



ROOF DETAILS

General Notes  
Unless otherwise noted, all details are valid to a maximum slope of 12:12. Joists >16" have a maximum slope of 3:12.

Web stiffeners are required with all 22" and 24" joists and when the sides of the hanger do not laterally support at least 1/2" of the TJI® joist top flange. Also see framing plan.

Shear blocking - 1 1/2" TJI® Rim Board (with depths ≤ 16"), 1 1/2" or 1 1/2" TimberStrand® LSL or TJI® joist.

Web Stiffener required on both sides at R1W ONLY

See Beveled Plate Requirements in Trus Joist® TJI® Joist Specifier's Guide, TJ-4000

R1

R1W

R3

R3W

V-cut shear blocking - 1 1/2" or 1 1/2" TimberStrand® LSL rim board

Web stiffener required on both sides at R3W ONLY

Variable slope seat connector

2'-0" maximum

R5

BIRDSMOUTH CUT allowed at low end of joist only

Beveled web stiffeners required on both sides. Cut to match roof slope.

TJI® joist flange must bear fully on plate.

2'-0" maximum

2x4 block for soffit support

INTERMEDIATE BEARING  
Blocking panels or shear blocking may be specified for joist stability at intermediate supports

Web stiffeners required on both sides at R7W ONLY

Twist strap and backer block required at R7S. See Nailing Requirements at Bearing in Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.

See Beveled Plate Requirements in Trus Joist® TJI® Joist Specifier's Guide, TJ-4000

R7S is required for slopes greater than 3:12.

R7

R7W

R7S

Two rows 8d (0.113" x 2 1/2") nails at 8" on-center

2x4 one side. Use 2x4 both sides if joist spacing is greater than 24" on-center.

Beveled 2x4 block with beveled web stiffener on opposite side of web

2'-0" maximum

4'-0" minimum

R8

BIRDSMOUTH CUT allowed at low end of joist only

2x4 one side. Use 2x6 if joist spacing is greater than 24" on-center.

Beveled 2x4 block

Beveled web stiffeners on both sides

(0.131" x 3") nails at 8" on-center

R9

BIRDSMOUTH CUT allowed at low end of joist only

Two rows 8d (0.113" x 2 1/2") nails at 8" on-center

2x4 one side. Use 2x4 both sides if joist spacing is greater than 24" on-center.

Beveled 2x4 block. Second beveled web stiffener required on opposite side at R10W only.

See Beveled Plate Requirements in Trus Joist® TJI® Joist Specifier's Guide, TJ-4000

R10

R10W

LSTA18 (Simpson Strong-Tie® or USP Structural Connectors®) strap with twelve 10d (0.148" x 1 1/2") nails

2x4 one side. Use 2x4 both sides if joist spacing is greater than 24" on-center.

Beveled 2x4 block. Second beveled web stiffener required on opposite side at R14W only.

See Beveled Plate Requirements in Trus Joist® TJI® Joist Specifier's Guide, TJ-4000

R14

R14W

Additional blocking may be required for shear transfer

LSTA24 (Simpson Strong-Tie® or USP Structural Connectors®) strap with twelve 10d (0.148" x 1 1/2") nails required at H5S

Additional blocking may be required for shear transfer.

Strap nails: Leave 2 1/2" minimum end distance

Variable slope joist hanger, see TJ-4000. Beveled web stiffener required each side.

H5

H5S

H5

H5S

H5

H5S

H5

H5S

H5

H5S

Double TJI® Joist Filler Block. Attach per the table below. Clinch nails when possible.

Hanger Backer Block. Install tight to top flange (tight to bottom flange with face mount hangers). Attach per the table below. Clinch nails when possible.

LSTA18 strap nails at H6S

Strap nails: Leave 2 1/2" minimum end distance

Variable slope joist hanger. Beveled web stiffeners required on both sides.

For triple TJI® joist header conditions refer to Weyerhaeuser Technical Bulletin TB-820

TJI® Depth, D	TJI® Flange Width	Block Type	Nail	
			Size	Quantity
9 1/2" <Ds 20"	less than 3 1/2"	Filler	(0.131" x 3")	15
		Backer	(0.131" x 3")	15
	3 1/2"	Filler	(0.131" x 3 1/2")	16 - each side
		Backer	(0.131" x 3")	15
20" <Ds 24"	3 1/2"	Filler	(0.131" x 3 1/2")	25 - each side
		Backer	(0.131" x 3")	15

For nailing capacities refer to TB-834 (ASD) and TB-861 (LSD)

H6S is required for slopes greater than 3:12  
For filler and backer block sizes see Trus Joist® TJI® Joist Specifier's Guide, TJ-4000

H6

H6S

H6

H6S

SHEAR BLOCKING and VENTILATION HOLES (Roof Only)

Field trim to match joist depth at outer edge of wall or locate on wall to match joist depth. Use 1 1/2" TJI® Rim Board with depths ≤ 16".

Allowed hole zone

Maximum allowable V-cut

SB

For TJI® joists with slopes of 10:12 to 12:12, the vertical depth of shear blocking at bearing will require 1 1/2" TJI® Rim Board or 1 1/2" or 1 1/2" TimberStrand® LSL that is one size deeper than the TJI® joist. DO NOT use 1 1/2" TJI® Rim Board with 18"-24" TJI® joists or in ventilation - hole applications.

Nail through web into outrigger

Double joist may be required when L exceeds joist spacing

Blocking as required

2x\_ overhang. Notch around TJI® joist top flange.

End wall

O

Beveled web stiffener each side of TJI® joist web

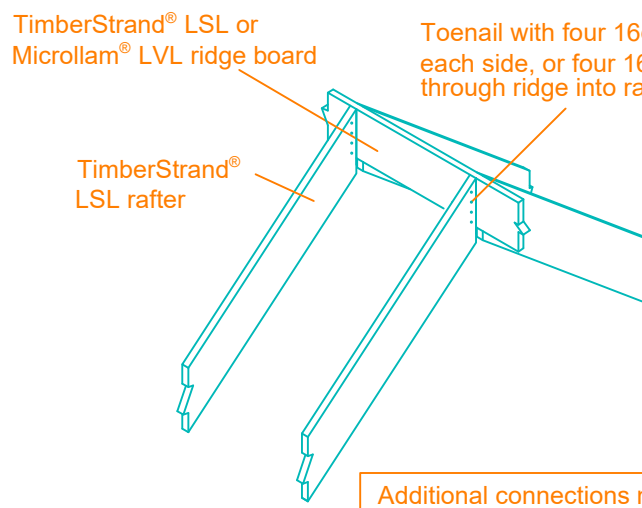
TJI® joist flange must bear fully on plate. Birdsmouth cut must not overhang inside face of plate.

BC

BIRDSMOUTH CUT allowed at low end of joist only

ROOF FRAMING DETAILS

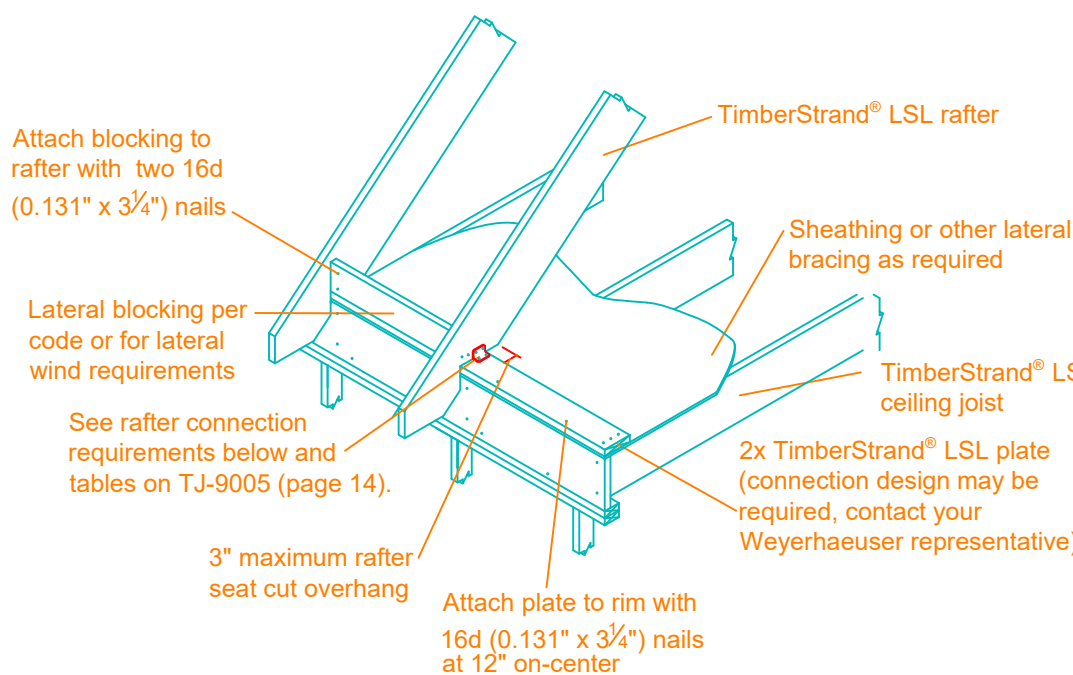
Ridge Connection



Toenail with four 16d (0.131" x 3 1/4") nails each side, or four 16d (0.131" x 3 1/4") nails through ridge into rafter

Additional connections may be required to resist wind forces in high wind zones

Heel Connection (Platform)



Attach blocking to rafter with two 16d (0.131" x 3 1/4") nails

Lateral blocking per code or for lateral wind requirements

See rafter connection requirements below and tables on TJ-9005 (page 14).

3" maximum rafter seat cut overhang

Attach plate to rim with 16d (0.131" x 3 1/4") nails at 12" on-center

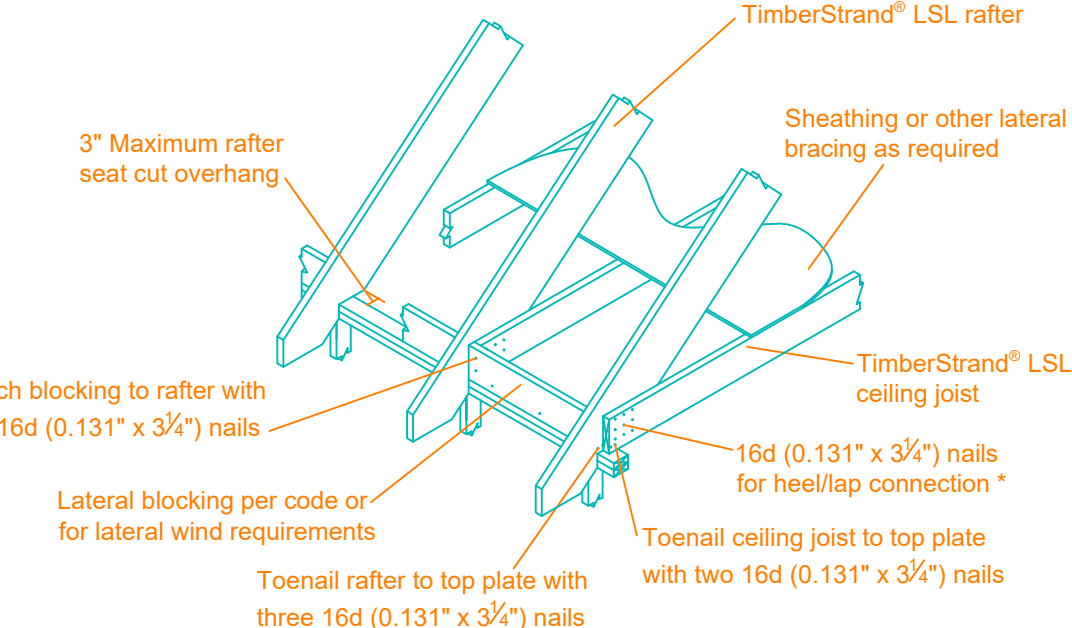
R22

Minimum Ridge Board Depth

Rafter Size	Rafter Pitch			
	4:12 to 9:12	10:12 to 11:12	12:12	
Ridge Board Sizes				
2x6	2x8	2x10	2x10	
2x8	2x10	2x12	2x12	
2x10	14"	14"	14"	
2x12	14"	16"	16"	

R20

Heel Connection (Lap)



Attach blocking to rafter with two 16d (0.131" x 3 1/4") nails

Lateral blocking per code or for lateral wind requirements

Toenail rafter to top plate with three 16d (0.131" x 3 1/4") nails

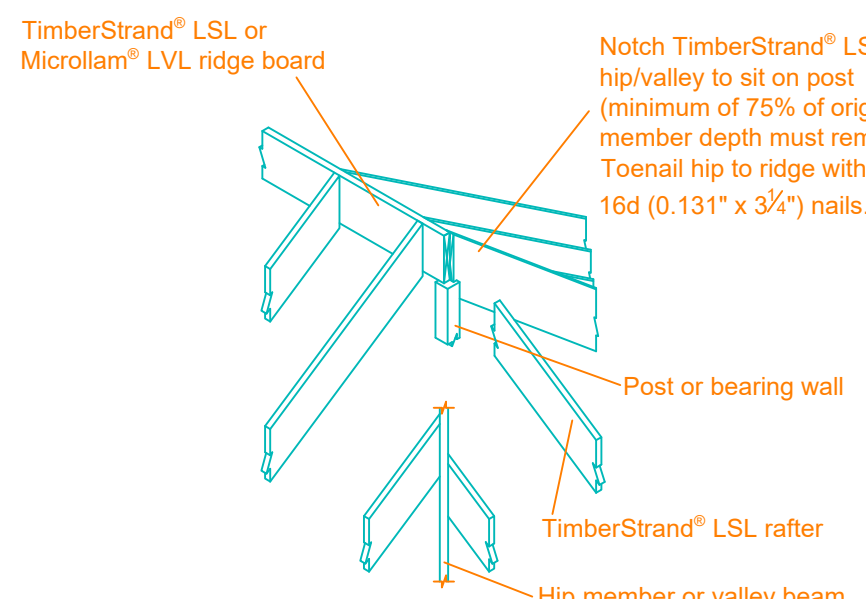
16d (0.131" x 3 1/4") nails for heel/lap connection \*

Toenail ceiling joist to top plate with two 16d (0.131" x 3 1/4") nails

R21

\* For heel/lap connection nailing see Rafter Span and Heel Connection Tables in Trus Joist® Roof System Design Guide, TJ-9005.

Hip/Ridge/Valley/ Post Detail



TimberStrand® LSL or Microlam® LVL ridge board

Notch TimberStrand® LSL hip/valley to sit on post (minimum of 75% of original member depth must remain). Toenail hip to ridge with five 16d (0.131" x 3 1/4") nails.

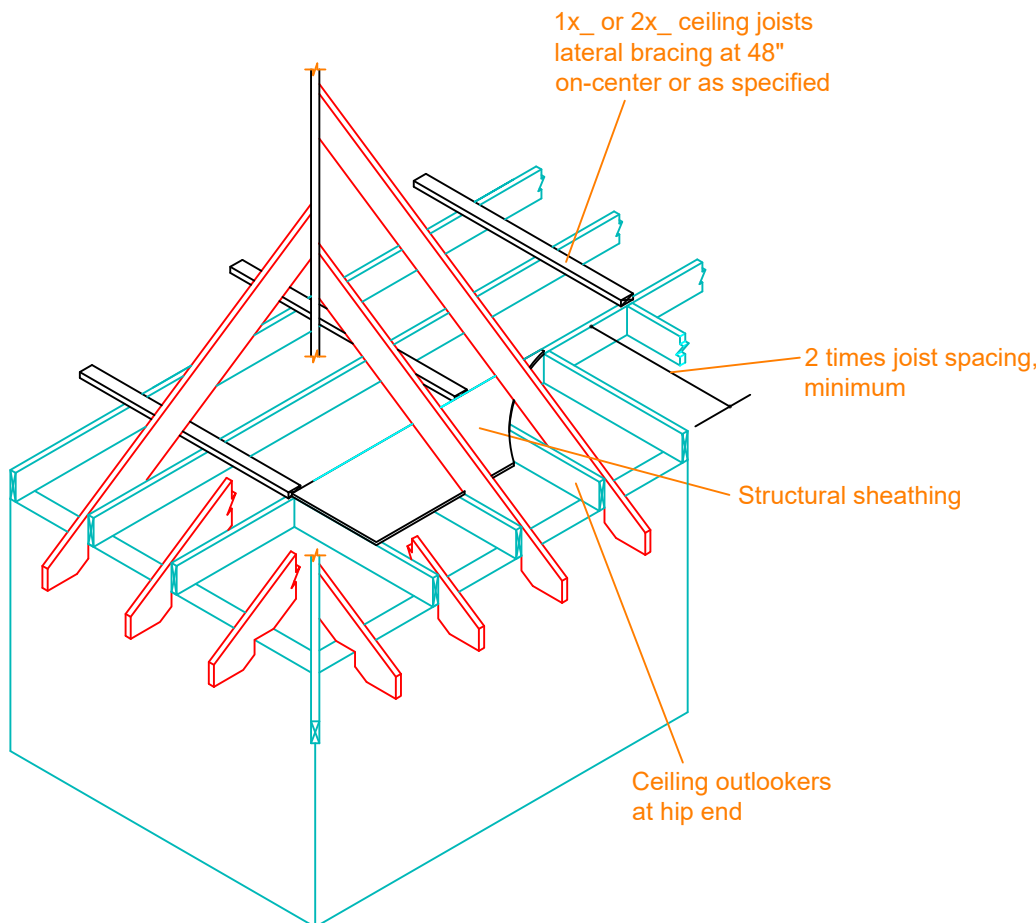
Post or bearing wall

TimberStrand® LSL rafter

Hip member or valley beam

R23

Outlooker Detail



1x\_ or 2x\_ ceiling joists lateral bracing at 48" on-center or as specified

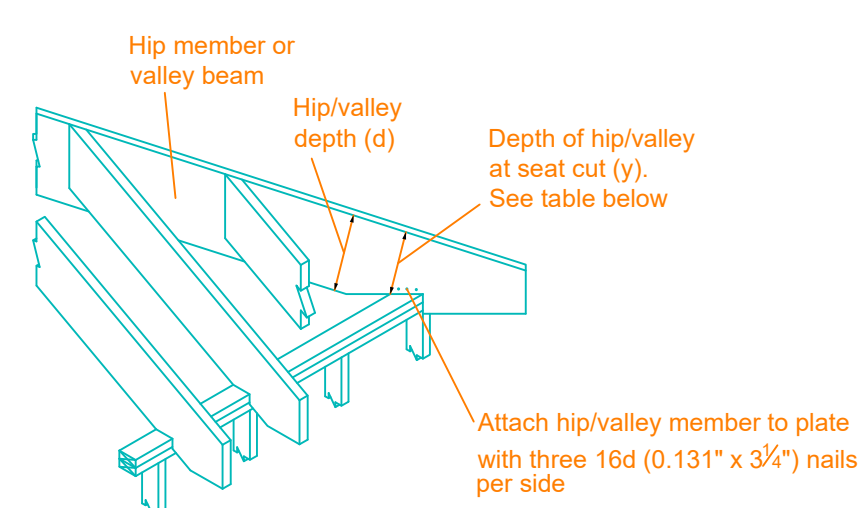
2 times joist spacing, minimum

Structural sheathing

Ceiling outlookers at hip end

R24

Hip/Valley Low End



Hip member or valley beam

Hip/valley depth (d)

Depth of hip/valley at seat cut (y). See table below

Attach hip/valley member to plate with three 16d (0.131" x 3 1/4") nails per side

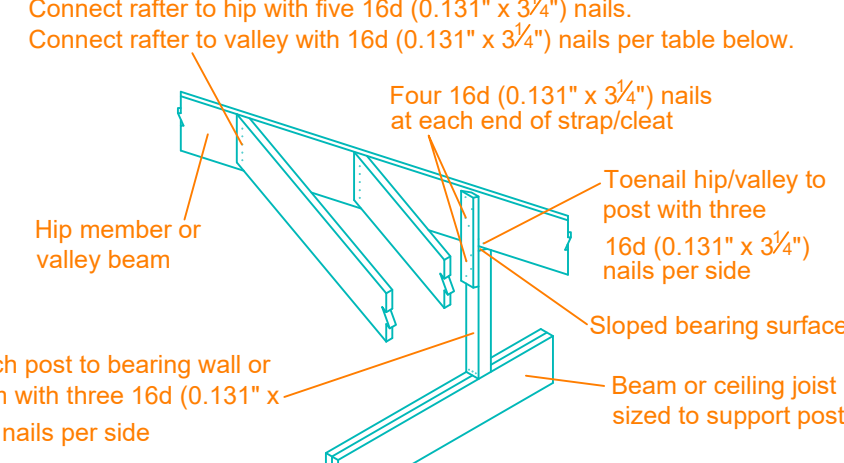
Hip/Valley Depth

Minimum Percentage of Original Hip/Valley Depth Required		
Member Type	TimberStrand® LSL	Microlam® LVL
Hip Member	35%	50%
Valley Beam	60%	80%

(1) For nail width greater than 5", minimum percentage is 30%  
\* Calculate percentage as y/d x 100

R25

Hip/Valley Intermediate Support



Connect rafter to hip with five 16d (0.131" x 3 1/4") nails

Connect rafter to valley with 16d (0.131" x 3 1/4") nails per table below.

Four 16d (0.131" x 3 1/4") nails at each end of strap/cleat

Toenail hip/valley to post with three 16d (0.131" x 3 1/4") nails per side

Sloped bearing surface

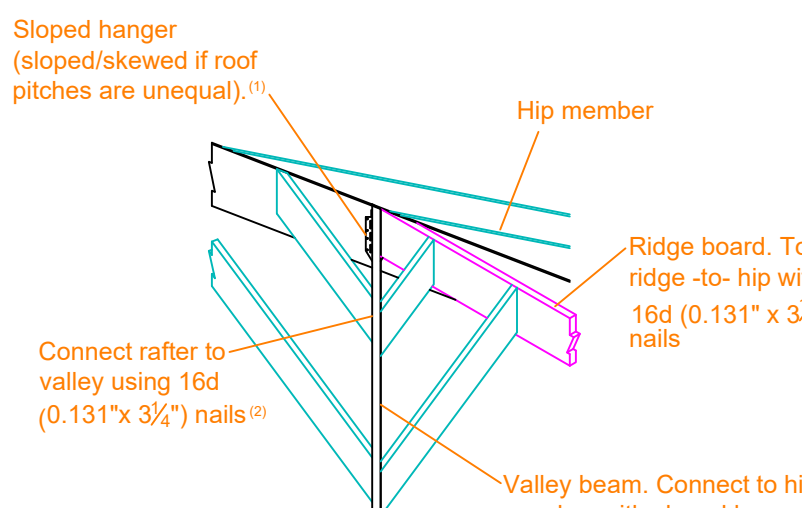
Beam or ceiling joist sized to support post

R26

\* Contact your Weyerhaeuser representative for additional connection information.

Rafter - to - Valley Connection		Roof Snow Load			
Rafter On-Center Spacing	Rafter Span	30 LL + 15 DL	50 LL + 15 DL	80 LL + 15 DL	Number of 16d (0.131" x 3 1/4") nails required
		6'	12'	18'	24'
16"	6'	5	5	5	
	12'	5	6	8	
	18'	6	9	12	
	24'	8	12	*	
24"	6'	5	5	7	
	12'	6	8	11	
	18'	9	13	*	
	24'	12	*	*	

Valley-to-Hip Connection



Sloped hanger (sloped/skewed if roof pitches are unequal).<sup>(1)</sup>

Hip member

Ridge board. Toenail ridge -to- hip with four 16d (0.131" x 3 1/4") nails

Connect rafter to valley using 16d (0.131" x 3 1/4") nails<sup>(2)</sup>

Valley beam. Connect to hip member with sloped hanger.

R28

Contact your Weyerhaeuser representative for sizing of a hip or valley with a point load.

<sup>(1)</sup> See Framing Connectors in Trus Joist® Roof System Design Guide, TJ-9005 for hanger capacities.

<sup>(2)</sup> See Rafter -to- Valley Connection table in Detail R26 above.



Warning: This product can expose you to chemicals including wood dust which are known to the State of California to cause cancer, and methanol, which are known to the State of California to cause birth defects or other reproductive harm. Drilling, sawing, sanding or machining wood products can expose you to wood dust. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov) and [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood).



Weyerhaeuser, Javelin, Microlam, Paralam, TimberStrand, TJ, TJI, and Trus Joist are registered trademarks and Edge Gold is a registered trademark of Weyerhaeuser NR. © 2025 Weyerhaeuser NR Company. All rights reserved.

August 2025 Reorder TJ-4014



1-888-453-8358  
woodbyw.com

COMMENT

REV BY DATE

PROJECT #:

SERVICE #:

SHEET  
\_ of \_