AND DETAILS 5



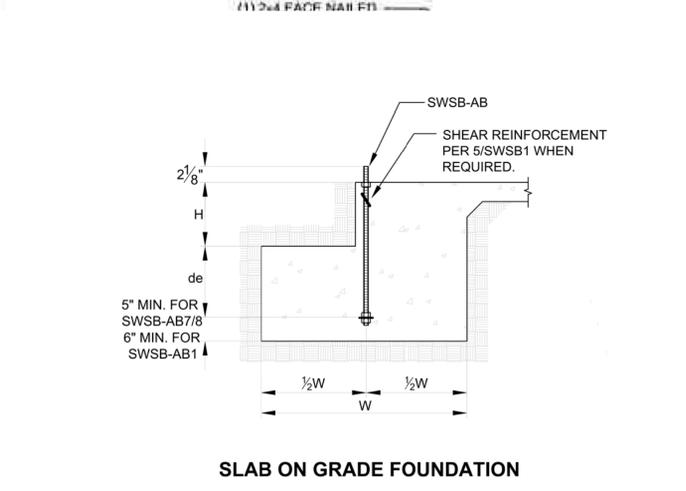
TOP PLATE CONNECTION 12



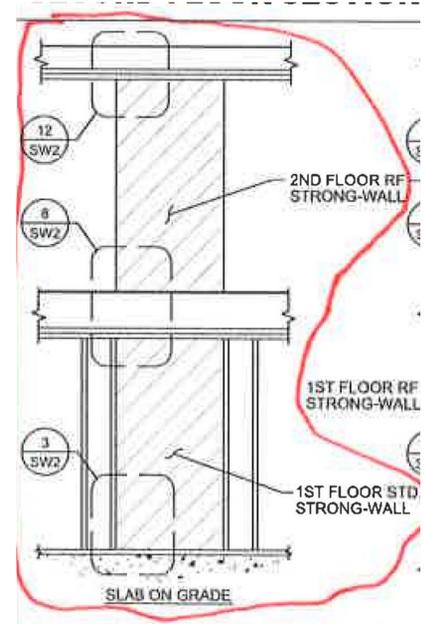
STANDARD WALL SILL (STACKED) 3



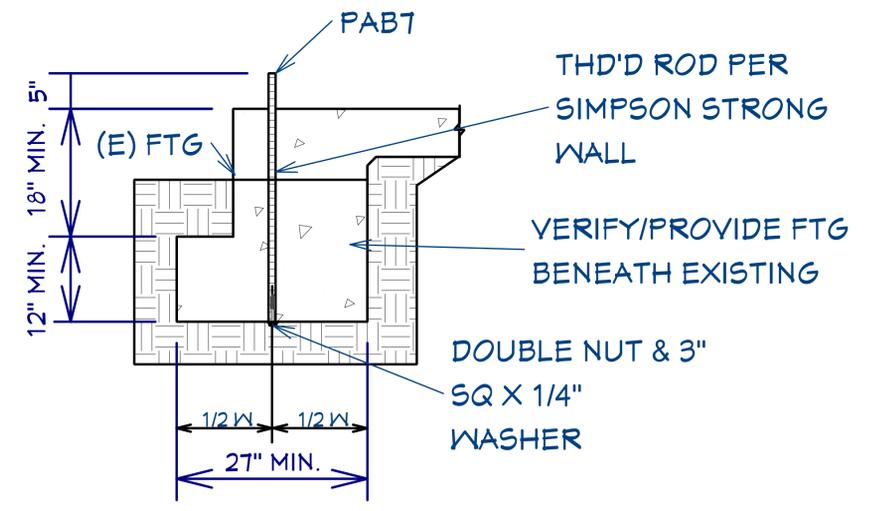
SECOND FLOOR (STACKED) 8



SLAB ON GRADE FOUNDATION



STACKED STRONG-WALL®



FROM DETAIL 1 ON SW 2
SCALE: 1" = 1' 0"

STRONG-WALL® SB SECOND-STORY WALLS - STACKED APPLICATION

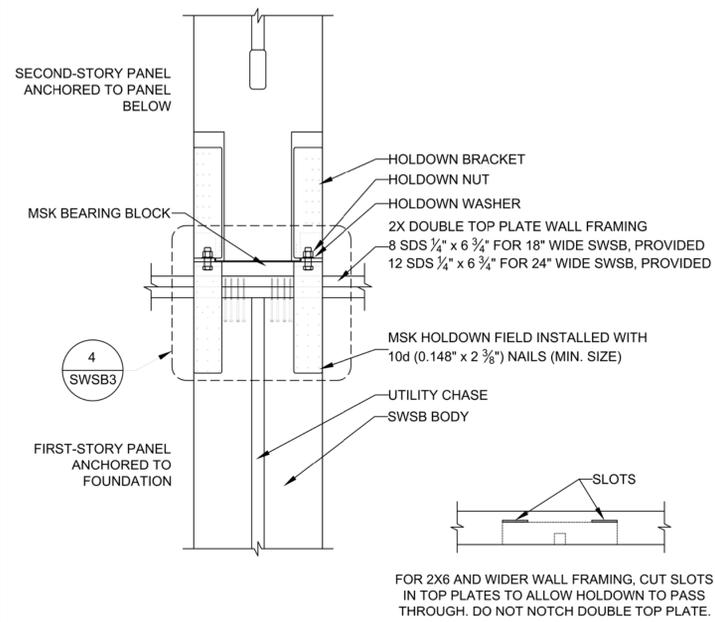
MODEL NO.	W (in)	H (in)	NUMBER OF SCREWS IN TOP OF WALL	TOTAL WALL WEIGHT (lbs)
SWSB12x9	12	105 1/4	6	125
SWSB18x9	18	105 1/4	8	180
SWSB24x9	24	105 1/4	12	240
SWSB18x10	18	117 1/4	8	200
SWSB24x10	24	117 1/4	12	265
SWSB18x11	18	129 1/4	8	215
SWSB24x11	24	129 1/4	12	290
SWSB18x12	18	141 1/4	8	235
SWSB24x12	24	141 1/4	12	315

- ALL PANELS COME WITH TWO PRE-ATTACHED HOLDOWNS, TWO SLOTTED HEX NUTS, TWO WASHERS, SDS 1/4"x6 3/4" SCREWS (IN QUANTITIES INDICATED IN TABLE), AND INSTALLATION INSTRUCTIONS.
- ORDER SWSB-MSK SEPARATELY FOR TWO-STORY STACKED APPLICATIONS. KIT INCLUDES TWO MULTI-STORY KIT HOLDOWNS, LSL BEARING BLOCK (LENGTH CORRESPONDS TO PANEL WIDTH), AND INSTALLATION INSTRUCTIONS.
- ALL PANELS ARE 3 1/2" THICK.

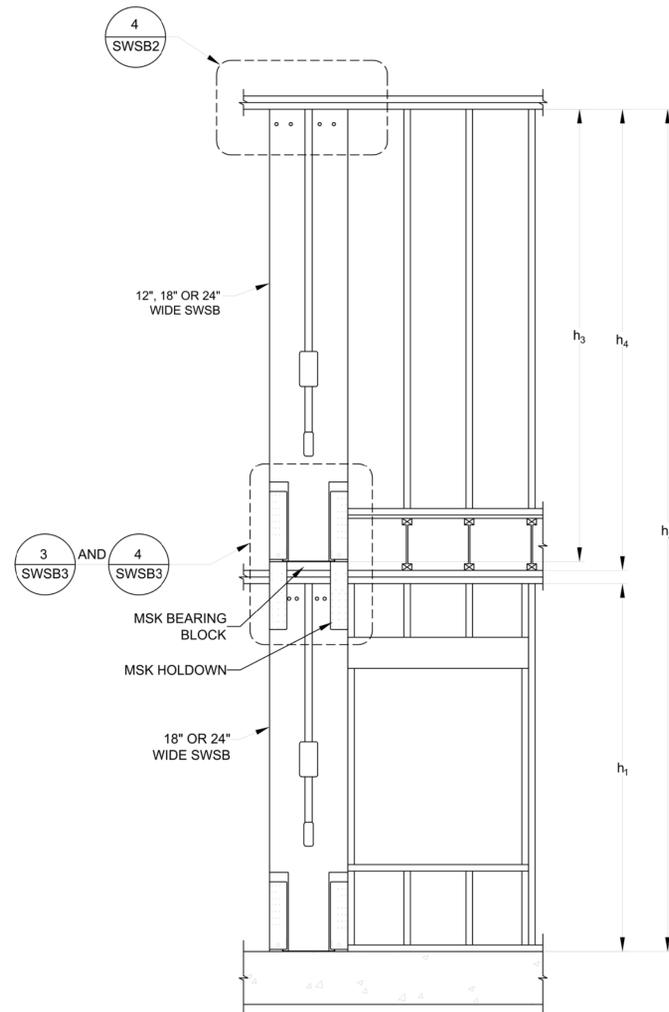
STRONG-WALL® SB FIRST-STORY WALLS-STACKED APPLICATION

MODEL NO.	W (in)	H (in)	ANCHOR BOLTS		NUMBER OF SCREWS IN TOP OF WALL	TOTAL WALL WEIGHT (lbs)
			QUANTITY	DIA. (in)		
SWSB18x8	18	93 1/4	2	7/8	8	165
SWSB24x8	24	93 1/4	2	1	12	220
SWSB18x9	18	105 1/4	2	7/8	8	180
SWSB24x9	24	105 1/4	2	1	12	240
SWSB18x10	18	117 1/4	2	7/8	8	200
SWSB24x10	24	117 1/4	2	1	12	265
SWSB18x11	18	129 1/4	2	7/8	8	215
SWSB24x11	24	129 1/4	2	1	12	290
SWSB18x12	18	141 1/4	2	7/8	8	235
SWSB24x12	24	141 1/4	2	1	12	315

- ALL PANELS COME WITH TWO PRE-ATTACHED HOLDOWNS, TWO SLOTTED HEX NUTS, TWO FLAT WASHERS, SDS 1/4"x6 3/4" SCREWS (IN QUANTITIES INDICATED IN TABLE), AND INSTALLATION INSTRUCTIONS.
- ALL PANELS ARE 3 1/2" THICK.



TWO-STORY STACKED SWSB MODELS



NOTES:

1ST STORY SWSB MUST BE THE SAME WIDTH OR WIDER THAN THE 2ND STORY SWSB

JOIST AND SHEATHING MAY BE ATTACHED TO SWSB WITH JOIST HANGER AND LEDGER. LOAD TRANSFER IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL OF RECORD.

SWSB MULTI-STORY KIT INCLUDES MSK BEARING BLOCK AND MSK HOLD-DOWN BRACKET

LEGEND:

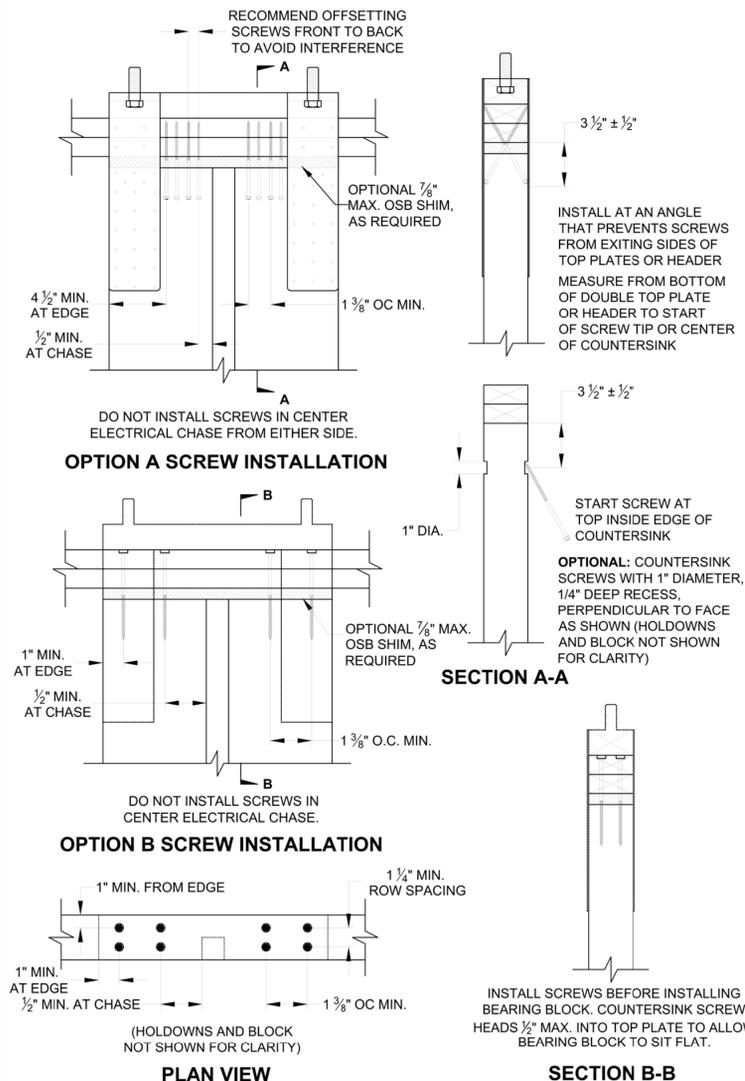
h_1 = 1ST STORY SWSB HEIGHT, TOP OF CONCRETE TO UNDERSIDE OF 1ST STORY TOP PLATES (INCHES)

h_2 = TOTAL ASSEMBLY HEIGHT, TOP OF CONCRETE TO UNDERSIDE OF 2ND STORY TOP PLATES (INCHES)

h_3 = $h_4 - 2"$ (IN.) = 2ND STORY SWSB HEIGHT, TOP OF BEARING BLOCK TO BOTTOM OF 2ND STORY TOP PLATES

h_4 = TOP OF 1ST STORY TOP PLATES TO UNDERSIDE OF 2ND STORY TOP PLATES (IN.)

1 TWO-STORY STACKED INSTALLATION



TWO-STORY STACKED ELEVATION

2 TWO-STORY STACKED SCREW SPACING OPTIONS



Client: Dave & Amy Eraut
5688 River Dr
West Linn, OR 97068

SHEAR WALL DETAIL

DRAWINGS PROVIDED BY:
Rachel Verdick
Verdick Residential Designs

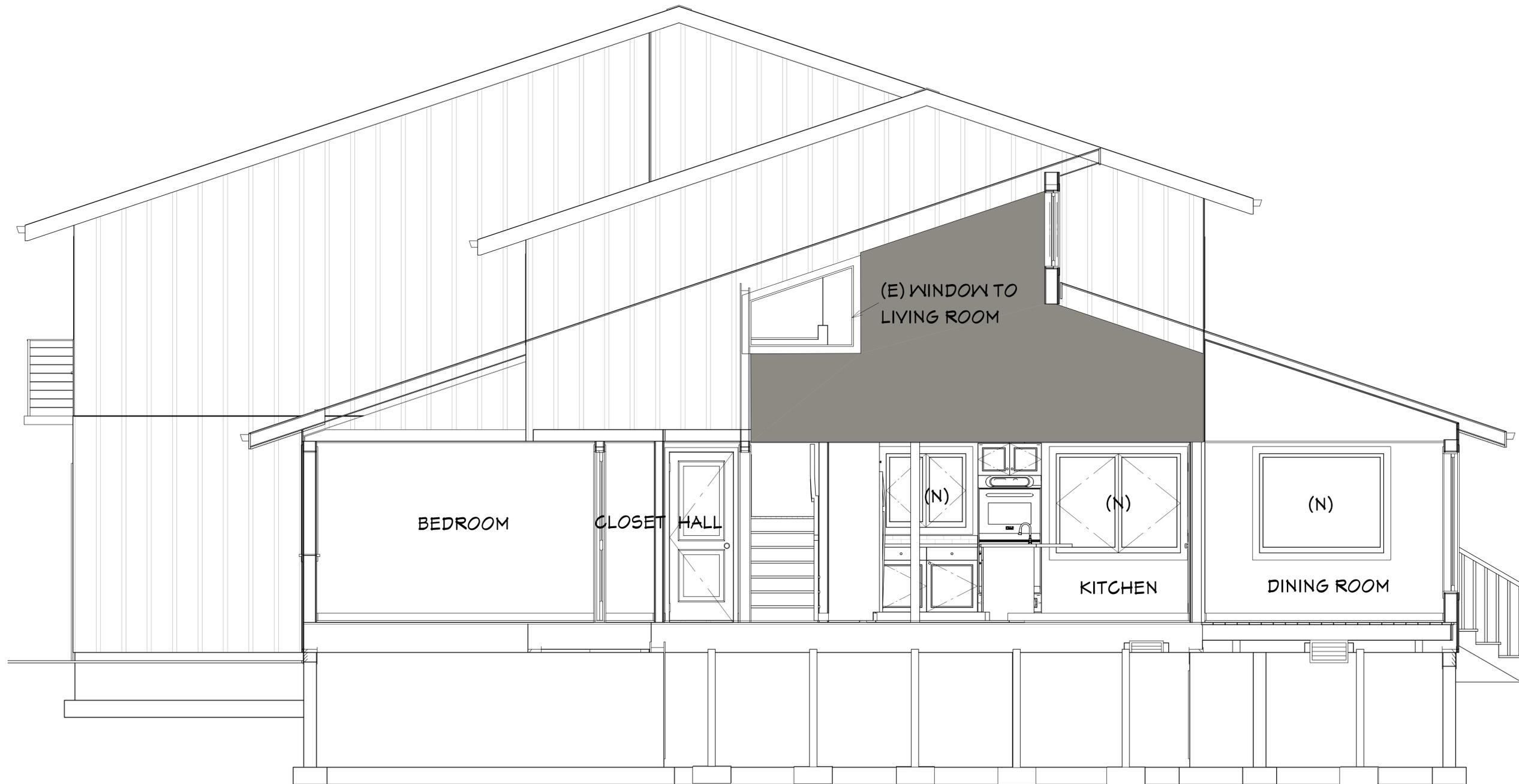
DATE:

7/10/2016

SCALE:

SHEET:

11



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

WINDOW SCHEDULE									
NUMBER	LABEL	QTY	FLOOR	SIZE	WIDTH	HEIGHT	DESCRIPTION	EGRESS	COMMENTS
W01	1463FX	1	1	1463FX	16"	75"	FIXED GLASS		
W02	21024SC	3	2	21024SC	33 3/4"	28"	SNGL CASEMENT-HR		
W03	2030SC	1	2	2030SC	24"	36"	SNGL CASEMENT-HR		
W04	3020FX	3	3	3020FX	36"	24"	FIXED GLASS		
W05	3030SC	3	2	3030SC	36"	36"	SNGL CASEMENT-HR		
W06	3330DC	1	1	3330DC	39"	36"	DBL CASEMENT-LHL/RHR		
W07	6056FX	1	1	6056FX	72"	66"	FIXED GLASS		
W08	3040SC	1	1	3040SC	36"	48"	SNGL CASEMENT-HR		
W09	41030DC	1	2	41030DC	58"	36"	DBL CASEMENT-LHL/RHR		
W10	5040DC	2	1	5040DC	60"	48"	DBL CASEMENT-LHL/RHR		
W11	5040FX	1	1	5040FX	60"	48"	FIXED GLASS		
W12	51030DC	1	2	51030DC	70"	36"	DBL CASEMENT-LHL/RHR		
W13	51030RS	1	1	51030RS	70"	36"	RIGHT SLIDING		
W14	4030DC	1	2	4030DC	48"	36"	DBL CASEMENT-LHL/RHR		
W15	3056FX	4	1	3056FX	36"	66"	FIXED GLASS		

DOOR SCHEDULE									
NUMBER	LABEL	QTY	FLOOR	SIZE	WIDTH	HEIGHT	DESCRIPTION	THICKNESS	COMMENTS
D02	1268	1	1	1268 R	20"	80"	2 DR. BIFOLD-SLAB	1 3/8"	
D04	2868	1	2	2868 L IN	32"	80"	HINGED-DOOR P04	1 3/8"	
D06	2468	1	2	2468 L IN	28"	80"	HINGED-DOOR P04	1 3/8"	
D08	2668	1	1	2668 L IN	30"	80"	HINGED-SLAB	1 3/8"	
D09	2668	2	1	2668 R IN	30"	80"	HINGED-DOOR P04	1 3/8"	
D11	5668	3	2	5668 R IN	66"	80"	SLIDER-DOOR P04	1 3/8"	
D12	4068	1	1	4068 L/R IN	48"	80"	DOUBLE HINGED-DOOR P04	1 3/8"	
D13	5068	1	2	5068 L/R EX	60"	80"	EXT. DOUBLE HINGED-GLASS	1 3/4"	
D14	3068	1	1	3068 R EX	36"	80"	EXT. HINGED-DOOR E20	1 3/4"	
D15	2668	1	2	2668 L IN	30"	80"	HINGED-GLASS DOOR SC02	1 3/8"	
D16	2868	1	2	2868 R IN	32"	80"	HINGED-SLAB	1 3/8"	
D18	5068	1	1	5068 L IN	60"	80"	SLIDER-GLASS	1 3/8"	
D19	2668	1	1	2668 L IN	30"	80"	HINGED-DOOR P04	1 3/8"	
D20	51068	1	1	51068 L/R EX	70"	80"	EXT. DOUBLE HINGED-GLASS	1 3/4"	

NOTE:
VERIFY WITH OWNER NEW WINDOWS AND DOOR,
STYLE TYPE AND SIZES.

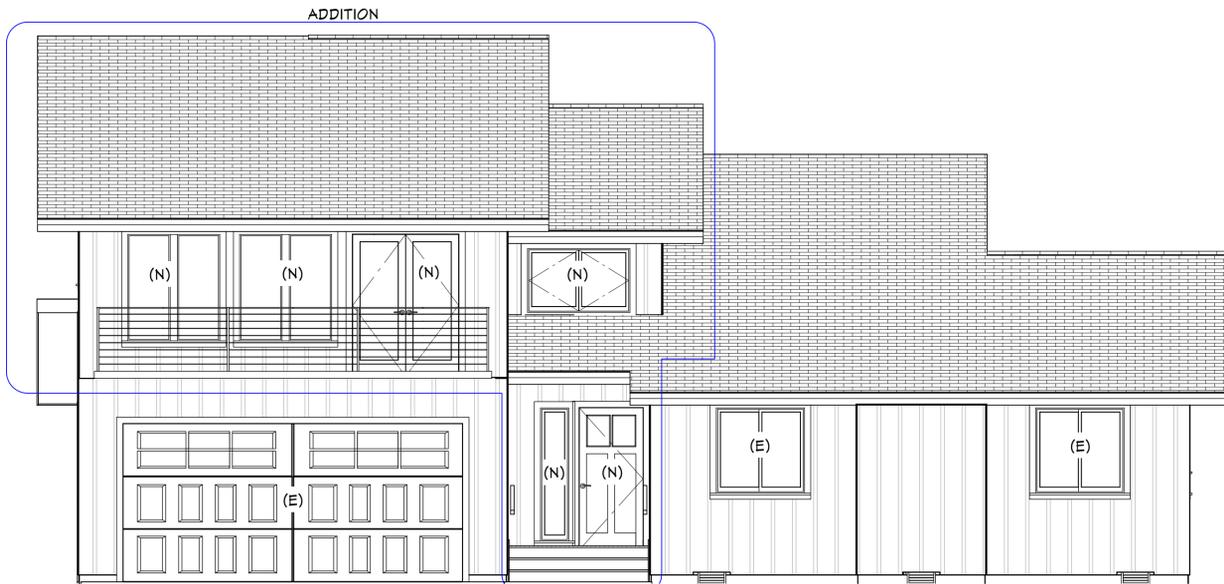


INTERIOR ELEVATION 2
SCALE: 1/2" = 1' 0"

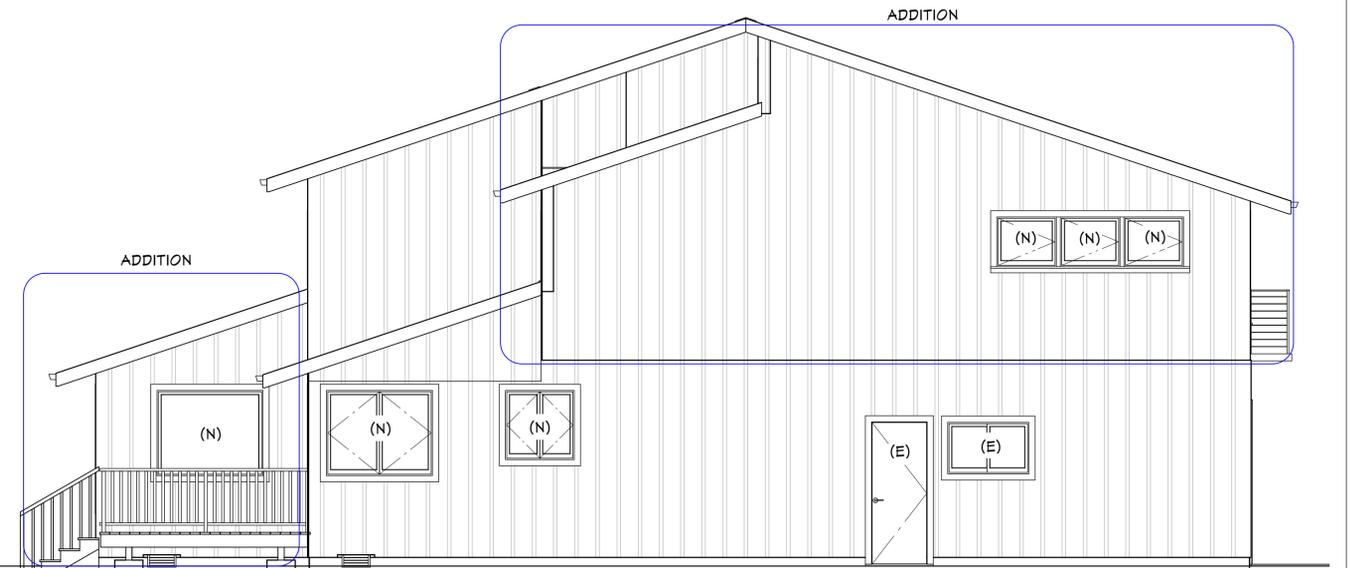
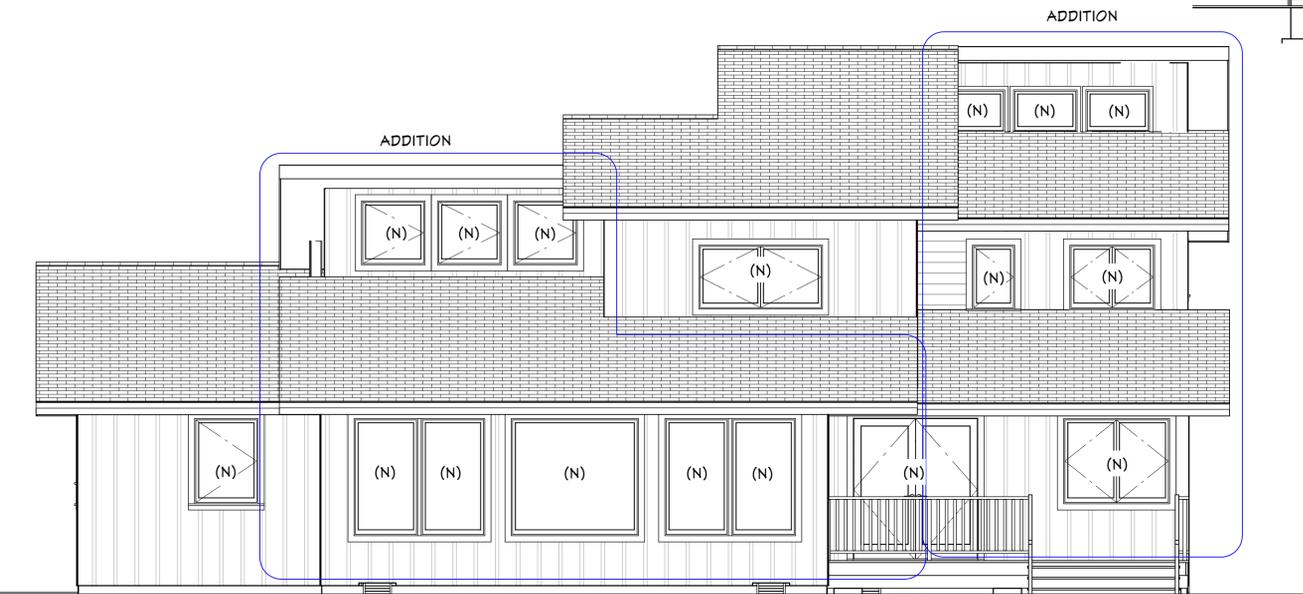
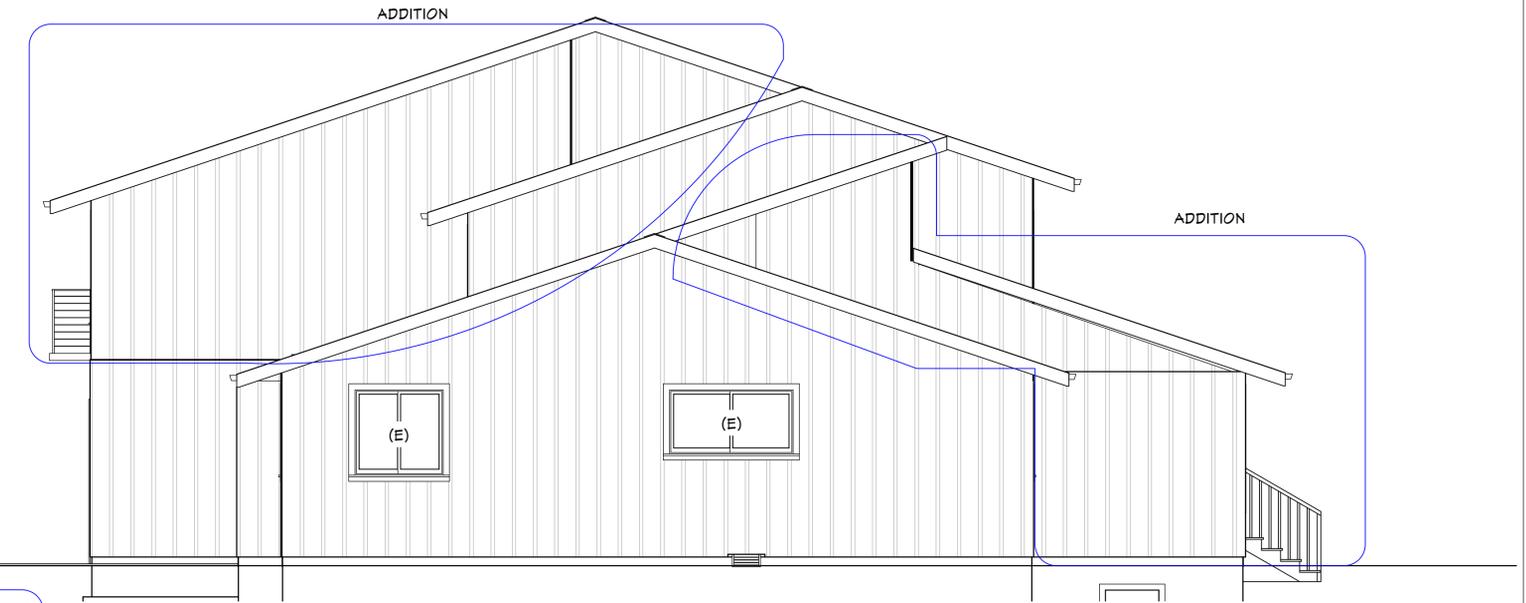
ELEVATION DATA (TAKEN FROM THE ELEVATION SURVEY DATED 12/14/15):

a) Top of bottom floor (including crawlspace, etc.)	44.0	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
b) Top of the next higher floor	49.8	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
c) Bottom of the lowest horizontal structural member (V Zones only)	N/A.	<input type="checkbox"/> feet	<input type="checkbox"/> meters
d) Attached garage (top of slab)	48.0	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	50.0	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
f) Lowest adjacent (finished) grade next to building (LAG)	45.1	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
g) Highest adjacent (finished) grade next to building (HAG)	47.9	<input checked="" type="checkbox"/> feet	<input type="checkbox"/> meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	45.1	<input type="checkbox"/> feet	<input type="checkbox"/> meters

Check the measurement used.



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



- NOTES:**
- ALL OVERHANGS TO EXTEND TO 2' 0" TYP.
 - NEW ROOF FOR ENTIRE HOUSE, OWNERS CHOICE
 - NEW SIDING FOR ENTIRE HOUSE, OWNERS CHOICE