city of forest grove

CITY OF FOREST GROVE
1924 Council Street
PO Box 326
Forest Grove, OR 97116
503-992-3229

Permit No.: **MEC-10-00310**

For Inspections Call the 24 Hour Inspection Line
Building (503-992-3206) Engineering (503-992-3228)

Permit Type: **Mechanical Residential Over the Counter**

Site Address:	2941 BOYD LN FOREST GROVE OR 97116	**OccCode**	**Construction Type**	**SqFt**
Owner:	WAGNER, MICKEY A	**Phone:**		
Address:	2941 BOYD LN FOREST GROVE OR 97116	**Fax:**		
Contractor:	ALL FUEL INSTALLATION & SERVICE, LL(	**Phone:**		
Address:	PO BOX 69 TROUTDALE OR 97060	**Fax:** **Business Lic#:**	ccb 169503	
Contact:		**Phone:**		
Description:	Install pellet stove & venting.			

SUPPLEMENTAL INFORMATION:

# FLUE/VENT - APPLIANCE/CHI	1
# WOOD/PELLET STOVE	1

FEES:

Mechanical Permit Fee/equip.	27.30	Mechanical State Surcharge Equ	3.28

TOTAL FEES: **30.58**

I hereby acknowledge that I have read this permit and state that the above information is correct, and agree to comply with all conditions, ordinances and state and federal laws regulating activities covered by this permit.

Applicant Signature: E. T. C. Date: 5/11/10 Issued by: YMP

Mechanical Permit Application

city of forest grove

City of Forest Grove Phone: 503-992-3229 Fax: 503-992-3202

1924 Council Street/P.O. Box 326, Forest Grove, OR 97116 **Inspection Request Line: 503-992-3206**

Permit Number: MEC-10-00310

TYPE OF WORK	
☐ New construction	☒ Addition/alteration/replacement
☐ Demolition	☐ Other:

CATEGORY OF CONSTRUCTION		
☒ 1- and 2-family dwelling	☐ Commercial/industrial	☐ Accessory building
☐ Multi-family	☐ Master builder	☐ Other:

JOB SITE INFORMATION AND LOCATION	
Job site address: 2941 Boyd Lane	
City/State/ZIP: Forest Grove, OR 97116	
Suite/bldg./apt. no.:	Project name:
Cross street/directions to job site:	
Subdivision:	Lot no.:
Tax map/parcel no.:	

DESCRIPTION OF WORK

Install pellet stove & venting

☒ PROPERTY OWNER	☐ TENANT
Name: Mickey Wagner	
Address:	
City/State/ZIP:	
Phone: (971) 344-5695	Fax: ( )

☒ APPLICANT	☐ CONTACT PERSON
Business name: See Below	
Contact name:	
Address:	
City/State/ZIP:	
Phone: ( )	Fax: : ( )
E-mail:	

CONTRACTOR

Business name:	All Fuel Installation & Service, LLC.
Address:	PO Box 69
City/State/ZIP:	Troutdale, OR 97060
Phone: (503) 674-2350	Fax: (503) 674-2693
CCB lic.:	169503

Authorized signature: Eric T. Camp

Print name: Eric T. Camp Date: 5/3/10

COMMERCIAL FEE* SCHEDULE – USE CHECKLIST

Mechanical permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all mechanical materials, equipment, labor, overhead, and profit.

Value: $

RESIDENTIAL EQUIPMENT / SYSTEMS FEES*

For special information use checklist.

Description	*Qty.*	*Ea.*	*Total*
Heating/cooling			
Furnace add-on air conditioning		11.90	
Gas heat pump		8.95	
Duct work		15.85	
Hydronic hot water system			
Residential boiler (radiator or hydronic)		11.90	
Unit heaters (fuel-type, not electric), in-wall, in-duct, suspended, etc.		11.90	
Flue/vent for any of above		6.00	
Other:		8.95	
Other fuel appliances			
Water heater		8.95	
Gas fireplace		8.95	
Flue vent for water heater or gas fireplace		6.00	
Log lighter (gas)		8.95	
Wood/pellet stove	1	8.95	8.95
Wood fireplace/insert		8.95	
Chimney/liner/flue/vent		6.00	6.00
Other:		8.95	
Environmental exhaust and ventilation			
Range hood/other kitchen equipment		8.95	
Clothes dryer exhaust		8.95	
Single-duct exhaust (bathrooms, toilet compartments, utility rooms)		6.00	
Attic/crawl space fans		6.00	
Other:		8.95	
Fuel piping			
$4.00 for first four outlets; $1.05 for each additional			
Furnace, etc.		By Outlet #	
Gas heat pump		By Outlet #	
Wall/suspended/unit heater		By Outlet #	
Water heater		By Outlet #	
Fireplace		By Outlet #	
Range		By Outlet #	
Barbecue		By Outlet #	
Clothes dryer (gas)		By Outlet #	
Other:			

MECHANICAL PERMIT FEES*

Subtotal	14.95
Minimum permit fee	27.30
Plan review (__% of permit fee)	
State surcharge (12% of permit fee)	3.28
TOTAL PERMIT FEE	30.58

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete.

* Fee methodology set by Tri-County Building Industry Service Board

city of forest grove

COMMUNITY DEVELOPMENT DEPARTMENT
Building / Engineering / Code Enforcement

INSPECTION REQUEST
503-992-3206

POSTED

Site Address 2941 BOYD LANE

Contractor MICKI WAGNER - OWNER

Phone Number 971/344/5695 - HOMEOWNER
503/674/2350 - CONTRACTOR ALL FUEL

Scheduled Inspection Date 05/14/10

Mon ☐ Tues ☐ Wed ☐ Thurs ☐ Fri ☒

AM ☒ PM ○ other

Permit Number MEC - 10-00310

BUILDING	PLUMBING	MECHANICAL	MANUFACTURED HOME
__ Erosion Control	__ Underfloor (P & B)	__ Gas Piping	__ M/H Set-Up
__ Footing / Pier	__ Top Out (Rough)	__ Underfloor (P & B)	__ M/H Mechanical
__ Foundation Wall	__ Water Line	__ Rough Mechanical	__ M/H Water/Sewer
__ Underfloor (P & B)	__ Rain/Crawl Drains	X HVAC (Final)	__ M/H Electrical Feeder
__ Shear	__ Storm Drainage	__ Other	__ M/H Final
__ Framing	__ Sanitary Sewer		__ Other
__ Insulation	__ Backflow Device		
__ Approach/Sidewalk	__ Water Heater		
__ Other	__ Other		
__ Planning	__ Final		
__ Final			

Comments:

☒ APPROVED ☐ NOT APPROVED (REINSPECTION REQUIRED) ☐ APPROVED AFTER CORRECTIONS ☐ REINSPECTION FEE IS REQUIRED BEFORE NEXT INSPECTION $_____

CORRECTIONS: pellet stove model parlour 3000 6home serial # 10515

Date: 5-14-10 Inspector:

FOREST GROVE OREGON

A place where businesses and families thrive.

City of Forest Grove
1924 Council St
Forest Grove, OR 97116
503-992-3229
Fax: 503-992-3202

Building Permit

Residential Plumbing

Permit Number: 311-21-000551-PLM

IVR Number: 311015370929

Web Address: www.forestgrove-or.gov

Email Address: cd@forestgrove-or.gov

Permit Issued: August 03, 2021

Application Date: August 03, 2021

TYPE OF WORK

Plumbing Specialty Code Edition: 2021

Category of Construction: Single Family Dwelling

Type of Work: Alteration

Submitted Job Value: $0.00

Description of Work: Connect to City Water main. Vault was already constructed years ago.

JOB SITE INFORMATION

Worksite Address	Parcel	Owner:	WAGNER MICKEY A
2941 BOYD LN	1N331AC03501	Address:	2941 BOYD LN
FOREST GROVE, OR 97116-1532			FOREST GROVE, OR 97116-1532

LICENSED PROFESSIONAL INFORMATION

Business Name	License	License Number	Phone
SEE PROPERTY OWNER INFORMATION - Primary	Owner (Property)	OWNER	

PENDING INSPECTIONS

Inspection	Inspection Group	Inspection Status
3999 Final Plumbing	Plumb Res	Pending

SCHEDULING INSPECTIONS

Various inspections are minimally required on each project and often dependent on the scope of work. Contact the issuing jurisdiction indicated on the permit to determine required inspections for this project.

Schedule or track inspections at www.buildingpermits.oregon.gov

Call or text the word "schedule" to 1-888-299-2821 use IVR number: 311015370929

Schedule using the Oregon ePermitting Inspection App, search "epermitting" in the app store

Permits expire if work is not started within 180 Days of issuance or if work is suspended for 180 Days or longer depending on the issuing agency's policy.

All provisions of laws and ordinances governing this type of work will be complied with whether specified herein or not. Granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction.

ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the Center at (503) 232-1987.

All persons or entities performing work under this permit are required to be licensed unless exempted by ORS 701.010 (Structural/Mechanical), ORS 479.540 (Electrical), and ORS 693.010-020 (Plumbing).

PERMIT FEES

Fee Description	Quantity	Fee Amount
Water service - Total linear feet	10	$46.35
Water service SDC (3/4" meter)	1	$6,765.00
Water service-drop in connection fee (3/4" meter)	1	$357.00
State of Oregon Surcharge -Plumb (12% of applicable fees)		$5.56
	Total Fees:	$7,173.91

Note: This may not include all the fees required for this project.

FOREST GROVE OREGON

A place where families and businesses thrive.

Plumbing Permit Application

City of Forest Grove

Permit Number: _____

TYPE OF WORK	
☐ New construction	☐ Demolition
☒ Addition/alteration/replacement	☐ Other:
CATEGORY OF CONSTRUCTION	
☒ 1- and 2-family dwelling	☐ Commercial/industrial
☐ Accessory building	☐ Multi-family
☐ Master builder	☐ Other:
JOB SITE INFORMATION AND LOCATION	
Job site address: 2941 Boyd Ln	
City/State/ZIP: Forest Grove, OR 97116	
Suite/bldg./apt. no.:	Project name:
Cross street/directions to job site:	
Subdivision:	Lot no.:
Tax map/parcel no.:	
DESCRIPTION OF WORK	
☒ PROPERTY OWNER	☐ TENANT
Name: Mickey Wagner	
Address: 2941 Boyd Ln	
City/State/ZIP: Forest Grove, OR 97116	
Phone: (971) 344-5695	Email: Bluemoontruck*
☒ APPLICANT	☐ CONTACT PERSON
Business name:	
Contact name: Mickey Wagner	
Address: 2941 Boyd Ln	
City/State/ZIP: Forest Grove OR 97116	
Phone: (971) 344-5695	Email: *
CONTRACTOR	
Business name:	
Address:	
City/State/ZIP:	
Phone: ( )	
City/Metro Bus Lic:	Email:
CCB lic.:	PB Lic. no.:

Authorized signature: _____

Print name: Mickey Wagner Date: 8/3/21

* Bluemoontruck37@gmail.com

FEE* SCHEDULE			
For special information use checklist.			
Description	Qty.	Ea.	Total
New 1- 2-family dwellings (includes 100 ft. for each utility connection)			
SFR (1) bath		239.50	
SFR (2) bath		316.75	
SFR (3) bath		386.25	
Each additional bath/kitchen		41.72	
Fire sprinkler (_____ sq. ft.)		By sq ft	
Site utilities			
Catch basin or area drain		13.90	
Drywell, leach line, or trench drain		13.90	
Footing drain (each 100 ft.: _____)		46.35	
Manufactured home utilities			
Manholes		13.90	
Rain drain connector		13.90	
Sanitary sewer (each 100 ft.: _____)		46.35	
Storm sewer (each 100 ft.: _____)		46.35	
Water service (each 100 ft.: _____)	1	46.35	
Fixture or item			
Absorption valve		13.90	
Backflow preventer		13.90	
Backwater valve		13.90	
Clothes washer		13.90	
Dishwasher		13.90	
Drinking fountain		13.90	
Ejectors/sump		13.90	
Expansion tank		13.90	
Fixture/sewer cap		13.90	
Floor drain/floor sink/hub		13.90	
Garbage disposal		13.90	
Hose bib		13.90	
Ice maker		13.90	
Interceptor/grease trap		13.90	
Medical gas (value: $ _____)		By value	
Primer		13.90	
Roof drain (commercial)		13.90	
Sink/basin/lavatory		13.90	
Tub/shower/shower pan		13.90	
Urinal		13.90	
Water closet		13.90	
Water heater		13.90	
Other:		13.90	
Other:			
		Subtotal	
		Minimum permit fee	$ 27.30
		Plan review (___% of permit fee)	
		State surcharge (12% of permit fee)	
		TOTAL PERMIT FEE	

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete.

*Fee methodology set by Tri-County Building Industry Service Board

Phone: 503-992-3229 Fax: 503-992-3202
1924 Council Street/P.O. Box 326, Forest Grove OR 97116
IVR Inspection Request Line: 888-299-2821

Forest Grove Inspection Report

1924 Council Street
Forest Grove, OR 97116
Tel: (503)992-3229

Location:
2941 BOYD LN FOREST GROVE OR 97116-1532

Inspection Date:
Fri, 27 Aug 2021 03:03 PM

Record Type:
Residential Plumbing

Record ID:
311-21-000551-PLM

Inspection Type:
3999 Final Plumbing

Result:
Approved

Inspector: Evan Dahl
Phone: 503-992-3229
Email: edahl@forestgrove-or.gov

Comments:

ED

Inspector

FOREST GROVE OREGON

A place where families and businesses thrive.

Building Permit Application

City of Forest Grove

Permit Number: 311-24-000255-DWL

TYPE OF WORK	
☑ New construction	☐ Demolition
☐ Addition/alteration/replacement	☐ Other:

CATEGORY OF CONSTRUCTION	
☐ 1- and 2-family dwelling	☐ Commercial/industrial
☑ Accessory building	☐ Multi-family
☐ Master builder	☐ Other:

JOB SITE INFORMATION AND LOCATION

Job site address: 2941 Boyd Lane

City/State/ZIP: Forest Grove, OR 97130

Suite/bldg./apt. no.: | Project name: Wildauer

Cross street/directions to job site:

I-5 S and US-26 W to 1st St/NW Glencoe Rd in North Plains.Exit 57 from US-26 W Continue on NW Glencoe Rd. NW Zion Church Rd, NW Cornelius Schefflin Rd, NW Verboort Rd and OR-47 S to Boyd LN

Subdivision: | Lot no.: 3501

Tax map/parcel no.: 1N331AC03501

DESCRIPTION OF WORK

Proposed Wolf Industries modular home. Modular home is 14' x 44', 616' SF with 8' X 12' shed style covered deck at entry.

☑ PROPERTY OWNER	☐ TENANT

Name: Mickey Wagner

Address: 2941 Boyd Ln

City/State/ZIP: Forest Grove, OR 97116

Phone: 971-344-5695 | Email: bluemoontruck37@gmail.com

☑ APPLICANT	☐ ENGINEER	☐ ARCHITECT/DESIGNER

Business name: Wolf Industries

Contact name: Anna Linder

Address: 607 SE Eaton Blvd

City/State/ZIP: Battle Ground, WA 98604

Phone: 360-912-9521 | Email: alinder@wolfind.com

CONTRACTOR

Business name: Wolf Industries/Anna Linder

Address: 607 SE Eaton Blvd

City/State/ZIP: Battle Ground, WA 98604

Phone: 360-912-9521 | Email: alinder@wolfind.com

CCB lic.: 184044 | City/Metro Bus lic:

Authorized signature: *Anna Linder*

Print name: Anna Linder | Date: 4/3/24

REQUIRED DATA: 1- AND 2-FAMILY DWELLING

Permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.

Valuation	~~$97,500~~ $105,133.36	
Number of bedrooms:	2	
Number of bathrooms:	1	
Total number of floors:	1	
New dwelling area:	616'	square feet
Garage/carport area:	0	square feet
Covered porch area:	96'	square feet
Deck area:	0	square feet
Other structure area:	0	square feet

REQUIRED DATA: COMMERCIAL-USE CHECKLIST

Permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.

Valuation	
Existing building area:	square feet
New building area:	square feet
Number of stories:	
Type of construction:	
Occupancy groups:	
Existing:	
New:	

NOTICE

All contractors and subcontractors are required to be licensed with the Oregon Construction Contractors Board under ORS 701 and may be required to be licensed in the jurisdiction in which work is being performed. If the applicant is exempt from licensing, the following reasons apply:

BUILDING PERMIT FEES*

Please refer to fee schedule

Fees due upon application	
Amount received	
Date received	

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete

* Fee methodology set by Tri-County Building Industry Service Board

Phone: 503-992-3229

Fax: 503-992-3202

IVR Inspection Request Line: 1-888-299-2821

1924 Council Street/P.O. Box 326, Forest Grove, OR 97116

Ek Engineering, Inc.
Engineering Consulting
Septic Designs

P. O. Box 3097
Battle Ground, WA 98604

(360) 687-7668 Phone
(360) 687-7669 Fax

Online: www.EkEngineering.net
E-Mail: David@EkEngineering.net

Forest Grove Building Division
APPROVED
These plans approved for construction with corrections made in red ink and/or comments on Plan Review correction letter
Reviewer YVETTE HAMILTON
Date 05/17/2024
Errors and omissions by the reviewer or inspector do not relieve the applicant from compliance with the Codes

Wolf Industries
607 SE Eaton Blvd.
Battle Ground, WA 98604

April 4, 2024

Structural Analysis Acceptability – Re-Use

Plan: Model E-S (14' x 44' Pre-Fabricated Home) in the State of Oregon

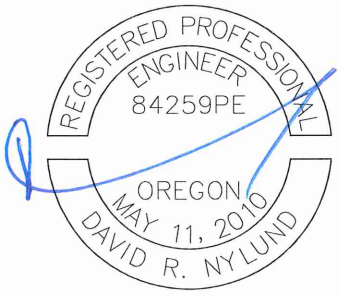
Build Site: 2941 Boyd Lane, Forest Grove, OR 97116

We hereby certify that the structural analysis for the Model E-S is suitable for the above location and that the home may be used at that location.

Please refer to the revised structural analysis detail sheets S1, S2, etc and to the revised structural analysis report dated January 13th, 2022 for complete details.

If you have any questions, please call 360-687-7668.

Sincerely;
David R. Nylund, P.E.



EXPIRES: 12/31/2024

Oregon
Tina Kotek, Governor

Department of Consumer and Business Services
Building Codes Division
1535 Edgewater Street NW
P.O. Box 14470
Salem, OR 97309-0404
503-378-8096 (direct)
503-378-4133 (general)
oregon.gov/bcd

PLAN RENEWAL NOTICE

DATE: 1/25/2024

Manufacturer: WOLF INDUSTRIES, INC. **Mfr. No.: 704**

Plan Number: 21-6738D +A1 +A2

Plan Expiration Date: 1/18/2024

Renewal Date: 1/25/2024

New Expiration Date: 1/18/2025

The State of Oregon, Prefabricated Structures Program reviewed and approved your application for renewal of the design master plan listed above. All previously approved plans and approval notes associated with the original approval plans dated 1/18/2023 remain in effect. If Oregon adopts a new edition of a code or standard, or a law changes that impacts this approved plan, revisions may be required to be submitted. In some cases, approved plans may be expired by this office prior to the expiration date listed above.

This plan renewal notice must be attached to the existing approved plan set for this plan number.

Christina Bowen
Christina Bowen, Permit Technician

Oregon
Kate Brown, Governor

Department of Consumer and Business Services
Building Codes Division
1535 Edgewater Street NW
P.O. Box 14470
Salem, OR 97309-0404
503-378-4133
Fax: 503-378-2322
oregon.gov/bcd

NOTICE OF PLAN REVIEW

OR Plan number:	21-6738D	Date received:	12/17/2021
		Date reviewed:	1/18/2022
Manufacturer #:	704	**Expiration date:**	**1/18/2023**
Manufacturer:	WOLF INDUSTRIES INC.		
First user:	UNKNOWN		
Design Professional:	DAVID R. NYLUND		
Destination:	UNKNOWN		
Description:	14' x 44' SFR		

DESIGN CRITERIA:

Occupancy:	R-3	Type of construction:	VB
Floor area:	616²	Number of stories:	1
Floor live load:	40	Roof live load:	30 Ps
Wind:	145V	Exposure:	B
Seismic zone:	D	Risk category:	II
Occupant load:	*	Sprinklers:	N/A
Plumbing:	6	Alarm(s):	N/A
NLEA:	N/A	Essential Facility (ORS 455.447):	N/A

THESE PLANS ARE APPROVED AND SUBJECT TO THE ITEMS NOTED BELOW.

These plans have been reviewed for conformity with applicable provisions of the **2019 Oregon Structural Specialty Code (OSSC) including the energy provisions in Chapter 13, 2019 Oregon Mechanical Specialty Code (OMSC), 2021 Oregon Plumbing Specialty Code (OPSC), 2021 Oregon Electrical Specialty Code (OESC), 2021 Oregon Residential Specialty Code (ORSC)**, and other related rules and regulations, as applicable.

Items noted in this review document must be incorporated into the project to meet minimum requirements. Approval of these plans is not an approval of omissions or oversights by this office or of non-compliance with any applicable regulations of any state or federal law, rule, code or regulation or any local ordinance. Please contact this office for any requirements you question or do not understand.

Deviations from the submitted and hereby conditionally approved plans during construction, exclusive of those necessary to comply with requirements as listed herein, are prohibited without the written authorization of this office.

Reviewed By: Randy Rudy Date Approved: 1/18/2022

This plan review covers:

Where plans reference IBC, or similar reports in lieu of specifics, two (2) copies of those reports shall be submitted with the plans for approval and be provided to the field inspector upon request. Inspection will not be completed

and a re-inspection required if current copies of the referenced documents are not available to the inspector as requested.

This plan review does not cover the design of the foundation, marriage of multiple component structures, connecting the building to its foundation, or exterior stairs and ramps.

Care shall be exercised by the authority having site jurisdiction that the requirements of OSSC Table 602 and the appropriate portions of OSSC Sections 705.3, 705.5, 705.6, 705.8, 705.8.5, 705.8.6, and 705.11 are considered in setting the structure on the property.

No modification to this structure shall be commenced without the approval of the design engineer, the local building official and the Prefabricated Structures Section of the Building Codes Division. Electrical and Plumbing alterations, Occupancy change of use requires separate permits and inspections.

Foundation systems, marriage connections of multiple component units, site work done outside of the confines of the structure (plumbing, electrical, gas piping, sprinkler underground installations including connections to the building, porches, stairs, patio covers etc. and utility connections) are the responsibility of the local building department having site jurisdiction. See OAR 918-674-0015(5). Notification to Local Enforcement Agencies, (NLEA) are for incomplete structures only. OAR 918-674-0055(7).

Design Master Plans are valid for 12 MONTHS following the date of approval subject to the following: During a code change year, the plans may expire prior to the plan expiration date indicated if a new code document is adopted by Oregon or other affected State(s). In such case, complete resubmittal including an application and updated plans may be required. OAR 918-674-0085

Authority. Any prefabricated structure approved by the Division or a certified third-party agency and bearing an Oregon insignia of compliance shall be considered in compliance with all appropriate construction laws, codes and regulations within the State of Oregon and shall be acceptable to the local authority having jurisdiction in all Oregon municipalities. OAR 918-674-0015(2)

No local authority having jurisdiction shall cause closed construction to be open for inspection on a prefabricated structure or component bearing an Oregon insignia of compliance. OAR 918-674-0015(3)

REFER TO APPROVED PLANS FOR NOTES PERTINENT TO THIS PARTICULAR PROJECT.

INSPECTIONS REQUIRED: COVER: __X__ FINAL: __X__ ON SITE : __X__
OTHER: Prior to shipping a structure that requires further inspections it is the responsibility of the manufacturer to notify the Division and the local jurisdiction (when required) when the unit ships and where the structure will be placed. (OAR 918-674-0055(1)(d)(e))

Inspection requests for the Division shall be at least 48 hours in advance. Inspection request forms are available on the Division's website (https://www.oregon.gov/bcd/Formslibrary/4934.pdf)
Completed inspection request forms must be emailed to: prefab.inpsections@oregon.gov
For questions regarding Division inspections call 503-378-2706.

Local jurisdiction contact information may be obtained at the following web site;
https://www.oregon.gov/bcd/lbdd/pages/index.aspx

The plans are approved subject to the items noted above and the approval of the authority having jurisdiction including but not limited to **DEQ, Planning and Zoning.**

NOTE: The following list of items are standard plan review comments made in an effort to be of assistance to the manufacturer. The items listed below are not meant to imply that these plans do not comply with code requirements. The field inspector will verify code compliance during the inspection at the manufacturer's facility.

1. Structural steel welding inspection and welder qualification for structural steel shall be in accordance with AWS D1.1 and Table 1704.3. Section: 1704.3.1
2. When welding reinforcement steel bars, shall be ASTM A706, or provide its chemical composition and carbon equivalent calculation verifying its weld-ability established by qualification in accordance with 6.2. Section: OSSC 102.4, Chapter 34, AWS D1.4 - 1.3.2, 1.3.4.1
3. Coordinate with local building department having jurisdiction over the site for the sitting of the building. This approval is only for the structure. The owner or the contractor is required to obtain a permit for the foundation.
4. All structures built from approved plans for installation in Oregon shall be constructed in strict accordance with the Design Criteria, methods, materials and the approved Oregon Compliance Control Procedures for in-plant manufacturing.
5. Electrical rooms with equipment rated 800 amps or more and over 6 feet wide that contain overcurrent devices, switching devices or control devices with exit or exit access doors shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel. Section 2014 OSSC 1008.1.10
6. Exit doors are required to be openable from the inside without the use of a key or any special knowledge or effort. Sec 1008.1.8 Manually operated edge or surface mounted flush bolts and surface bolts are prohibited. Sec 1008.1.8.4
7. There shall be a floor or landing on each side of a door. When access for persons with disabilities is required by OSSC Chapter 11, the floor or landing shall not be more than 1/2 inch lower than the threshold of the doorway. REF: 2007 OSSC, Section 1008.1.4 and 1109.9.5.
8. The typical flame-spread of interior wall and ceiling finishes in a non-sprinklered building are to be a maximum of 200:
9. HVAC units shall be installed in accordance with the manufacturer's listed installation instructions. Provide instructions with unit when shipped. 07-OMSC 304.1.
10. All members shall be framed, anchored, tied and braced so as to develop the strength and rigidity necessary for the purpose for which they are used.
11. Plans, specifications, and other requested data shall be provided to the local building official for his inspection of the foundation system, utility connections, and the "marriage" of multiple component structures. Other site work performed on the unit itself (other than the above-mentioned) will require an incomplete systems agreement (NLEA). REF: OAR 918-674.

INSPECTION REQUIREMENTS

12. Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment, conduit, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor. Section: 110.3.2
13. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification required in Section 1612.5 shall be submitted to the *building official*. Section: 110.3.3
14. Framing inspections shall be made after the roof deck or sheathing, all framing, fire-blocking and bracing are in place and pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, heating wires, pipes and ducts are approved. Section 110.3.4
15. Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, is in place, but before any plastering is applied or gypsum board joints and fasteners are taped and finished. **Exception:** Gypsum board that is not part of a fire-resistance-rated assembly or a shear assembly. Section: 110.3.5
16. Protection of joints and penetrations in fire-resistance-rated assemblies, *smoke barriers* and smoke partitions shall not be concealed from view until inspected and *approved*. Section: 110.3.6

17. Inspections shall be made to determine compliance with Chapter 13 and shall include, but not be limited to, inspections for: envelope insulation *R*- and *U*-values, fenestration *U*-value, duct system *R*-value, and HVAC and water-heating equipment efficiency. Section: 110.3.7
18. Other Inspections. In addition to the inspections specified in Sections 110.3.1 through 110.3.8 the building official is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by the department of building safety. Section: 2019 OSSC 110.3.9
19. The final inspection shall be made after all work required by the building *permit* is completed. Section: 110.3.10
20. It shall be the duty of the holder of the building permit or their duly authorized agent to notify the authority having jurisdiction when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspection of such work that are required by this code. Section 110.5
21. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the building official. Section 110.6
22. Approved construction documents shall be kept at the construction site of work and shall be available to the building inspector upon all subsequent inspections. Section: 107.3.1

Prefabricated Structure Application for Plan Approval or Renewal

Department of Consumer and Business Services
Building Codes Division • Statewide Services
1535 Edgewater NW, Salem, OR
Mailing address: P.O. Box 14610, Salem, OR 97309-0445
503-378-3080, Fax: 503-378-3656
Web: bcd.oregon.gov

DEPARTMENT USE ONLY
Plan approval:
Date received:
Date reviewed:
Reviewed by:
Expires:

Submit this application along with all required plans, specifications, test reports, manuals, notices to local enforcement agencies (NLEAs), other pertinent information, and fees. This application will not be accepted and plan review will be delayed if the application is incomplete, required materials are not included, or fees are not paid. Approval by the Oregon Building Codes Division is required before construction begins. **Inspections will be performed *only* after plan review and approval by the Oregon Building Codes Division.**

PREFABRICATED STRUCTURE INFORMATION

Manufacturer: Wolf Industries Inc	Mfr. no.: M-704	
Address (Street or P.O. Box): 607 SE Eaton Blvd	Phone: 360-912-9519	Fax:
City: Battle Ground	State: WA	ZIP: 98604
Contact name: Daniel Landsem	E-mail address: dl@wolfind.com	
☐ Plan renewal — Square footage: 616	No. of modules: 1	
Plan no.:	Expires:	

☑ Prefabricated building (permanent) ☐ Relocatable building (movable) ☐ Component (building subassembly) ☐ Custom structures (one of a kind)
☑ Design plan (two or more structures built to the same plan) ☐ Incomplete system (NLEA is required to be submitted with plans.)

☐ Existing structure ☐ Existing plan approval ☐ Alteration

DESIGN OPTION (DESIGN PLANS ONLY)

Design option no. 1:
Design option no. 2:
Design option no. 3:
Design option no. 4:

STRUCTURE DESIGN DATA

OCC: R-3	Seismic: D	Wind/exposure: 145/B
Floor LL: 40	Roof LL: 30	Energy zone: 2
Plumbing: 6	Construction type: VB	Elect. svc. load: 100A/14.7kva
No. of modules: 1	Size of structure: 14'x44"	

PLAN-REVIEW FEES AND CALCULATION INSTRUCTIONS

Fee calculation instructions		Plan-review fees	Agency adjustments
• Determine building valuation from building-valuation data sheet. (Pg. 2) ----------	**Building valuation:**	$ 46,323.20	$
• Determine structural-plan review fee from fee schedule (65% of permit fee). Additional hourly fees may be charged. (Pg. 3) ----------	**Structural:**	$ 333.78	$
• Determine fire- and life-safety plan-review fee from fee schedule. (40% of permit fee). See Section 106.3.3.2 OSSC for applicable structures. (Pg. 3) --	**Fire & life safety:**	$ N/A	$
• Determine mechanical plan-review fee. (25% of mechanical-permit fee) ----------	**Mechanical:**	$ 7.80	$
• Determine plumbing plan-review fee. (30% of total plumbing-permit fee) ----------	**Plumbing:**	$ 63.00	$
• Electrical plan-review fee. (minimum 1 hour at $69 per hour) ----------	**Hourly fee:**	$ 69.00	$
• Fees applicable to Q.C. program review, design options, system plans, component parts and additions, changes, alterations, or plan revisions. ----------	**Hourly fee:**	$ N/A	$
• Annual renewal fee, equalling 50% of initial plan-review fee, shall be paid prior to expiration. Custom structures may not be renewed. ----------	**Renewal fee:**	$ N/A	$
• Notice to local enforcement agency. ($60) ----------	**NLEA:**	$ N/A	$
Total fees, then submit with plans and application. ***Fees are not refundable.***	**Total paid:**	$ 473.58	$

Secure fax: 503-947-2333 for credit card payments

☐ Visa ☐ MasterCard ☐ Discover Phone:

Credit card number — Expiration date

Name of cardholder as shown on credit card — $

Cardholder signature — Amount

SUBMITTAL CHECKLIST

☑ Copies of specifications ☑ Copies of plans ☑ Fee worksheet
☑ Copies of engineering calculations ☐ Copies of test reports ☐ Copies of NLEA
☐ Copies of Q.C. manual ☑ Insignia application

Signature: Proj Mgr Date: 12/17/2021

Make check or money order payable to Dept. of Consumer & Business Services.
If paying by credit card, applicant must sign credit card information box. Do *not* send cash.

Fiscal use only: 70711/1190

DEPARTMENT OF CONSUMER & BUSINESS SERVICES
440-2557 (5/12/COM/WEB)

Touch 'n Seal®

PRODUCT DATA

FOAM KIT

DISPOSABLE POLYURETHANE FOAM SYSTEMS

Touch 'n Seal® Foam Kits are designed for use in commercial sealing, insulating, patching and filling applications. Portable and disposable, these two-component foam systems provide a quick, consistent flow of polyurethane foam that dries in less than one minute.

- Completely self-contained units
- Spray applied
- Includes new anti-crossover P2 gun*
- Pre-connected hoses for fast, easy set-up (single carton units)
- Multiple formulas to choose from

*Except Foam Kit 15

FOAM KITS

Spray applied, 2-component polyurethane foam

PRE-CONNECTED HOSES

- Portable, disposable, self-contained units
- High closed cell content of cured foam makes it suitable as a general sealant to prevent air leakage in cold storage and other insulating applications
- Foam expands 30 times, dries in less than 1 minute
- ***Rip 'n Go*** set-up provides easy access to new, comfort-grip handle (single carton units)
- Pre-connected hoses facilitate faster set-up (single carton units)
- Upright assembly
- No CFC's or urea formaldehyde
- Kits include A & B cylinders, P2 applicator gun with 10 ft. hoses, extra spray nozzles, assembly wrench, latex gloves, lubricant and trilingual instructions (English, Spanish, French)
- Clear, color-coded hoses
- Available in standard, fire retardant or high density formulas
- New packaging includes easy-to-identify "A" and "B" cartons (on 2-carton units) and illustrated instructions

Yield Estimates:	Board Feet	Cubic Feet
Foam Kit 110	110	9.1
Foam Kit 120	120	10.0
Foam Kit 200 / 200FR	200	16.6
Foam Kit 600 / 600FR	600	50.0

Note: *Theoretical yield is used as an industry standard to represent the size of 2-component foam kits. The calculation is based on ideal laboratory conditions, does not include blowing agent loss, and may vary according to application method or environmental factors.*

PRODUCT		ITEM NO.	CARTONS PER KIT	TOTAL WT. (LBS)	CARTONS / PALLET	KITS / PALLET
STANDARD FORMULA	FOAM KIT 110	4004520110	1	26	36	36
"	FOAM KIT 200	4004520200	1	38	36	36
"	FOAM KIT 600	4004520600	2 (A & B)	108	32	16
FIRE RETARDANT	FOAM KIT 200FR	4004001200	1	38	36	36
"	FOAM KIT 600FR	4004521600	2 (A & B)	105	32	16
HIGH DENSITY (3.0 pcf)	FOAM KIT 120	4004523120	1	36	36	36
PRODUCT		ITEM NO.	CASE PACK	CASE WT. (LBS)		
FOAM KIT Accessory Pack / 10 ft. hose		4004529914	1	5	---	---
FOAM KIT Accessory Pack / 30 ft. hose		4004529937	1	10	---	---
P2 GUN / 10 ft. hose		4004529960	1	3	---	---
NOZZLE KIT / 2X-Purple (conical spray)		4004529930	50 / bag	5	---	---
NOZZLE KIT / 2X-Yellow (fan spray)		4004529940	50 / bag	5	---	---

Self-contained units feature fast, easy set-up.

Portable and disposable, Touch 'n Seal Foam Kits are easy to move around the job site.

Multiple sizes and formulas available.

TECHNICAL DATA

STANDARD formula

- Density (ASTM D-1622): 1.75 +/- 0.2 pcf
- K-Factor (ASTM C-518): 0.14 BTU • in • hr^{-1} • ft^{-1} • F^{-1}
- R-Value (ASTM C-518): 7.12 per inch
- Compressive Strength (ASTM D-1621):
  10% parallel: 19 psi, 10% perpendicular: 13.4 psi
- Tensile Strength: (ASTM D-1623): 30 psi
- Dimensional Stability (ASTM D-2126):
  -40˚F, 2 weeks: +.88% volume change
  158˚F, 100% RH, 2 weeks: +14% volume change
- Water Absorption (ASTM D-2842): 1.0-3.5% vol
- Closed Cell Content (ASTM D-2856): 90% minimum
- Maximum Service Temperature for Cured Foam: 240˚F (116˚C)
- Shelf Life: 18 months
- Use all contents within 30 days of initial dispensing

FIRE RETARDANT formula

- Class 1 Flame Retardant
  ASTM E-84: FSI 15/SMK 450 at 2 inch thickness
- Radiation Panel Burning Test
  ASTM E-162: FSI 6
- Density (ASTM D-1622): 1.75 +/- 0.2 pcf
- K-Factor (ASTM C-518): 0.16 BTU • in • hr^{-1} • ft^{-1} • F^{-1}
- R-Value (ASTM C-518): 6.23 per inch
- Compressive Strength (ASTM D-1621):
  10% parallel: 13.2 psi, 10% perpendicular 6.8 psi
- Tensile Strength: (ASTM D-1623): 22 psi
- Dimensional Stability (ASTM D-2126):
  -40˚F, 2 weeks: +.88% volume change
  158˚F, 100% RH, 2 weeks: +14% volume change
- Water Absorption (ASTM D-2842): 1.0-3.5% vol
- Closed Cell Content (ASTM D-2856): 90% minimum
- Maximum Service Temperature for Cured Foam: 240˚F (116˚C)
- Shelf Life: 12 months
- Use all contents within 30 days of initial dispensing

HIGH DENSITY formula

- Density (ASTM D-1622): 3.0 pcf
- K-Factor (ASTM C-177): approx. 0.17 BTU • in • hr^{-1} • ft^{-1} • F^{-1}
- R-Value (ASTM C-518): 5.9
- Compressive Strength (ASTM D-1621): 40 psi
- Water Absorption (ASTM D-2842): 0.5-1.0%
- Closed Cell Content (ASTM D-2856): 90% minimum
- Maximum Service Temperature for Cured Foam: 240˚F (116˚C)
- Shelf Life: 18 months
- Use all contents within 30 days of initial dispensing

ACCESSORIES

- FOAM KIT Accessory Pack: includes P2 gun with 10 ft. hose and accessory bag (extra nozzles, latex gloves, assembly wrench, o-ring, lubricant). #4004529914
- FOAM KIT Accessory Pack: same as above but with 30 ft. hose #4004529937
- P2 Gun with 10 ft. hose: #4004529960
- NOZZLE KIT / 2X-Purple: conical spray nozzles for use with P2 guns #4004529930
- NOZZLE KIT / 2X-Yellow: fan spray nozzles for use with P2 guns #4004529940

FOAM KITS

Spray applied, 2-component polyurethane foam

FOAM KIT 15

- Upside down dispensing
- Includes applicator and longer, more flexible hoses
- No CFC's or urea formaldehyde
- Trilingual instructions (English, Spanish, French)
- 15 ft. hoses
- Standard formula

TECHNICAL DATA

- Density (ASTM D-1622): 1.75 +/- 0.2 pcf
- K-Factor (ASTM C-518): 0.18 BTU • in • hr^{-1} • ft^{-1} • F^{-1}
- R-Value (ASTM C-518): 5.5 per inch
- Compressive Strength (ASTM D-1621):
  10% parallel: 17.6 psi, 10% perpendicular: 13.0 psi
- Tensile Strength (ASTM D-1623): 30 psi
- Dimensional Stability (ASTM D-2126):
  -40˚F, 2 weeks: +.88% volume change
  158˚F, 100% RH, 2 weeks: +14% volume change
- Water Absorption (ASTM D-2842): 1.0-3.5% vol
- Closed Cell Content (ASTM D-2856): 90% minimum
- Maximum Service Temperature for Cured Foam: 240˚F (116˚C)
- Shelf Life: 18 months
- Use all contents within 24 hours of initial dispensing

Fast, easy set-up.

Yield Estimates:	Board Feet	Cubic Feet
Foam Kit 15	15	1.25

Note: *Theoretical yield is used as an industry standard to represent the size of 2-component foam kits. The calculation is based on ideal laboratory conditions, does not include blowing agent loss, and may vary according to application method or environmental factors.*

PRODUCT	ITEM NO.	CASE PACK	CASE WT. (LBS)	CASES / PALLET
Foam Kit 15	4004520015	12	42	24

PLEASE NOTE: While product datas sheets are made as accurate as possible, please refer to our web site (www.touch-n-seal.com) for the most current product information.

Convenience products
866 Horan Drive, Fenton, MO 63026-2416 USA
1-800-325-6180 • www.touch-n-seal.com

State Inspections Services
Prefabricated Structures Plan Review and Permits Fee Worksheet

Department of Consumer and Business Services
Building Codes Division • 1535 Edgewater NE, Salem, Oregon
Mailing address: P.O. Box 14470, Salem, OR 97309-0404
Phone: 503-378-3080 • Fax: 503-378-3656
Web: bcd.oregon.gov

GENERAL INFORMATION

Building valuation: $46323.20	Manufacturer: Wolf Industries Inc
1. Building use: Residence	2. Building occupancy: R-3
3. Type of construction: VB	4. Square footage of building: 616

5. Valuation of the building shall be based on one of the following:
   - Square footage (Page 3) of the building multiplied by the amount in the BCD valuation table: $ 46323.20
   - Invoice price: $
   - Free-on-board (FOB) factory price: $
   - Sprinkler/fire alarms: Multiply square footage in Line 4 by $2.16 per square feet $
6. **Total** valuation: $46323.20

STRUCTURAL PERMIT FEE

7. For *custom plans*, use the valuation on Line 6 with Table 1 (Page 4) to calculate the fees
   a. First increment: $
   b. Additional: $
   c. **Total** structural permit fee: Add lines 7a and 7b $ 70711/1191
8. Twelve percent surcharge: Multiply the total on Line 7c by 0.12 $ 70711/1291
9. For *design plans*, use the valuation on Line 6 with Table 2 (Page 4) to calculate the fees.
   a. First increment: $ 327.60
   b. Additional: $ 185.90
   c. **Total** structural permit fee: Add Lines 9a and 9b $ 513.50 70711/1191
10. Twelve percent surcharge: Multiply the total on Line 9c by 0.12 $ 70711/1291

STRUCTURAL PLAN REVIEW FEE

11. *Custom plan* review: Multiply the total on Line 7c by 0.65 $ 70711/1190
12. *Design plan* review: Multiply the total on Line 9c by 0.65 $ 333.78 70711/1190

FIRE AND LIFE-SAFETY PLAN REVIEW FEE (if required)

13. Fire and life-safety plan review: Multiply the total on Line 7c *or* Line 9c by 0.40 $ N/A 70711/1190
    - Required regardless of size for occupancy A, E, I, H, and for all other structures that are more than 4,000 square feet, more than 20 feet in height, or both.
    - **Total** fire and life-safety plan review fee: $ N/A 70711/1190

PLUMBING PERMIT FEE

14. **New residential:**
15. 1,800 square feet or less: $210.00 $ 210.00
16. Additional square feet: Multiply number of additional square feet by 0.20 $
17. Remodel or alteration, 10 fixtures or less: $67.00 $
18. **Commercial, industrial, and dwellings other than one- or two-family:**
19. Base fee, includes up to three fixtures: $60.00 $
20. Additional fixtures: Multiply the number of additional fixtures by 20.00 $
21. **Total** plumbing permit fee: Add lines 15, 16, 17, 19 and/or 20 $ 210.00 70611/1191
22. Twelve percent surcharge: Multiply the total on Line 21 by 0.12 $ 70611/1291

PLUMBING PLAN-REVIEW FEE

23. Multiply the total on Line 21 by 0.30 $ 63.00 70611/1190

Continued on next page

MECHANICAL PERMIT FEE

24.	Permit fee	$13.00	
25.	Forced-air or gravity-type furnace, 100,000 BTUs or less: $7.80 each furnace	$	
26.	Forced-air or gravity-type furnace, more than 100,000 BTUs: $9.75 each furnace	$	
27.	Air-handling unit up to 10,000 cfm: $5.85 each unit	$	
28.	Air-handling unit over 10,000 cfm: $9.75 each unit	$	
29.	Ventilation fan: Multiply number of fans by $3.90	$ 3.90	
30.	Ventilation system: $5.85 each system	$	
31.	Hood with mechanical exhaust: $5.85 each hood	$ 5.85	
32.	Air conditioner: $5.85 each system	$ 5.85	
33.	Fuel-gas piping system with four or fewer outlets: $2.60	$ 2.60	
34.	Additional fuel-gas outlets: Multiply number of additional outlets by 0.65	$	
35.	Each appliance and equipment for which no other fee is listed: $5.85 each	$	
36.	Total mechanical permit fee: Add lines 24 through 35		$ 31.20 70711/1191
37.	Twelve percent surcharge: Multiply the total on Line 36 by 0.12		$ 70711/1291

MECHANICAL PLAN REVIEW FEE

38.	Multiply the total on Line 36 by 0.25		$ 7.80 70711/1190

ELECTRICAL PERMIT SERVICE FEES

39.	Residential per unit of 1,000 square feet or less: $133.00	$ 133.00	
40.	Each additional 500 square feet or portion thereof: $24.00	$	
41.	200 amps or less: $79.00	$ 79.00	
42.	201-400 amps: $94.00	$	
43.	401-600 amps: $156.00	$	
44.	601-1,000 amps: $204.00	$	
45.	Over 1,000 amps: $469.00	$	
	Fees for branch circuits:		
46.	Each branch circuit *with* purchase of service fee: $4.00 each	$ 44.00	
47.	First branch circuit *without* purchase of service fee: $54.00	$	
48.	**Total** electrical-permit fee: Add lines 39 through 47		$ 256.00 70111/1191
49.	Twelve percent surcharge: Multiply the total on Line 48 by 0.12		$ 70111/1291

ELECTRICAL PLAN-REVIEW FEE

50.	Plan review: $69.00 per hour, one-hour minimum		$ 69.00 70111/1190

NOTIFICATION TO LOCAL ENFORCEMENT AGENCY (NLEA) (if applicable)

51.	*Incomplete systems only*: Notification to local enforcement agency (NLEA) fee: $60.00		$ N/A 70711/1190

TOTAL FEES

52.	**Total** plan review fees: Add Lines 11 or 12, 23, 38, 50, and 51	$ 473.58
53.	**Total** permit fees: Add Lines 7 and 8 *or* 9 and 10, plus Lines 21, 22, 36, 37, 48, and 49	$ 0
54.	**Total fees due**: Add lines 52 and 53	$ 473.58
55.	Total amount to be paid	$ 473.58

Note: The lists of fees under the plumbing and mechanical permit fees are not complete. The fees listed are the ones most commonly used. For complete lists, please refer to the following:

- Plumbing OAR 918-780-0080
- Mechanical OAR 918-440-0050
- Electrical OAR 918-309-0020
- Structural OAR 918-460-0030, OAR 918-480-0020

EXHIBIT 1 – BUILDING VALUATION DATA / PHASED PROJECTS / DEFERRED SUBMITTALS

The valuation of building construction for building permit purposes shall be the total construction cost for all classes of work. The plan review and building permit fee will be based on valuation computed from the following average values, which were compiled in April 2001. See OAR 918-460-0070 and 918-480-0030 for fees related to phased projects and deferred submittals. Permit fees for less than a complete structure will be based upon the percent of construction to be completed under the permit as determined by the jurisdiction having authority. The cost is intended to comply with the definition of "valuation" in Section 223 of the State of Oregon Structural Specialty Code and includes architectural, structural, electrical, plumbing, heating and ventilation devices and equipment, except as specifically listed below. It also includes the contractors' profit, which should not be omitted.

Occupancy & Type	$ PSF
1. APARTMENT HOUSES:	
Type I or II F.R*	$88.89
Type V – Masonry (or Type III)	72.21
Type V – Wood Frame	66.73
Type I – Basement Garage	30.46
2. AUDITORIUMS:	
Type I or II F.R.	85.32
Type II – 1 Hour	61.75
Type II – N	58.43
Type III – 1 Hour	64.91
Type III – N	61.59
Type V – 1 Hour	62.08
Type V – N	57.93
3. BANKS:	
Type I or II F.R*	120.52
Type II – 1 Hour	88.81
Type II – N	85.91
Type III – 1 Hour	98.02
Type III – N	94.45
Type V – 1 Hour	88.81
Type V – N	85.08
4. BOWLING ALLEYS:	
Type II – 1 Hour	41.50
Type II – N	38.76
Type III – 1 Hour	45.15
Type III – N	42.25
Type V – 1 Hour	30.46
5. CHURCHES:	
Type I or II F.R.	80.76
Type II – 1 Hour	60.59
Type II – N	57.60
Type III – 1 Hour	65.90
Type III – N	63.00
Type V – 1 Hour	61.59
Type V – N	57.93
6. CONVALESCENT HOSPITALS:	
Type I or II F.R*	113.30
Type II – 1 Hour	78.60
Type III – 1 Hour	80.59
Type V – 1 Hour	75.95
7. DWELLINGS:	
Type V – Masonry	78.85
Type V – Wood Frame	75.20
Basements -	
Semi-Finished	18.92
Unfinished	14.44
8. FIRE STATIONS:	
Type I or II F.R.	93.13
Type II – 1 Hour	61.25
Type II – N	57.77
Type III – 1 Hour	67.06
Type III – N	64.24
Type V – 1 Hour	62.91
Type V – N	59.68

Occupancy & Type	$ PSF
9. HOMES FOR THE ELDERLY:	
Type I or II F.R.	$84.41
Type II – 1 Hour	68.56
Type II – N	65.57
Type III – 1 Hour	71.38
Type III – N	68.48
Type V – 1 Hour	68.97
Type V – N	66.57
10. HOSPITALS:	
Type I or II F.R*	132.80
Type III – 1 Hour	109.98
Type V – 1 Hour	104.91
11. HOTELS & MOTELS:	
Type I or II F.R*	82.17
Type III – 1 Hour	71.21
Type III – N	67.89
Type V – 1 Hour	62.00
Type V – N	60.76
12. INDUSTRIAL PLANTS:	
Type I or II F.R.	46.31
Type II – 1 Hour	32.20
Type II – N	29.63
Type III – 1 Hour	35.52
Type III – N	33.45
Tilt-up	24.40
Type V – 1 Hour	33.45
Type V – N	30.63
13. JAILS:	
Type I or II F.R.	129.48
Type III – 1 Hour	118.44
Type V – 1 Hour	88.81
14. LIBRARIES:	
Type I or II F.R.	94.70
Type II – 1 Hour	63.91
Type II – N	65.90
Type III – 1 Hour	73.21
Type III – N	69.55
Type V – 1 Hour	68.81
Type V – N	65.90
15. MEDICAL OFFICES:	
Type I or II F.R*.	97.28
Type II – 1 Hour	75.03
Type II – N	71.30
Type III – 1 Hour	79.02
Type III – N	75.78
Type V – 1 Hour	73.37
Type V – N	70.80
16. OFFICES:**	
Type I or II F.R*.	86.90
Type II – 1 Hour	58.18
Type II – N	55.44
Type III – 1 Hour	62.83
Type III – N	60.09
Type V – 1 Hour	58.85
Type V – N	55.44
17. PRIVATE GARAGES:	
Wood Frame	19.75
Masonry	22.33
Open Carports	13.53

Occupancy & Type	$ PSF
18. PUBLIC BUILDINGS:	
Type I or II F.R*.	$100.4
Type II – 1 Hour	81.34
Type II – N	77.77
Type III – 1 Hour	84.49
Type III – N	81.51
Type V – 1 Hour	77.27
Type V – N	74.53
19. PUBLIC GARAGES:	
Type I or II F.R*.	39.84
Type I or II Open Parking*.	29.88
Type II – N	22.83
Type III – 1 Hour	30.13
Type III – N	26.81
Type V – 1 Hour	27.39
20. RESTAURANTS:	
Type III – 1 Hour	79.27
Type III – N	76.61
Type V – 1 Hour	72.63
Type V – N	69.72
21. SCHOOLS:	
Type I or II F.R.	90.47
Type II – 1 Hour	61.75
Type III – 1 Hour	66.07
Type III – N	63.58
Type V – 1 Hour	61.92
Type V – N	59.10
22. SERVICE STATIONS:	
Type II – N	54.70
Type III – 1 Hour	57.02
Type V – 1 Hour	48.56
Canopies	22.83
23. STORES:	
Type I or II F.R*.	67.06
Type II – 1 Hour	41.00
Type II – N	40.09
Type III – 1 Hour	49.88
Type III – N	46.81
Type V – 1 Hour	42.00
Type V – N	38.84
24. THEATERS:	
Type I or II F.R.	89.39
Type III – 1 Hour	65.07
Type III – N	62.00
Type V – 1 Hour.	61.25
Type V – N	57.93
25. WAREHOUSES*:**	
Type I or II F.R.	40.17
Type II or V – 1 Hour	23.82
Type II or V– N	22.41
Type III – 1 Hour	27.06
Type III – N	25.73
26. WOOD FRAME POLE:	
Type V – N, No slab	12.68
Type V – N, With slab	15.68
EQUIPMENT:	
Air Conditioning:	
Commercial	3.40
Residential	2.82
Sprinkler Systems	2.16

***Add 0.6% to total cost for each story over three.**

****Deduct 20% for shell-only buildings.**

*****Deduct 11% for mini-warehouses.**

Table 1
Permit Fees
(custom plans)

Total Valuation	Fee
$1 to $500	$13
$501 to $2,000	$13 for the first $500 plus $1.95 for each additional $100 or fraction, up to and including $2,000
$2,001 to $25,000	$42.25 for the first $2,000 plus $7.80 for each additional $1,000 or fraction, up to and including $25,000
$25,001 to $50,000	$221.65 for the first $25,000 plus $5.85 for each additional $1,000 or fraction, up to and including $50,000
$50,001 to $100,000	$367.90 for the first $50,000 plus $3.90 for each additional $1,000 or fraction, up to and including $100,000
$100,001 and up	$562.90 for the first $100,000 plus $3.25 for each additional $1,000 or fraction

Note: Table 1 is based on 130 percent of **Table No. 3-A** in the **1979 Uniform Building Code** and applies to prefabricated structure permits, inspections, and custom plan reviews.

Note: Valuations used to calculate fees may be based on the invoice price, FOB factory, the prefabricated structure, or the division's published valuation table, whichever is less.

Table 2
Permit Fees
(design master plans)

Total Valuation	Fee
$1 to $500	$19
$501 to $2,000	$19 for the first $500 plus $2.60 for each additional $100 or fraction, up to and including $2,000
$2,001 to $25,000	$58.50 for the first $2,000 plus $11.70 for each additional $1,000 or fraction, up to and including $25,000
$25,001 to $50,000	$327.60 for the first $25,000 plus $8.45 for each additional $1,000 or fraction, up to and including $50,000
$50,001 to $100,000	$538.85 for the first $50,000 plus $5.85 for each additional $1,000 or fraction, up to and including $100,000
$100,001 and up	$831.35 for the first $100,000 plus $4.55 for each additional $1,000 or fraction

Note: Table 2 is based on 130 percent of **Table No. 3-A** in the **1979 Uniform Building Code** and applies to design plan and design option plan reviews only.

RU199e, RU180e, RU160e, RU130e

EXTERNAL (OUTDOOR) CONDENSING TANKLESS WATER HEATER

RESIDENTIAL

SUPER-HIGH-EFFICIENCY (CONDENSING) TANKLESS WATER HEATER	
Installation Type	External (Outdoor) Residential Applications. Manufactured (Mobile) Home Certified
Model Numbers	RU199e (REU-N3237W-US) RU180e (REU-N2934W-US) RU160e (REU-N2530W-US) RU130e (REU-N2024W-US)
Approved Gas Types	Natural and Propane
Efficiency	AHRI CERTIFIED: UEF: 0.93 (RU199e, RU180e, RU160e) 0.92 (RU130e) Ratings not certified by AHRI: EF: 0.96 (RU199e, RU180e, RU160e) 0.95 (RU130e)
High Altitude Approved	Up to 10,200 ft (3,109 m)
Water Flow Control	Water Flow Sensor, Electronic Water Control and Bypass Control
Controller	Standard: Integrated Controller Optional: MC-195T-US, MC-100V-1US, BC-100V-1US, MCC-91-2US
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3, and ENERGY STAR®

Warranty

- Heat Exchanger: 15 years or 12,000 operation hours, whichever occurs first
- All Other Parts and Components: 5 Years
- Reasonable Labor: 1 Year

Safety Devices

Flame Failure - Flame Rod, Boiling Protection, Combustion Fan RPM Check, Over Current - Glass Fuse, Remaining Flame (OHS) and Automatic Frost Protection

Included with Purchase

- Tankless Water Heater
- Pressure Relief Valve and Adapter
- Isolation Valve Kit
- Integrated Controller

Additional Features

- Mobile Home Certified
- Ultra Low NOx
- Tankless Rack System™ Compatible
- 1/2 in. (13 mm) Gas Line Compatible
- Complies with South Coast Air Quality Management District 14 ng/J or 20 ppm NOx Emission Levels

EASE OF INSTALLATION AND SERVICEABILITY

- Compact Design to Save Space
- Wi-Fi Technology for Remote Monitoring and Management
- Simple Gas Conversion

OPTIONAL ACCESSORIES

Condensate Neutralizer, ScaleCutter, Drain Down Kit, Additional Controllers, Recess Box, Pipe Cover, Recirculation Pump, DPS/MIS Switch, EZConnect™ Cables, control·r™ Wi-Fi Module, Wireless Accessories, and many more. Visit rinnai.us for a complete list of accessories.

CERTIFIED TO ANSI Z21.10.3 — CSA 4.3

SENSEI™ TECHNICAL SPECIFICATIONS

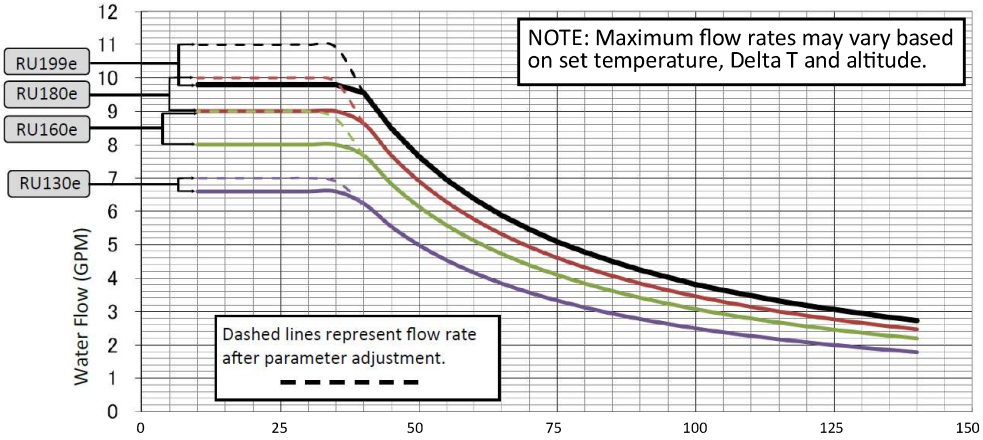
SPECIFICATION		RU199e	RU180e	RU160e	RU130e
Dimensions - w, h, d		18.5 in. x 26.4 in. x 11.4 in. (470 mm x 670 mm x 290 mm)			
Minimum Gas Consumption Btu/h		15,000			
Maximum Gas Consumption Btu/h		199,000	180,000	160,000	130,000
Flow Rate[1] (Min - Max)		0.26 - 9.8 GPM (1.0 - 37 L/min)	0.26 - 9.0 GPM (1.0 - 34 L/min)	0.26 - 8.0 GPM (1.0 - 30 L/min)	0.26 - 6.6 GPM (1.0 - 24 L/min)
Max Flow Rate with Parameter Adjustment		11 GPM (42 L/min)	10 GPM (38 L/min)	9 GPM (34 L/min)	7 GPM (26 L/min)
Weight		64 lb (29 kg)	64 lb (29 kg)	62 lb (28 kg)	62 lb (28 kg)
Sound Level		53 dB	52 dB	52 dB	52 dB
Electrical	Normal	81 W	62 W	49 W	36 W
	Standby	1.3 W			
	Freeze Protection	152 W			
	Max Current	4 Amps			
	Fuse	10 Amps			
Temperature		• Minimum: 98° F (37° C) Default • Maximum: 120° F (49° C) Default 140° F (60° C) With Parameter Adjustment			
By-Pass Flow Control		Electronic			
Gas Supply Pressure[2]		• Natural: 3.5 in. w.c. - 10.5 in. w.c. • Propane: 8.0 in. w.c. - 13.5 in. w.c.			
Ignition System		Direct Electronic Ignition			
Electronic Connections		• Appliance: AC 120 Volts, 60Hz. • Temperature Controller: DC 12 Volts (Digital)			
Water Supply Pressure		• Minimum: 50 PSI (Recommended 60-80 PSI for max performance) • Maximum: 150 PSI			
Controller Cable		Non-Polarized Two Core Cable (Minimum 22 AWG)			
Service Connections		• Gas Supply: 3/4 in. (19 mm) NPT • Cold Water Inlet: 3/4 in. (19 mm) NPT • Hot Water Outlet: 3/4 in. (19 mm) NPT • Condensate Drain: 1/2 in. (13 mm) NPT			
Clearances		• Top: 2 in. (51 mm)* • Bottom/Ground: 12 in. (305 mm) • Front: 0 in.**		• Back: 0 in. • Sides: 2 in. (51 mm)*** • Front Exhaust: 24 in. (610 mm)	

* 0 in. from vent components
** Clearance for servicing is 24 in. (610 mm) in front of water heater
*** Add 0.25 in. (6.35 mm) for recess box

[1] Minimum flow may vary slightly depending on the temperature setting and the inlet water temperature. Minimum activation flow is 0.4 GPM (1.5 L/min).
[2] The maximum gas supply pressure must not exceed the value specified by the manufacturer.

SENSEI™ WATER FLOW CURVE

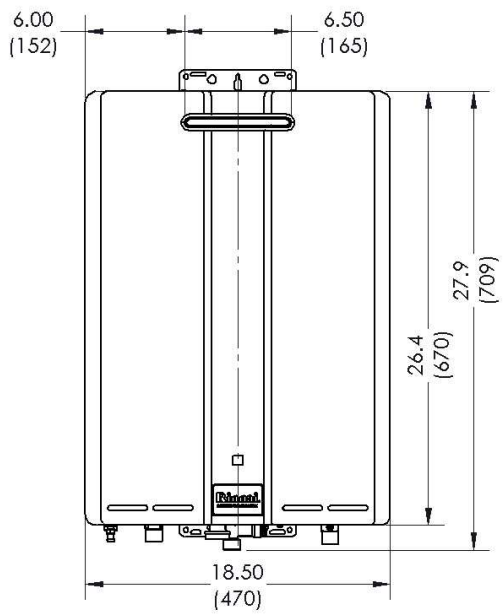
Flow curves apply only to incoming water temperatures of 70° F (21° C) or less.
For incoming water temperatures greater than 70° F (21° C), please contact Rinnai.



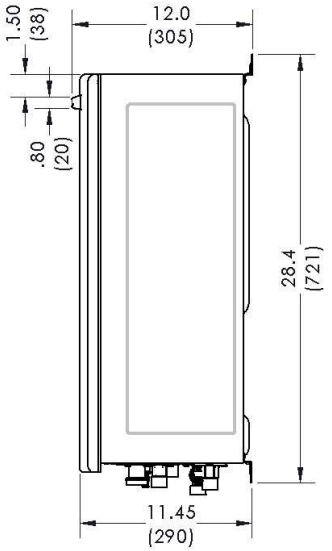
SENSEI™ DIMENSIONS

in. (mm)

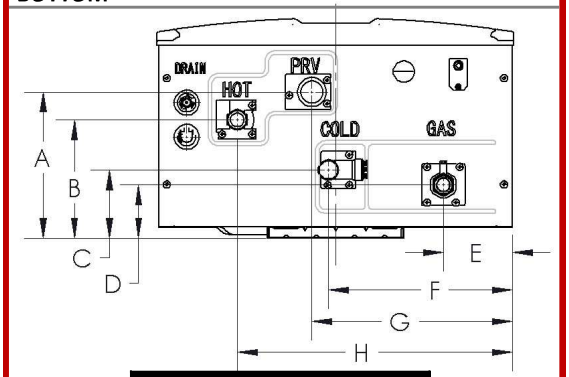
FRONT



SIDE



BOTTOM



Connection		in.	mm
COLD	F	9.54	242
	C	3.56	90
HOT	H	14.27	362
	B	6.16	156
GAS	E	3.57	91
	D	2.78	71
PRV	G	10.39	264
	A	7.60	193

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Digital Bath Fan Control

Honeywell

Every home can benefit from proper ventilation. Honeywell's new Digital Bath Fan Control can operate a bath fan to meet ASHRAE 62.2 ventilation standards, allowing you to offer increased ventilation control that is smart, affordable and efficient.

Digital Bath Fan Control

SMART, AFFORDABLE, EFFICIENT VENTILATION CONTROL

Easy To Install – Installs in place of a normal switch.

Simple Programming – Manually turn fan on/off or program to run at certain times of day for increased energy efficiency and convenience.

Timer Option – Can run in timer mode up to 60 minutes in 5-minute increments.

Meets ASHRAE 62.2 Ventilation Standard – Required or recommended in most states and provinces for new construction or whenever a permit is required.

Convenient Display – Easy-to-see backlit display shows current time to keep you on schedule when getting ready.

Color Options – Available in Premier White® (featured) or Biscuit (shown right).

Part Number	Product Description
HVC0001	Digital Bath Fan Control – Premier White®
HVC0002	Digital Bath Fan Control – Biscuit

ASHRAE 62.2 CFM Sizing Chart					
Floor Area (ft^2)	Number of Bedrooms				
	0-1	2-3	4-5	6-7	> 7
< 1500	30	45	60	75	90
1501 - 3000	45	60	75	90	105
3001 - 4500	60	75	90	105	120
4501 - 6000	75	90	105	120	135
6001 - 7500	90	105	120	135	150
> 7500	105	120	135	150	165

ANSI/ASHRAE STANDARD 62.2-2007 TABLE 4.1 A (I-P) Ventilation Air Requirements, cfm

Automation and Control Solutions

In the US:

Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422-3992

In Canada:

Honeywell Limited
35 Dynamic Drive
Toronto, Ontario M1V 4Z9

www.customer.honeywell.com

5-YEAR LIMITED WARRANTY

50-1331 GK
November 2010
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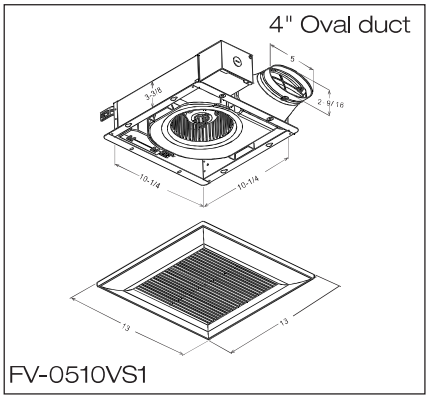
Honeywell

WhisperValue® DC™
VENTILATION FAN

FV-0510VS1

Specification Submittal Data / Panasonic Ventilation Fan



Description:

Ventilating fan shall be Low Noise ceiling or wall mount type rated for continuous run. Fan shall be ENERGY STAR® rated and certified by the Home Ventilation Institute (HVI). Evaluated by Underwriters Laboratories and conform to both UL and cUL safety standards.

Motor/Blower:

- Enclosed brushless ECM motor technology rated for continuous run.
- Fan ventilation rates shall be manually adjustable for 50-80-100 CFM.
- Power rating shall be 120 volts and 60 Hz.
- Fan shall be UL and cUL listed for tub/shower enclosure when GFCI protected and used in insulated ceiling (TYPE I.C.).
- PCB board equipped with thermal–cutoff fuse.
- Removable with permanently lubricated plug-in motor.

Housing:

- 26 gauge galvanized steel body.
- Built-in 4" Oval duct collar. Also compatible with 4" round duct.
- Optional 24 gauge steel, fire code rated 4" oval to 3" round duct adaptor sold separately (Model # FV-VS43R).
- Built in backdraft damper.
- Built-in metal flange provides blocking for penetrations through drywall as an Air Barrier, and assists with the decrease in leakage in the Building Envelope during blower door testing.
- Unique L-shaped bracket simplifies installation and provides strong support.

Ceiling Radiation Damper:

- WhisperValue DC is UL listed for use with the Panasonic Ceiling Radiation Damper (Model #: PC-RD05C5, sold separately).

Grille:

- Attractive design using Poly Pro material.
- Attaches directly to housing with torsion springs.

Warranty:

- ECM Motor: 6 Years from original purchase date.
- ALL Parts: 3 Years from original purchase date.

Architectural Specifications:

Ventilation fan shall be UL and cUL listed for ceiling or wall mount and tub/shower enclosure when GFCI protected. Fan shall also be ENERGY STAR® certified, with a built-in speed selector. Choose from 50-80-100 CFM and no more than <0.3/0.4/0.9 sone as certified by the Home Ventilating Institute (HVI) at 0.1 static pressure in inches water gauge (w.g.) with no less than 53/81/100 CFM and no more than 0.5/0.8/1.3 sone as certified by HVI at 0.25 w.g., and 52/75/83 at 0.375 w.g. Power Consumption shall be no greater than 4.4/7.2/11.1 watts at 0.1 w.g. and 7.5/11.5/16.0 watts at 0.25 w.g., and at 0.375 w.g. 12.0/16.0/18.0 watts, with efficiency of no less than 12.8/11.4/9.2 CFM/watt at 0.1 w.g. and 7.9/7.2/6.4 CFM/watt at 0.25 w.g., and 4.3/4.7/4.6 CFM/watt at 0.375" w.g. The motor shall be totally enclosed with a brushless ECM motor engineered to run continuously. ECM motor speed shall automatically increase when the fan senses static pressure to maintain selected CFM. Power rating shall be 120V/60Hz. Duct diameter shall be no less than 4". Optional 24 gauge steel, fire code rated 4" oval to 3" round duct adaptor sold separately (Model # FV-VS43R). Fan can be used to comply with ASHRAE 62.2, LEED, EarthCraft, California Title-24 and WA Ventilation Code.

WhisperValue Contractor Pack*

The Contractor Pack includes four complete fans. The housing and motor/grille are packaged separately for flexibility during installation.

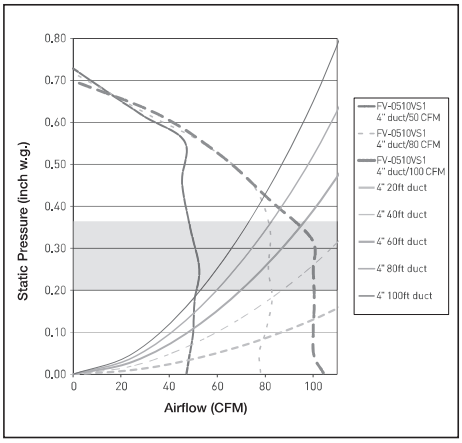
Housing Can	Motor/Grille Assembly	Complete Fan Unit	Master Pack
FV-0510VSA1	FV-0510VSB1	FV-0510VS1	4

*Must order in quantities of 4. Shipment will contain 1 box with 4 units.

Specifications: **WhisperValueDC** FV-0510VS1		4" Oval			4" Oval			4" Oval		
Ventilation Fan Characteristics (HVI Certified Data)	Static Pressure in inches w.g.	0.1	0.25	0.375	0.1	0.25	0.375	0.1	0.25	0.375
	Air Volume (CFM)	100	100	83	80	81	75	50	53	52
	Noise (sones)	0.9	1.3	-	0.4	0.8	-	<0.3	0.5	-
	Power Consumption (watts)	11.1	16.0	18.0	7.2	11.5	16.0	4.4	7.5	12.0
	Energy Efficiency (CFM/Watt)	9.2	6.4	4.6	11.4	7.2	4.7	12.8	7.9	4.3
	Speed (RPM)	902	1121	1300	797	1070	1270	708	1025	1230
	Current (amps)	0.20	0.27	0.25	0.13	0.20	0.24	0.09	0.14	0.17
	MAX. Current (amps)	0.39								
	Power Rating (V/Hz)	120/60								
	ENERGY STAR rated	Yes								

***Industry research indicates static pressure in typical installations ranges from 0.20" to 0.375"**

Performance Curve 4" Oval duct



For complete Installation Instructions visit **us.panasonic.com/ventfans**

Model	Quantity	Comments	Project:
			Location:
			Architect:
			Engineer:
			Contractor:
			Submitted by:
			Date:

Panasonic Life Solutions Company of America
IAQ Division
Two Riverfront Plaza
Newark, NJ 07102

us.panasonic.com/ventfans

ECM Motor Technology
When the fan senses static pressure, its speed is automatically increased to ensure that the desired CFM is not compromised, which allows the fan to perform as rated.

Panasonic

AttiCat®
Expanding Blown-In PINK® FIBERGLAS™ Insulation

Manufacturers Fact Sheet

This fact sheet contains important details about Owens Corning's™ AttiCat® Expanding Blown-In PINK® Fiberglas™ Insulation. Read it carefully.

Owens Corning will accept no responsibility when the product is not installed in accordance with the product label. Stated R-value is provided by installing the required number of bags at a thickness not less that the label minimum thickness. Installation of the required number of bags may yield more than the specified minimum thickness. Failure by the installer to provide both the required number of bags and at least the minimum thickness will result in lower insulation R-value.

Read This Before You Buy

What you should know about R-Values

The chart shows the R-value of this insulation. R means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation R-values before you buy.

There are other factors to consider. The amount of insulation you need depends mainly on the climate, the type and size of your home, and your fuel use patterns and family size. If you buy too much insulation, it will cost you more than you'll save on fuel.

To get the marked R-value, it is essential that this insulation be installed properly.

Open cavity application (attic)
Nominal bag weight 28.5 lbs.

Nominal bag weight 28.5 lbs.	Minimum Bags Per 1,000 Sq. Ft.	Maximum Coverage Per Bag in Sq. Ft.	Minimum Weight in Lbs./Sq. Ft.	Minimum Initial Installed Thickness in Inches	Minimum Settled Thickness in Inches[1]
R-13	6.6	151.4	0.188	4.50	4.50
R-19	9.4	106.3	0.268	6.50	6.50
R-22	11.1	89.9	0.317	7.50	7.50
R-25	13.3	75.0	0.380	8.75	8.75
R-30	15.3	65.4	0.436	10.25	10.25
R-38	19.5	51.4	0.554	13.00	13.00
R-44	23.0	43.6	0.654	14.75	14.75
R-49	25.8	38.8	0.735	16.50	16.50
R-60	32.1	31.1	0.916	20.00	20.00

1. Settling is negligible, with no impact on R-value.
An AttiCat® machine with a 2.5" hose was used to determine the coverage information above. No adjustments to gearing or gate opening can be made by the AttiCat® machine operator.

Closed cavity application (walls)
Nominal bag weight 28.5 lbs.

R-Value	Minimum Bags Per 1,000 Sq. Ft.	Maximum Coverage Per Bag in Sq. Ft.	Minimum Weight in Lbs./Sq. Ft.	Minimum Thickness in inches	Installed Density Lbs Per Cu. Ft.
13	13.3	75.2	0.379	3.5	1.3
15	15.4	65.1	0.438	3.5	1.5
21	20.2	47.8	0.596	5.5	1.3
24	29.0	34.5	0.825	5.5	1.8

Please contact 419-248-6557 for additional information. Email: gettech@owenscorning.com

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OWENS CORNING INSULATING SYSTEMS, LLC
ONE OWENS CORNING PARKWAY
TOLEDO, OHIO, USA 43659
1-800-GET-PINK®
www.owenscorning.com

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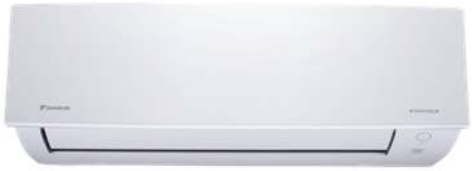
Job Name:	
Tag#	

Submittal Data Sheet

FTX12AXVJU / RX12AXVJU

1-Ton Wall Mounted Heat Pump System



Complete warranty details available from your local dealer or at www.daikincomfort.com. To receive the 12-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec. *If product is installed in a commercial application, limited warranty period is 5 years.*

Indoor Specifications

	Cooling		Heating	
Airflow Rate (cfm)	H	M	H	M
	436	316	412	316
	L	SL	L	SL
	247	210	247	210
Sound (dBA) H / M / L / SL	45 / 37 / 31 / 26		45 / 37 / 30 / 26	
Dimensions (H × W × D) (in)	11-1/3 × 30-29/32 × 9-27/32			
Weight (Lbs)	22			

Outdoor Specifications

Compressor	Hermetically Sealed Swing Type			
Refrigerant	R-410A			
Factory Charge (Lbs)	2.09			
Refrigerant Oil	PVE (FVC50K)			
Airflow Rate (cfm)	Cooling		Heating	
	H	1,051	H	966
Sound Pressure Level (dBA)	49			
Dimensions (H × W × D) (in)	21-11/16 × 26-1/2 × 11-3/16			
Weight (Lbs)	64			

Efficiency

Cooling		Heating	
SEER	19	HSPF	10.0
EER	12.5	COP	3.80

Performance

Cooling (Btu/hr)	
Rated (Min/Max)	10,900 (4,400 / 13,300)
Sensible @ AHRI	9,090
Moisture Removal gal/h	.19
Standard Operating Range	50°F – 115°F
Extended Operating Range*	-4°F – 115°F

Rated Cooling Conditions: Indoor: 80°F DB/67°F WB
Outdoor: 95°F DB/75°F WB

***With field settings and wind baffle**

Heating (Btu/hr)	
1:@ 47° Rated (Min/Max)	13,500 (4,400 / 16,400)
2: @ 17° Rated	8,600
Operating Range	5°F – 65°F

1: Rated Heating Conditions: Indoor: 70°F DB/60°F WB
Outdoor: 47°F DB/43°F WB

2: Rated Heating Conditions: Indoor: 70°F DB/60°F WB
Outdoor: 17°F DB/15°F WB

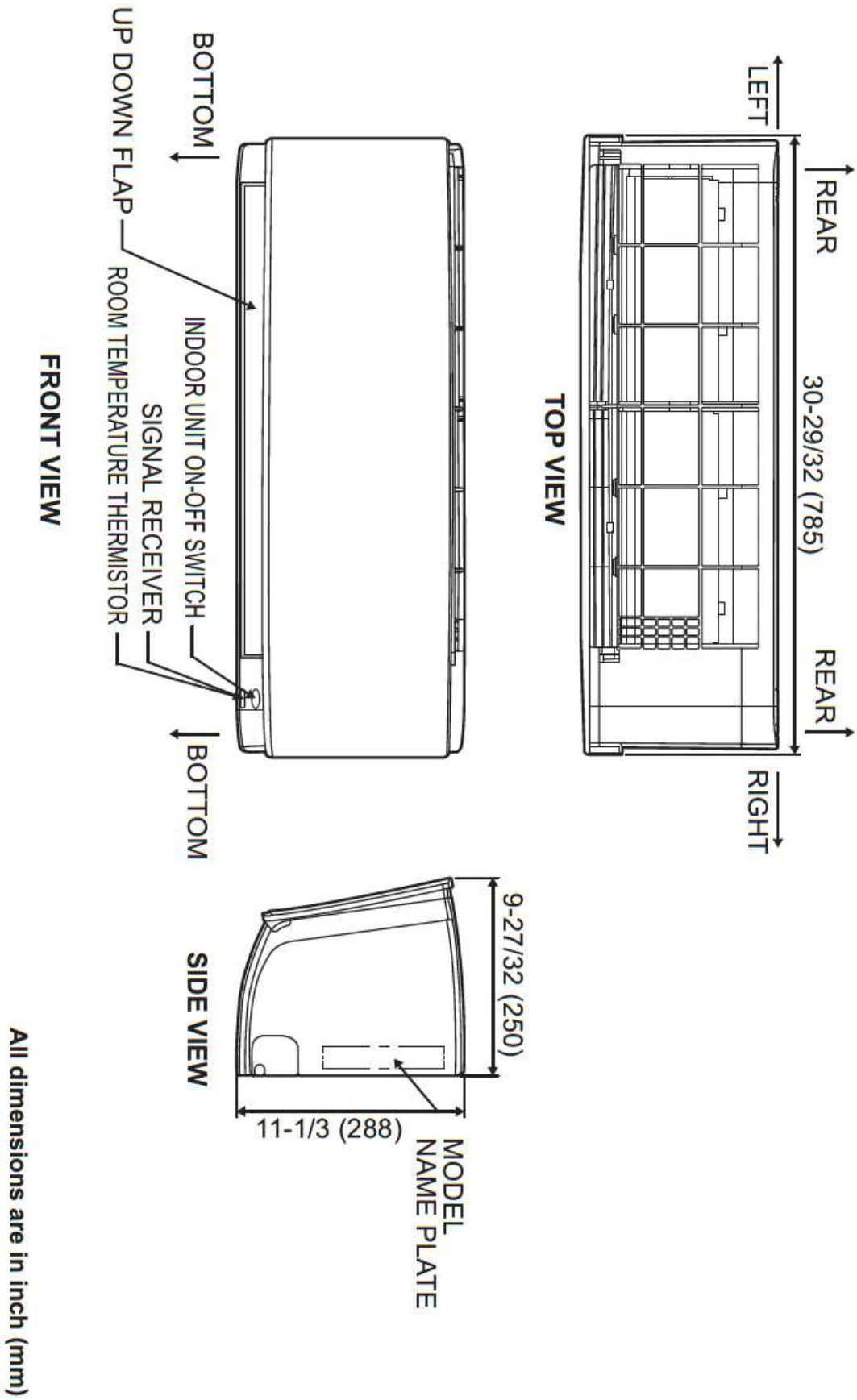
Electrical

	208/60/1	230/60/1
System MCA	8.7	8.7
System MFA	15.0	15.0
Compressor RLA	8.5	8.5
Outdoor fan motor FLA	.47	.47
Outdoor fan motor W	41	41
Indoor fan motor FLA	.36	.36
Indoor fan motor W	38	38

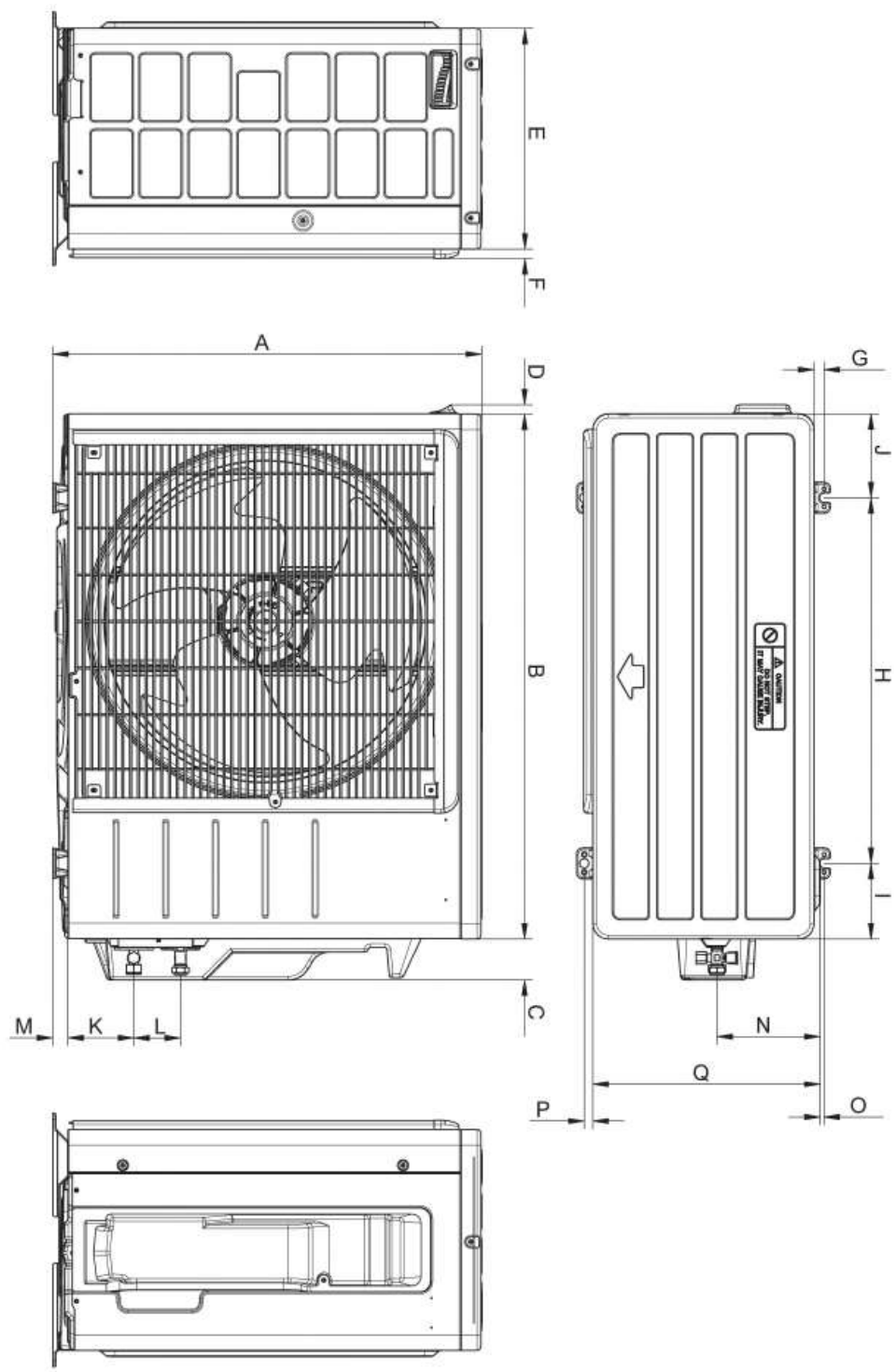
MFA: Max. fuse amps **MCA**: Min. circuit amps (A) **FLA**: Full load amps (A)
RLA: Rated load amps (A) **W**: Fan motor rated output (W)

Piping

Liquid (in)	1/4
Gas (in)	3/8
Drain (in)	3/4
Max. Interunit Piping Length (ft)	65.625
Max. Interunit Height Difference (ft)	49.25
Chargeless (ft)	32.8
Additional Charge of Refrigerant (oz/ft)	.21


LEFT
REAR
30-29/32 (785)
REAR
RIGHT
TOP VIEW
BOTTOM
UP DOWN FLAP
INDOOR UNIT ON-OFF SWITCH
SIGNAL RECEIVER
ROOM TEMPERATURE THERMISTOR
BOTTOM
FRONT VIEW
9-27/32 (250)
11-1/3 (288)
MODEL NAME PLATE
SIDE VIEW
All dimensions are in inch (mm)

Model / Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
09/12	21-11/16 (550)	26-1/2 (675)	2-1/16 (53)	15/32 (12)	11-3/16 (284)	15/32 (12)	1/2 (13)	18-1/2 (470)	3-13/16 (97)	4-1/4 (108)	3-3/8 (86)	2-3/8 (60)	25/32 (20)	5-1/4 (133)	3/16 (5)	7/16 (11)	11-1/2 (292)



All dimensions are in inch (mm)

Optional Accessories

Indoor Unit		
Included	**Part Number**	**Description**
	BRP072A43	Wireless Interface Adaptor
	AZAI6WSCDKB	DKN Residential Cloud Wi-Fi Adaptor for Single- and Multi-Zone System (S21)
	BRC944B2-A08	Wired Remote Controller kit
	BRCW901A08	Wired Remote Controller Cable – 25ft (Included in above kit)
	BRCW901A03	Wired Remote Controller Cable – 10ft
	DACA-CP1-1	Inline Condensate Pump (Fits inside all Daikin wall & floor mount units)
	DACA-CP4-1	External Condensate Pump

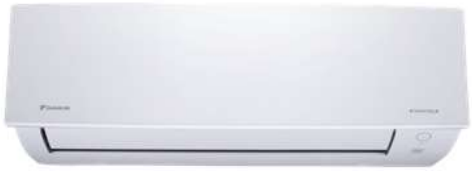
Outdoor Unit		
Included	**Part Number**	**Description**
	DACA-WB-1	Powder-Coated Wall-Mounted Bracket
	KPW937F4	Air direction adjustment grille (09 & 12)
	KEH067A41E	Daikin BMS Drain Pan Heater Small RX09,12 & RXN09,12
	KKG067A41	Back protection wire net (09 & 12)

Job Name:	
Tag#	

Submittal Data Sheet

FTX12AXVJU / RX12AXVJU

1-Ton Wall Mounted Heat Pump System



Complete warranty details available from your local dealer or at www.daikincomfort.com. To receive the 12-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec. *If product is installed in a commercial application, limited warranty period is 5 years.*

Indoor Specifications

	Cooling		Heating	
Airflow Rate (cfm)	H	M	H	M
	436	316	412	316
	L	SL	L	SL
	247	210	247	210
Sound (dBA) H / M / L / SL	45 / 37 / 31 / 26		45 / 37 / 30 / 26	
Dimensions (H × W × D) (in)	11-1/3 × 30-29/32 × 9-27/32			
Weight (Lbs)	22			

Outdoor Specifications

Compressor	Hermetically Sealed Swing Type			
Refrigerant	R-410A			
Factory Charge (Lbs)	2.09			
Refrigerant Oil	PVE (FVC50K)			
Airflow Rate (cfm)	Cooling		Heating	
	H	1,051	H	966
Sound Pressure Level (dBA)	49			
Dimensions (H × W × D) (in)	21-11/16 × 26-1/2 × 11-3/16			
Weight (Lbs)	64			

Efficiency

Cooling		Heating	
SEER	19	HSPF	10.0
EER	12.5	COP	3.80

Performance

Cooling (Btu/hr)	
Rated (Min/Max)	10,900 (4,400 / 13,300)
Sensible @ AHRI	9,090
Moisture Removal gal/h	.19
Standard Operating Range	50°F – 115°F
Extended Operating Range*	-4°F – 115°F

Rated Cooling Conditions: Indoor: 80°F DB/67°F WB
Outdoor: 95°F DB/75°F WB

***With field settings and wind baffle**

Heating (Btu/hr)	
1:@ 47° Rated (Min/Max)	13,500 (4,400 / 16,400)
2: @ 17° Rated	8,600
Operating Range	5°F – 65°F

1: Rated Heating Conditions: Indoor: 70°F DB/60°F WB
Outdoor: 47°F DB/43°F WB

2: Rated Heating Conditions: Indoor: 70°F DB/60°F WB
Outdoor: 17°F DB/15°F WB

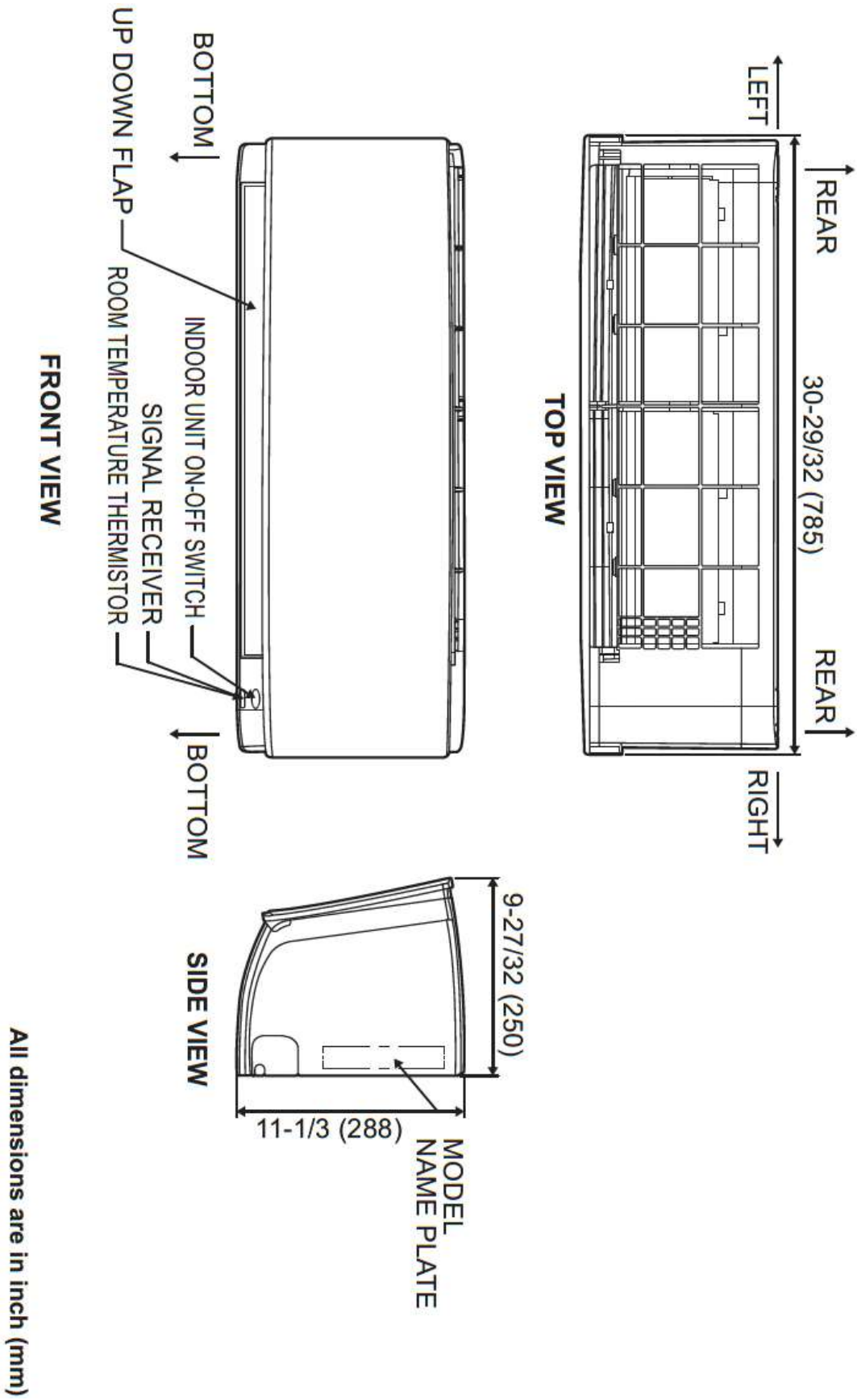
Electrical

	208/60/1	230/60/1
System MCA	8.7	8.7
System MFA	15.0	15.0
Compressor RLA	8.5	8.5
Outdoor fan motor FLA	.47	.47
Outdoor fan motor W	41	41
Indoor fan motor FLA	.36	.36
Indoor fan motor W	38	38

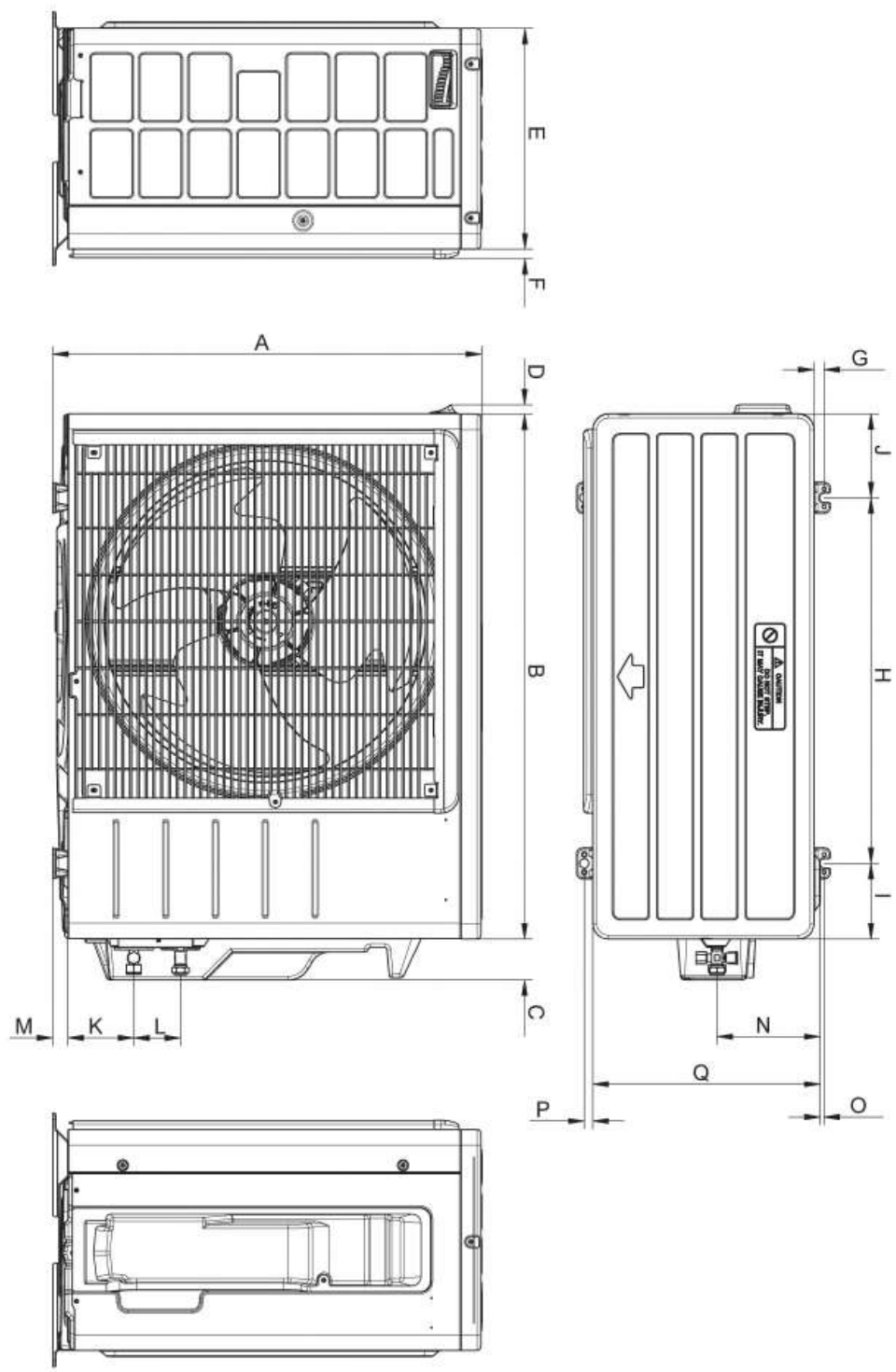
MFA: Max. fuse amps **MCA**: Min. circuit amps (A) **FLA**: Full load amps (A)
RLA: Rated load amps (A) **W**: Fan motor rated output (W)

Piping

Liquid (in)	1/4
Gas (in)	3/8
Drain (in)	3/4
Max. Interunit Piping Length (ft)	65.625
Max. Interunit Height Difference (ft)	49.25
Chargeless (ft)	32.8
Additional Charge of Refrigerant (oz/ft)	.21


LEFT
REAR
30-29/32 (785)
REAR
RIGHT
TOP VIEW
BOTTOM
UP DOWN FLAP
INDOOR UNIT ON-OFF SWITCH
SIGNAL RECEIVER
ROOM TEMPERATURE THERMISTOR
BOTTOM
FRONT VIEW
9-27/32 (250)
11-1/3 (288)
MODEL NAME PLATE
SIDE VIEW
All dimensions are in inch (mm)

Model / Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
09/12	21-11/16 (550)	26-1/2 (675)	2-1/16 (53)	15/32 (12)	11-3/16 (284)	15/32 (12)	1/2 (13)	18-1/2 (470)	3-13/16 (97)	4-1/4 (108)	3-3/8 (86)	2-3/8 (60)	25/32 (20)	5-1/4 (133)	3/16 (5)	7/16 (11)	11-1/2 (292)



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	KKG067A41	Back protection wire net (09 & 12)

Ek Engineering, Inc.
Engineering Consulting
Septic Designs
P. O. Box 3097
Battle Ground, WA 98604
(360) 687-7668 Phone
(360) 687-7669 Fax
Online: www.EkEngineering.net
E-Mail: David@EkEngineering.net

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
1/18/2022
Plan Reviewed By: Randy Rudy
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

January 13, 2022

Wolf Industries
Attn: Daniel Landsem
607 SE Eaton Blvd.
Battle Ground, WA 98604

Re: Structural Details and Calculations for the Model E-S in the State of Oregon (exact site location to be determined)

Dear Mr. Landsem;

At your request, we hereby provide structural detail sheets and calculations for the Model E-S (factory built 14'-0" x 44'-0" home) in the State of Oregon. The following is a reference of the information contained in the detail sheets and calculations:

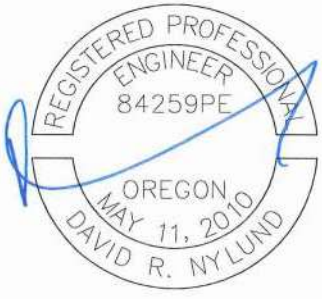
Detail Sheet Table of Contents

Structural Report Table of Contents

If you have any questions, please call 360-687-7668.

Sincerely;

David R. Nylund, P.E.



EXPIRES: 12/31/2022

WoodWorks® Shearwalls — SOFTWARE FOR WOOD DESIGN

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Model E-S.wsw
Plan Reviewed By: Randy Rivety
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

WoodWorks® Shearwalls 2019 (Update 3)

Jan. 7, 2022 10:17:18

Project Information

COMPANY AND PROJECT INFORMATION

Company	Project
EK ENGINEERING 105 W MAIN ST BATTLE GROUND, WA	MODEL E-S FOR: WOLF INDUSTRIES

DESIGN SETTINGS

Design Code	Wind Standard	Seismic Standard
IBC 2018/AWC SDPWS 2015	ASCE 7-16 Directional (All heights)	ASCE 7-16

Load Combinations		Building Code Capacity Modification	
For Design (ASD)	For Deflection (Strength)	Wind	Seismic
0.70 Seismic	1.00 Seismic	1.00	1.00
0.60 Wind	1.00 Wind		

Service Conditions and Load Duration				Max Shearwall Offset [ft]	
Duration Factor	Temperature Range	Moisture Content Fabrication	Moisture Content Service	Plan (within story)	Elevation (between stories)
-	-	15% (<=19%)	10% (<=19%)	6.00	-

Maximum Height-to-width Ratio					
Wood panels		Fiberboard	Lumber		Gypsum
Wind	Seismic		Wind	Seismic	Blocked	Unblocked
3.5	3.5	-	-	-	2.0	1.5

Ignore non-wood-panel shear resistance contribution...		Forces based on...	
Wind	Seismic	Hold-downs	Applied loads
when comb'd w/ wood panels	Always	Drag struts	Applied loads

Shearwall relative rigidity:	Deflection-based stiffness of wall segments
Perforated shearwall Co factor:	SDPWS Equation 4.3-5
Non-identical materials and construction on the shearline:	Allowed, except for material type
Deflection Equation:	3-term from SDPWS 4.3-1
Drift limit for wind design:	1 / 500 story height
Force-transfer strap:	Continuous at top of highest opening and bottom of lowest

SITE INFORMATION

Wind — ASCE 7-16 Directional (All heights)	
Design Wind Speed	145 mph
Serviceability Wind Speed	100 mph
Exposure	Exposure B
Enclosure	Enclosed
Min Wind Loads: Walls	16 psf
Roofs	8 psf

Topographic Information [ft]		
Shape	Height	Length
-	-	-

Site Location: -

Elev: 0ft
Rigid building - Static analysis

Case 2	E-W loads	N-S loads
Eccentricity (%)	15	15
Loaded at	75%	

Seismic — ASCE 7-16 12.8 Equivalent Lateral Force Procedure	
Risk Category	Category II - All others
Structure Type	Regular
Building System	Bearing Wall
Design Category	D
Site Class	D

Spectral Response Acceleration	
S1: 0.600g	Ss: 1.500g

Fundamental Period	E-W	N-S
T Used	0.106s	0.106s
Approximate Ta	0.106s	0.106s
Maximum T	0.148s	0.148s
Response Factor R	6.50	6.50

Fa: 1.20 Fv: 1.70

WoodWorks® Shearwalls

Model E-S.wsw Jan. 7, 2022 10:17:18

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rudy
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

Structural Data

STORY INFORMATION

	Story Elev [ft]	Floor/Ceiling Depth [in]	Wall Height [ft]	Hold-down Length subject to shrinkage [in]	Hold-down Bolt length [in]
Ceiling	11.00	0.0			
Level 1	3.00	12.0	8.00	15.6	16.4
Foundation	2.00				

BLOCK and ROOF INFORMATION

Block Dimensions [ft]			Roof Panels Face	Type	Slope	Overhang [ft]
Block 1	1 Story	E-W Ridge				
Location X,Y =	0.00	0.00	North	Side	9.5	1.00
Extent X,Y =	44.00	14.50	South	Side	90.0	1.00
Ridge Y Location, Offset	0.00	-7.25	East	Gable	90.0	1.00
Ridge Elevation, Height	13.43	2.43	West	Gable	90.0	1.00
Block 2	1 Story	N-S Ridge				
Location X,Y =	10.50	-6.00	North	Joined	90.0	1.33
Extent X,Y =	11.00	6.00	South	Gable	90.0	1.33
Ridge X Location, Offset	16.00	0.00	East	Side	18.4	1.33
Ridge Elevation, Height	12.83	1.83	West	Side	18.4	1.33

WoodWorks® Shearwalls

Model E-S.wsw Jan. 7, 2022 10:17:18

Oregon Building Codes Division
Plan Review for Code Compliance
Plans Reviewed By:
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SHEATHING MATERIALS by WALL GROUP

Grp	Surf	Material	Ratng	Sheathing Thick in	GU in	Ply	Or	Gvtv lbs/in	Fasteners Size	Type	Df	Eg in	Fd in	Bk	Apply Notes
1	Ext	Structural I	24/16	7/16	-	3	Horz	35000	8d	Nail	N	3	6	Y	2
	Int	Gyp WB 1-ply		1/2	-	-	Horz	40000	5d	Nail	N	7	7	Y	3

Legend:
Grp – Wall Design Group number, used to reference wall in other tables (created by program)
Surf – Exterior or interior surface when applied to exterior wall
Ratng – Span rating, see SDPWS Table C4.2.2.2C
Thick – Nominal panel thickness
GU - Gypsum underlay thickness
Ply – Number of plies (or layers) in construction of plywood sheets
Or – Orientation of longer dimension of sheathing panels
Gvtv – Shear stiffness in lb/in. of depth from SDPWS Tables C4.2.2A-B
Type – Fastener type from SDPWS Tables 4.3A-D: Nail – common wire nail for structural panels and lumber, cooler or gypsum wallboard nail for GWB, plasterboard nail for gypsum lath, galvanised nail for gypsum sheathing; Box - box nail; Casing – casing nail; Roof – roofing nail; Screw – drywall screw
Size - Common, box, and casing nails: refer to SDPWS Table A1 (casing sizes = box sizes).
Gauges: 11 ga = 0.120" x 1-3/4" (gypsum sheathing, 25/32" fiberboard), 1-1/2" (lath & plaster, 1/2" fiberboard); 13 ga plasterboard = 0.92" x 1-1/8".
Cooler or gypsum wallboard nail: 5d = .086" x 1-5/8"; 6d = .092" x 1-7/8"; 8d = .113" x 2-3/8"; 6/8d = 6d base ply, 8d face ply for 2-ply GWB.
Drywall screws: No. 6, 1-1/4" long.
5/8" gypsum sheathing can also use 6d cooler or GWB nail
Df – Deformed nails (threaded or spiral), with increased withdrawal capacity
Eg – Panel edge fastener spacing
Fd – Field spacing interior to panels
Bk – Sheathing is nailed to blocking at all panel edges; Y(es) or N(o)
Apply Notes – Notes below table legend which apply to sheathing side

Notes:
2. Framing at adjoining panel edges must be 3" nominal or wider with staggered nailing according to SDPWS 4.3.7.1.4
3. This material does not contribute to seismic shear resistance because of the "Ignore non-wood-panel contribution for all walls" design setting.

FRAMING MATERIALS and STANDARD WALL by WALL GROUP

Wall Grp	Species	Grade	b in	d in	Spcg in	SG	E psi^6	Standard Wall
1	D.Fir-L	Stud	1.50	5.50	24	0.50	1.40	

Legend:
Wall Grp – Wall Design Group
b – Stud breadth (thickness)
d – Stud depth (width)
Spcg – Maximum on-centre spacing of studs for design, actual spacing may be less.
SG – Specific gravity
E – Modulus of elasticity
Standard Wall - Standard wall designed as group.

Notes:
Check manufacture requirements for stud size, grade and specific gravity (G) for all shearwall hold-downs.

WoodWorks® Shearwalls

Model E-S.wsw Jan. 7, 2022 10:17:18

Oregon Building Codes Division
Plan Review for Code Compliance
APPLICATION APPROVED
Plan Reviewed By: Randy Rieby
This approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or ordinances or any local ordinances. This approved plan is a permit.

SHEARLINE, WALL and OPENING DIMENSIONS

North-south Shearlines	Type	Wall Group	Location X [ft]	Extent [ft] Start	Extent [ft] End	Length [ft]	FHS [ft]	Aspect Ratio	Height [ft]
Line 1									
Level 1									
Line 1		2	0.00	0.00	14.50	14.50	11.50	-	8.00
Wall 1-1	Prf	2	0.00	0.00	4.50	4.50	4.50	1.78	-
Wall 1-2	NSW		0.00	4.50	7.50	3.00	0.00	1.00	-
Wall 1-3	Prf	2	0.00	7.50	14.50	7.00	7.00	1.14	-
Line 2									
Level 1									
Line 2		2	44.00	0.00	14.50	14.50	5.56	-	8.00
Wall 2-1	Prf	2	44.00	0.00	14.50	14.50	5.56	-	-
Segment 1		-	-	0.00	2.50	2.50	1.56	3.20	-
Opening 1		-	-	2.50	10.50	8.00	8.00	-	1.50
Segment 2		-	-	10.50	14.50	4.00	4.00	2.00	-

East-west Shearlines	Type	Wall Group	Location Y [ft]	Extent [ft] Start	Extent [ft] End	Length [ft]	FHS [ft]	Aspect Ratio	Height [ft]
Line A									
Level 1									
Line A		1	0.00	0.00	44.00	44.00	36.50	-	8.00
Wall A-1	Seg	1	0.00	0.00	14.00	14.00	14.00	0.57	-
Wall A-2	NSW		0.00	14.00	15.50	1.50	0.00	1.00	-
Wall A-3	Seg	1	0.00	15.50	27.50	12.00	12.00	0.67	-
Wall A-4	NSW		0.00	27.50	33.50	6.00	0.00	1.00	-
Wall A-5	Seg	1	0.00	33.50	44.00	10.50	10.50	0.76	-
Line B									
Level 1									
Line B		1	14.50	0.00	44.00	44.00	26.00	-	8.00
Wall B-1	Seg	1	14.50	0.00	5.50	5.50	5.50	1.45	-
Wall B-2	NSW		14.50	5.50	12.00	6.50	0.00	1.00	-
Wall B-3	Seg	1	14.50	12.00	16.00	4.00	4.00	2.00	-
Wall B-4	NSW		14.50	16.00	27.50	11.50	0.00	1.00	-
Wall B-5	Seg	1	14.50	27.50	44.00	16.50	16.50	0.48	-

Legend:
Type - Seg = segmented, Prf = perforated, FT = force-transfer, NSW = non-shearwall
Location - Dimension perpendicular to wall
FHS - Length of full-height sheathing used to resist shear force. For perforated walls, it is based on the factored segments Li defined in SDPWS 4.3.4.3
Aspect Ratio – Ratio of wall height to segment length (h/bs), for force-transfer walls, the aspect ratio of the central pier
Wall Group - Wall design group defined in Sheathing and Framing Materials tables, where it shows associated Standard Wall
If two wall group numbers listed, they are for rigid diaphragm and flexible diaphragm design.

Oregon Building Codes Division
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Loads

WIND SHEAR LOADS (as entered or generated)

Level 1

Block	F	Element	Load Case	Wnd Dir	Surf Dir	Prof	Location [ft] Start	Location [ft] End	Magnitude [lbs,plf,psf] Start	Magnitude [lbs,plf,psf] End	Trib Ht [ft]
Block 1	W	Wall	1	W->E	Wind	Line	0.00	14.50	71.5		
Block 1	W	Wall	Min	W->E	Wind	Line	0.00	14.50	32.0		
Block 1	E	Wall	1	W->E	Lee	Line	0.00	14.50	22.2		
Block 1	E	Wall	Min	W->E	Lee	Line	0.00	14.50	32.0		
Block 1	W	Wall	1	E->W	Lee	Line	0.00	14.50	22.2		
Block 1	W	Wall	Min	E->W	Lee	Line	0.00	14.50	32.0		
Block 1	E	Wall	1	E->W	Wind	Line	0.00	14.50	71.5		
Block 1	E	Wall	Min	E->W	Wind	Line	0.00	14.50	32.0		
Block 1	S	Roof	1	S->N	Wind	Line	-1.00	45.00	43.4		
Block 1	S	Roof	Min	S->N	Wind	Line	-1.00	45.00	1.6		
Block 1	S	Wall	Min	S->N	Wind	Line	0.00	44.00	32.0		
Block 1	S	Wall	1	S->N	Wind	Line	0.00	44.00	71.5		
Block 1	N	Roof	Min	S->N	Lee	Line	-1.00	45.00	10.4		
Block 1	N	Wall	1	S->N	Lee	Line	0.00	44.00	44.7		
Block 1	N	Wall	Min	S->N	Lee	Line	0.00	44.00	32.0		
Block 1	S	Roof	Min	N->S	Lee	Line	-1.00	45.00	1.6		
Block 1	S	Roof	1	N->S	Lee	Line	-1.00	45.00	32.5		
Block 1	S	Wall	1	N->S	Lee	Line	0.00	44.00	44.7		
Block 1	S	Wall	Min	N->S	Lee	Line	0.00	44.00	32.0		
Block 1	N	Roof	Min	N->S	Wind	Line	-1.00	45.00	10.4		
Block 1	N	Wall	1	N->S	Wind	Line	0.00	44.00	71.5		
Block 1	N	Wall	Min	N->S	Wind	Line	0.00	44.00	32.0		
Block 2	W	Roof	Min	W->E	Wind	Line	-7.33	0.00	9.1		
Block 2	W	Roof	1	W->E	Wind	Line	-7.33	0.00	-9.1		
Block 2	E	Roof	Min	W->E	Lee	Line	-7.33	0.00	9.1		
Block 2	E	Roof	1	W->E	Lee	Line	-7.33	0.00	30.5		
Block 2	W	Roof	Min	E->W	Lee	Line	-7.33	0.00	9.1		
Block 2	W	Roof	1	E->W	Lee	Line	-7.33	0.00	30.5		
Block 2	E	Roof	Min	E->W	Wind	Line	-7.33	0.00	9.1		
Block 2	E	Roof	1	E->W	Wind	Line	-7.33	0.00	-9.1		

Legend:
Block - Block used in load generation
Accum. = loads from one block combined with another
Manual = user-entered loads (so no block)
F - Building face (north, south, east or west)
Element - Building surface on which loads generated or entered
Load Case - One of the following:
ASCE 7 All Heights: Case 1 or 2 from Fig 27.3-8 or minimum loads from 27:1.5
ASCE 7 Low-rise: Reference corner and Case A or B from Fig 28.3-1 or minimum loads from 28.3.4
Wind Dir - Direction of wind for loads with positive magnitude, also direction of MWFRS.
Surf Dir - Windward or leeward side of the building for loads in given direction
Prof - Profile (distribution)
Location - Start and end points on building element
Magnitude - Start = intensity of uniform and point loads or leftmost intensity of trapezoidal load, End = right intensity of trap load
Trib Ht - Tributary height of area loads only

Notes:
Windward load on the monoslope roof was not generated, to comply with ASCE 7 Figure 27.3-1, Note 7.
All loads entered by the user or generated by program are specified (unfactored) loads.The program applies a load factor of 0.60 to wind loads before distributing them to the shearlines.

WoodWorks® Shearwalls

Model E-S.wsw Jan. 7, 2022 10:17:18

Oregon Building Codes Division
Plan Review for Code Compliance
Plan Reviewed By: Randy Riedy
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BUILDING MASSES

Level 1

Force Dir	Element	Block	Wall Line	Profile	Location [ft] Start	Location [ft] End	Magnitude [lbs,plf,psf] Start	Magnitude [lbs,plf,psf] End	Trib Width [ft]
E-W	Roof	Block 1	1	Line	-1.00	15.50	391.0	391.0	
E-W	Roof	Block 1	2	Line	-1.00	15.50	391.0	391.0	
E-W	Roof	Block 2		Line	-7.33	0.00	116.2	116.2	
E-W	Roof	Block 2		Line	-7.33	0.00	116.2	116.2	
E-W	R Gable	Block 1	1	Line	0.00	0.00	24.3	0.0	
E-W	L Gable	Block 1	1	Line	0.00	14.50	0.0	24.3	
E-W	L Gable	Block 1	2	Line	0.00	0.00	24.3	0.0	
E-W	R Gable	Block 1	2	Line	0.00	14.50	0.0	24.3	
N-S	Roof	Block 1	A	Line	-1.00	45.00	140.3	140.3	
N-S	Roof	Block 1	B	Line	-1.00	45.00	140.3	140.3	
N-S	Roof	Block 2		Line	9.17	22.83	73.7	73.7	
N-S	Roof	Block 2	A	Line	9.17	22.83	51.0	51.0	
N-S	L Gable	Block 2		Line	10.50	16.00	18.3	0.0	
N-S	R Gable	Block 2		Line	16.00	21.50	0.0	18.3	
Both	Wall 1-1	n/a	1	Line	0.00	4.50	40.0	40.0	
Both	Wall 1-2	n/a	1	Line	4.50	7.50	40.0	40.0	
Both	Wall 1-3	n/a	1	Line	7.50	14.50	40.0	40.0	
Both	Wall 2-1	n/a	2	Line	0.00	14.50	40.0	40.0	
Both	Wall A-1	n/a	A	Line	0.00	14.00	40.0	40.0	
Both	Wall A-2	n/a	A	Line	14.00	15.50	40.0	40.0	
Both	Wall A-3	n/a	A	Line	15.50	27.50	40.0	40.0	
Both	Wall A-4	n/a	A	Line	27.50	33.50	40.0	40.0	
Both	Wall A-5	n/a	A	Line	33.50	44.00	40.0	40.0	
Both	Wall B-1	n/a	B	Line	0.00	5.50	40.0	40.0	
Both	Wall B-2	n/a	B	Line	5.50	12.00	40.0	40.0	
Both	Wall B-3	n/a	B	Line	12.00	16.00	40.0	40.0	
Both	Wall B-4	n/a	B	Line	16.00	27.50	40.0	40.0	
Both	Wall B-5	n/a	B	Line	27.50	44.00	40.0	40.0	

Legend:
Force Dir - Direction in which the mass is used for seismic load generation, E-W, N-S, or Both
Building element - Roof, gable end, wall or floor area used to generate mass, wall line for user-applied masses, Floor F# - refer to Plan View for floor area number
Wall line - Shearline that equivalent line load is assigned to
Location - Start and end points of equivalent line load on wall line
Trib Width. - Tributary width; for user applied area loads only

Oregon Building Codes Division
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SEISMIC LOADS

Level 1

Force Dir		Location [ft] Start	Location [ft] End	Mag [lbs,plf,psf] Start	Mag [lbs,plf,psf] End
E-W	Line	-7.33	-1.00	35.7	35.7
E-W	Point	-6.00	-6.00	15	15
E-W	Line	-1.00	0.00	156.1	156.1
E-W	Point	0.00	0.00	271	271
E-W	Line	0.00	4.50	140.1	137.8
E-W	Line	4.50	7.50	137.8	136.2
E-W	Line	7.50	14.50	136.2	132.6
E-W	Point	14.50	14.50	271	271
E-W	Line	14.50	15.50	120.3	120.3
N-S	Line	-1.00	0.00	43.2	43.2
N-S	Point	0.00	0.00	116	116
N-S	Line	0.00	5.50	55.5	55.5
N-S	Line	5.50	9.17	55.5	55.5
N-S	Line	9.17	10.50	74.6	74.6
N-S	Line	10.50	12.00	74.6	75.4
N-S	Line	12.00	14.00	75.4	76.4
N-S	Line	14.00	15.50	76.4	77.2
N-S	Line	15.50	16.00	77.2	77.5
N-S	Line	16.00	21.50	77.5	74.6
N-S	Line	21.50	22.83	74.6	74.6
N-S	Line	22.83	27.50	55.5	55.5
N-S	Line	27.50	33.50	55.5	55.5
N-S	Line	33.50	44.00	55.5	55.5
N-S	Point	44.00	44.00	116	116
N-S	Line	44.00	45.00	43.2	43.2

Legend:
Loads in table can be accumulation of loads from several building masses, so they do not correspond with a particular building element.
Location - Start and end of load in direction perpendicular to seismic force direction

Notes:
All loads entered by the user or generated by program are specified (unfactored) loads.The program applies a load factor of 0.70 and redundancy factor to seismic loads before distributing them to the shearlines.

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Flexible Diaphragm Wind Design
ASCE 7 Directional (All Heights) Loads

SHEAR RESULTS

N-S Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line 1														
Level 1														
Ln1, Lev1	–	S->N	–	–	2133	–	–	–	–	–		–	4400	–
	–	N->S	–	–	1983	–	–	–	–	–		–	4400	–
Wall 1-1	2	S->N	66.7	66.7	300	1.0	1.0	125	258	1.00	A	383	1722	0.17S
	2	N->S	56.7	56.7	255	1.0	1.0	125	258	1.00	A	383	1722	0.15S
Wall 1-3	2	S->N	261.8	261.8	1832	1.0	1.0	125	258	1.00	A	383	2678	0.68S
	2	N->S	246.8	246.8	1728	1.0	1.0	125	258	1.00	A	383	2678	0.65S
Line 2														
Ln2, Lev1	2	S->N	328.1	328.1	2133	1.0	1.0	125	258	1.00	A	383	2128	0.86S
	2	N->S	305.1	305.1	1983	1.0	1.0	125	258	1.00	A	383	2128	0.80S

E-W Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line A														
Level 1														
LnA, Lev1	–	Both	–	–	502	–	–	–	–	–		–	28105	–
Wall A-1	1	Both	32.7	–	457	–	1.0	–	770	–		770	10780	0.04
Wall A-3	1	Both	3.7	–	44	–	1.0	–	770	–		770	9240	0.00
Wall A-5	1	Both	0.0	–	0	–	1.0	–	770	–		770	8085	0.00
Line B														
LnB, Lev1	–	Both	–	–	408	–	–	–	–	–		–	20020	–
Wall B-1	1	Both	0.0	–	0	–	1.0	–	770	–		770	4235	0.00
Wall B-3	1	Both	0.0	–	0	–	1.0	–	770	–		770	3080	0.00
Wall B-5	1	Both	24.7	–	408	–	1.0	–	770	–		770	12705	0.03

Legend:
W Gp - Wall design group defined in Sheathing and Framing Materials tables, where it shows associated Standard Wall. "^" means that this wall is critical for all walls in the Standard Wall group.
For Dir - Direction of wind force along shearline.
v - Design shear force on segment = ASD-factored shear force per unit length of full-height sheathing (FHS)
vmax/vft - Perforated walls: Collector and in-plane anchorage force as per SDPWS eqn. 4.3-9 = V/FHS/Co. FHS is factored for narrow segments as per 4.3.4.3
Force-transfer walls: Shear force in piers above and below either openings or piers beside opening(s). Aspect ratio factor does not apply to these piers.
V - ASD factored shear force. For shearline: total shearline force. For wall: total of all segments on wall. For segment: force on segment
Asp/Cub – For wall: Unblocked structural wood panel factor Cub from SDPWS 4.3.3.2. For segment or force-transfer pier: Aspect Ratio Factor from SDPWS 4.3.4.2.
Int - Unit shear capacity of interior sheathing; Ext - Unit shear capacity of exterior sheathing. For wall: Unfactored. For segment: Include Cub factor and aspect ratio adjustments.
Co - Adjustment factor for perforated walls from SDPWS Equation 4.3-5.
C - Sheathing combination rule, A = Add capacities, S = Strongest side or twice weakest, G = Stiffness-based using SDPWS 4.3-3.
Cmb - Combined interior and exterior unit shear capacity including perforated wall factor Co.
V – Total factored shear capacity of shearline, wall or segment.
Crit Resp – Response ratio = v/Cmb = design shear force/unit shear capacity. "S" indicates that the wind design criterion was critical in selecting wall.

Notes:
Refer to Elevation View diagrams for individual level for uplift anchorage force t for perforated walls given by SDPWS 4.3.6.4.2,4.

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HOLD-DOWN DESIGN (flexible wind design)

Level 1 Line-Wall	Posit'n	Location [ft] X	Y	Load Case	Tensile ASD Holddown Force [lbs] Shear	Dead	Uplift	Cmb'd	Hold-down	Cap [lbs]	Crit Resp.
Line 1											
1-1	L End	0.00	0.12	1	710			710	HDU5-SDS2.	4340	0.16
1-1	R End	0.00	4.38	1	604			604	HDU5-SDS2.	4340	0.14
1-3	L End	0.00	7.63	1	2331			2331	HDU5-SDS2.	4340	0.54
1-3	R End	0.00	14.38	1	2198			2198	HDU5-SDS2.	4340	0.51
Line 2											
2-1	L End	44.00	0.12	1	3674			3674	HDU5-SDS2.	4340	0.85
2-1	R End	44.00	14.38	1	3416			3416	HDU5-SDS2.	4340	0.79
Line A											
A-1	L End	0.12	0.00	1	266			266	HDU5-SDS2.	5645	0.05
A-1	R End	13.88	0.00	1	266			266	HDU5-SDS2.	5645	0.05
A-3	L End	15.63	0.00	1	30			30	HDU5-SDS2.	5645	0.01
A-3	R End	27.38	0.00	1	30			30	HDU5-SDS2.	5645	0.01
Line B											
B-5	L End	27.63	14.50	1	201			201	HDU5-SDS2.	5645	0.04
B-5	R End	43.88	14.50	1	201			201	HDU5-SDS2.	5645	0.04

Legend:
Line-Wall:
At wall or opening – Shearline and wall number At vertical element - Shearline
Posit'n - Position of stud that hold-down is attached to:
V Elem - Vertical element: column or strengthened studs required where not at wall end or opening
L or R End - At left or right wall end
L or R Op n - At left or right side of opening n
t @ Op n - Uplift force t at opening n from offset opening in perforated wall above, from SDPWS 4.3.6.2.1
Location - Co-ordinates in Plan View
Load Case - Results are for critical load case:
ASCE 7 All Heights: Case 1 or 2 from Fig. 27.3-8
ASCE 7 Low-rise: Windward corner(s) and Case A or B from Fig. 28.3-1
ASCE 7 Minimum loads (27.1.5 / 28.3.4)
Hold-down Forces:
Shear – Wind shear overturning component, based on shearline force, factored for ASD by 0.60. For perforated walls, T from SDPWS 4.3-8 is used.
Dead – Dead load resisting component, factored for ASD by 0.60
Uplift - Uplift wind load component, factored for ASD by 0.60. For perforated walls, T from SDPWS 4.3-8 is used.
Cmb'd - Sum of ASD-factored overturning, dead and uplift forces. May also include the uplift force t from perforated walls from SDPWS 4.3.6.2.1 when openings are staggered.
Hold-down – Device used from hold-down database
Cap – Allowable ASD tension load
Crit. Resp. - Critical Response = Combined ASD force / Allowable ASD tension load

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rivety
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Flexible Diaphragm Seismic Design

SEISMIC INFORMATION

Level	Mass [lbs]	Area [sq.ft]	Story Shear [lbs] E-W	Story Shear [lbs] N-S	Diaphragm Force [lbs] E-W:	Fpx	Design	N-S:	Fpx	Design
1	19739	638.0	3037	3037		3316	3316		3316	3316
All	19739	-	3037	3037		-	-		-	-

Legend:
Mass – Sum of all generated and input building masses on level = wx in ASCE 7 equation 12.8-12.
Story Shear – Total unfactored (strength-level) shear force induced at level x, = Fx in ASCE 7 equation 12.8-11.
Diaphragm Force – Minimum ASD-factored force for diaphragm design, used by Shearwalls only for drag strut forces, as per Exception to 12.10.2.1. Fpx is from Eqns. 12.10-1, -2, and -3. Design = The greater of the story shear and Fpx + transfer forces from discontinuous shearlines, factored by overstrength (omega) as per 12.10.1.1. Omega = 2.5 as per 12.2-1.

Redundancy Factor p (rho):
E-W 1.00, N-S 1.30
Automatically calculated according to ASCE 7 12.3.4.2.
Applies to shearwall design, hold-down forces and the drag strut force component based on shearline forces; does not apply to story drift, out-of-plane force, or the diaphragm force Fpx and the drag strut force component based on it.

Vertical Earthquake Load Ev
Ev = 0.2 Sds D; Sds = 1.00; Ev = 0.200 D unfactored; 0.140 D factored; total dead load factor: 0.6 - 0.140 = 0.460 tension, 1.0 + 0.140 = 1.140 compression.

WoodWorks® Shearwalls	Model E-S.wsw	Jan. 7, 2022 10:17:18

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SHEAR RESULTS (flexible seismic design)

N-S Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line 1														
Level 1														
Ln1, Lev1	-	Both	-	-	1416	-	-	-	-	-		-	2116	-
Wall 1-1	2	Both	45.0	45.0	203	1.0	1.0	0	184	1.00	S	184	828	0.24
Wall 1-3	2	Both	173.4	173.4	1214	1.0	1.0	0	184	1.00	S	184	1288	0.94
Line 2														
Ln2, Lev1	2^	Both	207.3	207.3	1347	1.0	1.0	0	184	1.00	S	184	1023	1.13*
E-W Shearlines	**W Gp**	**For Dir**	**ASD Shear Force [plf] v**	**vmax/vft**	**V [lbs]**	**Asp-Cub Int**	**Ext**	**Allowable Shear [plf] Int**	**Ext**	**Co**	**C**	**Cmb**	**V [lbs]**	**Resp. Ratio**
Line A														
Level 1														
LnA, Lev1	-	Both	-	-	1166	-	-	-	-	-		-	20075	-
Wall A-1	1	Both	53.2	-	745	-	1.0	-	550	-		550	7700	0.10
Wall A-3	1	Both	29.4	-	353	-	1.0	-	550	-		550	6600	0.05
Wall A-5	1	Both	6.5	-	69	-	1.0	-	550	-		550	5775	0.01
Line B														
LnB, Lev1	-	Both	-	-	959	-	-	-	-	-		-	14300	-
Wall B-1	1	Both	0.0	-	0	-	1.0	-	550	-		550	3025	0.00
Wall B-3	1	Both	0.0	-	0	-	1.0	-	550	-		550	2200	0.00
Wall B-5	1^	Both	58.1	-	959	-	1.0	-	550	-		550	9075	0.11

Legend:
W Gp - Wall design group defined in Sheathing and Framing Materials tables, where it shows associated Standard Wall. "^" means that this wall is critical for all walls in the Standard Wall group.
For Dir – Direction of seismic force along shearline.
v - Design shear force on segment = ASD-factored shear force per unit length of full-height sheathing (FHS)
vmax/vft - Perforated walls: Collector and in-plane anchorage force as per SDPWS eqn. 4.3-9 = V/FHS/Co. FHS is factored for narrow segments as per 4.3.4.3
Force-transfer walls: Shear force in piers above and below either openings or piers beside opening(s). Aspect ratio factor does not apply to these piers.
V - ASD factored shear force. For shearline: total shearline force. For wall: total of all segments on wall. For segment: force on segment
Asp/Cub – For wall: Unblocked structural wood panel factor Cub from SDPWS 4.3.3.2. For segment or force-transfer pier: Aspect Ratio Factor from SDPWS 4.3.4.2.
Int - Unit shear capacity of interior sheathing; Ext - Unit shear capacity of exterior sheathing. For wall: Unfactored. For segment: Include Cub factor and aspect ratio adjustments.
Co - Adjustment factor for perforated walls from SDPWS Equation 4.3-5.
C - Sheathing combination rule, A = Add capacities, S = Strongest side or twice weakest, G = Stiffness-based using SDPWS 4.3-3.
Cmb - Combined interior and exterior unit shear capacity including perforated wall factor Co.
V – Total factored shear capacity of shearline, wall or segment.
Crit Resp – Response ratio = v/Cmb = design shear force/unit shear capacity. "W" indicates that the wind design criterion was critical in selecting wall.

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HOLD-DOWN DESIGN (flexible seismic design)

Level 1 Line-Wall	Posit'n	Location [ft] X	Y	Tensile ASD Holddown Force [lbs] Shear	Dead	Ev	Cmb'd	Hold-down	Cap [lbs]	Crit Resp.
Line 1										
1-1	L End	0.00	0.12	479			479	HDU5-SDS2.	4340	0.11
1-1	R End	0.00	4.38	479			479	HDU5-SDS2.	4340	0.11
1-3	L End	0.00	7.63	1544			1544	HDU5-SDS2.	4340	0.36
1-3	R End	0.00	14.38	1544			1544	HDU5-SDS2.	4340	0.36
Line 2										
2-1	L End	44.00	0.12	2321			2321	HDU5-SDS2.	4340	0.53
2-1	R End	44.00	14.38	2321			2321	HDU5-SDS2.	4340	0.53
Line A										
A-1	L End	0.12	0.00	433			433	HDU5-SDS2.	5645	0.08
A-1	R End	13.88	0.00	433			433	HDU5-SDS2.	5645	0.08
A-3	L End	15.63	0.00	240			240	HDU5-SDS2.	5645	0.04
A-3	R End	27.38	0.00	240			240	HDU5-SDS2.	5645	0.04
A-5	L End	33.63	0.00	54			54	HDU5-SDS2.	5645	0.01
A-5	R End	43.88	0.00	54			54	HDU5-SDS2.	5645	0.01
Line B										
B-5	L End	27.63	14.50	472			472	HDU5-SDS2.	5645	0.08
B-5	R End	43.88	14.50	472			472	HDU5-SDS2.	5645	0.08

Legend:
Line-Wall:
At wall or opening – Shearline and wall number
At vertical element - Shearline
Posit'n - Position of stud that hold-down is attached to:
V Elem - Vertical element: column or strengthened studs required where not at wall end or opening
L or R End - At left or right wall end
L or R Op n - At left or right side of opening n
t @ Op n - Uplift force t at opening n from offset opening in perforated wall above, from SDPWS 4.3.6.2.1
Location - Co-ordinates in Plan View
Hold-down Forces:
Shear – Seismic shear overturning component, factored for ASD by 0.7. For perforated walls, T from SDPWS 4.3-8 is used
Dead – Dead load resisting component, factored for ASD by 0.60
Ev – Vertical seismic load effect from ASCE 7 12.4.2.2 = -0.2Sds x ASD seismic factor x unfactored D = 0.233 x factored D. Refer to Seismic Information table for more details.
Cmb'd - Sum of ASD-factored overturning, dead and vertical seismic forces. May also include the uplift force t from perforated walls from SDPWS 4.3.6.2.1 when openings are staggered.
Hold-down – Device used from hold-down database
Cap – Allowable ASD tension load
Crit. Resp. – Critical Response = Combined ASD force/Allowable ASD tension load

Notes:
Combined force from ASCE 7 2.4.1 load combination 10 = - (0.6D - 0.7Ev + 0.7Eh); Eh (from 12.4.2.1) = - shear overturning force
Refer to Shear Results table for factor Co, and shearline dimensions table for the sum of Li, used to calculate tension force T for perforated walls from SDPWS Eqn. 4.3-8.
Designer is responsible for design of connection from wall to floor or foundation for shear force shown in Shear Results table. Refer to SDPWS 4.3.6.4.3 for foundation anchor bolt requirements.

EK ENGINEERING, INC. PG 13
105 W. MAIN ST. ~ P.O. BOX 3097 PHONE: (360) 687-7668
BATTLE GROUND, WA 98604 FAX: (360) 687-7669

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
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Project: Model E-S for Wolf Industries
Location: To be determined, Oregon
Date: 1/7/2022

PERFORATED SHEAR WALL CALCULATIONS (Walls 1-1/1-3 and 2-1/2-3)

Description/Variable	Value	Units	Comments/Code Reference (see notes)
Sesimic Shear Force, V_S	1416	lb	Calculated seismic shear force on wall from pg 11
Wind Shear Force, V_W	2134	lb	Calculated wind shear force on wall from pg 8
Wall Height, h	10.17	ft	Note 4
Overall Wall Length, L_{TOT}	14	ft	
Total Length of Shear Walls, L_{SW}	8.5	ft	Note 5
Maximum Wall Aspect Ratio, W_{AR}	3.39	NA	Note 5
Sheathing Ratio, r	0.913	NA	$r = 1 / \{ 1 + A_O / (h L_{SW}) \}$ [EQ 4.3-6]
Shear Capacity Factor, C_O	1.281	NA	$C_O = L_{TOT} r / \{ L_{SW} (3 - 2 r) \}$ [EQ 4.3-5]
Nominal Seismic unit shear force, $v_{S,N}$	130	plf	$v_{S,N} = V_S / (C_O L_{SW})$ [EQ 4.3-9]
Design Seismic unit shear force, v_S	220.4	plf	If $W_{AR} < 2$, $v_S = v_{S,N}$, else $v_S = v_{S,N} (W_{AR} / 2)$
Design Wind unit shear force, v_W	196	plf	$v_W = V_W / (C_O L_{SW})$ [EQ 4.3-9]
Tension at Ends of Wall, T	1993	lb	$T = MAX (V_S, V_W) h / (C_O L_{SW})$ [EQ 4.3-8]
Uniform Uplift at S.W. Segments, t	196	plf	$t = MAX (v_S, v_W)$ [Section 4.3.6.4.2.1]

Wall Openings					
Opening Height, h_1	3	ft	Opening Height, h_3	0	ft
Opening Width, w_1	4	ft	Opening Width, w_3	0	ft
Area of Opening, A_1	13.56	ft^2	Area of Opening, A_3	0	ft^2
Opening Height, h_2	0	ft			
Opening Width, w_2	0	ft	Total Area of Openings, A_O	13.56	ft^2
Area of Opening, A_2	0	ft^2			

Notes:

1) All code references in the notes below and in the charts above are from the 2015 *Special Design Provisions for Wind and Seismic* (2015 SDPWS).

2) A perforated shear wall segment shall be located at each end of the shear perforated shear wall. The aspect ratio limitations of section 4.3.4.1 apply to the wall lengths considered in the total shear wall length determination above (L_{SW}). Other limitations as per Section 4.3.5.3 also apply.

3) Sill plate anchor bolts shall use 3" x 3" x 0.229" steel plate washers. Exception: standard cut washers may be used if the shear wall aspect ratios do not exceed 2:1, shear wall end anchorage is designed without considering dead load stabilizing moment, and the nominal unit shear capacity of the shear wall does not exceed 980 plf for seismic or 1370 plf for wind.

4) One of these walls will be 8' tall and the other about 10'-3" tall, depending on the roof configuration. The worst case height is used here to ensure a conservative design.

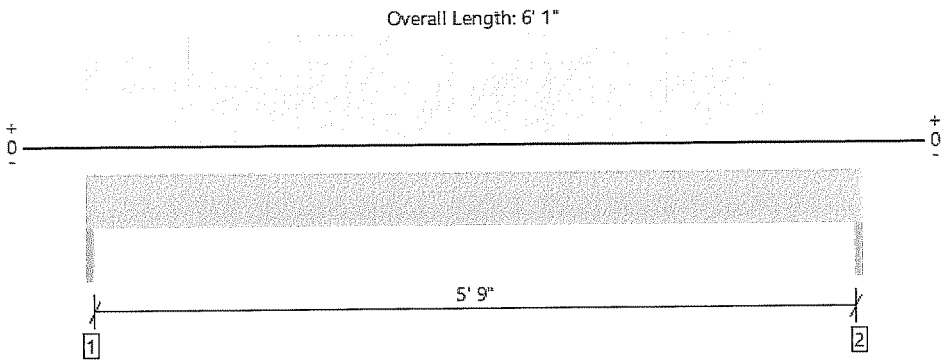
5) In this case, the minimum wall length is 3'-0" (see detail sheet S1) and the total shear wall length will be 9'-0". With a plate height of 10'-3" and a wall length of 3'-0", the maximum aspect ratio is 10'-2" / 3'-0" = 3.39.

MEMBER REPORT

ROOF, HEADER (WORST CASE)

1 piece(s) 4 x 6 DF No.2

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1230 @ 1/2"	4375 (2.00")	Passed (28%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	977 @ 7 1/2"	2657	Passed (37%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	1820 @ 3' 1/2"	1979	Passed (92%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.096 @ 3' 1/2"	0.200	Passed (L/752)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.152 @ 3' 1/2"	0.300	Passed (L/474)	--	1.0 D + 1.0 S (All Spans)

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

	Bearing Length			Loads to Supports (lbs)			
Supports	Total	Available	Required	Dead	Snow	Total	Accessories
1 - Trimmer - DF	2.00"	2.00"	1.50"	454	776	1230	None
2 - Trimmer - DF	2.00"	2.00"	1.50"	454	776	1230	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' 1" o/c	
Bottom Edge (Lu)	6' 1" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6' 1"	N/A	4.9	--	
1 - Uniform (PSF)	0 to 6' 1"	B' 6"	17.0	30.0	Roof

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Luke Bruckelmyer Ek Engineering (360) 687-766B LukeB@EKEngineering.net	Tiny Home Model E-G Location to be determined in Oregon State For: Wolf Industries

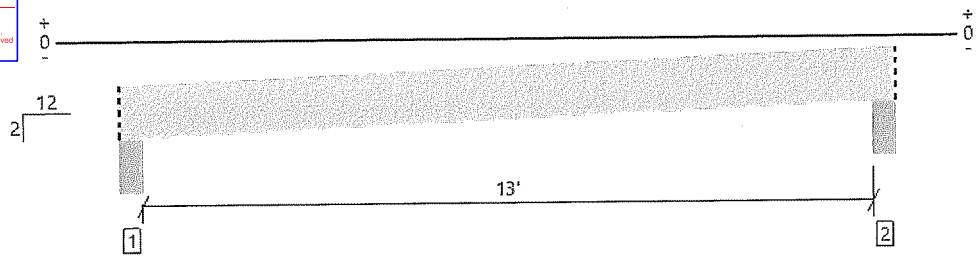
MEMBER REPORT

ROOF, RAFTERS

1 piece(s) 2 x 10 DF No.2 @ 24" OC

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

Sloped Length: 14' 2 5/16"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Member Length : 14' 3 7/8"

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 2/12

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	661 @ 5"	5625 (6.00")	Passed (12%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	542 @ 1' 3 1/8"	1915	Passed (28%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	2047 @ 7'	2334	Passed (88%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.263 @ 7'	0.667	Passed (L/608)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.415 @ 7'	0.890	Passed (L/386)	--	1.0 D + 1.0 S (All Spans)

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

	Bearing Length			Loads to Supports (lbs)			
Supports	Total	Available	Required	Dead	Snow	Total	Accessories
1 - Beveled Plate - DF	6.00"	6.00"	1.50"	241	420	661	Blocking
2 - Beveled Plate - DF	6.00"	6.00"	1.50"	241	420	661	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 5" o/c	
Bottom Edge (Lu)	14' 2" o/c	

- Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 14'	24"	17.0	30.0	Roof

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Luke Bruckelmyer Ek Engineering (360) 687-7668 Luke8@EKEngineering.net	Tiny Home Model E-G Location to be determined in Oregon State For: Wolf Industries

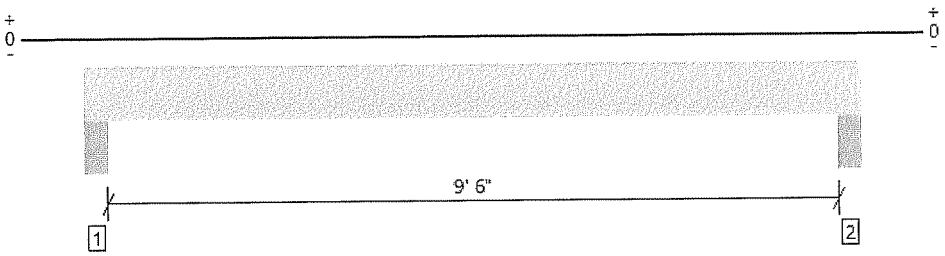
MEMBER REPORT

ROOF, DECK ROOF BEAM

1 piece(s) 6 x 10 DF No.2

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

Overall Length: 10' 6"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1704 @ 4 1/2"	20625 (6.00")	Passed (8%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	1285 @ 1' 3 1/2"	6810	Passed (19%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	3857 @ 5' 3"	6937	Passed (56%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.079 @ 5' 3"	0.325	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.129 @ 5' 3"	0.488	Passed (L/906)	--	1.0 D + 1.0 S (All Spans)

System : Roof
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Lumber grading provisions must be extended over the length of the member per NDS 4.2.5.5.
- Applicable calculations are based on NDS.

	Bearing Length			Loads to Supports (lbs)			
Supports	Total	Available	Required	Dead	Snow	Total	Accessories
1 - Column - HF	6.00"	6.00"	1.50"	661	1043	1704	None
2 - Column - HF	6.00"	6.00"	1.50"	661	1043	1704	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	10' 6" o/c	
Bottom Edge (Lu)	10' 6" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 10' 6"	N/A	13.2	--	
1 - Uniform (PSF)	0 to 10' 6" (Front)	6' 7 1/2"	17.0	30.0	Roof

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Luke Bruckelmyer Ek Engineering (360) 687-7668 LukeB@EKEngineering.net	Tiny Home Model E-G Location to be determined in Oregon State For: Wolf Industries

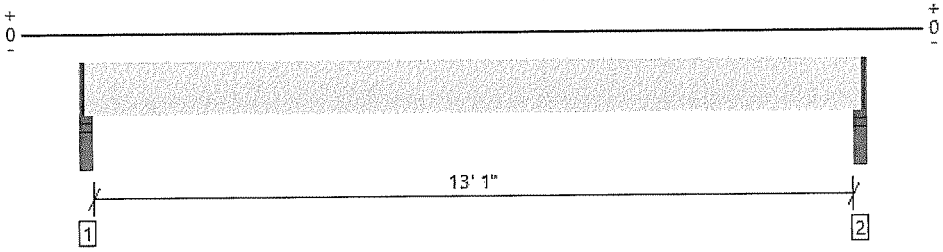
MEMBER REPORT

MAIN FLOOR, JOISTS

1 piece(s) 2 x 10 DF No.2 @ 16" OC

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

Overall Length: 13' 8"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	467 @ 2 1/2"	1434 (2.25")	Passed (33%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	400 @ 1' 3/4"	1665	Passed (24%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1522 @ 6' 10"	2029	Passed (75%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.234 @ 6' 10"	0.331	Passed (L/680)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.304 @ 6' 10"	0.663	Passed (L/523)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	N/A	--	N/A

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

	Bearing Length			Loads to Supports (lbs)			
Supports	**Total**	**Available**	**Required**	**Dead**	**Floor Live**	**Total**	**Accessories**
1 - Stud wall - SPF	3.50"	2.25"	1.50"	109	364	473	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	2.25"	1.50"	109	364	473	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	7' 5" o/c	
Bottom Edge (Lu)	13' 6" o/c	

- Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 13' 8"	16"	12.0	40.0	Floor

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Luke Bruckelmyer Ek Engineering (360) 687-7668 LukeB@EKEngineering.net	Tiny Home Model E-G Location to be determined In Oregon State For: Wolf Industries

Weyerhaeuser

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
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BeamChek v2020 licensed to: Ek Engineering Reg # 4117-67998

MODEL B, C, E, F — TO BE DETERMINED, OR

BMD — Prepared by: LAB Date: 1/11/22

Selection

4x 10 HF #2 Lu = 0.0 Ft

NDS 2018, Wet Use

Min Bearing Area R1= 6.1 in² R2= 6.1 in² (2.0) DL Defl= 0.07 in

Data

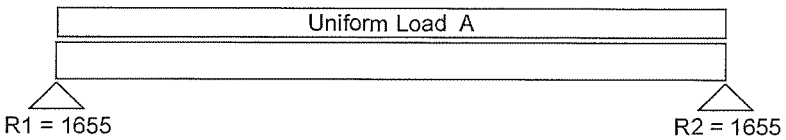
Beam Span	9.25 ft	Reaction 1 LL	1388 #	Reaction 2 LL	1388 #
Beam Wt per ft	7.87 #	Reaction 1 TL	1655 #	Reaction 2 TL	1655 #
Bm Wt Included	73 #	Maximum V	1655 #		
Max Moment	3828 '#	Max V (Reduced)	1379 #		
TL Max Defl	L / 240	TL Actual Defl	L / 438		
LL Max Defl	L / 360	LL Actual Defl	L / 608		

Attributes	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	49.91	32.38	0.25	0.18
Critical	45.03	14.22	0.46	0.31
Status	OK	OK	OK	OK
Ratio	90%	44%	55%	59%

Values	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	850	150	1.3	405
Adjusted Values	1020	146	1.2	271

Adjustments				
CF Size Factor	1.200			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	0.97	0.90	0.67
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 300 Uniform TL: 350 = A



SPAN = 9.25 FT

Uniform and partial uniform loads are lbs per lineal ft.

BeamChek v2020 licensed to: Ek Engineering Reg # 4117-67998

MODEL B, C, E, F — TO BE DETERMINED, OR

DECK JOISTS — Prepared by: LAB Date: 1/11/22

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieby
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

Selection

2x 8 HF #2 @ 16 in oc Lu = 0.0 Ft

NDS 2018, Repetitive Use, Wet Use

Min Bearing Area R1= 1.7 in² R2= 1.7 in² (2.0) DL Defl= 0.11 in

Data

Beam Span	10.0 ft	Reaction 1 LL	400 #	Reaction 2 LL	400 #
Beam Wt per ft	0 #	Reaction 1 TL	467 #	Reaction 2 TL	467 #
Bm Wt Included	0 #	Maximum V	467 #		
Max Moment	1167 '#	Max V (Reduced)	410 #		
TL Max Defl	L / 240	TL Actual Defl	L / 279		
LL Max Defl	L / 360	LL Actual Defl	L / 372		

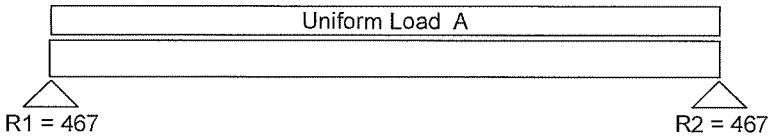
Attributes

	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	13.14	10.88	0.43	0.32
Critical	11.93	4.23	0.50	0.33
Status	OK	OK	OK	OK
Ratio	91%	39%	86%	97%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	850	150	1.3	405
Adjusted Values	1173	146	1.2	271
CF Size Factor	1.200			
Cd Duration	1.00	1.00		
Cr Repetitive	1.15			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	0.97	0.90	0.67
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 80 Uniform TL: 93 = A



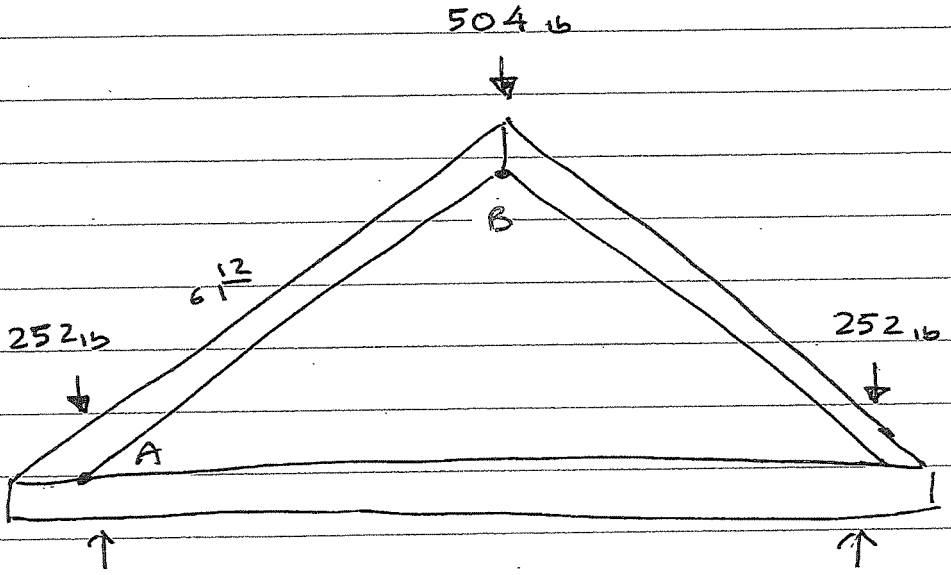
SPAN = 10 FT

Uniform and partial uniform loads are lbs per lineal ft.

TINY HOUSE, MODEL E

PORCH TRUSS CALCULATIONS

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rivety
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

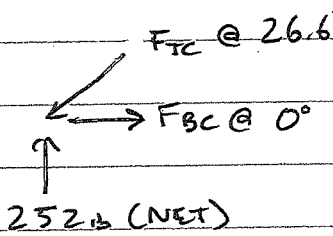


$R = 2' \times 6' \times 42\,psf$

$= 504\,lb$

$R = 504\,lb$

NODE A



$\Sigma F_y \uparrow^+$:

$-F_{TC}(\sin 26.6°) + 252 = 0, \quad F_{TC} = 563.5\,lb$

$\Sigma F_x \rightarrow^+$:

$F_{BC} - 563.5\,lb\,(\cos 26.6°) = 0, \quad F_{BC} = 504\,lb$

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rudy
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

PORCH TRUSS CONTINUED...

STAPLED JOINTS:

THE MAXIMUM FORCE AT THE JOINTS IS 564 lb IN THE TOP CHORD. 16 GA, 1-1/2" LONG, 7/16" CROWN STAPLES HAVE A CAPACITY OF ABOUT 46 lb PER STAPLE AS PER THE ICC REPORT NER-272.

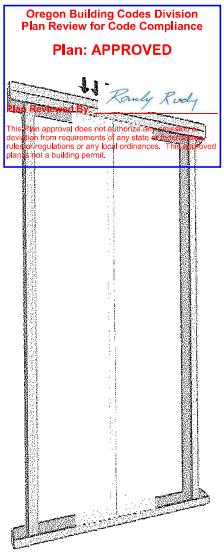
N = 564 lb / 46 lb/STAPLE = 12.2 STAPLES

THERE ARE GUSSETS ON BOTH SIDES OF THE TRUSS. TO ENSURE A CONSERVATIVE DESIGN, 16 STAPLES (8 PER SIDE) INTO EACH TRUSS MEMBER WILL BE SPECIFIED.

MEMBER REPORT

COLUMNS, STUDS (WORST CASE)

1 piece(s) 2 x 6 DF No.2 @ 24" OC



Drawing is Conceptual

Wall Height: 10' 2" Member Height: 9' 9 1/2" O. C. Spacing: 24.00"

Design Results	Actual	Allowed	Result	LDF	Load: Combination
Slenderness	21	50	Passed (43%)	--	--
Compression (lbs)	860	7147	Passed (12%)	1.15	1.0 D + 1.0 S
Plate Bearing (lbs)	860	6445	Passed (13%)	--	1.0 D + 1.0 S
Lateral Reaction (lbs)	172	--	--	1.60	1.0 D + 0.6 W
Lateral Shear (lbs)	155	1584	Passed (10%)	1.60	1.0 D + 0.6 W
Lateral Moment (ft-lbs)	420 @ mid-span	1342	Passed (31%)	1.60	1.0 D + 0.6 W
Total Deflection (in)	0.15 @ mid-span	0.65	Passed (L/771)	--	1.0 D + 0.6 W
Bending/Compression	0.33	1	Passed (33%)	1.60	1.0 D + 0.6 W

- Lateral deflection criteria: Wind (L/180)
- Input axial load eccentricity for the design is zero
- Applicable calculations are based on NDS.
- A bearing area factor of 1.25 has been applied to base plate bearing capacity.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.

Supports	Type	Material
Top	Dbl 2X	Douglas Fir-Larch
Base	2X	Douglas Fir-Larch

System : Wall
Member Type : Stud
Building Code : IBC 2018
Design Methodology : ASD

Max Unbraced Length	Comments
1'	

Lateral Connections

Supports	Connector	Type/Model	Quantity	Connector Nailing
Top	Nails	Bd x 2.5" Box (Toe)	2	N/A
Base	Nails	8d x 2.5" Box (Toe)	2	N/A

- Nailed connection at the top of the member is assumed to be nailed through the bottom 2x plate prior to placement of the top 2x of the double top plate assembly.

Vertical Load	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Point (PLF)	24.00"	174.0	256.0	Roof

Lateral Load	Location	Spacing	Wind (1.60)	Comments
1 - Uniform (PSF)	Full Length	24.00"	29.2	

- IBC Table 1604.3, footnote f: Deflection checks are performed using 42% of this lateral wind load.

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Luke Bruckelmyer Ek Engineering (360) 687-7668 LukeB@EKEngineering.net	Tiny Home Model E-G Location to be determined in Oregon State For: Wolf Industries

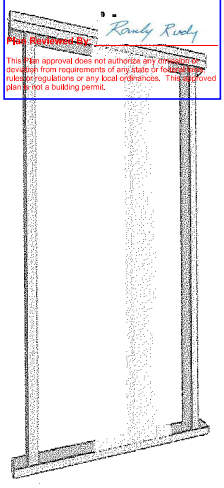
Weyerhaeuser

MEMBER REPORT

COLUMNS, 10'-2" COLUMN (WORST CASE)

1 piece(s) 2 x 6 DF No.2

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By:
This plan approval does not authorize any omissions or deviation from requirements of any state or federal law, rules or regulations or any local ordinances. This approved plan is not a building permit.



Drawing is Conceptual

Wall Height: 10' 2" Member Height: 9' 9 1/2" Tributary Width: 5'

Design Results	Actual	Allowed	Result	LDF	Load: Combination
Slenderness	21	50	Passed (43%)	--	--
Compression (lbs)	2148	7147	Passed (30%)	1.15	1.0 D + 1.0 S
Plate Bearing (lbs)	2148	5156	Passed (42%)	--	1.0 D + 1.0 S
Lateral Reaction (lbs)	429	--	--	1.60	1.0 D + 0.6 W
Lateral Shear (lbs)	389	1584	Passed (25%)	1.60	1.0 D + 0.6 W
Lateral Moment (ft-lbs)	1050 @ mid-span	1169	Passed (90%)	1.60	1.0 D + 0.6 W
Total Deflection (in)	0.38 @ mid-span	0.65	Passed (L/308)	--	1.0 D + 0.6 W
Bending/Compression	1.01	1	Passed (101%)	1.60	1.0 D + 0.6 W

- Lateral deflection criteria: Wall (L/180)
- Input axial load eccentricity for the design is zero
- Applicable calculations are based on NDS.

Supports	Type	Material
Top	Dbl 2X	Douglas Fir-Larch
Base	2X	Douglas Fir-Larch

System : Wall
Member Type : Column
Building Code : IBC 2018
Design Methodology : ASD

Max Unbraced Length	Comments
1'	

Lateral Connections

Supports	Connector	Type/Model	Quantity	Connector Nailing
Top	Nails	10d x 3" Box (Toe)	4	N/A
Base	Nails	10d x 3" Box (Toe)	4	N/A

- Nailed connection at the top of the member is assumed to be nailed through the bottom 2x plate prior to placement of the top 2x of the double top plate assembly.

Vertical Load	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (PLF)	5' 0.00"	174.0	255.6	Roof

Lateral Load	Location	Tributary Width	Wind (1.60)	Comments
1 - Uniform (PSF)	Full Length	5'	29.2	

- IBC Table 1604.3, footnote f: Deflection checks are performed using 42% of this lateral wind load.

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Luke Bruckelmyer Ek Engineering (360) 687-7668 LukeB@EKEngineering.net	Tiny Home Model E-G Location to be determined in Oregon State For: Wolf Industries

MEMBER REPORT

COLUMNS, 8' COLUMN (WORST CASE)

1 piece(s) 2 x 6 DF No.2

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By:
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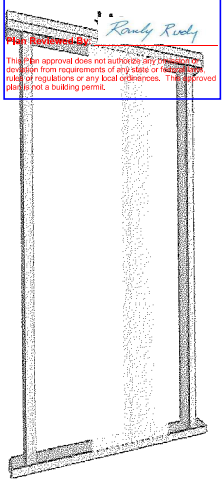

Drawing is Conceptual

Wall Height: 8'

Member Height: 7' 7 1/2"

Tributary Width: 8'

Design Results	Actual	Allowed	Result	LDF	Load: Combination
Slenderness	17	50	Passed (33%)	--	--
Compression (lbs)	3437	9777	Passed (35%)	1.15	1.0 D + 1.0 S
Plate Bearing (lbs)	3437	5156	Passed (67%)	--	1.0 D + 1.0 S
Lateral Reaction (lbs)	534	--	--	1.60	1.0 D + 0.6 W
Lateral Shear (lbs)	470	1584	Passed (30%)	1.60	1.0 D + 0.6 W
Lateral Moment (ft-lbs)	1019 @ mid-span	1169	Passed (87%)	1.60	1.0 D + 0.6 W
Total Deflection (in)	0.22 @ mid-span	0.51	Passed (L/408)	--	1.0 D + 0.6 W
Bending/Compression	0.98	1	Passed (98%)	1.60	1.0 D + 0.6 W

- Lateral deflection criteria: Wind (L/180)
- Input axial load eccentricity for the design is zero
- Applicable calculations are based on NDS.

Supports	Type	Material
Top	Dbl 2X	Douglas Fir-Larch
Base	2X	Douglas Fir-Larch

System : Wall
Member Type : Column
Building Code : IBC 2018
Design Methodology : ASD

Max Unbraced Length	Comments
1'	

Lateral Connections

Supports	Connector	Type/Model	Quantity	Connector Nailing
Top	Nails	16d x 3.5" Box (Toe)	4	N/A
Base	Nails	16d x 3.5" Box (Toe)	4	N/A

- Nailed connection at the top of the member is assumed to be nailed through the bottom 2x plate prior to placement of the top 2x of the double top plate assembly.

Vertical Load	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (PLF)	B' 0.00"	174.0	255.6	Roof

Lateral Load	Location	Tributary Width	Wind (1.60)	Comments
1 - Uniform (PSF)	Full Length	8'	29.2	

- IBC Table 1604.3, footnote f: Deflection checks are performed using 42% of this lateral wind load.

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

FASTENMASTER FRAMEFAST SCREW CALCULATIONS

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rudy
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or local ordinances. Approved plan is not a building permit.

Project: Models C-G, C-S, B-G, B-S, E-G, E-S, F-G, F-S

For: Wolf Industries

Location: State of Oregon

The following calculations are for the 0.188 DIA. X 6" Long Fastenmaster Framefast Screw Connector. Screw capacities are taken from the UES evaluation report No. 719 (valid through 11/30/2022).

Lateral Load/Shear Capacity of Screw Determination

Lateral capacity of screw (UES report table 3) = 185 lb nominal, perpendicular to grain
Z = 185 lb x 1.4 load duration = 259 lb lateral load per screw or 129.5 lb per lineal foot

Lateral load on screw = 862 lb seismic lateral load on wall x 1.4 load duration factor / 30'-4" wall top plate length = 40 lb per lineal foot along wall top plates. This is much less than the 129.5 lb per lineal foot capacity of the screws. Therefore, the screws are adequate.

Note: The screws will be spaced at 24" oc along the top of the wall into the trusses. The load induced on the screw is calculated by dividing the lateral load on the wall by the entire length of the wall (not just the shear walls) for the worst-case, shortest model. Therefore, the screw is adequate for all models.

FASTENMASTER FRAMEFAST SCREW CALCULATIONS (CONTINUED)

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By:
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Projects: Models C-G, C-S, B-G, B-S, E-G, E-S, F-G, F-S

For: Wolf Industries

Location: State of Oregon

Uplift Capacity of Screw Determination

Pull-through capacity of screw (UES report table 4) = 208 lb/in of penetration into the top plates

208 lb x 2 inch min in top plates = 416 lb

416 x 1.4 load duration = 582 lb

Withdrawal capacity of screw (UES report table 4) = 206 lb per inch of penetration into the truss or rafter x 1.5 inches = 309 lb

309 lb x 1.4 load duration = 433 lb

Uplift capacity of screw = 433 lb

Uplift load on screw = 267 lb (see note below)

The screw has sufficient uplift capacity

Note: The uplift loads are taken from the truss engineering by "UFP Industries" dated 7/1/2021 for Models E-G and F-G. These models have the longest span trusses with the highest calculated uplift. By inspection, the shed roof models (constructed with low-pitched rafters) have lower uplift loads then the trussed-roof models. Therefore, the screws are adequate in uplift for all models.

311-24-000255-DWL

RECEIVED
04/17/2024
City of Forest Grove

2941 Boyd Ln

Electrical permit required
though Washington County
503-846-3470

WOLF INDUSTRIES INC
MODEL E
14'x44' FACTORY ASSEMBLED HOME

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
1/18/2022
Plan Reviewed By: Randy Rivoly
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

NOTICE
THESE APPROVED PLANS SHALL BE KEPT ON SUCH BUILDING OR WORK AT ALL TIMES DURING WHICH THE WORK AUTHORIZED THEREBY IS IN PROGRESS UNTIL FINAL INSPECTION

CODE COMPLIANCE
THESE PLANS WERE DESGNED TO
COMPLY WITH THE FOLLOWING CODES
ORSC 2021

Plumbing Code
2021 OPSC Based on the 2021 UPC by IAPMO

DESIGN CRITERIA
-OCC: R-3
-CONST TYPE: VB
-USE: SFR
-SEISMIC DESIGN CATEGORY: D
-SEISMIC SITE CLASS: D
-ROOF LL: 30PSF
-WIND LOAD/EXP: 145/B
-FLOOR LL: 40PSF
-DISTANCE TO NEAREST BLDG/PROPERTY LINE:>= 5'
(ALL SIDES)

TABLE N1101.1(2) ADDITIONAL MEASURE
OPTION 1 - HIGH EFFICIENCY HVAC SYSTEM

INDEX OF PLAN SHEETS

Forest Grove Building Division
APPROVED
These plans approved for construction with corrections made in red ink and/or comments on Plan Review correction letter
Reviewer YVETTE HAMILTON
Date 04/18/2024
Errors and omissions by the reviewer or inspector do not relieve the applicant from compliance with the Codes

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----
Date
Scale N.A.
Sheet 0

Model E
12/17/2021
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Reedy
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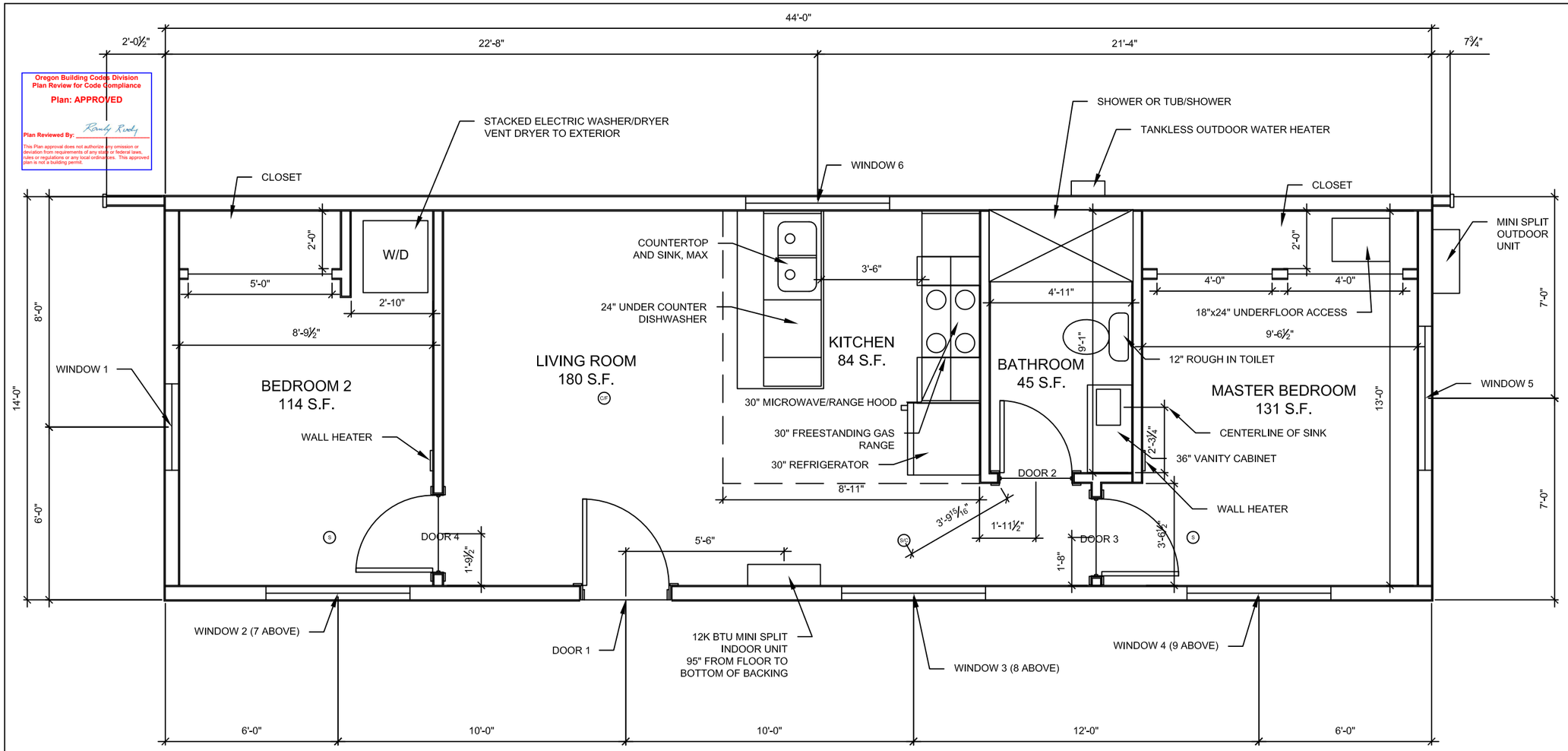

DOOR SCHEDULE

LABEL	WIDTH	HEIGHT	HARDWARE	DOOR TYPE	NOTES	ROUGH OPENING
1	3'-0"	6'-8"	ENTRY W/ DEADBOLT	EXTERIOR PREHUNG	U 0.20	38.5"X82.5"
2	2'-6"	6'-8"	PRIVACY	INTERIOR PREHUNG		32"X82"
3	2'-8"	6'-8"	PRIVACY	INTERIOR PREHUNG		34"X82"
4	2'-8"	6'-8"	PRIVACY	INTERIOR PREHUNG		34"X82"

NOTE
-AIR INFILTRATION RATES FOR EXTERIOR WINDOWS, SWINGING DOORS, AND SLIDING DOORS SHALL BE IN ACCORDANCE WITH ASTM E283

WINDOW SCHEDULE

LABEL	WIDTH	HEIGHT	OPERATION	FRAME	GLASS	NOTES	HEIGHT TO TOP
1	3'-0"	3'-0"	SLIDER	VINYL	U 0.27		6'-8"
2	5'-0"	4'-0"	SLIDER	VINYL	U 0.27 TEMPERED	EGRESS	6'-8"
3	5'-0"	4'-0"	SLIDER	VINYL	U 0.27		6'-8"
4	5'-0"	4'-0"	SLIDER	VINYL	U 0.27 TEMPERED	EGRESS	6'-8"
5	5'-0"	1'-6"	PICTURE	VINYL	U 0.27		6'-8"
6	5'-0"	3'-0"	SLIDER	VINYL	U 0.27		6'-8"
7	5'-0"	1'-6"	PICTURE	VINYL	U 0.27		9'-4"
8	5'-0"	1'-6"	PICTURE	VINYL	U 0.27		9'-4"
9	5'-0"	1'-6"	PICTURE	VINYL	U 0.27		9'-4"

MODEL E1-S FLOOR PLAN
Scale: 1/4" = 1'-0"

General Notes

ALL PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL HAVE HIGH EFFICACY LAMPS

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----
Date
Scale N.A.
Sheet A1

Model E-S
1/13/2022
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Reedy
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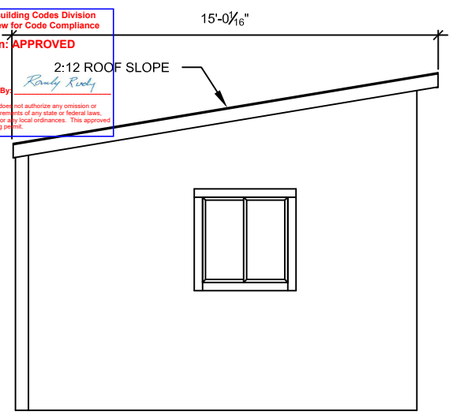
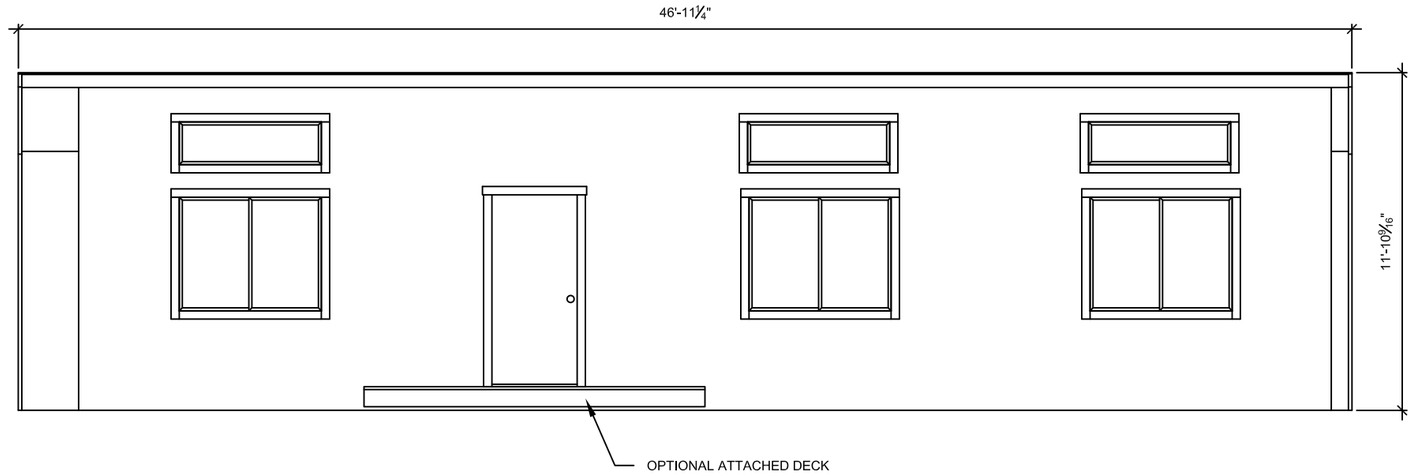
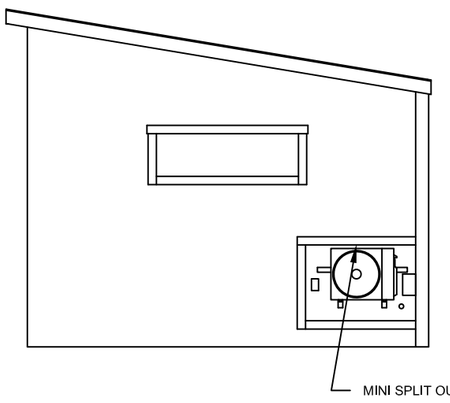


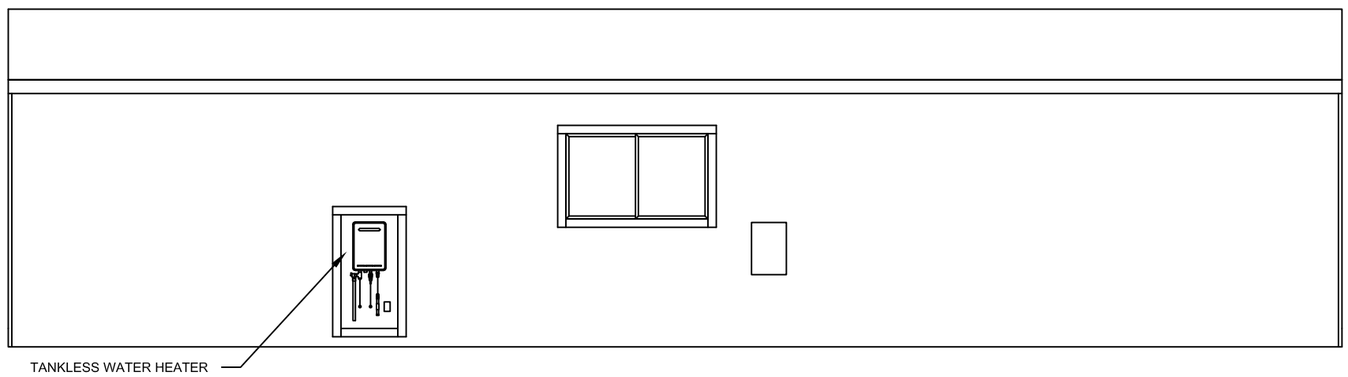
LEFT ELEVATION
Scale: 3/16" = 1'-0"



FRONT ELEVATION
Scale: 3/16" = 1'-0"



RIGHT ELEVATION
Scale: 3/16" = 1'-0"



BACK ELEVATION
Scale: 3/16" = 1'-0"

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project	Sheet
----	A2
Date	
Scale N.A.	

Model E-S
12/17/2021
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
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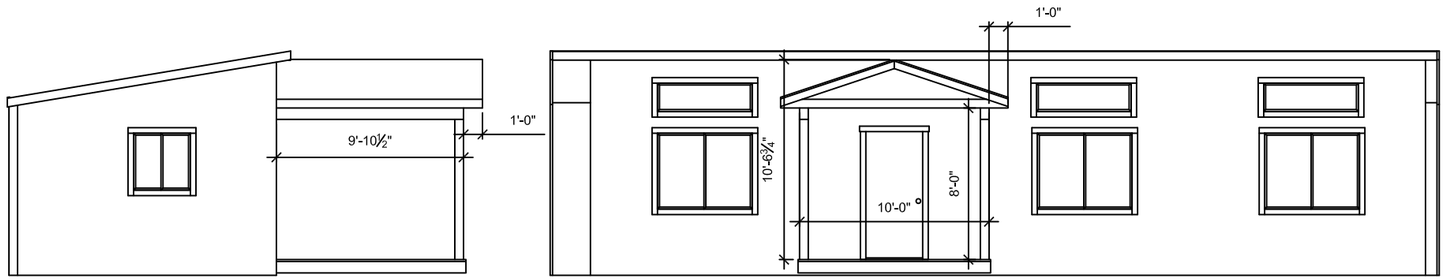
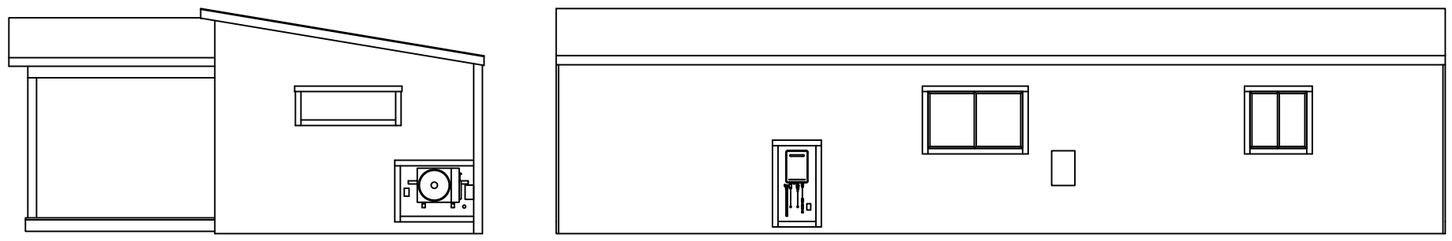


LEFT ELEVATION WITH OPTIONAL COVERED DECK
Scale: 1/8" = 1'-0"

FRONT ELEVATION WITH OPTIONAL COVERED DECK
Scale: 1/8" = 1'-0"



RIGHT ELEVATION WITH OPTIONAL COVERED DECK
Scale: 1/8" = 1'-0"

BACK ELEVATION WITH OPTIONAL COVERED DECK
Scale: 1/8" = 1'-0"

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----
Date
Scale N.A.
Sheet A2.1

Model E–S
12/17/2021
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Reedy
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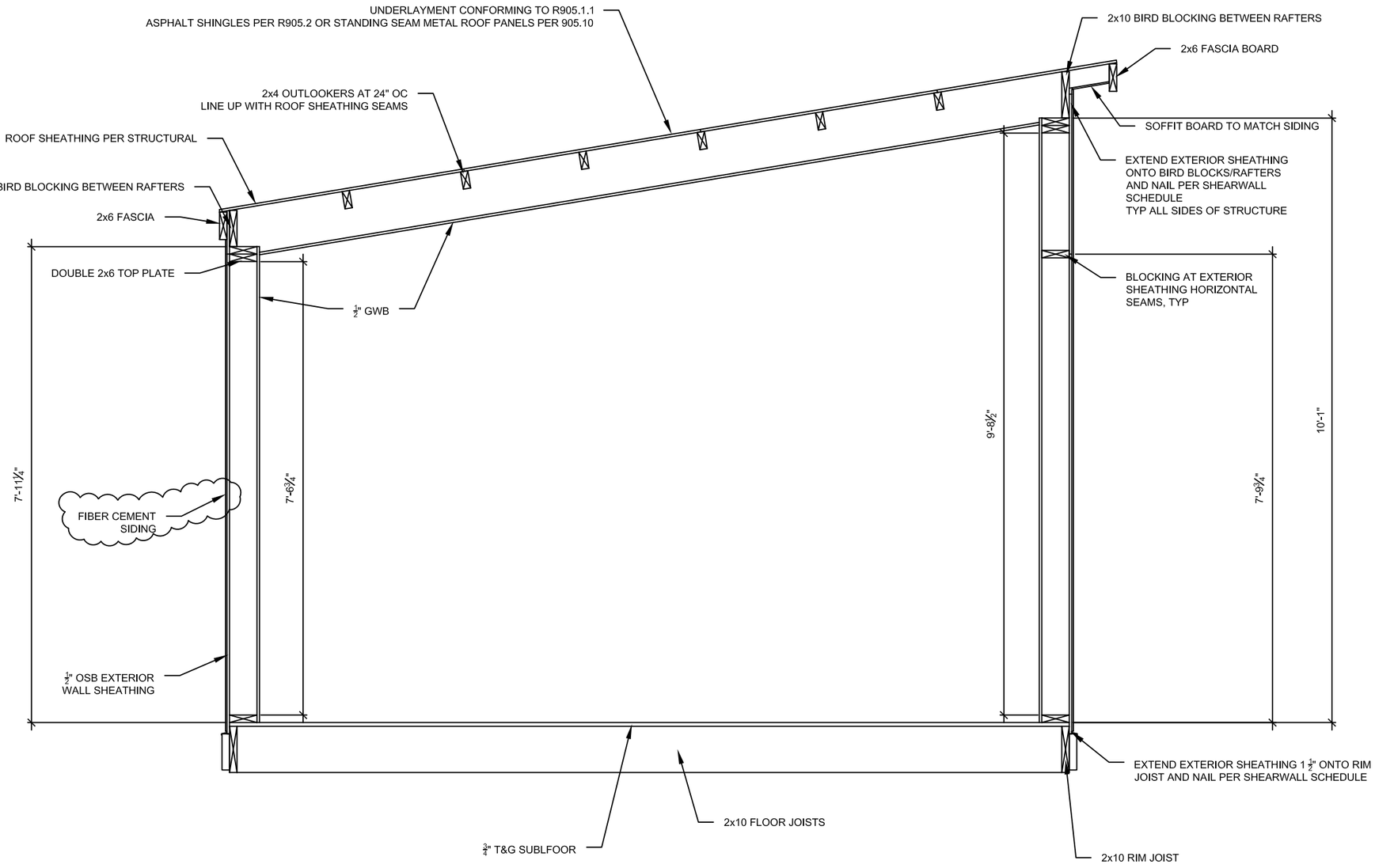

SECTION
Scale: 1/2" = 1'-0"

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----	Sheet A3
Date	
Scale N.A.	

Model E–S
1/13/2022
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
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Plan Reviewed By: Randy Reedy
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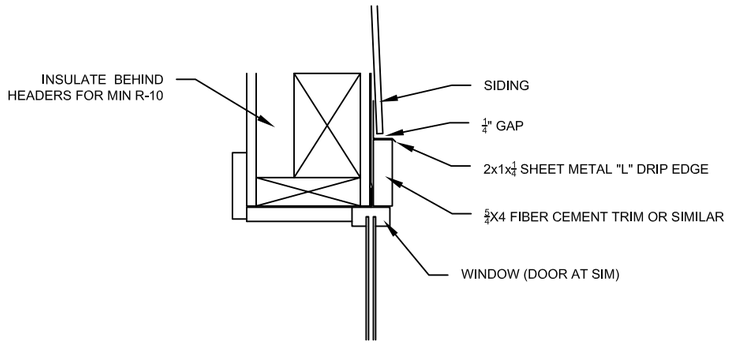
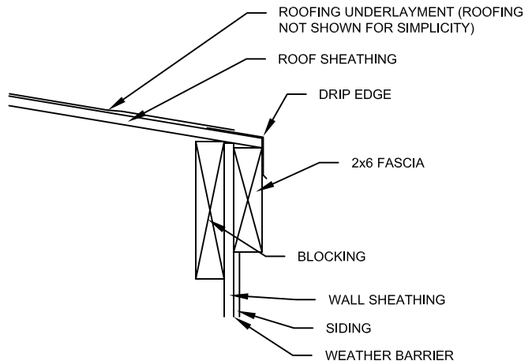
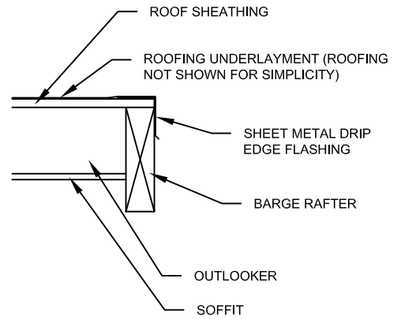


WINDOW HEAD DETAIL (DOOR HEAD SIM)
Scale: 1-1/2" = 1'-0"



EAVE DETAIL
Scale: 1-1/2" = 1'-0"



GABLE DETAIL
Scale: 1-1/2" = 1'-0"

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project	Sheet
----	A4
Date	
Scale: N.A.	

Model E-S
12/17/2021
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
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Plan Reviewed By: Randy Rieck
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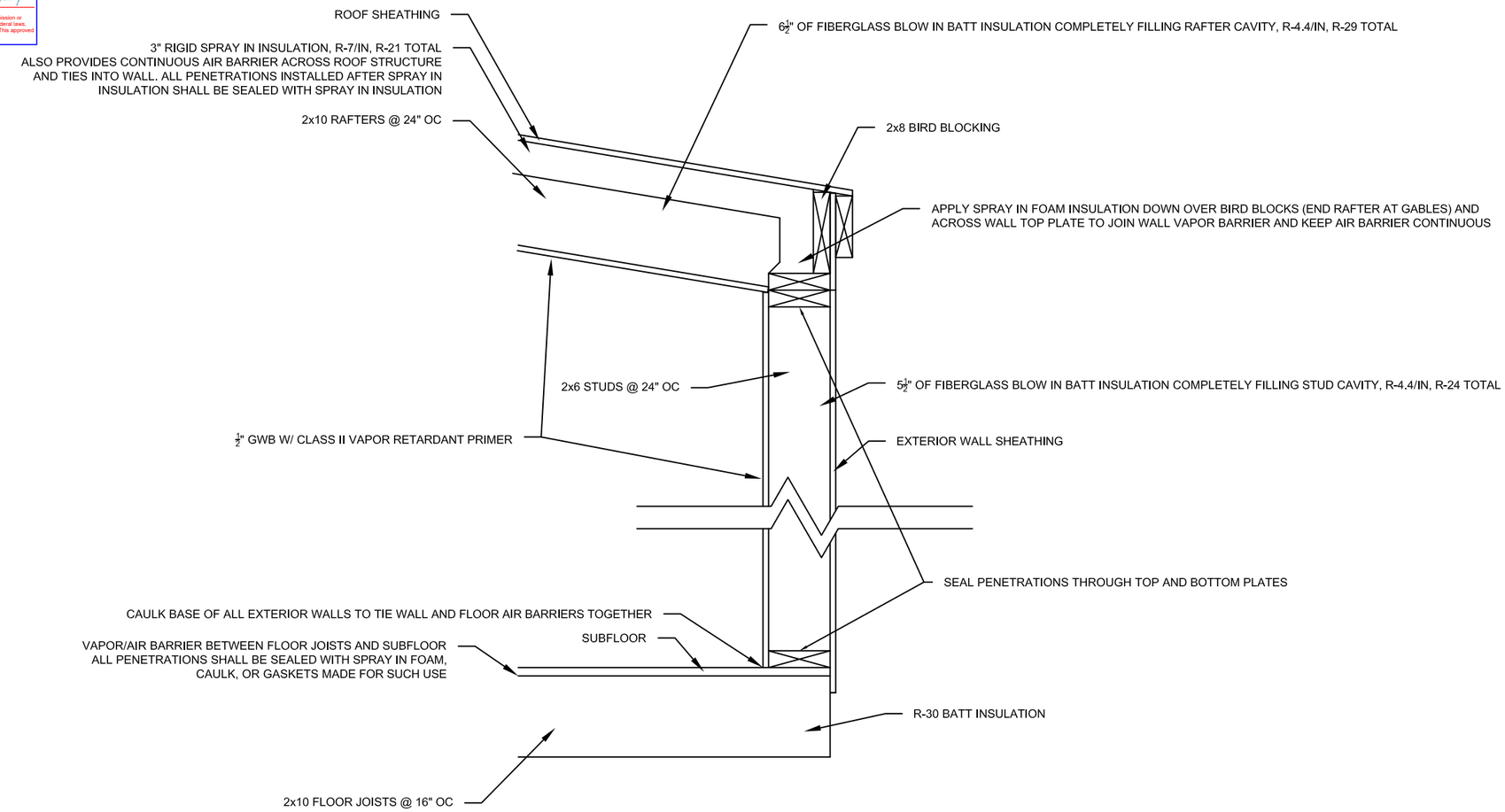

INSULATION NOTES:
-TOTAL ROOF INSULATION = R-50
-CLOSED CELL SPRAY FOAM FOR R-21
-BLOWN IN BATT IN REMAINDER OF CAVITY FOR AN ADDITIONAL R-29

TYPICAL AIR BARRIER AND THERMAL ENVELOPE DETAIL
Scale: 1" = 1'-0"

GENERAL AIR SEALING NOTE:
-ALL EXTERIOR JOINTS AROUND WINDOWS, DOOR FRAMES, BETWEEN WALLS AND FOUNDATION, WALLS AND ROOF, BETWEEN WALL PANELS, AT PENETRATIONS OR UTILITY SERVICES THROUGH WALLS, FLOORS, ROOFS, TOP PLATES, AND ALL OTHER OPENINGS IN THE EXTERIOR ENVELOPE SHALL BE PROPERLY AIR SEALED USING SPRAY FOAM, CAULK, OR OTHER ACCEPTABLE MEANS FOR THE PURPOSE

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----	Sheet A5
Date	
Scale N.A.	

Model E-S
1/13/2022
Daniel

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Plan Reviewed By: Randy Roedy
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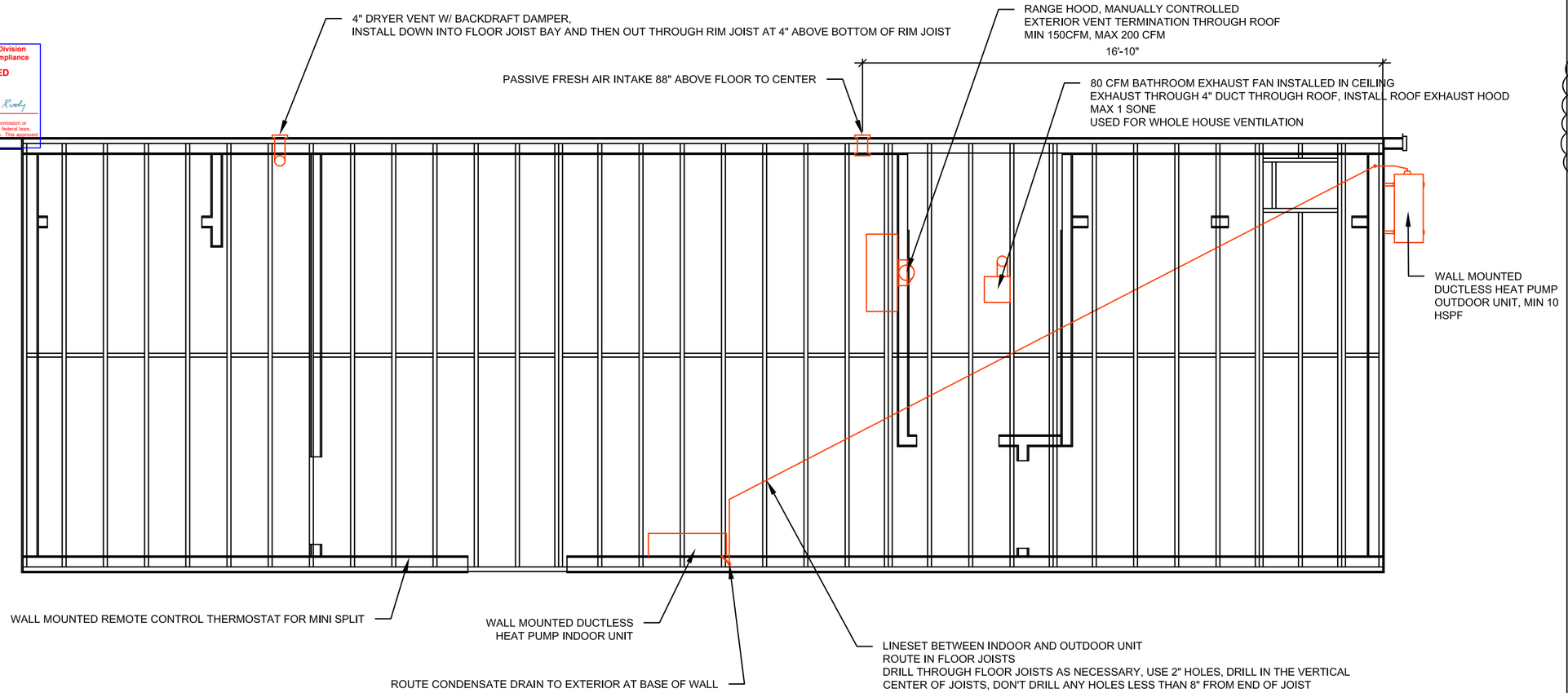


WHOLE HOUSE VENTILATION CALCULATION PER M1505.4.3
Continuous ventilation rate = 0.01x616+(7.5x(2+1))=~29cfm per equation 15-1
Fan cfm rating = 80cfm
Intermittent run time = $\frac{29}{80}$ = 36.25%
Fan switch (Honeywell HVC0001 or similar ASHRAE 62.2 compliant controller) will be programmed to run for minimum 25 minutes per hour.
Makeup air will be provided by a Panasonic FV-GKF32S1 passive inlet vent.

HVAC PLAN
Scale: 1/4" = 1'-0"

General Notes

-MIN 16GA NAIL SHIELDS SHALL BE USED IN CEILINGS, WALLS, TOP & BOTTOM PLATES WHERE PIPE IS LESS THAN 1-1/2" FROM FACE OF FRAMING MEMBER

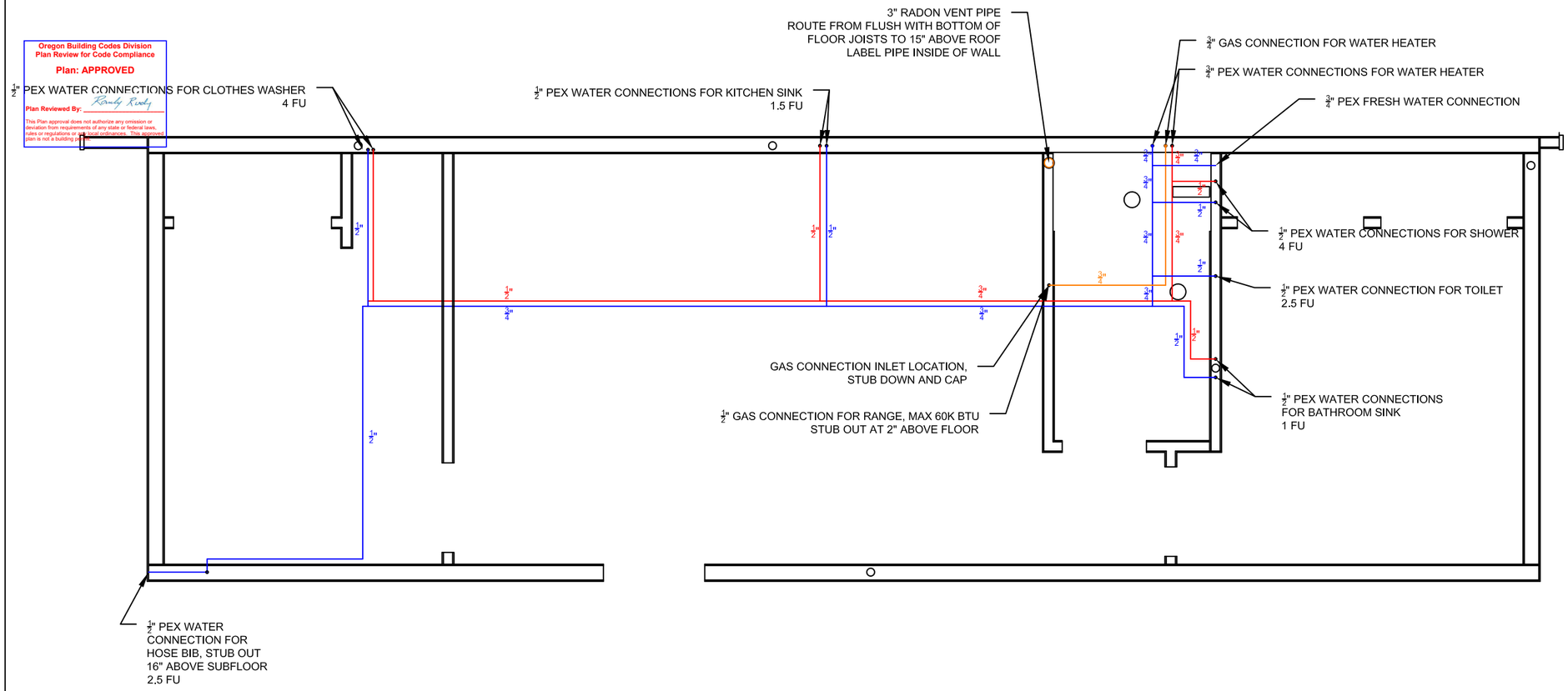
Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----
Date
Scale N.A.
Sheet M1

Model E-S
1/13/2022
Daniel

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Reedy
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.



WATER SUPPLY PIPING
TYPE: PEX
DESIGN PRESSURE - 30-80 PSI
TOTAL FIXTURE UNITS - 15.5
SERVICE SIZE PER TABLE 610.4 - ¾"
MAIN SUPPLY LINE SIZE PER TABLE 610.4 - ¾"
BRANCH SUPPLY LINE SIZE PER TABLE 610.4 - ½" (RATED UP TO 6 FU AT 40')

PLUMBING PLAN
Scale: 1/4" = 1'-0"

General Notes

ALL TOILETS SHALL BE WATERSENSE LABELED W/ MAX 1.28 GAL/FLUSH

ALL SHOWER HEADS AND KITCHEN FAUCETS SHALL BE WATERSENSE LABELED W/ MAX 1.75 GAL/MIN

ALL LAVATORY FAUCETS SHALL BE MAX 1GAL/MIN

FIELD EXTEND TPR VALVE TO BETWEEN 6" AND 24" ABOVE GRADE

INSULATE HOT WATER LINES TO R3

PROVIDE LISTED AIR GAP AT DISHWASHER

PROVIDE TEE ON COLD WATER LINE NEAR WATER HEATER FOR FUTURE INSTALLATION OF EXPANSION TANK

Oregon Building Codes Division
PLUMBING
Plan Review for Code Compliance
Plan: APPROVED
12/27/2021
Plan Reviewed By:
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Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project	Sheet
----	P1
Date	
Scale N.A.	

Model E-S
12/17/2021
Daniel

Oregon Building Codes Division
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Plan: APPROVED
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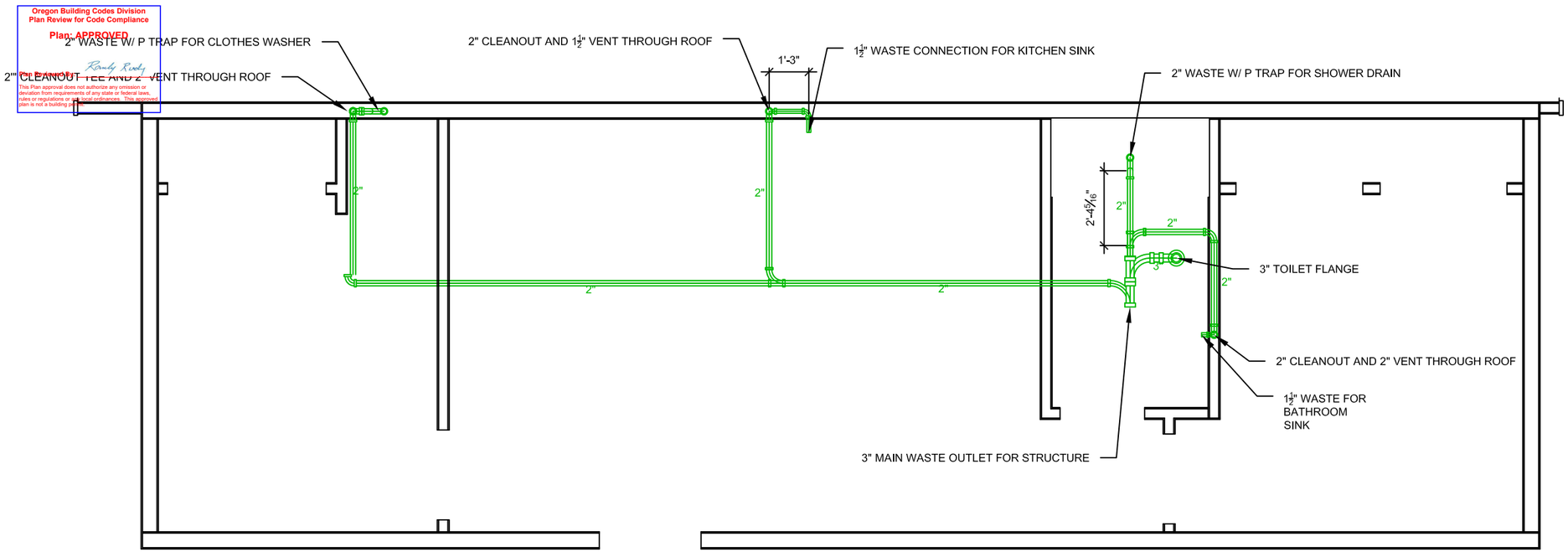

DWV PIPING
TYPE: ABS

DWV PLAN
Scale: 1/4" = 1'-0"

Oregon Building Codes Division
PLUMBING
Plan Review for Code Compliance
Plan: APPROVED
12/27/2021
Plan Reviewed By:
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General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

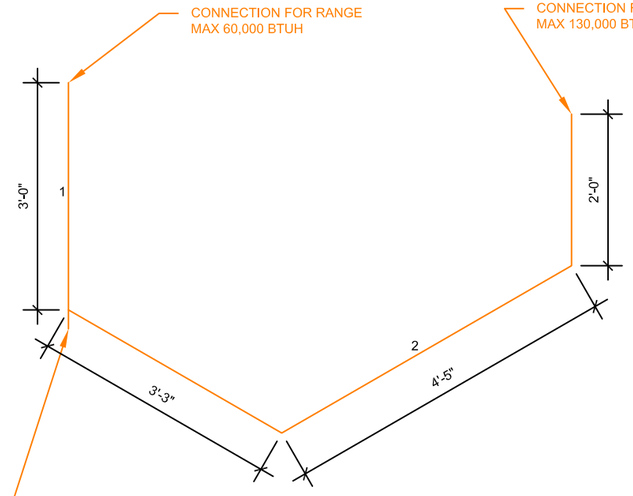
Project Name and Address

Project	Sheet
----	P2
Date	
Scale N.A.	

Model E-S
12/17/2021
Daniel

VOID

See Revised Sheet
Gas Only



GAS LINE SIZING (NG <2 PSI)			
SECTION	LENGTH (ROUNDED UP TO NEAREST FOOT)	BTUH	MIN SIZE
1	3'-0"	60,000	½"
2	10'-0"	130,000	¾"

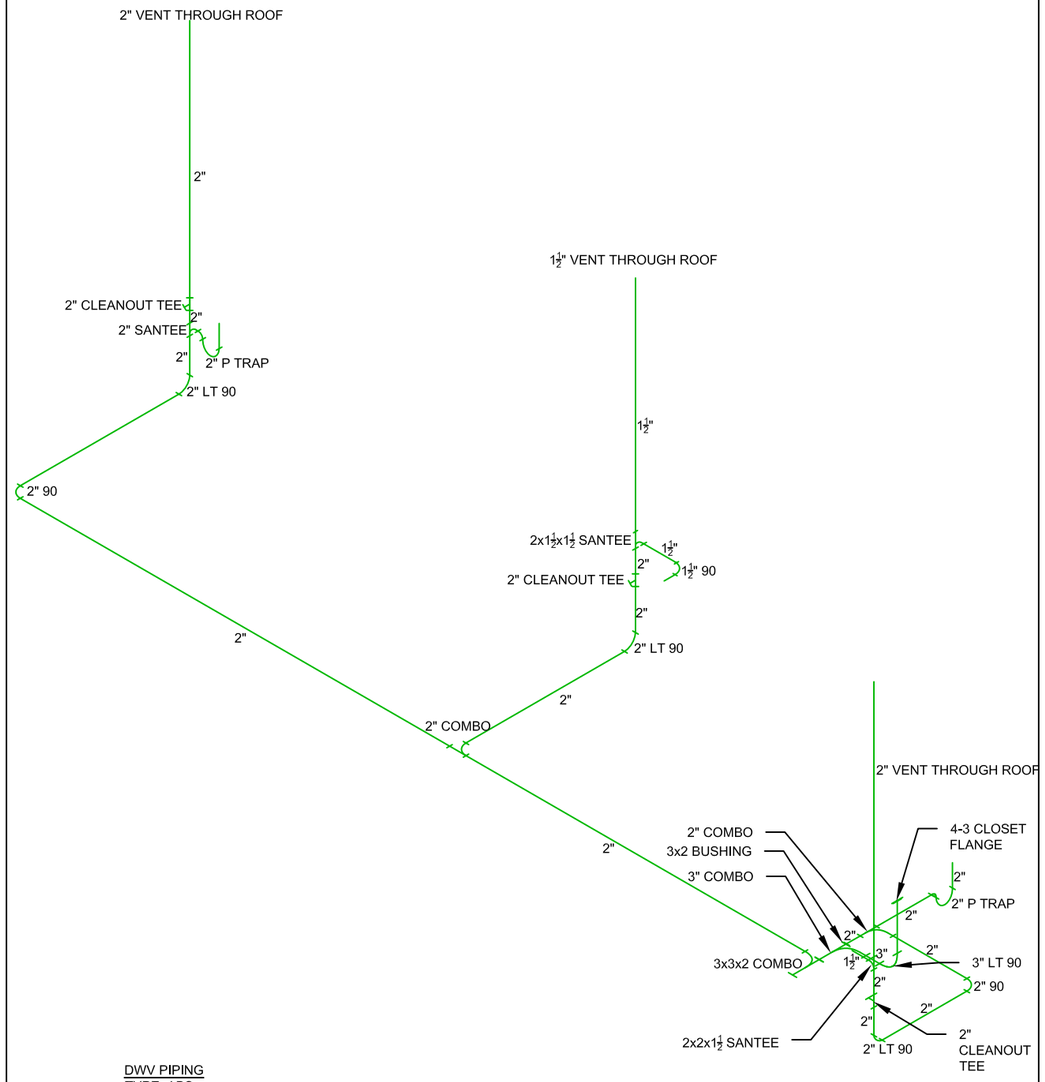
NATURAL GAS NOTES
-TABLE ABOVE ASSUMES TYPICAL IN-HOME PRESSURE REGULATED TO 0.25PSI
-TABLE ABOVE ASSUMES 1000 BTUH/CF HEAT CAPACITY OF NATURAL GAS BASED ON TYPICAL VALUES FOR LOCAL AREA
-SIZES ARE DETERMINED FROM TABLE G2414.4(1)
-TABLE ABOVE DETERMINES MINIMUM PIPE SIZE. ACTUAL PIPE SIZE TO BE PER SHEET P1

GAS LINE SIZING (LP 11 in W.C.)			
SECTION	LENGTH (ROUNDED UP TO NEAREST FOOT)	BTUH	MIN SIZE
1	3'-0"	60,000	½"
2	10'-0"	130,000	¾"

LP GAS NOTES
-TABLE ABOVE ASSUMES TYPICAL IN-HOME PRESSURE REGULATED TO 11 in W.C.
-SIZES ARE DETERMINED FROM TABLE G2414.4(12)
-TABLE ABOVE DETERMINES MINIMUM PIPE SIZE. ACTUAL PIPE SIZE TO BE PER SHEET P1

GAS PIPING
TYPE: BLACK IRON

GAS PLUMBING ISOMETRIC
Scale: 1/2" = 1'-0"



DWV PIPING
TYPE: ABS

Plumbing approval does not include Gas Piping.

Oregon Building Codes Division
PLUMBING
Plan Review for Code Compliance
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12/27/2021
Plan Reviewed By:
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DWV ISOMETRIC
Scale: 1/4" = 1'-0"

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project	Sheet
----	P3
Date	
Scale N.A.	

Model E-S
12/17/2021
Daniel

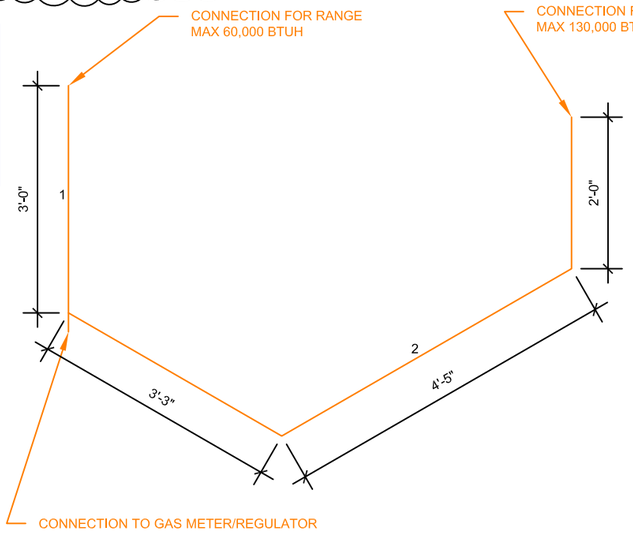
Model E-S

1/13/2022

Daniel

NOTE
-PROVIDE SHUTOFF VALVE FOR EACH APPLIANCE LOCATED IN THE SAME ROOM AS AND WITHIN 6' OF THE APPLIANCE
-PROVIDE SEDIMENT TRAP DOWNSTREAM OF APPLIANCE SHUTOFF VALVE AS CLOSE TO INLET OF APPLIANCE AS PRACTICAL (NOT REQUIRED FOR RANGE UNLESS SPECIFICALLY REQUIRED BY RANGE MANUFACTURER)
-SHUTOFF VALVES SHALL COMPLY WITH STANDARDS SHOWN IN TABLE G2420.1.1
-PROVIDE LINE PRESSURE REGULATOR AT CONNECTION TO HOUSE PIPING IF SUPPLY PRESSURE EXCEEDS RATING OF APPLIANCE REGULATORS

Oregon Building Codes Division
MECHANICAL
Plan Review for Code Compliance
Plan: APPROVED
1/18/2022
Plan Reviewed By: Randy Rooby
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.



GAS LINE SIZING (NG <2 PSI)			
SECTION	LENGTH (ROUNDED UP TO NEAREST FOOT)	BTUH	MIN SIZE
1	3'-0"	60,000	½"
2	10'-0"	130,000	¾"

NATURAL GAS NOTES
-TABLE ABOVE ASSUMES TYPICAL IN-HOME PRESSURE REGULATED TO 0.25PSI
-TABLE ABOVE ASSUMES 1000 BTUH/CF HEAT CAPACITY OF NATURAL GAS BASED ON TYPICAL VALUES FOR LOCAL AREA
-SIZES ARE DETERMINED FROM TABLE G2413.4(1)
-TABLE ABOVE DETERMINES MINIMUM PIPE SIZE. ACTUAL PIPE SIZE TO BE PER SHEET P1

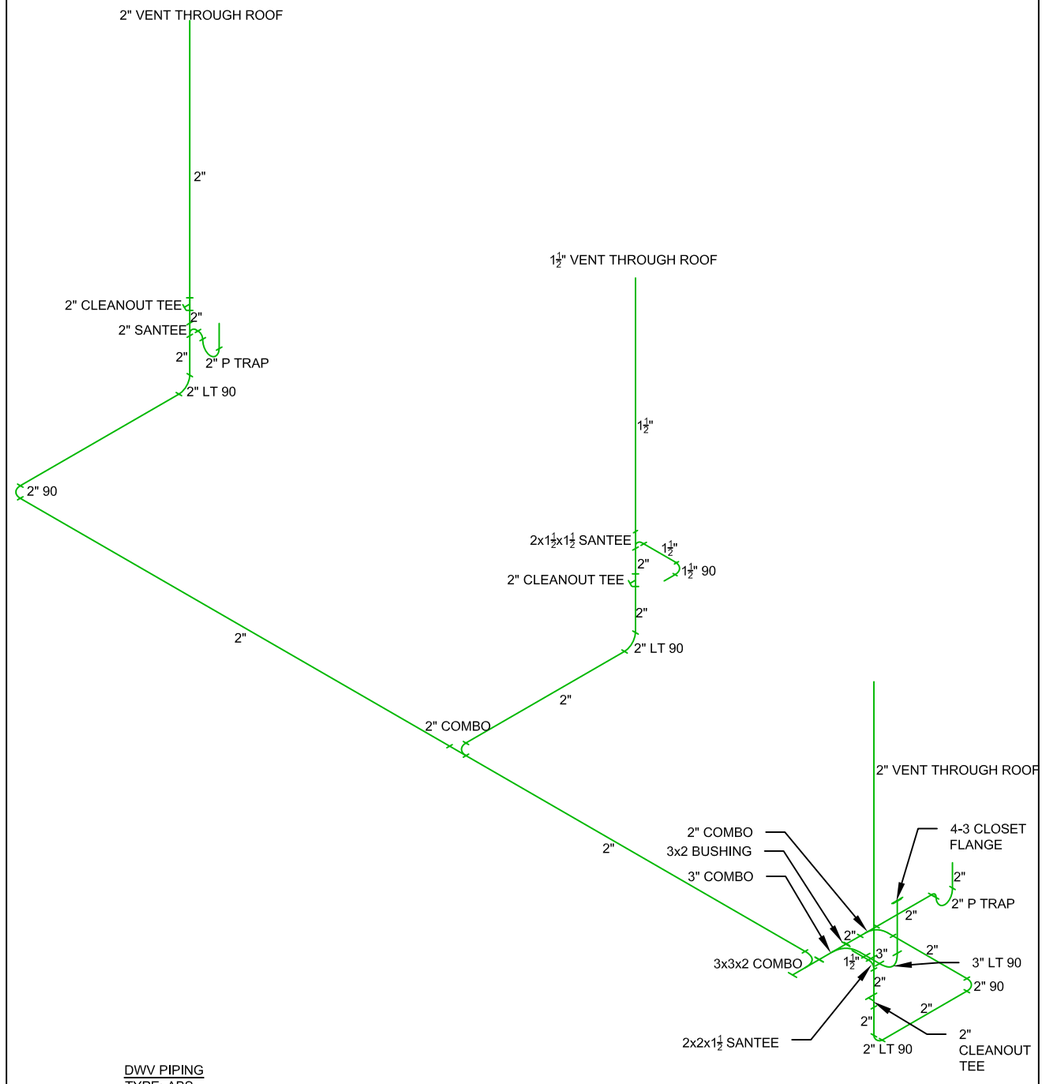
GAS LINE SIZING (LP 11 in W.C.)			
SECTION	LENGTH (ROUNDED UP TO NEAREST FOOT)	BTUH	MIN SIZE
1	3'-0"	60,000	½"
2	10'-0"	130,000	¾"

LP GAS NOTES
-TABLE ABOVE ASSUMES TYPICAL IN-HOME PRESSURE REGULATED TO 11 in W.C.
-SIZES ARE DETERMINED FROM TABLE G2413.4(12)
-TABLE ABOVE DETERMINES MINIMUM PIPE SIZE. ACTUAL PIPE SIZE TO BE PER SHEET P1

Revised
01/18/2022 8:13:41 AM

GAS PIPING
TYPE: BLACK IRON

GAS PLUMBING ISOMETRIC
Scale: 1/2" = 1'-0"



DWV PIPING
TYPE: ABS

DWV ISOMETRIC
Scale: 1/4" = 1'-0"

General Notes

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project	Sheet
----	P3
Date	
Scale N.A.	

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Reedy
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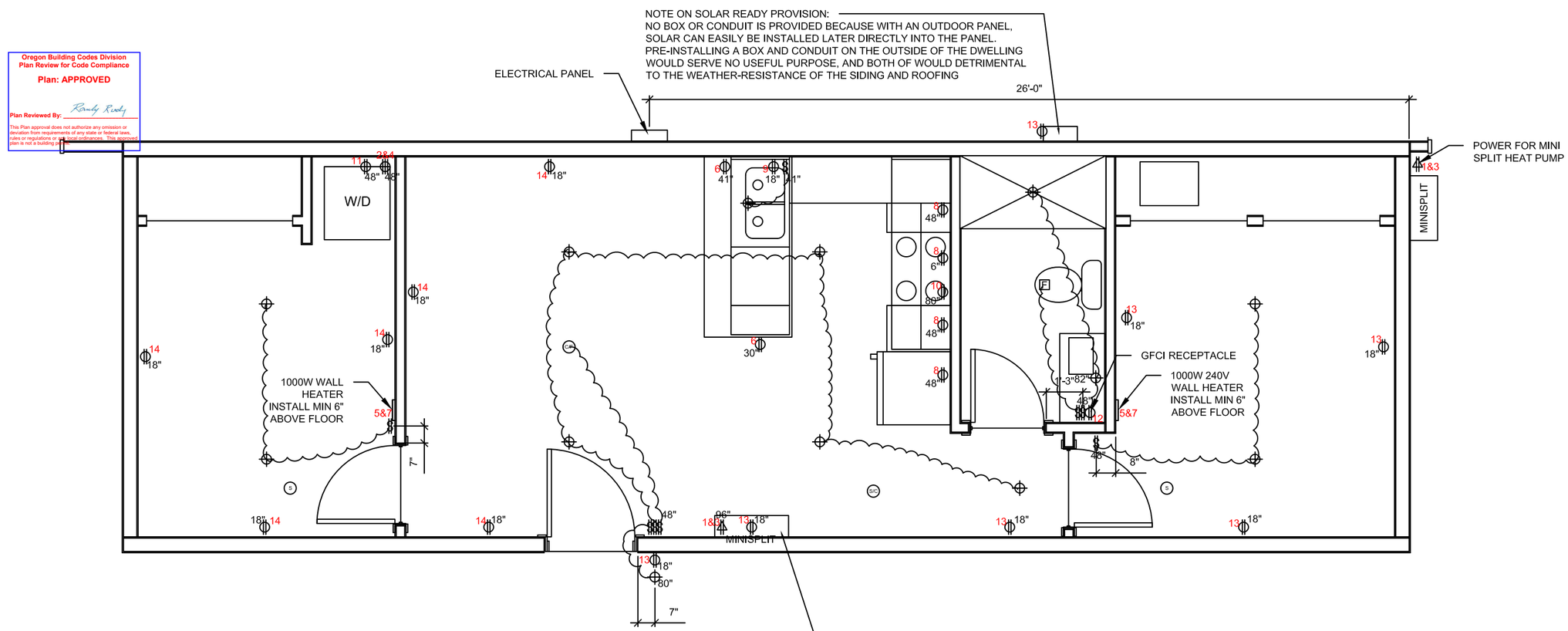

ELECTRICAL PLAN

Scale: 1/4" = 1'-0"

General Notes

-ALL PERMANENTLY INSTALLED LIGHT FIXTURES SHALL HAVE HIGH EFFICACY BULBS

-EXTERIOR RECEPTACLES SHALL BE LISTED AS WEATHER-RESISTANT TYPE

-ALL OUTDOOR RECEPTACLES SHALL BE PROVIDED WITH EXTRA-DUTY WHILE-IN-USE COVERS

-ALL CEILING LIGHT OUTLETS SHALL BE RATED FOR 50LBS OR MORE

27425

Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project	Sheet
----	E1
Date	
Scale N.A.	

Oregon Building Codes Division
ELECTRICAL
Plan Review for Code Compliance
Plan: APPROVED
12/28/2021
Plan Reviewed By: Daren Jensen
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

Model E-S
12/17/2021
Daniel

SPACE #	SERVES	BREAKER SIZE	BREAKER TYPE
--	UFER GROUND #4 COPPER	--	--
1	H/P	15A/240V	GFI
2	DRYER	30A/240V	GFI
3	SEE 1		
4	SEE 2		
5	WALL HEATERS	15A/240V	GFI
6	KITCHEN	20A/120V	GFI/AFI
7	SEE 5		
8	KITCHEN	20A/120V	GFI/AFI
9	DISHWASHER	20A/120V	GFI/AFI
10	MICROHOOD	20A/120V	GFI/AFI
11	LAUNDRY	20A/120V	GFI/AFI
12	BATHROOM	20A/120V	STANDARD*
13	PLUGS/SMOKES	15A/120V	GFI/AFI
14	PLUGS/SMOKES	15A/120V	GFI/AFI
15	LIGHTING	15A/120V	GFI/AFI
16	SURGE PROTECTIVE DEVICE	15A/120V	50 KA SPD
17	SPARE		50 KA SPD
18	SEE 16		
19	SPARE		
20	SPARE		

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rudy
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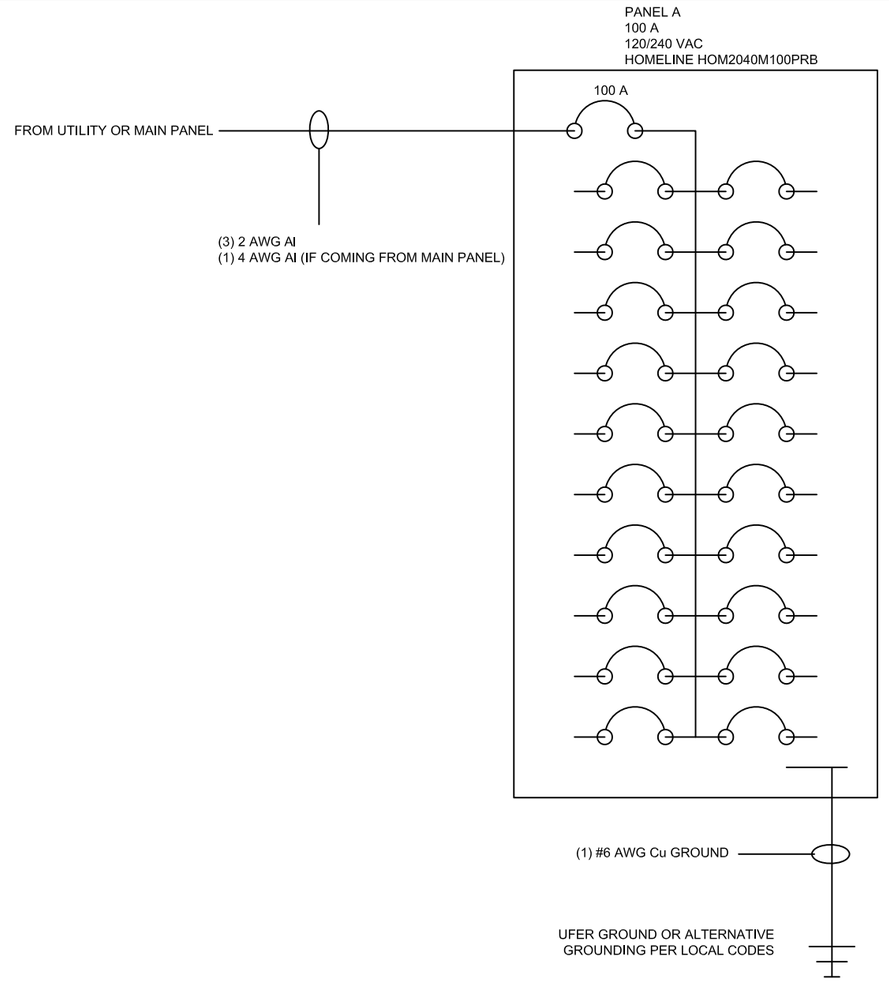
PANEL A
BRAND: SQUARE D
MODEL: HOM2040M100PRB
RATING: 100A
SPACES: 20
MAX CIRCUITS: 40

SURGE PROTECTIVE DEVICE (TYPE 2):
SQUARE D HOM250PSPD

ELECTRICAL PANEL SCHEDULE
Scale: N/A

* bathroom will be GFI protected at receptacle



ELECTRICAL ONE LINE DIAGRAM
Scale: N/A

Optional Electrical Load Calculation for Dwelling, from NEC 220 Part IV. Optional Feeder and Service Load Calculations

NEC 220.82 Subpart	Load Type	Value	Unit	Multiplier	Load Value (VA)	Multiplier/Demand	Total VA
(B)1	General lighting	616	sf	@3VA/sf	1848	First 10000VA @ 100%,	12729.6
(B)2	Small appliance branch circuits	2	circuits	@1500VA/circuit	3000	remainder @ 40%	
(B)2	Laundry circuit	1	circuits	@1500VA/circuit	1500		
(B)3	Water heater (gas)	0	VA	N/A	0		
(B)3	Refrigerator/freezer	720	VA	N/A	720		
(B)3	Disposal	756	VA	N/A	756		
(B)3	Microwave hood	1000	VA	N/A	1000		
(B)3	Dryer	6000	VA	N/A	6000		
(B)3	Wall heaters	2000	VA	N/A	2000		
(B)3	Range (gas)	0	VA	N/A	0		
(C)1	Mini split heat pump	1955	VA	N/A	1955	100%	1955

TOTAL SERVICE DEMAND 14684.6 VA

Total amperage	61.19 A
Service size (per NEC 230.79(C))	100 A
Feeder size	2 AWG Al

General Notes

Oregon Building Codes Division
ELECTRICAL
Plan Review for Code Compliance
Plan: APPROVED
12/28/2021
Plan Reviewed By: Darren Jensen
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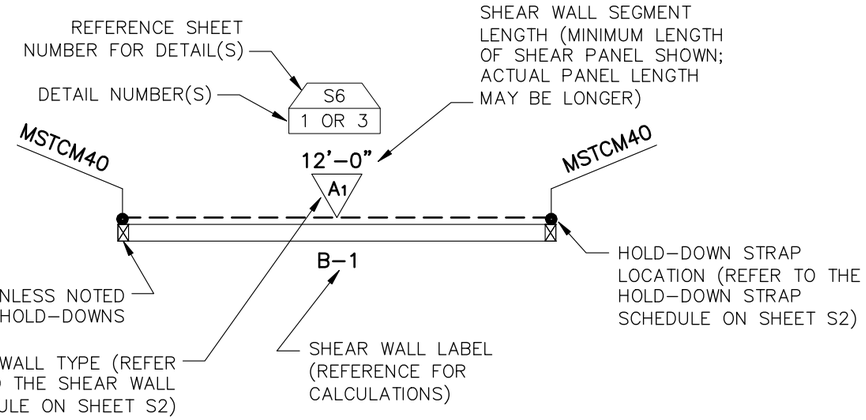
Firm Name and Address
Wolf Industries
607 SE Eaton Blvd
Battle Ground, WA 98604

Project Name and Address

Project ----	Sheet E2
Date	
Scale N.A.	

SHEAR WALL LEGEND

FOR COMPLETE DETAILS ON SHEAR WALLS, REFER TO THE TYPICAL SHEAR WALL ELEVATION DETAIL 1/S5.



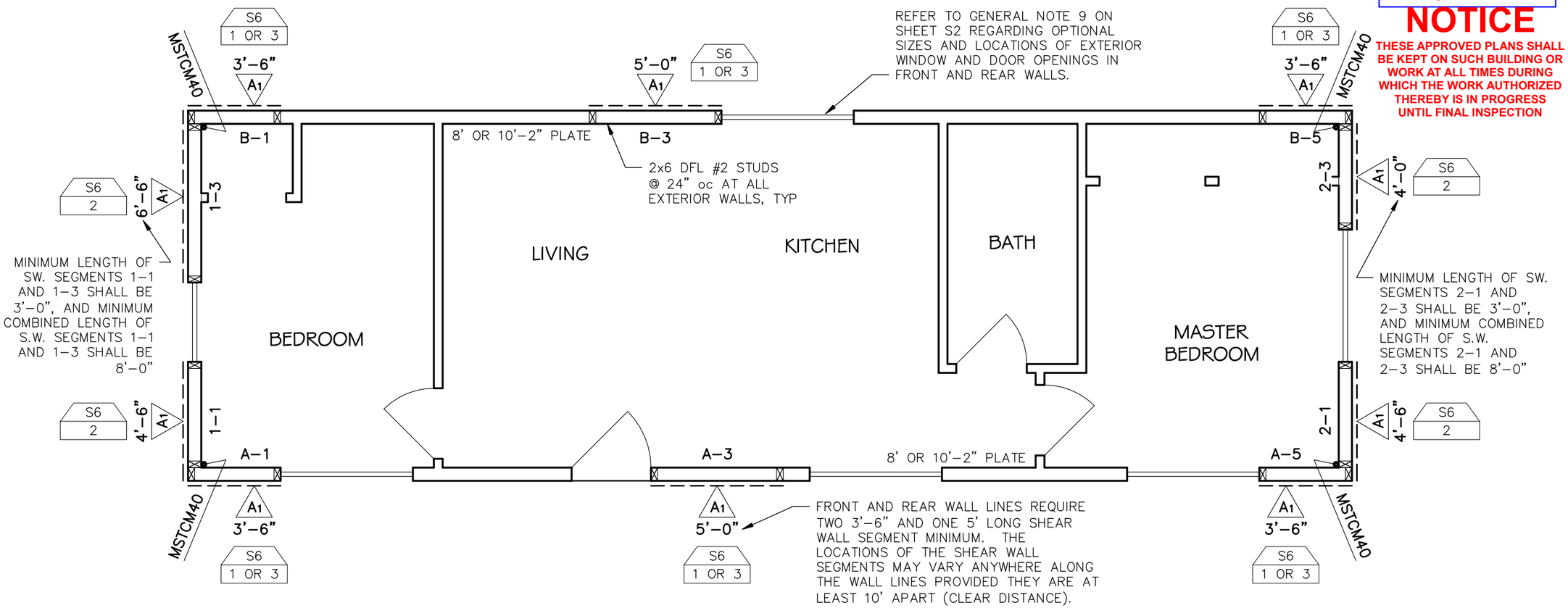
REGISTERED PROFESSIONAL ENGINEER 84259PE OREGON MAY 11, 2010 DAVID R. NYLUND

EXPIRES: 12/31/2022

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
1/18/2022
Plan Reviewed By: Randy Rudy
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

NOTICE

THESE APPROVED PLANS SHALL BE KEPT ON SUCH BUILDING OR WORK AT ALL TIMES DURING WHICH THE WORK AUTHORIZED THEREBY IS IN PROGRESS UNTIL FINAL INSPECTION



REFER TO THE GENERAL NOTES ON SHEET S2

STRUCTURAL LAYOUT

1/4"=1'-0"

MAIN FLOOR

SHEET S1
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E-S FOR WOLF INDUSTRIES

EK ENGINEERING, INC.
P.O. BOX 3097
BATTLE GROUND, WA 98604
PHONE: (360) 687-7668
FAX: (360) 687-7669

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rusty
This Plan approval does not authorize any violation or deviation from requirements of any state statutes, rules or regulations or any local ordinance. This plan is not a building permit.

GENERAL NOTES (TYPICAL UNLESS NOTED OTHERWISE)

1. REFER TO FLOOR PLAN DRAWINGS BY WOLF INDUSTRIES FOR DIMENSIONS AND OTHER DETAILS.
2. ROOF SHEATHING IS TO BE RATED FOR 24" SPAN AND SNOW LOADS PER DESIGN CRITERIA BELOW, AND IS TO BE FASTENED WITH 8d NAILS AT 6" EDGE, 12" FIELD SPACING OR 1-1/2" LONG, 16 GA. STAPLES (MIN. 7/16" CROWN) AT 3" EDGE, 6" FIELD SPACING UNLESS SPECIFICALLY NOTED OTHERWISE. WALL SHEATHING IS TO BE 7/16" MIN. OSB OR PLYWOOD WITH 8d NAILS AT 6" EDGE, 12" FIELD SPACING OR 1-1/2" LONG, 16 GA. STAPLES AT 3" EDGE, 6" FIELD SPACING UNLESS SPECIFICALLY NOTED OTHERWISE. FLOOR SHEATHING SHALL BE 19/32" MIN PLYWOOD OR OSB WITH A SPAN RATING MATCHING THE JOIST SPACING (SEE FLOOR JOIST SUPPLIER OR FRAMING PLAN BY OTHERS) AND RATED FOR 40 psf LIVE LOAD AND IS TO BE FASTENED WITH 8d NAILS AT 6" EDGE, 12" FIELD SPACING. WHERE ROOF OR FLOOR SHEATHING THICKNESS EXCEEDS 1/2", USE 10d NAILS IN PLACE OF 8d.
3. ALL EXTERIOR WINDOW AND DOOR HEADERS AND INTERIOR BEARING WALL HEADERS ARE TO BE 4x6 DFL #2 MINIMUM. ALSO, THE SPECIES AND GRADE OF ALL STRUCTURAL LUMBER SHALL BE DFL #2 (NON PRESERVATIVE-TREATED) OR HF #2 (PRESERVATIVE TREATED). FASTENERS DRIVEN INTO PT LUMBER SHALL BE HOT-DIPPED GALVANIZED OR EQUIVALENTLY PROTECTED.
4. ALL WEATHERPROOFING MEASURES ARE THE RESPONSIBILITY OF THE OWNER OR CONTRACTOR.
5. STITCH NAILING FOR BUILT UP STUD COLUMNS SHALL BE AS FOLLOWS: 16d NAILS @ 12" oc IN TWO STAGGERED ROWS FOR DOUBLE STUDS, AND 16d NAILS @ 12" oc IN TWO STAGGERED ROWS INTO EACH SUCCESSIVE FACE OF BUILT UP COLUMN FOR 3-PLY OR LARGER STUD COLUMNS. STITCH NAILING FOR DOUBLED 2x RAFTERS OR DOUBLE 1", $1\frac{1}{8}$", OR $1\frac{1}{4}$" SOLID RIM BOARD SHALL BE 10d NAILS @ 8" oc IN TWO STAGGERED ROWS WITH NAILS SPACED BETWEEN 1" AND 2" FROM EDGE OF MEMBER.
6. DESIGN CRITERIA (2019 OSSC/ASCE 7-16):
   - WIND SPEED: 145 mph ULTIMATE, WIND EXPOSURE CATEGORY B, IMPORTANCE FACTOR I_W = 1.0
   - (ALTERNATE: THIS DESIGN ALSO IS SUITABLE FOR 120 mph ULTIMATE WIND SPEED WITH WIND EXPOSURE C)
   - SEISMIC DESIGN CATEGORY D1, OCCUPANCY CATEGORY II, SITE CLASS = D, R = 6.5, I_E = 1.0, S_S = 1.50, S_1 = 0.60, V_{BASE} = 3.07 KIP, METHOD: SEISMIC EQUIVALENT LATERAL FORCE PROCEDURE, ASCE 7-16 SECTION 12.8, LIGHT WOOD FRAMED SHEAR WALLS
   - ROOF DEAD LOAD = 15 psf, ROOF SNOW LOAD = 30 psf, FLOOR DEAD LOAD = 10 psf, FLOOR LIVE LOAD = 40 psf, DECK DEAD LOAD = 10 psf, DECK LIVE LOAD = 60 psf
   - ALLOWABLE SOIL BEARING CAPACITY = 1500 psf
7. ERECTION PROCEDURES SHALL CONFORM TO OSHA STANDARDS, AND BUILDER SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES, TREES, UTILITIES, ETC DURING CONSTRUCTION. THE BUILDER IS RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION, AND SHALL PROVIDE ALL SHORING OR BRACING AS REQUIRED AND AS PER THE GOVERNING REGULATIONS.
8. ACCESS OR VENT HOLES MAY BE CUT INTO SHEAR WALLS OF TYPE "A_0", "A_1", "A_2", OR "B" PROVIDED THAT THE OPENING WIDTH OR HEIGHT IS NOT MORE THAN 40% OF THE SHEAR WALL SEGMENT WIDTH OR HEIGHT, THE OPENING IS NO MORE THAN 24" WIDE OR 24" TALL, THE NEAREST EDGE OF THE OPENING IS LOCATED AT LEAST 16" FROM THE ENDS OF THE SHEAR WALL AND THE TOP OR BOTTOM WALL PLATES, AND THAT 2x4 FLAT BLOCKING AROUND EACH UNSUPPORTED SIDE OF THE OPENING. ATTACH THE SHEATHING TO THE BLOCKING AND/OR STUDS ON ALL FOUR SIDES OF THE OPENING AS PER THE EDGE NAILING REQUIREMENTS IN THE SHEAR WALL SCHEDULE.
9. EXACT SIZES AND LOCATIONS OF EXTERIOR WINDOWS AND DOORS IN THE FRONT AND REAR WALLS MAY BE MODIFIED, PROVIDED THE MAXIMUM OPENING WIDTH DOES NOT EXCEED 5'-0"; THERE IS AT LEAST 6" BETWEEN OPENINGS; OPENINGS ARE LOCATED NO CLOSER THAN 9" CLEAR TO ANY EXTERIOR CORNER OF THE HOME; AND THE SHEAR WALL SECTIONS SHOWN ON SHEET S1 ARE NOT COMPROMISED BY THE OPENINGS. ALSO, THE LOCATIONS OF THE SHEAR WALLS SECTIONS ON THE FRONT AND REAR WALLS MAY BE MODIFIED AS PER THE NOTES ON SHEET S1.
10. EXACT SIZES AND LOCATIONS OF OPENINGS IN THE EXTERIOR GABLE END WALLS MAY BE MODIFIED, PROVIDED THE MAXIMUM OPENING WIDTH DOES NOT EXCEED 5'-0"; THE MAXIMUM OPENING HEIGHT DOES NOT EXCEED 6'-8" (A DOOR MAY BE INSTALLED); AND OPENINGS ARE LOCATED NEAR THE CENTER OF THE WALL TO ALLOW AT LEAST A 2'-7.5" LONG SHEAR PANEL AT EACH END OF THE WALL. THE LENGTH OF BOTH SHEAR PANELS ON EACH GABLE END WALL SHALL TOTAL AT LEAST 8'-0".

FRAMING NOTES
1. AT ALL EXTERIOR WINDOW OR DOOR HEADERS, PROVIDE (1) 2x6 TRIMMER STUD AND (1) 2x6 KING STUD. BEAR THE HEADER FULLY ON THE TRIMMER STUD.
2. TYPICAL NAILING (BOX NAILS UNLESS NOTED OTHERWISE)
   - STUD TO PLATES, END NAIL – (3) 10d OR (2) 16d COMMON
   - STUD TO PLATES, TOE NAIL – (4) 10d
   - TOP/BOTTOM PLATES
     A. STITCH NAIL – 10d @ 8" oc
     B. LAPS & INTERSECTION – (4) 10d EA SIDE OF JOINT
   - FLOOR/ROOF/CEILING JOISTS TO PLATES OR BEAMS, TOE NAIL – (2) 10d
   - RIM JOIST TO PLATE, TOE NAIL – 16d COMMON @ 8" oc
   - BLOCKING TO PLATE, TOE NAIL – (2) 10d
   - BLOCKING TO JOISTS, EACH END – (2) 10d
   - CORNER STUDS, STITCH NAIL – 10d @ 12" oc
3. ALL FRAMING NOTES ARE TYPICAL UNLESS NOTED OTHERWISE ON PLAN.

REVISION NOTE
REVISIONS ARE AS FOLLOWS:
THE SHEAR WALL SHEATHING THICKNESS HAS BEEN REVISED.

REVISION 1–13–22

REGISTERED PROFESSIONAL ENGINEER
84259PE
OREGON
MAY 11, 2010
DAVID R. NYLUND

EXPIRES: 12/31/2022

SHEAR WALL SCHEDULE

MARK	SHEATHING	WALL SUBTYPE	NAILING EDGE	NAILING FIELD	PLATE NAIL (16d BOX OR SINKER)	A35 OR LS50 SHEAR CLIP (NOTE 3)
Ax	7/16" PLYWOOD OR OSB, ONE SIDE OF WALL (NOTE 2)	A_0	8d @ 6"	8d @ 12"	16" oc	78" oc
		A_1			10" oc	36" oc
		A_2			6" oc	22" oc
B	7/16" PLYWOOD OR OSB, ONE SIDE OF WALL (NOTE 2)	NA	8d @ 4"	8d @ 12"	4.5" oc	17" oc

SHEAR WALL NOTES

1. WALL SHALL BE FRAMED WITH STUDS AT 24" oc AND SHEATHING PANELS SHALL BE APPLIED WITH LONG DIMENSION ACROSS STUDS. BLOCKING BETWEEN STUDS AT PANEL JOINTS IS REQUIRED FOR ALL WALLS EXCEPT TYPES "A_0" AND "A_1".
2. SHEAR WALLS OF TYPE A_0, A_1, AND A_2 MAY USE 7/16" CROWN, 1–1/2" LONG 16 GA. STAPLES AT 3" EDGE, 6" FIELD SPACING. SHEAR WALL TYPE B MAY USE 7/16" CROWN, 1–1/2" LONG 16 GA. STAPLES AT 2" EDGE, 6" FIELD SPACING.
3. A35 AND LS50 ARE PRODUCTS MANUFACTURED BY SIMPSON STRONG–TIE. REFER TO SIMPSON FOR COMPLETE INFORMATION.

HOLD-DOWN STRAP SCHEDULE

MARK	STRAP SIZE (THICKNESS X WIDTH)	FASTENERS TO VERTICAL WOOD MEMBER	CAPACITY (lb)
MSTCM40	3 GA X 1 1/4"	18–10d	2800

HOLD-DOWN NOTES

1. CONTACT SIMPSON STRONG–TIE FOR DETAILS. FOLLOW ALL MANUFACTURER RECOMMENDED INSTALLATION INSTRUCTIONS.
2. ALLOWABLE LOADS ARE FROM SIMPSON STRONG–TIE AND ASSUME DOUGLAS FIR–LARCH OR SOUTHERN PINE FRAMING MEMBERS.
3. SPECIAL INSPECTION OF THE TITEN SCREWS INTO THE CONCRETE STEM WALL IS NOT REQUIRED.

SHEET S2
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NOTED

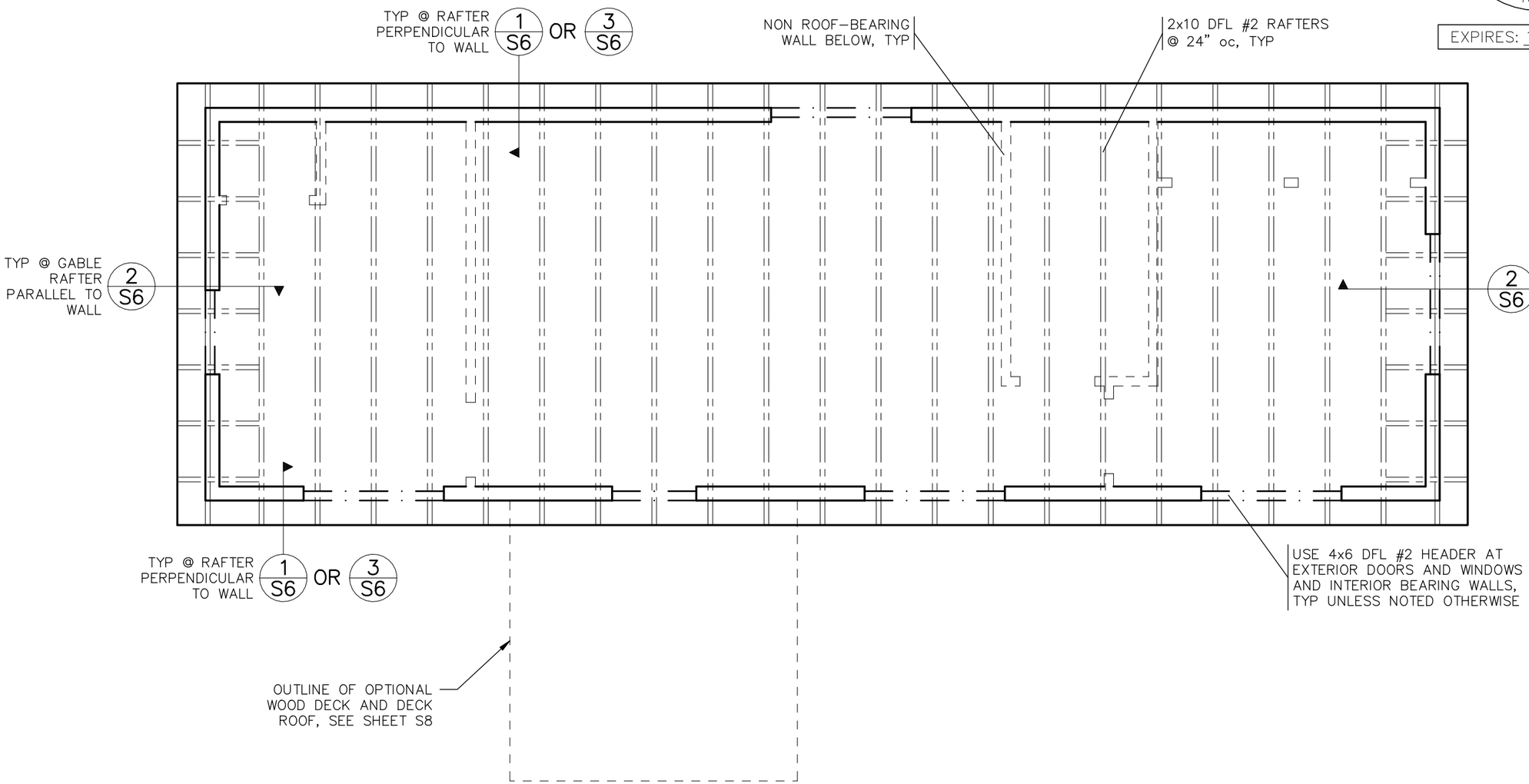
PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E–S FOR WOLF INDUSTRIES

EK ENGINEERING, INC.
P.O. BOX 3097
BATTLE GROUND, WA 98604
PHONE: (360) 687–7668
FAX: (360) 687–7669

Oregon Building Codes Division
Plan Review for Code Compliance
Plan: APPROVED
Plan Reviewed By: Randy Rieck
This Plan approval does not authorize any omission or deviation from requirements of any state or federal laws, rules or regulations or any local ordinances. This approved plan is not a building permit.

EXPIRES: 12/31/2022



REFER TO THE GENERAL NOTES ON SHEET S2

STRUCTURAL LAYOUT

1/4"=1'-0"

ROOF FRAMING

SHEET S3
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

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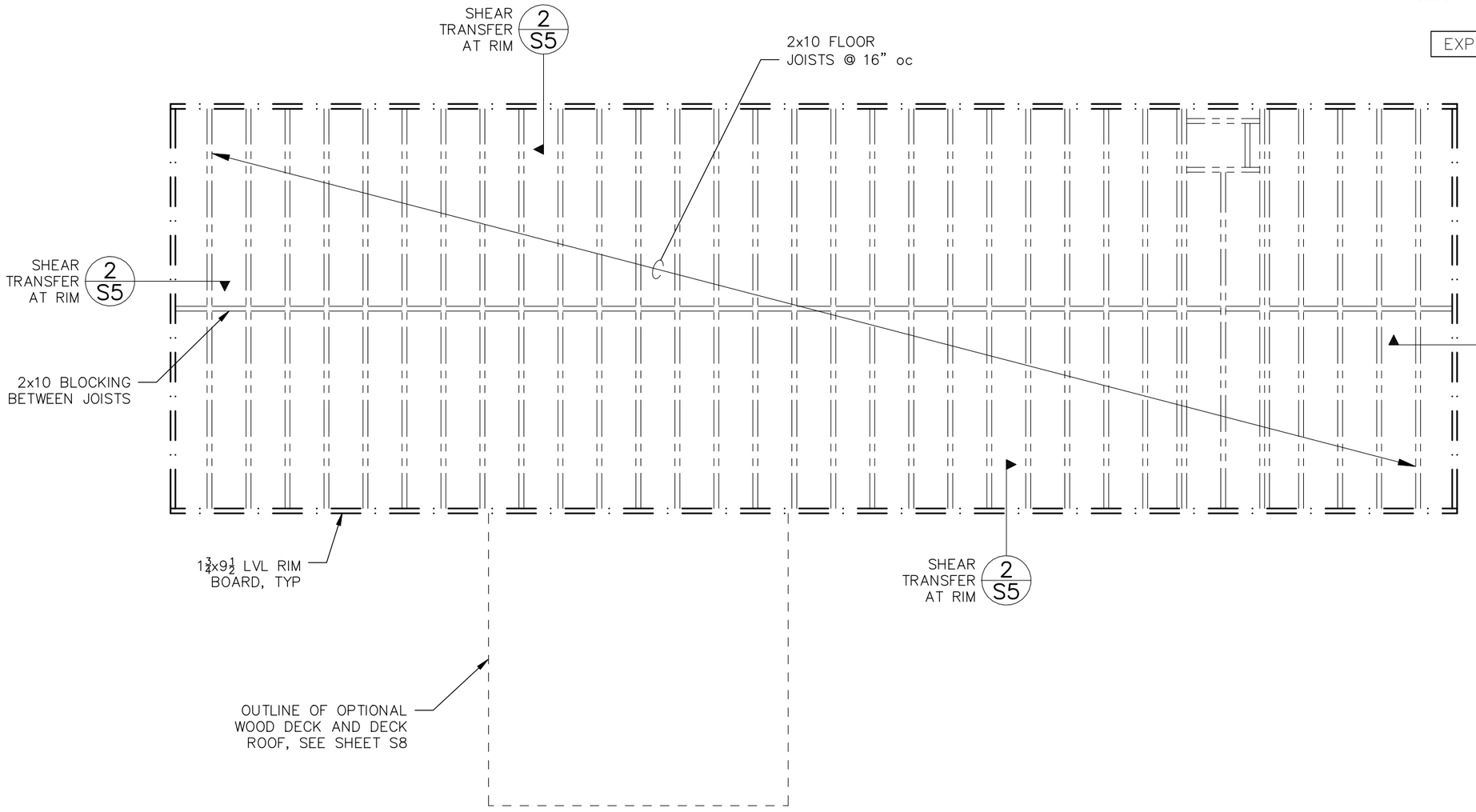

REFER TO THE GENERAL NOTES ON SHEET S2

STRUCTURAL LAYOUT
FLOOR FRAMING

1/4"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
84259PE
OREGON
MAY 11, 2010
DAVID R. NYLUND

EXPIRES: 12/31/2022

SHEET S4
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E-S FOR WOLF INDUSTRIES

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Oregon Building Codes Division
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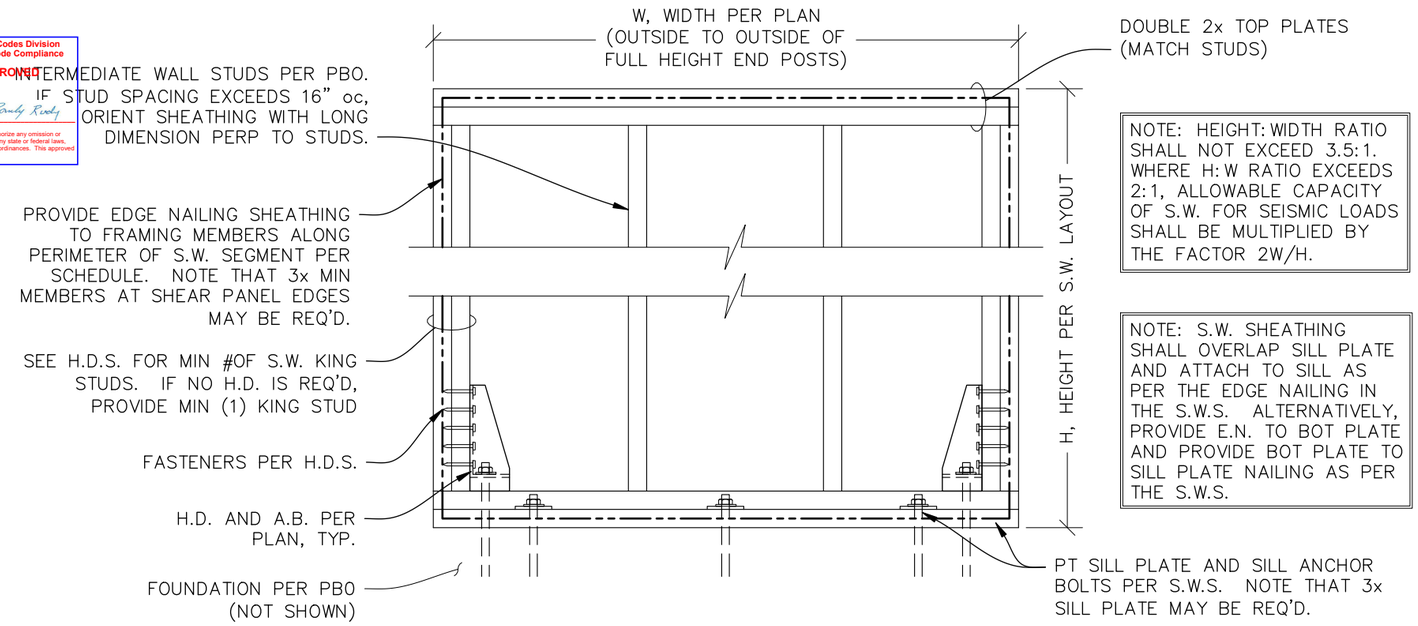


NOTE: HEIGHT:WIDTH RATIO SHALL NOT EXCEED 3.5:1. WHERE H:W RATIO EXCEEDS 2:1, ALLOWABLE CAPACITY OF S.W. FOR SEISMIC LOADS SHALL BE MULTIPLIED BY THE FACTOR 2W/H.

NOTE: S.W. SHEATHING SHALL OVERLAP SILL PLATE AND ATTACH TO SILL AS PER THE EDGE NAILING IN THE S.W.S. ALTERNATIVELY, PROVIDE E.N. TO BOT PLATE AND PROVIDE BOT PLATE TO SILL PLATE NAILING AS PER THE S.W.S.

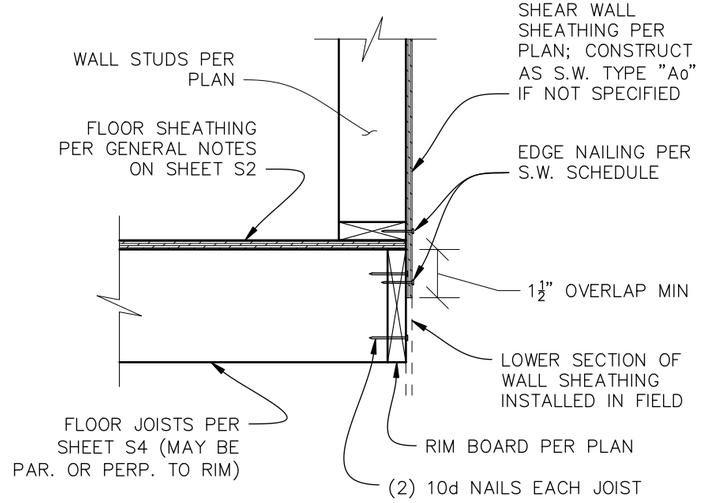
1/S5 TYPICAL S.W. ELEVATION AT FOUNDATION 1"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
84259PE
OREGON
MAY 11, 2010
DAVID R. NYLUND

EXPIRES: 12/31/2022

NOTATIONS/ABBREVIATIONS:

- A.B. = ANCHOR BOLT
- ALT = ALTERNATIVE
- BLK'G = BLOCKING
- BOT = BOTTOM
- CANT = CANTILEVER
- CONT = CONTINUOUS (WHEN USED WITH SHEAR WALLS, APPLIES TO ENTIRE LENGTH OF S.W. TYP UNO)
- DBL = DOUBLE
- DIA = DIAMETER
- EA = EACH
- EMBED = EMBEDMENT
- E.N. = EDGE NAILING PER S.W.S.
- EXST'G = EXISTING
- FTG = FOOTING
- GALV = HOT-DIPPED GALVANIZED
- HDR = HEADER
- H.D.(S.) = HOLD-DOWN (SCHEDULE)
- MANUF = MANUFACTURED
- MAX = MAXIMUM
- MIN = MINIMUM
- NO. = NUMBER
- NOM = NOMINAL
- oc = ON CENTER (SPACING)
- PAR = PARALLEL
- PBO = PLANS BY OTHERS
- PERP = PERPENDICULAR
- PLYW'D = PLYWOOD OR SIMILAR SHEATHING
- PT = PRESERVATIVE TREATED
- REQ'D = REQUIRED
- SCHED = SCHEDULE
- STGGR(D) = STAGGER(ED)
- S.W.(S.) = SHEAR WALL (SCHEDULE)
- TPL = TRIPLE
- TYP = TYPICAL
- UNO = UNLESS NOTED OTHERWISE



2/S5 SECTION DETAIL
SHEAR TRANSFER TO RIM BOARD 1"=1'-0"

SHEET S5
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E-S FOR WOLF INDUSTRIES

EK ENGINEERING, INC.
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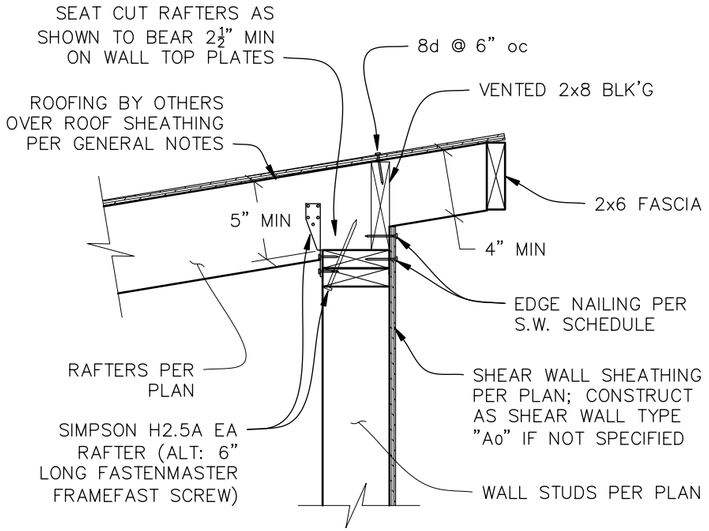
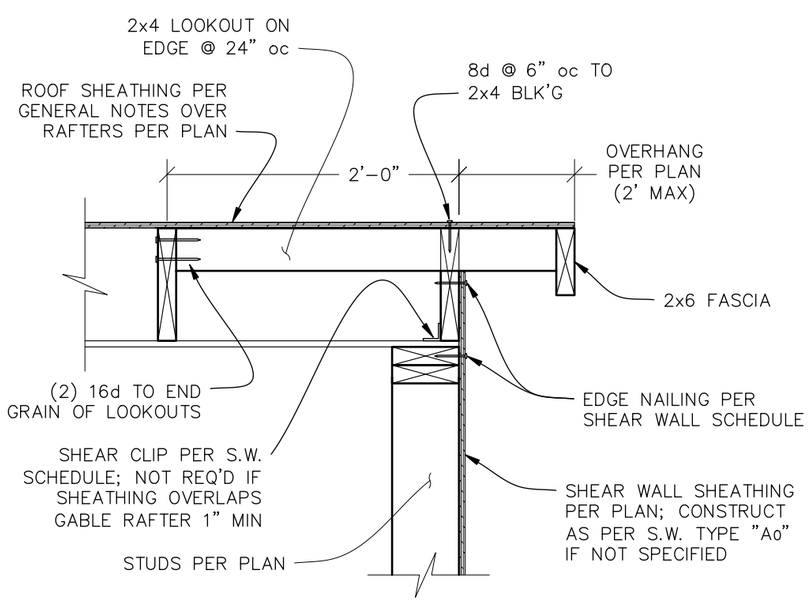
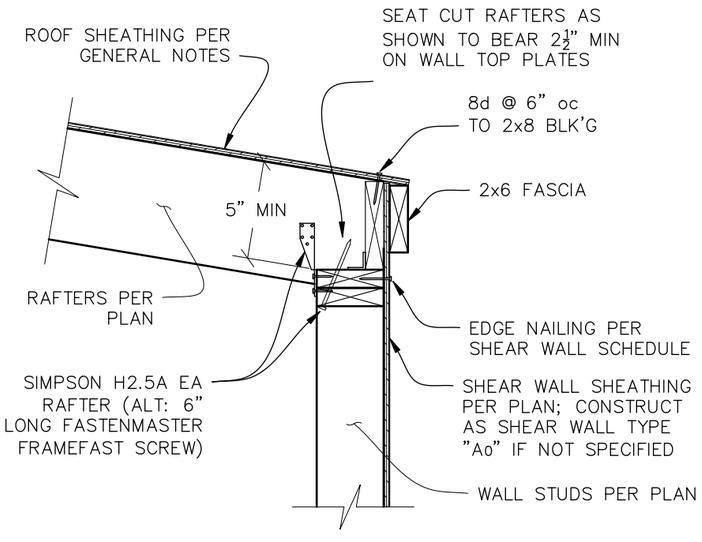
SEE NOTES/ABBREVIATIONS ON SHEET S5



1/S6 SECTION DETAIL
RAFTERS PERPENDICULAR TO WALL (UPSLOPE) 1"=1'-0"



2/S6 SECTION DETAIL
RAFTERS PARALLEL TO WALL 1"=1'-0"



3/S6 SECTION DETAIL
RAFTERS PERPENDICULAR TO WALL (DOWNSLOPE) 1"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
84259PE
OREGON
MAY 11, 2010
DAVID R. NYLUND

EXPIRES: 12/31/2022

SHEET S6
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E-S FOR WOLF INDUSTRIES

EK ENGINEERING, INC.
P.O. BOX 3097
BATTLE GROUND, WA 98604
PHONE: (360) 687-7668
FAX: (360) 687-7669

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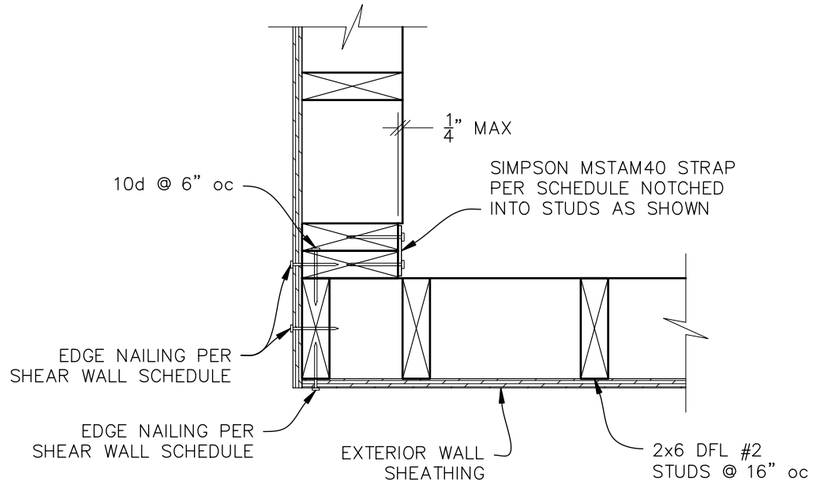
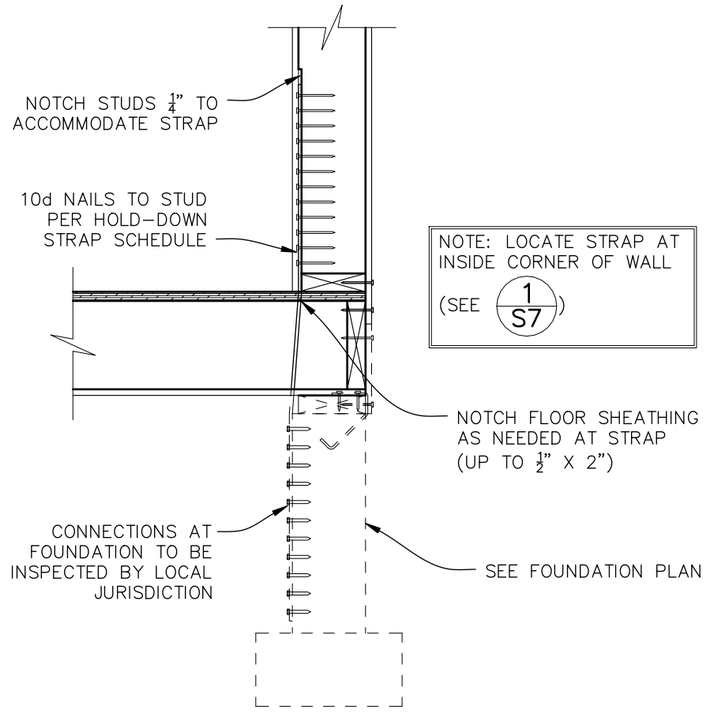


1/S7 HOLD-DOWN STRAP LOCATION
TOP VIEW 1-1/2"=1'-0"



2/S7 HOLD-DOWN STRAP DETAIL
1"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
84259PE
OREGON
MAY 11, 2010
DAVID R. NYLUND

EXPIRES: 12/31/2022

SHEET S7
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION:
TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR
MODEL E-S FOR WOLF INDUSTRIES

EK ENGINEERING, INC.
P.O. BOX 3097
BATTLE GROUND, WA 98604
PHONE: (360) 687-7668
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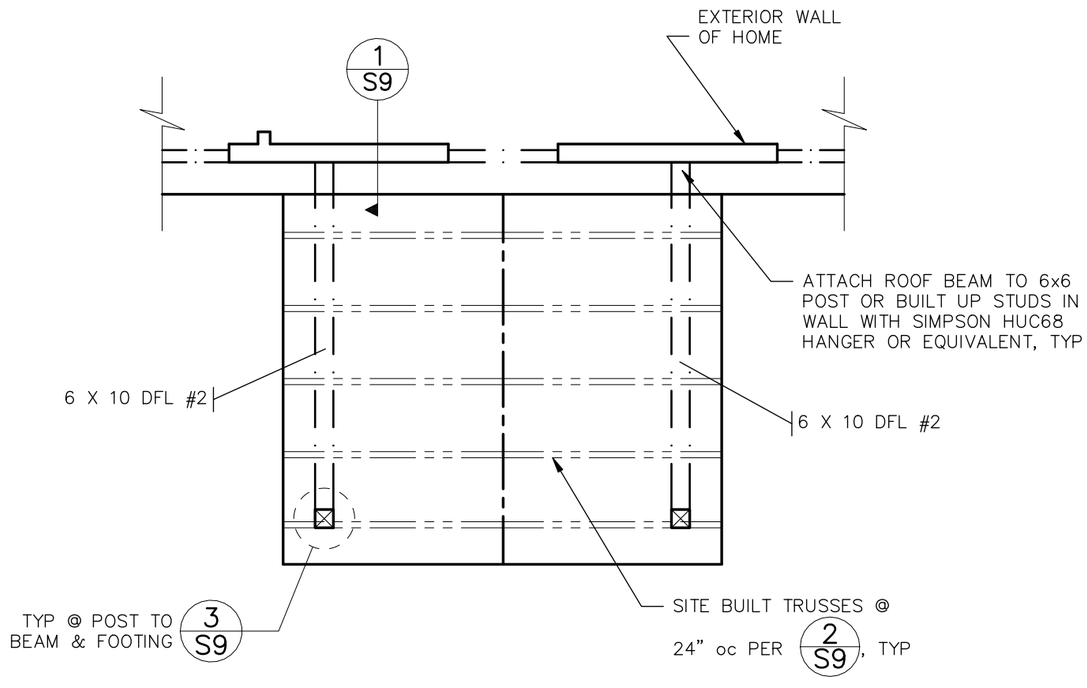
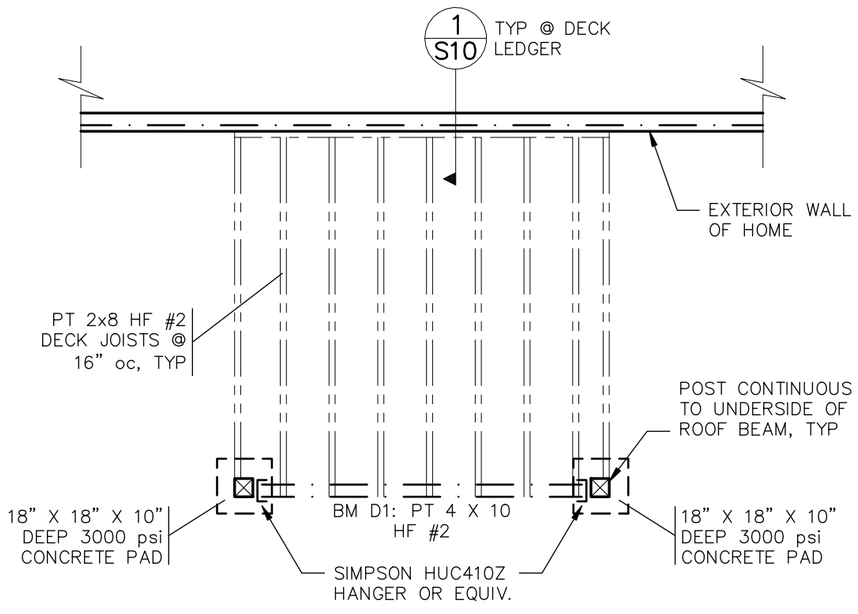
EXPIRES: 12/31/2022



STRUCTURAL LAYOUT 1/4"=1'-0"
OPTIONAL DECK ROOF



STRUCTURAL LAYOUT 1/4"=1'-0"
OPTIONAL DECK

REFER TO THE GENERAL
NOTES ON SHEET S2

SHEET S8
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR
MODEL E-S FOR WOLF INDUSTRIES

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P.O. BOX 3097
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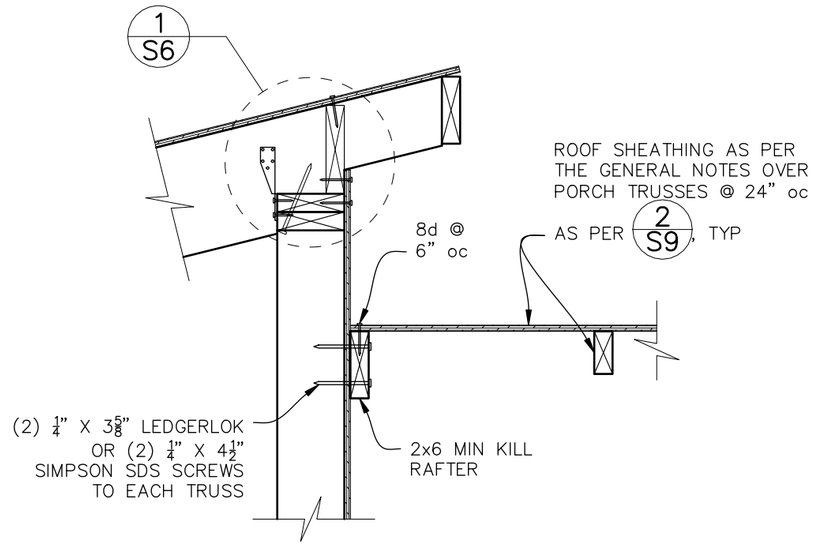
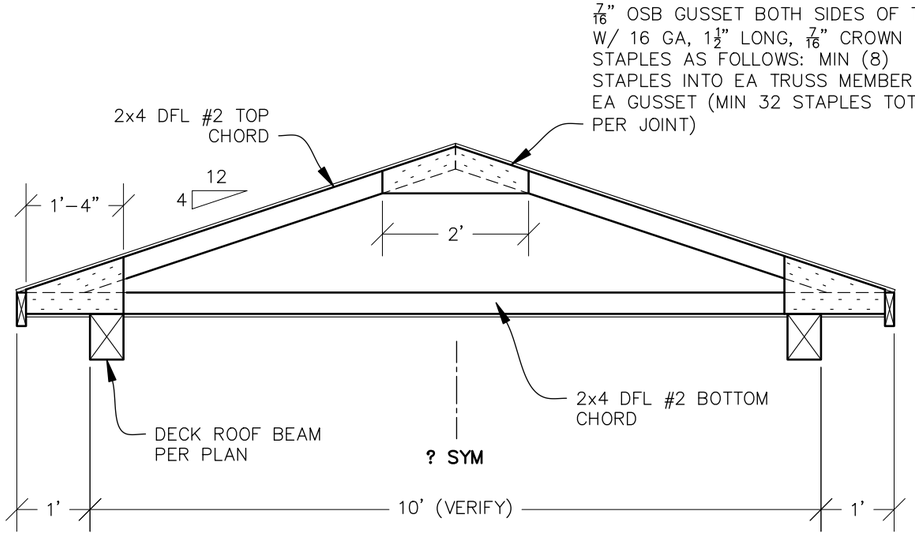
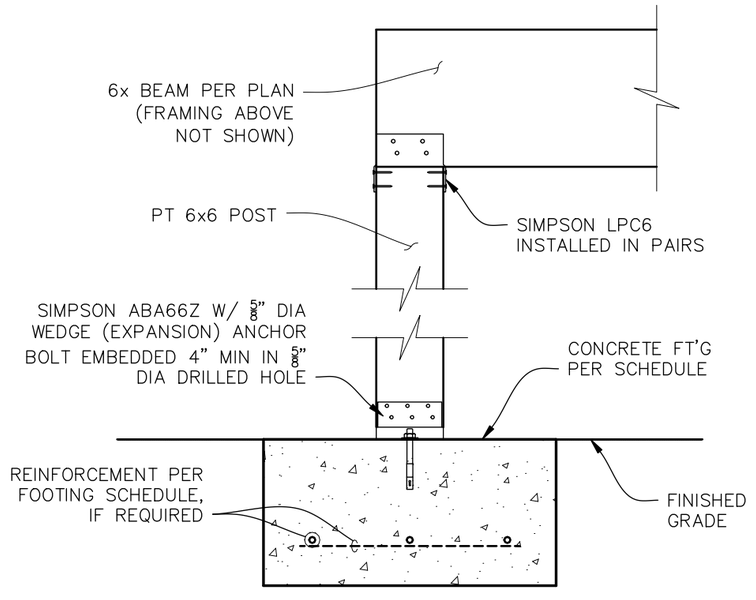
NOTE: THE DETAILS ON THIS SHEET ARE FOR THE OPTIONAL DECK ROOF ONLY



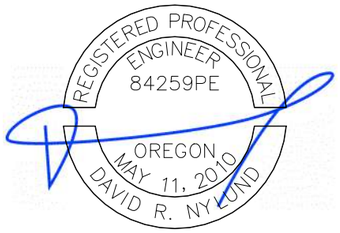
1/S9 RAFTER LEDGER
SECTION AT UPSLOPE ROOF OVERHANG 1"=1'-0"



2/S9 DECK ROOF TRUSS DETAIL
1/2"=1'-0"



3/S9 POST & BEAM DETAILS
1"=1'-0"



EXPIRES: 12/31/2022

SEE NOTES/ABBREVIATIONS ON SHEET S5

SHEET S9
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E-S FOR WOLF INDUSTRIES

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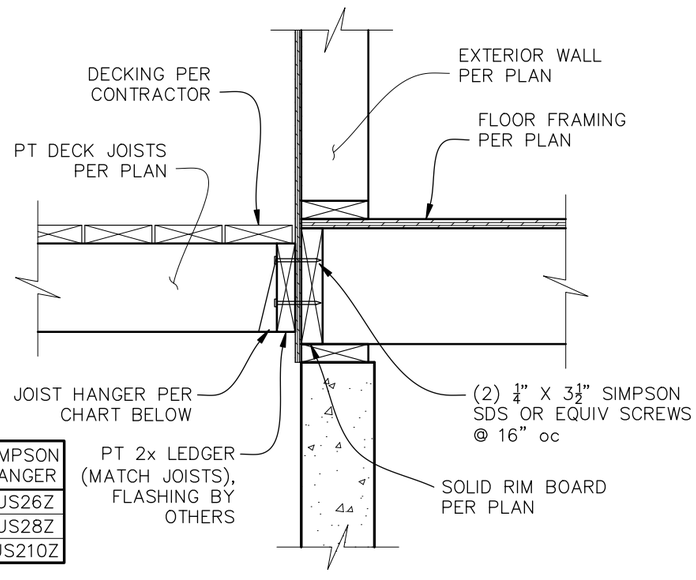
EXPIRES: 12/31/2022

NOTE: ATTACH ENDS OF DECK TO WALL AS PER 2/S10.

NOTE: ALL WEATHERPROOFING MEASURES ARE THE RESPONSIBILITY OF THE OWNER OR CONTRACTOR

NOTE: THE DETAILS ON THIS SHEET ARE FOR THE OPTIONAL DECK ONLY

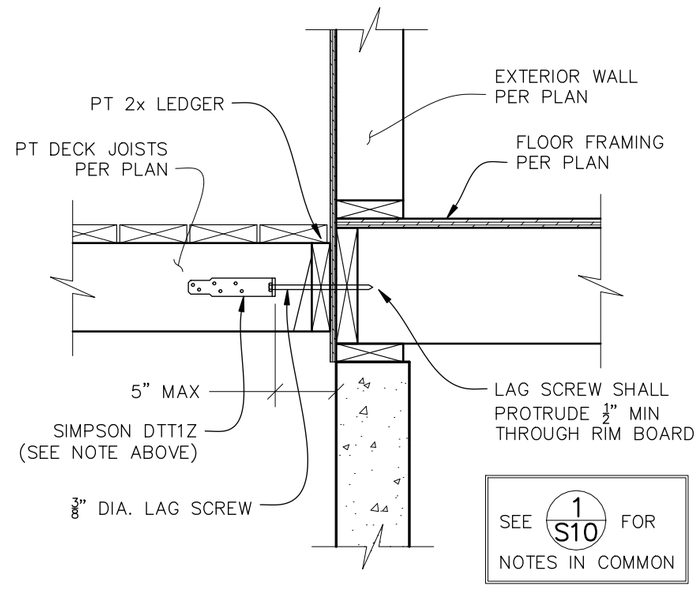


JOIST SIZE	SIMPSON HANGER
2x8	LUS26Z
2x10	LUS28Z
2x12	LUS210Z

1/S10 DECK LEDGER DETAIL 1"=1'-0"

SEE NOTES/ABBREVIATIONS ON SHEET S5

NOTE:
LOCATE SIMPSON DTT1Z AT BOTH ENDS OF DECK AT THE OUTSIDE JOIST AND AT THE FIRST JOIST IN FROM EACH END.



SEE 1/S10 FOR NOTES IN COMMON

2/S10 LATERAL DECK TIE DETAIL 1"=1'-0"

SHEET S10
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

STRUCTURAL ENGINEERING FOR MODEL E-S FOR WOLF INDUSTRIES

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HOLD-DOWN STRAP SCHEDULE

MARK	STRAP SIZE (THICKNESS X WIDTH)	FASTENERS TO VERTICAL MEMBER	FASTENERS TO CONCRETE (NOTE 3)	CAPACITY (lb)
MSTCM40	3 GA X 1 1/4"	18-10d	10-1/4" X 1 3/4" TITEN	2800

HOLD-DOWN NOTES

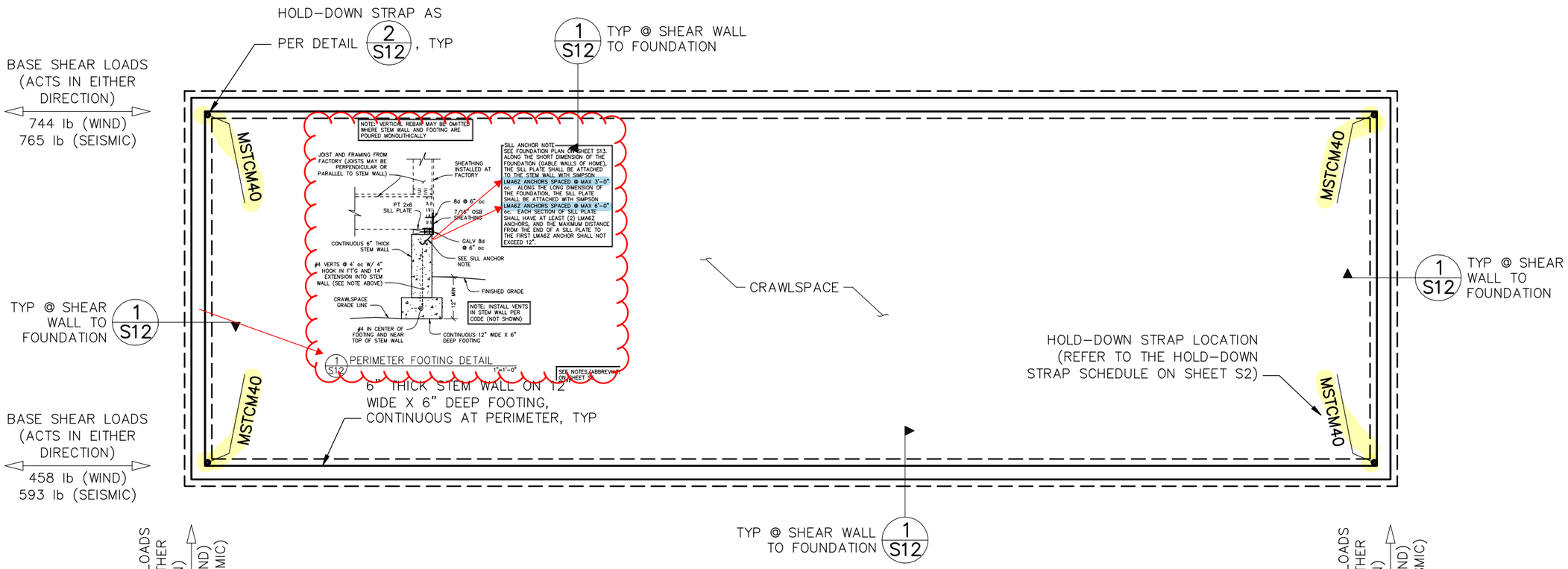
1. CONTACT SIMPSON STRONG-TIE FOR DETAILS. FOLLOW ALL MANUFACTURER RECOMMENDED INSTALLATION INSTRUCTIONS.
2. ALLOWABLE LOADS ARE FROM SIMPSON STRONG-TIE.
3. INSTALL $\frac{1}{4}$" DIAMETER TITEN SCREWS IN $\frac{3}{16}$" DIAMETER PRE-DRILLED HOLES (SPECIAL INSPECTION IS NOT REQUIRED).

FOUNDATION NOTES

1. ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3000 psi MINIMUM.
2. ALL REBAR SHALL CONFORM TO ASTM A 615, SHALL BE GRADE 40 MINIMUM, AND SHALL HAVE 3" OF CONCRETE COVER. ALSO, LAP SPLICES SHALL BE AS FOLLOWS: 30" FOR #4 BAR, 38" FOR #5 BAR, AND 45" FOR #6 BAR.
3. SILL PLATES SHALL BE ATTACHED TO THE FOUNDATION AS SPECIFIED IN (1/S12).

REGISTERED PROFESSIONAL ENGINEER
84259PE
OREGON
MAY 11, 2010
DAVID R. NYLUND

EXPIRES: 12/31/2022



STRUCTURAL LAYOUT
FOUNDATION

1/4"=1'-0"

SHEET S11
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

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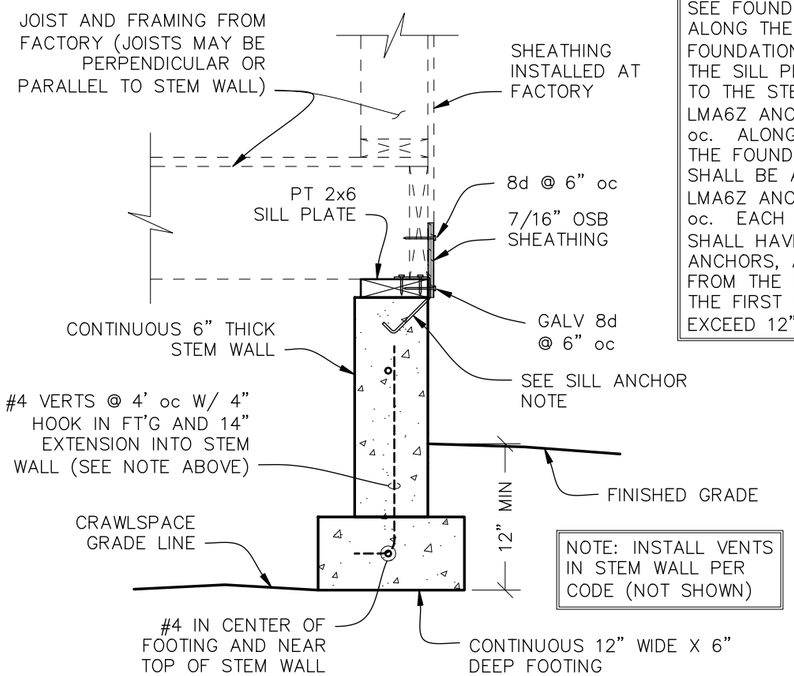
REVIEW/INSPECTION NOTE

THE FOUNDATION, SILL PLATE AND ANY CONNECTION FROM THE PRE-MANUFACTURED HOUSE TO THE FOUNDATION AND SILL PLATE ARE TO BE REVIEWED AND INSPECTED BY LOCAL JURISDICTION. THE PRE-MANUFACTURED HOUSE IS THE RESPONSIBILITY OF LABOR AND INDUSTRIES TO REVIEW AND INSPECT.

EXPIRES: 12/31/2022

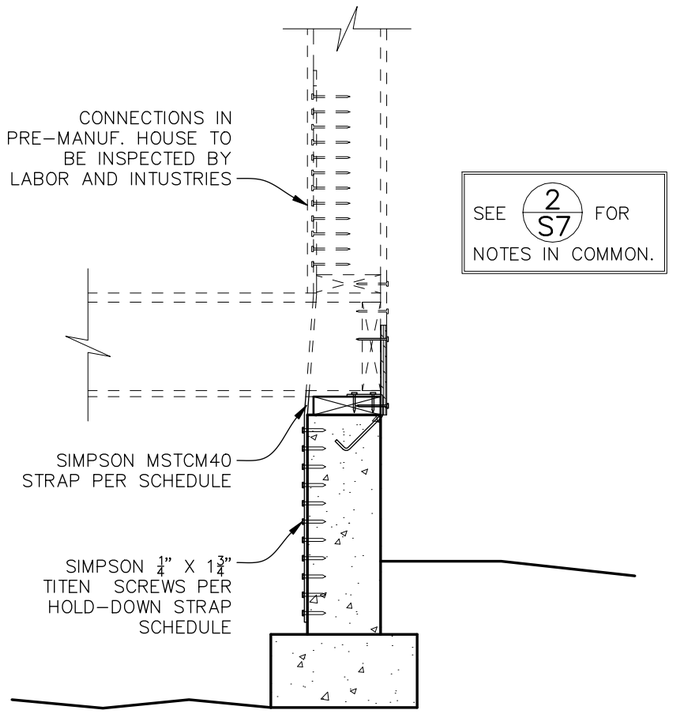
NOTE: VERTICAL REBAR MAY BE OMITTED WHERE STEM WALL AND FOOTING ARE POURED MONOLITHICALLY



1/S12 PERIMETER FOOTING DETAIL
1"=1'-0"

SILL ANCHOR NOTE

SEE FOUNDATION PLAN ON SHEET S13. ALONG THE SHORT DIMENSION OF THE FOUNDATION (GABLE WALLS OF HOME), THE SILL PLATE SHALL BE ATTACHED TO THE STEM WALL WITH SIMPSON LMA6Z ANCHORS SPACED @ MAX 3'-0" oc. ALONG THE LONG DIMENSION OF THE FOUNDATION, THE SILL PLATE SHALL BE ATTACHED WITH SIMPSON LMA6Z ANCHORS SPACED @ MAX 6'-0" oc. EACH SECTION OF SILL PLATE SHALL HAVE AT LEAST (2) LMA6Z ANCHORS, AND THE MAXIMUM DISTANCE FROM THE END OF A SILL PLATE TO THE FIRST LMA6Z ANCHOR SHALL NOT EXCEED 12".



SEE 2/S7 FOR NOTES IN COMMON.

2/S12 HOLD-DOWN STRAP DETAIL
1"=1'-0"

SEE NOTES/ABBREVIATIONS ON SHEET S5

FOUNDATION NOT REVIEWED BY STATE OFOREGON BUILDING CODES DIVISION

SHEET S12
DATE 12/10/21
DRAWN LAB
CHECKED DRN
REVISION NA

PROJECT LOCATION: TO BE DETERMINED, IN THE STATE OF OREGON

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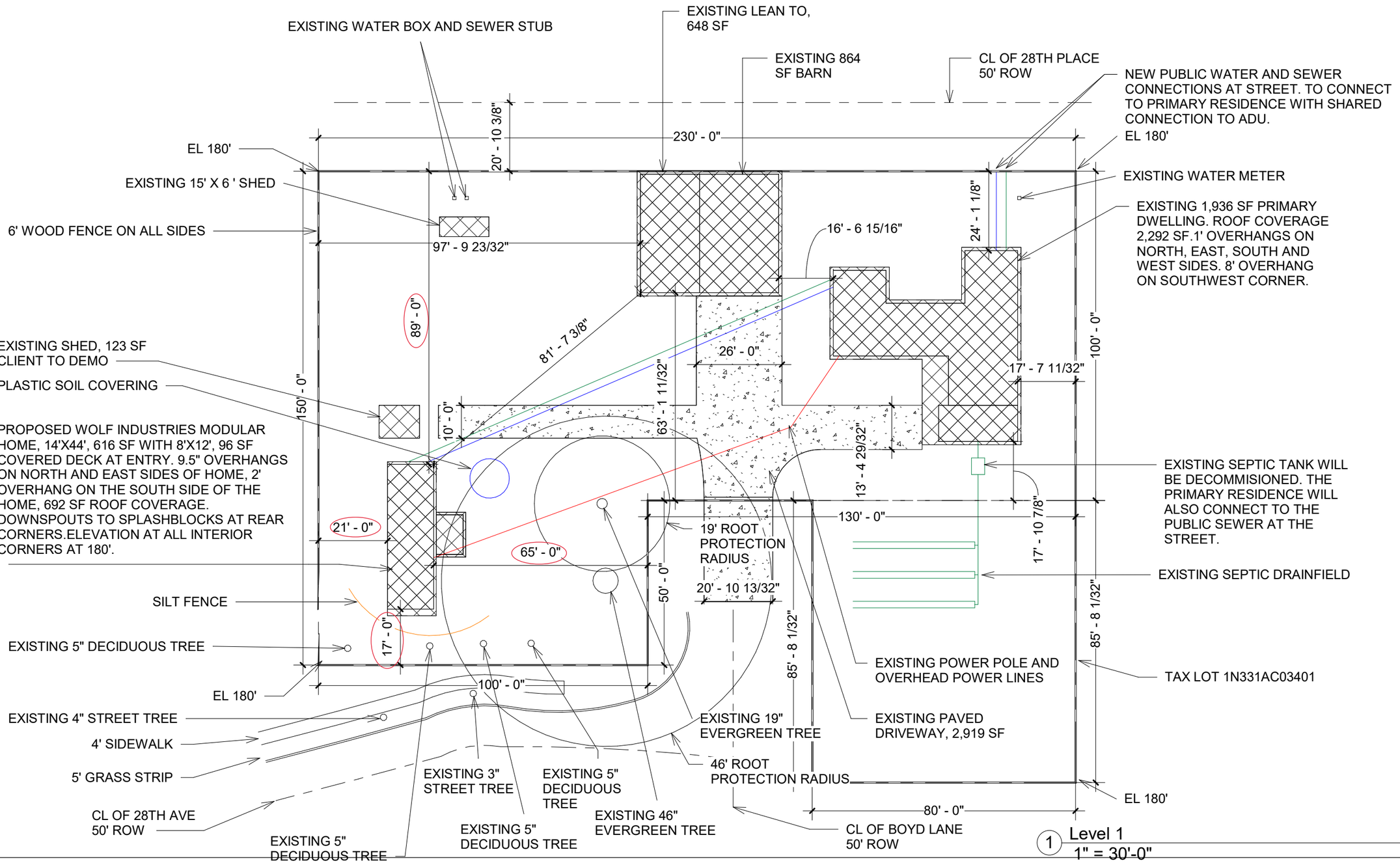

Notes

Property Owner:
Mickey Wagner

Site Address:
2941 Boyd Lane
Forest Grove, OR 97116

Parcel:
R742566

Applicant:
Wolf Industries
607 SE Eaton Blvd.
Battle Ground, WA 98604
alinder@wolfind.com
360-912-9512

Impervious Area
House with Garage: 2,292 SF
Driveway: 2,919 SF
Barn: 864 SF
Lean-to: 648 SF
Shed: 90 SF
ADU: 692 SF
Covered Deck: 96 SF
Total: 7,601 SF
New: 788 SF

Total Lot Area: 28,000 SF
Building Coverage: 4,682 SF
Lot Coverage: 16%

WOLF | INDUSTRIES

www.wolfind.com

WILDAUER

DETACHED ADU

No.	Description	Date

Site Plan

Project number	22619	A101
Date	4/8/24	
Drawn by	Anna	
Checked by	Checker	Scale As indicated

4/16/2024 11:31:50 AM

City of Forest Grove
1924 Council St
Forest Grove, OR 97116
503-992-3229
Fax: 503-992-3202

Residential

Certificate of Occupancy

Web Address: www.forestgrove-or.gov
Email Address: cd@forestgrove-or.gov

This structure has been inspected and approved according to the applicable codes, regulations and laws that were in effect at the time the permit was issued. All final inspections have been completed and this dwelling is approved for occupancy.

Residential Specialty Code Edition: 2023

Permit Number: 311-24-000255-DWL **Final Inspection Date:** 12/10/24

Property Address: 2941 BOYD LN A, FOREST GROVE, OR 97116

Parcel Number: 1N331AC03501

Owner: WAGNER MICKEY A, 2941 BOYD LN, FOREST GROVE, OR, US 97116

Description of Work: CWS RPT

Proposing to place a Wolf Industries modular home, 14' x 44', 616 sf as a detached ADU.

Category of Construction: Single Family Dwelling **Type of Work:** New

Existing Sprinklers: Not specified **Sprinklers Included in Project:** No

Portion of Building: ADU

Special Conditions: None Specified

Occupancy Classification	Type of Construction	Sq. Ft.
R-3 1 & 2 family	VB	616
U Utility, misc. - half rate	VB	96

Yvette Hamilton
Building Official

Effective Date: December 12, 2024

Yvette Hamilton

Contact and license information for the general, electrical, plumbing and mechanical contractors is on file and can be obtained upon request.

Inspection Results

Permit #: 311-24-000078-PLM

CITY OF FOREST GROVE
1924 Council St
Forest Grove,OR 97116
Phone: 503-992-3229
Fax: 503-992-3202

www.forestgrove-or.gov
cd@forestgrove-or.gov

Applicant: WAGNER, MICKEY
Owner: 2941 BOYD LN, FOREST GROVE, OR 97116-1532
Address: 2941 BOYD LN
FOREST GROVE OR

IVR Number: 311029285511

Parcel: 1N331AC03501

Contractor(s)

SEE PROPERTY OWNER INFORMATION — Primary: Yes

ECONOMY CONSTRUCTION LLC
31126 CEDAR CREEK ROAD
COTTAGE GROVE, OR. 97424

Primary: No
Phone: (541) 285-8710
Email: jessicavanwychen@yahoo.com

Inspection Type:	Inspection Result:	Comments:
3999 Final Plumbing	Approved	Septic tank decommissioned and filled with sand

Inspection Date: 12/09/2024
Inspector: Cassi Bergstrom
Phone: 503-992-3265
Email: cbergstrom@forestgrove-or.gov

Schedule or track inspections at www.buildingpermits.oregon.gov

Call or text the word "schedule" to 1-888-299-2821 use IVR number: 311029285511

Schedule using the Oregon ePermitting Inspection App, search "epermitting" in the app store

FOREST GROVE OREGON

APPLICATION FOR SANITARY SEWER & SURFACE WATER

DATE: 12/9/24	
BUILDING PERMIT NUMBER: 311-24-000078-PLM	**RECEIPT #** 15624
CONNECTION ADDRESS: 2941 Boyd Ln	**LOT NO.:**
MAP/TAX LOT NO.:	**PROJECT NAME:**

OWNER: Mickey Wagner		
OWNER ADDRESS: 2941 Boyd Ln		**CITY:** Forest Grove
STATE: OR	**ZIP:** 97116	**OWNER PHONE:** 971-344-5695

TYPE OF CONNECTION	☐ NEW ☑ ADD	**TYPE OF OCCUPANCY**	☑ SF ☐ MF ☐ COMM ☐ IND

IF CONNECTION IS NEW, IS A SANITARY LINE TAP DEPOSIT REQUIRED? ☐ YES ☐ NO
NOTE: THIS IS A DEPOSIT ONLY – ACTUAL COST OF INSTALLATION TO BE DETERMINED AFTER WORK IS PERFORMED.

RESIDENTIAL DWELLING UNITS	1	**COMMERCIAL FIXTURE UNITS**	

SANITARY SEWER SYSTEM DEVELOPMENT FEES

SEWER LATERAL CONST. DEPOSIT	
SEWER CONST. FEE (NOT PREVIOUSLY ASSESSED)	
SEWER SDC - CWS	$5,459.20
SEWER SDC - FG	$1,364.80
TEMP. CONNECTION	
MISC.	

SWM SYSTEM DEVELOPMENT FEES

WATER QUALITY	
FEE IN LIEU	
LESS CREDIT	< >
WATER QUANTITY	
LESS CREDIT	< >

EROSION CONTROL	

TOTAL: $6,824.00