

For Postal Delivery

Department of Labor and Industries
Factory Assembled Structures
PO Box 44430
Olympia WA 98504-4430

**For Non-Postal Delivery (e.g., FedX, UPS)**

Department of Labor and Industries
Factory Assembled Structures
7273 Linderson Way SW
Tumwater WA 98501
www.wa.gov/lni (case sensitive)

☒	WA Only		
☐	WA Rev/	Courtesy	
☐	Rev/WA	Courtesy	
☐	State ID	Other state	

Manufacturer Timberland Homes		Mfg No. M-60	
Plans to be returned to: Address 913 Central Ave S.			
City/State/ZIP Kent WA 98032			
FOR DEPARTMENT USE ONLY			
Fee Ldg Sht #	Check #	\$ Amount	Application ID
Ap No.	Date approved	Expiration date	
21FBS2500073	06/05/2025	06/05/2026	

PLAN APPROVAL REQUEST**FACTORY BUILT STRUCTURES**

Contact person's printed name: Mike Langford		Date	Fee enclosed \$
Signature [Signature]	Phone No 253-736-3501	FAX No Mike@timberland-homes.com	
New plan (Master design)	(1 Yr design) X	See appropriate WAC for fees	Initial MFG filing
Renewal	AP No.	Resubmittal	
Addendum	AP No.	Plans review by L&I listed professional	

Note: Identify addendum items on plan!

Code cycles (month/year): IBC, IRC, IMC 3 / 21 UPC: 3 / 21 NEC: 1 / 23 WSEC, VIAQ: 3 / 21 IFC: 3 / 21			
Size of building: Width: 28 Length: 40' Area (Sq Ft): 1120 No of modules: 2 Occupancy group: B			
Type construction: VB	Use: Food Processing	SUB yr: 2021	SEC yr: 2023 Seismic: D S₁=1.27 S₂=1.437
Roof live load PSF: 25	Wind load MPH - EXP: 110 / C	Floor load PSF: 100	
Plot plan submitted: ☐ Yes ☒ No If "No", provide distance from farthest projection to nearest building/property			
Front: 30'	Rear: 30'	Left side: 30'	Right side: 30'
Type heat: ☐ Central forced air ☐ Hydronics ☐ Baseboard ☐ Fan powered room heater ☒ Other Mini-split			
Type of fuel: ☒ Electric ☐ Natural gas ☐ Propane ☐ Oil ☐ Other:			
Insulation values: Floor R-38 Walls R-21 + R-5 Roof (Flat) R-49 Roof (Vault) N/A	Heating zone: ☒ Zone 1 ☐ Zone 2		
WSEC compliance chapter: ☒ Component ☐ Systems ☐ Prescriptive ☐ N/A	Energy calculations: ☒ Attached ☐ On file - AP# ☐ Heat Pump ☒ Yes ☐ No ☒ Air conditioning ☒ Yes ☐ No		Electrical service: Amps 200 / 35.952 Phase ☒ 1 ☐ 3

	N/A	Attached L&I Review	Attached/Design Professional Review	On file	AP#
Structural calculations or test proposals	☐	☒	☐	☐	
Truss or rafter drawing(s)	☐	☒	☐	☐	
Truss plan if over 3 different trusses	☐	☒	☐	☐	
Girder truss or ridge beam drawing	☐	☒	☐	☐	
HVAC drawing	☒	☒	☐	☐	
Cross section and elevation	☐	☒	☐	☐	
Foundation plan	☐	☒	☐	☐	
Electrical load demand calculation	☐	☒	☐	☐	
Panel box schedule/Electric load calc's	☐	☒	☐	☐	
Chassis drawing (CC units only)	☒	☐	☐	☐	
Plumbing systems:	☒	☐	☐	☐	
Operating pressure 46 to 60		No of fixtures 4	Total developed length 100' MAX		

RETURN PLANS VIA:	☒ Regular mail	☐ Overnight @ customer's expense	☐ Carrier
	☐ Other:		Acct #

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 PO Box 44430
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☒ Permanent
☐ Alteration
☐ Replacement

For Non-Postal Delivery (e.g., FedEx, UPS)

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 Factory Assembled Structures
 7273 Linderson Way SW
 Tumwater WA 98501

Multi-Tagged
☒ WA ☐ ID
☐ OR ☐ Other

www.wa.gov/lni/FAS/
 (case sensitive)

APPLICATION FOR INSIGNIA FOR FACTORY BUILT STRUCTURES



Applicant: Fill out completely

MANUFACTURER Timberland Homes		MFG NO. M-60
PRODUCTION FACILITY ADDRESS 913 Central Ave S		
CITY/STATE/ZIP Kent WA 98032		
TELEPHONE NO. 253-736-3501	FAX NO. Mike@timberland-homes.com	
FOR DEPARTMENT USE ONLY		
FEE LEDGER SHEET NO. 110633000	CHECK NO. FP4580537	\$ AMOUNT \$1,228.59

SUBMIT ONE COPY - NOTE: A separate form is to be used for each building unless multiple buildings have the same plan approval number.

Contact person's printed name: Mike Langford	Date	Fee enclosed \$
Signature <i>Mike Langford</i>	Phone No (253) 736-3501	FAX No () Mike@timberland-homes.com

A FEE FOR EACH INSIGNIA IS DUE WITH APPLICATION - NOT SUBJECT TO REFUND

PLEASE MAKE CHECKS PAYABLE TO DEPT. OF LABOR & INDUSTRIES

1.	Dept Insignia No.	Mfg Serial No.	Approved Plan No.										POD	Fee
		D# 7161-A	21FBS2500073										1	\$ 318³⁰
OG	TC	IS	SUB YR	SEC YR	ESL	RF	W	SZONE	TD	HTG	AC	P		
B	VB	SamP	2021	2023	200	35.95	25	110/c	D	4C	split	Y	4	
2.	Dept Insignia No.	Mfg Serial No.											POD	Fee
		D# 7161-B											2	\$ 33⁶⁰
3.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$
4.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$
5.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$
6.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$
7.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$
8.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$
9.	Dept Insignia No.	Mfg Serial No.											POD	Fee
														\$

Manufacturer to complete:

Number of tags: **2**

Via

☒ Regular mail
☐ Overnight at customer expense—
☐ Other

Carrier

Acct #

continued on reverse

FOR DEPARTMENT USE ONLY

Date 05/08/2025	Insignia Release by Michael Luke	To John-Paul Noble-Gulliford/Chris Rarig, Tukwila
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Department of Labor and Industries
 Factory Assembled Structures
 PO Box 44430
 Olympia WA 98504-4430



Paid date	Column	Check	Fee \$
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NOTIFICATION TO LOCAL ENFORCEMENT AGENCY

www.wa.gov/lni/FAS/
 (case sensitive)

The Factory-Built unit identified below requires completion work at the site as specified.

Date	M 60
Mfg	Timberland Homes

Owner's name Marcoe Candy	Mfgr's serial no. D#7161	Dept insignia no.
Installation address 110 9th Ave SW (Puyallup Fairgrounds)	Type of construction VB	Occupancy B
City Puyallup	State WA	ZIP+4 98371
County Pierce	Phone number 253-735-3435	

Installation site is in:



City



County

DESCRIBE ITEMS REQUIRING COMPLETION WORK AT THE SITE

BUILDING DEPARTMENT www.wabo.org/ INSERT NAME AND ADDRESS IN SHADED AREA	ELECTRICAL DEPARTMENT www.wa.gov/lni/electrical/ INSERT NAME AND ADDRESS IN SHADED AREA
To: City Of Puyallup	To: Dept of L&I
Attn: Building/Fire Code Official	Attn: Electrical Inspector
333 S. Meridian	950 Broadway Suite 200
Puyallup, WA 98371	Tacoma, WA 98402-4628
Email: rayc@puyallupwa.gov / (253)841-5585	
Hook up all waste plumbing on exterior of building	Hook up ufer ground Site portion of the grounding electrode system
Compartment/hand sink install & plumbing hook up	Elect building supply to interior 200A 120/240 1PH Panel
No waste plumbing tree will be factory installed or built	Install and hook up all appliances fridges, ice cream etc.etc.
Exterior landing, steps & railing	Hook up disconnect for mini split heat pump
Full skirtboard to ground installed for full enclosure	Re-connect electrical crossovers between modules
Install ridge cap roofing at ridge marriage line ridge	Building Department continued below: Review and approval of all DWV plumbing for site installed fixtures, including protection of exterior piping. Verification of available plumbing facilities in accordance with IBC ch 29 - including 2902.3.3 ... travel to such facilities shall not exceed a distance of 500 feet. This building is approved only in a complete, detached, configuration. No fire rated assemblies are reviewed or approved in this structure. The structure must be located appropriately to achieve required fire separation from surrounding structures & property lines (actual or assumed) to meet all applicable codes Foundation plans and details are not reviewed by L&I, except for the reasonability of the design to connect to the modular building. Plan review, Approval and Inspection of the foundation system is the jurisdiction of the local building official. This is typical for all foundation related sheets, details and engineering contained within this plan set.
Install siding at marriage lines at ends of building	
Install lag bolts at marriage line girders per drawings	
Install marriage line floor bolts per drawings	
Install mini split system on site	
Tie down attachment to foundation per engineered drawing	
Local review and approval of height above grade based on foundation design. See sheets such as 6&7 for floor framing materials and details.	
Inspector's name (print/type)	Manufacturer's name (print/type)
Phone: (8 am to 5 pm)	
Office location	Date
	Manufacturer's signature

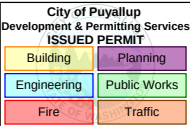
CUSTOMER IS RESPONSIBLE FOR:
1. FOUNDATION AND UTILITIES:

SITE PREPARATION
AGREEMENT

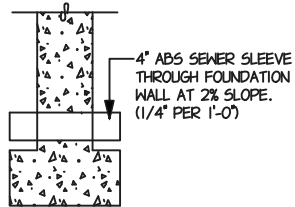
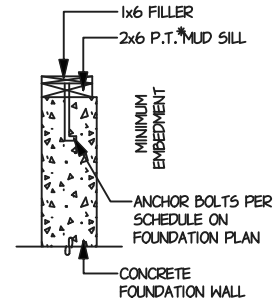
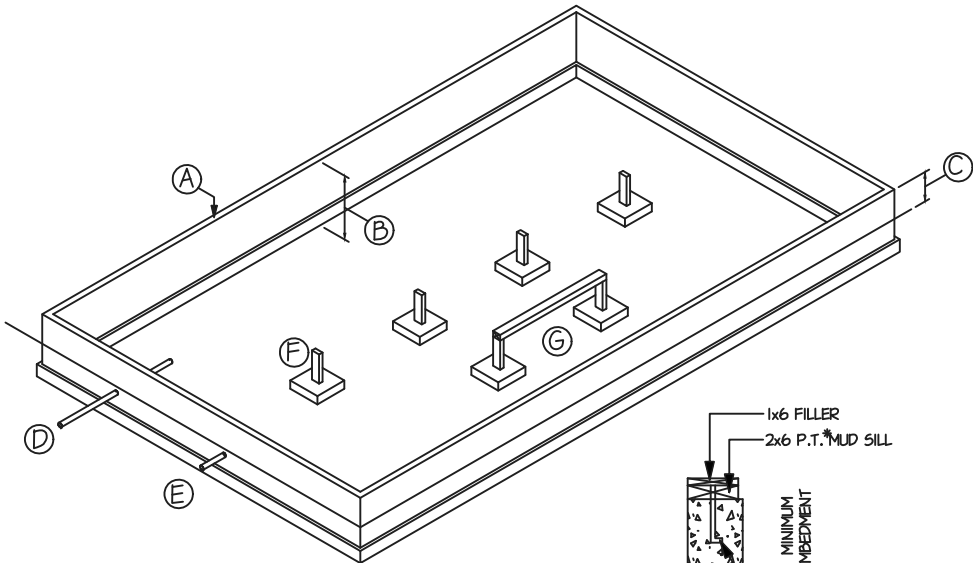
4. TYPICAL REASONS FOR ADDITIONAL SET CHARGE ASSESSMENT TO CUSTOMERS:

- A. Foundation not fully prepared as specified.
- B. Foundation changed without notification to Timberland Homes.
- C. Relocation of foundation on the site, resulting in changed module placement.
- D. Unreasonable delays resulting in billable time and equipment charges due to:
 - Additional crew or equipment requirements
 - Improper site preparation

Customer understands site requirements and agrees to the above, and will be responsible for same. Customer also agrees to pay additional charges if site is not properly prepared, if additional equipment is required, or if unwarranted stand-by time is incurred. Further related information and responsibilities are listed on SET UP AGREEMENT.



PRPF20251347



(# P.T. = Pressure Treated)

- A. FOUNDATION DETAIL:
1. Provide and install foundation as specified in foundation plans and specifications provided by Timberland Homes. Plans will be stamped "Final Plans for Construction".
 2. Provide and install 2 x 6 treated mud sill, secured to embedded anchor bolts, and topped by 1x 6 spacer boards between anchor bolt nuts (Detail "A").
- B & C. HEIGHT OF FOUNDATION:
1. For crawl space-type foundations, maximum height INSIDE OR OUTSIDE of foundation is NOT TO EXCEED 48" from bottom of footing or grade to top of mud sill (Ref. "B-C"). ADDITIONAL COSTS WILL BE ASSESSED IF OVER 48".
 2. All ground adjacent to the foundation is to be firm to allow for delivery and placement of the home.
- D. WATER SUPPLY LINE/GAS PIPE & VENT:
1. Install 1" diameter supply line from 3 ft. outside the foundation (size of pipe may vary due to local requirements) to 3 ft. inside the foundation.
 2. Provide and install 200 PSI poly line from the water meter. Line to be installed at depth of 26" from meter to house unless otherwise specified by code.
 3. Provide and install piping for all gas appliances.
- E. SEWER SLEEVE:
1. Provide and install 4" ABS sewer sleeve through foundation at a 2% slope to the outside (1/4" per foot). 3" ABS through foundation wall about 3' with clean out outside of foundation. (Detail "E").
- F & G:
- Install ALL POST MATERIAL (Ref. "F" and "G"). See foundation plan for specifications. Posts and beams must be installed prior to delivery on all homes.
2. ADEQUATE ACCESS TO THE SITE:
- Timberland Homes will deliver your home modules on special pneumatic-lift trailers. Our truck and trailer is about 80' long, depending upon the size of the home. Consequently, it is very important to have adequate driveway clearance, as well as on-site clearance to get to your foundation. If the remote crawler is specified for your project we will verify that it is needed prior to the scheduled delivery date of your home. Either the delivery truck/trailer or the remote crawler/trailer will be used to place the modules next to the crane for placement on the foundation. A Timberland representative will certify highway accessibility, but it is the Customer's responsibility to provide adequate access onto the property and up to the foundation.
- A. DRIVEWAY AND CULVERT:
1. Driveway must remain at least 16 ft. wide on straight-aways, and wider at corners.
 2. PRIOR TO DELIVERY DATE: Ditches and holes must be filled, and stumps removed. All intruding trees must be removed or trimmed, and all overhead wires must be propped up, repositioned, or removed for clear access to the job site. (We need a minimum of 16 ft. clearance).
- B. GRADING AND LEVELING:
1. Level site along length of foundation where placement will occur. (Side placement). Should not be more than 48" from ground to top of mud sill.
 2. Provide adequate space for the crane set up, crane pad 30'x30' (minimum size) and the delivery of the modules next to the crane to attach rigging for placement of your home on the foundation. For more specific details for your site please refer to your site visit form that was filled out by a Timberland representative at the time of the site visit.
- C. PERMITS AND UTILITIES:
3. PRIOR TO DELIVERY:
- a. Provide all necessary permits, and have water & sewer into the foundation.
 - b. If water activation is not complete when plumbing is ready to be connected to purchasers water line, purchaser accepts responsibility for activation of water and testing of plumbing fixtures.
 - c. Make arrangements with your local utility company to hook up power and gas immediately after State and local inspections have been completed on site. Delays in getting permanent power will impact your move-in date.



913 - CENTRAL AVE. S.
KENT, WA 98032
PH: 253-735-3435
Custom@Timberland-Homes.com

DRAWN EXCLUSIVELY FOR:
MARCOE CANDY
SALES
D. McKim
LOCATION
PUYALLUP, WA.
THIS DRAWING IS THE PROPERTY OF TIMBERLAND HOMES
AND SHALL NOT BE COPIED OR DUPLICATED WITHOUT
PRIOR PERMISSION.

10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/07/25	Let	ST

PERMIT REVIEW	
BLDG. PERMIT	
Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	
7161	
JOB NO.	
-	
SHEET NO.	
1	



913 - CENTRAL AVE. S.
KENT, WA 98032
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Custom@Timberland-Homes.com

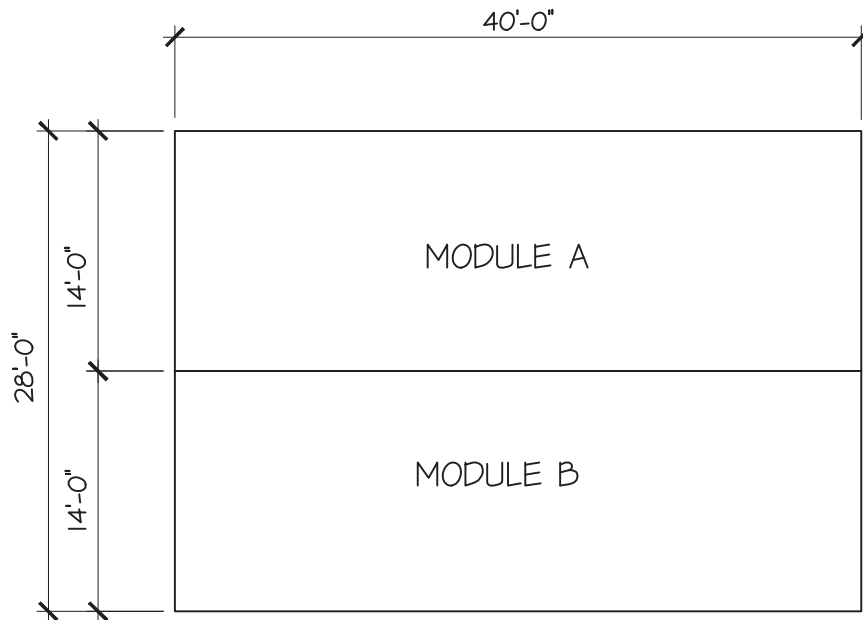
DRAWN EXCLUSIVELY FOR:
MARCOE CANDY
LOCATION: PUYALLUP, WA.
SALES: D. MCKIM
THIS DRAWING IS THE PROPERTY OF TIMBERLAND HOMES
AND SHALL NOT BE COPIED OR DUPLICATED WITHOUT
PRIOR PERMISSION.

10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/07/25	Let	ST

PERMIT REVIEW
BLDG. PERMIT

Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	7161
JOB NO.	-
SHEET NO.	2

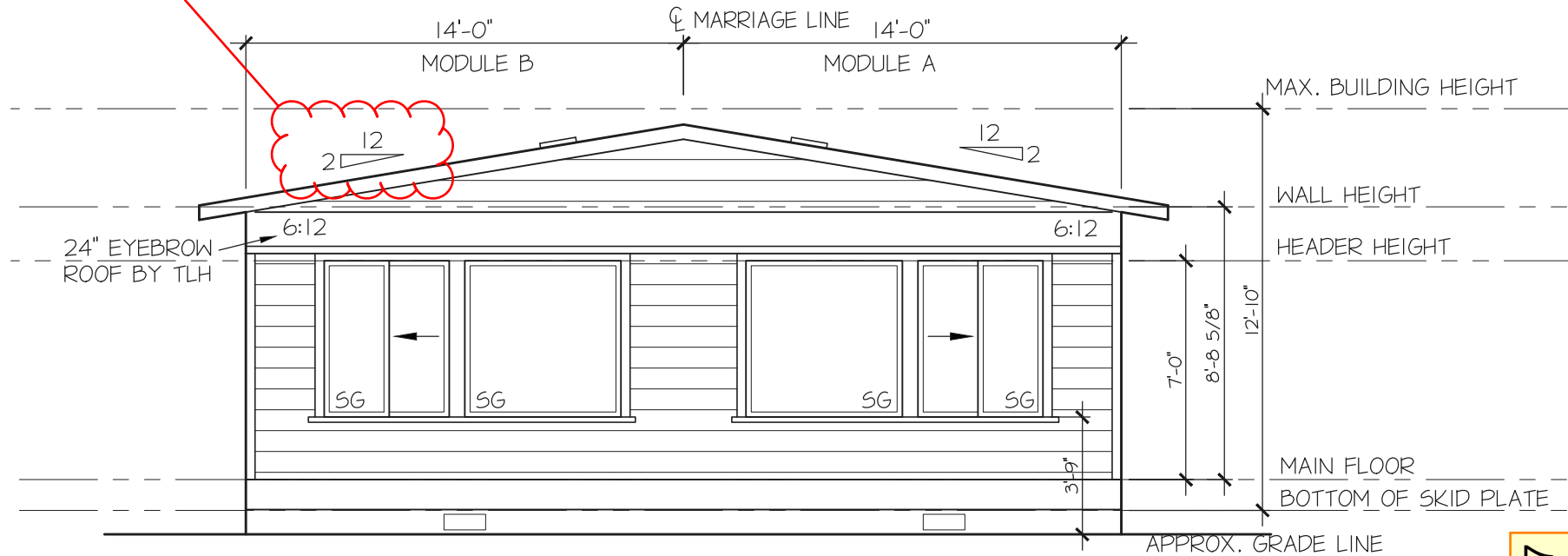


KEY PLAN



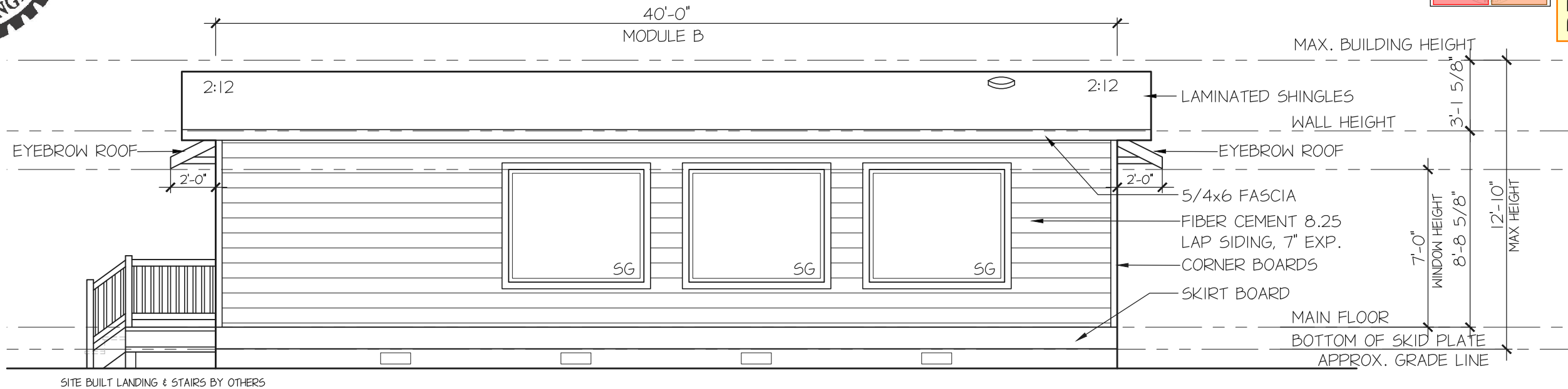
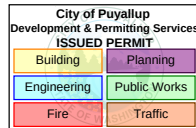
04-08-2025

Verify manuf. specification for this slope - including underlayment req's



RIGHT ELEVATION

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



FRONT ELEVATION

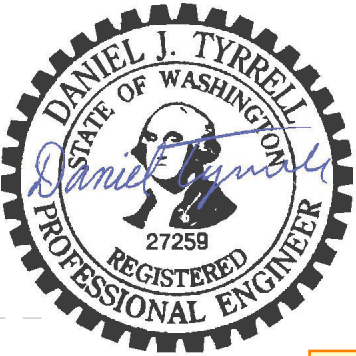
SCALE: 3/16" = 1'-0"

NOTE:
ENGINEERS SEAL FOR STRUCTURAL ONLY

Porches, awnings, decks, stairs, landings and guards which are not factory installed in/on the modules are not reviewed or approved by L&I. Local jurisdiction having authority is responsible for all review, approval and inspection of these items. Typical of all sheets, details and engineering related to these items.

ROOFING:	PABCO 30 YEAR LAMINATED SHINGLES
SIDING:	FIBER CEMENT 8.25 LAP SIDING, 7" EXP.
WINDOWS:	VINYL
ENCLOSED SOFFITS:	NO

DESIGN REQUIREMENTS
ROOF SNOW LOAD - 25 lb./ SQUARE FOOT
FLOOR LIVE LOAD - 100 / SQUARE FOOT
110 mph WIND EXPOSURE "C"



04-08-2025

PRPF20251347



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Ph: 253-735-3435
Custom@Timberland-Homes.com

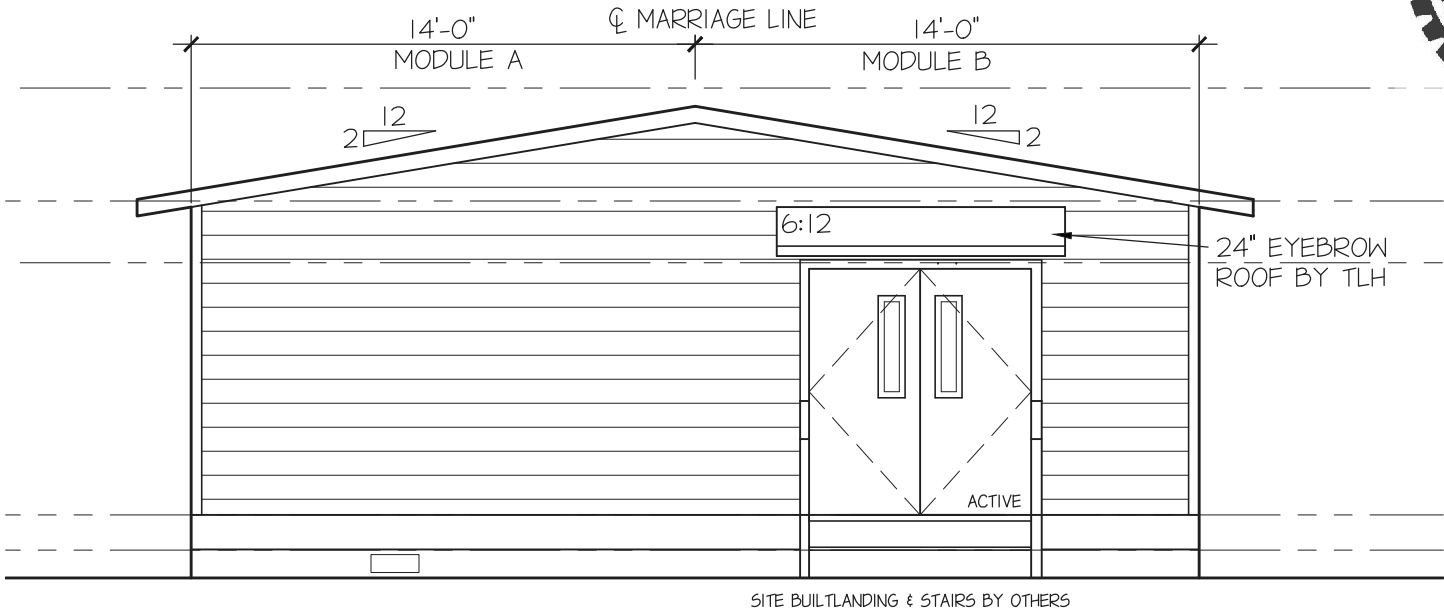
DRAWN EXCLUSIVELY FOR:
MARCOE CANDY
SALES
D. MCKIM
LOCATION
PUYALLUP, WA.
THIS DRAWING IS THE PROPERTY OF TIMBERLAND HOMES
AND SHALL NOT BE COPIED OR DUPLICATED WITHOUT
PRIOR PERMISSION.

10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/07/25	Let	ST

PERMIT REVIEW
BLDG. PERMIT

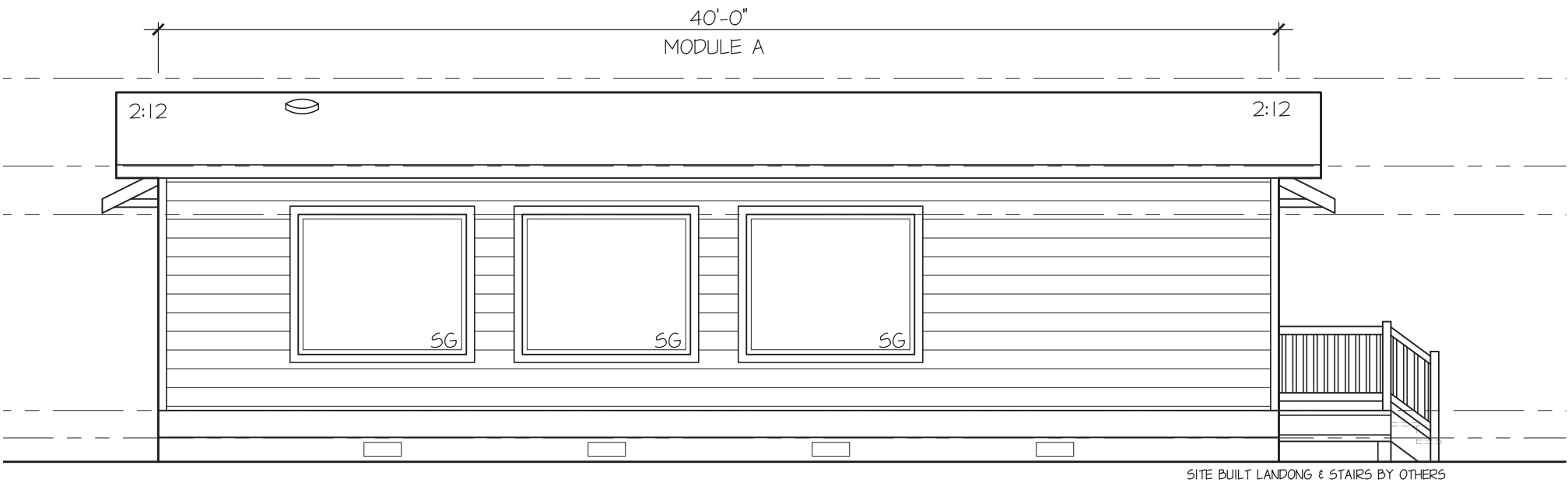
Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	7161
JOB NO.	-
SHEET NO.	3



LEFT ELEVATION

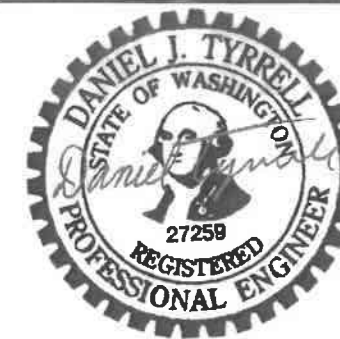
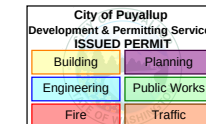
SCALE: 3/16" = 1'-0"



REAR ELEVATION

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

NOTE:
ENGINEERS SEAL FOR STRUCTURAL ONLY



TIMBERLAND

913 - CENTRAL AVE. S.
MONT, WA 98052
PH 253-736-3435
Online@RobtandHanna.com

AVAILABLE EXCLUSIVELY FOR:	MARCOE CANDY
NAME	D. McKim
LOCATION	PUYALLUP, WA.

THIS FORM IS THE PROPERTY OF FRANKLIN JONES AND SHALL NOT BE CREDITED OR REPRODUCED WITHOUT WRITTEN PERMISSION.

10/02/24	PRELIMINARY	5
11/01/24	1ST REV	5
11/12/24	2ND REV	5
01/01/25	PREP FOR ENG	5
02/03/25	ENGINEERING	5
04/14/25	LLI	5
05/20/25	PLAN REVIEW	5
05/29/25	PRODUCTION	5
06/02/25	CONSTRUCTION	5
06/04/25	LLI PLUMBING	5

	PERMIT REVIEW	
	BLDG. PERMIT	

Style	CUSTOM
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5-5-1	1120
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54. FWD	1,120
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No. Polym.	N/A
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1999-2000	1999
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2124-2125	2124
2125-2126	2125
2126-2127	2126

Drawn By	ST
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20	20 20 20
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Date	09/30/20
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Scale	AS NOTED
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State	1990
Alabama	10.0
Alaska	10.0
Arizona	10.0
Arkansas	10.0
California	10.0
Colorado	10.0
Connecticut	10.0
Delaware	10.0
District of Columbia	10.0
Florida	10.0
Georgia	10.0
Hawaii	10.0
Idaho	10.0
Illinois	10.0
Indiana	10.0
Iowa	10.0
Kansas	10.0
Kentucky	10.0
Louisiana	10.0
Maine	10.0
Maryland	10.0
Massachusetts	10.0
Michigan	10.0
Minnesota	10.0
Mississippi	10.0
Missouri	10.0
Montana	10.0
Nebraska	10.0
Nevada	10.0
New Hampshire	10.0
New Jersey	10.0
New Mexico	10.0
New York	10.0
North Carolina	10.0
North Dakota	10.0
Ohio	10.0
Oklahoma	10.0
Oregon	10.0
Pennsylvania	10.0
Rhode Island	10.0
South Carolina	10.0
South Dakota	10.0
Tennessee	10.0
Texas	10.0
Utah	10.0
Vermont	10.0
Virginia	10.0
Washington	10.0
West Virginia	10.0
Wisconsin	10.0
Wyoming	10.0

DESIGN NO.

[illegible]

7161

7101

JOB NO.

1000

2773

SHEET NO.

TEST NO.

1

4

026

020

NOTE:

1. ALL DMV WASTE LINES TO BE BUILT ON EXTERIOR OF THE BUILDING AND PROTECTED FROM DAMAGE ON-SITE PER UPC CODE.

NO PUBLIC ACCESS
TO THIS BUILDING.
EMPLOYEES ONLY

Porches, awnings, decks, stairs, landings and guards which are not factory installed in/on the modules are not reviewed or approved by L&I. Local jurisdiction having authority is responsible for all review, approval and inspection of these items. Typical of all sheets, details and engineering related to these items.

Accessibility and signage shall comply with ANSI A117.1

FLOOR PLAN NOTES:

- 1.) DESIGN LOAD CRITERIA: IBC 2021.
100 psf FLOOR LIVE LOAD
25 psf ROOF SNOW LOAD
WIND SPEED= 110 M.P.H. "EXPOSURE C"
SITE CLASS 'D' $S_s = 1.27$ $S_1 = 0.437$
- 2.) TIMBERLAND HOMES CERTIFIES TO BUILD
TO THE DEPARTMENT OF LABOR AND
INDUSTRIES GOLD SEAL STANDARDS.

CONTRACTOR NOTE

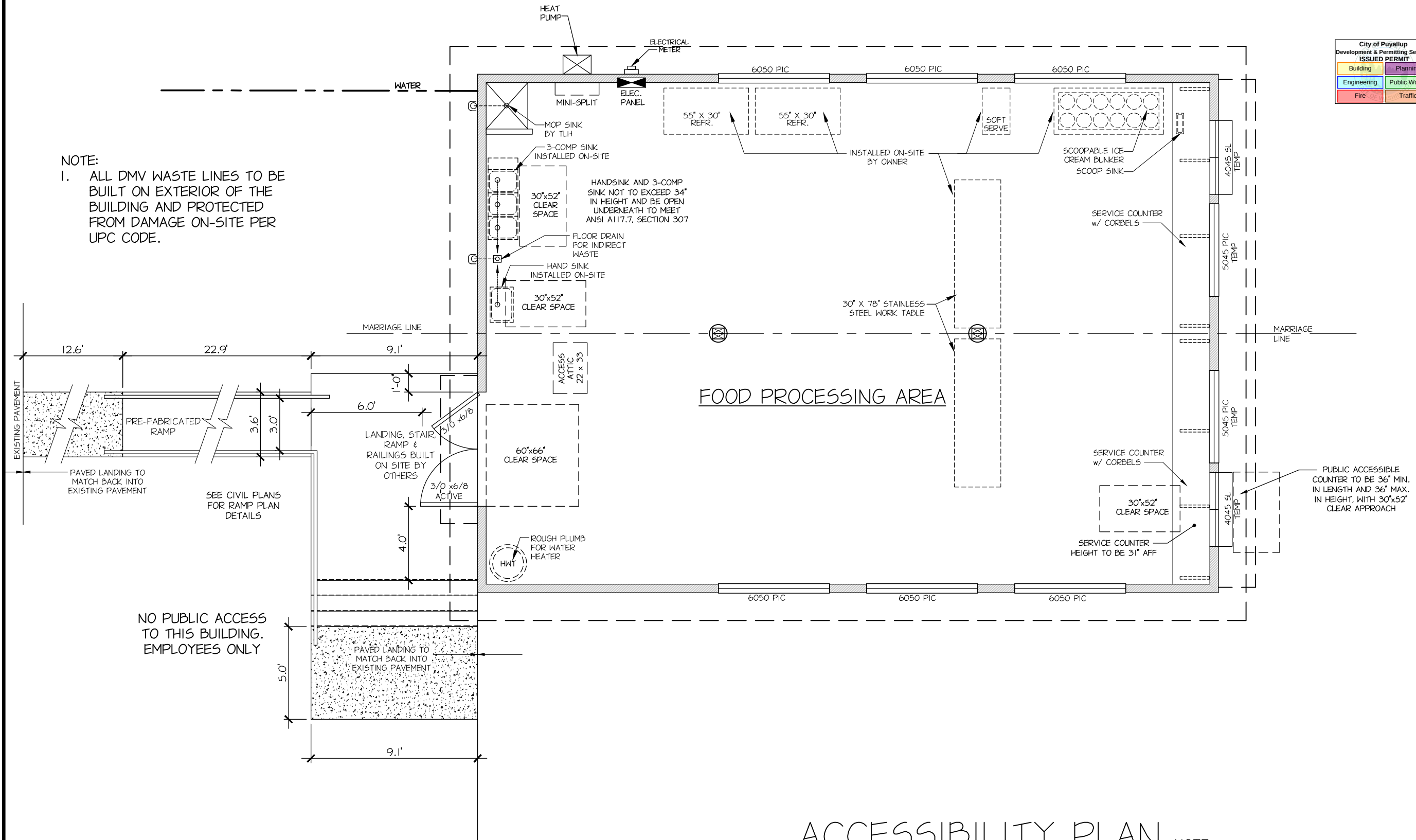
See Sheet 4A for updated plans
and on-site installations.

FLOOR PLAN

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

NOTE:

ENGINEERS SEAL FOR STRUCTURAL ONLY



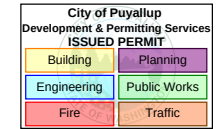
NOTE:
1. ALL DMV WASTE LINES TO BE BUILT ON EXTERIOR OF THE BUILDING AND PROTECTED FROM DAMAGE ON-SITE PER UPC CODE.

NO PUBLIC ACCESS TO THIS BUILDING. EMPLOYEES ONLY

ACCESSIBILITY PLAN

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

NOTE:
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PRPF20251347



1201 37th STREET NW
AUBURN, WA 98001
PH: 253-735-3435
Custom@Timberland-Homes.com

DRAWN EXCLUSIVELY FOR:
MARCOE CANDY

SALES
D. McKIM

LOCATION
PUYALLUP, WA.

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10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/14/25	LAI	ST
05/20/25	PLAN REVIEW	ST
05/29/25	PRODUCTION	ST
06/02/25	CONSTRUCTION	ST
06/04/25	LAI PLUMBING	ST
06/05/25	WINDOWS	ST
06/30/25	FOUNDATION	ST
01/06/26	PERMIT	ST

PERMIT REVIEW
BLDG. PERMIT

Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.

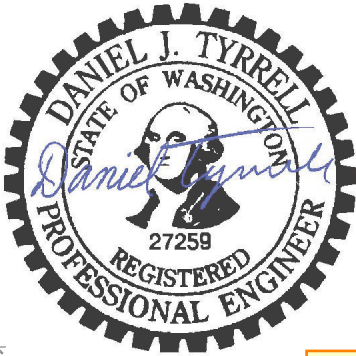
7161

JOB NO.

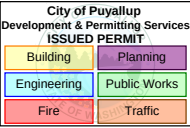
2773

SHEET NO.

4A



04-08-2025



PRPF20251347



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KENT, WA 98032
PH: 253-735-3435
Custom@Timberland-Homes.com

DRAWN EXCLUSIVELY FOR:
MARCOE CANDY

SALES
D. McKim

LOCATION
PUYALLUP, WA.

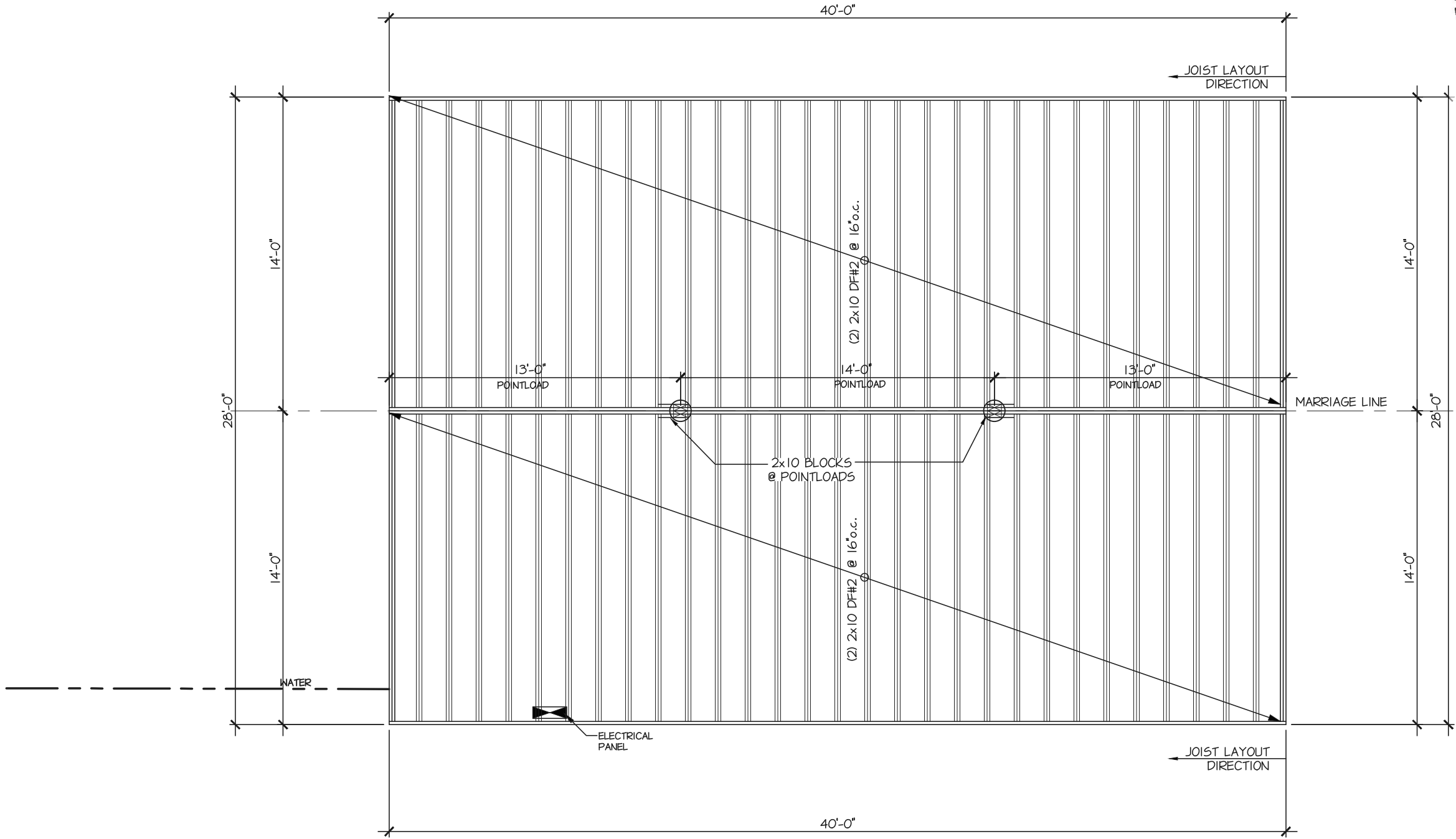
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PRIOR PERMISSION.

10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/07/25	Let	ST

PERMIT REVIEW
BLDG. PERMIT

Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	7161
JOB NO.	-
SHEET NO.	5



CONTRACTOR NOTE

See Sheet 4A for updated plans and on-site installations of foundation strapping.

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

NOTE:
ENGINEERS SEAL FOR STRUCTURAL ONLY



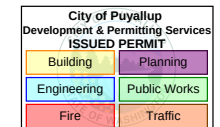
04-08-2025

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LOCATION: PUYALLUP, WA.
SALES: D. McKim
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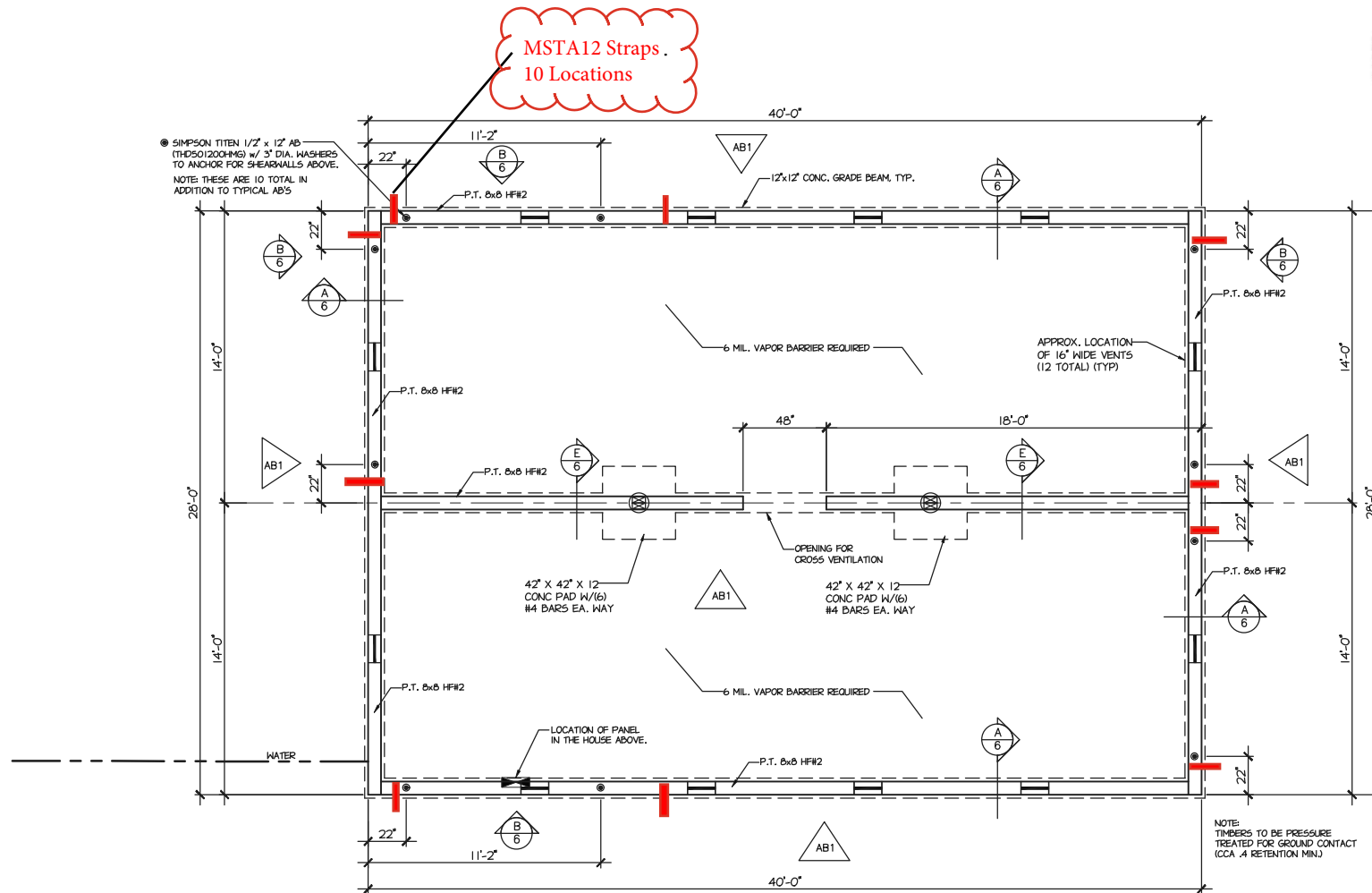
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11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/07/25	LI	ST

PERMIT REVIEW		
BLDG. PERMIT		
Style	CUSTOM	
Scale	1/120	
No. Ddm.	N/A	
Drawn By	ST	
Date	09/30/24	
Scale	AS NOTED	

DESIGN NO.
7161

JOB NO.
-

SHEET NO.
5A



Foundation plans and details are not reviewed by L&I, except for the reasonability of the design to connect to the modular building. Plan review, Approval and Inspection of the foundation system is the jurisdiction of the local building official. This is typical for all foundation related sheets, details and engineering contained within this plan set.

FOUNDATION PLAN

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

NOTE:
ENGINEERS SEAL FOR STRUCTURAL ONLY

FOUNDATION NOTES:

- 1.) FOR POSITIVE CONNECTION BETWEEN POST AND PAD USE SIMPSON "PB-44" FOR 4x8's AND 4x4's USE SIMPSON "PB-66" FOR 6x6's & 6x8's (OR EQUAL) USE SIMPSON "ABU-88" FOR 8x8's (OR EQUAL)
- 2.) FOOTING AND POST LOCATIONS MAY BE WITHIN 2' OF ROOF POINT LOAD LOCATIONS.
- 3.) SITE CONTRACTOR TO VERIFY ALL DIMENSIONS ON FOUNDATION PLAN.
- 4.) FOUNDATION CONTRACTOR RESPONSIBLE FOR SEWER, WATER, POWER AND GAS LINE KNOCK-OUTS IN FOUNDATION. SEWER CLEAN OUT IS REQ'D TO BE PLACED OUTSIDE AND WITHIN OF 5 ft. OF THE FOUNDATION WALL BY THE SITE CONTRACTOR.
- 5.) FOUNDATION VENTING PER 2021 IRC CRAWL SPACE = 1319 sq. ft. 1319 ÷ 150 = 8.8 sq. ft. 9 sq. ft. OF SCREENED VENT. REQ'D. (VENTS TO BE SIZED AND LOCATED IN FIELD BY FOUNDATION CONTRACTOR)
- 6.) CRAWL SPACE ACCESS: SITE CONTRACTOR TO LOCATE AND PROVIDE CRAWL SPACE ACCESS PANEL TO MEET LOCAL CODE AND SITE REQUIREMENTS. LOCATION TO BE DETERMINED SO AS NOT TO ALIGN W/ HOLDOWNS, DOORWAYS, DECKS, AND ETC...
- 7.) FOUNDATION TO BE AS PER THE REQUIREMENTS OF THE LOCAL JURISDICTION.

ANCHOR BOLT SCHEDULE		
MARK	SILL PLATE ANCHOR	REMARKS
AB1	1/2"x12" SIMPSON TITEN HD (THD501200 HMG) @ 72" O.C.	SEE PLAN
AB2	1/2" DIA. x 18" o.c. AB w/3"x3"x3/16" PLATE WASHER	NOT USED
AB3	1/2" DIA. x 36" o.c. AB w/3"x3"x3/16" PLATE WASHER	NOT USED

NOTE: AB REQUIRED 8" FROM CUT END OF 8x8

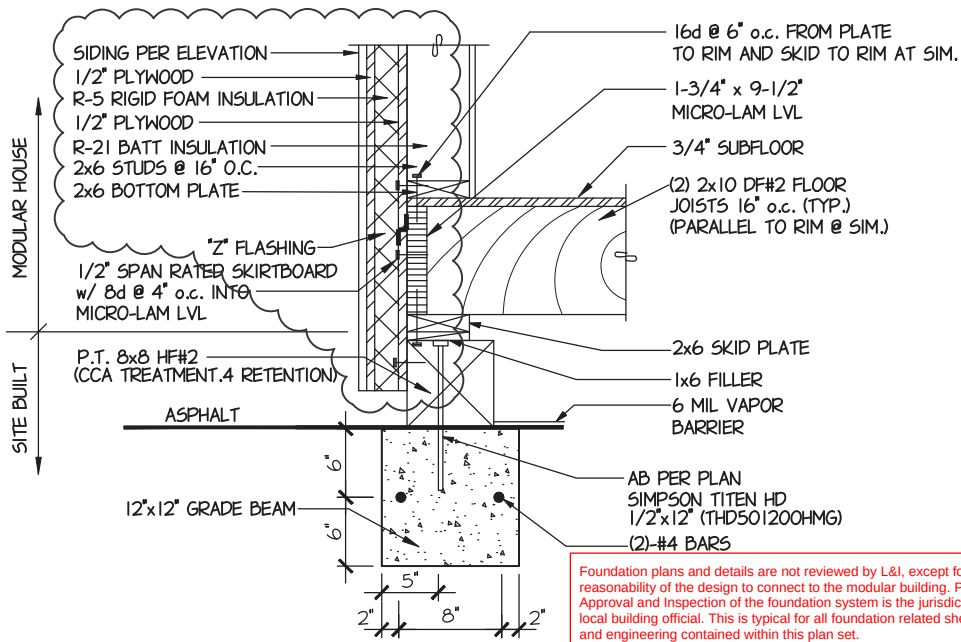
STRUCTURAL NOTES:

FOUNDATION
EXTEND FOUNDATION TO SOLID BEARING 1,500 psf BEARING CAPACITY, 1'-6" MINIMUM BELOW FINISH GRADE.

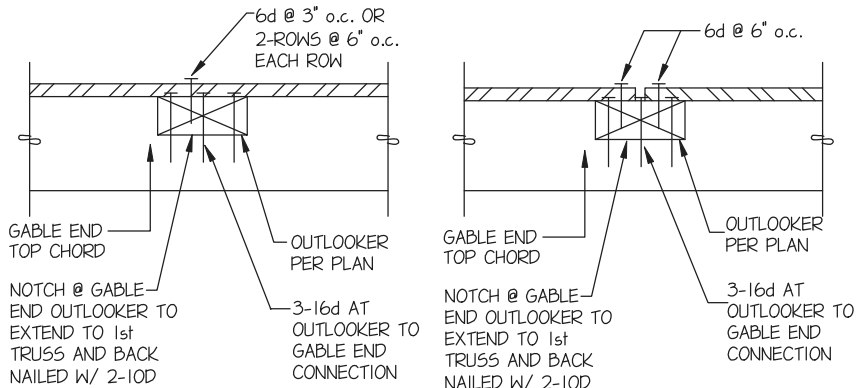
CONCRETE
CONCRETE TO HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 3000 psi.

REINFORCING STEEL
ALL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 40.
WOOD FRAMING
SCHEDULE OF LUMBER GRADING (W.C.L.I.B. BOOK NO. 16) KILN DRY (U.N.O.)
A.) HEM-FIR NO. 2 FOR HEADERS EXCEPT AS SHOWN.
B.) DOUGLAS FIR NO. 2 POSTS AND JOISTS.
C.) HEM-FIR STUD GRADE FOR STUDS, WALL PLATES, SILL PLATES AND BRIDGING.
D.) PRESSURE TREAT ALL WOOD IN CONTACT WITH CONCRETE.
E.) ALL STRUCTURAL CONNECTORS TO BE MANUFACTURED BY SIMPSON STRONG-TIE.
F.) WHERE CONNECTORS ARE SECURED TO PRESSURE TREATED WOOD (ACO-C, ACO-D, CBA-A, CA-B AND NON-DOT BORATES; SIMPSON Z-MAX (G185) COATED OR STAINLESS STEEL CONNECTORS ARE REQUIRED.

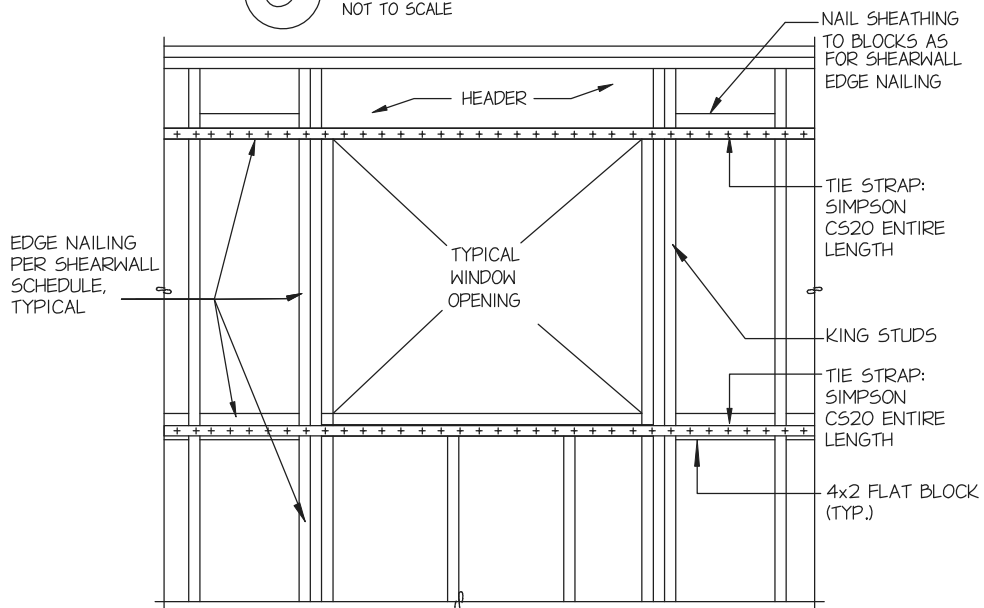
NOTE:
ENGINEERS SEAL FOR STRUCTURAL ONLY



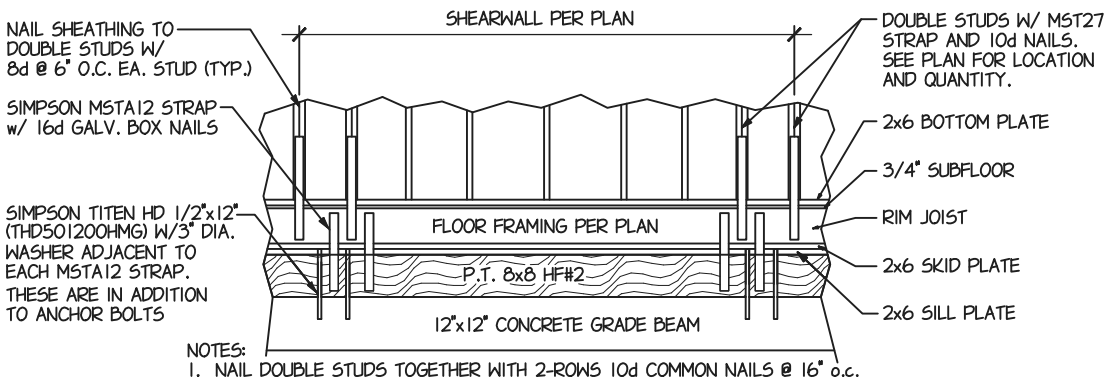
A FOUNDATION DETAIL
NOT TO SCALE



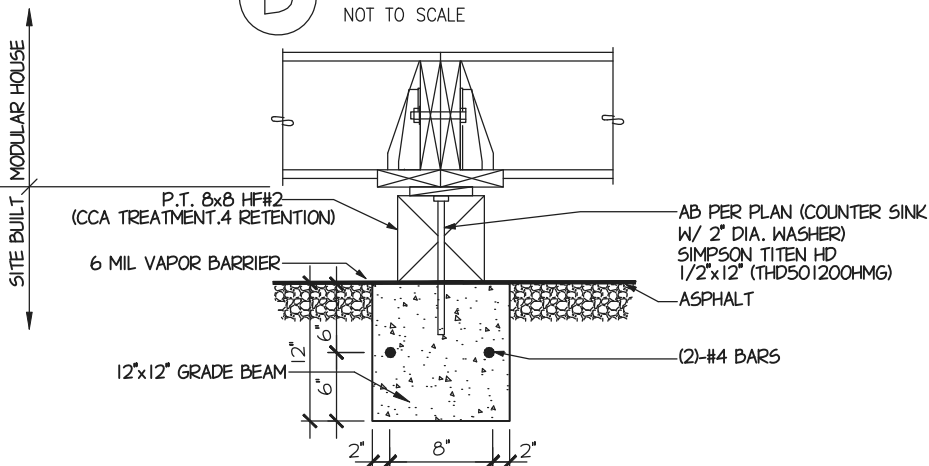
C OUTLOOKER NAILING
NOT TO SCALE



D WALL OPENING REINFORCEMENT AT SHEARWALL
NOT TO SCALE



B HOLDDOWN DETAIL
NOT TO SCALE



E FOUNDATION DETAIL
NOT TO SCALE

SHEARWALL SCHEDULE 1,2,3,4,6,7,8				
MARK	SHEATHING	SHEATHING EDGE NAILING	REMARKS	
SW1	15/32" PLYWD ONE SIDE	8d @ 6" o.c.		
SW2	15/32" PLYWD ONE SIDE	8d @ 4" o.c.		NOT USED
SW3	15/32" PLYWD ONE SIDE	8d @ 3" o.c.	SEE NOTE 5.	NOT USED
SW4	15/32" PLYWD ONE SIDE	8d @ 2" o.c.	SEE NOTE 5	NOT USED
SW5	15/32" PLYWD EACH SIDE	8d @ 4" o.c.	SEE NOTE 5	NOT USED
SW6	15/32" PLYWD EACH SIDE	8d @ 3" o.c.	SEE NOTE 5.	NOT USED
SW7	15/32" PLYWD EACH SIDE	8d @ 2" o.c.	SEE NOTE 5.	NOT USED

- NOTES:
1. SCHEDULE IS BASED ON 2021 IBC AND ON WOOD FRAMED WALLS WITH 2x4 (MINIMUM) HEM-FIR STUDS @ 24" o.c..
 2. SHEATHING IS TO BE SPAN RATED 24/0 MINIMUM AND MAY BE PLYWOOD OR OSB.
 3. SHEATHING THICKNESS MAY BE REDUCED TO 3/8" OR 7/16" PROVIDED STUDS ARE @ 16" o.c. MAXIMUM.
 4. SHEATHING IS TO BE DIRECTLY APPLIED TO STUDS AND ALL EDGES BLOCKED.
 5. STUDS ARE TO BE SINGLE 3" NOMINAL OR THICKER AT ADJOINING PANEL EDGES AND SHEATHING NAILING STAGGERED FOR SW3, SW4, SW5, SW6, & SW7.
 6. ALL NAILS ARE TO BE COMMON WIRE.
 7. SHEATHING NAILING AT INTERMEDIATE SUPPORTS IS TO BE 8d @ 12" o.c.
 8. SHEATHING NAILS ARE TO BE DRIVEN SO THAT THEIR HEADS ARE FLUSH WITH THE SURFACE OF THE SHEATHING.
 9. ALL FASTENERS AND CONNECTORS IN CONTACT WITH PRESERVATIVE TREATED WOOD MUST MEET IBC 2304.10.5

05-21-2025





05-21-2025

City of Puyallup Development & Permitting Services ISSUED PERMIT			
Building	Planning	Public Works	Traffic
Engineering			
Fire			

NOTES:

1. TIMBERLAND HOMES IS NOT RESPONSIBLE FOR ANY MATERIALS BELOW SKID PLATE UNLESS OTHERWISE NOTED.
2. SPECIFICATIONS AND MATERIALS SHOWN ARE MINIMUM REQUIREMENTS AND MAY BE SUBSTITUTED FOR EQUAL OR BETTER MATERIALS.

ROOF VENTILATION CALCULATIONS:

TOTAL ATTIC FLOOR SQ. FT. = 1,120 SQ. FT.
 $1,120/300 = 3.73 \times 144 = 538$ SQ. IN. REQUIRED
269 SQ. IN. OF NET FREE AREA NEAR RIDGE
269 SQ. IN. OF NET FREE AREA AT EAVES

ROOFING: LAMINATED SHINGLES OR METAL
ICE AND WATER UNDERLAYMENT INSTALLED PER IRC

1/2" CDX PLYWOOD SHEATHING (32/16)
W/ 8d COMMON NAILS @ 6" O.C. @ PANEL
EDGES & 12" O.C. @ INTERMEDIATE.

INSULATION Baffle. NAIL TO INSIDE
EDGE OF UPPER TRUSS CHORD.

SIMPSON "H1" OR EQUAL
EVERY TRUSS

FREEZE VENT OR 2x4 BLOCKING
TOTAL VENTILATION TO BE 1/300th
OF ATTIC AREA W/50% OF VENTS
TO BE AT EAVES. OR ATTIC VENTILATION
MUST EQUAL 1/150th OF ATTIC AREA.
INSTALL VENTS TO PROVIDE CROSS VENTILATION.
NOTE: 50% OF EAVE VENTS TO BE
3'-0" BELOW THE OTHER 50%

5/4x8 FASCIA w/
(2) 16d NAILS PER TRUSS.

SHEAR WALL SUMMARY:

1/2" APA RATED SHEATHING, 5/8" T1-11, OR
7/16" LP SMART PANEL SIDING BLOCKED
W/ NAILING PER SCHEDULE ON SHEET #7.

ALL EXTERIOR WALLS:

NAIL SPACING @ INTERMEDIATE SUPPORTS
TO BE 12" O.C. INSTALL TYVEK HOUSEWRAP
OR CAULK AND SEAL ALL EXTERIOR JOINTS
AND SEAMS PER IBC 2021 1402.2

SIDING PER ELEVATION

1/2" PLYWOOD

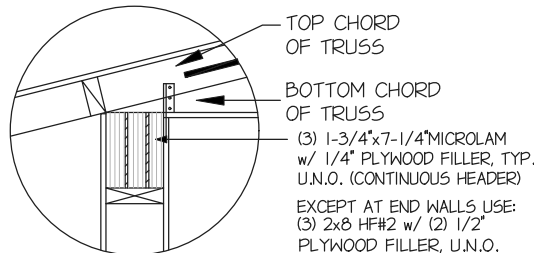
R-5 RIGID FOAM INSULATION

1/2" PLYWOOD

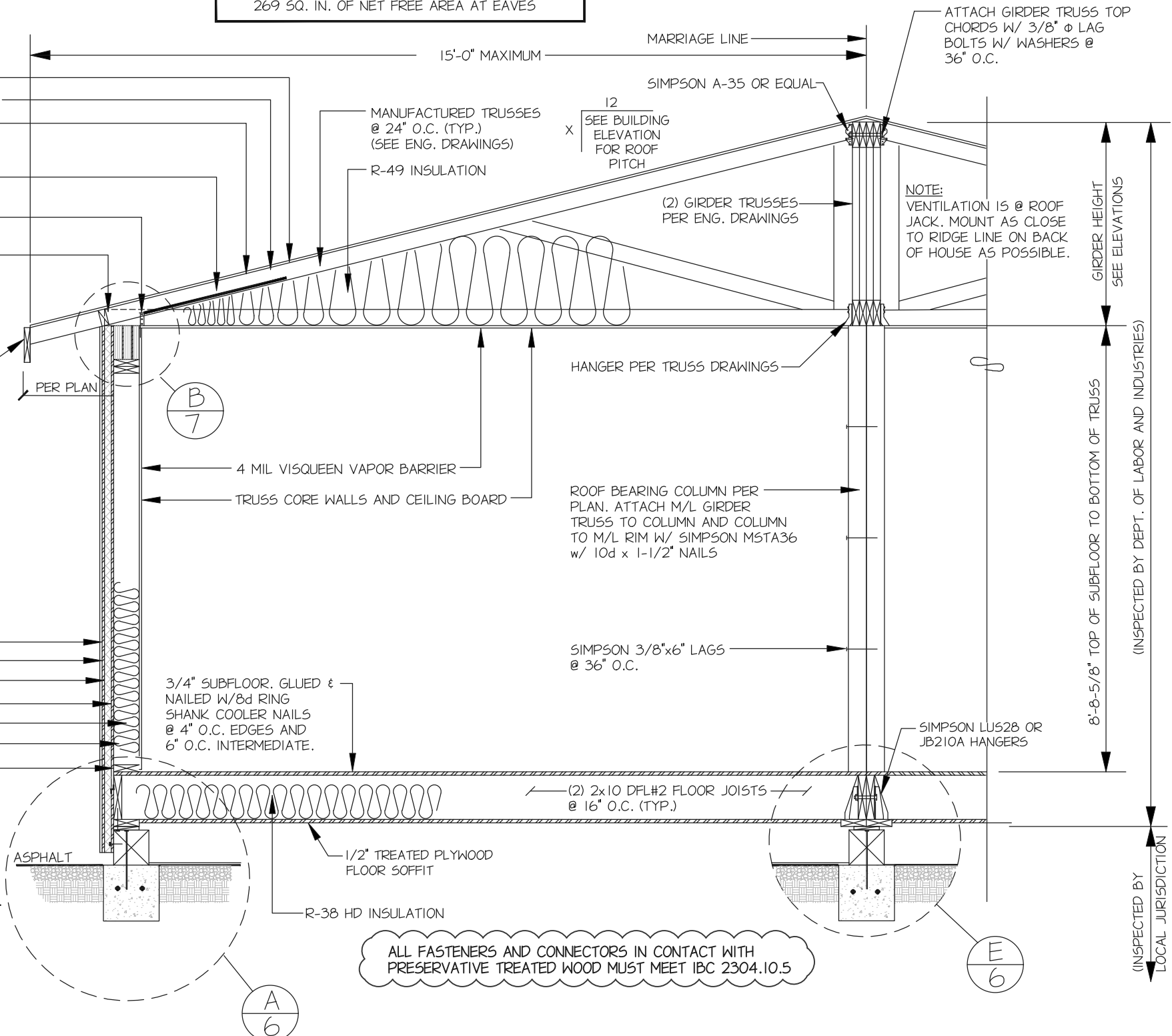
R-21 BATT INSULATION

2x6 STUDS @ 16" O.C.

2x6 BOTTOM PLATE



B DETAIL



A BUILDING SECTION
NOT TO SCALE

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KENT, WA 98032
PH: 253-735-3435
Custom@Timberland-Homes.com

DRAWN EXCLUSIVELY FOR:
MARCOE CANDY

LOCATION
PUYALLUP, WA.

SALES
D. MCKIM

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PRIOR PERMISSION.

10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/14/25	LEI	ST
05/20/25	PLAN REVIEW	ST

PERMIT REVIEW	
BLDG. PERMIT	
Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	
7161	
JOB NO.	
-	
SHEET NO.	
7	

NOTE: ENGINEERS SEAL FOR STRUCTURAL ONLY

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic



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01/07/25	PREP FOR ENG.	ST
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04/14/25	LI	ST
05/20/25	PLAN REVIEW	ST
05/29/25	PRODUCTION	ST
06/02/25	CONSTRUCTION	ST

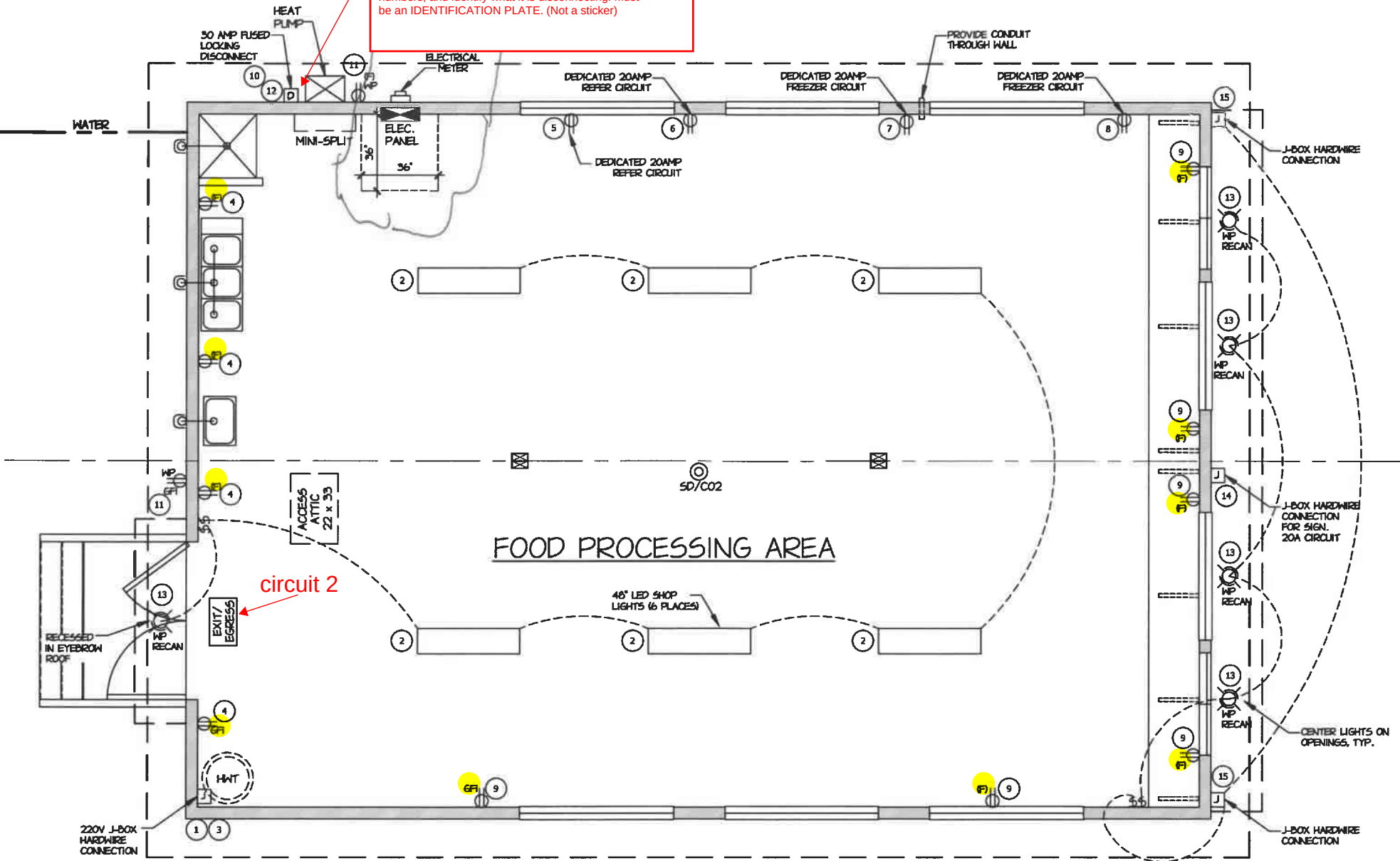
PERMIT REVIEW	BLDG. PERMIT
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Style	CUSTOM
Sq. Feet	1,120
No. Bdrms.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	7161
JOB NO.	2773
SHEET NO.	E1

WAC 296.46B 110.022
Identification plates on disconnect means
are to show designation of circuit source
panel board that supplies disconnect, circuit
numbers, and identify what it is disconnecting. Must
be an IDENTIFICATION PLATE. (Not a sticker)

NO PUBLIC ACCESS
TO THIS BUILDING.
EMPLOYEES ONLY



NOTES:

- ELECTRICAL PLAN SHOWS APPROXIMATE LOCATIONS OF SWITCHES, OUTLETS, LIGHTS ETC. PER NEC CODE. THESE LOCATIONS MAY BE SUBJECT TO REQUIRED FIELD ADJUSTMENTS. ANY ALTERATION FOR SPECIFIC LOCATIONS OR ADDITIONS ARE CHARGED AT OPTION PRICE.
- ALL EXHAUST FANS TO TERMINATE THROUGH THE ROOF

ELECTRICAL LEGEND

	110V OUTLET		CEILING LIGHT		ELECTRICAL PANEL
	110V HALF HOT SWITCHED OUTLET		WALL LIGHT		METER
	110V OUTLET COUNTERTOP (POP-UP)		RECESSED CAN LIGHT (TOTALLY ENCLOSED FIXTURE)		J-BOX
	110V OUTLET (FIRST GFCI ON CIRCUIT)		RECESSED EYEBALL LIGHT (TOTALLY ENCLOSED FIXTURE)		TV JACK
	110V OUTLET PROTECTED FROM A LINE SIDE RECEPTACLE		EXTERIOR LIGHT FIXTURE DAMP/WET/OUTDOOR LOCATIONS		PHONE JACK
	110V OUTLET DAMP/WET/OUTDOOR LOCATIONS		EXTERIOR FLOOD LIGHT		DOOR CHIME
	220V OUTLET		CHANDIELIER		THERMOSTAT CONTROL
	SWITCH		TRACK LIGHT		SMOKE DETECTOR
	SWITCH w/ DIMMER		RECESSED FLOURESCENT LIGHT		CEILING HEATER
	SWITCH (3 WAY, 4 WAY, ETC.)		VENT FAN		WALL HEATER
					PADDLE FAN

LIGHT FIXTURE SCHEDULE:

LED SHOP LIGHTS = 37 WATTS PER FIXTURE
EXTERIOR RECESSED CAN LIGHTS = 11 WATTS PER FIXTURE

NOTE:

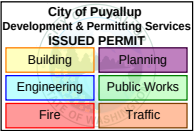
BATTERY BACKUP ON ALL EGRESS LIGHTING

NOTES:

- LIGHT FIXTURES CONTROLLED w/ MANUAL SWITCHES
- EXTERIOR LIGHTS CONTROLLED w/ PHOTO EYE DAYLIGHT CONTROL
- ALL INTERIOR/EXTERIOR LIGHTS TO BE LED HIGH EFFICACY

ELECTRICAL PLAN

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



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SALES D. MCKIM
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10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/03/25	ENGINEERING	ST
04/14/25	L&I	ST

PERMIT REVIEW
BLDG. PERMIT

Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	7161
JOB NO.	-
SHEET NO.	E2

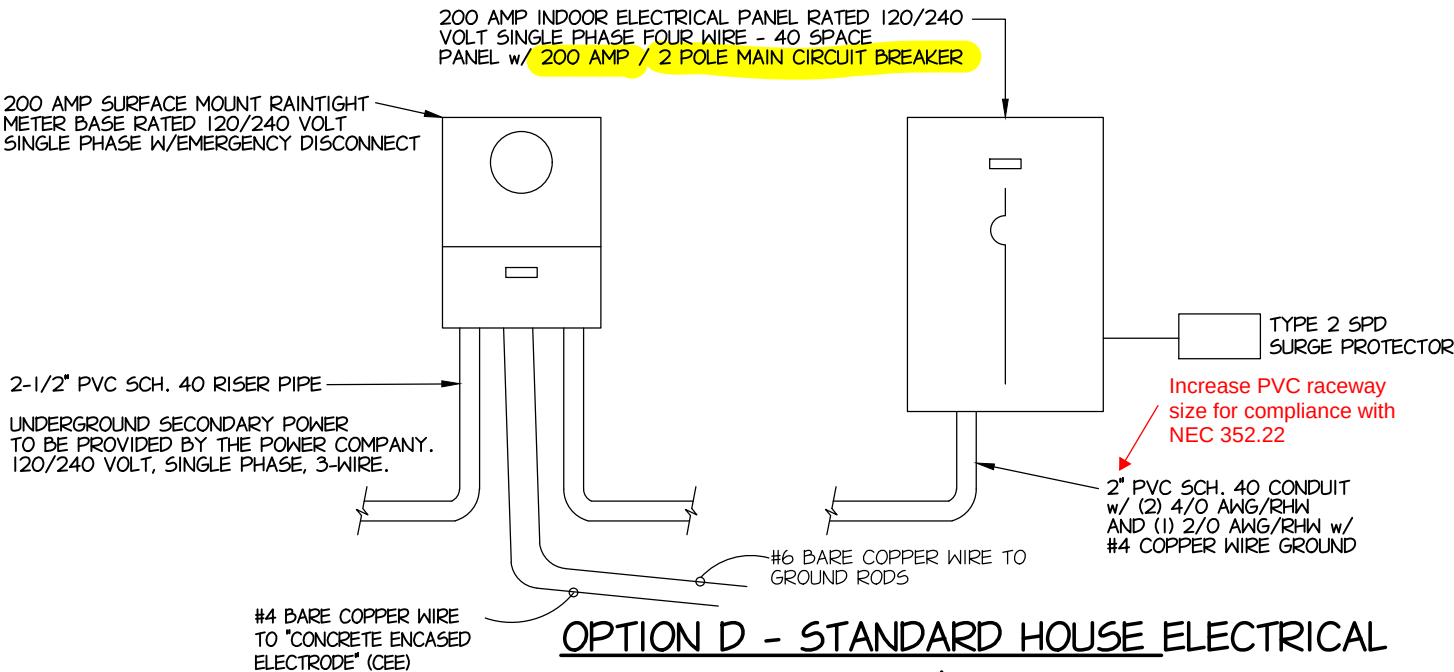
PANEL SCHEDULE "A"							
WIRE SIZE	LOAD #	C/B	DESCRIPTION	WIRE SIZE	LOAD #	C/B	DESCRIPTION
#10	CIRC. #1	30A/2P	WATER HEATER (LO)	#12	CIRC. #2	20A/1P	INTERIOR LIGHTS / EXIT SIGN
#10	CIRC. #3	30A/2P	* * (LO)	#12	CIRC. #4	20A/1P	INTERIOR PLUGS
#12	CIRC. #5	20A/1P	REFER	#12	CIRC. #6	20A/1P	REFER
#12	CIRC. #7	20A/1P	FREEZER	#12	CIRC. #8	20A/1P	FREEZER
#12	CIRC. #9	20A/1P	INTRIOR PLUGS	#10	CIRC. #10	30A/2P	MINI SPLIT FUSED DISCONNECT
#12	CIRC. #11	20A/1P	EXTERIOR PLUGS	#10	CIRC. #12	30A/2P	* *
#12	CIRC. #13	20A/1P	EXTERIOR CAN LIGHTS GFCI	#12	CIRC. #14	20A/1P	EXTERIOR SIGN GFCI
#12	CIRC. #15	20A/1P	EXTERIOR OUTLETS GFCI	#12	CIRC. #16	20A/2P	SURGE PROTECTOR
#12	CIRC. #17	20A/2P		#12	CIRC. #18	20A/2P	SURGE PROTECTOR
#12	CIRC. #19	20A/2P			CIRC. #20		
#12	CIRC. #21	20A/2P			CIRC. #22		
#12	CIRC. #23	20A/2P			CIRC. #24		
			200A				MAIN DISCONNECT
			200A				* *
			200A				* *
			200A				* *

- PANEL SCHEDULE NOTES:
- WIRE SIZE LISTED IS THE MINIMUM REQUIREMENT.
 - ALL WIRE TYPE TO BE COPPER.
 - GFCI = GFCI CIRCUIT BREAKER
AFCI = AFCI CIRCUIT BREAKER
GFCI/AFCI = GFCI/AFCI CIRCUIT BREAKER
 - (LO) = INDICATES LOCKOUT DEVICE ON CIRCUIT

NEC 110.14(D) Tightening torque values for terminal connections shall be indicated on equipment or in installation instructions provided by the manufacturer. An approved means, such as a calibrated torque tool, shall be used to achieve the indicated torque value. USE TORQUE SEAL OR SIMILAR TO IDENTIFY ALL TERMINATIONS THAT HAVE BEEN TORQUED TO COMPLY WITH THIS REQUIREMENT FOR L&I INSPECTOR TO VERIFY. Please document values used for inspector to verify.

GENERAL ELECTRICAL NOTES:

- ALL RECEP.TS, SWITCHES, LIGHTS, FANS & HEATER LOCATIONS SHOWN ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS MAY VARY SOME DUE TO CONSTRUCTION OBSTACLES, EASE OF INSTALLATION, ETC., SO LONG AS CODE COMPLIANCE IS MAINTAINED PER 2023 NEC SECTION 210.
- ALL PERMANENTLY CONNECTED APPLIANCES TO BE CONNECTED TO A BREAKER LOCK-OUT IN THE ELECTRICAL PANEL.
- ALL G.F.I. KITCHEN COUNTER RECEP.TICLES SHALL CONFORM TO 2023 NEC.
- ADD LIGHT TO ILLUMINATE CROSSOVER J-BOXES WITH A SWITCH AT POINT OF ATTIC ACCESS PANEL SHALL BE PROVIDED PER 2023 NEC 210-70(C).
- ALL BATHROOM FANS, SWITCHES, THERMOSTATS AND RECEP'S. TO BE INSTALLED PER 2023 NEC.
- ALL WIRE SIZES PER 2023 NEC TABLE 310.16
- BOXES FOR CEILING MOUNTED & WALL MOUNTED LUMINAIRES MUST BE DESIGNED FOR THE PURPOSE AND BE CAPABLE OF SUPPORTING LUMINAIRE WEIGHING A MINIMUM OF 50 LB. PER 2023 NEC 314.27 (C)
- RECESSED LUMINAIRES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE TYPE IC-RATED AND CERTIFIED UNDER ASTM E283 ALL RECESSED LUMINAIRES SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN OR CAULK BETWEEN THE HOUSING AND THE INTERIOR WALL OR CEILING COVERING.
- 15 AND 20 AMP RECEP.TICLES INSTALLED IN WET LOCATION SHALL HAVE AN ENCLOSURE THAT WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS "EXTRA DUTY" PER 2023 NEC 406.9(B)(1).
- ALL NON-LOCKING TYPE 125 & 250 VOLT, 15 AND 20 AMP RECEP.TICLES SPECIFIED IN 210.53 SHALL BE TAMPER RESISTANT RECEP.TICLES. THIS REQUIREMENT INCLUDES INTERIOR AND EXTERIOR RECEP.TICLES.



OPTION D - STANDARD HOUSE ELECTRICAL RISER DIAGRAM w/ METER DISCONNECT

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic



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PRPF20251347

DRAWN EXCLUSIVELY FOR:	
MARCOE CANDY	
SALES	LOCATION
D. McKim	PUYALLUP, WA.
THIS DRAWING IS THE PROPERTY OF TIMBERLAND HOMES AND SHALL NOT BE COPIED OR DUPLICATED WITHOUT PRIOR PERMISSION.	

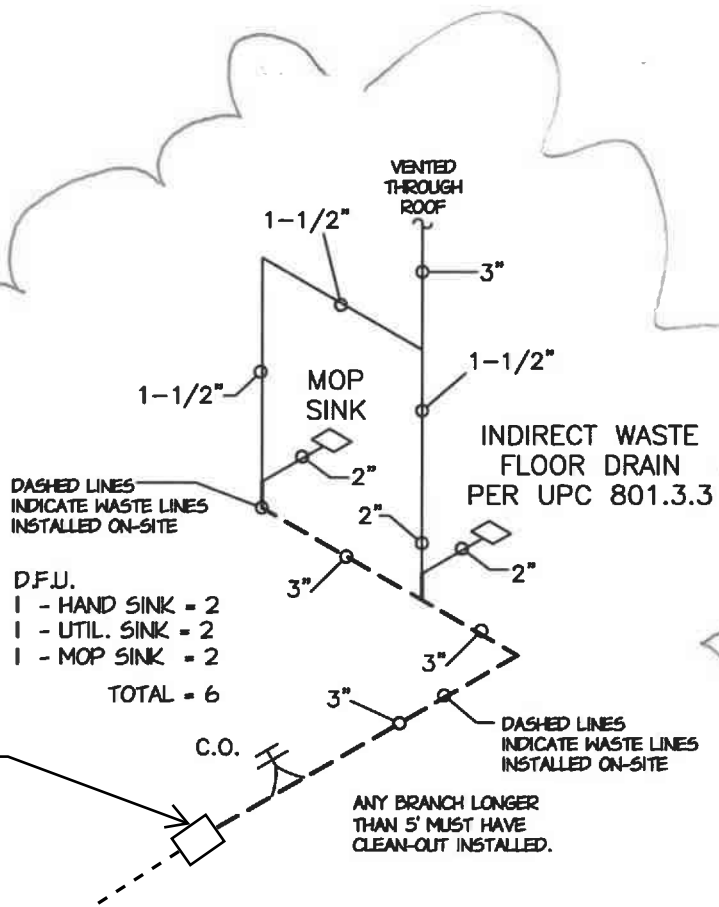
10/02/24	PRELIMINARY	ST
11/01/24	1ST REV	ST
11/12/24	2ND REV	ST
01/07/25	PREP FOR ENG.	ST
02/05/25	ENGINEERING	ST
04/14/25	LI	ST
05/20/25	PLAN REVIEW	ST
05/29/25	PRODUCTION	ST
06/02/25	CONSTRUCTION	ST
06/04/25	LI PLUMBING	ST

PERMIT REVIEW	BLDG. PERMIT
---------------	--------------

Style	CUSTOM
Sq. Feet	1,120
No. Bdrm.	N/A
Drawn By	ST
Date	09/30/24
Scale	AS NOTED

DESIGN NO.	7161
JOB NO.	2773
SHEET NO.	P1

Schier GB 50
Hydrodynamic Grease Interceptor
Located In Ground Outside of Building.
See Sheet P-2 for Sizing and Civil
Construction Permit for Location.



D.F.U.
1 - HAND SINK = 2
1 - UTIL. SINK = 2
1 - MOP SINK = 2
TOTAL = 6

NOTE:

1. ALL DMV WASTE LINES TO BE BUILT ON EXTERIOR OF THE BUILDING AND PROTECTED FROM DAMAGE ON-SITE PER UPC CODE.

DRAIN/ VENT PIPES:
CHARLOTTE PIPE SCHEDULE
40 DWV ABS PLUS

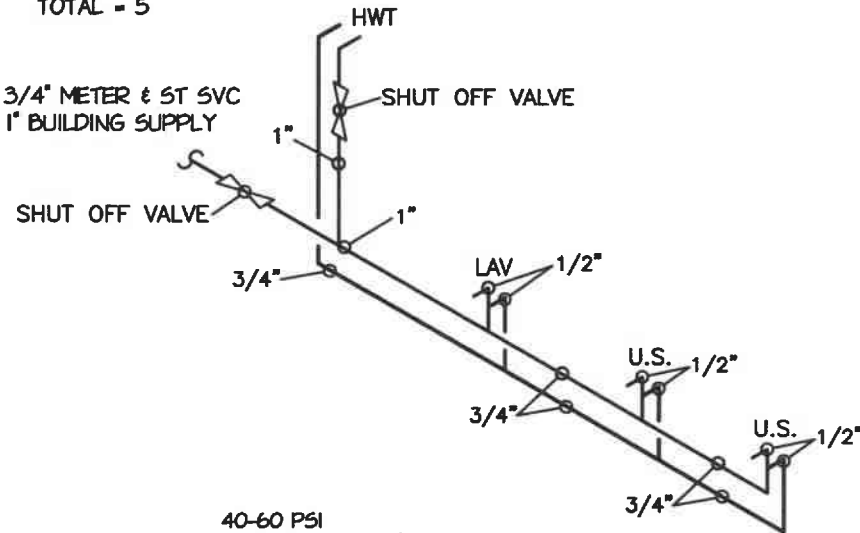
PLUMBING WASTE & VENT

WATER HEATER:
50 GALLON HEAT PUMP HYBRID WATER HEATER.

W.F.U.

1 - LAV. = 1
2 - U.S. = 4
TOTAL = 5

WATER HEATER PRESSURE RELIEF VALVE PIPING MUST TERMINATE TO THE EXTERIOR OF THE BUILDING PER UPC 608.5 SEISMIC STRAPS REQUIRED PER UPC 507.2



40-60 PSI
LONGEST RUN 100'

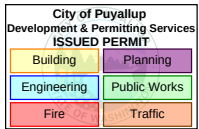
NOTE:

1. HAMMER ARRESTORS INSTALLED @ ALL FAST CLOSED VALVES.
2. TEE @ HWT FOR FUTURE EXP. TANK
3. WATER HEATER PRESSURE RELIEF VALVE PIPING MUST TERMINATE TO THE EXTERIOR OF THE BUILDING PER UPC 608.5 SEISMIC STRAPS REQUIRED PER UPC 507.2

WATER PIPES:
UPONOR AQUAPEX WATER PIPING

PLUMBING SUPPLY

Unit Number	Fixture		Fixture Units (DFU)	Waste Size	Length (Inches)	Width (Inches)	Depth (Inches)	Cubic Inches	Load - 75% Capacity (Gallons)	Time to Drain (Minutes)	Flow Rate (GPM)
K-1	Three Compartment Sink	Bowl 1	12	1.5"	17	17	12	3468	11.26	2	5.63
		Bowl 2			17	17	12	3468	11.26	2	5.63
		Bowl 3			17	17	12	3468	11.26	2	5.63
K-2	Hand Wash Sink	Bowl 1	1	1.5"	9	9	4	324	1.05	2	0.53
K-4	Mop Sink	Bowl 1	1	1.5"	14	16	6	1344	4.36	2	2.18
	Misc Condensate/Floor Drains										10.00
Total			13								29.60



SPECIFICATION NOTES

(1) 4" FPT Inlet/Outlet with 4" plain end fittings

(2) Unit weight: 78 lbs. For wet weight, add 542 lbs. For traffic-rated cover(s), add 90 lbs per cover. For pedestrian cover(s), add 7 lbs per cover.

(3) Maximum operating temperature: 150° F continuous

(4) Liquid Capacity: 65 gal
Grease Capacity (50 GPM): 439 lbs (60 gal)
Grease Capacity (75 GPM): 287 lbs (43 gal)
Solids Capacity: 13 gal

(5) For gravity drainage applications only

(6) Do not use for pressure applications

(7) Cover placement allows full access to tank for proper maintenance

(8) Vent not required unless per local code

(9) Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping

(10) Integral air relief / Anti-siphon / Sampling access

(11) Cover adapters provide an adjustable height range of 5"

(12) Designed for below-grade, above-grade, indoor or outdoor installations

(13) Safety Star® (450 lbs load capacity) is an access restrictor built into each cover adapter to prevent accidental entry into tanks

CERTIFIED PERFORMANCE

Great Basin® hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.

ENGINEER SPECIFICATION GUIDE

Schier Great Basin® grease interceptor model GB-50 shall be lifetime guaranteed and made in USA of seamless, molded polyethylene with minimum 3/8" uniform wall thickness. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter, Safety Star® access restrictor built into each cover adapter, and three outlet options. This unit is certified for hydromechanical performance to ASME A112.14.3 (Type D) and CSA B481.1. Interceptor flow rate shall be 50 GPM or 75 GPM. Interceptor grease capacity shall be 439 lbs.

COVERS SOLD SEPARATELY

This unit is provided with temporary cover(s) intended for the duration of jobsite installation. Purchase one of the following finish covers.

- T24-GI (8044-000-01): Traffic-rated (KASHTO H-20) cast iron cover shall provide water/gas-tight seal and have a minimum of 16,000 lbs load capacity. For outdoor installation.
- P24-GI (8045-000-01): Polyethylene-rated poly cover shall provide water/gas-tight seal and have a minimum of 2,000 lbs load capacity. For indoor installation.

TOP VIEW
(COVERS REMOVED FOR CLARITY)

ISOMETRIC VIEW

SECTION A-A

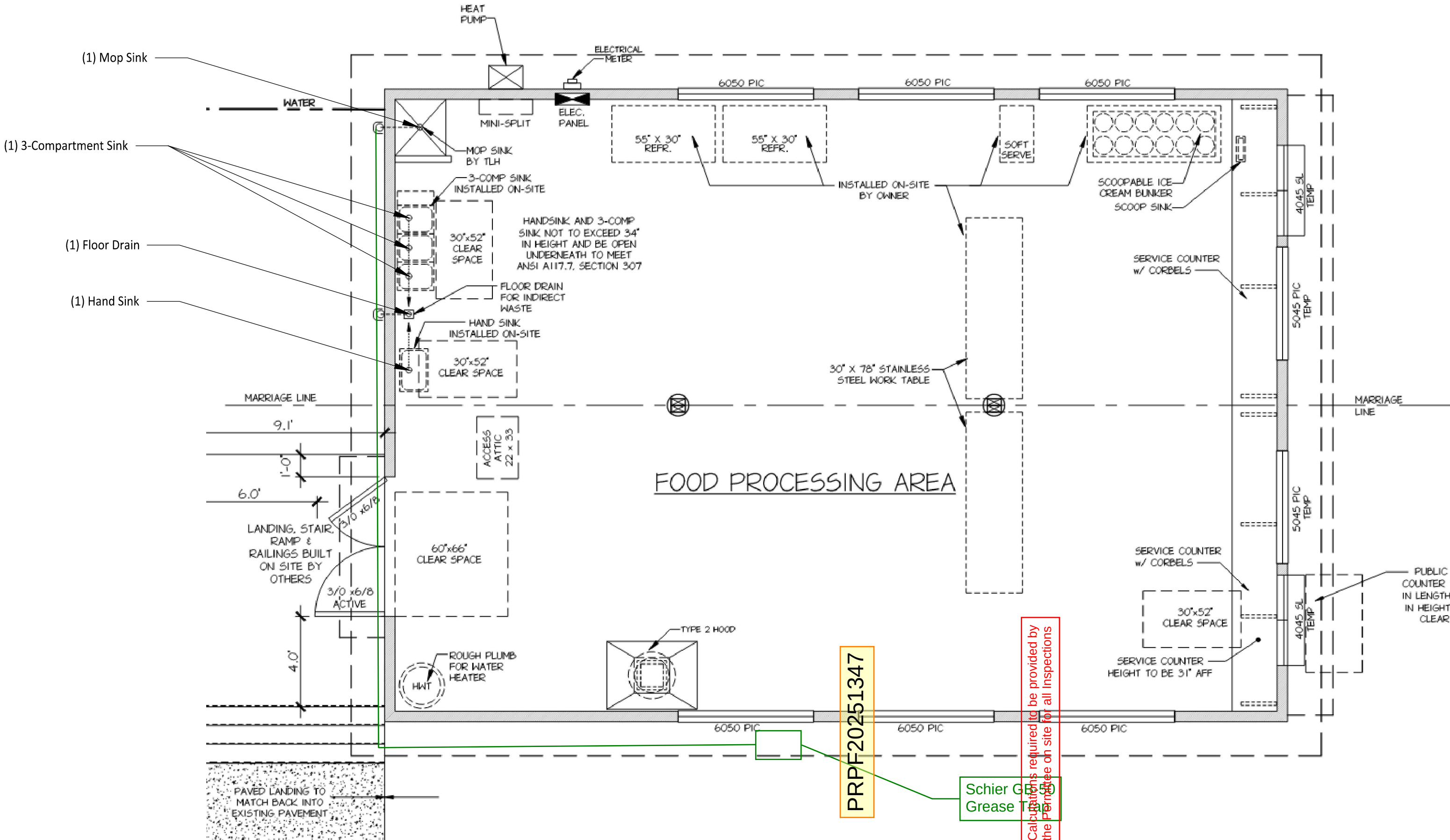
INLET END VIEW

SPECIFICATION SHEET

MODEL NUMBER	GB-50
PART NUMBER	4025-300-01
DESCRIPTION	GB-50 GREASE INTERCEPTOR 50 GPM / 75 GPM, 4" PLAIN/FPT CONNECTIONS
DRAWN BY	C.FINCHAM
DATE	05/20/2025
REV	A
ECO	00108

SCHIER
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schierproducts.com
Made in the U.S.A.

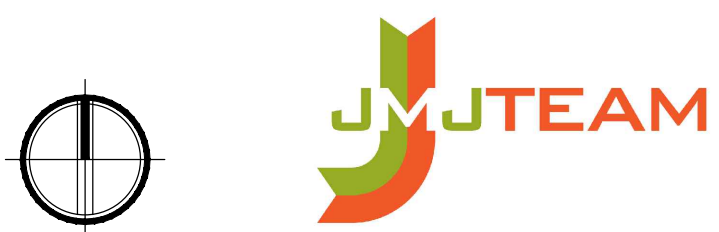
UPC
PROPRIETARY AND CONFIDENTIAL. THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SCHIER PRODUCTS. ANY REPRODUCTION IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCHIER PRODUCTS IS PROHIBITED.



PRPF20251347

Schier GB-50 Grease Trap

Covers to be provided by the owner to be installed at site for all inspections



JOB #25-5238--STRUCTURAL CALCULATIONS
TIMBERLAND CUSTOM HOMES
DESIGN #7161

MARCOE CANDY

FEBRUARY 4, 2025

DANIEL TYRRELL, P.E.
PO BOX 537
MILTON, WA 98354

INDEX

PGS 1-2 CONSTRUCTION NOTES
PGS 3-10 LATERAL CALCULATIONS
PGS 11-16 VERTICAL CALCULATIONS



CONSTRUCTION NOTES:**GENERAL:****Scope:**

Engineering calculations are based on code required design loads imposed on the structure once it has been completely installed on site. Design for resistance to forces imposed during transportation and placement are beyond the scope of these calculations and are the sole responsibility of the manufacturer.

CODE:

IBC CODE REQUIREMENTS ARE TO BE FOLLOWED. 2021 EDITION AND ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.

CONTRACTOR SHALL VERIFY ALL NOTES, DIMENSIONS & CONDITIONS PRIOR TO CONSTRUCTION & PROVIDE TEMP. BRACING AS REQUIRED UNTIL ALL PERMANENT CONNECTIONS HAVE BEEN INSTALLED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND REPORT ALL DISCREPANCIES TO THE DESIGNER AT THE TIME THEY ARE NOTED. DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS.

LOADING:

WIND = 110 MPH, EXPOSURE C				
SEISMIC = SITE CLASS D, SEISMIC DESIGN CATEGORY D ($S_s=1.270.958$, $S_1=.437$)				
ROOF	20 PSF DEAD LOAD	25 PSF SNOW LOAD	=	45 PSF
FLOOR	10 PSF DEAD LOAD	+	40 PSF LIVE LOAD	= 50 PSF
DECK	10 PSF DEAD LOAD	+	60 PSF LIVE LOAD	= 70 PSF
INTERIOR PARTITION			=	7 PSF
EXTERIOR WALL			=	9 PSF

SITE WORK:**GENERAL:**

UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 1000 PSF. EXTERIOR FOOTINGS SHALL BEAR 1'-0" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS. BACK FILL TO BE THOROUGHLY COMPACTED. FOUNDATION VENTS SHALL NOT INTERFERE WITH DIRECT LOAD PATH OF COLUMNS.

FOUNDATION:**GENERAL:**

CLASS AND USE	F'C	SLUMP	MINIMUM SACKS/C.Y.
A: FOOTINGS AND FOUNDATIONS	2500	3 - 4	5-1/2
B: SLABS ON GRADE	2500	3 - 4	5-1/2

- AIR ENTRAINING AGENT (5% TO 7%) TO BE USED IN ALL CONCRETE FLAT WORK EXPOSED TO WEATHER.
- MIX MAY BE DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF SECTIONS 1904 OF THE IBC.
- WATER - CEMENT RATIO PER IBC.

REINFORCING STEEL:

ASTM A615 GRADE 40 (#4 BARS & SMALLER) AND GRADE 60 (#5 BARS & GREATER) REINFORCING STEEL DETAILS SHALL BE PREPARED BY AN EXPERIENCED APPROVED DETAILER AND CONFORM TO STANDARD PRACTICE OUTLINED IN ACI REPORT 315.

CONCRETE COVER OF REINFORCING:

3"	CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.
1-1/2"	CONCRETE EXPOSED TO EARTH OR WEATHER.
1-1/2"	BEAMS AND COLUMNS NOT EXPOSED TO EARTH OR WEATHER.
3/4"	SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER.

LAP COLUMN VERTICALS. CLASS "A" CONCRETE AND MASONRY COLUMN AND WALL VERTICALS 32 DIAMETERS. LAP ALL OTHER REINFORCING 24 DIAMETERS. SPLICES AT TENSION REGIONS SHALL NOT BE PERMITTED.

ANCHOR BOLTS:

ANCHOR BOLTS ARE TO BE 1/2" MINIMUM DIA. X 12" ASTM-A307 AT 4'-0" O.C. UNLESS NOTED OTHERWISE BY ENGINEER W/ 7" MIN. EMBEDMENT. SILL PLATE WASHERS TO BE 3" X 3" X .229". THERE SHALL BE A MIN. OF TWO ANCHOR BOLTS PER FOUNDATION SILL PLATE WITH ONE BOLT LOCATED WITHIN 12" OF EACH END OF EACH SILL PLATE. SIMPSON MASA MAY ALSO BE WHERE NOTED.

CARPENTRY:**GENERAL:**

ALL FRAMING TO COMPLY WITH IBC CHAPTER 23. NAIL SIZES AND SPACING TO CONFORM TO IBC TABLE 2304.10.2.

ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURED TREATED.

6"	MIN. CLEARANCE BETWEEN WOOD AND EARTH.
18"	MIN. CLEARANCE BETWEEN FLOOR JOIST AND EARTH.
12"	MIN. CLEARANCE BETWEEN FLOOR BEAMS AND EARTH.

LUMBER STRENGTH (UNITS IN psi):

PARALLAM PSL	F _v 290	F _B 2900	E 2,000,000
GLUED LAMINATED TIMBERS			
DOUG-FIR LARCH (24F-V4)	165	2400	1,800,000
MICRO-LAM LVL			
DOUG-FIR LARCH	285	2600	1,900,000

WOOD BEARING ON OR INSTALLED WITHIN 1" OF MASONRY OR CONCRETE SHALL BE TREATED WITH AN APPROVED PRESERVATIVE, SOLID BLOCKING OF NOT LESS THAN 2X THICKNESS SHALL BE PROVIDED AT ENDS AND AT ALL SUPPORT OF JOISTS AND RAFTERS.

Construction Hardware

All structural connectors to be manufactured by Simpson Strong-Tie. Where connectors are in contact with pressure treated wood (ACQ-C, ACQ-D, CBA-A, CA-B and non-DOT Borates), Simpson Z-max (G185) coated or Stainless Steel connectors are required.

PLYWOOD:

WALL AND ROOF SHEATHING SHALL BE 7/16" CDX PLYWOOD, UNLESS OTHERWISE SPECIFIED. MINIMUM NAILING SHALL BE 8d @ 6" O.C. @ PANEL EDGES AND 12" O.C. IN FIELD. SPAN INDEX SHALL BE 32/16. FLOOR SHEATHING SHALL BE 23/32" CDX T&G PLYWOOD, UNLESS OTHERWISE SPECIFIED. FLOOR SHEATHING SHALL BE GLUED AND NAILED W/ 8d RING SHANK @ 4" O.C. AT PANEL EDGES AND 6" O.C. IN FIELD. SPAN INDEX SHALL BE 40/20. STAGGER END LAPS AT ROOF AND FLOOR SHEATHING. OSB SHEATHING PRODUCTS OF EQUIVALENT SPAN RATINGS SHALL BE ALLOWED.

STRUCTURAL GLUED – LAMINATED LUMBER:

SHALL BE DOUGLAS FIR FABRICATED TO THE REQUIREMENTS OF U.S. PRODUCT STANDARD PS 56. LUMBER SHALL BE OF SUCH GRADE TO PROVIDE NORMAL WORKING STRESS VALUES OF 2400 PSI IN BENDING: 1100 PSI IN TENSION: 1600 PSI IN COMPRESSION PARALLEL TO GRAIN: 560 PSI IN COMPRESSION PERPENDICULAR TO GRAIN AND 165 PSI HORIZONTAL SHEAR (COMBINATION 24F-V4). LAMINATED MEMBERS TO BE AITC CERTIFIED. USE WATERPROOF GLUE.

WOOD TRUSSES:

TRUSSES SHALL BE DESIGNED BY A REGISTERED WASHINGTON STATE ENGINEER AND FABRICATED FROM ONLY THOSE DESIGNS. TRUSSES TO BE STAMPED BY THE MANUFACTURER OR BY A QUALITY CONTROL AGENCY SUCH AS THE TRUSS PLATE INSTITUTE. ROOF TRUSS DESIGN SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION. AS PER WASHINGTON STATE LABOR & INDUSTRIES, MAXIMUM LOAD DURATION FACTOR FOR LUMBER AND CONNECTOR PLATES IS 1.00.

NONBEARING WALLS SHALL BE HELD AWAY FROM THE TRUSS BOTTOM CHORD WITH AN APPROVED FASTENER (SUCH AS SIMPSON STC) TO ENSURE THAT THE TRUSS BOTTOM CHORD WILL NOT BEAR ON THE WALL.

APPROVED HANGERS SHALL BE USED AT ALL CONNECTIONS OF RAFTERS, JACK OR HIP TRUSSES TO MAIN GIRDER TRUSS.

ALL ROOF TRUSSES SHALL BE FRAMED AND TIED INTO THE FRAME WORK AND SUPPORTING WALLS SO AS TO FORM AN INTEGRAL PART OF THE WHOLE BUILDING. ROOF TRUSSES SHALL HAVE JOINTS WELL FITTED AND SHALL HAVE ALL TENSION MEMBERS WELL TIGHTENED BEFORE ANY LOAD IS PLACED UPON THE TRUSS. DIAGONAL AND SWAY BRACING SHALL BE USED TO BRACE ALL TRUSSES.



Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	1.27	S_{D1} :	N/A
S_1 :	0.437	T_L :	6
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA_M :	0.6
S_{MS} :	1.524	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.016	C_v :	1.354

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Sat Jan 25 2025

Date Source: USGS Seismic Design Maps

Daniel J. Tyrrell, P.E.

Consulting Engineer

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 e-mail: dantyrrell@att.net

PROJECT: Timberland #7161 MarcoeJOB #: 25- 5238 PAGE 5 OF 16BY: DT DATE: 2/4/2025

$$\begin{array}{llll}
 C_s = S_{DS}/R & (\text{equ. 12.8-2 ASCE 7-16}) & h = & 13 \text{ ft} \\
 C_s(\text{max}) = \text{N/A per 11.4.8 ASCE 7-16} & (\text{equ. 12.8-3 ASCE 7-16}) & R = & 6.50 \\
 C_s(\text{min}) = 0.044(S_{DS})(I) & (\text{equ. 12.8-5 ASCE 7-16}) & I = & 1.00
 \end{array}$$

$$\begin{array}{llll}
 C_s(\text{min}) = & 0.045 \\
 C_s = & 0.156 & \longleftarrow & \text{governs} \\
 C_s(\text{max}) = & \text{N/A}
 \end{array}$$

$$V = C_s W = Q_E = \quad (\text{equ. 12.8-1 ASCE 7-16})$$

SINGLE STORY:

$$\begin{array}{llll}
 \text{Roof Area} = & 1333.0 \text{ ft}^2 & \text{Wall Length} = & 40.0 \text{ ft} \\
 \text{Roof Dead Weight} = & 20.0 \text{ psf} & \text{Wall Dead Weight} = & 9.0 \text{ psf} \\
 \text{Snow Load} = & 25 \text{ psf} & \text{Tributary Wall Height} = & 4.5 \text{ ft} \\
 & & \text{\# of Walls} = & 2
 \end{array}$$

$$\begin{array}{ll}
 W = \text{Roof} + \text{Wall} = & 29,900 \text{ \#} \\
 V = & 0.156 * 29900 = 4664 \text{ \#}
 \end{array}$$

$$\rho \text{ calc:} \quad \text{Wall Height} = 9.0$$

Wall Line	Trib. Shear	Wall Segments					Panel Ratio	
LA	0.50	14.00	0.00	0.00	0.00	0.00	0.00	<=.33 OK
LB	0.50	2.50	2.00	2.00	2.50	0.00	0.14	<=.33 OK
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
TA	0.50	13.00	0.00	0.00	0.00	0.00	0.00	<=.33 OK
TB	0.50	13.00	0.00	0.00	0.00	0.00	0.00	<=.33 OK
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A

$$\begin{array}{ll}
 \rho = & 1.0 \quad \text{per ASCE 7-16, 12.3.4.2} \\
 0.7\rho Q_E = & .7(1)(4664) = 3265 \text{ \#}
 \end{array}$$

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PROJECT: Timberland #7161 Marcoe
 JOB #: 25-5238 PAGE 6 OF 16
 BY: DT DATE: 2/4/2025

WIND

Enclosed Simple Diaphragm Method
 (Part 2, Chapter 28, ASCE 7-16)

Code IBC 2021, ASCE 7-16

Wind Ult. = 110 mph

Exposure = C

$$P_s = \lambda K_{zt} P_{s30} \quad (\text{Section 28.5.3 ASCE 7-16})$$

by figure 28.5-1 ASCE 7-16

where: $\lambda = 1.21$
 $K_{zt} = 1.00$
 $h = 13 \text{ ft}$
 $2a = (0.2) (28.0)$
 $= 5.6 \approx 6$
 $\text{pitch} = 2.0 / 12$
 $\Rightarrow \theta = \tan^{-1} (2/12)$
 $= 9.46$

$$\begin{aligned} A &= (1.21) (1.00) (21.60) = 26.1 \text{ psf} \\ B &= (1.21) (1.00) (.00) = .0 \text{ psf} \\ C &= (1.21) (1.00) (14.40) = 17.4 \text{ psf} \\ D &= (1.21) (1.00) (.00) = .0 \text{ psf} \end{aligned}$$

ASD Pressure

$$P = (.6)[\text{Area}_A \cdot A + \text{Area}_B \cdot B + \text{Area}_C \cdot C + \text{Area}_D \cdot D] = \text{Pressure Calculated}$$

check 10psf minimum per ASCE 7-16 =

$$P_{\min} = (.6)[16\text{psf}(\text{AREA}_A + \text{AREA}_C) + 8\text{psf}(\text{AREA}_B + \text{AREA}_D)]$$

Front -Rear (number of wall lines = 2)

$P(LA) = (.6) [$	(27) (26.10)	+	(50) (.00)	+	
	(63) (17.40)		(0) (.00)		$] = 1080.5$
$P(LA)_{\min} =$	1104.0				Pmin. Governs
$P(LB) = (.6) [$	(27) (26.10)	+	(50) (.00)	+	
	(63) (17.40)		(0) (.00)		$] = 1080.5$
$P(LB)_{\min} =$	1104.0				Pmin. Governs
$P(N/A) = (.6) [$	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)		$] = 0.0$
$P(N/A)_{\min} =$	0.0				
$P(N/A) = (.6) [$	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)		$] = 0.0$
$P(N/A)_{\min} =$	0.0				
$P(N/A) = (.6) [$	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)		$] = 0.0$
$P(N/A)_{\min} =$	0.0				
$P(N/A) = (.6) [$	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)		$] = 0.0$
$P(N/A)_{\min} =$	0.0				

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PROJECT: Timberland #7161 MarcoeJOB #: 25- 5238 PAGE 7 OF 16BY: DT DATE: 2/4/2025

by figure 28.5-1 ASCE 7-16

A = (1.21) (1.00) (19.20) = 23.2 psf
B = (1.21) (1.00) (.00) = .0 psf
C = (1.21) (1.00) (12.70) = 15.4 psf
D = (1.21) (1.00) (.00) = .0 psf

pitch = 0.0 / 12
 $\Rightarrow \theta = \tan^{-1} (/ 12)$
= 0.00

Side - Side (number of wall lines = 2)

P(TA) = (.6) [	(30) (23.20)	+	(0) (.00)	+	
	(48) (15.40)		(0) (.00)	]	= 861.1
P(TA) _{min} =	748.8	Pcalced Governs			
P(TB) = (.6) [	(30) (23.20)	+	(0) (.00)	+	
	(48) (15.40)		(0) (.00)	]	= 861.1
P(TB) _{min} =	748.8	Pcalced Governs			
P(N/A) = (.6) [	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)	]	= 0.0
P(N/A) _{min} =	0.0				
P(N/A) = (.6) [	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)	]	= 0.0
P(N/A) _{min} =	0.0				
P(N/A) = (.6) [	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)	]	= 0.0
P(N/A) _{min} =	0.0				
P(N/A) = (.6) [	(0) (.00)	+	(0) (.00)	+	
	(0) (.00)		(0) (.00)	]	= 0.0
P(N/A) _{min} =	0.0				

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PROJECT: Timberland #7161 MarcoeJOB #: 25- 5238 PAGE 8 OF 16BY: DT DATE: 2/4/2025SHEAR TABLE

Wall Line	Wind Shear	Seismic Shear	Wall Length	Vw	Vs	SW Type
LA	1104	1632	14.00	78.9	116.6	1
LB	1104	1632	9.00	122.7	181.4	1
N/A	0	0	0.00	0.0	0.0	0
N/A	0	0	0.00	0.0	0.0	0
N/A	0	0	0.00	0.0	0.0	0
N/A	0	0	0.00	0.0	0.0	0
TA	861	1632	13.00	66.2	125.6	1
TB	861	1632	13.00	66.2	125.6	1
N/A	0	0	0.00	0.0	0.0	0
N/A	0	0	0.00	0.0	0.0	0
N/A	0	0	0.00	0.0	0.0	0
N/A	0	0	0.00	0.0	0.0	0

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PROJECT Timberland - #7161JOB # 25-5238 PAGE 9 OF 16BY DT DATE 2-4-25OverturningWall Line LA (14' wall)

$$U = 1632 \text{ #}, M_o = 1632(9) = 14,688 \text{ Ft. #}$$

$$W_r = 2.5(20) + 81 = 131 \text{ #/ft}$$

$$M_r = 131(14)^2 / 2(1.6 - .14(1.02)) = 5905 \text{ Ft. #}$$

$$R_u = (14,688 - 5905) / 12.5 = 703 \text{ #}$$

⇒ Simp m5727 SW to rim + Simp m57A12 rim to 8x8
+ Simp Titen HD 1/2" x 12" (THD501200 HMB)

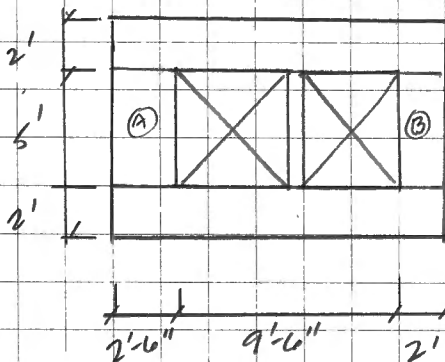
Wall Line LB (14' wall w/ 4°50' & 5°50' strapped per 016)

$$U = 1632/2 = 816 \text{ #}, M_o = 816(9) = 7344 \text{ Ft. #}$$

$$M_r = 5905 \text{ Ft. # (prev calcd)}$$

$$R_u = (7344 - 5905) / 13.5 = 107 \text{ # negl.}$$

⇒ no holdown reqd



OTM B:

$$M_o = (2)(181)(5) = 1810 \text{ Ft. #}$$

$$M_r = 131(2)^2 / 2(1.46) = 121 \text{ Ft. #}$$

$$R_u = (1810 - 121) / 2 = 844 \text{ #}$$

$$U = 844(9.5) = 211 \text{ #/ft} \Rightarrow \triangleleft 1 \text{ ok}$$

Verify CS20 strap:

$$P = 181(2.5) - 58(2.5) = 309 \text{ #} < 1030 \text{ #}$$

OK ✓

Verify seismic H/W ratio: $181(5) / 2(2) = 226 \text{ plf} \Rightarrow \triangleleft 1 \text{ ok}$

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PROJECT Timberland #7161JOB # 25-5238 PAGE 10 OF 16BY DT DATE 2-4-25

Well Line TA & TB (13' wall)

$$V = 1632 \# \quad M_o = 1632(9) = 14,688 \text{ ft.}\#$$

$$W_f = (14\frac{1}{2} + 1.5)(20) + 81 = 251 \#/\text{ft}$$

$$M_f = 251(13)^2 / (2 \cdot 1.46) = 9756 \text{ ft.}\#$$

$$R_u = (14,688 - 9756) / 11.5 = 429 \#$$

⇒ Simp m5T27 strap SW to rim
 + Simp m5TA12 rim to 8x8
 + Simp Titen HD 1/2" x 12"
 (THD 501200 HMLG)

Project: 7161

Location: PIER PAD @ GIRDER POINTLOADS

Footing

[2021 International Building Code(2018 NDS)]

Footing Size: 3.51 FT x 3.51 FT x 12.00 IN

Reinforcement: #4 Bars @ 7.00 IN. O.C. E/W / (6) min.

Section Footing Design Adequate

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FOOTING PROPERTIES

Allowable Soil Bearing Pressure: $Q_s = 1000$ psf
Concrete Compressive Strength: $F'_c = 2500$ psi
Reinforcing Steel Yield Strength: $F_y = 40000$ psi
Concrete Reinforcement Cover: $c = 3$ in

FOOTING SIZE

Width: $W = 3.51$ ft
Length: $L = 3.51$ ft
Depth: $\text{Depth} = 12$ in
Effective Depth to Top Layer of Steel: $d = 8.25$ in

COLUMN AND BASEPLATE SIZE

Column Type: Wood
Column Width: $m = 4$ in
Column Depth: $n = 8$ in

FOOTING CALCULATIONS**Bearing Calculations:**

Ultimate Bearing Pressure: $Q_u = 845$ psf
Effective Allowable Soil Bearing Pressure: $Q_e = 850$ psf
Required Footing Area: $A_{req} = 12.25$ sf
Area Provided: $A = 12.32$ sf

Baseplate Bearing:

Bearing Required: $\text{Bear} = 14739$ lb
Allowable Bearing: $\text{Bear-A} = 88400$ lb

Beam Shear Calculations (One Way Shear):

Beam Shear: $V_{u1} = 4483$ lb
Allowable Beam Shear: $V_{c1} = 26062$ lb

Punching Shear Calculations (Two Way Shear):

Critical Perimeter: $B_o = 57$ in
Punching Shear: $V_{u2} = 13085$ lb
Allowable Punching Shear (ACI 11-35): $vc2-a = 70538$ lb
Allowable Punching Shear (ACI 11-36): $vc2-b = 137363$ lb
Allowable Punching Shear (ACI 11-37): $vc2-c = 70538$ lb
Controlling Allowable Punching Shear: $vc2 = 70538$ lb

Bending Calculations:

Factored Moment: $M_u = 77602$ in-lb
Nominal Moment Strength: $M_n = 338564$ in-lb

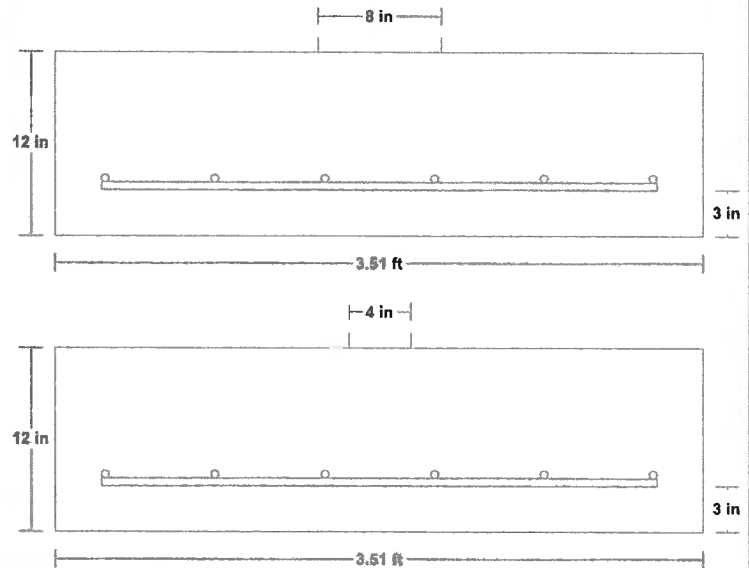
Reinforcement Calculations:

Concrete Compressive Block Depth: $a = 0.53$ in
Steel Required Based on Moment: $A_s(1) = 0.26$ in²
Min. Code Req'd Reinf. Shrink./Temp. (ACI-10.5.4): $A_s(2) = 1.01$ in²
Controlling Reinforcing Steel: $A_{s-reqd} = 1.01$ in²
Selected Reinforcement: #4's @ 7.0 in. o.c. e/w (6) Min.
Reinforcement Area Provided: $A_s = 1.18$ in²

Development Length Calculations:

Development Length Required: $L_d = 15$ in
Development Length Supplied: $L_{d-sup} = 18.06$ in

Note: Plain concrete adequate for bending,
therefore adequate development length not required.

NOTES**LOADING DIAGRAM****FOOTING LOADING**

Live Load: $PL = 5600$ lb *
Dead Load: $PD = 4816$ lb *
Total Load: $PT = 10416$ lb *
Ultimate Factored Load: $P_u = 14739$ lb
Footing plus soil above footing weight: $W_t = 1191$ lb

* Load obtained from Load Tracker. See Summary Report for details.

Project: 7161

Location: 1) WINDOW / DOOR HDRS

Roof Beam

[2021 International Building Code(2018 NDS)]

(3) 1.75 IN x 7.25 IN x 6.5 FT

1.9E Microllam - iLevel Trus Joist

Section Adequate By: 453.1%

Controlling Factor: Moment

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CAUTIONS

* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS

Center

Live Load 0.03 IN L/2735

Dead Load 0.02 in

Total Load 0.05 IN L/1467

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

A

B

Live Load 731 lb 731 lb

Dead Load 632 lb 632 lb

Total Load 1363 lb 1363 lb

Bearing Length 0.35 in 0.35 in

BEAM DATA

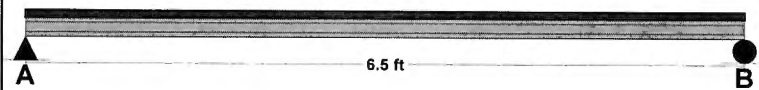
Span Length 6.5 ft

Unbraced Length-Top 2 ft

Unbraced Length-Bottom 0 ft

Roof Pitch 2 :12

Roof Duration Factor 1.15

LOADING DIAGRAM**MATERIAL PROPERTIES**

1.9E Microllam - iLevel Trus Joist

Base Values

Adjusted

Bending Stress: $F_b = 2600$ psi $F_b' = 3196$ psi $C_d = 1.15$ $C_t = 1.00$ $C_F = 1.07$ Shear Stress: $F_v = 285$ psi $F_v' = 328$ psi $C_d = 1.15$ Modulus of Elasticity: $E = 1900$ ksi $E' = 1900$ ksiComp. $\perp$ to Grain: $F_c - \perp = 750$ psi $F_c - \perp' = 750$ psi

Controlling Moment: 2215 ft-lb

3.25 ft from left support

Created by combining all dead and live loads.

Controlling Shear: 1118 lb

At a distance d from support.

Created by combining all dead and live loads.

Comparisons with required sections:

Req'd

Provided

Section Modulus: 8.32 in³ 45.99 in³Area (Shear): 5.12 in² 38.06 in²Moment of Inertia (deflection): 20.45 in⁴ 166.72 in⁴

Moment: 2215 ft-lb 12250 ft-lb

Shear: 1118 lb 8317 lb

ROOF LOADING

Side One:

Roof Live Load: LL = 25 psf

Roof Dead Load: DL = 20 psf

Tributary Width: TW = 7 ft

Side Two:

Roof Live Load: LL = 25 psf

Roof Dead Load: DL = 20 psf

Tributary Width: TW = 2 ft

Wall Load: WALL = 0 plf

SLOPE/PITCH ADJUSTED LENGTHS AND LOADS

Adjusted Beam Length: Ladj = 6.5 ft

Beam Self Weight: BSW = 12 plf

Beam Uniform Live Load: wL = 225 plf

Beam Uniform Dead Load: wD_adj = 194 plf

Total Uniform Load: wT = 419 plf

NOTES

Project: 7161

Location: 2) MAIN FLOOR BEAM @ MODULE
 Uniformly Loaded Floor Beam
 [2021 International Building Code(2018 NDS)]
 1.75 IN x 9.5 IN x 4.0 FT
 1.9E Microllam - iLevel Trus Joist
 Section Adequate By: 201.4%
 Controlling Factor: Shear

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DEFLECTIONS

Center

Live Load 0.02 IN L/2571

Dead Load 0.00 in

Total Load 0.02 IN L/2343

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS

A

B

Live Load 1540 lb 1540 lb

Dead Load 150 lb 150 lb

Total Load 1690 lb 1690 lb

Bearing Length 1.29 in 1.29 in

BEAM DATA

Center

Span Length 4 ft

Unbraced Length-Top 1.33 ft

Floor Duration Factor 1.00

Notch Depth 0.00

MATERIAL PROPERTIES

1.9E Microllam - iLevel Trus Joist

Base Values

Adjusted

Bending Stress: Fb = 2600 psi Fb' = 2644 psi

Cd=1.00 Cf=0.99 CF=1.03

Shear Stress: Fv = 285 psi Fv' = 285 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 750 psi Fc $\perp$ ' = 750 psi**Controlling Moment:** 1690 ft-lb

2.0 ft from left support

Created by combining all dead and live loads.

Controlling Shear: -1048 lb

At a distance d from support.

Created by combining all dead and live loads.

Comparisons with required sections:

Req'd

Provided

Section Modulus: 7.67 in3 26.32 in3

Area (Shear): 5.52 in2 16.63 in2

Moment of Inertia (deflection): 17.5 in4 125.03 in4

Moment: 1690 ft-lb 5800 ft-lb

Shear: -1048 lb 3159 lb

LOADING DIAGRAM**FLOOR LOADING**

Side 1

Side 2

Floor Live Load FLL = 110 psf 0 psf

Floor Dead Load FDL = 10 psf 0 psf

Floor Tributary Width FTW = 7 ft 0 ft

Wall Load WALL = 0 plf

BEAM LOADING

Beam Total Live Load: wL = 770 plf

Beam Total Dead Load: wD = 70 plf

Beam Self Weight: BSW = 5 plf

Total Maximum Load: wT = 845 plf

NOTES

Project: 7161

Location: FLOOR JOISTS

Floor Joist

[2021 International Building Code(2018 NDS)]

(2) 1.5 IN x 9.25 IN x 13.75 FT @ 16 O.C.

#2 - Douglas-Fir-Larch - Dry Use

Section Adequate By: 1.5%

Controlling Factor: Deflection

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CAUTIONS

* Properly connect sheathing to double joists/rafters or fully laminate to transfer diaphragm forces.

DEFLECTIONSCenter

Live Load 0.34 IN L/487

Dead Load 0.03 in

Total Load 0.37 IN L/443

Live Load Deflection Criteria: L/480 Total Load Deflection Criteria: L/360

REACTIONSAB

Live Load 917 lb 917 lb

Dead Load 92 lb 92 lb

Total Load 1009 lb 1009 lb

Bearing Length 0.54 in 0.54 in

SUPPORT LOADSAB

Live Load 688 plf 688 plf

Dead Load 69 plf 69 plf

Total Load 757 plf 757 plf

MATERIAL PROPERTIES

#2 - Douglas-Fir-Larch

Base ValuesAdjusted

Bending Stress: Fb = 900 psi Fb' = 1139 psi

Cd=1.00 CF=1.10 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1600 ksi E' = 1600 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi**Controlling Moment:** 3466 ft-lb

6.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -908 lb

At a distance d from right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:Req'dProvided

Section Modulus: 36.53 in3 42.78 in3

Area (Shear): 7.56 in2 27.75 in2

Moment of Inertia (deflection): 194.94 in4 197.86 in4

Moment: 3466 ft-lb 4059 ft-lb

Shear: -908 lb 3330 lb

LOADING DIAGRAM**JOIST DATA**Center

Span Length 13.75 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING**Uniform Floor Loading**Center

Live Load LL = 100 psf

Dead Load DL = 10 psf

Total Load TL = 110 psf

TL Adj. For Joist Spacing wT = 146.7 plf

NOTES

Project: 7161

Location: FLOOR JOISTS W/ MIXER

Floor Joist

[2021 International Building Code(2018 NDS)]

(2) 1.5 IN x 9.25 IN x 13.75 FT @ 16 O.C.

#2 - Douglas-Fir-Larch - Dry Use

Section Adequate By: 12.0%

Controlling Factor: Moment

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CAUTIONS

* Properly connect sheathing to double joists/rafters or fully laminate to transfer diaphragm forces.

DEFLECTIONSCenter

Live Load 0.35 IN L/466

Dead Load 0.03 in

Total Load 0.39 IN L/426

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONSAB

Live Load 943 lb 944 lb

Dead Load 92 lb 92 lb

Total Load 1035 lb 1036 lb

Bearing Length 0.55 in 0.55 in

SUPPORT LOADSAB

Live Load 707 plf 708 plf

Dead Load 69 plf 69 plf

Total Load 776 plf 777 plf

MATERIAL PROPERTIES

#2 - Douglas-Fir-Larch

Base ValuesAdjustedBending Stress: $F_b = 900$ psi $F_b' = 1139$ psi $C_d = 1.00$ $CF = 1.10$ $Cr = 1.15$ Shear Stress: $F_v = 180$ psi $F_v' = 180$ psi $C_d = 1.00$ Modulus of Elasticity: $E = 1600$ ksi $E' = 1600$ ksiComp. $\perp$ to Grain: $F_c \perp = 625$ psi $F_c \perp' = 625$ psi**Controlling Moment:** 3623 ft-lb

6.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -935 lb

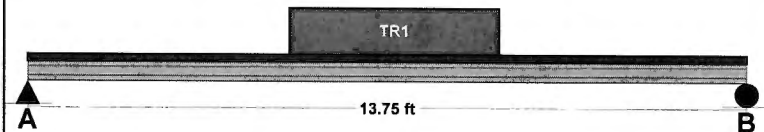
At a distance d from right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:Req'dProvidedSection Modulus: 38.18 in³ 42.78 in³Area (Shear): 7.79 in² 27.75 in²Moment of Inertia (deflection): 152.74 in⁴ 197.86 in⁴

Moment: 3623 ft-lb 4059 ft-lb

Shear: -935 lb 3330 lb

LOADING DIAGRAM**JOIST DATA**Center

Span Length 13.75 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING**Uniform Floor Loading**Center

Live Load LL = 100 psf

Dead Load DL = 10 psf

Total Load TL = 110 psf

TL Adj. For Joist Spacing wT = 146.7 plf

Partially Distributed Loading

Live Load LL = 10 psf

Dead Load DL = 0 psf

Load Start A = 5 ft

Load End B = 9 ft

Load Length C = 4 ft

NOTES

Project: 7161

Location: TYPICAL COLUMN

Column

[2021 International Building Code(2018 NDS)]

3.5 IN x 7.25 IN x 9.0 FT

#2 - Douglas-Fir-Larch - Dry Use

Section Adequate By: 54.7%

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VERTICAL REACTIONS

Live Load: Vert-LL-Rxn = 2900 lb
Dead Load: Vert-DL-Rxn = 2350 lb
Total Load: Vert-TL-Rxn = 5250 lb

COLUMN DATA

Total Column Length: 9 ft
Unbraced Length (X-Axis) Lx: 9 ft
Unbraced Length (Y-Axis) Ly: 9 ft
Column End Condition-K (e): 1
Axial Load Duration Factor 1.00

COLUMN PROPERTIES

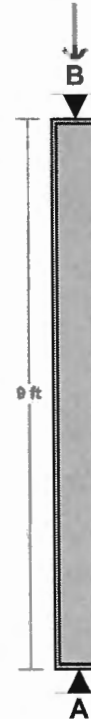
#2 - Douglas-Fir-Larch

	Base Values	Adjusted
Compressive Stress:	Fc = 1350 psi	Fc' = 457 psi
	Cd=1.00 Cf=1.05 Cp=0.32	
Bending Stress (X-X Axis):	Fbx = 900 psi	Fbx' = 1170 psi
	Cd=1.00 CF=1.30	
Bending Stress (Y-Y Axis):	Fby = 900 psi	Fby' = 1170 psi
	Cd=1.00 CF=1.30	
Modulus of Elasticity:	E = 1600 ksi	E' = 1600 ksi
Column Section (X-X Axis):	dx = 7.25 in	
Column Section (Y-Y Axis):	dy = 3.5 in	
Area:	A = 25.38 in ²	
Section Modulus (X-X Axis):	Sx = 30.66 in ³	
Section Modulus (Y-Y Axis):	Sy = 14.8 in ³	
Slenderness Ratio:	L _{ex} /dx = 14.9	
	L _{ey} /dy = 30.86	

Column Calculations (Controlling Case Only):

Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress: Fc = 207 psi
Allowable Compressive Stress: Fc' = 457 psi
Eccentricity Moment (X-X Axis): Mx-ex = 0 ft-lb
Eccentricity Moment (Y-Y Axis): My-ey = 0 ft-lb
Moment Due to Lateral Loads (X-X Axis): Mx = 0 ft-lb
Moment Due to Lateral Loads (Y-Y Axis): My = 0 ft-lb
Bending Stress Lateral Loads Only (X-X Axis): Fbx = 0 psi
Allowable Bending Stress (X-X Axis): Fbx' = 1170 psi
Bending Stress Lateral Loads Only (Y-Y Axis): Fby = 0 psi
Allowable Bending Stress (Y-Y Axis): Fby' = 1170 psi
Combined Stress Factor: CSF = 0.45

LOADING DIAGRAM**AXIAL LOADING**

Live Load: PL = 2900 lb
Dead Load: PD = 2300 lb
Column Self Weight: CSW = 50 lb
Total Axial Load: PT = 5250 lb

NOTES

Timberland Homes

Electrical Calculations

Project: Marcoe Candy
 Address: 110 9th Ave SW
 Puyallup, WA
 98371

Job #: D#7161
 County: Pierce
 Zone: 4C

Electrical Load Calculations: Standard Calculation-Commercial/Industrial

Item Description:	General Loads	Quantity	Value	Connected Load
Refers		2	2400	4800
Ice Cream Bunker		1	2400	2400
Hot Water Heater		1	7200	7200
Soft Serve Ice Cream		1	2400	2400
Receptacle Load Non-continous duty		11	180	1980
Heat Pump (Ductless)		1	7200	7200
Total Connected Load				25980

Demand Load Calculation:					
1st 10KW and Appliances at 100%					24000
General Lighting Load	1120sf x	3.5va x	3920 x	125%	4900
Outside Light Load	11va x	5 units	55 x	125%	69
Sign Lighting Load	1200va x	1 unit	1200 x	125%	1500
Balance of	1980	VA @	50%		990
Total Calculated Load					31459

Equals: 131.1 AMPS at 240 Volts

Load Center Size:
200 AMP

Feeder Sizes
2 - (4/0) 1 - (2/0) @ XHHW



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March 10, 2025

ENVELOPE SUMMARY

RE: Marcoe Candy
110 9th Ave SW
Puyallup, WA 98371

New construction of conditioned building. Project complies with 2021 WSEC, Commercial Provisions, using the Component Performance approach.

Roof: R-49 insulation in attic. $U=0.021$, default Table A102.1

Wall (Wood, Opaque, Exterior, Floor to Roof): 2x6 wood studs, Intermediate framing, with R-21 batt insulation, plus R-5 rigid, $U=0.041$, default Table A103.3.1(5)

Floor Over: Wood joist with R-38 batt insulation, $U=0.025$, default Table A105.1(3)

Doors (Swinging, Opaque): Insulated metal, $U=0.37$, default Table A107.1(1)

Vertical Glazing (Non-Metal): Wood/vinyl frame, NFRC certified assembly, $U=0.25$, $SHGC=0.38$

Skylights: NFRC certified assembly, $U=0.51$, $SHGC=0.35$, $VT=0.50$

Please note that these values are minimum insulation requirements for code compliance. Higher insulation values may be installed. $SHGC$ = Solar Heat Gain Coefficient. VT = Visible Transmittance.

ENVELOPE COMPLIANCE SUMMARY

2021 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

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Project & Applicant Information	Project Title	Marcoc Candy - 2021 WSEC	For Building Department Use:	Date: Mar 10, 2025
	Project Address	110 9th Ave SW Puyallup, WA 98371		
	Applicant Name	Mike Langford		
	Applicant Phone	253-736-3501		
	Applicant Email	mike@timberline-homes.com		
For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com				

General Occupancy	All Commercial	General Building Use Type(s)	Dining, Fast Food	Building Cond. Floor Area	1,058
Project Scope	New Building	Space Conditioning Categories	Fully Conditioned	Project Cond. Floor Area	1,058
				Floors Above Grade	1
				Compliance Method	General Prescriptive
Envelope Project Description	New construction of fully conditioned walk up food service.				

Envelope Compliance Scope and Method	Scope	Space Conditioning Category	Compliance Method	WWR/SRR per Category	UA Calculation Adjustment	Fenestration Alternates	Compliance Verification
	New Building	Fully Conditioned	Component performance	22.73% / 0.19%	None selected	No alternates selected	COMPLIES

Additional Energy Efficiency (AEC) Measures Included	No envelope or miscellaneous additional energy efficiency measures included in project	Load Management (LDM) Measures Included	No envelope or miscellaneous load management measures included in project
Air Barrier Testing	Standard building thermal envelope test	Air Barrier Comments	

Project Title	Marcoc Candy - 2021 WSEC				Date	Mar 10, 2025
Scope & Space Conditioning	NEW BUILDING - FULLY CONDITIONED				Compliance Verification	COMPLIES
Window-to-wall Ratio	22.73%	Skylight-to-roof-ratio	0.19%	Vertical Fenestration Alternate	No alternates selected	

Opaque Envelope Assemblies								
Roof/Ceiling	Location in Documents	Assembly ID	Assembly Location	Insulation R-Values			U-Factor	Net Area (SF)
				Cavity	Continuous (% penetration)	2nd Layer (MB Roof)		
Attic and other	-	Attic, R-49	Exterior	R-49	R-0 (< 0.04%)		U-0.021	1,058
	U-Factor Source: WSEC Appendix A Default			U-Factor Source Description: Table A102.1				
	Roof Framing Type: Advanced			Roof Framing Depth (Inches): -				
	Roof Framing Spacing (OC): -			Roof Framing Material: Wood-framed				
	Ceiling/Attic Venting: Vented							
Walls	Location in Documents	Assembly ID	Assembly Location	Cavity	Continuous (% penetration)	Insulated Wall Furring	U-Factor	Net Area (SF)
Wood-framed and other - Commercial	-	Wood Furr	Exterior	R-21	R-5 (< 0.04%)		U-0.041	876
	Which code target does wall comply with?: R-20 Cavity + R-3.8 CI			U-Factor Source: WSEC Appendix A Default				
	U-Factor Source Description: Table A103.3.1(5)			Wall Framing Type: Intermediate				
	Framing Depth: 2x6			Other Framing Depth:				
	Framing Spacing (OC): 16" oc							
Floors and Edges	Location in Documents	Assembly ID	Assembly Location	Cavity	Continuous (% penetration)		U-Factor	Net Area (SF)
Wood-framing/joist	-	Floor over Crawl	Exterior	R-38	R-0 (< 0.04%)		U-0.025	1,058
	U-Factor Source: WSEC Appendix A Default			U-Factor Source Description: Table A105.1(1)				
	Floor Framing Type (Joist, Post & Beam): Wood Joist			Framing Depth: 2x10				

		Other Framing Depth:		Framing Spacing (OC): -				
Fenestration & Opaque Door Assemblies								
				Insulation R-Values				
Opaque Doors	Location in Documents	Assembly ID	Assembly Location	Door Insulation			U-Factor	Rough Opening (SF)
Swinging	-	Man Doors	Exterior				U-0.37	42
What percentage of this opaque door is glazing?: 50% or less				U-Factor Source: WSEC Appendix A Default				
U-Factor Source Description: Table A107.1(1)				Is this a public entrance door?: No				
Vertical Fenestration	Location in Documents	Assembly ID	Assembly Location		Shading (PF)	Fenestration SHGC	Fenestration U-Factor	Rough Opening (SF)
Fixed - All other types	-	NFRC Windows	Exterior		PF < 0.2	SHGC-0.38	U-0.25	270
U-Factor & SHGC Source: NFRC Rating				U-Factor Source Description:				
Skylights	Location in Documents	Assembly ID	Assembly Location			Fenestration SHGC	Fenestration U-Factor	Rough Opening (SF)
All types	-	NFRC Skylights	Exterior			SHGC-0.35	U-0.51	2
U-Factor & SHGC Source: NFRC Rating				U-Factor Source Description:				

Project Title	Marcoc Candy - 2021 WSEC					Date	Mar 10, 2025	
U x A Calculation		NEW BUILDING - FULLY CONDITIONED				COMPLIES		
Opaque Envelope Assemblies		PROPOSED			TARGET			
Roof/Ceiling	Assembly ID	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A	
Attic and other	Attic, R-49	0.021	1,058.0	22.2	0.021	1,058.0 (1)	22.2	
Walls	Assembly ID	Wall Assembly U-factor	Net Area (SF)	U x A	Wall Assembly U-factor	Net Area (SF)	U x A	
Wood-framed and other - Commercial	Wood Furr	0.041	876.0	35.9	0.051	876.0 (1)	44.7	
Floors and Edges	Assembly ID	Floor Assembly U-Factor	Net Area (SF)	U x A	Floor Assembly U-Factor	Net Area (SF)	U x A	
Wood-framing/joist	Floor over Crawl	0.025	1,058.0	26.5	0.029	1,058.0 (1)	30.7	
Fenestration Assemblies		PROPOSED			TARGET			
Opaque Doors	Assembly ID	Door Assembly U-Factor	Assembly Rough Opening (SF)	U x A	Door Assembly U-Factor	Assembly Rough Opening (SF)	U x A	
Swinging	Man Doors	0.37	42.0	15.5	0.37	42.0 (1)	15.5	
Vertical Fenestration	Assembly ID	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A	
Fixed - All other types	NFRC Windows	0.25	270.0	67.5	0.26	270.0 (1)	70.2	
Skylights	Assembly ID	Skylight U-Factor	Assembly Rough Opening (SF)	U x A	Skylight U-Factor	Assembly Rough Opening (SF)	U x A	
All types	NFRC Skylights	0.51	2.0	1.0	0.50	2.0 (1)	1.0	
	Proposed Area	Proposed UxA		Target Area		Target UxA		
Project Totals	3,306	169		3,306		184		

Project Title	Marcoc Candy - 2021 WSEC					Date	Mar 10, 2025	
SHGC x A Calculation		NEW BUILDING - FULLY CONDITIONED				COMPLIES		
Fenestration Assemblies			PROPOSED			TARGET		
Horizontal	Assembly ID	PF	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A
Skylights	NFRC Skylights		0.35	2.0	0.7	0.35	2.0 (1)	0.7
Vertical Fenestration	Assembly ID	PF	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A
Fixed - All other types	NFRC Windows	PF < 0.2	0.38	270.0	102.6	0.38	270.0 (1)	102.6
	Proposed Area	Proposed SHGC x A			Target Area	Target SHGC x A		
Project Totals	272	103			272	103		

MECHANICAL COMPLIANCE SUMMARY

2021 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

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Project & Applicant Information	Project Title	Marcoe Candy - 2021 WSEC	For Building Department Use:	Date: Mar 10, 2025
	Project Address	110 9th Ave SW Puyallup, WA 98371		
	Applicant Name	Mike Langford		
	Applicant Phone	253-736-3501		
	Applicant Email	mike@timberland-homes.com		
For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com				

General Occupancy	All Commercial		General Building Use Type	Dining, Fast Food		Building Cond. Floor Area	1,058
General Project Types	New Building	New Building or Addition Mechanical Scope	Single Zone Systems & Equipment	Alteration Mechanical Scope		Project Cond. Floor Area	1,058
						Floors Above Grade	1
						Compliance Method	General Prescriptive
Mechanical Project Description	New mini split						

Mechanical Compliance Scope and Method	Project Type	Mechanical Scope	Economizer Exception(s) Applied?	DOAS Ventilation Provided?	Higher Equipment Efficiency Option Applied?	Equipment Efficiency Compliance Verification
	New Building	Single Zone Systems & Equipment	Yes	No	NA	COMPLIES
Additional Energy Efficiency (AEC) Measures Included	HVAC cooling equipment - 5% better than code efficiency & improved fan efficiency		Load Management (LDM) Measures Included		No mechanical load management measures included in project	
Additional Efficiency Credits Included (AEC)						
Does building include occupancy classifications requiring DOAS?	No		Does project include DOAS equipment?		No	
Based on project scope do TSPR requirements apply?	No		Do all systems comply with Appendix D standard reference design or qualify for an exception to TSPR?		No	

Scope & Space Conditioning	NEW BUILDING - SINGLE ZONE SYSTEMS & EQUIPMENT	Compliance Verification	COMPLIES
---------------------------------------	---	--------------------------------	-----------------

Single Zone Air Systems Category - Heat pump, split & single package, SC, SDHV**Air Systems Summary Information**

System/Equip ID	Quantity of Items	Supply Airflow Control	Ventilation Standard	Ventilation CFM (Total if Multiple Items)	Ventilation Air Source	Paired with DOAS	Ventilation energy recovery	Energy Recovery Efficiency (%)
HP-1		Variable air volume	IMC Natural Ventilation					

Air Systems & Equipment - Cooling

System/Equip ID	Cooling System/Equip Type	Specific Type	Cooling Capacity per item (Btu/h)	Econo Full Load Multiplier (Full/IPLV)	Required Cooling Efficiency (Code Min & Econo)	Proposed Cooling Efficiency	CE Units	Efficiency Compliance Verification
HP-1	Heat pump, air cooled	Split system	24,000	0	13.4	15.7	SEER2	COMPLIES

Air Systems & Equipment - Heating

System /Equip ID	Heating System/Equip Type	Specific Type	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h)	AEC Efficiency Multiplier	Proposed Heat Pump Heating Efficiency	HPH Units	Proposed Low OSA Temp Efficiency	LTH Units	Efficiency Compliance Verification
HP-1	Heat pump, air cooled, heating	Split system	24,000	36,000	1	7.5	HSPF2		COP	COMPLIES

Air Systems & Equipment Details

System/Equip ID	Discrete Area(s) Served	Location In Project Documents - Plan/Detail #	System/Equip Compliance Path
HP-1	Whole building	-	General Prescriptive
	System/Equip ID for a single or multiple items?: Single item		
	Heating Section/Auxiliary Heating Type: Other source		Economizer Compliance Method: Economizer not required
	WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(2) Unitary Heat Pumps		
	Proposed Low OSA Temp Efficiency:		LTH Units: COP
	WSEC Equip Efficiency Reference Table - Heating: Table C403.3.2(2) - Unitary Heat Pumps		

C406, C411 Summary**C406-C411-SUM**

2021 Washington State Energy Code Compliance Forms for Commercial Buildings as defined in Chapter 2

Revised June 2024

Project Info	Project Title: Marcoe Candy	Date: 3/10/2025
	Applicant Information. Provide contact information for individual who can respond to inquiries about compliance form information provided.	
	Company Name: Timberland Homes	For Building Dept. Use
	Company Address:	
	Applicant Name: Mike Langford	
	Applicant Phone: 253-736-3501	
	Applicant Email: mike@timberland-homes.com	

Project Type & Area

Select one construction type per form.
For projects that include multiple construction types, separate forms must be completed.

Project Type	New Construction
Project Floor Area	1,056
Project Conditioned Floor Area	1,056

Space and Water Heating Fu

Space heating must be provided by equipment complying with C403.1.4 or C401.3.3. Service hot water must be provided by equipment complying with C404.2.1 or C401.3. Compliance with C401.3 requires that additional C406.2 energy efficiency credits be achieved.

Is any space heat in the project area provided by equipment that does not comply with C403.1.4?	No
Is any service hot water used in the project provided by equipment that do not comply with C404.2.1?	No

Grocery Details

It is permitted to apply grocery heat recovery for C406.2.6.2 credit when the grocery area is over 10,000sf and it is not required to comply with C403.9.2.3.

Remotely located refrigeration condenser heat rejection capacity (kBtu/h)	
Does the facility have food service, meat or deli departments?	
Is refrigeration condenser heat recovery required?	
Is condenser heat recovery to Service Water heat required or used to comply with C403.9.2.3?	

C411 Summary

Values in this section are auto-filled from the RE-CALC worksheet and are write-protected. RE-CALC is required for all new construction, addition, change of conditioning, and change of use projects with conditioned floor area larger than 10000sf.

C411.1 Compliance	NO REQUIREMENT - COMPLIES
On-site Renewable Capacity (kW)	
On-site Renewable Capacity (W/CFA)	

C406 Summary

Compliance results indicate whether the proposed number of credits complies with C406 required number of credits including additional credits required by C401.3.3 and C411.

C406.2 Additional Energy Efficiency Measure Credit Compliance	DOES NOT COMPLY
C406.3 Load Management Measure Credit Compliance	NOT REQUIRED

Notes

C406 Additional Energy Efficiency & Load Management Credit Calculation

C406-CALC

2021 Washington State Energy Code Compliance Forms for Commercial Buildings as defined in Chapter 2

Project Title:Marcoe Candy

Revised June 2024

Date3/10/2025

Additional Energy Efficiency & Load Management Measures - Required Credits

Occupancy/Discrete Area List								Additional Energy Efficiency Measure Credits					Load Management Measure Credits	
Area ID	Occupancy Group	Special Occ Case (Only for Occ. Group M and All Other) ^{NOTE 1}	Special Conditioning Case ^{NOTE 2}	Description	Floor Area	Capacity Fraction Requiring C401.3.3 Compliance ^{NOTE 3}		Base Credits Req'd	Fossil Fuel Path Credits Req'd	C411 Exception Credits Req'd	Total Req'd	Proposed	Total Req'd	Proposed
						Space Heating	Water heating							
All	Group B	None	None	Marcoe Candy	1,056			42	0	0	42.0	0.0	0.0	0.0
Credits Entered by Whole Project Measures ^{NOTE 4}												42.00		0.00
Project Total					1056	0.00	0.00				42.00	42.00	0.00	0.00

Note 1 - For Group M and All Other occupancy selections, enter appropriate special occupancy case or space type. This is used for measure credit assignment.

Note 2 - Enter Special Conditioning case info. Refer to C402.1.1 for details of the space types. This is used to determine the required credits and also for measure credit assignment. Generally the lower conditioning level the less required credits.

Note 3 - Enter the fraction of heating capacity serving the space that does not comply with C403.1.4 or C404.2.1 without utilizing the C401.3.3 fossil fuel compliance path. Provide a list of all equipment and systems serving the area, the compliance path utilized, the capacity weighted fossil fuel path fraction, and any applicable exceptions.

Note 4 - Credits here are for measures selecting the Whole Project Area ID below. Credits are calculated based upon the defined occupancy areas and area-weighted for the whole project.

Note 5 - Select an Area ID defined in the required credits section to which the measure will be applied, or select Whole Project to apply to the whole project.

Note 6 - Only measures earning variable credits based upon the implementation require this. Enter the proposed value for the input and provide documentation support ing the input value.

AEEM Compliance

LM Compliance

COMPLIES

COMPLIES



Certificate of Product Ratings

AHRI Certified Reference Number : 215413176 Date : 03-31-2025 Model Status : Active

AHRI Type : HRCU-A-CB-O (Mini-Split Heat Pump, with Remote Outdoor Unit Air-Source, Free Delivery)

Outdoor Unit Brand Name : CARRIER

Outdoor Unit Model Number : 37MHRAQ24AA3

Indoor Type : Mini-Splits (Non-Ducted)

Indoor Model Number(s) : 45MHHAQ24XC3

Rated as follows in accordance with the latest edition of AHRI 210/240 – 2024, Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment and subject to rating accuracy by AHRI-sponsored, independent, third party testing:

Cooling Capacity (A_Fu_l) – Single or High Stage (95F), btuh : 24000

SEER2 : 18.50

EER2 (A_Fu_l) – Single or High Stage (95F) : 9.50

Heating Capacity (H₁Fu_l) – Single or High Stage (47F), btuh : 24000

HSPF2 (Region IV) : 9.00

Sold in? : USA, Canada



†“Active” Model Status are those that an AHRI Certification Program Participant is currently producing AND selling or offering for sale; OR new models that are being marketed but are not yet being produced. “Production Stopped” Model Status are those that an AHRI Certification Program Participant is no longer producing BUT is still selling or offering for sale.

Ratings that are accompanied by WAS indicate an involuntary re-rate. The new published rating is shown along with the previous (i.e. WAS) rating.

The Department of Energy has published updated energy efficiency metrics for central air conditioners and heat pumps. This publication reflects both the 1987 metric (SEER) and the 2023 metric (SEER2). Efficiency requirements are published at 10 C.F.R. 430.32(c). Please refer to www.AHRInet.org for more information about updated energy efficiency metrics.

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CERTIFICATE VERIFICATION

The information for the model cited on this certificate can be verified at www.ahridirectory.org, click on “Verify Certificate” link and enter the AHRI Certified Reference Number and the date on which the certificate was issued, which is listed above, and the Certificate No., which is listed at bottom right.

©2025 Air-Conditioning, Heating, and Refrigeration Institute



CERTIFICATE NO.:

133879165662401603

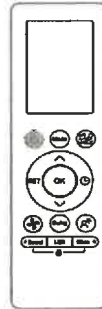
Single Zone Heat Pump Ductless System



Outdoor Model: 37MHRAQ24AA3
Indoor Model: 45MHHAQ24XC3

Job Date: _____
Tag #: _____
Date: _____

Location: _____
Carrier: _____

**OUTDOOR STANDARD FEATURES**

- Variable Speed (inverter)
- Factory Installed Base Pan Heater
- Factory Installed Crankcase Heater
- Low Voltage Controls
- Auto-Restart function
- Condenser High Temp Protection
- Quiet operation
- Anti-corrosive fin coating

INDOOR STANDARD FEATURES

- Modes: Cool, Heat, Dry, Fan, Auto
- Four fan speeds
- Sleep Mode
- Turbo Mode
- Louver Angle Memory
- Follow Me (senses temperature at handheld remote)
- Auto-Restart function
- Condenser High Temp Protection
- Quiet Indoor operation
- Anti-corrosive fin coating

RESIDENTIAL APPLICATION LIMITED WARRANTY*

- Ten (10) years if properly registered within ninety (90) days after original installation, parts are warranted to the original purchaser for a period of ten (10) years. Otherwise, parts warranty is five (5) years.

NOTE: Images for illustration purposes only. Actual models may be slightly different.

Outdoor - Heat Pump			
System	Outdoor Model #	37MHRAQ24AA3	
	Outdoor Size	24000	
Electrical	Voltage, Phase, Cycle	V/Ph/Hz	208-230/1/60
	MCA	A	19
	MOPA	A	20
	SCCR	KA	5
Operating Range	Cooling Outdoor DB Min - Max	°F(°C)	5°-122°(-15~50)
	Heating Outdoor DB Min - Max	°F(°C)	5°-75°(-15~24)
	Min. Piping Length	ft (m)	9.8 (3)
	Standard Piping Length	ft (m)	24.6 (7.5)
Piping	Total Piping Length	ft (m)	164.04(50)
	Piping Lift	ft (m)	82.02(25)
	Pipe Connection Size - Liquid	in (mm)	3/8in(9.52mm)
	Pipe Connection Size - Suction	in (mm)	5/8in(15.9mm)
Refrigerant	Refrigerant Type	R454B	
	Charge	lbs (kg)	3.35(1.52)
	Add'l Refrigerant (between Std & Max Piping Lengths)	Oz/ft (g/m)	0.32(30)
	Face Area	Sq. Ft.	5.9
Outdoor Coil	No. Rows	1.6	
	Fins per Inch	20	
	Circuits	5	
	Compressor	ROTARY	
Compressor	Type	KTM240D46UKT2	
	Oil Type	ESTER OIL	
	Oil Charge	FL Oz.	20.97
	Rated Current	RLA	0.9
Airflow & Sound	Airflow	CFM	1765.7
	Sound Pressure	dB(A)	62
	Height	Inch	26.5(673)
	Width	Inch	35.04(890)
Dimensions	Depth	Inch	13.46(342)
	Net Weight	Lbs.	94.58(42.9)
	Shipping Height	Inch	29.13(740)
	Shipping Width	Inch	39.17(995)
	Shipping Depth	Inch	15.67(398)
	Shipping Net Weight	Lbs.	102.29(46.4)

* Condensing unit above or below indoor unit

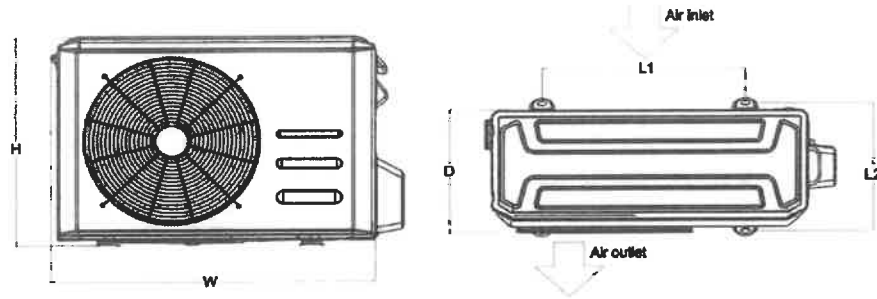
37MHRAQ24AA3 / 45MHHAQ24XC3 System Accessories			
Standard	Wireless Remote Controller (°F/°C Convertible)		
Optional	Wired Remote Control 7 Day Programmable	KSACN1401AAA	
	Wired Remote Control with Timer Function	KSACN1201AAA	
	Wi-Fi™ Kit High Wall	KSAIF0701AAA	
	24V Mini Interface	KSAKD601230	

Indoor - Heat Pump			
System	Indoor Model #	45MHHAQ24XC3	
	Indoor Size	24000	
Electrical	Voltage, Phase, Cycle	V/Ph/Hz	208-230/1/60
	Power Supply	Indoor unit powered by outdoor unit	
	MCA	A	3
	SCCR	KA	5
Operating Range	Cooling Indoor DB Min - Max	°F(°C)	60°-90°(16~32)
	Heating Indoor DB Min - Max	°F(°C)	32°-86°(0~30)
	Face Area	Sq. Ft.	2.97
	No. Rows	2	
Indoor Coil	Fins per Inch	20	
	Circuits	4	
	Number of Fan Speeds	1100/940/780	
	Airflow (highest to lowest)	CFM	547.4/400.2/329.6
Indoor Unit	Sound Pressure (highest to lowest)	dB(A)	46/41.0/28/22
	Moisture Removal	L/h	3
	Air Throw Data	ft/m	30.41(9.27)
	Height	In (mm)	26.5(673)
Dimensions	Width	In (mm)	35.04(890)
	Depth	In (mm)	13.46(342)
	Net Weight	Lbs (kg)	94.58(42.9)
	Shipping Height	Inch	29.13(740)
	Shipping Width	Inch	39.17(995)
	Shipping Depth	Inch	15.67(398)

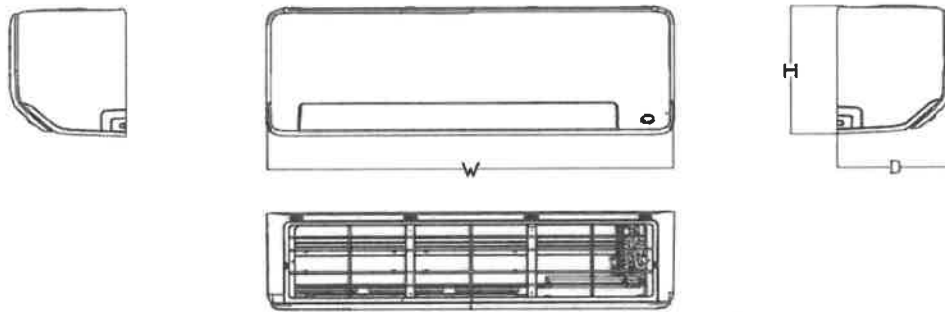
37MHRAQ24AA3 / 45MHHAQ24XC3 System Performance			
Cooling Rated Capacity (DOE A2 - 95°F)		24000	
Cooling Capacity Range		6200~24700	
SEER2		Btu/h	18.5
EER2 (DOE A2 - 95°F)		Btu/h	9.7
Heating Rated Capacity (DOE H12 - 47°F)		24000	
Heating Capacity Range		11900~27200	
COP (DOE H12 - 47°F)		Btu/h	3.22
HSPF2 IV		Btu/h	9
HSPF2 V		Btu/h	7.1
Cooling Rated Capacity (DOE B2 - 82°F)		Btu/h	27000
EER2 (DOE B2 - 82°F)		Btu/h	12.5
Heating Rated Capacity (DOE H32 - 17°F)		17200	
COP (DOE H32 - 17°F)		W/W	2.46
Heating Maximum Capacity (17°F)		W/W	20200
Heating Rated Capacity (DOE H42 - 5°F)		W/W	17000
COP (DOE H42 - 5°F)		2.11	
Heating Maximum Capacity (5°F)		17000	



R-454B



OUTDOOR UNIT DIMENSIONS						
Capacity	Unit	W	D	H	L1	L2
9K/12K - 115V/9K-12K	mm	765	303	555	452.4	285.75
	inch	30.12	11.93	21.85	17.81	11.25
18K	mm	805	330	554	511.00	317.2
	inch	31.69	12.99	21.81	20.1	12.5
24K	mm	890	342	673	663	346.67
	inch	35.04	13.46	26.5	26.1	13.65
30K/36K	mm	946	410	810	672.96	402.6
	inch	37.24	16.14	31.89	26.49	15.85



INDOOR UNIT DIMENSIONS				
Capacity	Unit	W	D	H
9K - 115V/9K	mm	729	200	292
	inch	28.7	7.87	11.5
12K - 115V/12k	mm	802	200	295
	inch	31.57	7.87	11.61
18K	mm	971	228	321
	inch	38.23	8.98	12.64
24K	mm	1082	234	337
	inch	42.6	9.21	13.27
30K/36K	mm	1259	283	362
	inch	49.57	11.14	14.25



R-454B

Rinnai

REHP Series

ELECTRIC HEAT PUMP WATER HEATER



RESIDENTIAL HYBRID ELECTRIC HEAT PUMP WATER HEATER

Efficiency & Performance	- Exceptional efficiency up to 4.0 UEF (Uniform Energy Factor) reduces operating cost - Up to 91 Gallons FHR (First Hour Rating) - Heat pump operating range down to 37°F ambient for extra days of efficient operation - ENERGY STAR® rated for state and local rebates - Modulating fan allows noise free tranquility
Easy Installation	- Easy access to water supply and condensate connection on side. - Zero clearance required on back, top and side is optimal for confined spaces - Horizontal air filter placement for quick maintenance
Operation Modes	- Economy (Default) - Heat Pump - Hybrid - E-Heater - Vacation
Certifications	- Energy Star - AHRI - NEEA Tier 4 - CTA-2045-B Level 1 (AC form factor)
Warranty	10-Year limited warranty for tank and parts. Refer to warranty section in manual for more details.
Additional	- Intuitive LED Screen for easy installation and troubleshooting - Premium anode rod extends the life of the water heater - Dry-fire protection - Factory installed temperature and pressure relief valve 3/4" NPT for water inlet and outlet; condensate drain with burb fitting for 3/4" hose - Integrated ducting adapters for tighter spaces (sold separately) - Easy to install with built-in handles - Plastic feet to prevent direct ground contact



CERTIFIED TO NEEA TIER 4

RINNAI.US | RINNAI.CA | 1-800-621-9419

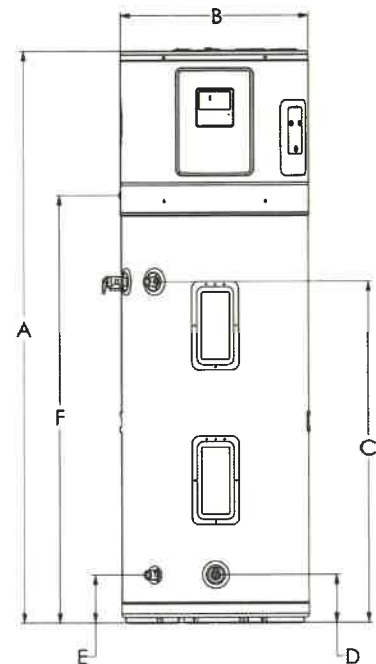
TECHNICAL SPECIFICATIONS

Model		50 Gal Models	65 Gal Models	80 Gal Models
Nominal Gallon Capacity		50 gal (189 lt)	65 gal (246 lt)	80 gal (303 lt)
Rated Gallon Capacity		46 gal (174 lt)	61 gal (231 lt)	74 gal (280 lt)
Voltage		208V/240V, 60Hz, 1PH		
Maximum Current		21.5 Amps		
Electrical Breaker Size		30 Amps		
Heat Pump Operating Ambient Temperature Range		37~107°F (3~42°C)		
Outlet Water Temperature Range		110°F~150°F (43°C~66°C)		
Refrigerant Type		R134a		
Uniform Energy Factor (UEF)		3.75	3.90	4.00
First Hour Rating (FHR)		73 gal (276 lt)	80 gal (303 lt)	91 gal (344 lt)
Recovery in G.P.H 90°F Rise		27.5	27.5	27.5
Estimated Yearly Energy Cost ¹		\$121	\$178	\$174
Element Wattage	Upper	4500 W		
	Lower			
Compressor Wattage		500 W		
Total Unit Wattage (Input)		5000 W		
Hot and Cold Water Connection		3/4 in MNPT		
Condensate Drain Hose		3/4 in		
Unit Weight (Approximate)		218 lb (99 kg)	271 lb (123 kg)	290 (132 kg)
Shipping Weight (Approximate)		265 lb (120 kg)	334 lb (152 kg)	358 lb (162 kg)
Shipping Dimensions	Height	74.8 in (1900 mm)	75.6 in (1920 mm)	83.1 in (2111 mm)
	Length	28.3 in (719 mm)	30.1 in (765 mm)	30.3 in (770 mm)
	Width	27.2 in (691 mm)	28.9 in (734 mm)	29.1 in (739 mm)
Warranty		Tank & Other Parts: 10 Years. Reasonable Labor: 1 Year. See the "Rinnai Electric Heat Pump Water Heater Manual" (100000867) for complete details.		

¹ The estimated yearly energy cost is calculated based on energy costs published by the U.S. Department of Energy in 2022.

UNIT DIMENSIONS

Dimensions	F	49.5 in (1257 mm)	49.1 in (1246 mm)	57.8 in (1468 mm)
	E	5.6 in (141 mm)		
	D	5.2 in (131 mm)	5.6 in (141 mm)	
	C	39.7 in (1008 mm)	37.9 in (962 mm)	46.6 in (1184 mm)
	B	21.7 in (551 mm)	25.6 in (650 mm)	
	A	66.4 in (1687 mm)	65.5 in (1663 mm)	74.2 in (1885 mm)
Description	Model Number	50 Gal Models	65 Gal Models	80 Gal Models
	Rated Gallon Capacity	46	61	74



Rinnai America Corporation • 103 International Drive, Peachtree City, GA 30269
1-800-621-9419 • rinnai.us • rinnai.ca

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800000224(02)

9/2024

PABCO PREMIER®

Technical Data Sheet



PABCO Premier® laminated fiberglass shingles are the leading choice of homeowners and builders who trust the PABCO name and desire a wide selection of color options.

TECHNICAL DETAIL	DATA
Category	Traditional Laminated Fiberglass
Weight per Square (nominal)	255 lbs
Weather Exposure	5 5/8"
Offset	5 5/8"
Shingles per Square (approx.)	64
Bundles per Square (approx.)	4
Bundles per Pallet	68

WARRANTY*	
Original Homeowner	Limited Lifetime
Subsequent Homeowners	30 Years Fully Transferable
Non-Prorated Coverage	15 Years
Wind Resistance (Standard Application 110 mph)	15 Years
Wind Resistance (High Wind Application – 130 mph)	15 Years
Algae Resistance (Featuring Algae Defender®)	20 Years

DESIGNATION NUMBER	APPLICABLE STANDARD
ASTM D3462	Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
ASTM D3018	Type I Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules
CSA Standard A123.5	Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
UL 790	Class A Fire Resistance
ASTM E108	Class A Fire Resistance
ASTM D3161	Class F Wind Resistance
ASTM D7158	Class H Wind Resistance
UL 2218	Class 3 Impact Resistance
ESR-1717	ICC-ES Evaluation Report



Detailed Installation instructions at www.pabcoroofing.com/literature.

*Single Family Residences only. See PABCO®'s Limited Shingle Warranty for details and other structures.



LIGHTING COMPLIANCE SUMMARY

2021 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

Administered by: ©2025 NEEA, All rights reserved

Project & Applicant Information	Project Title	Marcoe Candy - 2021 WSEC	For Building Department Use:	Date: Mar 31, 2025
	Project Address	110 9th Ave SW Puyallup, WA 98371		
	Applicant Name	Mike Langford		
	Applicant Phone	253-736-3501		
	Applicant Email	mike@timberland-homes.com		
For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com				

General Occupancy	All Commercial		General Building Use Type		Dining, Fast Food	Building Cond. Floor Area	1,058
General Project Types	New Building	New Building or Addition Lighting Scope	Interior Lighting Exterior Lighting	Alteration Lighting Scope		Project Cond. Floor Area	1,058
						Floors Above Grade	1
						Compliance Method	General Prescriptive
Lighting Project Description	Kitchen for making/selling caramel apples. No public used spaced, Employee use only						

Lighting Compliance Scope and Method	Project Type	Interior / Exterior (Interior includes both interior & parking)	Luminaire Replacement Scope	Compliance Method	LPA Calculation Adjustment	Compliance Verification
	New Building	Interior Lighting		Building area	No Calculation Adjustments selected	COMPLIES
	New Building	Exterior Lighting			Not applicable to exterior	COMPLIES
Additional Energy Efficiency (AEC) Measures Included	Reduced lighting power density - 20% lower than LPA		Load Management (LDM) Measures Included		No lighting or electrical load management measures included in project	

Project Title	Marcoe Candy - 2021 WSEC				Date	Mar 31, 2025
Lighting Power Calculation	NEW BUILDING - INTERIOR LIGHTING			Compliance Verification	COMPLIES	
Compliance Method	Building area		LPA Calculation Adjustment			LPA x 0.8

Interior Lighting Power Allowance - Building Area					
Building Areas	Gross Interior Area (SF)	LPA (Watts/SF)	Total Watts Allowed (SF x LPA x 0.8)	Total Proposed Watts By Building Area	Compliance Status by Building Area
Dining - Cafeteria/fast food	1,058	0.72	610	222	COMPLIES

Proposed Lighting Power Density								
Fixture Type/Application	Fixture ID	Building Area	New or Existing-to-Remain	Quantity of Fixtures, CLDs or Luminaires (#F)	Watts per Fixture, CLD or Luminaire (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures								
Horizontal surface-mount	Surface Mount LED Panel	Dining - Cafeteria/fast food	New	6	37			222

Project Title	Marcoe Candy - 2021 WSEC					Date	Mar 31, 2025				
Proposed Fixtures Details		NEW BUILDING - INTERIOR LIGHTING									
Fixture Type/Application	Fixture ID		Location in Documents		Lamp Type	Building Area		New or Existing-to-Remain			
Individual Fixtures											
Horizontal surface-mount		Surface Mount LED Panel		Page E1		LED		Dining - Cafeteria/fast food		New	
		Fixture Description:					Are these fixtures located within a daylight zone?: No				
		Do these fixtures require specific application lighting controls?: None required									

Project Title	Marcoc Candy - 2021 WSEC			Date	Mar 31, 2025
Lighting Power Calculation	NEW BUILDING - EXTERIOR LIGHTING			Compliance Verification	COMPLIES
Exterior Lighting Zone	ZONE 2		Base Site Allowance		280

Exterior Lighting Power Allowance								
Exterior Surface	Surface Sub-Type	Surface Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts	Compliance Status
Building entrances and exits	Entry canopies	70	0.126			9		
Base Site Allowance						280		
Totals						289	55	COMPLIES

Proposed Exterior Lighting Power Density							
Fixture Type	Fixture ID	Exterior Surface Type	Quantity of Fixtures (#F)	Watts or Wattage Limit per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures							
Other fixture type	Recessed Can Lights	Building entrances and exits - Entry canopies	5	11			55
Proposed Total LPD							55



Above plan provided for truss placement only. Refer to truss calculations and engineering structural drawings for all further information. Building designer/engineer of record are responsible for all non truss to truss connections. Building designer / engineer of record to review and approve all designs prior to construction.

Quote Date
01/28/2025

Revision

Sales

Castor McCoy

Designer

Anna Roats

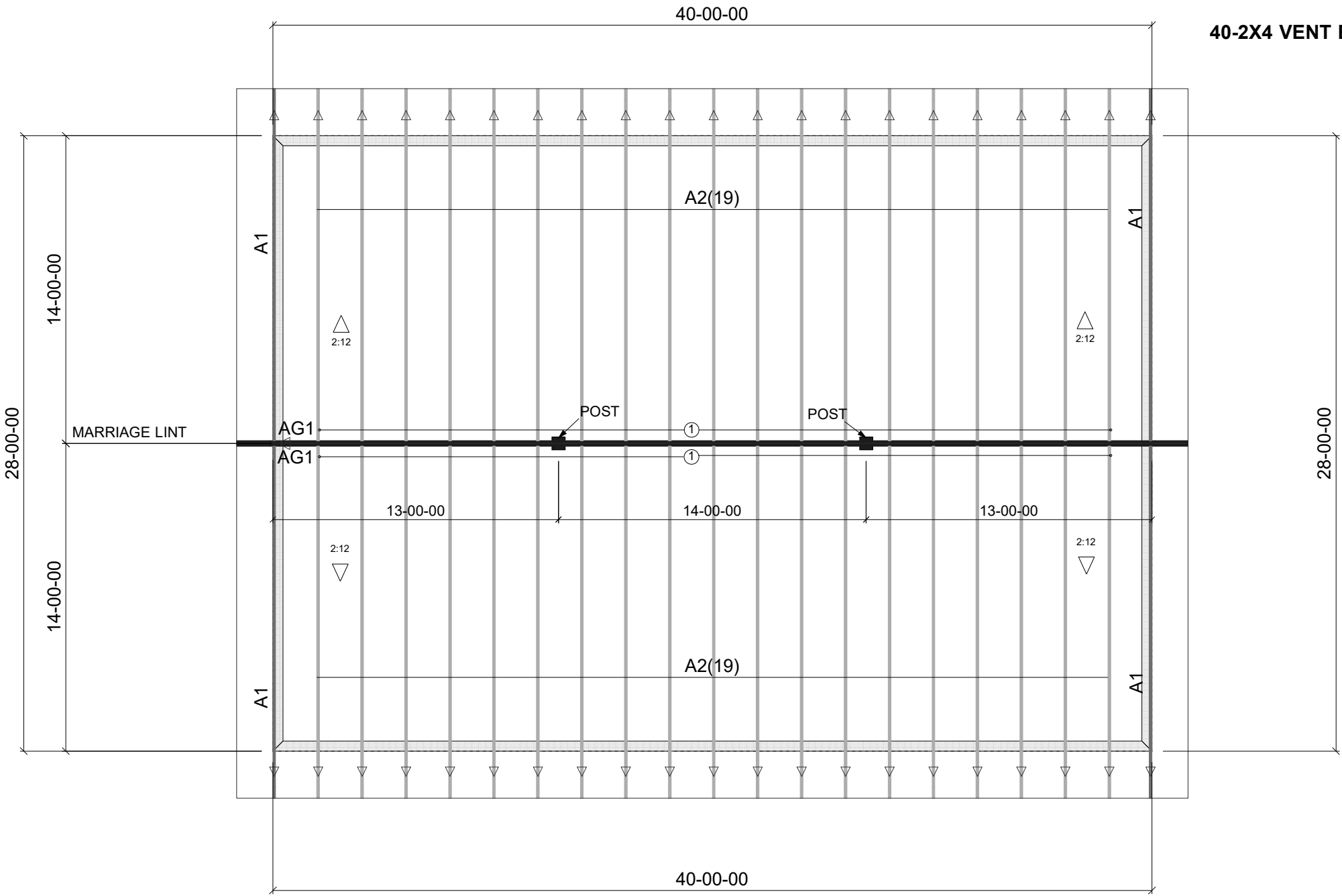
Delivery

Job Number:
B25001347-A

Customer:
TIMBERLAND HOMS

Project:
D# 7161 MARCOE CANDY

Plan:



LAY-OUT DIMENSIONS:
FEET - INCHES - SIXTEENTHS
(6'-7 3/4" = 6'-7-12)
****DRAWING IS NOT TO SCALE**

40-2X4 VENT BLOCKS

ROOF PITCH: 2/12
OVERHANGS: 24"
HEEL HEIGHTS: STD.
LOADING: 25 TC LL
10 TC DL
10 BC DL

45 TL PSF

2021 IRC CODE
WIND EXPOSURE: C
WIND VELOCITY = 110 mph
KzT = 1.00

*NOTE: ALL HANGER NAILS MUST BE 16d
SINKER (3-1/4" LONG)....TYP. UNLESS
NOTED OTHERWISE*

QTY	TYPE	SYMBOL
38	HUS26	①

**CAUTION: DO NOT CUT, DRILL OR
ALTER ANY TRUSSES WITHOUT PRIOR
APPROVAL FROM PARR TRUSS.**

**PRECAUCION: NO CORTAR, PERFORAR
O ALTERAR NINGUNA TRAZA SIN
APROBACION DE PARR TRUSS**

ROOF NOTES:

- 1.) ALL TRUSSES TO BE SPACED AT 24" O.C.
(UNLESS NOTED OTHERWISE)
- 2.) PROVIDE FULL BEARING UNDER GIRDER
TRUSSES.
- 3.) SEE ATTACHED FRAMING DETAILS FOR
HIP, VALLEY, GABLE, AND OVERFRAMING.
- 4.) ALL BEAMS ARE DESIGNED BY OTHERS,
UNLESS NOTED OTHERWISE - (SEE
STRUCTURAL FRAMING PLANS.)



MiTek, Inc.
400 Sunrise Ave., Suite 270
Roseville, CA 95661
916.755.3571

Re: B25001347-A
7161 MARCOE CANDY

The truss drawing(s) referenced below have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Roof Truss Supply.

Pages or sheets covered by this seal: R87421177 thru R87421180

My license renewal date for the state of Washington is September 28, 2025.



April 1, 2025

Zhao, Xiaoming

IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which were given to MiTek or TRENCO. Any project specific information included is for MiTek's or TRENCO's customers file reference purpose only, and was not taken into account in the preparation of these designs. MiTek or TRENCO has not independently verified the applicability of the design parameters or the designs for any particular building. Before use, the building designer should verify applicability of design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.

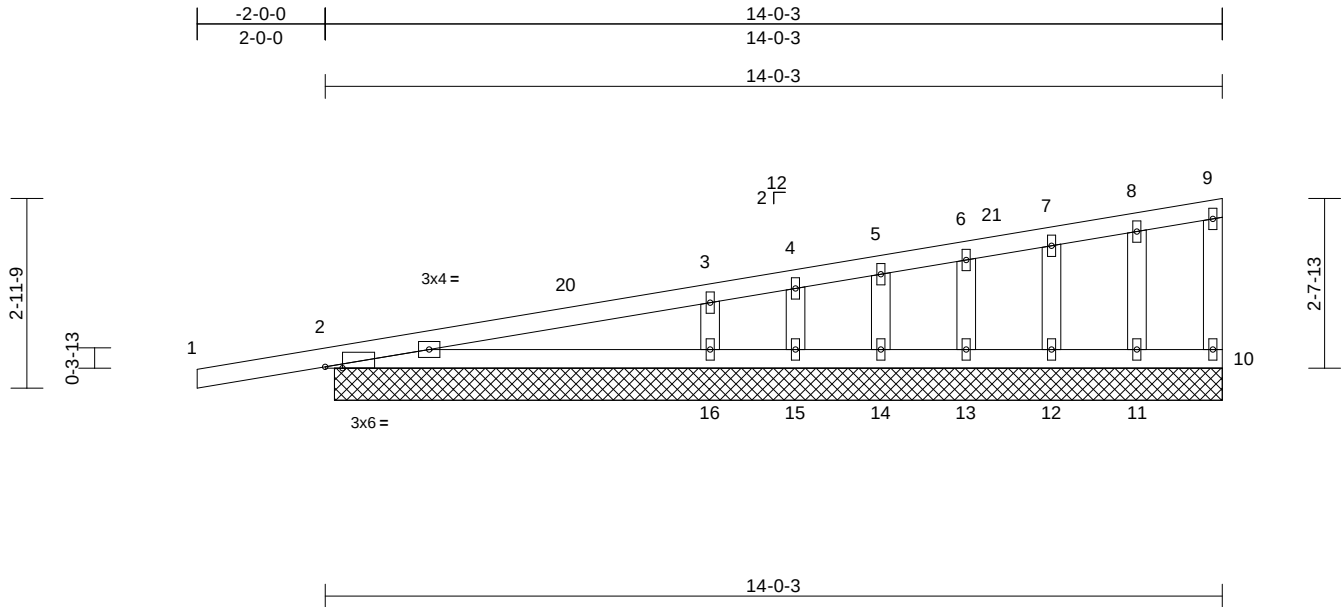
Job	Truss	Truss Type	Qty	Ply	7161 MARCOE CANDY	R87421177
B25001347-A	A1	Monopitch Supported Gable	4	1	Job Reference (optional)	

Roof Truss Supply, Woodinville, WA - 98072,

Run: 8.83 S Mar 20 2025 Print: 8.830 S Mar 20 2025 MiTek Industries, Inc. Mon Mar 31 14:34:44

Page: 1

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Scale = 1:36

Plate Offsets (X, Y): [2:0-3-4,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.00	TC	0.54	Vert(LL)	n/a	-	999	MT20	185/148
(Roof Snow = 25.0)		Lumber DOL	1.00	BC	0.33	Vert(CT)	n/a	-	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	10	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MS							
BCDL	10.0										
										Weight: 47 lb	FT = 20%

LUMBER

TOP CHORD	2x4 HF No.2
BOT CHORD	2x4 HF No.2
WEBS	2x4 HF No.2
OTHERS	2x4 HF No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 6'-0" oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10'-0" oc bracing.

REACTIONS

(size)	2=13-10-7, 10=13-10-7, 11=13-10-7, 12=13-10-7, 13=13-10-7, 14=13-10-7, 15=13-10-7, 16=13-10-7
Max Horiz	2=125 (LC 11)
Max Uplift	2=-144 (LC 10), 10=-15 (LC 11), 11=-24 (LC 11), 12=-29 (LC 11), 13=-24 (LC 11), 14=-43 (LC 11), 15=-188 (LC 19), 16=-135 (LC 11)
Max Grav	2=392 (LC 19), 10=57 (LC 19), 11=151 (LC 19), 12=156 (LC 19), 13=132 (LC 19), 14=233 (LC 19), 15=41 (LC 11), 16=689 (LC 19)

FORCES

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/39, 2-3=-136/151, 3-4=-87/48, 4-5=-90/64, 5-6=-73/56, 6-7=-61/53, 7-8=-47/50, 8-9=-42/52, 9-10=-47/28
BOT CHORD	2-16=-156/142, 15-16=-40/53, 14-15=-40/53, 13-14=-40/53, 12-13=-40/53, 11-12=-40/53, 10-11=-40/53
WEBS	8-11=-125/73, 7-12=-127/71, 6-13=-115/63, 5-14=-170/90, 4-15=-35/86, 3-16=-471/247

NOTES

- 1) Wind: ASCE 7-16; Vult=110mph (3-second gust) Vasd=87mph; TCDL=5.5psf; BCDL=4.0psf; h=25ft; B=45ft; L=24ft; eave=2ft; Cat. II; Exp C; Enclosed; MWFRS (directional) and C-C Corner(3E) -2-0-0 to 1-0-0, Exterior(2N) 1-0-0 to 13-10-7 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- 3) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL = 1.00 Plate DOL = 1.00); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.00
- 4) Unbalanced snow loads have been considered for this design.
- 5) This truss has been designed for greater of min roof live load of 20.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
- 6) As requested, plates have not been designed to provide for placement tolerances or rough handling and erection conditions. It is the responsibility of the fabricator to increase plate sizes to account for these factors.
- 7) All plates are 1.5x4 (II) MT20 unless otherwise indicated.
- 8) Plates checked for a plus or minus 20 degree rotation about its center.
- 9) Gable studs spaced at 1'-4" oc.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3'-0" tall by 2'-0" wide will fit between the bottom chord and any other members.
- 12) All bearings are assumed to be HF No.2.

- 13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 15 lb uplift at joint 10, 144 lb uplift at joint 2, 24 lb uplift at joint 11, 29 lb uplift at joint 12, 24 lb uplift at joint 13, 43 lb uplift at joint 14, 188 lb uplift at joint 15, 135 lb uplift at joint 16 and 144 lb uplift at joint 2.

LOAD CASE(S) Standard

April 1, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcscomponents.com)

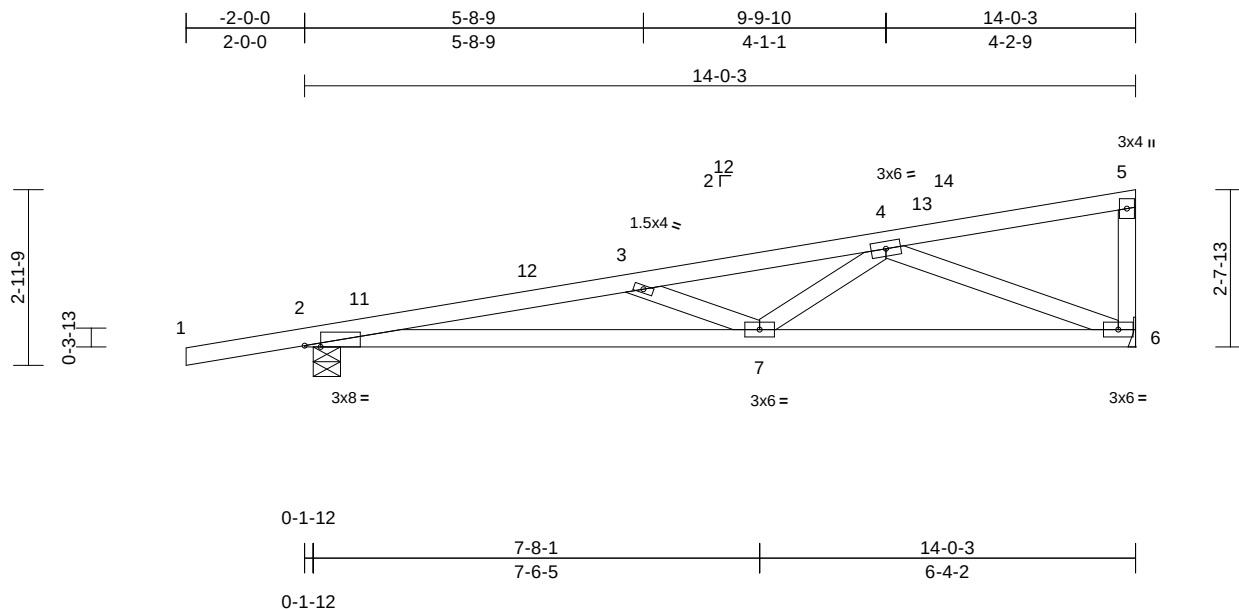
MiTek®
400 Sunrise Ave., Suite 270
Roseville, CA 95661
916.755.3571 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	7161 MARCOE CANDY	R87421178
B25001347-A	A2	Monopitch	38	1	Job Reference (optional)	

Roof Truss Supply, Woodinville, WA - 98072,

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Page: 1



Scale = 1:38.9

Plate Offsets (X, Y): [2:0-3-4,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.00	TC	0.54	Vert(LL)	-0.15	7-10	>999	360	MT20	185/148
(Roof Snow = 25.0)		Lumber DOL	1.00	BC	0.87	Vert(CT)	-0.27	7-10	>614	240		
TCDL	10.0	Rep Stress Incr	YES	WB	0.55	Horz(CT)	0.05	6	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-MS		Wind(LL)	0.09	7-10	>999	240		
BCDL	10.0										Weight: 48 lb	FT = 20%

LUMBER

TOP CHORD 2x4 HF No.2
 BOT CHORD 2x4 HF No.2
 WEBS 2x4 HF No.2

BRACING

TOP CHORD Structural wood sheathing directly applied or
 2-11-4 oc purlins, except end verticals.
 BOT CHORD Rigid ceiling directly applied or 7-7-9 oc
 bracing.

REACTIONS

(size) 2=0-5-8, 6= Mechanical
 Max Horiz 2=125 (LC 11)
 Max Uplift 2=-216 (LC 10), 6=-142 (LC 11)
 Max Grav 2=859 (LC 19), 6=764 (LC 19)

FORCES

(lb) - Maximum Compression/Maximum
 Tension

TOP CHORD 1-2=0/39, 2-3=-2672/446, 3-4=-1988/291,
 4-5=-72/40, 5-6=-162/72
 BOT CHORD 2-7=-552/2625, 6-7=-326/1371
 WEBS 3-7=-753/219, 4-7=-49/707, 4-6=-1441/316

NOTES

- Wind: ASCE 7-16; Vult=110mph (3-second gust)
 Vasd=87mph; TCDL=5.5psf; BCDL=4.0psf; h=25ft;
 B=45ft; L=24ft; eave=4ft; Cat. II; Exp C; Enclosed;
 MWFRS (directional) and C-C Exterior(2E) -2-0-0 to
 1-0-0, Interior (1) 1-0-0 to 13-10-7 zone; cantilever left
 and right exposed; end vertical left and right exposed; C-
 C for members and forces & MWFRS for reactions
 shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL = 1.00 Plate
 DOL = 1.00); Is=1.0; Rough Cat C; Partially Exp.;
 Ce=1.0; Cs=1.00; Ct=1.00
- Unbalanced snow loads have been considered for this
 design.
- This truss has been designed for greater of min roof live
 load of 20.0 psf or 2.00 times flat roof load of 25.0 psf on
 overhangs non-concurrent with other live loads.

- As requested, plates have not been designed to provide
 for placement tolerances or rough handling and erection
 conditions. It is the responsibility of the fabricator to
 increase plate sizes to account for these factors.
- Plates checked for a plus or minus 20 degree rotation
 about its center.
- This truss has been designed for a 10.0 psf bottom
 chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf
 on the bottom chord in all areas where a rectangle
 3-06-00 tall by 2-00-00 wide will fit between the bottom
 chord and any other members.
- All bearings are assumed to be HF No.2.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to
 bearing plate capable of withstanding 142 lb uplift at joint
 6 and 216 lb uplift at joint 2.

LOAD CASE(S) Standard

April 1, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcsccomponents.com)

MiTek®

400 Sunrise Ave., Suite 270
 Roseville, CA 95661
 916.755.3571 / MiTek-US.com

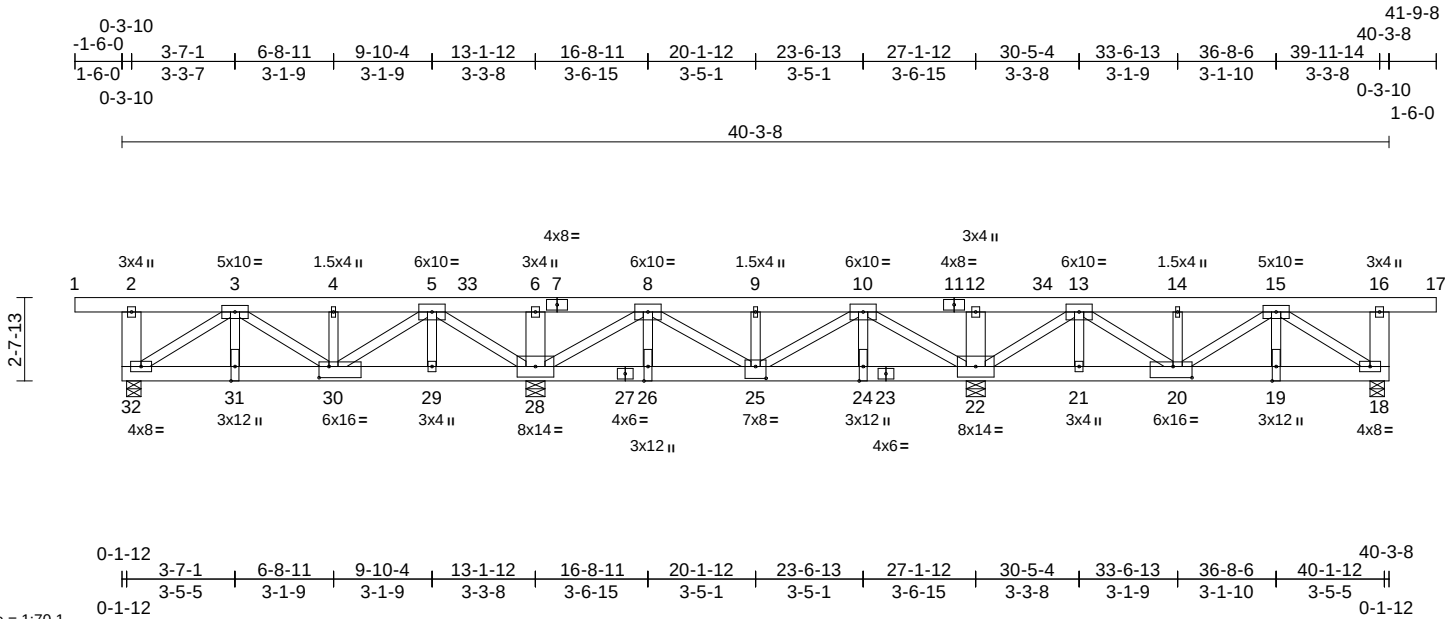
Job	Truss	Truss Type	Qty	Ply	7161 MARCOE CANDY	R87421179
B25001347-A	AG1	Flat Girder	2	1	Job Reference (optional)	

Roof Truss Supply, Woodinville, WA - 98072,

Run: 8.83 S Jan 17 2025 Print: 8.830 S Jan 17 2025 MiTek Industries, Inc. Tue Apr 01 13:26:32

Page: 1

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Scale = 1:70.1
 Plate Offsets (X, Y): [20:0-7-4,0-4-4], [25:0-4-0,0-4-8], [30:0-3-12,0-4-4]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL	25.0	Plate Grip DOL	1.00	TC	0.77	Vert(LL)	-0.05	25-26	>999	360	MT20	185/148
(Roof Snow = 25.0)		Lumber DOL	1.00	BC	0.75	Vert(CT)	-0.09	25-26	>999	240		
TCDL	10.0	Rep Stress Incr	NO	WB	0.91	Horz(CT)	0.04	18	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MS		Wind(LL)	0.03	25-26	>999	240		
BCDL	10.0											
Weight: 239 lb											FT = 20%	

LUMBER
 TOP CHORD 2x6 HF No.2
 BOT CHORD 2x6 HF No.2
 WEBS 2x4 HF No.2 *Except*
 32-2,16-18,6-28,12-22:2x8 DF SS

BRACING
 TOP CHORD Structural wood sheathing directly applied or 4-9-14 oc purlins.
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS All bearings 0-5-8. except 28=0-8-7(input: 0-7-4), 22=0-8-7(input: 0-7-4)
 (lb) - Max Uplift All uplift 100 (lb) or less at joint(s) except 18=-348 (LC 5), 22=-770 (LC 8), 28=-770 (LC 8), 32=-348 (LC 4)
 Max Grav All reactions 250 (lb) or less at joint (s) except 18=1935 (LC 1), 22=5131 (LC 1), 28=5131 (LC 1), 32=1935 (LC 1)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
 TOP CHORD 3-4=-2037/314, 4-5=-2037/314, 5-33=-327/2186, 6-33=-327/2186, 6-7=-327/2186, 7-8=-327/2186, 8-9=-1418/216, 9-10=-1418/216, 10-11=-327/2186, 11-12=-327/2186, 12-34=-327/2186, 13-34=-327/2186, 13-14=-2037/314, 14-15=-2037/314
 BOT CHORD 31-32=-277/1871, 30-31=-277/1871, 29-30=-95/570, 28-29=-95/570, 27-28=-66/409, 26-27=-66/409, 25-26=-66/409, 24-25=-66/409, 23-24=-66/409, 22-23=-66/409, 21-22=-95/570, 20-21=-95/570, 19-20=-277/1871, 18-19=-277/1871

WEBS
 2-32=-328/113, 16-18=-328/113, 5-29=-89/747, 3-31=-119/989, 3-32=-2249/333, 5-30=-266/1790, 6-28=-469/97, 10-24=-102/852, 8-26=-102/852, 8-28=-3044/460, 9-25=-277/67, 8-25=-179/1200, 10-25=-179/1200, 12-22=-469/97, 13-21=-89/747, 13-22=-3314/502, 13-20=-266/1790, 15-19=-119/989, 15-18=-2249/333, 5-28=-3314/502, 10-22=-3044/460

NOTES

- Wind: ASCE 7-16; Vult=110mph (3-second gust) Vasd=87mph; TCDL=5.5psf; BCDL=4.0psf; h=25ft; B=45ft; L=40ft; eave=5ft; Cat. II; Exp C; Enclosed; MWFRS (directional); cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL = 1.00 Plate DOL = 1.00); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.00
- This truss has been designed for greater of min roof live load of 20.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- As requested, plates have not been designed to provide for placement tolerances or rough handling and erection conditions. It is the responsibility of the fabricator to increase plate sizes to account for these factors.
- Plates checked for a plus or minus 20 degree rotation about its center.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

- WARNING: Required bearing size at joint(s) 28, 22 greater than input bearing size.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 347 lb uplift at joint 32, 770 lb uplift at joint 28, 770 lb uplift at joint 22 and 347 lb uplift at joint 18.
 - In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).
- LOAD CASE(S)** Standard
- Dead + Snow (balanced): Lumber Increase=1.00, Plate Increase=1.00
 Uniform Loads (lb/ft)
 Vert: 1-17=-70, 18-32=-280 (F=-260)



April 1, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

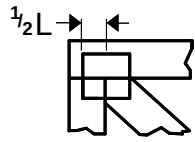
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcsccomponents.com)

MiTek®

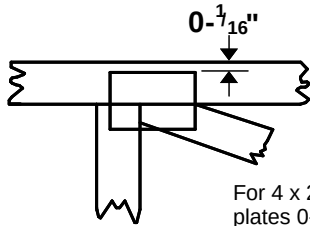
400 Sunrise Ave., Suite 270
 Roseville, CA 95661
 916.755.3571 / MiTek-US.com

Symbols

PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- $\frac{1}{16}$ " from outside edge of truss.



This symbol indicates the required direction of slots in connector plates.

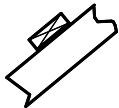
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

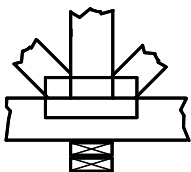
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

BEARING

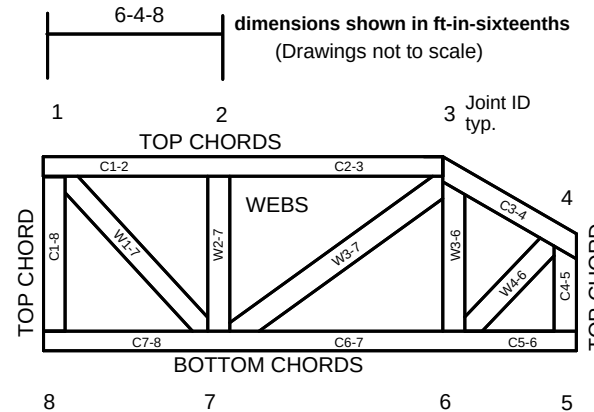


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

Numbering System



JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

Product Code Approvals

ICC-ES Reports:

ESR-1988, ESR-2362, ESR-2685, ESR-3282
ESR-4722, ESL-1388

Design General Notes

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

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MiTek®

MiTek Engineering Reference Sheet: MII-7473 rev. 1/2/2023

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.

PABCO PREMIER®

Technical Data Sheet



PABCO Premier® laminated fiberglass shingles are the leading choice of homeowners and builders who trust the PABCO name and desire a wide selection of color options.

TECHNICAL DETAIL	DATA
Category	Traditional Laminated Fiberglass
Weight per Square (nominal)	255 lbs
Weather Exposure	5 5/8"
Offset	5 5/8"
Shingles per Square (approx.)	64
Bundles per Square (approx.)	4
Bundles per Pallet	68

WARRANTY*	
Original Homeowner	Limited Lifetime
Subsequent Homeowners	30 Years Fully Transferable
Non-Prorated Coverage	15 Years
Wind Resistance (Standard Application 110 mph)	15 Years
Wind Resistance (High Wind Application – 130 mph)	15 Years
Algae Resistance (Featuring Algae Defender®)	20 Years

DESIGNATION NUMBER	APPLICABLE STANDARD
ASTM D3462	Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
ASTM D3018	Type I Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules
CSA Standard A123.5	Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
UL 790	Class A Fire Resistance
ASTM E108	Class A Fire Resistance
ASTM D3161	Class F Wind Resistance
ASTM D7158	Class H Wind Resistance
UL 2218	Class 3 Impact Resistance
ESR-1717	ICC-ES Evaluation Report



Detailed Installation instructions at www.pabcoroofing.com/literature.

*Single Family Residences only. See PABCO®'s Limited Shingle Warranty for details and other structures.



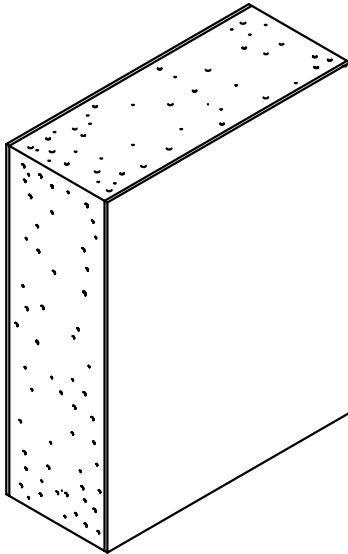
1-3/4" ENVOY DOOR

FLUSH STEEL DOORS
UNIVERSAL, NON-HANDED

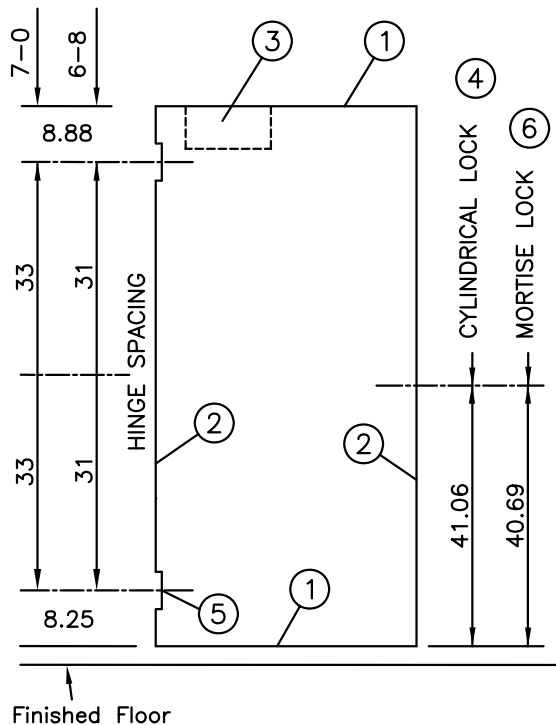
FACE SHEETS: 18 GA. C.R.S.
(GALVANNEALED OPTIONAL)
CORE: POLYSTYRENE
DESIGN: FLUSH
FIRE LABEL: 1-1/2 HOUR W.H.

SIZES AVAILABLE

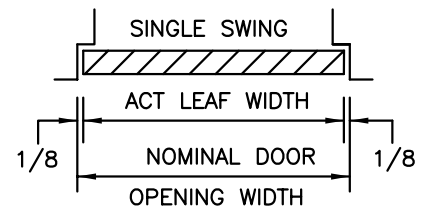
2668	2670
2868	2870
3068	3070
3468	3470
3668	3670



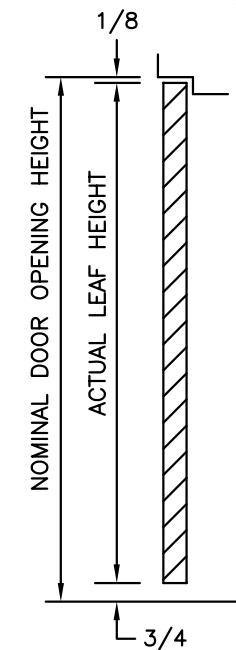
Hardware locations shown match Ceco standard frames.



DOOR ELEVATION



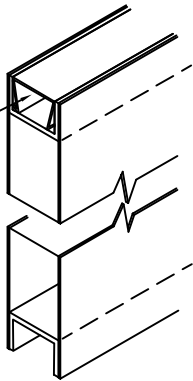
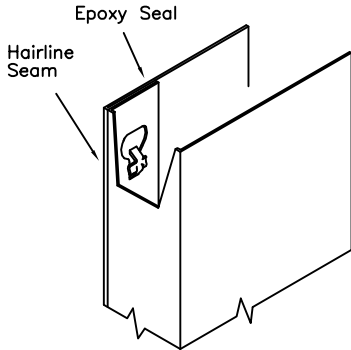
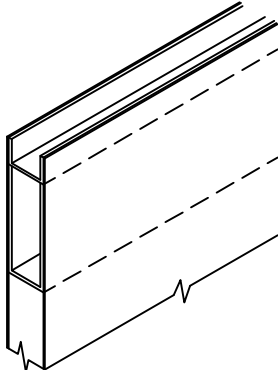
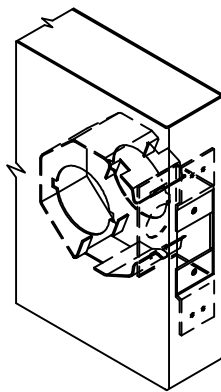
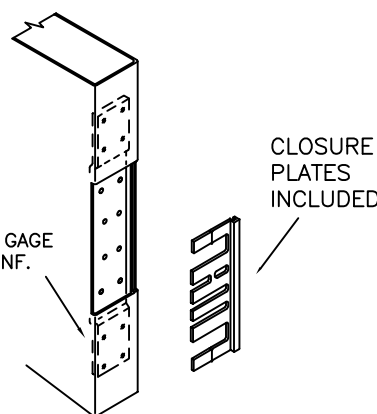
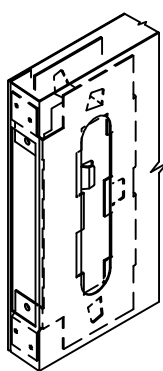
HORIZONTAL SECTION



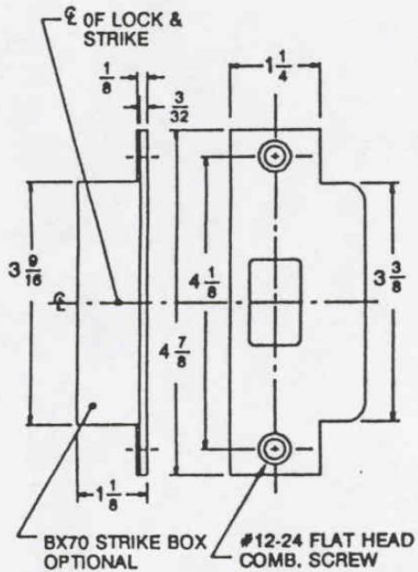
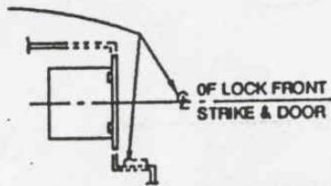
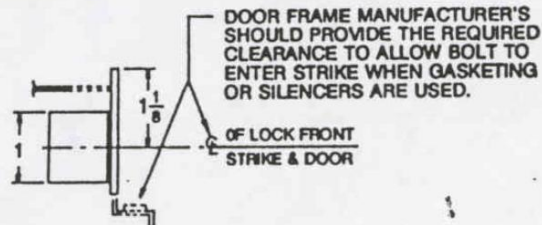
VERTICAL SECTION

SDI/NAAMM hinge and lock locations available

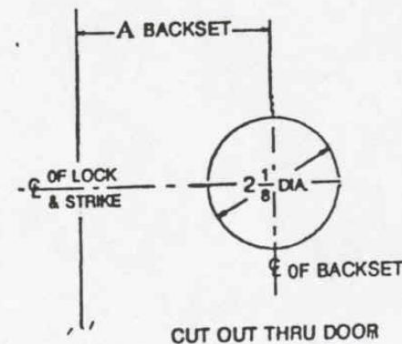
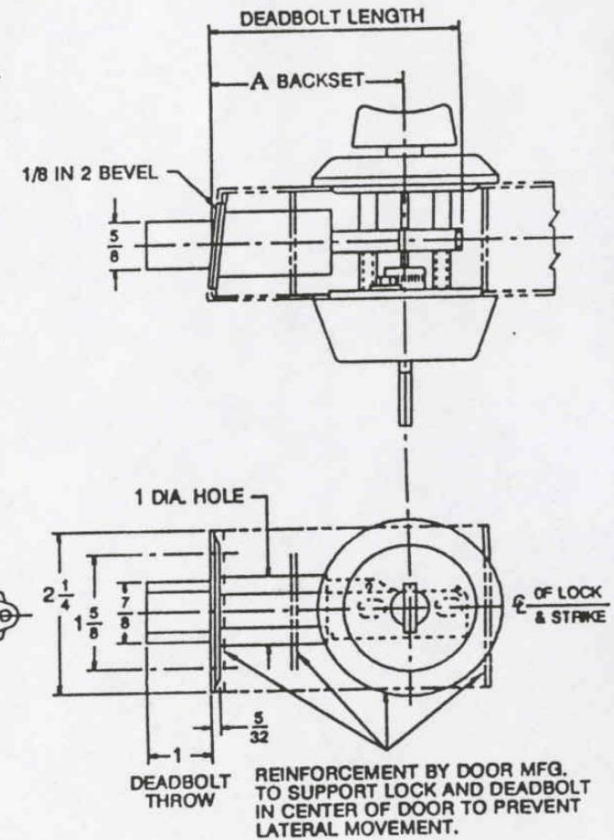
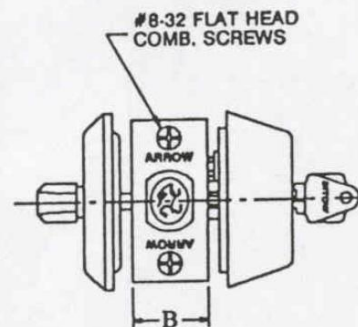
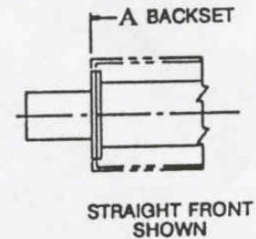
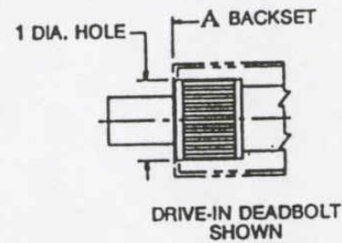
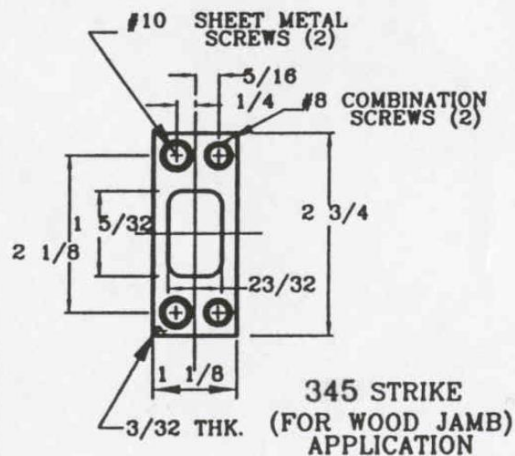
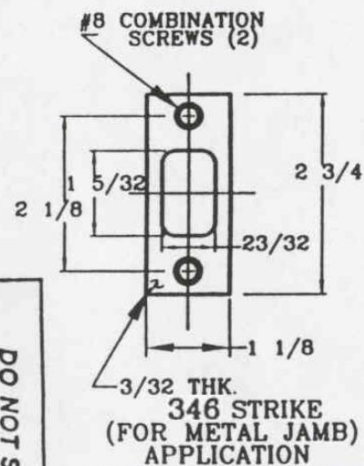
3-27-08

① 16 GAGE STEEL END CHANNELS INVERTED TOP AND BOTTOM SNAP-IN FLUSH TOP CAP ON POLYSTYRENE CORE 	② VERTICAL EDGES MECHANICALLY INTERLOCKED HEMMED EDGES Epoxy Seal Hairline Seam 
③ CLOSER REINFORCEMENT STANDARD 16 GAGE STEEL CHANNEL 20" LONG 	④ LOCK PREPARATION CYLINDRICAL TYPE & LL3 LEVER LOCK DESIGN (ANSI A115.2) 2-3/4" BACKSET  <u>OPTIONAL</u> DEADLOCK PREPARATION @ 48" AFF ONLY (DB)
⑤ HINGE PREPARATION 4-1/2" X .134" HIGH, STANDARD OR HEAVY WT. FULL MORTISE HINGE PREPS ANSI A156.7 TEMPLATE NON-HANDED 10 GAGE REINF. CLOSURE PLATES INCLUDED 	⑥ LOCK PREPARATION GOV. 86-4 MORTISE TYPE (LM1) (ANSI A115.1) 2-3/4" BACKSET (LM0) SIMILAR TO DETAIL LESS FACE CUTOUT (LP0) SIMILAR TO DETAIL LESS ALL CUTOUTS AND REINFORCEMENT (PR1) SIMILAR TO DETAIL LESS ALL CUTOUTS REINFORCEMENT ON HINGE AND LOCK SIDE (RIM EXIT) 

DESCRIPTION	DIM'S	D & E SERIES
BACKSET	A	2 $\frac{3}{8}$ " OR 2 $\frac{3}{4}$ "
WIDTH OF THE LATCH FRONT	B	1" OR 1 $\frac{1}{8}$ "



347 STRIKE

REV & DATE
C 04-14

DO NOT SCALE

TEMPLATE NO.
1125 B.

ARROW TEMPLATE

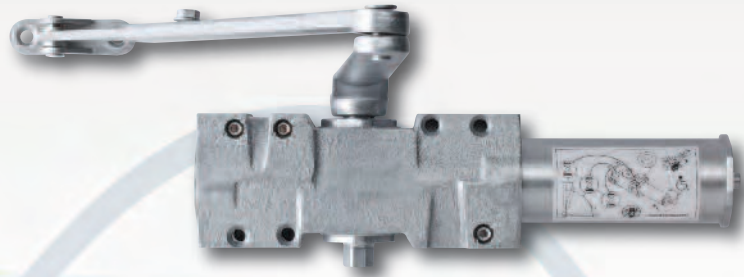
PRODUCT

D & E SERIES LOCK

DC500 Series Door Closers

Classic Product

The Arrow DC500 Series Heavy Duty Surface Applied Door Closers are ideal for Institutions or other high traffic applications. The DC500 is designed for end users looking for value and versatility in a rugged design making this series suitable for a wide variety of applications.



Compliance:

- UL/cUL listed.
- UL10C listed for positive pressure to comply with UBC-72 (1997).
- Meets the requirements of ANSI A156.4 and ANSI ICC A117.1, Grade 1
- Meets ADA requirements (Americans with Disabilities Act).



Look for the universal symbol next to Arrow products that comply with ADA accessibility requirements.

Sizes (Adjustable):

- DC516 closers are adjustable for spring sizes 1 through 6.

Interior Door Width	24" (610mm)	30" (762mm)	34" (865mm)	38" (965mm)	48" (1219mm)	54" (1372mm)	60" (1524mm)
Regular Arm & Top Jamb	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6	
Parallel Arm	Size 2	Size 3	Size 4	Size 5	Size 6		

Exterior (& Vestibule) Door Width	24" (610mm)	30" (762mm)	36" (914mm)	42" (1067mm)	48" (1219mm)
Regular Arm & Top Jamb	Size 3	Size 4	Size 5	Size 6	
Parallel Arm	Size 4	Size 5	Size 6		

Features:

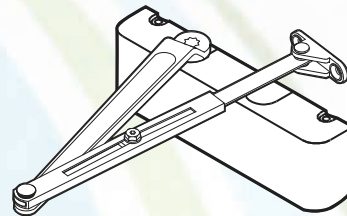
- Heavy duty cast iron body.
- Hardened steel rack and pinion.
- High tensile steel springs.
- Staked valves
- Two non-critical adjusting valves (sweep and latch) control closing speed.
- Backcheck intensity valve.
- All temperature fluid.
- Full plastic cover standard.
- Non-handed for regular, top jamb and parallel arm mount applications.
- Supplied with fully threaded self-reaming/tapping screws, sleeve nuts and thru-bolts for 1-3/4" thick doors.

- DC516-1 Series door closers are supplied with a hold open arm.
- DC516-2 has a heavy duty parallel arm with a stop feature for door openings between 90° and 110°.
- DC516-3 has a heavy duty parallel arm with a stop and thumb turn hold open feature for door openings between 90° and 110°.
- Packaging: one per box and four boxes per carton.
- 10 year limited warranty.

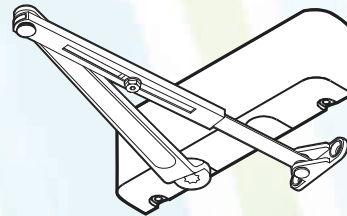
Finishes:

- Aluminum (689), Specify **AL**
- Dark Bronze (690), Specify **DBZ**

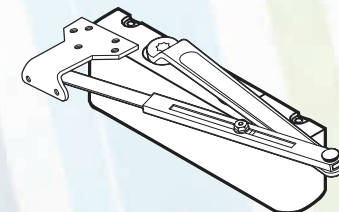
Regular Arm Installation



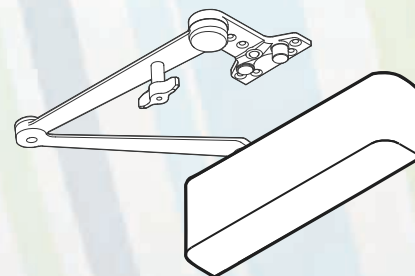
Top Jamb Installation



Parallel Arm Installation



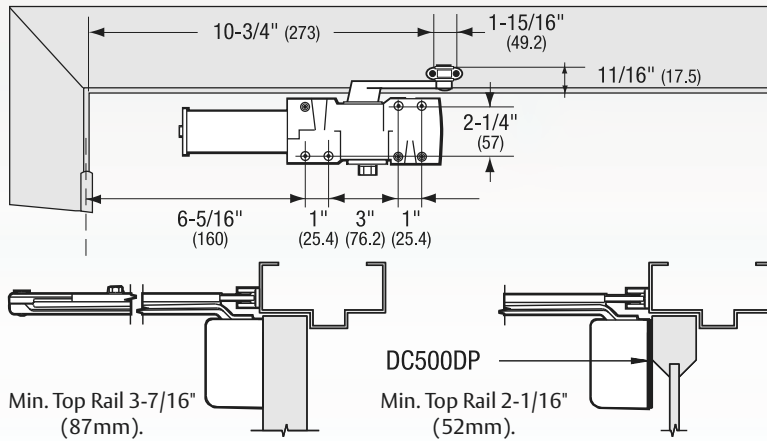
Heavy Duty Parallel Arm Installation



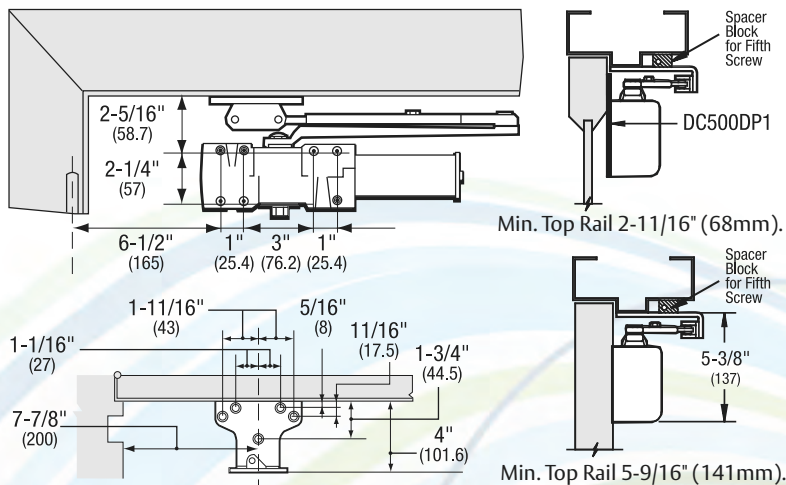
DC500 Series Door Closers

Classic Product

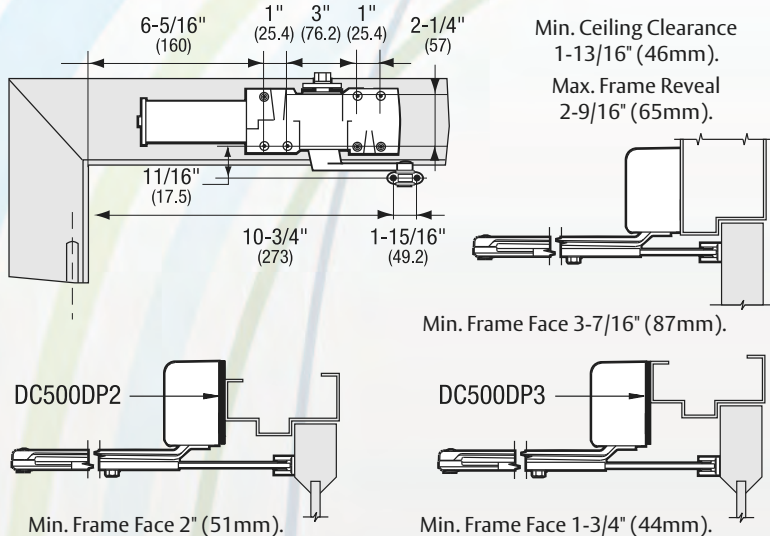
Regular Arm Installation



Parallel Arm Installation (180° maximum door swing template illustrated).



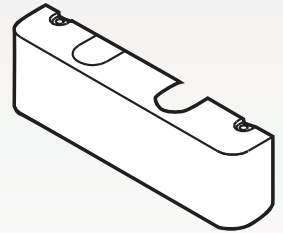
Top Jamb Installation



Parts:

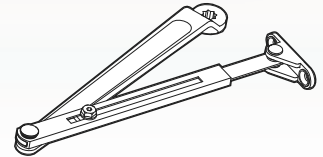
Cover with Screw Pack

- DC500COV



Non-Hold Open Arm (Standard with)

- DC516

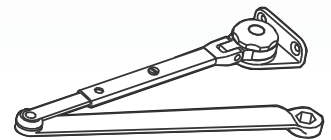


(To order separately)

- DC500A

Hold Open Arm (Standard with)

- DC516-1



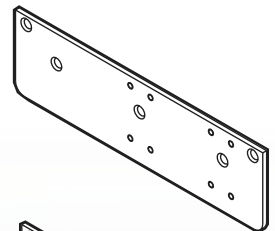
(To order separately)

- DC500A1

Drop Plates

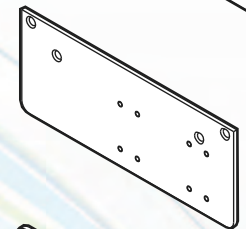
Regular Arm Application

- DC500DP



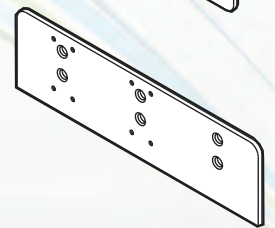
Parallel Arm Application

- DC500DP1



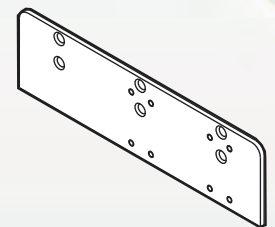
Top Jamb Application

- DC500DP2



Top Jamb Low Ceiling Application

- DC500DP3



QL Series Cylindrical Lever Locks



Features:

Door Preparation – Requires standard 2-1/8" (53.97mm) bore through door.

Backset – 2-3/4" (69.85mm)

Door Thickness – Fits 1-3/8" (34.93mm) to 1-3/4" (44.45mm) doors standard.

Latch – Stainless Steel 1/2" (12.7mm) throw, UL Listed, guarded latchbolt on all locking functions

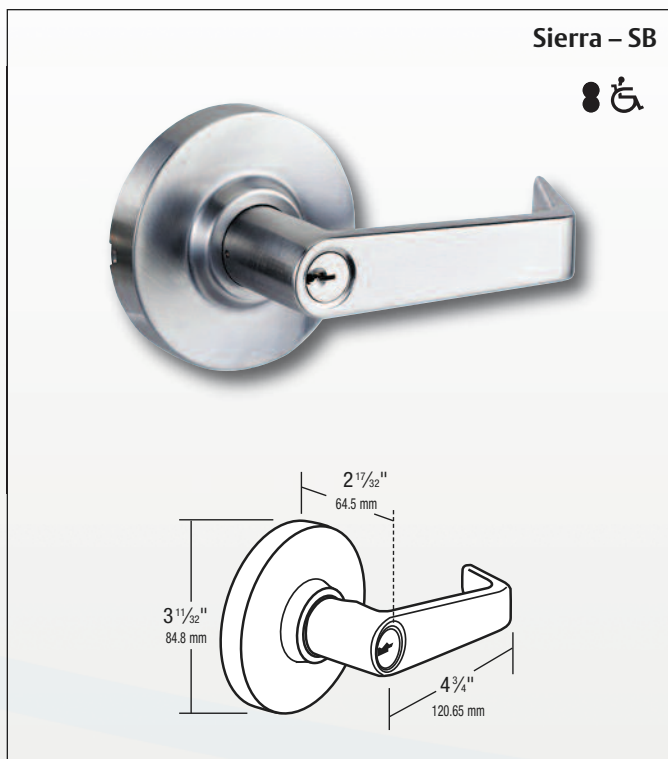
Latch Front – 1-1/8" x 2-1/4" for 2-3/4" (69.85mm) backset.

Exposed Trim – QL Levers are pressure cast zinc measuring 4-3/4" (120.65mm) in length. QL Roses are wrought brass 3-11/32" (84.8mm) diameter. Total projection from face of door is 2-17/32" (64.5mm).

Finishes:

	BHMA	U.S. Equiv.	Arrow Equiv.	Finish
1	605	US3	03	Bright Brass
3	613	US10B	10B	Dark Oxide Bronze, Oil Rubbed
5	626	US26D	26D	Satin Chromium Plated

Design:



ASSA ABLOY, the global leader
in door opening solutions

Professional Replacement Products

The QL Series is a robust Grade 1 lockset featuring a Freewheeling Lever for abuse resistance, two screw lockset install for quick installation and a 10 Year Mechanical Warranty. The perfect solution for replacing or upgrading locksets in commercial applications.

Freewheeling Lever

Warranty – Ten Year Warranty

Handing – Non-handed

Packaging – 6 per case

Strike – 4-7/8" ANSI (123.83mm)

Cylinder – Solid brass 6 pin, Arrow AR and Schlage CS Keyway, keyed different

Keys – 2 brass keys



Certification & Compliance:

- Arrow QL Series Cylindrical Lever Locks are BHMA Grade 1 Certified, ANSI/BHMA A156.2, Series 4000
- All Arrow QL Series Locks are U.L. and c.U.L. list for use on 3 hour, A label or lesser doors
- Meets American with Disabilities Act Requirements



ASSA ABLOY

8400 Commercial protection plates**8402 UL Commercial protection plates**

- Door protection plates are available in .050" thick brass, stainless steel or aluminum; and 1/8" thick high impact polyethylene in clear or black.
- All plates, metal and plastic, come standard with four beveled edges and countersunk mounting holes (B-CS).
- Protection plates must be ordered in 1/2" increments. Available in other sizes, consult customer service
- For 8402 UL Plates, UL mark appears in upper right corner. Not available on plastic protection plates.

Certifications

- Meets ANSI A156.6 for J301
- UL protection plates certified to UL10C

Mounting

- Standard mounting package, 16 per pack
 - #6 X 5/8 oval head screws
- Optional TEK/TORX package, specify TK-TX
 - #6 X 5/8 Self-drilling, Self-tapping screws
 - #6 X 5/8 Torx screws

Finishes

- Aluminum 5005 Series, Brass C26800 Series, Stainless Steel 300 Series, Plastic

BHMA	Description	Substrate	Finish	Max sizes
605	Bright Brass	Brass	US3	24"X48"
606	Satin Brass	Brass	US4	24"X48"
612	Satin Bronze	Brass	US10	24"X48"
613	Oil rubbed Bronze	Brass	US10B	36"X48"
619	Satin Nickel	Brass	US15	24"X48"
625	Bright Chrome	Brass	US26	36"X48"
626	Satin Chrome	Brass	US26D	24"X48"
628	Satin Aluminium	Aluminium	US28	48"X48"
629	Bright Stainless Steel	Stainless Steel	US32	48"X48"
630	Satin Stainless Steel	Stainless Steel	US32D	48"X48"
654	Satin Stainless Steel	Stainless Steel	US32D	48"X48"
BLK	Matte black	Stainless Steel	BLK	24"X48"
P-BLK	Black	Plastic	P-BLK	48"X48"
CLR	Clear	Plastic	CLR	48"X48"

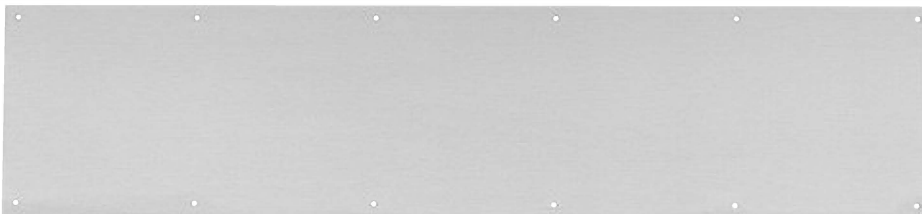
- Custom finishes are available as engineering special, consult customer service.

Available options

- Specify B-NH for no mounting holes. (Not available on 8402. Available only with US32D, US32, US3, US4, US28, Clear, Black only)
- Specify B-NHA for no mounting holes with adhesive.
- Specify ERS prepped with extra row of screws.
- Special Cut-outs are available as engineering special, consult customer service.

Available accessory

- Gasket tape kit tape is recommended when using a brass plate on a metal door to reduce tarnishing from electrolytic oxidation. One tape pack will cover an the perimeters of a 8" x 34" kickplate. Order 8401 gasket tape.



Number of screw packs required by plate size
(specify TEK Screws or TORK screws)

	22"-25"	26"-33"	34"-41"	42"-48"
4"-8"	1	1	1	1
9"-16"	1	1	1	1
17"-24"	1	1	1	2
25"-32"	1	1	2	2
33"-40"	1	2	2	2
41"-48"	2	2	2	2

QL Series Cylindrical Lever Locks

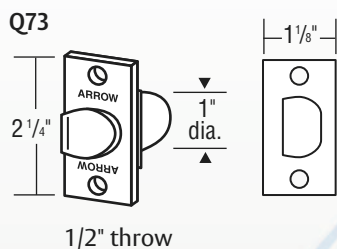
Professional Replacement Products

Functions:

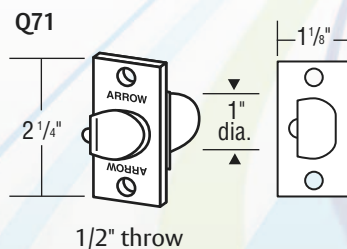
ARROW STANDARD	FUNCTION		DESCRIPTION
QL01	Passage		Latchbolt operated by lever either side.
QL72	Privacy		Latchbolt operated by lever either side except when inside turnbutton locks outside. Unlocked by rotating button or by using tool outside.
QL08	1/2 Dummy Trim		Rigid trim for one side of door only. Used as pull or to match active trim.
QL81	Entrance		Latchbolt operated by lever either side except when outside lever is locked by turn-button inside. When outside lever is locked, latchbolt operated by key outside or turning inside lever. Inside button must be manually released.
QL82	Storeroom		Outside lever always locked. Latchbolt operated by key in outside lever, or by turning inside lever.
QL87	Classroom		Latchbolt operated by lever either side except when key outside locks outside lever. Inside lever always free. Key outside locks/unlocks outside lever only.
QL97	Intruder Classroom		Deadlocking latch bolt operated by lever from either side. Key either inside or outside locks or unlocks outside lever. Inside lever always operates latchbolt.

Latches & Strikes:

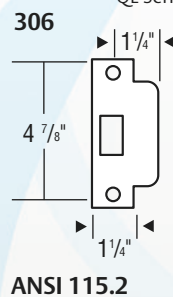
Spring Latches 2-3/4" Backset



Dead Latches 2-3/4" Backset

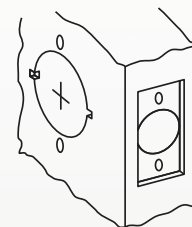


Strikes Standard with QL Series



Installation:

161 prep for retrofit and secure installation.



Order Example:

Example: To order a QL Series entry function lockset with a Sierra design lever, satin stainless steel finish, with an Q71 strike, and 2-3/4" deadlocking latch, keyed different:

Specify:

Standard:	QL	81	SB	26D	306	Q71	KD	XXX
	Series	Function	Design	Finish	Strike	Latch	Keying	Options (if required)

QL Series Cylindrical Lever Locks

Professional Replacement Products

Features

Certification	BHMA 156.2, Series 4000, Grade 1, UL Listed
Freewheeling Lever Action	Standard
Door Thickness	Fits 1-3/8" to 1-3/4", factory set for 1-3/4"
Strike	ANSI 1-1/4" x 4-7/8"
Latch	2-3/4" backset, 1-1/8" front
Cylinder	Standard: 6-pin, solid brass, 2 brass keys; IC prep available
Handing	Non-handed
Case Quantity	6 per case
Average Case Weight	27 lbs.
Warranty	10 years

Available Finishes	Arrow Code	BHMA Code	U.S. Code
Bright Brass	03	605	US3
Dark Oxide Satin Bronze, Oil Rubbed	10BP	614	US10BL
Satin Chromium Plated	26D	626	US26D

How to Order

Function & Trim	QL81-SB
Finish	QL81-SB-26D
Strike	QL81-SB-26D-306
Latch	QL81-SB-26D-306-Q71
Keying	QL81-SB-26D-306-Q71-KD-AR

Function	Description	03, 10B, 26D
QL01-SB	Passage	\$185.00
QL72-SB	Privacy	\$215.00
QL81-SB	Entrance/Office	\$240.00
QL82-SB	Storeroom	\$240.00
QL87-SB	Classroom	\$240.00
QL97-SB	Classroom Intruder	\$300.00

Latch Options	Spring Latch	Dead Latch	Price Add
2-3/4" backset x 1-1/8" front	R23	R21	Standard

Keying & Cylinder Options	Specify	Price Add
Keyed different, AR keyway	KD-AR	Standard
Keyed different, CS keyway	KD-CS	No add
Lock prepared to accept a 6- or 7-pin SFIC cylinder (not included)	IC	No add

Parts	Part No.	Price
Cylinder with tailpiece	700HD	\$23.34
Strike	306	\$23.98
Latch - 2-3/4" backset	Q73 ¹ or Q71 ²	\$19.12
Screw pack	QL-201	\$1.70
Alternate latch - 2-3/8" backset x 1" front (sold only as a separate part)	Q72 ¹ or Q70 ²	\$19.12
Alternate latch - 3-3/8" backset (sold only as a separate part)	Q83 ¹ or Q81 ²	\$24.38
Alternate latch - 5" backset (sold only as a separate part)	Q93 ¹ or Q91 ²	\$28.42

¹Used only with non-keyed functions

²Used only with keyed functions


ASSA ABLOY


Telephone: 800.839.3157 • Facsimile: 800.421.6615 • Web: www.arrowlock.com

 Arrow Order#
(Acknowledgement#):

(Office use only)

 Arrow Acct#: _____
 P.O.#: _____
 Date: _____
 Customer: _____
 Address: _____
 City/State/Zip: _____

 Ship To: _____
 Address: _____
 City/State: _____
 Zip: _____


- For immediate order processing, use the Arrow Online Order Entry Site at:

https://extranet.assaabloydss.com/
extranet/login.htm

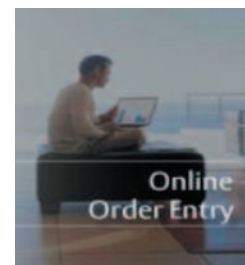
- Please provide complete order information to prevent processing delays
- For e-mail orders, please send to orders@medeco.com
- For fax orders, please send to 1-800-421-6615

Stock Number	QTY
XMLX01-SB-03-306-R23	
XMLX01-SB-10BP-306-R23	
XMLX01-SB-26D-306-R23	
XMLX08-SB-03	
XMLX08-SB-10BP	
XMLX08-SB-26D	
XMLX72-SB-03-306-R23	
XMLX72-SB-10BP-306-R23	
XMLX72-SB-26D-306-R23	
XMLX81-SB-03-306-R21-IC	
XMLX81-SB-03-306-R21-ARKD	
XMLX81-SB-03-306-R21-CSKD	
XMLX81-SB-10BP-306-R21-IC	
XMLX81SB10BP-306-R21-ARKD	
XMLX81SB10BP-306-R21-CSKD	
XMLX81-SB-26D-306-R21-IC	
XMLX81-SB26D-306-R21-ARKD	
XMLX81-SB26D-306-R21-CSKD	
XMLX82-SB-03-306-R21-IC	
XMLX82-SB-03-306-R21-ARKD	
XMLX82-SB-03-306-R21-CSKD	
XMLX82-SB-10BP-306-R21-IC	
XMLX82SB10BP-306-R21-ARKD	
XMLX82SB10BP-306-R21-CSKD	
XMLX82-SB-26D-306-R21-IC	
XMLX82-SB26D-306-R21-ARKD	
XMLX82-SB26D-306-R21-CSKD	
XMLX87-SB-03-306-R21-IC	
XMLX87-SB-03-306-R21-ARKD	
XMLX87-SB-03-306-R21-CSKD	
XMLX87-SB-10BP-306-R21-IC	
XMLX87SB10BP-306-R21-ARKD	
XMLX87SB10BP-306-R21-CSKD	
XMLX87-SB-26D-306-R21-IC	
XMLX87-SB26D-306-R21-ARKD	
XMLX87-SB26D-306-R21-CSKD	
ARX-R20.03 RLX GUARDED 2-3/8" BS	
ARX-R20.10BP RLX GUARDED 2-3/8" BS	
ARX-R20.32D RLX GUARDED 2-3/8" BS	
ARX-R21.03 RLX GUARDED 2-3/4" BS	
ARX-R21.10BP RLX GUARDED 2-3/4" BS	
ARX-R21.32D RLX GUARDED 2-3/4" BS	
ARX-R22.03 RLX UNGUARDED 2-3/8" BS	
ARX-R22.10BP RLX UNGUARDED 2-3/8" BS	
ARX-R22.32D RLX UNGUARDED 2-3/8" BS	
ARX-R23.03 RLX UNGUARDED 2-3/4" BS	
ARX-R23.10BP RLX UNGUARDED 2-3/4" BS	
ARX-R23.32D RLX UNGUARDED 2-3/4" BS	

Stock Number	QTY
XQL01-SB-10BP-306-Q73	
XQL01-SB-26D-306-Q73	
XQL01-SB-10BP-306-Q73	
XQL72-SB-26D-306-Q73	
XQL81-SB10BP-306-Q71-ARKD	
XQL81-SB10BP-306-Q71-CSKD	
XQL81-SB-10BP-306-Q71-IC	
XQL81-SB-26D-306-Q71-ARKD	
XQL81-SB-26D-306-Q71-CSKD	
XQL81-SB-26D-306-Q71-IC	
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XQL82-SB-26D-306-Q71-CSKD	
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XQL87-SB10BP-306-Q71-ARKD	
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XQL97-SB10BP-306-Q71-CSKD	
XQL97-SB-10BP-306-Q71-IC	
XQL97-SB-26D-306-Q71-ARKD	
XQL97-SB-26D-306-Q71-CSKD	
XQL97-SB-26D-306-Q71-IC	
X-Q71.10BP QL GUARDED 2-3/4" BS	
X-Q71.32D QL GUARDED 2-3/4" BS	
X-Q73.10BP QL UNGUARDED 2-3/4" BS	
X-Q73.32D QL UNGUARDED 2-3/4" BS	
X-QL-201.03 QL / ML SCREW PACK	
X-QL-201.10BP QL / ML SCREW PACK	
X-QL-201.26D QL / ML SCREW PACK	
X-RLX-44-201.FIN IC TAILPIECE PK RLX/MLX/QL/HK	

Why Use Online Order Entry?

- 24/7 Availability
- Eliminates Question Orders
- Instant Processing of Your Order
- Importable CSV File for Your System



8400 Commercial protection plates**8402 UL Commercial protection plates**

- Door protection plates are available in .050" thick brass, stainless steel or aluminum; and 1/8" thick high impact polyethylene in clear or black.
- All plates, metal and plastic, come standard with four beveled edges and countersunk mounting holes (B-CS).
- Protection plates must be ordered in 1/2" increments. Available in other sizes, consult customer service
- For 8402 UL Plates, UL mark appears in upper right corner. Not available on plastic protection plates.

Certifications

- Meets ANSI A156.6 for J301
- UL protection plates certified to UL10C

Mounting

- Standard mounting package, 16 per pack
 - #6 X 5/8 oval head screws
- Optional TEK/TORX package, specify TK-TX
 - #6 X 5/8 Self-drilling, Self-tapping screws
 - #6 X 5/8 Torx screws

Finishes

- Aluminum 5005 Series, Brass C26800 Series, Stainless Steel 300 Series, Plastic

BHMA	Description	Substrate	Finish	Max sizes
605	Bright Brass	Brass	US3	24"X48"
606	Satin Brass	Brass	US4	24"X48"
612	Satin Bronze	Brass	US10	24"X48"
613	Oil rubbed Bronze	Brass	US10B	36"X48"
619	Satin Nickel	Brass	US15	24"X48"
625	Bright Chrome	Brass	US26	36"X48"
626	Satin Chrome	Brass	US26D	24"X48"
628	Satin Aluminium	Aluminium	US28	48"X48"
629	Bright Stainless Steel	Stainless Steel	US32	48"X48"
630	Satin Stainless Steel	Stainless Steel	US32D	48"X48"
654	Satin Stainless Steel	Stainless Steel	US32D	48"X48"
BLK	Matte black	Stainless Steel	BLK	24"X48"
P-BLK	Black	Plastic	P-BLK	48"X48"
CLR	Clear	Plastic	CLR	48"X48"

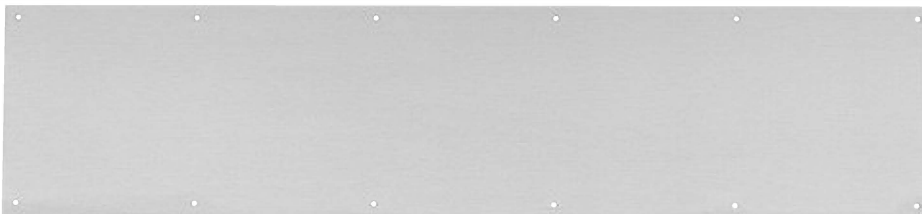
- Custom finishes are available as engineering special, consult customer service.

Available options

- Specify B-NH for no mounting holes. (Not available on 8402. Available only with US32D, US32, US3, US4, US28, Clear, Black only)
- Specify B-NHA for no mounting holes with adhesive.
- Specify ERS prepped with extra row of screws.
- Special Cut-outs are available as engineering special, consult customer service.

Available accessory

- Gasket tape kit tape is recommended when using a brass plate on a metal door to reduce tarnishing from electrolytic oxidation. One tape pack will cover an the perimeters of a 8" x 34" kickplate. Order 8401 gasket tape.



Number of screw packs required by plate size
(specify TEK Screws or TORK screws)

	22"-25"	26"-33"	34"-41"	42"-48"
4"-8"	1	1	1	1
9"-16"	1	1	1	1
17"-24"	1	1	1	2
25"-32"	1	1	2	2
33"-40"	1	2	2	2
41"-48"	2	2	2	2



ASSA ABLOY

**ASTRAGALS & MEETING STILES:
ASTRAGALS AND MEETING STILE GASKETING-
SPLIT ASTRAGALS**

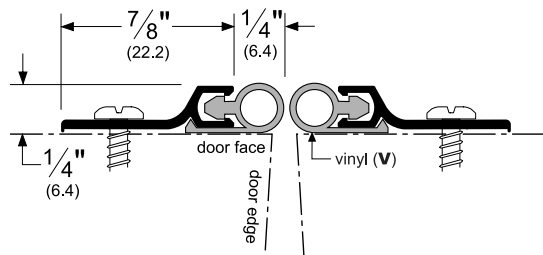
303_V (MS)   **ORDER TWO
(AS A PAIR)**

AVAILABLE FINISHES: A, BDG, D, G, PW, SN

PROFILE WIDTH: 7/8" (22.2 mm) (x2)

TOTAL WIDTH WITH INSERT: 1-1/8" (28.6 mm) (x2)

HEIGHT: 1/4" (6.4 mm)



A (Mill Finish Aluminum)

BDG (Bright Dip Gold Anodized Aluminum)

D (Dark Bronze Anodized Aluminum)

G (Gold Anodized Aluminum)

PW (Painted White Aluminum)

SN (Satin Nickel Anodized Aluminum)

TITLE:

PREPARED FOR:

PREPARED BY:

DATE:

COMMENTS:

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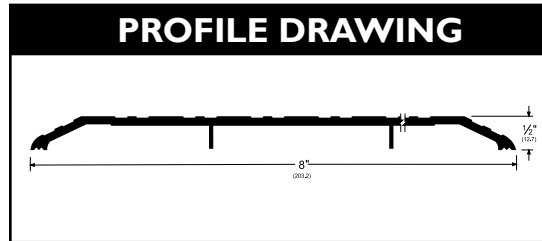
303_V_CUT Rev 1 - 04.01.08

TECH-SPEC:

Product Reference Sheet

2548

Example: **2548 | A | 36**
 Profile# Finish Length



CATEGORY: Commercial Thresholds

TYPE: Saddle Thresholds

FINISHES: A (Mill Finish), D (Dark Anodized), G (Gold Anodized)

LENGTHS: Up to 185"

WIDTH: 8" (203.2 mm)

HEIGHT: 1/2" (12.7 mm)

WEIGHT: Estimated per foot: 1.3 lbs

RATINGS:   

PRODUCT APPROVALS:

- Tested and approved under UL10C for Fire
- ADAAG-1998 (Amended); ICC/ANSI A117.1 and California Building Code, Title 24 for Barrier-Free Entry
- Category J gaskets for use with listed steel frames and/or classified steel covered composite, hollow metal doors rated up to and including 3 hours; wood and plastic covered composite doors rated up to and including 1-1/2 hours; and wood core doors rated for 20 minutes.

ANSI NUMBER: Aluminim: J32100, J32130

LEAD TIME: 4 working days (or less)

AVAILABLE: Shipped from PEMKO's Memphis, Ventura, Vancouver and Toronto locations

CROSS REFERENCE: Draftseal: DS800; Hager 426S; NGP: 428; K N Crowder: CT-32

INSTRUCTIONS: Available upon request and on website

CAD DRAWINGS: Available upon request and on website

PROFILE DRAWINGS: Available upon request and on website

CUT SHEET: Available upon request and on website

www.pemko.com

Memphis, TN USA
 P.O. Box 18966
 Memphis, TN 3818
 P: 800.824.3018
 F: 800.243.3656

Ventura, CA USA
 P.O. Box 3780
 Ventura, CA 93006
 P: 800.283.9988
 F: 800.283.4050

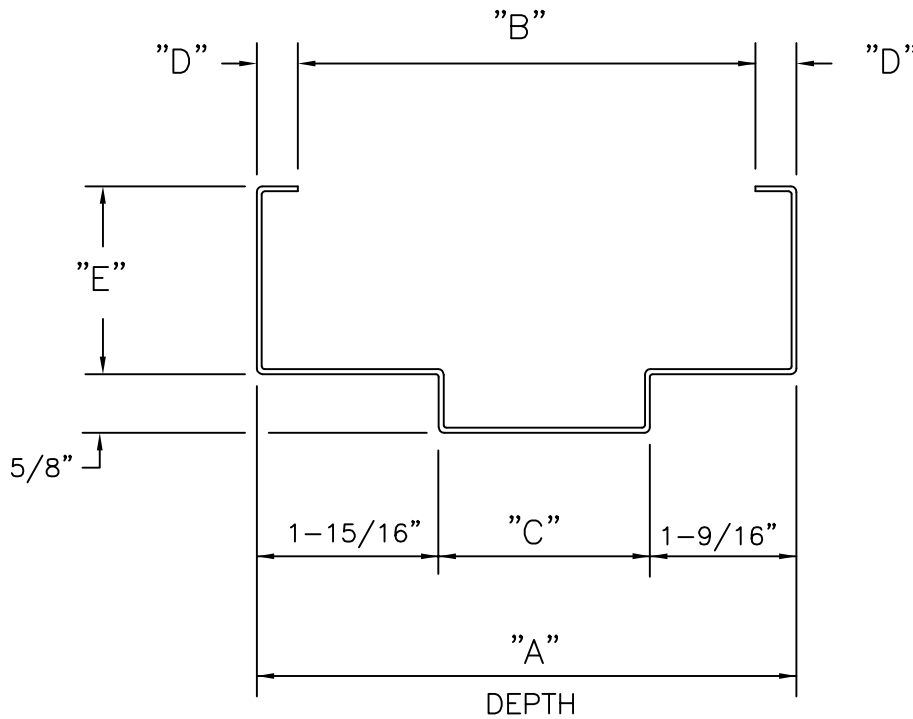
Vancouver, BC Canada
 103-2480 Mt. Lehman Rd.
 Abbotsford, BC V2T 6W3
 P: 877.535.7888
 F: 877.535.7444

Toronto, ON Canada
 160 Four Valley Dr.
 Vaughan, ON L4K 4T9
 P: 877.535.7888
 F: 877.535.7444

SERIES SU STEEL FRAMES (UNEQUAL RABBET)

FOR 1-3/4" THICK DOORS

STANDARD WALL APPLICATION, HANDED

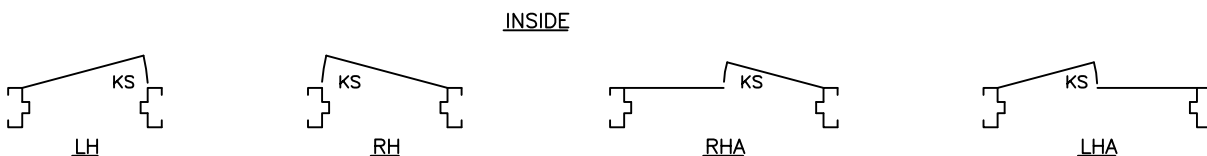


(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)

DEPTH	A	B	C	D	E	
					HEAD & JAMBS	HEAD & JAMBS
434	4-3/4"	3-3/4"	1-1/4"	1/2"	2"	1"
534	5-3/4"	4-7/8"	2-1/4"	7/16"	2"	1"
634	6-3/4"	5-3/4"	3-1/4"	1/2"	2"	1"
734	7-3/4"	6-3/4"	4-1/4"	1/2"	2"	1"
834	8-3/4"	7-3/4"	5-1/4"	1/2"	2"	1"

Series SU, double rabbet frames (with unequal rabbets) are also available in a range of depths from: 4-5/8" thru 14" in 1/8" increments.

4" face heads with 2" face jambs are also available in selected sizes.



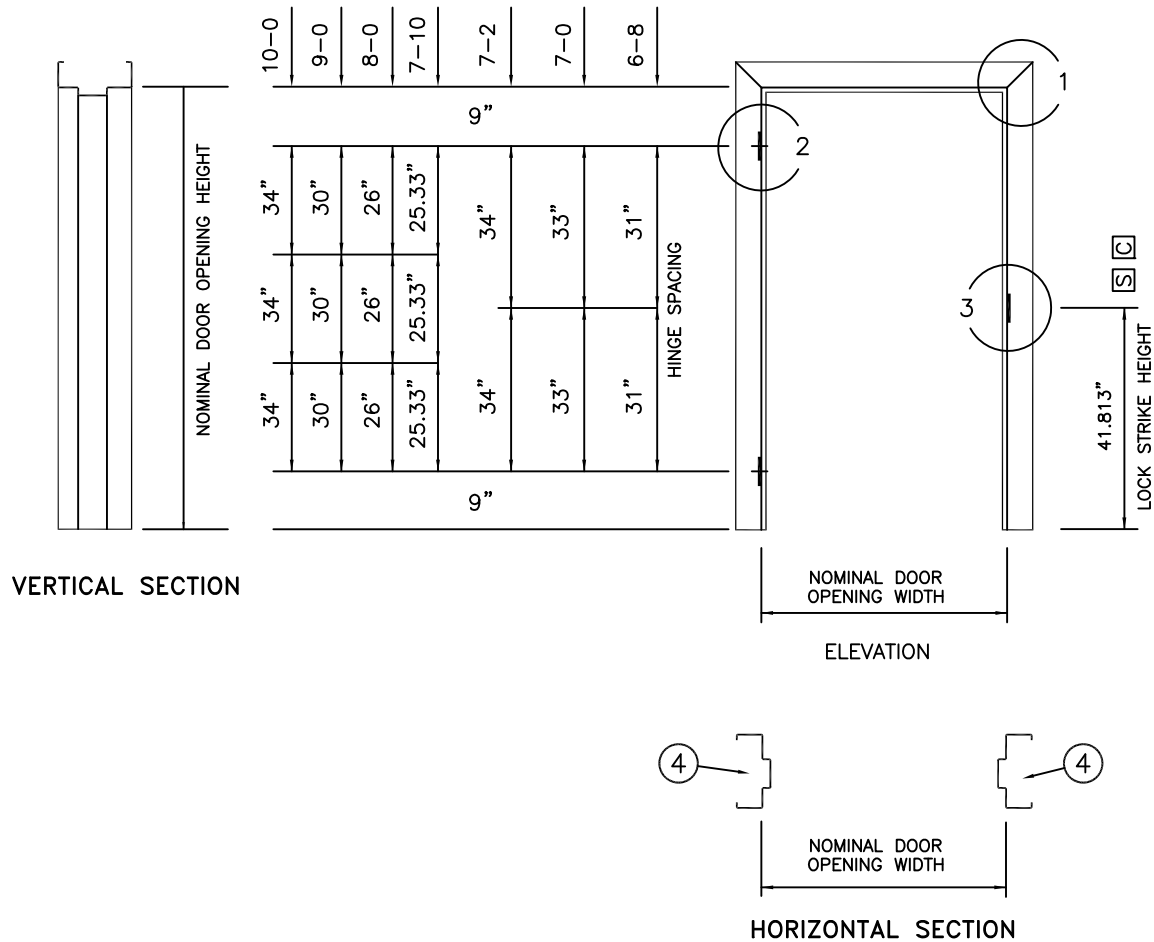
INSIDE

OUTSIDE

"KS" = KEY SIDE

F1-2

Hardware locations shown match Ceco standard doors.

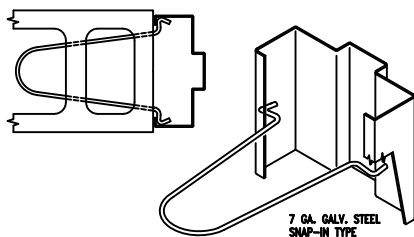


(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)

JAMB ANCHOR QUANTITIES

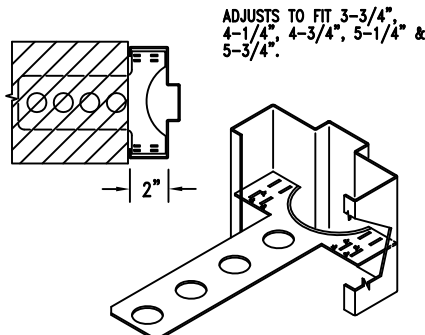
2 PER JAMB FOR HEIGHTS 3/6 THRU 5/0 AND ONE FLOOR ANCHOR
 3 PER JAMB FOR HEIGHTS >5/0 THRU 7/2 AND ONE FLOOR ANCHOR
 4 PER JAMB FOR HEIGHTS >7/2 THRU 9/0 AND ONE FLOOR ANCHOR
 5 PER JAMB FOR HEIGHTS >9/0 THRU 10/0 AND ONE FLOOR ANCHOR
 ONE ADDITIONAL JAMB ANCHOR FOR EACH ADDITIONAL TWO FEET IN HEIGHT OR FRACTION THEREOF
 ONE ADDITIONAL JAMB ANCHOR IN LIEU OF FLOOR ANCHOR FOR EXISTING STUDS AND/OR WALL CONDITIONS.

WIRE MASONRY ANCHOR WMA



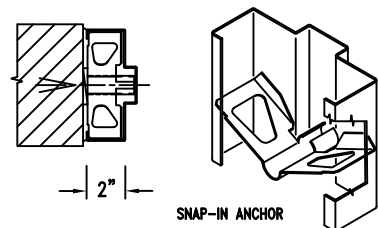
(For 3" THRU 8-3/4" DEPTHS)

MASONRY "T" ANCHOR (ADJUSTABLE) MT



ALTERNATE MT ANCHOR DESIGN IS AVAILABLE FOR SPECIAL DEPTH & FACE FRAMES. SEE SECTION F13 FOR DETAILS.

EXISTING OPENING ANCHOR EO



EO/S6: 4-1/2" THRU 6-3/4" DEPTH
 EO/S8: 6-7/8" THRU 8-3/4" DEPTH

CecoDoor

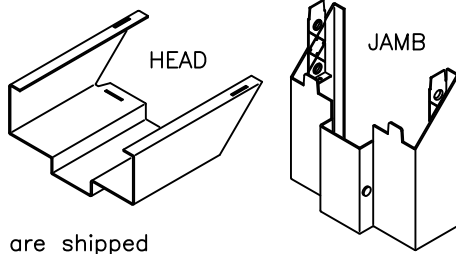
ASSA ABLOY

05/06/13

F1-3

KNOCKED DOWN (KD) CORNER CONSTRUCTION

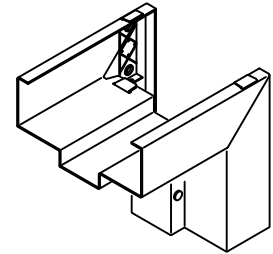
①



Components are shipped "knocked down" and assembled at the job site

WELDED CORNERS

①

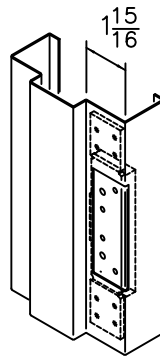


Die-cut corner with corner tab and face weld shown. Also available without tab and welded or mitre sawed and welded. Alternative weld options are also available.

HINGE PREPARATION

②

4-1/2" x .134" OR
4-1/2" x .180"
ANSI A156.7 TEMPLATE
7 GAGE STEEL
REINFORCING

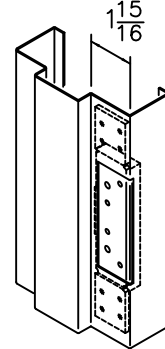


BACKSET: 5/16"

HINGE PREPARATION

②

5" x .146" OR
5" x .190"
ANSI A156.7 TEMPLATE
7 GAGE STEEL
REINFORCING



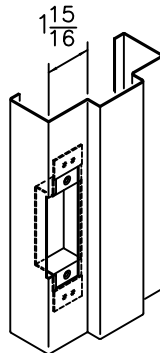
BACKSET: 5/16"

LOCK STRIKE PREPARATION

③

S

UNIVERSAL (4-7/8")
ANSI A115.1 & 2 TEMPLATE
16 GAGE STEEL REINFORCING
WITH EXTRUDED SCREW HOLES
PROVIDES EQUIVALENT THREAD
ENGAGEMENT EQUAL TO 14 GAGE.
STANDARD FOR 1-3/4" DOORS

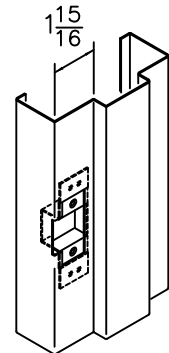


LOCK STRIKE PREPARATION

③

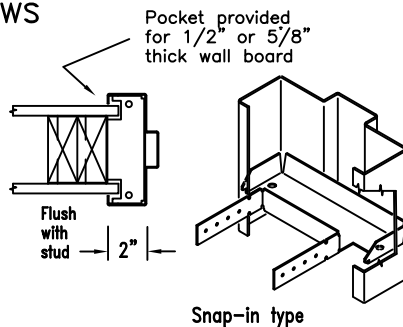
C

CYLINDRICAL (2-3/4")
ANSI A115.2 TEMPLATE
16 GAGE STEEL REINFORCING
WITH EXTRUDED SCREW HOLES
PROVIDES EQUIVALENT THREAD
ENGAGEMENT EQUAL TO 14 GAGE.
OPTIONAL FOR 1-3/4" DOORS



WOOD STUD ANCHOR WS

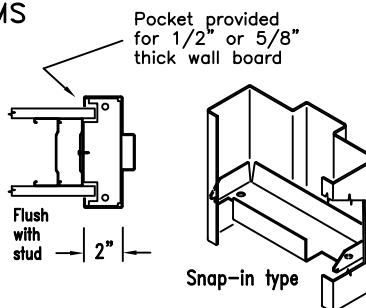
④



(Used also for METAL STUD Walls)

METAL STUD ANCHOR MS

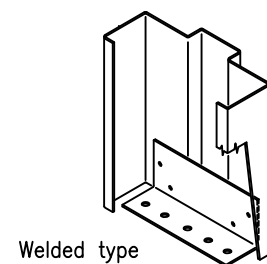
④



4-3/4 and 5-3/4" Depth Only
For other depths use WS type.

FIXED FLOOR ANCHOR SA

④



ONE PIECE

06/24/11

CecoDoor

ASSA ABLOY

F1-4

STANDARD SIZES NOMINAL DOOR OPENING

WIDTH		HEIGHT
SINGLE	DOUBLE	
2'-0"	4'-0"	6'-8"
2'-4"	4'-8"	
2'-6"	5'-0"	7'-0"
2'-8"	5'-4"	7'-2"
2'-10"	5'-8"	7'-10"
3'-0"	6'-0"	8'-0"
3'-4"	6'-8"	9'-0"
3'-6"	7'-0"	10'-0"
3'-8"	7'-4"	
3'-10"	7'-8"	
4'-0"	8'-0"	
5'-0"	10'-0"	

FIRE DOORS

LABELING AGENCIES:

- UNDERWRITERS LABORATORY
- WARNOCK HERSEY
- FACTORY MUTUAL

TEST: UL10B, UL10C, UI1784 & NFPA 252

- RATING: 20 MIN, 3/4 HR, 1 HR, 1-1/2 HR, OR 3 HR
- MAX. SIZE: 40 x 100 SINGLE
80 x 100 PAIR

Not all ratings are available in all sizes, designs and materials.
 Hourly classifications are not shown on label unless class is less than 3 hours.

PRODUCT SPECIFICATIONS:

Steel door frames shall be as manufactured by Ceco Door Products, Milan, TN or Mason City, IA USA. They shall conform to the Steel Door Institute guide specification, ANSI A250.8. See chart below for performance classifications.

Series SU frames for 1-3/4" doors are formed from commercial quality cold rolled steel conforming to ASTM A1008 ...or (optional) hot-dipped galvanized steel conforming to ASTM A924 and A653 - see chart below.

Frames are knocked down (K.D.) field assembled type or welded unit type. Head and jamb members of K.D. frames have diecut mitered corners that interlock rigidly when field assembled. Integral door stops are 5/8" high. Jambs are sized to suit wall applications. Twist-in anchors are available for new masonry, wood stud, metal stud, or existing opening wall conditions (indicate which). Floor anchors or extra jamb anchors are provided to anchor sill. Welded-in jamb anchors are also available.

Hardware Provisions: Frames are handed. Hinge jambs are mortised for 4-1/2" or 5" high, standard and heavy weight hinges (specify which). 7 gage steel reinforcements are welded in place and are drilled and tapped for fasteners in accordance with ANSI A156.7. The strike jamb is prepared for 4-7/8" universal or 2-3/4" cylindrical strike in accordance with ANSI A 115.1 & 2 (specify which). Plaster guards are provided. Optional closer reinforcement is a 14 gage steel formed steel sleeve (12 gage upon request). 3 door mutes are provide per strike jamb and 2 for double swing heads.

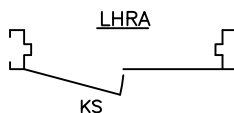
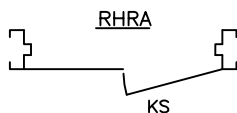
Paint: Steel door frames are provided with one coat of oven-cured neutral color primer paint. Primer coat shall conform with ANSI A250.10 . The primer coat is a preparatory base for necessary finish painting. "Colorstyle" finish coat is also available on K.D. frames from a selection of standard colors (optional). Colorstyle finish is electrostatically applied, oven-cured urethane enamel, and shall conform to ANSI A250.3. For accurate color selectors ask for a Ceco Colorstyle chart.

MATERIAL

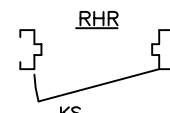
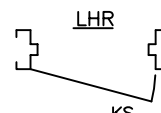
DOOR FRAME MATERIAL	LEVEL	C.R.	GALV	
			A60	G90
16 Gage Steel	Heavy or Extra Heavy Duty	STD	OPT	OPT
14 Gage Steel	Maximun Duty	STD	OPT	OPT

PERFORMANCE

Physical Endurance Level:	Meets ANSI A250.4 Performance Test, Level A (1,000,000 Cycles)
---------------------------	--



INSIDE



OUTSIDE

"SUFFIX"A" = ACTIVE LEAF OF PAIRS



ASSA ABLOY

ASSA ABLOY, the global leader in door opening solutions.

06/21/13



FLUSH HOLLOW METAL DOOR

Heavy-duty steel door for commercial, industrial and institutional applications

Our stock hollow metal door is an affordable non-handed, square-edge door solution designed to meet your requirements for quality full flush steel doors - for commercial, institutional and industrial applications. Stocked with Steelcraft locations, these doors are designed to satisfy your requirements for durability, security, aesthetics or fire protection. Trudoor is authorized by Warnock Hersey / Intertek to modify, re-certify and label fire-rated metal doors.

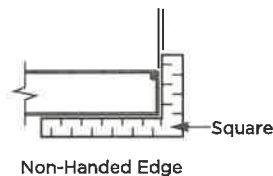
Features:

- Heavy-duty, SDI Level 2 - 18 gauge steel faces
- 1-3/4" Thick, non-handed design with reversible hinge plates
- Polystyrene or rigid honeycomb core
- Inverted top and bottom channels for additional stability and protection
- Interlocking seam enhances structural rigidity and durability
- Heavy gauge hinge reinforcements and door closer reinforcement
- Available with a wide range of glass lites, louvers and hardware preps
- Factory applied rust inhibiting primer (no special color options)
- Fire-rated up to 3 hours with WHI / ITS mylar label applied
- Preps include 161 (cylindrical lock), 86ED (mortise lock), RPD (Rim Panic Reinforced)

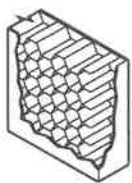


Code Compliance:

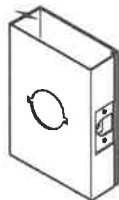
- Meets or exceeds ANSI A250.6 and A250.6
- Construction meets the requirements of ANSI A250.8
- Listed for installations requiring compliance to negative pressure testing (UL-10B) and positive pressure (UL-10C)
- Florida Product Approved



Polystyrene Core



Honeycomb Core



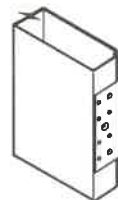
161 Lock



86ED Lock



RPD



Non-Handed
Mortise Hinge Prep



Grade and Model:

ANSI A250.8 - SDI 100			Edge Construction	Maximum Sizes		Recommended Gauge of Frame
Level	Model	Description		Single	Pair	
Level 2: Heavy Duty Commercial			18 gauge (1.0 mm) - heavy commercial and institutional applications with high use			
2	1	Full Flush	Visible	4'0" x 8'0"	8'0" x 8'0"	16 gauge (1.3 mm)

Grades and models defined by Steel Door Institute (SDI)

Manufacturers include Steelcraft and ASSA Abloy



Installation Recommendations for Mounting Fin Windows

These installation recommendations are made available by Milgard Manufacturing LLC (Milgard) to assist with the integration of products with a mounting fin into a typical wood-framed building less than three stories in height. Installation into other structures and frame types are not addressed here.

Please contact Milgard or visit www.Milgard.com for additional information.

IMPORTANT DESIGN CONSIDERATIONS

Read this entire document before proceeding with installation of Milgard's products. Responsibility for product selection and installation rests with the owner, architect, and installer. Do not proceed with installation unless all factors necessary to properly integrate Milgard's products into a building's water management system have been addressed.

Milgard makes no representation or warranty that these recommendations include all information necessary to ensure proper integration into every building. State and local code requirements may impose different or additional demands which will supersede these recommendations. For additional guidance regarding installation of window products, refer to applicable industry standards (e.g., AAMA 2400, AAMA InstallationMasters™, ASTM E 2112).

Failure to follow these recommendations, local requirements, or good building practices may affect the availability of remedies under Milgard's warranty. Provide a copy of these recommendations and the applicable Milgard warranty to the owner before installing. Milgard does not permit adoption of its installation recommendations into the contracts of others without its prior, written consent.

IMPORTANT PRE-INSTALLATION CONSIDERATIONS

- Window installation may disturb finish surfaces and paint in existing structures. Specific notice and work site precautions may be required. Additional information is available at www.epa.gov/lead. Comply with all applicable federal, state, and local requirements.
- Special disposal considerations may be necessary for materials used during installation. Materials removed from an existing structure may also have their own disposal or recycling requirements. Comply with all applicable federal, state, and local requirements.
- Job site and worker protections are recommended and may be required. Follow all manufacturers' instructions for appropriate and safe use of protective equipment, tools, materials, hardware and site protections necessary for installation.
- Product specification sheets include important information regarding your product and may include additional installation recommendations.

Contact Milgard for product specifications and additional product information for your Milgard product.

MATERIALS REQUIRED

- Non-compressible shims.
- Fasteners. The applicable building code should be consulted, to ensure compliance with all state and local requirements. At a minimum, fastener type should be sufficient to properly affix the frame and penetrate rough framing by 1-1/2" or more.
- High-quality compatible exterior grade sealant.
- Seal tape for the weather-resistant barrier. *
- Self-adhering flashing, in a width required by code but no less than 4". AAMA 711 compliant flexible butyl tape flashing or equivalent is recommended. *
- Backer rod. *
- Low-expansive, low-pressure foam or batt type insulation. *

* Use and placement of these materials may be required by code, plan, or good building practices.

TOOLS REQUIRED



HAMMER



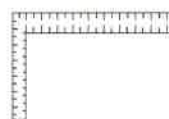
**TAPE
MEASURE**



CHISEL



LEVEL



SQUARE



**UTILITY
KNIFE**



**CAULK
GUN**

INSPECT AND PREPARE THE PRODUCT FOR INSTALLATION

1. Inspect the window product thoroughly before beginning installation.
 - Confirm the window matches the size needed for the opening; measuring 1/2" smaller than the rough opening dimensions in width and height.
 - Confirm the window's features match the requirements of the project, order, and opening; e.g., Low-E, color, code, rating, operating direction, egress.
 - Confirm there is no damage to the product and that all necessary pieces are in place for a complete installation; e.g., locks, labels, weather stripping.

Do not proceed with installation if there are any concerns about the condition or suitability of the product for installation or compliance with project, order, code, or opening requirements.

2. Keep the jambs plumb and square with the head and sill on the window throughout installation. Keep sashes closed and locked throughout installation. Avoid "crown up" or "bow down" conditions at both sill and head. Avoid "bowed out" installations by confirming equal jamb widths throughout installation, especially at meeting rails.

INSPECT AND PREPARE THE ROUGH OPENING

1. Make sure the rough opening is in good condition and plumb, level, and square to within 1/8" nominal tolerance. Framing conditions at the rough opening must be sufficient to support the window unit, framing header above, and permit appropriate integration of the window into the building's water management system. Rough openings shall be 1/2" larger than window frame in width and height.
2. If the building already has a weather-resistant barrier (WRB) installed, it is necessary to prepare an opening in the WRB to accept the window. Milgard recommends that the installer follow the WRB manufacturer's recommendation to prepare the opening. The steps that follow are Milgard's general guidelines for preparing a WRB opening and, where used, the installer must confirm these steps will not impact the WRB manufacturer's warranty or otherwise inhibit drainage before proceeding.

Use a modified "I-cut" at the WRB. **See Figure B.**

- Begin with a horizontal cut across the entire width of the head and sill of the rough opening.
- Next, in the middle of the opening, make a vertical cut from head to the sill.
- Fold the WRB into the opening and secure, trimming excess as necessary. **See Figure C.**
- Finally, cut two slits in the WRB at the head corners that angle 45° away from the center of the opening. Each cut should be long enough to ensure that the WRB will fold over the entirety of the later-applied head flashing. Fold the WRB upward as shown and temporarily fasten with tape. **See Figure D.**

FIGURE A

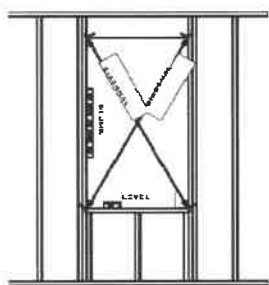


FIGURE B



FIGURE C

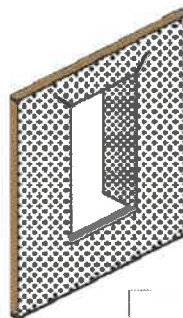


FIGURE D



FLASH AND SHIM THE SILL

Many options exist to flash a window opening. Method and material selection involve pre-installation consideration of factors such as the required building performance and specific water management system used. At a minimum, Milgard suggests installers use a pan at the sill combined with a complete interior air dam around the product. Installers should consult with the architect, owner, or other responsible site personnel for instructions regarding appropriate flashing of a window opening before installing Milgard's products.

1. Start by cutting flexible self-adhering flashing no less than 12" longer than the width of the opening.
 - Center the cut flashing piece and lay it across the rough opening, allowing equal overlaps up the jambs, but no less than 6" on each side. Position the flashing so that when pressed down onto the exterior sheathing or WRB, the flashing will extend beyond the window fin by at least 2".
 - Remove backing from flashing and apply across sill and up jambs. Do not round the corners. Flashing must be secured squarely into the jamb-sill corners to avoid the risk of puncturing the flashing. Use a J-roller to remove bubbles or creases.

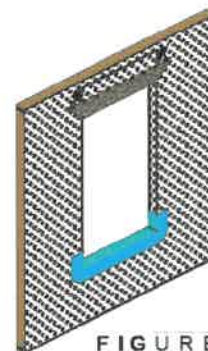


FIGURE E
By MITER Brands™

- Fold flexible flashing down onto the WRB and secure. Use a J-roller to remove bubbles or creases.
 - Where necessary, and using the steps above, apply an additional length of flexible flashing across the sill and up the jambs to ensure that the width of the window frame in the rough opening rests on applied and secured flashing material. A completed installation should reflect **Figure E**.
2. Install with FULL support under the entire width of the window sill. Note: For windows with intermediate meeting rails (IMR), and all slider windows, additional shims are recommended under each IMR and meeting rail/stile to ensure a level sill and proper operation. Sill shims should remain after installation is complete. Apply additional shims as necessary to maintain a level sill throughout installation. If necessary, secure shims with tape to prevent movement during setting of the window. See **Figure F**.

APPLY SEALANT, SET, AND SECURE THE WINDOW

1. Milgard recommends corrosion-resistant fasteners be located 3" to 6" from each corner, and then every 8" to 12" on center. Do not distort the mounting fin during this process. Inspect sealant at all frame joints. Apply sealant at mechanically fastened corners as well as the full length of the joints where mounting fins/flanges meet.
2. Apply a continuous 3/8" bead of premium grade, compatible exterior sealant to the backside of the mounting fins (interior facing) at the head and jambs of the window near the outside edge of the mounting fin. See **Figure G**. Apply a 3/8" bead of premium grade, compatible exterior sealant on the backside of the sill mounting fin (interior facing).
3. Set window into center of opening at sill first. Push up into place. Place a temporary fastener near each corner at the head of the window no closer than 3" to either corner. Measure the window to ensure it has remained level and square, and the frame is not bowed. Unlock and open operable sashes. Adjust as required to ensure smooth operation. Close and relock sash. Adjust and place additional shims, as necessary, to secure the unit and ensure proper operation. Place additional fasteners in the bottom corners. Confirm again unit is level, plumb, and square.
4. Keeping the sash closed and locked, secure the window with fasteners of a type appropriate for the frame and that penetrate the rough framing by a minimum of 1-1/2" or as required by code. See **Figure I**. Take care to install fasteners straight, not angled. See **Figure J**. No fasteners should be located closer than 3" to any corner. Do not distort the mounting fin with the fasteners. Milgard recommends its vinyl products have fasteners applied securely into every other pre-punched slot on all sides of the window. Fastening in locations other than the mounting fin may damage the unit. **Do not fasten the window using staples.**

INTEGRATE THE WINDOW

1. Cut two pieces of self-adhered flashing for the jambs that extend a minimum of 1" above the head mounting fin and a minimum of 1" below the sill flashing previously installed in **Figure E**. Apply flashing over jamb mounting fins. Use a J-roller to remove bubbles or creases. See **Figure K**.

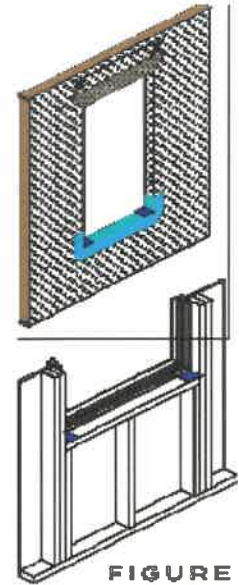


FIGURE F



FIGURE G

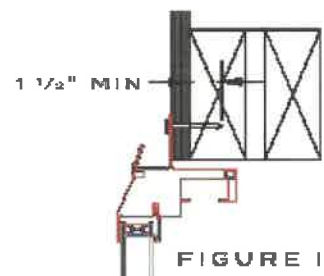


FIGURE I



FIGURE J

By MITER Brands™

2. Cut a piece of self-adhered flashing for application at the head of the window. Flashing must extend a minimum of 1" beyond the jamb flashing applied in **Figure E**. Apply flashing over the head mounting fin. Use a J-roller to remove bubbles or creases. **See Figure L**.
3. Remove tape holding WRB flap and fold WRB downward covering the head mounting fin. Be sure the WRB does not affix to the head flashing or create a pocket at the head of the window. Seal the WRB to the head flashing using WRB sealant tape to cover the entirety of the top cuts previously made. **See Figure M**.

NOTE: Ensure that the flashing tape is installed flush to the window main frame completely covering the mounting flanges.

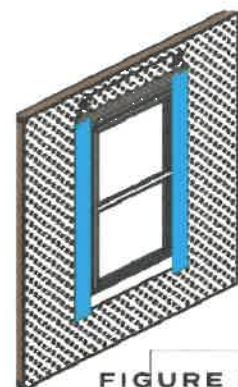


FIGURE K

INSULATE THE OPENING

4. From the interior, insulate between the window frame and rough opening with fiberglass insulation or a measured use of low pressure, low expansion foam. Only use foam after determining that it will not distort the window frame when fully expanded. Check operation of the window after insulating to ensure proper operation.
5. A complete interior perimeter seal around the window product is essential to ensure proper functioning of the sill flashing method. Apply a properly backed continuous bead of sealant around the entire interior perimeter of the window. **See Figure N**. The seal must connect the flashing applied at the sill plate to the window unit for proper functioning of the sill pan.

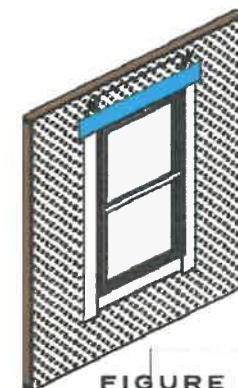


FIGURE L

CONSIDERATIONS AND CAUTIONS

Considerations and Cautions

- Care should be taken to ensure proper integration of the window into the building's water management system and with the selected cladding. A properly designed $\frac{1}{4}$ " sealant joint between all sides of the window frame and exterior cladding may be advisable. Consult the responsible architect, owner, or builder, as well as the cladding manufacturer's instructions.
- It is the sole responsibility of the owner, architect, and/or builder to select correct products to be in compliance with applicable laws, site requirements and building codes and to ensure that installation is in compliance with applicable laws, site requirements and building codes.

Important Cautions

- ⚠ Use of solvents or acids may damage components of this product and will limit rights under the warranty.
- ⚠ Stage and store window products with caution. Do not store in the sun or lay flat before or during installation.
- ⚠ Care must be taken to ensure material compatibility of the window unit and surrounding building conditions. Where necessary, steps should be taken to isolate the window from reactionary building elements.

Post Installation Reminders

- With the exception of logo and NFRC labels, all Milgard applied labels should remain in place and not be removed after installation is complete (e.g., AAMA labels, warranty labels, warning labels).
- Milgard recommends a yearly inspection of its products and the surrounding materials, inside and outside the home. Upkeep of sealant joints, hardware and weather stripping can ensure longevity and proper functioning of the window products.

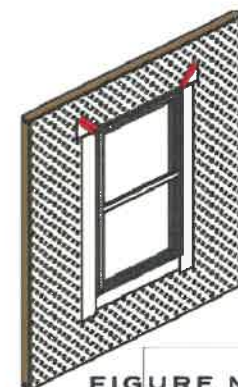


FIGURE M

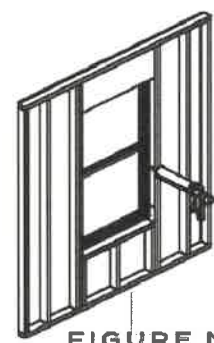


FIGURE N

Please contact Milgard or visit www.Milgard.com for additional information.

PS SERIES

WALL VENT

DESCRIPTION

Through the wall ventilation is intake ventilation unit for constant ventilation and designed for supplying fresh air to residential or nonresidential premises. Technically advanced, cost effective, and high efficiency ventilation kits are economical ventilation solution for wide range of applications where centralized ventilation is not applied. Through the wall ventilation kits are installed in the outer wall of various premises such as apartments, cottages, or office buildings. Designed for continuous or intermittent operation. Wall vent can fill the room with fresh air without the need of opening a window while preventing the entry of dust and fumes from outside. Eliminates heat loss.

The unique design of the internal grille and air flow regulator prevent backdraft.

MERV 5 cleaning level filter ensures filtration of exhaust and incoming air keeping the air always fresh.

The internal grille is made of high quality ABS plastic. The airflow and its intensity are adjustable with the airflow regulator.



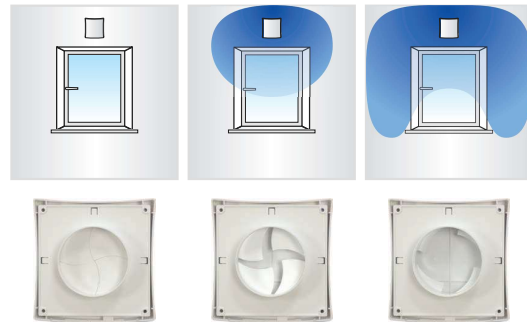
PS 100



PS 101

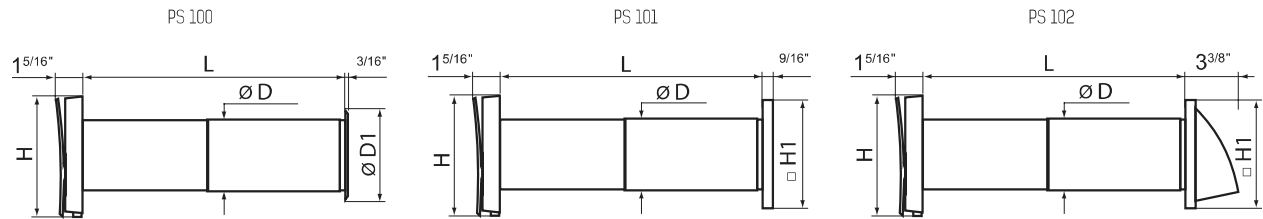


PS 102



DIMENSIONS

Model	Measurements [in.]				
	L	H	H1	ØD	ØD1
100 PS	8 1/16" - 5 1/8"	6 7/16" - 1 5/16"	-	4 1/16"	5 1/16"
101 PS	8 1/16" - 5 1/8"	6 7/16" - 1 5/16"	6 1/16"	4 1/16"	-
102 PS	8 1/16" - 5 1/8"	6 7/16" - 1 5/16"	6 1/16"	4 1/16"	-



Window Vent include



Internal grill



Telescope



PS 100



PS 101



PS 102

External grill



Specialty Warmer ConserveWell® Utensil Holder

SPECIFICATION SHEET

FAST FACTS

ConserveWell® Wall-Mount Utensil Holders are an environmentally friendly method of rinsing and protecting utensils against bacteria growth versus traditional dipper wells; one unit can save over 250,000 gallons of water per year.

APPLICATIONS

- Replace a traditional dipper well perpetual-flow sink to save water, energy and money
- Mount next to a serving station to keep short-handled utensils clean and handy

DETAILS

- Holds serving utensils above 140° F, keeping them safe against bacteria growth; includes (2) 1¹/₈-size, 4 in deep pans
- Programmable countdown timer helps ensure timely water changeouts; also available without timer
- Ideal for utensils with a handle that will not intensify heat - DO NOT use utensils with liquid or gel-filled handles
- Convenient key slot mounting brackets make mounting to a wall or sturdy vertical surface quick and easy
- Great for blended ice cream treats (non-gel-filled dishes)
- Replacing a dipper well? See our [drop-in models](#)



CW 87750 (w/timer)



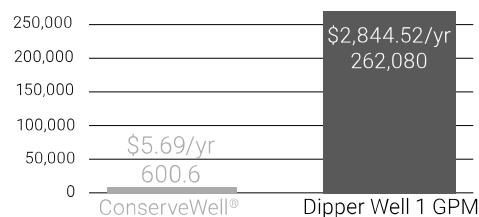
CW 87740



"Frisch's Big Boy Restaurants in OH, KY and IN will now save 7.8 million gallons of water per year thanks to the installation of two ConserveWell® units per store."

Jason Vaughn, Frisch's Big Boy Restaurants

GALLONS PER YEAR*



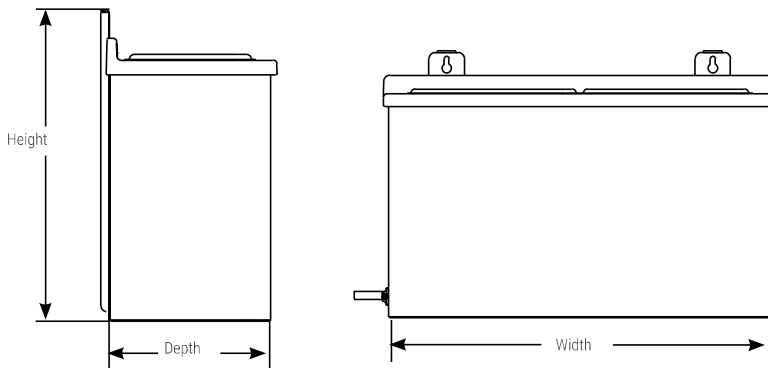
Check the facts with our [ROI Calculator](#).

*52 weeks at 7 days per week at 12 hours per day.
Average water and sewer rate of \$9.48 per 1,000 gal.

Save water, energy and money.

CONSERVEWELL® UTENSIL HOLDER WALL-MOUNT MODELS: CW

Server ConserveWell® Utensil Holder is designed to hold utensils above 140° F as an alternative to a perpetual-flow dipper well. Unit comes with (2) stainless steel $\frac{1}{8}$ -size pans 4 in deep (90106) and is mountable to a wall or sturdy vertical surface using key slot holes on back plate. Models available with and without adjustable countdown timer. Timer model has an LED display and a volume adjustable alarm for water changeout notifications. When changing out water, be sure to fill each pan with $\frac{3}{4}$ qt (3 cups) warm tap water. For use with plastic handled utensils and non-gel-filled dishes. NEMA 5-15P plug with 72 or 108 in power cord. 2-year warranty.



UTENSIL HOLDER

order amt	model/item	description	capacity	dims (H x W x D)	plug	electrical	watts	weight
☐	<u>CW</u> <u>87750</u>	wall-mount with timer	(2) $\frac{1}{8}$ -size pans 4" deep (90106) included	$10 \frac{5}{8} \times 15 \frac{1}{4} \times 5 \frac{1}{4}$ "		120 V AC 3.3 A	400 W	19 lb
☐	<u>CW</u> <u>87740</u>	wall-mount without timer		$7 \frac{5}{16} \times 15 \frac{1}{4} \times 5 \frac{1}{4}$ "				15 lb

CLEAN HAS NEVER BEEN MORE GREEN WITH CONSERVEWELL® UTENSIL HOLDERS
 SERVER-PRODUCTS.COM | 800.558.8722 | 262.628.5600