Structural Calculations

26-015 Adams

DATE	October 7, 2026
COMPANY	SMC Design
DESIGNED BY	Steve Curtis
REVIEWED BY	
PROJECT FILE	26-015 Adams

CONTENTS ›

Design Criteria

BUILDING CODE
2018 International Residential Code

LOADS
ASCE 7-16

WOOD
2018 NDS, Allowable Stress Design

STEEL
AISC 360-16, ASD

CONCRETE
ACI 318-14

SITE CLASS / RISK CATEGORY
Site Class D - Stiff soil / II

HEADERS
NDS 3.2.1 span (the opening plus half the required bearing each end); trimmers outside the opening, 1 1/2 in each, the loads running over them to the king studs (the strip over each bearing into it); king studs IRC Table R602.7.5, < 140 mph Exp. B / < 130 mph Exp. C

LOAD COMBINATIONS (ASD)
D, D+L, D+S, D+Lr, D+0.75L+0.75S, D+0.75L+0.75Lr

DEFLECTION
per member (see each sheet). Floor live: the member's limit, never looser than L/360; roof live or snow alone: L/240 (IRC Table R301.7); dead plus live: the member's limit. A cantilever on twice its length.

SOIL BEARING
1,500 psf allowable (as entered on the footings)

CONCRETE / REBAR
f'c = 3,000 psi, Fy = 60 ksi

SELF WEIGHT
included on every member and footing

Summary

	Members	Pass	Fail	Not checked	Loads only
Beams	44	44	0	0	0
Girders	8	0	0	0	8
Headers	58	58	0	0	0
Trusses / Rafters	37	2	0	0	35
Joists	21	21	0	0	0
Columns	3	3	0	0	0
Other Members	5	1	0	0	4
Footings	178	178	0	0	0
Total	**354**	**307**	**0**	**0**	**47**

Load path: 110 of 110 beams, girders and headers trace to a footing or a marked wall.

Connections: 32 hung ends and 39 posts checked -- every hanger, cap and base specified passes.

Fabricated by default (nothing in the catalog carries them -- design each one to the load on the Connections schedule): Beam #27 end 2, Beam #28 end 1, Beam #29 end 1.

Reading these calculations

- Each member sheet reads from the top: the verdict at the top right, the loads drawn over the member, Design Results with the location, allowable, percent used, load duration factor and governing combination, then the supports with the load each one hands on, the bracing and every load with where it came from.
- Percent = demand / capacity. A result within 1% of its limit prints with a decimal and in orange so a hair-thin pass reads as one.
- Calculated by the SMC Framework engine to the project's codes (2018 NDS, AISC 360-16, ACI 318-14, loads combined to ASCE 7-16) from the project file, with the load path solved at print time.

Legend color & symbol key — KEY

Plans

A1 Foundation — PLAN
A2 Floor 1st Floor Layout - 1St Level — PLAN
A3 Floor 2nd Floor Layout - 2Nd Level — PLAN
A4 Roof 1st Roof Layout - 1St Level — PLAN
A5 Roof 2nd Roof Layout - 2Nd Level — PLAN

Beams

Beam #1 — PASS
Beam #2 — PASS
Beam #3 — PASS
Beam #4 — PASS
Beam #5 — PASS
Beam #6 — PASS
Beam #7 — PASS
Beam #8 — PASS
Beam #9 — PASS
Beam #10 — PASS
Beam #11 — PASS
Beam #12 — PASS
Beam #13 — PASS
Beam #14 — PASS
Beam #15 — PASS
Beam #16 — PASS
Beam #17 — PASS
Beam #18 — PASS
Beam #19 — PASS
Beam #20 — PASS
Beam #21 — PASS
Beam #22 — PASS
Beam #23 — PASS
Beam #24 — PASS
Beam #25 — PASS
Beam #26 — PASS
Beam #27 — PASS
Beam #28 — PASS
Beam #29 — PASS
Beam #30 — PASS
Beam #31 — PASS
Beam #32 — PASS
Beam #33 — PASS
Beam #34 — PASS
Beam #35 — PASS

Beams (cont.)

Beam #36 — PASS
Beam #37 — PASS
Beam #38 — PASS
Beam #39 — PASS
Beam #40 — PASS
Beam #41 — PASS
Beam #42 — PASS
Beam #43 — PASS
Beam #44 — PASS

Girders

Girder #1 — PASS
Girder #2 — PASS
Girder #3 — PASS
Girder #4 — PASS
Girder #5 — PASS
Girder #6 — PASS
Girder #7 — PASS
Girder #8 — PASS

Headers

Header #1 — PASS
Header #2 — PASS
Header #3 — PASS
Header #4 — PASS
Header #5 — PASS
Header #6 — PASS
Header #7 — PASS
Header #8 — PASS
Header #9 — PASS
Header #10 — PASS
Header #11 — PASS
Header #12 — PASS
Header #13 — PASS
Header #14 — PASS
Header #15 — PASS
Header #16 — PASS
Header #17 — PASS
Header #18 — PASS
Header #19 — PASS
Header #20 — PASS
Header #21 — PASS
Header #22 — PASS

Headers (cont.)

Header #23	PASS
Header #24	PASS
Header #25	PASS
Header #26	PASS
Header #27	PASS
Header #28	PASS
Header #29	PASS
Header #30	PASS
Header #31	PASS
Header #32	PASS
Header #33	PASS
Header #34	PASS
Header #35	PASS
Header #36	PASS
Header #37	PASS
Header #38	PASS
Header #39	PASS
Header #40	PASS
Header #41	PASS
Header #42	PASS
Header #43	PASS
Header #44	PASS
Header #45	PASS
Header #46	PASS
Header #47	PASS
Header #48	PASS
Header #49	PASS
Header #50	PASS
Header #51	PASS
Header #52	PASS
Header #53	PASS
Header #54	PASS
Header #55	PASS
Header #56	PASS
Header #57	PASS
Header #58	PASS

Trusses / Rafters

Rafters #1	PASS
Trusses #1	
Rafters #2	PASS
Trusses #2	
Trusses #3	
Trusses #4	

Trusses / Rafters (cont.)

Trusses #5
Trusses #6
Trusses #7
Trusses #8
Trusses #9
Trusses #10
Trusses #11
Trusses #12
Trusses #13
Trusses #14
Trusses #15
Trusses #16
Trusses #17
Trusses #18
Trusses #19
Trusses #20
Trusses #21
Trusses #22
Trusses #23
Trusses #24
Trusses #25
Trusses #26
Trusses #27
Trusses #28
Trusses #29
Trusses #30
Trusses #31
Trusses #32
Trusses #33
Trusses #34
Trusses #35

Joists

Joist #1	PASS
Joist #2	PASS
Joist #3	PASS
Joist #4	PASS
Joist #5	PASS
Joist #6	PASS
Joist #7	PASS
Joist #8	PASS
Joist #9	PASS
Joist #10	PASS
Joist #11	PASS

Joists (cont.)

Joists #12	PASS
Joists #13	PASS
Joists #14	PASS
Joists #15	PASS
Joists #16	PASS
Joists #17	PASS
Joists #18	PASS
Joists #19	PASS
Joists #20	PASS
Joists #21	PASS

Other Members

Outlookers	PASS
Timber Truss #1	
Column Bm #1-1	PASS
Timber Truss #2	
Timber Truss #3	
Timber Truss #4	
Column Bm #39-2	PASS
Column Bm #39-3	PASS

Footings

Footing #1	PASS
Footing #2	PASS
Footing #3	PASS
Footing - WD-#4	PASS
Footing #5	PASS
Footing - WD-#6	PASS
Footing #7	PASS
Footing #8	PASS
Footing #9	PASS
Footing #10	PASS
Footing #11	PASS
Footing #12	PASS
Footing #13	PASS
Footing #14	PASS
Footing #15	PASS
Footing - WD-#16	PASS
Footing - WD-#17	PASS
Footing #18	PASS
Footing #19	PASS
Footing #20	PASS
Footing #21	PASS

Footings (cont.)

Footing #22	PASS
Footing - WD-#23	PASS
Footing - WD-#24	PASS
Footing - WD-#25	PASS
Footing #26	PASS
Footing #27	PASS
Footing #28	PASS
Footing #29	PASS
Footing #30	PASS
Footing #31	PASS
Footing #32	PASS
Footing #33	PASS
Footing #34	PASS
Footing - WD-#35	PASS
Footing #36	PASS
Footing #37	PASS
SpotFtg Bm #1-1	PASS
SpotFtg Bm #1-2	PASS
SpotFtg Gdr #1-2	PASS
SpotFtg Hdr #1-2	PASS
SpotFtg Bm #1-3	PASS
SpotFtg Hdr #1-3	PASS
SpotFtg Bm #1-4	PASS
SpotFtg Hdr #2-1	PASS
SpotFtg Bm #2-2	PASS
SpotFtg Gdr #2-2	PASS
SpotFtg Hdr #2-2	PASS
SpotFtg Bm #2-3	PASS
SpotFtg Bm #3-2	PASS
SpotFtg Bm #4-1	PASS
SpotFtg Gdr #4-1	PASS
SpotFtg Bm #4-2	PASS
SpotFtg Gdr #4-2	PASS
SpotFtg Bm #4-3	PASS
SpotFtg Gdr #4-3	PASS
SpotFtg Bm #4-4	PASS
SpotFtg Bm #5-1	PASS
SpotFtg Bm #5-2	PASS
SpotFtg Gdr #5-2	PASS
SpotFtg Bm #6-2	PASS
SpotFtg Hdr #7-2	PASS
SpotFtg Hdr #7-3	PASS
SpotFtg Gdr #8-1	PASS
SpotFtg Hdr #8-1	PASS

Footings (cont.)

SpotFtg Bm #8-2	PASS
SpotFtg Gdr #8-2	PASS
SpotFtg Hdr #8-2	PASS
SpotFtg Bm #9-1	PASS
SpotFtg Hdr #9-1	PASS
SpotFtg Bm #9-2	PASS
SpotFtg Hdr #9-2	PASS
SpotFtg Bm #10-1	PASS
SpotFtg Bm #10-2	PASS
SpotFtg Bm #11-1	PASS
SpotFtg Hdr #11-1	PASS
SpotFtg Bm #11-2	PASS
SpotFtg Hdr #11-2	PASS
SpotFtg Bm #12-2	PASS
SpotFtg Bm #12-3	PASS
SpotFtg Bm #12-4	PASS
SpotFtg Hdr #13-1	PASS
SpotFtg Bm #13-2	PASS
SpotFtg Hdr #13-2	PASS
SpotFtg Hdr #14-1	PASS
SpotFtg Bm #14-2	PASS
SpotFtg Bm #15-1	PASS
SpotFtg Hdr #15-1	PASS
SpotFtg Bm #15-2	PASS
SpotFtg Bm #16-1	PASS
SpotFtg Hdr #16-1	PASS
SpotFtg Bm #16-2	PASS
SpotFtg Hdr #16-2	PASS
SpotFtg Hdr #16-3	PASS
SpotFtg Bm #17-1	PASS
SpotFtg Bm #17-2	PASS
SpotFtg Bm #17-3	PASS
SpotFtg Bm #18-1	PASS
SpotFtg Bm #19-1	PASS
SpotFtg Hdr #20-1	PASS
SpotFtg Bm #20-2	PASS
SpotFtg Hdr #20-2	PASS
SpotFtg Bm #21-1	PASS
SpotFtg Hdr #21-1	PASS
SpotFtg Bm #21-2	PASS
SpotFtg Hdr #21-2	PASS
SpotFtg Hdr #22-1	PASS
SpotFtg Hdr #22-2	PASS
SpotFtg Bm #23-1	PASS

Footings (cont.)

SpotFtg Hdr #24-1	PASS
SpotFtg Hdr #25-1	PASS
SpotFtg Hdr #25-2	PASS
SpotFtg Hdr #26-1	PASS
SpotFtg Bm #26-2	PASS
SpotFtg Hdr #26-2	PASS
SpotFtg Hdr #27-1	PASS
SpotFtg Hdr #27-2	PASS
SpotFtg Hdr #28-1	PASS
SpotFtg Hdr #28-2	PASS
SpotFtg Bm #30-1	PASS
SpotFtg Hdr #30-1	PASS
SpotFtg Bm #30-2	PASS
SpotFtg Hdr #30-2	PASS
SpotFtg Hdr #30-3	PASS
SpotFtg Bm #31-1	PASS
SpotFtg Hdr #31-1	PASS
SpotFtg Bm #31-2	PASS
SpotFtg Bm #32-1	PASS
SpotFtg Bm #33-1	PASS
SpotFtg Hdr #33-1	PASS
SpotFtg Bm #33-2	PASS
SpotFtg Hdr #33-2	PASS
SpotFtg Hdr #33-3	PASS
SpotFtg Bm #34-2	PASS
SpotFtg Hdr #34-2	PASS
SpotFtg Bm #34-3	PASS
SpotFtg Bm #34-4	PASS
SpotFtg Bm #35-1	PASS
SpotFtg Hdr #35-1	PASS
SpotFtg Bm #35-2	PASS
SpotFtg Hdr #35-2	PASS
SpotFtg Bm #36-1	PASS
SpotFtg Hdr #36-1	PASS
SpotFtg Bm #36-2	PASS
SpotFtg Hdr #36-2	PASS
SpotFtg Hdr #37-1	PASS
SpotFtg Hdr #37-2	PASS
SpotFtg Bm #38-1	PASS
SpotFtg Hdr #38-1	PASS
SpotFtg Hdr #38-2	PASS
SpotFtg Bm #39-1	PASS
SpotFtg Bm #39-2	PASS
SpotFtg Bm #39-3	PASS

Footings (cont.)

SpotFtg Hdr #41-2	PASS
SpotFtg Bm #42-1	PASS
SpotFtg Hdr #42-1	PASS
SpotFtg Bm #42-2	PASS
SpotFtg Hdr #42-2	PASS
SpotFtg Hdr #44-2	PASS
SpotFtg Hdr #45-1	PASS
SpotFtg Hdr #45-2	PASS
SpotFtg Hdr #46-1	PASS
SpotFtg Hdr #46-2	PASS
SpotFtg Hdr #47-1	PASS
SpotFtg Hdr #47-2	PASS
SpotFtg Hdr #48-1	PASS
SpotFtg Hdr #48-2	PASS
SpotFtg Hdr #51-1	PASS
SpotFtg Hdr #52-1	PASS
SpotFtg Hdr #52-2	PASS
SpotFtg Hdr #54-1	PASS
SpotFtg Hdr #54-2	PASS
SpotFtg Hdr #55-1	PASS
SpotFtg Hdr #55-2	PASS
SpotFtg Hdr #56-1	PASS
SpotFtg Hdr #56-2	PASS
SpotFtg #100	PASS
SpotFtg #101	PASS

Connections and Simpson sheets

Connections schedule	SHEET
Fabricated hangers each one's design sheet	SHEET
Simpson hardware	SHEET
p. 76 ABA/ABU/ABW Adjustable and ·	SIMPSON
p. 87 CB Column Base	SIMPSON
p. 93 BC/BCS Post Caps	SIMPSON
p. 99 CCQ·/ECCQ· Column Caps	SIMPSON
p. 118 Face-Mount Hangers · Solid Sawn ·	SIMPSON
p. 158 Face-Mount Hangers · I-Joists, Glulam ·	SIMPSON
p. 160 Face-Mount Hangers · I-Joists, Glulam ·	SIMPSON
p. 162 Face-Mount Hangers · I-Joists, Glulam ·	SIMPSON
p. 163 Face-Mount Hangers · I-Joists, Glulam ·	SIMPSON
p. 168 CBH·/ACBH·/SCBH· Concealed Beam ·	SIMPSON
p. 197 Top-Flange Hangers · I-Joists, Glulam ·	SIMPSON
p. 315 HL Heavy Angle and Gusset	SIMPSON

Legend

Color & symbol key for the load path diagrams

Load Path Diagrams

Beam #21
GLB 5.5x15

The member itself. Loads land on its top edge where they land on the member -- a bar is a uniform load over its length. Its reactions leave the bottom edge at the supports (ticks). Click it for its calc sheet.

Trusses #32 · B
2 × D 212 · S 1.9k plf

What bears on the member: which member and reaction, and what it delivers. "2 x" is the same load twice.

Beam #24
(3) LVL 1.75x11.25

Where the load goes next. The dot is that member's own design check: green passes, red fails. Every box is a link.

Column #4
6x6 DF-L #1

A column or post.

SpotFtg Bm #21-1
60"x60"x10" - (6) #4

A footing: the load is in the ground.

A · D 3.1k · S 31k

What a link delivers, by load case: D dead, L floor live, Lr roof live, S snow, W wind. A minus sign is uplift.

out of date

Out of date: the load on the member below no longer matches this reaction.

no load rows

Broken: the link delivers nothing, or points at a member that is gone.

B · bears on wall

Bears on a wall that is not modelled (the engineer's mark).

C · not linked below

Not linked: the load leaves the model here. Verify where it bears.

UP 1,405 lb

Uplift: net uplift at a support under 0.6D + W, and any link whose loads add up to a pull, are boxed in amber.

+ 4 more above
Beam #20

Footing sheets draw what loads the footing. A box stopped short says how many more feed it; click it for the rest.

Status Badges (TOC & sections)

PASS — Every reaction traces to a foundation.

NOT TRACED — At least one reaction unverified — including anywhere DOWN the member's support chain. A footing in this member's chain can't offset its uplift — treat as structural fail.

UPLIFT FAIL — The member fails its own design check (see its calc sheet).

DESIGN FAIL

UPLIFT — Amber tag by a TOC name: uplift condition in this member's chain (own negative reaction or an uplift footing).

Navigation

HOME — Back to the table of contents.

DIAGRAMS — On plan sheets: jump to the flowcharts.

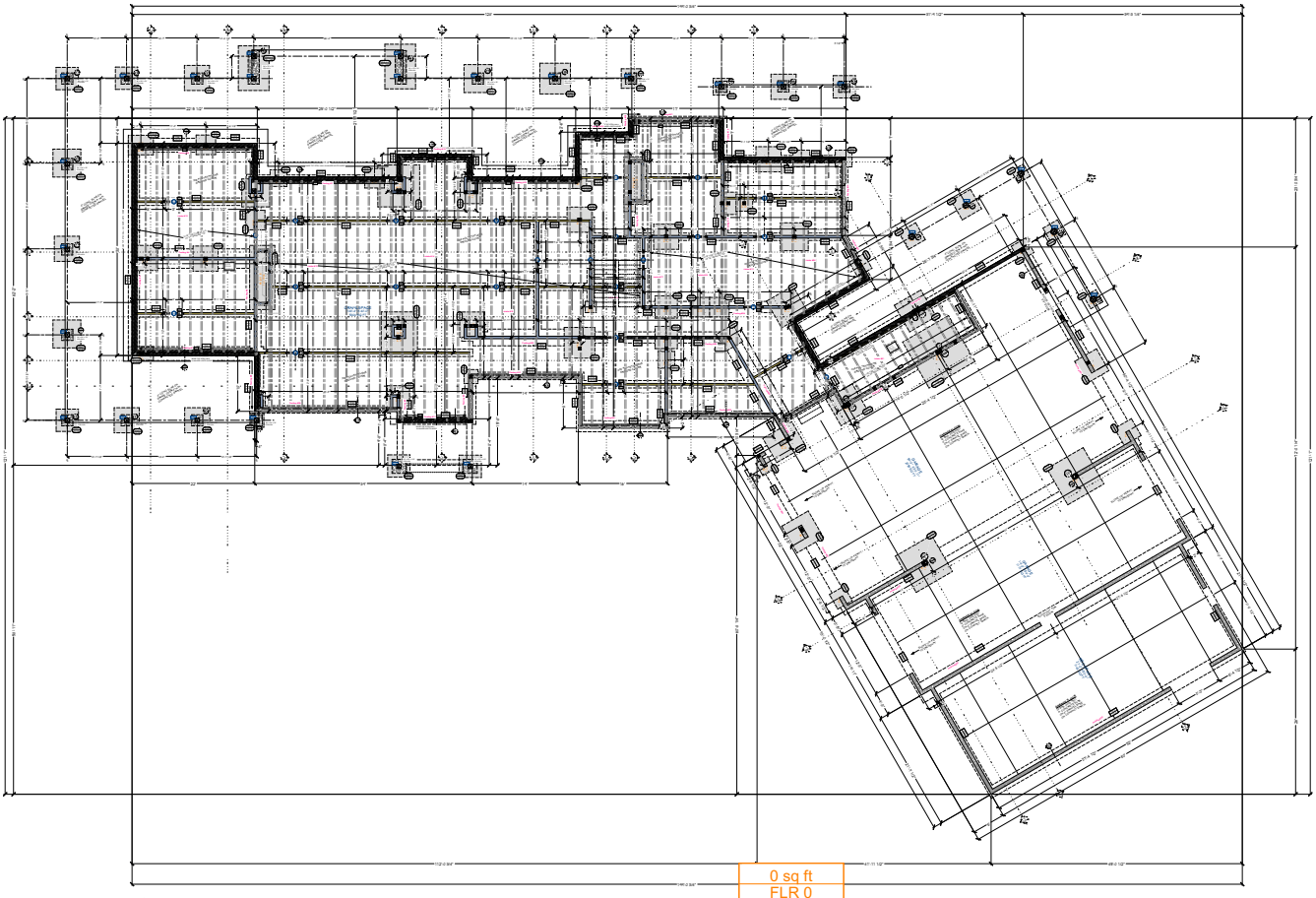
ON PLAN — Jump to this member's pink callout on the drawing, zoomed in.

Beam #31 — On a calc sheet: a diagram page that references this member.

A2 Floor 1st — Small blue pills on diagram titles: the sheets this member is drawn on.

Joists #8 — Pink callouts ON the plan sheets are clickable — straight to that member.

Nearly everything is clickable: TOC rows, member boxes, incoming-load boxes, footings, plan callouts, and the calc sheets cross-link each other.
In most PDF viewers, Alt+Left steps back a view.



FOUNDATION - WORK
3/16 IN = 1 FT

FOUNDATION NOTES:
ALL ANGLE AT 90°
ALL INTERIOR DIMENSIONS ARE TO CENTER OF FOOTING

SHEET INDEX

PAGE	TITLE
A1	FOUNDATION
A2	FLOOR LAYOUT - 1ST LEVEL
A3	FLOOR LAYOUT - 2ND LEVEL
A4	ROOF LAYOUT - 1ST LEVEL
A5	ROOF LAYOUT - 2ND LEVEL

FOUNDATION CONCRETE (EST.)

FOOTING	## Cu Yd
STEM WALLS	## Cu Yd
CONCRETE SLAB	## Cu Yd
TOTAL CONCRETE	## Cu Yd

PROJECT NO.
'26-015

ADAMS RESIDENCE - HELI RANCH
VALLEY CO, ID

CONTRACTOR TO VERIFY ALL DATUMS, DIMENSIONS, AND DIRECTION TO BE TAKEN FROM CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS PRIOR ANY CLEARANCE, EXTRUSIONS OR SETS THAT ARISE DURING CONSTRUCTION OR ANYTIME THEREAFTER.

SHEET SIZE
36" x 24"

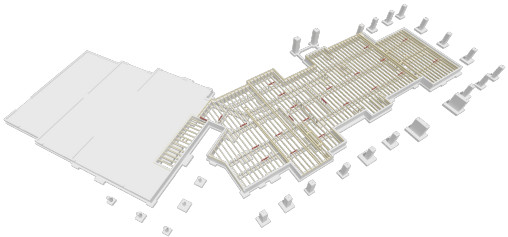
INITIAL DATE: 09-09-2025
ISSUE DATE: 1/7/2026

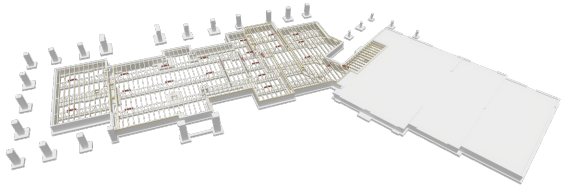
DRAWN BY:
Steve

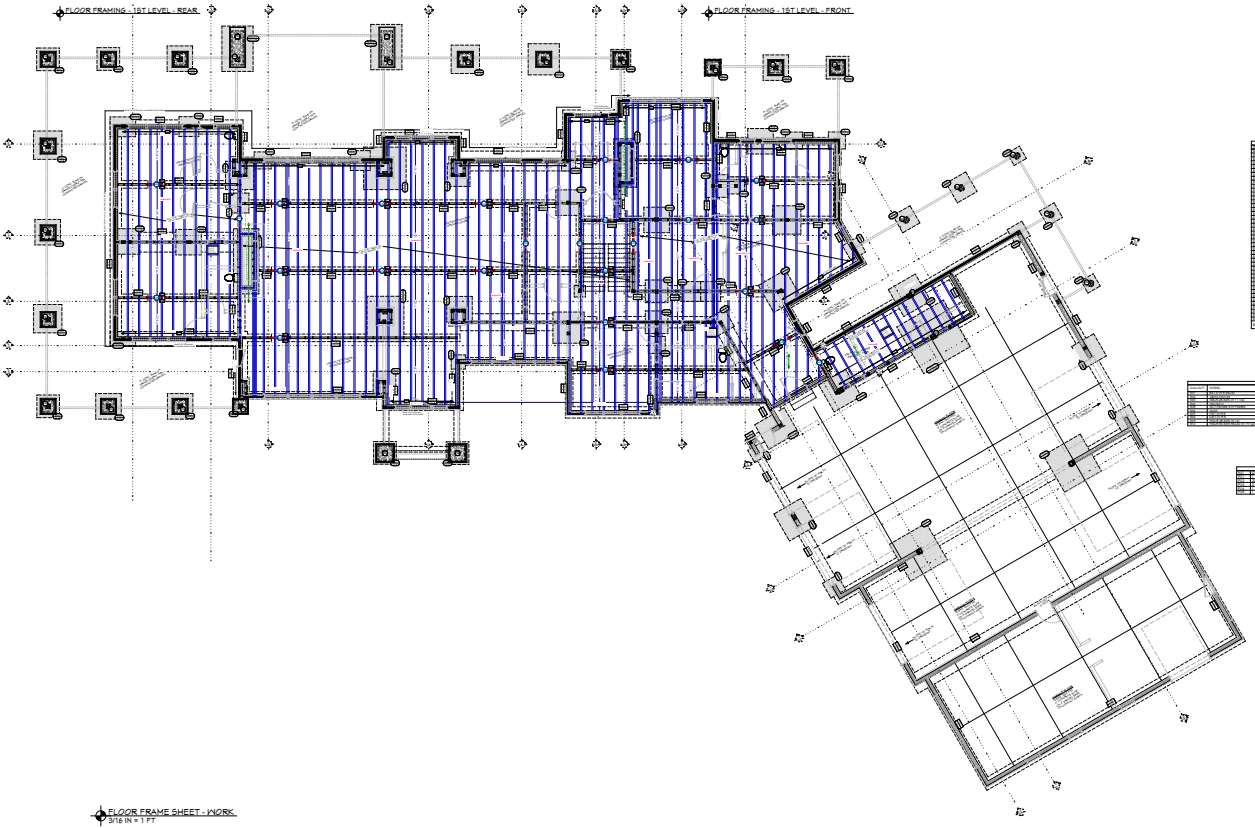
FOUNDATION

SVC
Steve C. Douglas
208.344.1250
Nampa, ID

SHEET NUMBER
A1
PAGE 1 OF 5







FLOOR FRAME SHEET - WORK
3/16 IN = 1 FT

SCAN FOR CURRENT PLAN

SCAN FOR 3D FRAMING VIEWER

SCAN FOR ENGINEERED CALCS

PROJECT NO. -26-015

ADAMS RESIDENCE - HELI RANCH
VALLEY CO, ID

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SHEET SIZE: 36" x 24"

INITIAL DATE: 09-09-2024

ISSUE DATE: 1/7/2025

DRAWN BY: SVC

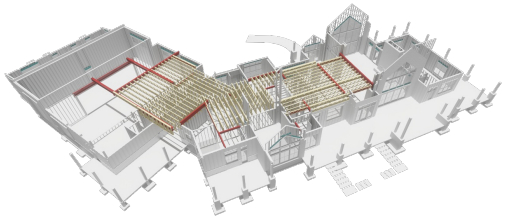
FLOOR LAYOUT - 1ST LEVEL

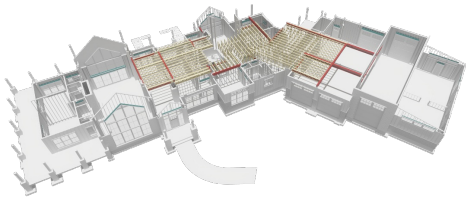
SHEET INDEX

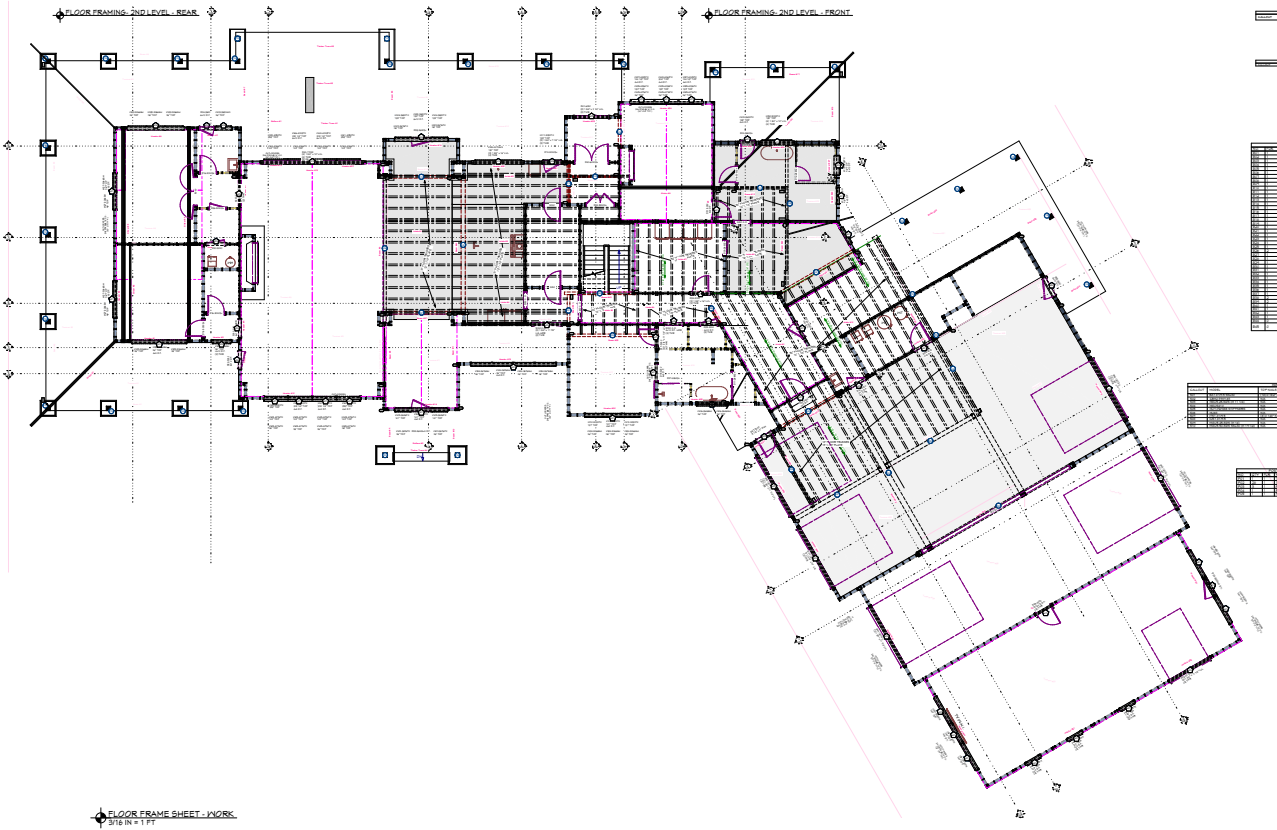
PAGE	TITLE
A1	FOUNDATION
A2	FLOOR LAYOUT - 1ST LEVEL
A2.5	FLOOR LAYOUT - 2ND LEVEL
A3	ROOF LAYOUT - 1ST LEVEL
A3.5	ROOF LAYOUT - 2ND LEVEL

SVC Design
SVC Design
208.344.1280
Nampa, ID

SHEET NUMBER: A2
PAGE 2 OF 5







FLOOR FRAME SHEET - WORK
3/16 IN = 1 FT

SCAN FOR CURRENT PLAN

SCAN FOR 3D FRAMING VIEWER

SCAN FOR ENGINEERED CALCS

PROJECT NO. -26-215

ADAMS RESIDENCE - HELI RANCH
VALLEY CO, ID

CONTRACTOR TO VERIFY ALL DIMENSIONS, AND SPECIFICALLY TOUR PRIOR CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ARCHITECT. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR ANY CLEARS, CUTBACKS TOWERS OR SUITS THAT ARISE DURING CONSTRUCTION OR ANYTIME THEREAFTER.

SHEET SIZE 36" x 24"

INITIAL DATE 09-09-2025

ISSUE DATE 1/7/2026

DRAWN BY: Steve

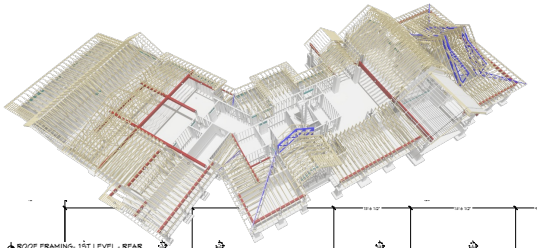
FLOOR LAYOUT - 2ND LEVEL

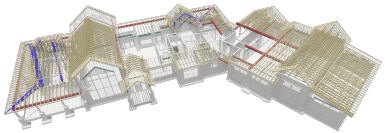
SHEET INDEX

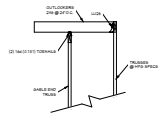
PAGE	TITLE
A1	FOUNDATION
A2	FLOOR LAYOUT - 1ST LEVEL
A2.5	FLOOR LAYOUT - 2ND LEVEL
A3	ROOF LAYOUT - 1ST LEVEL
A3.5	ROOF LAYOUT - 2ND LEVEL

SHC
Phil C. Douglas
208.344.1200
Nampa, ID

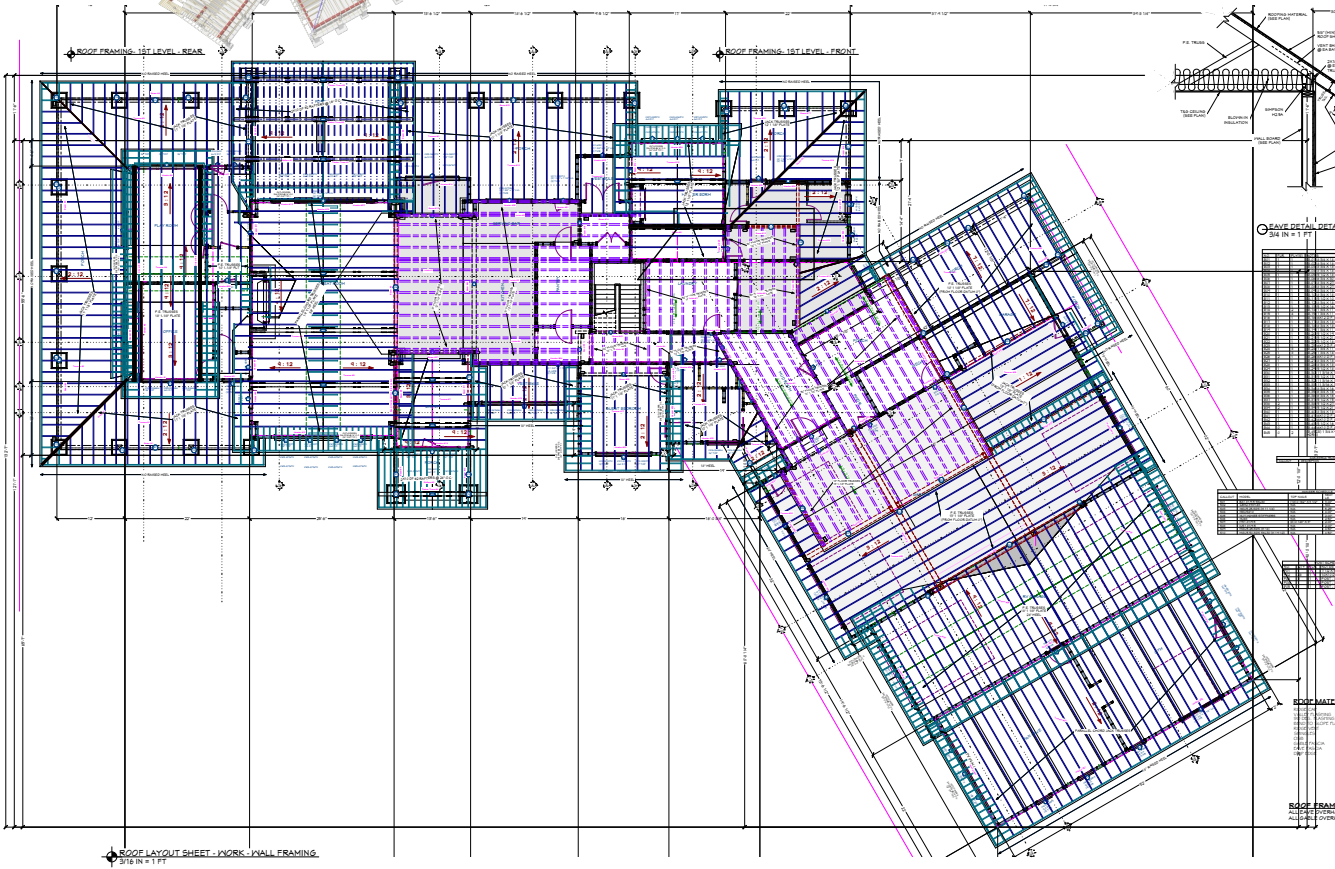
SHEET NUMBER
A3
PAGE 3 OF 5

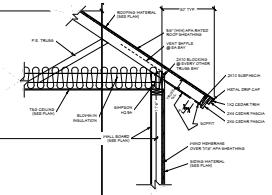






OUTLOOKER DETAIL
NTS





EAVE DETAIL
3/4 IN = 1 FT

ROOF MATERIALS

ROOF FRAMING NOTES:
ALL EAVE OVERHANGS 30" UNO
ALL GABLE OVERHANGS 30" UNO

ROOF LAYOUT SHEET - WORK - WALL FRAMING
3/16 IN = 1 FT

SHEET INDEX

PAGE	TITLE
A1	FOUNDATION
A2	FLOOR LAYOUT - 1ST LEVEL
A3	FLOOR LAYOUT - 2ND LEVEL
A4	ROOF LAYOUT - 1ST LEVEL
A5	ROOF LAYOUT - 2ND LEVEL

PROJECT NO.
'26-015

ADAMS RESIDENCE - HELI RANCH
VALLEY CO, ID

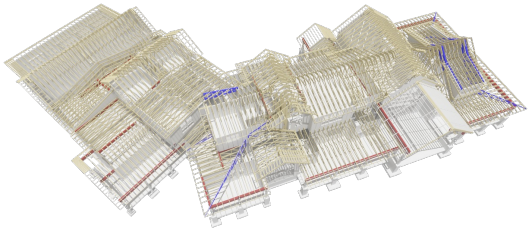
SHEET SIZE
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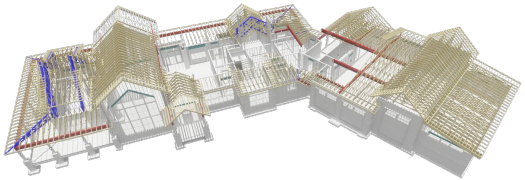
INITIAL DATE: 09-09-2025
ISSUE DATE: 1/7/2026

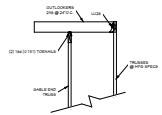
DRAWN BY:
Steve

ROOF LAYOUT - 1ST LEVEL

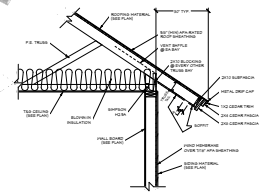
SHEET NUMBER
A4
PAGE 4 OF 5





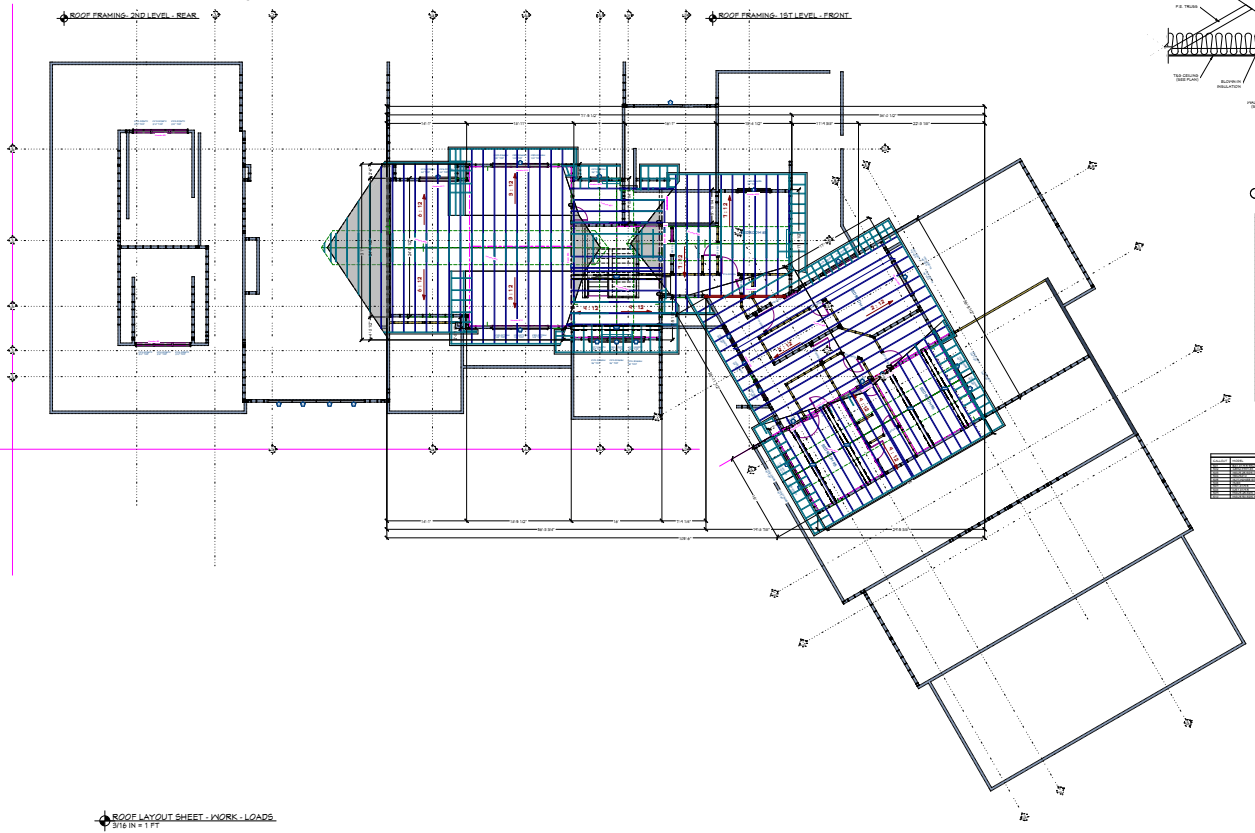


OUTLOOKER DETAIL
NTS



EAVE DETAIL DETAIL
3/4 IN = 1 FT

ROOF FRAMING- 2ND LEVEL - REAR



ROOF FRAMING- 1ST LEVEL - FRONT

ROOF LAYOUT SHEET - WORK - LOADS
3/16 IN = 1 FT

ROOF MATERIALS

RIDGE CAP	### FL
VALLEY FLASHING	### FL
VALLEY TAPERING	### FL
RAKE TO SLOPE FLASHING	### FL
RIDGE VENT	### FL
SHINGLES	### Comp. FL
EAVE FL	### FL
GABLE FASCIA	### FL
EAVE FASCIA	### FL
DRIP EDGE	### FL

ROOF FRAMING NOTES:
ALL EAVE OVERHANGS 30" UNO
ALL GABLE OVERHANGS 30" UNO

SHEET INDEX

PAGE	TITLE
A1	FOUNDATION
A2	FLOOR LAYOUT - 1ST LEVEL
A3	FLOOR LAYOUT - 2ND LEVEL
A4	ROOF LAYOUT - 1ST LEVEL
A5	ROOF LAYOUT - 2ND LEVEL

SCAN FOR CURRENT PLANS

SCAN FOR 3D FRAMING VIEWER

SCAN FOR ENGINEERED CALCS

PROJECT NO.
-26-015

ADAMS RESIDENCE - HELI RANCH
VALLEY CO, ID

CONTRACTOR TO VERIFY ALL DETAILS, DIMENSIONS, AND SPECIFICATIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. PROVIDE ANY CLARIFICATIONS OR NOTES THAT MAY AVOID DURING CONSTRUCTION OR ANYTIME THEREAFTER.

SHEET SIZE
36" x 24"

INITIAL DATE
09-09-2025

ISSUE DATE
1/7/2026

DRAWN BY:
Steve

ROOF LAYOUT - 2ND LEVEL

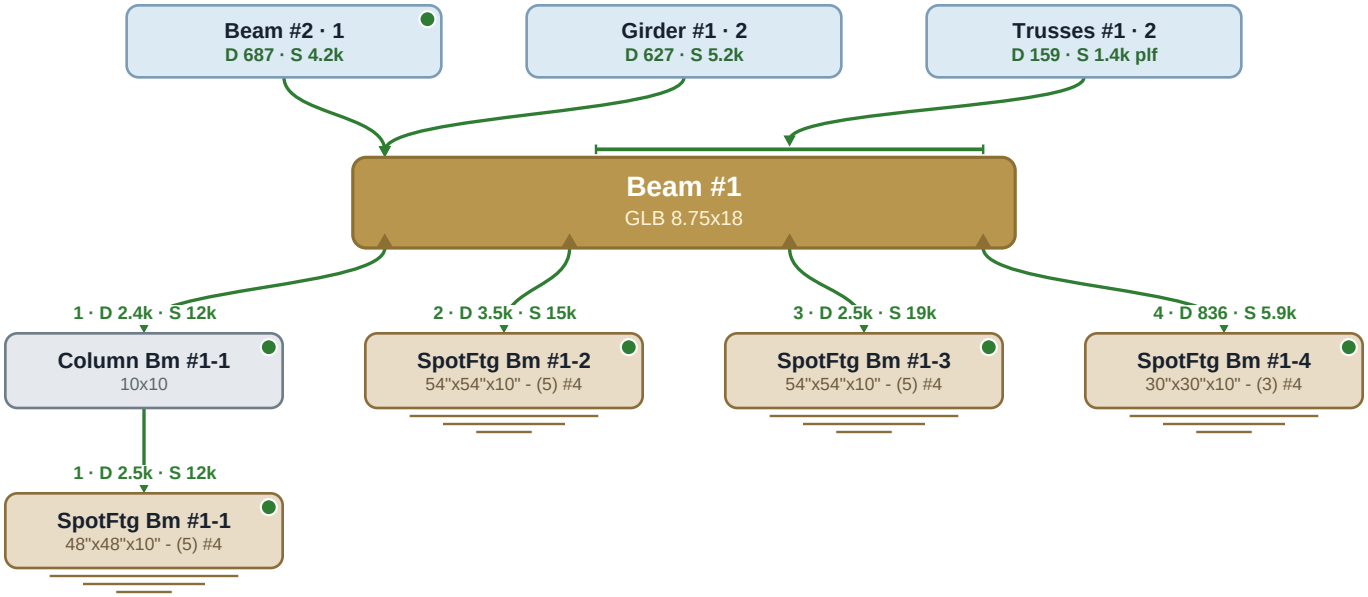
SVC
Steve C. Douglas
208.249.1280
Nampa, ID

SHEET NUMBER
A5
PAGE 5 OF 5

Beam #1 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

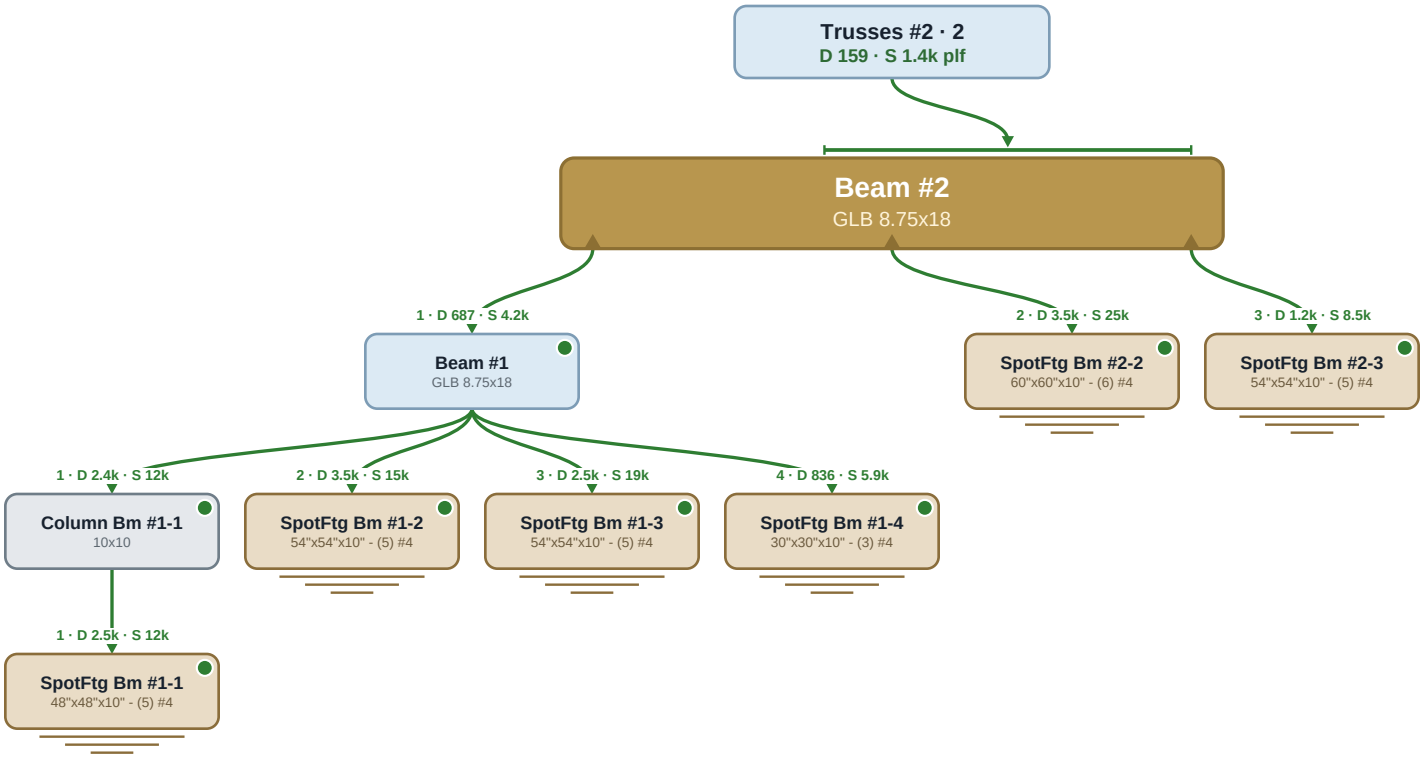
PASS



Beam #2 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

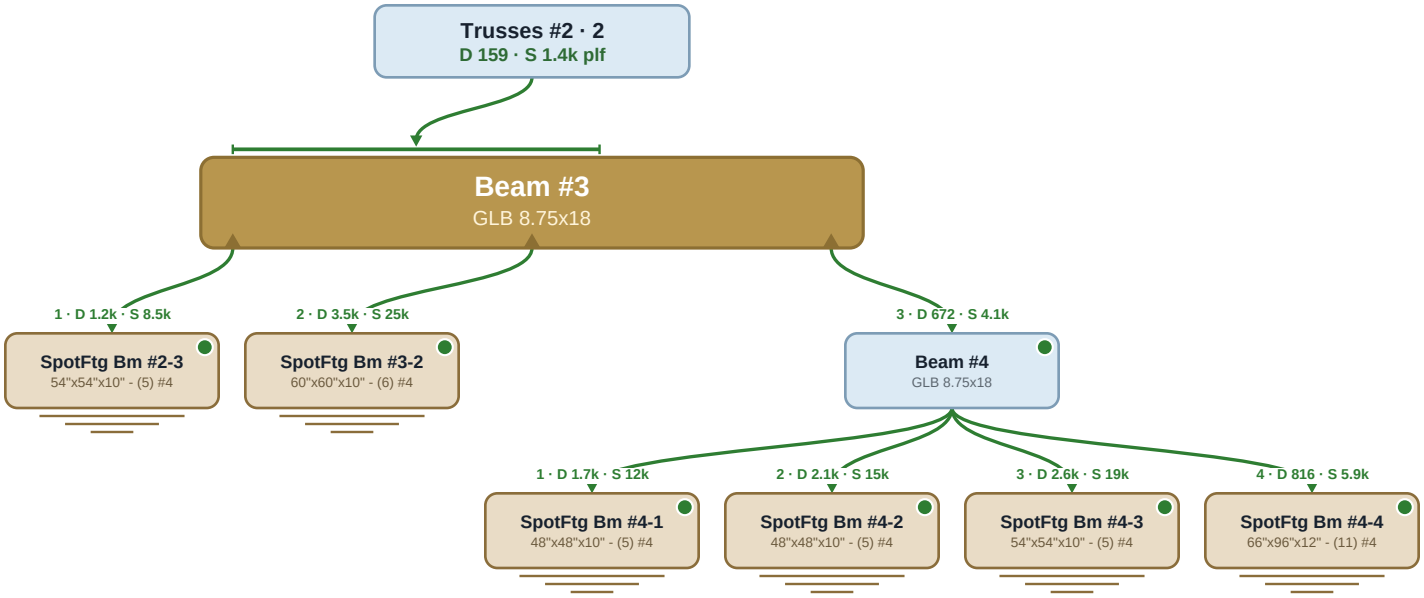
PASS



Beam #3 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

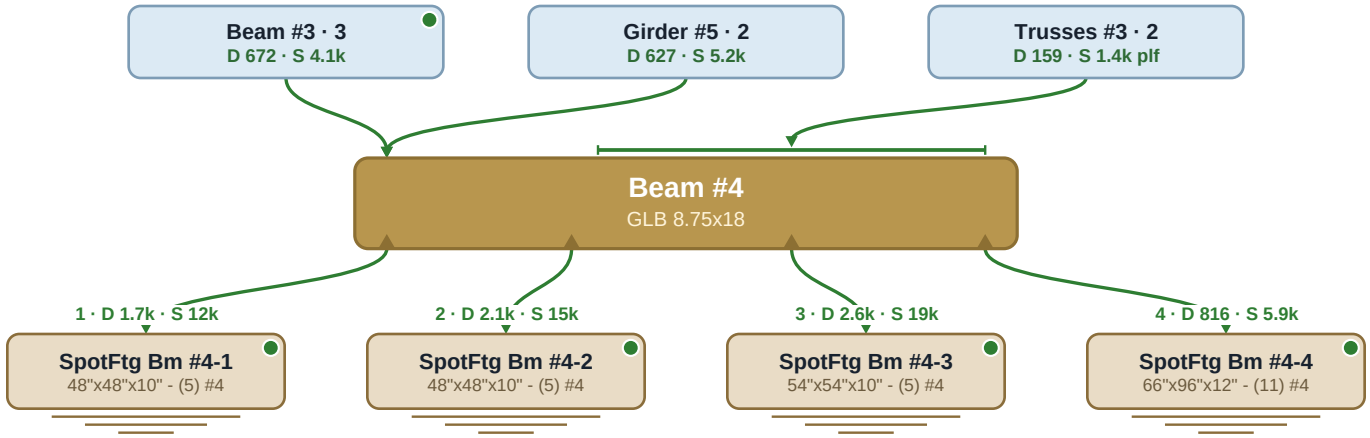
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Beam #4 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

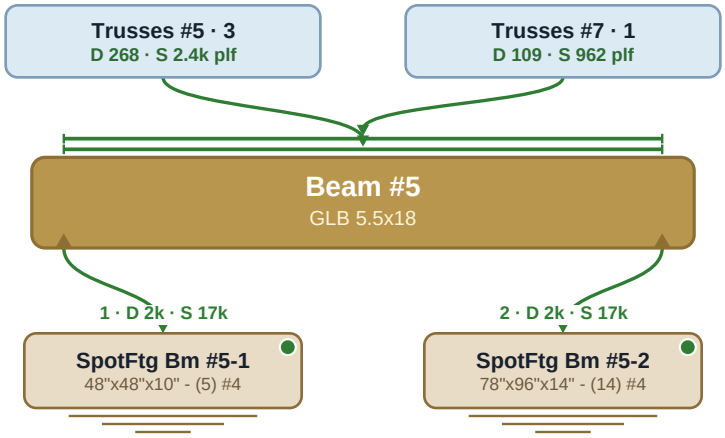
PASS



Beam #5 | GLB 5.5x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

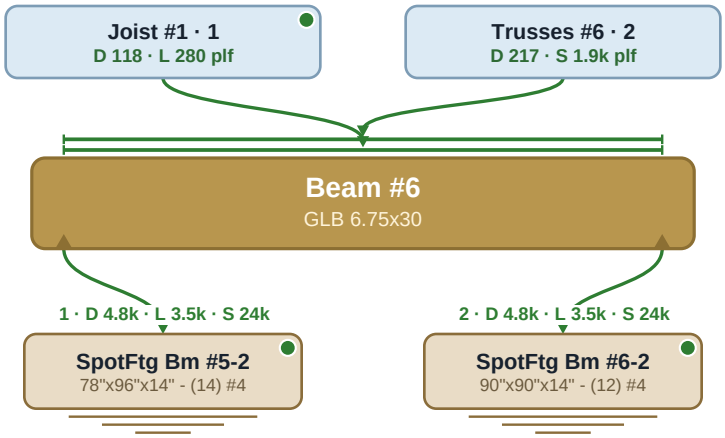
PASS



Beam #6 | GLB 6.75x30

ON PLAN: A3 Floor 2nd A4 Roof 1st

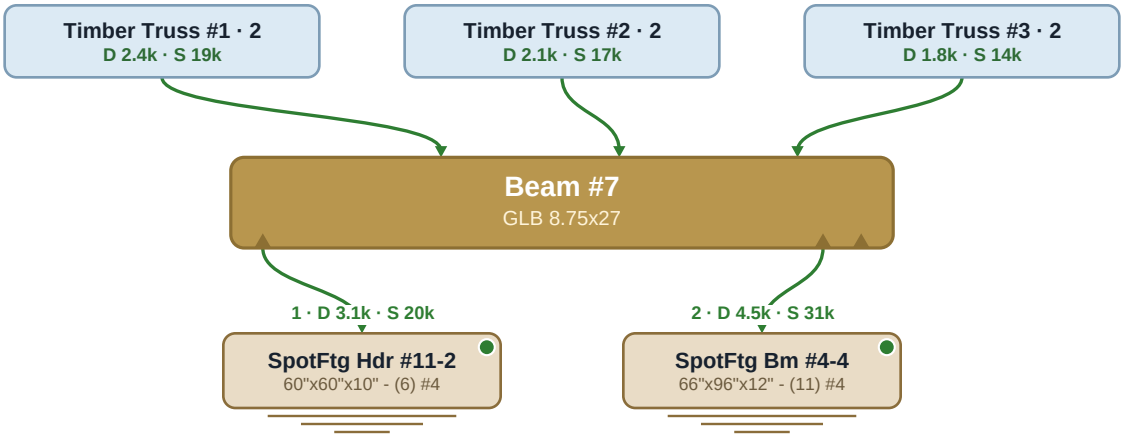
PASS



Beam #7 | GLB 8.75x27

ON PLAN: A3 Floor 2nd A4 Roof 1st

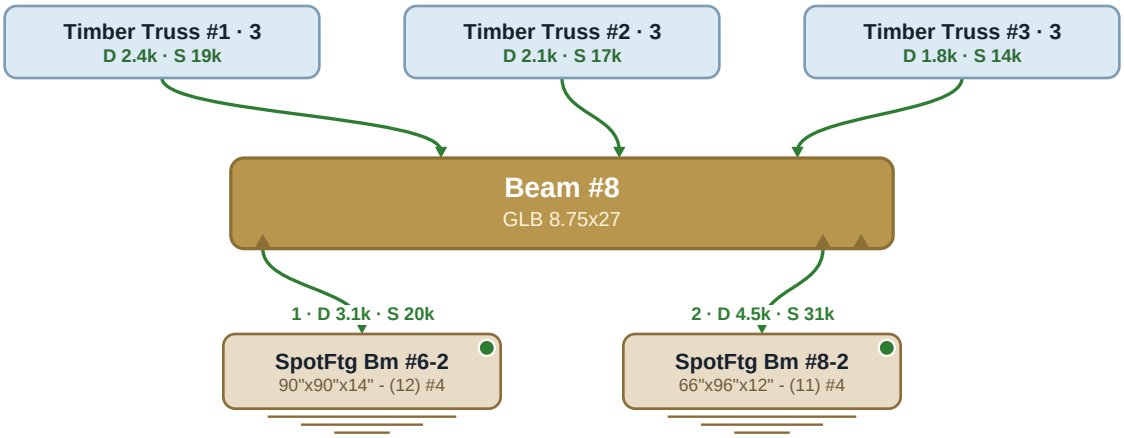
PASS



Beam #8 | GLB 8.75x27

ON PLAN: A3 Floor 2nd A4 Roof 1st

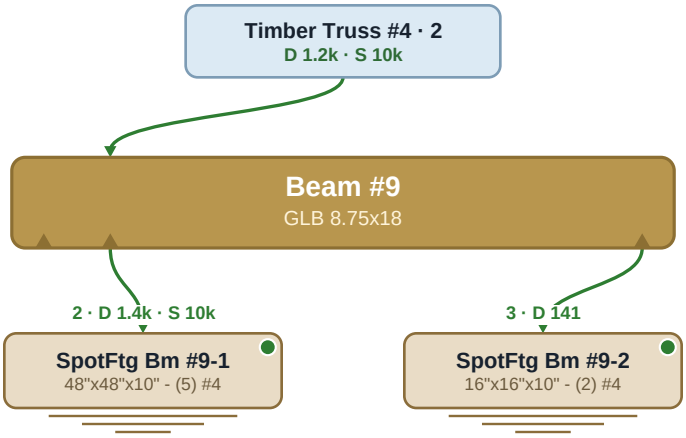
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Beam #9 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

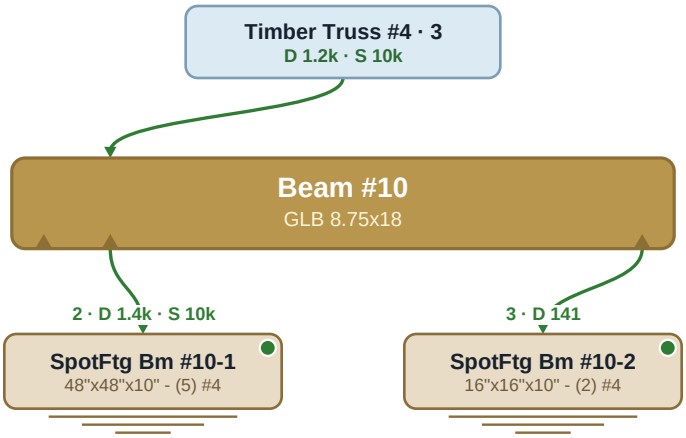
PASS



Beam #10 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

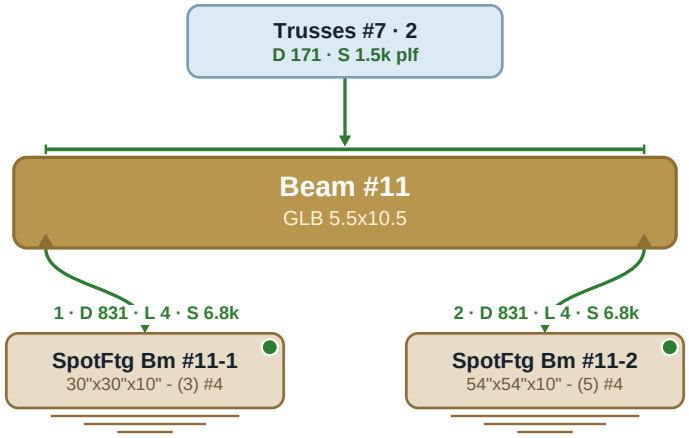
PASS



Beam #11 | GLB 5.5x10.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

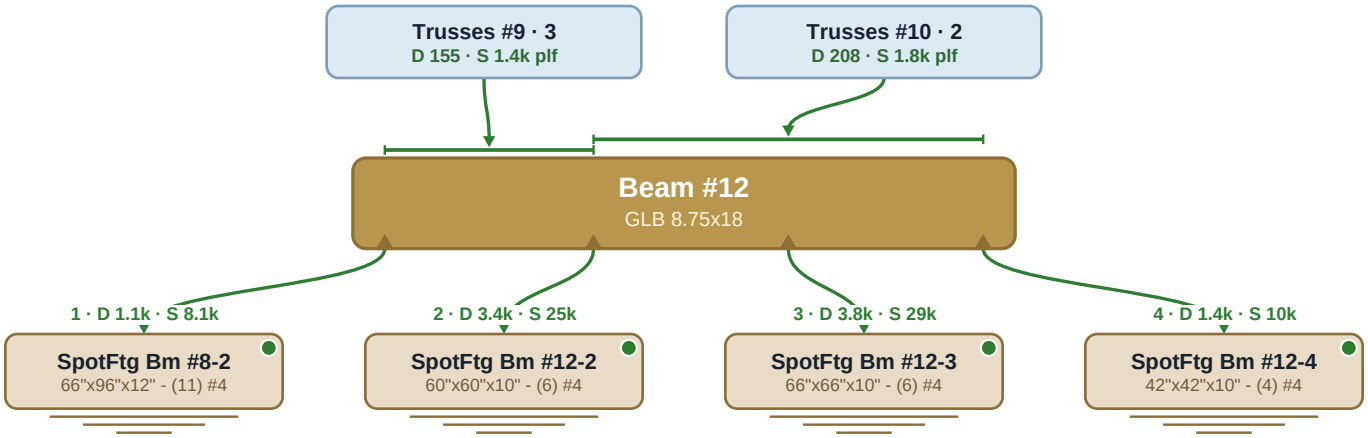
PASS



Beam #12 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

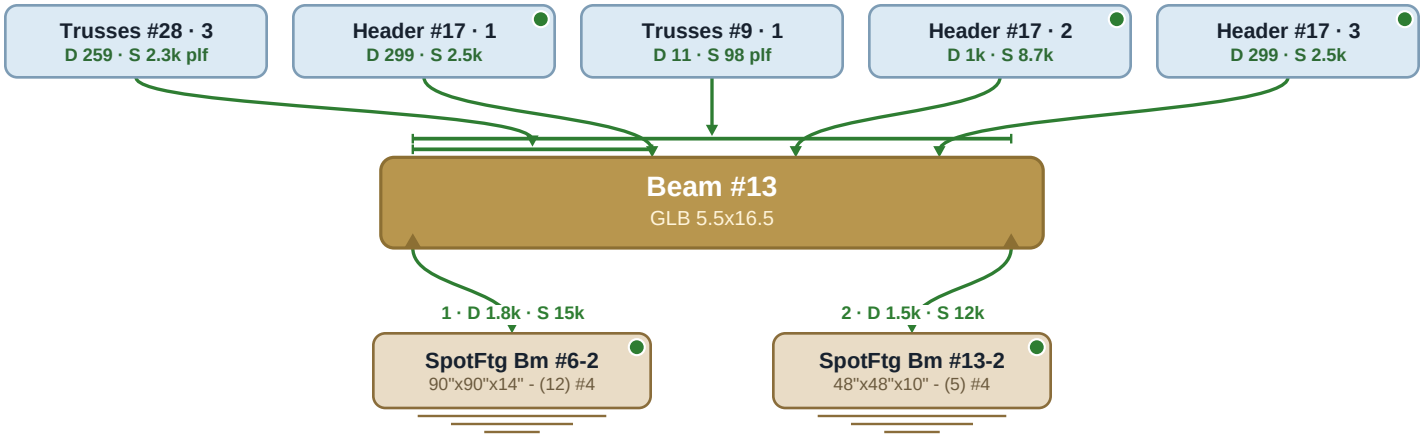
PASS



Beam #13 | GLB 5.5x16.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

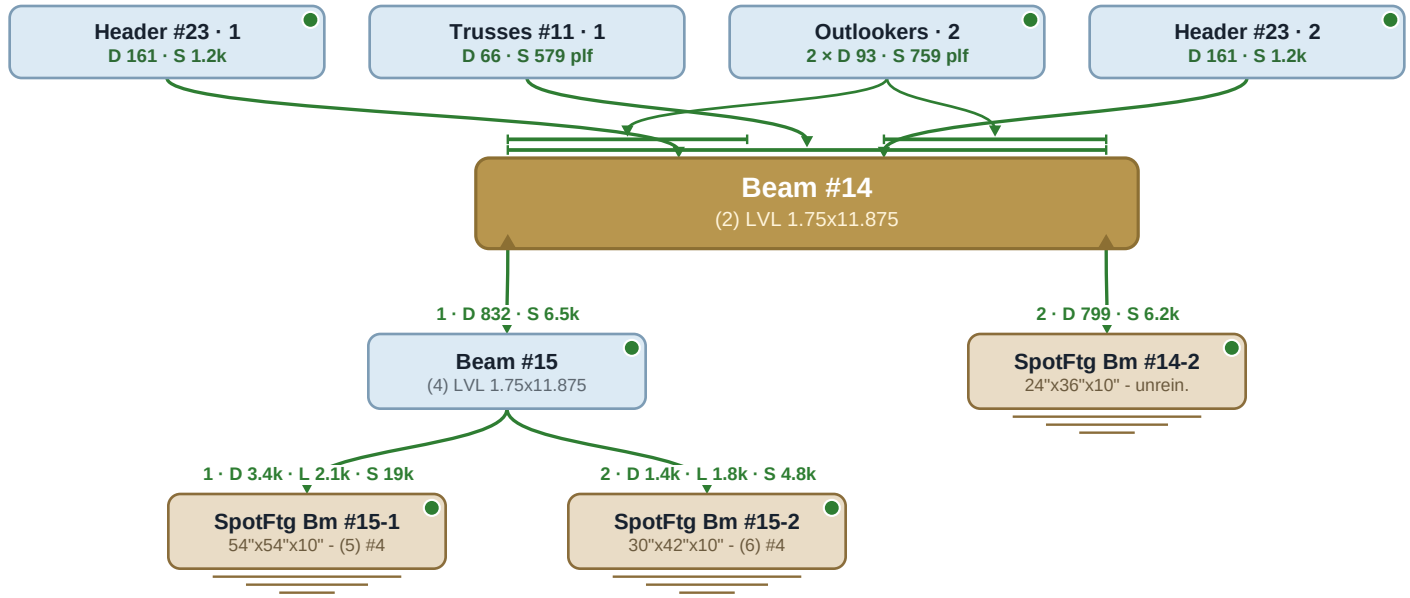
PASS



Beam #14 | (2) LVL 1.75x11.875

ON PLAN: A3 Floor 2nd A4 Roof 1st

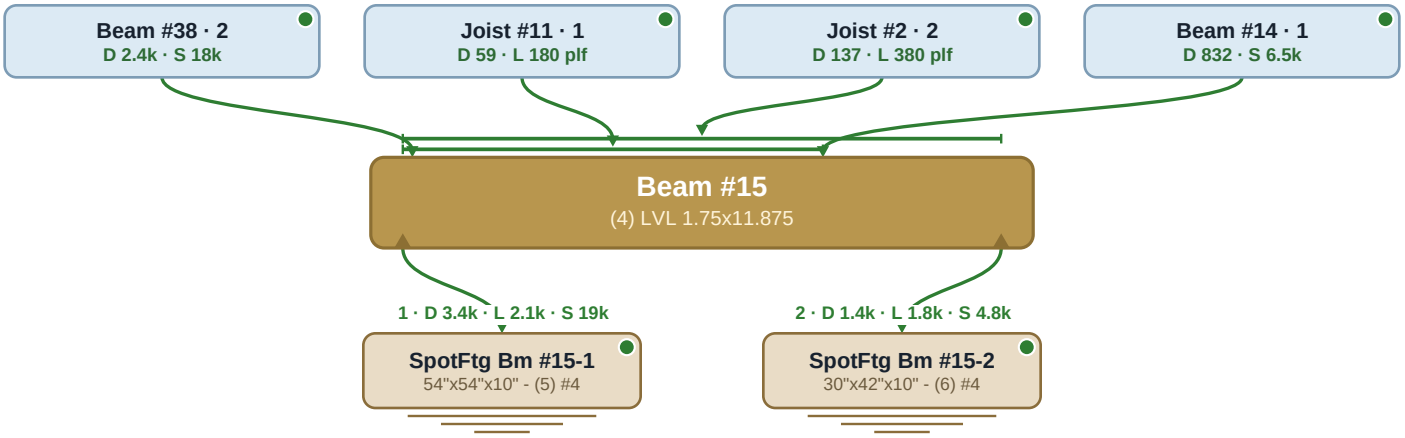
PASS



Beam #15 | (4) LVL 1.75x11.875

ON PLAN: A3 Floor 2nd A4 Roof 1st

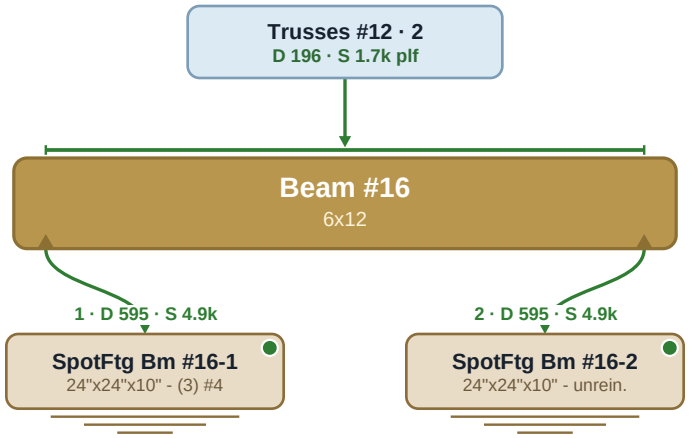
PASS



Beam #16 | 6x12

ON PLAN: A3 Floor 2nd A4 Roof 1st

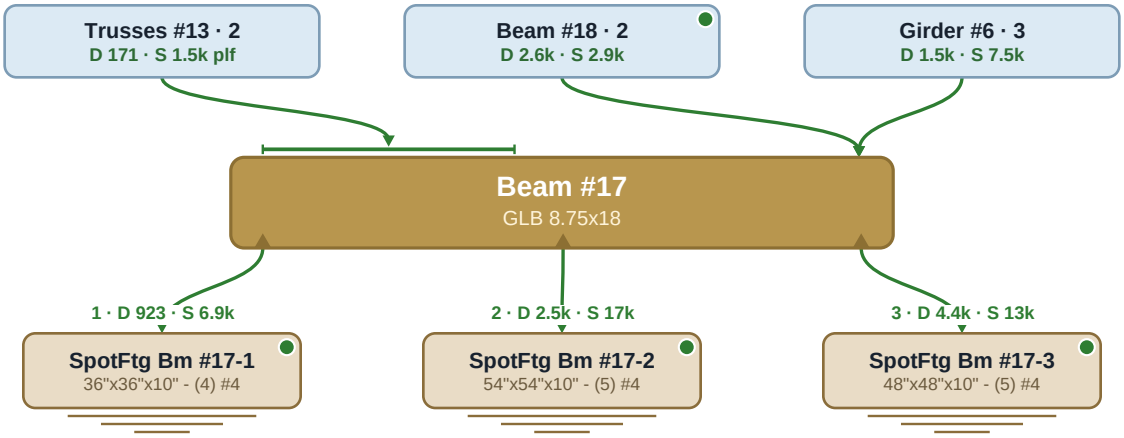
PASS



Beam #17 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

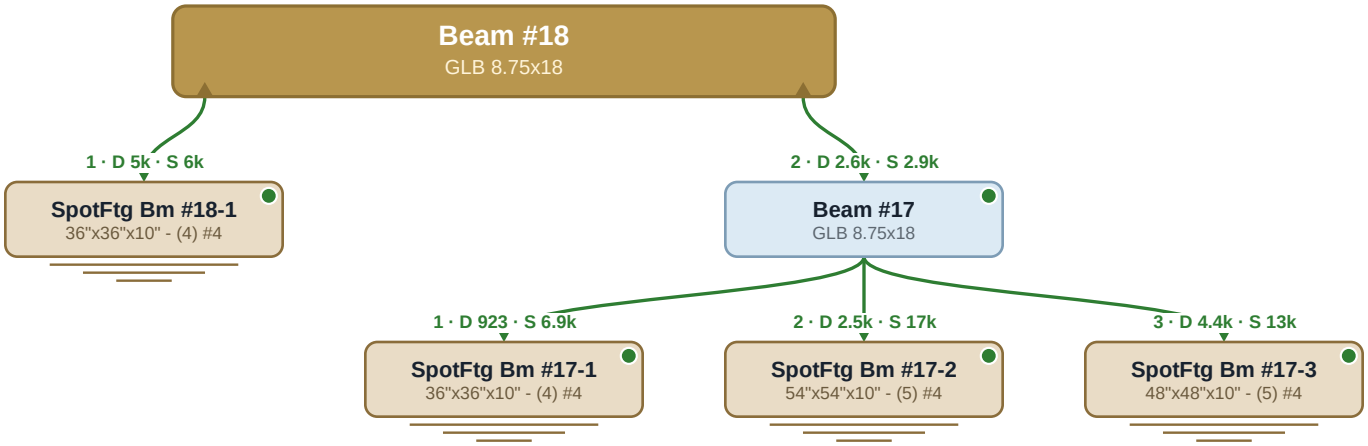
PASS



Beam #18 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

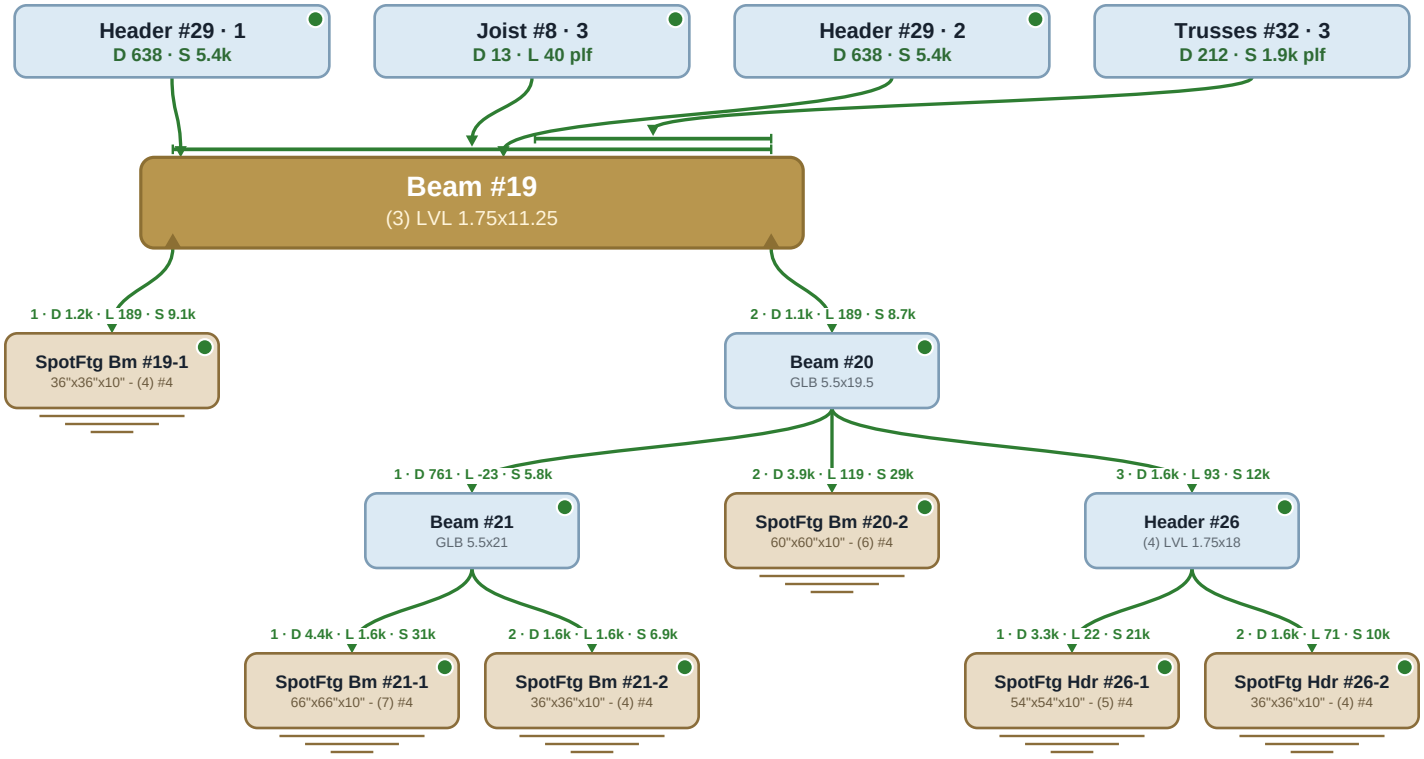
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Beam #19 | (3) LVL 1.75x11.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

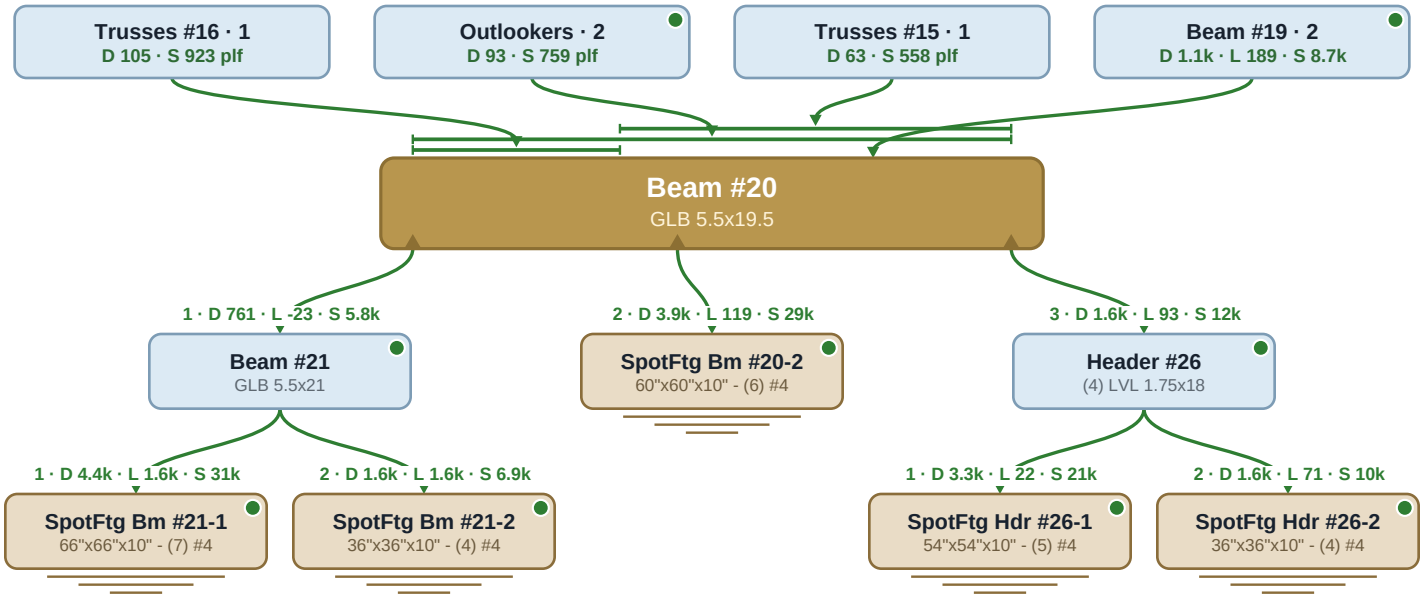
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Beam #20 | GLB 5.5x19.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

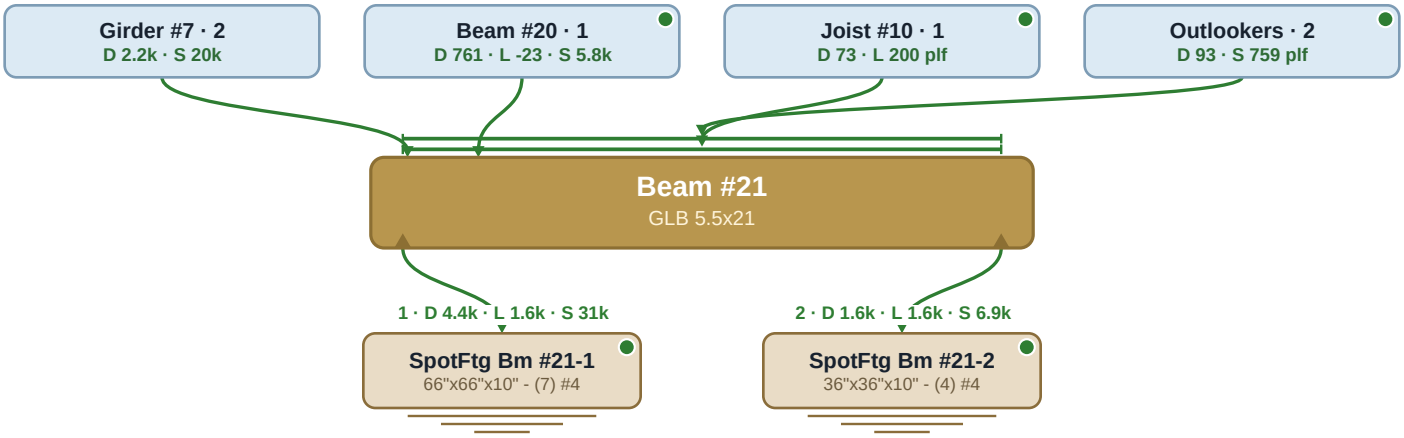
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Beam #21 | GLB 5.5x21

ON PLAN: A3 Floor 2nd A4 Roof 1st

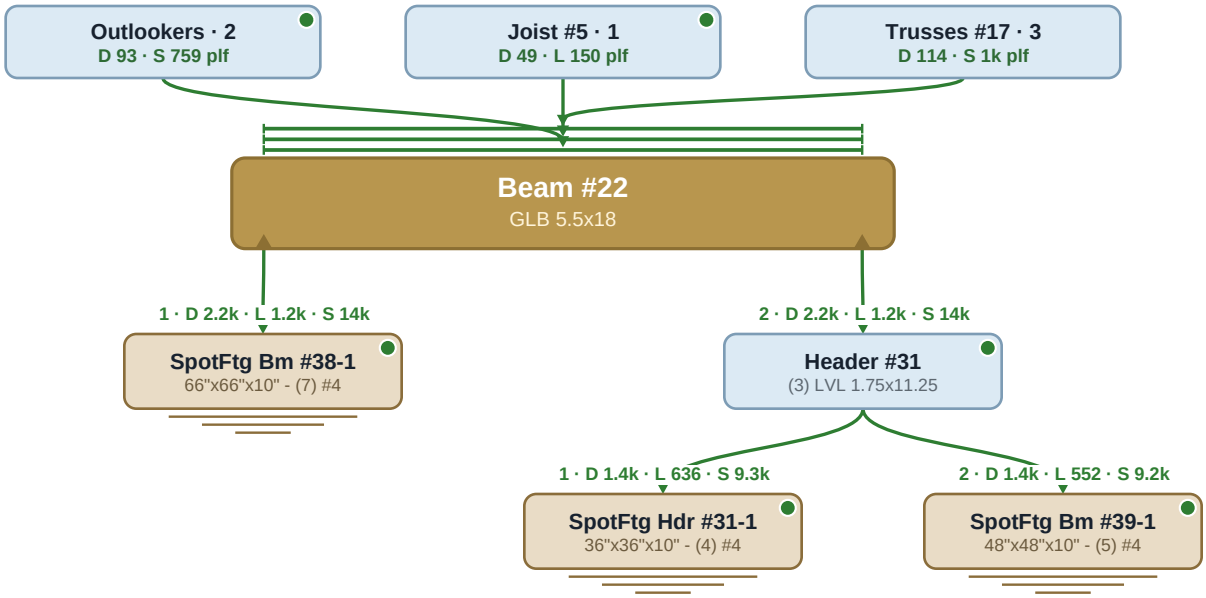
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Beam #22 | GLB 5.5x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

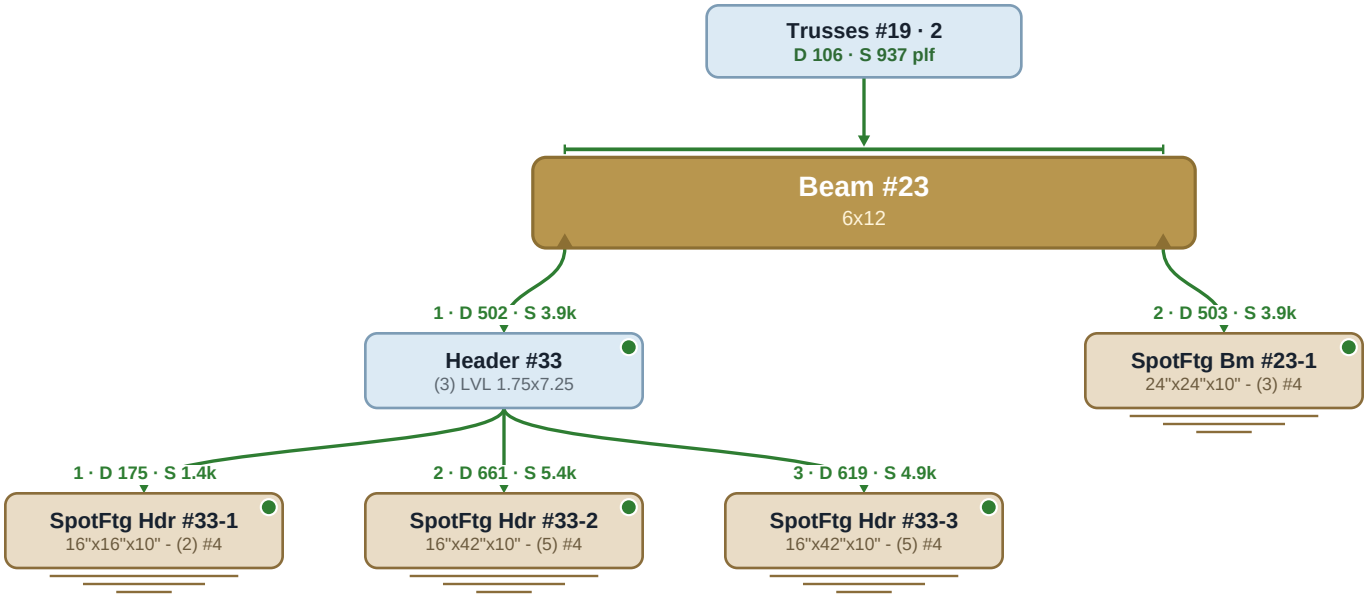
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Beam #23 | 6x12

ON PLAN: A3 Floor 2nd A4 Roof 1st

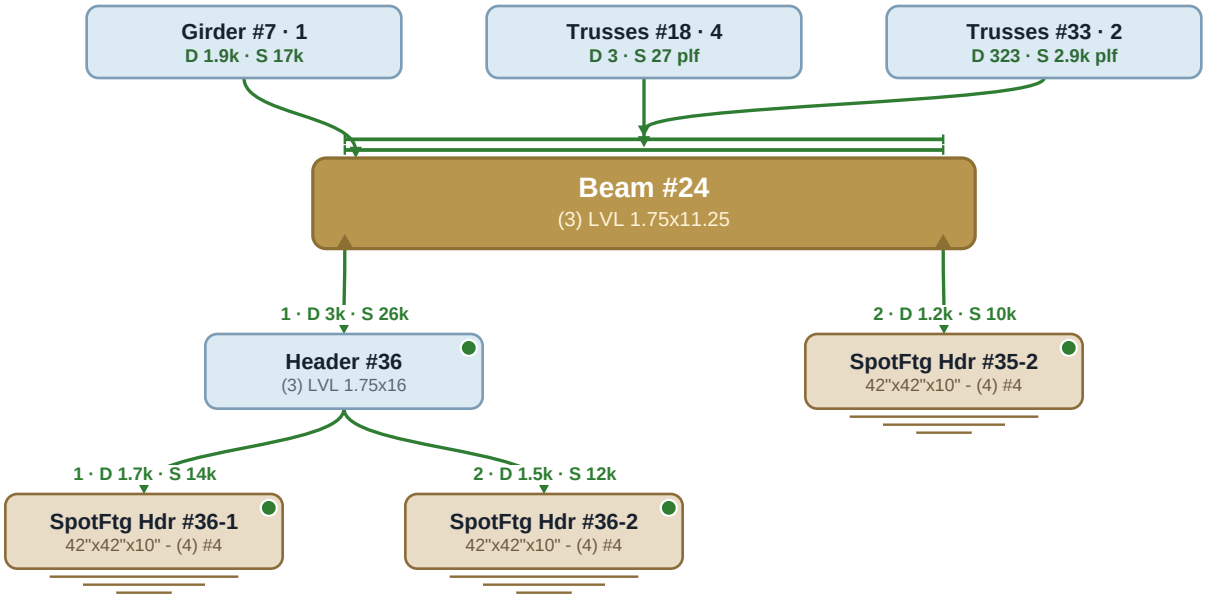
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Beam #24 | (3) LVL 1.75x11.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

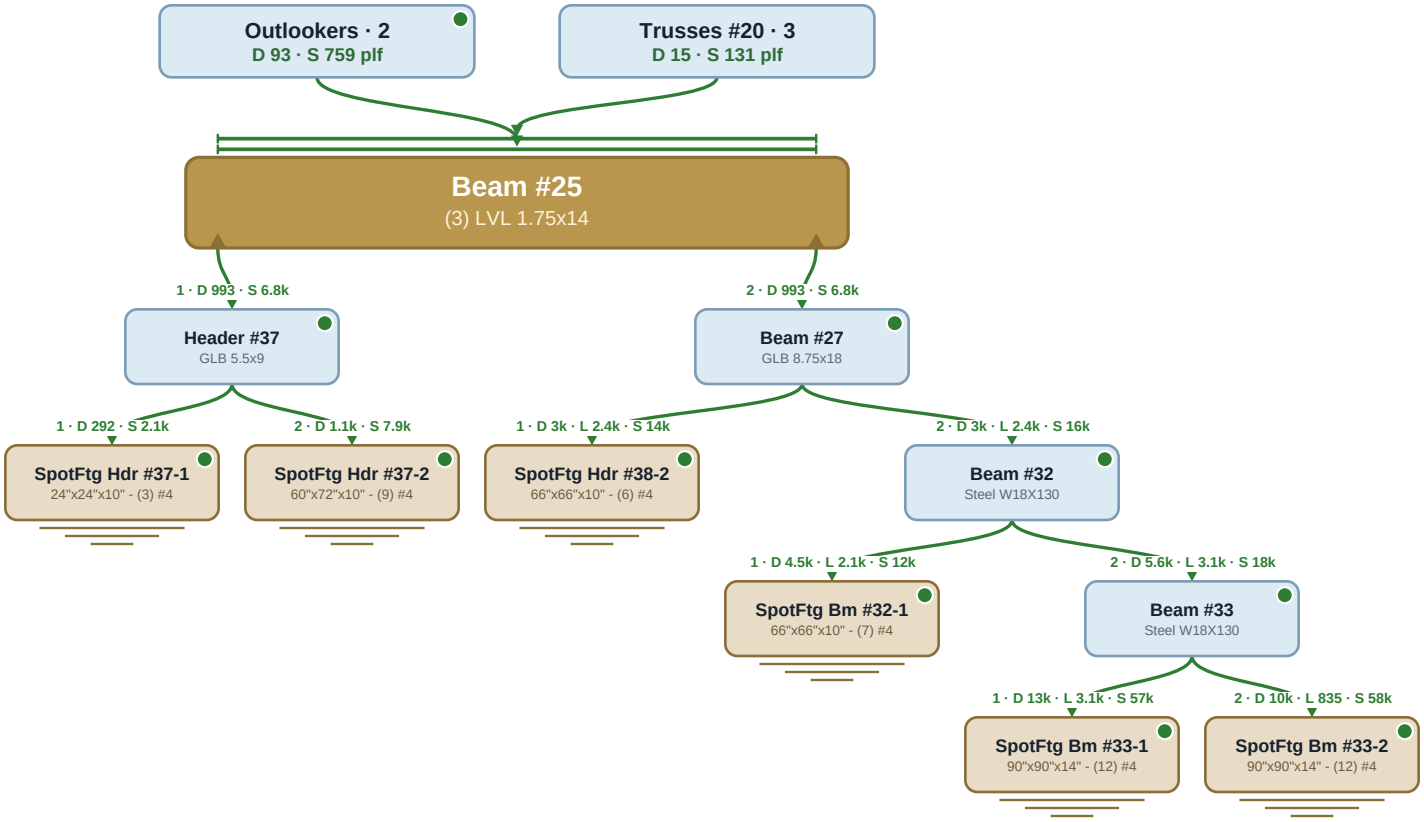
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Beam #25 | (3) LVL 1.75x14

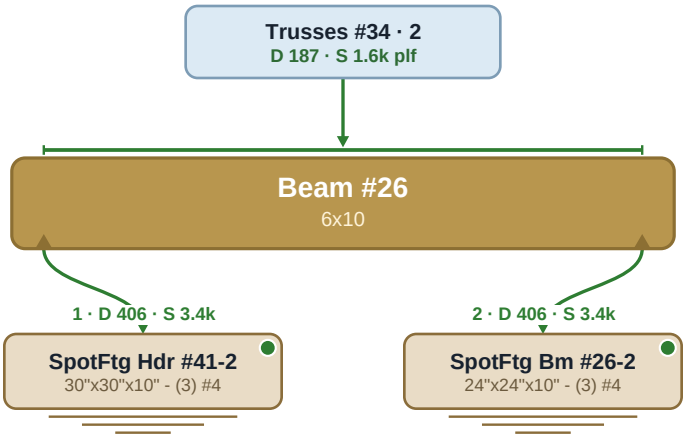
ON PLAN: A3 Floor 2nd A4 Roof 1st

PASS



Beam #26 | 6x10

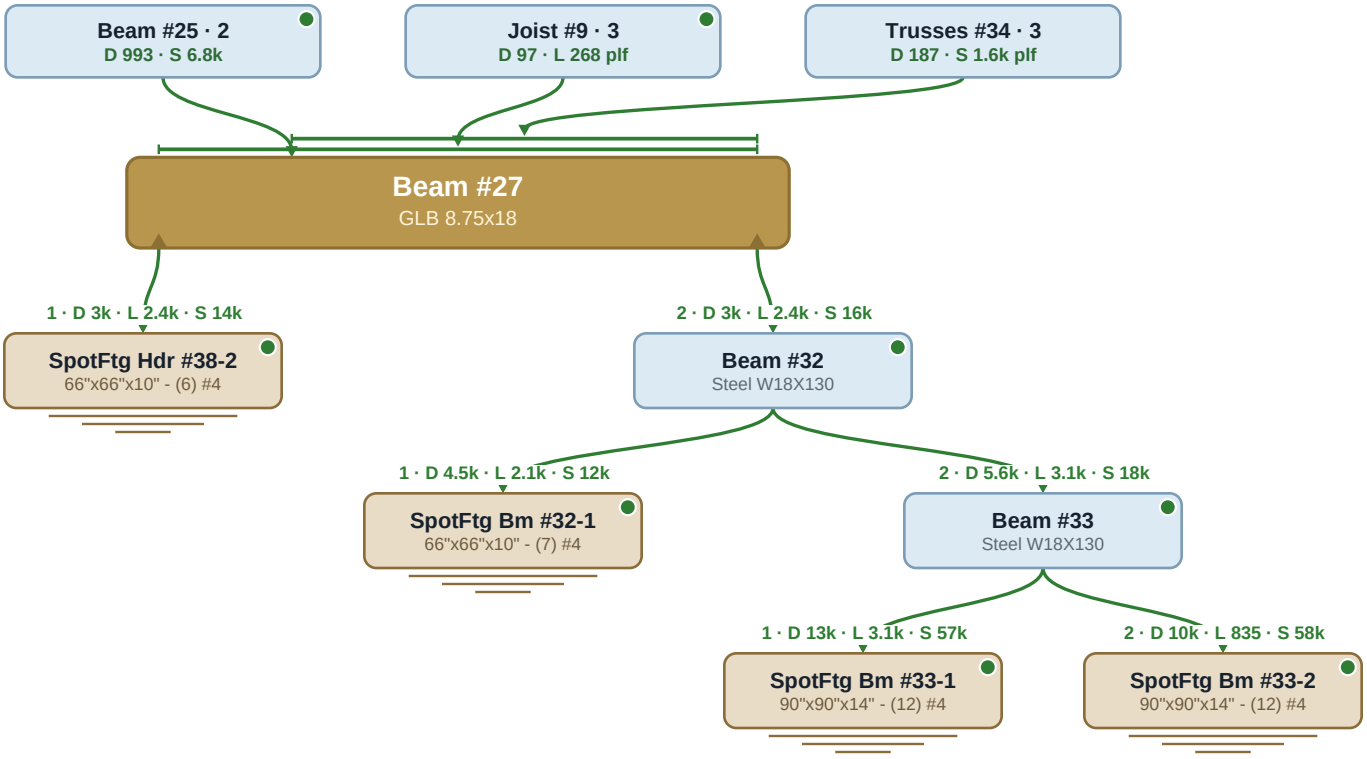
PASS



Beam #27 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

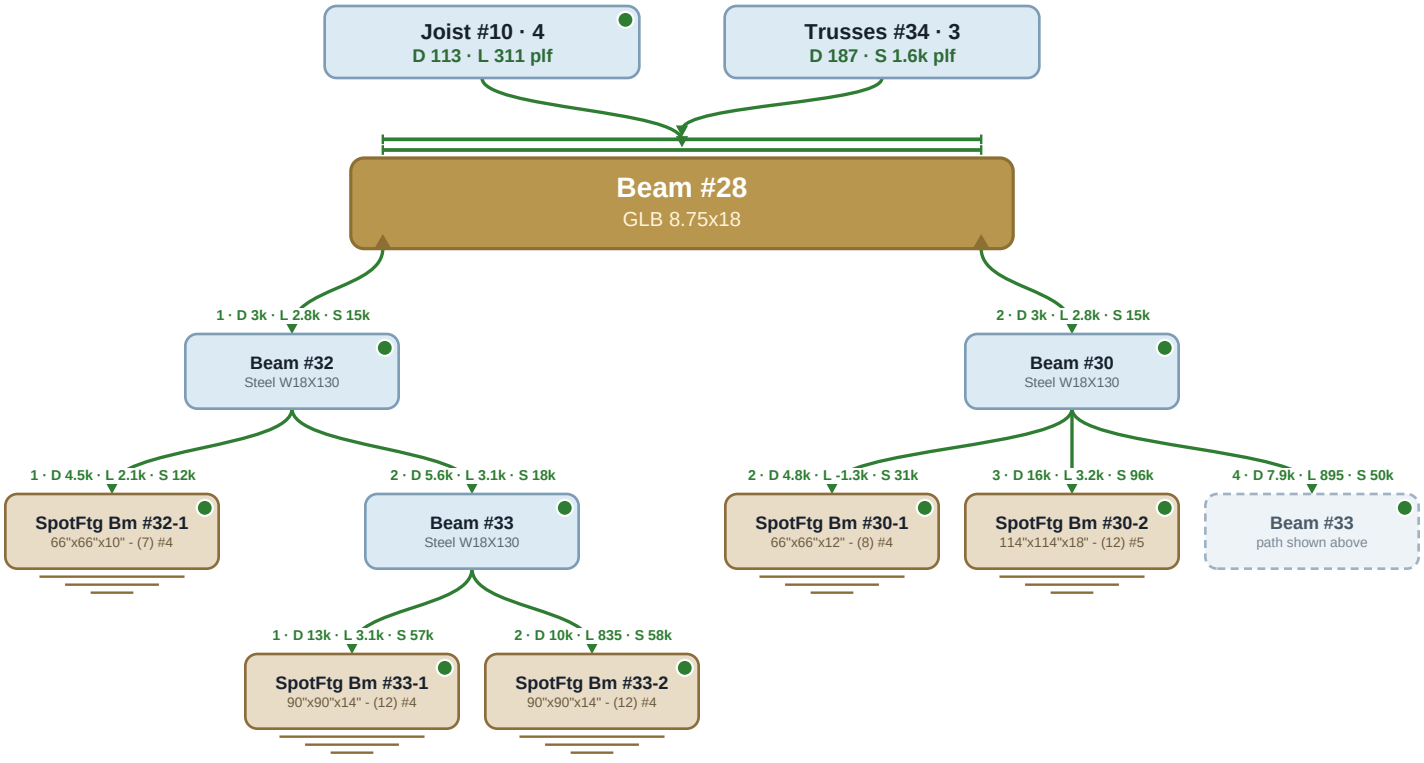
PASS



Beam #28 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

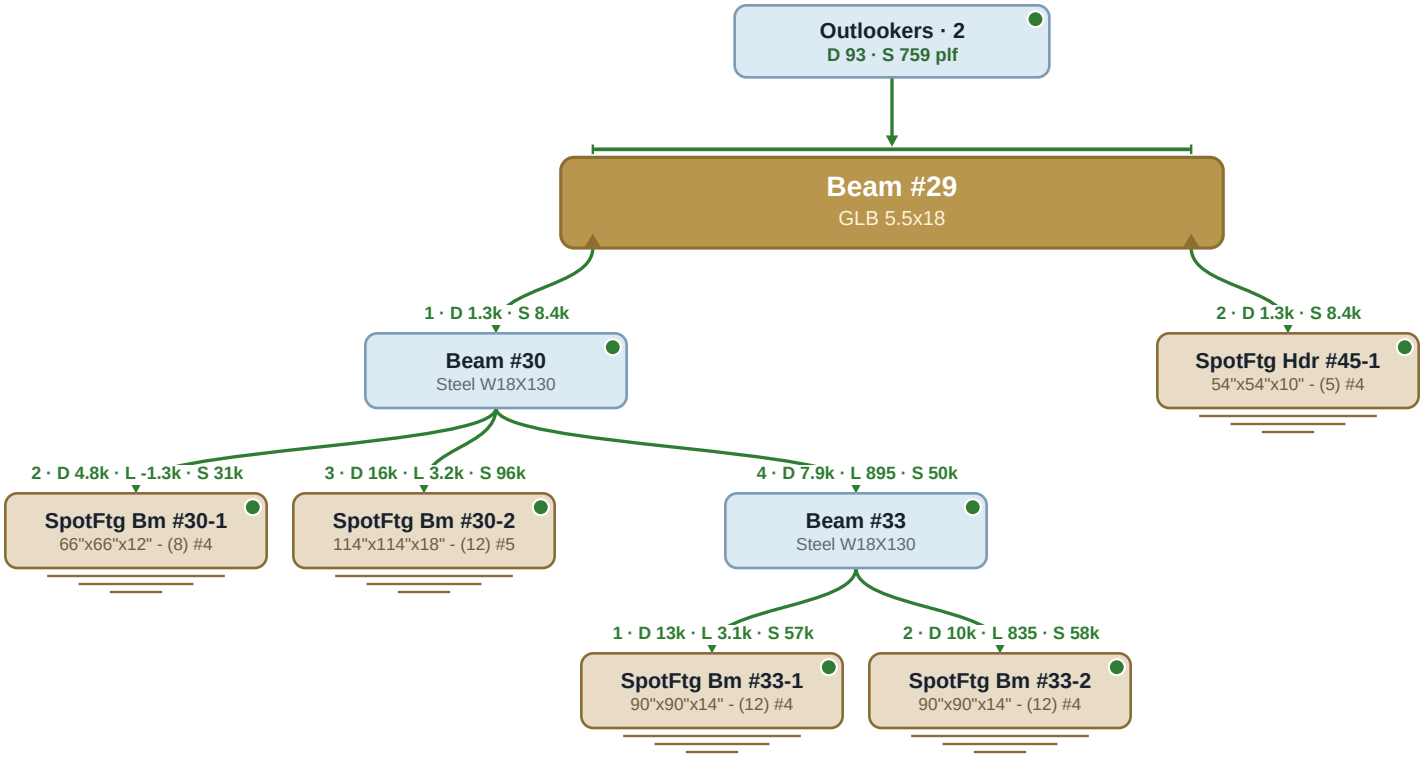
PASS



Beam #29 | GLB 5.5x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

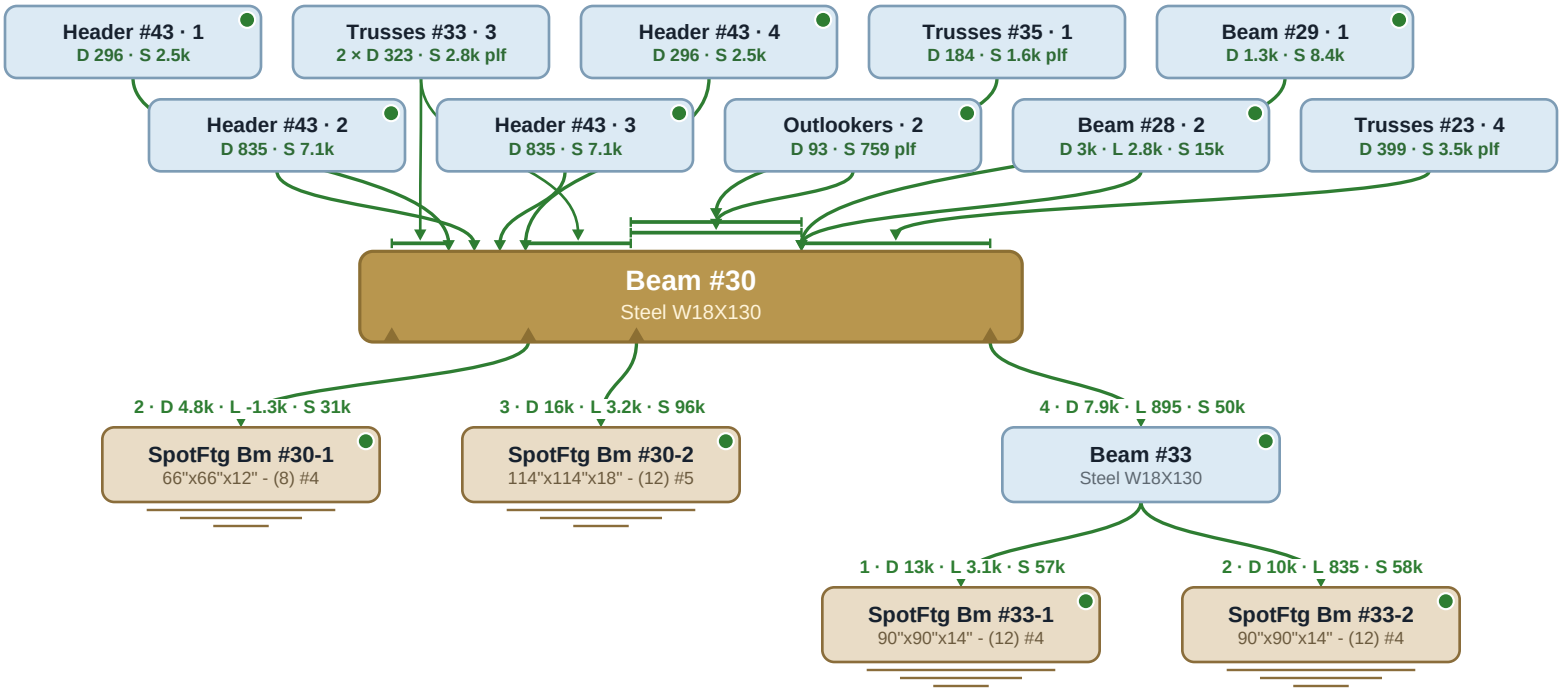
PASS



Beam #30 | Steel W18X130

ON PLAN: A3 Floor 2nd A4 Roof 1st

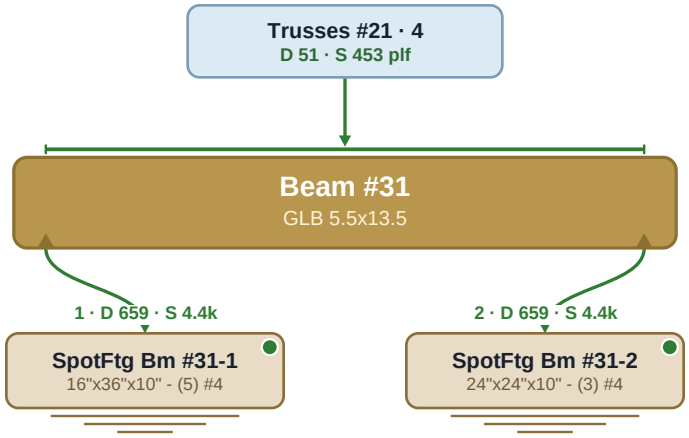
PASS



Beam #31 | GLB 5.5x13.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

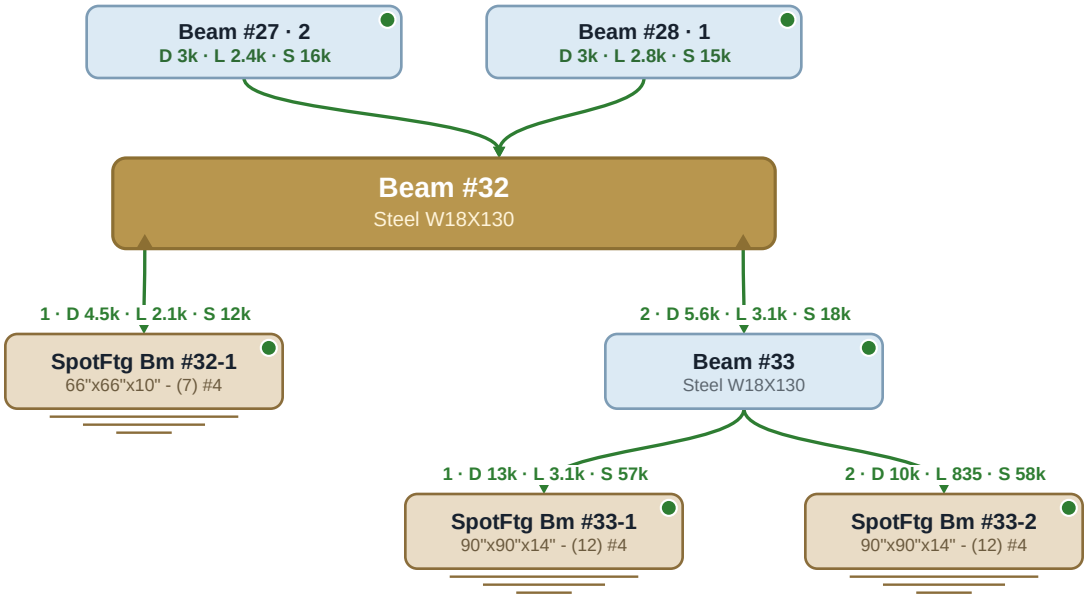
PASS



Beam #32 | Steel W18X130

ON PLAN: A3 Floor 2nd A4 Roof 1st

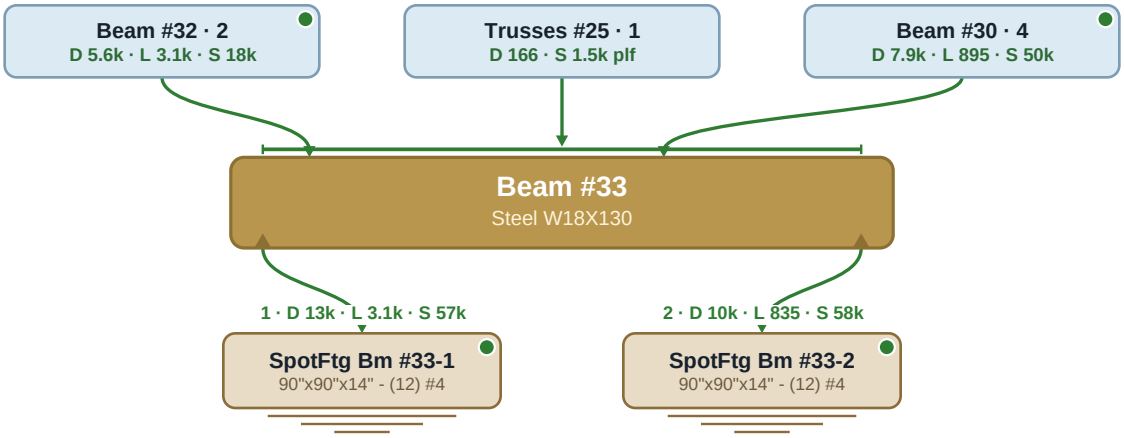
PASS



Beam #33 | Steel W18X130

ON PLAN: A3 Floor 2nd A4 Roof 1st

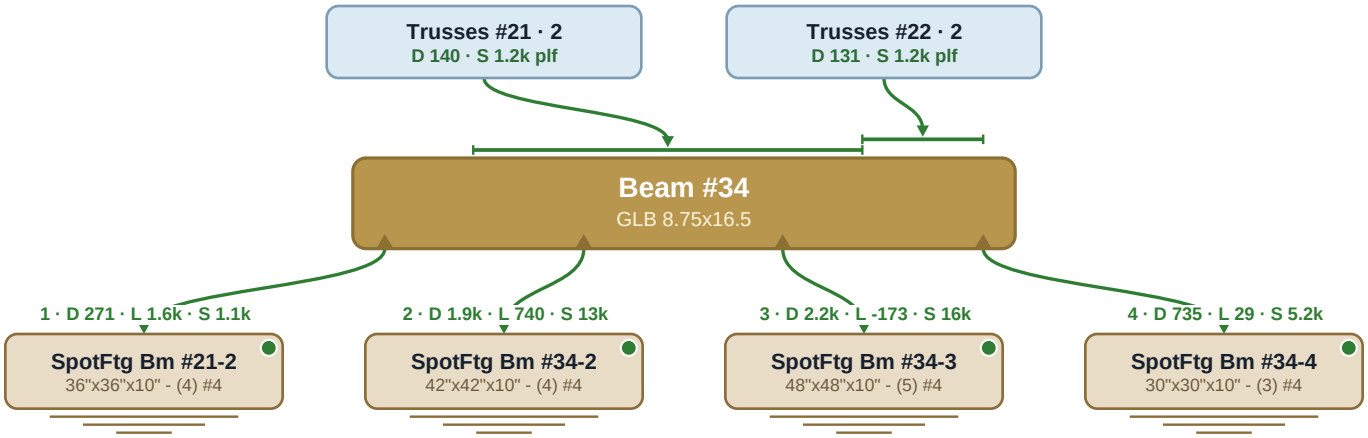
PASS



Beam #34 | GLB 8.75x16.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

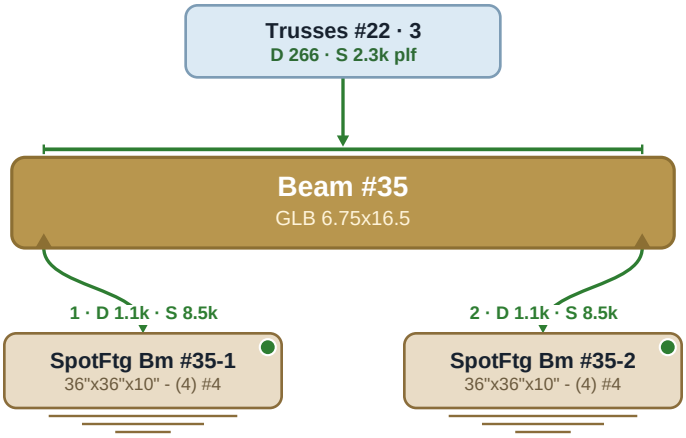
PASS



Beam #35 | GLB 6.75x16.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

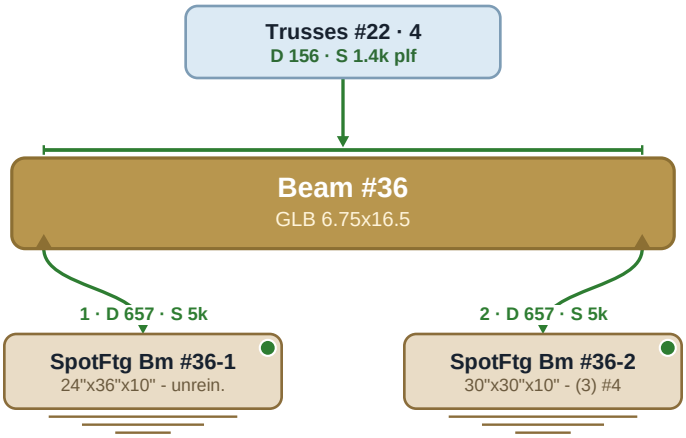
PASS



Beam #36 | GLB 6.75x16.5

ON PLAN: A3 Floor 2nd A4 Roof 1st

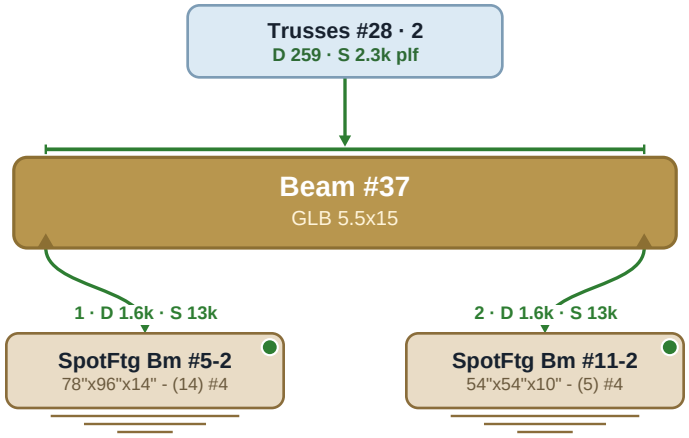
PASS



Beam #37 | GLB 5.5x15

ON PLAN: A3 Floor 2nd A4 Roof 1st

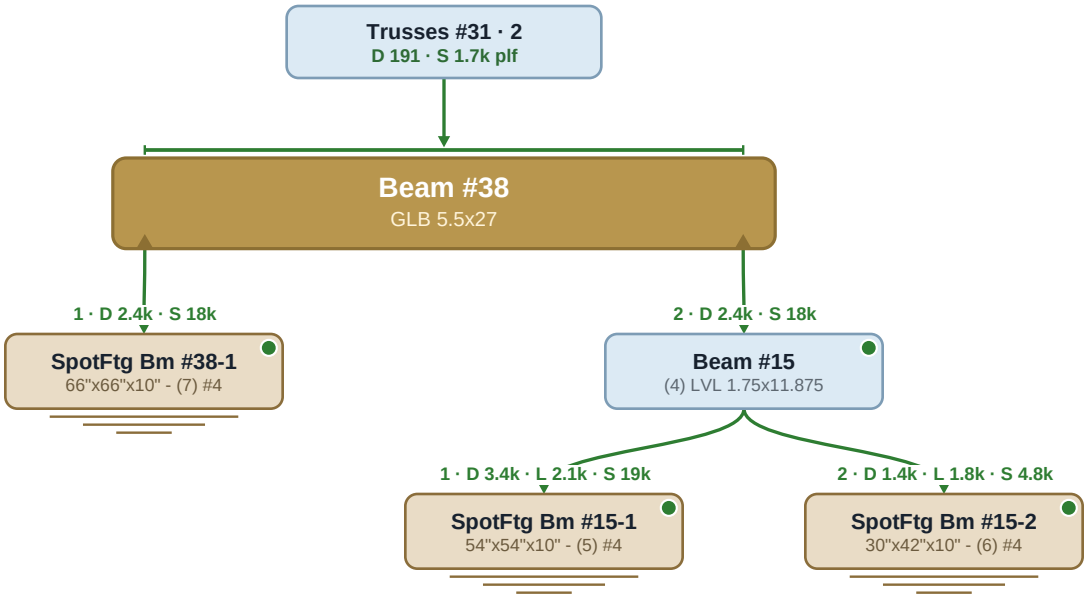
PASS



Beam #38 | GLB 5.5x27

ON PLAN: A5 Roof 2nd

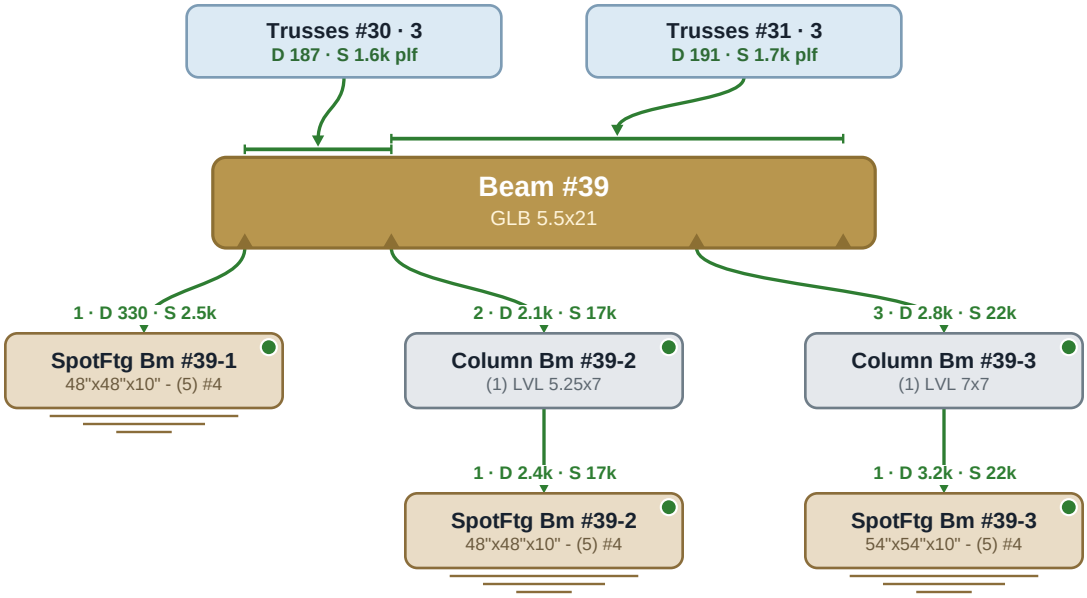
PASS



Beam #39 | GLB 5.5x21

ON PLAN: A5 Roof 2nd

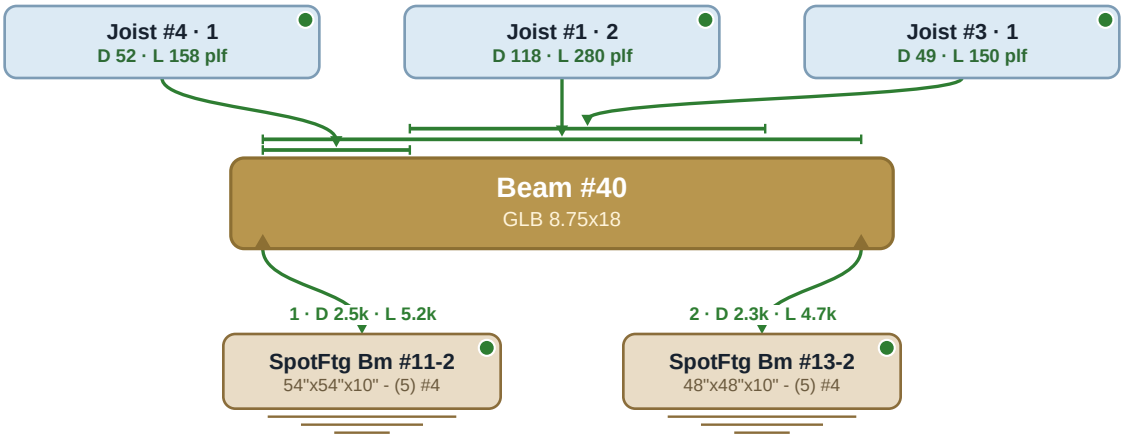
PASS



Beam #40 | GLB 8.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

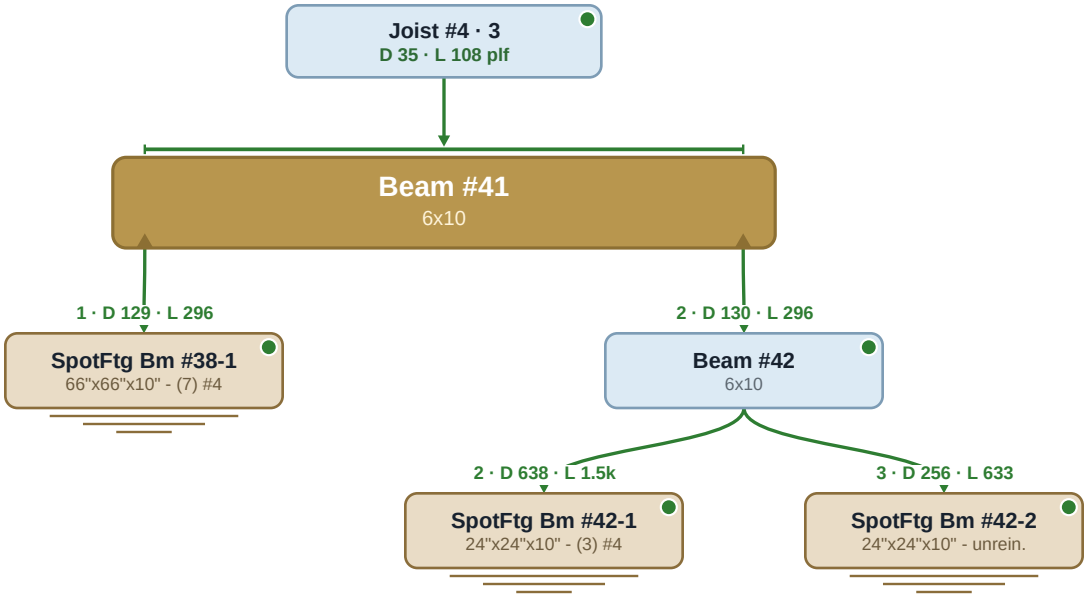
PASS



Beam #41 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

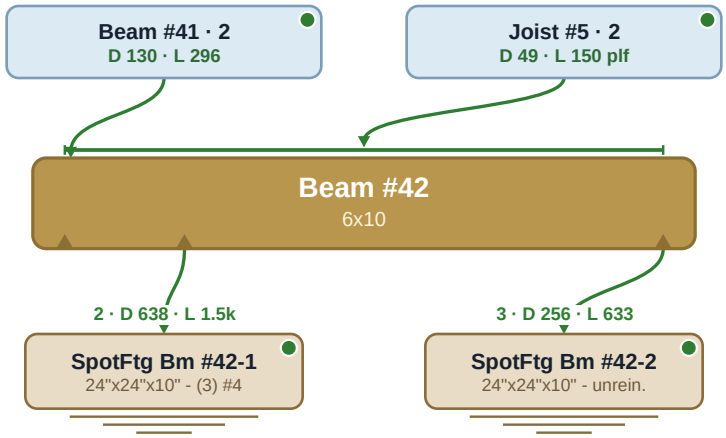
PASS



Beam #42 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

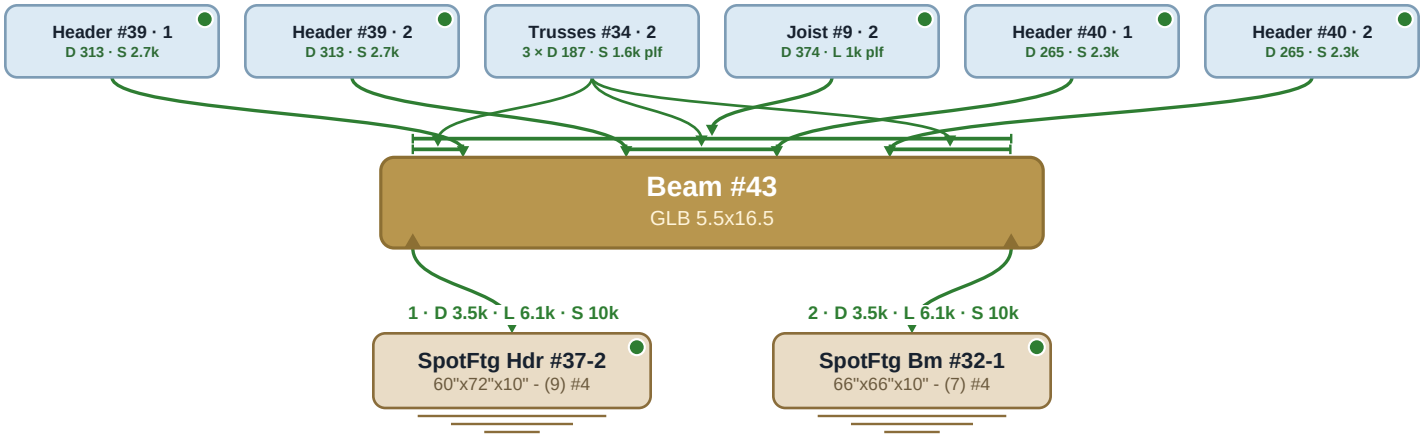
PASS



Beam #43 | GLB 5.5x16.5

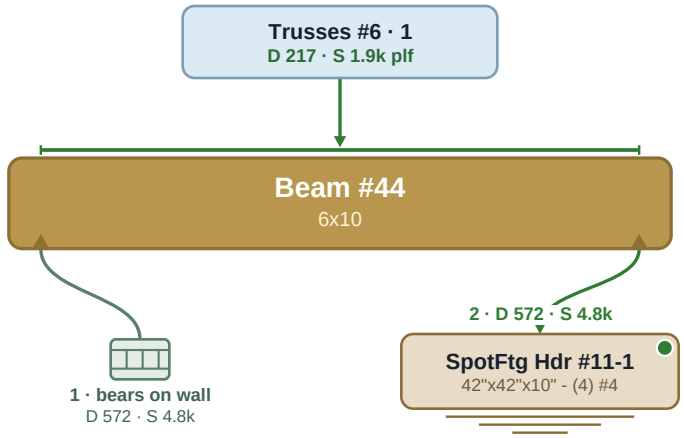
ON PLAN: A3 Floor 2nd A4 Roof 1st

PASS



Beam #44 | 6x10

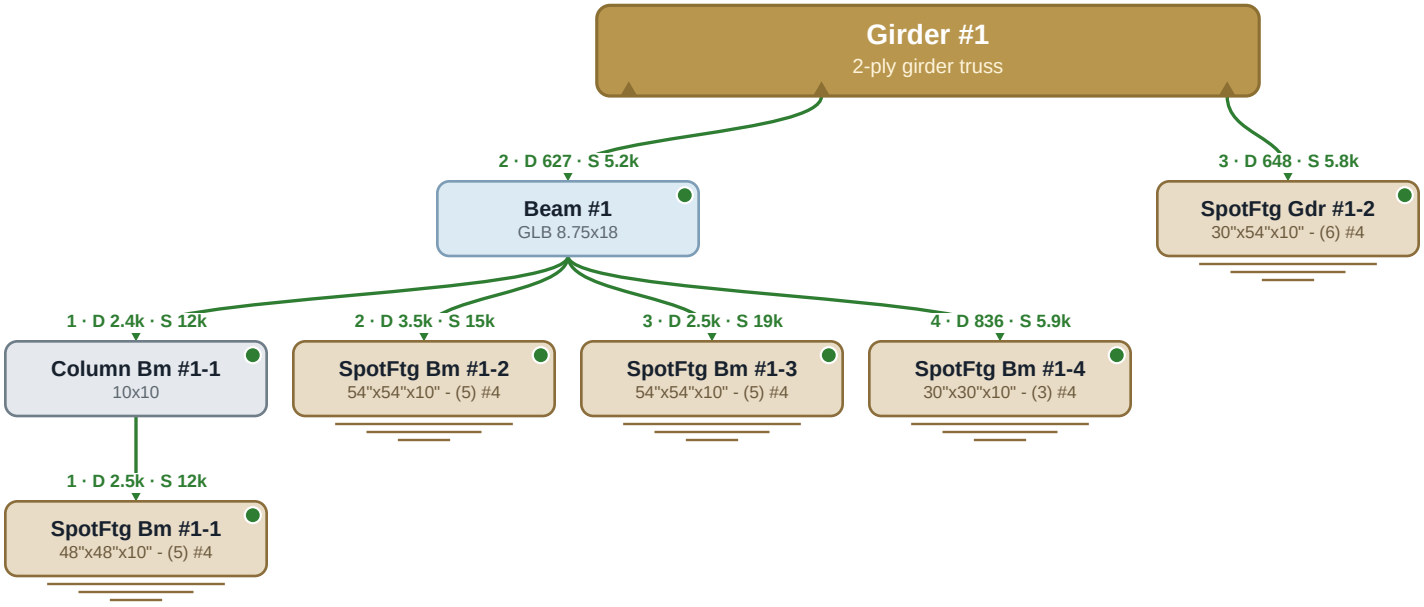
PASS



Girder #1 | 2-ply girder truss

ON PLAN: A3 Floor 2nd A4 Roof 1st

PASS



Girder #2 | 2-ply girder truss

ON PLAN: A3 Floor 2nd A4 Roof 1st

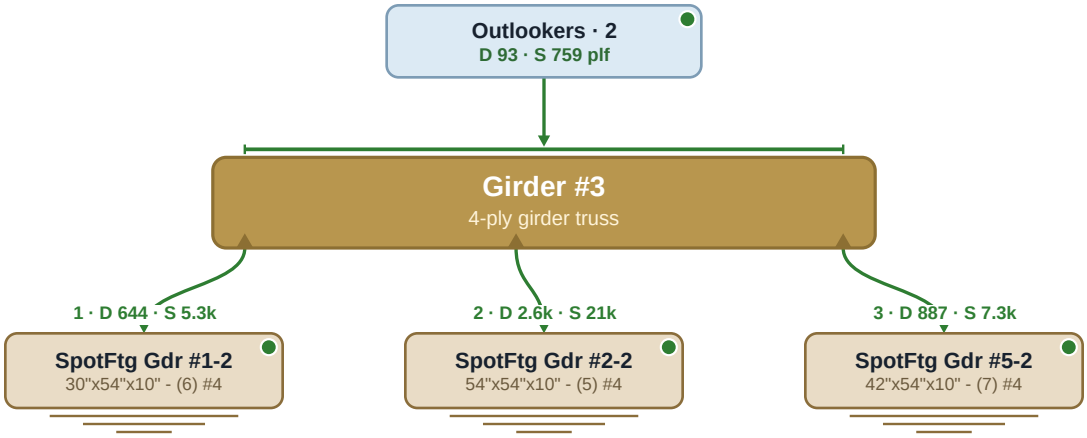
PASS



Girder #3 | 4-ply girder truss

ON PLAN: A3 Floor 2nd A4 Roof 1st

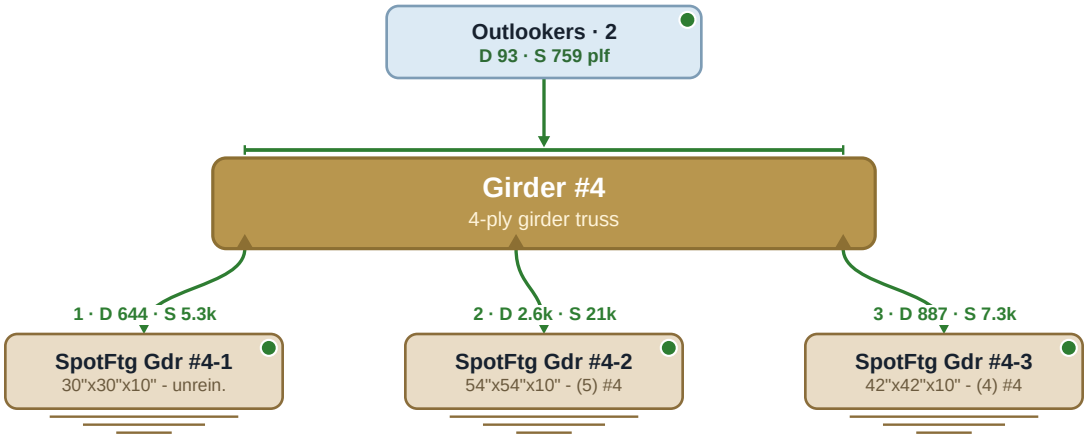
PASS



Girder #4 | 4-ply girder truss

ON PLAN: A3 Floor 2nd A4 Roof 1st

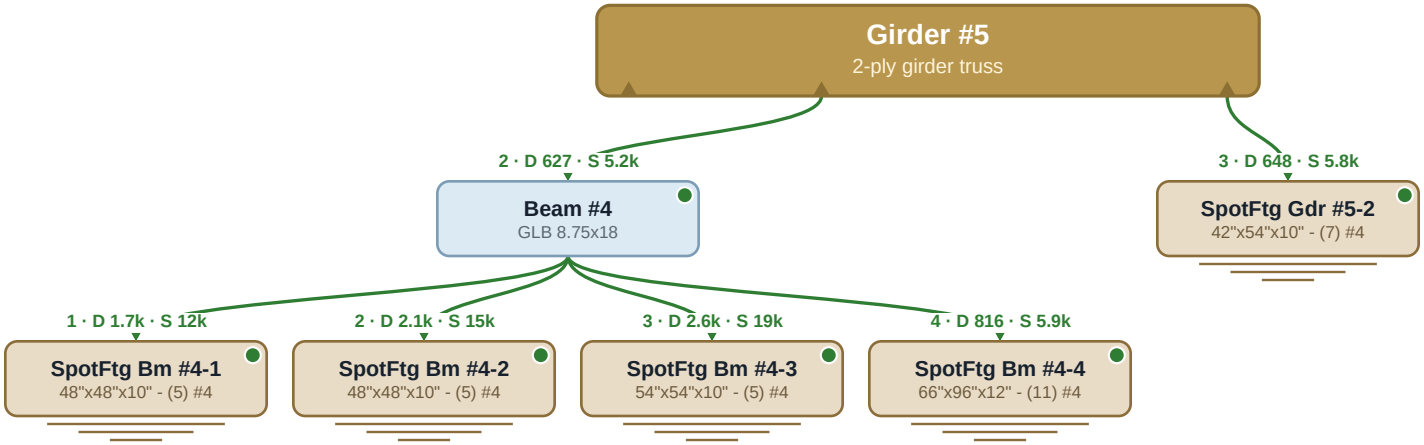
PASS



Girder #5 | 2-ply girder truss

ON PLAN: A3 Floor 2nd

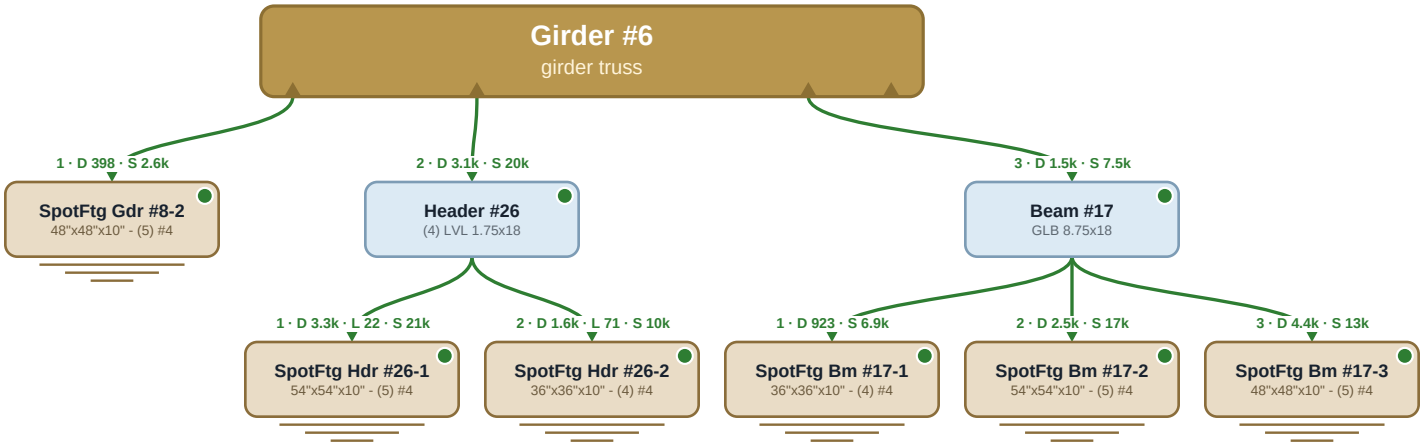
PASS



Girder #6 | girder truss

ON PLAN: A3 Floor 2nd A4 Roof 1st

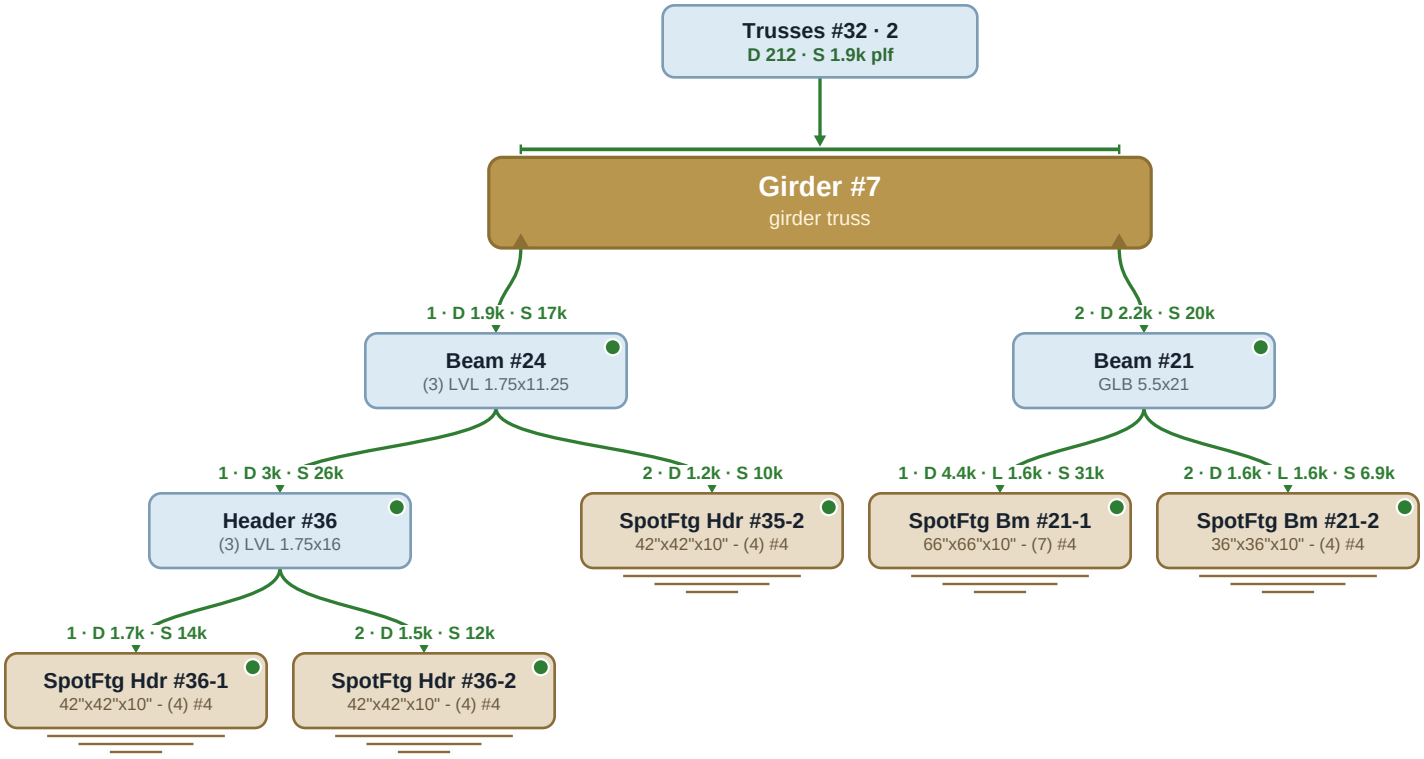
PASS



Girder #7 | girder truss

ON PLAN: A5 Roof 2nd

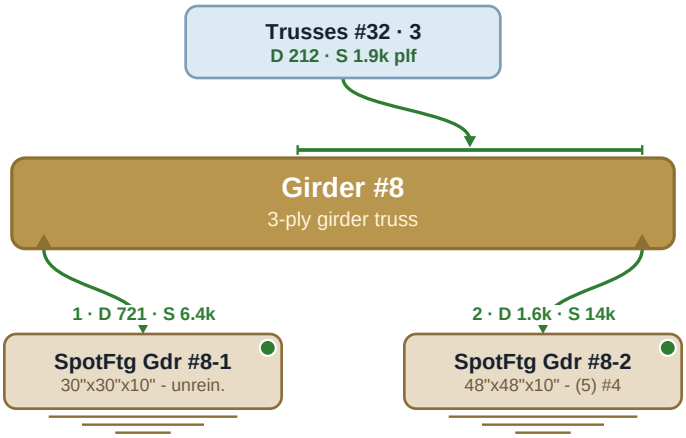
PASS



Girder #8 | 3-ply girder truss

ON PLAN: A3 Floor 2nd A4 Roof 1st

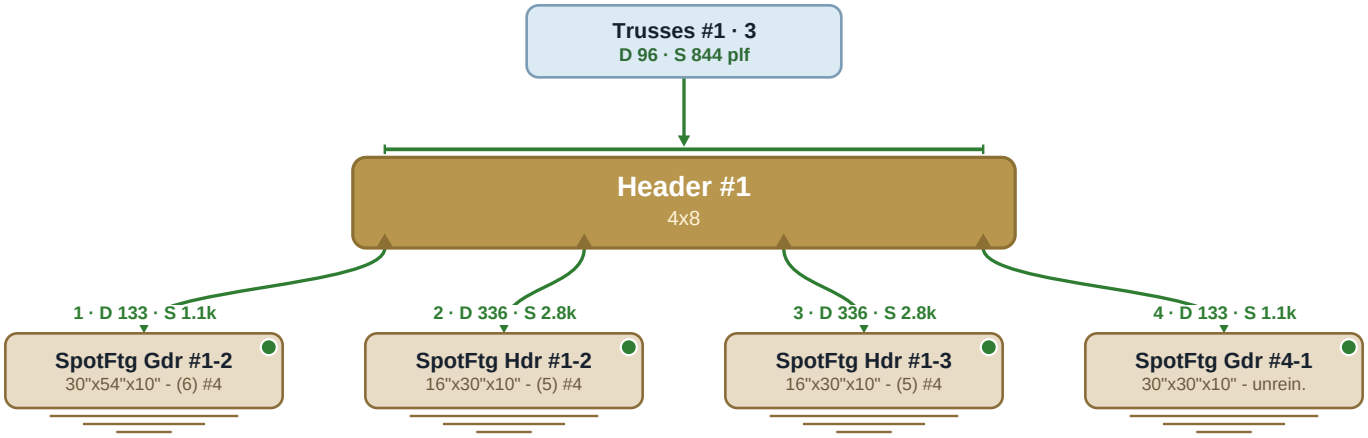
PASS



Header #1 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

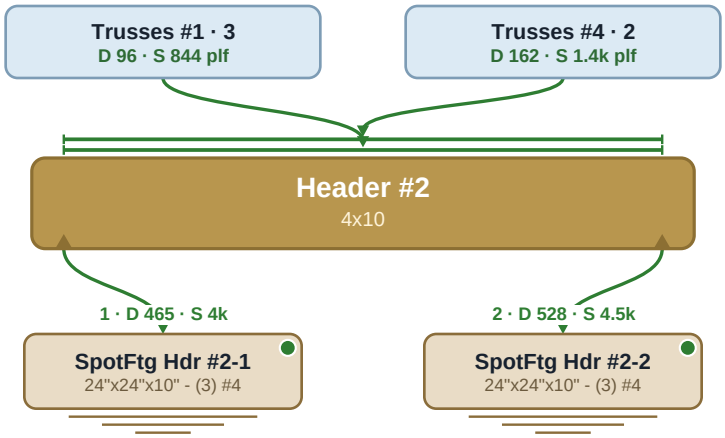
PASS



Header #2 | 4x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

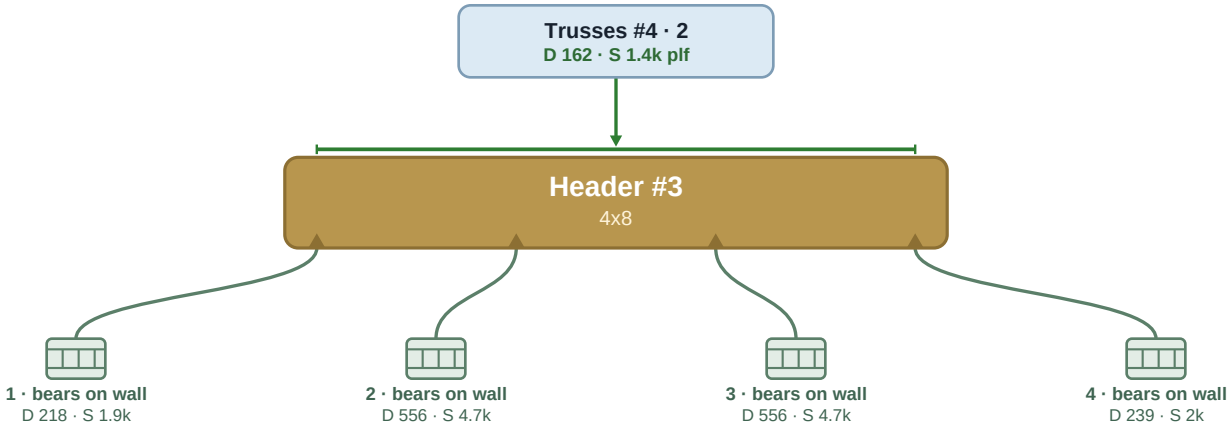
PASS



Header #3 | 4x8

ON PLAN: A5 Roof 2nd

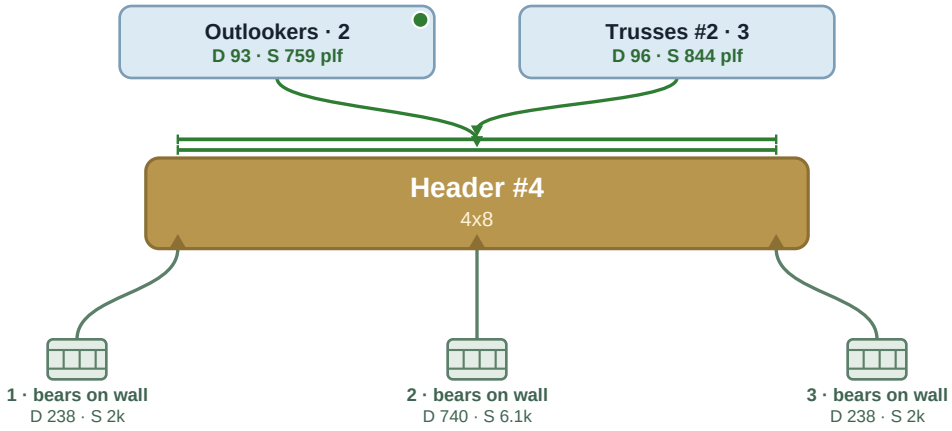
PASS



Header #4 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

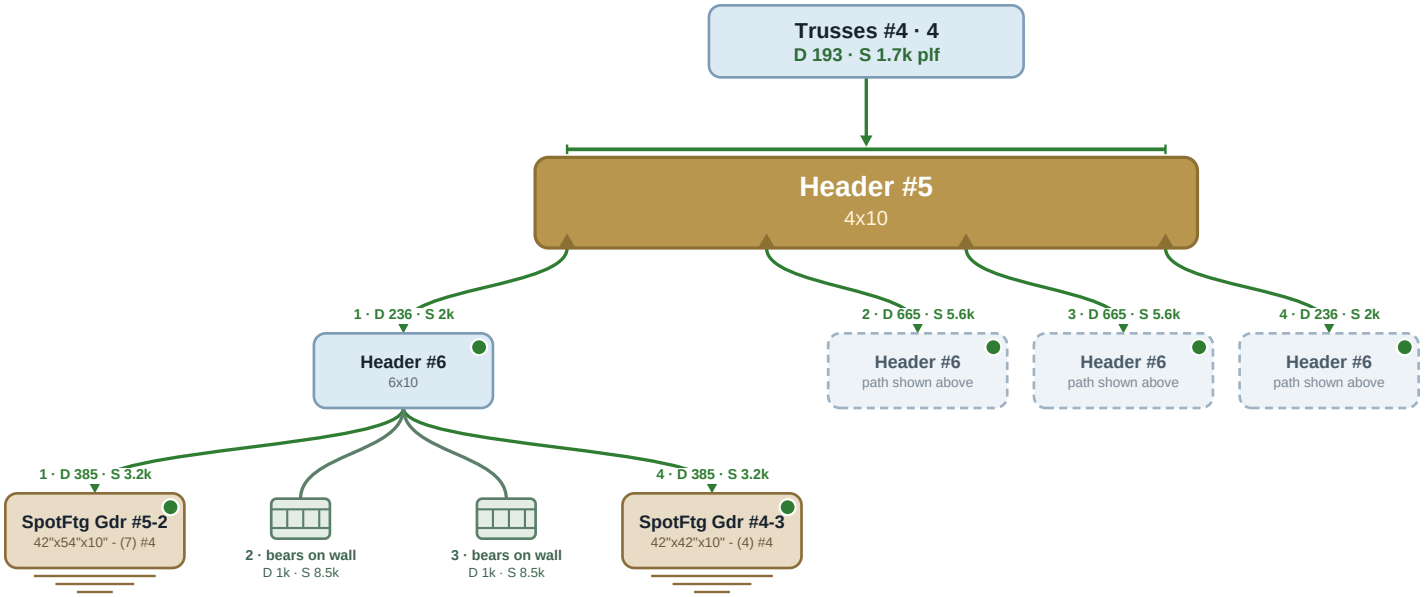
PASS



Header #5 | 4x10

ON PLAN: A5 Roof 2nd

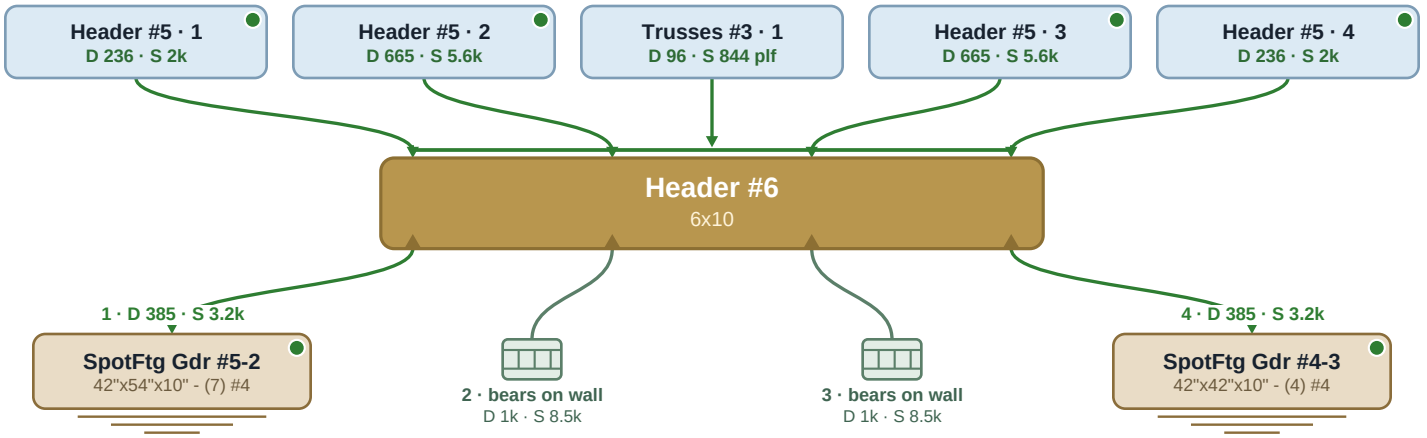
PASS



Header #6 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

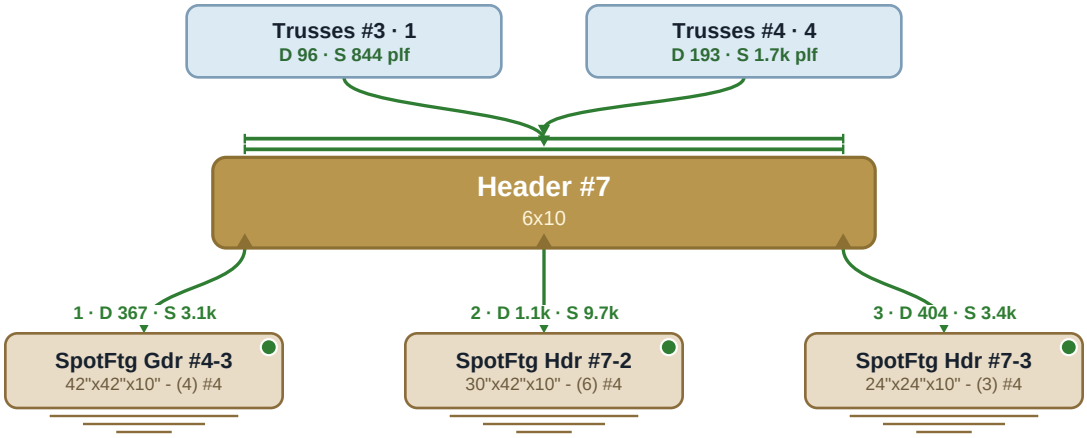
PASS



Header #7 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

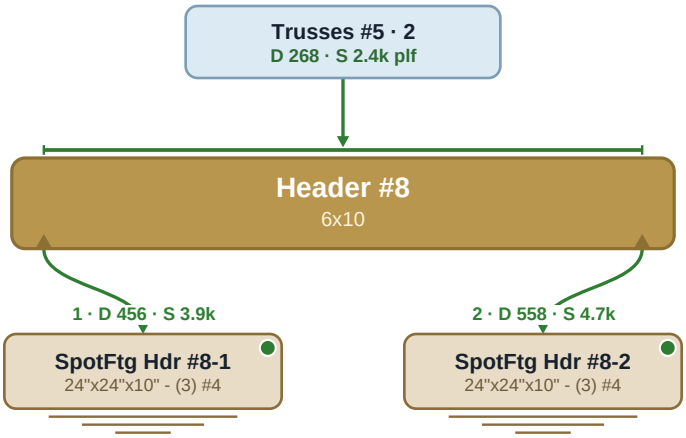
PASS



Header #8 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

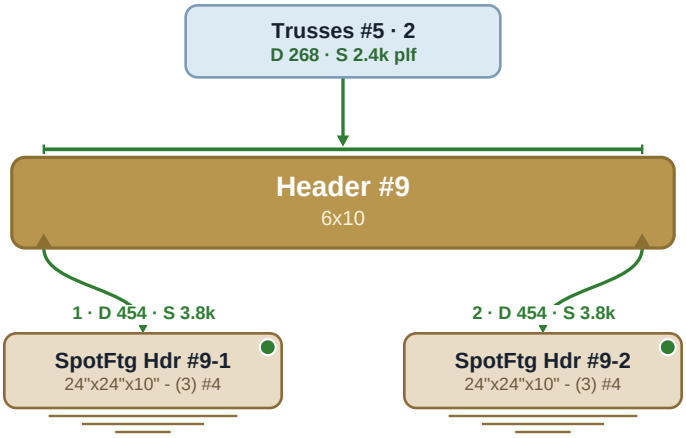
PASS



Header #9 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

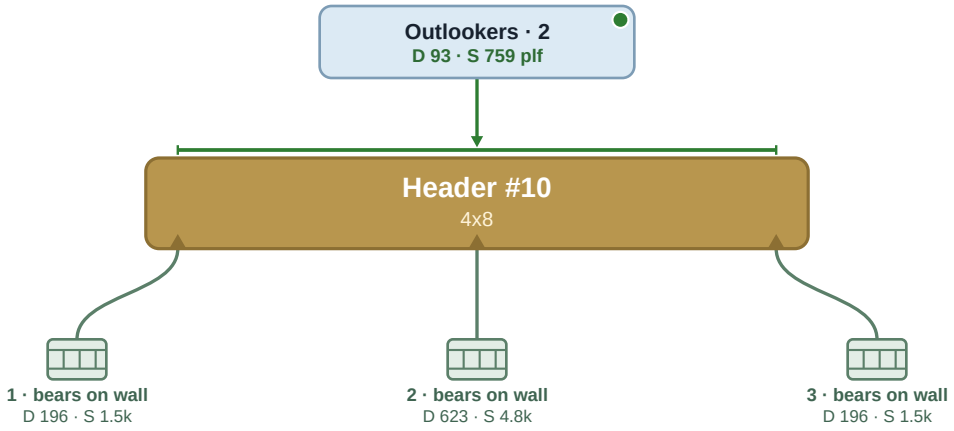
PASS



Header #10 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

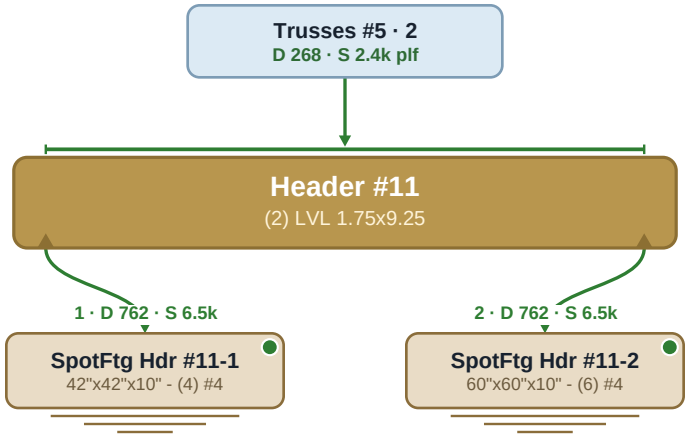
PASS



Header #11 | (2) LVL 1.75x9.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

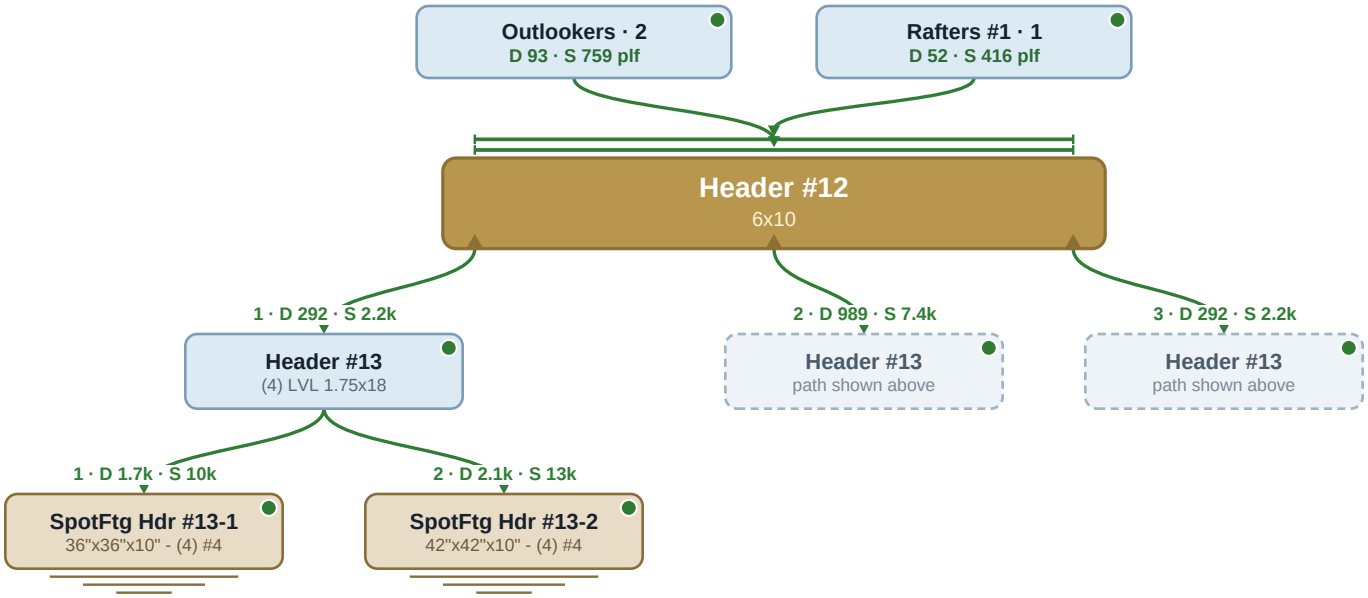
PASS



Header #12 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

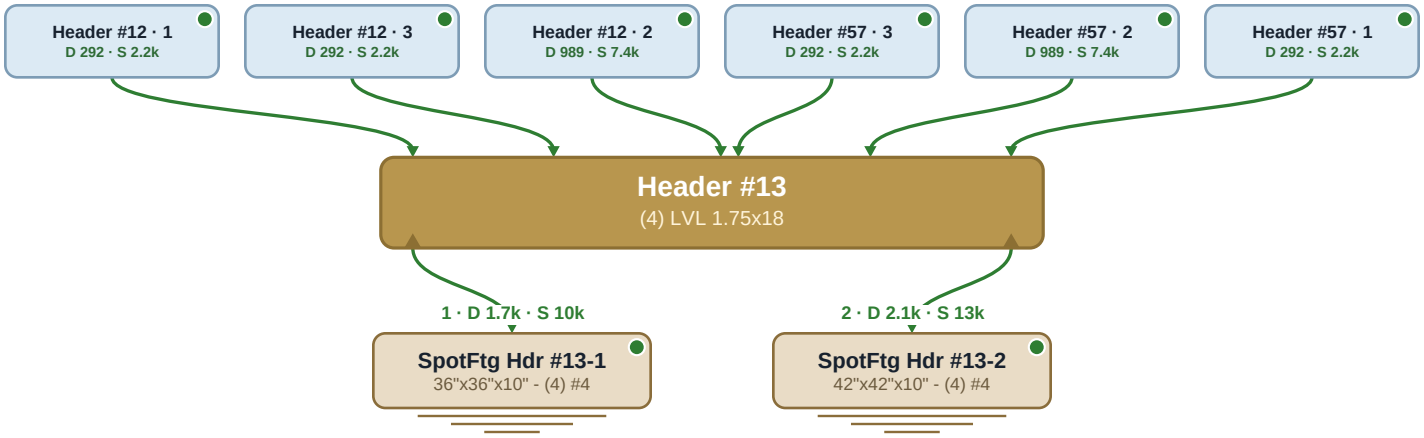
PASS



Header #13 | (4) LVL 1.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

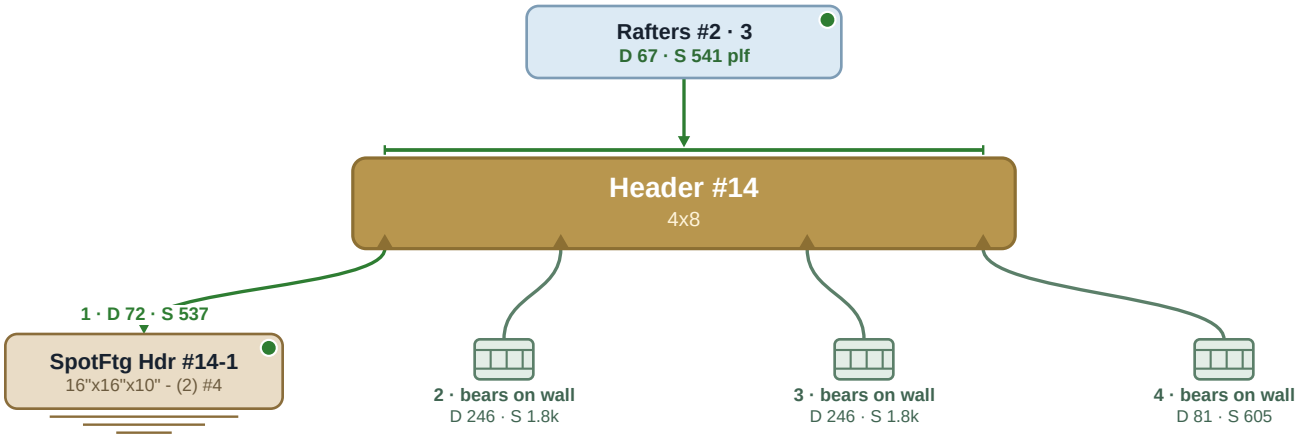
PASS



Header #14 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

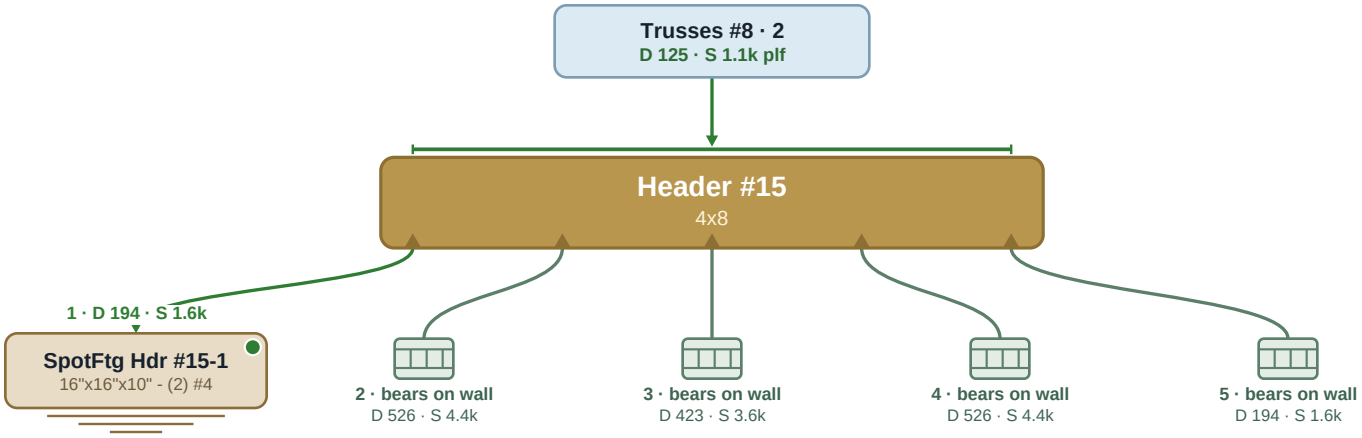
PASS



Header #15 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

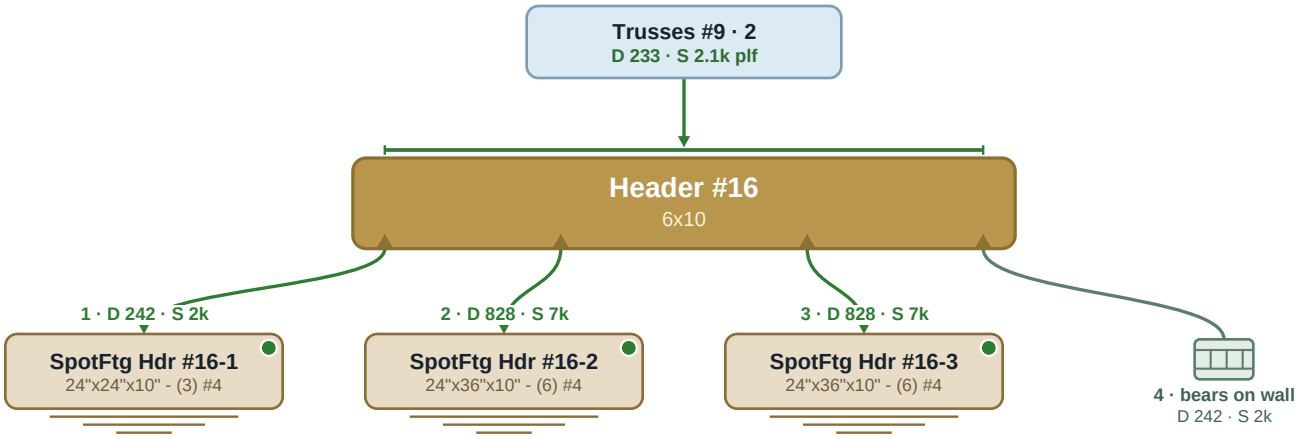
PASS



Header #16 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

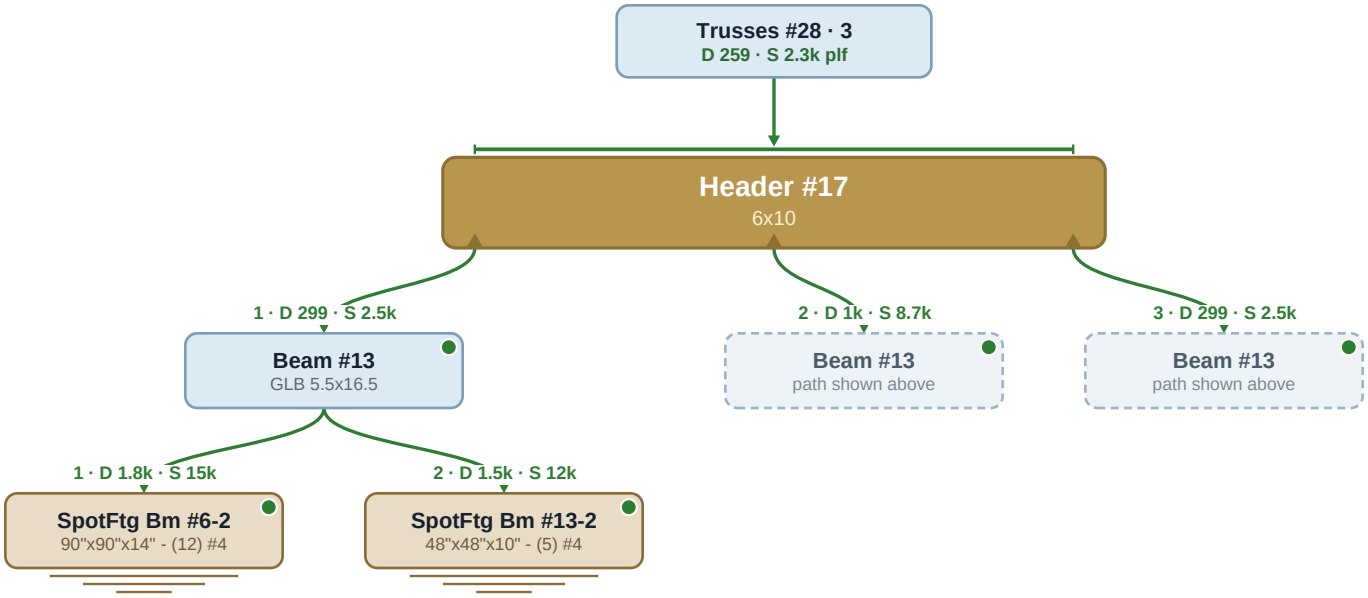
PASS



Header #17 | 6x10

ON PLAN: A5 Roof 2nd

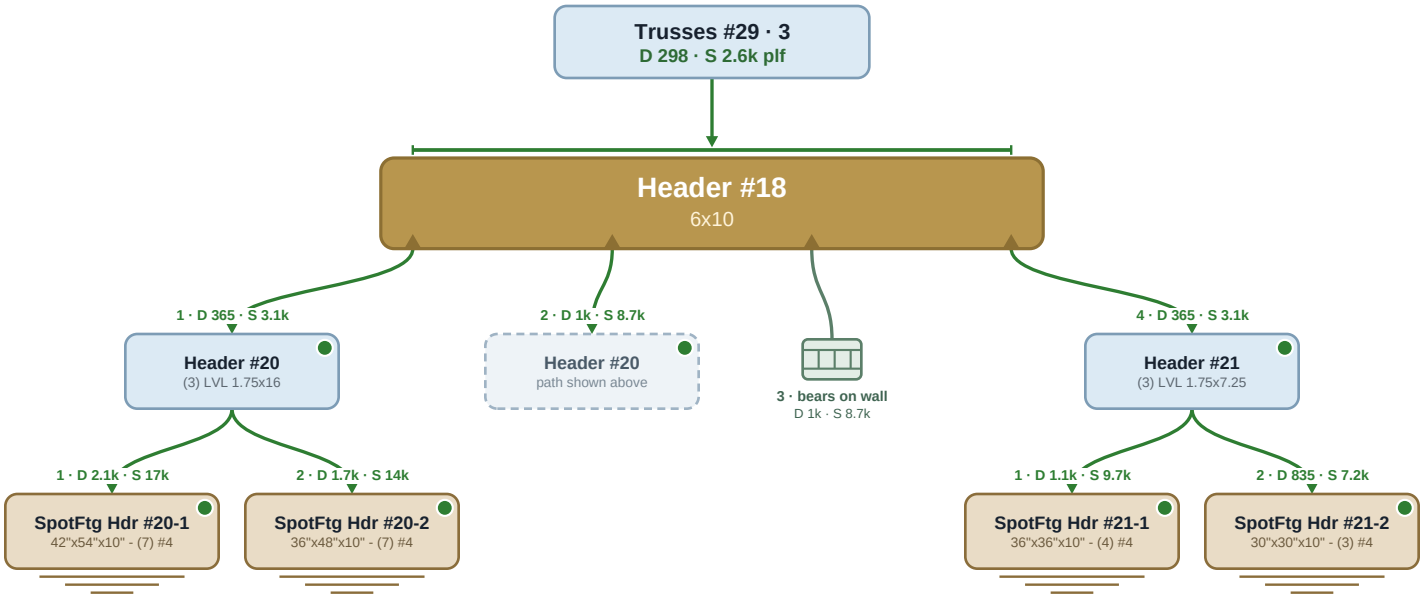
PASS



Header #18 | 6x10

ON PLAN: A5 Roof 2nd

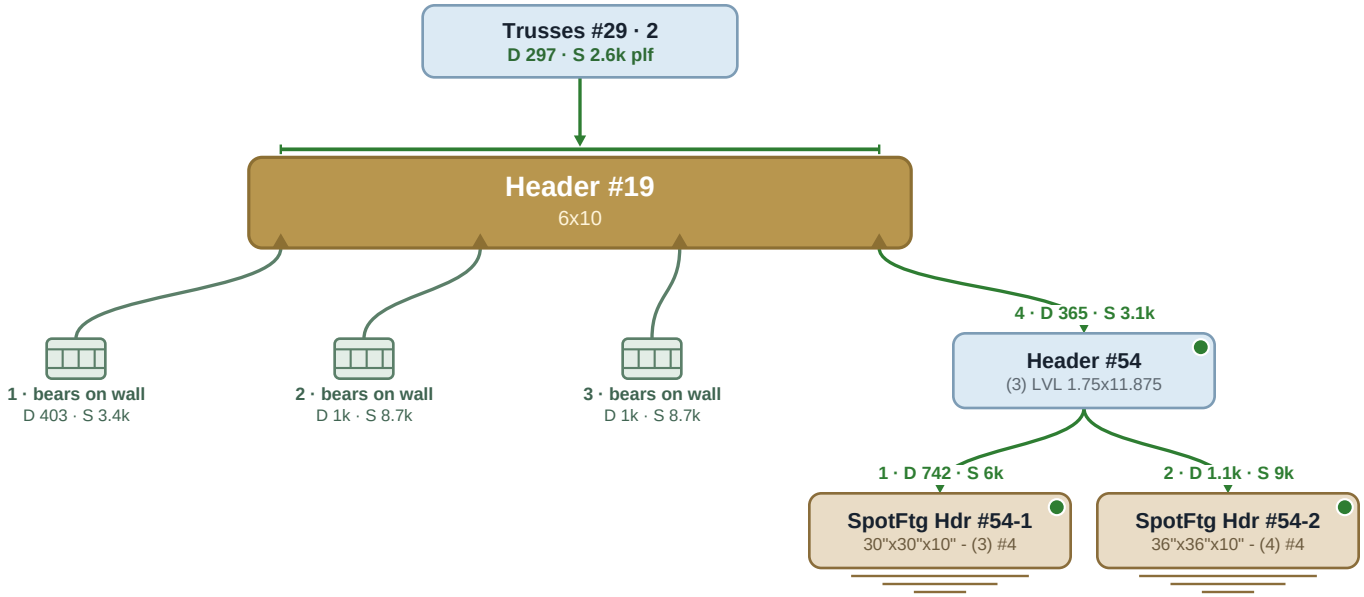
PASS



Header #19 | 6x10

ON PLAN: A5 Roof 2nd

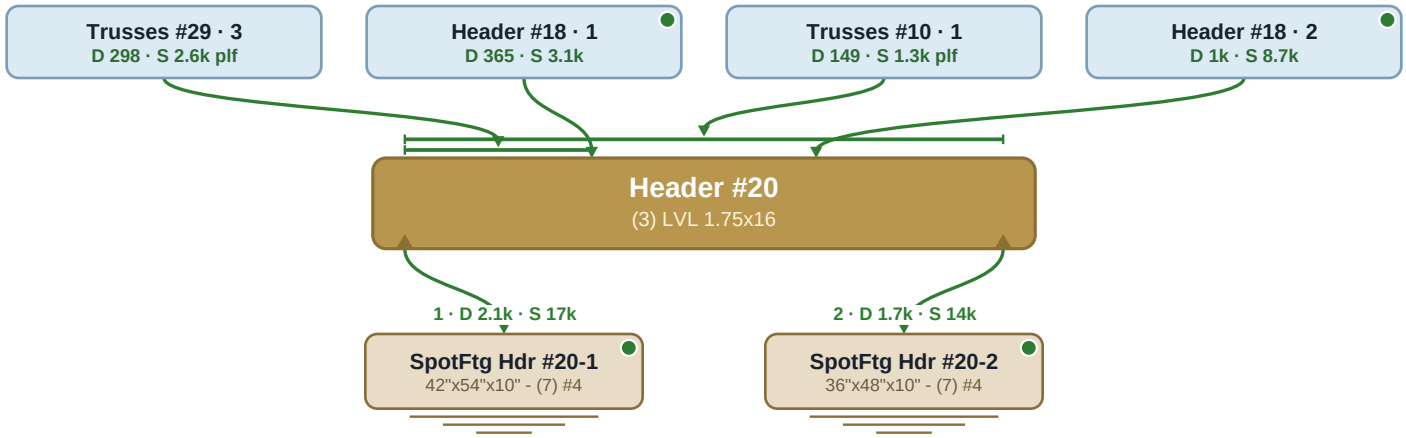
PASS



Header #20 | (3) LVL 1.75x16

ON PLAN: A3 Floor 2nd A4 Roof 1st

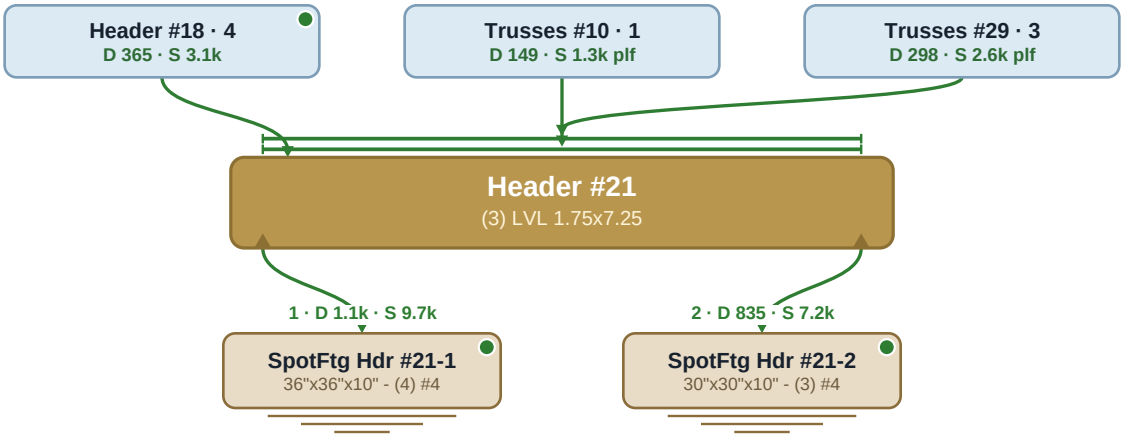
PASS



Header #21 | (3) LVL 1.75x7.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

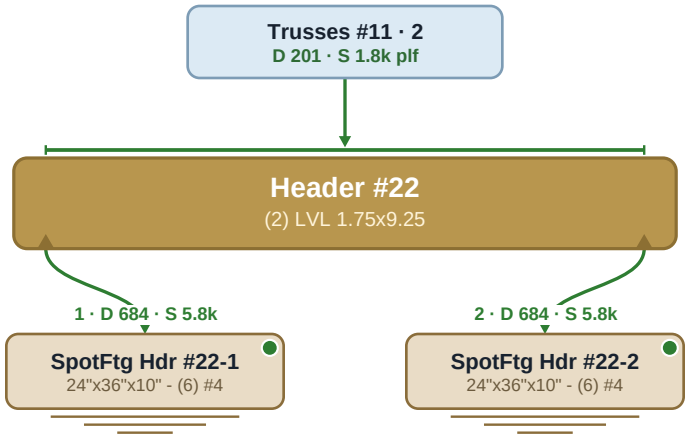
PASS



Header #22 | (2) LVL 1.75x9.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

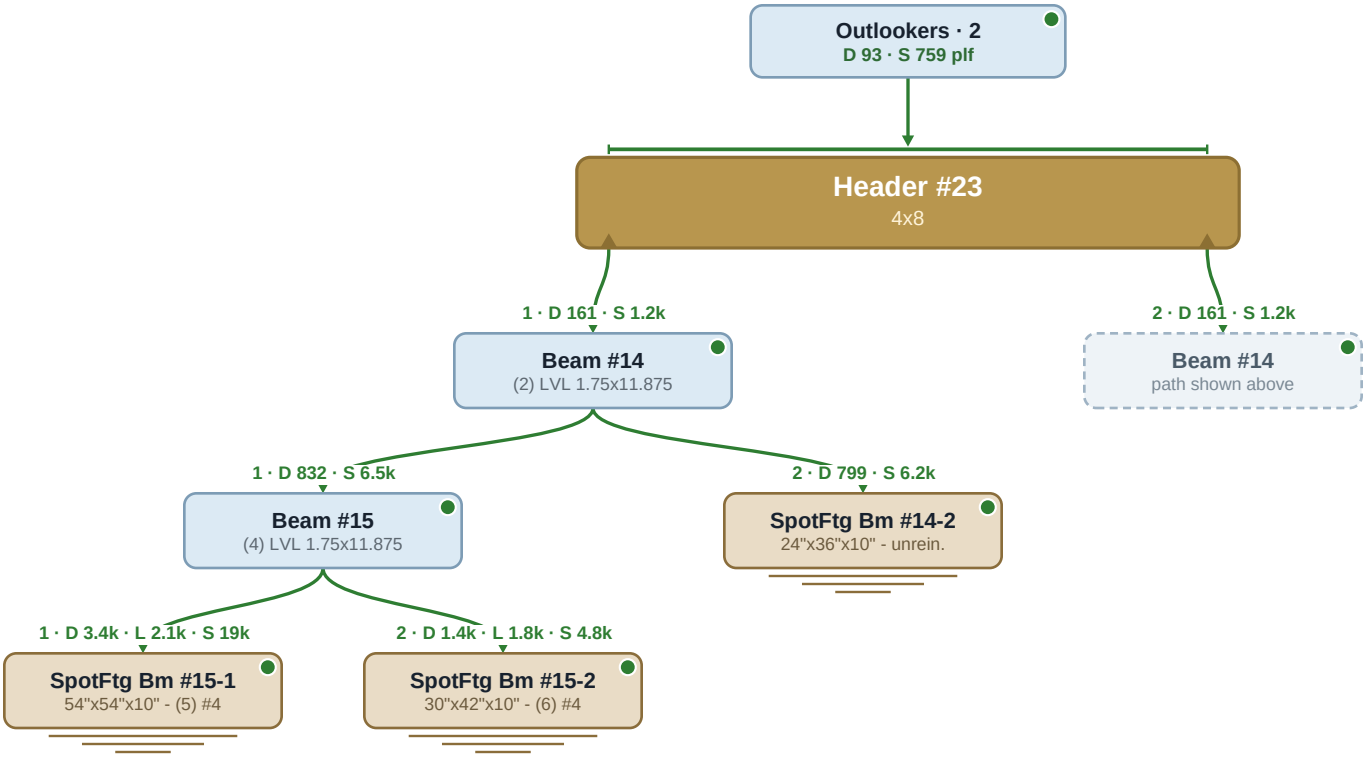
PASS



Header #23 | 4x8

ON PLAN: A5 Roof 2nd

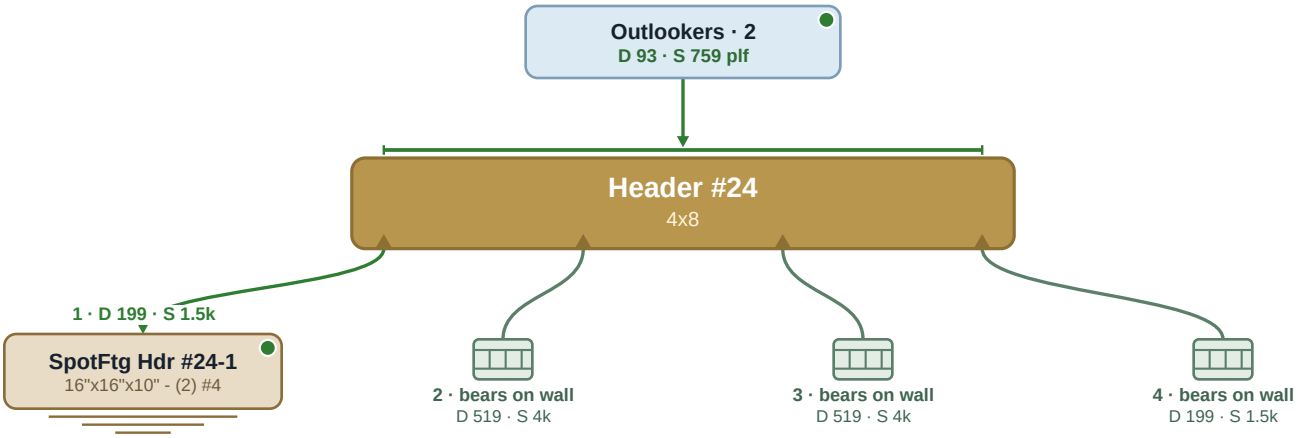
PASS



Header #24 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

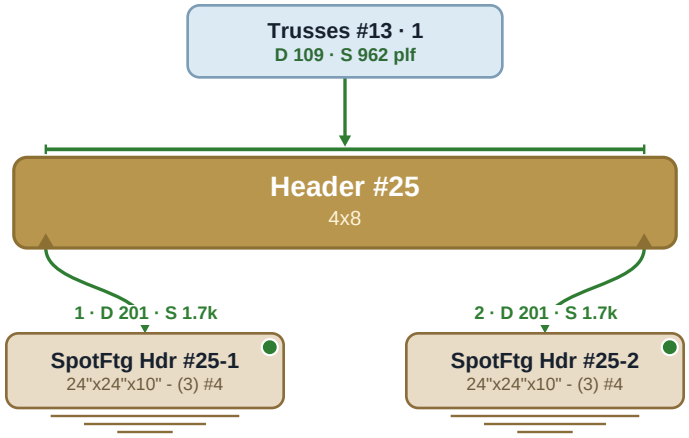
PASS



Header #25 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

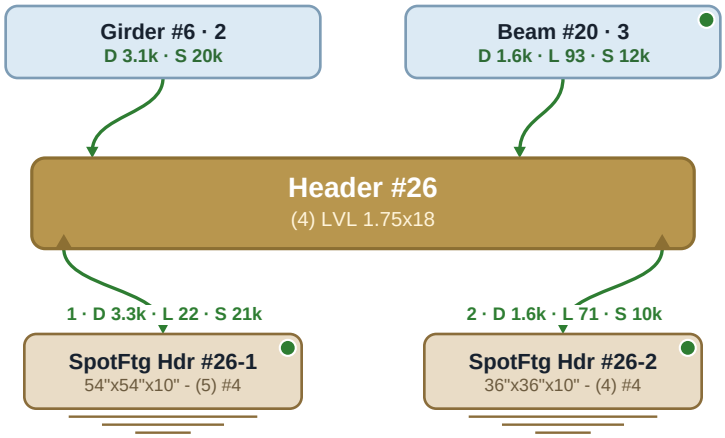
PASS



Header #26 | (4) LVL 1.75x18

ON PLAN: A3 Floor 2nd A4 Roof 1st

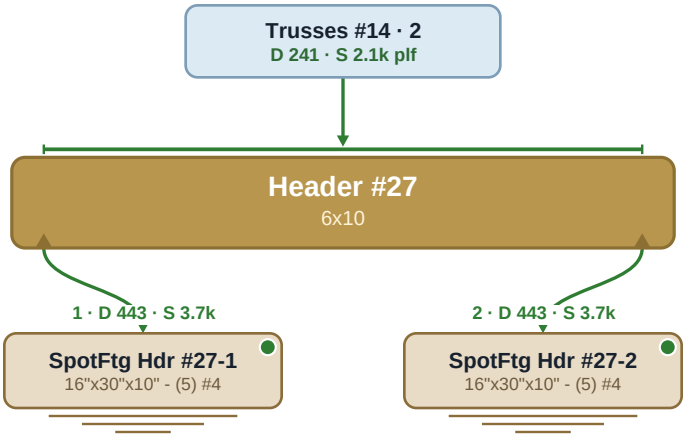
PASS



Header #27 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

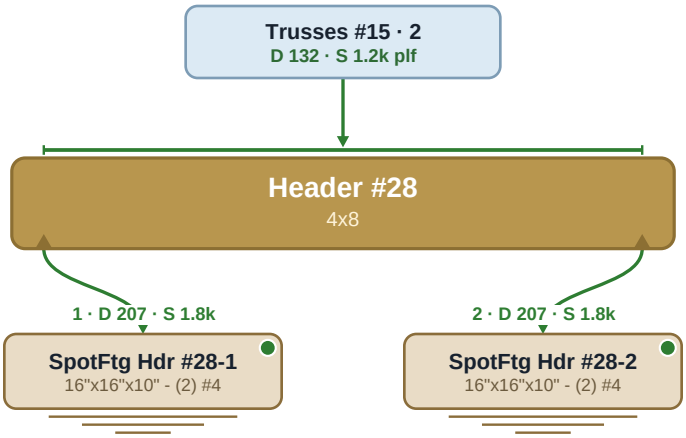
PASS



Header #28 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

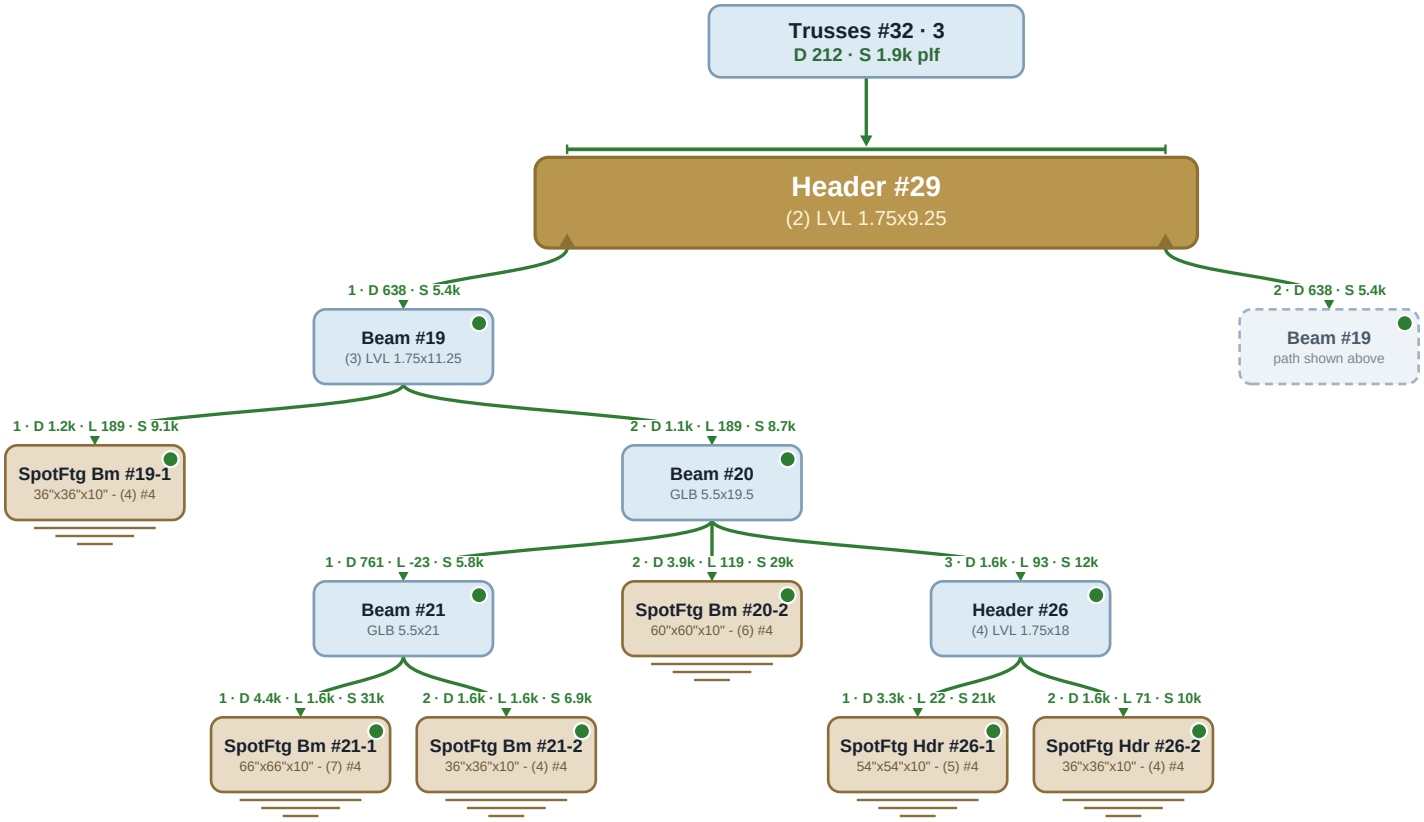
PASS



Header #29 | (2) LVL 1.75x9.25

ON PLAN: A5 Roof 2nd

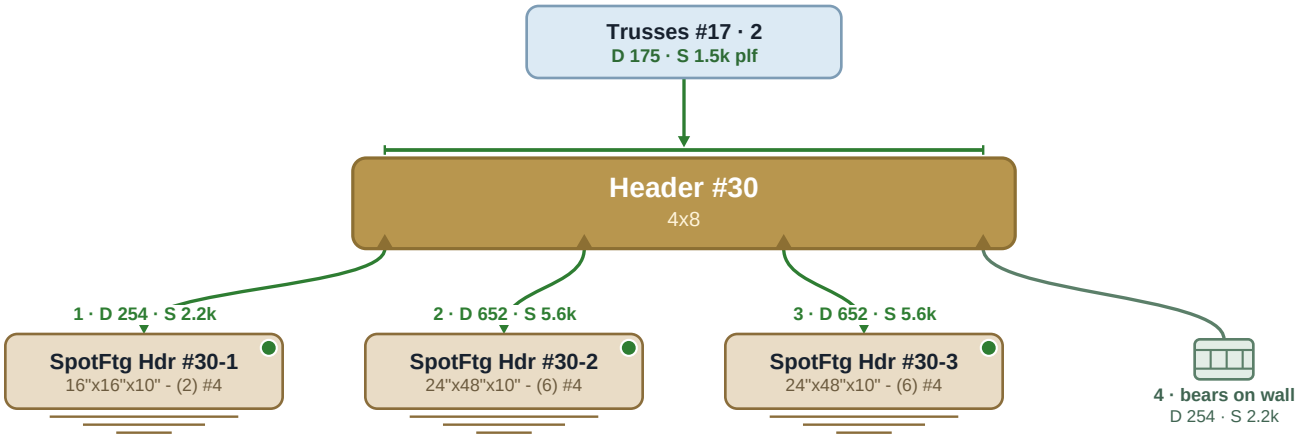
PASS



Header #30 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

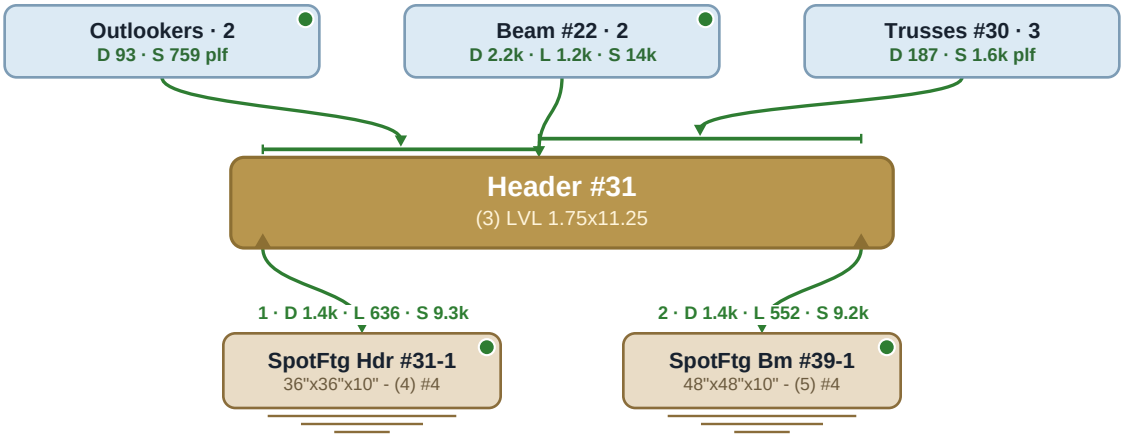
PASS



Header #31 | (3) LVL 1.75x11.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

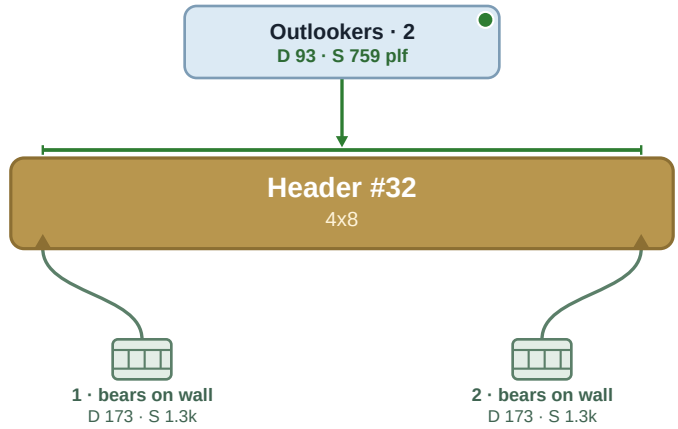
PASS



Header #32 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

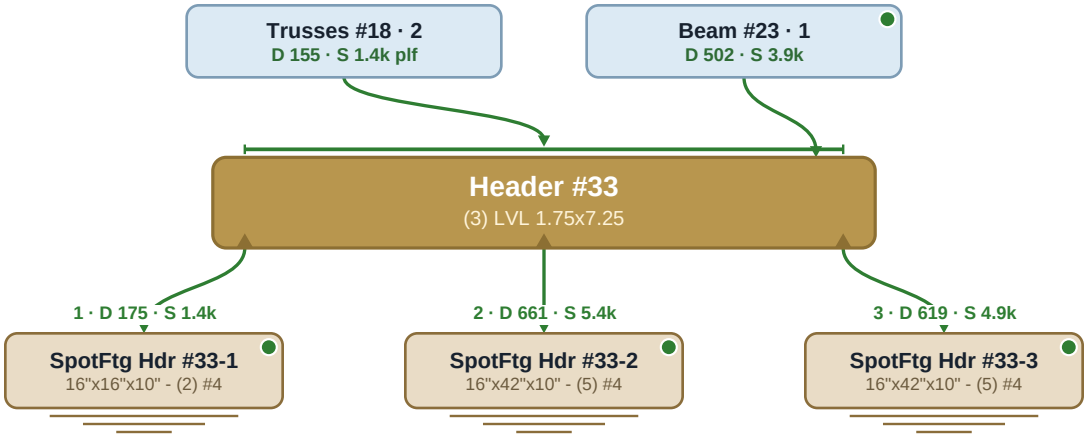
PASS



Header #33 | (3) LVL 1.75x7.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

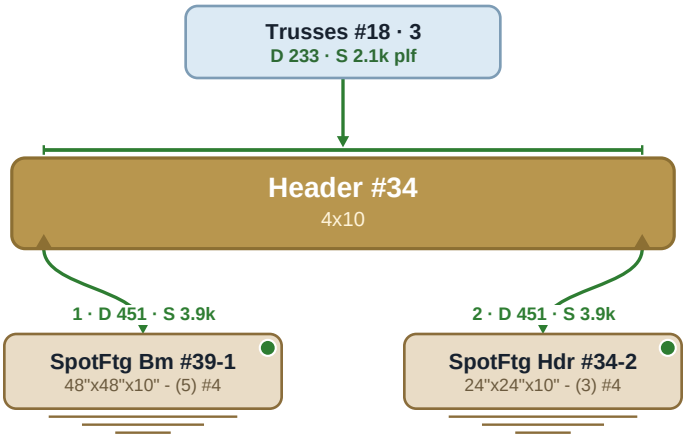
PASS



Header #34 | 4x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

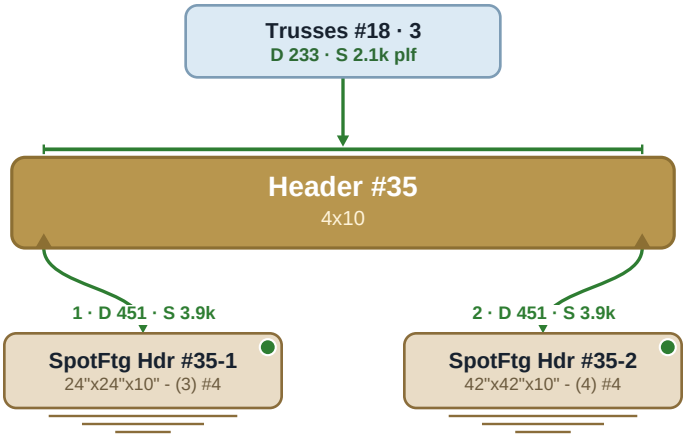
PASS



Header #35 | 4x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

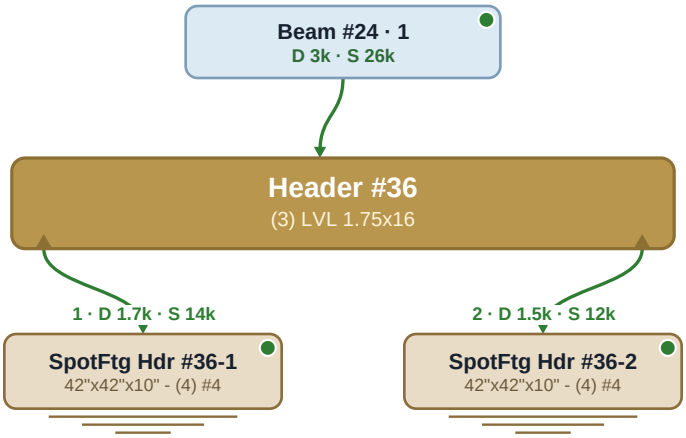
PASS



Header #36 | (3) LVL 1.75x16

ON PLAN: A3 Floor 2nd A4 Roof 1st

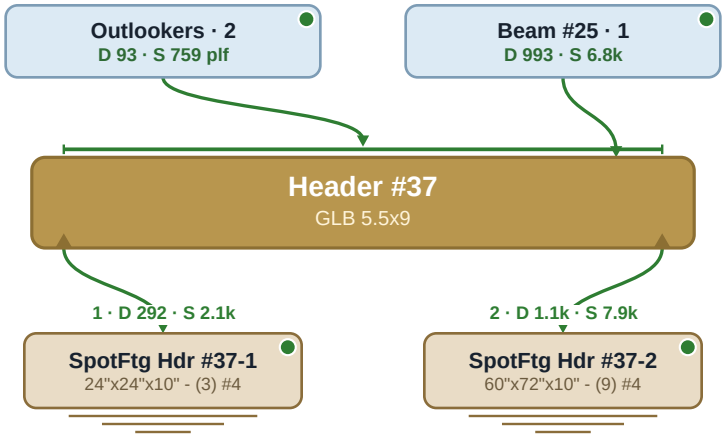
PASS



Header #37 | GLB 5.5x9

ON PLAN: A3 Floor 2nd A4 Roof 1st

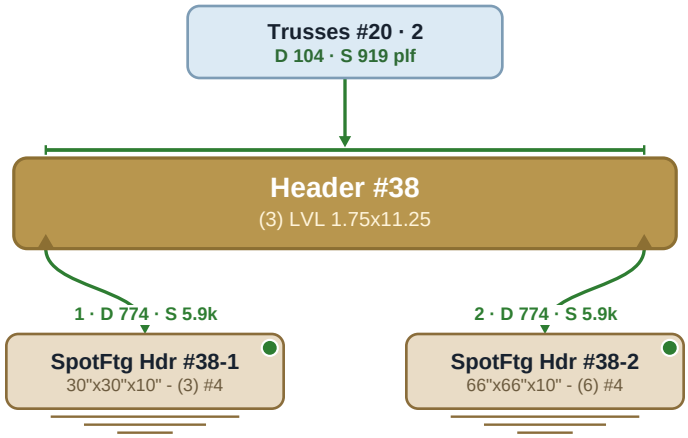
PASS



Header #38 | (3) LVL 1.75x11.25

ON PLAN: A3 Floor 2nd A4 Roof 1st

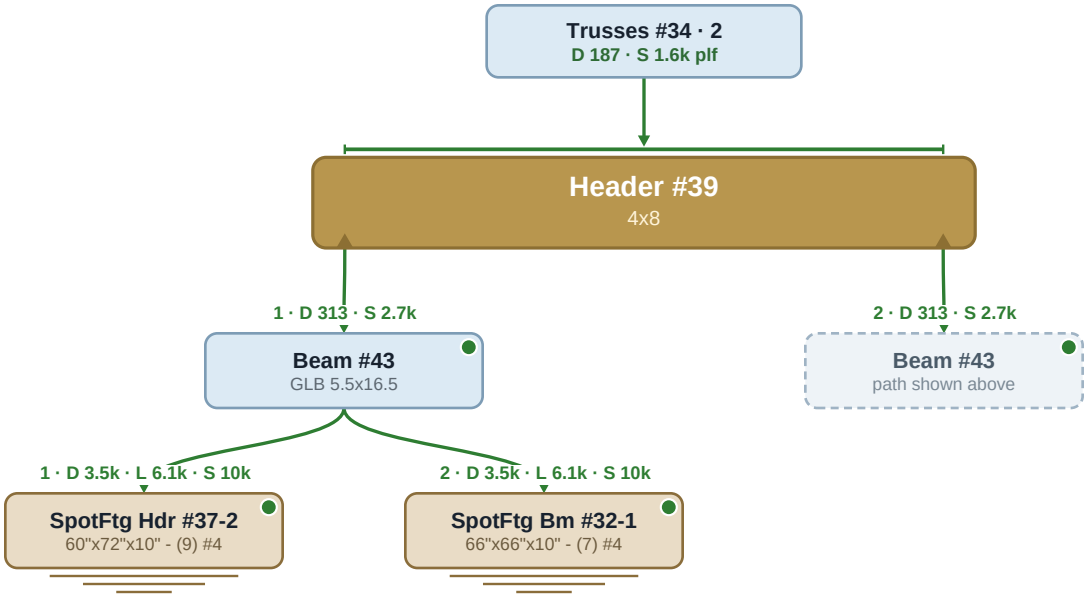
PASS



Header #39 | 4x8

ON PLAN: A5 Roof 2nd

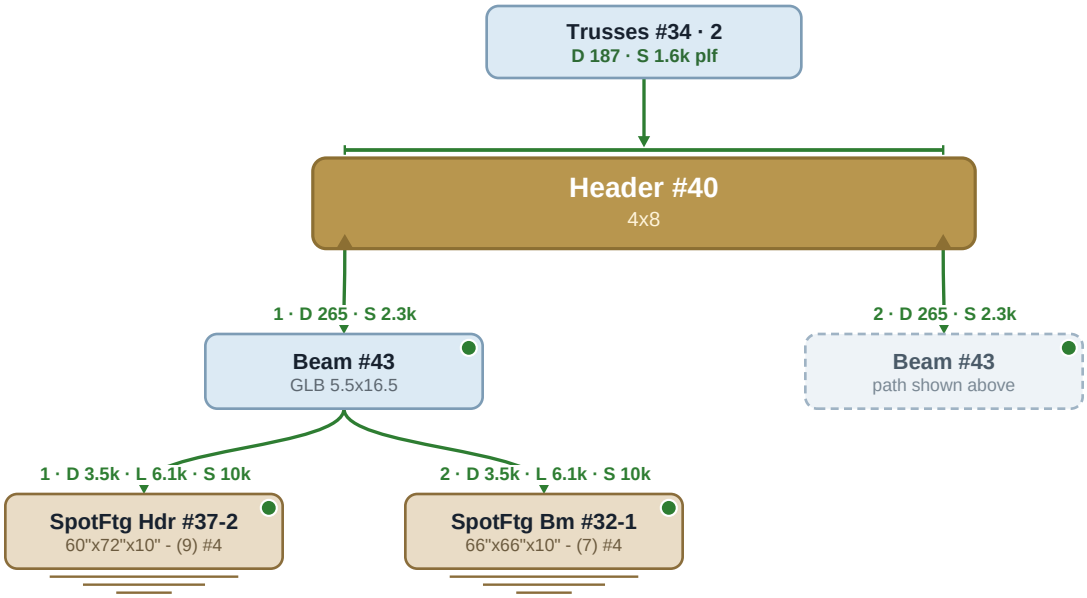
PASS



Header #40 | 4x8

ON PLAN: A5 Roof 2nd

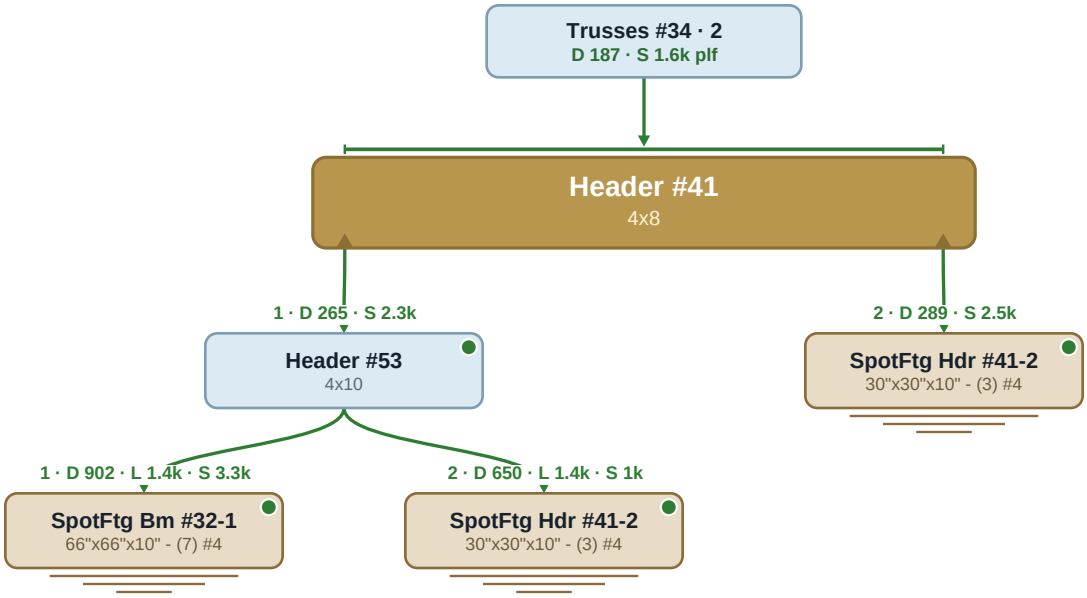
PASS



Header #41 | 4x8

ON PLAN: A5 Roof 2nd

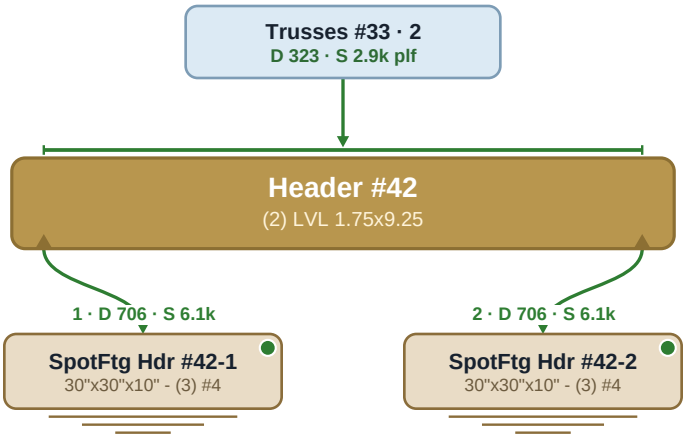
PASS



Header #42 | (2) LVL 1.75x9.25

ON PLAN: A5 Roof 2nd

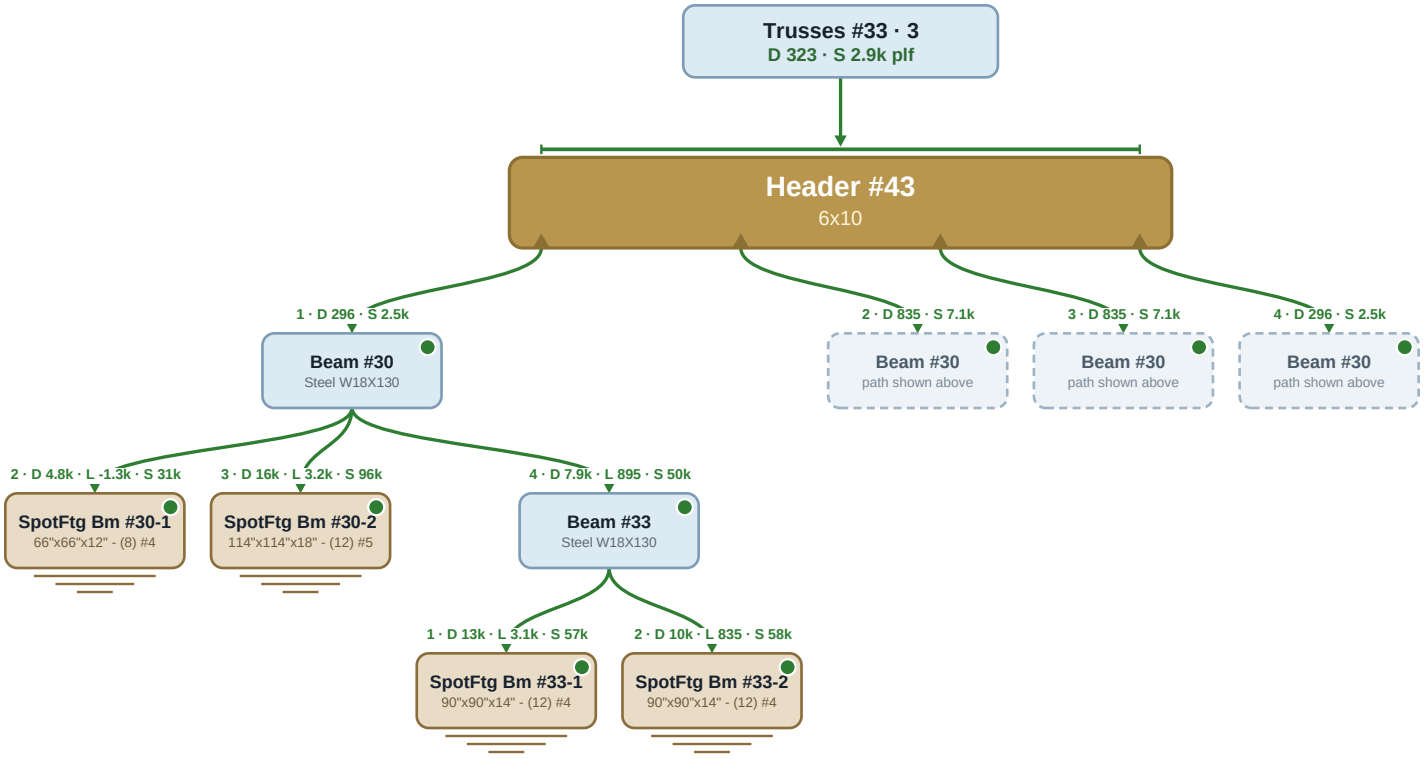
PASS



Header #43 | 6x10

ON PLAN: A5 Roof 2nd

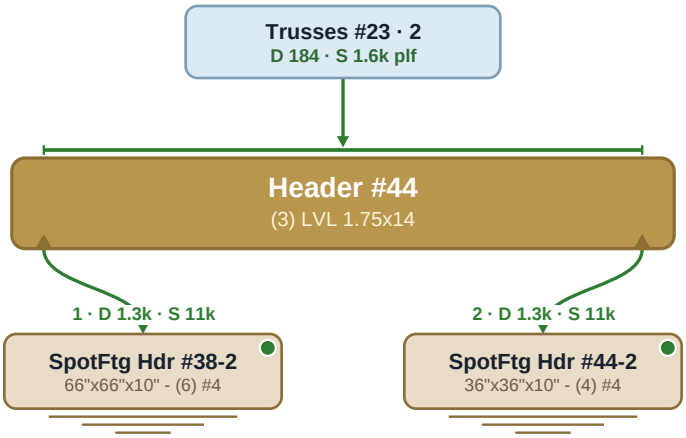
PASS



Header #44 | (3) LVL 1.75x14

ON PLAN: A3 Floor 2nd A4 Roof 1st

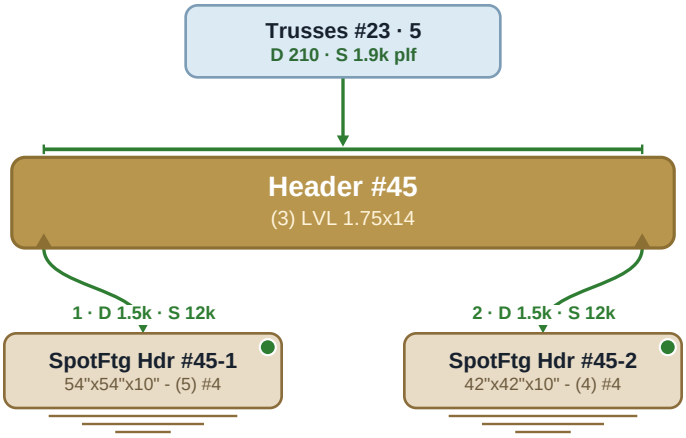
PASS



Header #45 | (3) LVL 1.75x14

ON PLAN: A3 Floor 2nd A4 Roof 1st

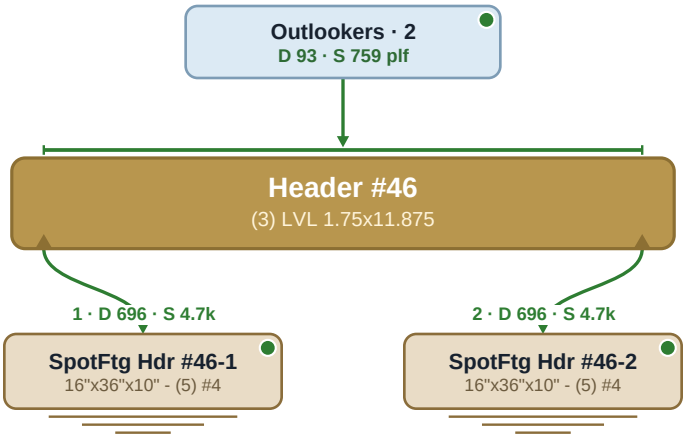
PASS



Header #46 | (3) LVL 1.75x11.875

ON PLAN: A3 Floor 2nd A4 Roof 1st

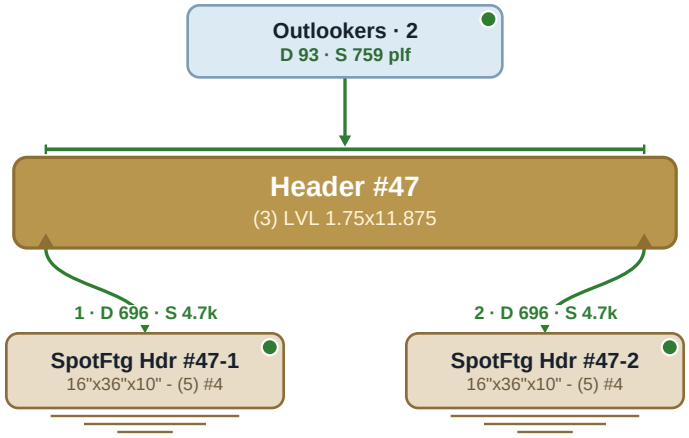
PASS



Header #47 | (3) LVL 1.75x11.875

ON PLAN: A3 Floor 2nd A4 Roof 1st

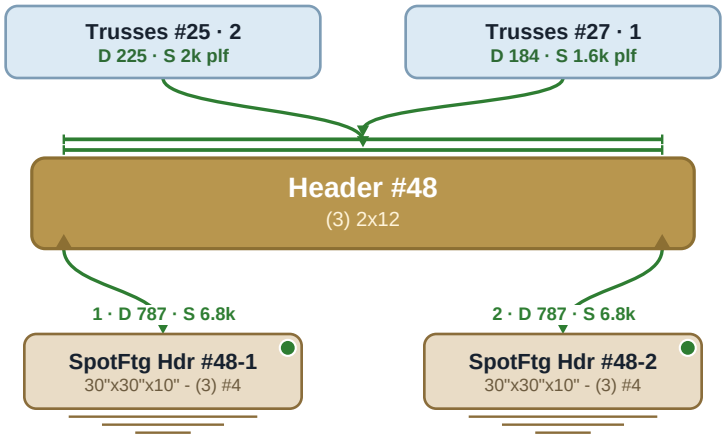
PASS



Header #48 | (3) 2x12

ON PLAN: A3 Floor 2nd A4 Roof 1st

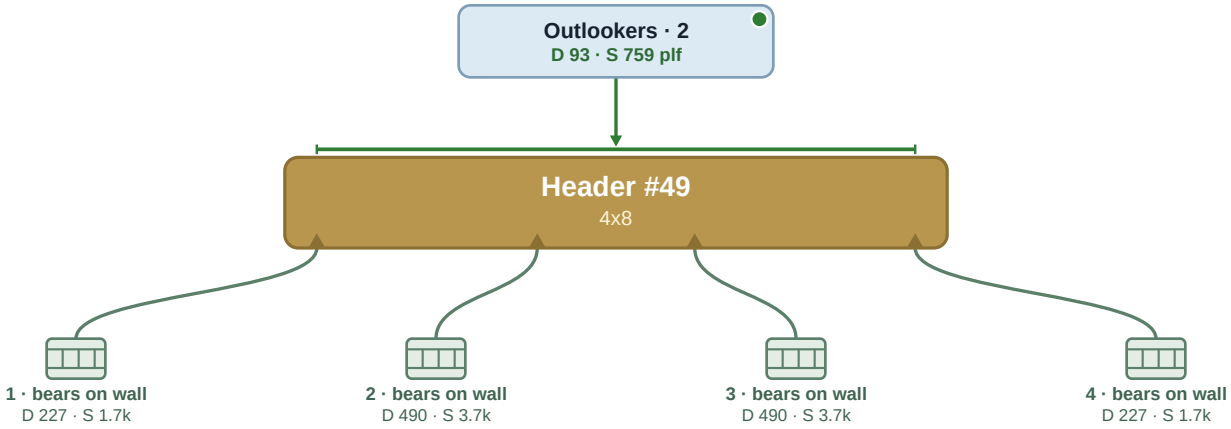
PASS



Header #49 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

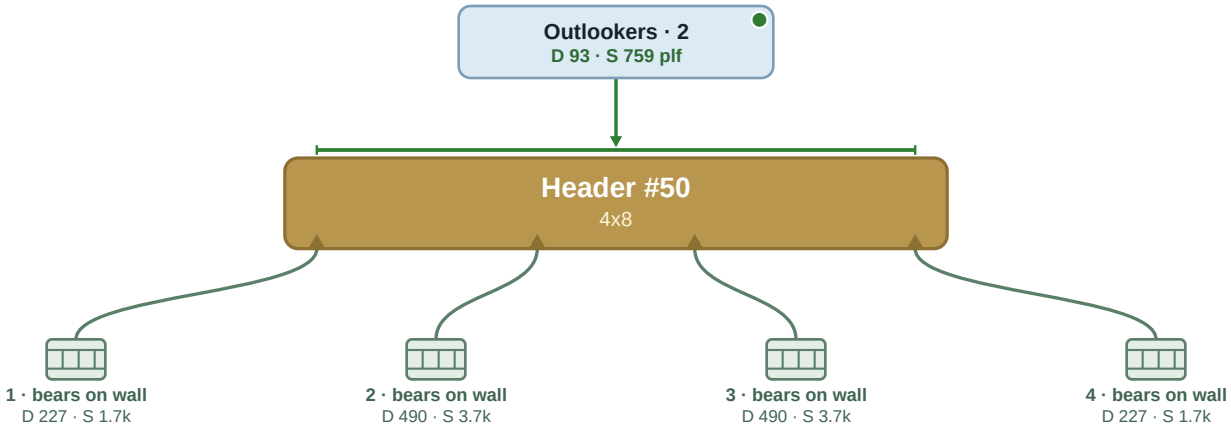
PASS



Header #50 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

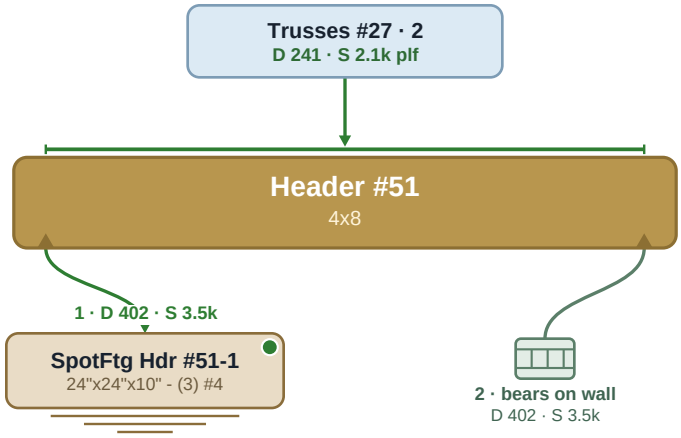
PASS



Header #51 | 4x8

ON PLAN: A3 Floor 2nd A4 Roof 1st

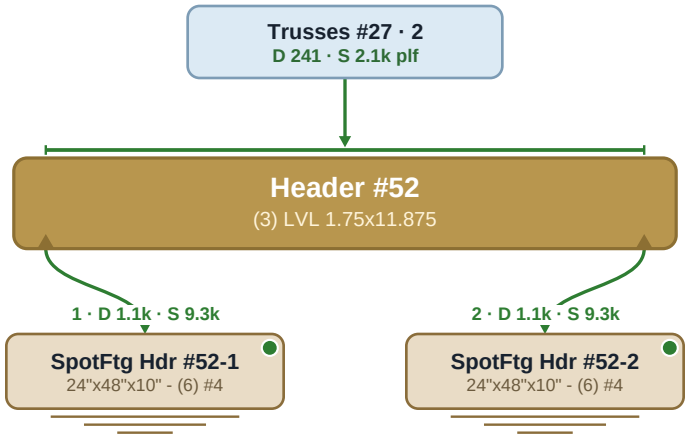
PASS



Header #52 | (3) LVL 1.75x11.875

ON PLAN: A3 Floor 2nd A4 Roof 1st

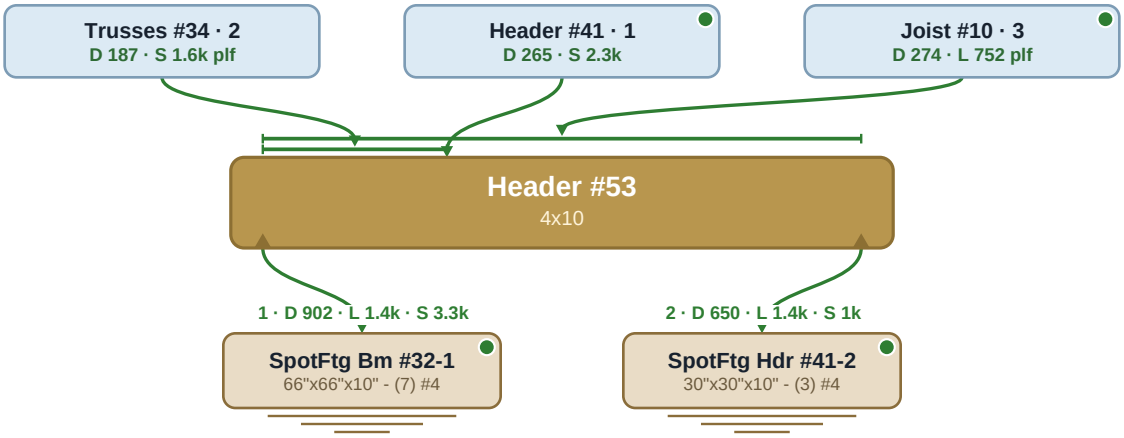
PASS



Header #53 | 4x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

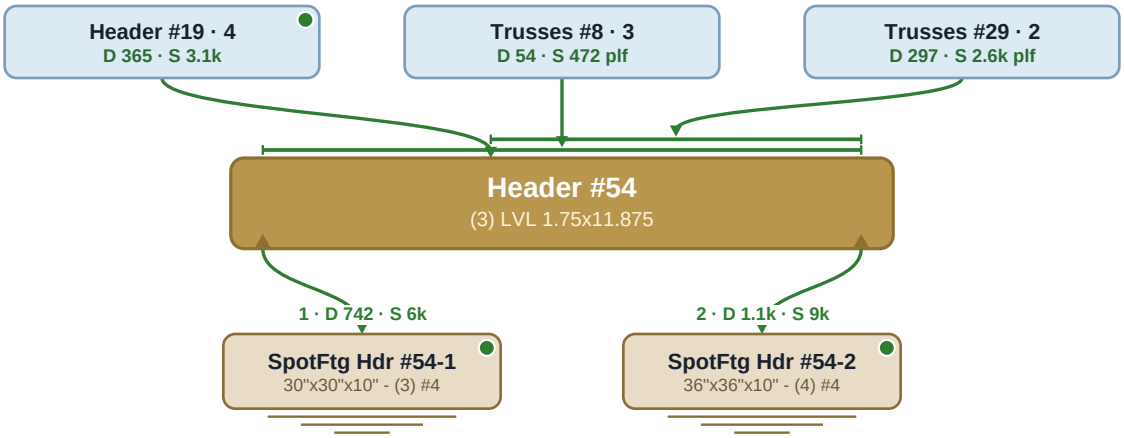
PASS



Header #54 | (3) LVL 1.75x11.875

ON PLAN: A3 Floor 2nd A4 Roof 1st

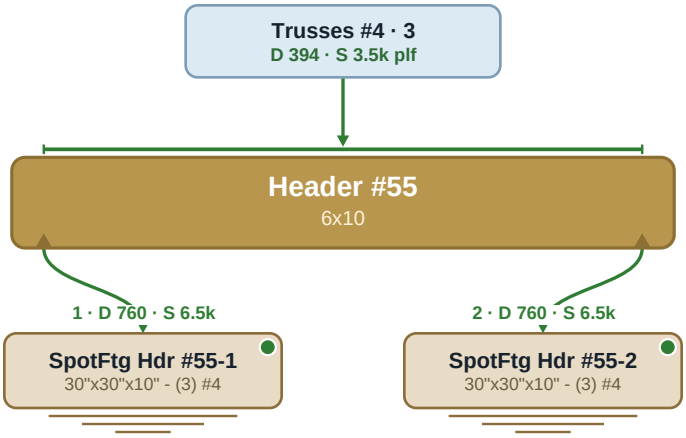
PASS



Header #55 | 6x10

ON PLAN: A3 Floor 2nd A4 Roof 1st

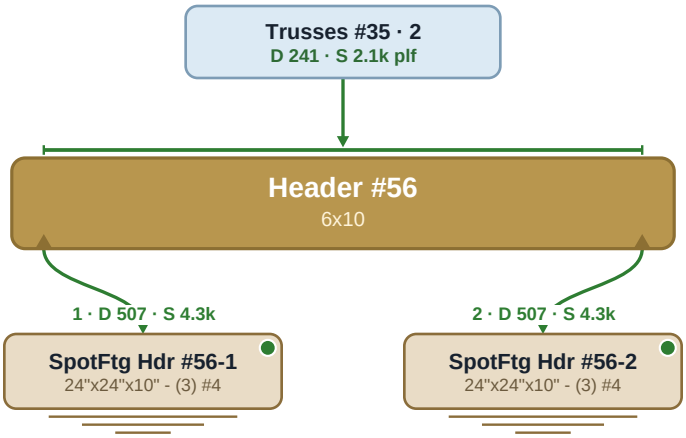
PASS



Header #56 | 6x10

ON PLAN: A3 Floor 2nd

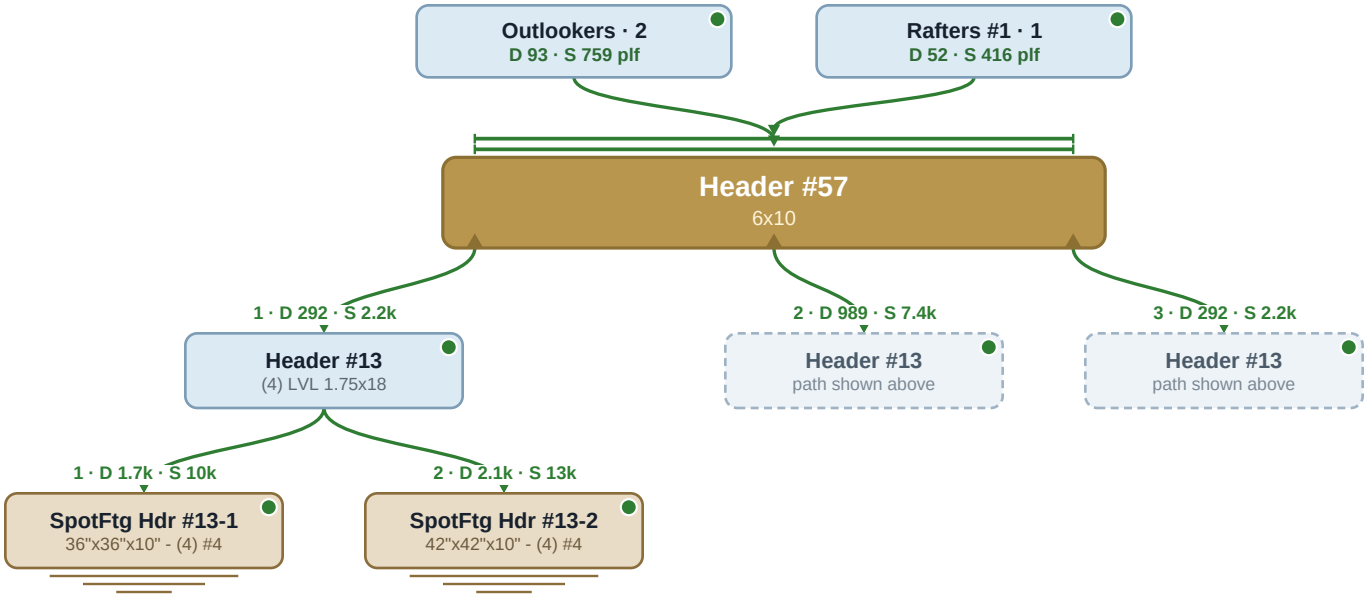
PASS



Header #57 | 6x10

ON PLAN: A3 Floor 2nd | A4 Roof 1st

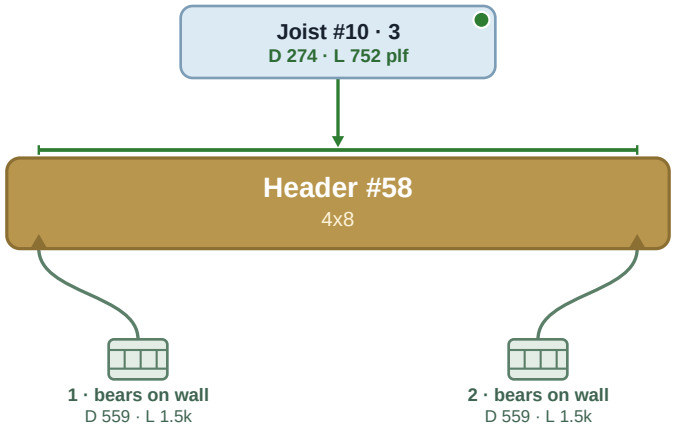
PASS



Header #58 | 4x8

ON PLAN: A3 Floor 2nd | A4 Roof 1st

PASS



Gold = beam/header | Brown = foundation | Slate = bearing wall (marked) | Yellow = needs verification | Red = dead end / circular
Boxed amber reaction = UPLIFT (negative) | Click a member/box for its section or calc sheet; ON PLAN jumps to the plan callout

Beam #1

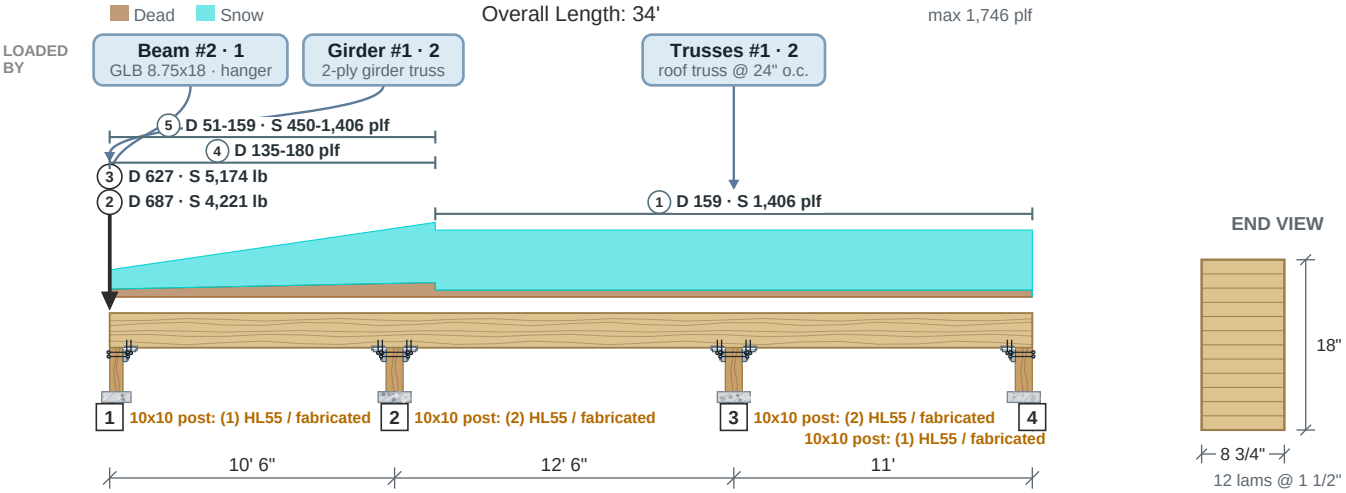
(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 34' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 39% used

Section adequacy 60.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	21,327 @ 23'	54,031 (9 1/2")	Passed (39%)	--	
Shear (lbs)	10,914 @ 23'	32,004	Passed (34%)	1.15	D+S
Neg Moment (Ft-lbs)	-23,160 @ 23'	72,667	Passed (32%)	1.15	D+S
Live Load Defl. (in)	0.026 @ 28' 11 1/16"	0.55	Passed (L/5,064)	--	S
Total Load Defl. (in)	0.03 @ 28' 11 1/16"	0.733	Passed (L/4,380)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.867, CL = 0.993 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 23159 lbf-ft, 10.50-23.00 ft, CL 0.993 (unbraced 12.5 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	9 1/2" seat	2 1/2"	2,398	11,797	**14,196**	Column Bm #1-1 (10x10 post (max 6 ft, 79%): (1) HL55 / fabricated)
2 @ 10' 6"	9 1/2" seat	2 7/8"	3,469	14,968	**18,437**	SpotFtg Bm #1-2 (10x10 post (max 6 ft, 74%): (2) HL55 / fabricated)
3 @ 23'	9 1/2" seat	3 3/8"	2,486	18,840	**21,327**	SpotFtg Bm #1-3 (10x10 post (max 6 ft, 70%): (2) HL55 / fabricated)
4 @ 34'	9 1/2" seat	1 3/16"	839	5,864	**6,703**	SpotFtg Bm #1-4 (10x10 post (max 6 ft, 90%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

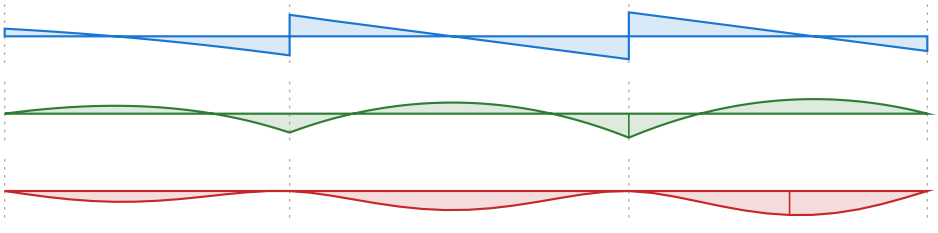
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 34'	N/A	35.9	--	
1 - Uniform (PLF)	12' to 34'	N/A	159.4	1,406	Linked from: Trusses #1, Support 2
2 - Point (lb)	0	N/A	686.9	4,221	Linked from: Beam #2, Support 1
3 - Point (lb)	0	N/A	626.8	5,174	Linked from: Girder #1, Support 2
4 - Trapezoidal (PLF)	0 to 12'	N/A	135 - 180	--	
5 - Trapezoidal (PLF)	0 to 12'	N/A	51 - 159.4	450 - 1406.2	Trapezoidal

Beam #1 (continued)

Roof Beam | (1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max 10,914 @ 23'

Moment (ft-lbs)
D+S
max -23,159 @ 23'

Deflection (in)
D+S
0.03 in down @ 28' 11 1/16"
limit 0.733 in on the span

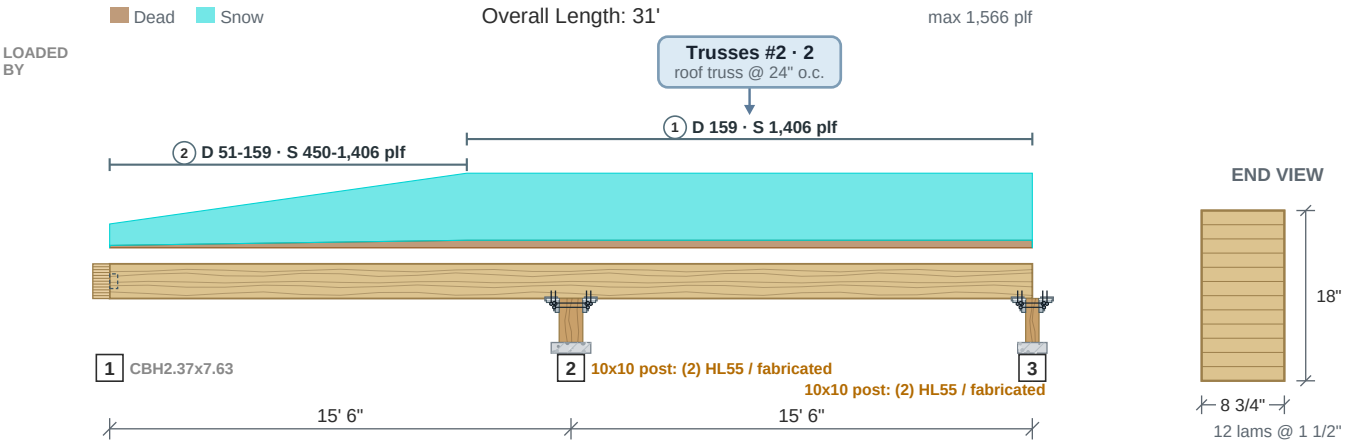
Beam #2

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 31' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 58% used
Section adequacy 41.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	28,705 @ 15' 6"	54,031 (9 1/2")	Passed (53%)	--	
Shear (lbs)	15,177 @ 15' 6"	32,004	Passed (47%)	1.15	D+S
Neg Moment (Ft-lbs)	-42,856 @ 15' 6"	73,340	Passed (58%)	1.15	D+S
Live Load Defl. (in)	0.114 @ 24' 5/16"	0.775	Passed (L/1,632)	--	S
Total Load Defl. (in)	0.129 @ 24' 5/16"	1.033	Passed (L/1,437)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.875, CL = 0.991 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 42856 lbf-ft, 0.00-15.50 ft, CL 0.991 (unbraced 15.5 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

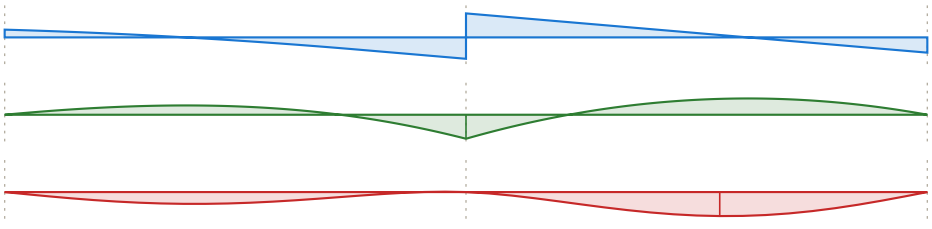
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	7/8"	687	4,221	**4,907**	Beam #1 (flush, in a CBH2.37x7.63 concealed beam hanger, 72%)
2 @ 15' 6"	9 1/2" seat	4 11/16"	3,546	25,158	**28,705**	SpotFtg Bm #2-2 (10x10 post (max 6 ft, 59%): (2) HL55 / fabricated)
3 @ 31'	4 3/4" seat	1 11/16"	1,169	8,477	**9,647**	SpotFtg Bm #2-3 (10x10 post (max 6 ft, 73%): (2) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	15' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 31'	N/A	35.9	--	
1 - Uniform (PLF)	12' to 31'	N/A	159.4	1,406	Linked from: Trusses #2, Support 2
2 - Trapezoidal (PLF)	0 to 12'	N/A	51 - 159.4	450 - 1406.2	Trapezoidal

Shear, Moment and Deflection



Shear (lbs)
D+S
max 15,177 @ 15' 6"

Moment (ft-lbs)
D+S
max -42,856 @ 15' 6"

Deflection (in)
D+S
0.129 in down @ 24' 5/16"
limit 1.033 in on the span

Beam #3

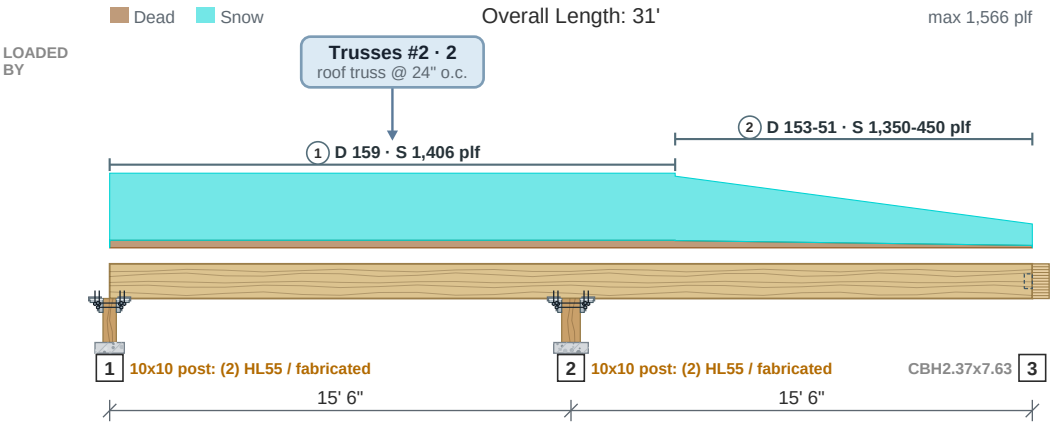
(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

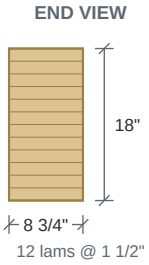
Level: Roof | Member type: Beam (Roof Beam) | Length: 31' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 58% used

Section adequacy 42.2% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	28,449 @ 15' 6"	54,031 (9 1/2")	Passed (53%)	--	
Shear (lbs)	15,145 @ 15' 6"	32,004	Passed (47%)	1.15	D+S
Neg Moment (Ft-lbs)	-42,375 @ 15' 6"	73,340	Passed (58%)	1.15	D+S
Live Load Defl. (in)	0.115 @ 6' 11 11/16"	0.775	Passed (L/1,612)	--	S
Total Load Defl. (in)	0.131 @ 6' 11 11/16"	1.033	Passed (L/1,420)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.875, CL = 0.991 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 42375 lbf-ft, 0.00-15.50 ft, CL 0.991 (unbraced 15.5 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

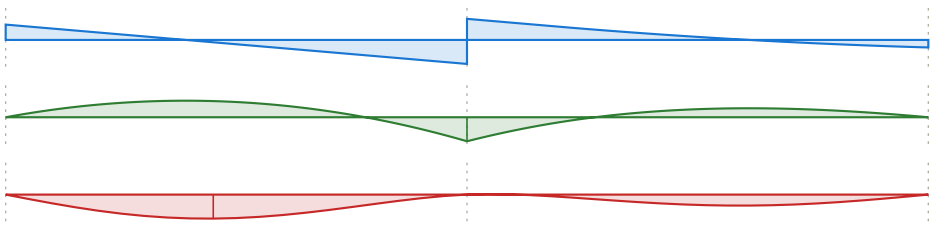
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	4 3/4" seat	1 11/16"	1,172	8,505	**9,678**	SpotFtg Bm #2-3 (10x10 post (max 6 ft, 73%): (2) HL55 / fabricated)
2 @ 15' 6"	9 1/2" seat	4 5/8"	3,520	24,928	**28,449**	SpotFtg Bm #3-2 (10x10 post (max 6 ft, 60%): (2) HL55 / fabricated)
3 @ 31'	3 3/4"	13/16"	672	4,085	**4,757**	Beam #4 (flush, in a CBH2.37x7.63 concealed beam hanger, 70%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	15' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 31'	N/A	35.9	--	
1 - Uniform (PLF)	0 to 19'	N/A	159.4	1,406	Linked from: Trusses #2, Support 2
2 - Trapezoidal (PLF)	19' to 31'	N/A	153 - 51	1350 - 450	

Shear, Moment and Deflection



Shear (lbs)
D+S
max -15,145 @ 15' 6"

Moment (ft-lbs)
D+S
max -42,375 @ 15' 6"

Deflection (in)
D+S
0.131 in down @ 6' 11 11/16"
limit 1.033 in on the span

Beam #4

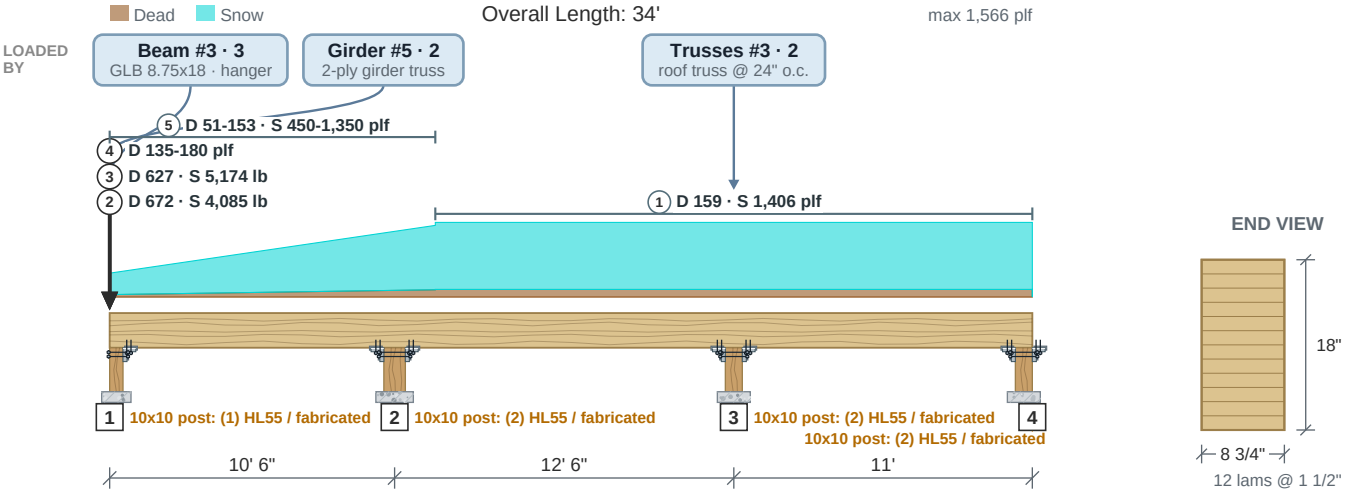
(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 34' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 40% used

Section adequacy 60.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	21,466 @ 23'	54,031 (9 1/2")	Passed (40%)	--	
Shear (lbs)	10,940 @ 23'	32,004	Passed (34%)	1.15	D+S
Neg Moment (Ft-lbs)	-23,452 @ 23'	72,667	Passed (32%)	1.15	D+S
Live Load Defl. (in)	0.026 @ 28' 11 1/16"	0.55	Passed (L/5,077)	--	S
Total Load Defl. (in)	0.03 @ 28' 11 1/16"	0.733	Passed (L/4,452)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.867, CL = 0.993 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 23453 lbf-ft, 10.50-23.00 ft, CL 0.993 (unbraced 12.5 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	9 1/2" seat	2 5/16"	1,707	11,596	**13,303**	SpotFtg Bm #4-1 (10x10 post (max 6 ft, 81%): (1) HL55 / fabricated)
2 @ 10' 6"	9 1/2" seat	2 9/16"	2,119	14,683	**16,801**	SpotFtg Bm #4-2 (10x10 post (max 6 ft, 76%): (2) HL55 / fabricated)
3 @ 23'	9 1/2" seat	3 3/8"	2,607	18,859	**21,466**	SpotFtg Bm #4-3 (10x10 post (max 6 ft, 69%): (2) HL55 / fabricated)
4 @ 34'	9 1/2" seat	1 3/16"	816	5,860	**6,676**	SpotFtg Bm #4-4 (10x10 post (max 20 ft, 1%): (2) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

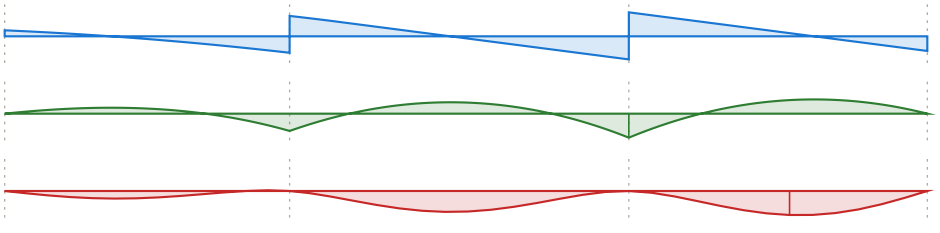
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 34'	N/A	35.9	--	
1 - Uniform (PLF)	12' to 34'	N/A	159.4	1,406	Linked from: Trusses #3, Support 2
2 - Point (lb)	0	N/A	671.8	4,085	Linked from: Beam #3, Support 3
3 - Point (lb)	0	N/A	626.8	5,174	Linked from: Girder #5, Support 2
4 - Trapezoidal (PLF)	0 to 0	N/A	135 - 180	--	
5 - Trapezoidal (PLF)	0 to 12'	N/A	51 - 153	450 - 1350	

Beam #4 (continued)

Roof Beam | (1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max 10,940 @ 23'

Moment (ft-lbs)
D+S
max -23,453 @ 23'

Deflection (in)
D+S
0.03 in down @ 28' 11 1/16"
limit 0.733 in on the span

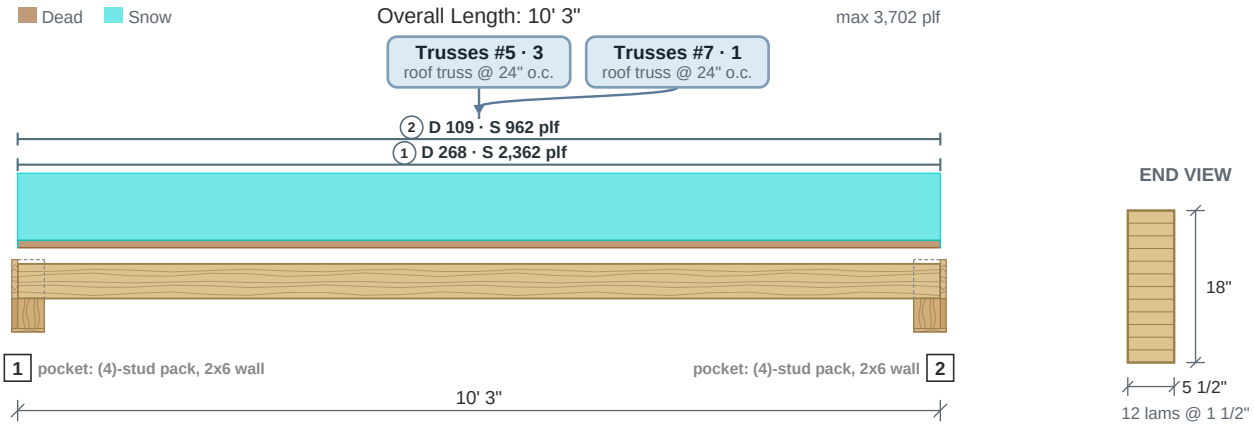
Beam #5

(1) 5 1/2" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 10' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 97% used
Section adequacy 2.9% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	19,088 @ 0	19,662 (5 1/2")	Passed (97%)	--	
Plate Bearing (psi)	631 @ 0	668 (2x6 wall, DF-L #2)	Passed (95%)	--	
Shear (lbs)	19,087 @ 0	20,117	Passed (95%)	1.15	D+S
Moment (Ft-lbs)	48,911 @ 5' 1 1/2"	68,310	Passed (72%)	1.15	D+S
Live Load Defl. (in)	0.172 @ 5' 1 1/2"	0.512	Passed (L/717)	--	S
Total Load Defl. (in)	0.192 @ 5' 1 1/2"	0.683	Passed (L/640)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 22.5 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

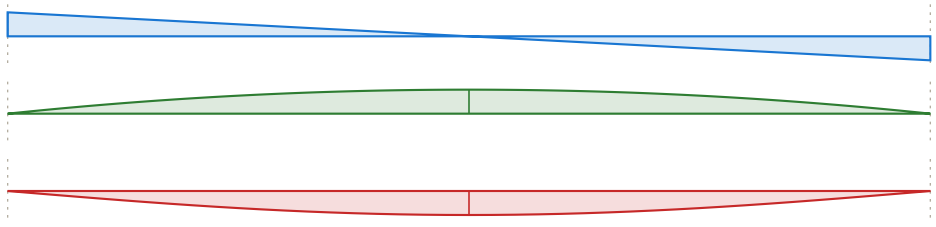
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	5 5/16"	2,047	17,041	**19,087**	SpotFtg Bm #5-1 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)
2 @ 10' 3"	5 1/2"	5 5/16"	2,047	17,041	**19,087**	SpotFtg Bm #5-2 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	10' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 10' 3"	N/A	22.5	--	
1 - Uniform (PLF)	0 to 10' 3"	N/A	267.8	2,362	Linked from: Trusses #5, Support 3
2 - Uniform (PLF)	0 to 10' 3"	N/A	109.1	962.5	Linked from: Trusses #7, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 19,087 @ 0

Moment (ft-lbs)
D+S
max 48,912 @ 5' 1 1/2"

Deflection (in)
D+S
0.192 in down @ 5' 1 1/2"
limit 0.683 in on the span

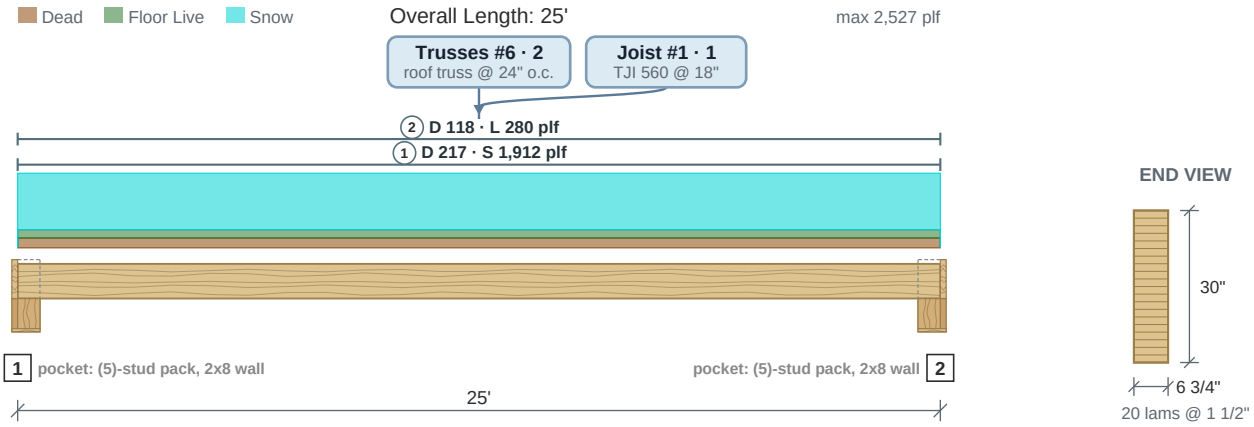
Beam #6

PASSED

(1) 6 3/4" x 30" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 25' | 2018 IRC | 2018 NDS | ASD

Controls: Bearing on the plates 94% used
Section adequacy 6.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	28,662 @ 0	31,809 (7 1/4")	Passed (90%)	--	
Plate Bearing (psi)	586 @ 0	625 (2x8 wall, DF-L #2)	Passed (94%)	--	
Shear (lbs)	28,662 @ 0	41,148	Passed (70%)	1.15	D+S
Moment (Ft-lbs)	179,137 @ 12' 6"	203,141	Passed (88%)	1.15	D+S
Live Load Defl. (in)	0.615 @ 12' 6"	1.25	Passed (L/488)	--	S
Total Load Defl. (in)	0.737 @ 12' 6"	1.667	Passed (L/407)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.872, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 46.1 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

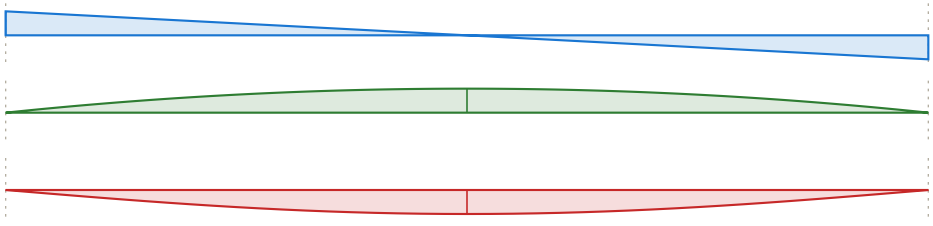
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	7 1/4"	6 1/2"	4,756	3,500	23,906	**28,662**	SpotFtg Bm #5-2 (in a beam pocket in a 2x8 stud wall 10 ft tall (the default), on a (5)-stud pack -- no post cap)
2 @ 25'	7 1/4"	6 1/2"	4,756	3,500	23,906	**28,662**	SpotFtg Bm #6-2 (in a beam pocket in a 2x8 stud wall 10 ft tall (the default), on a (5)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	25' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 25'	N/A	46.1	--	--	
1 - Uniform (PLF)	0 to 25'	N/A	216.8	--	1,912	Linked from: Trusses #6, Support 2
2 - Uniform (PLF)	0 to 25'	N/A	117.6	280	--	Linked from: Joist #1, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 28,662 @ 0

Moment (ft-lbs)
D+S
max 179,139 @ 12' 6"

Deflection (in)
D+S
0.737 in down @ 12' 6"
limit 1.667 in on the span

Beam #7

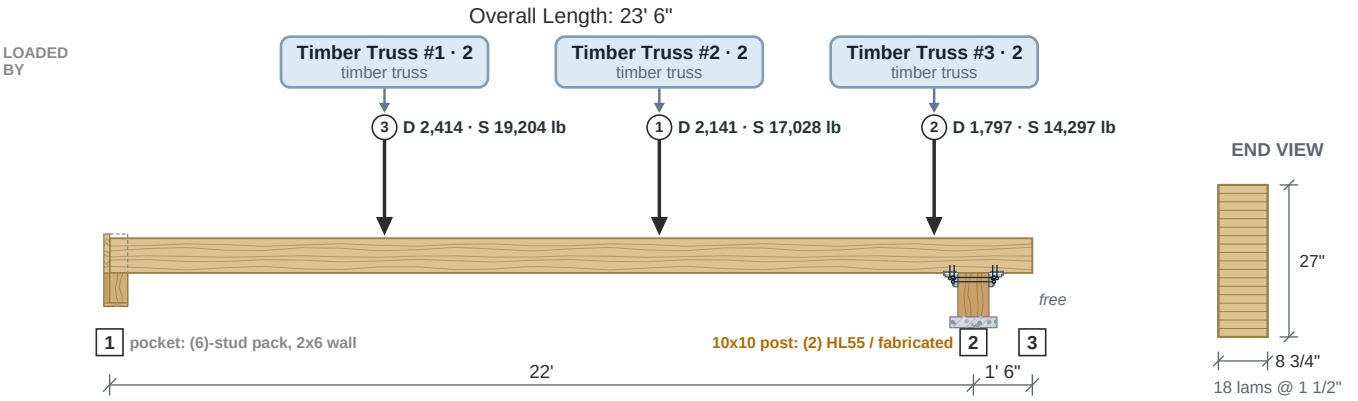
(1) 8 3/4" x 27" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 23' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 78% used

Section adequacy 21.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	23,031 @ 0	31,281 (5 1/2")	Passed (74%)	--	
Plate Bearing (psi)	479 @ 0	668 (2x6 wall, DF-L #2)	Passed (72%)	--	
Shear (lbs)	35,034 @ 22'	48,006	Passed (73%)	1.15	D+S
Moment (Ft-lbs)	165,830 @ 14'	211,340	Passed (78%)	1.15	D+S
Live Load Defl. (in)	0.106 @ 23' 6"	0.15	Passed (2L/338)	--	S
Total Load Defl. (in)	0.122 @ 23' 6"	0.2	Passed (2L/295)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.15, CV = 0.864, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 53.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

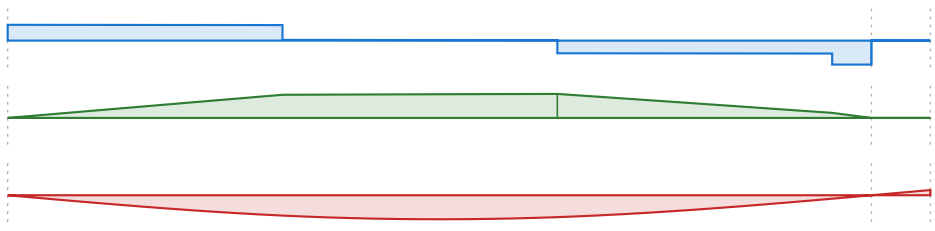
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 1/16"	3,095	19,935	**23,031**	SpotFtg Hdr #11-2 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a (6)-stud pack -- no post cap)
2 @ 22'	9 1/2" seat	5 13/16"	4,522	30,593	**35,115**	SpotFtg Bm #4-4 (10x10 post (max 20 ft, 1%): (2) HL55 / fabricated)
3 @ 23' 6"	--	--	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	22' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 23' 6"	N/A	53.8	--	
1 - Point (lb)	14'	N/A	2,141	17,028	Linked from: Timber Truss #2, Support 2
2 - Point (lb)	21'	N/A	1,797	14,297	Linked from: Timber Truss #3, Support 2
3 - Point (lb)	7'	N/A	2,414	19,204	Linked from: Timber Truss #1, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max -35,034 @ 22'

Moment (ft-lbs)
D+S
max 165,830 @ 14'

Deflection (in)
D+S
0.122 in up @ 23' 6"
limit 0.2 in on 2L (cantilever)

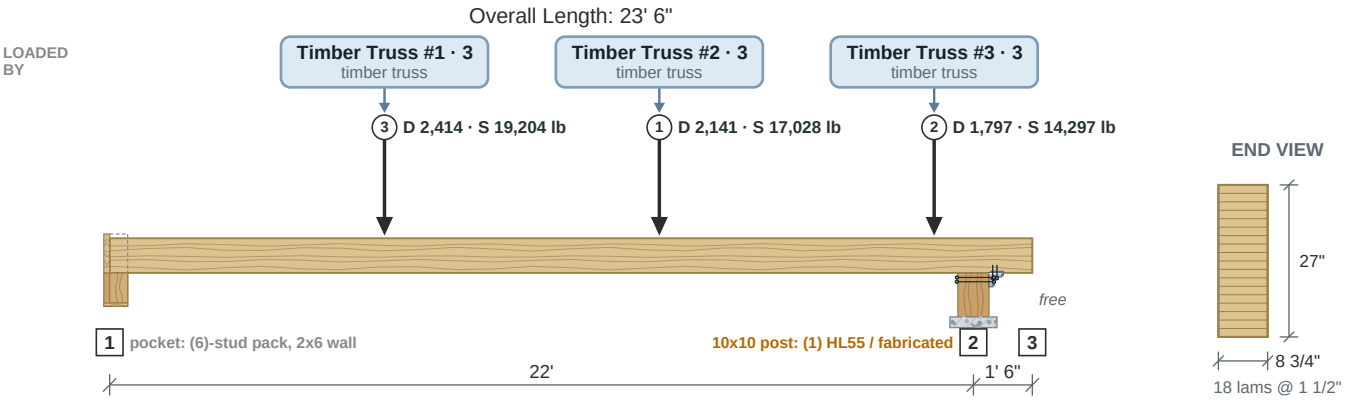
Beam #8

PASSED

(1) 8 3/4" x 27" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 23' 6" | 2018 IRC | 2018 NDS | ASD

Controls: Moment 78% used
Section adequacy 21.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	23,031 @ 0	31,281 (5 1/2")	Passed (74%)	--	
Plate Bearing (psi)	479 @ 0	668 (2x6 wall, DF-L #2)	Passed (72%)	--	
Shear (lbs)	35,034 @ 22'	48,006	Passed (73%)	1.15	D+S
Moment (Ft-lbs)	165,830 @ 14'	211,340	Passed (78%)	1.15	D+S
Live Load Defl. (in)	0.106 @ 23' 6"	0.15	Passed (2L/338)	--	S
Total Load Defl. (in)	0.122 @ 23' 6"	0.2	Passed (2L/295)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.15, CV = 0.864, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 53.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

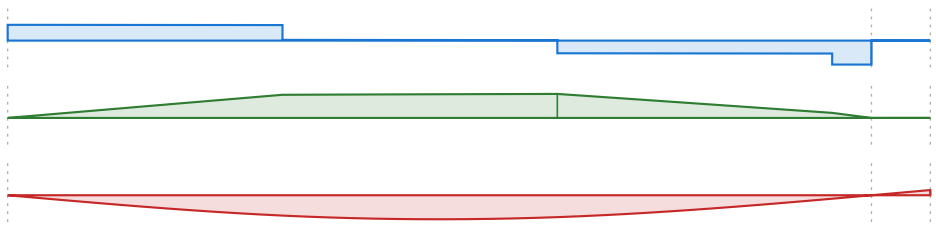
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 1/16"	3,095	19,935	**23,031**	SpotFtg Bm #6-2 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a (6)-stud pack -- no post cap)
2 @ 22'	9 1/2" seat	5 13/16"	4,522	30,593	**35,115**	SpotFtg Bm #8-2 (10x10 post (max 12 ft, 30%): (1) HL55 / fabricated)
3 @ 23' 6"	--	--	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	22' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 23' 6"	N/A	53.8	--	
1 - Point (lb)	14'	N/A	2,141	17,028	Linked from: Timber Truss #2, Support 3
2 - Point (lb)	21'	N/A	1,797	14,297	Linked from: Timber Truss #3, Support 3
3 - Point (lb)	7'	N/A	2,414	19,204	Linked from: Timber Truss #1, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max -35,034 @ 22'

Moment (ft-lbs)
D+S
max 165,830 @ 14'

Deflection (in)
D+S
0.122 in up @ 23' 6"
limit 0.2 in on 2L (cantilever)

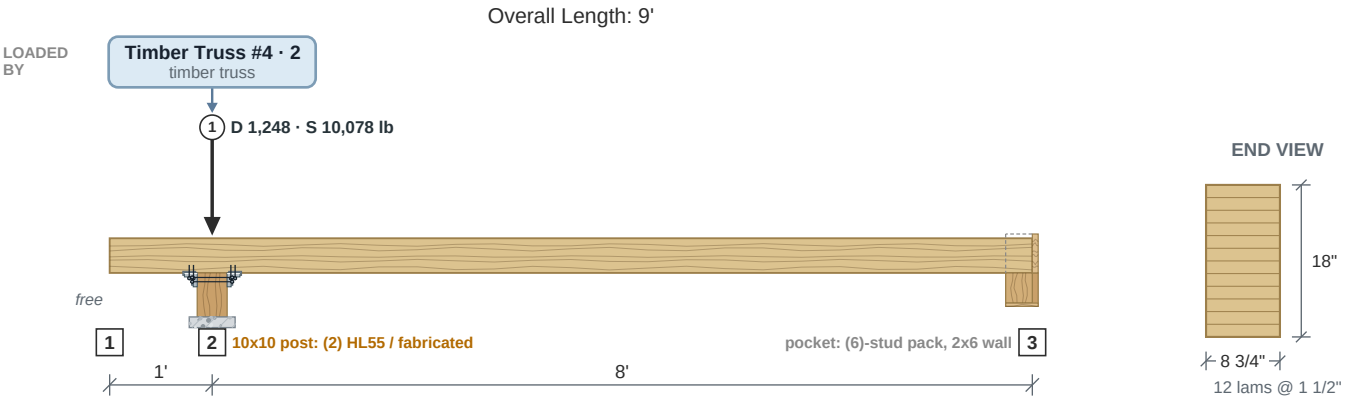
Beam #9

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 21% used
Section adequacy 78.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	11,508 @ 1'	54,031 (9 1/2")	Passed (21%)	--	
Plate Bearing (psi)	3 @ 9'	668 (2x6 wall, DF-L #2)	Passed (0%)	--	
Shear (lbs)	146 @ 1'	25,042	Passed (1%)	0.90	D
Moment (Ft-lbs)	280 @ 5' 1"	84,262	Passed (0%)	0.90	D
Live Load Defl. (in)	0 @ 9'	0.4	Passed (L/9999+)	--	S
Total Load Defl. (in)	0 @ 0	0.133	Passed (2L/9999+)	--	D

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 0.90, CV = 0.991, CL = 1.00 (D).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

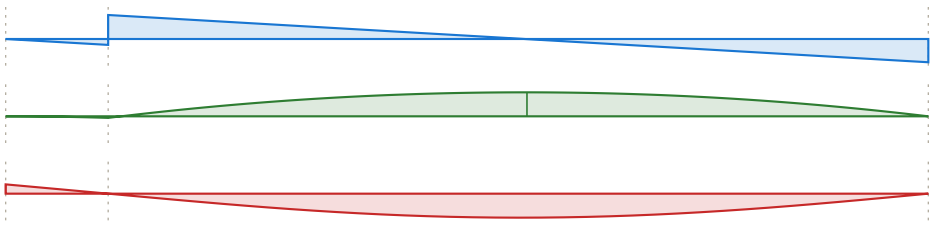
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	--	--	free end (cantilever tip)
2 @ 1'	9 1/2" seat	1 5/8"	1,430	10,078	**11,508**	SpotFtg Bm #9-1 (10x10 post (max 6 ft, 84%): (2) HL55 / fabricated)
3 @ 9'	5 1/2"	0"	141	--	**141**	SpotFtg Bm #9-2 (in a beam pocket in a 2x6 stud wall 20 ft tall, on a (6)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	35.9	--	
1 - Point (lb)	1'	N/A	1,248	10,078	Linked from: Timber Truss #4, Support 2

Shear, Moment and Deflection



Shear (lbs)
D
max 146 @ 1'

Moment (ft-lbs)
D
max 278 @ 5' 1"

Deflection (in)
D
0 in up @ 0
limit 0.133 in on 2L (cantilever)

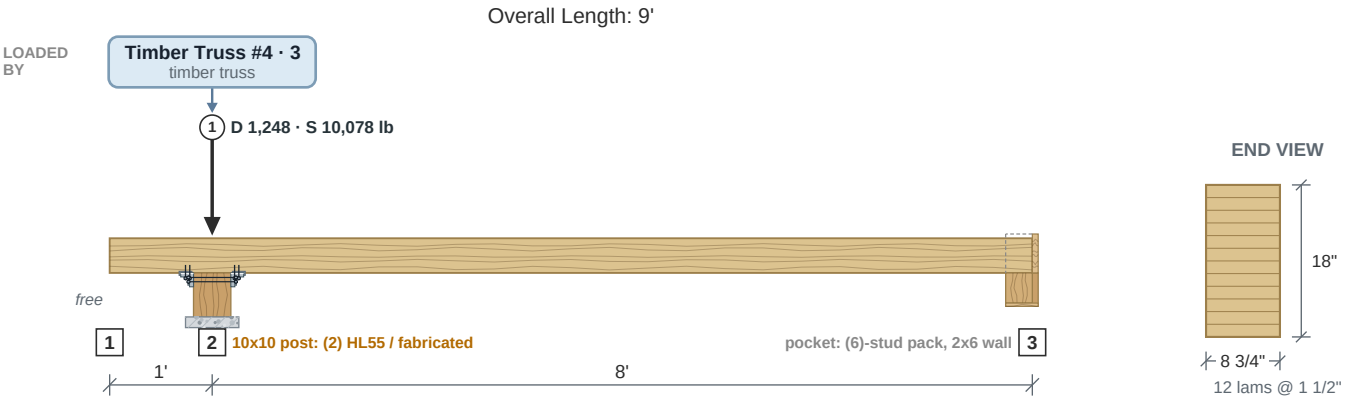
Beam #10

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 21% used
Section adequacy 78.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	11,508 @ 1'	54,031 (9 1/2")	Passed (21%)	--	
Plate Bearing (psi)	3 @ 9'	668 (2x6 wall, DF-L #2)	Passed (0%)	--	
Shear (lbs)	146 @ 1'	25,042	Passed (1%)	0.90	D
Moment (Ft-lbs)	280 @ 5' 1"	84,262	Passed (0%)	0.90	D
Live Load Defl. (in)	0 @ 9'	0.4	Passed (L/9999+)	--	S
Total Load Defl. (in)	0 @ 0	0.133	Passed (2L/9999+)	--	D

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 0.90, CV = 0.991, CL = 1.00 (D).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

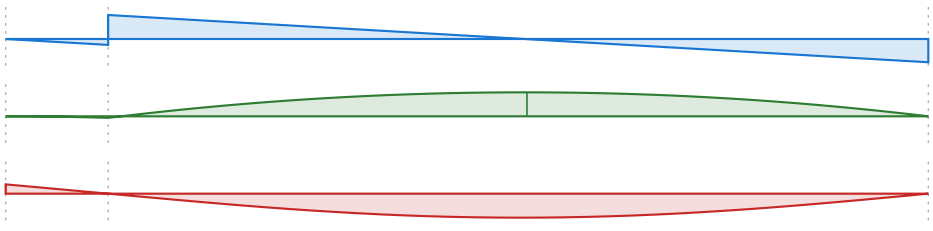
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	--	--	free end (cantilever tip)
2 @ 1'	9 1/2" seat	1 5/8"	1,430	10,078	**11,508**	SpotFtg Bm #10-1 (10x10 post (max 10 ft, 82%): (2) HL55 / fabricated)
3 @ 9'	5 1/2"	0"	141	--	**141**	SpotFtg Bm #10-2 (in a beam pocket in a 2x6 stud wall 10 ft tall, on a (6)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	35.9	--	
1 - Point (lb)	1'	N/A	1,248	10,078	Linked from: Timber Truss #4, Support 3

Shear, Moment and Deflection



Shear (lbs)
D
max 146 @ 1'

Moment (ft-lbs)
D
max 278 @ 5' 1"

Deflection (in)
D
0 in up @ 0
limit 0.133 in on 2L (cantilever)

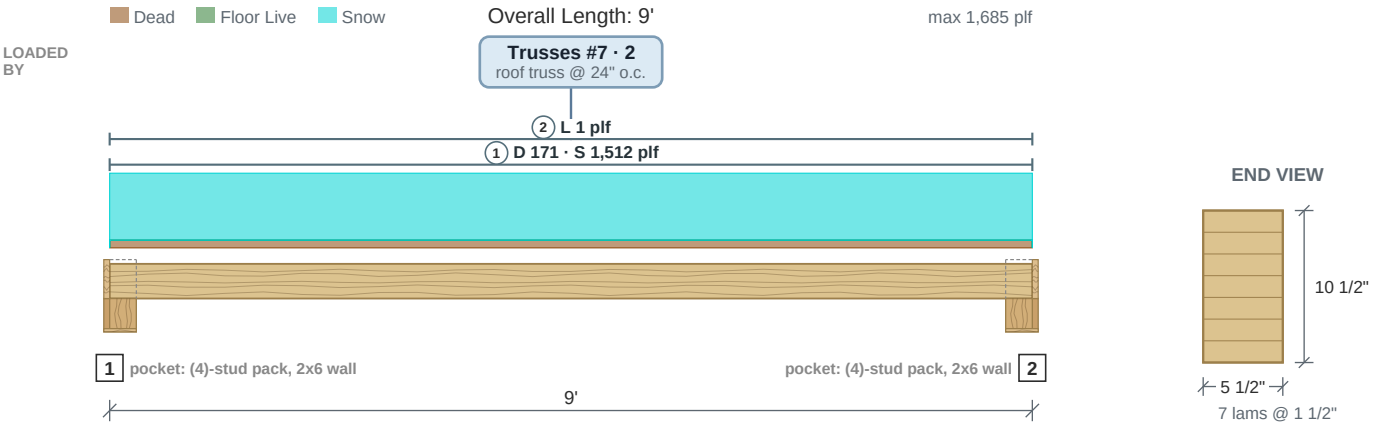
Beam #11

(1) 5 1/2" x 10 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 74% used
Section adequacy 26.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	7,637 @ 0	19,662 (5 1/2")	Passed (39%)	--	
Plate Bearing (psi)	252 @ 0	668 (2x6 wall, DF-L #2)	Passed (38%)	--	
Shear (lbs)	7,637 @ 0	11,735	Passed (65%)	1.15	D+S
Moment (Ft-lbs)	17,183 @ 4' 6"	23,244	Passed (74%)	1.15	D+S
Live Load Defl. (in)	0.234 @ 4' 6"	0.45	Passed (L/462)	--	S
Total Load Defl. (in)	0.262 @ 4' 6"	0.6	Passed (L/412)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 13.2 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

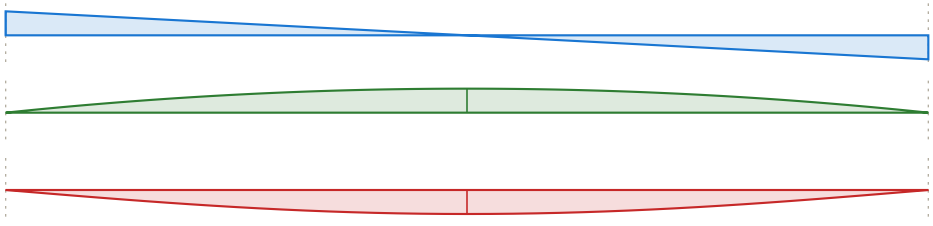
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	2 1/8"	831	4	6,806	**7,637**	SpotFtg Bm #11-1 (in a beam pocket in a 2x6 stud wall 10 ft tall, on a (4)-stud pack -- no post cap)
2 @ 9'	5 1/2"	2 1/8"	831	4	6,806	**7,637**	SpotFtg Bm #11-2 (in a beam pocket in a 2x6 stud wall 10 ft tall, on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	9' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	13.2	--	--	
1 - Uniform (PLF)	0 to 9'	N/A	171.4	--	1,512	Linked from: Trusses #7, Support 2
2 - Uniform (PLF)	0 to 9'	N/A	--	1	--	

Shear, Moment and Deflection



Shear (lbs)
D+S
max 7,637 @ 0

Moment (ft-lbs)
D+S
max 17,183 @ 4' 6"

Deflection (in)
D+S
0.262 in down @ 4' 6"
limit 0.6 in on the span

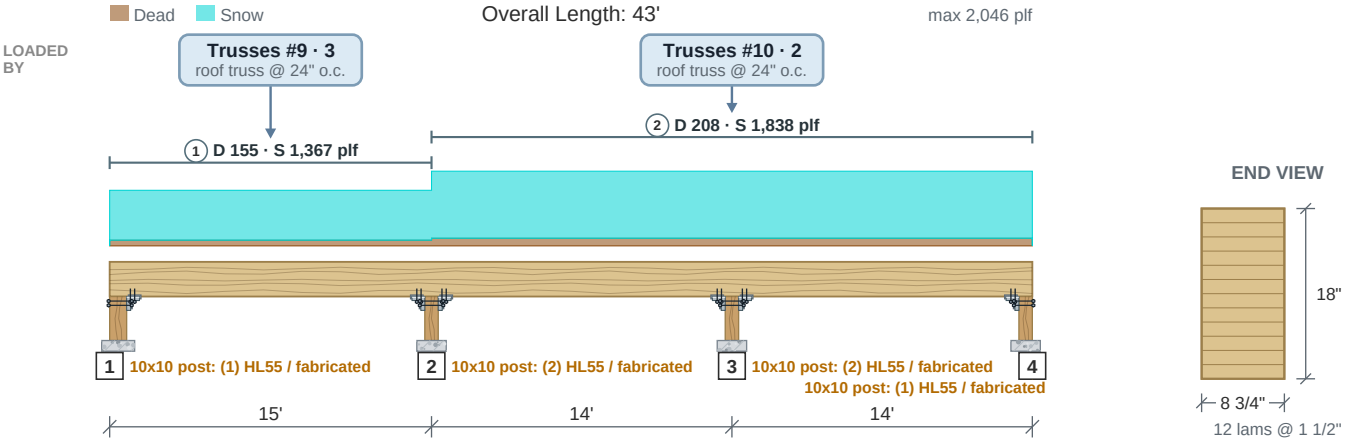
Beam #12

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 43' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 60% used
Section adequacy 40% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	32,440 @ 29'	54,031 (9 1/2")	Passed (60%)	--	
Shear (lbs)	17,549 @ 29'	32,004	Passed (55%)	1.15	D+S
Neg Moment (Ft-lbs)	-41,694 @ 29'	70,977	Passed (59%)	1.15	D+S
Live Load Defl. (in)	0.107 @ 37'	0.7	Passed (L/1,564)	--	S
Total Load Defl. (in)	0.122 @ 37'	0.933	Passed (L/1,380)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.847, CL = 0.992 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 41693 lbf-ft, 15.00-29.00 ft, CL 0.992 (unbraced 14.0 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

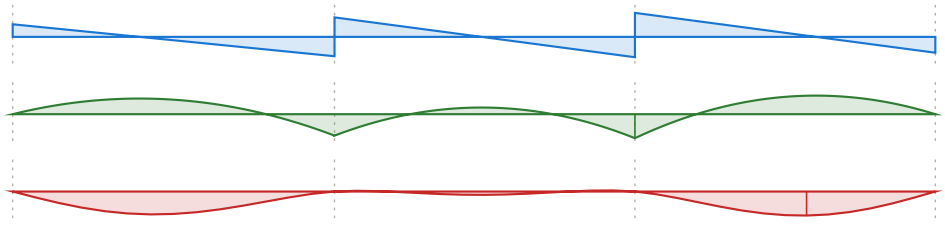
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	9 1/2" seat	1 5/8"	1,132	8,074	**9,206**	SpotFtg Bm #8-2 (10x10 post (max 12 ft, 30%): (1) HL55 / fabricated)
2 @ 15'	9 1/2" seat	4 5/8"	3,413	25,008	**28,421**	SpotFtg Bm #12-2 (10x10 post (max 12 ft, 55%): (2) HL55 / fabricated)
3 @ 29'	9 1/2" seat	5 5/16"	3,791	28,649	**32,440**	SpotFtg Bm #12-3 (10x10 post (max 12 ft, 49%): (2) HL55 / fabricated)
4 @ 43'	9 1/2" seat	2 1/16"	1,362	10,231	**11,593**	SpotFtg Bm #12-4 (10x10 post (max 12 ft, 81%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	15' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 43'	N/A	35.9	--	
1 - Uniform (PLF)	0 to 15'	N/A	155	1,367	Linked from: Trusses #9, Support 3
2 - Uniform (PLF)	15' to 43'	N/A	208.2	1,838	Linked from: Trusses #10, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 17,549 @ 29'

Moment (ft-lbs)
D+S
max -41,693 @ 29'

Deflection (in)
D+S
0.122 in down @ 37'
limit 0.933 in on the span

Beam #13

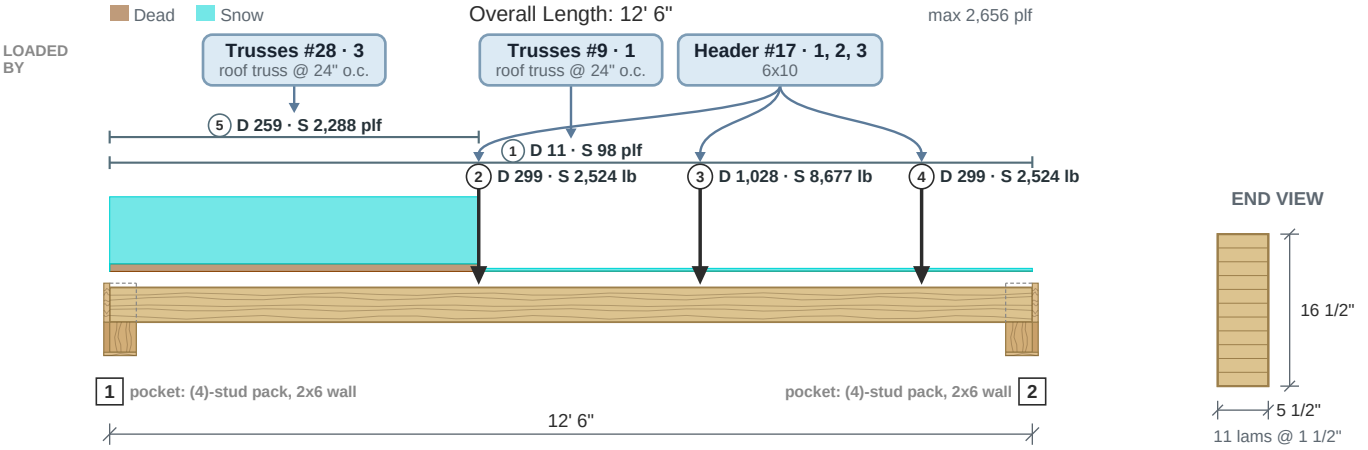
(1) 5 1/2" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 12' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 90% used

Section adequacy 10.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	16,527 @ 0	19,662 (5 1/2")	Passed (84%)	--	
Plate Bearing (psi)	546 @ 0	668 (2x6 wall, DF-L #2)	Passed (82%)	--	
Shear (lbs)	16,527 @ 0	18,440	Passed (90%)	1.15	D+S
Moment (Ft-lbs)	49,565 @ 7' 5 1/4"	57,399	Passed (86%)	1.15	D+S
Live Load Defl. (in)	0.34 @ 6' 2 3/8"	0.625	Passed (L/441)	--	S
Total Load Defl. (in)	0.383 @ 6' 2 3/8"	0.833	Passed (L/392)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 20.7 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 5/8"	1,821	14,705	**16,527**	SpotFtg Bm #6-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)
2 @ 12' 6"	5 1/2"	3 11/16"	1,499	11,686	**13,185**	SpotFtg Bm #13-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

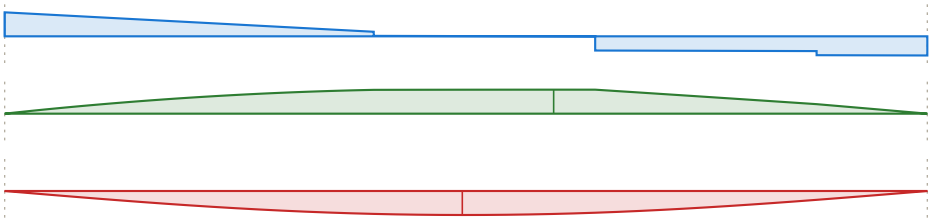
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 6"	N/A	20.7	--	
1 - Uniform (PLF)	0 to 12' 6"	N/A	11.1	98.3	Linked from: Trusses #9, Support 1
2 - Point (lb)	5'	N/A	299.2	2,524	Linked from: Header #17, Support 1
3 - Point (lb)	8'	N/A	1,028	8,677	Linked from: Header #17, Support 2
4 - Point (lb)	11'	N/A	299.2	2,524	Linked from: Header #17, Support 3
5 - Uniform (PLF)	0 to 5'	N/A	259.2	2,288	Linked from: Trusses #28, Support 3

Beam #13 (continued)

Roof Beam | (1) 5 1/2" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max 16,527 @ 0

Moment (ft-lbs)
D+S
max 49,565 @ 7' 5 1/4"

Deflection (in)
D+S
0.383 in down @ 6' 2 3/8"
limit 0.833 in on the span

Beam #14

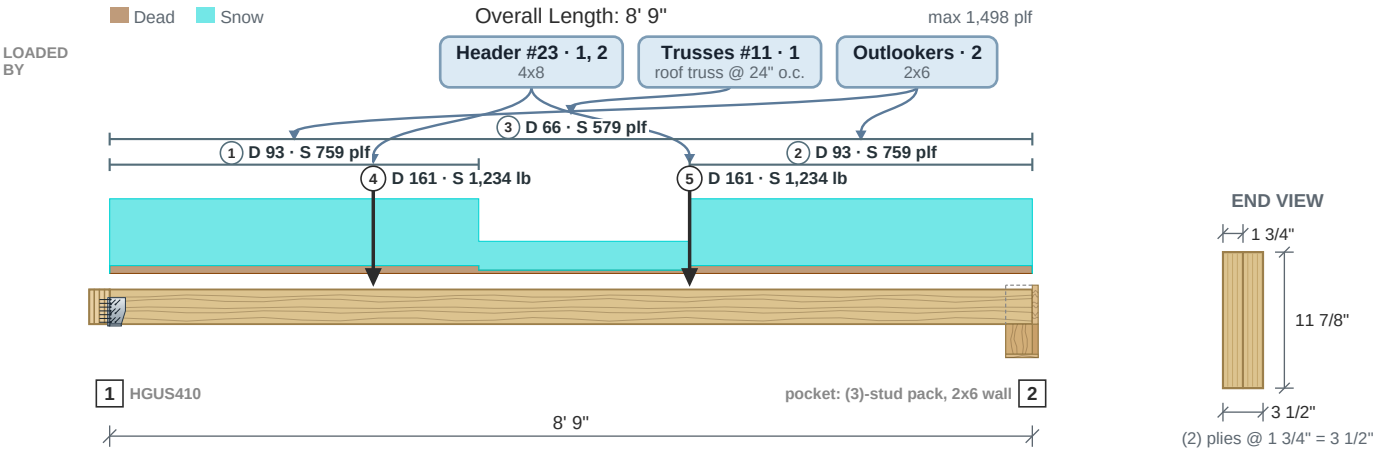
(2) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 8' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 80% used

Section adequacy 19.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	7,291 @ 0	10,500 (4")	Passed (69%)	--	
Plate Bearing (psi)	364 @ 8' 9"	668 (2x6 wall, DF-L #2)	Passed (54%)	--	
Shear (lbs)	7,291 @ 0	9,083	Passed (80%)	1.15	D+S
Moment (Ft-lbs)	15,162 @ 4' 5"	20,526	Passed (74%)	1.15	D+S
Live Load Defl. (in)	0.232 @ 4' 3 5/8"	0.438	Passed (L/452)	--	S
Total Load Defl. (in)	0.262 @ 4' 3 5/8"	0.583	Passed (L/400)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.001, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 12.1 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	4" seat	2 3/4"	832	6,459	**7,291**	Beam #15 (flush, in an HGUS410 face mount, 80%)
2 @ 8' 9"	5 1/2"	2 11/16"	799	6,204	**7,003**	SpotFtg Bm #14-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (3)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

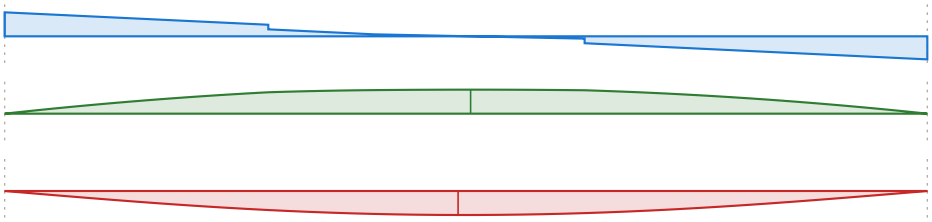
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 8' 9"	N/A	12.1	--	
1 - Uniform (PLF)	0 to 3' 6"	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	5' 6" to 8' 9"	N/A	93.2	759.4	Linked from: Outlookers, Support 2
3 - Uniform (PLF)	0 to 8' 9"	N/A	65.7	579.4	Linked from: Trusses #11, Support 1
4 - Point (lb)	2' 6"	N/A	160.8	1,234	Linked from: Header #23, Support 1
5 - Point (lb)	5' 6"	N/A	160.8	1,234	Linked from: Header #23, Support 2

Beam #14 (continued)

Roof Beam | (2) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Shear, Moment and Deflection



Shear (lbs)
D+S
max 7,291 @ 0

Moment (ft-lbs)
D+S
max 15,163 @ 4' 5"

Deflection (in)
D+S
0.22 in down @ 4' 3 5/8"
limit 0.583 in on the span

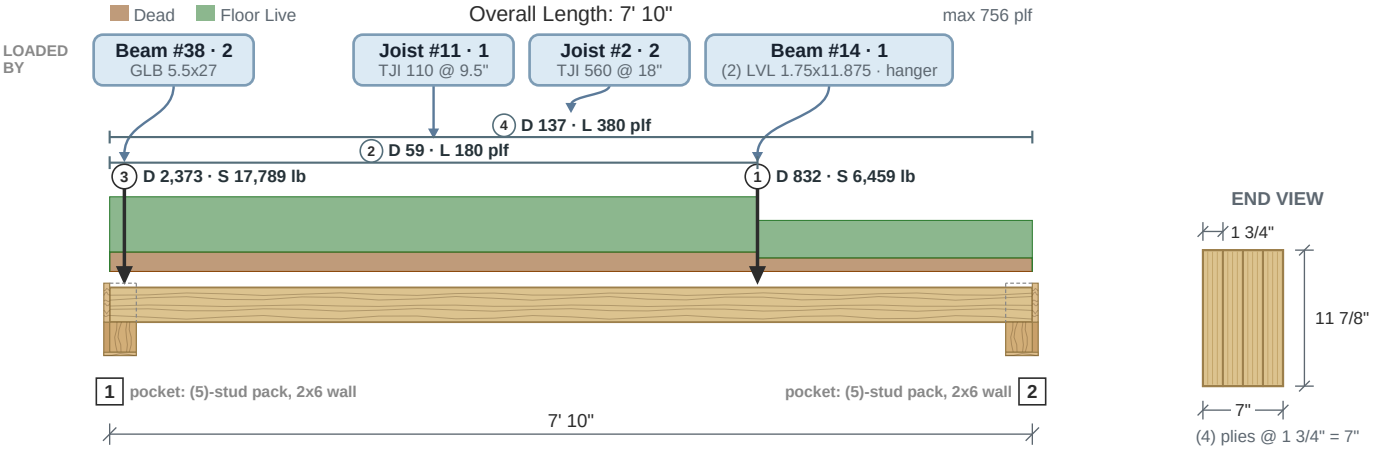
Beam #15

PASSED

(4) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 7' 10" | 2018 IRC | 2018 NDS | ASD

Controls: Bearing on the plates 89% used
Section adequacy 9.2% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	22,854 @ 0	28,875 (5 1/2")	Passed (79%)	--	
Plate Bearing (psi)	594 @ 0	668 (2x6 wall, DF-L #2)	Passed (89%)	--	
Shear (lbs)	6,108 @ 7' 10"	18,166	Passed (34%)	1.15	D+0.75L+0.75S
Moment (Ft-lbs)	13,245 @ 5' 6"	41,051	Passed (32%)	1.15	D+S
Live Load Defl. (in)	0.068 @ 4' 1 7/8"	0.392	Passed (L/1,391)	--	S
Total Load Defl. (in)	0.091 @ 4' 1 7/8"	0.522	Passed (L/1,038)	--	D+0.75L+0.75S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.001, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 24.2 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 3/8"	3,425	2,131	19,429	**22,854**	SpotFtg Bm #15-1 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (5)-stud pack -- no post cap)
2 @ 7' 10"	5 1/2"	1 3/16"	1,367	1,836	4,819	**6,358**	SpotFtg Bm #15-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (5)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

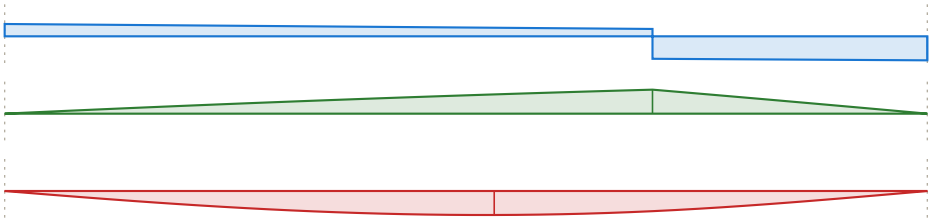
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	7' 10" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 7' 10"	N/A	24.2	--	--	
1 - Point (lb)	5' 6"	N/A	832.1	--	6,459	Linked from: Beam #14, Support 1
2 - Uniform (PLF)	0 to 5' 6"	N/A	59.2	180	--	Linked from: Joist #11, Support 1
3 - Point (lb)	1 1/2"	N/A	2,373	--	17,789	Linked from: Beam #38, Support 2
4 - Uniform (PLF)	0 to 7' 10"	N/A	136.8	380	--	Linked from: Joist #2, Support 2

Beam #15 (continued)

Roof Beam | (4) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Shear, Moment and Deflection



Shear (lbs)
D+S
max -5,864 @ 7' 10"

Moment (ft-lbs)
D+S
max 13,245 @ 5' 6"

Deflection (in)
D+0.75L+0.75S
0.072 in down @ 4' 1 7/8"
limit 0.522 in on the span

Beam #16

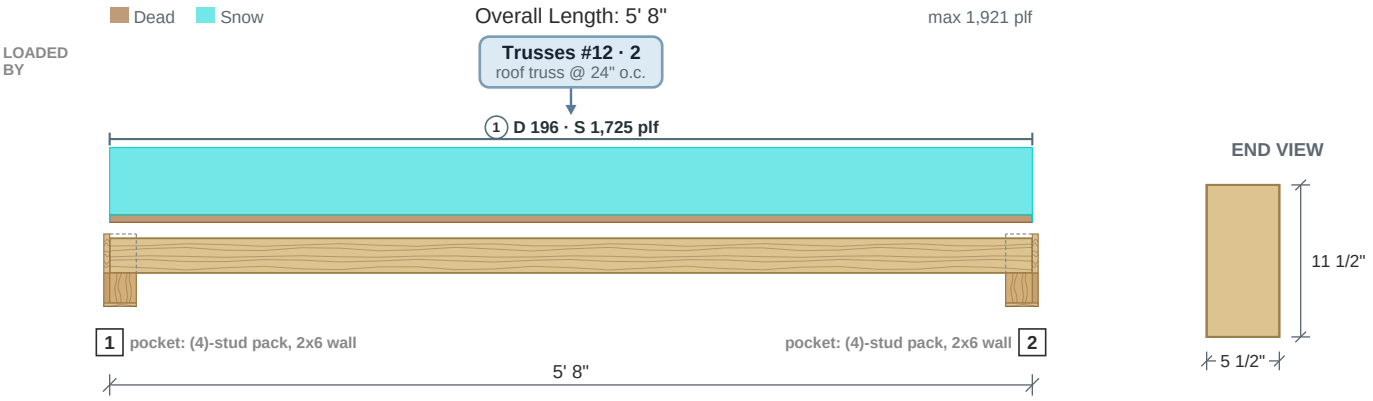
(1) 6x12 DF-L(N) No. 2 (5 1/2" x 11 1/2")

Level: Roof | Member type: Beam (Roof Beam) | Length: 5' 8" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 76% used

Section adequacy 23.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,482 @ 0	18,906 (5 1/2")	Passed (29%)	--	
Plate Bearing (psi)	181 @ 0	668 (2x6 wall, DF-L #2)	Passed (27%)	--	
Shear (lbs)	5,482 @ 0	8,244	Passed (66%)	1.15	D+S
Moment (Ft-lbs)	7,767 @ 2' 10"	10,165	Passed (76%)	1.15	D+S
Live Load Defl. (in)	0.044 @ 2' 10"	0.283	Passed (L/1,540)	--	S
Total Load Defl. (in)	0.05 @ 2' 10"	0.378	Passed (L/1,373)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 14.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

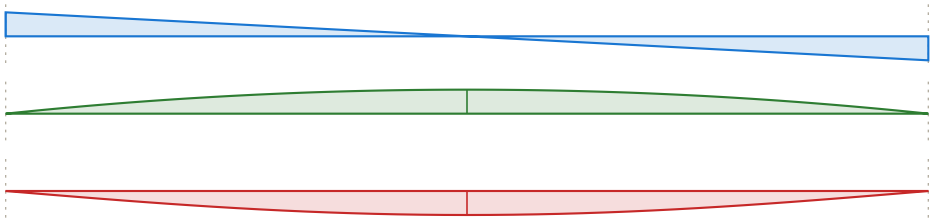
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1 9/16"	595	4,888	**5,482**	SpotFtg Bm #16-1 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)
2 @ 5' 8"	5 1/2"	1 9/16"	595	4,888	**5,482**	SpotFtg Bm #16-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 8" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 8"	N/A	14.4	--	
1 - Uniform (PLF)	0 to 5' 8"	N/A	195.5	1,725	Linked from: Trusses #12, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,482 @ 0

Moment (ft-lbs)
D+S
max 7,767 @ 2' 10"

Deflection (in)
D+S
0.05 in down @ 2' 10"
limit 0.378 in on the span

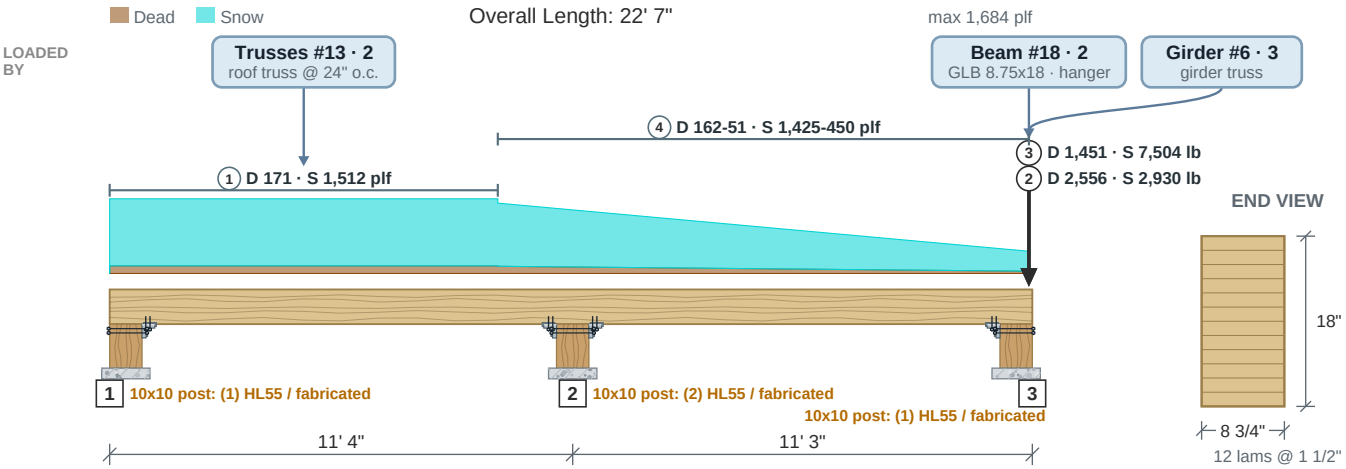
Beam #17

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 22' 7" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 37% used
Section adequacy 63% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	19,986 @ 11' 4"	54,031 (9 1/2")	Passed (37%)	--	
Shear (lbs)	11,379 @ 11' 4"	32,004	Passed (36%)	1.15	D+S
Neg Moment (Ft-lbs)	-21,873 @ 11' 4"	75,698	Passed (29%)	1.15	D+S
Live Load Defl. (in)	0.039 @ 5' 3/8"	0.567	Passed (L/3,530)	--	S
Total Load Defl. (in)	0.044 @ 5' 3/8"	0.756	Passed (L/3,125)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.904, CL = 0.993 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 21874 lbf-ft, 0.00-11.33 ft, CL 0.993 (unbraced 11.3 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	9 1/2" seat	1 3/8"	923	6,844	**7,767**	SpotFtg Bm #17-1 (10x10 post (max 12 ft, 87%): (1) HL55 / fabricated)
2 @ 11' 4"	9 1/2" seat	3 1/8"	2,517	17,469	**19,986**	SpotFtg Bm #17-2 (10x10 post (max 12 ft, 68%): (2) HL55 / fabricated)
3 @ 22' 7"	9 1/2" seat	3"	4,385	12,678	**17,063**	SpotFtg Bm #17-3 (10x10 post (max 12 ft, 73%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

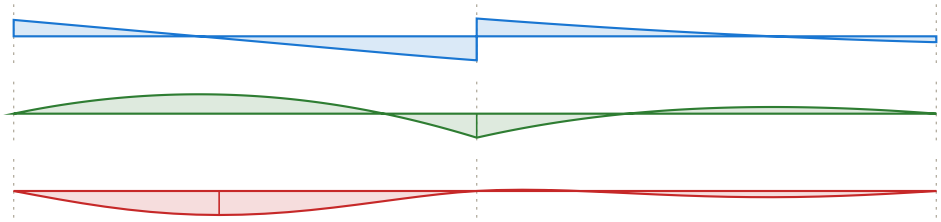
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	11' 4" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 22' 7"	N/A	35.9	--	
1 - Uniform (PLF)	0 to 9' 6"	N/A	171.4	1,512	Linked from: Trusses #13, Support 2
2 - Point (lb)	22' 6"	N/A	2,556	2,930	Linked from: Beam #18, Support 2
3 - Point (lb)	22' 6"	N/A	1,451	7,504	Linked from: Girder #6, Support 3
4 - Trapezoidal (PLF)	9' 6" to 22' 6"	N/A	161.5 - 51	1425 - 450	

Beam #17 (continued)

Roof Beam | (1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max -11,379 @ 11' 4"

Moment (ft-lbs)
D+S
max -21,874 @ 11' 4"

Deflection (in)
D+S
0.044 in down @ 5' 3/8"
limit 0.756 in on the span

Beam #18

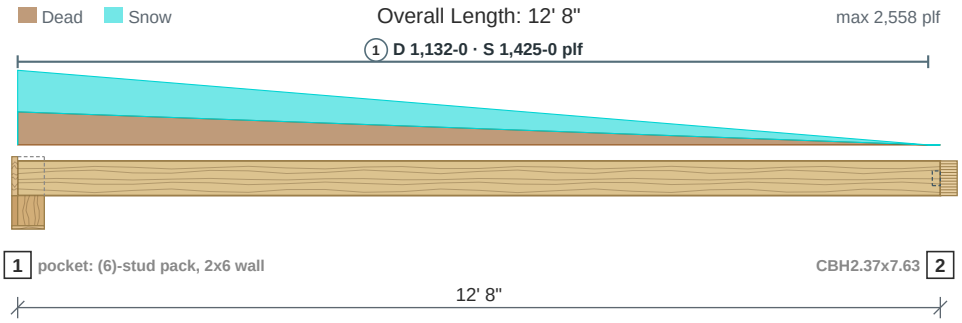
(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

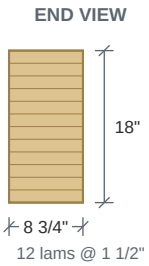
Level: Roof | Member type: Beam (Roof Beam) | Length: 12' 8" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 35% used

Section adequacy 63.7% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	10,954 @ 0	31,281 (5 1/2")	Passed (35%)	--	
Plate Bearing (psi)	228 @ 0	668 (2x6 wall, DF-L #2)	Passed (34%)	--	
Shear (lbs)	10,954 @ 0	32,004	Passed (34%)	1.15	D+S
Moment (Ft-lbs)	26,708 @ 5' 4 5/8"	104,052	Passed (26%)	1.15	D+S
Live Load Defl. (in)	0.053 @ 5' 11 1/4"	0.633	Passed (L/2,854)	--	S
Total Load Defl. (in)	0.098 @ 5' 11 1/4"	0.844	Passed (L/1,546)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.957, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

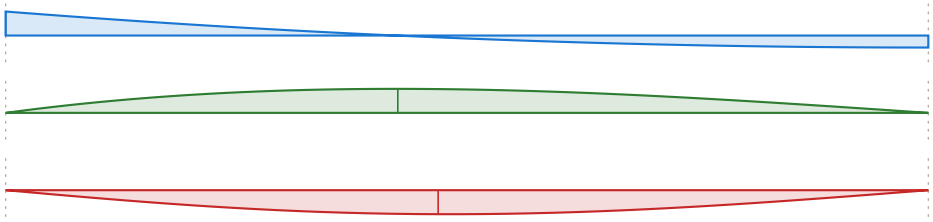
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1 15/16"	4,977	5,977	**10,954**	SpotFtg Bm #18-1 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (6)-stud pack -- no post cap)
2 @ 12' 8"	5 1/2"	15/16"	2,556	2,930	**5,485**	Beam #17 (flush, in a CBH2.37x7.63 concealed beam hanger, 81%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 8" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 8"	N/A	35.9	--	
1 - Trapezoidal (PLF)	0 to 12' 6"	N/A	1132.5 - 0	1425 - 0	

Shear, Moment and Deflection



Shear (lbs)
D+S
max 10,954 @ 0

Moment (ft-lbs)
D+S
max 26,708 @ 5' 4 5/8"

Deflection (in)
D+S
0.098 in down @ 5' 11 1/4"
limit 0.844 in on the span

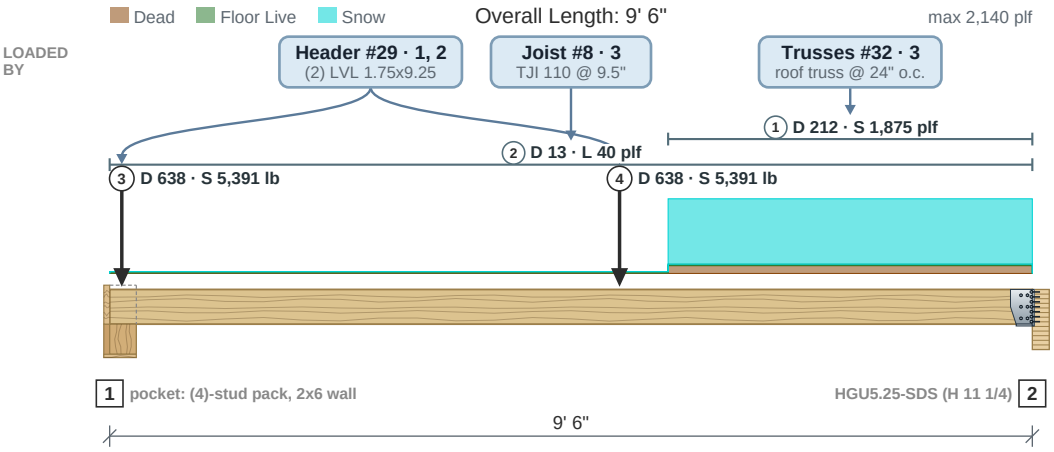
Beam #19

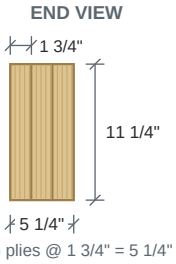
(3) 1 3/4" x 11 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 9' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 81% used
Section adequacy 18.8% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	10,336 @ 0	21,656 (5 1/2")	Passed (48%)	--	
Plate Bearing (psi)	358 @ 0	668 (2x6 wall, DF-L #2)	Passed (54%)	--	
Shear (lbs)	9,759 @ 9' 6"	12,907	Passed (76%)	1.15	D+S
Moment (Ft-lbs)	22,609 @ 5' 3"	27,837	Passed (81%)	1.15	D+S
Live Load Defl. (in)	0.269 @ 5' 3/16"	0.475	Passed (L/424)	--	S
Total Load Defl. (in)	0.305 @ 5' 3/16"	0.633	Passed (L/373)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.009, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 17.2 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	2 5/8"	1,216	189	9,119	**10,335**	SpotFtg Bm #19-1 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)
2 @ 9' 6"	5 1/4" seat	2 1/2"	1,145	189	8,693	**9,838**	Beam #20 (flush, in an HGU5.25-SDS (H 11 1/4) face mount, 75%)

Total = the governing ASD combination at that support; the category columns are service loads.

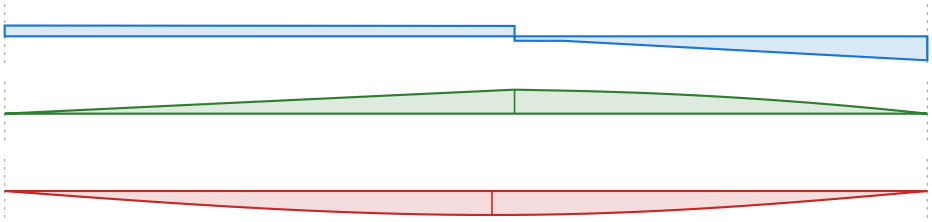
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	9' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9' 6"	N/A	17.2	--	--	
1 - Uniform (PLF)	5' 9" to 9' 6"	N/A	212.5	--	1,875	Linked from: Trusses #32, Support 3
2 - Uniform (PLF)	0 to 9' 6"	N/A	13.1	39.8	--	Linked from: Joist #8, Support 3
3 - Point (lb)	1 1/2"	N/A	638.1	--	5,391	Linked from: Header #29, Support 1
4 - Point (lb)	5' 3"	N/A	638.1	--	5,391	Linked from: Header #29, Support 2

Beam #19 (continued)

Roof Beam | (3) 1 3/4" x 11 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Shear, Moment and Deflection



Shear (lbs)
D+S
max -9,759 @ 9' 6"

Moment (ft-lbs)
D+S
max 22,609 @ 5' 3"

Deflection (in)
D+S
0.261 in down @ 5' 3/16"
limit 0.633 in on the span

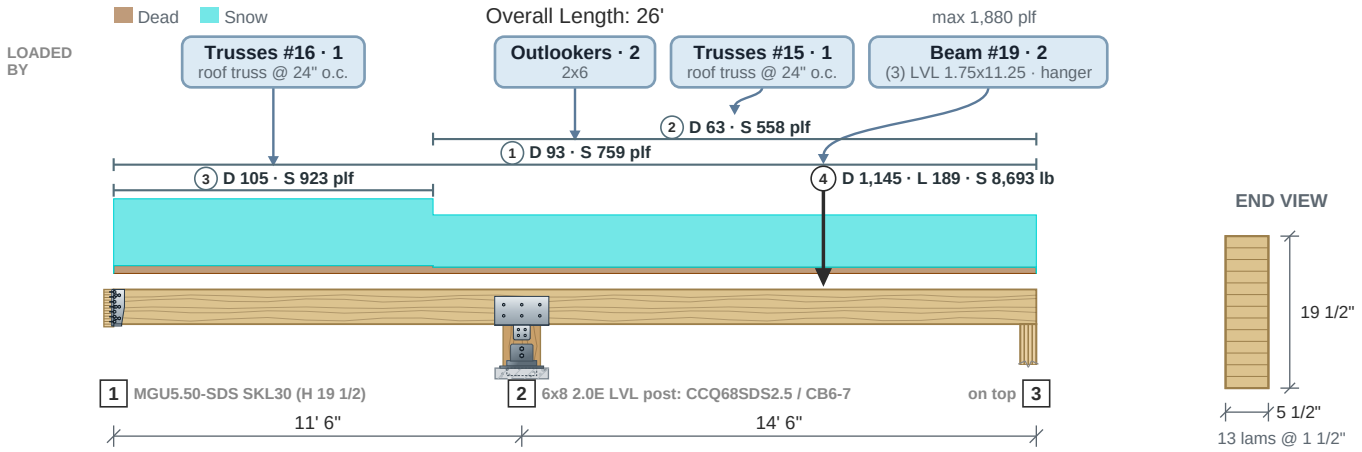
Beam #20

(1) 5 1/2" x 19 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 26' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 86% used
Section adequacy 14.2% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	32,634 @ 11' 6"	39,325 (11")	Passed (83%)	--	
Shear (lbs)	18,319 @ 11' 6"	21,793	Passed (84%)	1.15	D+S
Neg Moment (Ft-lbs)	-49,083 @ 11' 6"	57,219	Passed (86%)	1.15	D+S
Live Load Defl. (in)	0.207 @ 19' 4 11/16"	0.725	Passed (L/840)	--	S
Total Load Defl. (in)	0.235 @ 19' 4 11/16"	0.967	Passed (L/740)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.926, CL = 0.976 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 49083 lbf-ft, 0.00-11.50 ft, CL 0.976 (unbraced 11.5 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 24.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	4 1/2" seat	1 13/16"	761	-23	5,813	**6,573**	Beam #21 (flush, in an MGU5.50-SDS SKL30 (H 19 1/2) face mount, 87%)
2 @ 11' 6"	11" seat	9 1/8"	3,878	119	28,756	**32,634**	SpotFtg Bm #20-2 (6x8 2.0E LVL post (max 12 ft, 31%): CCQ68SDS2.5 / CB6-7)
3 @ 26'	5 1/2"	3 11/16"	1,581	93	11,664	**13,245**	Header #26 (bears on top)

Total = the governing ASD combination at that support; the category columns are service loads.

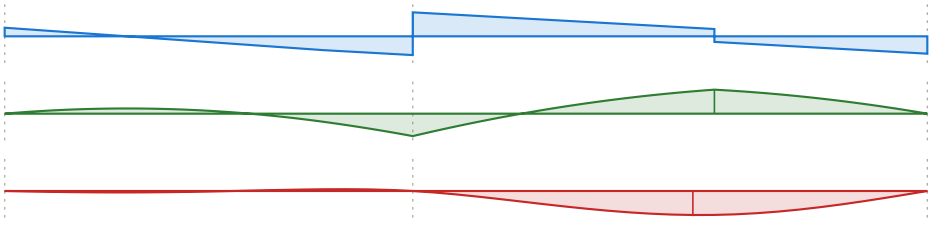
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	14' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 26'	N/A	24.4	--	--	
1 - Uniform (PLF)	0 to 26'	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	9' to 26'	N/A	63.2	--	558.1	Linked from: Trusses #15, Support 1
3 - Uniform (PLF)	0 to 9'	N/A	104.6	--	923.1	Linked from: Trusses #16, Support 1
4 - Point (lb)	20'	N/A	1,145	189.1	8,693	Linked from: Beam #19, Support 2

Beam #20 (continued)

Roof Beam | (1) 5 1/2" x 19 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max 18,319 @ 11' 6"

Moment (ft-lbs)
D+S
max 52,500 @ 20'

Deflection (in)
D+S
0.235 in down @ 19' 4 11/16"
limit 0.967 in on the span

Beam #21

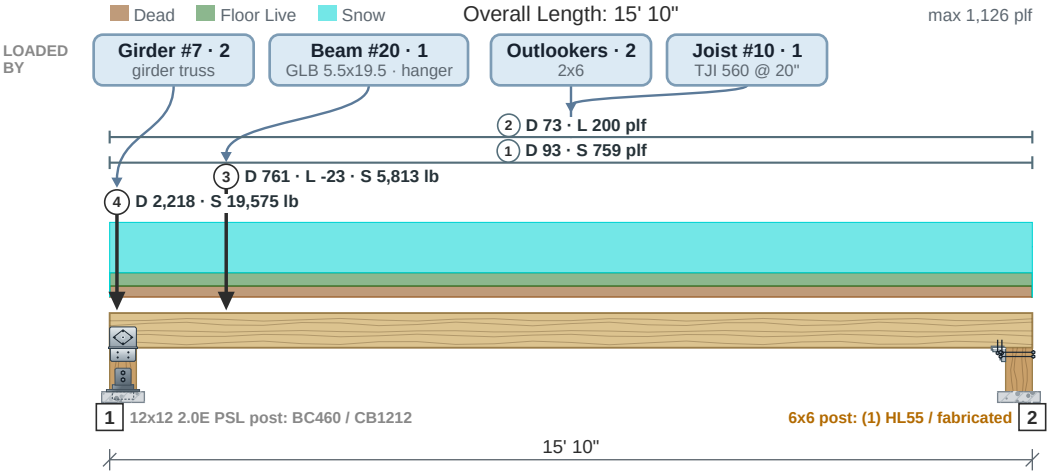
(1) 5 1/2" x 21" 24F-1.8E 24F-V4 DF/DF Glulam

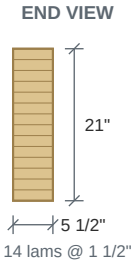
Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 15' 10" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 85% used

Section adequacy 15.1% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	34,899 @ 0	41,112 (11 1/2")	Passed (85%)	--	
Shear (lbs)	13,277 @ 0	23,470	Passed (57%)	1.15	D+S
Moment (Ft-lbs)	36,760 @ 7' 9/16"	89,801	Passed (41%)	1.15	D+S
Live Load Defl. (in)	0.19 @ 7' 6 3/8"	0.792	Passed (L/1,001)	--	S
Total Load Defl. (in)	0.232 @ 7' 6 3/8"	1.056	Passed (L/820)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.966, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 26.3 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	11 1/2" seat	9 3/4"	4,388	1,565	30,511	**34,899**	SpotFtg Bm #21-1 (12x12 2.0E PSL post (max 10 ft, 83%): BC460 / CB1212)
2 @ 15' 10"	5 1/2" seat	2 3/8"	1,636	1,582	6,900	**8,537**	SpotFtg Bm #21-2 (6x6 post (max 10 ft, 41%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

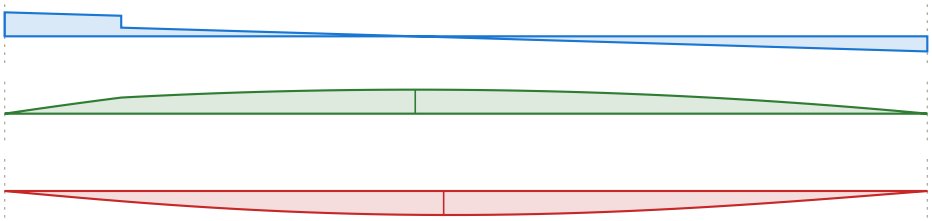
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	15' 10" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 15' 10"	N/A	26.3	--	--	
1 - Uniform (PLF)	0 to 15' 10"	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 15' 10"	N/A	72.8	200.2	--	Linked from: Joist #10, Support 1
3 - Point (lb)	2'	N/A	760.8	-22.8	5,813	Linked from: Beam #20, Support 1
4 - Point (lb)	1 1/2"	N/A	2,218	--	19,575	Linked from: Girder #7, Support 2

Beam #21 (continued)

Roof Beam | (1) 5 1/2" x 21" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max 13,277 @ 0

Moment (ft-lbs)
D+S
max 36,759 @ 7' 9/16"

Deflection (in)
D+S
0.232 in down @ 7' 6 3/8"
limit 1.056 in on the span

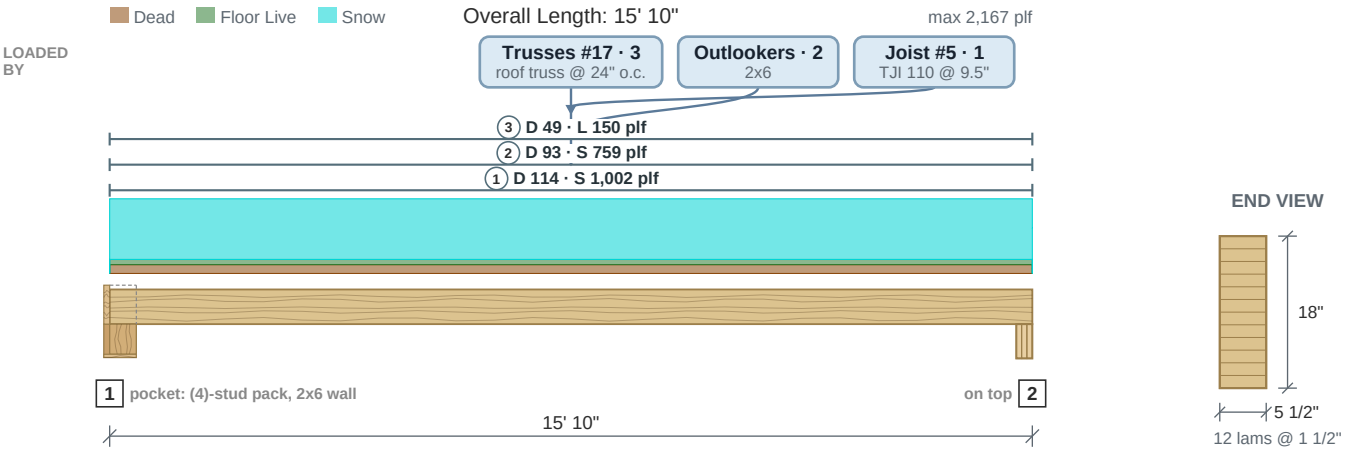
Beam #22

PASSED

(1) 5 1/2" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 15' 10" | 2018 IRC | 2018 NDS | ASD

Controls: Moment 95% used
Section adequacy 4.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	16,148 @ 0	19,662 (5 1/2")	Passed (82%)	--	
Plate Bearing (psi)	534 @ 0	668 (2x6 wall, DF-L #2)	Passed (80%)	--	
Shear (lbs)	16,148 @ 0	20,117	Passed (80%)	1.15	D+S
Moment (Ft-lbs)	63,919 @ 7' 11"	67,001	Passed (95%)	1.15	D+S
Live Load Defl. (in)	0.518 @ 7' 11"	0.792	Passed (L/367)	--	S
Total Load Defl. (in)	0.599 @ 7' 11"	1.056	Passed (L/317)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.981, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 22.5 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

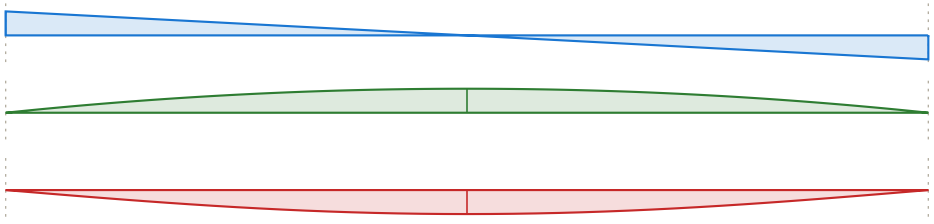
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 1/2"	2,206	1,188	13,943	**16,148**	SpotFtg Bm #38-1 (in a beam pocket in a 2x6 stud wall 11 ft tall, on a (4)-stud pack -- no post cap)
2 @ 15' 10"	5 1/2"	4 1/2"	2,206	1,188	13,943	**16,149**	Header #31 (bears on top)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	15' 10" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 15' 10"	N/A	22.5	--	--	
1 - Uniform (PLF)	0 to 15' 10"	N/A	113.5	--	1,002	Linked from: Trusses #17, Support 3
2 - Uniform (PLF)	0 to 15' 10"	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
3 - Uniform (PLF)	0 to 15' 10"	N/A	49.3	150	--	Linked from: Joist #5, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 16,148 @ 0

Moment (ft-lbs)
D+S
max 63,919 @ 7' 11"

Deflection (in)
D+S
0.599 in down @ 7' 11"
limit 1.056 in on the span

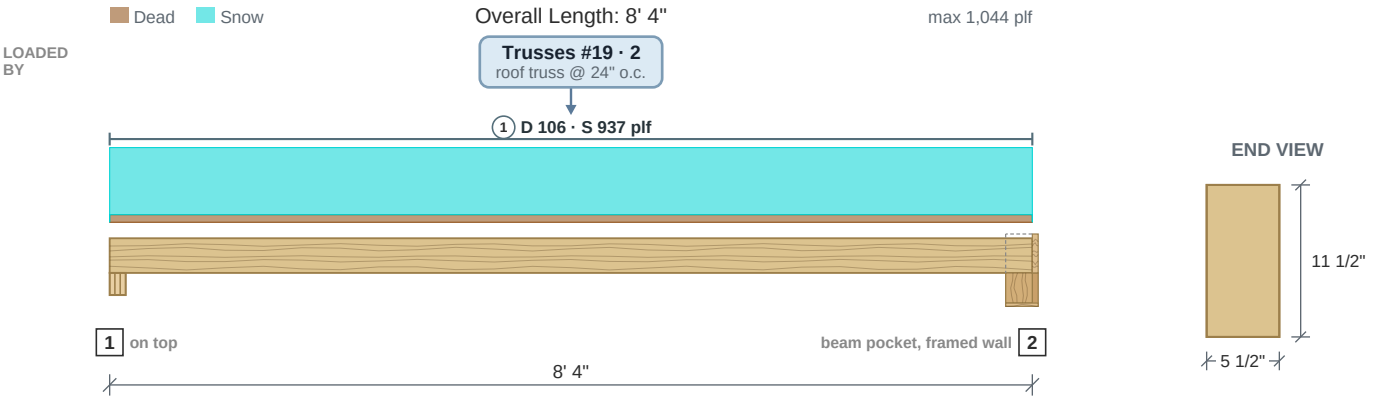
Beam #23

(1) 6x12 DF-L(N) No. 2 (5 1/2" x 11 1/2")

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 8' 4" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 90% used
Section adequacy 9.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	4,409 @ 0	18,906 (5 1/2")	Passed (23%)	--	
Shear (lbs)	4,409 @ 0	8,244	Passed (54%)	1.15	D+S
Moment (Ft-lbs)	9,185 @ 4' 2"	10,165	Passed (90%)	1.15	D+S
Live Load Defl. (in)	0.112 @ 4' 2"	0.417	Passed (L/891)	--	S
Total Load Defl. (in)	0.127 @ 4' 2"	0.556	Passed (L/789)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 14.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

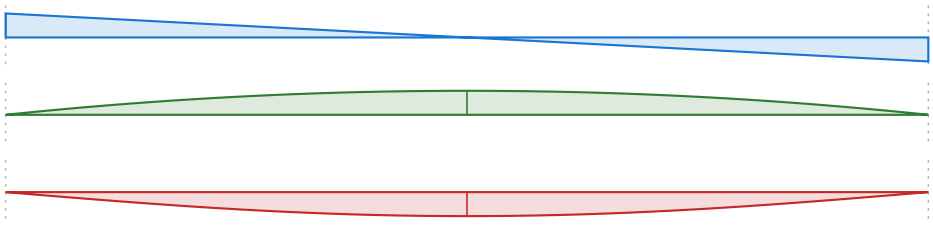
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	5 1/2"	1 1/4"	503	3,906	**4,409**	Header #33 (bears on top)
2 @ 8' 4"	5 1/2"	1 1/4"	503	3,906	**4,409**	SpotFtg Bm #23-1 (in a beam pocket in a framed wall, on a stud pack or a post in it)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' 4" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 8' 4"	N/A	14.4	--	
1 - Uniform (PLF)	0 to 8' 4"	N/A	106.2	937.5	Linked from: Trusses #19, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 4,409 @ 0

Moment (ft-lbs)
D+S
max 9,185 @ 4' 2"

Deflection (in)
D+S
0.127 in down @ 4' 2"
limit 0.556 in on the span

Beam #24

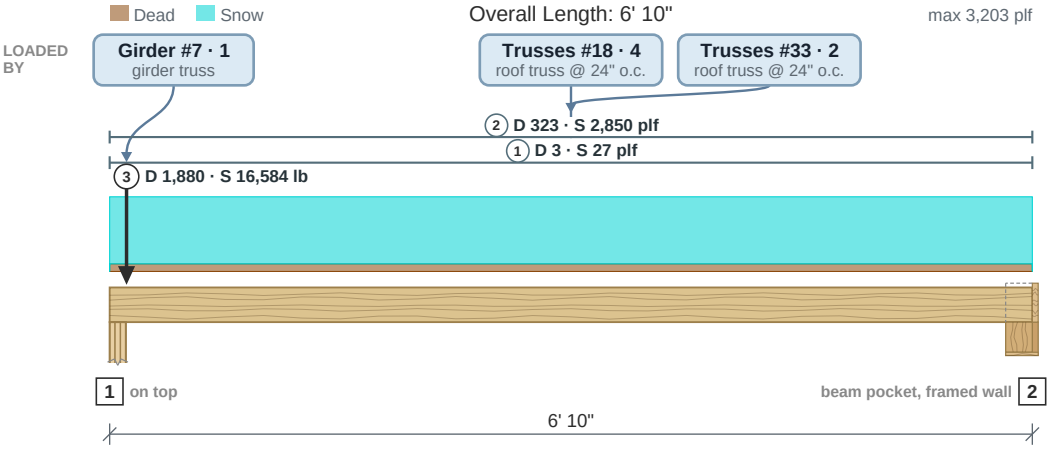
(3) 1 3/4" x 11 1/4" 2.0E Microlam LVL (Weyerhaeuser)

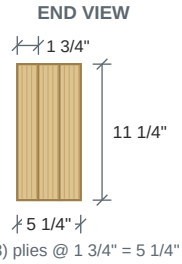
Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 6' 10" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 85% used

Section adequacy 14.8% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	29,128 @ 0	37,406 (9 1/2")	Passed (78%)	--	
Shear (lbs)	11,002 @ 0	12,907	Passed (85%)	1.15	D+S
Moment (Ft-lbs)	18,796 @ 3' 5"	27,837	Passed (68%)	1.15	D+S
Live Load Defl. (in)	0.154 @ 3' 3 3/4"	0.342	Passed (L/531)	--	S
Total Load Defl. (in)	0.173 @ 3' 3 3/4"	0.456	Passed (L/475)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.009, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 17.2 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

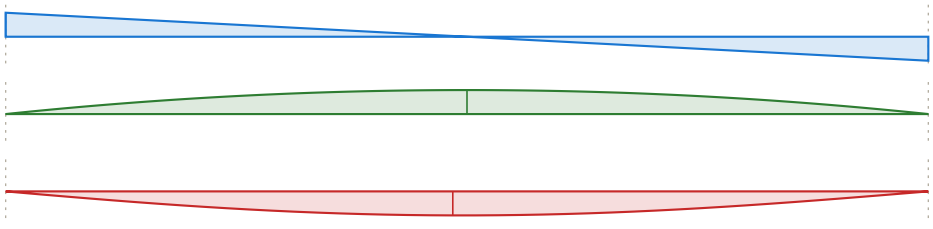
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	9 1/2"	7 3/8"	3,018	26,110	**29,128**	Header #36 (bears on top)
2 @ 6' 10"	5 1/2"	2 7/8"	1,207	10,133	**11,340**	SpotFtg Hdr #35-2 (in a beam pocket in a framed wall, on a stud pack or a post in it)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	6' 10" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6' 10"	N/A	17.2	--	
1 - Uniform (PLF)	0 to 6' 10"	N/A	3	26.9	Linked from: Trusses #18, Support 4
2 - Uniform (PLF)	0 to 6' 10"	N/A	323	2,850	Linked from: Trusses #33, Support 2
3 - Point (lb)	1 1/2"	N/A	1,880	16,584	Linked from: Girder #7, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 11,002 @ 0

Moment (ft-lbs)
D+S
max 18,795 @ 3' 5"

Deflection (in)
D+S
0.136 in down @ 3' 3 3/4"
limit 0.456 in on the span

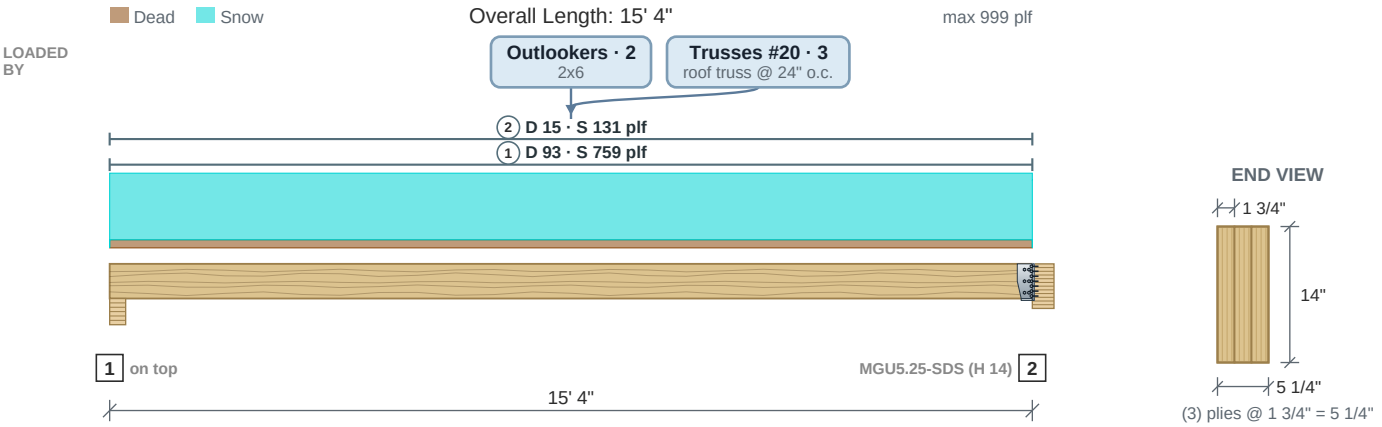
Beam #25

(3) 1 3/4" x 14" 2.0E Microlam LVL (Weyerhaeuser)

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 15' 4" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Deflection 75% used
Section adequacy 25% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	7,821 @ 15' 4"	17,719 (4 1/2")	Passed (44%)	--	
Shear (lbs)	7,821 @ 0	16,062	Passed (49%)	1.15	D+S
Moment (Ft-lbs)	29,981 @ 7' 8"	41,846	Passed (72%)	1.15	D+S
Live Load Defl. (in)	0.502 @ 7' 8"	0.767	Passed (L/366)	--	S
Total Load Defl. (in)	0.575 @ 7' 8"	0.767	Passed (L/320)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Bending adjustment factors: CD = 1.15, CV = 0.979, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 21.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

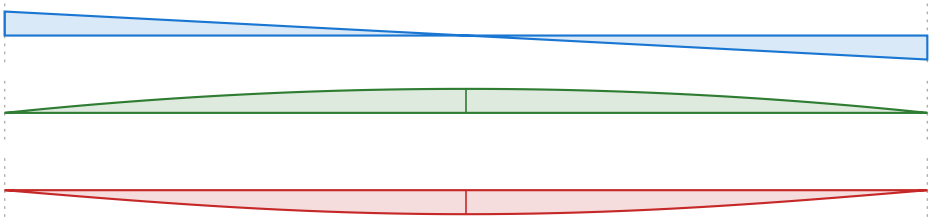
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	2"	993	6,828	**7,821**	Header #37 (bears on top)
2 @ 15' 4"	4 1/2" seat	2"	993	6,828	**7,821**	Beam #27 (flush, in an MGU5.25-SDS (H 14) face mount, 83%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	15' 4" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 15' 4"	N/A	21.4	--	
1 - Uniform (PLF)	0 to 15' 4"	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 15' 4"	N/A	14.9	131.2	Linked from: Trusses #20, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 7,821 @ 0

Moment (ft-lbs)
D+S
max 29,981 @ 7' 8"

Deflection (in)
D+S
0.528 in down @ 7' 8"
limit 0.767 in on the span

Beam #26

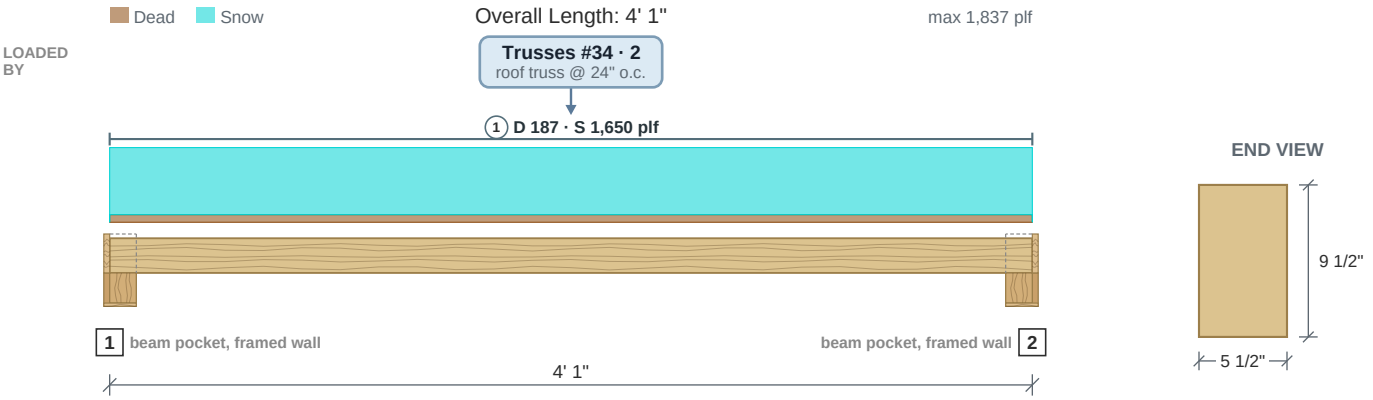
(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Roof | Member type: Beam (Roof Beam) | Length: 4' 1" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 56% used

Section adequacy 44.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,775 @ 0	18,906 (5 1/2")	Passed (20%)	--	
Shear (lbs)	3,775 @ 0	6,810	Passed (55%)	1.15	D+S
Moment (Ft-lbs)	3,854 @ 2' 1/2"	6,937	Passed (56%)	1.15	D+S
Live Load Defl. (in)	0.02 @ 2' 1/2"	0.204	Passed (L/2,425)	--	S
Total Load Defl. (in)	0.023 @ 2' 1/2"	0.272	Passed (L/2,164)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

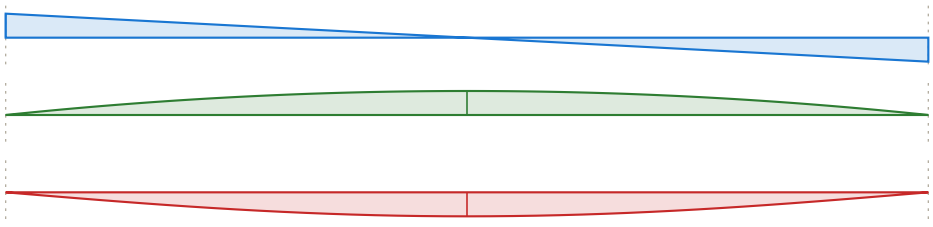
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1 1/8"	406	3,369	**3,775**	SpotFtg Hdr #41-2 (in a beam pocket in a framed wall, on a stud pack or a post in it)
2 @ 4' 1"	5 1/2"	1 1/8"	406	3,369	**3,775**	SpotFtg Bm #26-2 (in a beam pocket in a framed wall, on a stud pack or a post in it)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	4' 1" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 4' 1"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 4' 1"	N/A	187	1,650	Linked from: Trusses #34, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 3,775 @ 0

Moment (ft-lbs)
D+S
max 3,853 @ 2' 1/2"

Deflection (in)
D+S
0.023 in down @ 2' 1/2"
limit 0.272 in on the span

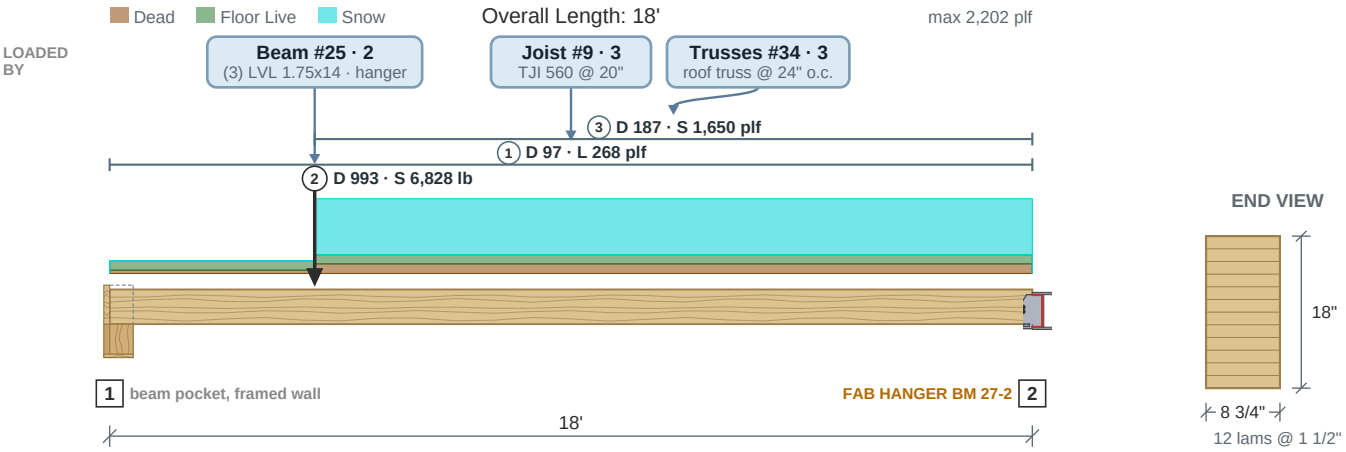
Beam #27

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 18' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 88% used
Section adequacy 12.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	18,654 @ 18'	31,281 (5 1/2")	Passed (60%)	--	
Shear (lbs)	18,654 @ 18'	32,004	Passed (58%)	1.15	D+S
Moment (Ft-lbs)	88,302 @ 8' 6 5/8"	100,457	Passed (88%)	1.15	D+S
Live Load Defl. (in)	0.567 @ 8' 9 3/4"	0.9	Passed (L/381)	--	S
Total Load Defl. (in)	0.677 @ 8' 9 3/4"	1.2	Passed (L/319)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.924, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

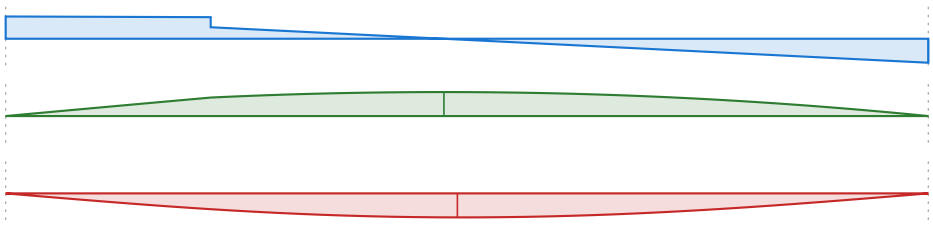
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	3 1/16"	2,989	2,409	14,294	**17,284**	SpotFtg Hdr #38-2 (in a beam pocket in a framed wall, on a stud pack or a post in it)
2 @ 18'	5 1/2"	3 1/4"	3,020	2,409	15,634	**18,654**	Beam #32 (flush, in FAB HANGER BM 27-2)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	18' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 18'	N/A	35.9	--	--	
1 - Uniform (PLF)	0 to 18'	N/A	97.4	267.6	--	Linked from: Joist #9, Support 3
2 - Point (lb)	4'	N/A	992.9	--	6,828	Linked from: Beam #25, Support 2
3 - Uniform (PLF)	4' to 18'	N/A	187	--	1,650	Linked from: Trusses #34, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max -18,654 @ 18'

Moment (ft-lbs)
D+S
max 88,303 @ 8' 6 5/8"

Deflection (in)
D+S
0.677 in down @ 8' 9 3/4"
limit 1.2 in on the span

Beam #28

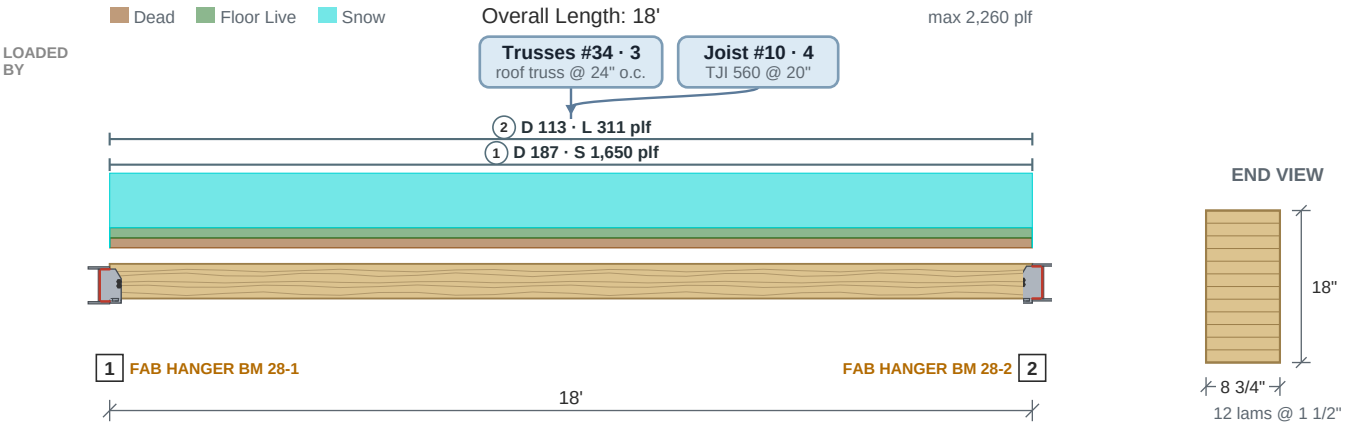
(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 18' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 80% used

Section adequacy 19.9% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	17,872 @ 0	31,281 (5 1/2")	Passed (57%)	--	
Shear (lbs)	17,872 @ 0	32,004	Passed (56%)	1.15	D+S
Moment (Ft-lbs)	80,427 @ 9'	100,457	Passed (80%)	1.15	D+S
Live Load Defl. (in)	0.509 @ 9'	0.9	Passed (L/424)	--	S
Total Load Defl. (in)	0.613 @ 9'	1.2	Passed (L/352)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.924, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

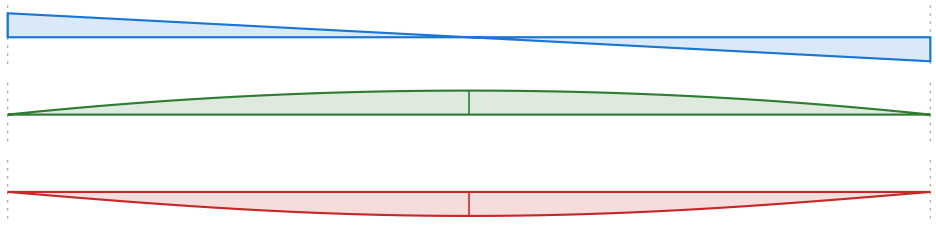
	Bearing Length		Loads to Supports (lbs)				
Supports	Provided	Required	Dead	Floor Live	Snow	Total	Load goes to
1 @ 0	5 1/2"	3 1/8"	3,022	2,795	14,850	**17,872**	Beam #32 (flush, in FAB HANGER BM 28-1)
2 @ 18'	5 1/2"	3 1/8"	3,022	2,795	14,850	**17,872**	Beam #30 (flush, in FAB HANGER BM 28-2)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	18' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 18'	N/A	35.9	--	--	
1 - Uniform (PLF)	0 to 18'	N/A	187	--	1,650	Linked from: Trusses #34, Support 3
2 - Uniform (PLF)	0 to 18'	N/A	113	310.5	--	Linked from: Joist #10, Support 4

Shear, Moment and Deflection



Shear (lbs)
D+S
max 17,872 @ 0

Moment (ft-lbs)
D+S
max 80,426 @ 9'

Deflection (in)
D+S
0.613 in down @ 9'
limit 1.2 in on the span

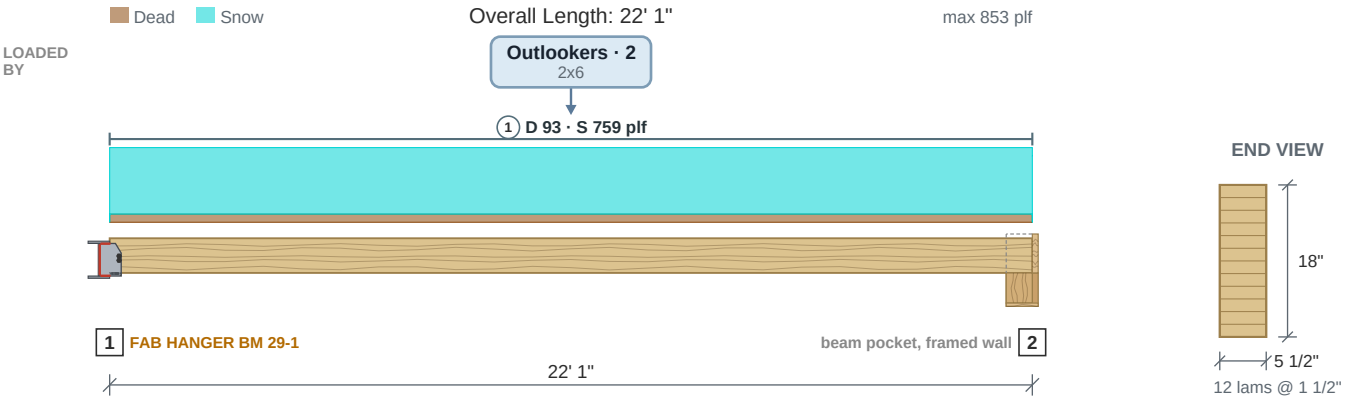
Beam #29

(1) 5 1/2" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 22' 1" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 82% used
Section adequacy 17.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,663 @ 0	26,812 (7 1/2")	Passed (36%)	--	
Shear (lbs)	9,663 @ 0	20,117	Passed (48%)	1.15	D+S
Moment (Ft-lbs)	53,346 @ 11' 1/2"	64,808	Passed (82%)	1.15	D+S
Live Load Defl. (in)	0.845 @ 11' 1/2"	1.104	Passed (L/314)	--	S
Total Load Defl. (in)	0.973 @ 11' 1/2"	1.472	Passed (L/272)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.949, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 22.5 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

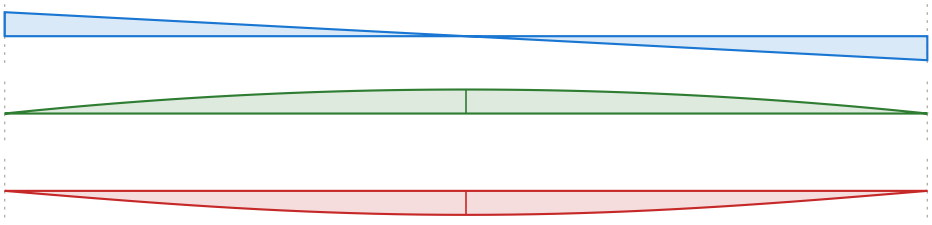
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	7 1/2"	2 11/16"	1,278	8,385	**9,663**	Beam #30 (flush, in FAB HANGER BM 29-1)
2 @ 22' 1"	7 1/2"	2 11/16"	1,278	8,385	**9,663**	SpotFtg Hdr #45-1 (in a beam pocket in a framed wall, on a stud pack or a post in it)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	22' 1" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 22' 1"	N/A	22.5	--	
1 - Uniform (PLF)	0 to 22' 1"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 9,663 @ 0

Moment (ft-lbs)
D+S
max 53,347 @ 11' 1/2"

Deflection (in)
D+S
0.973 in down @ 11' 1/2"
limit 1.472 in on the span

Beam #30

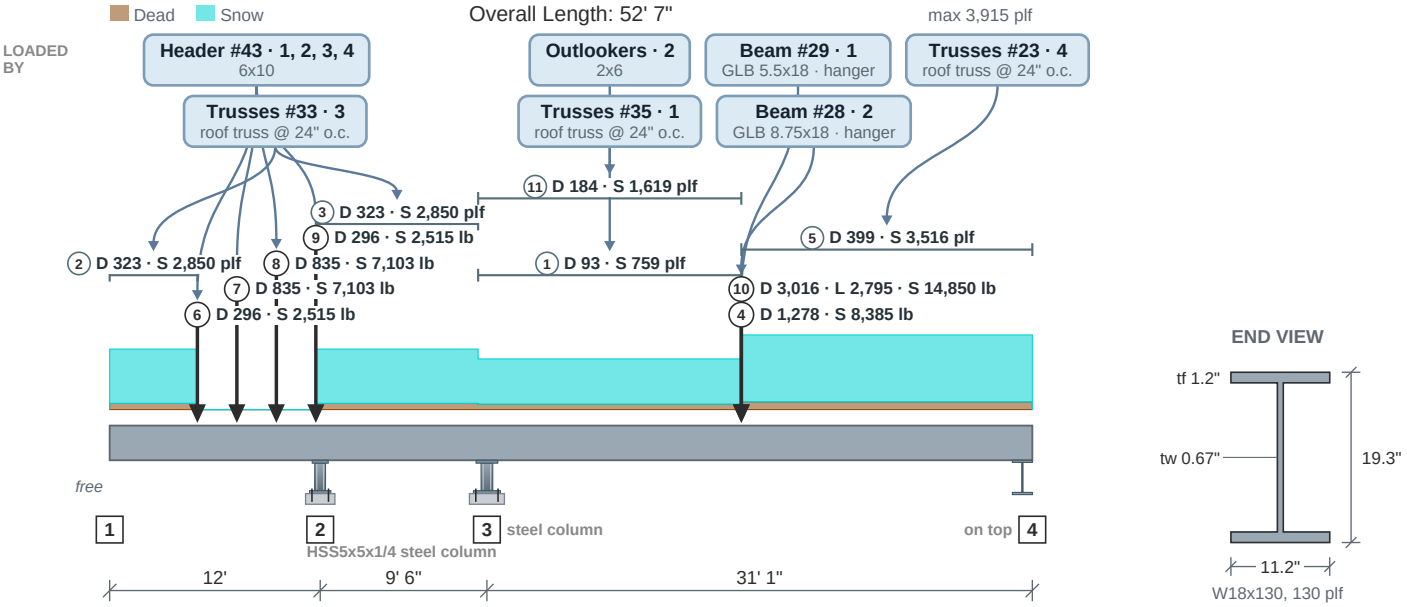
W18x130 (ASTM A992, Fy 50 ksi)

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 52' 7" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 63% used

Section adequacy 37% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Shear (lbs)	77,075 @ 21' 6"	258,620	Passed (30%)	--	D+S
Neg Moment (Ft-lbs)	-420,446 @ 21' 6"	667,829	Passed (63%)	--	D+S
Live Load Defl. (in)	0.717 @ 38' 6 5/8"	1.554	Passed (L/520)	--	S
Total Load Defl. (in)	0.834 @ 38' 6 5/8"	1.554	Passed (L/447)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Overhang deflection criteria: LL (2L/360) and TL (2L/240) -- a cantilever is limited on twice its length.
- Member self weight of 130 plf is included.
- Calculations per AISC 360-16, ASD, every load combination with its own allowables.

	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	--	--	--	free end (cantilever tip)
2 @ 12'	5 1/2"	--	4,818	-1,336	31,387	**36,205**	SpotFtg Bm #30-1 (HSS5x5x1/4 steel column)
3 @ 21' 6"	13"	--	16,059	3,236	95,647	**111,706**	SpotFtg Bm #30-2 (steel column)
4 @ 52' 7"	5 1/2"	--	7,876	895	50,046	**57,922**	Beam #33 (bears on top)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	31' 1" o/c	used for C_L only where the bottom edge is in compression

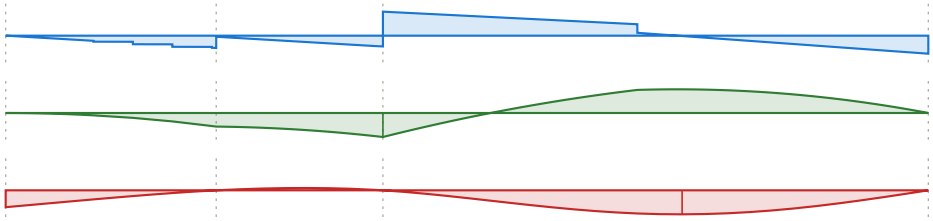
Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 52' 7"	N/A	130	--	--	
1 - Uniform (PLF)	21' to 36'	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 5'	N/A	323	--	2,850	Linked from: Trusses #33, Support 3
3 - Uniform (PLF)	11' 9" to 21'	N/A	323	--	2,850	Linked from: Trusses #33, Support 3
4 - Point (lb)	36'	N/A	1,278	--	8,385	Linked from: Beam #29, Support 1
5 - Uniform (PLF)	36' to 52' 7"	N/A	398.5	--	3,516	Linked from: Trusses #23, Support 4
6 - Point (lb)	5'	N/A	295.6	--	2,515	Linked from: Header #43, Support 1
7 - Point (lb)	7' 3"	N/A	834.7	--	7,103	Linked from: Header #43, Support 2
8 - Point (lb)	9' 6"	N/A	834.7	--	7,103	Linked from: Header #43, Support 3
9 - Point (lb)	11' 9"	N/A	295.6	--	2,515	Linked from: Header #43, Support 4
10 - Point (lb)	36'	N/A	3,016	2,795	14,850	Linked from: Beam #28, Support 2

Beam #30 (continued)

Roof Beam | W18x130 (ASTM A992, Fy 50 ksi)

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
11 - Uniform (PLF)	21' to 36'	N/A	183.5	--	1,619	Linked from: Trusses #35, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 77,075 @ 21' 6"

Moment (ft-lbs)
D+S
max -420,445 @ 21' 6"

Deflection (in)
D+S
0.834 in down @ 38' 6 5/8"
limit 1.554 in on the span

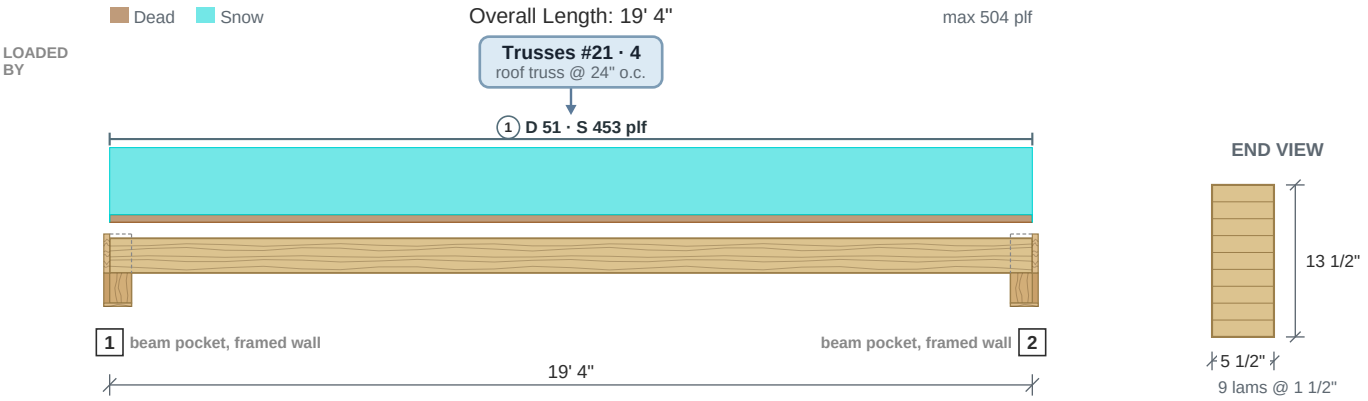
Beam #31

(1) 5 1/2" x 13 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 19' 4" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Deflection 73% used
Section adequacy 27.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,035 @ 0	19,662 (5 1/2")	Passed (26%)	--	
Shear (lbs)	5,035 @ 0	15,088	Passed (33%)	1.15	D+S
Moment (Ft-lbs)	24,337 @ 9' 8"	38,021	Passed (64%)	1.15	D+S
Live Load Defl. (in)	0.701 @ 9' 8"	0.967	Passed (L/331)	--	S
Total Load Defl. (in)	0.807 @ 9' 8"	1.289	Passed (L/288)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.989, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 16.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

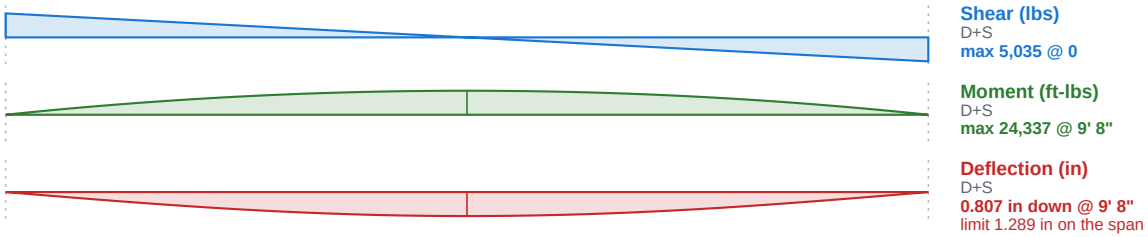
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1 7/16"	659	4,376	**5,035**	SpotFtg Bm #31-1 (in a beam pocket in a framed wall, on a stud pack or a post in it)
2 @ 19' 4"	5 1/2"	1 7/16"	659	4,376	**5,035**	SpotFtg Bm #31-2 (in a beam pocket in a framed wall, on a stud pack or a post in it)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	19' 4" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 19' 4"	N/A	16.9	--	
1 - Uniform (PLF)	0 to 19' 4"	N/A	51.3	452.7	Linked from: Trusses #21, Support 4

Shear, Moment and Deflection



Beam #32

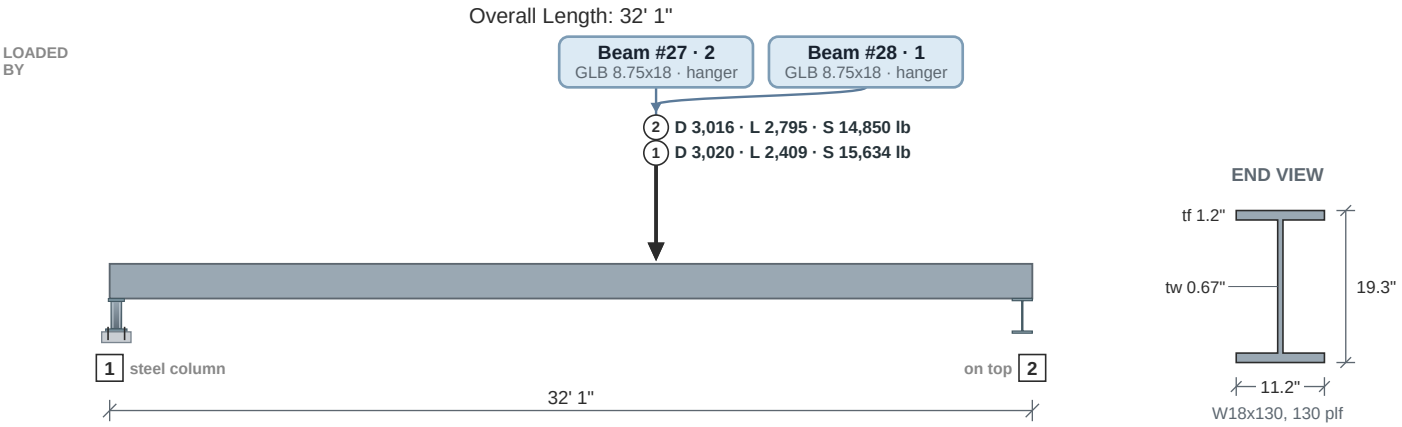
W18x130 (ASTM A992, Fy 50 ksi)

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 32' 1" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Deflection 78% used

Section adequacy 22.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Shear (lbs)	23,712 @ 32' 1"	258,620	Passed (9%)	--	D+S
Moment (Ft-lbs)	299,113 @ 19'	723,553	Passed (41%)	--	D+S
Live Load Defl. (in)	0.485 @ 16' 7 1/2"	1.604	Passed (L/793)	--	S
Total Load Defl. (in)	0.625 @ 16' 7 1/2"	0.802	Passed (L/616)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/480; roof live or snow alone L/240; dead plus live L/480.
- Member self weight of 130 plf is included.
- Calculations per AISC 360-16, ASD, every load combination with its own allowables.

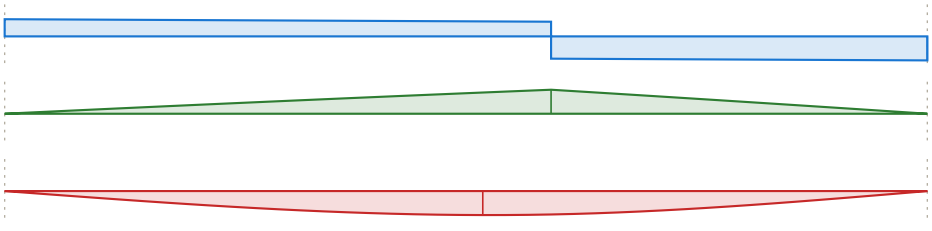
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	4,547	2,122	12,431	**16,978**	SpotFtg Bm #32-1 (steel column)
2 @ 32' 1"	5 1/2"	--	5,660	3,082	18,053	**23,713**	Beam #33 (bears on top)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	32' 1" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 32' 1"	N/A	130	--	--	
1 - Point (lb)	19'	N/A	3,020	2,409	15,634	Linked from: Beam #27, Support 2
2 - Point (lb)	19'	N/A	3,016	2,795	14,850	Linked from: Beam #28, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max -23,713 @ 32' 1"

Moment (ft-lbs)
D+S
max 299,113 @ 19'

Deflection (in)
D+S
0.625 in down @ 16' 7 1/2"
limit 0.802 in on the span

Beam #33

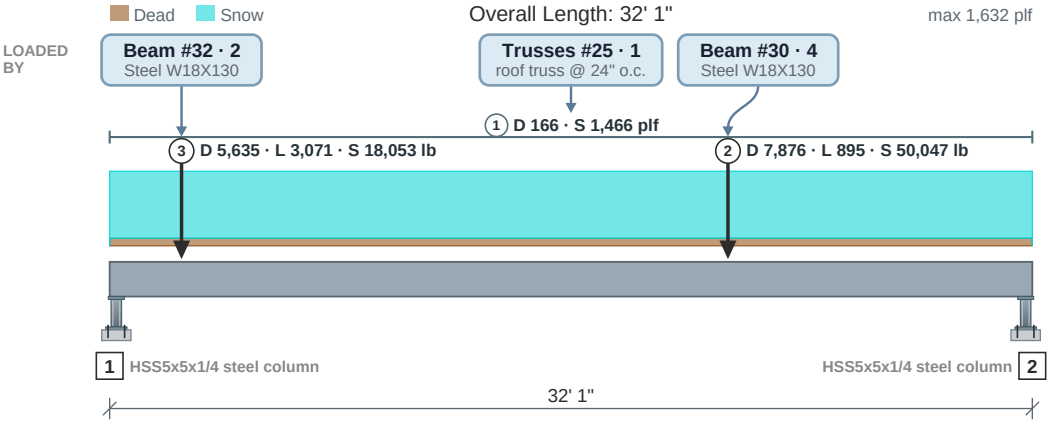
W18x130 (ASTM A992, Fy 50 ksi)

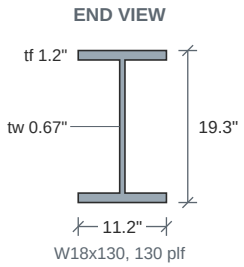
Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 32' 1" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 87% used

Section adequacy 12.8% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Shear (lbs)	69,221 @ 0	258,620	Passed (27%)	--	D+S
Moment (Ft-lbs)	630,849 @ 21' 6"	723,553	Passed (87%)	--	D+S
Live Load Defl. (in)	1.268 @ 16' 9"	1.604	Passed (L/304)	--	S
Total Load Defl. (in)	1.5 @ 16' 9"	2.139	Passed (L/257)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Member self weight of 130 plf is included.
- Calculations per AISC 360-16, ASD, every load combination with its own allowables.

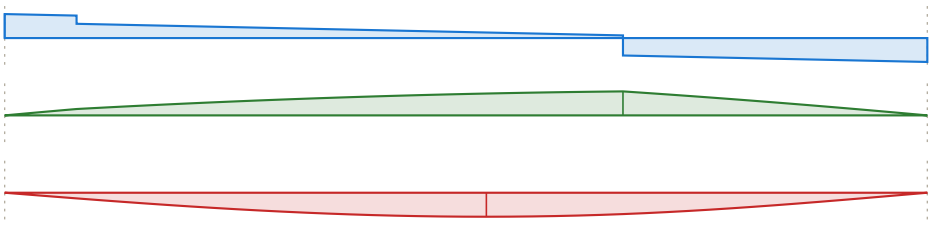
	Bearing Length		Loads to Supports (lbs)				
Supports	Provided	Required	Dead	Floor Live	Snow	Total	Load goes to
1 @ 0	5 1/2"	--	12,545	3,127	56,676	**69,221**	SpotFtg Bm #33-1 (HSS5x5x1/4 steel column)
2 @ 32' 1"	5 1/2"	--	10,468	839	58,466	**68,934**	SpotFtg Bm #33-2 (HSS5x5x1/4 steel column)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	32' 1" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 32' 1"	N/A	130	--	--	
1 - Uniform (PLF)	0 to 32' 1"	N/A	166.2	--	1,466	Linked from: Trusses #25, Support 1
2 - Point (lb)	21' 6"	N/A	7,876	895.2	50,047	Linked from: Beam #30, Support 4
3 - Point (lb)	2' 6"	N/A	5,635	3,071	18,053	Linked from: Beam #32, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 69,221 @ 0

Moment (ft-lbs)
D+S
max 630,849 @ 21' 6"

Deflection (in)
D+S
1.5 in down @ 16' 9"
limit 2.139 in on the span

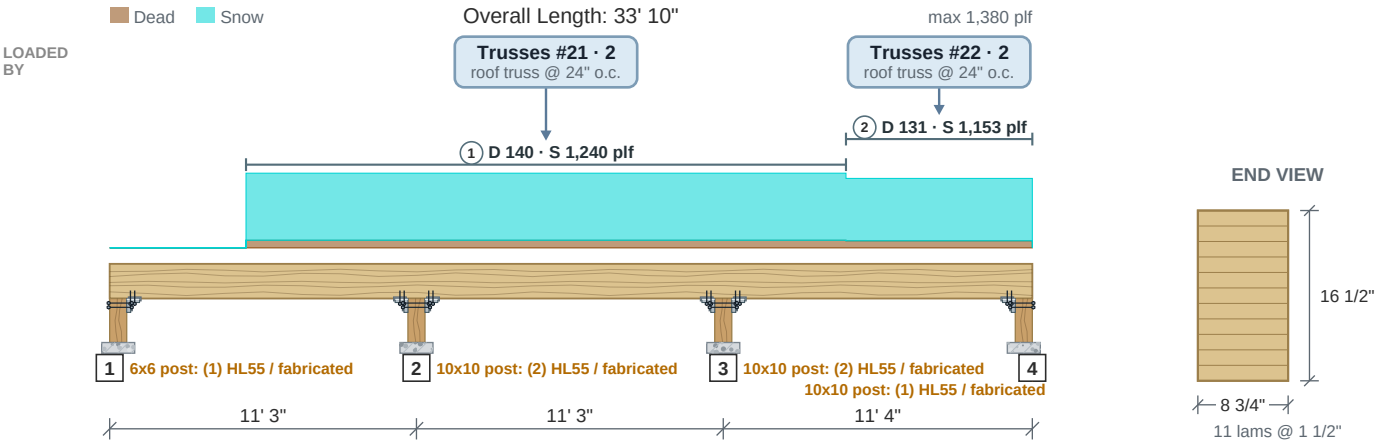
Beam #34

(1) 8 3/4" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 33' 10" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 33% used
Section adequacy 67% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	17,824 @ 22' 6"	54,031 (9 1/2")	Passed (33%)	--	
Shear (lbs)	9,450 @ 22' 6"	29,337	Passed (32%)	1.15	D+S
Neg Moment (Ft-lbs)	-18,614 @ 22' 6"	61,623	Passed (30%)	1.15	D+S
Live Load Defl. (in)	0.037 @ 28' 6 1/4"	0.567	Passed (L/3,722)	--	S
Total Load Defl. (in)	0.042 @ 28' 6 1/4"	0.756	Passed (L/3,255)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.875, CL = 0.994 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 18616 lbf-ft, 11.25-22.50 ft, CL 0.994 (unbraced 11.2 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 32.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

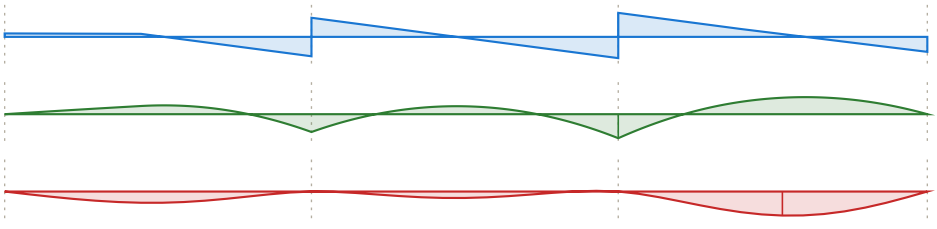
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2" seat	1/4"	271	1,082	**1,353**	SpotFtg Bm #21-2 (6x6 post (max 10 ft, 41%): (1) HL55 / fabricated)
2 @ 11' 3"	9 1/2" seat	2 5/16"	1,908	13,254	**15,162**	SpotFtg Bm #34-2 (10x10 post (max 10 ft, 77%): (2) HL55 / fabricated)
3 @ 22' 6"	9 1/2" seat	2 3/4"	2,182	15,642	**17,824**	SpotFtg Bm #34-3 (10x10 post (max 10 ft, 73%): (2) HL55 / fabricated)
4 @ 33' 10"	9 1/2" seat	1 1/16"	735	5,168	**5,903**	SpotFtg Bm #34-4 (10x10 post (max 10 ft, 91%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	11' 4" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 33' 10"	N/A	32.9	--	
1 - Uniform (PLF)	5' to 27'	N/A	140.5	1,240	Linked from: Trusses #21, Support 2
2 - Uniform (PLF)	27' to 33' 10"	N/A	130.6	1,153	Linked from: Trusses #22, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 9,450 @ 22' 6"

Moment (ft-lbs)
D+S
max -18,616 @ 22' 6"

Deflection (in)
D+S
0.042 in down @ 28' 6 1/4"
limit 0.756 in on the span

Beam #35

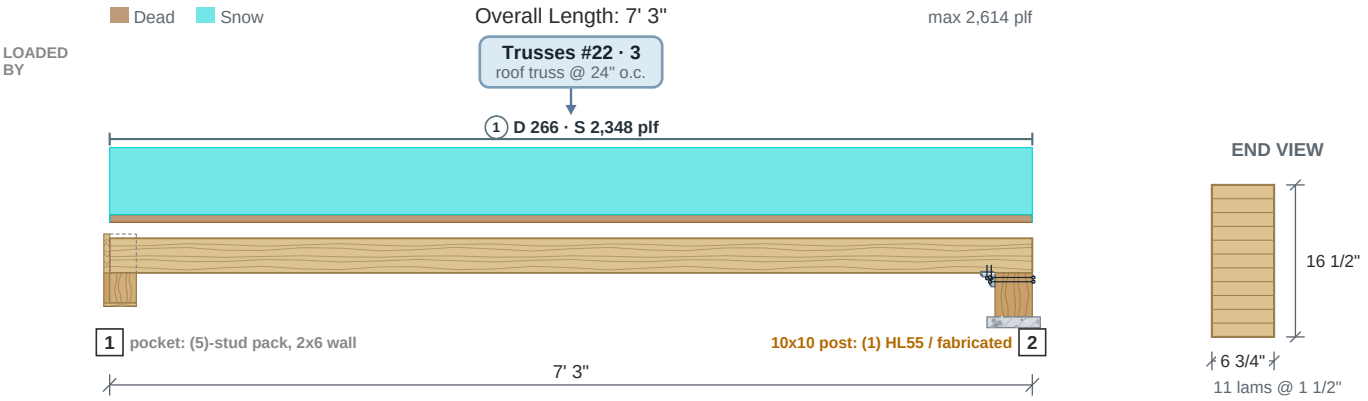
(1) 6 3/4" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 7' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 42% used

Section adequacy 50.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,568 @ 0	24,131 (5 1/2")	Passed (40%)	--	
Plate Bearing (psi)	258 @ 0	668 (2x6 wall, DF-L #2)	Passed (39%)	--	
Shear (lbs)	9,568 @ 0	22,631	Passed (42%)	1.15	D+S
Moment (Ft-lbs)	17,341 @ 3' 7 1/2"	70,445	Passed (25%)	1.15	D+S
Live Load Defl. (in)	0.032 @ 3' 7 1/2"	0.362	Passed (L/2,711)	--	S
Total Load Defl. (in)	0.036 @ 3' 7 1/2"	0.483	Passed (L/2,412)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 25.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

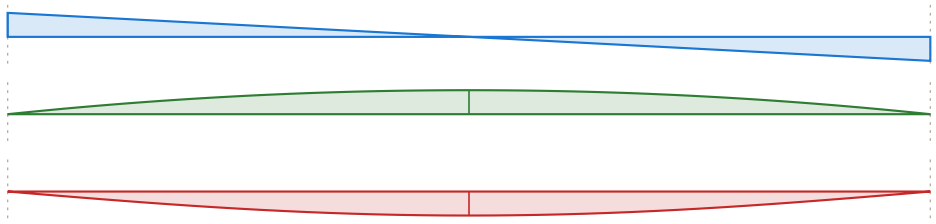
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	2 3/16"	1,057	8,511	**9,568**	SpotFtg Bm #35-1 (in a beam pocket in a 2x6 stud wall 14 ft tall, on a (5)-stud pack -- no post cap)
2 @ 7' 3"	9 1/2" seat	2 3/16"	1,057	8,511	**9,568**	SpotFtg Bm #35-2 (10x10 post (max 10 ft, 85%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	7' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 7' 3"	N/A	25.4	--	
1 - Uniform (PLF)	0 to 7' 3"	N/A	266.1	2,348	Linked from: Trusses #22, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 9,568 @ 0

Moment (ft-lbs)
D+S
max 17,342 @ 3' 7 1/2"

Deflection (in)
D+S
0.036 in down @ 3' 7 1/2"
limit 0.483 in on the span

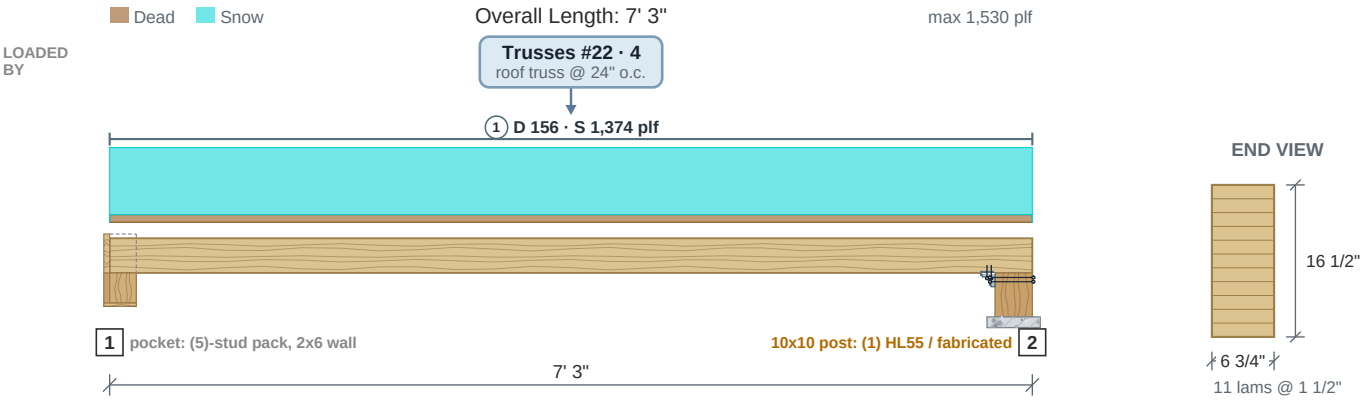
Beam #36

(1) 6 3/4" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 7' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 25% used
Section adequacy 70.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,638 @ 0	24,131 (5 1/2")	Passed (23%)	--	
Plate Bearing (psi)	152 @ 0	668 (2x6 wall, DF-L #2)	Passed (23%)	--	
Shear (lbs)	5,638 @ 0	22,631	Passed (25%)	1.15	D+S
Moment (Ft-lbs)	10,220 @ 3' 7 1/2"	70,445	Passed (15%)	1.15	D+S
Live Load Defl. (in)	0.019 @ 3' 7 1/2"	0.362	Passed (L/4,632)	--	S
Total Load Defl. (in)	0.021 @ 3' 7 1/2"	0.483	Passed (L/4,093)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 25.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

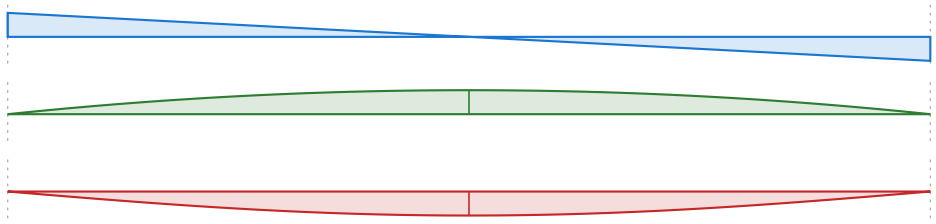
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1 5/16"	657	4,982	**5,638**	SpotFtg Bm #36-1 (in a beam pocket in a 2x6 stud wall 14 ft tall, on a (5)-stud pack -- no post cap)
2 @ 7' 3"	9 1/2" seat	1 5/16"	657	4,982	**5,638**	SpotFtg Bm #36-2 (10x10 post (max 11 ft, 91%): (1) HL55 / fabricated)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	7' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 7' 3"	N/A	25.4	--	
1 - Uniform (PLF)	0 to 7' 3"	N/A	155.7	1,374	Linked from: Trusses #22, Support 4

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,638 @ 0

Moment (ft-lbs)
D+S
max 10,219 @ 3' 7 1/2"

Deflection (in)
D+S
0.021 in down @ 3' 7 1/2"
limit 0.483 in on the span

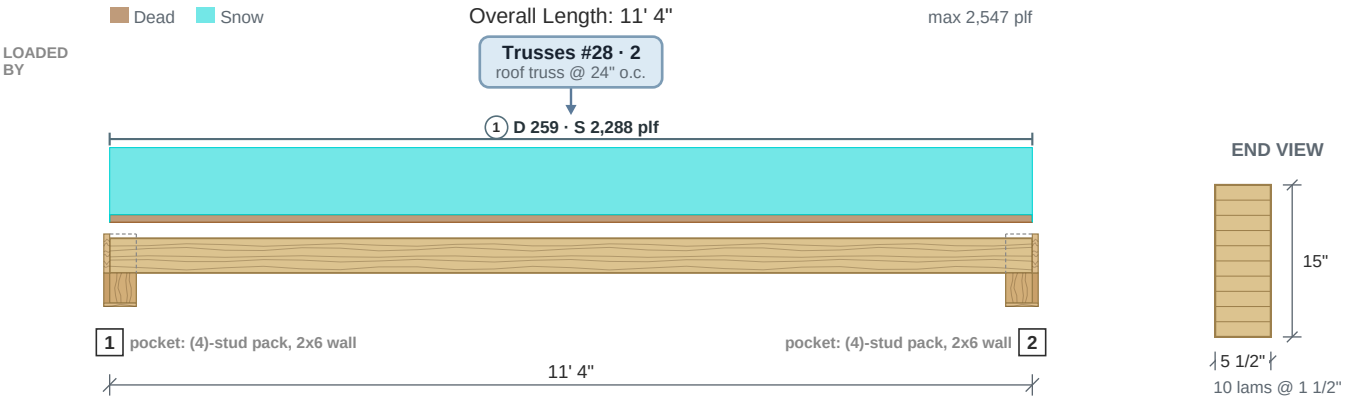
Beam #37

(1) 5 1/2" x 15" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 11' 4" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 87% used
Section adequacy 13.2% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	14,538 @ 0	19,662 (5 1/2")	Passed (74%)	--	
Plate Bearing (psi)	481 @ 0	668 (2x6 wall, DF-L #2)	Passed (72%)	--	
Shear (lbs)	14,538 @ 0	16,764	Passed (87%)	1.15	D+S
Moment (Ft-lbs)	41,192 @ 5' 8"	47,438	Passed (87%)	1.15	D+S
Live Load Defl. (in)	0.305 @ 5' 8"	0.567	Passed (L/446)	--	S
Total Load Defl. (in)	0.342 @ 5' 8"	0.756	Passed (L/398)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 18.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

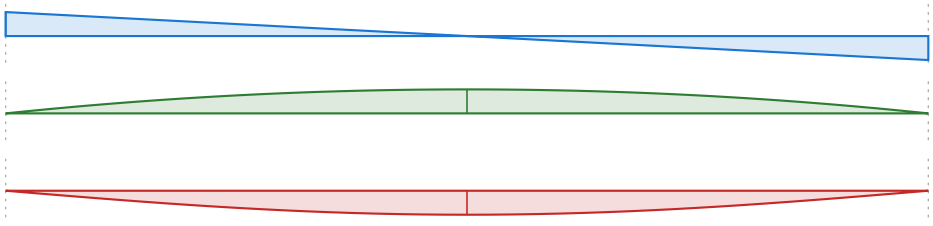
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 1/16"	1,576	12,962	**14,538**	SpotFtg Bm #5-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)
2 @ 11' 4"	5 1/2"	4 1/16"	1,576	12,962	**14,538**	SpotFtg Bm #11-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	11' 4" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 11' 4"	N/A	18.8	--	
1 - Uniform (PLF)	0 to 11' 4"	N/A	259.2	2,288	Linked from: Trusses #28, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 14,538 @ 0

Moment (ft-lbs)
D+S
max 41,191 @ 5' 8"

Deflection (in)
D+S
0.342 in down @ 5' 8"
limit 0.756 in on the span

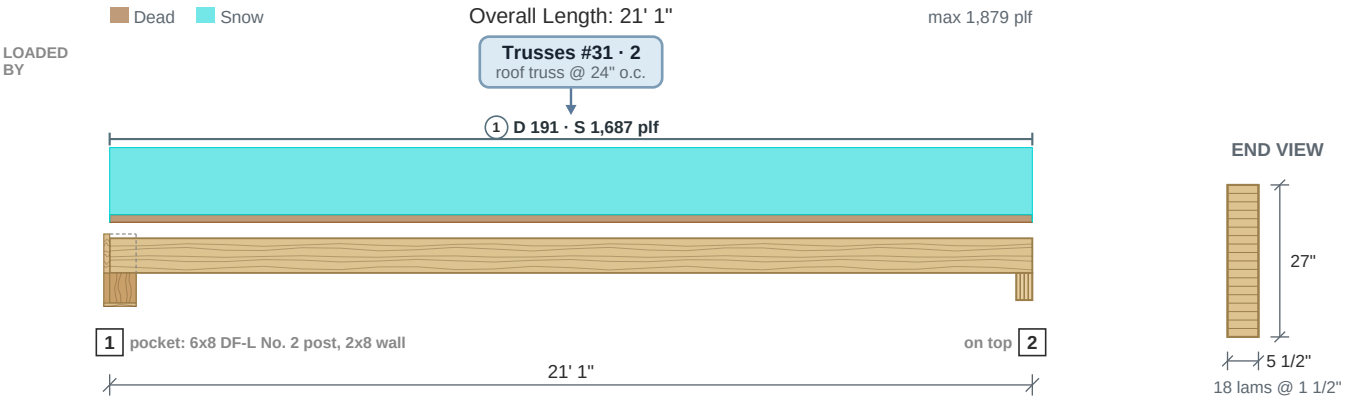
Beam #38

PASSED

(1) 5 1/2" x 27" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 21' 1" | 2018 IRC | 2018 NDS | ASD

Controls: Bearing on the plates 81% used
Section adequacy 16.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	20,162 @ 0	25,919 (7 1/4")	Passed (78%)	--	
Plate Bearing (psi)	506 @ 0	625 (2x8 wall, DF-L #2)	Passed (81%)	--	
Shear (lbs)	20,162 @ 0	30,175	Passed (67%)	1.15	D+S
Moment (Ft-lbs)	106,268 @ 10' 6 1/2"	140,672	Passed (76%)	1.15	D+S
Live Load Defl. (in)	0.462 @ 10' 6 1/2"	1.054	Passed (L/548)	--	S
Total Load Defl. (in)	0.524 @ 10' 6 1/2"	1.406	Passed (L/483)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.915, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 33.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

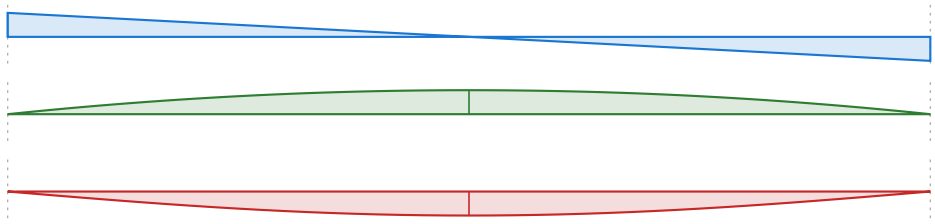
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	7 1/4"	5 5/8"	2,373	17,789	**20,162**	SpotFtg Bm #38-1 (in a beam pocket in a 2x8 stud wall 10 ft tall (the default), on a 6x8 DF-L No. 2 post -- no post cap)
2 @ 21' 1"	7 1/2"	5 5/8"	2,373	17,789	**20,162**	Beam #15 (bears on top)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	21' 1" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 21' 1"	N/A	33.8	--	
1 - Uniform (PLF)	0 to 21' 1"	N/A	191.2	1,687	Linked from: Trusses #31, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 20,162 @ 0

Moment (ft-lbs)
D+S
max 106,269 @ 10' 6 1/2"

Deflection (in)
D+S
0.524 in down @ 10' 6 1/2"
limit 1.406 in on the span

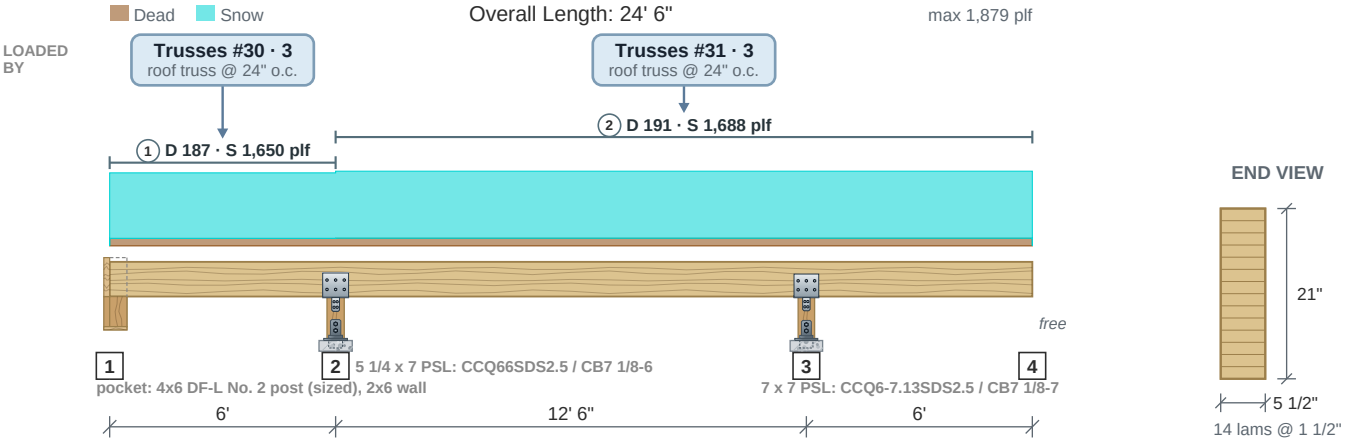
Beam #39

(1) 5 1/2" x 21" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Roof | Member type: Beam (Roof Beam) | Length: 24' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 63% used
Section adequacy 37% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	24,778 @ 18' 6"	39,325 (11")	Passed (63%)	--	
Plate Bearing (psi)	95 @ 0	668 (2x6 wall, DF-L #2)	Passed (14%)	--	
Shear (lbs)	13,348 @ 18' 6"	23,470	Passed (57%)	1.15	D+S
Neg Moment (Ft-lbs)	-34,291 @ 18' 6"	66,263	Passed (52%)	1.15	D+S
Live Load Defl. (in)	0.088 @ 24' 6"	0.6	Passed (2L/1,637)	--	S
Total Load Defl. (in)	0.099 @ 24' 6"	0.8	Passed (2L/1,450)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.15, CV = 0.925, CL = 0.97 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 34291 lbf-ft, 6.00-18.50 ft, CL 0.970 (unbraced 12.5 ft).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 26.3 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	13/16"	330	2,547	**2,877**	SpotFtg Bm #39-1 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a 4x6 DF-L No. 2 post (sized) -- no post cap)
2 @ 6'	11" seat	4 7/8"	2,145	16,623	**18,768**	Column Bm #39-2 (5 1/4 x 7 PSL (max 24 ft, 18%): CCQ66SDS2.5 / CB7 1/8-6)
3 @ 18' 6"	11" seat	6 15/16"	2,830	21,949	**24,778**	Column Bm #39-3 (7 x 7 PSL (max 24 ft, 45%): CCQ6-7.13SDS2.5 / CB7 1/8-7)
4 @ 24' 6"	--	--	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

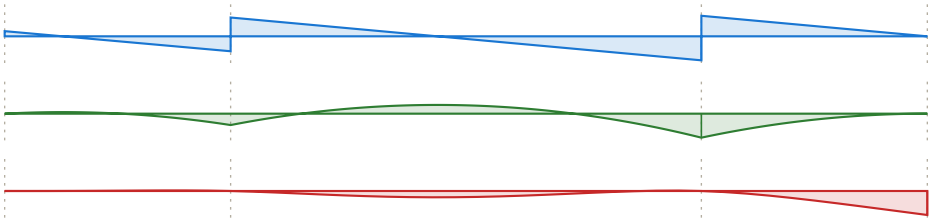
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 24' 6"	N/A	26.3	--	
1 - Uniform (PLF)	0 to 6'	N/A	187	1,650	Linked from: Trusses #30, Support 3
2 - Uniform (PLF)	6' to 24' 6"	N/A	191.2	1,688	Linked from: Trusses #31, Support 3

Beam #39 (continued)

Roof Beam | (1) 5 1/2" x 21" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+S
max -13,348 @ 18' 6"

Moment (ft-lbs)
D+S
max -34,291 @ 18' 6"

Deflection (in)
D+S
0.099 in down @ 24' 6"
limit 0.8 in on 2L (cantilever)

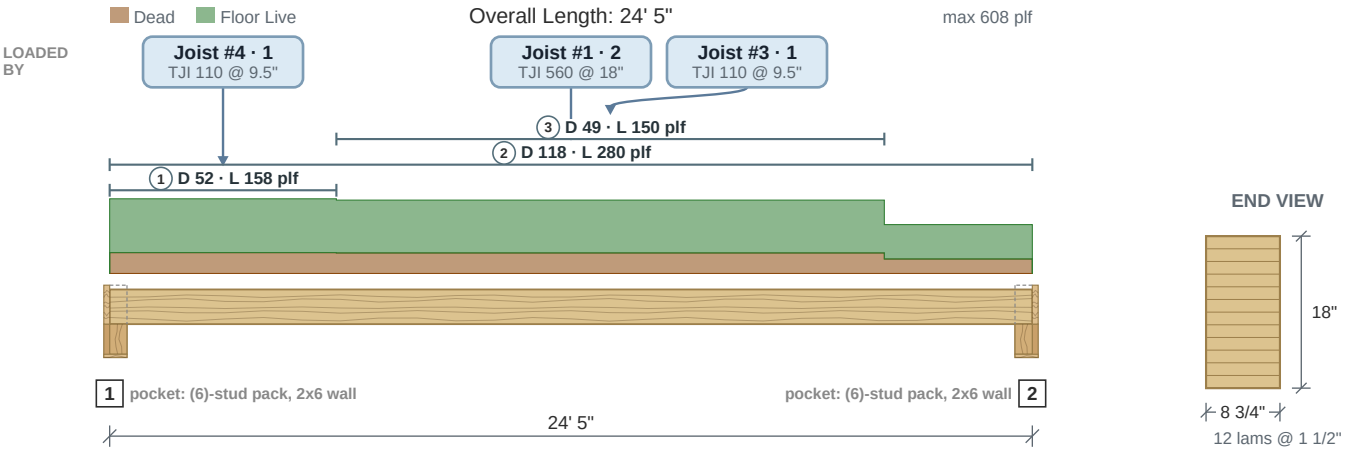
Beam #40

(1) 8 3/4" x 18" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 24' 5" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Deflection 72% used
Section adequacy 27.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	7,719 @ 0	31,281 (5 1/2")	Passed (25%)	--	
Plate Bearing (psi)	160 @ 0	668 (2x6 wall, DF-L #2)	Passed (24%)	--	
Shear (lbs)	7,719 @ 0	27,825	Passed (28%)	1.00	D+L
Moment (Ft-lbs)	46,490 @ 12' 1 1/16"	84,731	Passed (55%)	1.00	D+L
Live Load Defl. (in)	0.441 @ 12' 1/2"	0.61	Passed (L/665)	--	L
Total Load Defl. (in)	0.65 @ 12' 1/2"	1.628	Passed (L/451)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/480; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.00, CV = 0.897, CL = 1.00 (D+L).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 35.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

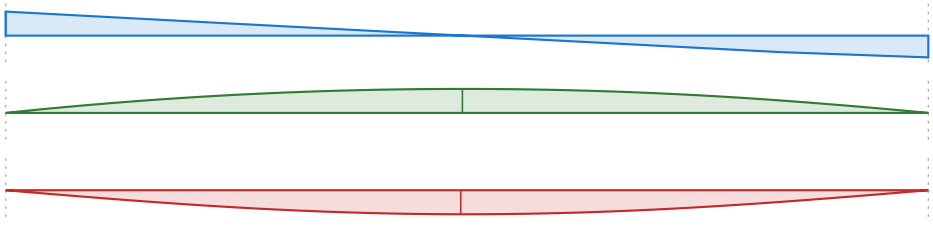
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1 3/8"	2,474	5,245	**7,719**	SpotFtg Bm #11-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (6)-stud pack -- no post cap)
2 @ 24' 5"	5 1/2"	1 1/4"	2,300	4,715	**7,015**	SpotFtg Bm #13-2 (in a beam pocket in a 2x6 stud wall 12 ft tall, on a (6)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	24' 5" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 24' 5"	N/A	35.9	--	
1 - Uniform (PLF)	0 to 6'	N/A	51.9	158	Linked from: Joist #4, Support 1
2 - Uniform (PLF)	0 to 24' 5"	N/A	117.6	280	Linked from: Joist #1, Support 2
3 - Uniform (PLF)	6' to 20' 6"	N/A	49.3	150	Linked from: Joist #3, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+L
max 7,719 @ 0

Moment (ft-lbs)
D+L
max 46,492 @ 12' 1 1/16"

Deflection (in)
D+L
0.65 in down @ 12' 1/2"
limit 1.628 in on the span

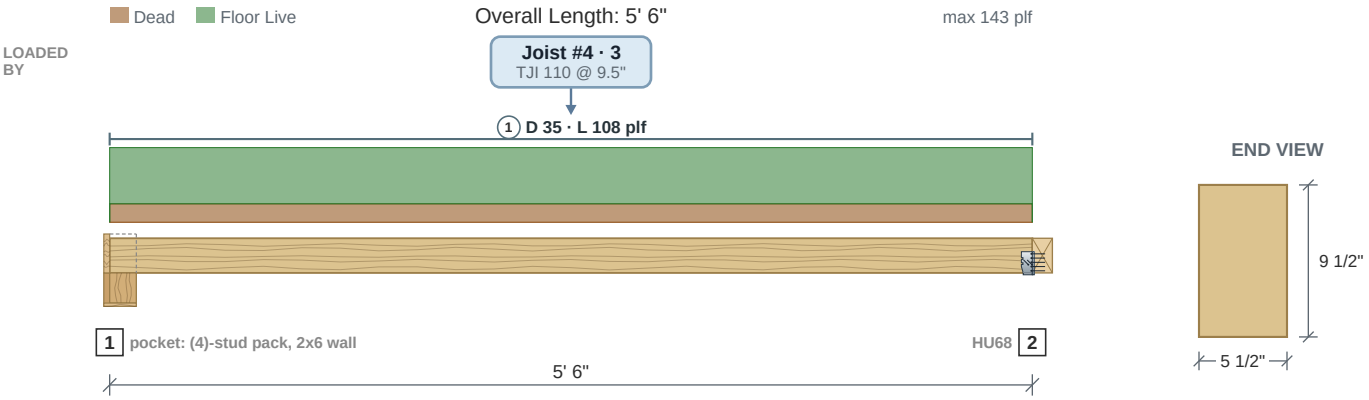
Beam #41

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 5' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 10% used
Section adequacy 90.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	426 @ 5' 6"	8,594 (2 1/2")	Passed (5%)	--	
Plate Bearing (psi)	14 @ 0	668 (2x6 wall, DF-L #2)	Passed (2%)	--	
Shear (lbs)	426 @ 0	5,922	Passed (7%)	1.00	D+L
Moment (Ft-lbs)	585 @ 2' 9"	6,032	Passed (10%)	1.00	D+L
Live Load Defl. (in)	0.004 @ 2' 9"	0.183	Passed (L/9999+)	--	L
Total Load Defl. (in)	0.006 @ 2' 9"	0.367	Passed (L/9999+)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.00, CL = 1.00 (D+L).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

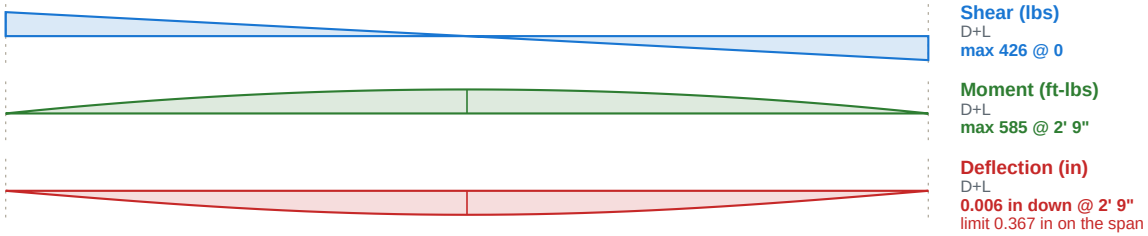
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	1/8"	130	296	**426**	SpotFtg Bm #38-1 (in a beam pocket in a 2x6 stud wall 11 ft tall, on a (4)-stud pack -- no post cap)
2 @ 5' 6"	2 1/2" seat	1/8"	130	296	**426**	Beam #42 (flush, in an HU68 face mount, 29%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 5' 6"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 5' 6"	N/A	35.3	107.5	Linked from: Joist #4, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+L
max 426 @ 0

Moment (ft-lbs)
D+L
max 585 @ 2' 9"

Deflection (in)
D+L
0.006 in down @ 2' 9"
limit 0.367 in on the span

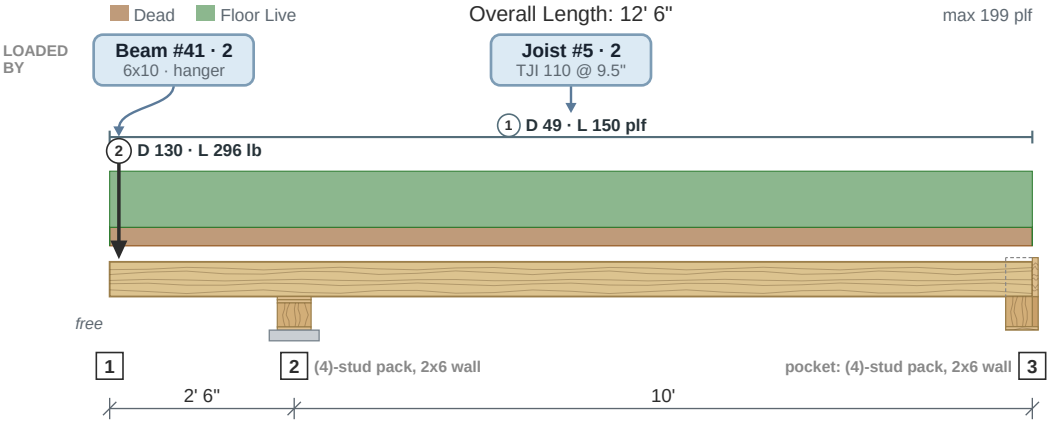
Beam #42

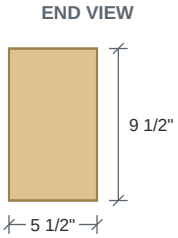
(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 12' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 31% used
Section adequacy 69% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,177 @ 2' 6"	20,195 (5 1/2")	Passed (11%)	--	
Plate Bearing (psi)	72 @ 2' 6"	668 (2x6 wall, DF-L #2)	Passed (11%)	--	
Shear (lbs)	1,223 @ 2' 6"	5,922	Passed (21%)	1.00	D+L
Moment (Ft-lbs)	1,871 @ 8' 3 3/4"	6,032	Passed (31%)	1.00	D+L
Live Load Defl. (in)	0.042 @ 7' 9 3/4"	0.333	Passed (L/2,884)	--	L
Total Load Defl. (in)	0.058 @ 7' 9 3/4"	0.667	Passed (L/2,064)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.00, CL = 1.00 (D+L).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

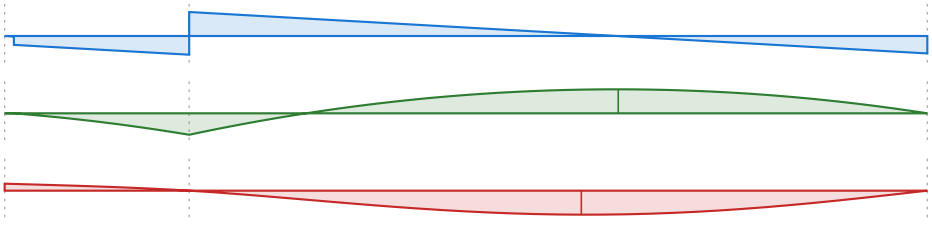
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	--	--	--	--	--	free end (cantilever tip)
2 @ 2' 6"	5 1/2"	1/4"	639	1,538	**2,177**	SpotFtg Bm #42-1 (in a 2x6 stud wall 10 ft tall (the default), on a (4)-stud pack -- no post cap)
3 @ 12' 6"	5 1/2"	1/4"	256	633	**889**	SpotFtg Bm #42-2 (in a beam pocket in a 2x6 stud wall 10 ft tall, on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	10' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 12' 6"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 12' 6"	N/A	49.3	150	Linked from: Joist #5, Support 2
2 - Point (lb)	1 1/2"	N/A	129.9	295.6	Linked from: Beam #41, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+L
max 1,223 @ 2' 6"

Moment (ft-lbs)
D+L
max 1,871 @ 8' 3 3/4"

Deflection (in)
D+L
0.058 in down @ 7' 9 3/4"
limit 0.667 in on the span

Beam #43

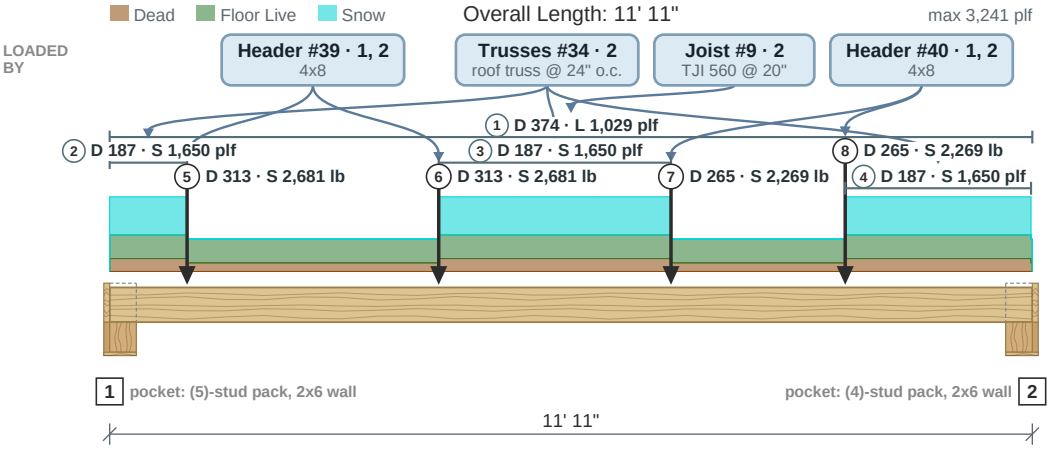
(1) 5 1/2" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

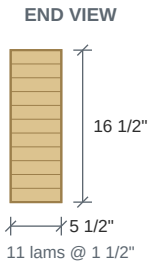
Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 11' 11" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 86% used

Section adequacy 13.6% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	15,934 @ 11' 11"	19,662 (5 1/2")	Passed (81%)	--	
Plate Bearing (psi)	527 @ 11' 11"	668 (2x6 wall, DF-L #2)	Passed (79%)	--	
Shear (lbs)	15,934 @ 11' 11"	18,440	Passed (86%)	1.15	D+0.75L+0.75S
Moment (Ft-lbs)	47,325 @ 6' 3/16"	57,399	Passed (82%)	1.15	D+0.75L+0.75S
Live Load Defl. (in)	0.208 @ 5' 10 5/8"	0.596	Passed (L/688)	--	S
Total Load Defl. (in)	0.323 @ 5' 10 5/8"	0.794	Passed (L/443)	--	D+0.75L+0.75S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+0.75L+0.75S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 20.7 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	4 3/8"	3,515	6,133	10,076	**15,672**	SpotFtg Hdr #37-2 (in a beam pocket in a 2x6 stud wall 14 ft tall, on a (5)-stud pack -- no post cap)
2 @ 11' 11"	5 1/2"	4 7/16"	3,546	6,133	10,384	**15,934**	SpotFtg Bm #32-1 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

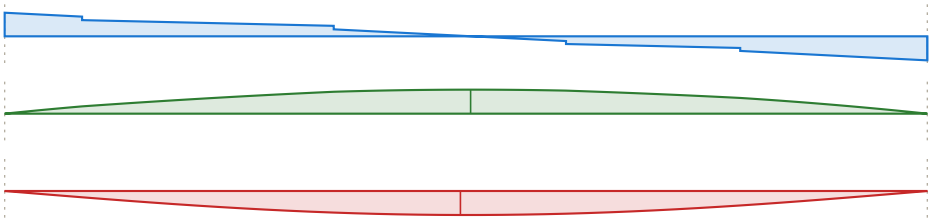
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	11' 11" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 11' 11"	N/A	20.7	--	--	
1 - Uniform (PLF)	0 to 11' 11"	N/A	374.4	1,029	--	Linked from: Joist #9, Support 2
2 - Uniform (PLF)	0 to 1'	N/A	187	--	1,650	Linked from: Trusses #34, Support 2
3 - Uniform (PLF)	4' 3" to 7' 3"	N/A	187	--	1,650	Linked from: Trusses #34, Support 2
4 - Uniform (PLF)	9' 6" to 11' 10 13/16"	N/A	187	--	1,650	Linked from: Trusses #34, Support 2
5 - Point (lb)	1'	N/A	313.1	--	2,681	Linked from: Header #39, Support 1
6 - Point (lb)	4' 3"	N/A	313.1	--	2,681	Linked from: Header #39, Support 2
7 - Point (lb)	7' 3"	N/A	264.9	--	2,269	Linked from: Header #40, Support 1
8 - Point (lb)	9' 6"	N/A	264.9	--	2,269	Linked from: Header #40, Support 2

Beam #43 (continued)

Roof Beam | (1) 5 1/2" x 16 1/2" 24F-1.8E 24F-V4 DF/DF Glulam

Shear, Moment and Deflection



Shear (lbs)
D+0.75L+0.75S
max -15,934 @ 11' 11"

Moment (ft-lbs)
D+0.75L+0.75S
max 47,325 @ 6' 3/16"

Deflection (in)
D+0.75L+0.75S
0.323 in down @ 5' 10 5/8"
limit 0.794 in on the span

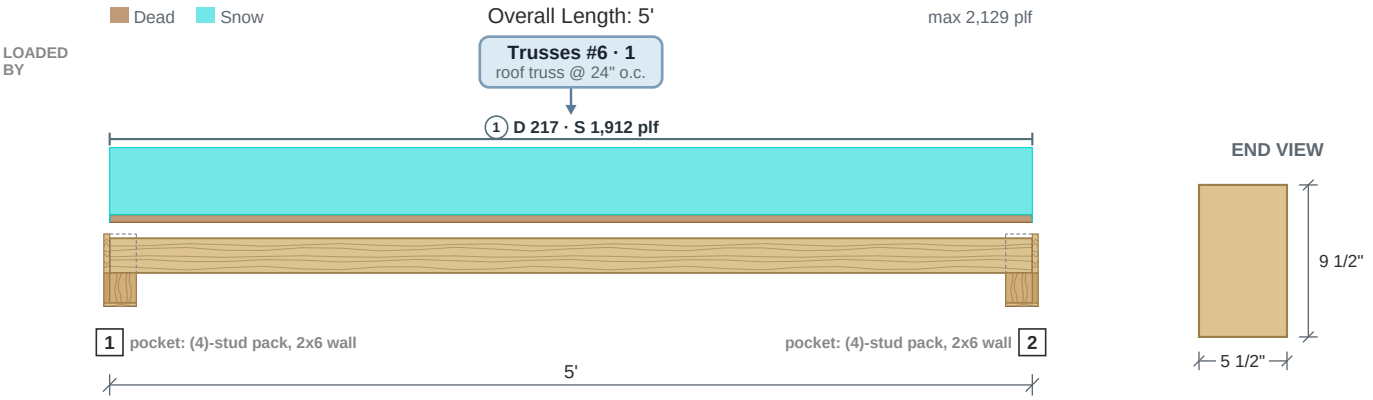
Beam #44

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Floor - 2nd Level | Member type: Beam (Roof Beam) | Length: 5' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 96% used
Section adequacy 3.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,353 @ 0	18,906 (5 1/2")	Passed (28%)	--	
Plate Bearing (psi)	177 @ 0	668 (2x6 wall, DF-L #2)	Passed (27%)	--	
Shear (lbs)	5,353 @ 0	6,810	Passed (79%)	1.15	D+S
Moment (Ft-lbs)	6,691 @ 2' 6"	6,937	Passed (96%)	1.15	D+S
Live Load Defl. (in)	0.053 @ 2' 6"	0.25	Passed (L/1,140)	--	S
Total Load Defl. (in)	0.059 @ 2' 6"	0.333	Passed (L/1,018)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

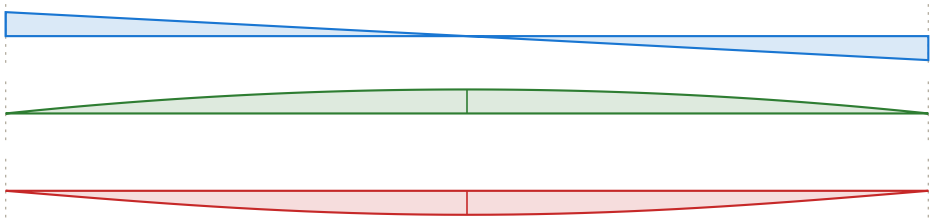
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	5 1/2"	1 9/16"	572	4,781	**5,353**	Bearing wall (marked, beam pocket, framed wall)
2 @ 5'	5 1/2"	1 9/16"	572	4,781	**5,353**	SpotFtg Hdr #11-1 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a (4)-stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 5'	N/A	216.8	1,912	Linked from: Trusses #6, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,353 @ 0

Moment (ft-lbs)
D+S
max 6,691 @ 2' 6"

Deflection (in)
D+S
0.059 in down @ 2' 6"
limit 0.333 in on the span

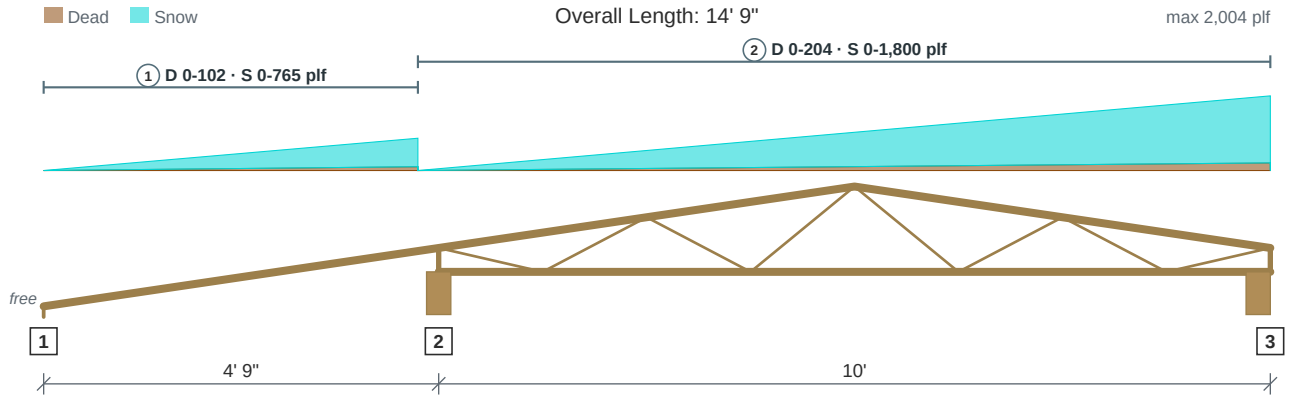
Girder #1

2-ply roof girder truss (generic)

Level: Roof | Length: 14' 9" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic 2-ply roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 4' 9"	627	5,174	**5,801**	Beam #1 (on top or in a hanger? not set)
3 @ 14' 9"	648	5,772	**6,420**	SpotFtg Gdr #1-2 (8 x 48 concrete pier)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Trapezoidal (PLF)	0 to 4' 6"	N/A	0 - 102	0 - 765	
2 - Trapezoidal (PLF)	4' 6" to 14' 9"	N/A	0 - 204	0 - 1800	

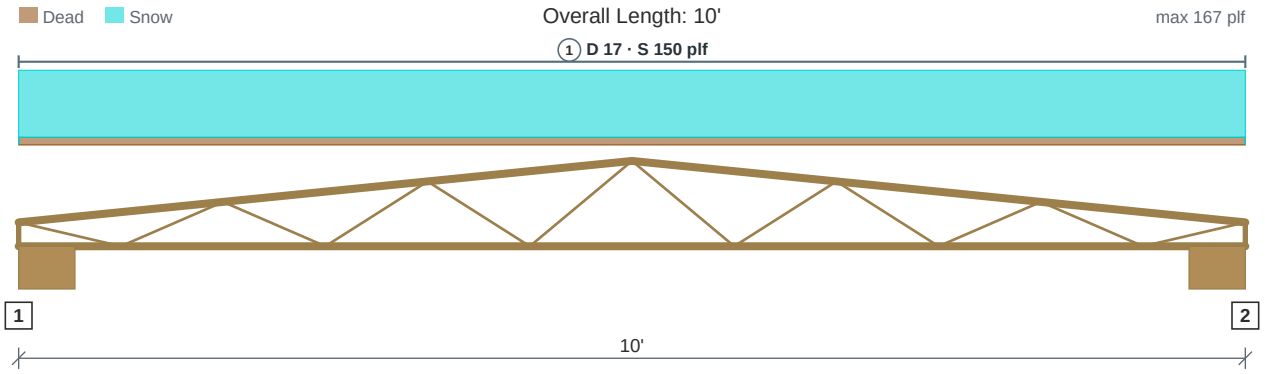
Girder #2

2-ply roof girder truss (generic)

Level: Roof | Length: 10' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic 2-ply roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	85	750	**835**	SpotFtg Gdr #1-2 (in a beam pocket in a 2x6 stud wall 10 ft tall, on a stud pack -- no post cap)
2 @ 10'	85	750	**835**	SpotFtg Gdr #2-2 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a post, sized when checked -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 10'	N/A	17	150	

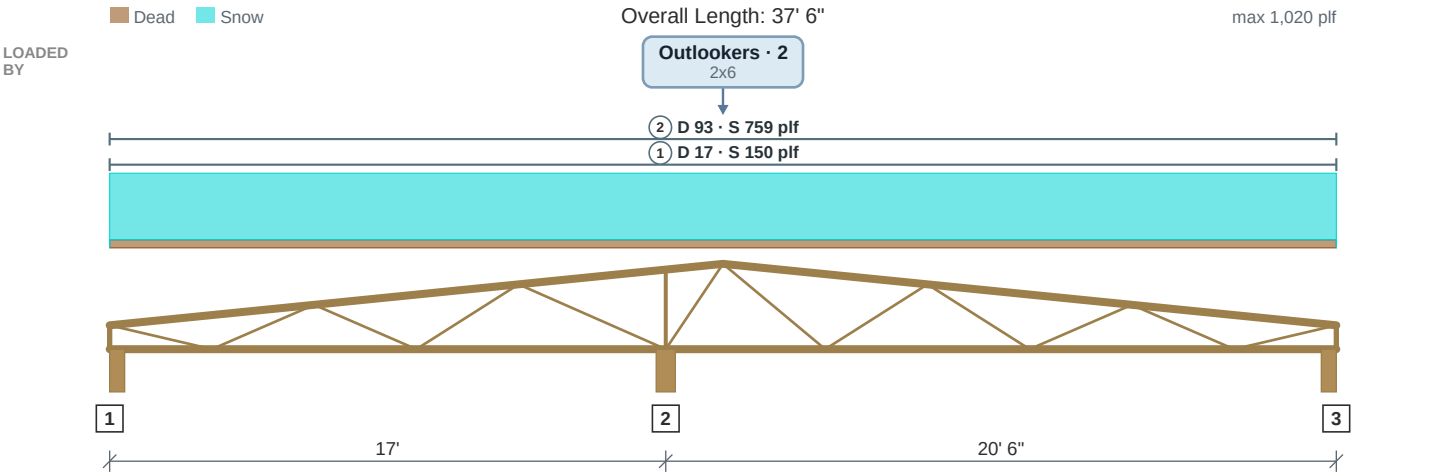
Girder #3

4-ply roof girder truss (generic)

Level: Roof | Length: 37' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic 4-ply roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	644	5,318	**5,962**	SpotFtg Gdr #1-2 (8 x 48 concrete pier)
2 @ 17'	2,601	21,463	**24,064**	SpotFtg Gdr #2-2 (7 x 7 2.0E PSL post (max 10 ft, 57%): truss layout / fabricated)
3 @ 37' 6"	887	7,321	**8,208**	SpotFtg Gdr #5-2 (6x6 post? (max 10 ft, 13%): truss layout / CB66)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 37' 6"	N/A	17	150	
2 - Uniform (PLF)	0 to 37' 6"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

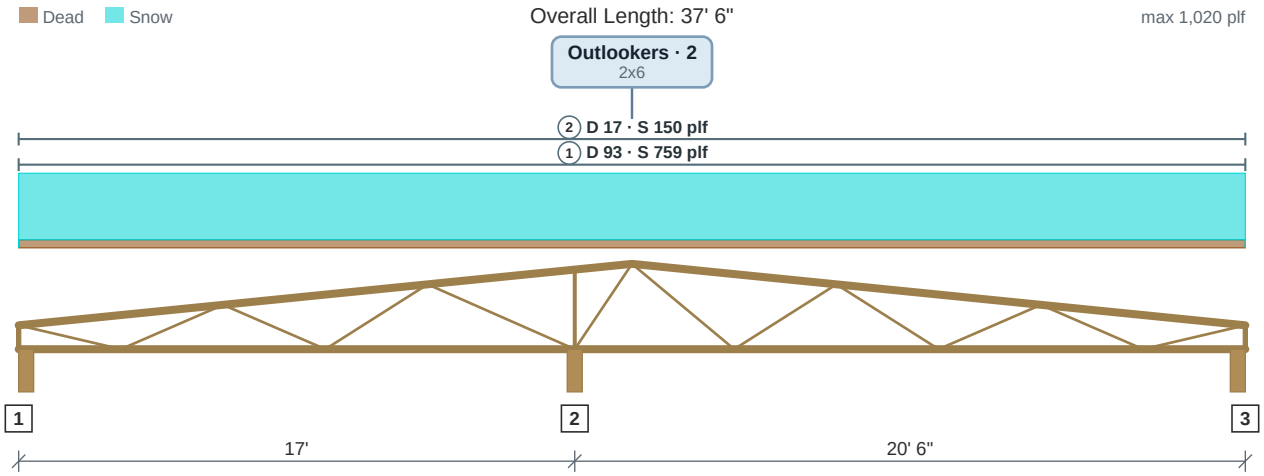
Girder #4

4-ply roof girder truss (generic)

Level: Roof | Length: 37' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic 4-ply roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	644	5,318	**5,962**	SpotFtg Gdr #4-1 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a stud pack -- no post cap)
2 @ 17'	2,601	21,463	**24,064**	SpotFtg Gdr #4-2 (in a 2x6 stud wall 10 ft tall (the default), on a stud pack -- no post cap)
3 @ 37' 6"	887	7,321	**8,208**	SpotFtg Gdr #4-3 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 37' 6"	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 37' 6"	N/A	17	150	

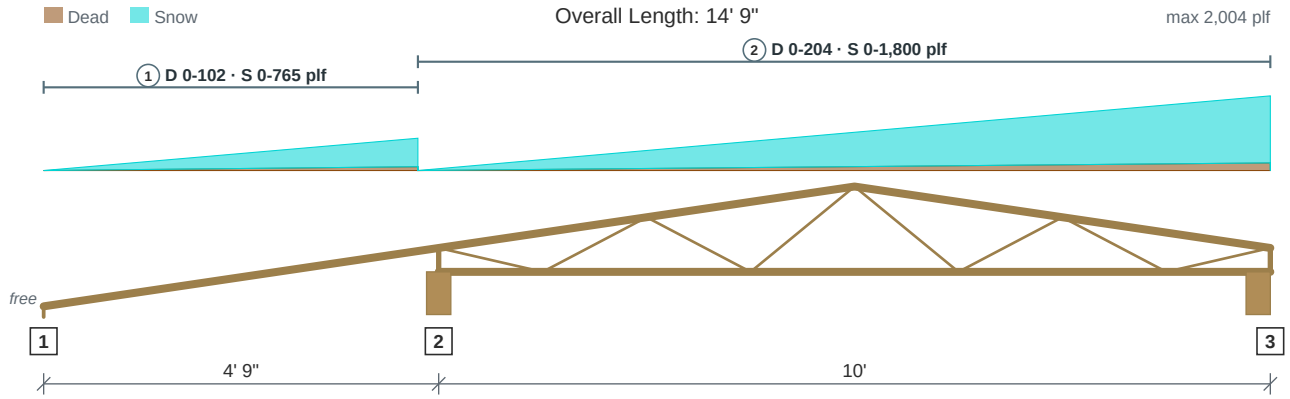
Girder #5

2-ply roof girder truss (generic)

Level: Roof | Length: 14' 9" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic 2-ply roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 4' 9"	627	5,174	**5,801**	Beam #4 (on top or in a hanger? not set)
3 @ 14' 9"	648	5,772	**6,420**	SpotFtg Gdr #5-2 (6x6 post? (max 10 ft, 13%): truss layout / CB66)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Trapezoidal (PLF)	0 to 4' 6"	N/A	0 - 102	0 - 765	
2 - Trapezoidal (PLF)	4' 6" to 14' 9"	N/A	0 - 204	0 - 1800	

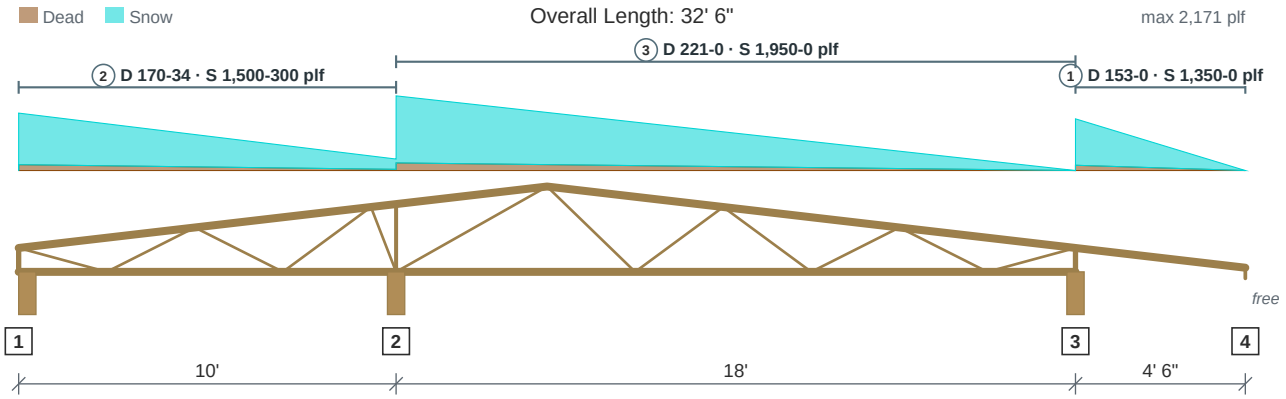
Girder #6

Roof girder truss (generic)

Level: Roof | Length: 32' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	398	2,555	**2,953**	SpotFtg Gdr #8-2 (6x6 post (max 10 ft, 82%): truss layout / ABU66Z)
2 @ 10'	3,059	19,528	**22,587**	Header #26 (on top or in a hanger? not set)
3 @ 28'	1,451	7,504	**8,955**	Beam #17 (on top or in a hanger? not set)
4 @ 32' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 32' 6"	N/A	47.8	--	
1 - Trapezoidal (PLF)	28' to 32' 6"	N/A	153 - 0	1350 - 0	
2 - Trapezoidal (PLF)	0 to 10'	N/A	170 - 34	1500 - 300	
3 - Trapezoidal (PLF)	10' to 28'	N/A	221 - 0	1950 - 0	

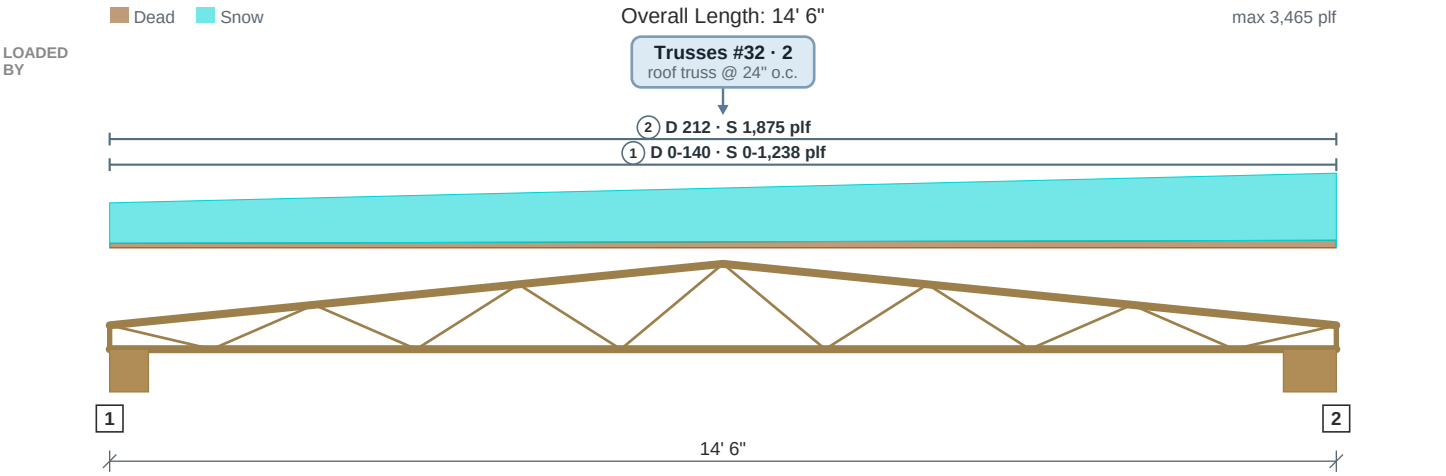
Girder #7

Roof girder truss (generic)

Level: Roof | Length: 14' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1,880	16,584	**18,464**	Beam #24 (on top or in a hanger? not set)
2 @ 14' 6"	2,218	19,575	**21,794**	Beam #21 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Trapezoidal (PLF)	0 to 14' 6"	N/A	0 - 140.2	0 - 1237.5	
2 - Uniform (PLF)	0 to 14' 6"	N/A	212.5	1,875	Linked from: Trusses #32, Support 2

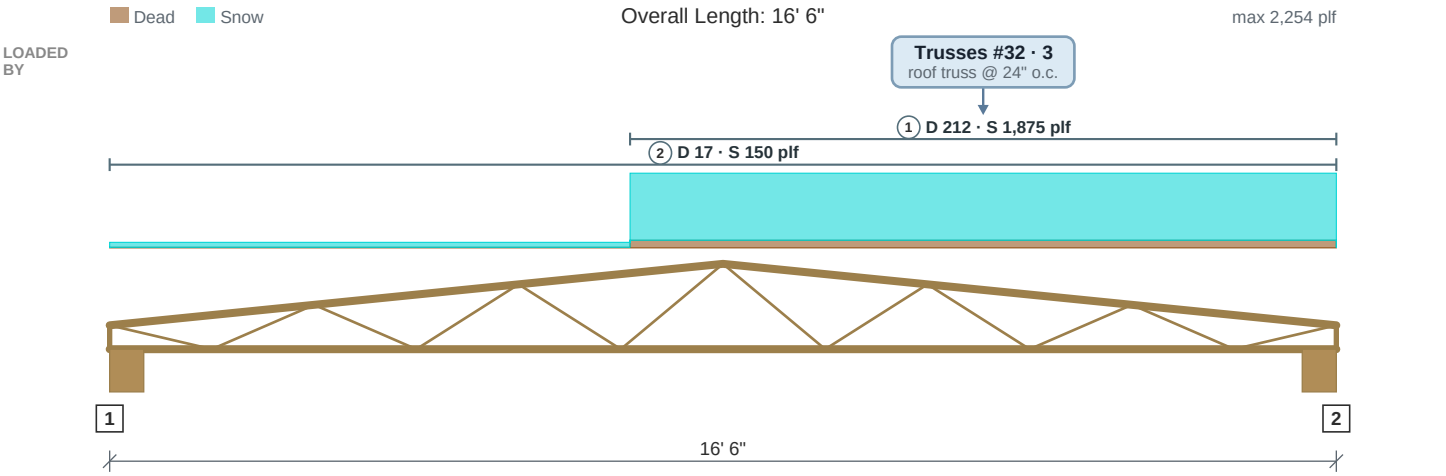
Girder #8

3-ply roof girder truss (generic)

Level: Roof | Length: 16' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic 3-ply roof girder truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a placeholder, so no size or design check is shown; the girder truss itself is designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	721	6,365	**7,087**	SpotFtg Gdr #8-1 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a stud pack -- no post cap)
2 @ 16' 6"	1,578	13,922	**15,500**	SpotFtg Gdr #8-2 (in a beam pocket in a 2x6 stud wall 10 ft tall (the default), on a stud pack -- no post cap)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	7' to 16' 6"	N/A	212.5	1,875	Linked from: Trusses #32, Support 3
2 - Uniform (PLF)	0 to 16' 6"	N/A	17	150	

Header #1

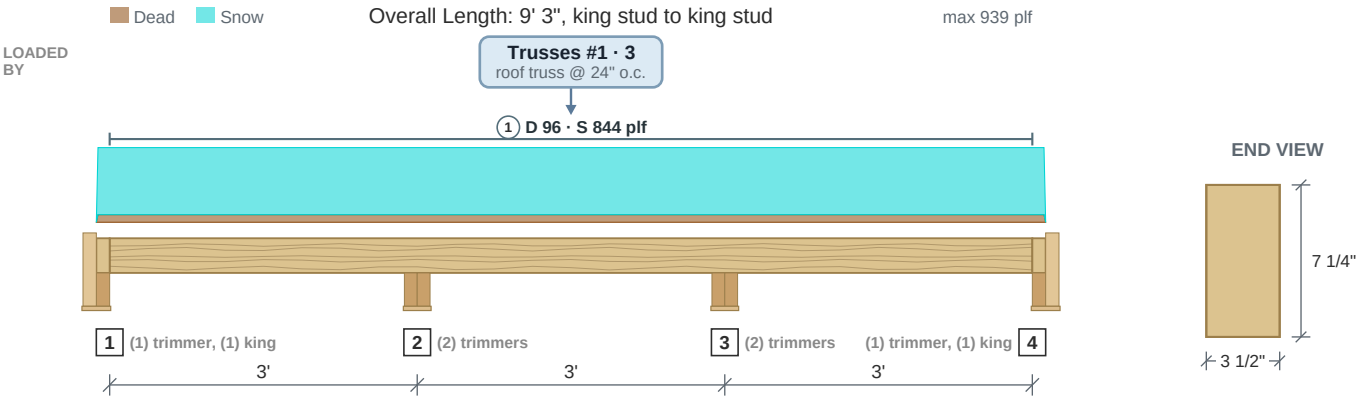
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 9' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 49% used

Section adequacy 51.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,130 @ 3'	7,383 (3")	Passed (42%)	--	
Shear (lbs)	1,713 @ 6'	3,502	Passed (49%)	1.15	D+S
Neg Moment (Ft-lbs)	-858 @ 6'	3,233	Passed (27%)	1.15	D+S
Live Load Defl. (in)	0.005 @ 1' 3 7/16"	0.151	Passed (2L/7,653)	--	S
Total Load Defl. (in)	0.005 @ 1' 3 7/16"	0.202	Passed (2L/6,832)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.996 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 858 lbf-ft, 3.00-6.00 ft, CL 0.996 (unbraced 3.0 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

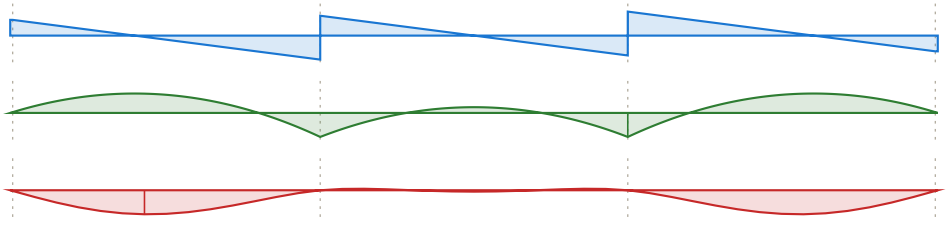
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1/2"	133	1,108	**1,241**	SpotFtg Gdr #1-2 (on (1) trimmer, (1) king stud)
2 @ 3'	3"	1 1/16"	336	2,795	**3,130**	SpotFtg Hdr #1-2 (on (2) trimmers)
3 @ 6'	3"	1 1/16"	336	2,795	**3,130**	SpotFtg Hdr #1-3 (on (2) trimmers)
4 @ 9'	1 1/2"	1/2"	133	1,108	**1,241**	SpotFtg Gdr #4-1 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	5.8	--	
1 - Uniform (PLF)	0 to 9'	N/A	95.6	843.8	Linked from: Trusses #1, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 1,713 @ 6'

Moment (ft-lbs)
D+S
max -858 @ 6'

Deflection (in)
D+S
0.005 in down @ 1' 3 7/16"
limit 0.202 in on 2L (cantilever)

Header #2

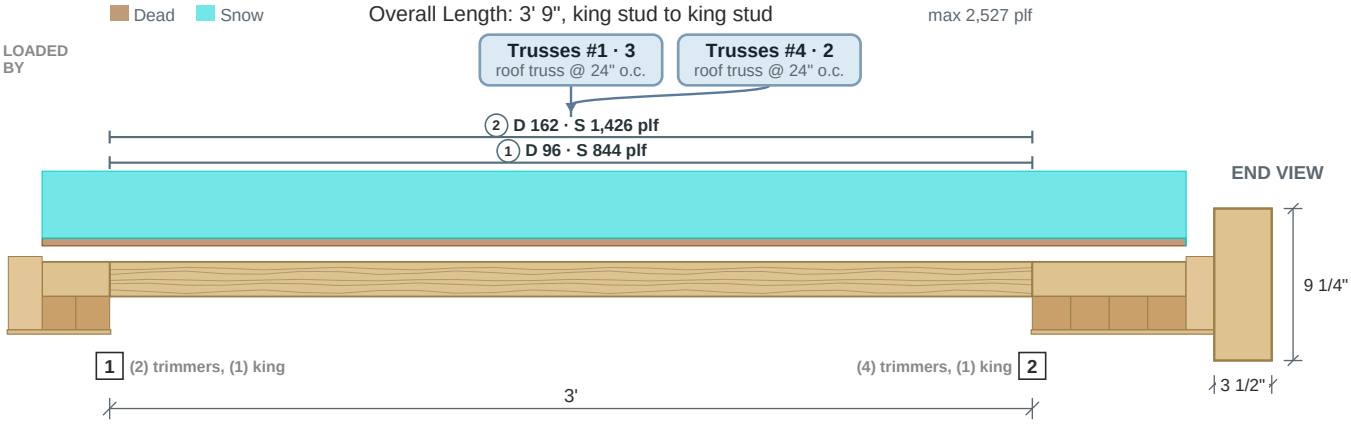
(1) 4x10 DF-L(N) No. 2 (3 1/2" x 9 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 85% used

Section adequacy 14.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,816 @ 0	6,562 (3")	Passed (58%)	--	
Shear (lbs)	3,817 @ -13/16"	4,468	Passed (85%)	1.15	D+S
Moment (Ft-lbs)	3,196 @ 1' 6 1/16"	4,879	Passed (65%)	1.15	D+S
Live Load Defl. (in)	0.014 @ 1' 6"	0.159	Passed (2L/2,706)	--	S
Total Load Defl. (in)	0.016 @ 1' 6"	0.212	Passed (2L/2,424)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.20, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 7.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

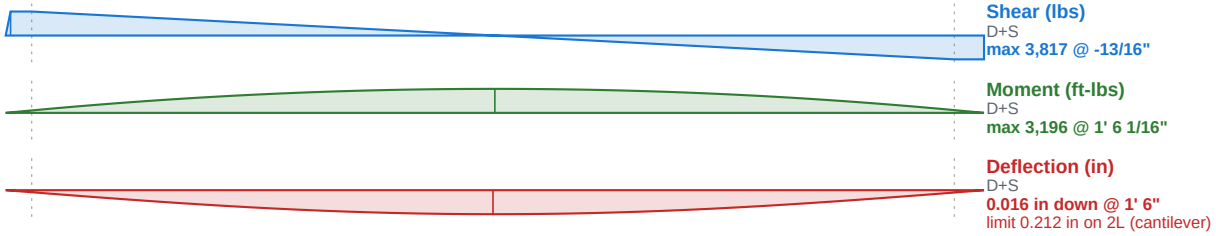
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	1 3/4"	465	3,986	**4,450**	SpotFtg Hdr #2-1 (on (2) trimmers, (1) king stud)
2 @ 3'	6"	1 3/4"	528	4,527	**5,055**	SpotFtg Hdr #2-2 (on (4) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3'	N/A	7.4	--	
1 - Uniform (PLF)	0 to 3'	N/A	95.6	843.8	Linked from: Trusses #1, Support 3
2 - Uniform (PLF)	0 to 3'	N/A	161.7	1,426	Linked from: Trusses #4, Support 2

Shear, Moment and Deflection



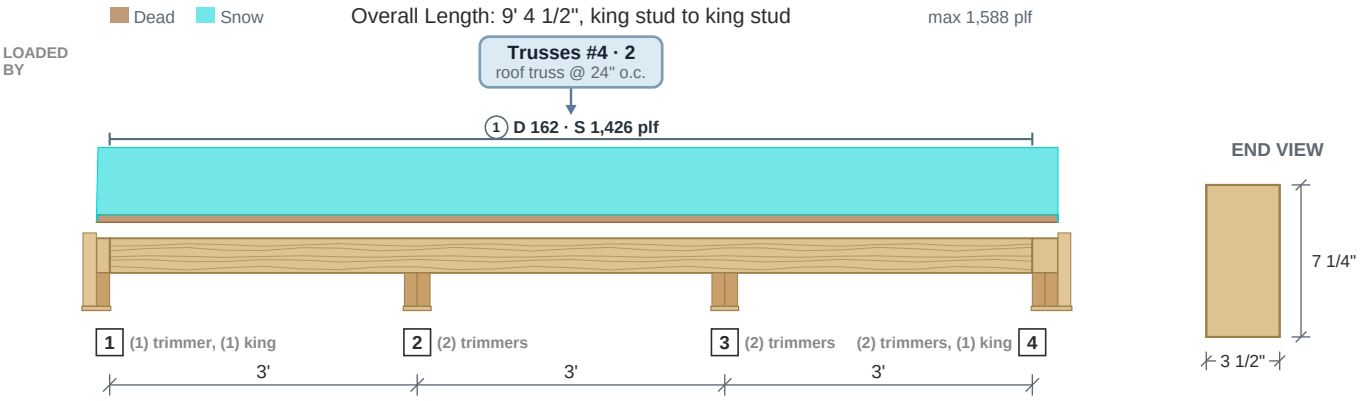
Header #3

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 9' 4 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 83% used
Section adequacy 17.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,296 @ 6'	7,383 (3")	Passed (72%)	--	
Shear (lbs)	2,904 @ 6'	3,502	Passed (83%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,458 @ 6'	3,233	Passed (45%)	1.15	D+S
Live Load Defl. (in)	0.008 @ 7' 8 9/16"	0.152	Passed (2L/4,418)	--	S
Total Load Defl. (in)	0.009 @ 7' 8 9/16"	0.203	Passed (2L/3,954)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.996 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1458 lbf-ft, 3.00-6.00 ft, CL 0.996 (unbraced 3.0 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

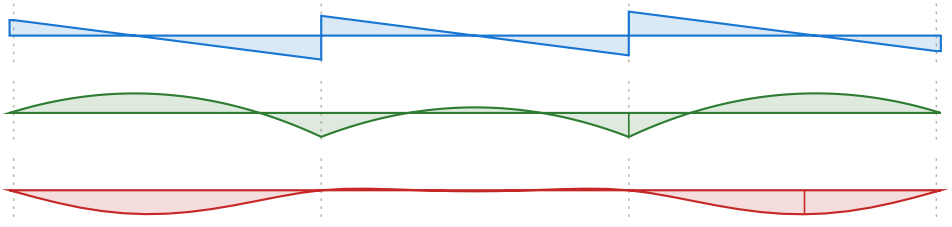
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	7/8"	218	1,861	**2,080**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud
2 @ 3'	3"	2 1/16"	556	4,735	**5,290**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 6'	3"	2 1/16"	556	4,740	**5,296**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 9'	3"	7/8"	239	2,036	**2,275**	Bearing wall (marked, trimmers) -- on (2) trimmers, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	5.8	--	
1 - Uniform (PLF)	0 to 9'	N/A	161.7	1,426	Linked from: Trusses #4, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,904 @ 6'

Moment (ft-lbs)
D+S
max -1,458 @ 6'

Deflection (in)
D+S
0.009 in down @ 7' 8 9/16"
limit 0.203 in on 2L (cantilever)

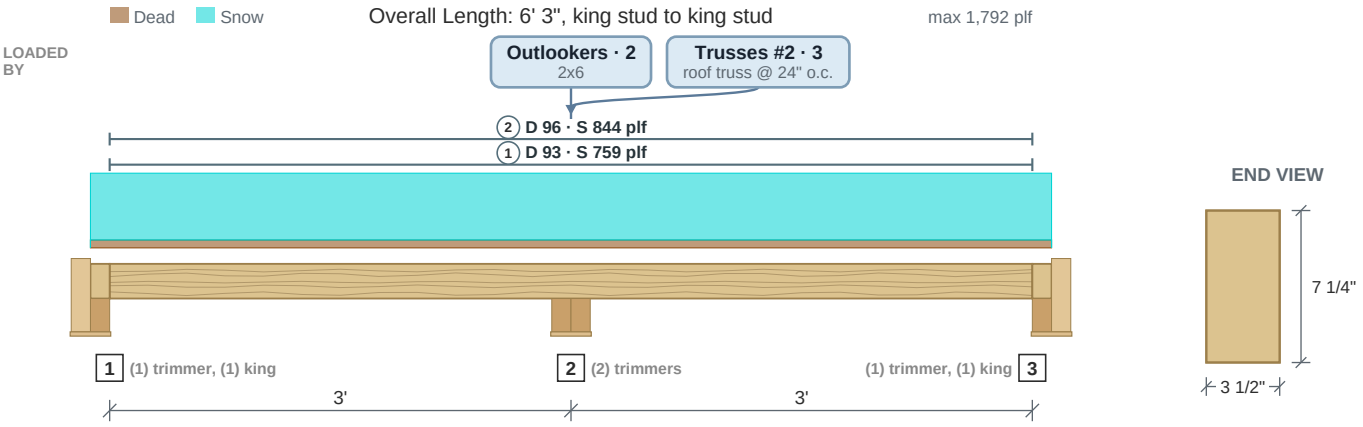
Header #4

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 6' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 98% used
Section adequacy 2.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,836 @ 3'	7,383 (3")	Passed (93%)	--	
Shear (lbs)	3,418 @ 3'	3,502	Passed (98%)	1.15	D+S
Neg Moment (Ft-lbs)	-2,080 @ 3'	3,233	Passed (64%)	1.15	D+S
Live Load Defl. (in)	0.007 @ 1' 2 3/8"	0.152	Passed (2L/5,058)	--	S
Total Load Defl. (in)	0.008 @ 1' 2 3/8"	0.203	Passed (2L/4,510)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.996 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 2080 lbf-ft, 0.00-3.00 ft, CL 0.996 (unbraced 3.0 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

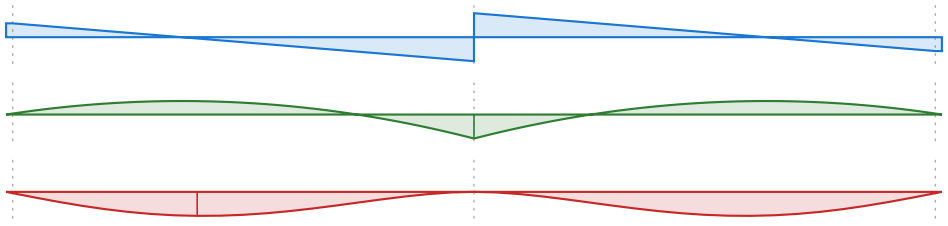
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	7/8"	238	1,962	**2,200**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud
2 @ 3'	3"	2 3/4"	740	6,096	**6,836**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 6'	1 1/2"	7/8"	238	1,962	**2,200**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6'	N/A	5.8	--	
1 - Uniform (PLF)	0 to 6'	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 6'	N/A	95.6	843.8	Linked from: Trusses #2, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 3,418 @ 3'

Moment (ft-lbs)
D+S
max -2,080 @ 3'

Deflection (in)
D+S
0.008 in down @ 1' 2 3/8"
limit 0.203 in on 2L (cantilever)

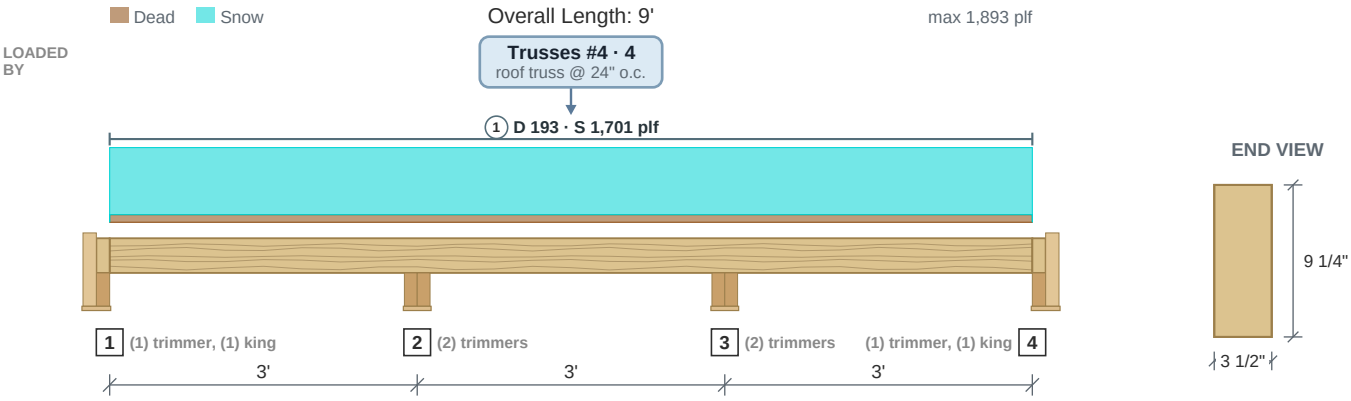
Header #5

(1) 4x10 DF-L(N) No. 2 (3 1/2" x 9 1/4")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 86% used
Section adequacy 14.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,314 @ 3'	7,383 (3")	Passed (86%)	--	
Shear (lbs)	3,463 @ 6'	4,468	Passed (77%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,738 @ 3'	4,854	Passed (36%)	1.15	D+S
Live Load Defl. (in)	0.005 @ 1' 3 7/16"	0.152	Passed (2L/7,698)	--	S
Total Load Defl. (in)	0.005 @ 1' 3 7/16"	0.203	Passed (2L/6,888)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.20, CL = 0.995 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1738 lbf-ft, 0.00-3.00 ft, CL 0.995 (unbraced 3.0 ft).
- Member self weight of 7.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

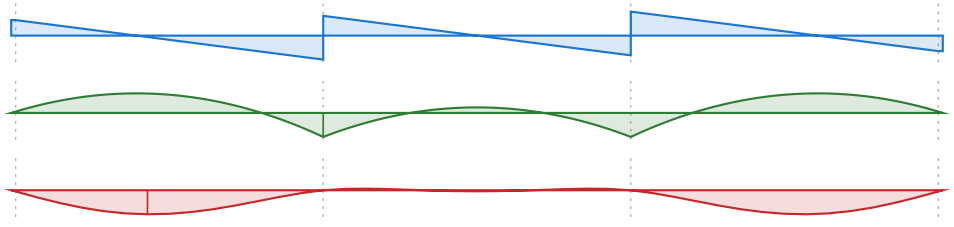
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1"	236	2,004	**2,239**	Header #6 (on (1) trimmer, (1) king stud)
2 @ 3'	3"	2 1/2"	665	5,649	**6,314**	Header #6 (on (2) trimmers)
3 @ 6'	3"	2 1/2"	665	5,649	**6,314**	Header #6 (on (2) trimmers)
4 @ 9'	1 1/2"	1"	236	2,004	**2,239**	Header #6 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	7.4	--	
1 - Uniform (PLF)	0 to 9'	N/A	192.7	1,701	Linked from: Trusses #4, Support 4

Shear, Moment and Deflection



Shear (lbs)
D+S
max 3,463 @ 6'

Moment (ft-lbs)
D+S
max -1,738 @ 3'

Deflection (in)
D+S
0.005 in down @ 1' 3 7/16"
limit 0.203 in on 2L (cantilever)

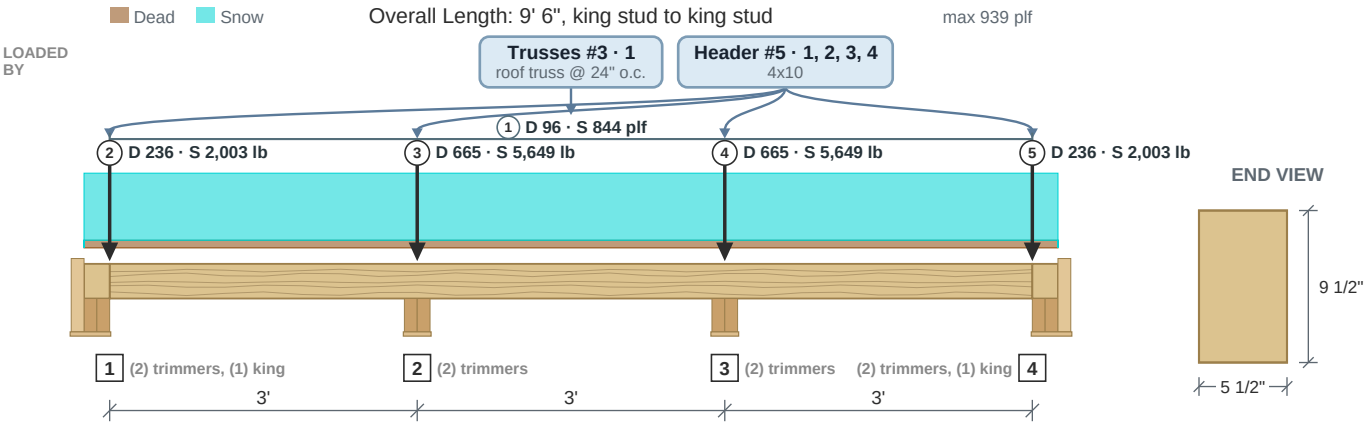
Header #6

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 9' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 82% used
Section adequacy 18% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,513 @ 3'	11,601 (3")	Passed (82%)	--	
Shear (lbs)	1,733 @ 6'	6,810	Passed (25%)	1.15	D+S
Neg Moment (Ft-lbs)	-870 @ 3'	6,922	Passed (13%)	1.15	D+S
Live Load Defl. (in)	0.002 @ 1' 3 7/16"	0.152	Passed (2L/9999+)	--	S
Total Load Defl. (in)	0.002 @ 1' 3 7/16"	0.203	Passed (2L/9999+)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 870 lbf-ft, 0.00-3.00 ft, CL 0.998 (unbraced 3.0 ft).
- Member self weight of 11.9 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	1"	385	3,174	**3,559**	SpotFtg Gdr #5-2 (on (2) trimmers, (1) king stud)
2 @ 3'	3"	2 3/8"	1,026	8,487	**9,513**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 6'	3"	2 3/8"	1,026	8,487	**9,513**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 9'	3"	1"	385	3,174	**3,559**	SpotFtg Gdr #4-3 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

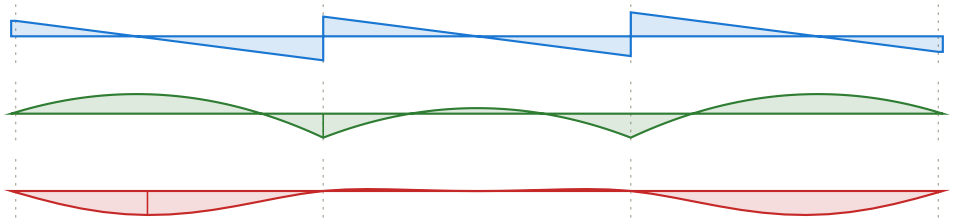
Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 9'	N/A	95.6	843.8	Linked from: Trusses #3, Support 1
2 - Point (lb)	0	N/A	235.8	2,003	Linked from: Header #5, Support 1
3 - Point (lb)	3'	N/A	664.7	5,649	Linked from: Header #5, Support 2
4 - Point (lb)	6'	N/A	664.7	5,649	Linked from: Header #5, Support 3
5 - Point (lb)	9'	N/A	235.8	2,003	Linked from: Header #5, Support 4

Header #6 (continued)

Roof Beam | (1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Shear, Moment and Deflection



Shear (lbs)
D+S
max 1,733 @ 6'

Moment (ft-lbs)
D+S
max -870 @ 3'

Deflection (in)
D+S
0.002 in down @ 1' 3 7/16"
limit 0.203 in on 2L (cantilever)

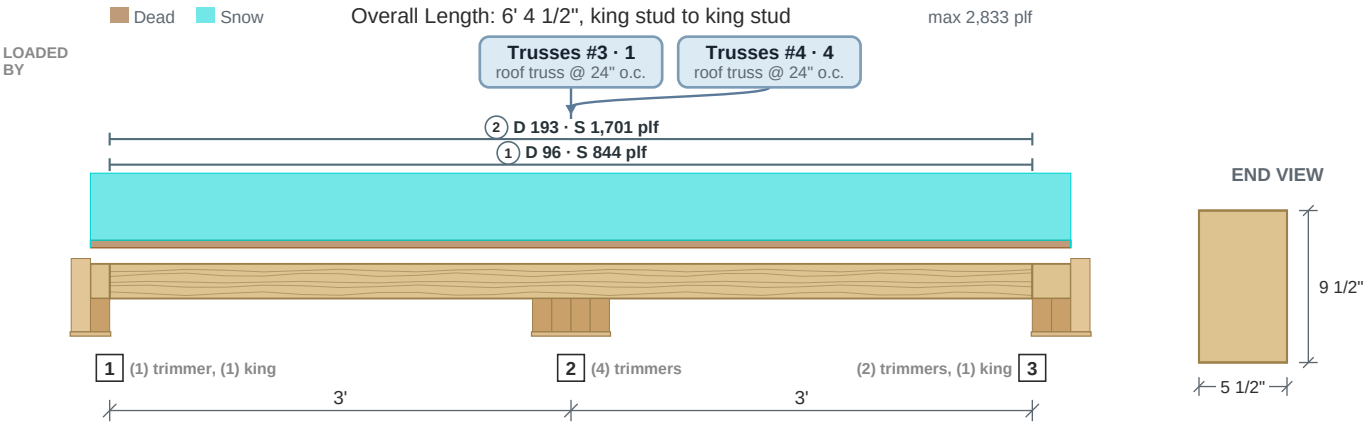
Header #7

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 6' 4 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 79% used
Section adequacy 20.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,123 @ 0	5,156 (1 1/2")	Passed (61%)	--	
Shear (lbs)	5,415 @ 3'	6,810	Passed (79%)	1.15	D+S
Neg Moment (Ft-lbs)	-3,296 @ 3'	6,922	Passed (48%)	1.15	D+S
Live Load Defl. (in)	0.004 @ 4' 9 5/8"	0.152	Passed (2L/9,096)	--	S
Total Load Defl. (in)	0.004 @ 4' 9 5/8"	0.203	Passed (2L/8,136)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 3296 lbf-ft, 0.00-3.00 ft, CL 0.998 (unbraced 3.0 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

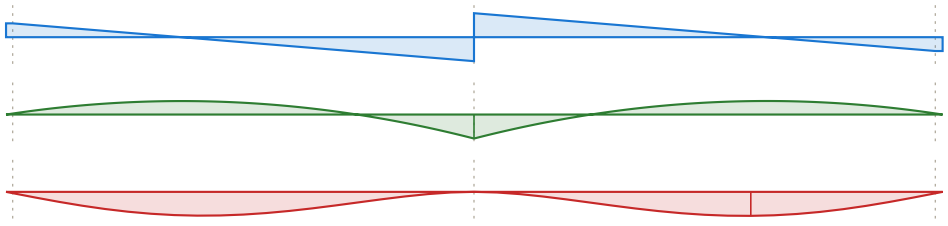
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	15/16"	367	3,112	**3,479**	SpotFtg Gdr #4-3 (on (1) trimmer, (1) king stud)
2 @ 3'	6"	2 3/4"	1,143	9,682	**10,825**	SpotFtg Hdr #7-2 (on (4) trimmers)
3 @ 6'	3"	15/16"	404	3,426	**3,830**	SpotFtg Hdr #7-3 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 6'	N/A	95.6	843.8	Linked from: Trusses #3, Support 1
2 - Uniform (PLF)	0 to 6'	N/A	192.7	1,701	Linked from: Trusses #4, Support 4

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,415 @ 3'

Moment (ft-lbs)
D+S
max -3,296 @ 3'

Deflection (in)
D+S
0.004 in down @ 4' 9 5/8"
limit 0.203 in on 2L (cantilever)

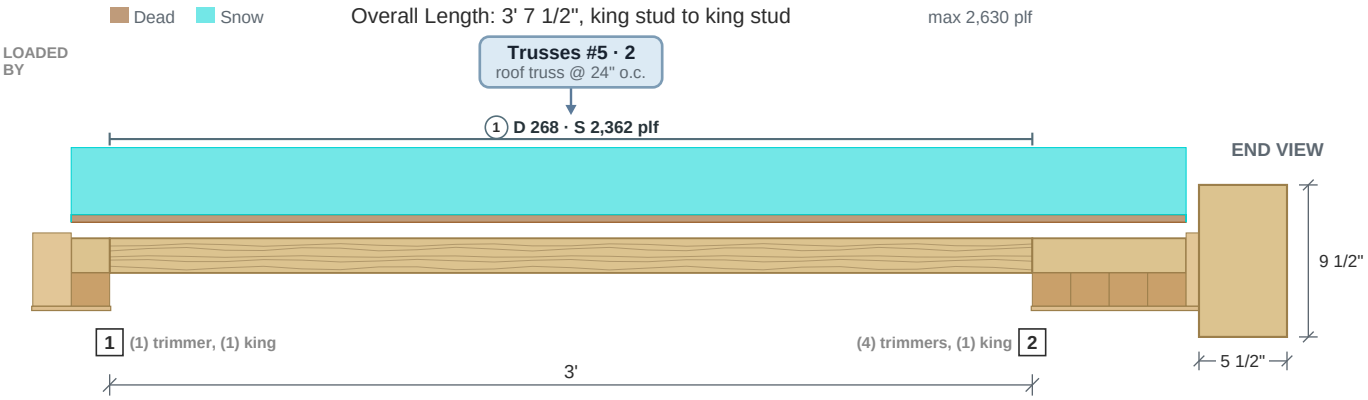
Header #8

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 7 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 77% used
Section adequacy 22.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,978 @ 0	5,156 (1 1/2")	Passed (77%)	--	
Shear (lbs)	3,979 @ -7/16"	6,810	Passed (58%)	1.15	D+S
Moment (Ft-lbs)	3,202 @ 1' 6 1/16"	6,937	Passed (46%)	1.15	D+S
Live Load Defl. (in)	0.01 @ 1' 6 7/16"	0.156	Passed (2L/3,820)	--	S
Total Load Defl. (in)	0.011 @ 1' 6 7/16"	0.208	Passed (2L/3,416)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

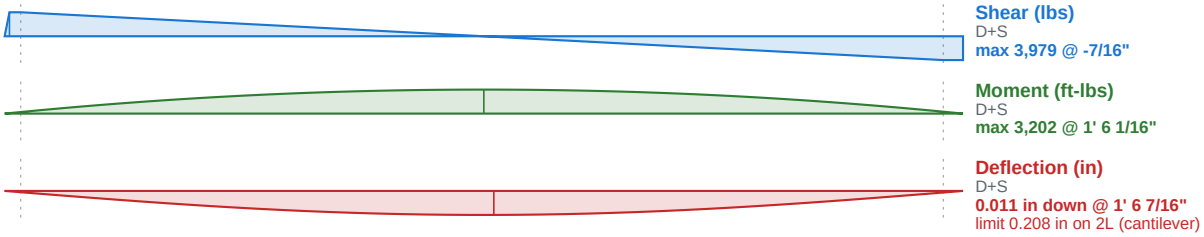
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 3/16"	456	3,853	**4,309**	SpotFtg Hdr #8-1 (on (1) trimmer, (1) king stud)
2 @ 3'	6"	1 1/8"	558	4,711	**5,269**	SpotFtg Hdr #8-2 (on (4) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 3'	N/A	267.8	2,362	Linked from: Trusses #5, Support 2

Shear, Moment and Deflection



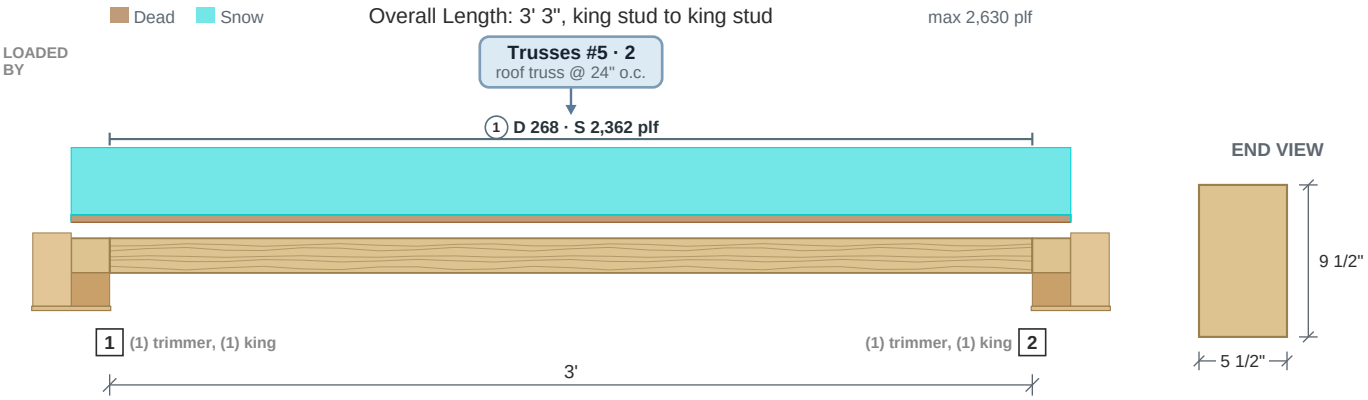
Header #9

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 77% used
Section adequacy 23.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,963 @ 0	5,156 (1 1/2")	Passed (77%)	--	
Shear (lbs)	3,963 @ -7/16"	6,810	Passed (58%)	1.15	D+S
Moment (Ft-lbs)	3,179 @ 1' 6"	6,937	Passed (46%)	1.15	D+S
Live Load Defl. (in)	0.01 @ 1' 5 9/16"	0.155	Passed (2L/3,864)	--	S
Total Load Defl. (in)	0.011 @ 1' 5 9/16"	0.207	Passed (2L/3,455)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

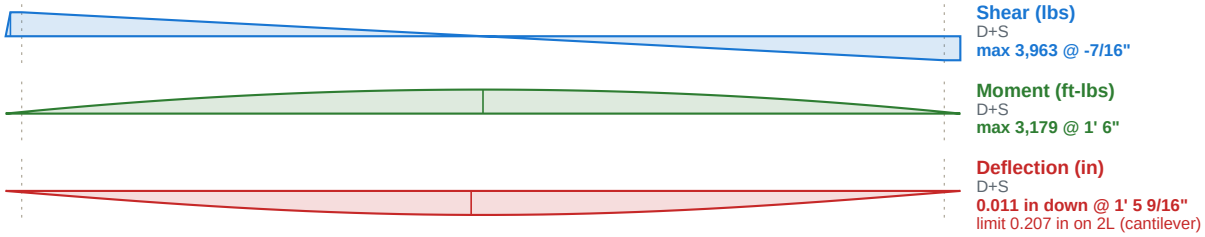
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 1/8"	454	3,839	**4,293**	SpotFtg Hdr #9-1 (on (1) trimmer, (1) king stud)
2 @ 3'	1 1/2"	1 1/8"	454	3,839	**4,293**	SpotFtg Hdr #9-2 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 3'	N/A	267.8	2,362	Linked from: Trusses #5, Support 2

Shear, Moment and Deflection



Header #10

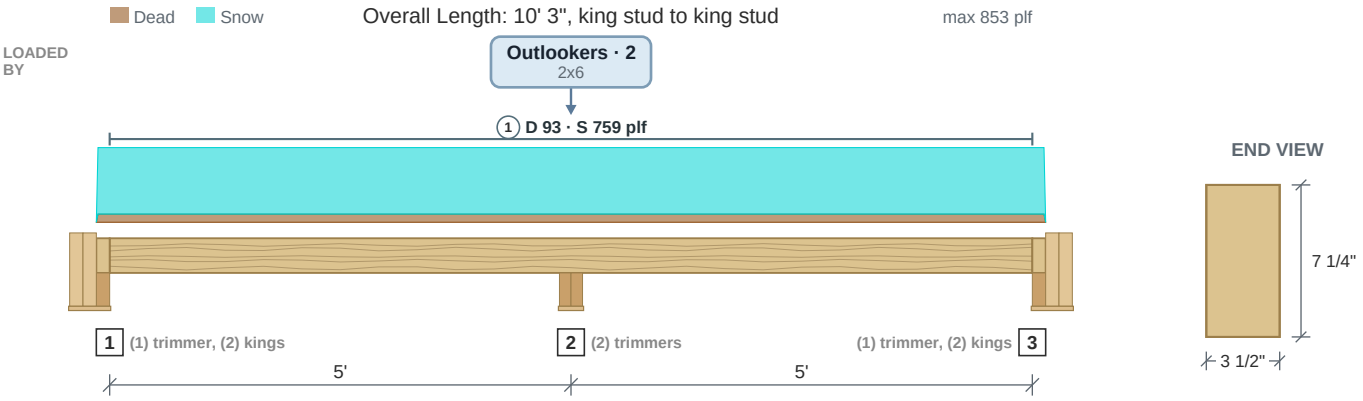
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 10' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 84% used

Section adequacy 15.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,400 @ 5'	7,383 (3")	Passed (73%)	--	
Shear (lbs)	2,700 @ 5'	3,502	Passed (77%)	1.15	D+S
Neg Moment (Ft-lbs)	-2,717 @ 5'	3,223	Passed (84%)	1.15	D+S
Live Load Defl. (in)	0.026 @ 8'	0.252	Passed (2L/2,361)	--	S
Total Load Defl. (in)	0.029 @ 8'	0.336	Passed (2L/2,088)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.993 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 2717 lbf-ft, 0.00-5.00 ft, CL 0.993 (unbraced 5.0 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

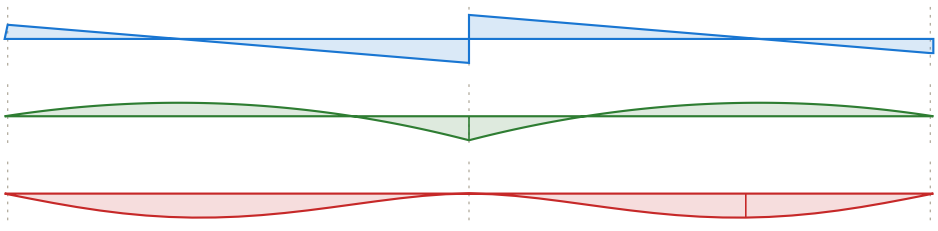
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	3/4"	196	1,503	**1,699**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs
2 @ 5'	3"	2 1/16"	623	4,777	**5,400**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 10'	1 1/2"	3/4"	196	1,503	**1,699**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 10'	N/A	5.8	--	
1 - Uniform (PLF)	0 to 10'	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,700 @ 5'

Moment (ft-lbs)
D+S
max -2,717 @ 5'

Deflection (in)
D+S
0.029 in down @ 8'
limit 0.336 in on 2L (cantilever)

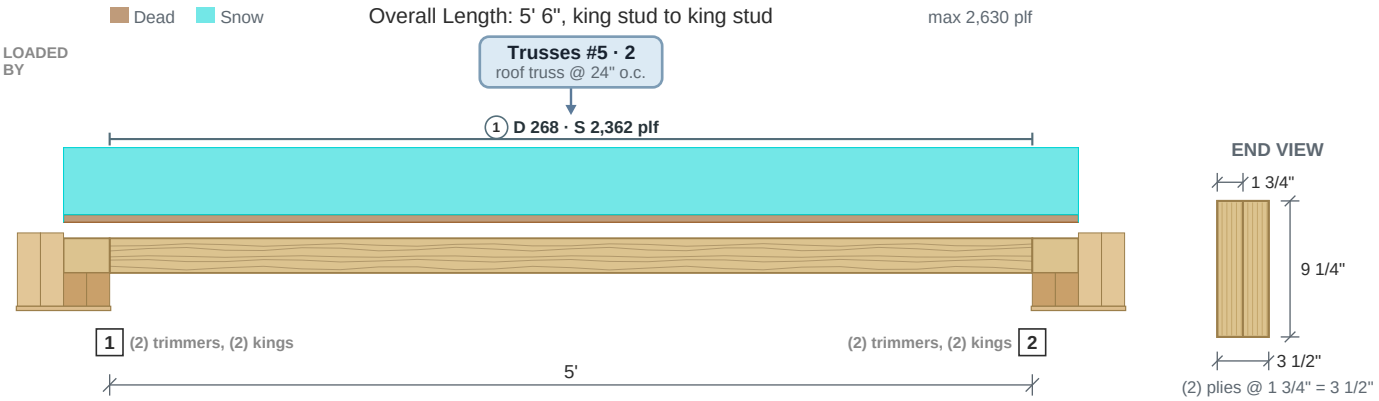
Header #11

(2) 1 3/4" x 9 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 5' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 93% used
Section adequacy 6.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,599 @ 0	7,875 (3")	Passed (84%)	--	
Shear (lbs)	6,599 @ -1 3/8"	7,075	Passed (93%)	1.15	D+S
Moment (Ft-lbs)	9,009 @ 2' 6"	12,884	Passed (70%)	1.15	D+S
Live Load Defl. (in)	0.115 @ 2' 6 3/4"	0.262	Passed (2L/548)	--	S
Total Load Defl. (in)	0.128 @ 2' 6 3/4"	0.349	Passed (2L/490)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.036, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 9.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

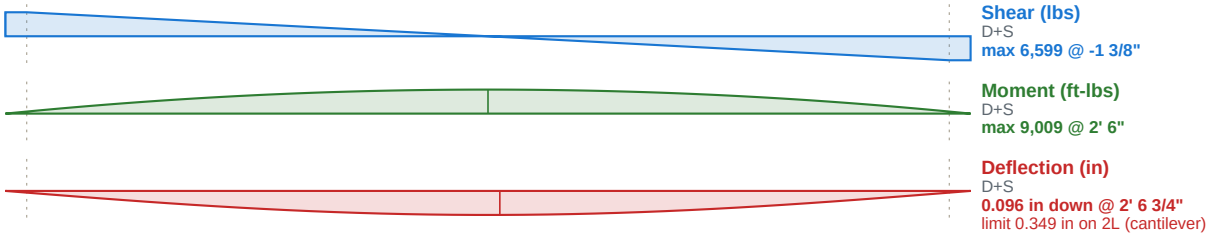
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	2 1/2"	762	6,497	**7,259**	SpotFtg Hdr #11-1 (on (2) trimmers, (2) king studs)
2 @ 5'	3"	2 1/2"	762	6,497	**7,259**	SpotFtg Hdr #11-2 (on (2) trimmers, (2) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5'	N/A	9.4	--	
1 - Uniform (PLF)	0 to 5'	N/A	267.8	2,362	Linked from: Trusses #5, Support 2

Shear, Moment and Deflection



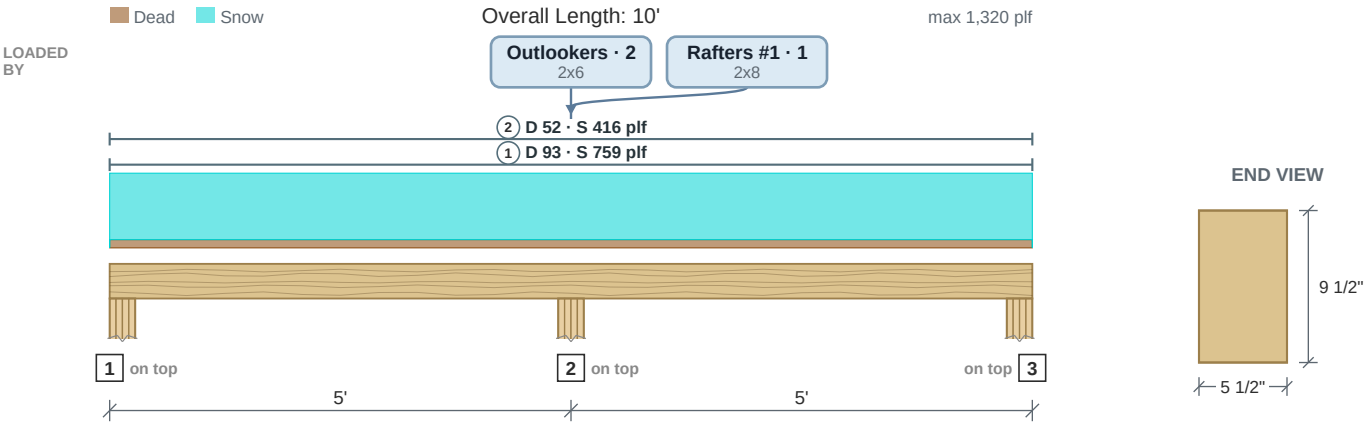
Header #12

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 10' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 72% used
Section adequacy 27.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	8,377 @ 5'	11,601 (3")	Passed (72%)	--	
Shear (lbs)	4,188 @ 5'	6,810	Passed (61%)	1.15	D+S
Neg Moment (Ft-lbs)	-4,214 @ 5'	6,911	Passed (61%)	1.15	D+S
Live Load Defl. (in)	0.014 @ 2'	0.252	Passed (2L/4,389)	--	S
Total Load Defl. (in)	0.016 @ 2'	0.335	Passed (2L/3,871)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.996 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 4214 lbf-ft, 0.00-5.00 ft, CL 0.996 (unbraced 5.0 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

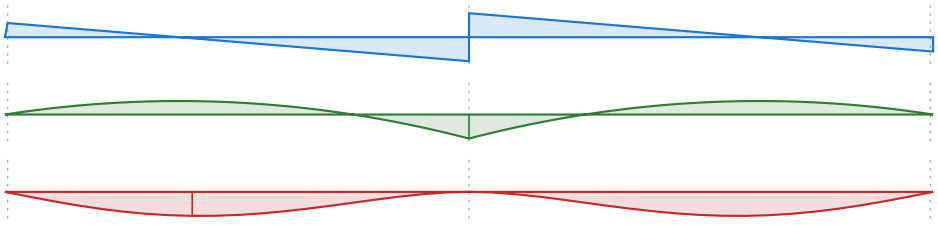
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	3/4"	292	2,181	**2,473**	Header #13 (bears on top)
2 @ 5'	3"	2 1/16"	989	7,387	**8,377**	Header #13 (bears on top)
3 @ 10'	1 1/2"	3/4"	292	2,181	**2,473**	Header #13 (bears on top)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 10'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 10'	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 10'	N/A	52.2	415.5	Linked from: Rafters #1, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 4,188 @ 5'

Moment (ft-lbs)
D+S
max -4,214 @ 5'

Deflection (in)
D+S
0.016 in down @ 2'
limit 0.335 in on 2L (cantilever)

Header #13

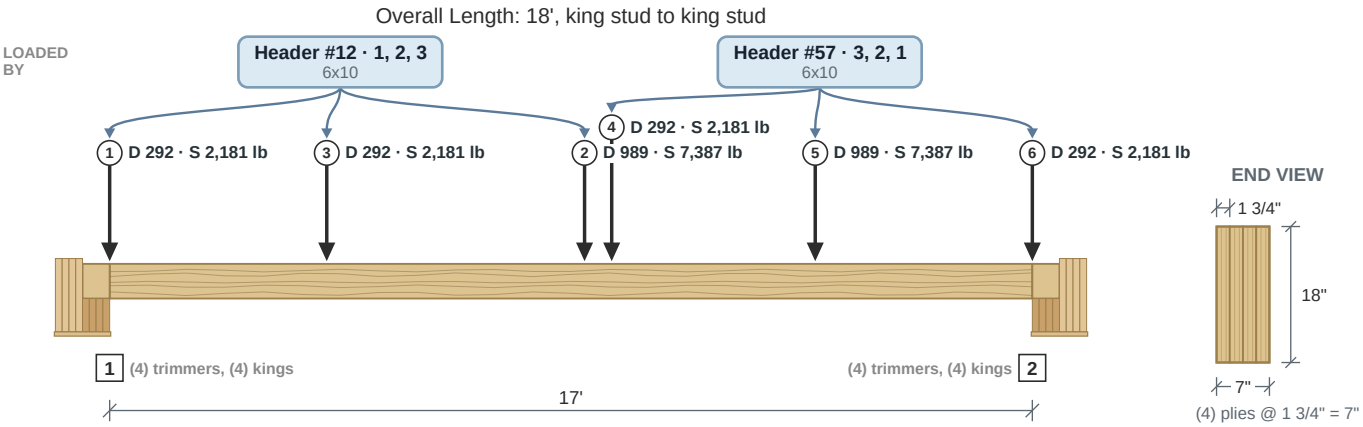
(4) 1 3/4" x 18" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 18' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 79% used

Section adequacy 21.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	15,385 @ 17'	31,500 (6")	Passed (49%)	--	
Shear (lbs)	12,916 @ 17'	27,535	Passed (47%)	1.15	D+S
Moment (Ft-lbs)	70,053 @ 8' 9"	89,132	Passed (79%)	1.15	D+S
Live Load Defl. (in)	0.487 @ 8' 9"	0.861	Passed (2L/424)	--	S
Total Load Defl. (in)	0.564 @ 8' 9"	1.148	Passed (2L/366)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.946, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 36.8 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

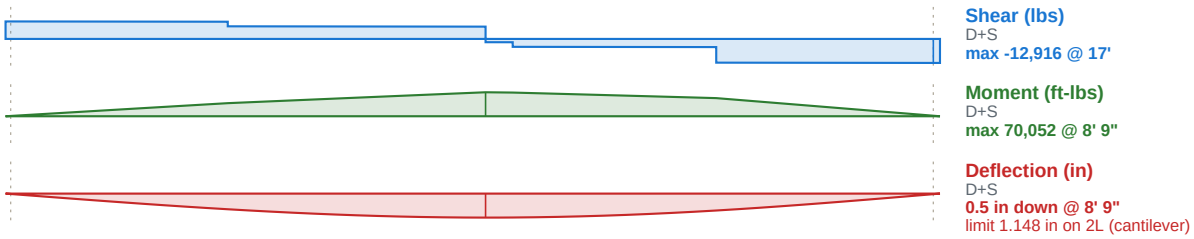
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	6"	2 1/4"	1,698	10,205	**11,903**	SpotFtg Hdr #13-1 (on (4) trimmers, (4) king studs)
2 @ 17'	6"	2 15/16"	2,110	13,293	**15,403**	SpotFtg Hdr #13-2 (on (4) trimmers, (4) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	17' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 17'	N/A	36.8	--	
1 - Point (lb)	0	N/A	292.1	2,181	Linked from: Header #12, Support 1
2 - Point (lb)	8' 9"	N/A	989.3	7,387	Linked from: Header #12, Support 2
3 - Point (lb)	4'	N/A	292.1	2,181	Linked from: Header #12, Support 3
4 - Point (lb)	9' 3"	N/A	292.1	2,181	Linked from: Header #57, Support 3
5 - Point (lb)	13'	N/A	989.3	7,387	Linked from: Header #57, Support 2
6 - Point (lb)	17'	N/A	292.1	2,181	Linked from: Header #57, Support 1

Shear, Moment and Deflection



Header #14

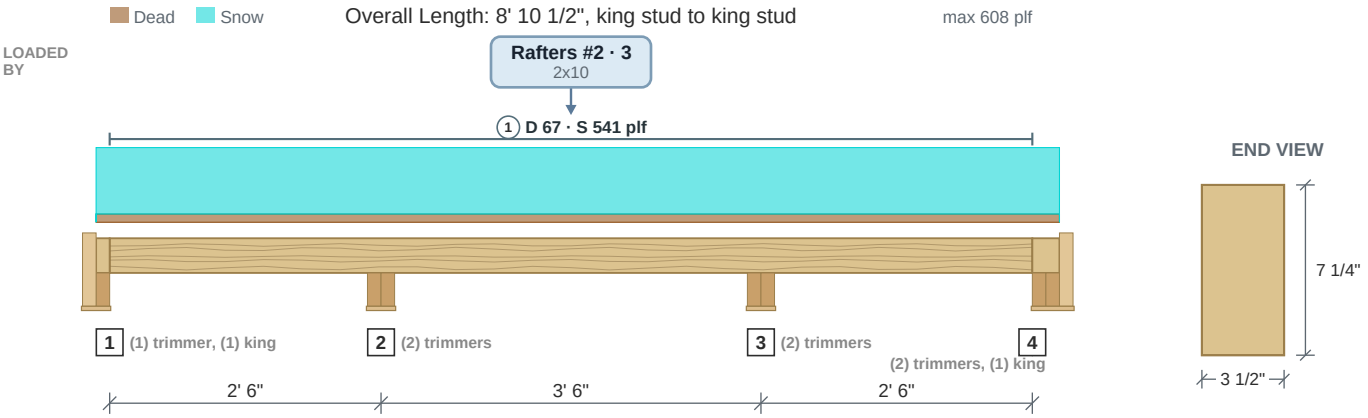
PASSED

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Controls: Shear 31% used

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 8' 10 1/2" | 2018 IRC | 2018 NDS | ASD

Section adequacy 69.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,078 @ 2' 6"	7,383 (3")	Passed (28%)	--	
Shear (lbs)	1,075 @ 6'	3,502	Passed (31%)	1.15	D+S
Neg Moment (Ft-lbs)	-581 @ 6'	3,230	Passed (18%)	1.15	D+S
Live Load Defl. (in)	0.003 @ 4' 1 3/4"	0.175	Passed (L/9999+)	--	S
Total Load Defl. (in)	0.003 @ 4' 1 3/4"	0.233	Passed (L/9999+)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.995 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 581 lbf-ft, 2.50-6.00 ft, CL 0.995 (unbraced 3.5 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

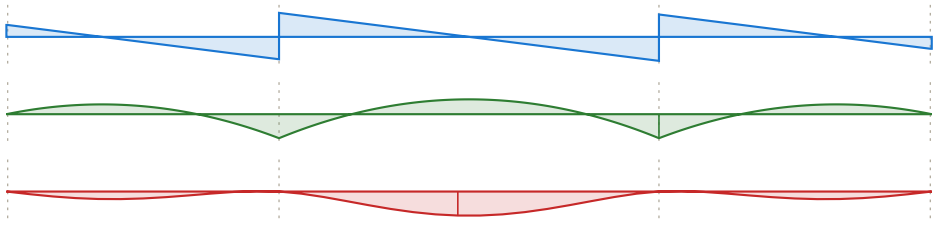
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	1/4"	72	537	**610**	SpotFtg Hdr #14-1 (on (1) trimmer, (1) king stud)
2 @ 2' 6"	3"	9/16"	246	1,831	**2,077**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 6'	3"	9/16"	246	1,832	**2,078**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 8' 6"	3"	1/4"	81	605	**686**	Bearing wall (marked, trimmers) -- on (2) trimmers, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 8' 6"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 8' 6"	N/A	67.1	541.4	Linked from: Rafters #2, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max -1,075 @ 6'

Moment (ft-lbs)
D+S
max -581 @ 6'

Deflection (in)
D+S
0.003 in down @ 4' 1 3/4"
limit 0.233 in on the span

Header #15

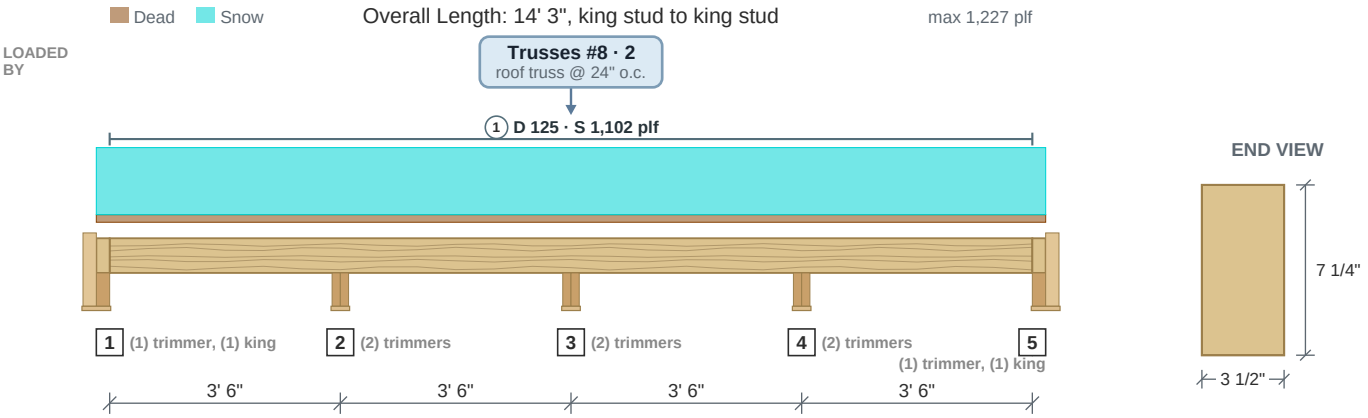
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 14' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 76% used

Section adequacy 24.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	4,966 @ 3' 6"	7,383 (3")	Passed (67%)	--	
Shear (lbs)	2,644 @ 10' 6"	3,502	Passed (76%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,642 @ 3' 6"	3,230	Passed (51%)	1.15	D+S
Live Load Defl. (in)	0.011 @ 1' 4 13/16"	0.177	Passed (2L/3,932)	--	S
Total Load Defl. (in)	0.012 @ 1' 4 13/16"	0.236	Passed (2L/3,515)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.995 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1642 lbf-ft, 0.00-3.50 ft, CL 0.995 (unbraced 3.5 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

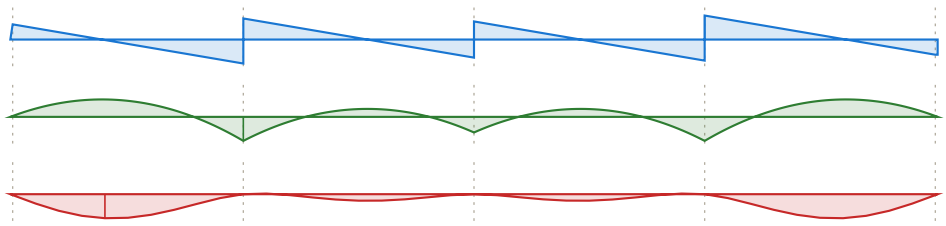
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	3/4"	194	1,633	**1,826**	SpotFtg Hdr #15-1 (on (1) trimmer, (1) king stud)
2 @ 3' 6"	3"	1 7/8"	526	4,440	**4,966**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 7'	3"	1 7/16"	423	3,565	**3,988**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 10' 6"	3"	1 7/8"	526	4,440	**4,966**	Bearing wall (marked, trimmers) -- on (2) trimmers
5 @ 14'	1 1/2"	3/4"	194	1,633	**1,826**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 14'	N/A	5.8	--	
1 - Uniform (PLF)	0 to 14'	N/A	125	1,102	Linked from: Trusses #8, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,644 @ 10' 6"

Moment (ft-lbs)
D+S
max -1,642 @ 3' 6"

Deflection (in)
D+S
0.012 in down @ 1' 4 13/16"
limit 0.236 in on 2L (cantilever)

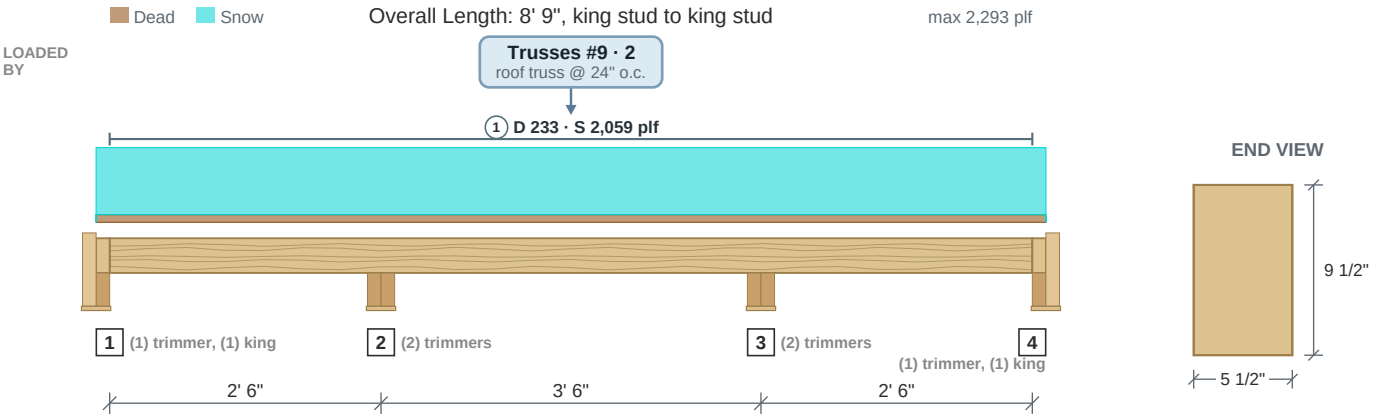
Header #16

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 8' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 67% used
Section adequacy 32.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	7,810 @ 2' 6"	11,601 (3")	Passed (67%)	--	
Shear (lbs)	4,033 @ 2' 6"	6,810	Passed (59%)	1.15	D+S
Neg Moment (Ft-lbs)	-2,186 @ 6'	6,920	Passed (32%)	1.15	D+S
Live Load Defl. (in)	0.003 @ 4' 1 3/4"	0.175	Passed (L/9999+)	--	S
Total Load Defl. (in)	0.004 @ 4' 1 3/4"	0.233	Passed (L/9999+)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 2186 lbf-ft, 2.50-6.00 ft, CL 0.998 (unbraced 3.5 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

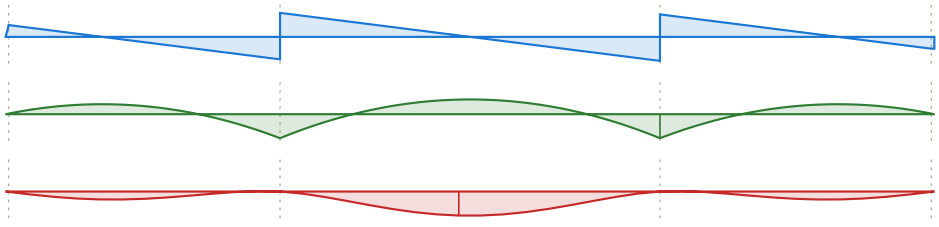
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	9/16"	242	2,030	**2,272**	SpotFtg Hdr #16-1 (on (1) trimmer, (1) king stud)
2 @ 2' 6"	3"	1 7/8"	831	6,979	**7,810**	SpotFtg Hdr #16-2 (on (2) trimmers)
3 @ 6'	3"	1 7/8"	831	6,979	**7,810**	SpotFtg Hdr #16-3 (on (2) trimmers)
4 @ 8' 6"	1 1/2"	9/16"	242	2,030	**2,272**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 8' 6"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 8' 6"	N/A	233.4	2,059	Linked from: Trusses #9, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 4,033 @ 2' 6"

Moment (ft-lbs)
D+S
max -2,186 @ 6'

Deflection (in)
D+S
0.004 in down @ 4' 1 3/4"
limit 0.233 in on the span

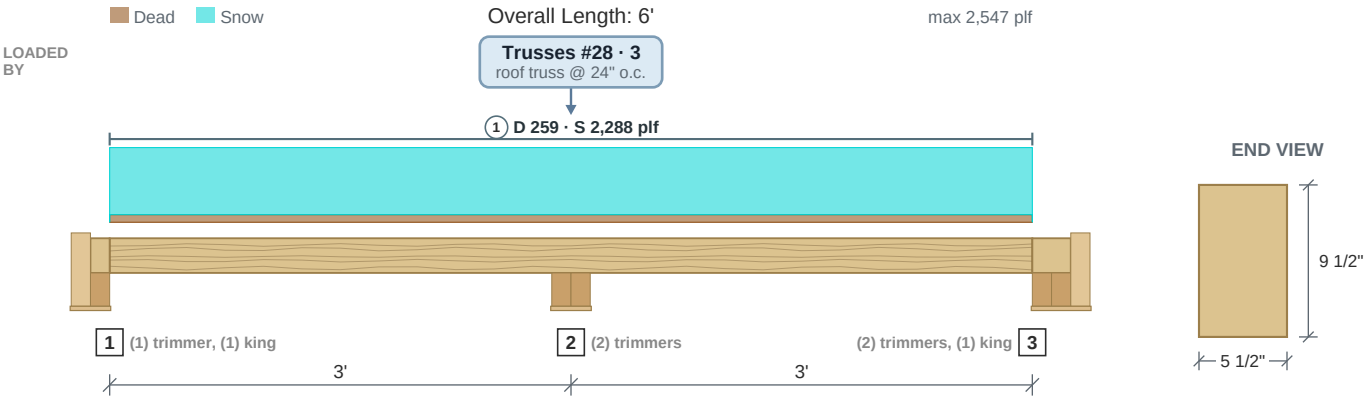
Header #17

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 6' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 84% used
Section adequacy 16.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,705 @ 3'	11,601 (3")	Passed (84%)	--	
Shear (lbs)	4,852 @ 3'	6,810	Passed (71%)	1.15	D+S
Neg Moment (Ft-lbs)	-2,945 @ 3'	6,922	Passed (43%)	1.15	D+S
Live Load Defl. (in)	0.004 @ 1' 2 3/8"	0.152	Passed (2L/9999+)	--	S
Total Load Defl. (in)	0.004 @ 1' 2 3/8"	0.202	Passed (2L/9,175)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 2945 lbf-ft, 0.00-3.00 ft, CL 0.998 (unbraced 3.0 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

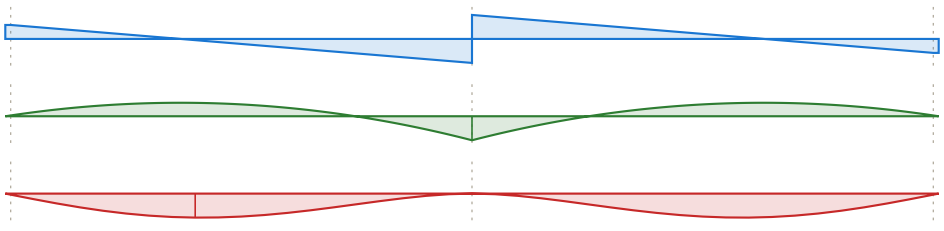
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	13/16"	299	2,524	**2,823**	Beam #13 (on (1) trimmer, (1) king stud)
2 @ 3'	3"	2 7/16"	1,028	8,677	**9,705**	Beam #13 (on (2) trimmers)
3 @ 6'	3"	13/16"	299	2,524	**2,823**	Beam #13 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 6'	N/A	259.2	2,288	Linked from: Trusses #28, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 4,852 @ 3'

Moment (ft-lbs)
D+S
max -2,945 @ 3'

Deflection (in)
D+S
0.004 in down @ 1' 2 3/8"
limit 0.202 in on 2L (cantilever)

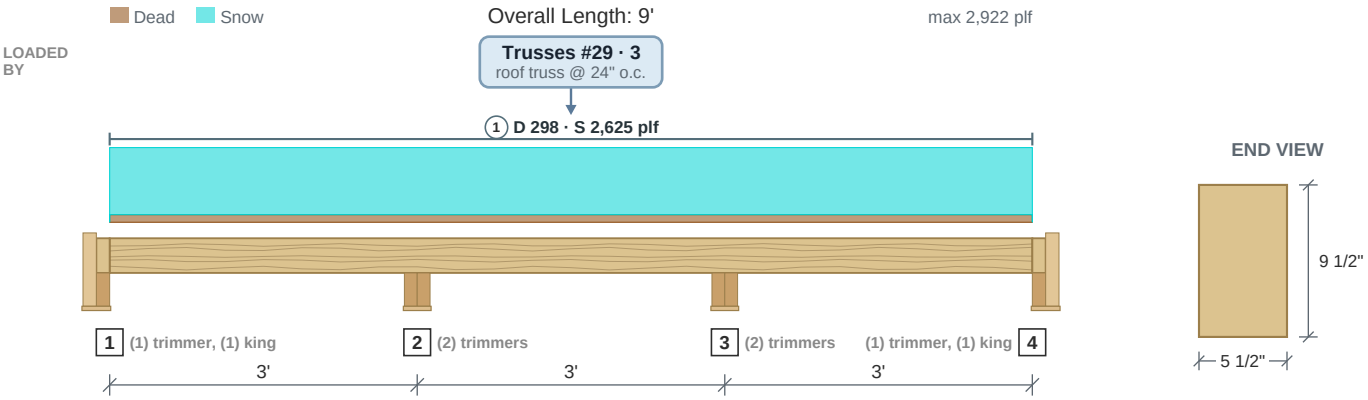
Header #18

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 84% used
Section adequacy 16% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,746 @ 3'	11,601 (3")	Passed (84%)	--	
Shear (lbs)	5,345 @ 6'	6,810	Passed (78%)	1.15	D+S
Neg Moment (Ft-lbs)	-2,682 @ 3'	6,922	Passed (39%)	1.15	D+S
Live Load Defl. (in)	0.005 @ 1' 3 7/16"	0.152	Passed (2L/6,904)	--	S
Total Load Defl. (in)	0.006 @ 1' 3 7/16"	0.203	Passed (2L/6,176)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 2682 lbf-ft, 0.00-3.00 ft, CL 0.998 (unbraced 3.0 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

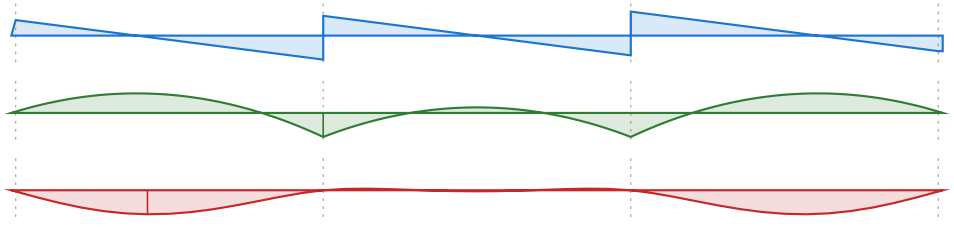
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1"	365	3,094	**3,458**	Header #20 (on (1) trimmer, (1) king stud)
2 @ 3'	3"	2 7/16"	1,028	8,719	**9,747**	Header #20 (on (2) trimmers)
3 @ 6'	3"	2 7/16"	1,028	8,719	**9,747**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 9'	1 1/2"	1"	365	3,094	**3,458**	Header #21 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 9'	N/A	297.5	2,625	Linked from: Trusses #29, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,345 @ 6'

Moment (ft-lbs)
D+S
max -2,682 @ 3'

Deflection (in)
D+S
0.006 in down @ 1' 3 7/16"
limit 0.203 in on 2L (cantilever)

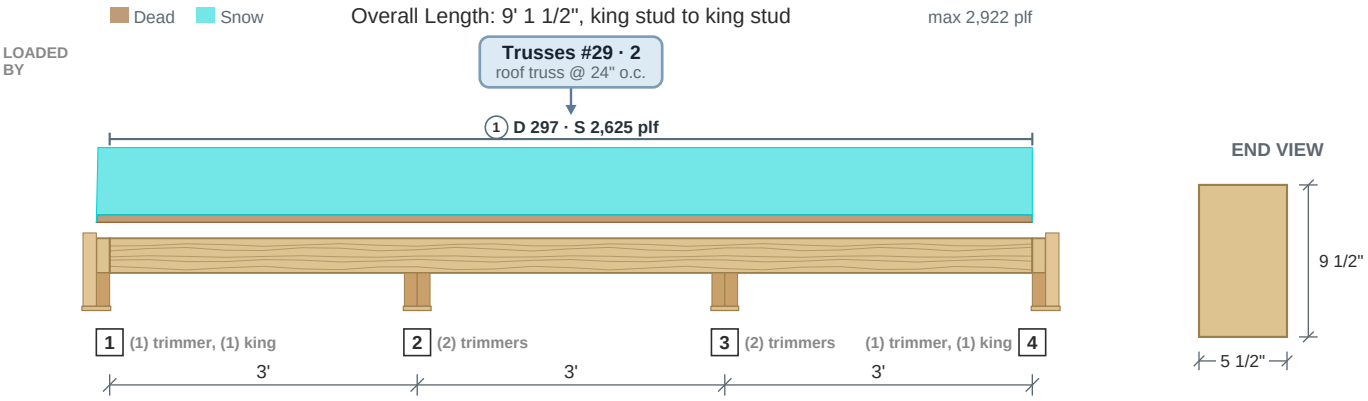
Header #19

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 9' 1 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 84% used
Section adequacy 15.9% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,756 @ 3'	11,601 (3")	Passed (84%)	--	
Shear (lbs)	5,352 @ 3'	6,810	Passed (79%)	1.15	D+S
Neg Moment (Ft-lbs)	-2,688 @ 3'	6,922	Passed (39%)	1.15	D+S
Live Load Defl. (in)	0.005 @ 1' 3 7/16"	0.152	Passed (2L/6,870)	--	S
Total Load Defl. (in)	0.006 @ 1' 3 7/16"	0.203	Passed (2L/6,146)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 2688 lbf-ft, 0.00-3.00 ft, CL 0.998 (unbraced 3.0 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

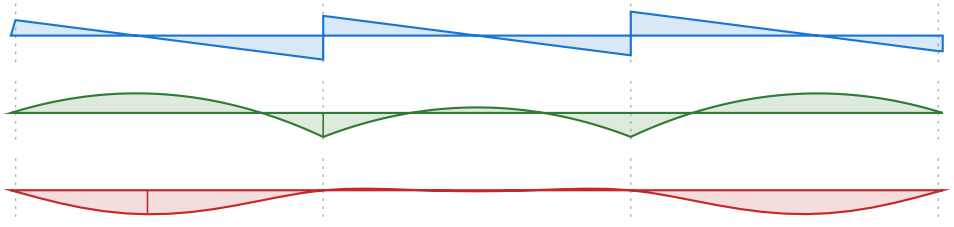
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1"	403	3,416	**3,818**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud
2 @ 3'	3"	2 7/16"	1,029	8,727	**9,756**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 6'	3"	2 7/16"	1,027	8,716	**9,744**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 9'	1 1/2"	1"	365	3,094	**3,459**	Header #54 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 9'	N/A	297.5	2,625	Linked from: Trusses #29, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max -5,352 @ 3'

Moment (ft-lbs)
D+S
max -2,688 @ 3'

Deflection (in)
D+S
0.006 in down @ 1' 3 7/16"
limit 0.203 in on 2L (cantilever)

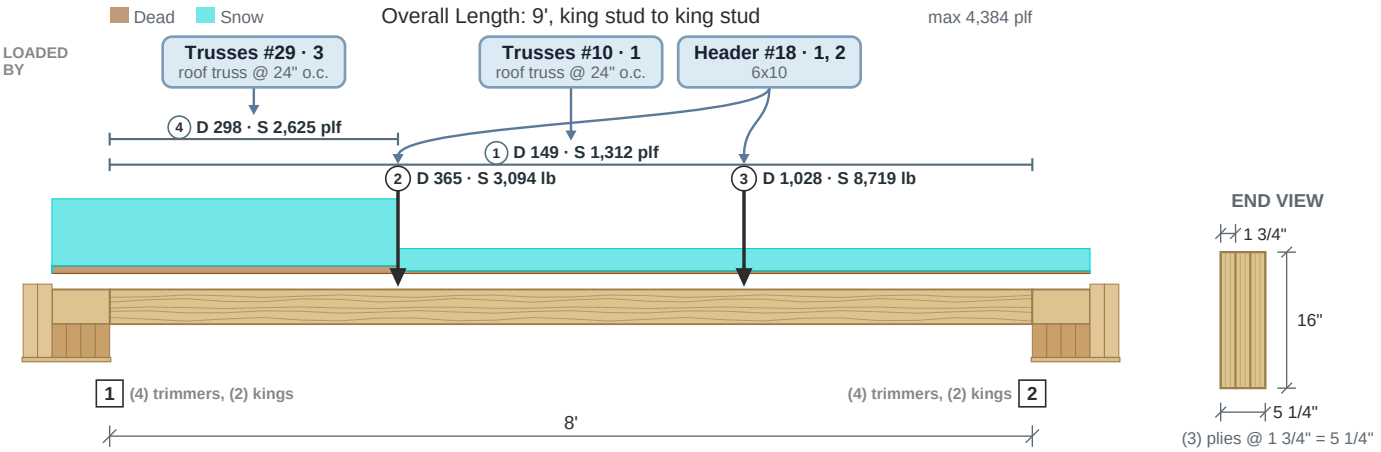
Header #20

(3) 1 3/4" x 16" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 95% used
Section adequacy 5.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	17,387 @ 0	23,625 (6")	Passed (74%)	--	
Shear (lbs)	17,387 @ -2"	18,357	Passed (95%)	1.15	D+S
Moment (Ft-lbs)	36,169 @ 4' 5 1/4"	53,672	Passed (67%)	1.15	D+S
Live Load Defl. (in)	0.161 @ 3' 10 13/16"	0.419	Passed (2L/624)	--	S
Total Load Defl. (in)	0.181 @ 3' 10 13/16"	0.558	Passed (2L/556)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.962, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 24.5 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

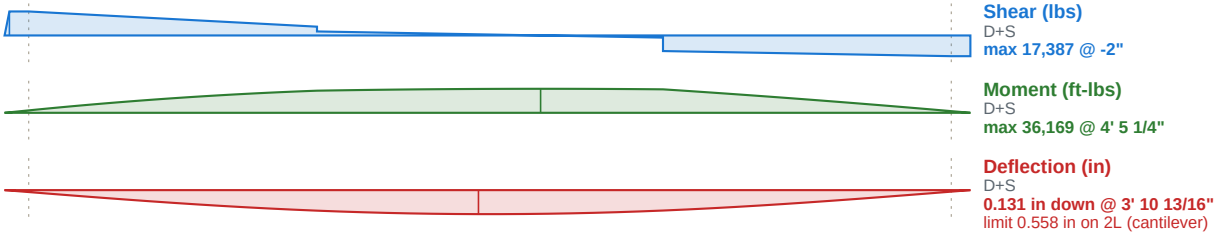
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	6"	4 7/16"	2,113	17,478	**19,591**	SpotFtg Hdr #20-1 (on (4) trimmers, (2) king studs)
2 @ 8'	6"	3 13/16"	1,731	14,022	**15,753**	SpotFtg Hdr #20-2 (on (4) trimmers, (2) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 8'	N/A	24.5	--	
1 - Uniform (PLF)	0 to 8'	N/A	148.7	1,312	Linked from: Trusses #10, Support 1
2 - Point (lb)	2' 6"	N/A	364.6	3,094	Linked from: Header #18, Support 1
3 - Point (lb)	5' 6"	N/A	1,028	8,719	Linked from: Header #18, Support 2
4 - Uniform (PLF)	0 to 2' 6"	N/A	297.5	2,625	Linked from: Trusses #29, Support 3

Shear, Moment and Deflection



Header #21

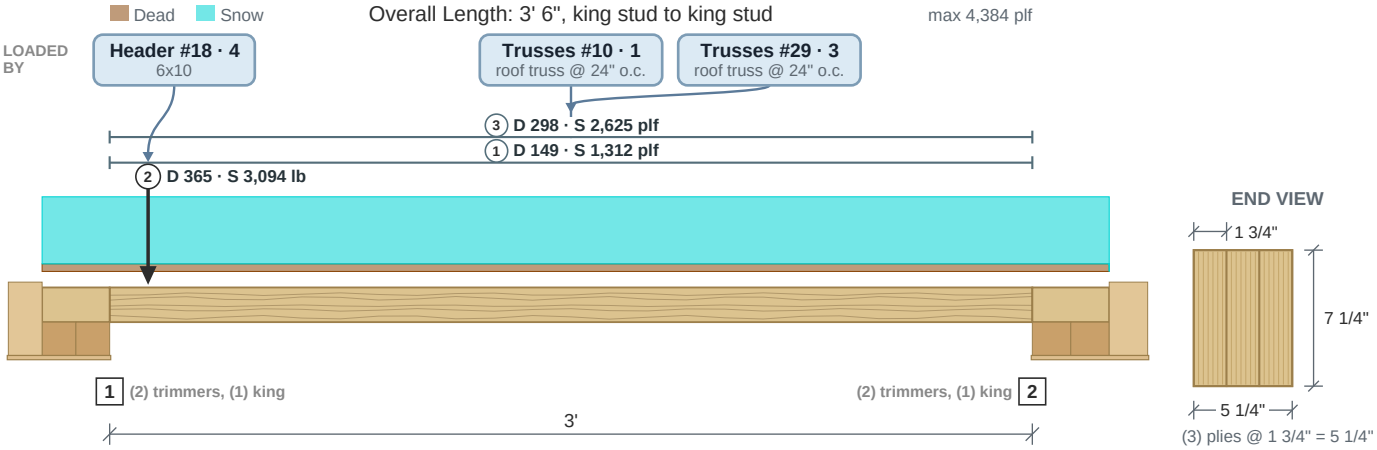
(3) 1 3/4" x 7 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 82% used

Section adequacy 17.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,720 @ 0	11,812 (3")	Passed (82%)	--	
Shear (lbs)	6,661 @ 3'	8,318	Passed (80%)	1.15	D+S
Moment (Ft-lbs)	5,601 @ 1' 5 13/16"	12,273	Passed (46%)	1.15	D+S
Live Load Defl. (in)	0.045 @ 1' 5 13/16"	0.16	Passed (2L/847)	--	S
Total Load Defl. (in)	0.051 @ 1' 5 13/16"	0.213	Passed (2L/758)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.071, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.1 plf is included.
- Point loads within 2 in of a bearing go straight into that support: they are in its reaction and bearing check, not in shear or moment.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

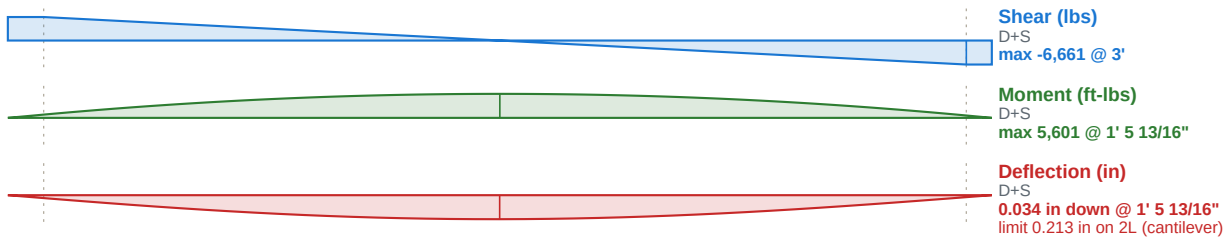
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	2 1/2"	1,130	9,689	**10,819**	SpotFtg Hdr #21-1 (on (2) trimmers, (1) king stud)
2 @ 3'	3"	1 3/4"	835	7,186	**8,021**	SpotFtg Hdr #21-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3'	N/A	11.1	--	
1 - Uniform (PLF)	0 to 3'	N/A	148.7	1,312	Linked from: Trusses #10, Support 1
2 - Point (lb)	1 1/2"	N/A	364.6	3,094	Linked from: Header #18, Support 4
3 - Uniform (PLF)	0 to 3'	N/A	297.5	2,625	Linked from: Trusses #29, Support 3

Shear, Moment and Deflection



Header #22

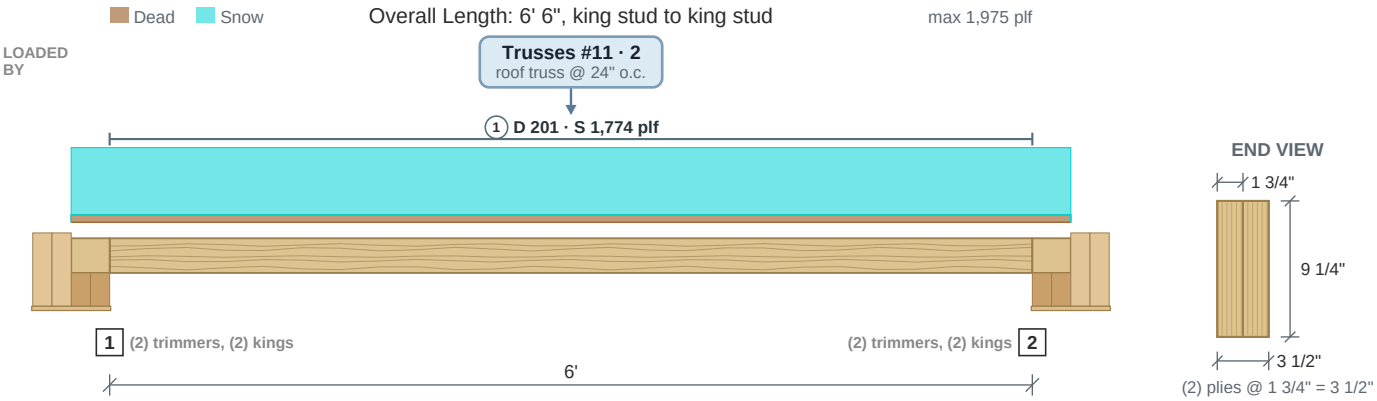
(2) 1 3/4" x 9 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 6' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 84% used

Section adequacy 15.9% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,952 @ 0	7,875 (3")	Passed (76%)	--	
Shear (lbs)	5,952 @ -1 1/4"	7,075	Passed (84%)	1.15	D+S
Moment (Ft-lbs)	9,538 @ 3'	12,884	Passed (74%)	1.15	D+S
Live Load Defl. (in)	0.158 @ 3' 15/16"	0.31	Passed (2L/471)	--	S
Total Load Defl. (in)	0.177 @ 3' 15/16"	0.414	Passed (2L/421)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.036, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 9.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

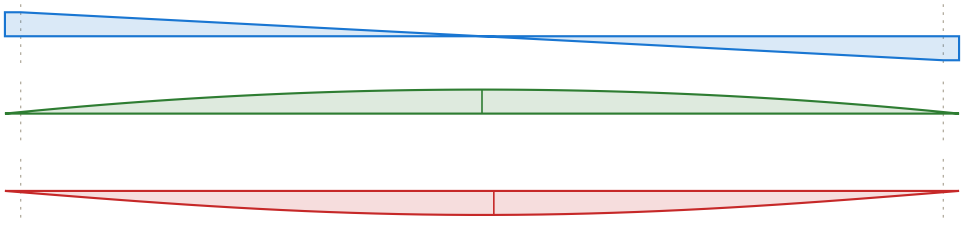
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	2 1/4"	684	5,764	**6,448**	SpotFtg Hdr #22-1 (on (2) trimmers, (2) king studs)
2 @ 6'	3"	2 1/4"	684	5,764	**6,448**	SpotFtg Hdr #22-2 (on (2) trimmers, (2) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	6' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6'	N/A	9.4	--	
1 - Uniform (PLF)	0 to 6'	N/A	201	1,774	Linked from: Trusses #11, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,952 @ -1 1/4"

Moment (ft-lbs)
D+S
max 9,538 @ 3'

Deflection (in)
D+S
0.143 in down @ 3' 15/16"
limit 0.414 in on 2L (cantilever)

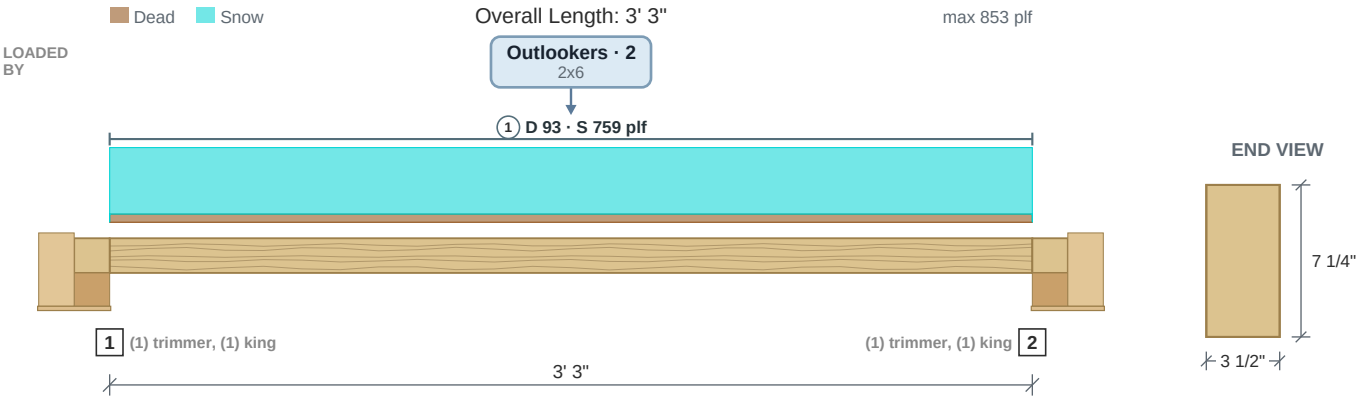
Header #23

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 3' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 43% used
Section adequacy 57.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,395 @ 0	3,281 (1 1/2")	Passed (43%)	--	
Shear (lbs)	1,395 @ -5/16"	3,502	Passed (40%)	1.15	D+S
Moment (Ft-lbs)	1,170 @ 1' 7 1/2"	3,247	Passed (36%)	1.15	D+S
Live Load Defl. (in)	0.011 @ 1' 7 1/2"	0.165	Passed (2L/3,467)	--	S
Total Load Defl. (in)	0.013 @ 1' 7 1/2"	0.22	Passed (2L/3,067)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

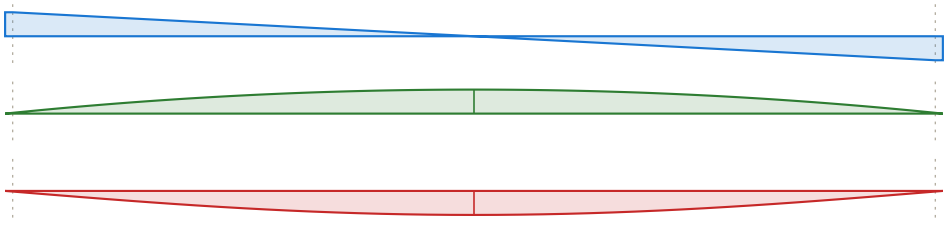
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	5/8"	161	1,234	**1,395**	Beam #14 (on (1) trimmer, (1) king stud)
2 @ 3' 3"	1 1/2"	5/8"	161	1,234	**1,395**	Beam #14 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 1,395 @ -5/16"

Moment (ft-lbs)
D+S
max 1,170 @ 1' 7 1/2"

Deflection (in)
D+S
0.013 in down @ 1' 7 1/2"
limit 0.22 in on 2L (cantilever)

Header #24

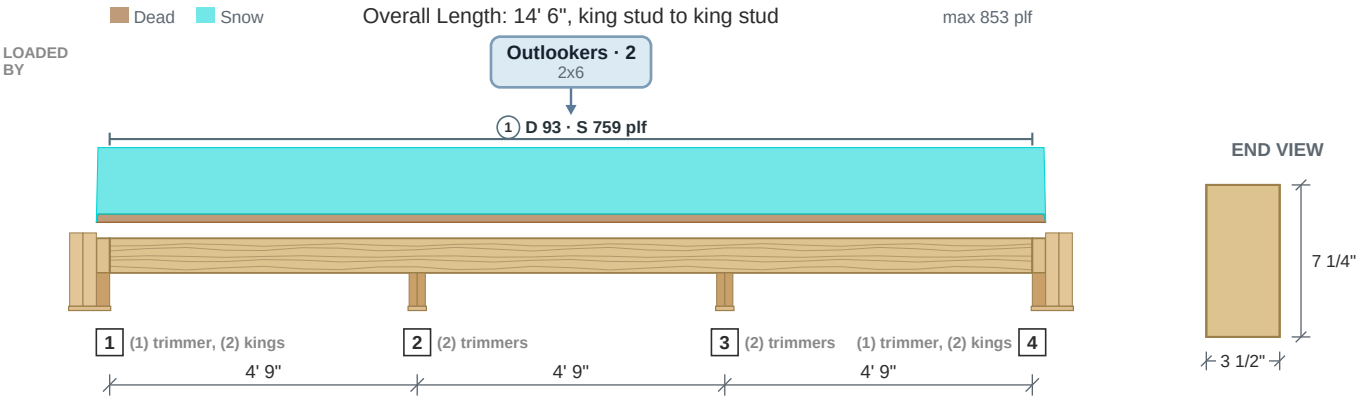
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 14' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 70% used

Section adequacy 29.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	4,499 @ 4' 9"	7,383 (3")	Passed (61%)	--	
Shear (lbs)	2,461 @ 9' 6"	3,502	Passed (70%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,952 @ 4' 9"	3,224	Passed (61%)	1.15	D+S
Live Load Defl. (in)	0.027 @ 2' 7/16"	0.239	Passed (2L/2,150)	--	S
Total Load Defl. (in)	0.03 @ 2' 7/16"	0.319	Passed (2L/1,902)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.993 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1952 lbf-ft, 0.00-4.75 ft, CL 0.993 (unbraced 4.8 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

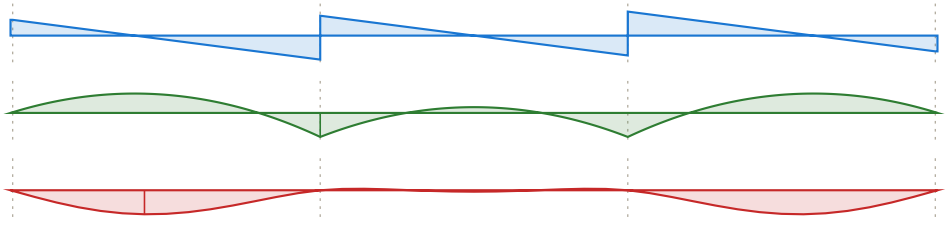
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	3/4"	199	1,525	**1,724**	SpotFtg Hdr #24-1 (on (1) trimmer, (2) king studs)
2 @ 4' 9"	3"	1 11/16"	519	3,980	**4,499**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 9' 6"	3"	1 11/16"	519	3,980	**4,499**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 14' 3"	1 1/2"	3/4"	199	1,525	**1,724**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	4' 9" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 14' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 14' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,461 @ 9' 6"

Moment (ft-lbs)
D+S
max -1,952 @ 4' 9"

Deflection (in)
D+S
0.03 in down @ 2' 7/16"
limit 0.319 in on 2L (cantilever)

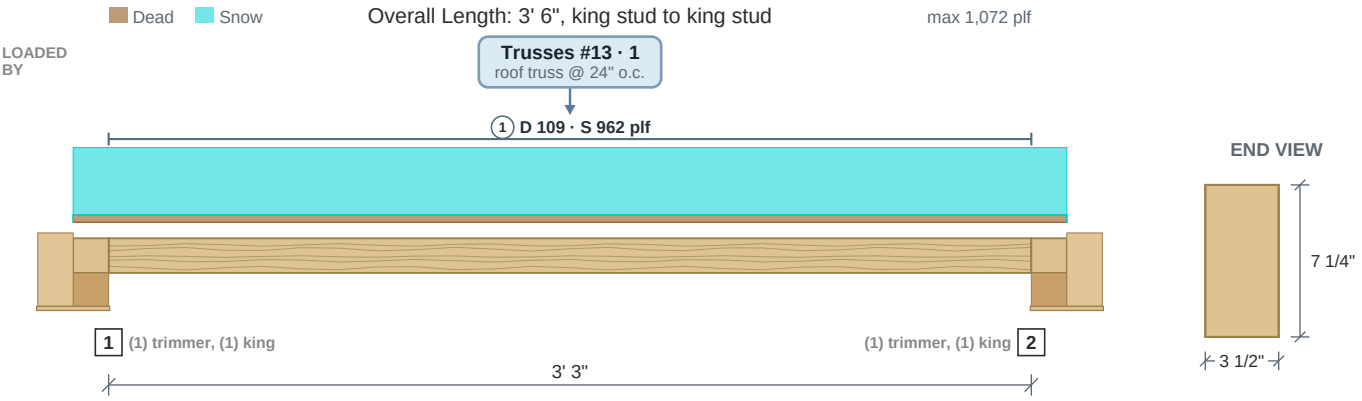
Header #25

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 53% used
Section adequacy 46.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,751 @ 0	3,281 (1 1/2")	Passed (53%)	--	
Shear (lbs)	1,751 @ 3' 3"	3,502	Passed (50%)	1.15	D+S
Moment (Ft-lbs)	1,485 @ 1' 7 1/2"	3,247	Passed (46%)	1.15	D+S
Live Load Defl. (in)	0.015 @ 1' 7 1/2"	0.166	Passed (2L/2,690)	--	S
Total Load Defl. (in)	0.017 @ 1' 7 1/2"	0.221	Passed (2L/2,403)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

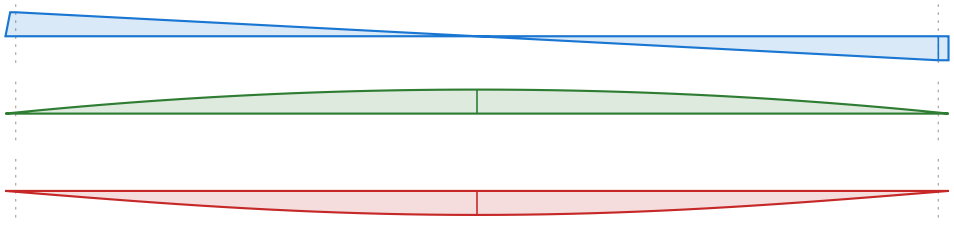
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	13/16"	201	1,684	**1,885**	SpotFtg Hdr #25-1 (on (1) trimmer, (1) king stud)
2 @ 3' 3"	1 1/2"	13/16"	201	1,684	**1,885**	SpotFtg Hdr #25-2 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	109.1	962.5	Linked from: Trusses #13, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max -1,751 @ 3' 3"

Moment (ft-lbs)
D+S
max 1,485 @ 1' 7 1/2"

Deflection (in)
D+S
0.017 in down @ 1' 7 1/2"
limit 0.221 in on 2L (cantilever)

Header #26

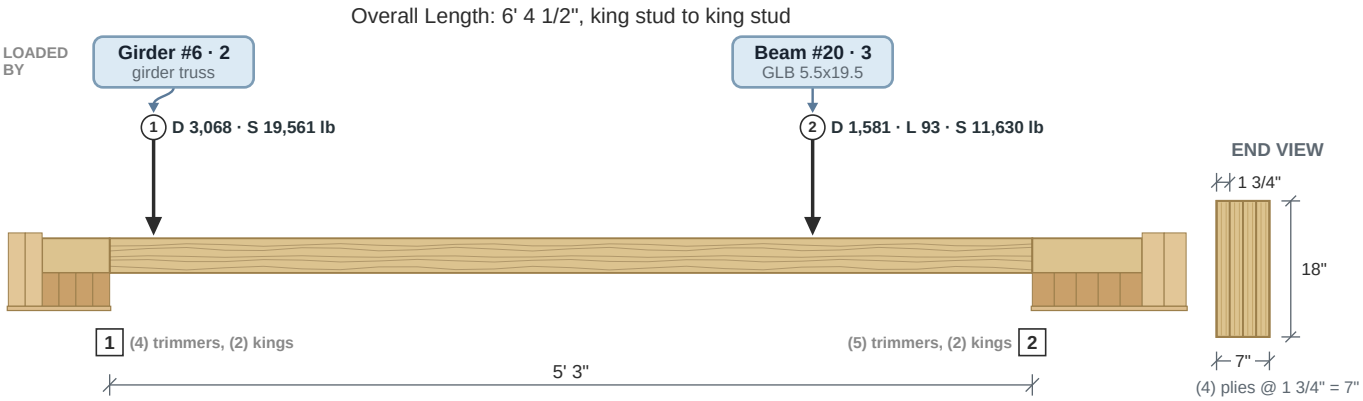
(4) 1 3/4" x 18" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 6' 4 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 87% used

Section adequacy 12.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	24,093 @ 0	31,500 (6")	Passed (76%)	--	
Shear (lbs)	24,093 @ -2 3/8"	27,535	Passed (87%)	1.15	D+S
Moment (Ft-lbs)	15,964 @ 4'	89,132	Passed (18%)	1.15	D+S
Live Load Defl. (in)	0.024 @ 2' 7 15/16"	0.277	Passed (2L/2,775)	--	S
Total Load Defl. (in)	0.028 @ 2' 7 15/16"	0.369	Passed (2L/2,413)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.946, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 36.8 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

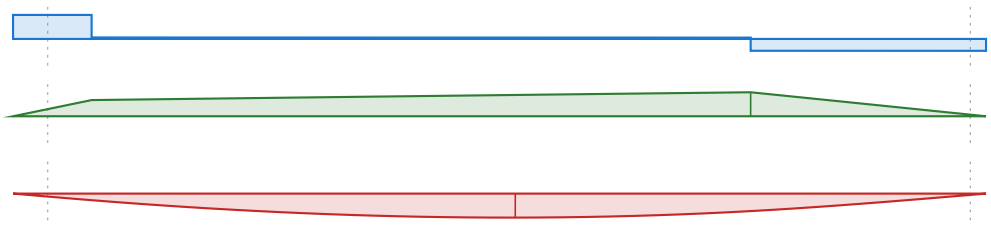
	Bearing Length		Loads to Supports (lbs)				
Supports	Provided	Required	Dead	Floor Live	Snow	Total	Load goes to
1 @ 0	6"	4 9/16"	3,316	22	20,795	**24,111**	SpotFtg Hdr #26-1 (on (4) trimmers, (2) king studs)
2 @ 5' 3"	7 1/2"	2 1/4"	1,568	70	10,395	**11,963**	SpotFtg Hdr #26-2 (on (5) trimmers, (2) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 3"	N/A	36.8	--	--	
1 - Point (lb)	3"	N/A	3,068	--	19,561	Linked from: Girder #6, Support 2
2 - Point (lb)	4'	N/A	1,581	92.8	11,630	Linked from: Beam #20, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 24,093 @ -2 3/8"

Moment (ft-lbs)
D+S
max 15,963 @ 4'

Deflection (in)
D+S
0.013 in down @ 2' 7 15/16"
limit 0.369 in on 2L (cantilever)

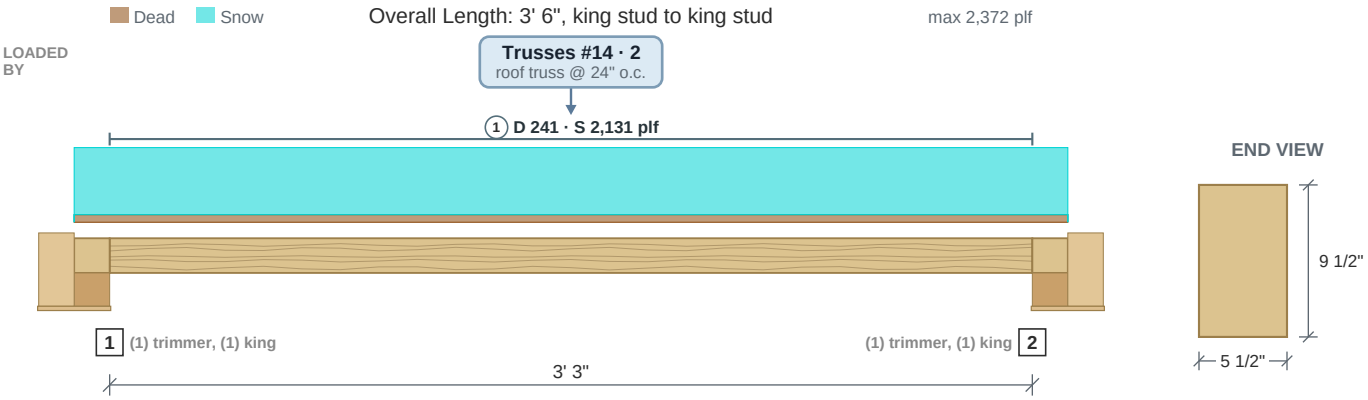
Header #27

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 75% used
Section adequacy 24.9% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,874 @ 0	5,156 (1 1/2")	Passed (75%)	--	
Shear (lbs)	3,874 @ 3' 3"	6,810	Passed (57%)	1.15	D+S
Moment (Ft-lbs)	3,344 @ 1' 7 1/2"	6,937	Passed (48%)	1.15	D+S
Live Load Defl. (in)	0.012 @ 1' 7"	0.168	Passed (2L/3,404)	--	S
Total Load Defl. (in)	0.013 @ 1' 7"	0.223	Passed (2L/3,042)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

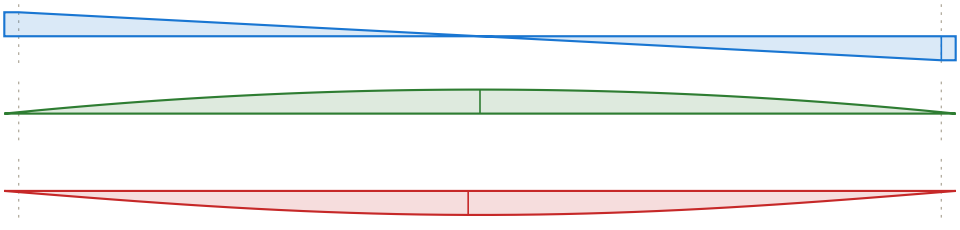
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 1/8"	443	3,729	**4,172**	SpotFtg Hdr #27-1 (on (1) trimmer, (1) king stud)
2 @ 3' 3"	1 1/2"	1 1/8"	443	3,729	**4,172**	SpotFtg Hdr #27-2 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	241.5	2,131	Linked from: Trusses #14, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max -3,874 @ 3' 3"

Moment (ft-lbs)
D+S
max 3,344 @ 1' 7 1/2"

Deflection (in)
D+S
0.013 in down @ 1' 7"
limit 0.223 in on 2L (cantilever)

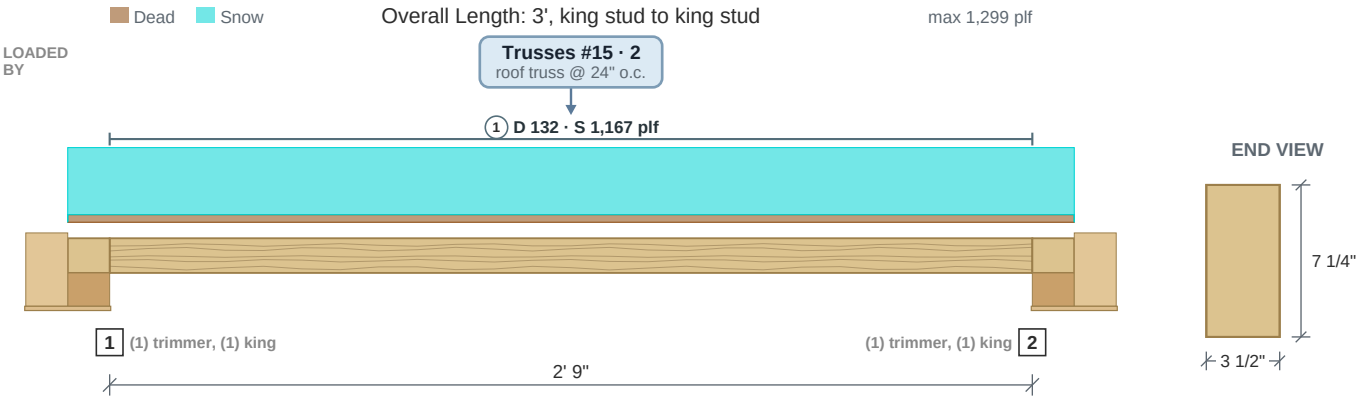
Header #28

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 55% used
Section adequacy 45.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,794 @ 0	3,281 (1 1/2")	Passed (55%)	--	
Shear (lbs)	1,794 @ -7/16"	3,502	Passed (51%)	1.15	D+S
Moment (Ft-lbs)	1,301 @ 1' 4 1/2"	3,247	Passed (40%)	1.15	D+S
Live Load Defl. (in)	0.009 @ 1' 4 1/16"	0.141	Passed (2L/3,613)	--	S
Total Load Defl. (in)	0.01 @ 1' 4 1/16"	0.188	Passed (2L/3,230)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

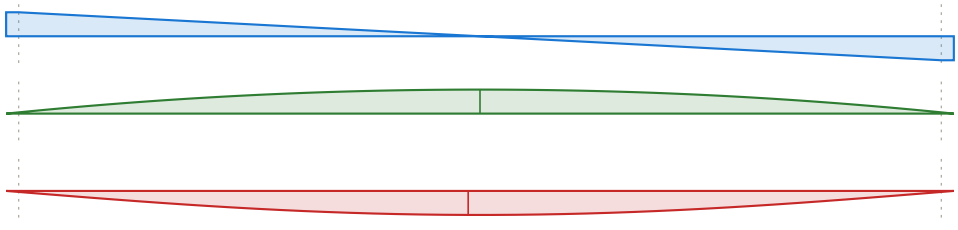
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	13/16"	207	1,750	**1,957**	SpotFtg Hdr #28-1 (on (1) trimmer, (1) king stud)
2 @ 2' 9"	1 1/2"	13/16"	207	1,750	**1,957**	SpotFtg Hdr #28-2 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 2' 9"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 2' 9"	N/A	132.2	1,167	Linked from: Trusses #15, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 1,794 @ -7/16"

Moment (ft-lbs)
D+S
max 1,300 @ 1' 4 1/2"

Deflection (in)
D+S
0.01 in down @ 1' 4 1/16"
limit 0.188 in on 2L (cantilever)

Header #29

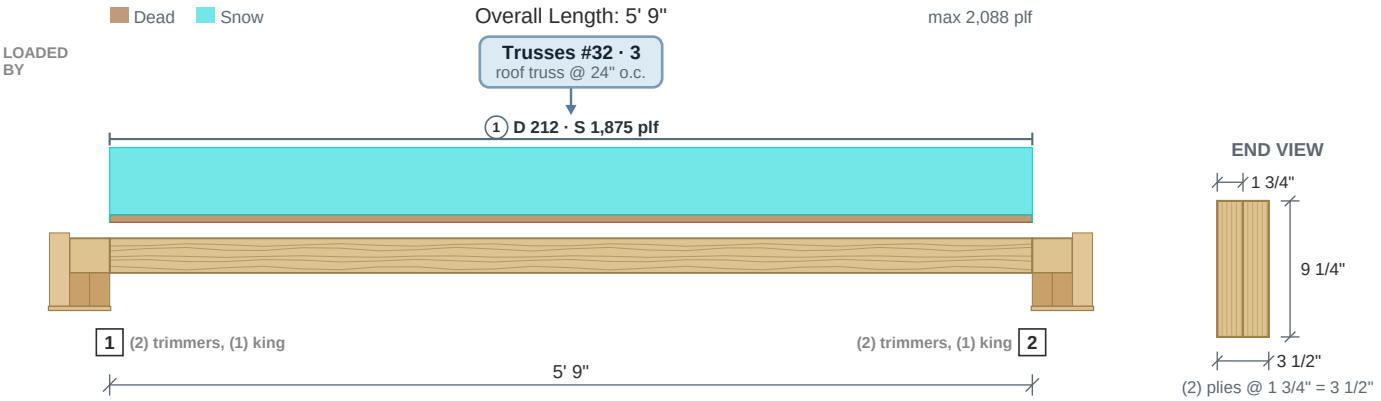
(2) 1 3/4" x 9 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 5' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 85% used

Section adequacy 14.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,029 @ 0	7,875 (3")	Passed (77%)	--	
Shear (lbs)	6,029 @ 5' 9"	7,075	Passed (85%)	1.15	D+S
Moment (Ft-lbs)	9,243 @ 2' 10 1/2"	12,884	Passed (72%)	1.15	D+S
Live Load Defl. (in)	0.143 @ 2' 9 5/8"	0.297	Passed (2L/498)	--	S
Total Load Defl. (in)	0.16 @ 2' 9 5/8"	0.396	Passed (2L/446)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.036, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 9.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

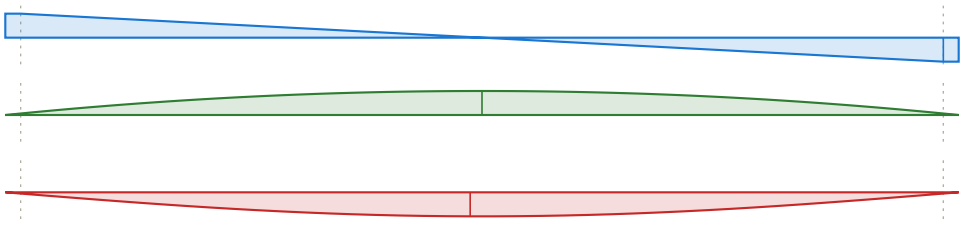
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	2 5/16"	638	5,391	**6,029**	Beam #19 (on (2) trimmers, (1) king stud -- under the IRC R602.7.5 minimum of 2)
2 @ 5' 9"	3"	2 5/16"	638	5,391	**6,029**	Beam #19 (on (2) trimmers, (1) king stud -- under the IRC R602.7.5 minimum of 2)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 9"	N/A	9.4	--	
1 - Uniform (PLF)	0 to 5' 9"	N/A	212.5	1,875	Linked from: Trusses #32, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max -6,029 @ 5' 9"

Moment (ft-lbs)
D+S
max 9,243 @ 2' 10 1/2"

Deflection (in)
D+S
0.127 in down @ 2' 9 5/8"
limit 0.396 in on 2L (cantilever)

Header #30

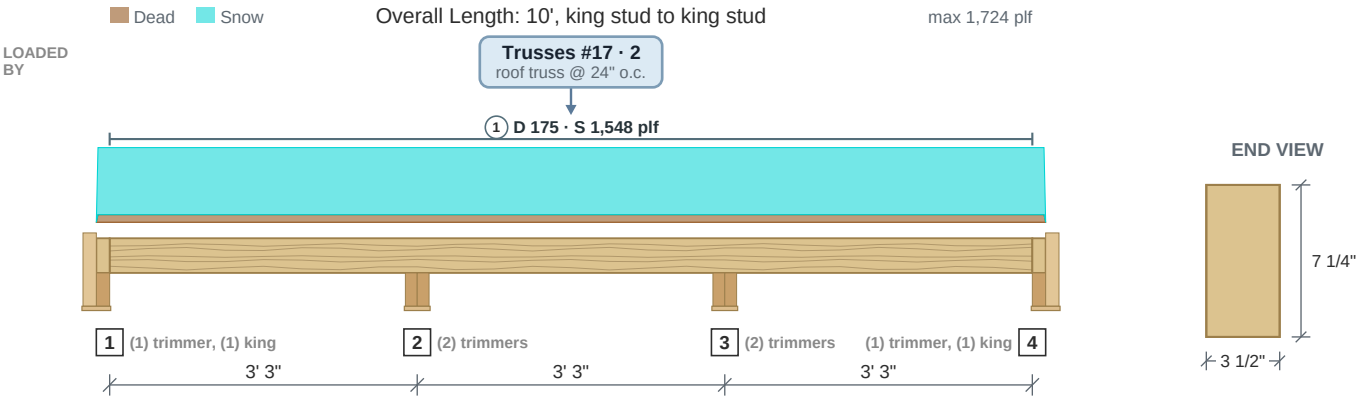
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 10' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 97% used

Section adequacy 2.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,224 @ 3' 3"	7,383 (3")	Passed (84%)	--	
Shear (lbs)	3,413 @ 6' 6"	3,502	Passed (97%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,856 @ 3' 3"	3,232	Passed (57%)	1.15	D+S
Live Load Defl. (in)	0.012 @ 1' 4 11/16"	0.165	Passed (2L/3,203)	--	S
Total Load Defl. (in)	0.014 @ 1' 4 11/16"	0.22	Passed (2L/2,867)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 0.995 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1856 lbf-ft, 0.00-3.25 ft, CL 0.995 (unbraced 3.2 ft).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

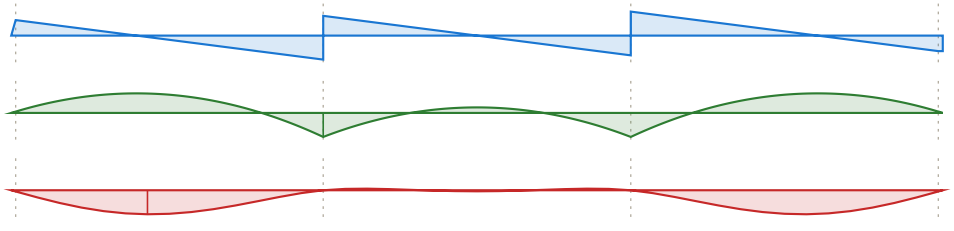
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1"	254	2,170	**2,424**	SpotFtg Hdr #30-1 (on (1) trimmer, (1) king stud)
2 @ 3' 3"	3"	2 1/2"	652	5,571	**6,224**	SpotFtg Hdr #30-2 (on (2) trimmers)
3 @ 6' 6"	3"	2 1/2"	652	5,571	**6,224**	SpotFtg Hdr #30-3 (on (2) trimmers)
4 @ 9' 9"	1 1/2"	1"	254	2,170	**2,424**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9' 9"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 9' 9"	N/A	175.5	1,548	Linked from: Trusses #17, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 3,413 @ 6' 6"

Moment (ft-lbs)
D+S
max -1,856 @ 3' 3"

Deflection (in)
D+S
0.014 in down @ 1' 4 11/16"
limit 0.22 in on 2L (cantilever)

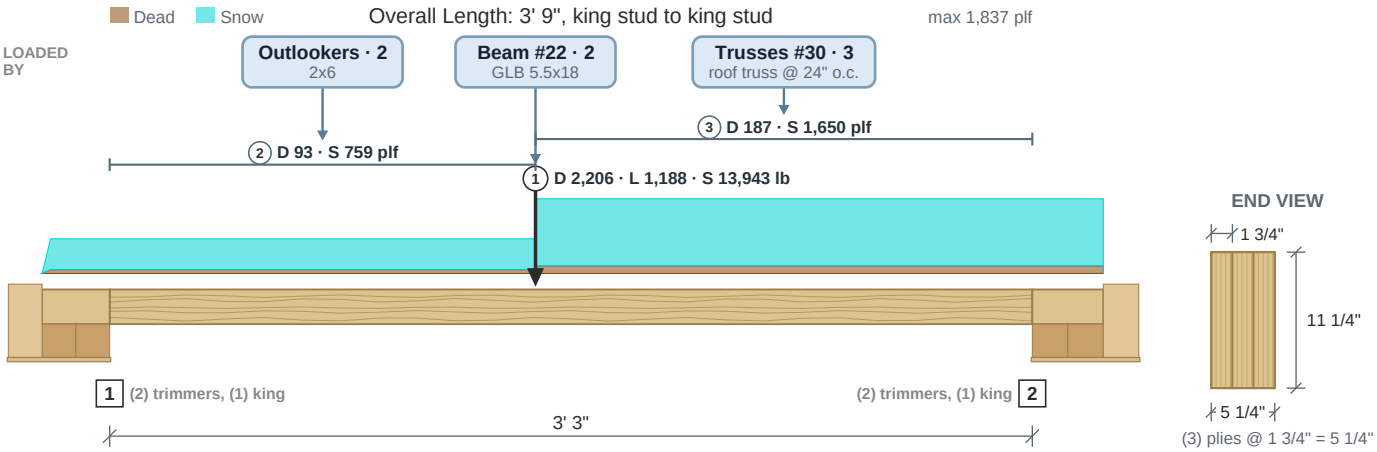
Header #31

(3) 1 3/4" x 11 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 89% used
Section adequacy 10.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	10,552 @ 0	11,812 (3")	Passed (89%)	--	
Shear (lbs)	10,552 @ -1 3/8"	12,907	Passed (82%)	1.15	D+S
Moment (Ft-lbs)	16,054 @ 1' 6"	27,837	Passed (58%)	1.15	D+S
Live Load Defl. (in)	0.047 @ 1' 7"	0.174	Passed (2L/883)	--	S
Total Load Defl. (in)	0.054 @ 1' 7"	0.232	Passed (2L/765)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.009, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 17.2 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

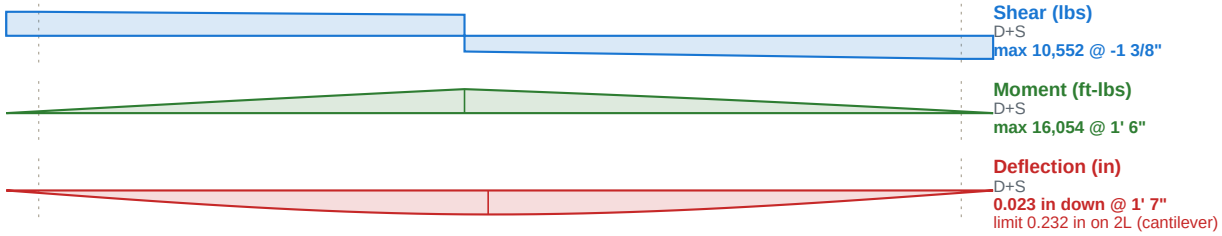
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	2 11/16"	1,435	636	9,334	**10,769**	SpotFtg Hdr #31-1 (on (2) trimmers, (1) king stud)
2 @ 3' 3"	3"	2 9/16"	1,372	551	9,238	**10,610**	SpotFtg Bm #39-1 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	17.2	--	--	
1 - Point (lb)	1' 6"	N/A	2,206	1,188	13,943	Linked from: Beam #22, Support 2
2 - Uniform (PLF)	0 to 1' 6"	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
3 - Uniform (PLF)	1' 6" to 3' 3"	N/A	187	--	1,650	Linked from: Trusses #30, Support 3

Shear, Moment and Deflection



Header #32

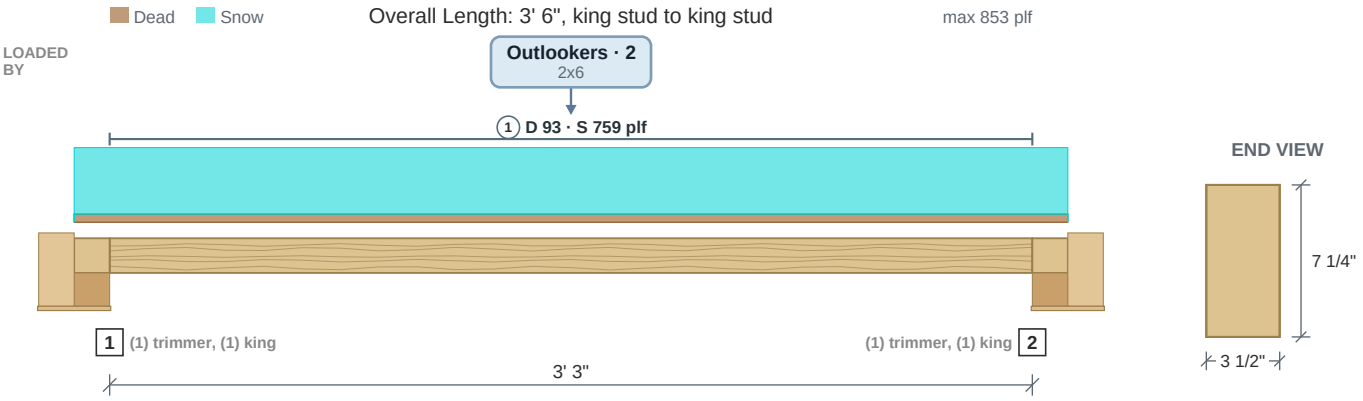
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 43% used

Section adequacy 57.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,395 @ 0	3,281 (1 1/2")	Passed (43%)	--	
Shear (lbs)	1,395 @ -5/16"	3,502	Passed (40%)	1.15	D+S
Moment (Ft-lbs)	1,173 @ 1' 7 1/2"	3,247	Passed (36%)	1.15	D+S
Live Load Defl. (in)	0.011 @ 1' 7 1/2"	0.165	Passed (2L/3,454)	--	S
Total Load Defl. (in)	0.013 @ 1' 7 1/2"	0.22	Passed (2L/3,056)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

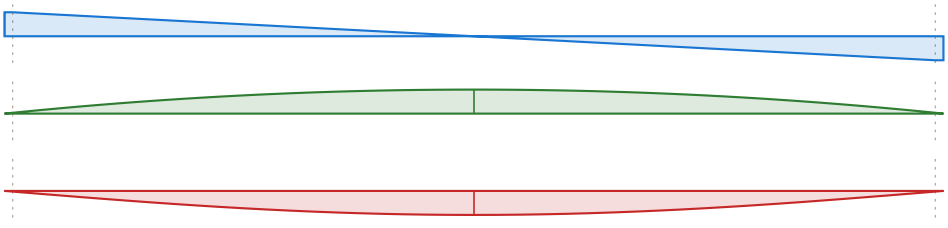
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	5/8"	173	1,329	**1,502**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud
2 @ 3' 3"	1 1/2"	5/8"	173	1,329	**1,502**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 1,395 @ -5/16"

Moment (ft-lbs)
D+S
max 1,173 @ 1' 7 1/2"

Deflection (in)
D+S
0.013 in down @ 1' 7 1/2"
limit 0.22 in on 2L (cantilever)

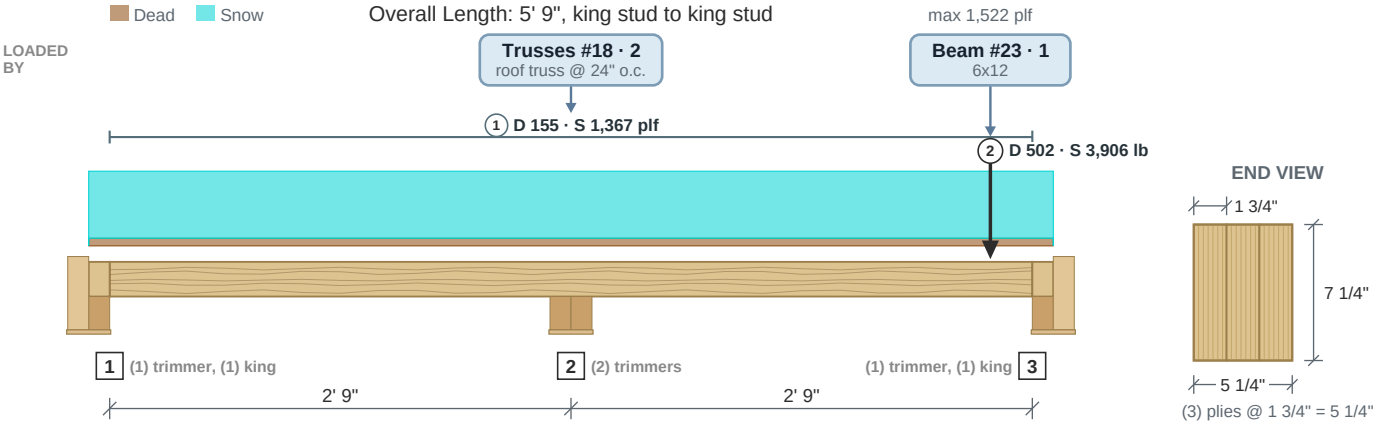
Header #33

(3) 1 3/4" x 7 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 5' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 90% used
Section adequacy 9.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,333 @ 5' 6"	5,906 (1 1/2")	Passed (90%)	--	
Shear (lbs)	5,333 @ 5' 6"	8,318	Passed (64%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,830 @ 2' 9"	12,242	Passed (15%)	1.15	D+S
Live Load Defl. (in)	0.01 @ 4' 5"	0.141	Passed (2L/3,447)	--	S
Total Load Defl. (in)	0.011 @ 4' 5"	0.187	Passed (2L/3,067)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.071, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1830 lbf-ft, 0.00-2.75 ft, CL 0.998 (unbraced 2.8 ft).
- Member self weight of 11.1 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

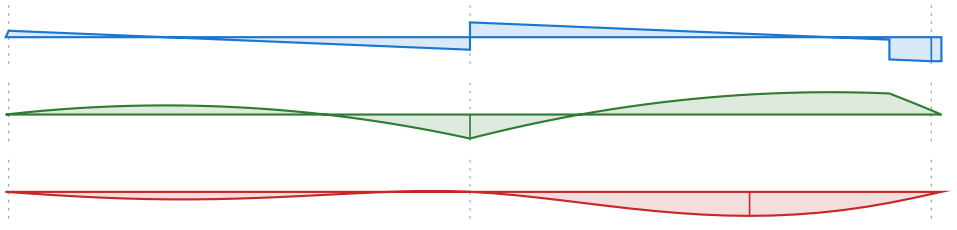
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	3/8"	175	1,449	**1,625**	SpotFtg Hdr #33-1 (on (1) trimmer, (1) king stud)
2 @ 2' 9"	3"	1 3/16"	662	5,411	**6,073**	SpotFtg Hdr #33-2 (on (2) trimmers)
3 @ 5' 6"	1 1/2"	1 3/8"	619	4,905	**5,525**	SpotFtg Hdr #33-3 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 9" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 6"	N/A	11.1	--	
1 - Uniform (PLF)	0 to 5' 6"	N/A	154.9	1,367	Linked from: Trusses #18, Support 2
2 - Point (lb)	5' 3"	N/A	501.7	3,906	Linked from: Beam #23, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max -5,333 @ 5' 6"

Moment (ft-lbs)
D+S
max -1,830 @ 2' 9"

Deflection (in)
D+S
0.005 in down @ 4' 5"
limit 0.187 in on 2L (cantilever)

Header #34

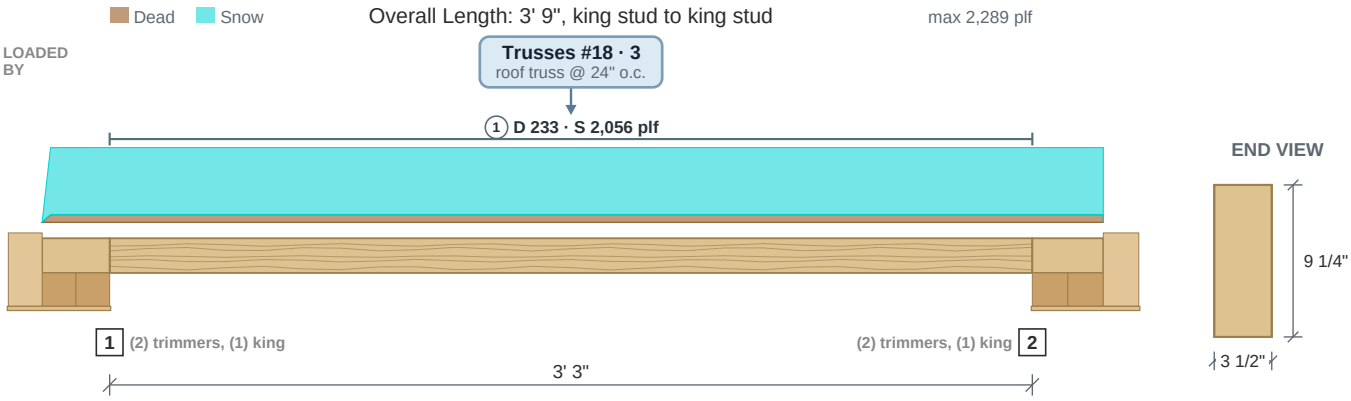
(1) 4x10 DF-L(N) No. 2 (3 1/2" x 9 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 84% used

Section adequacy 16.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,732 @ 0	6,562 (3")	Passed (57%)	--	
Shear (lbs)	3,732 @ 3' 3"	4,468	Passed (84%)	1.15	D+S
Moment (Ft-lbs)	3,338 @ 1' 7 1/2"	4,879	Passed (68%)	1.15	D+S
Live Load Defl. (in)	0.017 @ 1' 7"	0.171	Passed (2L/2,416)	--	S
Total Load Defl. (in)	0.019 @ 1' 7"	0.228	Passed (2L/2,163)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.20, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 7.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

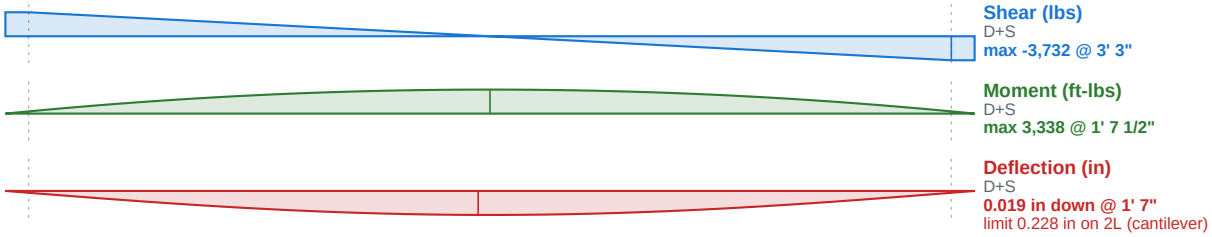
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	1 11/16"	451	3,855	**4,306**	SpotFtg Bm #39-1 (on (2) trimmers, (1) king stud)
2 @ 3' 3"	3"	1 11/16"	451	3,855	**4,306**	SpotFtg Hdr #34-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	7.4	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	233	2,056	Linked from: Trusses #18, Support 3

Shear, Moment and Deflection



Header #35

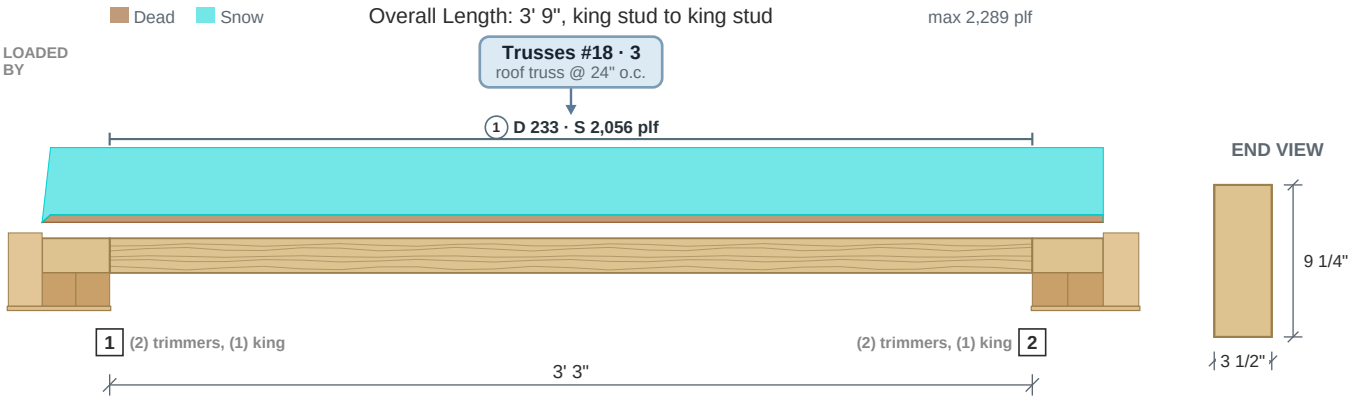
(1) 4x10 DF-L(N) No. 2 (3 1/2" x 9 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 84% used

Section adequacy 16.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,732 @ 0	6,562 (3")	Passed (57%)	--	
Shear (lbs)	3,732 @ 3' 3"	4,468	Passed (84%)	1.15	D+S
Moment (Ft-lbs)	3,338 @ 1' 7 1/2"	4,879	Passed (68%)	1.15	D+S
Live Load Defl. (in)	0.017 @ 1' 7"	0.171	Passed (2L/2,416)	--	S
Total Load Defl. (in)	0.019 @ 1' 7"	0.228	Passed (2L/2,163)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.20, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 7.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

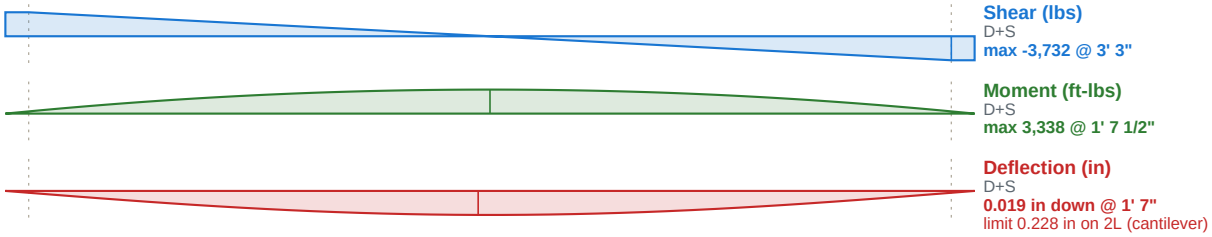
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	1 11/16"	451	3,855	**4,306**	SpotFtg Hdr #35-1 (on (2) trimmers, (1) king stud)
2 @ 3' 3"	3"	1 11/16"	451	3,855	**4,306**	SpotFtg Hdr #35-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	7.4	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	233	2,056	Linked from: Trusses #18, Support 3

Shear, Moment and Deflection



Header #36

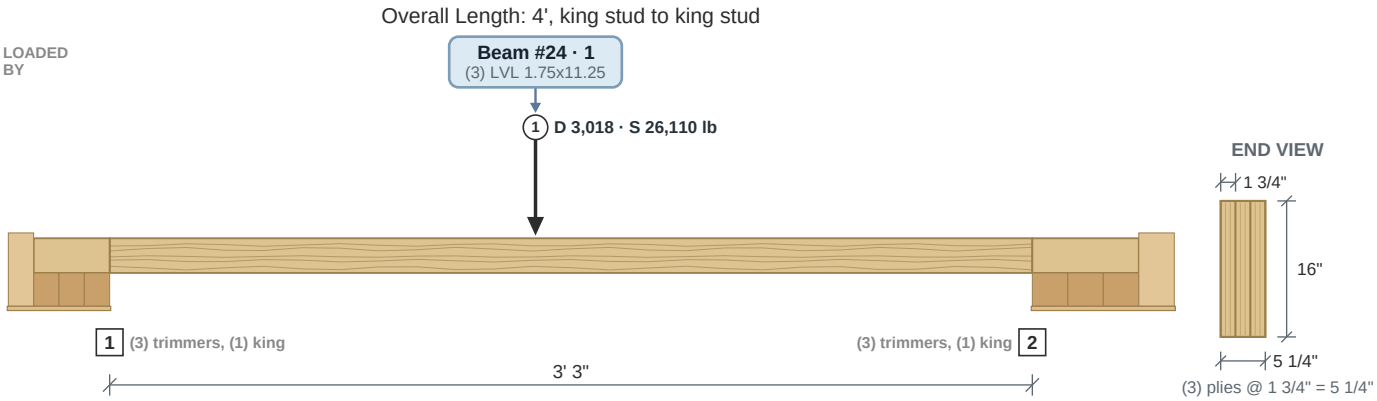
(3) 1 3/4" x 16" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 4' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 88% used

Section adequacy 12.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	15,530 @ 0	17,719 (4 1/2")	Passed (88%)	--	
Shear (lbs)	15,530 @ -2"	18,357	Passed (85%)	1.15	D+S
Moment (Ft-lbs)	25,853 @ 1' 6"	53,672	Passed (48%)	1.15	D+S
Live Load Defl. (in)	0.043 @ 1' 7 1/16"	0.178	Passed (2L/982)	--	S
Total Load Defl. (in)	0.049 @ 1' 7 1/16"	0.237	Passed (2L/879)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.962, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 24.5 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

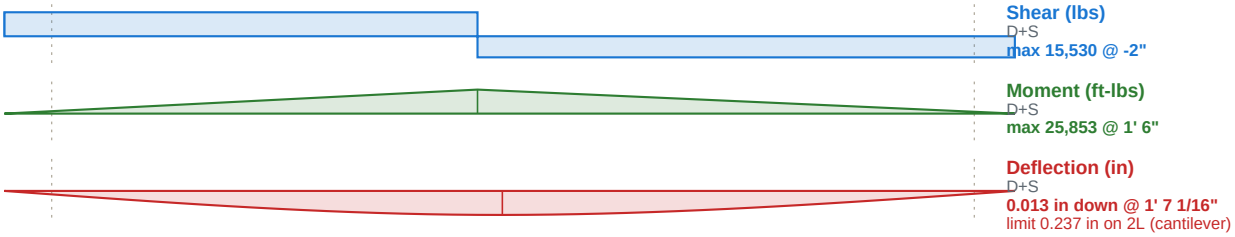
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	4 1/2"	3 15/16"	1,654	13,885	**15,539**	SpotFtg Hdr #36-1 (on (3) trimmers, (1) king stud)
2 @ 3' 3"	4 1/2"	3 1/2"	1,462	12,225	**13,687**	SpotFtg Hdr #36-2 (on (3) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	24.5	--	
1 - Point (lb)	1' 6"	N/A	3,018	26,110	Linked from: Beam #24, Support 1

Shear, Moment and Deflection



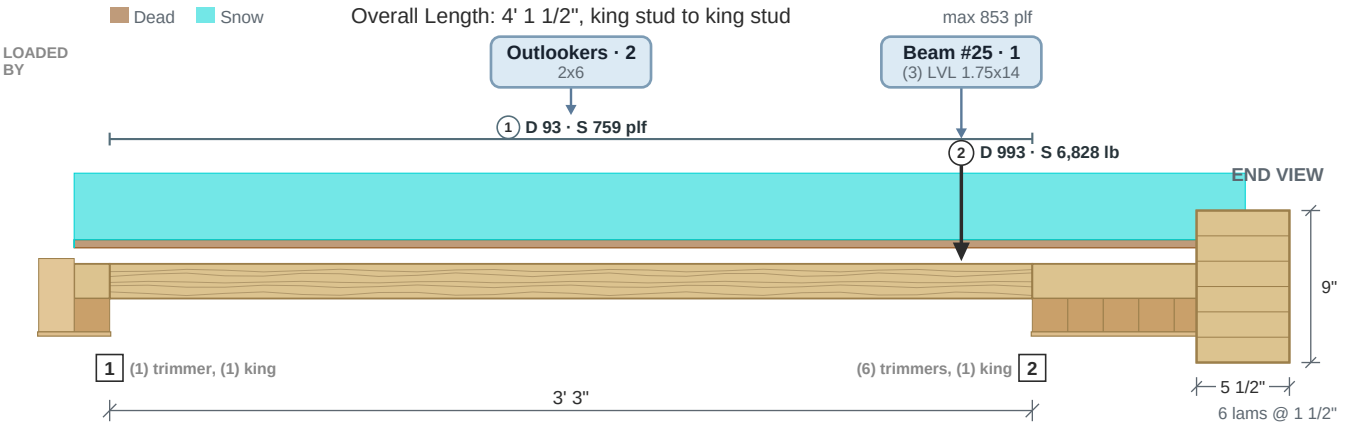
Header #37

(1) 5 1/2" x 9" 24F-1.8E 24F-V4 DF/DF Glulam

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 4' 1 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 83% used
Section adequacy 16.9% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,266 @ 0	5,362 (1 1/2")	Passed (42%)	--	
Shear (lbs)	8,362 @ 3' 3"	10,058	Passed (83%)	1.15	D+S
Moment (Ft-lbs)	3,028 @ 2' 7 9/16"	17,078	Passed (18%)	1.15	D+S
Live Load Defl. (in)	0.009 @ 1' 10"	0.169	Passed (2L/4,654)	--	S
Total Load Defl. (in)	0.01 @ 1' 10"	0.226	Passed (2L/4,075)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Unbalanced glulam layup: install with the tension laminations at the bottom, proper side up as marked by the manufacturer.
- Member self weight of 11.3 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

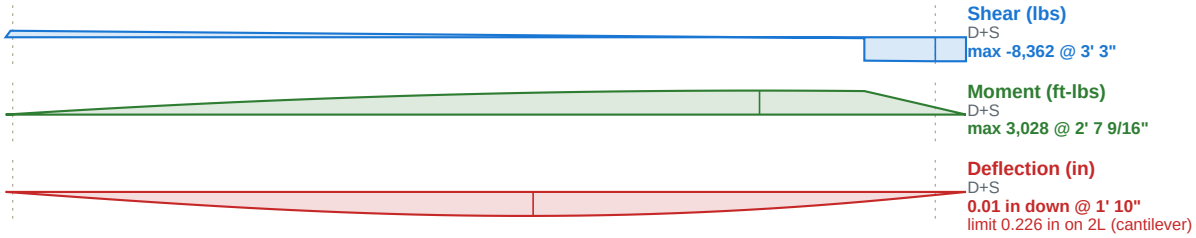
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	5/8"	292	2,082	**2,374**	SpotFtg Hdr #37-1 (on (1) trimmer, (1) king stud)
2 @ 3' 3"	9"	2 5/16"	1,132	7,878	**9,010**	SpotFtg Hdr #37-2 (on (6) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	11.3	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Point (lb)	3'	N/A	992.9	6,828	Linked from: Beam #25, Support 1

Shear, Moment and Deflection



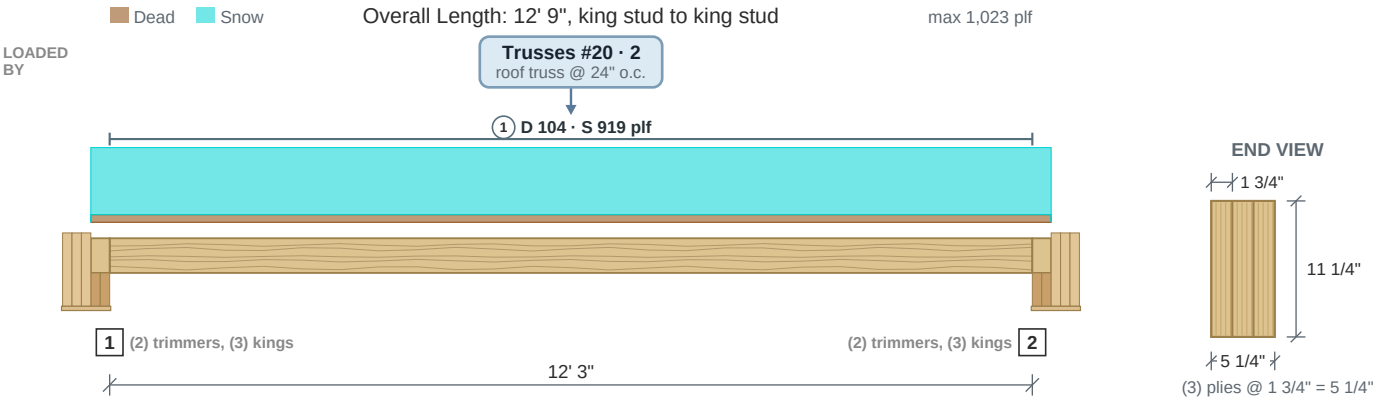
Header #38

PASSED

(3) 1 3/4" x 11 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 12' 9" | 2018 IRC | 2018 NDS | ASD

Controls: Moment 72% used
Section adequacy 28.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,371 @ 0	11,812 (3")	Passed (54%)	--	
Shear (lbs)	6,371 @ -13/16"	12,907	Passed (49%)	1.15	D+S
Moment (Ft-lbs)	19,957 @ 6' 1 1/2"	27,837	Passed (72%)	1.15	D+S
Live Load Defl. (in)	0.425 @ 6' 1 1/2"	0.62	Passed (2L/350)	--	S
Total Load Defl. (in)	0.482 @ 6' 1 1/2"	0.826	Passed (2L/309)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.009, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 17.2 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

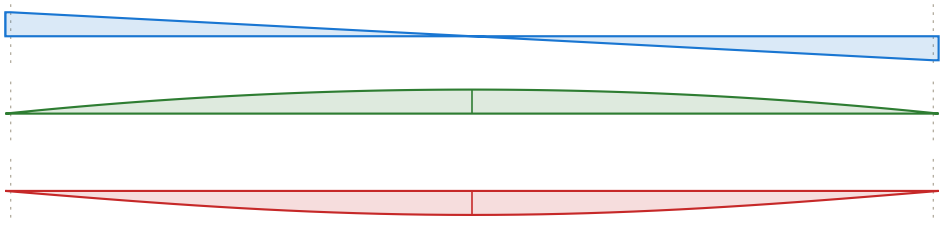
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	1 5/8"	774	5,857	**6,631**	SpotFtg Hdr #38-1 (on (2) trimmers, (3) king studs)
2 @ 12' 3"	3"	1 5/8"	774	5,857	**6,631**	SpotFtg Hdr #38-2 (on (2) trimmers, (3) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 3"	N/A	17.2	--	
1 - Uniform (PLF)	0 to 12' 3"	N/A	104.1	918.8	Linked from: Trusses #20, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 6,371 @ -13/16"

Moment (ft-lbs)
D+S
max 19,957 @ 6' 1 1/2"

Deflection (in)
D+S
0.443 in down @ 6' 1 1/2"
limit 0.826 in on 2L (cantilever)

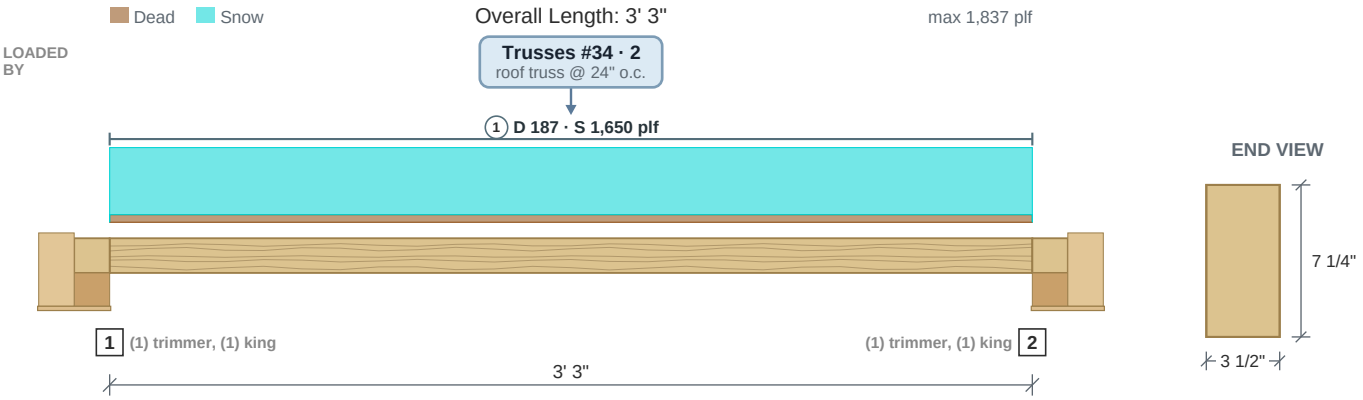
Header #39

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 3' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 91% used
Section adequacy 8.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,994 @ 0	3,281 (1 1/2")	Passed (91%)	--	
Shear (lbs)	2,995 @ -1/2"	3,502	Passed (86%)	1.15	D+S
Moment (Ft-lbs)	2,604 @ 1' 7 1/2"	3,247	Passed (80%)	1.15	D+S
Live Load Defl. (in)	0.027 @ 1' 7"	0.168	Passed (2L/1,513)	--	S
Total Load Defl. (in)	0.03 @ 1' 7"	0.224	Passed (2L/1,355)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

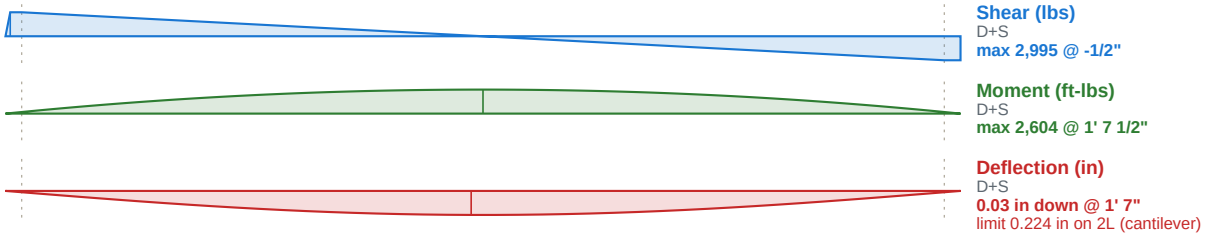
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 3/8"	313	2,681	**2,995**	Beam #43 (on (1) trimmer, (1) king stud)
2 @ 3' 3"	1 1/2"	1 3/8"	313	2,681	**2,995**	Beam #43 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	187	1,650	Linked from: Trusses #34, Support 2

Shear, Moment and Deflection



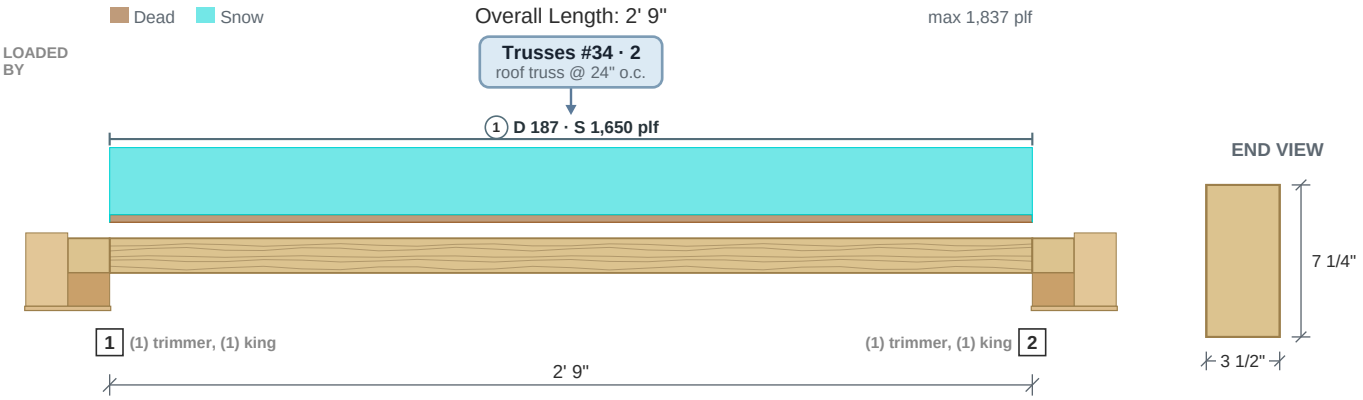
Header #40

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 2' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 77% used
Section adequacy 22.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,534 @ 0	3,281 (1 1/2")	Passed (77%)	--	
Shear (lbs)	2,534 @ -7/16"	3,502	Passed (72%)	1.15	D+S
Moment (Ft-lbs)	1,864 @ 1' 4 1/2"	3,247	Passed (57%)	1.15	D+S
Live Load Defl. (in)	0.014 @ 1' 4 1/16"	0.142	Passed (2L/2,498)	--	S
Total Load Defl. (in)	0.015 @ 1' 4 15/16"	0.19	Passed (2L/2,236)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

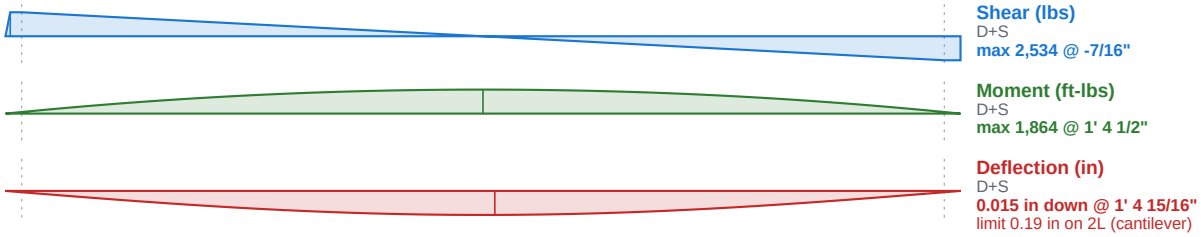
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 3/16"	265	2,269	**2,534**	Beam #43 (on (1) trimmer, (1) king stud)
2 @ 2' 9"	1 1/2"	1 3/16"	265	2,269	**2,534**	Beam #43 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 2' 9"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 2' 9"	N/A	187	1,650	Linked from: Trusses #34, Support 2

Shear, Moment and Deflection



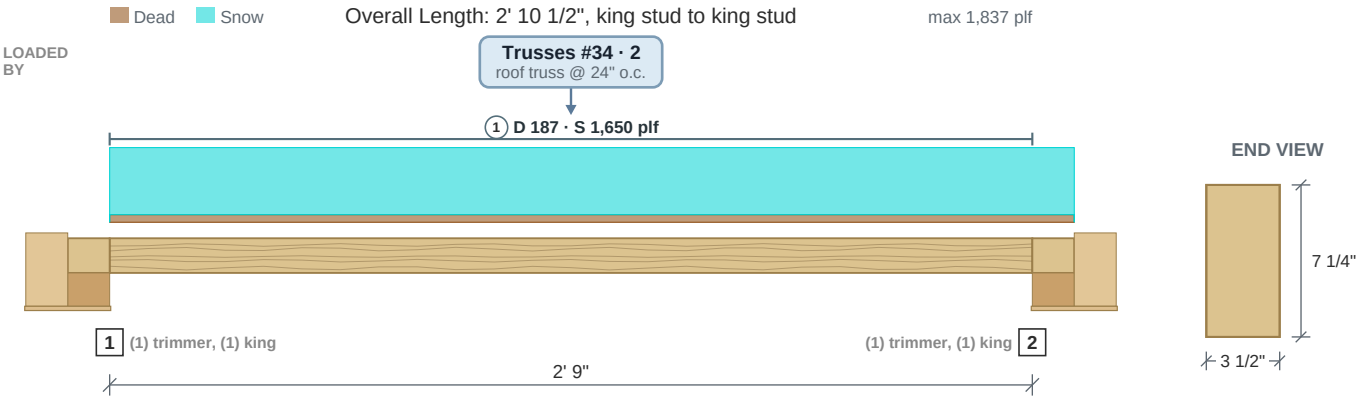
Header #41

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 2' 10 1/2" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 77% used
Section adequacy 22.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,538 @ 0	3,281 (1 1/2")	Passed (77%)	--	
Shear (lbs)	2,538 @ -7/16"	3,502	Passed (72%)	1.15	D+S
Moment (Ft-lbs)	1,870 @ 1' 4 1/2"	3,247	Passed (58%)	1.15	D+S
Live Load Defl. (in)	0.014 @ 1' 4 15/16"	0.143	Passed (2L/2,486)	--	S
Total Load Defl. (in)	0.015 @ 1' 4 15/16"	0.19	Passed (2L/2,226)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

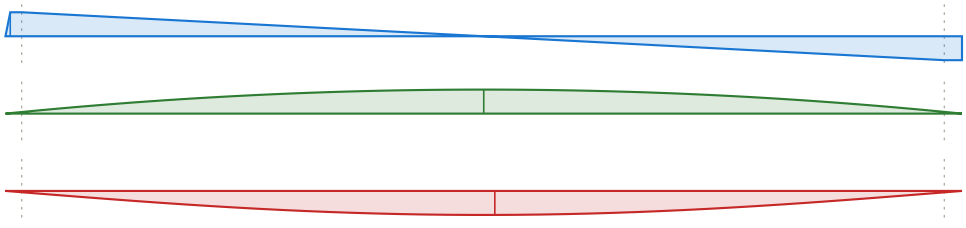
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 3/16"	265	2,272	**2,538**	Header #53 (on (1) trimmer, (1) king stud)
2 @ 2' 9"	1 1/2"	1 3/16"	289	2,472	**2,760**	SpotFtg Hdr #41-2 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 2' 9"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 2' 9"	N/A	187	1,650	Linked from: Trusses #34, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,538 @ -7/16"

Moment (ft-lbs)
D+S
max 1,870 @ 1' 4 1/2"

Deflection (in)
D+S
0.015 in down @ 1' 4 15/16"
limit 0.19 in on 2L (cantilever)

Header #42

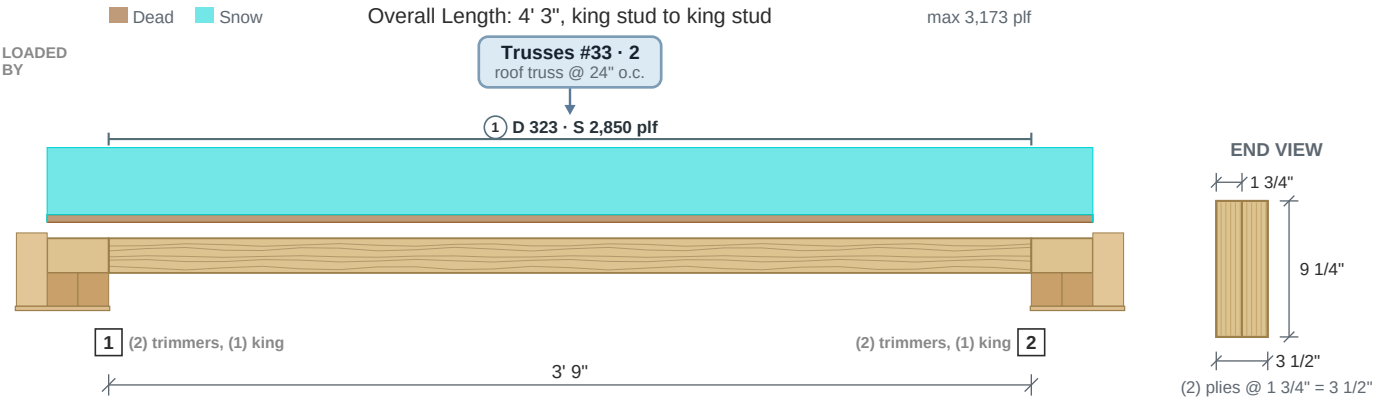
(2) 1 3/4" x 9 1/4" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 4' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 84% used

Section adequacy 15.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,967 @ 0	7,875 (3")	Passed (76%)	--	
Shear (lbs)	5,967 @ -1 1/16"	7,075	Passed (84%)	1.15	D+S
Moment (Ft-lbs)	6,235 @ 1' 10 1/2"	12,884	Passed (48%)	1.15	D+S
Live Load Defl. (in)	0.054 @ 1' 10 1/2"	0.198	Passed (2L/880)	--	S
Total Load Defl. (in)	0.06 @ 1' 10 1/2"	0.264	Passed (2L/788)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.036, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 9.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

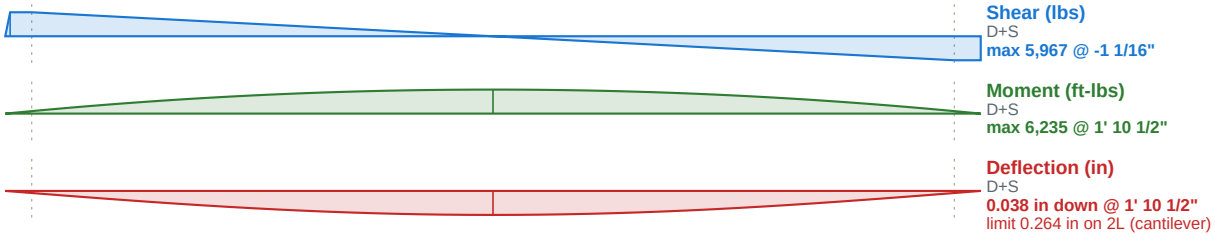
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	2 1/4"	706	6,056	**6,763**	SpotFtg Hdr #42-1 (on (2) trimmers, (1) king stud)
2 @ 3' 9"	3"	2 1/4"	706	6,056	**6,763**	SpotFtg Hdr #42-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 9"	N/A	9.4	--	
1 - Uniform (PLF)	0 to 3' 9"	N/A	323	2,850	Linked from: Trusses #33, Support 2

Shear, Moment and Deflection



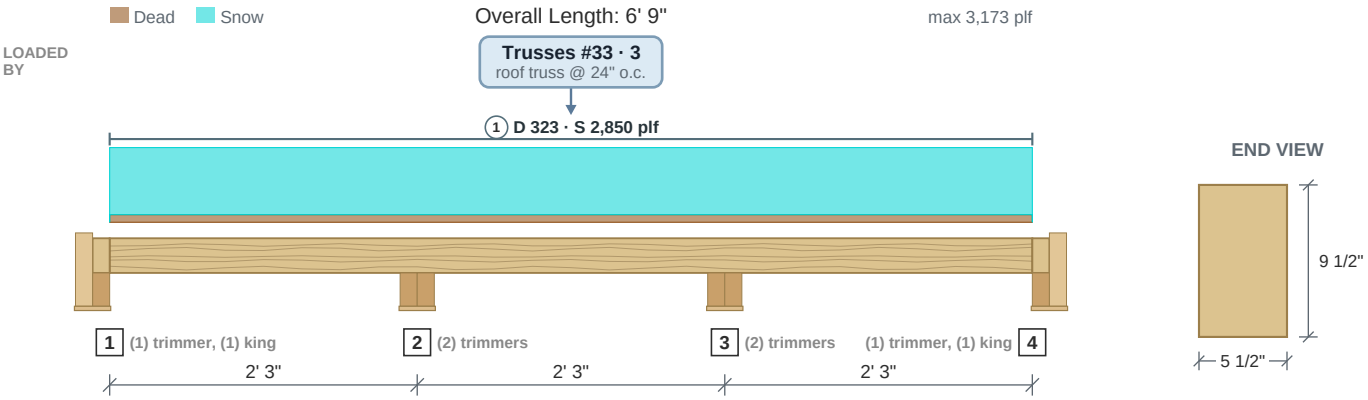
Header #43

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 2nd Level | Member type: Header (Roof Beam) | Length: 6' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 68% used
Section adequacy 31.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	7,938 @ 2' 3"	11,601 (3")	Passed (68%)	--	
Shear (lbs)	4,355 @ 4' 6"	6,810	Passed (64%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,640 @ 4' 6"	6,926	Passed (24%)	1.15	D+S
Live Load Defl. (in)	0.002 @ 11 9/16"	0.114	Passed (2L/9999+)	--	S
Total Load Defl. (in)	0.002 @ 5' 9 7/16"	0.152	Passed (2L/9999+)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.998 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1640 lbf-ft, 2.25-4.50 ft, CL 0.998 (unbraced 2.2 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

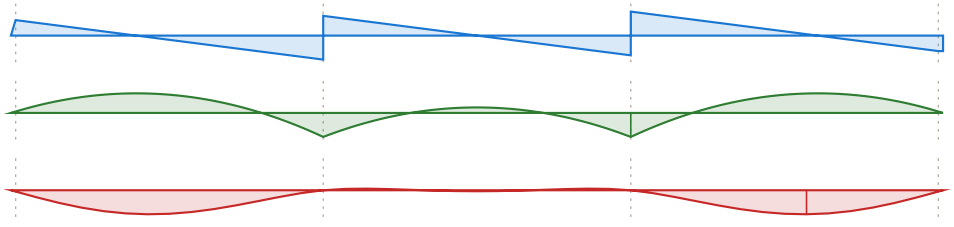
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	13/16"	296	2,515	**2,811**	Beam #30 (on (1) trimmer, (1) king stud)
2 @ 2' 3"	3"	1 15/16"	835	7,103	**7,938**	Beam #30 (on (2) trimmers)
3 @ 4' 6"	3"	1 15/16"	835	7,103	**7,938**	Beam #30 (on (2) trimmers)
4 @ 6' 9"	1 1/2"	13/16"	296	2,515	**2,811**	Beam #30 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 3" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6' 9"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 6' 9"	N/A	323	2,850	Linked from: Trusses #33, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+S
max 4,355 @ 4' 6"

Moment (ft-lbs)
D+S
max -1,640 @ 4' 6"

Deflection (in)
D+S
0.002 in down @ 5' 9 7/16"
limit 0.152 in on 2L (cantilever)

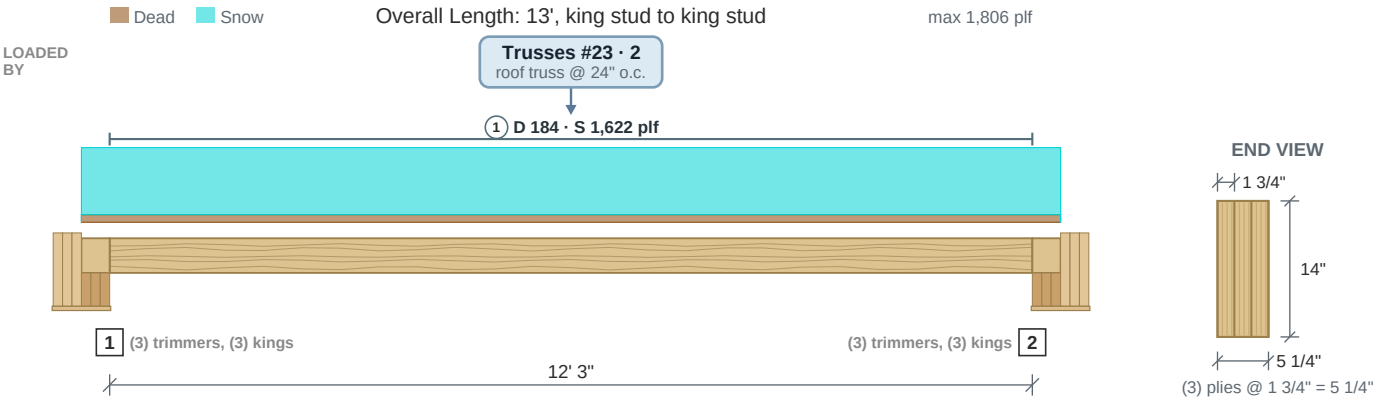
Header #44

(3) 1 3/4" x 14" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 13' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 85% used
Section adequacy 14.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	11,194 @ 0	17,719 (4 1/2")	Passed (63%)	--	
Shear (lbs)	11,194 @ 12' 3"	16,062	Passed (70%)	1.15	D+S
Moment (Ft-lbs)	35,689 @ 6' 1 1/2"	41,846	Passed (85%)	1.15	D+S
Live Load Defl. (in)	0.421 @ 6' 1 1/2"	0.625	Passed (2L/357)	--	S
Total Load Defl. (in)	0.474 @ 6' 1 1/2"	0.833	Passed (2L/316)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.979, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 21.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

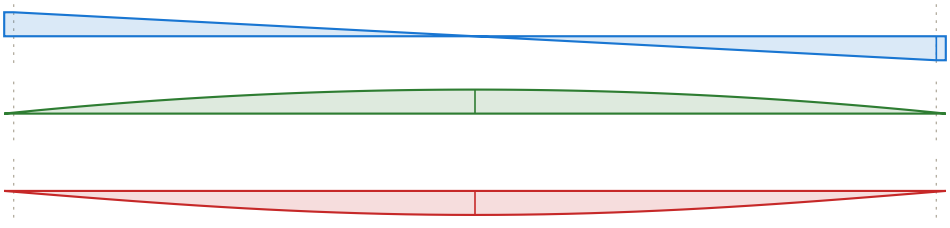
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	4 1/2"	2 13/16"	1,334	10,545	**11,879**	SpotFtg Hdr #38-2 (on (3) trimmers, (3) king studs)
2 @ 12' 3"	4 1/2"	2 13/16"	1,334	10,545	**11,879**	SpotFtg Hdr #44-2 (on (3) trimmers, (3) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 3"	N/A	21.4	--	
1 - Uniform (PLF)	0 to 12' 3"	N/A	183.9	1,622	Linked from: Trusses #23, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max -11,194 @ 12' 3"

Moment (ft-lbs)
D+S
max 35,689 @ 6' 1 1/2"

Deflection (in)
D+S
0.418 in down @ 6' 1 1/2"
limit 0.833 in on 2L (cantilever)

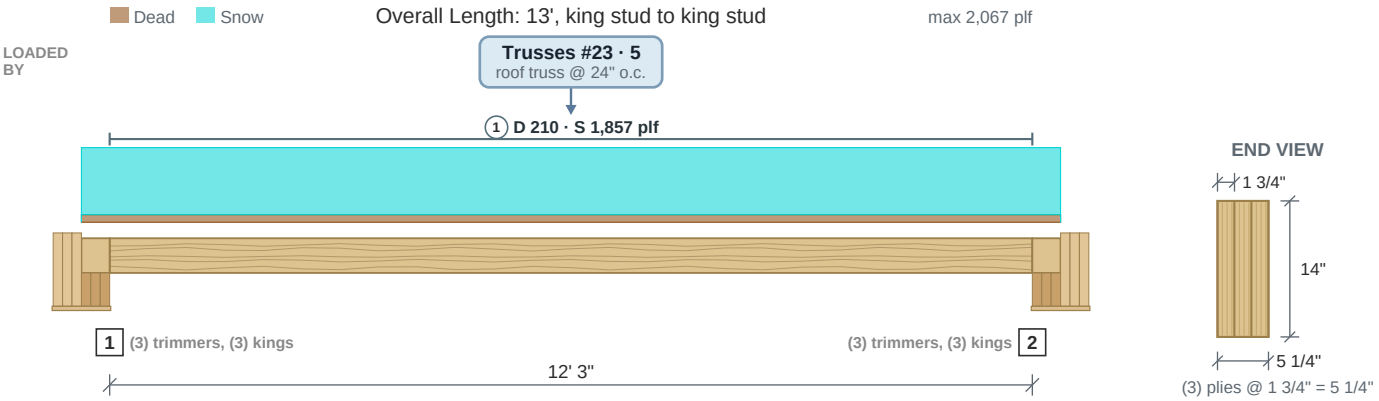
Header #45

(3) 1 3/4" x 14" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 13' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 98% used
Section adequacy 2% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	12,791 @ 0	17,719 (4 1/2")	Passed (72%)	--	
Shear (lbs)	12,791 @ 12' 3"	16,062	Passed (80%)	1.15	D+S
Moment (Ft-lbs)	41,011 @ 6' 1 1/2"	41,846	Passed (98%)	1.15	D+S
Live Load Defl. (in)	0.487 @ 6' 1 1/2"	0.627	Passed (2L/309)	--	S
Total Load Defl. (in)	0.547 @ 6' 1 1/2"	0.836	Passed (2L/275)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 0.979, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 21.4 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

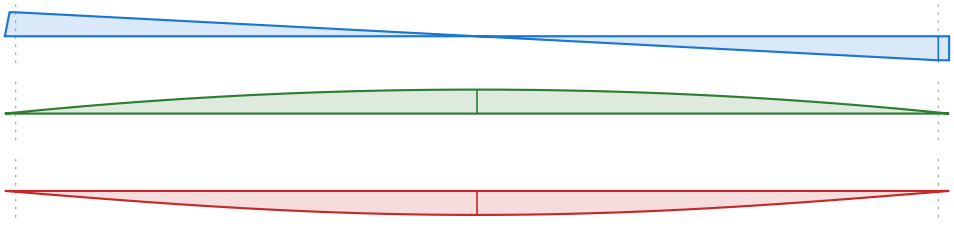
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	4 1/2"	3 1/4"	1,507	12,068	**13,575**	SpotFtg Hdr #45-1 (on (3) trimmers, (3) king studs)
2 @ 12' 3"	4 1/2"	3 1/4"	1,507	12,068	**13,575**	SpotFtg Hdr #45-2 (on (3) trimmers, (3) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 3"	N/A	21.4	--	
1 - Uniform (PLF)	0 to 12' 3"	N/A	210.4	1,857	Linked from: Trusses #23, Support 5

Shear, Moment and Deflection



Shear (lbs)
D+S
max -12,791 @ 12' 3"

Moment (ft-lbs)
D+S
max 41,011 @ 6' 1 1/2"

Deflection (in)
D+S
0.483 in down @ 6' 1 1/2"
limit 0.836 in on 2L (cantilever)

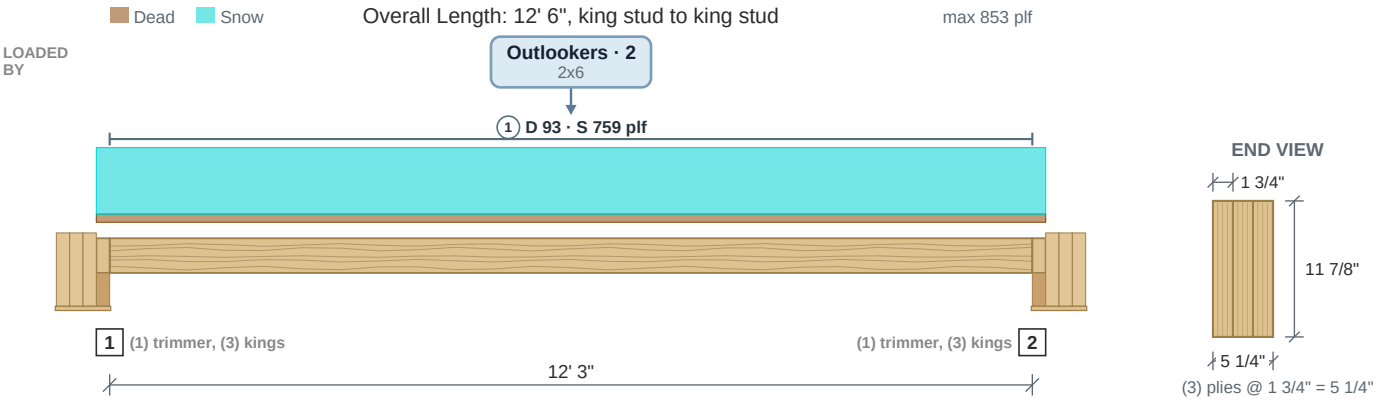
Header #46

(3) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 12' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 90% used
Section adequacy 9.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,333 @ 0	5,906 (1 1/2")	Passed (90%)	--	
Shear (lbs)	5,333 @ -11/16"	13,624	Passed (39%)	1.15	D+S
Moment (Ft-lbs)	16,641 @ 6' 1 1/2"	30,789	Passed (54%)	1.15	D+S
Live Load Defl. (in)	0.299 @ 6' 1 1/2"	0.618	Passed (2L/496)	--	S
Total Load Defl. (in)	0.343 @ 6' 1 1/2"	0.824	Passed (2L/432)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.001, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 18.2 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

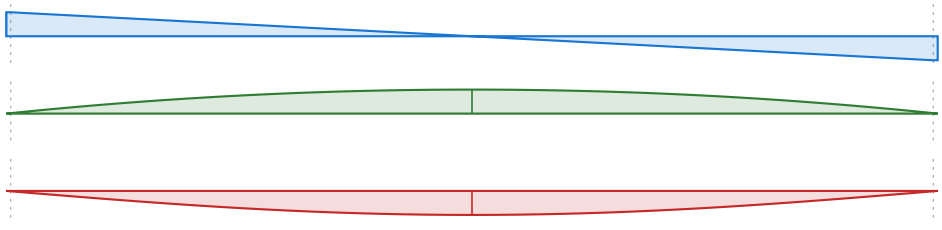
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 3/8"	696	4,746	**5,442**	SpotFtg Hdr #46-1 (on (1) trimmer, (3) king studs)
2 @ 12' 3"	1 1/2"	1 3/8"	696	4,746	**5,442**	SpotFtg Hdr #46-2 (on (1) trimmer, (3) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 3"	N/A	18.2	--	
1 - Uniform (PLF)	0 to 12' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,333 @ -11/16"

Moment (ft-lbs)
D+S
max 16,641 @ 6' 1 1/2"

Deflection (in)
D+S
0.313 in down @ 6' 1 1/2"
limit 0.824 in on 2L (cantilever)

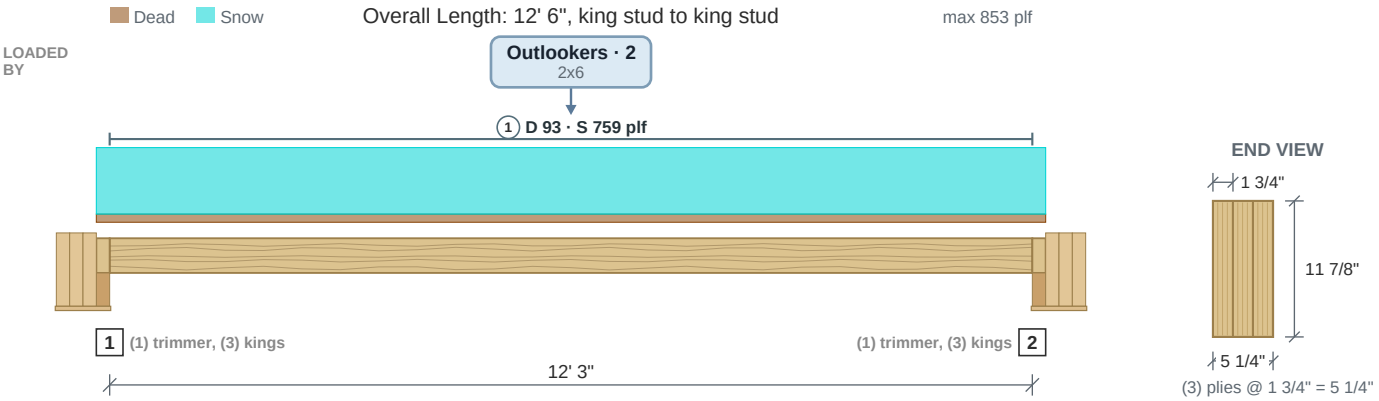
Header #47

(3) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 12' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 90% used
Section adequacy 9.7% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	5,333 @ 0	5,906 (1 1/2")	Passed (90%)	--	
Shear (lbs)	5,333 @ -11/16"	13,624	Passed (39%)	1.15	D+S
Moment (Ft-lbs)	16,641 @ 6' 1 1/2"	30,789	Passed (54%)	1.15	D+S
Live Load Defl. (in)	0.299 @ 6' 1 1/2"	0.618	Passed (2L/496)	--	S
Total Load Defl. (in)	0.343 @ 6' 1 1/2"	0.824	Passed (2L/432)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.001, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 18.2 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

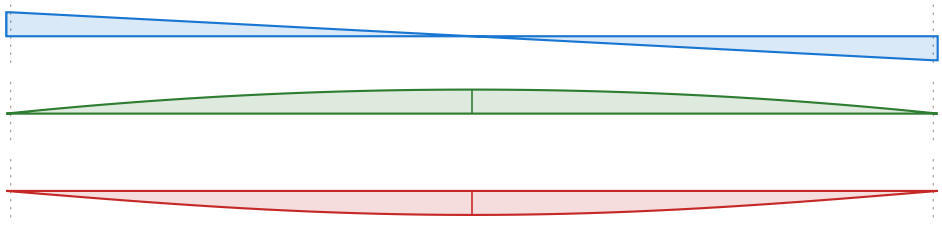
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	1 3/8"	696	4,746	**5,442**	SpotFtg Hdr #47-1 (on (1) trimmer, (3) king studs)
2 @ 12' 3"	1 1/2"	1 3/8"	696	4,746	**5,442**	SpotFtg Hdr #47-2 (on (1) trimmer, (3) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 3"	N/A	18.2	--	
1 - Uniform (PLF)	0 to 12' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 5,333 @ -11/16"

Moment (ft-lbs)
D+S
max 16,641 @ 6' 1 1/2"

Deflection (in)
D+S
0.313 in down @ 6' 1 1/2"
limit 0.824 in on 2L (cantilever)

Header #48

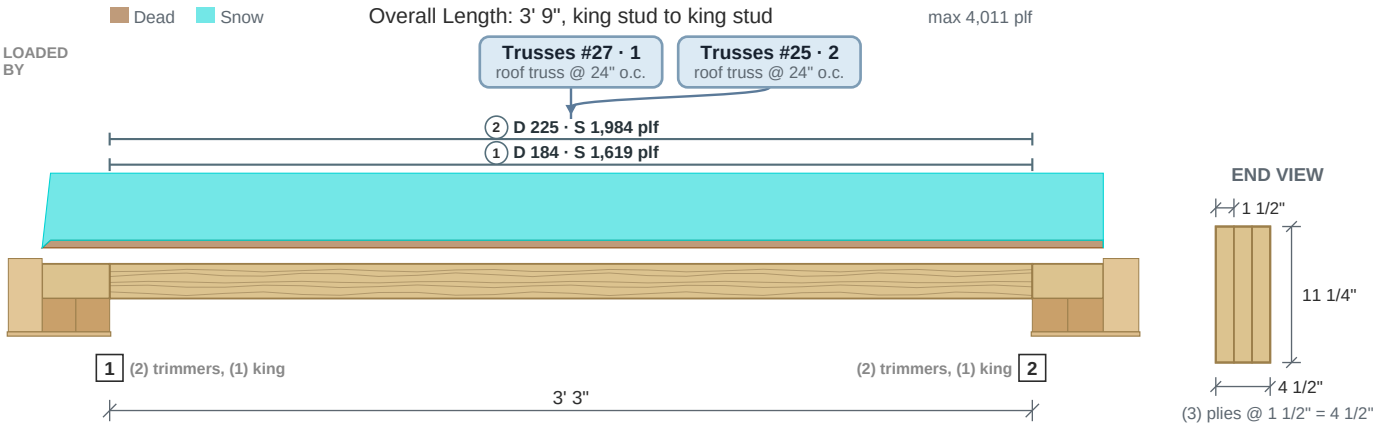
PASSED

(3) 2x12 DF-L(N) No. 2 (1 1/2" x 11 1/4")

Controls: Shear 94% used

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

Section adequacy 6.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,537 @ 0	8,438 (3")	Passed (77%)	--	
Shear (lbs)	6,537 @ 3' 3"	6,986	Passed (94%)	1.15	D+S
Moment (Ft-lbs)	6,042 @ 1' 7 1/2"	7,732	Passed (78%)	1.15	D+S
Live Load Defl. (in)	0.014 @ 1' 7 1/2"	0.174	Passed (2L/3,032)	--	S
Total Load Defl. (in)	0.015 @ 1' 7 1/2"	0.232	Passed (2L/2,716)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.5 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

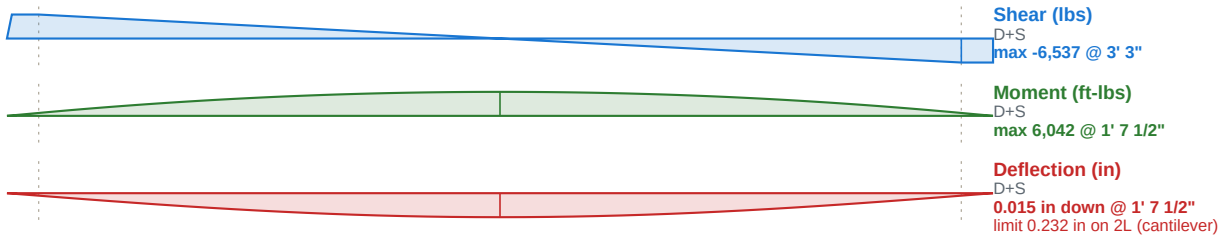
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	2 5/16"	787	6,756	**7,543**	SpotFtg Hdr #48-1 (on (2) trimmers, (1) king stud)
2 @ 3' 3"	3"	2 5/16"	787	6,756	**7,543**	SpotFtg Hdr #48-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	11.5	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	183.5	1,619	Linked from: Trusses #27, Support 1
2 - Uniform (PLF)	0 to 3' 3"	N/A	224.8	1,984	Linked from: Trusses #25, Support 2

Shear, Moment and Deflection



Header #49

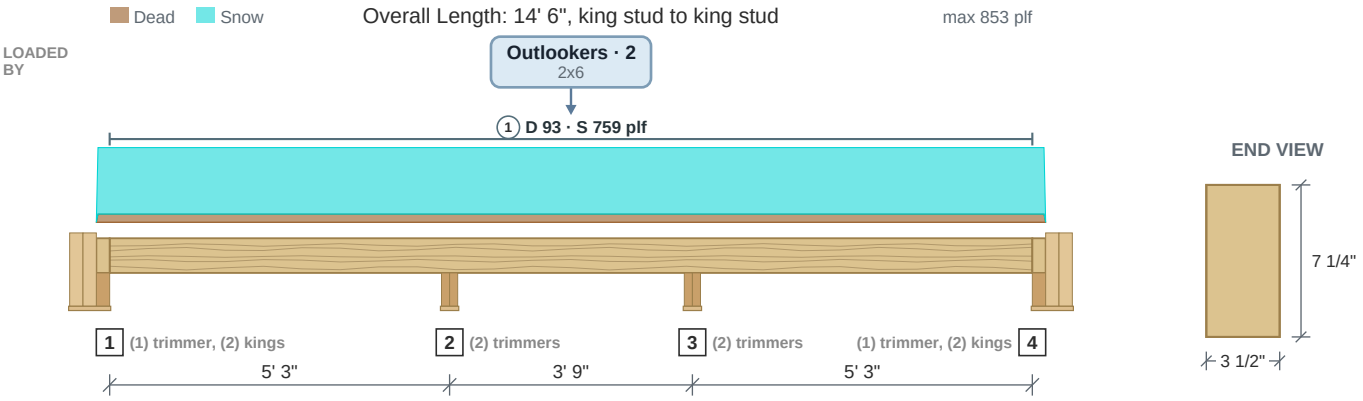
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 14' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 75% used

Section adequacy 24.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	4,252 @ 5' 3"	7,383 (3")	Passed (58%)	--	
Shear (lbs)	2,642 @ 9'	3,502	Passed (75%)	1.15	D+S
Moment (Ft-lbs)	2,095 @ 12' 13/16"	3,247	Passed (65%)	1.15	D+S
Live Load Defl. (in)	0.046 @ 2' 5 3/8"	0.264	Passed (2L/1,384)	--	S
Total Load Defl. (in)	0.052 @ 2' 5 3/8"	0.353	Passed (2L/1,224)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

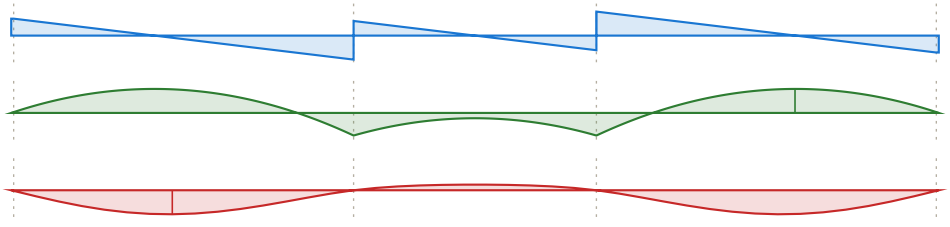
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	7/8"	227	1,744	**1,971**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs
2 @ 5' 3"	3"	1 9/16"	490	3,761	**4,252**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 9'	3"	1 9/16"	490	3,761	**4,252**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 14' 3"	1 1/2"	7/8"	227	1,744	**1,971**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 14' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 14' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,642 @ 9'

Moment (ft-lbs)
D+S
max 2,095 @ 12' 13/16"

Deflection (in)
D+S
0.052 in down @ 2' 5 3/8"
limit 0.353 in on 2L (cantilever)

Header #50

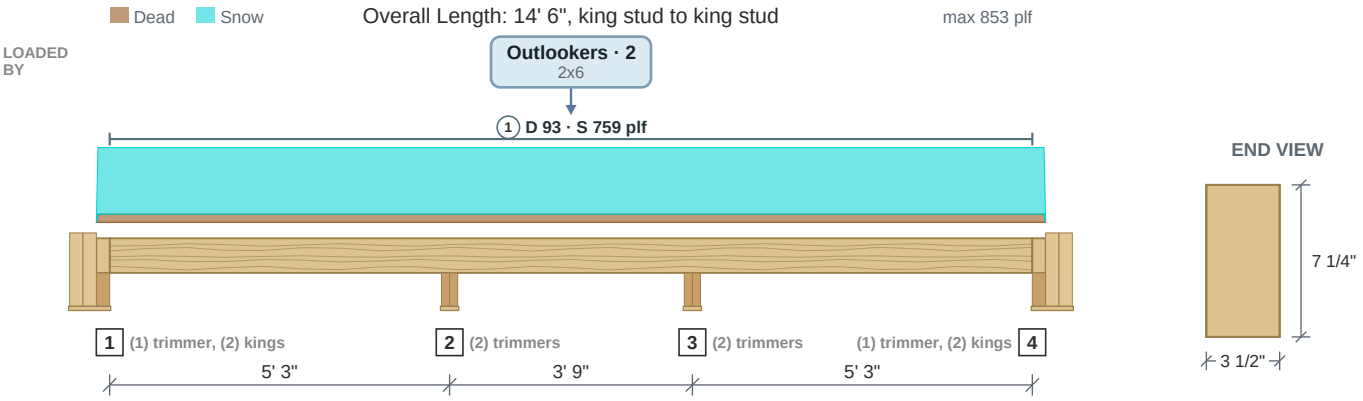
(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 14' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 75% used

Section adequacy 24.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	4,252 @ 5' 3"	7,383 (3")	Passed (58%)	--	
Shear (lbs)	2,642 @ 9'	3,502	Passed (75%)	1.15	D+S
Moment (Ft-lbs)	2,095 @ 12' 13/16"	3,247	Passed (65%)	1.15	D+S
Live Load Defl. (in)	0.046 @ 2' 5 3/8"	0.264	Passed (2L/1,384)	--	S
Total Load Defl. (in)	0.052 @ 2' 5 3/8"	0.353	Passed (2L/1,224)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

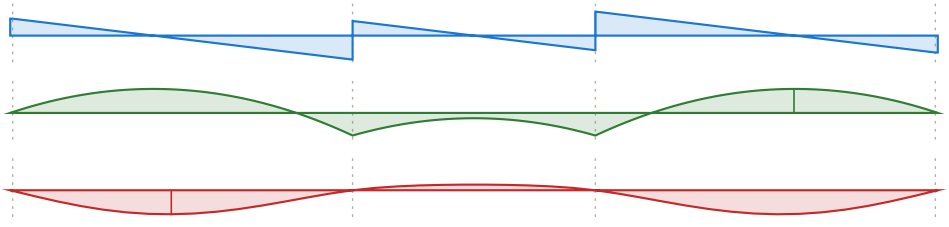
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	7/8"	227	1,744	**1,971**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs
2 @ 5' 3"	3"	1 9/16"	490	3,761	**4,252**	Bearing wall (marked, trimmers) -- on (2) trimmers
3 @ 9'	3"	1 9/16"	490	3,761	**4,252**	Bearing wall (marked, trimmers) -- on (2) trimmers
4 @ 14' 3"	1 1/2"	7/8"	227	1,744	**1,971**	Bearing wall (marked, trimmers) -- on (1) trimmer, (2) king studs

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 14' 3"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 14' 3"	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 2,642 @ 9'

Moment (ft-lbs)
D+S
max 2,095 @ 12' 13/16"

Deflection (in)
D+S
0.052 in down @ 2' 5 3/8"
limit 0.353 in on 2L (cantilever)

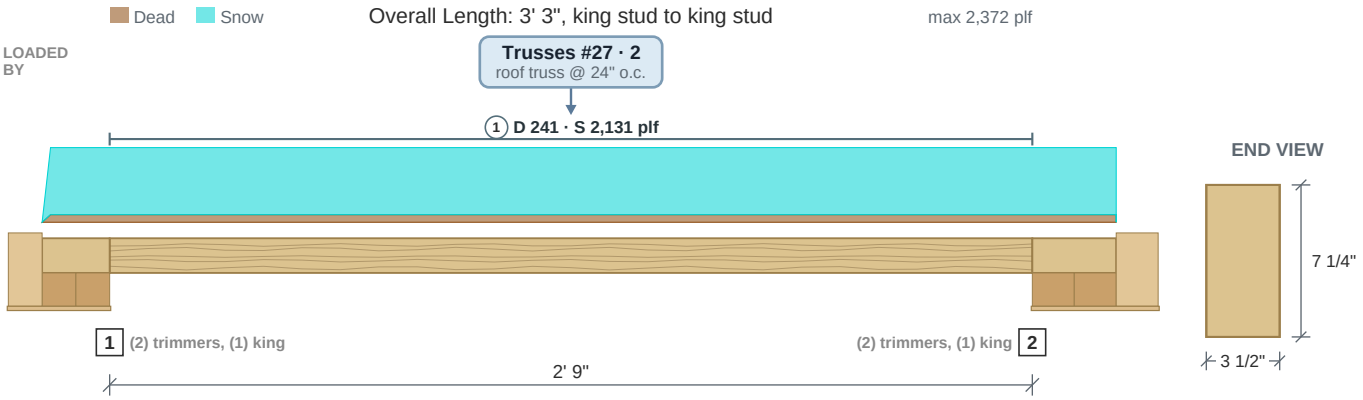
Header #51

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 3" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 93% used
Section adequacy 6.6% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,270 @ 0	6,562 (3")	Passed (50%)	--	
Shear (lbs)	3,270 @ 2' 9"	3,502	Passed (93%)	1.15	D+S
Moment (Ft-lbs)	2,488 @ 1' 4 1/2"	3,247	Passed (77%)	1.15	D+S
Live Load Defl. (in)	0.019 @ 1' 4 1/2"	0.145	Passed (2L/1,836)	--	S
Total Load Defl. (in)	0.021 @ 1' 4 1/2"	0.193	Passed (2L/1,645)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.30, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

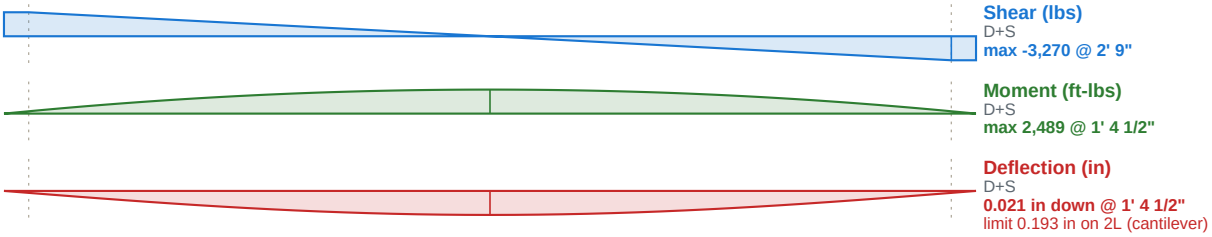
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	3"	1 1/2"	402	3,462	**3,864**	SpotFtg Hdr #51-1 (on (2) trimmers, (1) king stud)
2 @ 2' 9"	3"	1 1/2"	402	3,462	**3,864**	Bearing wall (marked, trimmers) -- on (2) trimmers, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 2' 9"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 2' 9"	N/A	241.5	2,131	Linked from: Trusses #27, Support 2

Shear, Moment and Deflection



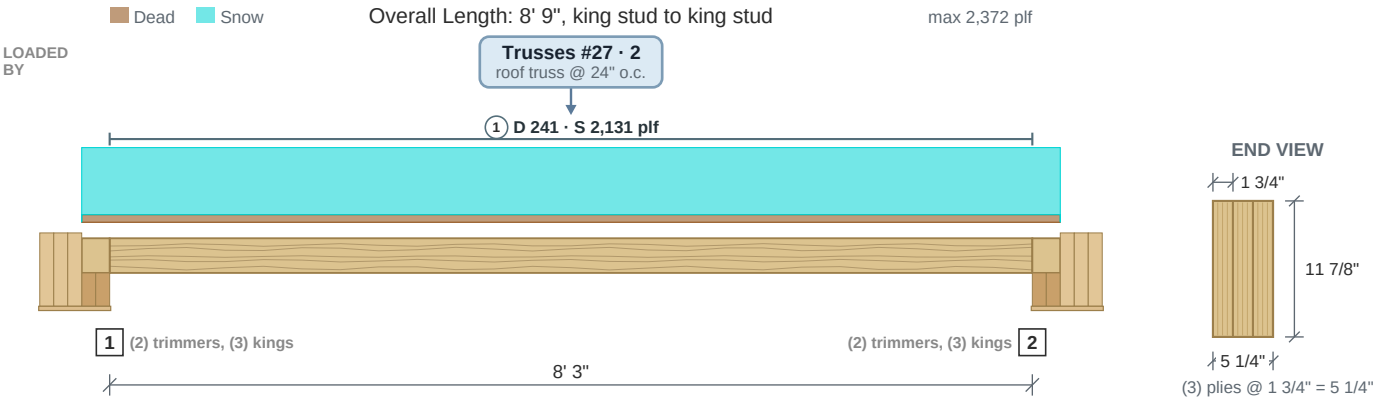
Header #52

PASSED

(3) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 8' 9" | 2018 IRC | 2018 NDS | ASD

Controls: Bearing 83% used
Section adequacy 16.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,860 @ 0	11,812 (3")	Passed (83%)	--	
Shear (lbs)	9,860 @ -1 5/16"	13,624	Passed (72%)	1.15	D+S
Moment (Ft-lbs)	21,427 @ 4' 1 1/2"	30,789	Passed (70%)	1.15	D+S
Live Load Defl. (in)	0.204 @ 4' 2 3/4"	0.424	Passed (2L/499)	--	S
Total Load Defl. (in)	0.228 @ 4' 2 3/4"	0.565	Passed (2L/445)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.001, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 18.2 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

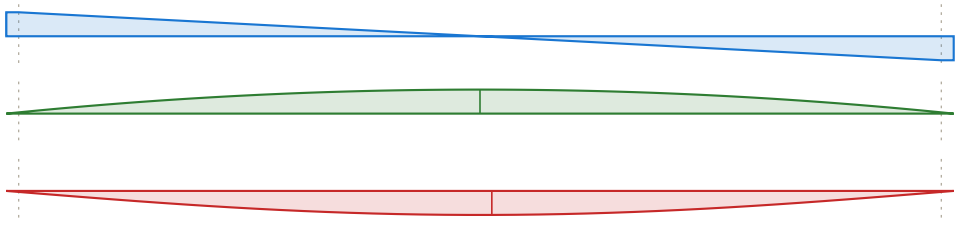
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	2 1/2"	1,136	9,322	**10,458**	SpotFtg Hdr #52-1 (on (2) trimmers, (3) king studs)
2 @ 8' 3"	3"	2 1/2"	1,136	9,322	**10,458**	SpotFtg Hdr #52-2 (on (2) trimmers, (3) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 8' 3"	N/A	18.2	--	
1 - Uniform (PLF)	0 to 8' 3"	N/A	241.5	2,131	Linked from: Trusses #27, Support 2

Shear, Moment and Deflection



Shear (lbs)
D+S
max 9,860 @ -1 5/16"

Moment (ft-lbs)
D+S
max 21,428 @ 4' 1 1/2"

Deflection (in)
D+S
0.189 in down @ 4' 2 3/4"
limit 0.565 in on 2L (cantilever)

Header #53

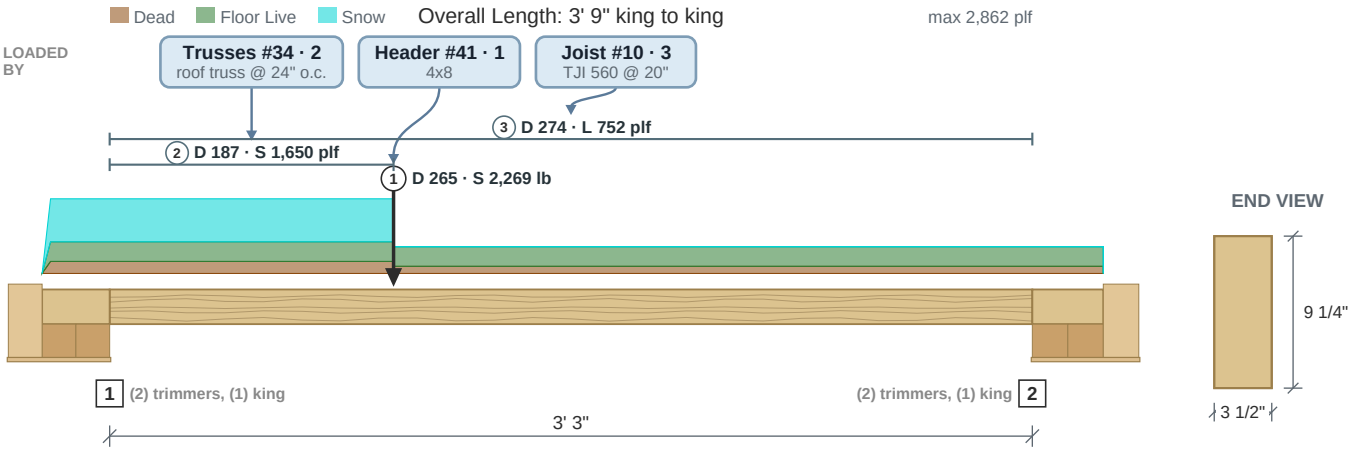
(1) 4x10 DF-L(N) No. 2 (3 1/2" x 9 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 87% used

Section adequacy 13.4% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	3,869 @ 0	6,562 (3")	Passed (59%)	--	
Shear (lbs)	3,869 @ -1"	4,468	Passed (87%)	1.15	D+0.75L+0.75S
Moment (Ft-lbs)	3,067 @ 1'	4,879	Passed (63%)	1.15	D+0.75L+0.75S
Live Load Defl. (in)	0.01 @ 1' 4 15/16"	0.169	Passed (2L/3,963)	--	S
Total Load Defl. (in)	0.016 @ 1' 6"	0.225	Passed (2L/2,612)	--	D+0.75L+0.75S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CF = 1.20, CL = 1.00 (D+0.75L+0.75S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 7.4 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

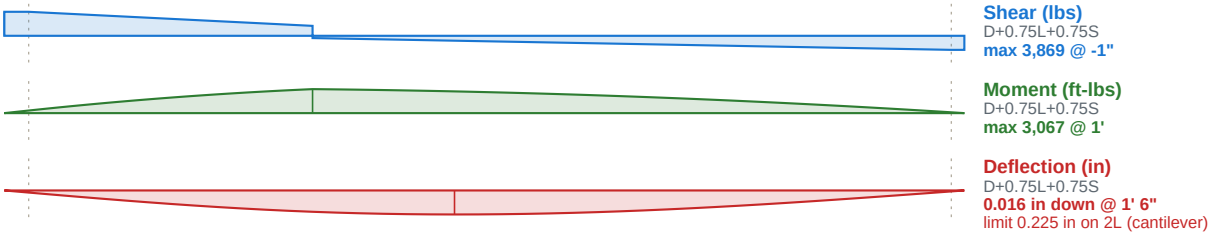
	Bearing Length		Loads to Supports (lbs)				
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	1 3/4"	902	1,395	3,317	**4,437**	SpotFtg Bm #32-1 (on (2) trimmers, (1) king stud)
2 @ 3' 3"	3"	1 1/16"	650	1,424	1,014	**2,478**	SpotFtg Hdr #41-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	7.4	--	--	
1 - Point (lb)	1'	N/A	264.9	--	2,269	Linked from: Header #41, Support 1
2 - Uniform (PLF)	0 to 1'	N/A	187	--	1,650	Linked from: Trusses #34, Support 2
3 - Uniform (PLF)	0 to 3' 3"	N/A	273.5	751.9	--	Linked from: Joist #10, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+0.75L+0.75S
max 3,869 @ -1"

Moment (ft-lbs)
D+0.75L+0.75S
max 3,067 @ 1'

Deflection (in)
D+0.75L+0.75S
0.016 in down @ 1' 6"
limit 0.225 in on 2L (cantilever)

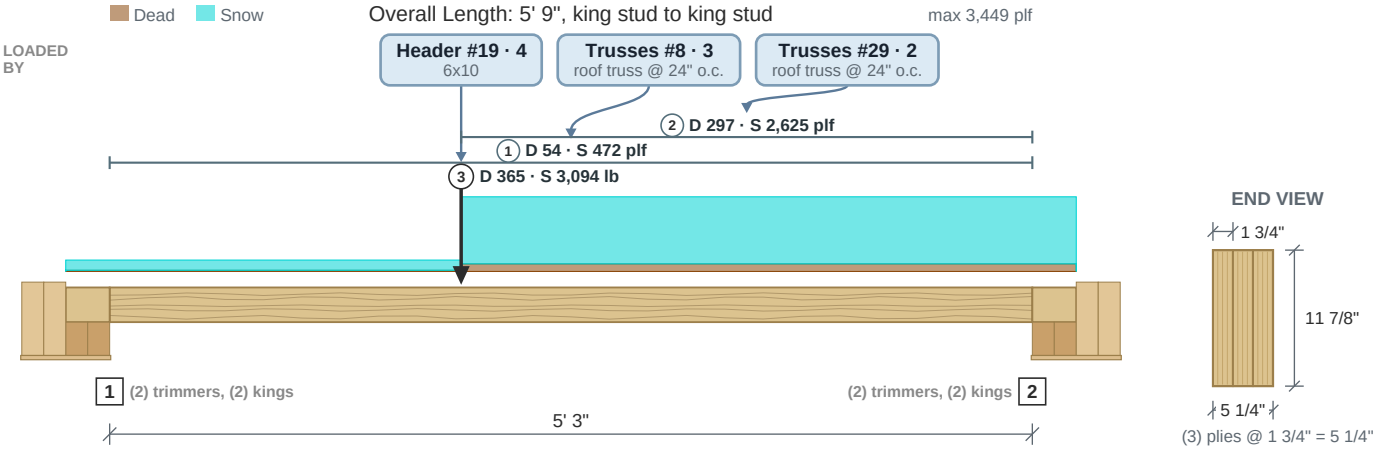
Header #54

PASSED

(3) 1 3/4" x 11 7/8" 2.0E Microlam LVL (Weyerhaeuser)

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 5' 9" | 2018 IRC | 2018 NDS | ASD

Controls: Bearing 78% used
Section adequacy 22.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	9,204 @ 5' 3"	11,812 (3")	Passed (78%)	--	
Shear (lbs)	9,204 @ 5' 3"	13,624	Passed (68%)	1.15	D+S
Moment (Ft-lbs)	13,209 @ 2' 7 1/16"	30,789	Passed (43%)	1.15	D+S
Live Load Defl. (in)	0.063 @ 2' 8 1/8"	0.271	Passed (2L/1,030)	--	S
Total Load Defl. (in)	0.071 @ 2' 8 1/8"	0.362	Passed (2L/920)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CV = 1.001, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 18.2 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser ICC-ES ESR-1387, ASD, every load combination with its own load duration factor.

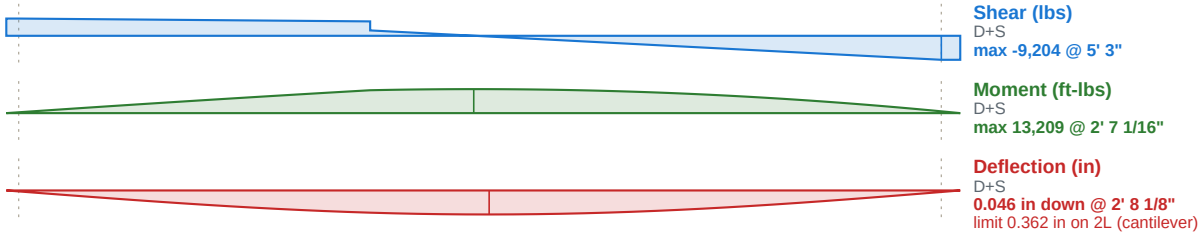
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	1 11/16"	742	6,004	**6,746**	SpotFtg Hdr #54-1 (on (2) trimmers, (2) king studs)
2 @ 5' 3"	3"	2 5/16"	1,077	8,994	**10,071**	SpotFtg Hdr #54-2 (on (2) trimmers, (2) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 3"	N/A	18.2	--	
1 - Uniform (PLF)	0 to 5' 3"	N/A	53.5	472.5	Linked from: Trusses #8, Support 3
2 - Uniform (PLF)	2' to 5' 3"	N/A	297.5	2,625	Linked from: Trusses #29, Support 2
3 - Point (lb)	2'	N/A	364.6	3,094	Linked from: Header #19, Support 4

Shear, Moment and Deflection



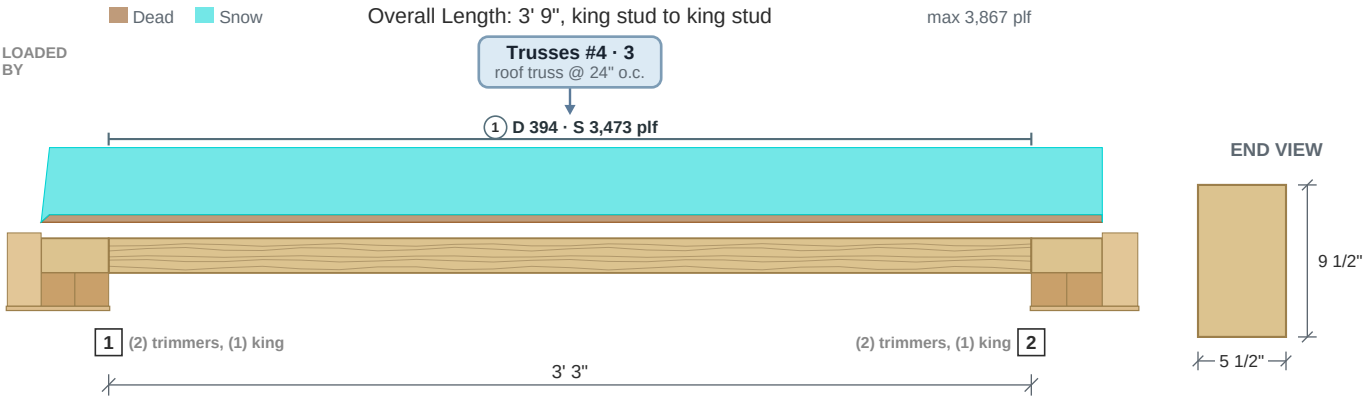
Header #55

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 3' 9" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Shear 93% used
Section adequacy 7.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	6,302 @ 0	10,312 (3")	Passed (61%)	--	
Shear (lbs)	6,303 @ 3' 3"	6,810	Passed (93%)	1.15	D+S
Moment (Ft-lbs)	5,677 @ 1' 7 1/2"	6,937	Passed (82%)	1.15	D+S
Live Load Defl. (in)	0.021 @ 1' 7 1/2"	0.171	Passed (2L/1,957)	--	S
Total Load Defl. (in)	0.023 @ 1' 7 1/2"	0.228	Passed (2L/1,752)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

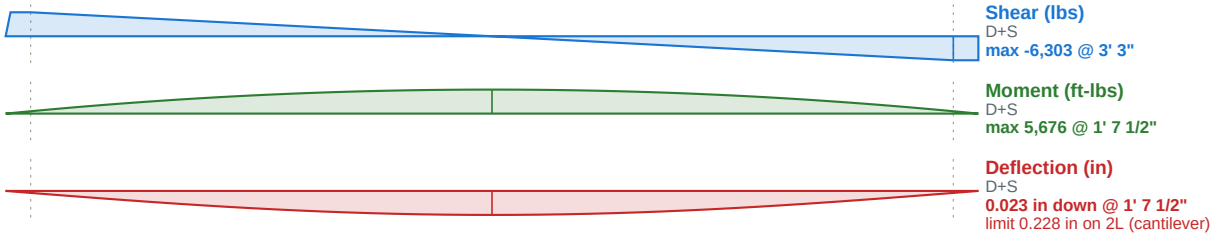
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	3"	1 13/16"	760	6,512	**7,272**	SpotFtg Hdr #55-1 (on (2) trimmers, (1) king stud)
2 @ 3' 3"	3"	1 13/16"	760	6,512	**7,272**	SpotFtg Hdr #55-2 (on (2) trimmers, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 3" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	393.6	3,473	Linked from: Trusses #4, Support 3

Shear, Moment and Deflection



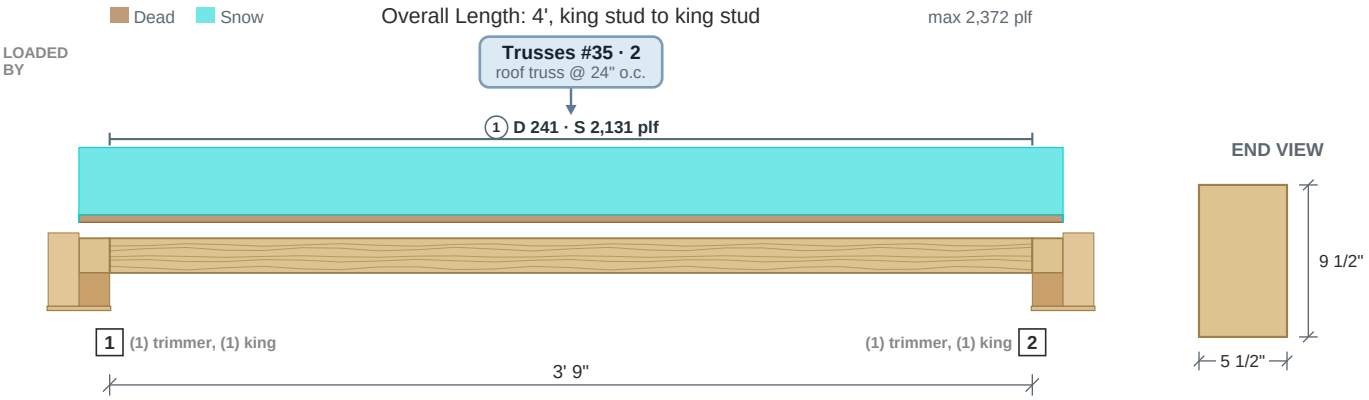
Header #56

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 4' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 87% used
Section adequacy 13.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	4,470 @ 0	5,156 (1 1/2")	Passed (87%)	--	
Shear (lbs)	4,470 @ -7/16"	6,810	Passed (66%)	1.15	D+S
Moment (Ft-lbs)	4,449 @ 1' 10 1/2"	6,937	Passed (64%)	1.15	D+S
Live Load Defl. (in)	0.021 @ 1' 11 1/16"	0.193	Passed (2L/2,218)	--	S
Total Load Defl. (in)	0.023 @ 1' 11 1/16"	0.258	Passed (2L/1,982)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

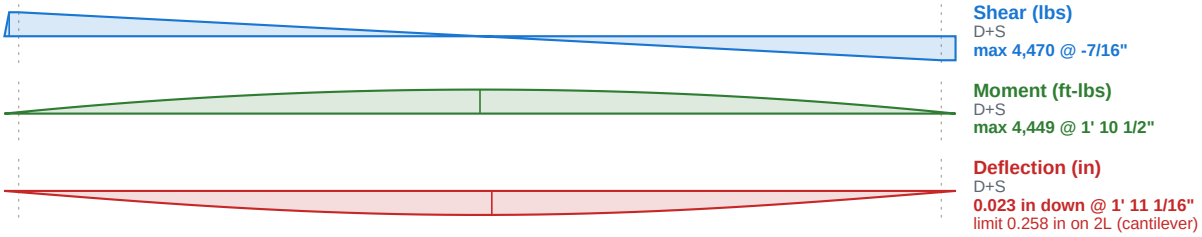
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	1 5/16"	507	4,261	**4,768**	SpotFtg Hdr #56-1 (on (1) trimmer, (1) king stud)
2 @ 3' 9"	1 1/2"	1 5/16"	507	4,261	**4,768**	SpotFtg Hdr #56-2 (on (1) trimmer, (1) king stud)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 9"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 3' 9"	N/A	241.5	2,131	Linked from: Trusses #35, Support 2

Shear, Moment and Deflection



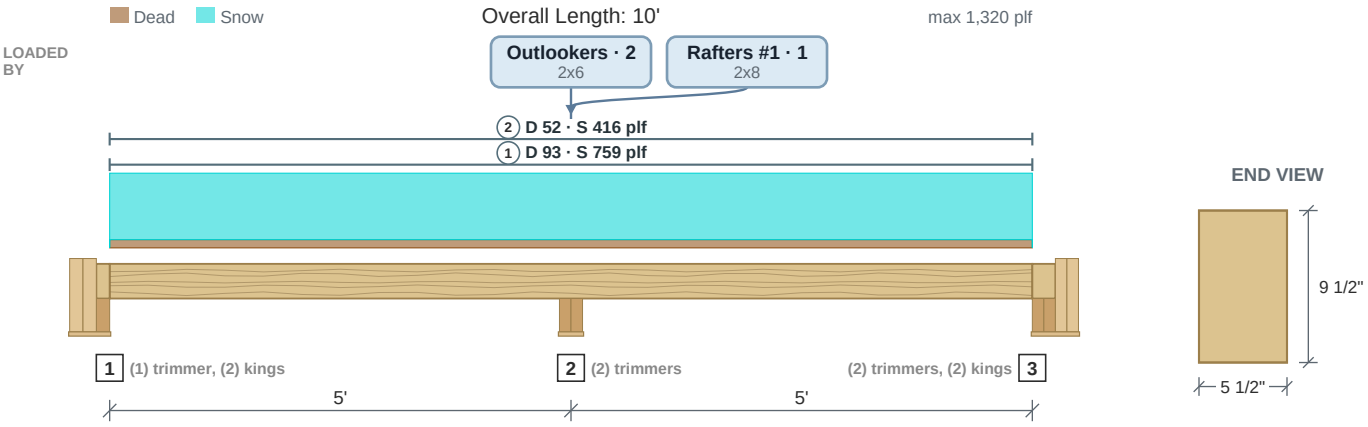
Header #57

(1) 6x10 DF-L(N) No. 2 (5 1/2" x 9 1/2")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 10' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 72% used
Section adequacy 27.8% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	8,377 @ 5'	11,601 (3")	Passed (72%)	--	
Shear (lbs)	4,188 @ 5'	6,810	Passed (61%)	1.15	D+S
Neg Moment (Ft-lbs)	-4,214 @ 5'	6,911	Passed (61%)	1.15	D+S
Live Load Defl. (in)	0.014 @ 2'	0.252	Passed (2L/4,389)	--	S
Total Load Defl. (in)	0.016 @ 2'	0.335	Passed (2L/3,871)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Bending adjustment factors: CD = 1.15, CL = 0.996 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 4214 lbf-ft, 0.00-5.00 ft, CL 0.996 (unbraced 5.0 ft).
- Member self weight of 11.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

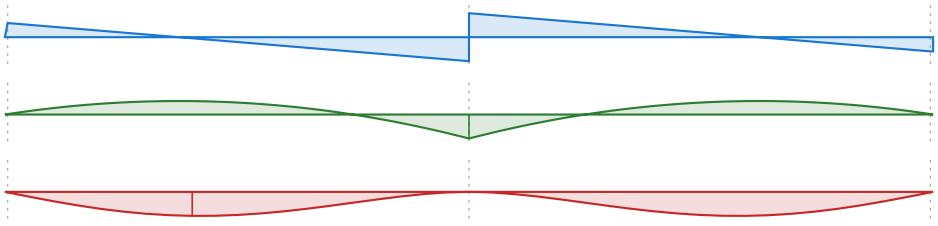
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	1 1/2"	3/4"	292	2,181	**2,473**	Header #13 (on (1) trimmer, (2) king studs)
2 @ 5'	3"	2 1/16"	989	7,387	**8,377**	Header #13 (on (2) trimmers)
3 @ 10'	3"	3/4"	292	2,181	**2,473**	Header #13 (on (2) trimmers, (2) king studs)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	5' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 10'	N/A	11.9	--	
1 - Uniform (PLF)	0 to 10'	N/A	93.2	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	0 to 10'	N/A	52.2	415.5	Linked from: Rafters #1, Support 1

Shear, Moment and Deflection



Shear (lbs)
D+S
max 4,188 @ 5'

Moment (ft-lbs)
D+S
max -4,214 @ 5'

Deflection (in)
D+S
0.016 in down @ 2'
limit 0.335 in on 2L (cantilever)

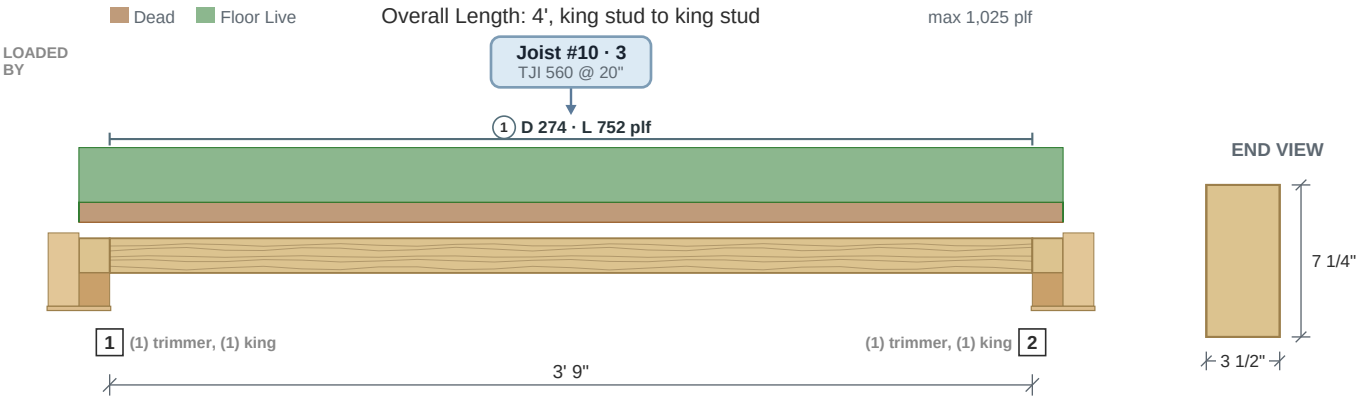
Header #58

PASSED

(1) 4x8 DF-L(N) No. 2 (3 1/2" x 7 1/4")

Level: Headers - 1st Level | Member type: Header (Roof Beam) | Length: 4' | 2018 IRC | 2018 NDS | ASD

Controls: Moment 67% used
Section adequacy 33.1% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,934 @ 0	3,281 (1 1/2")	Passed (59%)	--	
Shear (lbs)	1,933 @ 3' 9"	3,045	Passed (64%)	1.00	D+L
Moment (Ft-lbs)	1,888 @ 1' 10 1/2"	2,823	Passed (67%)	1.00	D+L
Live Load Defl. (in)	0.02 @ 1' 10 1/2"	0.128	Passed (2L/2,249)	--	L
Total Load Defl. (in)	0.028 @ 1' 10 1/2"	0.191	Passed (2L/1,640)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Bending adjustment factors: CD = 1.00, CF = 1.30, CL = 1.00 (D+L).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 5.8 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

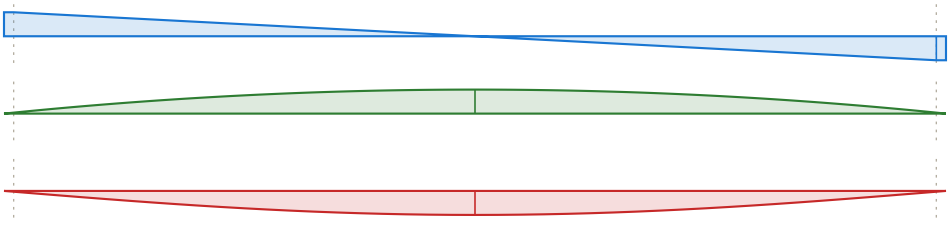
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Floor Live	Total	Load goes to
1 @ 0	1 1/2"	7/8"	559	1,504	**2,062**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud
2 @ 3' 9"	1 1/2"	7/8"	559	1,504	**2,062**	Bearing wall (marked, trimmers) -- on (1) trimmer, (1) king stud

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	3' 9" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 3' 9"	N/A	5.8	--	
1 - Uniform (PLF)	0 to 3' 9"	N/A	273.5	751.9	Linked from: Joist #10, Support 3

Shear, Moment and Deflection



Shear (lbs)
D+L
max -1,933 @ 3' 9"

Moment (ft-lbs)
D+L
max 1,889 @ 1' 10 1/2"

Deflection (in)
D+L
0.028 in down @ 1' 10 1/2"
limit 0.191 in on 2L (cantilever)

Rafters #1

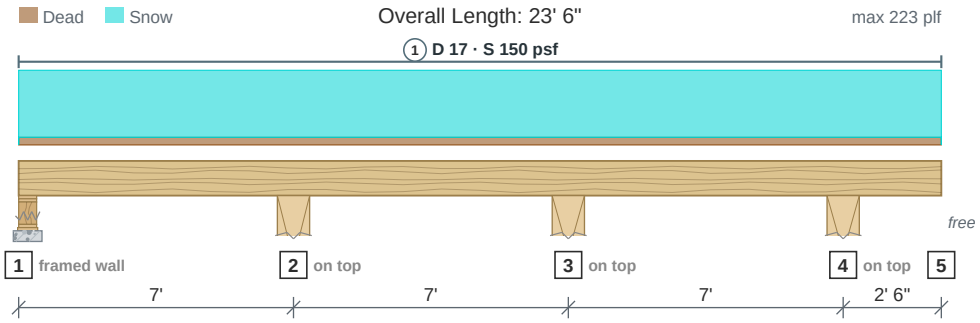
PASSED

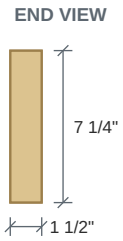
(1) 2x8 DF-L No. 2 (1 1/2" x 7 1/4") @ 16" o.c.

Controls: Moment 92% used

Level: Roof | Member type: Rafter (Roof Rafter) | Length: 23' 6" | 2018 IRC | 2018 NDS | ASD

Section adequacy 7.7% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,774 @ 7'	7,031 (7 1/2")	Passed (25%)	--	
Shear (lbs)	952 @ 7'	1,501	Passed (63%)	1.15	D+S
Neg Moment (Ft-lbs)	-1,150 @ 7'	1,246	Passed (92%)	1.15	D+S
Live Load Defl. (in)	0.072 @ 2' 11"	0.35	Passed (L/1,168)	--	S
Total Load Defl. (in)	0.081 @ 2' 11"	0.467	Passed (L/1,038)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.15, CF = 1.20, Cr = 1.15, CL = 0.797 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 1150 lbf-ft, 0.00-7.00 ft, CL 0.797 (unbraced 7.0 ft).
- Member self weight of 2.5 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

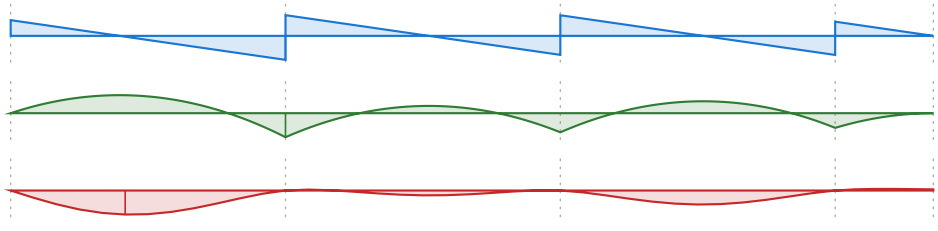
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	5 1/2"	11/16"	70	554	**624**	Header #12, Footing #7, Header #57 (a framed wall down to the foundation)
2 @ 7'	7 1/2"	1 1/2"	198	1,576	**1,774**	Timber Truss #1 (bears on top)
3 @ 14'	7 1/2"	1 5/16"	176	1,397	**1,573**	Timber Truss #2 (bears on top)
4 @ 21'	7 1/2"	1"	147	1,173	**1,321**	Timber Truss #3 (bears on top)
5 @ 23' 6"	--	--	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	7' o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 23' 6"	N/A	2.5	--	
1 - Uniform (PSF)	0 to 23' 6"	16"	17	150	

Shear, Moment and Deflection



Shear (lbs)
D+S
max -952 @ 7'

Moment (ft-lbs)
D+S
max -1,150 @ 7'

Deflection (in)
D+S
0.081 in down @ 2' 11"
limit 0.467 in on the span

Rafters #2

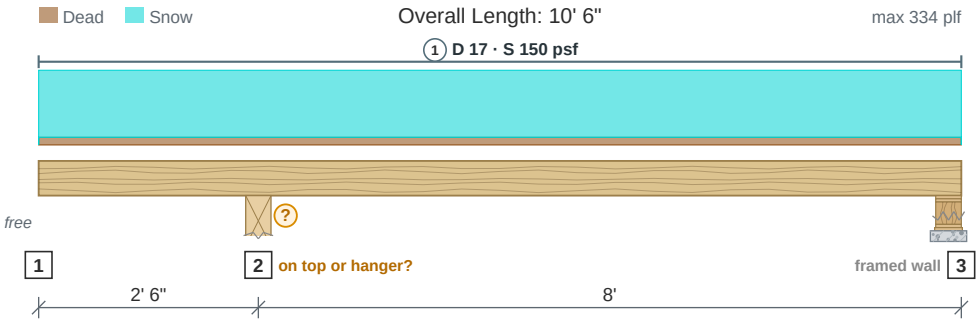
(1) 2x10 DF-L No. 2 (1 1/2" x 9 1/4") @ 24" o.c.

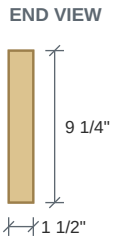
Level: Roof | Member type: Rafter (Roof Rafter) | Length: 10' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 94% used

Section adequacy 5.9% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,323 @ 2' 6"	3,633 (3 1/2")	Passed (64%)	--	
Shear (lbs)	1,480 @ 2' 6"	1,915	Passed (77%)	1.15	D+S
Moment (Ft-lbs)	2,196 @ 6' 10 1/2"	2,334	Passed (94%)	1.15	D+S
Live Load Defl. (in)	0.09 @ 0	0.25	Passed (2L/663)	--	S
Total Load Defl. (in)	0.102 @ 0	0.333	Passed (2L/590)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.15, CF = 1.10, Cr = 1.15, CL = 1.00 (D+S).
- Beam stability: each moment checked against the bracing of its compression edge (CL = 1.00 where braced).
- Member self weight of 3.2 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

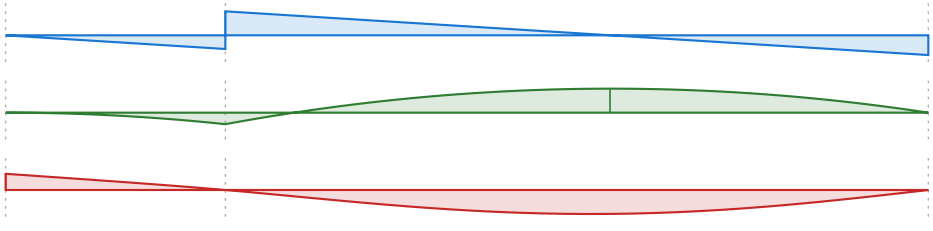
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Snow	Total	Load goes to
1 @ 0	--	--	--	--	--	free end (cantilever tip)
2 @ 2' 6"	3 1/2"	2 1/8"	256	2,067	**2,323**	Timber Truss #4 (on top or in a hanger? not set)
3 @ 10' 6"	3 1/2"	1 5/16"	134	1,083	**1,217**	Header #14, Footing #11 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	8' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 10' 6"	N/A	3.2	--	
1 - Uniform (PSF)	0 to 10' 6"	24"	17	150	

Shear, Moment and Deflection



Shear (lbs)
D+S
max 1,480 @ 2' 6"

Moment (ft-lbs)
D+S
max 2,196 @ 6' 10 1/2"

Deflection (in)
D+S
0.102 in up @ 0
limit 0.333 in on 2L (cantilever)

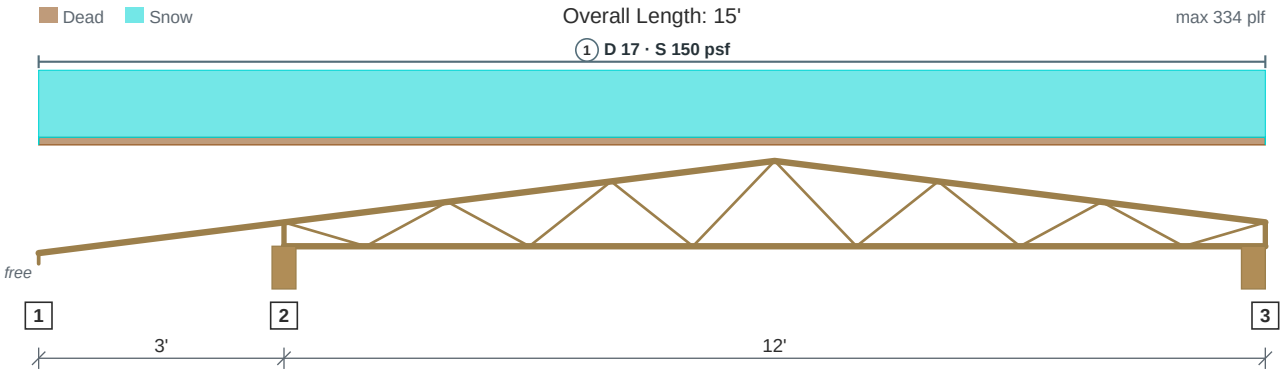
Trusses #1

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 15' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	319	2,812	**3,131**	Beam #1 (bears on top)
3 @ 15'	191	1,688	**1,879**	Header #1, Header #2, Footing #1 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 15'	24"	17	150	

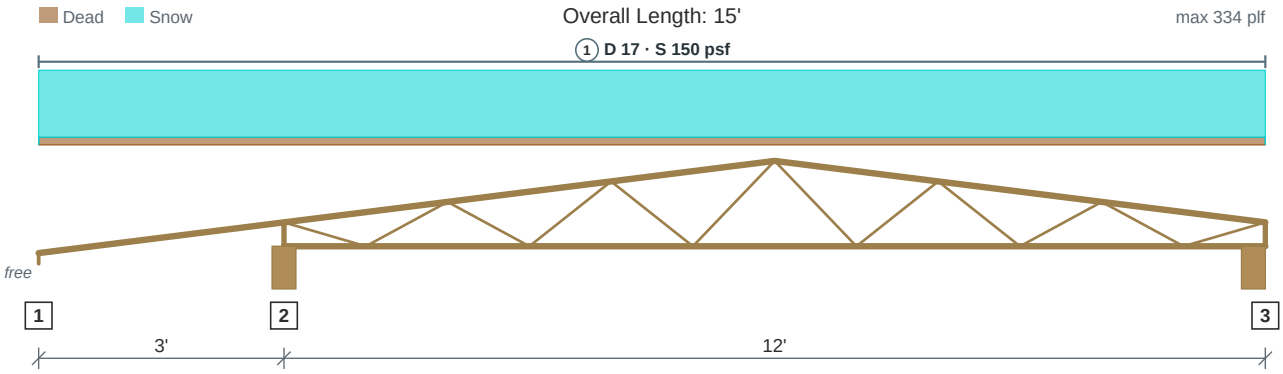
Trusses #2

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 15' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	319	2,812	**3,131**	Beam #2, Beam #3 (bears on top)
3 @ 15'	191	1,688	**1,879**	Header #4, Footing #2 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 15'	24"	17	150	

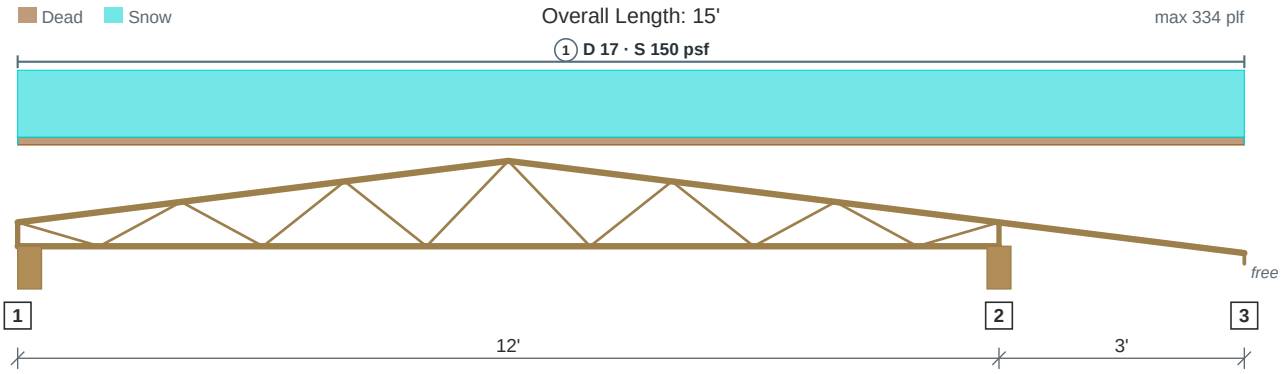
Trusses #3

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 15' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	191	1,688	**1,879**	Header #6, Header #7, Footing #3 (a framed wall down to the foundation)
2 @ 12'	319	2,812	**3,131**	Beam #4 (on top or in a hanger? not set)
3 @ 15'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 15'	24"	17	150	

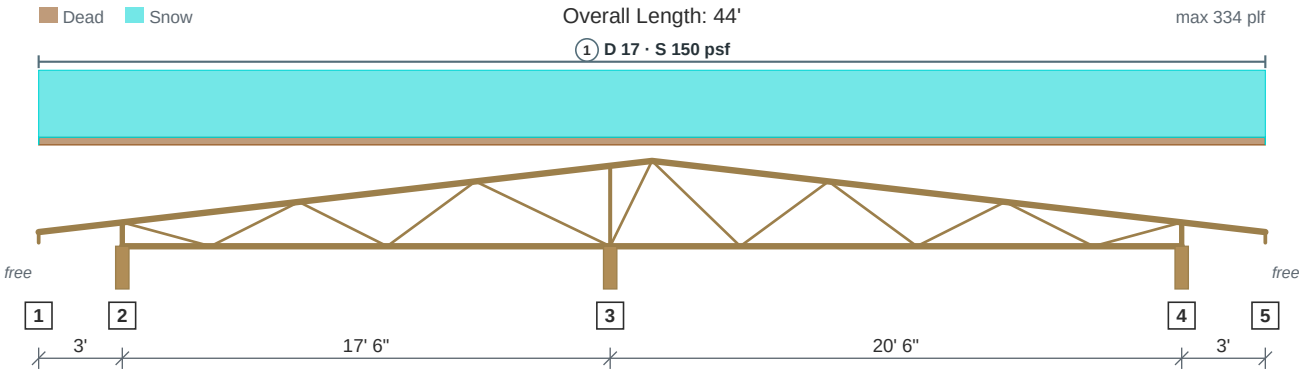
Trusses #4

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 44' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	323	2,853	**3,176**	Header #2, Header #3, Footing #1 (a framed wall down to the foundation)
3 @ 20' 6"	787	6,946	**7,733**	Footing - WD-#4, Header #55 (a framed wall down to the foundation)
4 @ 41'	385	3,401	**3,787**	Header #5, Header #7, Footing #3 (a framed wall down to the foundation)
5 @ 44'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 44'	24"	17	150	

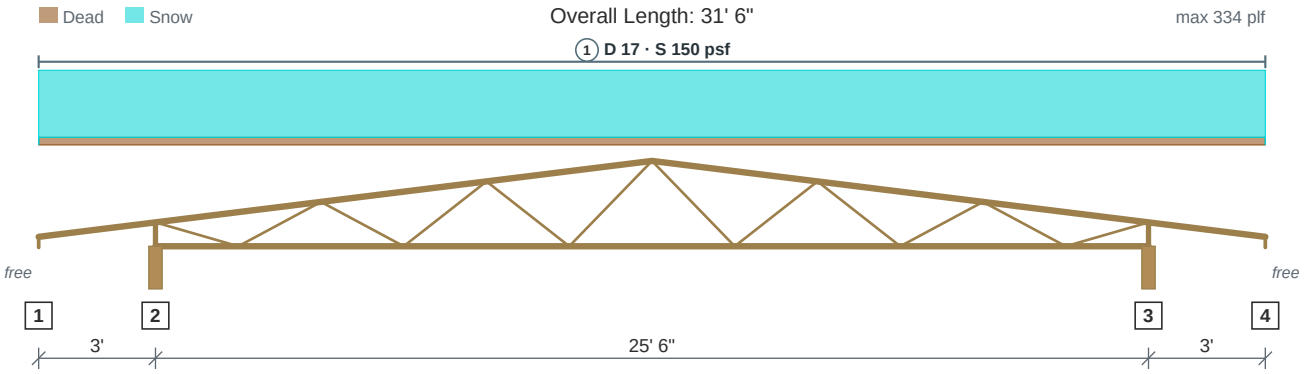
Trusses #5

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 31' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	536	4,725	**5,260**	Header #8, Header #9, Header #11, Footing #5 (a framed wall down to the foundation)
3 @ 28' 6"	536	4,725	**5,260**	Beam #5, Footing #8 (a framed wall down to the foundation)
4 @ 31' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 31' 6"	24"	17	150	

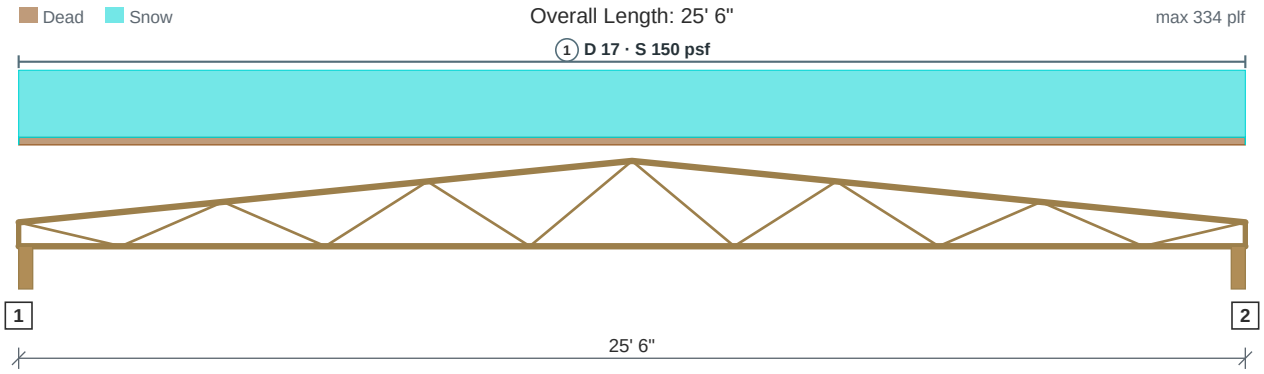
Trusses #6

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 25' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	434	3,825	**4,258**	Footing - WD-#6, Beam #44 (a framed wall down to the foundation)
2 @ 25' 6"	434	3,825	**4,258**	Beam #6 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 25' 6"	24"	17	150	

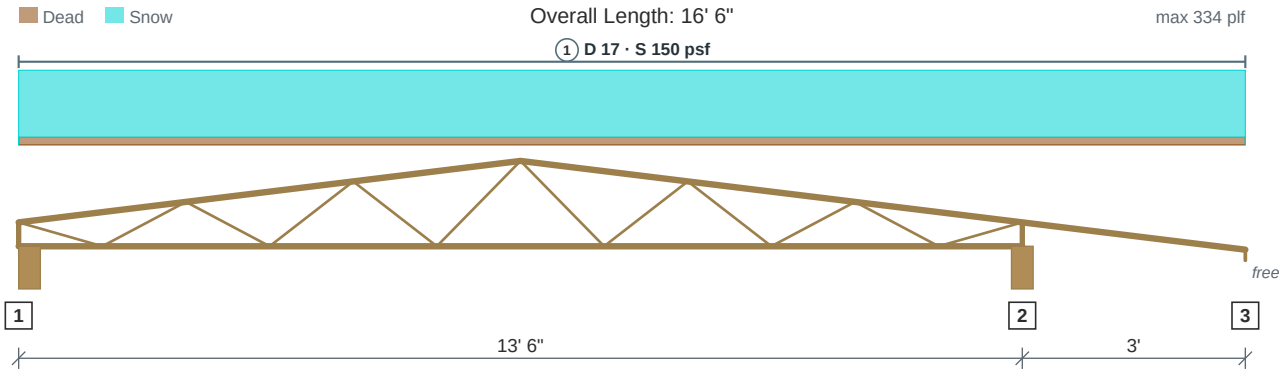
Trusses #7

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 16' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	218	1,925	**2,143**	Beam #5, Footing #8 (a framed wall down to the foundation)
2 @ 13' 6"	343	3,025	**3,368**	Beam #11, Footing #9 (a framed wall down to the foundation)
3 @ 16' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 16' 6"	24"	17	150	

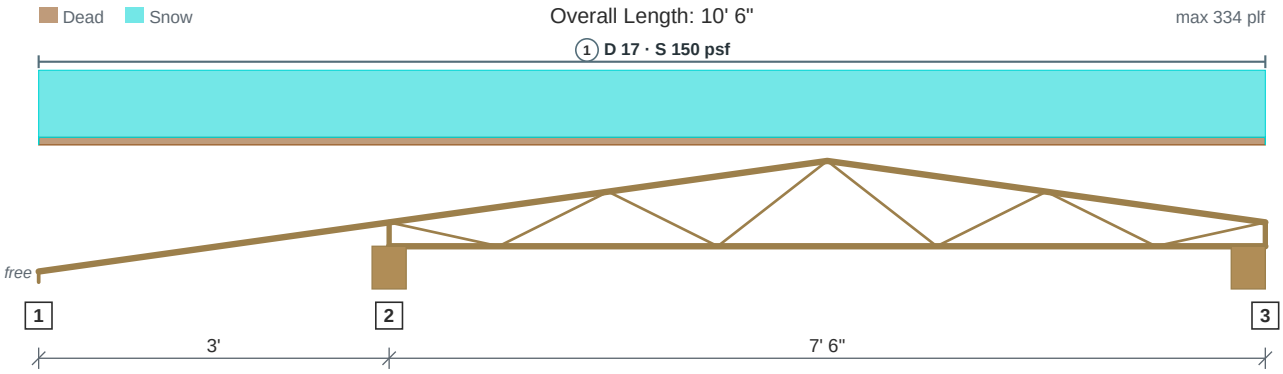
Trusses #8

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 10' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	250	2,205	**2,455**	Header #15, Footing #10 (a framed wall down to the foundation)
3 @ 10' 6"	107	945	**1,052**	Header #54, Footing - WD-#35 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 10' 6"	24"	17	150	

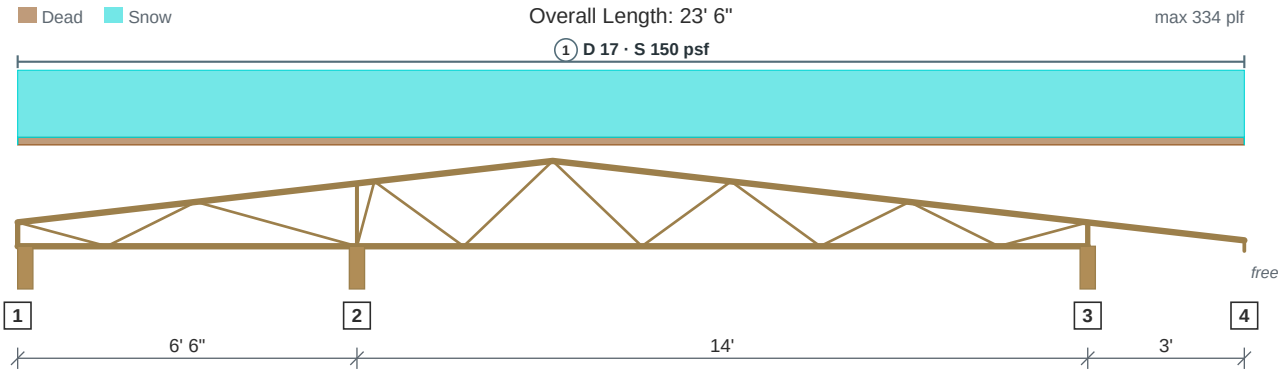
Trusses #9

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 23' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	22	196	**219**	Beam #13 (on top or in a hanger? not set)
2 @ 6' 6"	467	4,119	**4,585**	Header #16, Footing #12 (a framed wall down to the foundation)
3 @ 20' 6"	310	2,735	**3,045**	Beam #12 (on top or in a hanger? not set)
4 @ 23' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 23' 6"	24"	17	150	

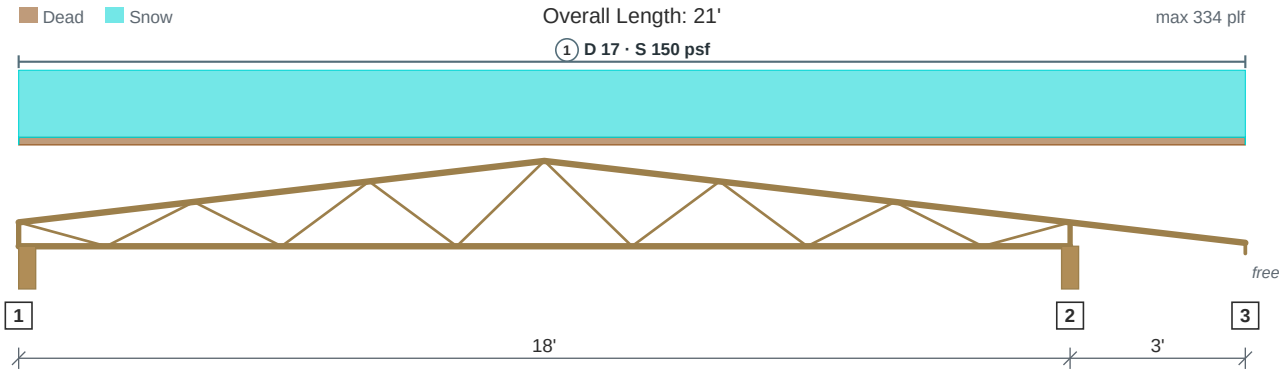
Trusses #10

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 21' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	298	2,625	**2,922**	Header #20, Header #21, Footing #13 (a framed wall down to the foundation)
2 @ 18'	416	3,675	**4,092**	Beam #12 (on top or in a hanger? not set)
3 @ 21'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 21'	24"	17	150	

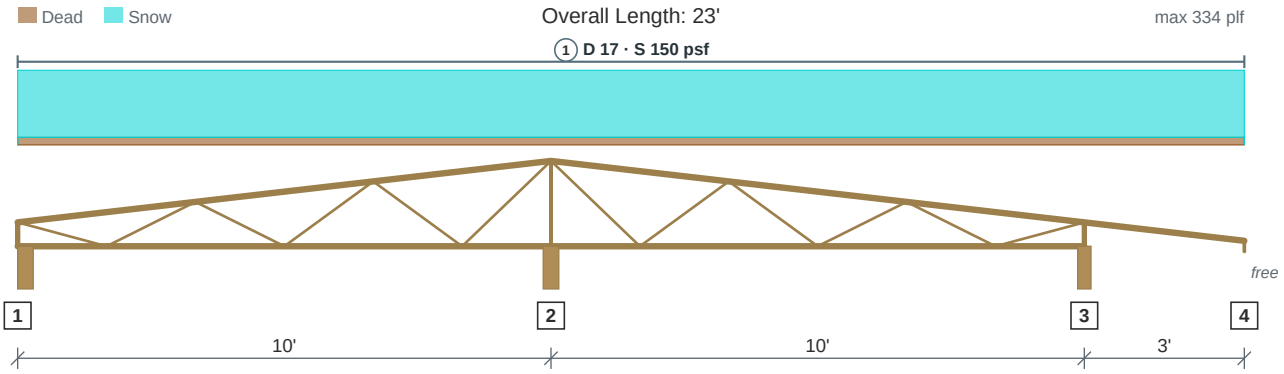
Trusses #11

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 23' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	131	1,159	**1,290**	Beam #14 (on top or in a hanger? not set)
2 @ 10'	402	3,548	**3,950**	Header #22, Footing #14 (a framed wall down to the foundation)
3 @ 20'	249	2,194	**2,442**	not linked
4 @ 23'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 23'	24"	17	150	

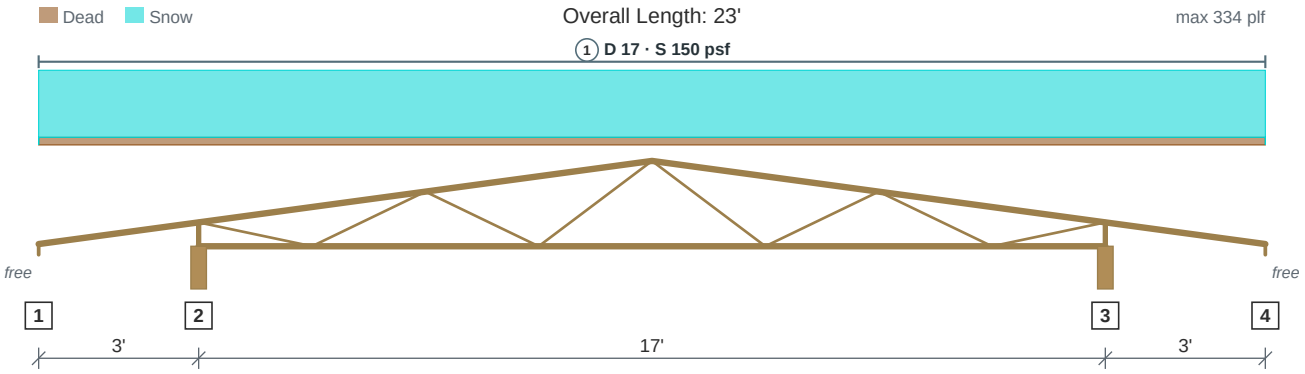
Trusses #12

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 23' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	391	3,450	**3,841**	Beam #16, Footing #15, Footing - WD-#16 (a framed wall down to the foundation)
3 @ 20'	391	3,450	**3,841**	Footing - WD-#17, Footing #18 (a framed wall down to the foundation)
4 @ 23'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 23'	24"	17	150	

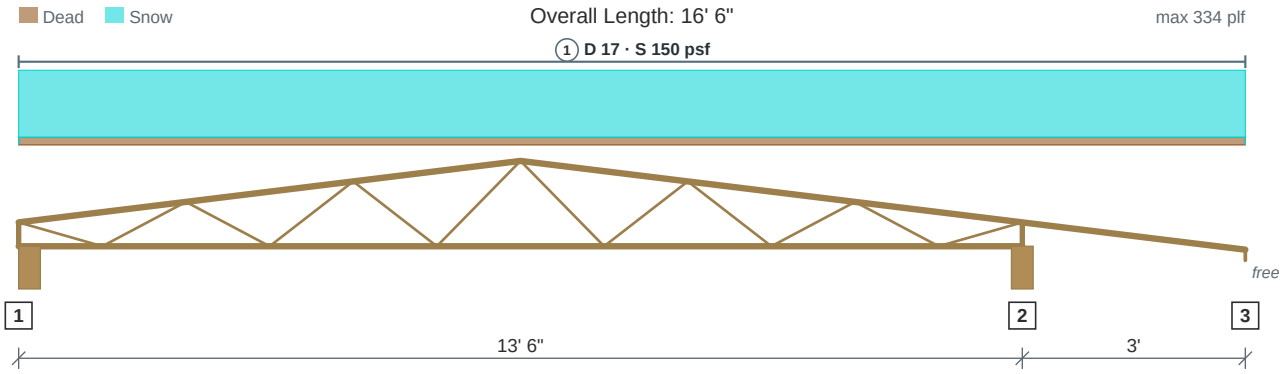
Trusses #13

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 16' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	218	1,925	**2,143**	Header #25 (on top or in a hanger? not set)
2 @ 13' 6"	343	3,025	**3,368**	Beam #17 (on top or in a hanger? not set)
3 @ 16' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 16' 6"	24"	17	150	

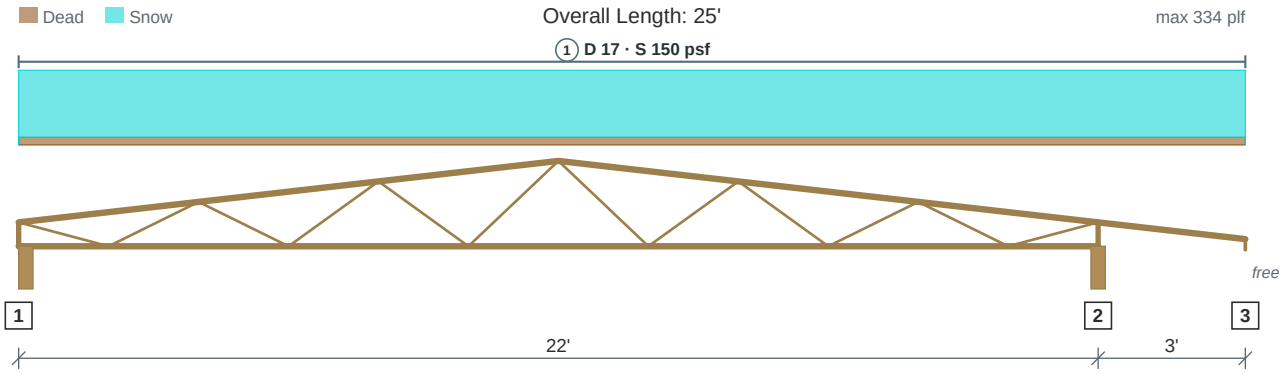
Trusses #14

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 25' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	367	3,239	**3,606**	not linked
2 @ 22'	483	4,261	**4,744**	Header #27 (on top or in a hanger? not set)
3 @ 25'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 25'	24"	17	150	

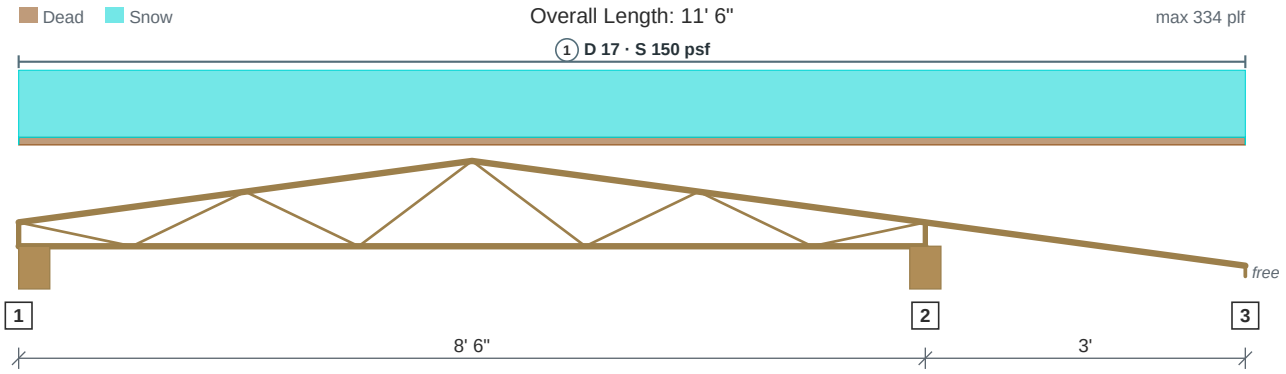
Trusses #15

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 11' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	126	1,116	**1,243**	Beam #20 (on top or in a hanger? not set)
2 @ 8' 6"	264	2,334	**2,598**	Header #28, Footing #19 (a framed wall down to the foundation)
3 @ 11' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 11' 6"	24"	17	150	

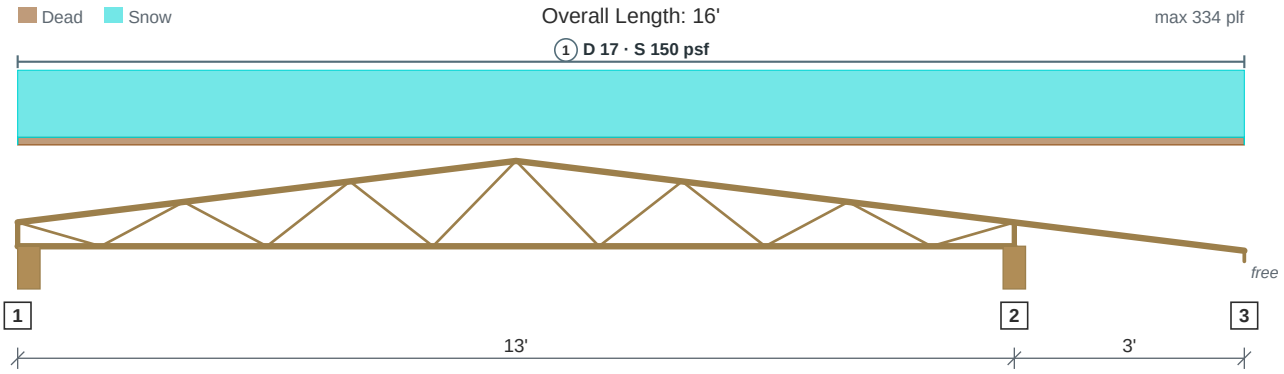
Trusses #16

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 16' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	209	1,846	**2,055**	Beam #20 (on top or in a hanger? not set)
2 @ 13'	335	2,954	**3,289**	Footing #20 (a framed wall down to the foundation)
3 @ 16'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 16'	24"	17	150	

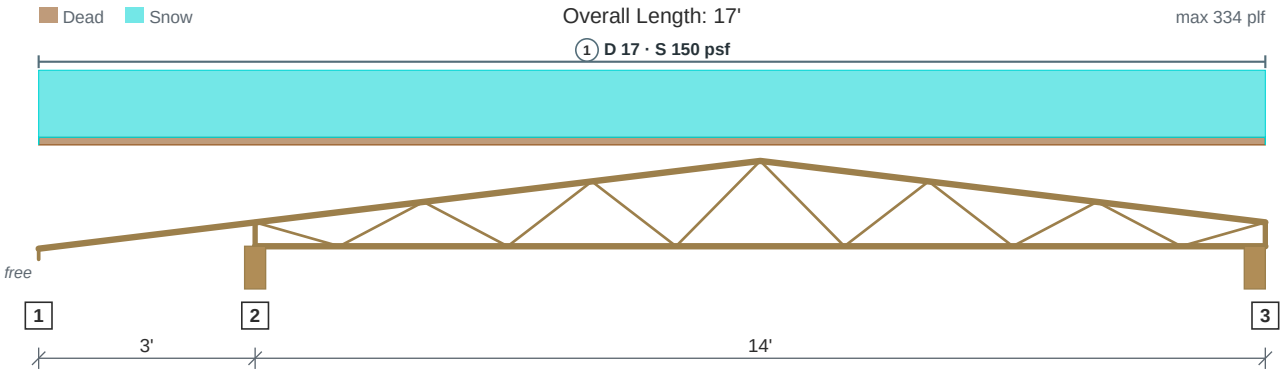
Trusses #17

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 17' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	351	3,096	**3,447**	Header #30, Footing #21 (a framed wall down to the foundation)
3 @ 17'	227	2,004	**2,231**	Beam #22 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 17'	24"	17	150	

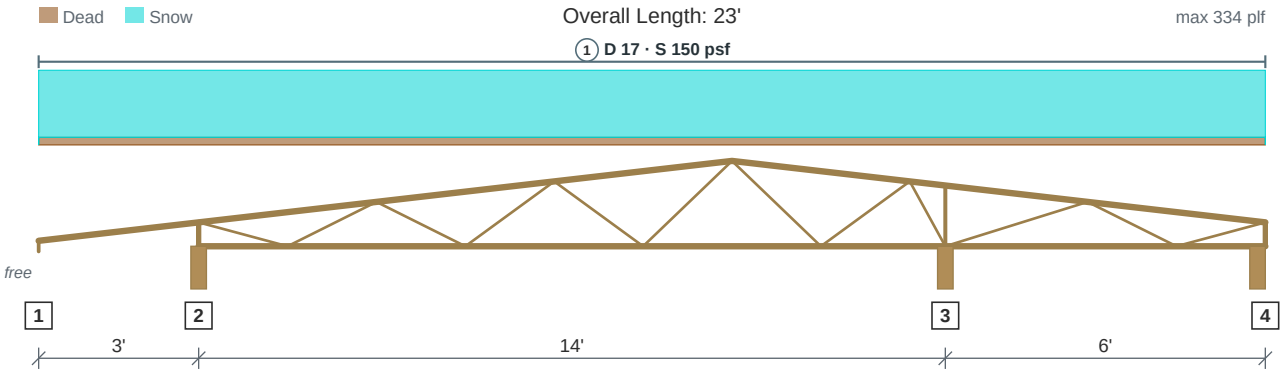
Trusses #18

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 23' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	310	2,734	**3,044**	Header #33, Footing #22 (a framed wall down to the foundation)
3 @ 17'	466	4,112	**4,579**	Header #34, Header #35, Footing - WD-#23 (a framed wall down to the foundation)
4 @ 23'	6	54	**60**	Beam #24, Footing - WD-#24 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 23'	24"	17	150	

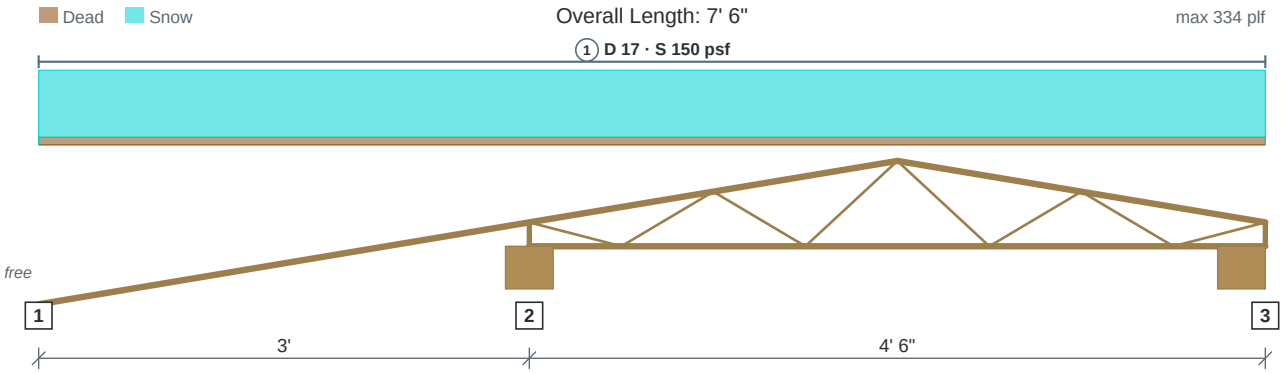
Trusses #19

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 7' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	212	1,875	**2,088**	Beam #23 (on top or in a hanger? not set)
3 @ 7' 6"	42	375	**418**	Footing - WD-#25, Footing #26 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 7' 6"	24"	17	150	

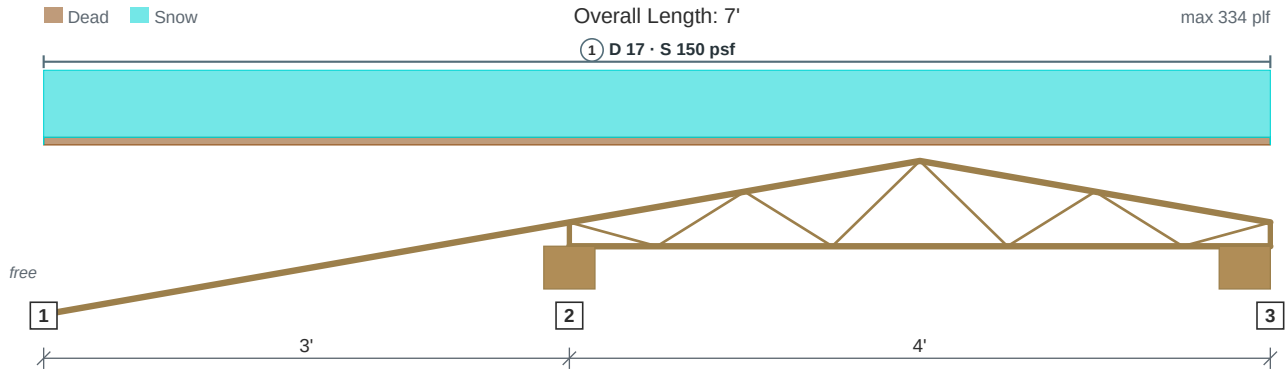
Trusses #20

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 7' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	208	1,838	**2,046**	Header #38, Footing #27 (a framed wall down to the foundation)
3 @ 7'	30	262	**292**	Beam #25 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 7'	24"	17	150	

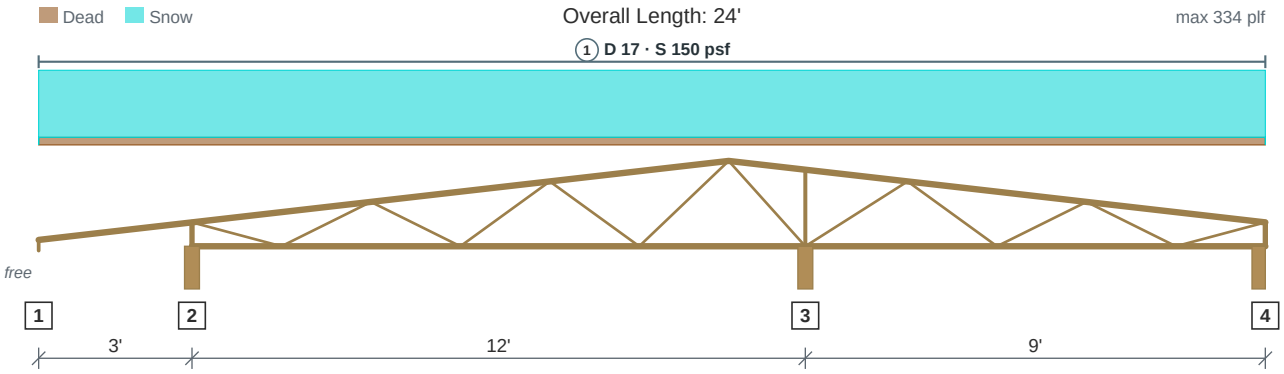
Trusses #21

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 24' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	281	2,479	**2,760**	Beam #34 (on top or in a hanger? not set)
3 @ 15'	432	3,816	**4,248**	Footing #28 (a framed wall down to the foundation)
4 @ 24'	103	905	**1,008**	Beam #31, Footing #29 (a framed wall down to the foundation)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 24'	24"	17	150	

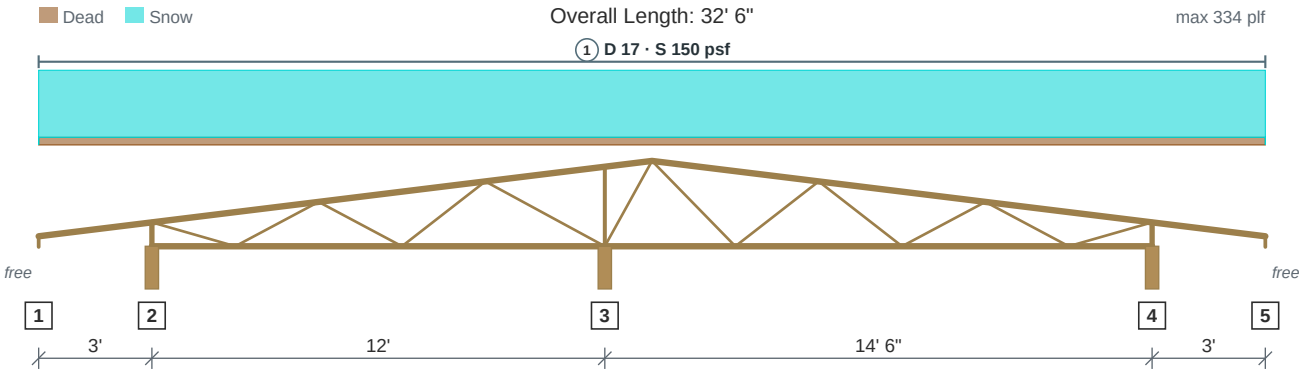
Trusses #22

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 32' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	261	2,305	**2,567**	Beam #34 (on top or in a hanger? not set)
3 @ 15'	532	4,696	**5,228**	Beam #35 (on top or in a hanger? not set)
4 @ 29' 6"	312	2,748	**3,060**	Beam #36 (on top or in a hanger? not set)
5 @ 32' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 32' 6"	24"	17	150	

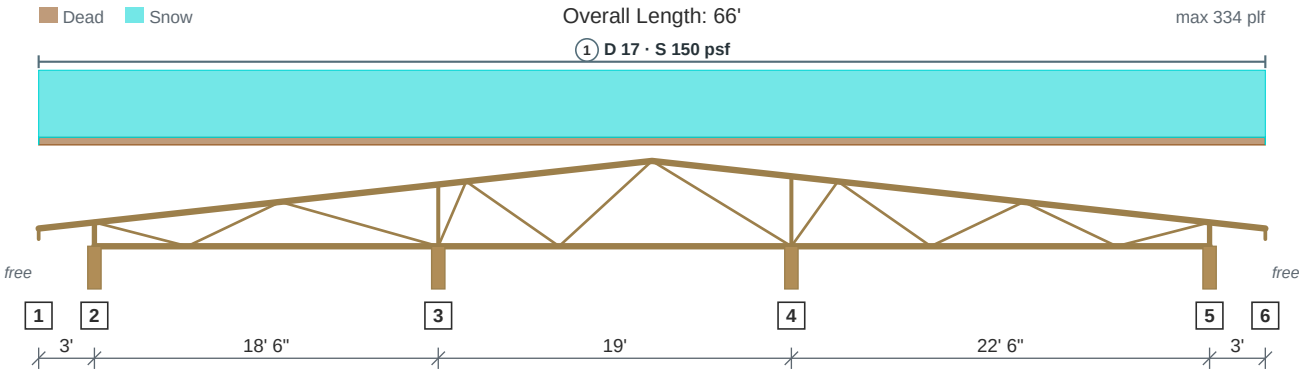
Trusses #23

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 66' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	368	3,245	**3,612**	Header #44, Footing #30 (a framed wall down to the foundation)
3 @ 21' 6"	658	5,809	**6,467**	not linked
4 @ 40' 6"	797	7,033	**7,830**	Beam #30 (on top or in a hanger? not set)
5 @ 63'	421	3,713	**4,134**	Header #45, Footing #31 (a framed wall down to the foundation)
6 @ 66'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 66'	24"	17	150	

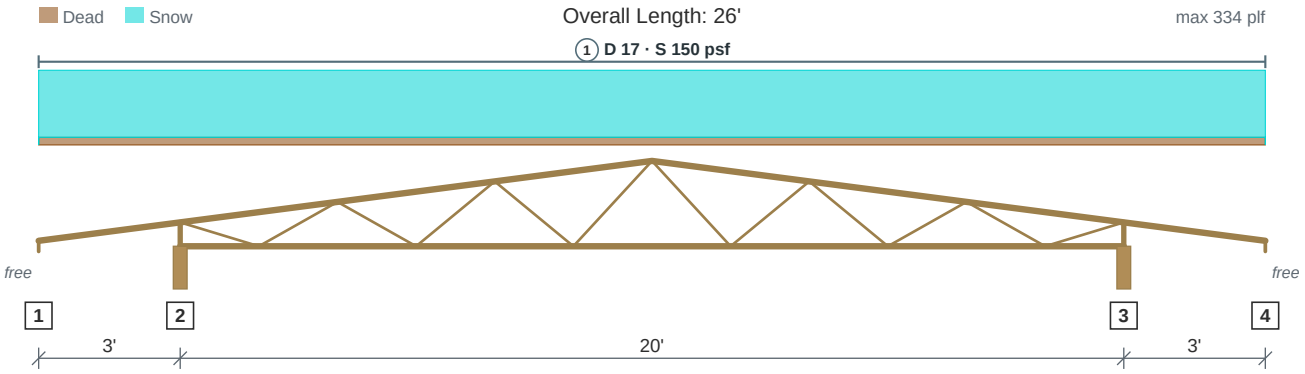
Trusses #24

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 26' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	442	3,900	**4,342**	Footing #32 (a framed wall down to the foundation)
3 @ 23'	442	3,900	**4,342**	Footing #33 (a framed wall down to the foundation)
4 @ 26'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 26'	24"	17	150	

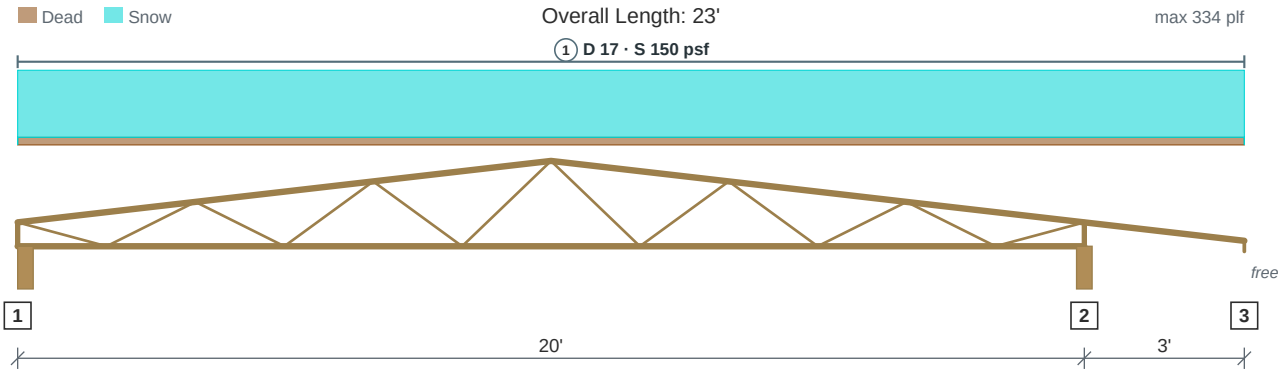
Trusses #25

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 23' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	332	2,932	**3,265**	Beam #33 (on top or in a hanger? not set)
2 @ 20'	450	3,968	**4,417**	Header #48 (on top or in a hanger? not set)
3 @ 23'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 23'	24"	17	150	

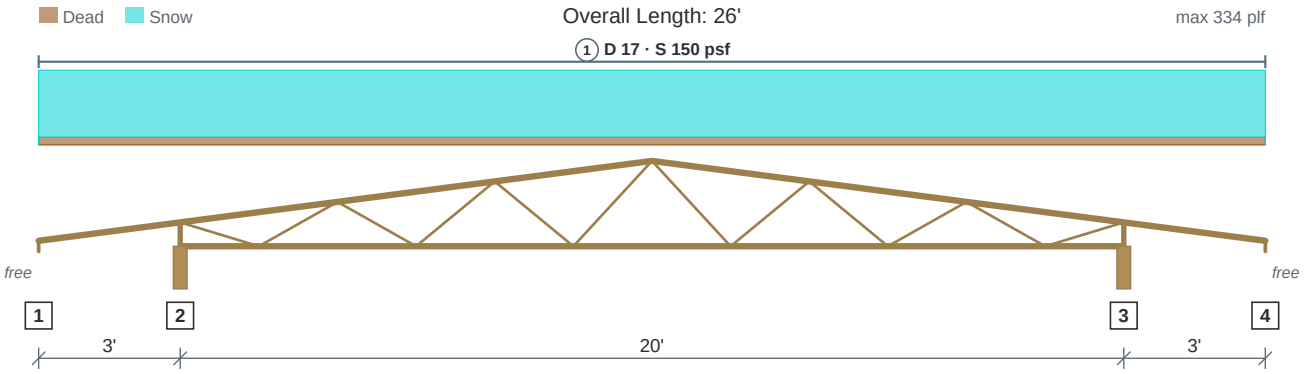
Trusses #26

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 26' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	442	3,900	**4,342**	not linked
3 @ 23'	442	3,900	**4,342**	not linked
4 @ 26'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 26'	24"	17	150	

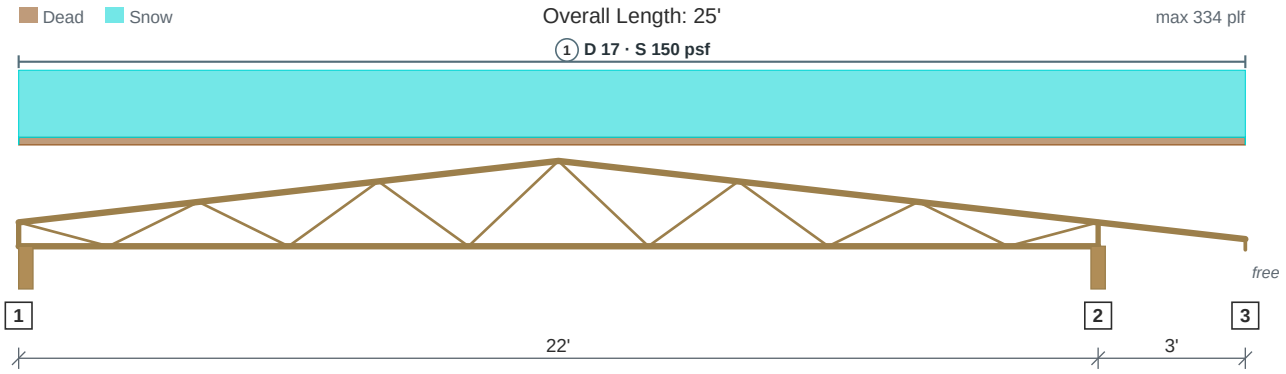
Trusses #27

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 25' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	367	3,239	**3,606**	Header #48, Footing #33 (a framed wall down to the foundation)
2 @ 22'	483	4,261	**4,744**	Header #51, Header #52, Footing #34 (a framed wall down to the foundation)
3 @ 25'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 25'	24"	17	150	

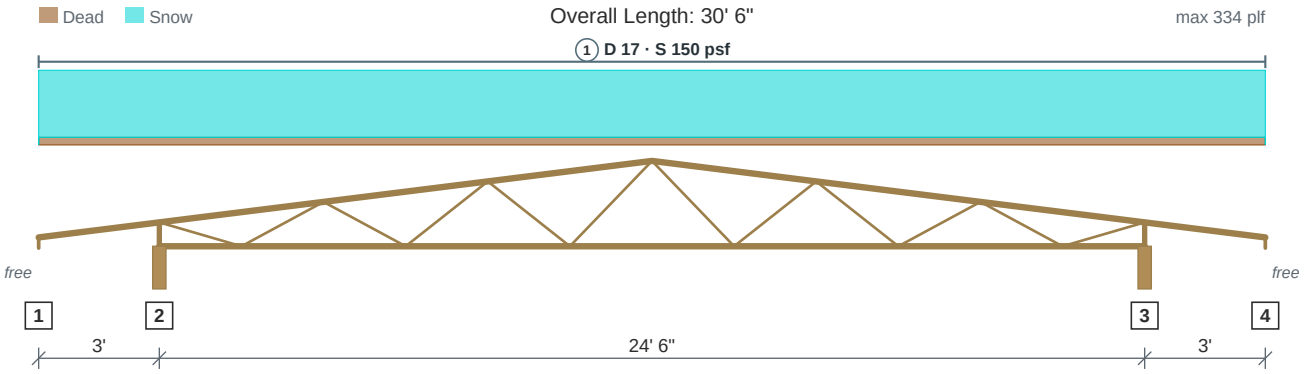
Trusses #28

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 30' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	518	4,575	**5,094**	Beam #37 (on top or in a hanger? not set)
3 @ 27' 6"	518	4,575	**5,094**	Header #17, Beam #13 (on top or in a hanger? not set)
4 @ 30' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 30' 6"	24"	17	150	

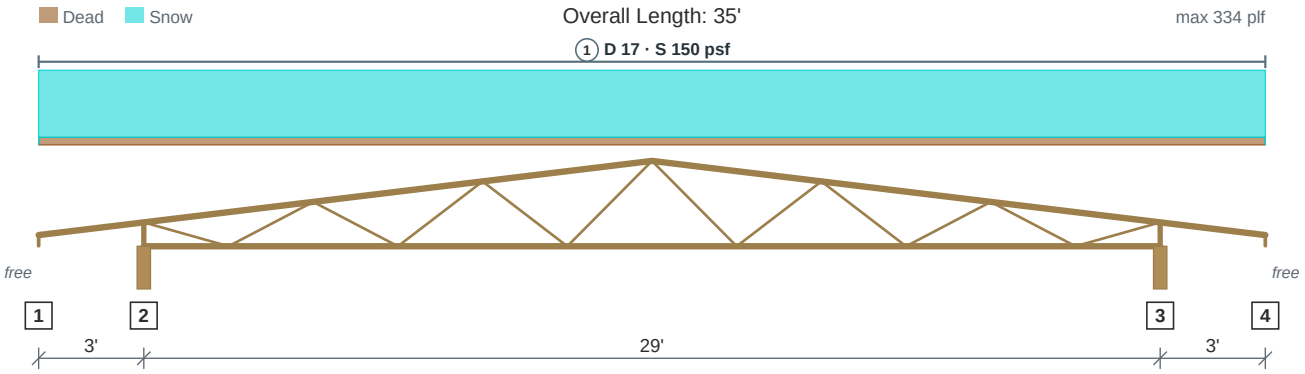
Trusses #29

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 35' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	595	5,250	**5,845**	Header #19, Header #54, Footing - WD-#35 (a framed wall down to the foundation)
3 @ 32'	595	5,250	**5,845**	Header #18, Header #20, Header #21, Footing #13 (a framed wall down to the foundation)
4 @ 35'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 35'	24"	17	150	

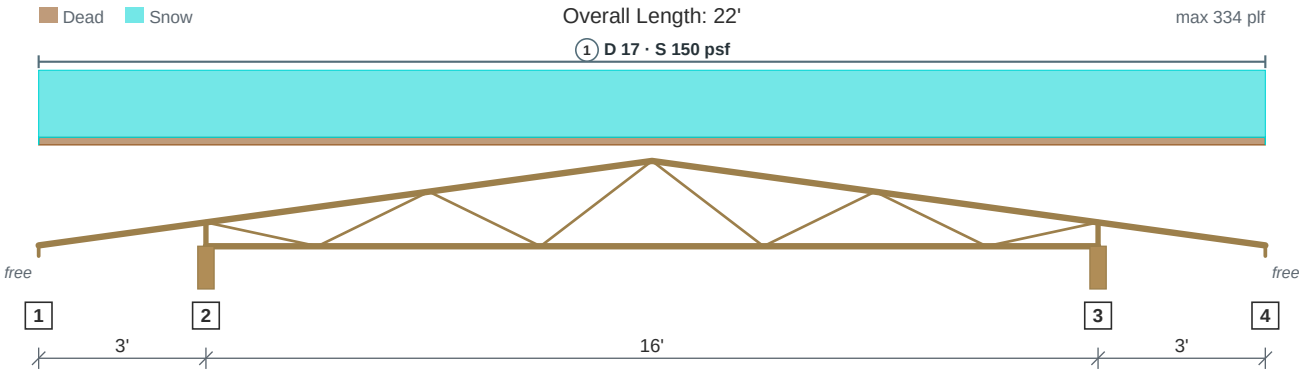
Trusses #30

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 22' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	374	3,300	**3,674**	not linked
3 @ 19'	374	3,300	**3,674**	Header #31, Beam #39 (on top or in a hanger? not set)
4 @ 22'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 22'	24"	17	150	

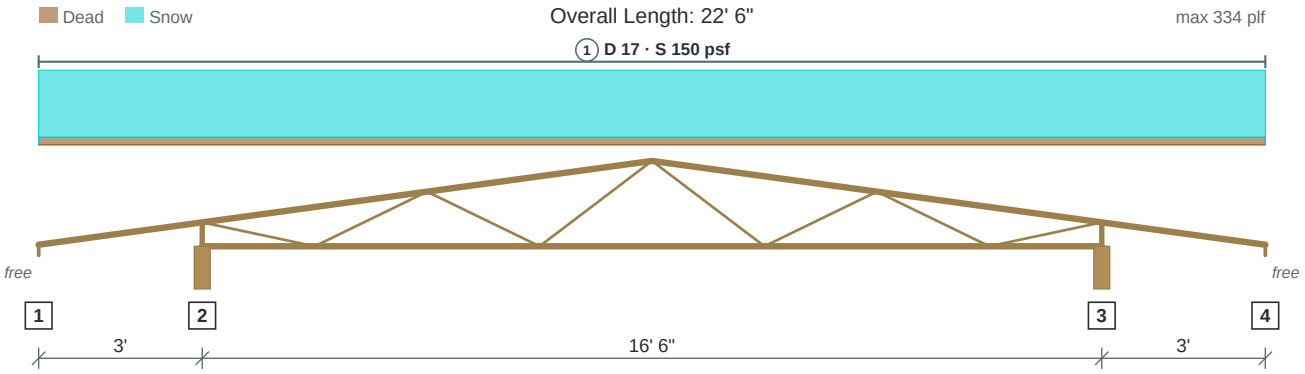
Trusses #31

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 22' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	382	3,375	**3,758**	Beam #38 (on top or in a hanger? not set)
3 @ 19' 6"	382	3,375	**3,758**	Beam #39 (on top or in a hanger? not set)
4 @ 22' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 22' 6"	24"	17	150	

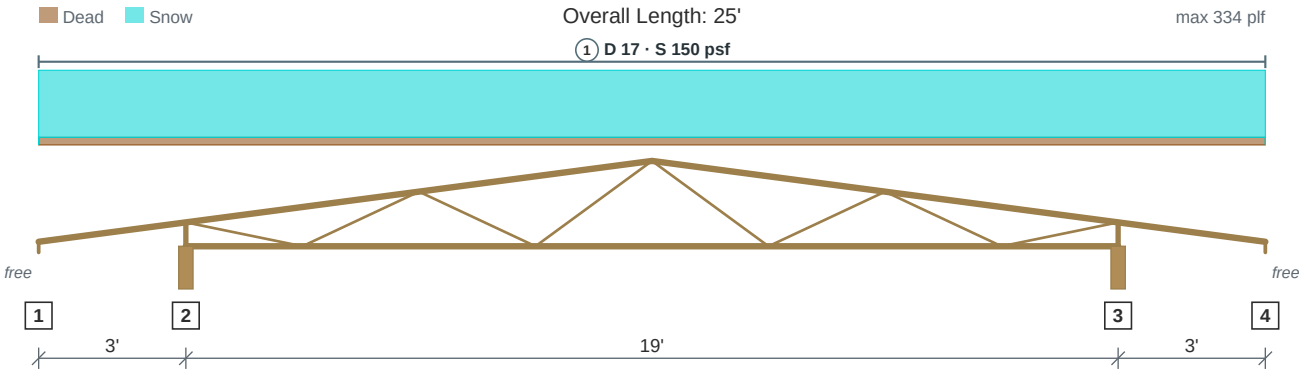
Trusses #32

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 25' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	425	3,750	**4,175**	Girder #7, Footing - WD-#24 (a framed wall down to the foundation)
3 @ 22'	425	3,750	**4,175**	Header #29, Beam #19, Girder #8 (on top or in a hanger? not set)
4 @ 25'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 25'	24"	17	150	

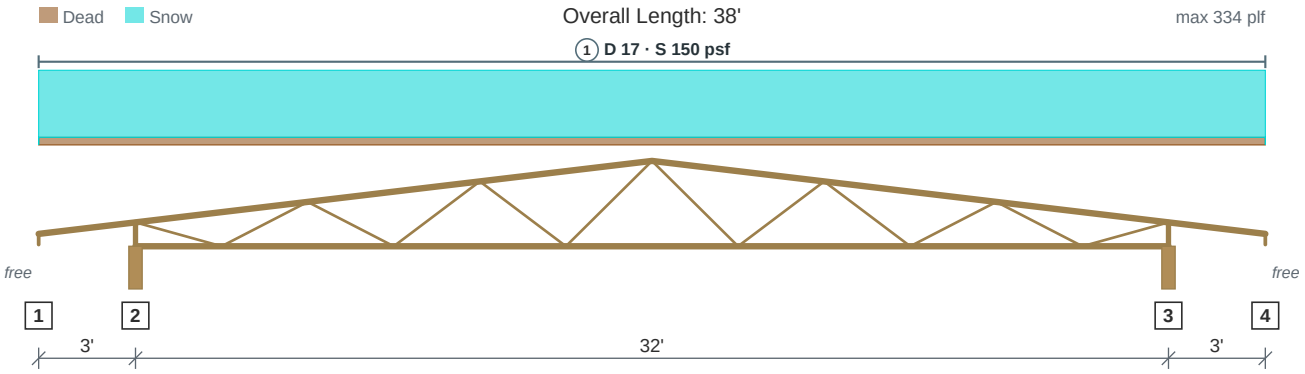
Trusses #33

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 38' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	646	5,700	**6,346**	Beam #24, Header #42, Footing - WD-#25, Footing #26 (a framed wall down to the foundation)
3 @ 35'	646	5,700	**6,346**	Header #43, Beam #30, Beam #30 (on top or in a hanger? not set)
4 @ 38'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 38'	24"	17	150	

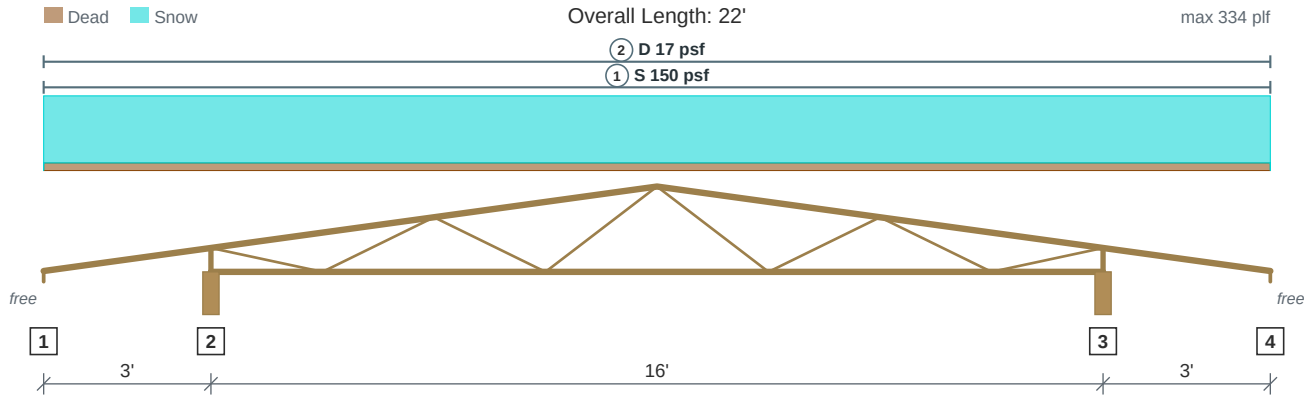
Trusses #34

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 22' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	374	3,300	**3,674**	Header #39, Header #40, Header #41, Beam #26, Header #53, Beam #43, Beam #43, Beam #43, Footing #29 (a framed wall down to the foundation)
3 @ 19'	374	3,300	**3,674**	Beam #27, Beam #28 (bears on top)
4 @ 22'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 22'	24"	--	150	Uniform
2 - Uniform (PSF)	0 to 22'	24"	17	--	

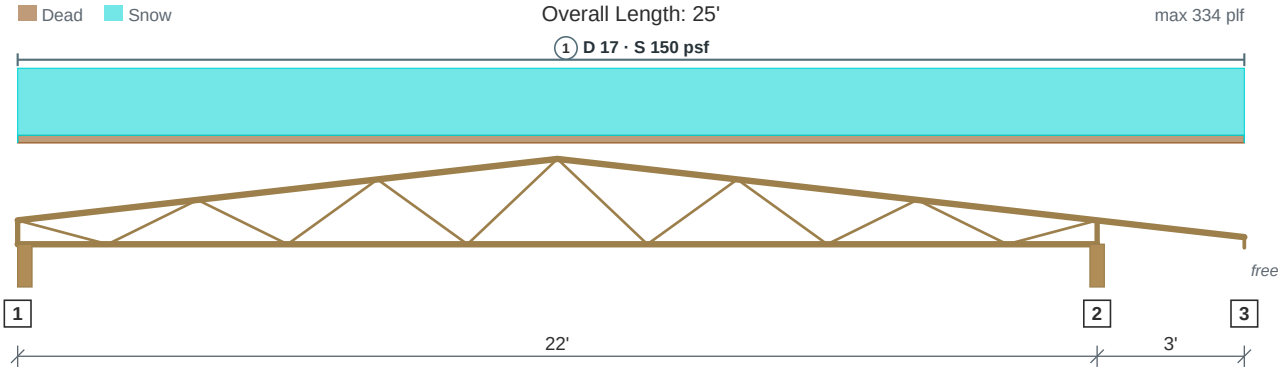
Trusses #35

Roof truss (generic) @ 24" o.c.

Level: Roof | Length: 25' | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- Generic roof trusses @ 24" o.c., modeled so the loads they carry reach the members and walls that support them as linked loads. The size in the model is a placeholder, so no size or design check is shown; the trusses themselves are designed by the truss manufacturer.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	367	3,239	**3,606**	Beam #30 (on top or in a hanger? not set)
2 @ 22'	483	4,261	**4,744**	Header #56 (on top or in a hanger? not set)
3 @ 25'	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 25'	24"	17	150	

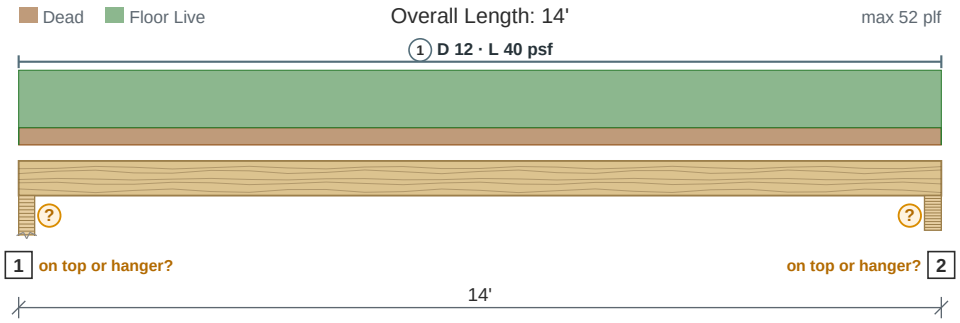
Joist #1

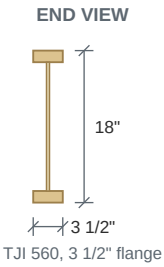
(1) 18" Weyerhaeuser TJI 560 @ 12" o.c.

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 14' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 23% used
Section adequacy 77% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	398 @ 0	1,725 (3 1/2")	Passed (23%)	--	D+L
Shear (lbs)	398 @ 0	3,030	Passed (13%)	1.00	D+L
Moment (Ft-lbs)	1,392 @ 7'	14,550	Passed (10%)	1.00	D+L
Live Load Defl. (in)	0.031 @ 7'	0.467	Passed (L/5,409)	--	L
Total Load Defl. (in)	0.044 @ 7'	0.7	Passed (L/3,809)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 4.8 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

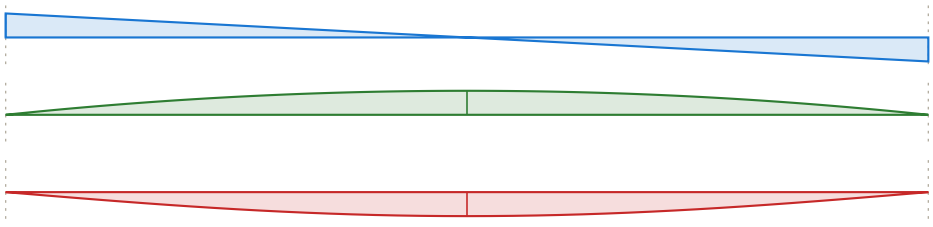
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	118	280	**398**	Beam #6 (on top or in a hanger? not set)
2 @ 14'	3 1/2"	--	118	280	**398**	Beam #40 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	14' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 14'	N/A	4.8	--	
1 - Uniform (PSF)	0 to 14'	12"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 398 @ 0

Moment (ft-lbs)
D+L
max 1,392 @ 7'

Deflection (in)
D+L
0.03 in down @ 7'
limit 0.7 in on the span

Joist #2

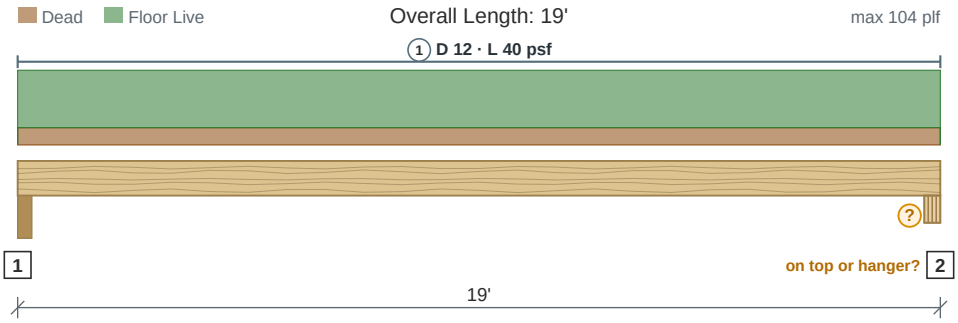
(1) 18" Weyerhaeuser TJI 560 @ 24" o.c.

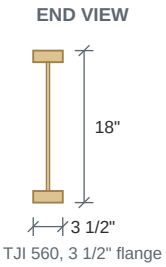
Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 19' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 60% used

Section adequacy 40.1% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,034 @ 0	1,725 (3 1/2")	Passed (60%)	--	D+L
Shear (lbs)	1,034 @ 0	3,030	Passed (34%)	1.00	D+L
Moment (Ft-lbs)	4,910 @ 9' 6"	14,550	Passed (34%)	1.00	D+L
Live Load Defl. (in)	0.18 @ 9' 6"	0.633	Passed (L/1,266)	--	L
Total Load Defl. (in)	0.245 @ 9' 6"	0.95	Passed (L/931)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 4.8 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

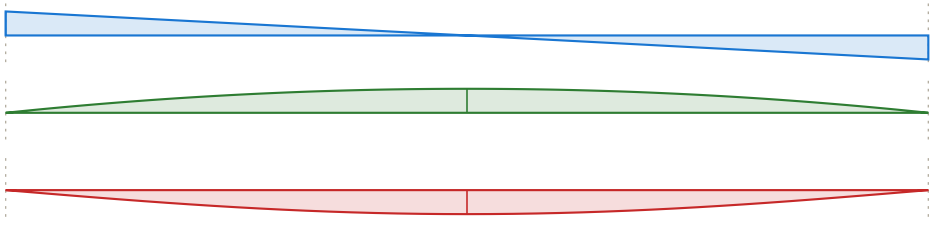
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	274	760	**1,034**	not linked
2 @ 19'	3 1/2"	--	274	760	**1,034**	Beam #15 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	19' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 19'	N/A	4.8	--	
1 - Uniform (PSF)	0 to 19'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 1,034 @ 0

Moment (ft-lbs)
D+L
max 4,910 @ 9' 6"

Deflection (in)
D+L
0.196 in down @ 9' 6"
limit 0.95 in on the span

Joist #3

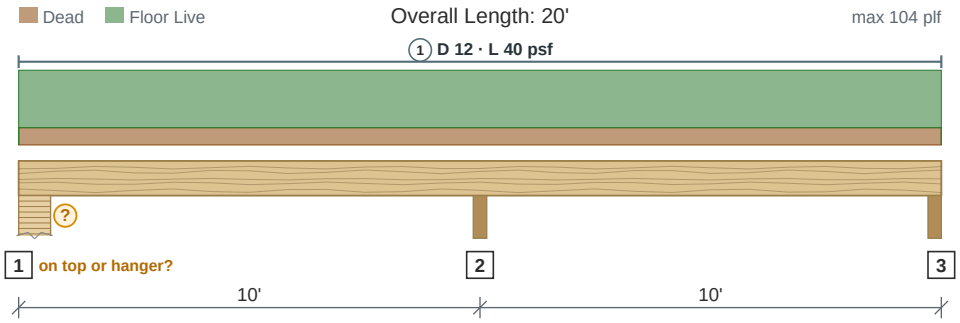
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

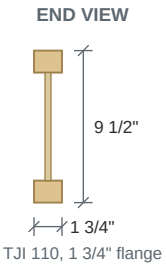
Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 20' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 69% used

Section adequacy 31.3% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,329 @ 10'	1,935 (3 1/2")	Passed (69%)	--	D+L
Shear (lbs)	664 @ 10'	1,220	Passed (54%)	1.00	D+L
Moment (Ft-lbs)	1,329 @ 3' 8 3/8"	2,500	Passed (53%)	1.00	D+L
Live Load Defl. (in)	0.07 @ 16'	0.333	Passed (L/1,714)	--	L
Total Load Defl. (in)	0.093 @ 16'	0.5	Passed (L/1,290)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

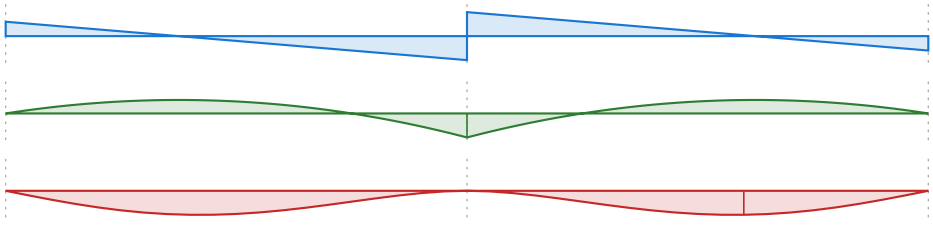
	Bearing Length		Loads to Supports (lbs)			
Supports	Provided	Required	Dead	Floor Live	Total	Load goes to
1 @ 0	3 1/2"	--	99	300	**399**	Beam #40 (on top or in a hanger? not set)
2 @ 10'	3 1/2"	--	329	1,000	**1,329**	not linked
3 @ 20'	3"	--	99	300	**399**	not linked

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	10' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 20'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 20'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 664 @ 10'

Moment (ft-lbs)
D+L
max -1,329 @ 10'

Deflection (in)
D+L
0.063 in down @ 16'
limit 0.5 in on the span

Joist #4

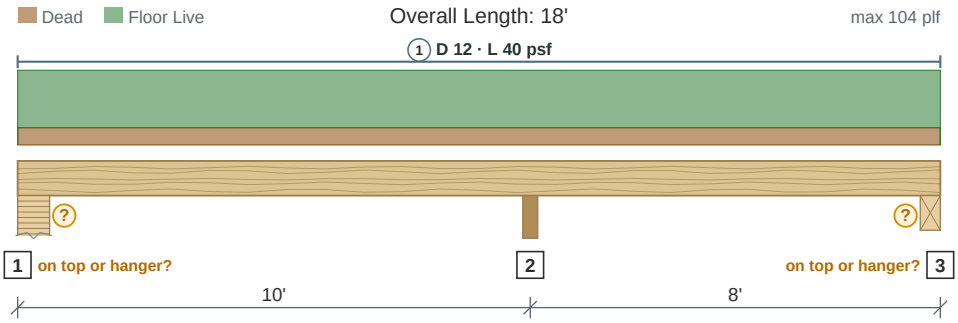
PASSED

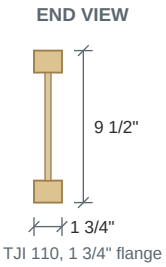
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Controls: Bearing 62% used

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 18' | 2018 IRC | 2018 NDS | ASD

Section adequacy 37.6% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,208 @ 10'	1,935 (3 1/2")	Passed (62%)	--	D+L
Shear (lbs)	643 @ 10'	1,220	Passed (53%)	1.00	D+L
Moment (Ft-lbs)	1,116 @ 3' 11 1/2"	2,500	Passed (45%)	1.00	D+L
Live Load Defl. (in)	0.077 @ 4' 4 3/16"	0.333	Passed (L/1,562)	--	L
Total Load Defl. (in)	0.102 @ 4' 4 3/16"	0.5	Passed (L/1,175)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

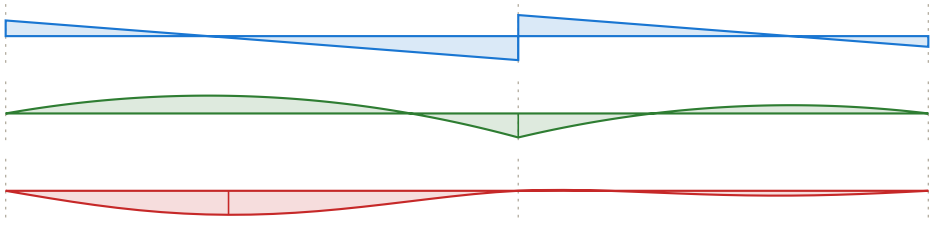
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	104	316	**420**	Beam #40 (on top or in a hanger? not set)
2 @ 10'	3 1/2"	--	299	909	**1,208**	not linked
3 @ 18'	3"	--	71	215	**286**	Beam #41 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	10' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 18'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 18'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -643 @ 10'

Moment (ft-lbs)
D+L
max -1,116 @ 10'

Deflection (in)
D+L
0.077 in down @ 4' 4 3/16"
limit 0.5 in on the span

Joist #5

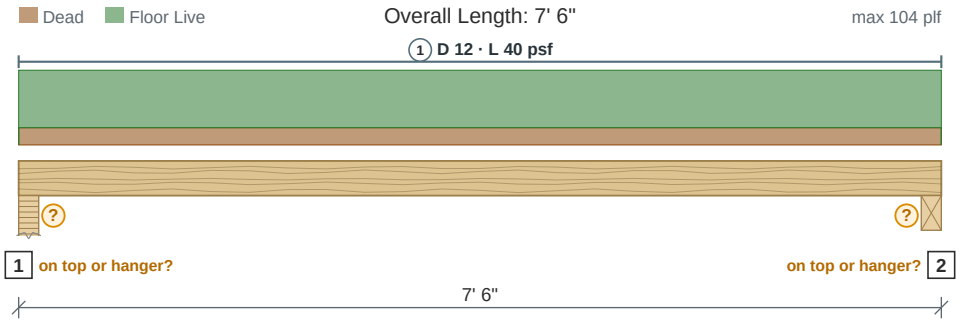
PASSED

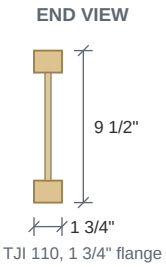
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Controls: Bearing 33% used

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 7' 6" | 2018 IRC | 2018 NDS | ASD

Section adequacy 67.3% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	399 @ 0	1,220 (3 1/2")	Passed (33%)	--	D+L
Shear (lbs)	399 @ 0	1,220	Passed (33%)	1.00	D+L
Moment (Ft-lbs)	747 @ 3' 9"	2,500	Passed (30%)	1.00	D+L
Live Load Defl. (in)	0.049 @ 3' 9"	0.25	Passed (L/1,840)	--	L
Total Load Defl. (in)	0.065 @ 3' 9"	0.375	Passed (L/1,385)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

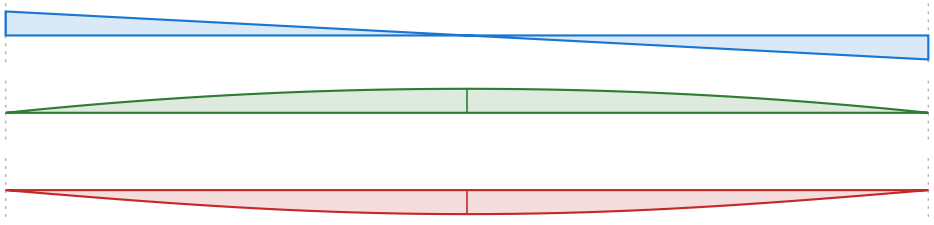
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	99	300	**399**	Beam #22 (on top or in a hanger? not set)
2 @ 7' 6"	3 1/2"	--	99	300	**399**	Beam #42 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	7' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 7' 6"	N/A	2.3	--	
1 - Uniform (PSF)	0 to 7' 6"	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 399 @ 0

Moment (ft-lbs)
D+L
max 747 @ 3' 9"

Deflection (in)
D+L
0.048 in down @ 3' 9"
limit 0.375 in on the span

Joist #6

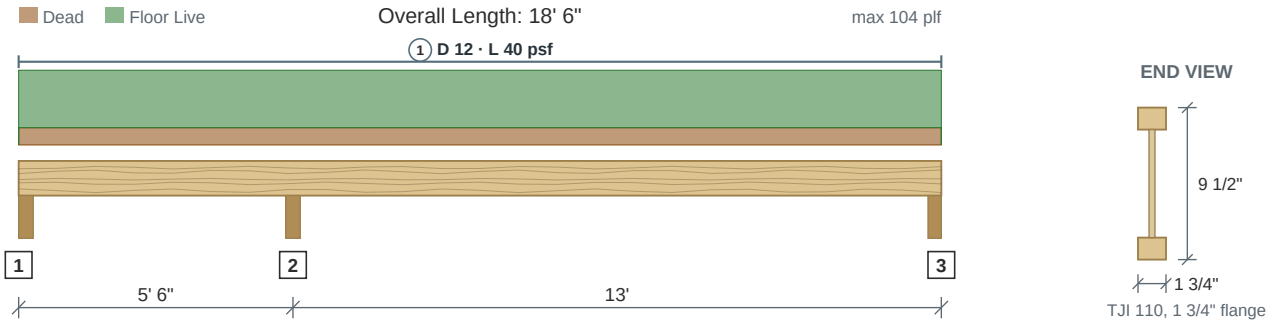
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 18' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 74% used

Section adequacy 26.5% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,422 @ 5' 6"	1,935 (3 1/2")	Passed (74%)	--	D+L
Shear (lbs)	822 @ 5' 6"	1,220	Passed (67%)	1.00	D+L
Moment (Ft-lbs)	1,698 @ 13' 2 3/4"	2,500	Passed (68%)	1.00	D+L
Live Load Defl. (in)	0.21 @ 12' 8 1/16"	0.433	Passed (L/743)	--	L
Total Load Defl. (in)	0.279 @ 12' 8 1/16"	0.65	Passed (L/559)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

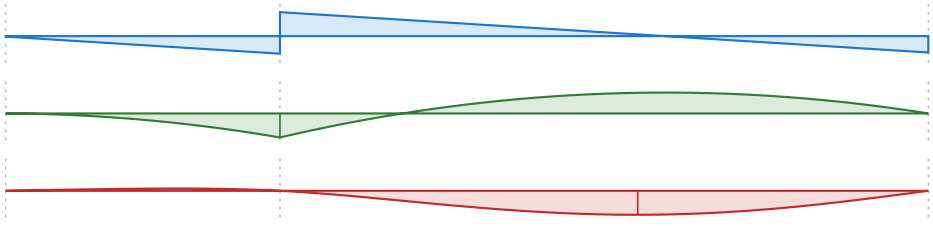
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	-4	-12	**-16**	not linked
2 @ 5' 6"	3 1/2"	--	352	1,071	**1,422**	not linked
3 @ 18' 6"	3"	--	139	422	**560**	not linked

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	13' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 18' 6"	N/A	2.3	--	
1 - Uniform (PSF)	0 to 18' 6"	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 822 @ 5' 6"

Moment (ft-lbs)
D+L
max -1,697 @ 5' 6"

Deflection (in)
D+L
0.241 in down @ 12' 8 1/16"
limit 0.65 in on the span

Joist #7

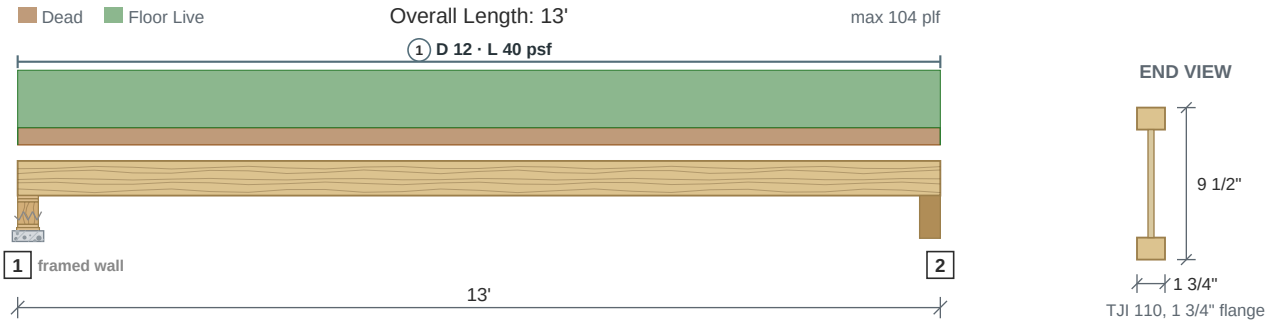
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 13' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 90% used

Section adequacy 10.2% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	691 @ 0	1,220 (3 1/2")	Passed (57%)	--	D+L
Shear (lbs)	691 @ 0	1,220	Passed (57%)	1.00	D+L
Moment (Ft-lbs)	2,246 @ 6' 6"	2,500	Passed (90%)	1.00	D+L
Live Load Defl. (in)	0.365 @ 6' 6"	0.433	Passed (L/427)	--	L
Total Load Defl. (in)	0.486 @ 6' 6"	0.65	Passed (L/321)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

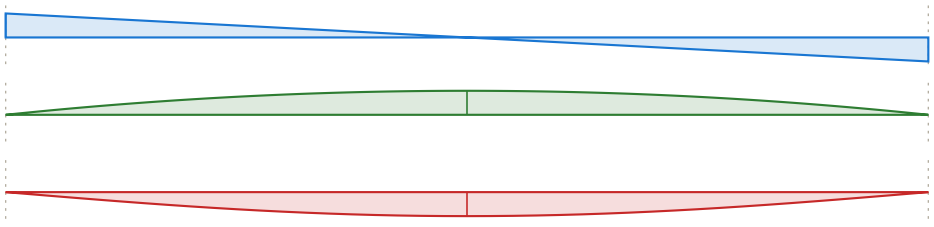
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	171	520	**691**	Footing - WD-#24 (a framed wall down to the foundation)
2 @ 13'	3 1/2"	--	171	520	**691**	not linked

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	13' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 13'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 13'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 691 @ 0

Moment (ft-lbs)
D+L
max 2,246 @ 6' 6"

Deflection (in)
D+L
0.435 in down @ 6' 6"
limit 0.65 in on the span

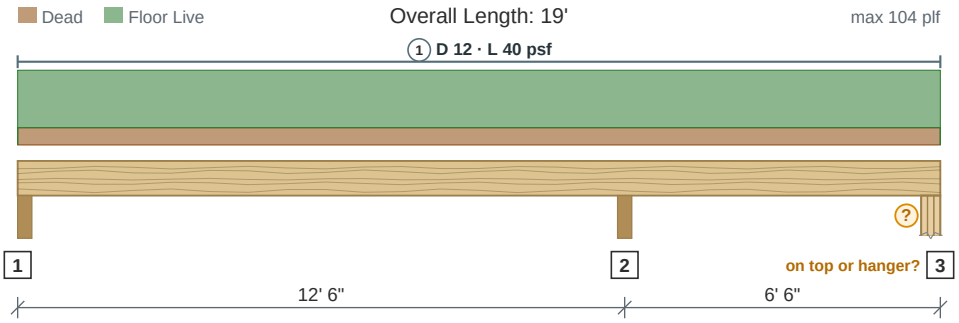
Joist #8

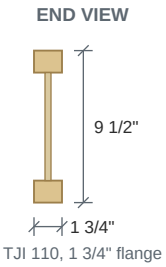
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 19' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 71% used
Section adequacy 29% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,374 @ 12' 6"	1,935 (3 1/2")	Passed (71%)	--	D+L
Shear (lbs)	789 @ 12' 6"	1,220	Passed (65%)	1.00	D+L
Moment (Ft-lbs)	1,558 @ 5' 7/16"	2,500	Passed (62%)	1.00	D+L
Live Load Defl. (in)	0.182 @ 5' 6 11/16"	0.417	Passed (L/823)	--	L
Total Load Defl. (in)	0.242 @ 5' 6 11/16"	0.625	Passed (L/619)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

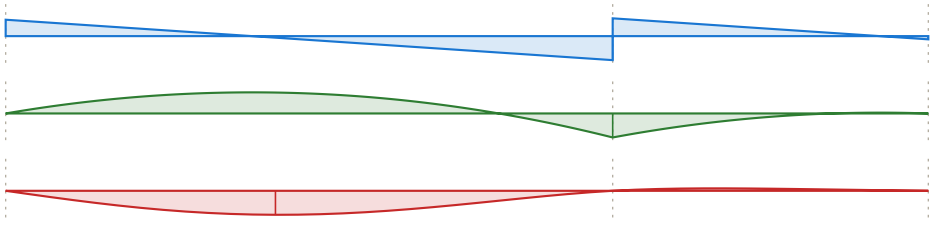
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	134	406	**540**	not linked
2 @ 12' 6"	3 1/2"	--	340	1,034	**1,374**	not linked
3 @ 19'	3"	--	26	80	**106**	Beam #19 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 19'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 19'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -789 @ 12' 6"

Moment (ft-lbs)
D+L
max -1,558 @ 12' 6"

Deflection (in)
D+L
0.207 in down @ 5' 6 11/16"
limit 0.625 in on the span

Joist #9

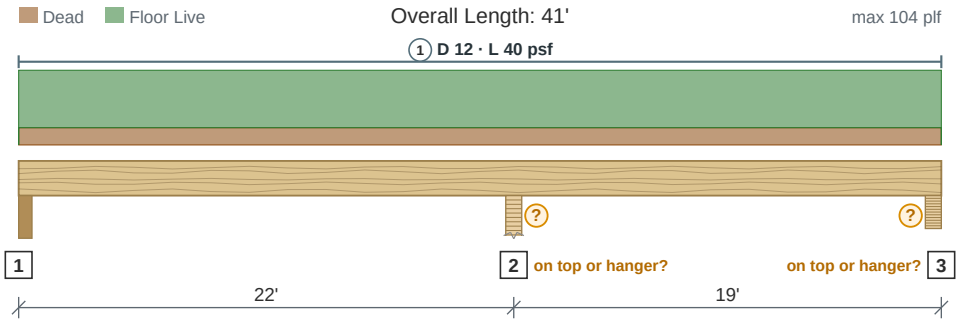
PASSED

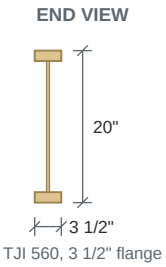
(1) 20" Weyerhaeuser TJI 560 @ 24" o.c.

Controls: Bearing 94% used

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 41' | 2018 IRC | 2018 NDS | ASD

Section adequacy 6.4% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,808 @ 22'	3,000 (3 1/2")	Passed (94%)	--	D+L
Shear (lbs)	1,465 @ 22'	3,345	Passed (44%)	1.00	D+L
Moment (Ft-lbs)	5,823 @ 8' 7 5/16"	16,165	Passed (36%)	1.00	D+L
Live Load Defl. (in)	0.137 @ 10'	0.733	Passed (L/1,928)	--	L
Total Load Defl. (in)	0.187 @ 10'	1.1	Passed (L/1,414)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 5.1 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

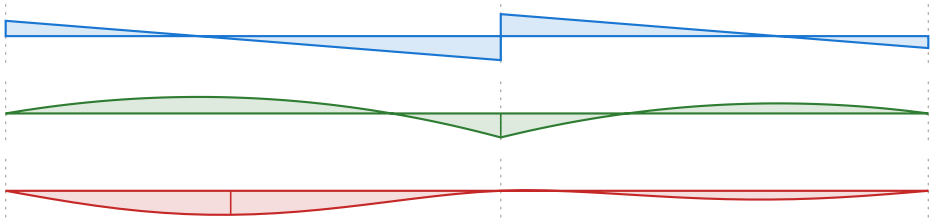
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	250	686	**935**	not linked
2 @ 22'	3 1/2"	--	749	2,059	**2,808**	Beam #43 (on top or in a hanger? not set)
3 @ 41'	3"	--	195	535	**730**	Beam #27 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	22' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 41'	N/A	5.1	--	
1 - Uniform (PSF)	0 to 41'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -1,465 @ 22'

Moment (ft-lbs)
D+L
max -5,823 @ 22'

Deflection (in)
D+L
0.134 in down @ 10'
limit 1.1 in on the span

Joist #10

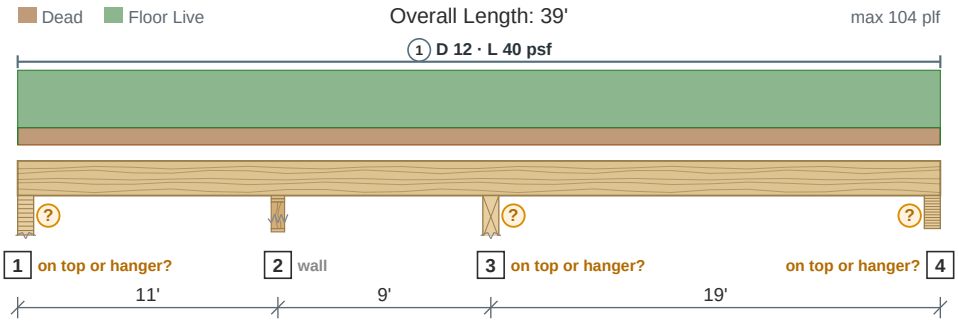
PASSED

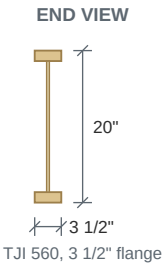
(1) 20" Weyerhaeuser TJI 560 @ 24" o.c.

Controls: Bearing 59% used

Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 39' | 2018 IRC | 2018 NDS | ASD

Section adequacy 40.6% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	2,051 @ 20'	3,455 (5 1/2")	Passed (59%)	--	D+L
Shear (lbs)	1,226 @ 20'	3,345	Passed (37%)	1.00	D+L
Moment (Ft-lbs)	3,600 @ 31' 2 3/8"	16,165	Passed (22%)	1.00	D+L
Live Load Defl. (in)	0.088 @ 30' 5 3/8"	0.633	Passed (L/2,577)	--	L
Total Load Defl. (in)	0.121 @ 30' 5 3/8"	0.95	Passed (L/1,890)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 5.1 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

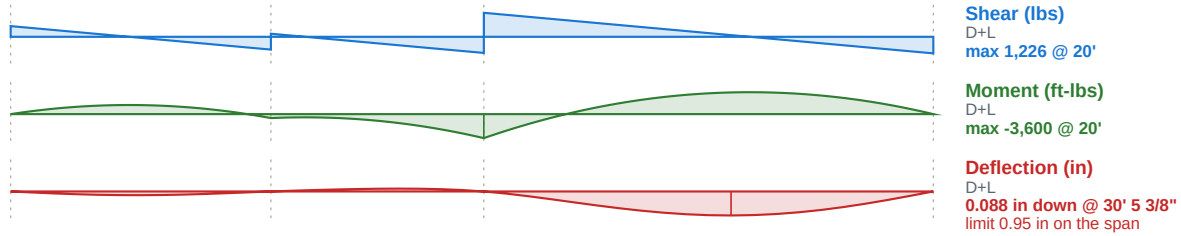
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	146	400	**546**	Beam #21 (on top or in a hanger? not set)
2 @ 11'	5 1/2"	--	216	595	**811**	Bearing wall (marked)
3 @ 20'	5 1/2"	--	547	1,504	**2,051**	Header #53, Header #58 (on top or in a hanger? not set)
4 @ 39'	5 1/2"	--	226	621	**847**	Beam #28 (on top or in a hanger? not set)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	19' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 39'	N/A	5.1	--	
1 - Uniform (PSF)	0 to 39'	24"	12	40	Uniform

Shear, Moment and Deflection



Shear (lbs)
D+L
max 1,226 @ 20'

Moment (ft-lbs)
D+L
max -3,600 @ 20'

Deflection (in)
D+L
0.088 in down @ 30' 5 3/8"
limit 0.95 in on the span

Joist #11

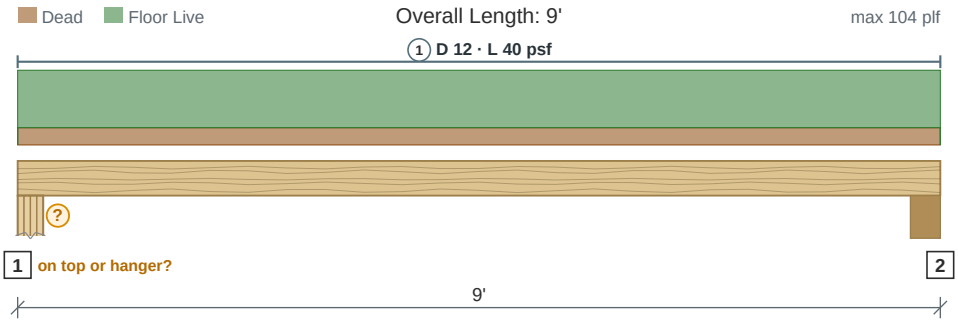
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

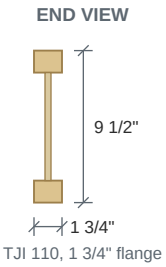
Level: Floor - 2nd Level | Member type: Joist (Floor Joist) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 43% used

Section adequacy 56.9% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	478 @ 0	1,220 (3 1/2")	Passed (39%)	--	D+L
Shear (lbs)	478 @ 0	1,220	Passed (39%)	1.00	D+L
Moment (Ft-lbs)	1,076 @ 4' 6"	2,500	Passed (43%)	1.00	D+L
Live Load Defl. (in)	0.093 @ 4' 6"	0.3	Passed (L/1,156)	--	L
Total Load Defl. (in)	0.124 @ 4' 6"	0.45	Passed (L/870)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

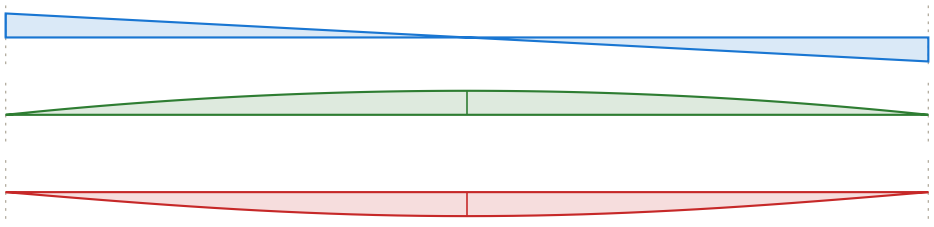
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	118	360	**478**	Beam #15 (on top or in a hanger? not set)
2 @ 9'	3 1/2"	--	118	360	**478**	not linked

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	9' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 9'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 478 @ 0

Moment (ft-lbs)
D+L
max 1,076 @ 4' 6"

Deflection (in)
D+L
0.1 in down @ 4' 6"
limit 0.45 in on the span

Joists #12

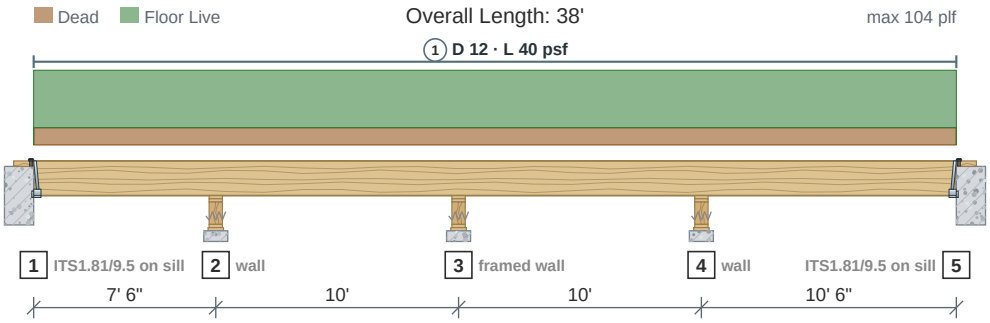
PASSED

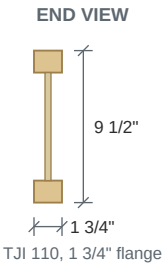
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Controls: Bearing 64% used

Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 38' | 2018 IRC | 2018 NDS | ASD

Section adequacy 35.8% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,242 @ 27' 6"	1,935 (3 1/2")	Passed (64%)	--	D+L
Shear (lbs)	672 @ 27' 6"	1,220	Passed (55%)	1.00	D+L
Moment (Ft-lbs)	1,199 @ 33' 9 13/16"	2,500	Passed (48%)	1.00	D+L
Live Load Defl. (in)	0.092 @ 33' 7 1/2"	0.35	Passed (L/1,367)	--	L
Total Load Defl. (in)	0.122 @ 33' 7 1/2"	0.525	Passed (L/1,029)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

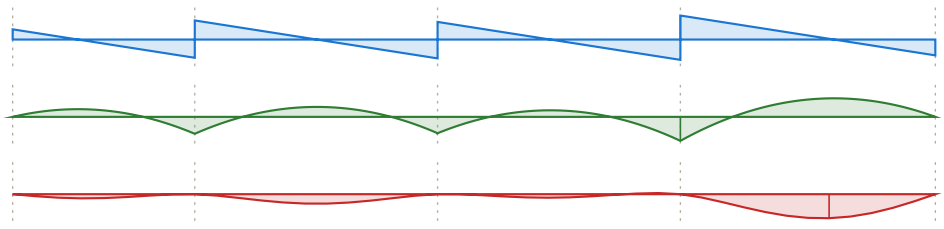
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	2" seat	--	71	215	**286**	Footing #1 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 25%)
2 @ 7' 6"	3 1/2"	--	259	787	**1,046**	Bearing wall (marked, on a footing)
3 @ 17' 6"	5 1/2"	--	253	769	**1,022**	Footing - WD-#4 (a framed wall down to the foundation)
4 @ 27' 6"	3 1/2"	--	307	935	**1,242**	Bearing wall (marked, on a footing)
5 @ 38'	2" seat	--	110	334	**444**	Footing #3 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 39%)

Total = the governing ASD combination at that support; the category columns are service loads.
Hanger J12-X2, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL, for 427 lb D+L on each (support 2 with the member cut there: the right side, the worse; the left side 399 lb D+L).
Hanger J12-X2B, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL, for 427 lb D+L on each (support 2 with the member cut there: the right side, the worse; the left side 399 lb D+L).
Hanger J12-X2C, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 2, 3 1/2 x 11 1/4 sawn, for 427 lb D+L on each (support 2 with the member cut there: the right side, the worse; the left side 399 lb D+L).
Hanger J12-X2D, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL, for 427 lb D+L on each (support 2 with the member cut there: the right side, the worse; the left side 399 lb D+L).
Hanger J12-X4, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 4, 2-ply 1 3/4 x 9 1/2 LVL, for 558 lb D+L on each (support 4 with the member cut there: the right side, the worse; the left side 417 lb D+L).

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	10' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 38'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 38'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 672 @ 27' 6"

Moment (ft-lbs)
D+L
max -1,199 @ 27' 6"

Deflection (in)
D+L
0.096 in down @ 33' 7 1/2"
limit 0.525 in on the span

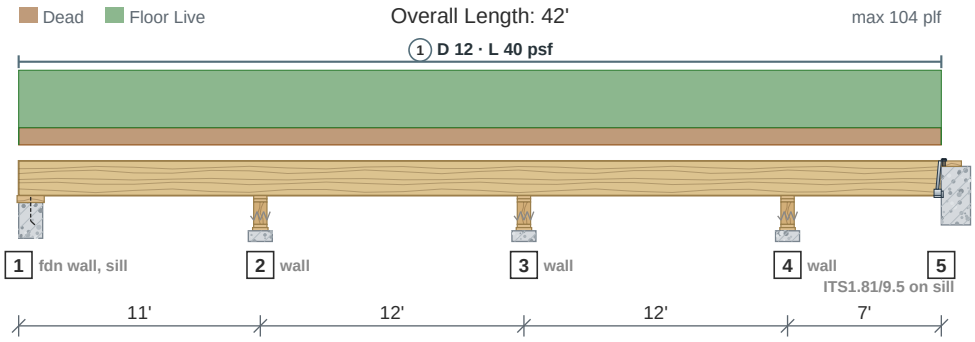
Joists #13

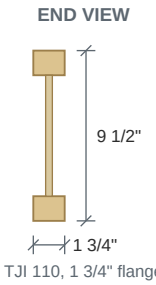
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 42' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 70% used
Section adequacy 29.5% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,363 @ 11'	1,935 (3 1/2")	Passed (70%)	--	D+L
Shear (lbs)	715 @ 11'	1,220	Passed (59%)	1.00	D+L
Moment (Ft-lbs)	1,429 @ 4' 2 3/8"	2,500	Passed (57%)	1.00	D+L
Live Load Defl. (in)	0.104 @ 5'	0.367	Passed (L/1,266)	--	L
Total Load Defl. (in)	0.139 @ 5'	0.55	Passed (L/953)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

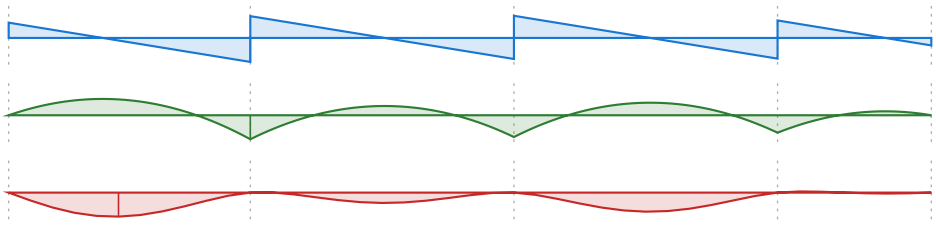
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	2"	--	113	342	**455**	Footing #36 (on the foundation wall, on its mud sill)
2 @ 11'	3 1/2"	--	337	1,026	**1,363**	Bearing wall (marked, on a footing)
3 @ 23'	3 1/2"	--	318	968	**1,286**	Bearing wall (marked, on a footing)
4 @ 35'	3 1/2"	--	281	856	**1,137**	Bearing wall (marked, on a footing)
5 @ 42'	2" seat	--	55	168	**224**	Footing #7 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 19%)

Total = the governing ASD combination at that support; the category columns are service loads.
Hanger J13-X2, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL, for 585 lb D+L on each (support 2 with the member cut there: the left side, the worse; the right side 497 lb D+L).
Hanger J13-X3, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 3, 2-ply 1 3/4 x 9 1/2 LVL, for 517 lb D+L on each (support 3 with the member cut there: the right side, the worse; the left side 491 lb D+L).
Hanger J13-X4, off a member not in the model: (2) IUS1.81/9.5 face mount, 1 on each side on Crawl space header at support 4, 2-ply 1 3/4 x 9 1/2 LVL, for 507 lb D+L on each (support 4 with the member cut there: the left side, the worse; the right side 372 lb D+L).

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 42'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 42'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -715 @ 11'

Moment (ft-lbs)
D+L
max -1,429 @ 11'

Deflection (in)
D+L
0.106 in down @ 5'
limit 0.55 in on the span

Joists #14

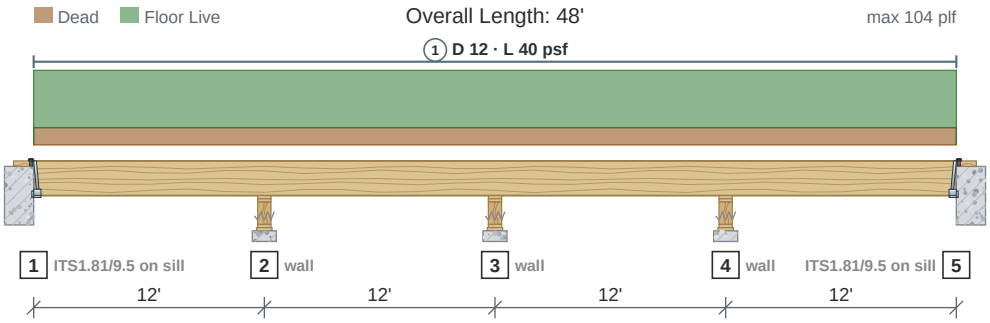
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

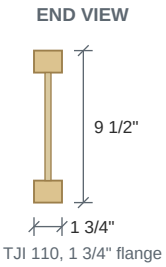
Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 48' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 75% used

Section adequacy 24.7% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,458 @ 12'	1,935 (3 1/2")	Passed (75%)	--	D+L
Shear (lbs)	774 @ 36'	1,220	Passed (63%)	1.00	D+L
Moment (Ft-lbs)	1,640 @ 43' 2 3/8"	2,500	Passed (66%)	1.00	D+L
Live Load Defl. (in)	0.145 @ 43' 2 3/8"	0.4	Passed (L/996)	--	L
Total Load Defl. (in)	0.192 @ 43' 2 3/8"	0.6	Passed (L/750)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

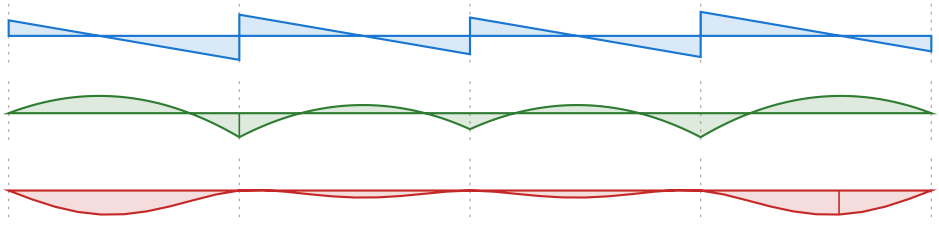
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	2" seat	--	124	377	**501**	Footing #11 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 44%)
2 @ 12'	3 1/2"	--	361	1,097	**1,458**	Bearing wall (marked, on a footing)
3 @ 24'	3 1/2"	--	293	891	**1,184**	Bearing wall (marked, on a footing)
4 @ 36'	3 1/2"	--	361	1,097	**1,458**	Bearing wall (marked, on a footing)
5 @ 48'	2" seat	--	124	377	**501**	Footing #12 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 44%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 48'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 48'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 774 @ 36'

Moment (ft-lbs)
D+L
max -1,640 @ 12'

Deflection (in)
D+L
0.155 in down @ 43' 2 3/8"
limit 0.6 in on the span

Joists #15

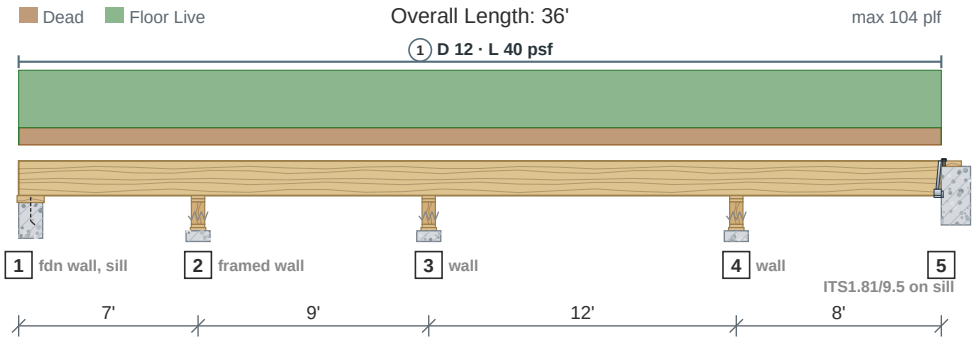
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

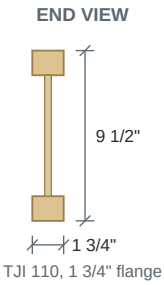
Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 36' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 63% used

Section adequacy 37.3% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,213 @ 28'	1,935 (3 1/2")	Passed (63%)	--	D+L
Shear (lbs)	643 @ 28'	1,220	Passed (53%)	1.00	D+L
Moment (Ft-lbs)	1,158 @ 21' 11 1/2"	2,500	Passed (46%)	1.00	D+L
Live Load Defl. (in)	0.089 @ 22'	0.4	Passed (L/1,618)	--	L
Total Load Defl. (in)	0.118 @ 22'	0.6	Passed (L/1,217)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

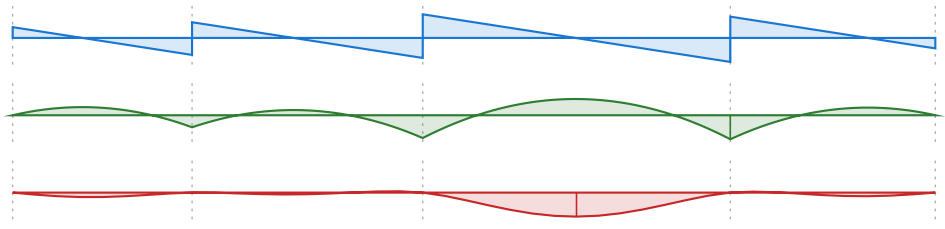
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	72	218	**289**	Footing #10 (on the foundation wall, on its mud sill)
2 @ 7'	5 1/2"	--	217	659	**876**	Footing - WD-#35 (a framed wall down to the foundation)
3 @ 16'	3 1/2"	--	289	880	**1,169**	Bearing wall (marked, on a footing)
4 @ 28'	3 1/2"	--	300	913	**1,213**	Bearing wall (marked, on a footing)
5 @ 36'	2" seat	--	69	211	**280**	Footing #13 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 24%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 36'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 36'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -643 @ 28'

Moment (ft-lbs)
D+L
max -1,158 @ 28'

Deflection (in)
D+L
0.092 in down @ 22'
limit 0.6 in on the span

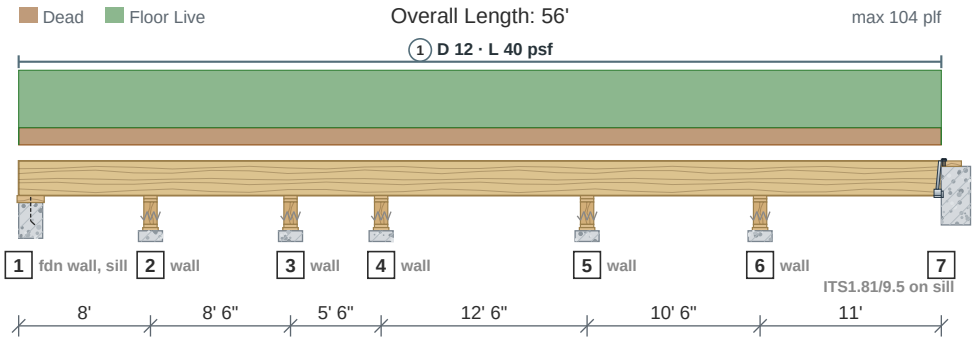
Joists #16

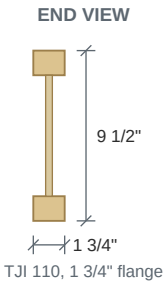
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 56' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 65% used
Section adequacy 35% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,258 @ 45'	1,935 (3 1/2")	Passed (65%)	--	D+L
Shear (lbs)	698 @ 45'	1,220	Passed (57%)	1.00	D+L
Moment (Ft-lbs)	1,242 @ 51' 6 1/4"	2,500	Passed (50%)	1.00	D+L
Live Load Defl. (in)	0.111 @ 50' 6"	0.367	Passed (L/1,188)	--	L
Total Load Defl. (in)	0.148 @ 50' 6"	0.55	Passed (L/894)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

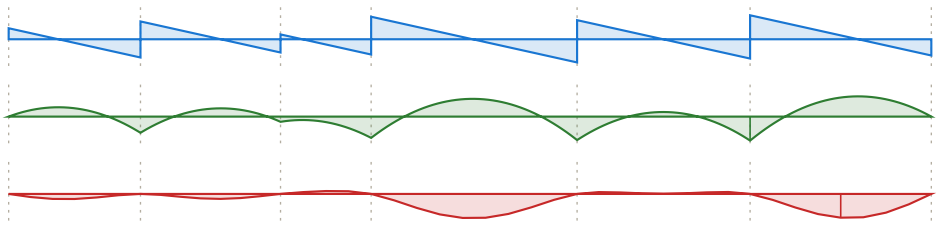
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	79	241	**321**	Footing #21 (on the foundation wall, on its mud sill)
2 @ 8'	3 1/2"	--	259	789	**1,048**	Bearing wall (marked, on a footing)
3 @ 16' 6"	5 1/2"	--	130	396	**526**	Bearing wall (marked, on a footing)
4 @ 22'	3 1/2"	--	272	827	**1,099**	Bearing wall (marked, on a footing)
5 @ 34' 6"	5 1/2"	--	304	925	**1,229**	Bearing wall (marked, on a footing)
6 @ 45'	3 1/2"	--	311	947	**1,258**	Bearing wall (marked, on a footing)
7 @ 56'	2" seat	--	117	355	**472**	Footing #14 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 41%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 56'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 56'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 698 @ 45'

Moment (ft-lbs)
D+L
max -1,241 @ 45'

Deflection (in)
D+L
0.12 in down @ 50' 6"
limit 0.55 in on the span

Joists #17

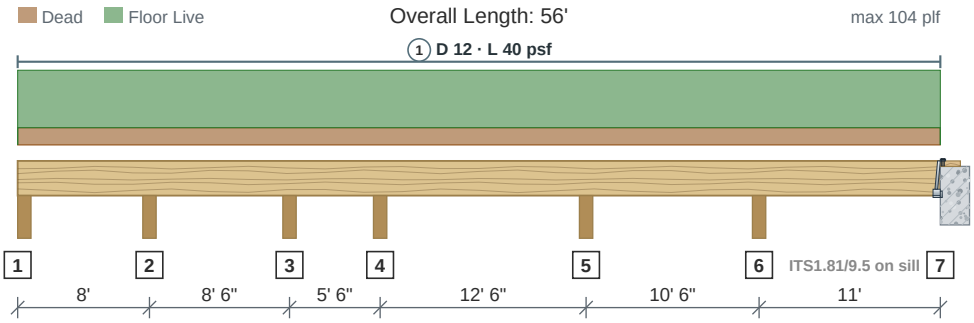
PASSED

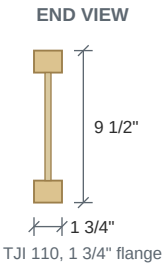
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Controls: Bearing 65% used

Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 56' | 2018 IRC | 2018 NDS | ASD

Section adequacy 35% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,258 @ 45'	1,935 (3 1/2")	Passed (65%)	--	D+L
Shear (lbs)	698 @ 45'	1,220	Passed (57%)	1.00	D+L
Moment (Ft-lbs)	1,242 @ 51' 6 1/4"	2,500	Passed (50%)	1.00	D+L
Live Load Defl. (in)	0.111 @ 50' 6"	0.367	Passed (L/1,188)	--	L
Total Load Defl. (in)	0.148 @ 50' 6"	0.55	Passed (L/894)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

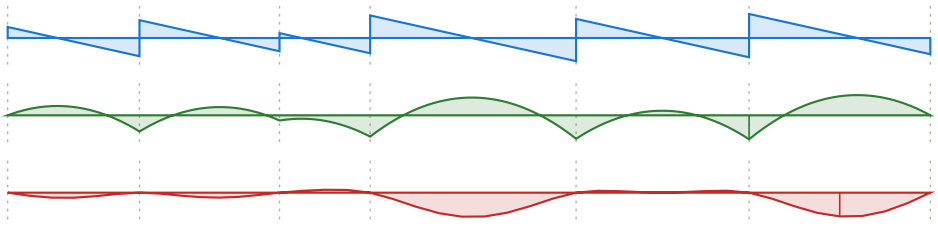
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	79	241	**321**	not linked
2 @ 8'	3 1/2"	--	259	789	**1,048**	not linked
3 @ 16' 6"	3 1/2"	--	130	396	**526**	not linked
4 @ 22'	3 1/2"	--	272	827	**1,099**	not linked
5 @ 34' 6"	3 1/2"	--	304	925	**1,229**	not linked
6 @ 45'	3 1/2"	--	311	947	**1,258**	not linked
7 @ 56'	2" seat	--	117	355	**472**	Footing #37 (hung from the mud sill, in an ITS1.81/9.5 top flange on the sill, 41%)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 56'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 56'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 698 @ 45'

Moment (ft-lbs)
D+L
max -1,241 @ 45'

Deflection (in)
D+L
0.12 in down @ 50' 6"
limit 0.55 in on the span

Joists #18

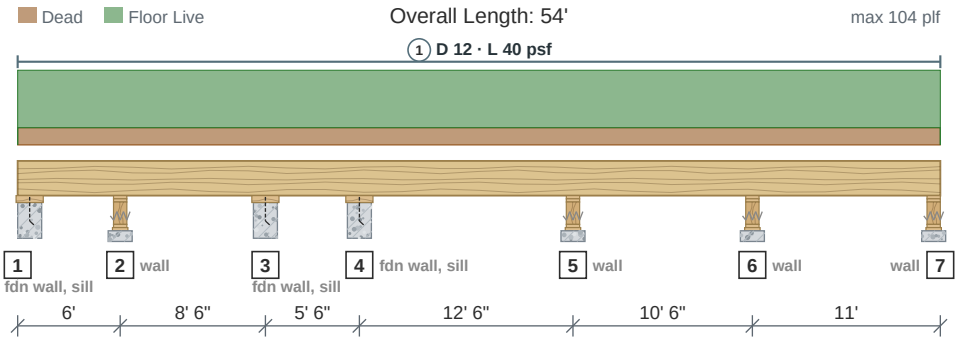
PASSED

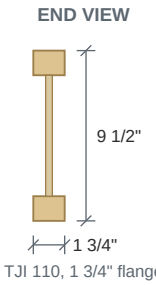
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Controls: Bearing 65% used

Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 54' | 2018 IRC | 2018 NDS | ASD

Section adequacy 35% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,258 @ 43'	1,935 (3 1/2")	Passed (65%)	--	D+L
Shear (lbs)	698 @ 43'	1,220	Passed (57%)	1.00	D+L
Moment (Ft-lbs)	1,241 @ 49' 8 3/16"	2,500	Passed (50%)	1.00	D+L
Live Load Defl. (in)	0.112 @ 49' 1 5/16"	0.367	Passed (L/1,174)	--	L
Total Load Defl. (in)	0.149 @ 49' 1 5/16"	0.55	Passed (L/884)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

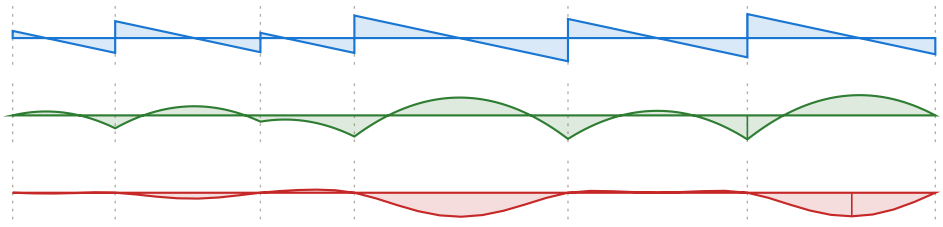
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	51	156	**208**	Footing #22 (on the foundation wall, on its mud sill)
2 @ 6'	3 1/2"	--	228	694	**922**	Bearing wall (marked, on a footing)
3 @ 14' 6"	5 1/2"	--	140	425	**564**	Footing - WD-#23 (on the foundation wall, on its mud sill)
4 @ 20'	5 1/2"	--	269	818	**1,086**	Footing - WD-#24 (on the foundation wall, on its mud sill)
5 @ 32' 6"	5 1/2"	--	304	926	**1,230**	Bearing wall (marked, on a footing)
6 @ 43'	3 1/2"	--	311	947	**1,258**	Bearing wall (marked, on a footing)
7 @ 54'	5 1/2"	--	117	355	**472**	Bearing wall (marked, on a footing)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	12' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 54'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 54'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 697 @ 43'

Moment (ft-lbs)
D+L
max -1,241 @ 43'

Deflection (in)
D+L
0.122 in down @ 49' 1 5/16"
limit 0.55 in on the span

Joists #19

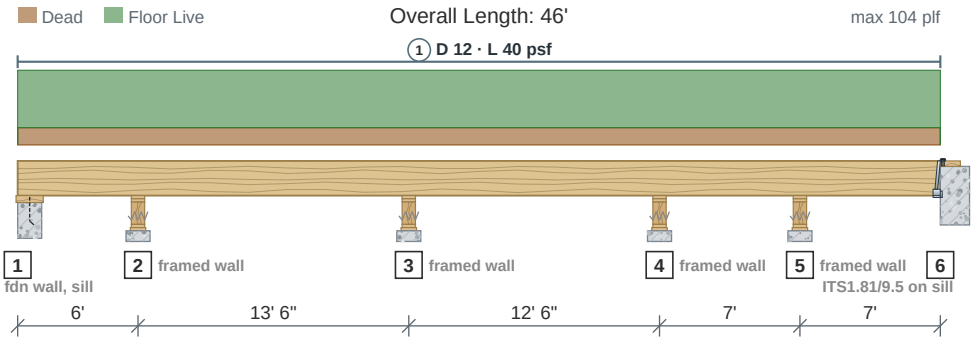
PASSED

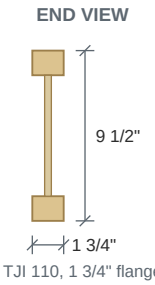
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

Controls: Bearing 76% used

Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 46' | 2018 IRC | 2018 NDS | ASD

Section adequacy 23.6% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,479 @ 19' 6"	1,935 (3 1/2")	Passed (76%)	--	D+L
Shear (lbs)	753 @ 19' 6"	1,220	Passed (62%)	1.00	D+L
Moment (Ft-lbs)	1,709 @ 12' 5 1/16"	2,500	Passed (68%)	1.00	D+L
Live Load Defl. (in)	0.132 @ 12' 9"	0.45	Passed (L/1,226)	--	L
Total Load Defl. (in)	0.176 @ 12' 9"	0.675	Passed (L/922)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

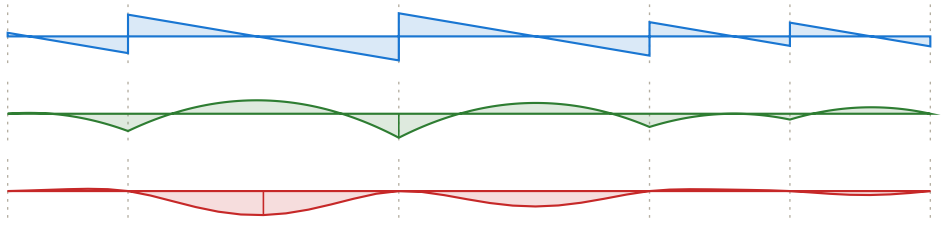
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	5 1/2"	--	28	85	**114**	not linked (fdn wall, sill)
2 @ 6'	3 1/2"	--	298	908	**1,206**	Footing - WD-#25 (a framed wall down to the foundation)
3 @ 19' 6"	3 1/2"	--	366	1,113	**1,479**	not linked (framed wall)
4 @ 32'	3 1/2"	--	260	790	**1,050**	not linked (framed wall)
5 @ 39'	3 1/2"	--	180	548	**728**	not linked (framed wall)
6 @ 46'	2" seat	--	77	235	**313**	not linked (hanger on sill)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	13' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 46'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 46'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -753 @ 19' 6"

Moment (ft-lbs)
D+L
max -1,709 @ 19' 6"

Deflection (in)
D+L
0.137 in down @ 12' 9"
limit 0.675 in on the span

Joists #20

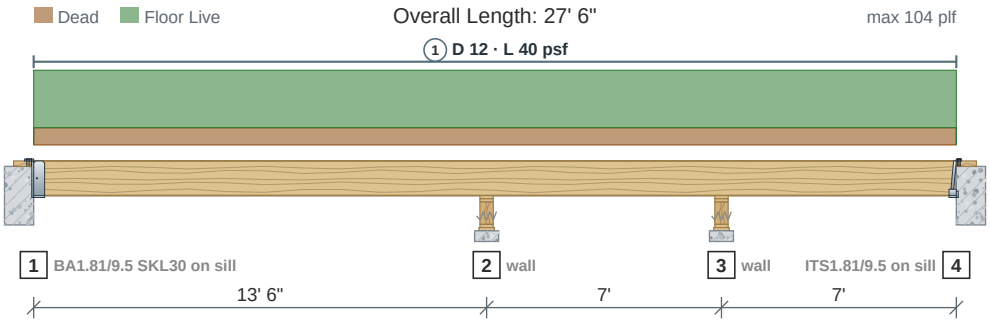
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

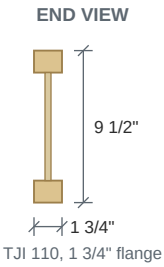
Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 27' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Bearing 75% used

Section adequacy 25.2% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,447 @ 13' 6"	1,935 (3 1/2")	Passed (75%)	--	D+L
Shear (lbs)	850 @ 13' 6"	1,220	Passed (70%)	1.00	D+L
Moment (Ft-lbs)	1,782 @ 5' 6"	2,500	Passed (71%)	1.00	D+L
Live Load Defl. (in)	0.245 @ 6' 7/8"	0.45	Passed (L/660)	--	L
Total Load Defl. (in)	0.326 @ 6' 7/8"	0.675	Passed (L/497)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

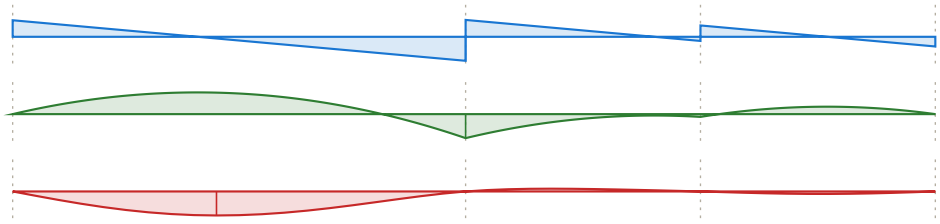
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3" seat	--	145	441	**586**	Bearing wall (marked, hanger on sill)
2 @ 13' 6"	3 1/2"	--	358	1,089	**1,447**	Bearing wall (marked, on a footing)
3 @ 20' 6"	3 1/2"	--	136	413	**548**	Bearing wall (marked, on a footing)
4 @ 27' 6"	2" seat	--	85	258	**343**	Bearing wall (marked, hanger on sill)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	13' 6" o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 27' 6"	N/A	2.3	--	
1 - Uniform (PSF)	0 to 27' 6"	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max -850 @ 13' 6"

Moment (ft-lbs)
D+L
max -1,782 @ 13' 6"

Deflection (in)
D+L
0.286 in down @ 6' 7/8"
limit 0.675 in on the span

Joists #21

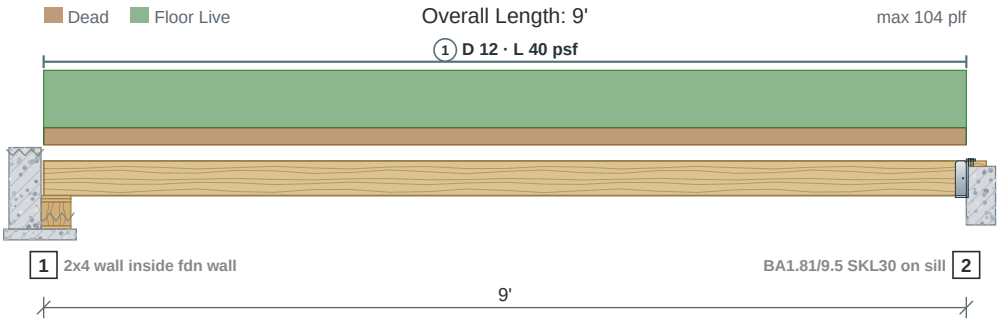
(1) 9 1/2" Weyerhaeuser TJI 110 @ 24" o.c.

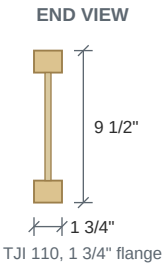
Level: Floor - 1st Level | Member type: Joist (Floor Joist) | Length: 9' | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 43% used

Section adequacy 56.9% (capacity to spare)





Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	478 @ 9'	1,131 (3")	Passed (42%)	--	D+L
Plate Bearing (psi)	78 @ 0	692 (2x4 wall, DF-L #2)	Passed (11%)	--	
Shear (lbs)	478 @ 0	1,220	Passed (39%)	1.00	D+L
Moment (Ft-lbs)	1,076 @ 4' 6"	2,500	Passed (43%)	1.00	D+L
Live Load Defl. (in)	0.093 @ 4' 6"	0.3	Passed (L/1,156)	--	L
Total Load Defl. (in)	0.124 @ 4' 6"	0.45	Passed (L/870)	--	D+L

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/240.
- Member self weight of 2.3 plf is included.
- Calculations per NDS 2018 and Weyerhaeuser TJ-4000 / ICC-ES ESR-1153, ASD, every load combination with its own load duration factor.

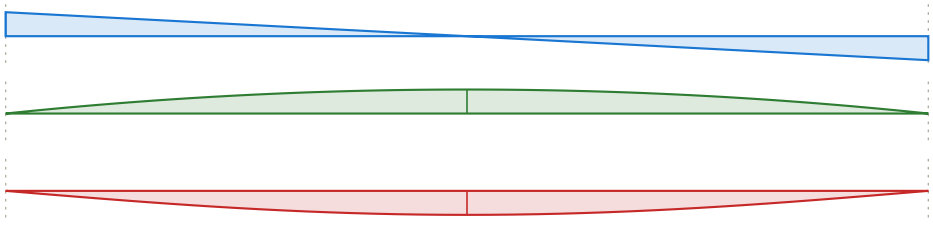
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Floor Live**	**Total**	**Load goes to**
1 @ 0	3 1/2"	--	118	360	**478**	Footing #28 (on a 2x4 framed wall inside the foundation wall, the concrete running on up past the end)
2 @ 9'	3" seat	--	118	360	**478**	Footing #29 (hung from the mud sill, in a BA1.81/9.5 SKL30 top flange on the sill, 27%)

Total = the governing ASD combination at that support; the category columns are service loads.
Framed wall inside the foundation wall: against concrete below grade, naturally durable or preservative-treated wood, or a vapor retarder between them (IRC R317.1).

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	9' o/c	used for C_L only where the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 9'	N/A	2.3	--	
1 - Uniform (PSF)	0 to 9'	24"	12	40	

Shear, Moment and Deflection



Shear (lbs)
D+L
max 478 @ 0

Moment (ft-lbs)
D+L
max 1,076 @ 4' 6"

Deflection (in)
D+L
0.1 in down @ 4' 6"
limit 0.45 in on the span

Column Bm #1-1

PASSED

(1) 10x10 DF-L No. 2 (9 1/2" x 9 1/2")

Level: Roof | Height: 6' | Unbraced: 10' (X), 10' (Y) | 2018 IRC | 2018 NDS | ASD

Controls: Compression 21% used
Section adequacy 78.6% (capacity to spare)

Design Results	Actual	Allowed	Result	LDF	Load Combination
Axial Load (lbs)	14,319	66,776	Passed (21%)	1.15	D+S
Compression (psi)	158.7	739.9	Passed (21%)	1.15	D+S

- Axial compression per NDS 2018 3.7 (ASD); self weight over the full height is included.
- Unbraced length about X pairs with the depth, about Y with the width.

Axial Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Axial (lb)	top	N/A	2,398	11,797	Linked from: Beam #1, Support 1

Supports	Load goes to
1 @ 0	SpotFtg Bm #1-1
2 @ 6'	--

Column Bm #39-2

PASSED

(1) 5 1/4" x 7" 2.0E Parallam PSL (Weyerhaeuser)

Level: Columns | Height: 24' | Unbraced: 12' (X), 12' (Y) | 2018 IRC | 2018 NDS | ASD

Controls: Compression 82% used
Section adequacy 18.2% (capacity to spare)

Design Results	Actual	Allowed	Result	LDF	Load Combination
Axial Load (lbs)	19,025	23,252	Passed (82%)	1.15	D+S
Compression (psi)	517.7	632.7	Passed (82%)	1.15	D+S

- Axial compression per NDS 2018 3.7 (ASD); self weight over the full height is included.
- Unbraced length about X pairs with the depth, about Y with the width.

Axial Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Axial (lb)	top	N/A	2,145	16,623	Linked from: Beam #39, Support 2

Supports	Load goes to
1 @ 0	SpotFtg Bm #39-2
2 @ 24'	--

Column Bm #39-3

PASSED

(1) 7" x 7" 2.0E Parallam PSL (Weyerhaeuser)

Level: Columns | Height: 24' | Unbraced: 12' (X), 12' (Y) | 2018 IRC | 2018 NDS | ASD

Controls: Compression 55% used
Section adequacy 44.8% (capacity to spare)

Design Results	Actual	Allowed	Result	LDF	Load Combination
Axial Load (lbs)	25,121	45,541	Passed (55%)	1.15	D+S
Compression (psi)	512.7	929.4	Passed (55%)	1.15	D+S

- Axial compression per NDS 2018 3.7 (ASD); self weight over the full height is included.
- Unbraced length about X pairs with the depth, about Y with the width.

Axial Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Axial (lb)	top	N/A	2,830	21,949	Linked from: Beam #39, Support 3

Supports	Load goes to
1 @ 0	SpotFtg Bm #39-3
2 @ 24'	--

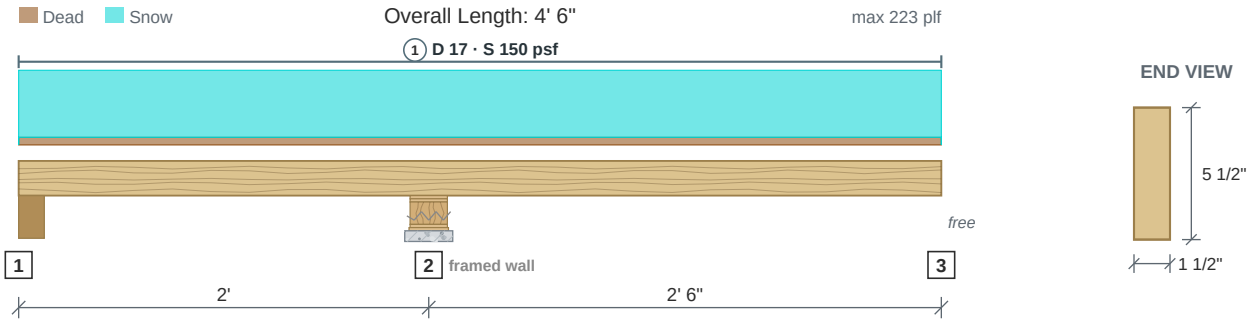
Outlookers

(1) 2x6 DF-L No. 2 (1 1/2" x 5 1/2") @ 16" o.c.

Level: Roof | Member type: Outlooker (Roof Rafter) | Length: 4' 6" | 2018 IRC | 2018 NDS | ASD

PASSED

Controls: Moment 74% used
Section adequacy 26.3% (capacity to spare)



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load Combination
Member Reaction (lbs)	1,137 @ 2'	5,508 (5 1/2")	Passed (21%)	--	
Shear (lbs)	575 @ 2'	1,138	Passed (51%)	1.15	D+S
Neg Moment (Ft-lbs)	-702 @ 2'	952	Passed (74%)	1.15	D+S
Live Load Defl. (in)	0.096 @ 4' 6"	0.25	Passed (2L/624)	--	S
Total Load Defl. (in)	0.108 @ 4' 6"	0.333	Passed (2L/556)	--	D+S

- Deflection criteria (IRC Table R301.7): floor live alone L/360; roof live or snow alone L/240; dead plus live L/180.
- Overhang deflection criteria: LL (2L/360) and TL (2L/180) -- a cantilever is limited on twice its length.
- Bending adjustment factors: CD = 1.15, CF = 1.30, Cr = 1.15, CL = 0.976 (D+S).
- Beam stability (NDS 3.3.3) governs bending: negative moment 702 lbf-ft, 2.00-4.50 ft, CL 0.976 (unbraced 2.5 ft).
- Member self weight of 1.9 plf is included.
- Calculations per NDS 2018, ASD, every load combination with its own load duration factor.

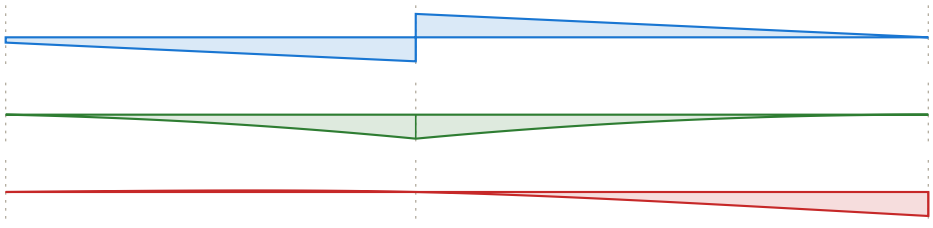
	Bearing Length		Loads to Supports (lbs)			
Supports	**Provided**	**Required**	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	1 1/2"	1/8"	-14	-112	**-126**	not linked
2 @ 2'	5 1/2"	13/16"	124	1,012	**1,137**	Header #4, Girder #4, Girder #3, Header #12, Header #10, Header #23, Beam #14, Beam #14, Header #24, Beam #20, Beam #21, Beam #22, Header #31, Header #32, Beam #25, Header #37, Beam #29, Beam #30, Header #46, Header #47, Header #49, Header #50, Footing #2, Footing #7, Header #57, Footing #36, Footing #37 (a framed wall down to the foundation)
3 @ 4' 6"	--	--	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	continuous	braced by the sheathing
Bottom Edge (Lu)	2' 6" o/c	governs C_L here: the bottom edge is in compression

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 4' 6"	N/A	1.9	--	
1 - Uniform (PSF)	0 to 4' 6"	16"	17	150	

Shear, Moment and Deflection



Shear (lbs)
D+S
max -575 @ 2'

Moment (ft-lbs)
D+S
max -702 @ 2'

Deflection (in)
D+S
0.108 in down @ 4' 6"
limit 0.333 in on 2L (cantilever)

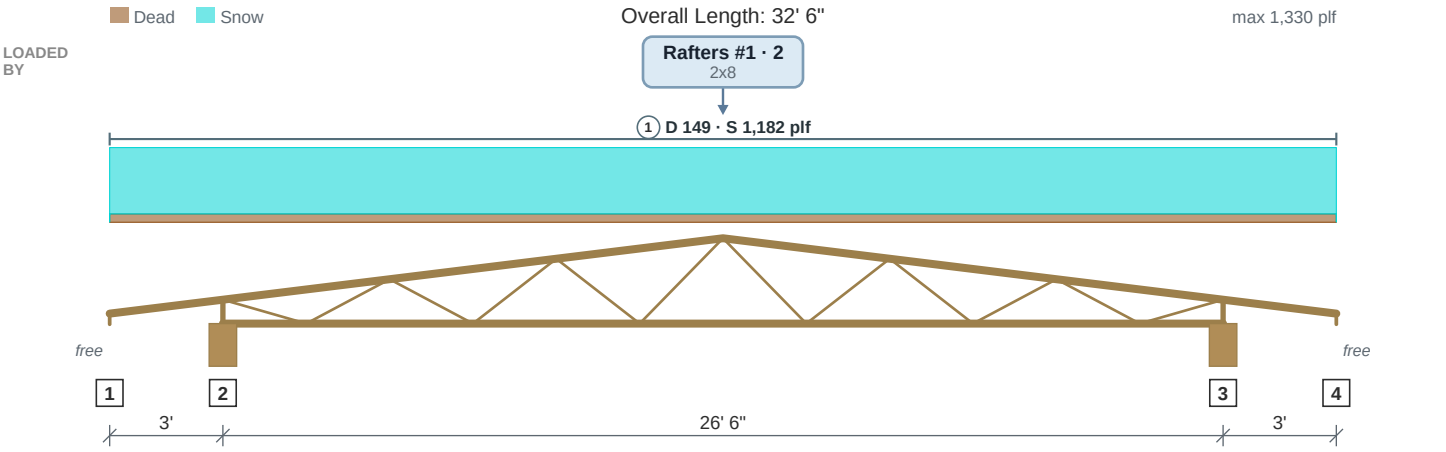
Timber Truss #1

Timber truss (generic)

Level: Roof | Length: 32' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic timber truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a stand-in, so no size or design check is shown; the timber truss itself is designed separately.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	2,414	19,204	**21,618**	Beam #7 (on top or in a hanger? not set)
3 @ 29' 6"	2,414	19,204	**21,618**	Beam #8 (on top or in a hanger? not set)
4 @ 32' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 32' 6"	N/A	148.6	1,182	Linked from: Rafters #1, Support 2

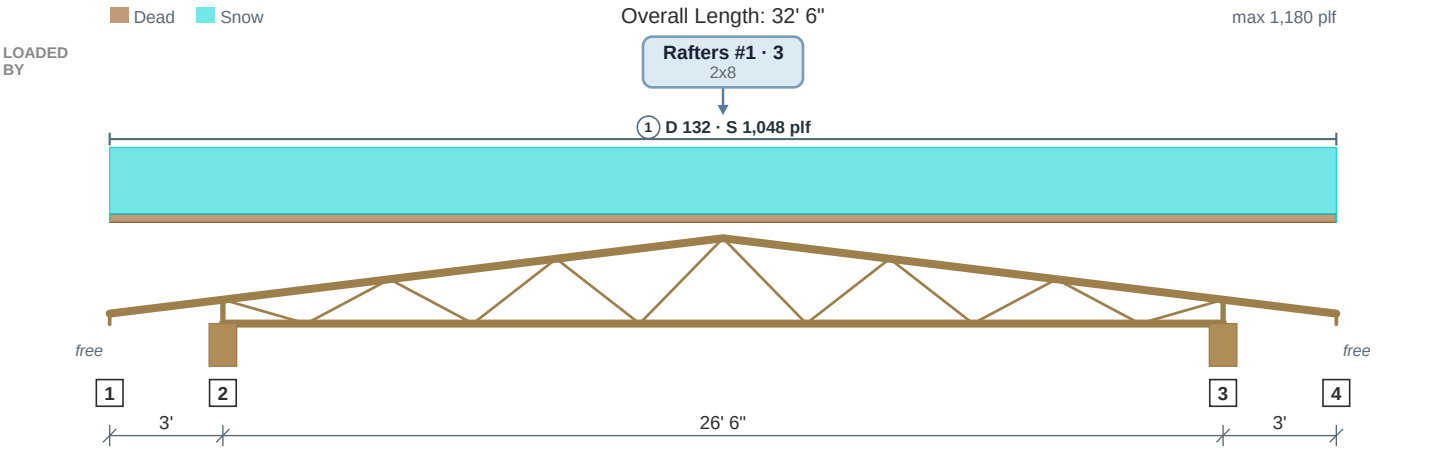
Timber Truss #2

Timber truss (generic)

Level: Roof | Length: 32' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic timber truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a stand-in, so no size or design check is shown; the timber truss itself is designed separately.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	2,141	17,028	**19,168**	Beam #7 (on top or in a hanger? not set)
3 @ 29' 6"	2,141	17,028	**19,168**	Beam #8 (on top or in a hanger? not set)
4 @ 32' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 32' 6"	N/A	131.7	1,048	Linked from: Rafters #1, Support 3

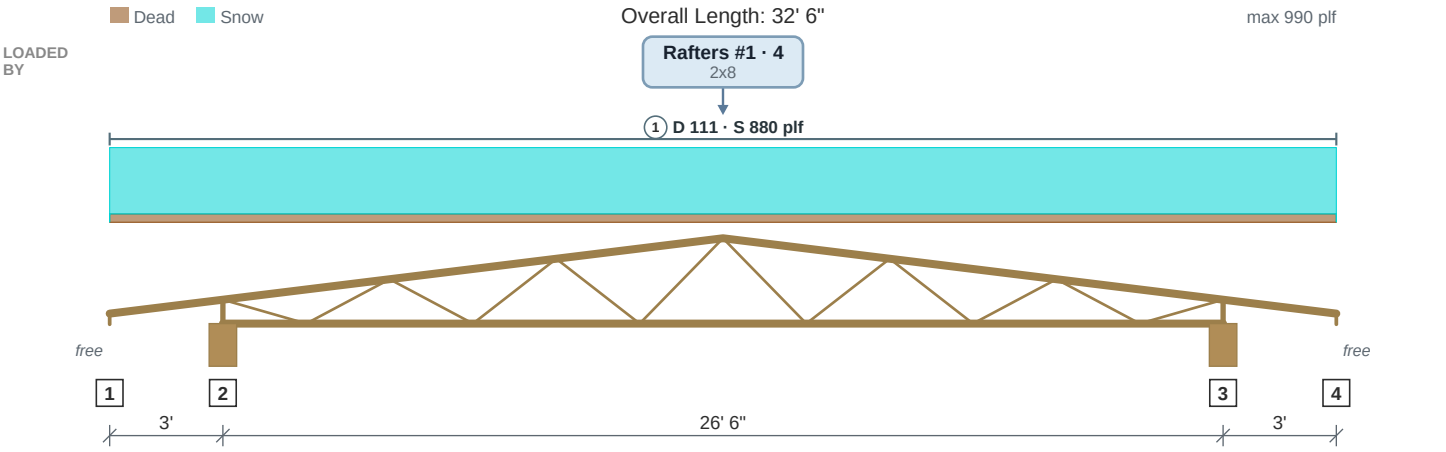
Timber Truss #3

Timber truss (generic)

Level: Roof | Length: 32' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic timber truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a stand-in, so no size or design check is shown; the timber truss itself is designed separately.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	1,797	14,297	**16,095**	Beam #7 (on top or in a hanger? not set)
3 @ 29' 6"	1,797	14,297	**16,095**	Beam #8 (on top or in a hanger? not set)
4 @ 32' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 32' 6"	N/A	110.6	879.8	Linked from: Rafters #1, Support 4

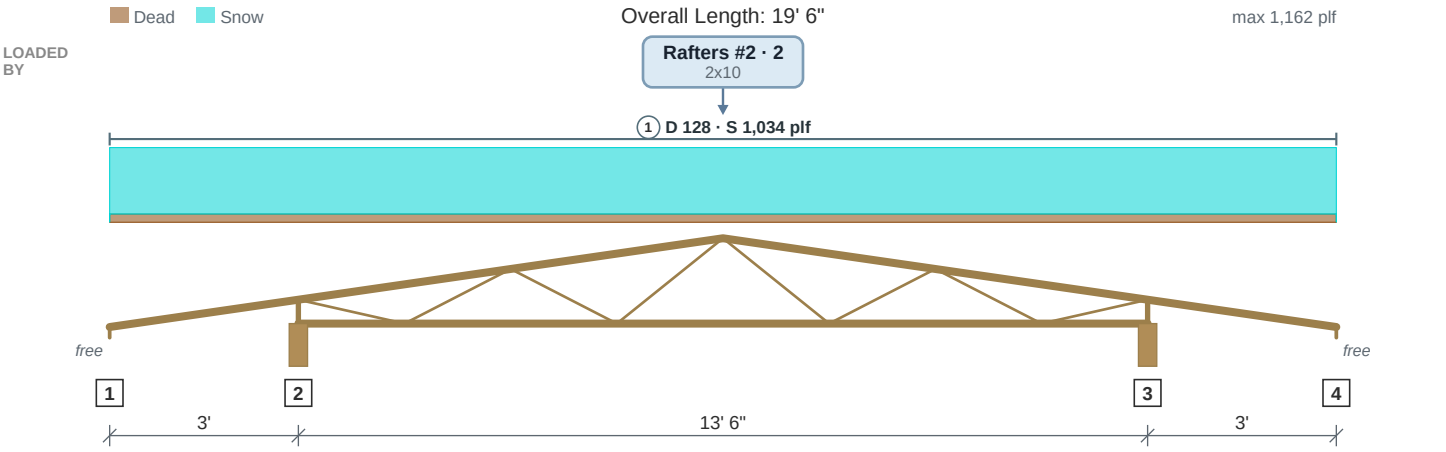
Timber Truss #4

Timber truss (generic)

Level: Roof | Length: 19' 6" | 2018 IRC | 2018 NDS | ASD

LOADS ONLY

Generic member for linked loads
no member size or design check



Drawing is conceptual. Locations are measured from the left end of the member; all dimensions are horizontal.

- A generic timber truss, modeled so the loads it carries reach the members and walls that support it as linked loads. The size in the model is a stand-in, so no size or design check is shown; the timber truss itself is designed separately.

	Loads to Supports (lbs)			
Supports	**Dead**	**Snow**	**Total**	**Load goes to**
1 @ 0	--	--	--	free end (cantilever tip)
2 @ 3'	1,248	10,078	**11,326**	Beam #9 (on top or in a hanger? not set)
3 @ 16' 6"	1,248	10,078	**11,326**	Beam #10 (on top or in a hanger? not set)
4 @ 19' 6"	--	--	--	free end (cantilever tip)

Total = the governing ASD combination at that support; the category columns are service loads.

Vertical Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	0 to 19' 6"	N/A	128	1,034	Linked from: Rafters #2, Support 2

Footing #1

PASSED

Continuous Footing 2' 6" wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

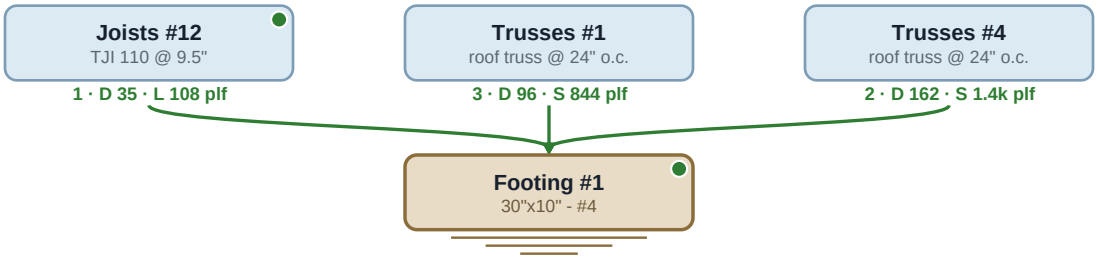
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 8" | ACI 318-14

Controls: Depth Above Bars 89% used

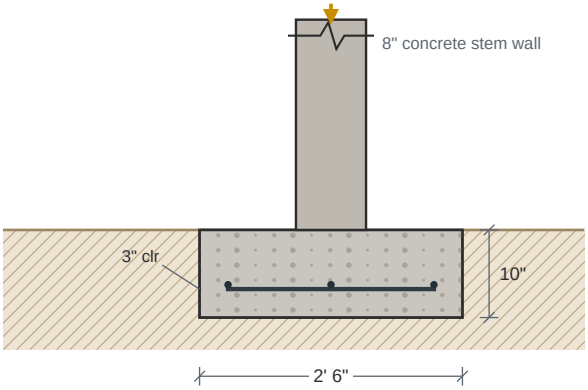
Adequacy 18.4% (capacity to spare)

What Loads It

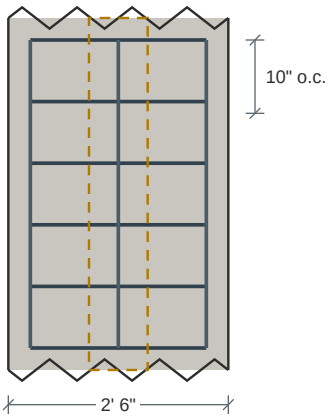
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 293 plf Snow 2,270 plf Floor Live 108 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,223	1,500	Passed (82%)	ASD	D+S
One-Way Shear (lbs)	580	6,655	Passed (9%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	687	7,036	Passed (10%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2' 6"
Footing depth	10"
Stem wall width	8"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing #1 (continued)

Continuous Footing | 2' 6" wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	95.6	--	843.8	Linked from: Trusses #1, Support 3
2 - Uniform (PLF)	--	N/A	161.7	--	1,426	Linked from: Trusses #4, Support 2
3 - Uniform (PLF)	--	N/A	35.4	107.6	--	Linked from: Joists #12, Support 1

Footing #2

PASSED

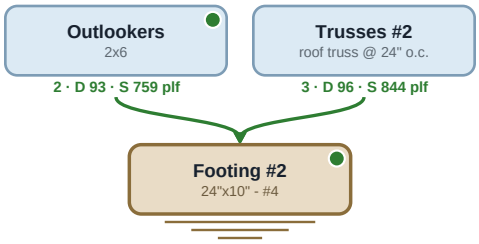
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 8" | ACI 318-14

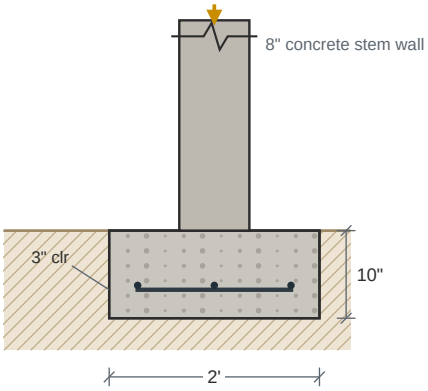
Controls: Depth Above Bars 89% used

Adequacy 25.8% (capacity to spare)

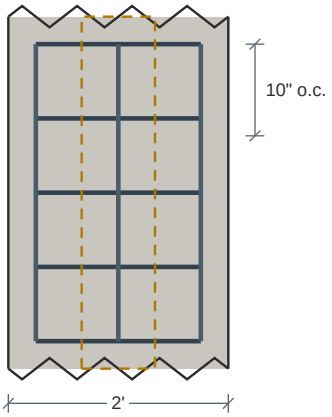
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 189 plf Snow 1,603 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,113	1,500	Passed (74%)	ASD	D+S
One-Way Shear (lbs)	145	6,655	Passed (2%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	310	7,036	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	8"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	95.6	843.8	Linked from: Trusses #2, Support 3
2 - Uniform (PLF)	--	N/A	93.2	759.4	Linked from: Outlookers, Support 2

Footing #3

PASSED

Continuous Footing 2' 6" wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

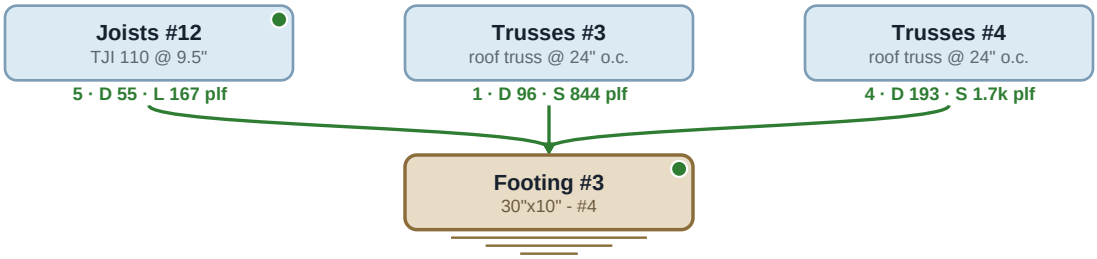
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 8" | ACI 318-14

Controls: Soil Bearing Pressure 90% used

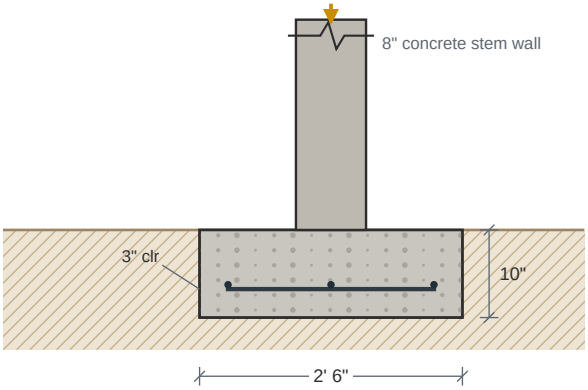
Adequacy 9.8% (capacity to spare)

What Loads It

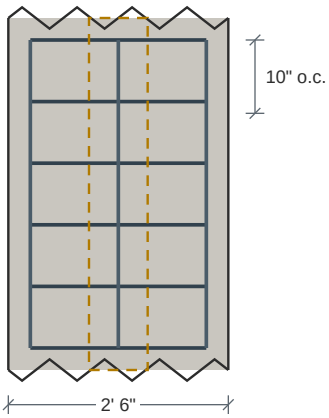
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 343 plf Snow 2,544 plf Floor Live 167 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,353	1,500	Passed (90%)	ASD	D+S
One-Way Shear (lbs)	659	6,655	Passed (10%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	781	7,036	Passed (11%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2' 6"
Footing depth	10"
Stem wall width	8"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing #3 (continued)

Continuous Footing | 2' 6" wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	95.6	--	843.8	Linked from: Trusses #3, Support 1
2 - Uniform (PLF)	--	N/A	54.9	167	--	Linked from: Joists #12, Support 5
3 - Uniform (PLF)	--	N/A	192.7	--	1,701	Linked from: Trusses #4, Support 4

Footing #5

PASSED

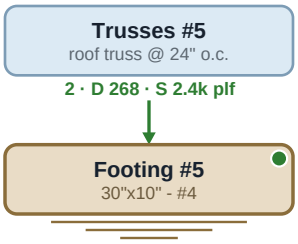
Continuous Footing 2' 6" wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 8" | ACI 318-14

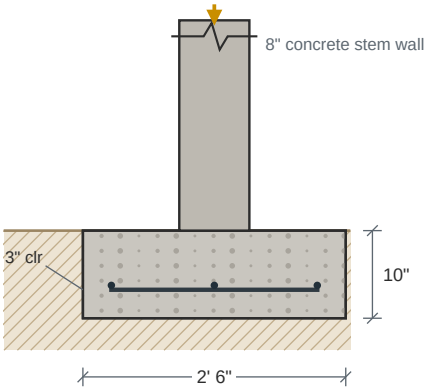
Controls: Depth Above Bars 89% used

Adequacy 16.6% (capacity to spare)

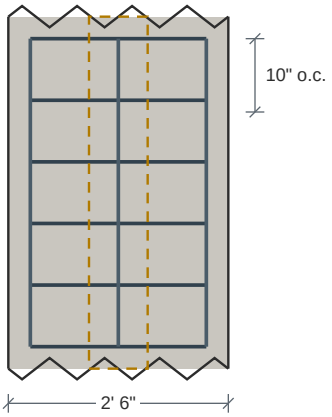
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 268 plf Snow 2,362 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,250	1,500	Passed (83%)	ASD	D+S
One-Way Shear (lbs)	581	6,655	Passed (9%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	689	7,036	Passed (10%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2' 6"
Footing depth	10"
Stem wall width	8"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	267.8	2,362	Linked from: Trusses #5, Support 2

Footing #7

PASSED

Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

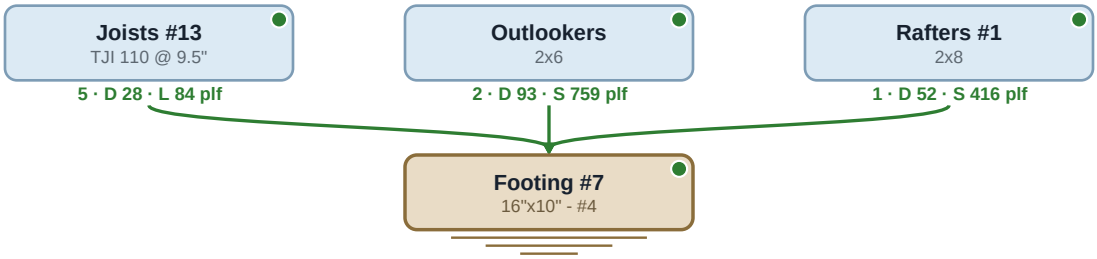
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 8" | ACI 318-14

Controls: Depth Above Bars 89% used

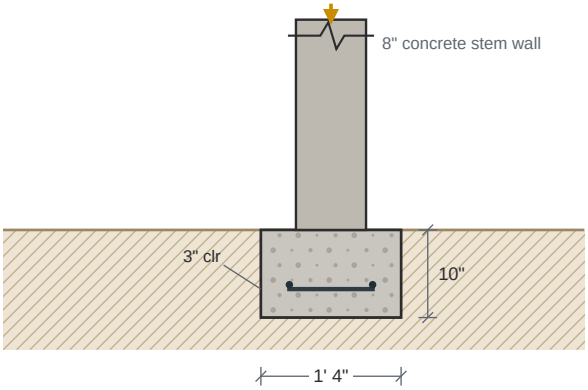
Adequacy 14.9% (capacity to spare)

What Loads It

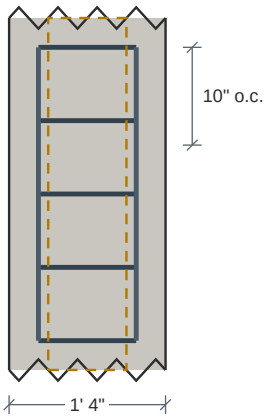
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 173 plf Snow 1,175 plf Floor Live 84 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,277	1,500	Passed (85%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	90	7,036	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	8"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing #7 (continued)

Continuous Footing | 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	--	N/A	52.2	--	415.5	Linked from: Rafters #1, Support 1
3 - Uniform (PLF)	--	N/A	27.7	84.2	--	Linked from: Joists #13, Support 5

Footing #8

PASSED

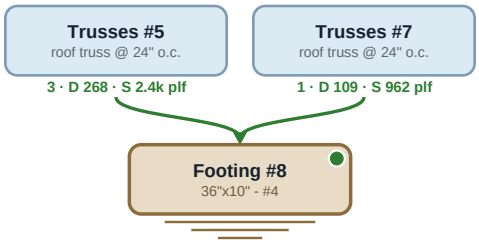
Continuous Footing 3' wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

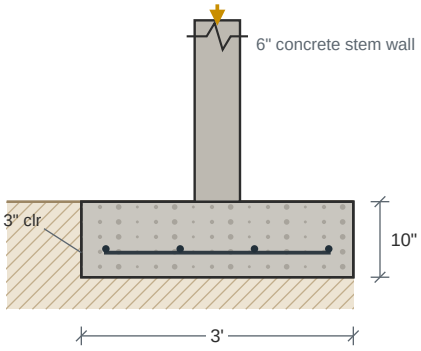
Controls: Soil Bearing Pressure 94% used

Adequacy 6.5% (capacity to spare)

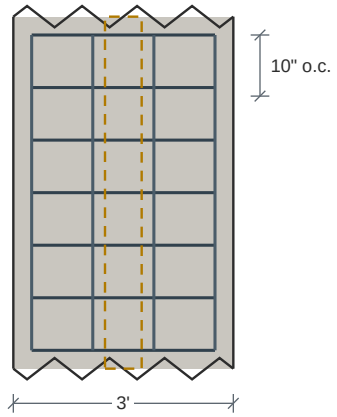
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 377 plf Snow 3,325 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,403	1,500	Passed (94%)	ASD	D+S
One-Way Shear (lbs)	1,323	6,655	Passed (20%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	1,503	7,036	Passed (21%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	3'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	109.1	962.5	Linked from: Trusses #7, Support 1
2 - Uniform (PLF)	--	N/A	267.8	2,362	Linked from: Trusses #5, Support 3

Footing #9

PASSED

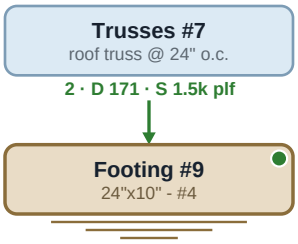
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

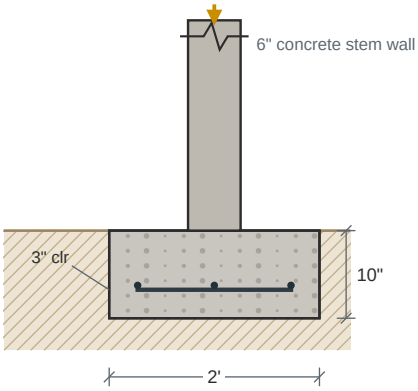
Controls: Depth Above Bars 89% used

Adequacy 31% (capacity to spare)

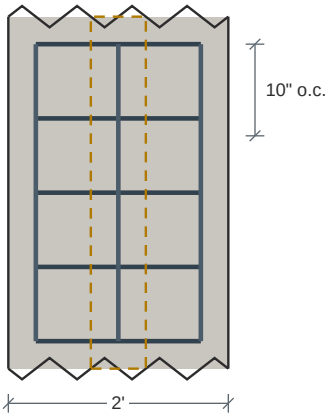
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 171 plf Snow 1,512 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,035	1,500	Passed (69%)	ASD	D+S
One-Way Shear (lbs)	246	6,655	Passed (4%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	369	7,036	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	171.4	1,512	Linked from: Trusses #7, Support 2

Footing #10

PASSED

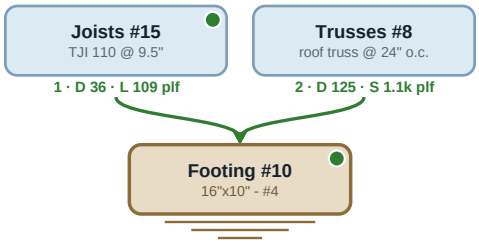
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

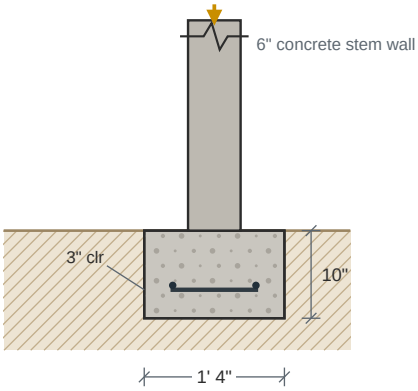
Controls: Depth Above Bars 89% used

Adequacy 21.5% (capacity to spare)

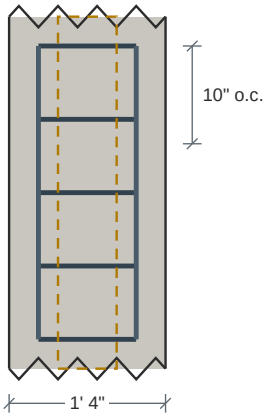
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 161 plf Snow 1,102 plf Floor Live 109 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,177	1,500	Passed (78%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	134	7,036	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	125	--	1,102	Linked from: Trusses #8, Support 2
2 - Uniform (PLF)	--	N/A	35.8	108.8	--	Linked from: Joists #15, Support 1

Footing #11

PASSED

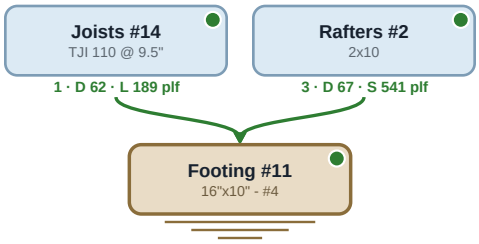
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

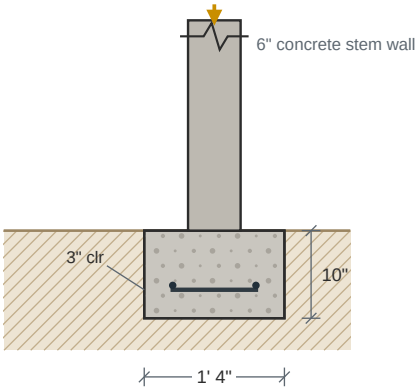
Controls: Depth Above Bars 89% used

Adequacy 50.9% (capacity to spare)

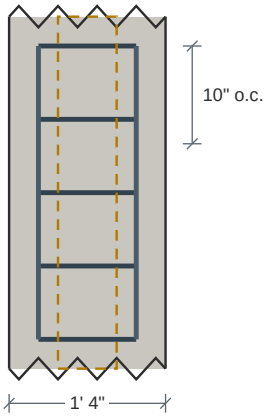
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 129 plf Floor Live 189 plf Snow 541 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	737	1,500	Passed (49%)	ASD	D+0.75L+0.75S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	79	7,036	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	62	188.6	--	Linked from: Joists #14, Support 1
2 - Uniform (PLF)	--	N/A	67.1	--	541.4	Linked from: Rafters #2, Support 3

Footing #12

PASSED

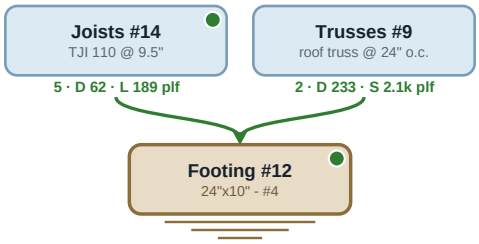
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

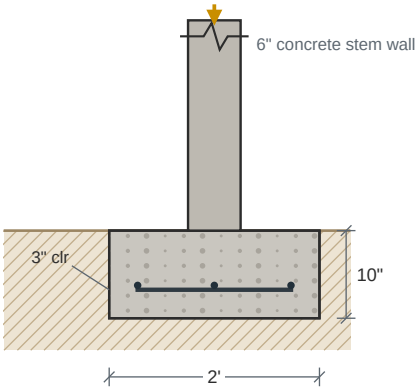
Controls: Soil Bearing Pressure 91% used

Adequacy 8.6% (capacity to spare)

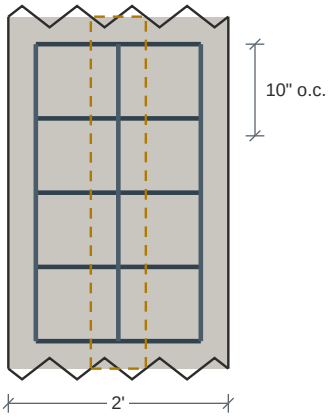
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 295 plf Floor Live 189 plf Snow 2,059 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,371	1,500	Passed (91%)	ASD	D+S
One-Way Shear (lbs)	360	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	540	7,036	Passed (8%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	62	188.6	--	Linked from: Joists #14, Support 5
2 - Uniform (PLF)	--	N/A	233.4	--	2,059	Linked from: Trusses #9, Support 2

Footing #13

PASSED

Continuous Footing 3' 6" wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

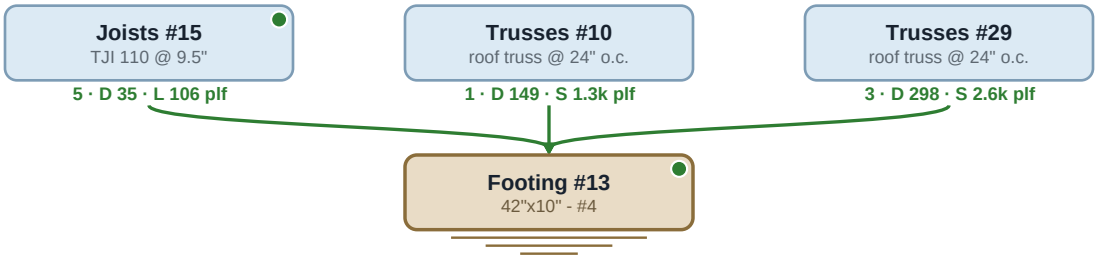
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

Controls: Soil Bearing Pressure 95% used

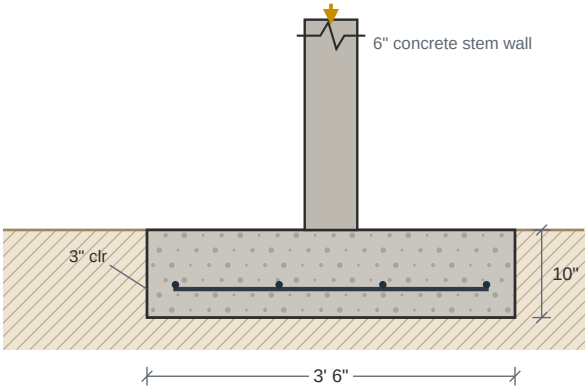
Adequacy 5% (capacity to spare)

What Loads It

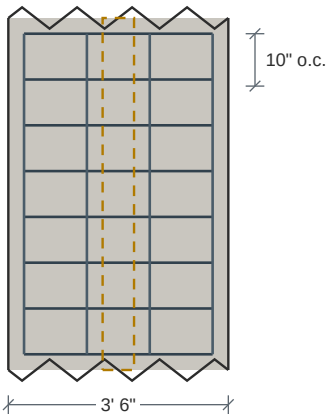
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 481 plf Floor Live 106 plf Snow 3,937 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,425	1,500	Passed (95%)	ASD	D+S
One-Way Shear (lbs)	1,870	6,655	Passed (28%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	2,244	7,036	Passed (32%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	3' 6"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing #13 (continued)

Continuous Footing | 3' 6" wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	34.7	105.5	--	Linked from: Joists #15, Support 5
2 - Uniform (PLF)	--	N/A	148.7	--	1,312	Linked from: Trusses #10, Support 1
3 - Uniform (PLF)	--	N/A	297.5	--	2,625	Linked from: Trusses #29, Support 3

Footing #14

PASSED

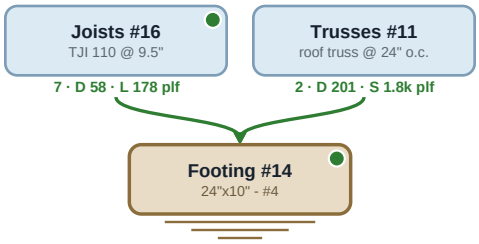
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

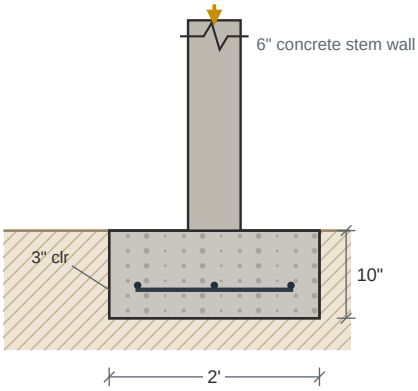
Controls: Depth Above Bars 89% used

Adequacy 19.3% (capacity to spare)

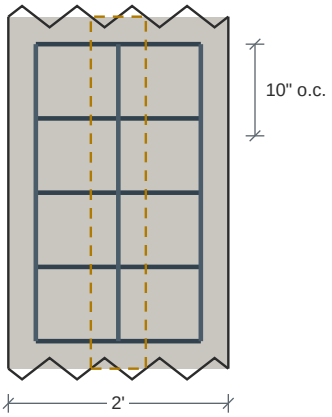
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 259 plf Floor Live 178 plf Snow 1,774 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,210	1,500	Passed (81%)	ASD	D+S
One-Way Shear (lbs)	312	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	468	7,036	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	58.4	177.5	--	Linked from: Joists #16, Support 7
2 - Uniform (PLF)	--	N/A	201	--	1,774	Linked from: Trusses #11, Support 2

Footing #15

PASSED

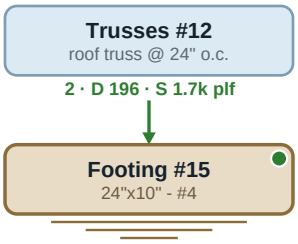
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

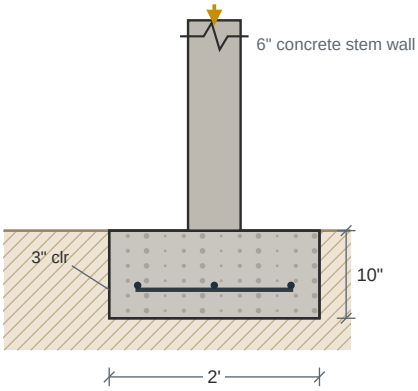
Controls: Depth Above Bars 89% used

Adequacy 23.1% (capacity to spare)

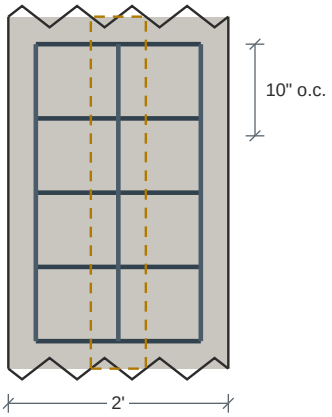
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 196 plf Snow 1,725 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,154	1,500	Passed (77%)	ASD	D+S
One-Way Shear (lbs)	281	6,655	Passed (4%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	421	7,036	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	195.5	1,725	Linked from: Trusses #12, Support 2

Footing #18

PASSED

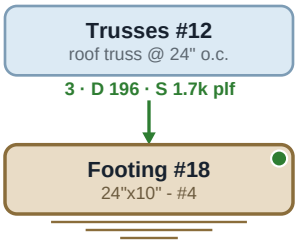
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

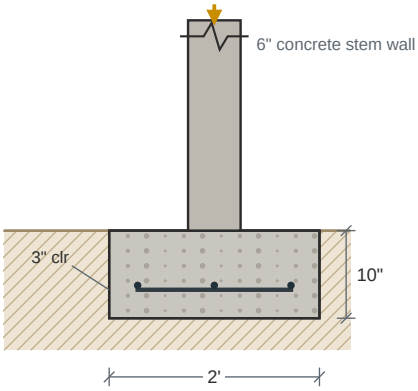
Controls: Depth Above Bars 89% used

Adequacy 23.1% (capacity to spare)

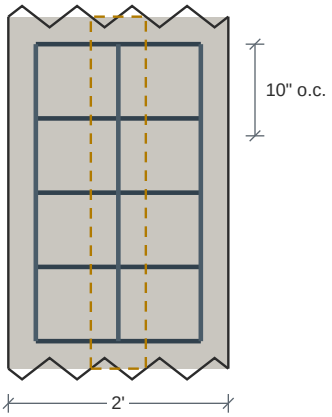
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 196 plf Snow 1,725 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,154	1,500	Passed (77%)	ASD	D+S
One-Way Shear (lbs)	281	6,655	Passed (4%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	421	7,036	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	195.5	1,725	Linked from: Trusses #12, Support 3

Footing #19

PASSED

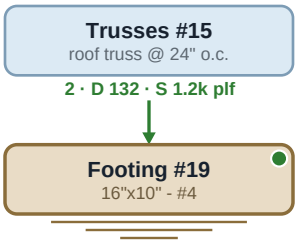
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

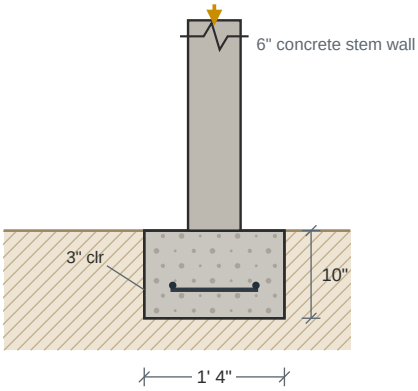
Controls: Depth Above Bars 89% used

Adequacy 19.7% (capacity to spare)

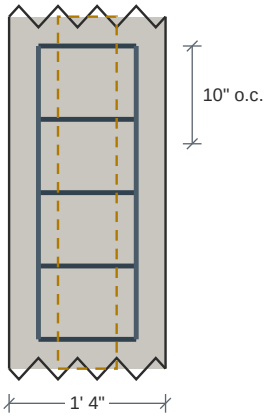
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 132 plf Snow 1,167 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,204	1,500	Passed (80%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	132	7,036	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	132.2	1,167	Linked from: Trusses #15, Support 2

Footing #20

PASSED

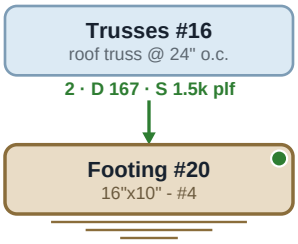
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

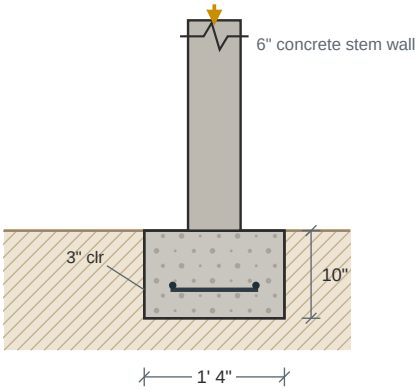
Controls: Soil Bearing Pressure 98% used

Adequacy 2.5% (capacity to spare)

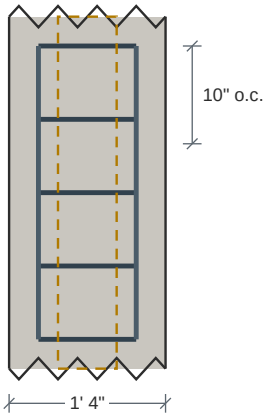
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 167 plf Snow 1,477 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,463	1,500	Passed (98%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	167	7,036	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	167.4	1,477	Linked from: Trusses #16, Support 2

Footing #21

PASSED

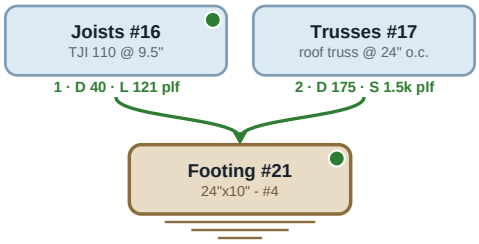
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

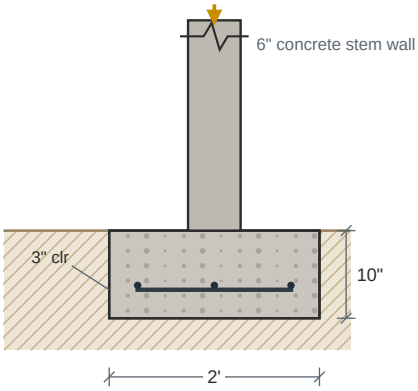
Controls: Depth Above Bars 89% used

Adequacy 28.3% (capacity to spare)

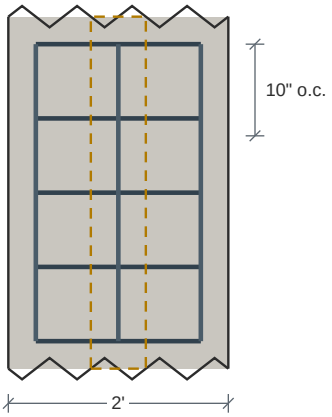
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 215 plf Floor Live 121 plf Snow 1,548 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,075	1,500	Passed (72%)	ASD	D+S
One-Way Shear (lbs)	268	6,655	Passed (4%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	402	7,036	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	39.7	120.6	--	Linked from: Joists #16, Support 1
2 - Uniform (PLF)	--	N/A	175.5	--	1,548	Linked from: Trusses #17, Support 2

Footing #22

PASSED

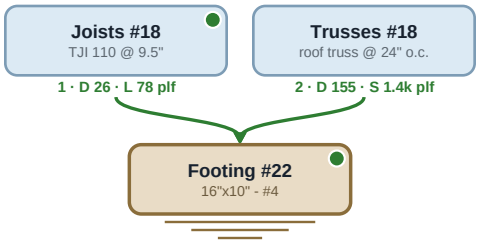
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

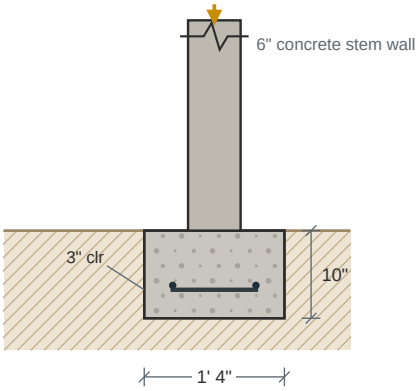
Controls: Soil Bearing Pressure 93% used

Adequacy 7.3% (capacity to spare)

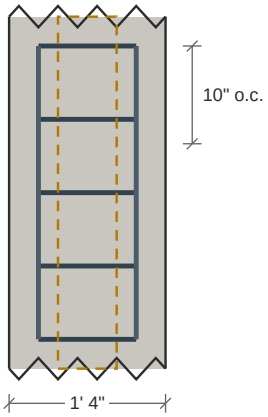
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 181 plf Snow 1,367 plf Floor Live 78 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,390	1,500	Passed (93%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	162	7,036	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	154.9	--	1,367	Linked from: Trusses #18, Support 2
2 - Uniform (PLF)	--	N/A	25.7	78.2	--	Linked from: Joists #18, Support 1

Footing #26

PASSED

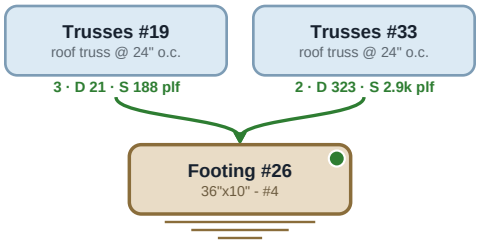
Continuous Footing 3' wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

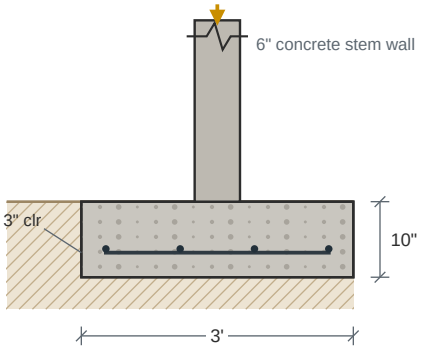
Controls: Depth Above Bars 89% used

Adequacy 13.6% (capacity to spare)

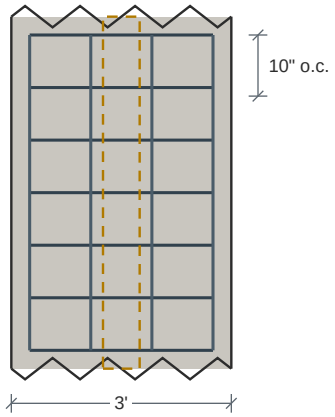
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 344 plf Snow 3,038 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,296	1,500	Passed (86%)	ASD	D+S
One-Way Shear (lbs)	1,208	6,655	Passed (18%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	1,373	7,036	Passed (20%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	3'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	323	2,850	Linked from: Trusses #33, Support 2
2 - Uniform (PLF)	--	N/A	21.3	187.5	Linked from: Trusses #19, Support 3

Footing #27

PASSED

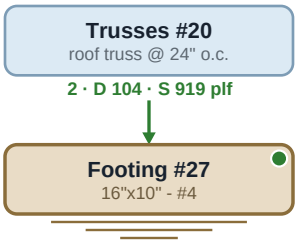
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

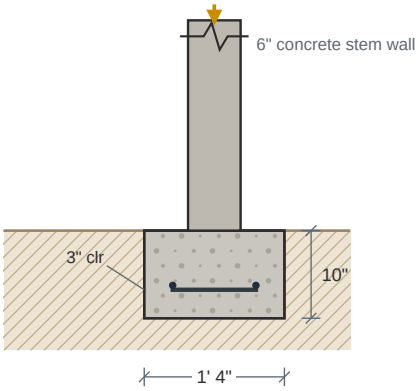
Controls: Depth Above Bars 89% used

Adequacy 33.6% (capacity to spare)

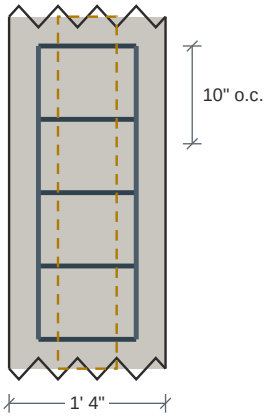
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 104 plf Snow 919 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	997	1,500	Passed (66%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	104	7,036	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	104.1	918.8	Linked from: Trusses #20, Support 2

Footing #28

PASSED

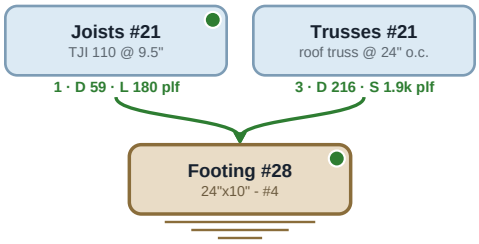
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

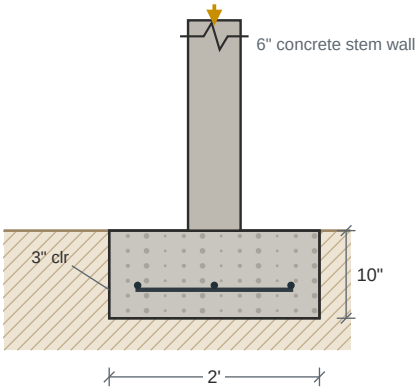
Controls: Depth Above Bars 89% used

Adequacy 14.3% (capacity to spare)

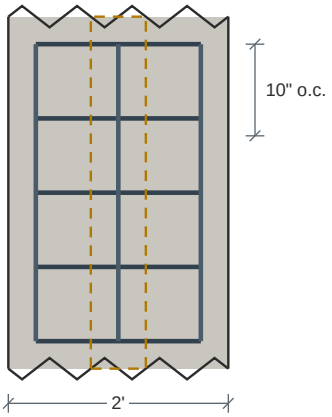
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 275 plf Floor Live 180 plf Snow 1,908 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,285	1,500	Passed (86%)	ASD	D+S
One-Way Shear (lbs)	334	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	501	7,036	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	59.2	180	--	Linked from: Joists #21, Support 1
2 - Uniform (PLF)	--	N/A	216.2	--	1,908	Linked from: Trusses #21, Support 3

Footing #29

PASSED

Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

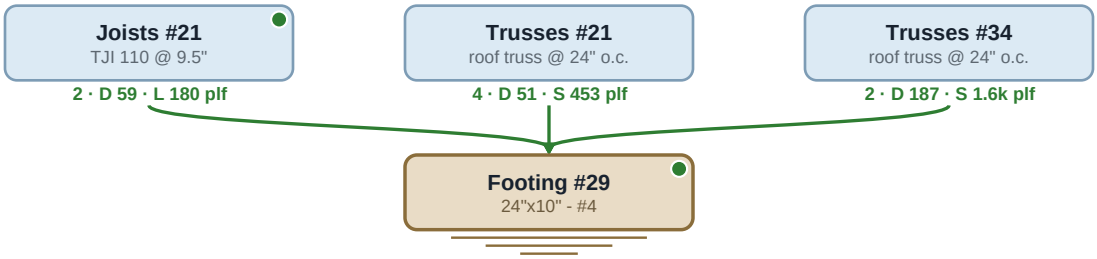
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

Controls: Soil Bearing Pressure 93% used

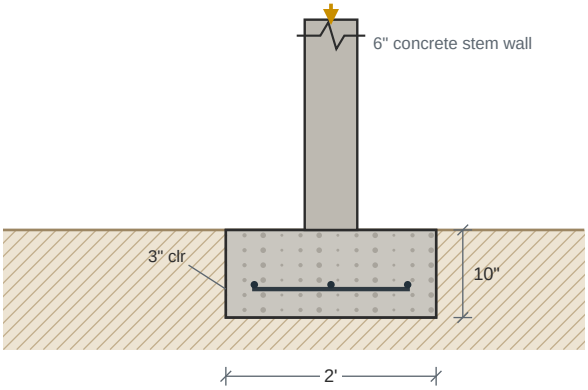
Adequacy 7.1% (capacity to spare)

What Loads It

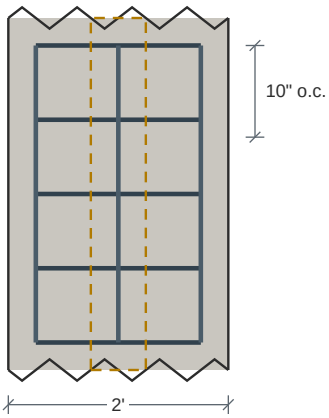
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 297 plf Floor Live 180 plf Snow 2,103 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,393	1,500	Passed (93%)	ASD	D+S
One-Way Shear (lbs)	366	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	549	7,036	Passed (8%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing #29 (continued)

Continuous Footing | 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	59.2	180	--	Linked from: Joists #21, Support 2
2 - Uniform (PLF)	--	N/A	51.3	--	452.7	Linked from: Trusses #21, Support 4
3 - Uniform (PLF)	--	N/A	187	--	1,650	Linked from: Trusses #34, Support 2

Footing #30

PASSED

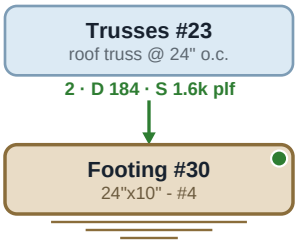
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

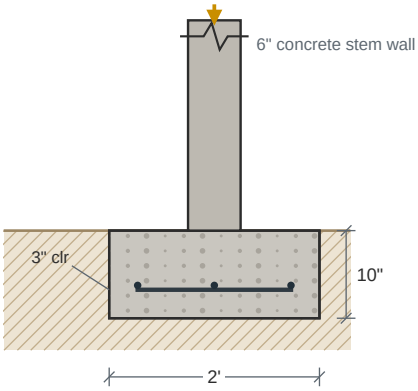
Controls: Depth Above Bars 89% used

Adequacy 26.9% (capacity to spare)

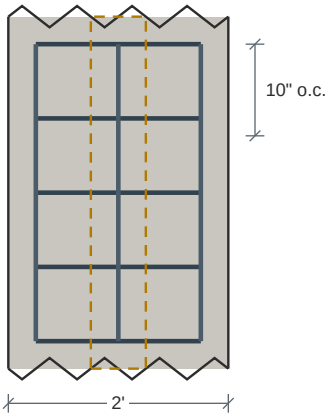
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 184 plf Snow 1,622 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,096	1,500	Passed (73%)	ASD	D+S
One-Way Shear (lbs)	264	6,655	Passed (4%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	396	7,036	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	183.9	1,622	Linked from: Trusses #23, Support 2

Footing #31

PASSED

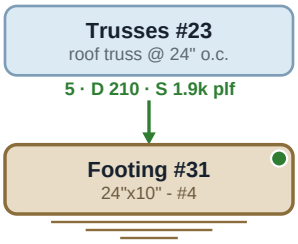
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

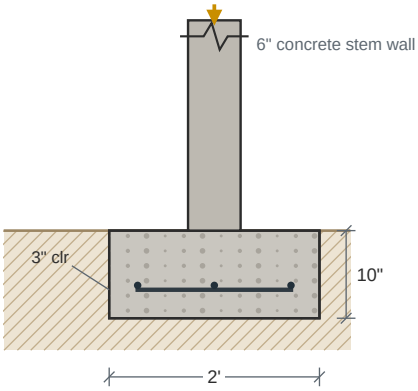
Controls: Depth Above Bars 89% used

Adequacy 18.2% (capacity to spare)

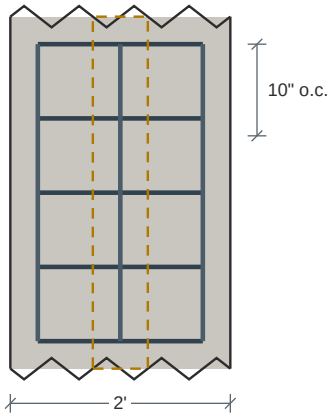
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 210 plf Snow 1,857 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,227	1,500	Passed (82%)	ASD	D+S
One-Way Shear (lbs)	302	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	453	7,036	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	210.4	1,857	Linked from: Trusses #23, Support 5

Footing #32

PASSED

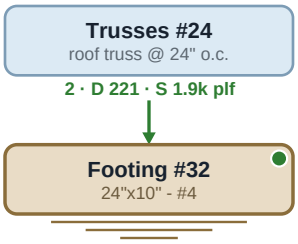
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

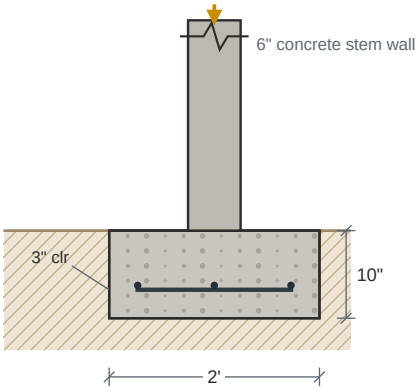
Controls: Depth Above Bars 89% used

Adequacy 14.7% (capacity to spare)

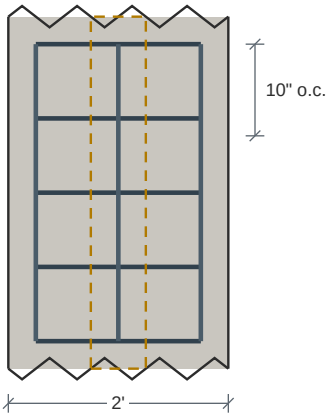
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 221 plf Snow 1,950 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,279	1,500	Passed (85%)	ASD	D+S
One-Way Shear (lbs)	317	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	476	7,036	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	221	1,950	Linked from: Trusses #24, Support 2

Footing #33

PASSED

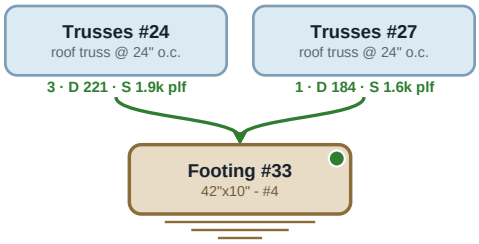
Continuous Footing 3' 6" wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

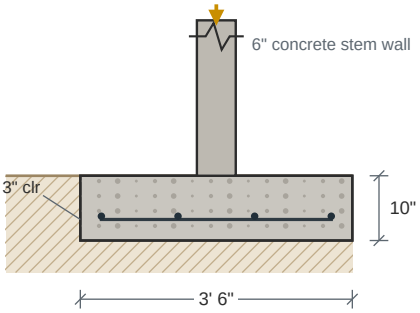
Controls: Depth Above Bars 89% used

Adequacy 13.5% (capacity to spare)

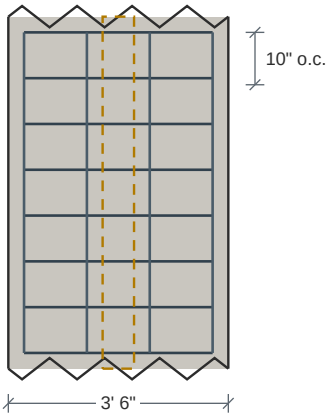
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 405 plf Snow 3,569 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,298	1,500	Passed (87%)	ASD	D+S
One-Way Shear (lbs)	1,660	6,655	Passed (25%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	1,992	7,036	Passed (28%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	3' 6"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	221	1,950	Linked from: Trusses #24, Support 3
2 - Uniform (PLF)	--	N/A	183.5	1,619	Linked from: Trusses #27, Support 1

Footing #34

PASSED

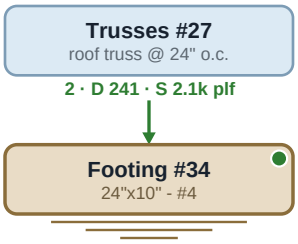
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

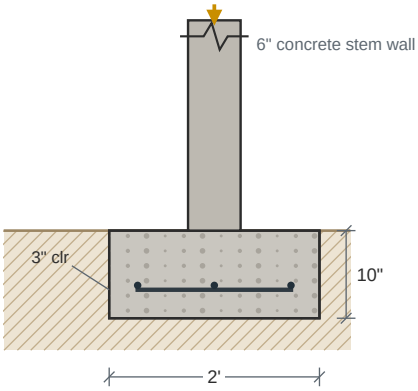
Controls: Soil Bearing Pressure 92% used

Adequacy 8% (capacity to spare)

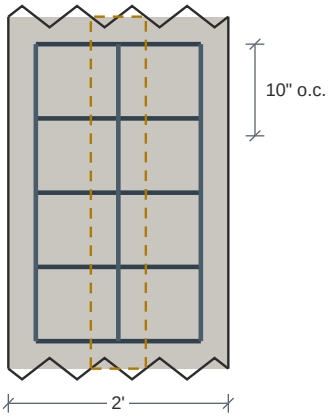
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 241 plf Snow 2,131 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,379	1,500	Passed (92%)	ASD	D+S
One-Way Shear (lbs)	347	6,655	Passed (5%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	520	7,036	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	2'
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	241.5	2,131	Linked from: Trusses #27, Support 2

Footing #36

PASSED

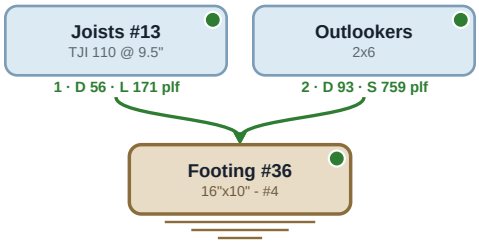
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

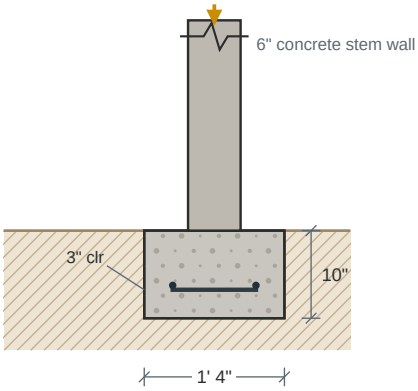
Controls: Depth Above Bars 89% used

Adequacy 39.3% (capacity to spare)

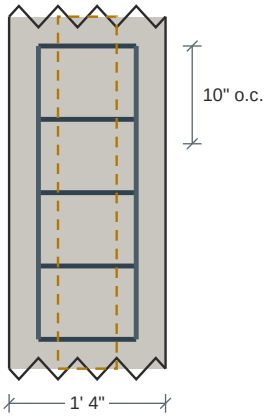
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 149 plf Snow 759 plf Floor Live 171 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	911	1,500	Passed (61%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	102	7,036	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	--	N/A	56.2	171	--	Linked from: Joists #13, Support 1

Footing #37

PASSED

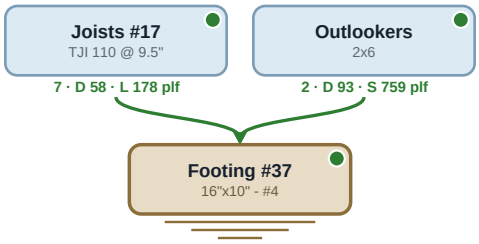
Continuous Footing 1' 4" wide x 10" deep -- Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete stem wall 6" | ACI 318-14

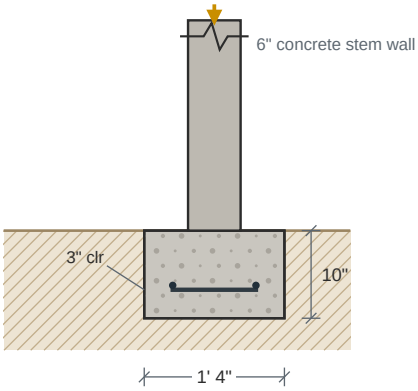
Controls: Depth Above Bars 89% used

Adequacy 39.1% (capacity to spare)

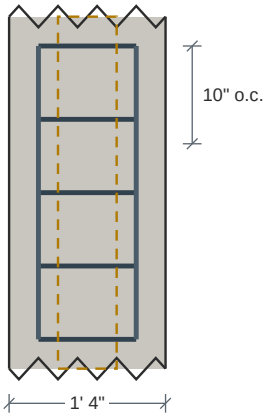
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(2) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 152 plf Snow 759 plf Floor Live 178 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	913	1,500	Passed (61%)	ASD	D+S
One-Way Shear (lbs)	0	6,655	Passed (0%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	103	7,036	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Concrete
Footing width	1' 4"
Footing depth	10"
Stem wall width	6"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(2) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(2) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	93.2	--	759.4	Linked from: Outlookers, Support 2
2 - Uniform (PLF)	--	N/A	58.4	177.5	--	Linked from: Joists #17, Support 7

Footing - WD-#4

PASSED

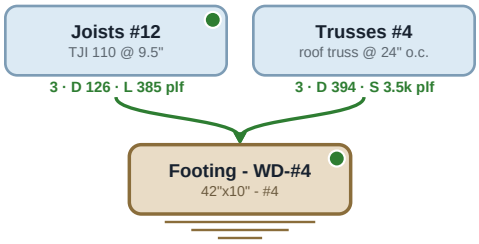
Continuous Footing 3' 6" wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

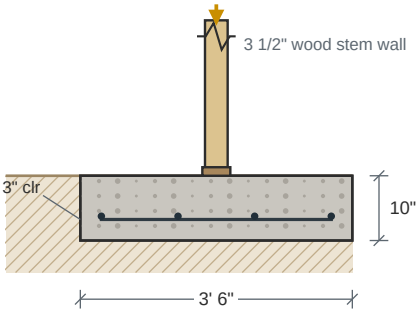
Controls: Depth Above Bars 89% used

Adequacy 14.3% (capacity to spare)

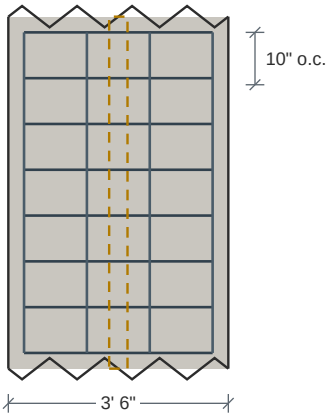
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Floor Live 385 plf Dead 520 plf Snow 3,473 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,286	1,500	Passed (86%)	ASD	D+S
One-Way Shear (lbs)	1,954	6,655	Passed (29%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	2,638	7,036	Passed (37%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	3' 6"
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	126.4	384.6	--	Linked from: Joists #12, Support 3
2 - Uniform (PLF)	--	N/A	393.6	--	3,473	Linked from: Trusses #4, Support 3

Footing - WD-#6

PASSED

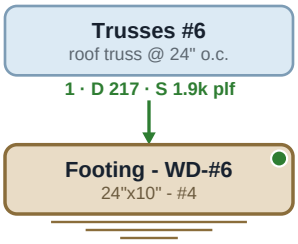
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

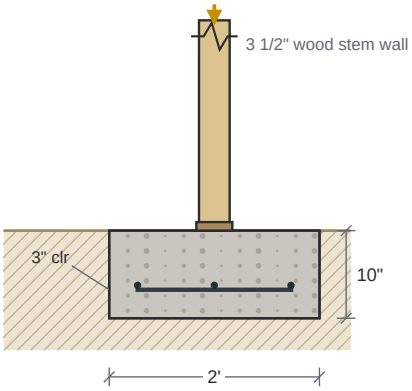
Controls: Depth Above Bars 89% used

Adequacy 18.1% (capacity to spare)

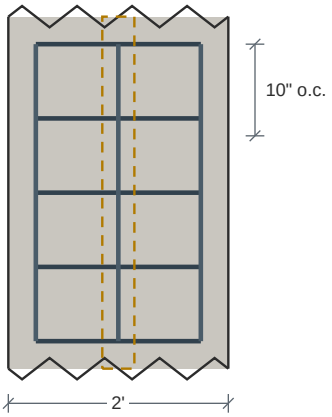
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 217 plf Snow 1,912 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,228	1,500	Passed (82%)	ASD	D+S
One-Way Shear (lbs)	484	6,655	Passed (7%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	713	7,036	Passed (10%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	2'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	216.8	1,912	Linked from: Trusses #6, Support 1

Footing - WD-#16

PASSED

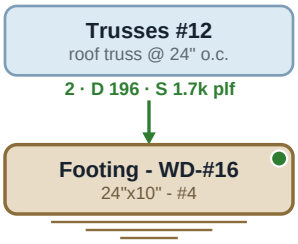
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

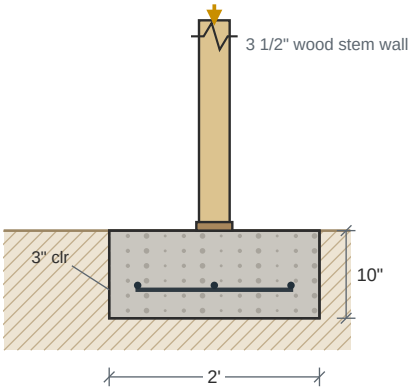
Controls: Depth Above Bars 89% used

Adequacy 25.1% (capacity to spare)

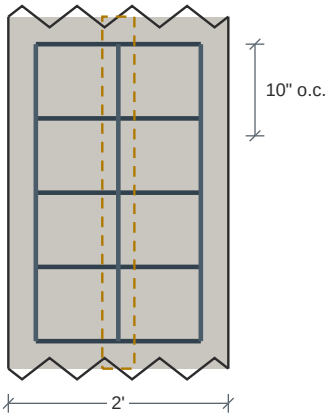
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 196 plf Snow 1,725 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,123	1,500	Passed (75%)	ASD	D+S
One-Way Shear (lbs)	437	6,655	Passed (7%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	643	7,036	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	2'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	195.5	1,725	Linked from: Trusses #12, Support 2

Footing - WD-#17

PASSED

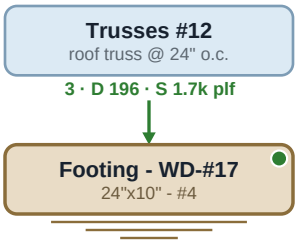
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

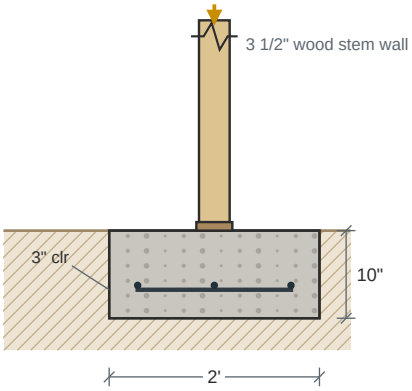
Controls: Depth Above Bars 89% used

Adequacy 25.1% (capacity to spare)

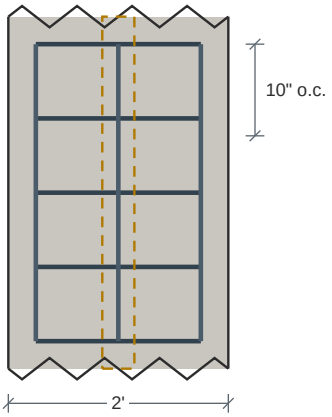
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 196 plf Snow 1,725 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,123	1,500	Passed (75%)	ASD	D+S
One-Way Shear (lbs)	437	6,655	Passed (7%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	643	7,036	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	2'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	195.5	1,725	Linked from: Trusses #12, Support 3

Footing - WD-#23

PASSED

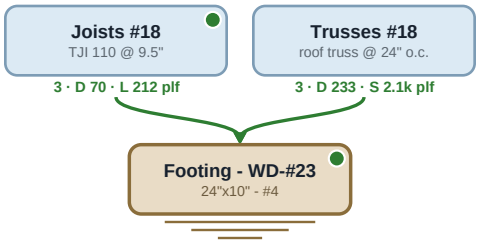
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

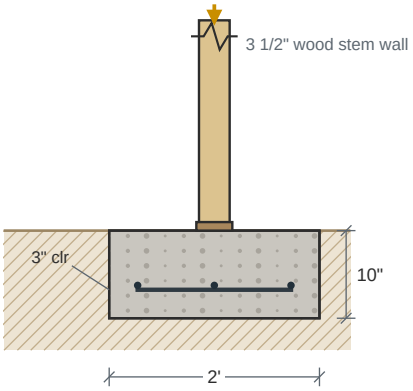
Controls: Soil Bearing Pressure 90% used

Adequacy 10.5% (capacity to spare)

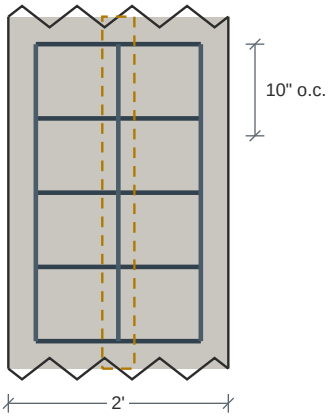
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 303 plf Snow 2,056 plf Floor Live 212 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,343	1,500	Passed (90%)	ASD	D+S
One-Way Shear (lbs)	564	6,655	Passed (8%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	831	7,036	Passed (12%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	2'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	233	--	2,056	Linked from: Trusses #18, Support 3
2 - Uniform (PLF)	--	N/A	69.8	212.3	--	Linked from: Joists #18, Support 3

Footing - WD-#24

PASSED

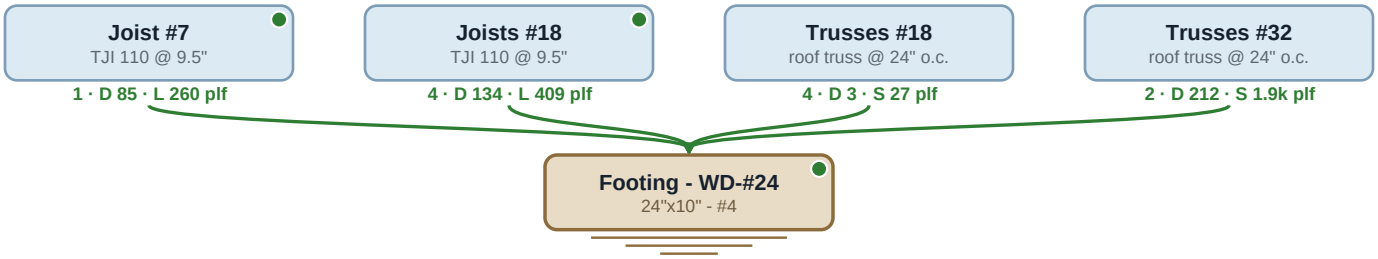
Continuous Footing 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

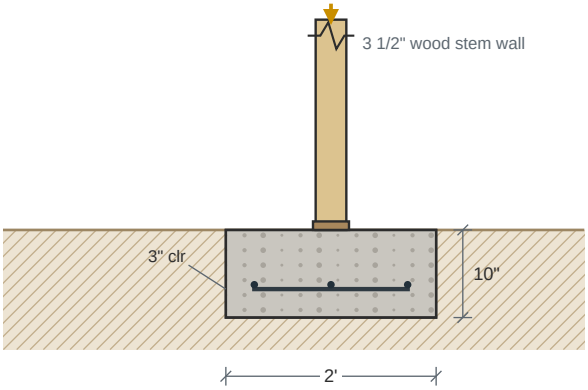
Controls: Soil Bearing Pressure 90% used
Adequacy 10.3% (capacity to spare)

What Loads It

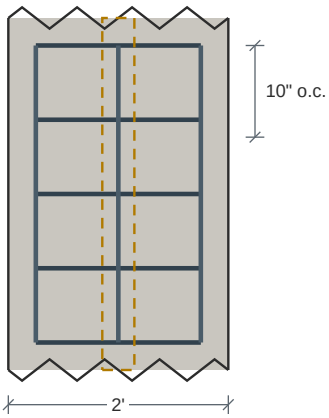
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 435 plf Floor Live 669 plf Snow 1,902 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,345	1,500	Passed (90%)	ASD	D+0.75L+0.75S
One-Way Shear (lbs)	618	6,655	Passed (9%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	910	7,036	Passed (13%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	2'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(3) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(3) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing - WD-#24 (continued)

Continuous Footing | 2' wide x 10" deep -- Long.(3) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	134.4	408.8	--	Linked from: Joists #18, Support 4
2 - Uniform (PLF)	--	N/A	3.1	--	27	Linked from: Trusses #18, Support 4
3 - Uniform (PLF)	--	N/A	85.5	260	--	Linked from: Joist #7, Support 1
4 - Uniform (PLF)	--	N/A	212.5	--	1,875	Linked from: Trusses #32, Support 2

Footing - WD-#25

PASSED

Continuous Footing 3' wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

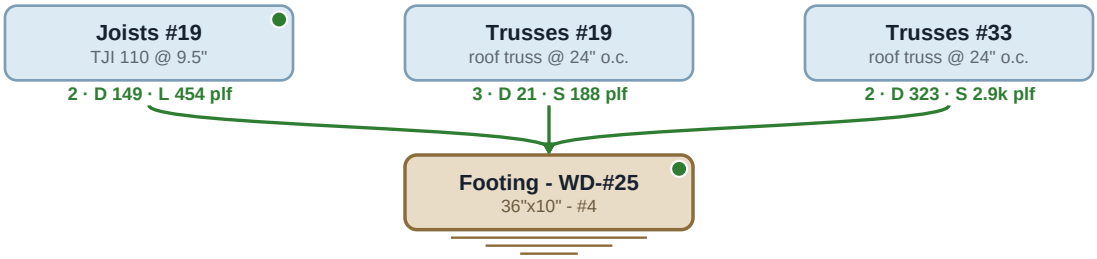
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used

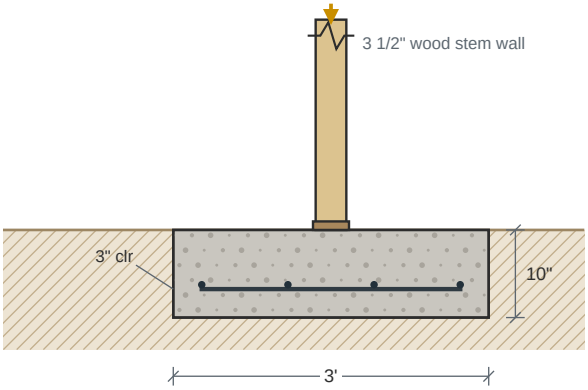
Adequacy 11.6% (capacity to spare)

What Loads It

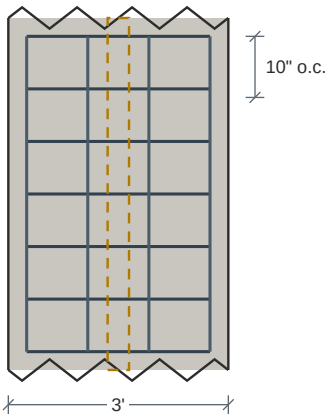
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SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 493 plf Floor Live 454 plf Snow 3,038 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,326	1,500	Passed (88%)	ASD	D+S
One-Way Shear (lbs)	1,559	6,655	Passed (23%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	2,005	7,036	Passed (28%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	3'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing - WD-#25 (continued)

Continuous Footing | 3' wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	149.2	454	--	Linked from: Joists #19, Support 2
2 - Uniform (PLF)	--	N/A	21.3	--	187.5	Linked from: Trusses #19, Support 3
3 - Uniform (PLF)	--	N/A	323	--	2,850	Linked from: Trusses #33, Support 2

Footing - WD-#35

PASSED

Continuous Footing 3' wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

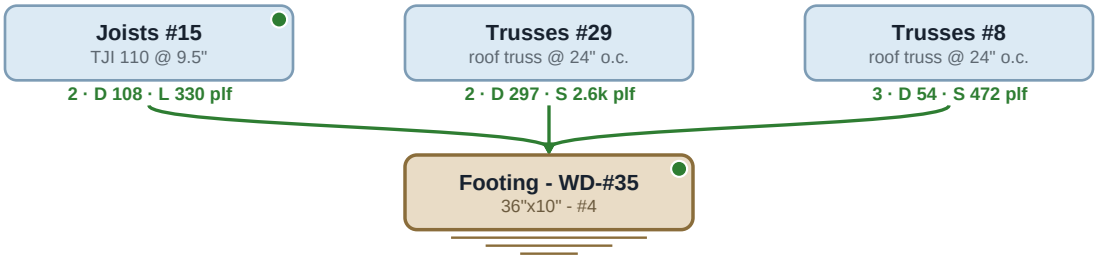
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood stem wall 3 1/2" | ACI 318-14

Controls: Soil Bearing Pressure 89% used

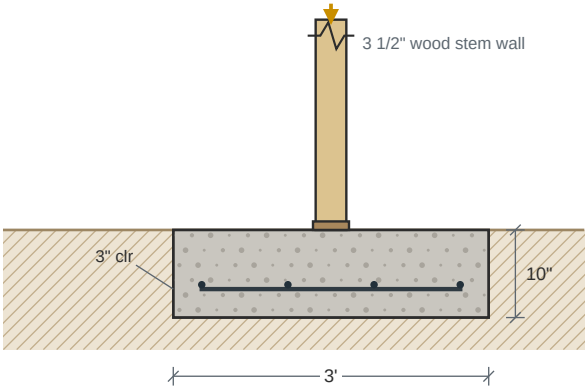
Adequacy 11% (capacity to spare)

What Loads It

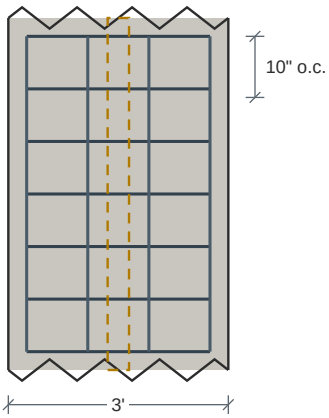
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SECTION



PLAN -- BOTTOM MAT



Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

Carrying: Dead 459 plf Snow 3,097 plf Floor Live 330 plf

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,335	1,500	Passed (89%)	ASD	D+S
One-Way Shear (lbs)	1,540	6,655	Passed (23%)	LRFD	1.2D+1.6S+L
Moment (ft-lbs)	1,981	7,036	Passed (28%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Stem wall type	Wood
Footing width	3'
Footing depth	10"
Stem wall width	3 1/2"
Stem wall height	24"
Stem wall density	145 pcf
Stem wall offset	0

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'

Reinforcement	
Bottom mat	Long.(4) #4 Bars, Transv:#4 @10(in) O.C.
Transverse	#4 @ 10" o.c.
Longitudinal	(4) #4
Selected for	moment and minimum steel
Dowels	(3), bar size not set
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

Footing - WD-#35 (continued)

Continuous Footing | 3' wide x 10" deep -- Long.(4) #4 Bars, Transv:#4 @10(in) O.C.

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PLF)	--	N/A	53.5	--	472.5	Linked from: Trusses #8, Support 3
2 - Uniform (PLF)	--	N/A	108.4	329.6	--	Linked from: Joists #15, Support 2
3 - Uniform (PLF)	--	N/A	297.5	--	2,625	Linked from: Trusses #29, Support 2

SpotFtg #100

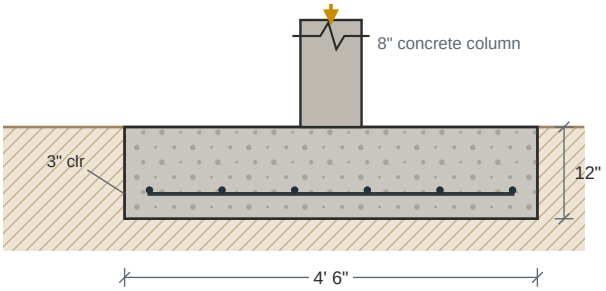
PASSED

Spot Footing 4' 6" x 11' 6" x 12" deep -- Bot.(15) #4 Long, (6) #4 Short - 9 of the Long in the center 4.5 ft

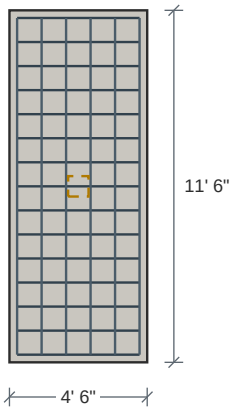
Controls: Depth Above Bars 69% used
Adequacy 89.9% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

SECTION



PLAN -- BOTTOM MAT



Bot.(15) #4 Long, (6) #4 Short - 9 of the Long in the center 4.5 ft

Carrying: Dead 300 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	151	1,500	Passed (10%)	ASD	D
One-Way Shear X (lbs)	173	36,602	Passed (0%)	LRFD	1.4D
One-Way Shear Y (lbs)	115	93,537	Passed (0%)	LRFD	1.4D
Two-Way Shear (lbs)	405	92,182	Passed (0%)	LRFD	1.4D
Moment X (ft-lbs)	536	43,138	Passed (1%)	LRFD	1.4D
Moment Y (ft-lbs)	171	107,922	Passed (0%)	LRFD	1.4D
Crushing (lbs)	420	212,160	Passed (0%)	LRFD	1.4D
Depth Above Bars (in)	6	9	Passed (69%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	11' 6"
Footing depth	12"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(15) #4 Long, (6) #4 Short - 9 of the Long
Bars the long way	(15) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg #100 (continued)

Spot Footing | 4' 6" x 11' 6" x 12" deep -- Bot.(15) #4 Long, (6) #4 Short - 9 of the Long in the center 4.5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Comments
1 - Point (lb)	--	N/A	300	

SpotFtg #101

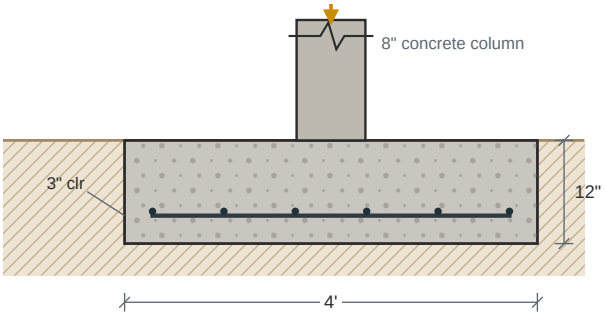
PASSED

Spot Footing 4' x 8' 6" x 12" deep -- Bot.(12) #4 Long, (6) #4 Short - 8 of the Long in the center 4 ft

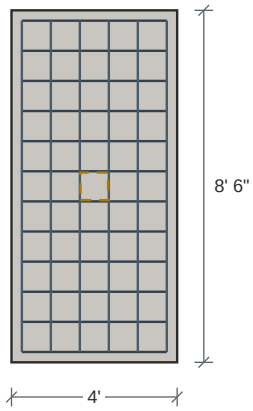
Controls: Depth Above Bars 69% used
Adequacy 89.7% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

SECTION



PLAN -- BOTTOM MAT



Bot.(12) #4 Long, (6) #4 Short - 8 of the Long in the center 4 ft

Carrying: Dead 300 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	154	1,500	Passed (10%)	ASD	D
One-Way Shear X (lbs)	160	32,535	Passed (0%)	LRFD	1.4D
One-Way Shear Y (lbs)	103	69,136	Passed (0%)	LRFD	1.4D
Two-Way Shear (lbs)	397	92,182	Passed (0%)	LRFD	1.4D
Moment X (ft-lbs)	379	42,962	Passed (1%)	LRFD	1.4D
Moment Y (ft-lbs)	146	86,110	Passed (0%)	LRFD	1.4D
Crushing (lbs)	420	212,160	Passed (0%)	LRFD	1.4D
Depth Above Bars (in)	6	9	Passed (69%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	8' 6"
Footing depth	12"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(12) #4 Long, (6) #4 Short - 8 of the Long
Bars the long way	(12) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg #101 (continued)

Spot Footing | 4' x 8' 6" x 12" deep -- Bot.(12) #4 Long, (6) #4 Short - 8 of the Long in the center 4 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Comments
1 - Point (lb)	--	N/A	300	

SpotFtg Bm #1-1

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

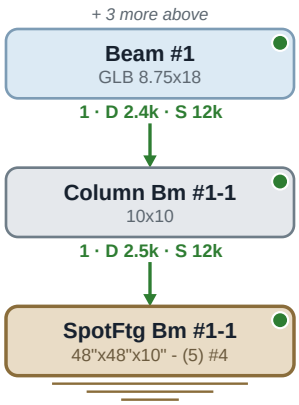
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

PASSED

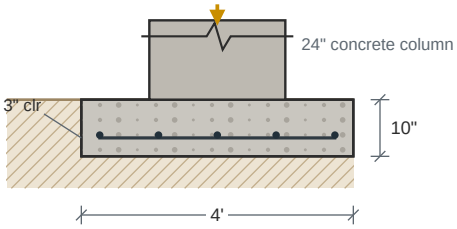
Controls: Depth Above Bars 89% used

Adequacy 16.6% (capacity to spare)

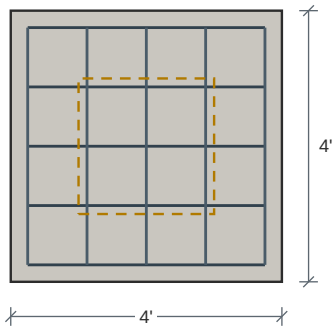
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 6,291 lb Snow 11,797 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,251	1,500	Passed (83%)	ASD	D+S
One-Way Shear X (lbs)	3,166	24,648	Passed (13%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,166	24,648	Passed (13%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	15,756	130,303	Passed (12%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,303	27,022	Passed (12%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,303	27,022	Passed (12%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	26,426	1,909,440	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,521	11,797	Linked from: Column Bm #1-1, Support 1
2 - Point (lb)	--	N/A	3,770	--	

SpotFtg Bm #1-2

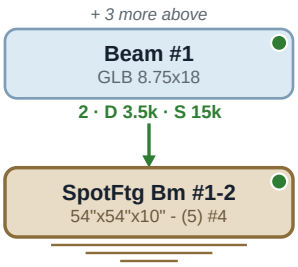
Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

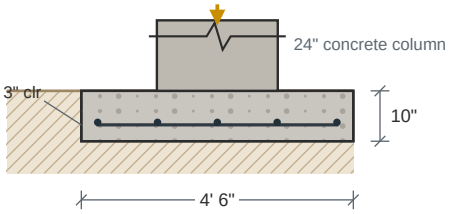
PASSED

Controls: Depth Above Bars 89% used
Adequacy 18.2% (capacity to spare)

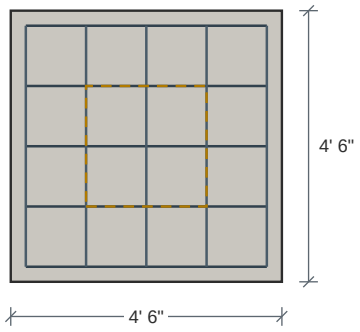
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 7,432 lb Snow 14,968 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,227	1,500	Passed (82%)	ASD	D+S
One-Way Shear X (lbs)	5,326	27,728	Passed (19%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,326	27,728	Passed (19%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	22,382	130,303	Passed (17%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,706	27,145	Passed (21%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,706	27,145	Passed (21%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	32,867	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,469	14,968	Linked from: Beam #1, Support 2
2 - Point (lb)	--	N/A	193	--	
3 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #1-3

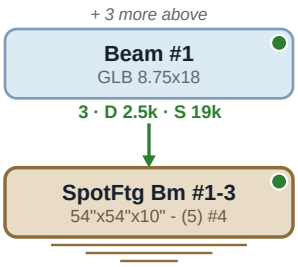
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

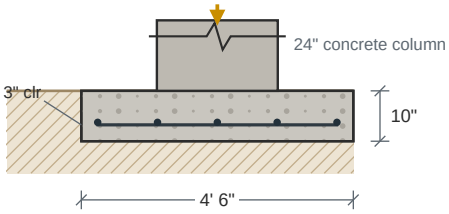
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Soil Bearing Pressure 91% used
Adequacy 9.3% (capacity to spare)

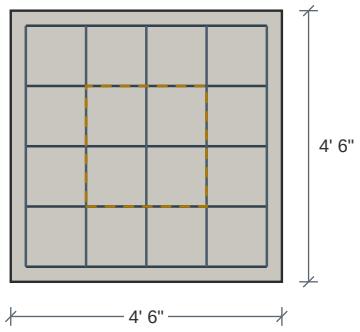
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 6,256 lb Snow 18,840 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,360	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	6,101	27,728	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,101	27,728	Passed (22%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	25,641	130,303	Passed (20%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,537	27,145	Passed (24%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	6,537	27,145	Passed (24%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	37,652	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,486	18,840	Linked from: Beam #1, Support 3
2 - Point (lb)	--	N/A	3,770	--	

SpotFtg Bm #1-4

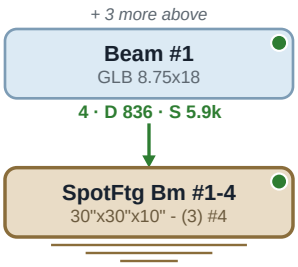
Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

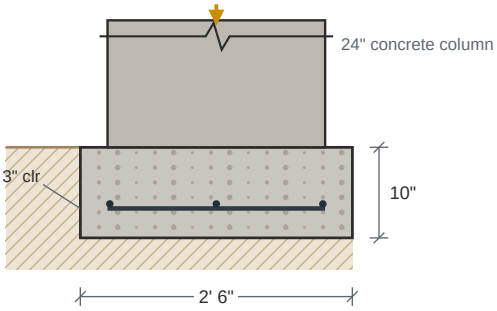
PASSED

Controls: Depth Above Bars 89% used
Adequacy 20.5% (capacity to spare)

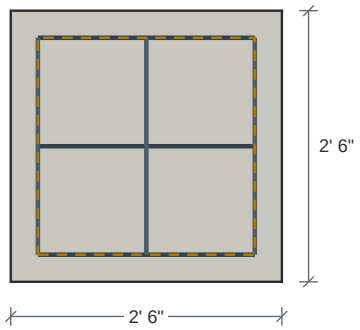
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 836 lb Snow 5,864 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,193	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	130	16,240	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	130	16,240	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,385	1,193,400	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	835.6	5,864	Linked from: Beam #1, Support 4

SpotFtg Bm #2-2

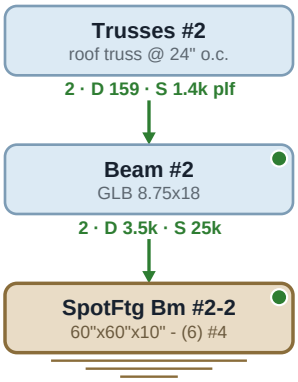
PASSED

Spot Footing 5' x 5' x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

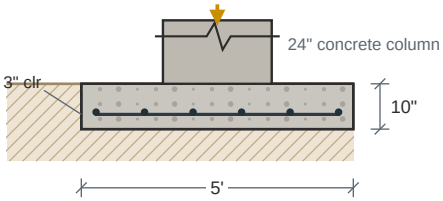
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Soil Bearing Pressure 95% used
Adequacy 5.3% (capacity to spare)

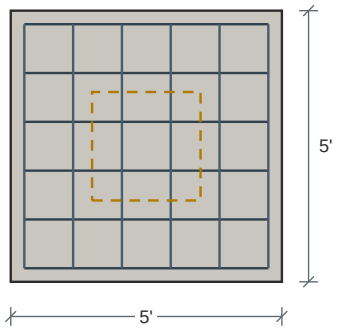
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 7,316 lb Snow 25,158 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,420	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	9,602	30,809	Passed (31%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	9,602	30,809	Passed (31%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	36,363	130,303	Passed (28%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	11,032	32,479	Passed (34%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	11,032	32,479	Passed (34%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	49,033	1,909,440	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5'
Footing length	5'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,546	25,158	Linked from: Beam #2, Support 2
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #2-3

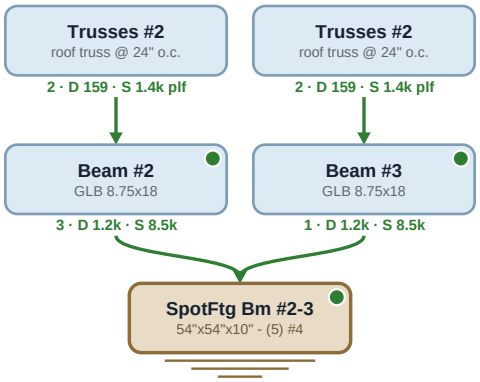
Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

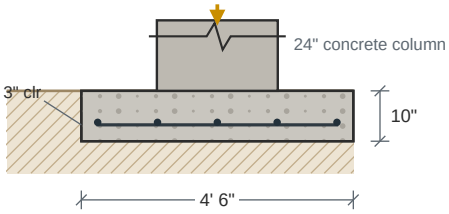
PASSED

Controls: Depth Above Bars 89% used
Adequacy 15.9% (capacity to spare)

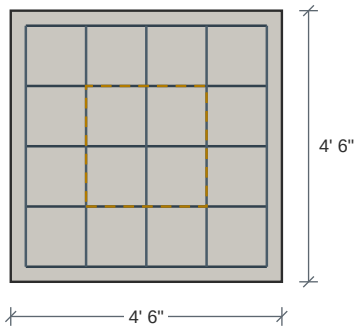
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 6,112 lb Snow 16,983 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,261	1,500	Passed (84%)	ASD	D+S
One-Way Shear X (lbs)	5,591	27,728	Passed (20%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,591	27,728	Passed (20%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	23,499	130,303	Passed (18%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,991	27,145	Passed (22%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,991	27,145	Passed (22%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	34,507	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,169	8,477	Linked from: Beam #2, Support 3
2 - Point (lb)	--	N/A	1,173	8,506	Linked from: Beam #3, Support 1

SpotFtg Bm #2-3 (continued)

Spot Footing | 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
3 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #3-2

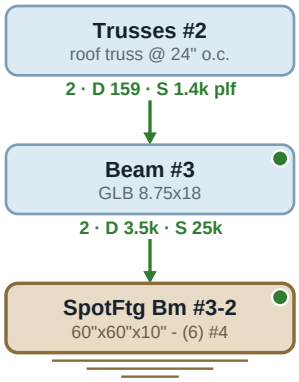
PASSED

Spot Footing 5' x 5' x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

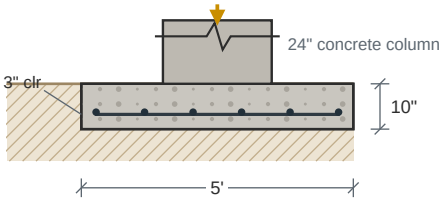
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 16.1% (capacity to spare)

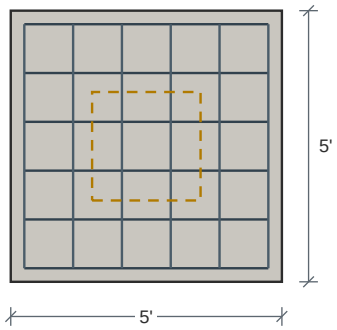
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 3,521 lb Snow 24,928 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,259	1,500	Passed (84%)	ASD	D+S
One-Way Shear X (lbs)	8,638	30,809	Passed (28%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	8,638	30,809	Passed (28%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	32,711	130,303	Passed (25%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	9,925	32,479	Passed (31%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	9,925	32,479	Passed (31%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	44,110	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5'
Footing length	5'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,521	24,928	Linked from: Beam #3, Support 2

SpotFtg Bm #4-1

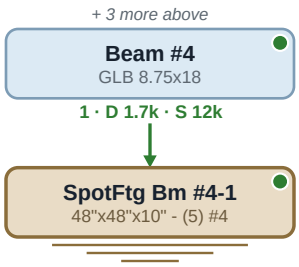
PASSED

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

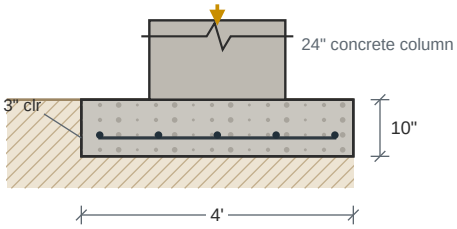
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 20.8% (capacity to spare)

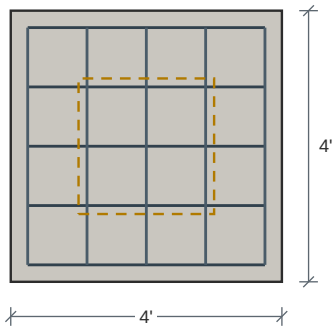
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 5,477 lb Snow 11,596 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,188	1,500	Passed (79%)	ASD	D+S
One-Way Shear X (lbs)	3,010	24,648	Passed (12%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,010	24,648	Passed (12%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	14,981	130,303	Passed (11%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,141	27,022	Passed (12%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,141	27,022	Passed (12%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	25,126	1,909,440	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,707	11,596	Linked from: Beam #4, Support 1
2 - Point (lb)	--	N/A	3,770	--	

SpotFtg Bm #4-2

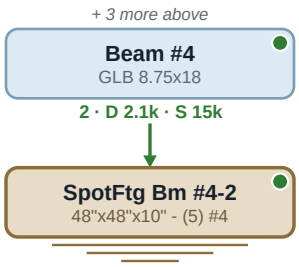
PASSED

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

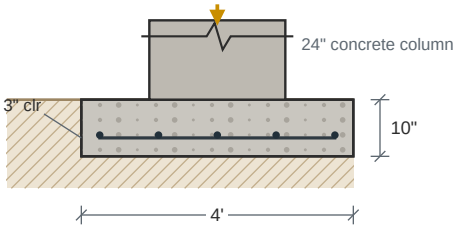
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Soil Bearing Pressure 94% used
Adequacy 6.2% (capacity to spare)

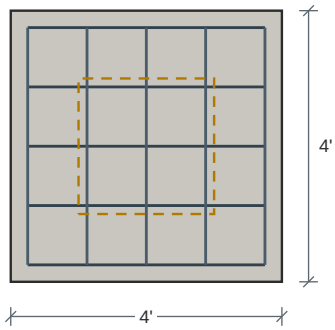
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 5,890 lb Snow 14,683 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,407	1,500	Passed (94%)	ASD	D+S
One-Way Shear X (lbs)	3,661	24,648	Passed (15%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,661	24,648	Passed (15%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	18,222	130,303	Passed (14%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,820	27,022	Passed (14%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,820	27,022	Passed (14%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	30,560	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,120	14,683	Linked from: Beam #4, Support 2
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #4-3

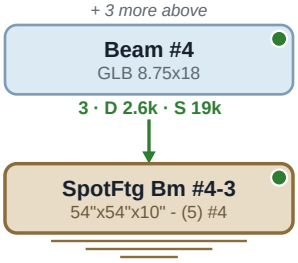
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

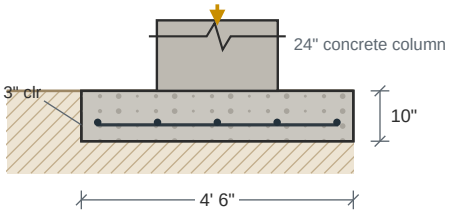
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Soil Bearing Pressure 91% used
Adequacy 8.9% (capacity to spare)

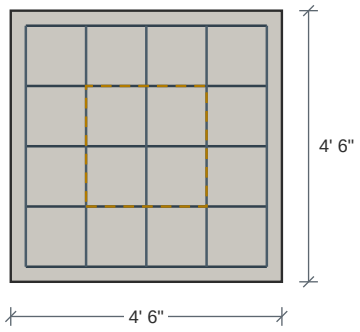
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 6,377 lb Snow 18,858 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,367	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	6,129	27,728	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,129	27,728	Passed (22%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	25,758	130,303	Passed (20%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,567	27,145	Passed (24%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	6,567	27,145	Passed (24%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	37,825	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,607	18,858	Linked from: Beam #4, Support 3
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #4-4

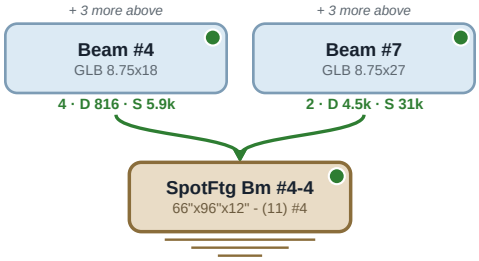
PASSED

Spot Footing 5' 6" x 8' x 12" deep -- Bot.(11) #4 Long, (8) #4 Short - 9 of the Long in the center 5.5 ft

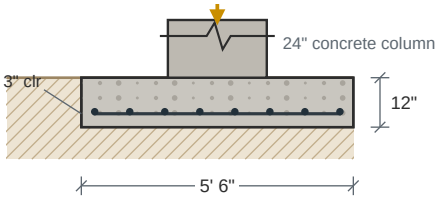
Controls: Soil Bearing Pressure 90% used
Adequacy 9.9% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 72" | ACI 318-14

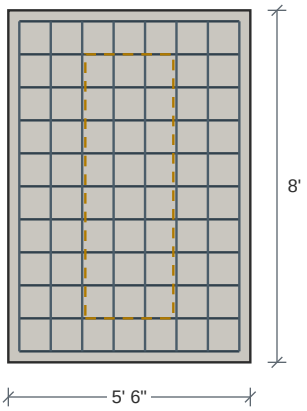
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(11) #4 Long, (8) #4 Short - 9 of the Long in the center 5.5 ft

Carrying: Dead 16,648 lb Snow 36,454 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,352	1,500	Passed (90%)	ASD	D+S
One-Way Shear X (lbs)	3,059	44,735	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	15,127	65,069	Passed (23%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	45,971	263,044	Passed (17%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	4,894	57,347	Passed (9%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	21,800	79,006	Passed (28%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	78,304	5,484,449	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	9	Passed (69%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5' 6"
Footing length	8'
Footing depth	12"
Column width	24"
Column length	72"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(11) #4 Long, (8) #4 Short - 9 of the Long
Bars the long way	(11) #4
Bars the short way	(8) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #4-4 (continued)

Spot Footing | 5' 6" x 8' x 12" deep -- Bot.(11) #4 Long, (8) #4 Short - 9 of the Long in the center 5.5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	816.1	5,861	Linked from: Beam #4, Support 4
2 - Point (lb)	--	N/A	4,522	30,593	Linked from: Beam #7, Support 2
3 - Point (lb)	--	N/A	11,310	--	

SpotFtg Bm #5-1

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

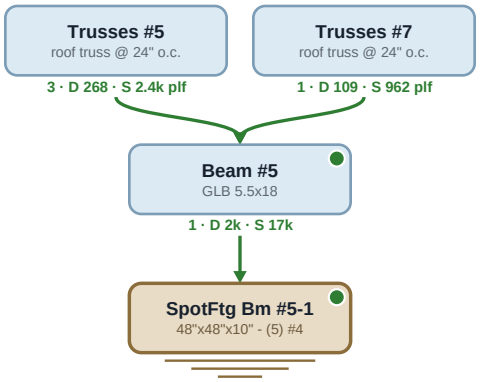
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

PASSED

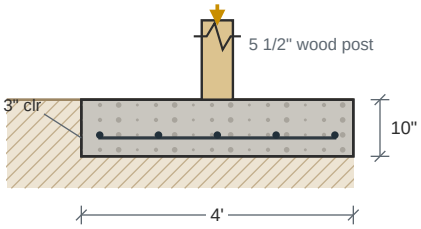
Controls: Depth Above Bars 89% used

Adequacy 12.4% (capacity to spare)

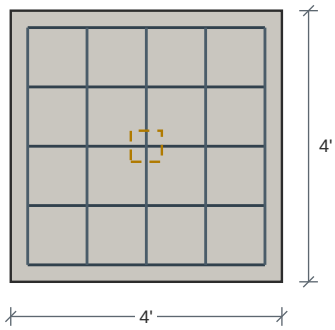
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,047 lb Snow 17,041 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,314	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	9,288	24,648	Passed (38%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	9,288	24,648	Passed (38%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	27,864	51,267	Passed (54%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	13,207	27,022	Passed (49%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	13,207	27,022	Passed (49%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	29,721	100,279	Passed (30%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,047	17,041	Linked from: Beam #5, Support 1

SpotFtg Bm #5-2

Spot Footing 6' 6" x 8' x 14" deep -- Bot.(14) #4 Long, (11) #4 Short - 12 of the Long in the center 6.5 ft

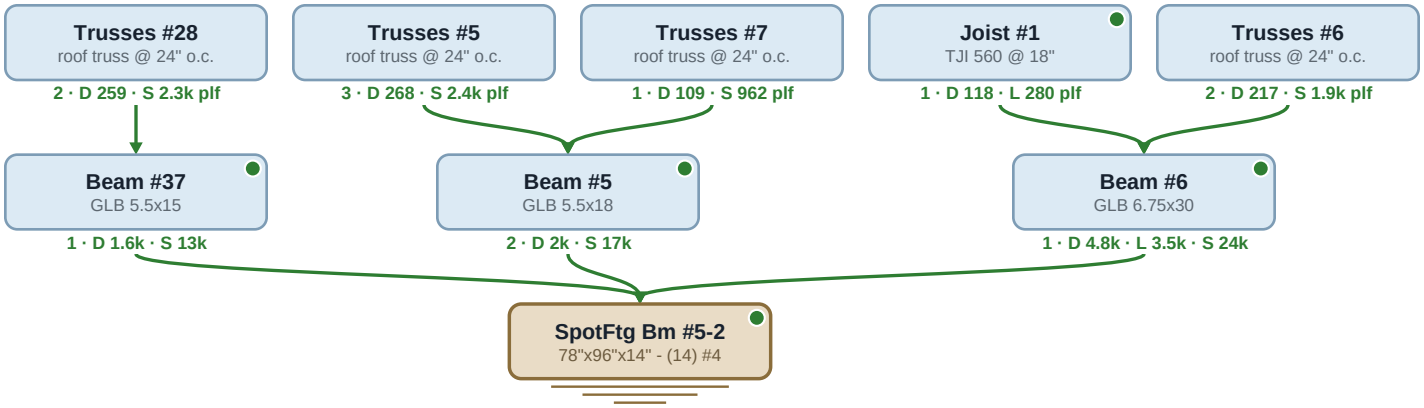
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

PASSED

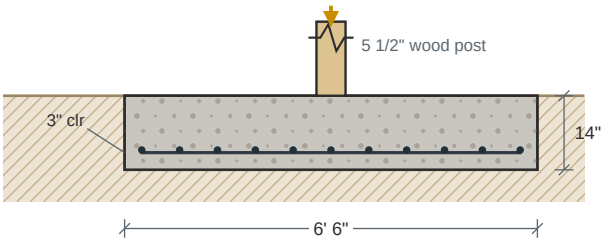
Controls: Crushing 99.5% used
Adequacy 0.5% (capacity to spare)

What Loads It

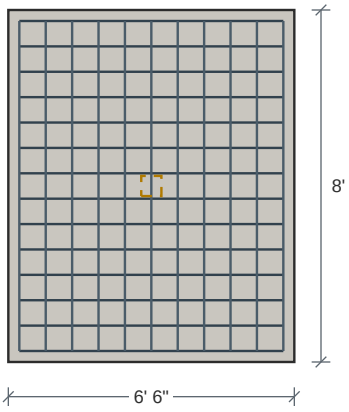
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(14) #4 Long, (11) #4 Short - 12 of the Long in the center 6.5 ft

Carrying: Dead 8,379 lb Snow 53,909 lb Floor Live 3,500 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,367	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	36,389	65,686	Passed (55%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	33,270	80,844	Passed (41%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	96,398	110,421	Passed (87%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	94,174	98,190	Passed (96%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	75,478	124,826	Passed (60%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	99,810	100,279	**Passed (99.5%)**	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	11	Passed (56%)	code	ACI 318-14 13.3.1.2

SpotFtg Bm #5-2 (continued)

Spot Footing | 6' 6" x 8' x 14" deep -- Bot.(14) #4 Long, (11) #4 Short - 12 of the Long in the center 6.5 ft

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	6' 6"
Footing length	8'
Footing depth	14"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(14) #4 Long, (11) #4 Short - 12 of the
Bars the long way	(14) #4
Bars the short way	(11) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,047	--	17,041	Linked from: Beam #5, Support 2
2 - Point (lb)	--	N/A	4,757	3,500	23,906	Linked from: Beam #6, Support 1
3 - Point (lb)	--	N/A	1,576	--	12,963	Linked from: Beam #37, Support 1

SpotFtg Bm #6-2

PASSED

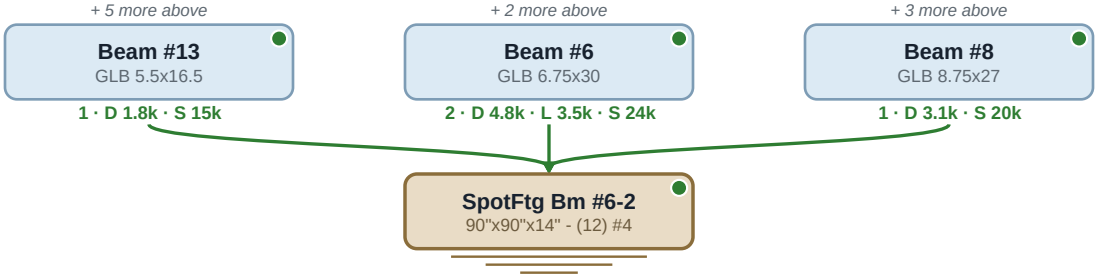
Spot Footing 7' 6" x 7' 6" x 14" deep -- Bot.(12) #4 Long, (12) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 7 1/2" x 7 1/2" | ACI 318-14

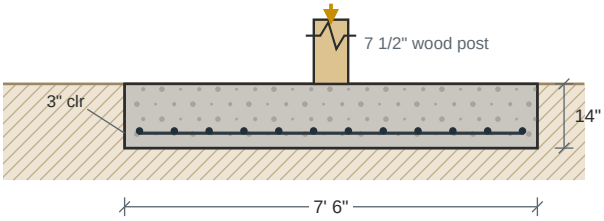
Controls: Soil Bearing Pressure 92% used
Adequacy 7.9% (capacity to spare)

What Loads It

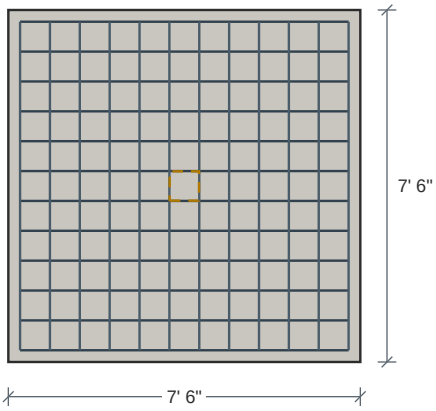
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(12) #4 Long, (12) #4 Short

Carrying: Dead 9,673 lb Floor Live 3,500 lb Snow 58,547 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,382	1,500	Passed (92%)	ASD	D+S
One-Way Shear X (lbs)	37,470	75,791	Passed (49%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	37,470	75,791	Passed (49%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	104,432	124,223	Passed (84%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	93,662	107,312	Passed (87%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	93,662	107,312	Passed (87%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	108,783	186,469	Passed (58%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	11	Passed (56%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	7' 6"
Footing length	7' 6"
Footing depth	14"
Column width	7 1/2"
Column length	7 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

SpotFtg Bm #6-2 (continued)

Spot Footing | 7' 6" x 7' 6" x 14" deep -- Bot.(12) #4 Long, (12) #4 Short

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(12) #4 Long, (12) #4 Short
Bars the long way	(12) #4
Bars the short way	(12) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,757	3,500	23,906	Linked from: Beam #6, Support 2
2 - Point (lb)	--	N/A	1,821	--	14,705	Linked from: Beam #13, Support 1
3 - Point (lb)	--	N/A	3,095	--	19,935	Linked from: Beam #8, Support 1

SpotFtg Bm #8-2

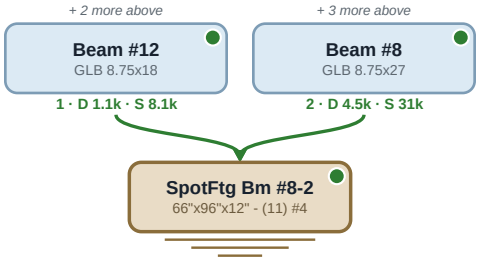
Spot Footing 5' 6" x 8' x 12" deep -- Bot.(11) #4 Long, (8) #4 Short - 9 of the Long in the center 5.5 ft

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 72" | ACI 318-14

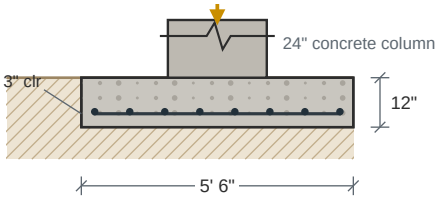
PASSED

Controls: Soil Bearing Pressure 94% used
Adequacy 6% (capacity to spare)

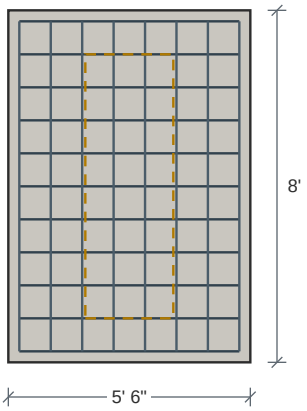
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(11) #4 Long, (8) #4 Short - 9 of the Long in the center 5.5 ft

Carrying: Dead 16,964 lb Snow 38,667 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,409	1,500	Passed (94%)	ASD	D+S
One-Way Shear X (lbs)	3,212	44,735	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	15,884	65,069	Passed (24%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	48,273	263,044	Passed (18%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,139	57,347	Passed (9%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	22,892	79,006	Passed (29%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	82,225	5,484,449	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	9	Passed (69%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5' 6"
Footing length	8'
Footing depth	12"
Column width	24"
Column length	72"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(11) #4 Long, (8) #4 Short - 9 of the Long
Bars the long way	(11) #4
Bars the short way	(8) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #8-2 (continued)

Spot Footing | 5' 6" x 8' x 12" deep -- Bot.(11) #4 Long, (8) #4 Short - 9 of the Long in the center 5.5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,522	30,593	Linked from: Beam #8, Support 2
2 - Point (lb)	--	N/A	1,132	8,074	Linked from: Beam #12, Support 1
3 - Point (lb)	--	N/A	11,310	--	

SpotFtg Bm #9-1

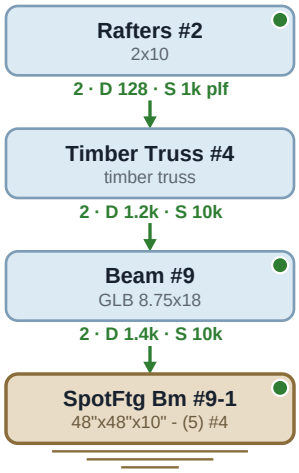
Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 30" x 30" | ACI 318-14

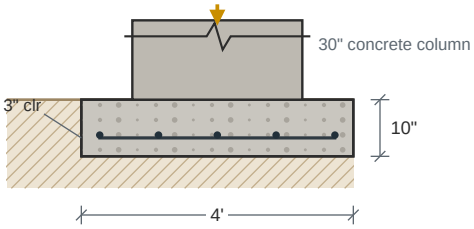
PASSED

Controls: Depth Above Bars 89% used
Adequacy 11.9% (capacity to spare)

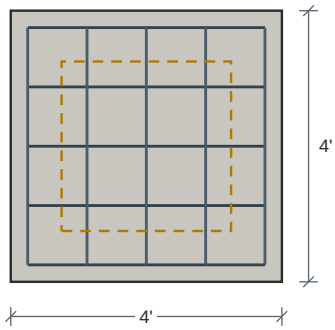
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 9,133 lb Snow 10,078 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,322	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	1,552	24,648	Passed (6%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,552	24,648	Passed (6%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	11,423	147,392	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,904	27,022	Passed (7%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,904	27,022	Passed (7%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	27,084	2,386,800	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	30"
Column length	30"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #9-1 (continued)

Spot Footing | 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,430	10,078	Linked from: Beam #9, Support 2
2 - Point (lb)	--	N/A	7,703	--	

SpotFtg Bm #9-2

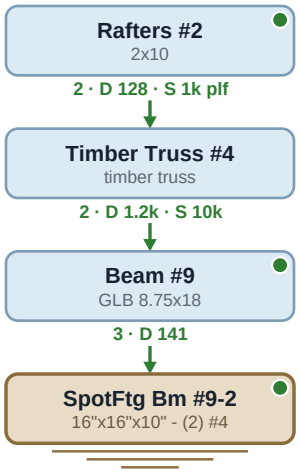
Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

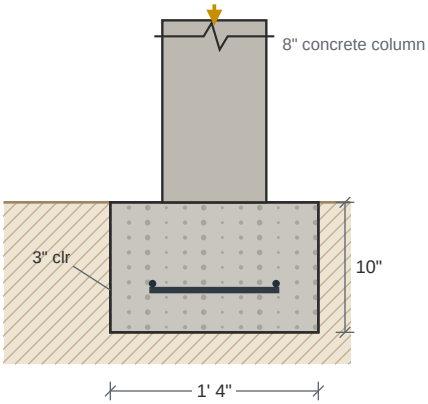
PASSED

Controls: Depth Above Bars 89% used
Adequacy 86.6% (capacity to spare)

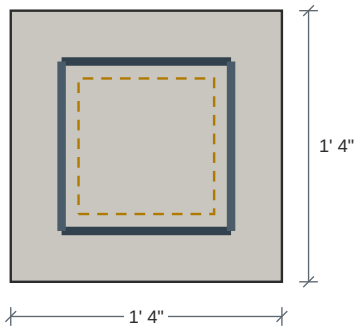
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 141 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	200	1,500	Passed (13%)	ASD	D
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.4D
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.4D
Two-Way Shear (lbs)	35	61,947	Passed (0%)	LRFD	1.4D
Moment X (ft-lbs)	8	10,721	Passed (0%)	LRFD	1.4D
Moment Y (ft-lbs)	8	10,721	Passed (0%)	LRFD	1.4D
Crushing (lbs)	198	212,160	Passed (0%)	LRFD	1.4D
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #9-2 (continued)

Spot Footing | 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Comments
1 - Point (lb)	--	N/A	141.4	Linked from: Beam #9, Support 3

SpotFtg Bm #10-1

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

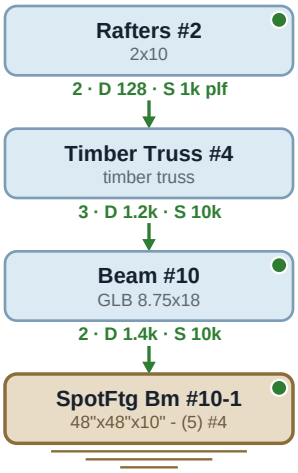
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 30" x 30" | ACI 318-14

PASSED

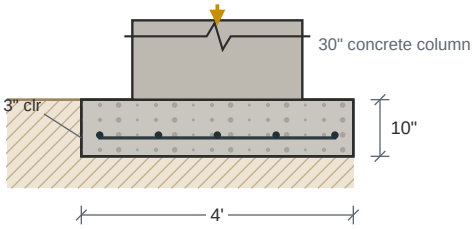
Controls: Depth Above Bars 89% used

Adequacy 11.9% (capacity to spare)

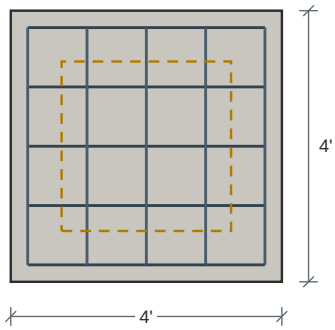
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 9,133 lb Snow 10,078 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,322	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	1,552	24,648	Passed (6%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,552	24,648	Passed (6%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	11,423	147,392	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,904	27,022	Passed (7%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,904	27,022	Passed (7%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	27,084	2,386,800	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	30"
Column length	30"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #10-1 (continued)

Spot Footing | 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,430	10,078	Linked from: Beam #10, Support 2
2 - Point (lb)	--	N/A	7,703	--	Concrete column 30 x 30 in x 8'-6"

SpotFtg Bm #10-2

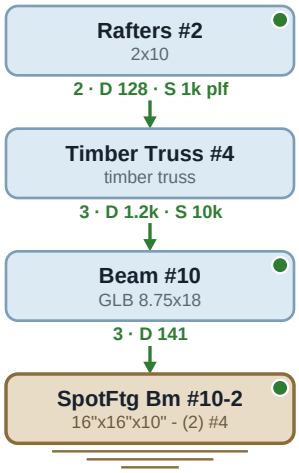
Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

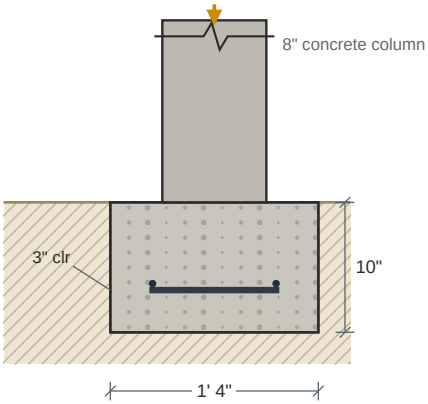
PASSED

Controls: Depth Above Bars 89% used
Adequacy 86.6% (capacity to spare)

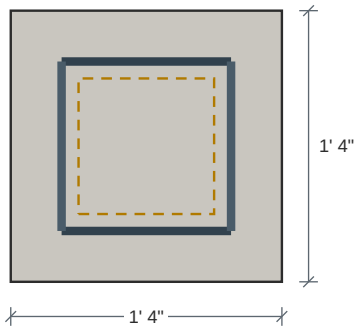
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 141 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	200	1,500	Passed (13%)	ASD	D
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.4D
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.4D
Two-Way Shear (lbs)	35	61,947	Passed (0%)	LRFD	1.4D
Moment X (ft-lbs)	8	10,721	Passed (0%)	LRFD	1.4D
Moment Y (ft-lbs)	8	10,721	Passed (0%)	LRFD	1.4D
Crushing (lbs)	198	212,160	Passed (0%)	LRFD	1.4D
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #10-2 (continued)

Spot Footing | 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Comments
1 - Point (lb)	--	N/A	141.4	Linked from: Beam #10, Support 3

SpotFtg Bm #11-1

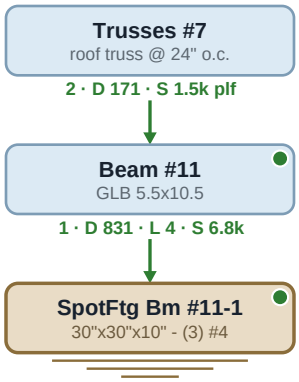
Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

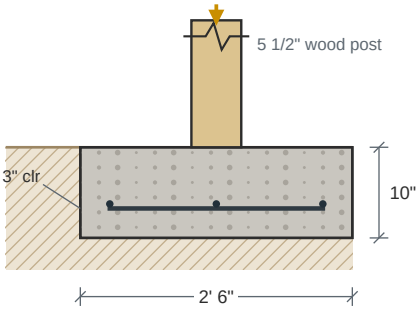
PASSED

Controls: Soil Bearing Pressure 90% used
Adequacy 10.5% (capacity to spare)

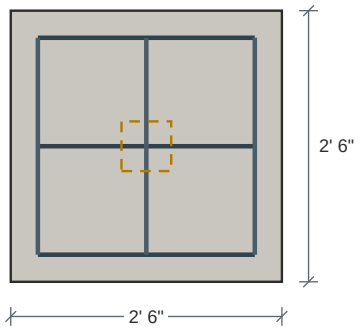
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 831 lb Floor Live 4 lb Snow 6,806 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,343	1,500	Passed (90%)	ASD	D+S
One-Way Shear X (lbs)	2,378	15,405	Passed (15%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	2,378	15,405	Passed (15%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,989	51,267	Passed (19%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,066	16,240	Passed (19%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,066	16,240	Passed (19%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,891	100,279	Passed (12%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	830.6	4.5	6,806	Linked from: Beam #11, Support 1

SpotFtg Bm #11-2

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

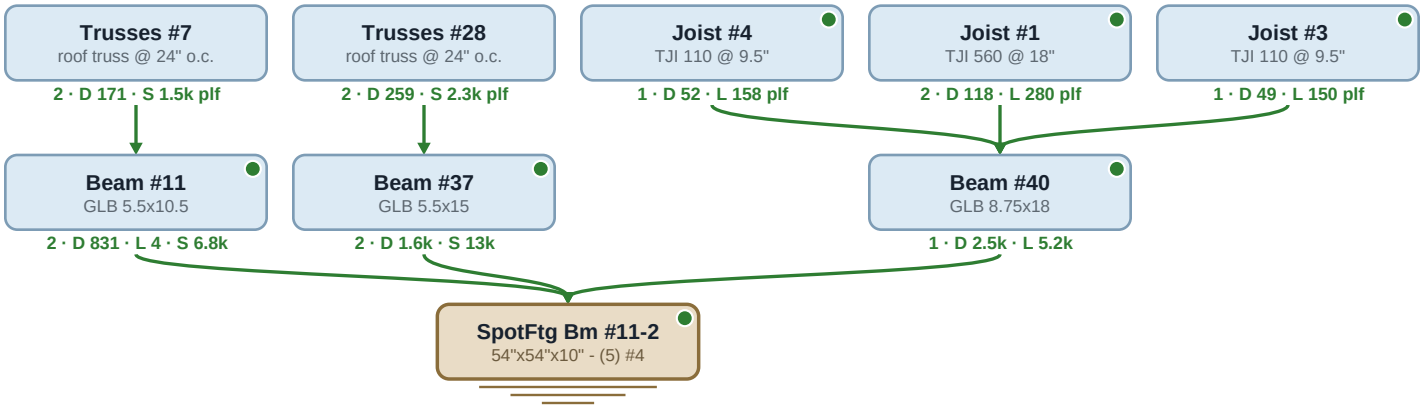
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

PASSED

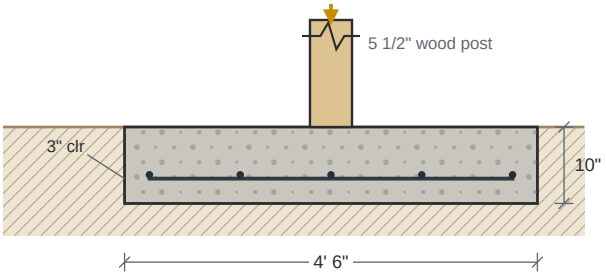
Controls: Soil Bearing Pressure 89% used
Adequacy 10.8% (capacity to spare)

What Loads It

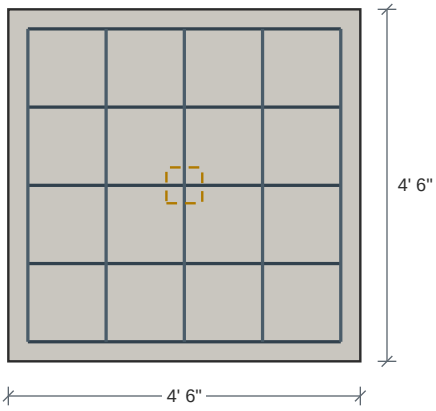
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 4,881 lb Floor Live 5,249 lb Snow 19,769 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,338	1,500	Passed (89%)	ASD	D+S
One-Way Shear X (lbs)	14,245	27,728	Passed (51%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	14,245	27,728	Passed (51%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	40,626	51,267	Passed (79%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	21,653	27,145	Passed (80%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	21,653	27,145	Passed (80%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	42,736	100,279	Passed (43%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

SpotFtg Bm #11-2 (continued)

Spot Footing | 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	830.6	4.5	6,806	Linked from: Beam #11, Support 2
2 - Point (lb)	--	N/A	1,576	--	12,963	Linked from: Beam #37, Support 2
3 - Point (lb)	--	N/A	2,475	5,245	--	Linked from: Beam #40, Support 1

SpotFtg Bm #12-2

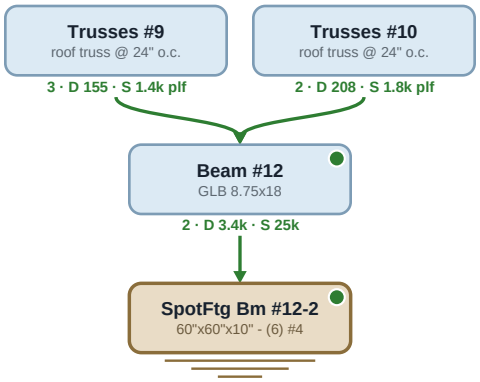
Spot Footing 5' x 5' x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

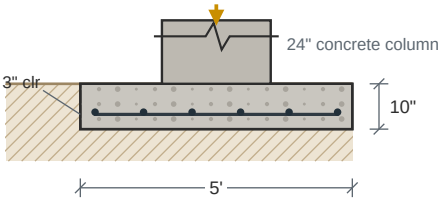
PASSED

Controls: Soil Bearing Pressure 94% used
Adequacy 6.1% (capacity to spare)

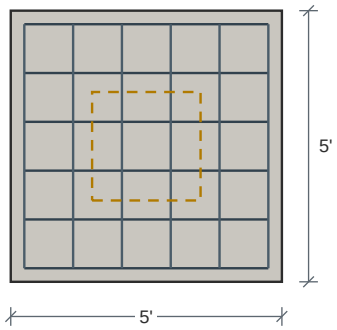
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 7,184 lb Snow 25,008 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,409	1,500	Passed (94%)	ASD	D+S
One-Way Shear X (lbs)	9,524	30,809	Passed (31%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	9,524	30,809	Passed (31%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	36,067	130,303	Passed (28%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	10,943	32,479	Passed (34%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	10,943	32,479	Passed (34%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	48,634	1,909,440	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5'
Footing length	5'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,414	25,008	Linked from: Beam #12, Support 2
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #12-3

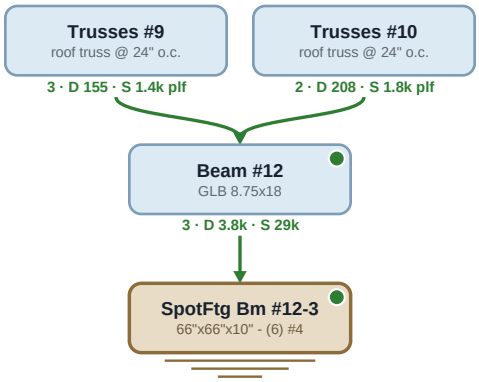
PASSED

Spot Footing 5' 6" x 5' 6" x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

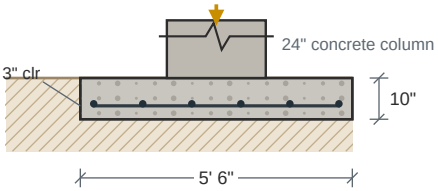
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 12.1% (capacity to spare)

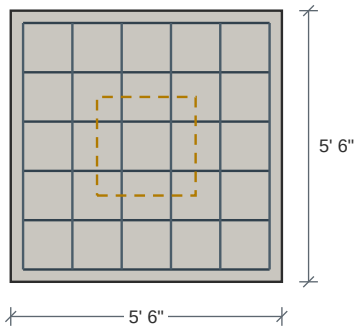
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 7,562 lb Snow 28,648 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,318	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	12,272	33,890	Passed (36%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	12,272	33,890	Passed (36%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	43,185	130,303	Passed (33%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	15,288	32,595	Passed (47%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	15,288	32,595	Passed (47%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	54,912	1,909,440	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5' 6"
Footing length	5' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,792	28,648	Linked from: Beam #12, Support 3
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #12-4

Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

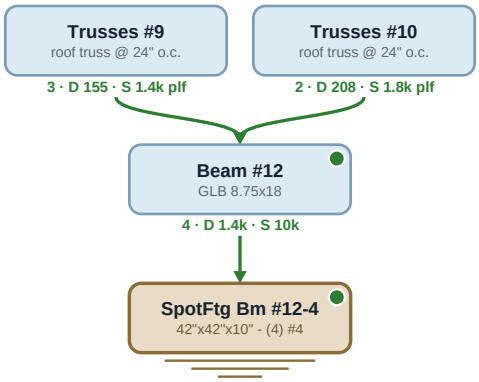
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

PASSED

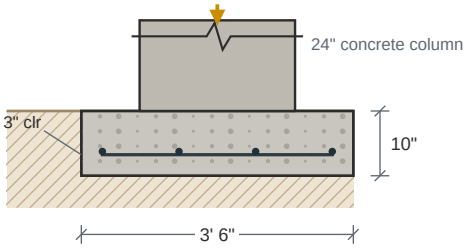
Controls: Soil Bearing Pressure 92% used

Adequacy 8.3% (capacity to spare)

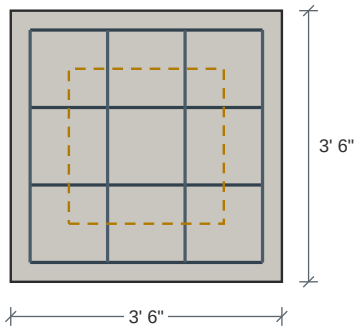
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 5,132 lb Snow 10,232 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,375	1,500	Passed (92%)	ASD	D+S
One-Way Shear X (lbs)	1,475	21,567	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,475	21,567	Passed (7%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	10,648	130,303	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,810	21,693	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,810	21,693	Passed (8%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	22,529	1,670,760	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,362	10,232	Linked from: Beam #12, Support 4
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #13-2

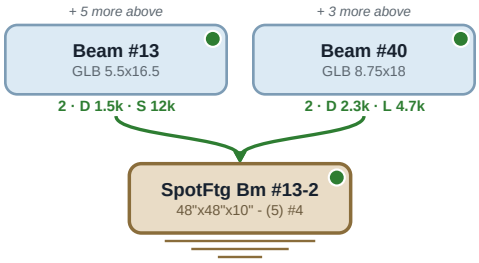
Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 24" x 8" | ACI 318-14

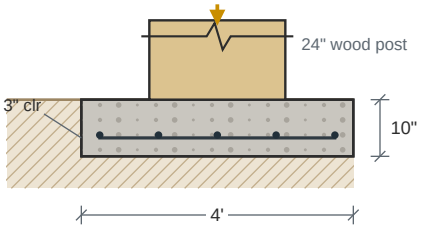
PASSED

Controls: Depth Above Bars 89% used
Adequacy 24.9% (capacity to spare)

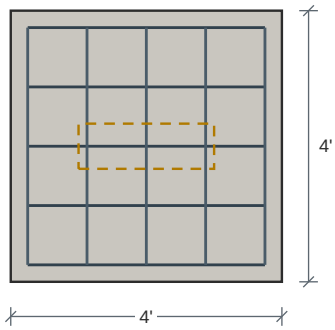
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 3,799 lb Snow 11,686 lb Floor Live 4,715 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,127	1,500	Passed (75%)	ASD	D+0.75L+0.75S
One-Way Shear X (lbs)	8,013	24,648	Passed (33%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,351	24,648	Passed (14%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	22,602	80,104	Passed (28%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	11,752	27,022	Passed (43%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	7,867	27,022	Passed (29%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	27,971	636,480	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	24"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,499	--	11,686	Linked from: Beam #13, Support 2
2 - Point (lb)	--	N/A	2,301	4,715	--	Linked from: Beam #40, Support 2

SpotFtg Bm #14-2

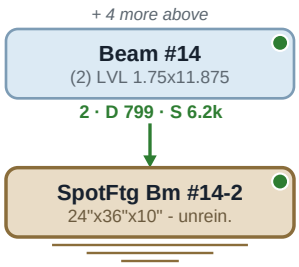
Spot Footing 2' x 3' x 10" deep -- Unreinforced (Plain)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 24" | ACI 318-14

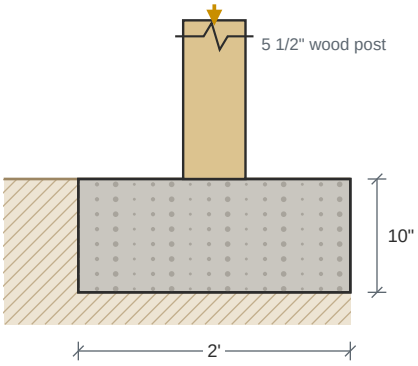
PASSED

Controls: Soil Bearing Pressure 86% used
Adequacy 14.1% (capacity to spare)

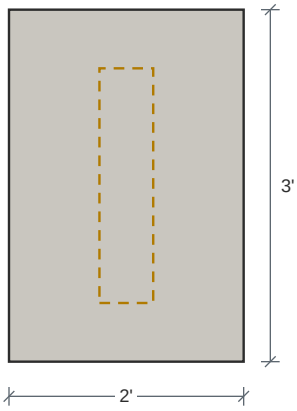
WHAT LOADS IT



SECTION



PLAN -- PLAIN CONCRETE, NO REINFORCING



Unreinforced (Plain)

Carrying: Dead 799 lb Snow 6,204 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,288	1,500	Passed (86%)	ASD	D+S
One-Way Shear Y (lbs)	567	12,620	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,443	46,520	Passed (12%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,814	3,505	Passed (52%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,134	5,258	Passed (41%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,886	403,920	Passed (3%)	LRFD	1.2D+1.6S+L
Minimum Thickness (in)	8	10	Passed (80%)	code	ACI 318-14 Ch. 14

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	3'
Footing depth	10"
Column width	5 1/2"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Reinforcing	none -- plain concrete
Plain concrete (no reinforcing)	Yes
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	799.2	6,204	Linked from: Beam #14, Support 2

SpotFtg Bm #15-1

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

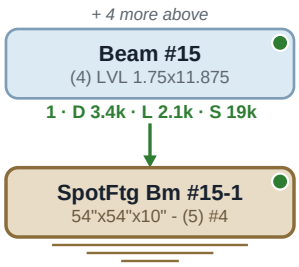
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

PASSED

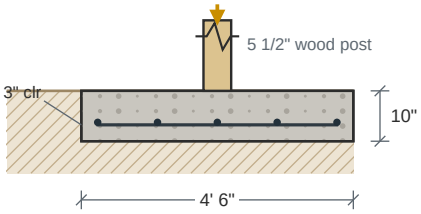
Controls: Depth Above Bars 89% used

Adequacy 16.7% (capacity to spare)

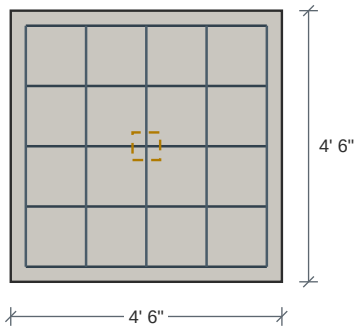
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 3,425 lb Floor Live 2,131 lb Snow 19,429 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,249	1,500	Passed (83%)	ASD	D+S
One-Way Shear X (lbs)	12,443	27,728	Passed (45%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	12,443	27,728	Passed (45%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	35,484	51,267	Passed (69%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	18,913	27,145	Passed (70%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	18,913	27,145	Passed (70%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	37,328	100,279	Passed (37%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,425	2,131	19,429	Linked from: Beam #15, Support 1

SpotFtg Bm #15-2

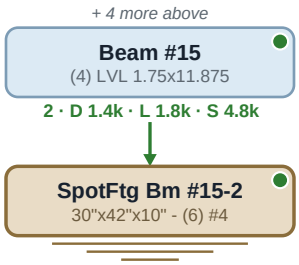
PASSED

Spot Footing 2' 6" x 3' 6" x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

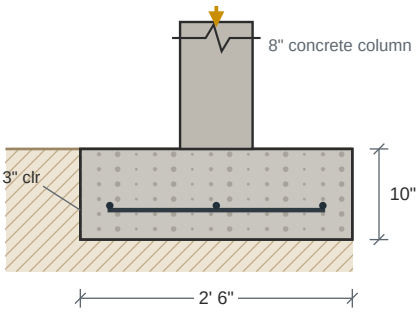
Controls: Depth Above Bars 89% used
Adequacy 43.5% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

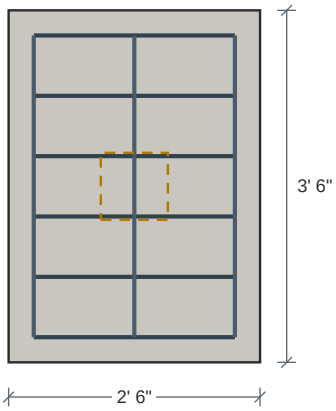
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Carrying: Dead 1,367 lb Floor Live 1,836 lb Snow 4,819 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	848	1,500	Passed (57%)	ASD	D+0.75L+0.75S
One-Way Shear X (lbs)	2,863	15,405	Passed (19%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,771	21,567	Passed (8%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,320	61,947	Passed (15%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,207	16,240	Passed (20%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,880	31,935	Passed (6%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,187	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	3' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #15-2 (continued)

Spot Footing | 2' 6" x 3' 6" x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,367	1,836	4,819	Linked from: Beam #15, Support 2

SpotFtg Bm #16-1

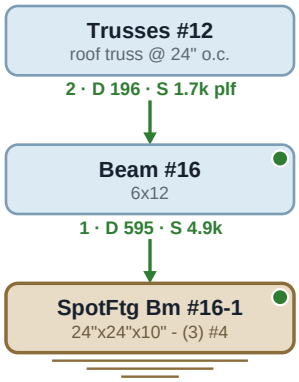
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

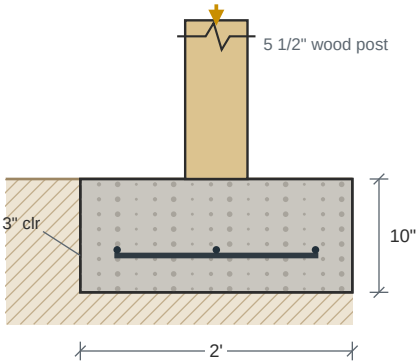
PASSED

Controls: Soil Bearing Pressure 99.4% used
Adequacy 0.6% (capacity to spare)

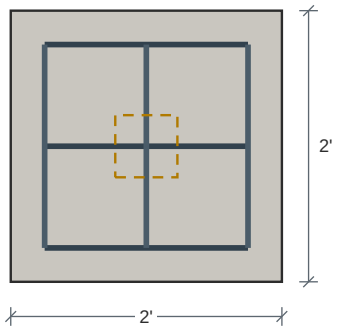
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 595 lb Snow 4,888 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,491	1,500	Passed (99.4%)	ASD	D+S
One-Way Shear X (lbs)	1,067	12,324	Passed (9%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,067	12,324	Passed (9%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	6,400	51,267	Passed (12%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,673	16,081	Passed (10%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,673	16,081	Passed (10%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,534	100,279	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	594.7	4,888	Linked from: Beam #16, Support 1

SpotFtg Bm #16-2

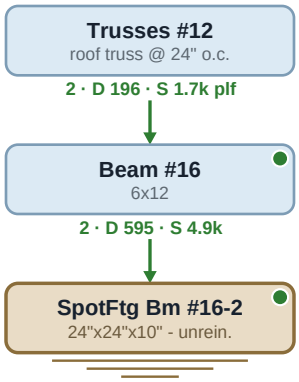
Spot Footing 2' x 2' x 10" deep -- Unreinforced (Plain)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

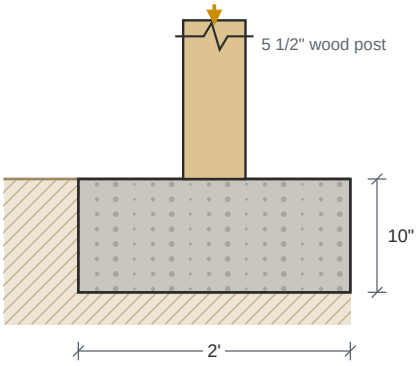
PASSED

Controls: Soil Bearing Pressure 99.4% used
Adequacy 0.6% (capacity to spare)

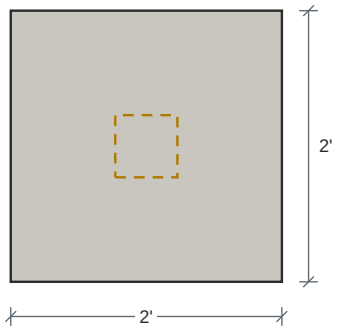
WHAT LOADS IT



SECTION



PLAN -- PLAIN CONCRETE, NO REINFORCING



Unreinforced (Plain)

Carrying: Dead 595 lb Snow 4,888 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,491	1,500	Passed (99.4%)	ASD	D+S
One-Way Shear X (lbs)	444	8,413	Passed (5%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	444	8,413	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,834	37,764	Passed (15%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,673	3,505	Passed (48%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,673	3,505	Passed (48%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,534	92,565	Passed (9%)	LRFD	1.2D+1.6S+L
Minimum Thickness (in)	8	10	Passed (80%)	code	ACI 318-14 Ch. 14

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Reinforcing	none -- plain concrete
Plain concrete (no reinforcing)	Yes
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	594.7	4,888	Linked from: Beam #16, Support 2

SpotFtg Bm #17-1

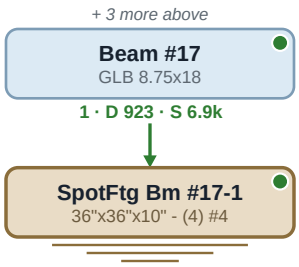
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

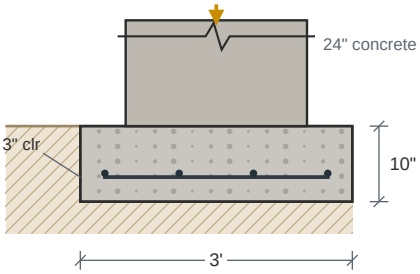
PASSED

Controls: Soil Bearing Pressure 94% used
Adequacy 6.4% (capacity to spare)

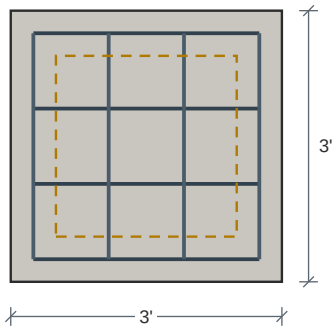
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 4,693 lb Snow 6,861 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,405	1,500	Passed (94%)	ASD	D+S
One-Way Shear X (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,687	130,303	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	692	21,559	Passed (3%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	692	21,559	Passed (3%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	16,609	1,432,080	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	923.3	6,861	Linked from: Beam #17, Support 1
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #17-2

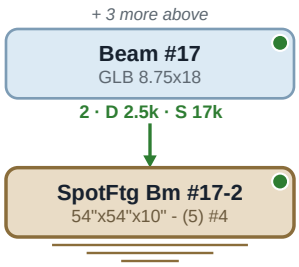
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

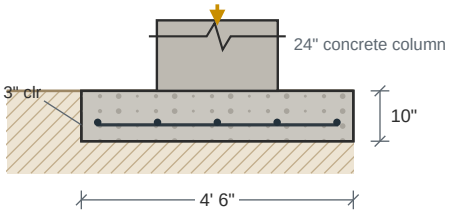
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 13.7% (capacity to spare)

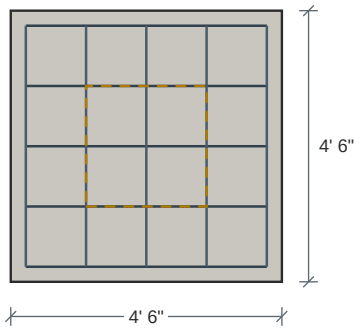
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 6,287 lb Snow 17,469 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,294	1,500	Passed (86%)	ASD	D+S
One-Way Shear X (lbs)	5,752	27,728	Passed (21%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,752	27,728	Passed (21%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	24,172	130,303	Passed (19%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,162	27,145	Passed (23%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	6,162	27,145	Passed (23%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	35,495	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,517	17,469	Linked from: Beam #17, Support 2
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #17-3

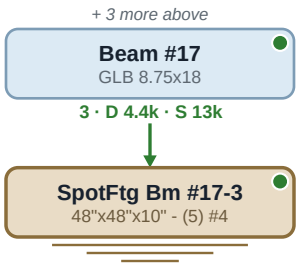
PASSED

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

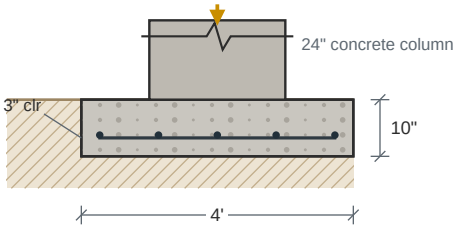
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 24" x 24" | ACI 318-14

Controls: Soil Bearing Pressure 95% used
Adequacy 5.1% (capacity to spare)

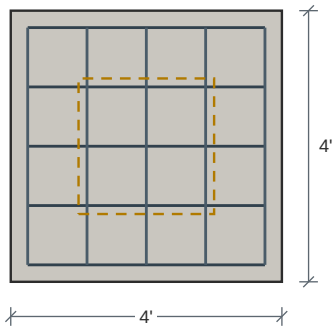
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 8,155 lb Snow 12,676 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,423	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	3,602	24,648	Passed (15%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,602	24,648	Passed (15%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	17,928	130,303	Passed (14%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,759	27,022	Passed (14%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,759	27,022	Passed (14%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	30,068	1,909,440	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	24"
Column length	24"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,385	12,676	Linked from: Beam #17, Support 3
2 - Point (lb)	--	N/A	3,770	--	Concrete column 24 x 24 in x 6'-6"

SpotFtg Bm #18-1

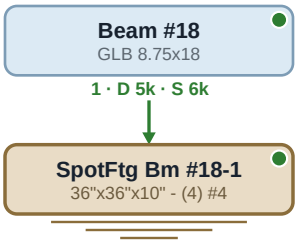
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

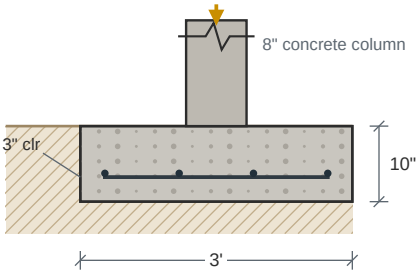
PASSED

Controls: Soil Bearing Pressure 89% used
Adequacy 10.8% (capacity to spare)

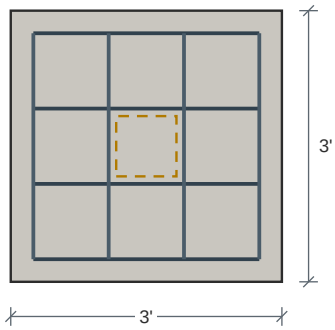
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 4,977 lb Snow 5,977 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,338	1,500	Passed (89%)	ASD	D+S
One-Way Shear X (lbs)	3,344	18,486	Passed (18%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,344	18,486	Passed (18%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	13,015	61,947	Passed (21%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,524	21,559	Passed (16%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,524	21,559	Passed (16%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	15,535	212,160	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,977	5,977	Linked from: Beam #18, Support 1

SpotFtg Bm #19-1

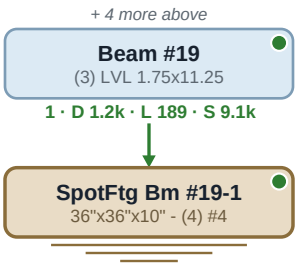
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

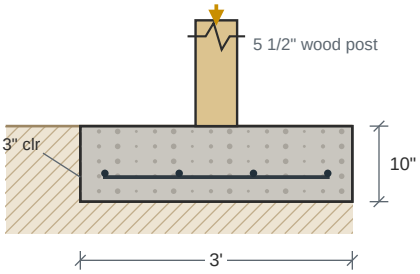
PASSED

Controls: Depth Above Bars 89% used
Adequacy 15.4% (capacity to spare)

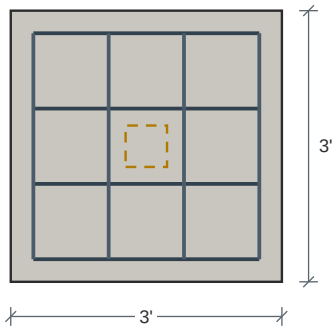
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,216 lb Floor Live 189 lb Snow 9,119 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,269	1,500	Passed (85%)	ASD	D+S
One-Way Shear X (lbs)	4,060	18,486	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	4,060	18,486	Passed (22%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	14,435	51,267	Passed (28%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,195	21,559	Passed (24%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,195	21,559	Passed (24%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	16,239	100,279	Passed (16%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,216	189.2	9,119	Linked from: Beam #19, Support 1

SpotFtg Bm #20-2

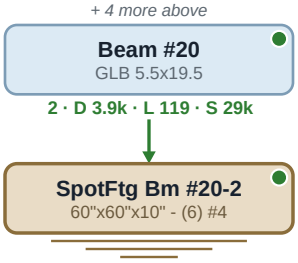
Spot Footing 5' x 5' x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 7" x 7" | ACI 318-14

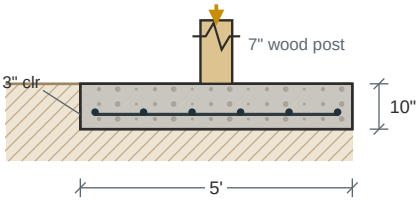
PASSED

Controls: Soil Bearing Pressure 95% used
Adequacy 4.9% (capacity to spare)

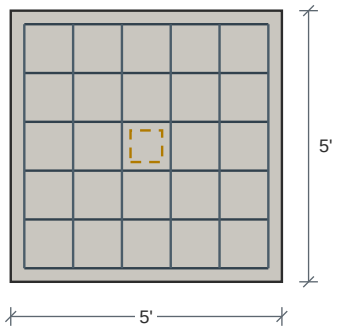
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 3,878 lb Floor Live 119 lb Snow 28,756 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,426	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	17,139	30,809	Passed (56%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	17,139	30,809	Passed (56%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	48,211	57,675	Passed (84%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	28,144	32,479	Passed (87%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	28,144	32,479	Passed (87%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	50,782	162,435	Passed (31%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	5'
Footing length	5'
Footing depth	10"
Column width	7"
Column length	7"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	6x8 2.0E LVL post
Post base	CB6-7, p. 87
Cap	CCQ68SDS2.5, p. 99

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,878	119.1	28,756	Linked from: Beam #20, Support 2

SpotFtg Bm #21-1

Spot Footing 5' 6" x 5' 6" x 10" deep -- Bot.(7) #4 Long, (7) #4 Short

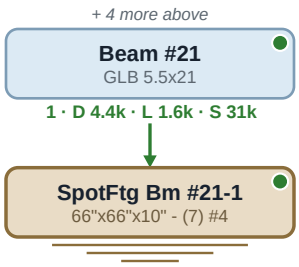
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 8" x 8" | ACI 318-14

PASSED

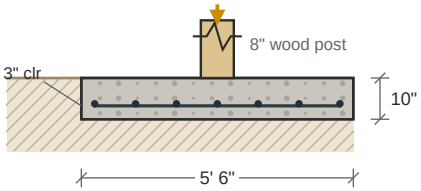
Controls: Moment X 89% used

Adequacy 10.7% (capacity to spare)

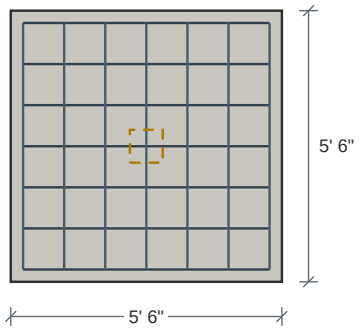
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(7) #4 Long, (7) #4 Short

Carrying: Dead 4,388 lb Floor Live 1,565 lb Snow 30,511 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,275	1,500	Passed (85%)	ASD	D+S
One-Way Shear X (lbs)	19,182	33,890	Passed (57%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	19,182	33,890	Passed (57%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	52,962	61,947	Passed (85%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	33,761	37,803	Passed (89%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	33,761	37,803	Passed (89%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	55,648	212,160	Passed (26%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	5' 6"
Footing length	5' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	12x12 2.0E PSL post
Post base	CB1212, p. 87
Cap	BC460, p. 93

Reinforcement	
Bottom mat	Bot.(7) #4 Long, (7) #4 Short
Bars the long way	(7) #4
Bars the short way	(7) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,388	1,565	30,511	Linked from: Beam #21, Support 1

SpotFtg Bm #21-2

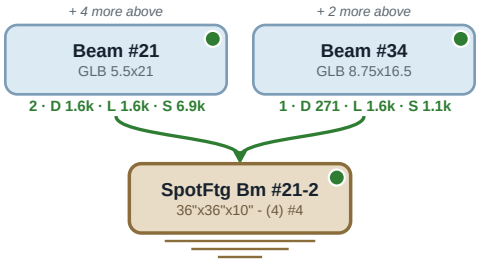
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

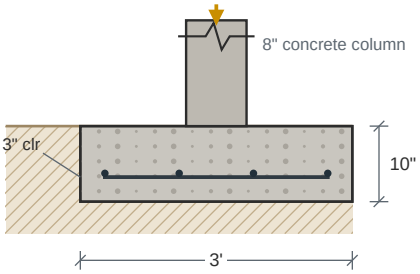
PASSED

Controls: Depth Above Bars 89% used
Adequacy 16% (capacity to spare)

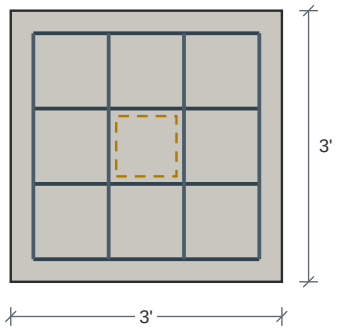
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,907 lb Floor Live 3,147 lb Snow 7,983 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,260	1,500	Passed (84%)	ASD	D+0.75L+0.75S
One-Way Shear X (lbs)	3,920	18,486	Passed (21%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,920	18,486	Passed (21%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	15,254	61,947	Passed (25%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	4,130	21,559	Passed (19%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	4,130	21,559	Passed (19%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	18,208	212,160	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	6x6 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,636	1,582	6,900	Linked from: Beam #21, Support 2
2 - Point (lb)	--	N/A	270.8	1,565	1,082	Linked from: Beam #34, Support 1

SpotFtg Bm #23-1

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

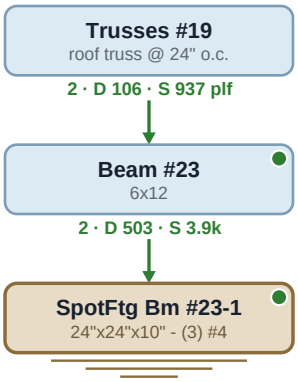
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

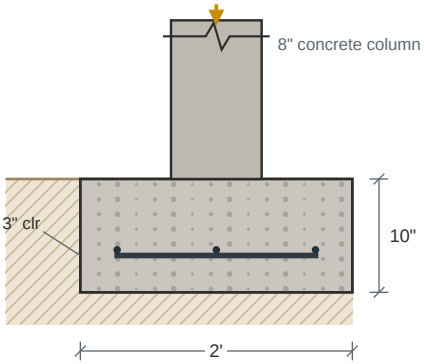
Controls: Depth Above Bars 89% used

Adequacy 18.5% (capacity to spare)

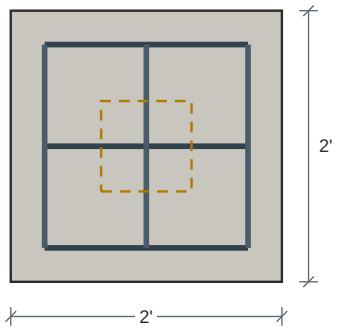
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 503 lb Snow 3,906 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,223	1,500	Passed (82%)	ASD	D+S
One-Way Shear X (lbs)	500	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	500	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,352	61,947	Passed (7%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	761	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	761	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,853	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	502.7	3,906	Linked from: Beam #23, Support 2

SpotFtg Bm #26-2

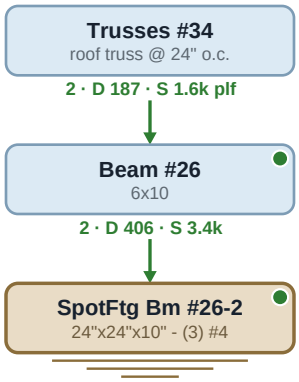
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

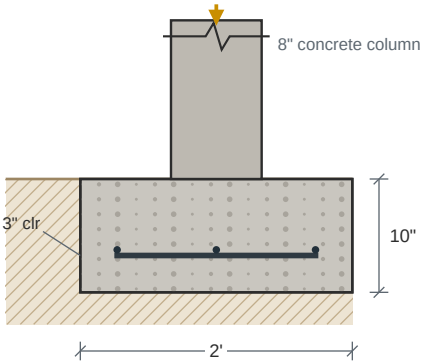
PASSED

Controls: Depth Above Bars 89% used
Adequacy 29% (capacity to spare)

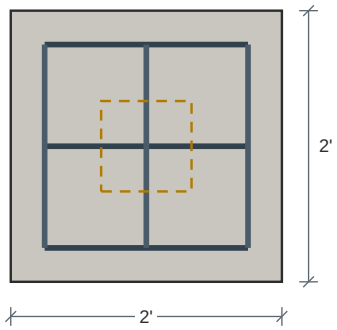
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 406 lb Snow 3,369 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,064	1,500	Passed (71%)	ASD	D+S
One-Way Shear X (lbs)	429	12,324	Passed (3%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	429	12,324	Passed (3%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	3,732	61,947	Passed (6%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	653	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	653	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	5,877	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	405.7	3,369	Linked from: Beam #26, Support 2

SpotFtg Bm #30-1

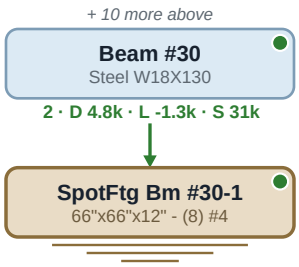
PASSED

Spot Footing 5' 6" x 5' 6" x 12" deep -- Bot.(8) #4 Long, (8) #4 Short

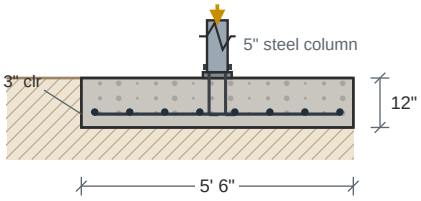
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Steel column 5" x 5" | ACI 318-14

Controls: Soil Bearing Pressure 90% used
Adequacy 10.5% (capacity to spare)

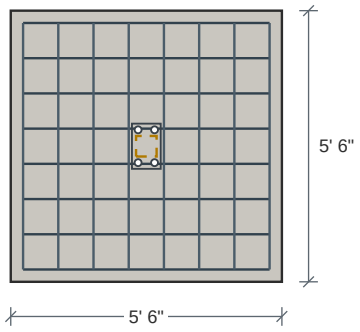
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



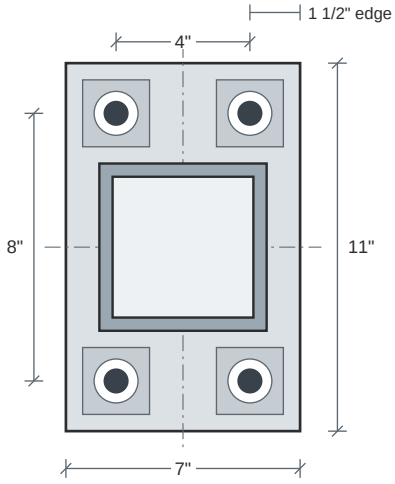
Bot.(8) #4 Long, (8) #4 Short

Carrying: Dead 4,818 lb Floor Live -1,337 lb Snow 31,412 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,343	1,500	Passed (90%)	ASD	D+S
One-Way Shear X (lbs)	18,892	44,735	Passed (42%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	18,892	44,735	Passed (42%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	53,696	75,421	Passed (71%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	35,664	57,347	Passed (62%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	35,664	57,347	Passed (62%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	56,041	255,255	Passed (22%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	9	Passed (69%)	code	ACI 318-14 13.3.1.2
Base Plate Thickness (in)	0.75	0.662 min	Passed	LRFD	1.2D+1.6S+L

Base Plate and Anchor Rods

plate size as entered on the footing; thickness per AISC Design Guide 1



Specification	
Plate	7" x 11" x 3/4" thick
Minimum thickness	0.662 in -> 3/4"
Plate steel	ASTM A36 (assumed; no grade specified)
Column	HSS5x5x1/4 (5" x 5")
Anchor rods	(4) 3/4" dia. ASTM F1554 Gr. 36
Holes	1 5/16" dia. (AISC Manual Table 14-2)
Plate washers	2" x 2" x 1/4"
Rod pattern	4" x 8" on centres
Edge distance	1 1/2" (min 1 1/16")
Embedment	9" into a 12" footing
Bearing (LRFD)	Pu 56,041 lb vs phiPp 255,255 lb
Anchorage	standard minimum (see notes)

! The 12 in footing leaves 9 in of embedment, short of the usual 12 in.

SpotFtg Bm #30-1 (continued)

Spot Footing | 5' 6" x 5' 6" x 12" deep -- Bot.(8) #4 Long, (8) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Steel, HSS5x5x1/4
Footing width	5' 6"
Footing length	5' 6"
Footing depth	12"
Column width	5"
Column length	5"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	HSS5x5x1/4 steel column
Post base	base plate
Cap	welded cap plate
Column check	10' tall: 37% used (AISC E3)

Reinforcement	
Bottom mat	Bot.(8) #4 Long, (8) #4 Short
Bars the long way	(8) #4
Bars the short way	(8) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Base plate: AISC Design Guide 1, concentric axial, A36 plate assumed; minimum 0.662 in for Pu = 56,041 lbs -- use 3/4".
- Anchor rods are specified, not designed: nothing in the model puts tension or shear on them. OSHA 1926.755(a)(1) requires at least four at a column; holes and plate washers per AISC Manual Table 14-2.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,818	-1,337	31,412	Linked from: Beam #30, Support 2

SpotFtg Bm #30-2

Spot Footing 9' 6" x 9' 6" x 18" deep -- Bot.(12) #5 Long, (12) #5 Short

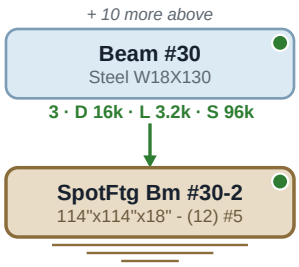
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Steel column 12" x 12" | ACI 318-14

PASSED

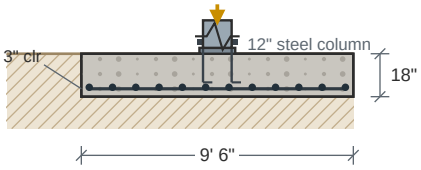
Controls: Soil Bearing Pressure 97% used

Adequacy 3% (capacity to spare)

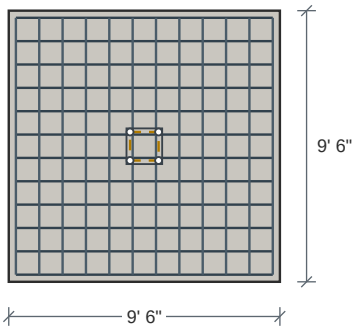
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



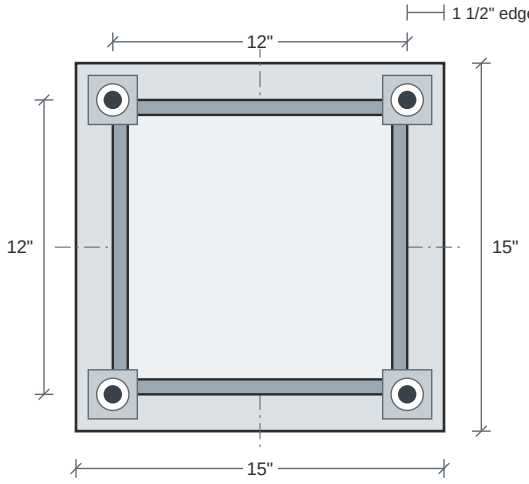
Bot.(12) #5 Long, (12) #5 Short

Carrying: Dead 16,059 lb Floor Live 3,236 lb Snow 95,615 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,455	1,500	Passed (97%)	ASD	D+S
One-Way Shear X (lbs)	56,861	131,710	Passed (43%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	56,861	131,710	Passed (43%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	166,097	249,197	Passed (67%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	187,036	228,980	Passed (82%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	187,036	228,980	Passed (82%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	175,490	745,875	Passed (24%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	15	Passed (41%)	code	ACI 318-14 13.3.1.2
Base Plate Thickness (in)	0.625	0.592 min	Passed	LRFD	1.2D+1.6S+L

Base Plate and Anchor Rods

plate size as entered on the footing; thickness per AISC Design Guide 1



Specification	
Plate	15" x 15" x 5/8" thick
Minimum thickness	0.592 in -> 5/8"
Plate steel	ASTM A36 (assumed; no grade specified)
Column	12" x 12" steel, tube / pipe
Anchor rods	(4) 3/4" dia. ASTM F1554 Gr. 36
Holes	1 5/16" dia. (AISC Manual Table 14-2)
Plate washers	2" x 2" x 1/4"
Rod pattern	12" x 12" on centres
Edge distance	1 1/2" (min 1 1/16")
Embedment	12" into a 18" footing
Bearing (LRFD)	Pu 175,490 lb vs phiPp 745,875 lb
Anchorage	standard minimum (see notes)

! The rods land on the column. With them outside a 12 in column the plate needs to be at least 17.5 in across -- or, on a W shape, set the column to W and put them between the flanges.

SpotFtg Bm #30-2 (continued)

Spot Footing | 9' 6" x 9' 6" x 18" deep -- Bot.(12) #5 Long, (12) #5 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Steel
Footing width	9' 6"
Footing length	9' 6"
Footing depth	18"
Column width	12"
Column length	12"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	20'
Post	steel column
Post base	base plate
Cap	welded cap plate

Reinforcement	
Bottom mat	Bot.(12) #5 Long, (12) #5 Short
Bars the long way	(12) #5
Bars the short way	(12) #5
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Base plate: AISC Design Guide 1, concentric axial, A36 plate assumed; minimum 0.592 in for Pu = 175,490 lbs -- use 5/8".
- Anchor rods are specified, not designed: nothing in the model puts tension or shear on them. OSHA 1926.755(a)(1) requires at least four at a column; holes and plate washers per AISC Manual Table 14-2.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	16,059	3,236	95,615	Linked from: Beam #30, Support 3

SpotFtg Bm #31-1

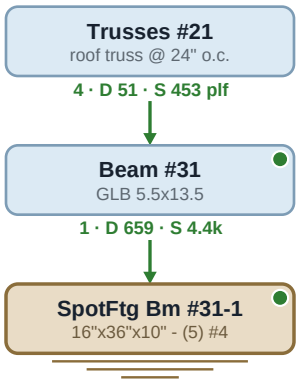
PASSED

Spot Footing 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

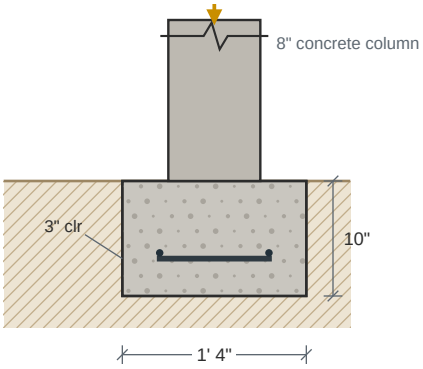
Controls: Soil Bearing Pressure 92% used
Adequacy 8% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

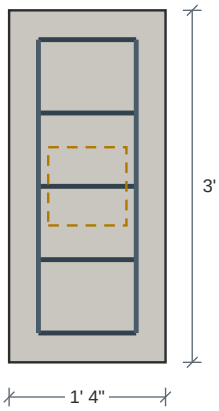
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 659 lb Snow 4,376 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,380	1,500	Passed (92%)	ASD	D+S
One-Way Shear X (lbs)	1,678	8,216	Passed (20%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,948	61,947	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,768	10,721	Passed (16%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	325	26,654	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	7,793	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Bm #31-1 (continued)

Spot Footing | 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	659.4	4,376	Linked from: Beam #31, Support 1

SpotFtg Bm #31-2

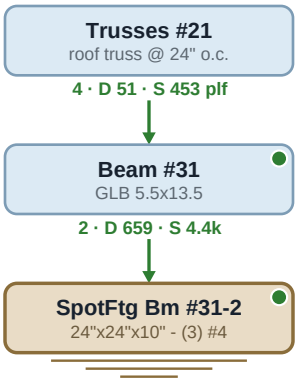
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

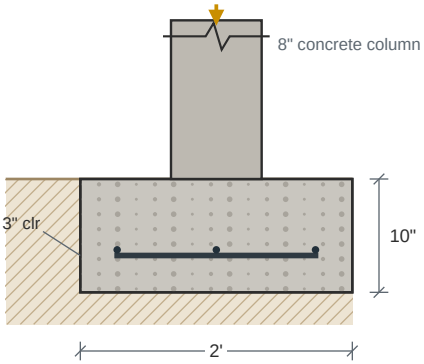
PASSED

Controls: Soil Bearing Pressure 92% used
Adequacy 8% (capacity to spare)

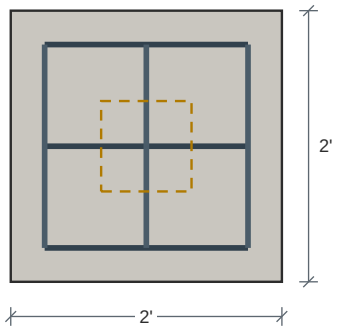
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 659 lb Snow 4,376 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,380	1,500	Passed (92%)	ASD	D+S
One-Way Shear X (lbs)	568	12,324	Passed (5%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	568	12,324	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,948	61,947	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	866	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	866	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	7,793	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	659.4	4,376	Linked from: Beam #31, Support 2

SpotFtg Bm #32-1

Spot Footing 5' 6" x 5' 6" x 10" deep -- Bot.(7) #4 Long, (6) #4 Short

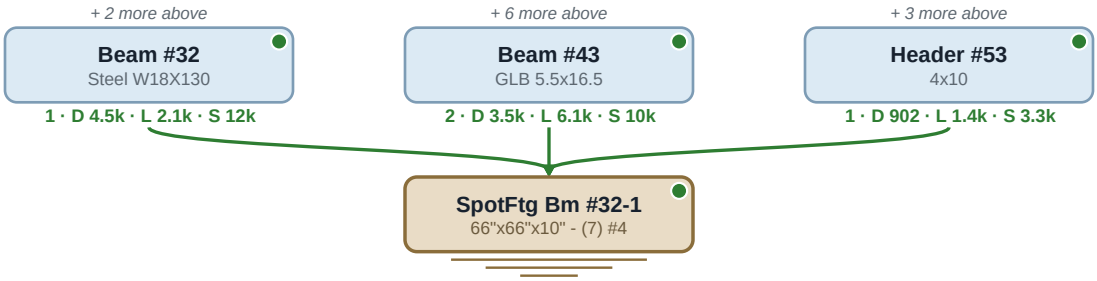
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Steel column 8" x 20" | ACI 318-14

PASSED

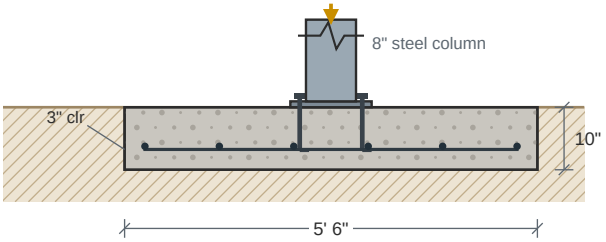
Controls: Moment Y 99.9% used
Adequacy 0.1% (capacity to spare)

What Loads It

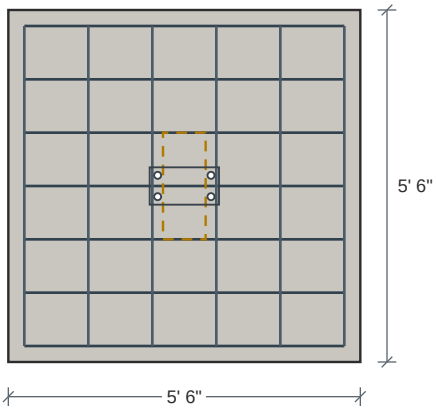
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



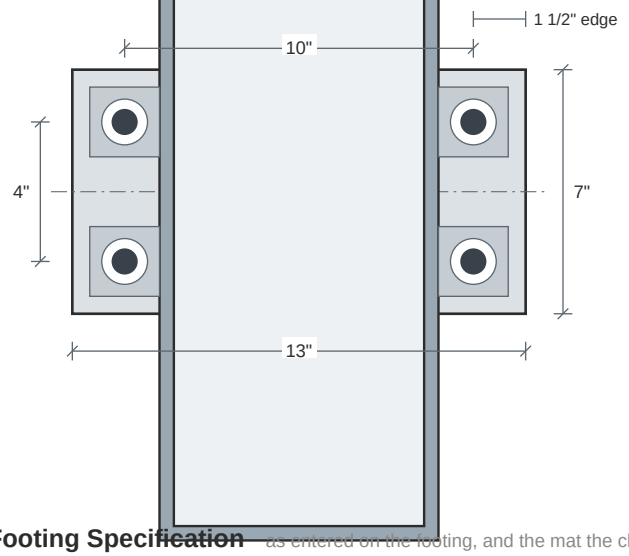
Bot.(7) #4 Long, (6) #4 Short

Carrying: Dead 8,981 lb Floor Live 9,643 lb Snow 26,159 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,305	1,500	Passed (87%)	ASD	D+0.75L+0.75S
One-Way Shear X (lbs)	15,805	33,890	Passed (47%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	21,466	33,890	Passed (63%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	56,782	78,823	Passed (72%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	30,823	32,595	Passed (95%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	37,782	37,803	**Passed (99.9%)**	LRFD	1.2D+1.6S+L
Crushing (lbs)	62,275	530,400	Passed (12%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2
Base Plate Thickness (in)	0.75	0.678 min	Passed	LRFD	1.2D+1.6S+L

SpotFtg Bm — Spot Footing | 5' 6" x 5' 6" x 10" deep -- Bot.(7) #4 Long, (6) #4 Short

Base Plate and — as entered on the footing; thickness per AISC Design Guide 1



Specification	
Plate	13" x 7" x 3/4" thick
Minimum thickness	0.678 in -> 3/4"
Plate steel	ASTM A36 (assumed; no grade specified)
Column	8" x 20" steel, tube / pipe
Anchor rods	(4) 3/4" dia. ASTM F1554 Gr. 36
Holes	1 5/16" dia. (AISC Manual Table 14-2)
Plate washers	2" x 2" x 1/4"
Rod pattern	10" x 4" on centres
Edge distance	1 1/2" (min 1 1/16")
Embedment	7" into a 10" footing
Bearing (LRFD)	Pu 62,275 lb vs phiPp 301,665 lb
Anchorage	standard minimum (see notes)

! The rods land on the column. With them outside a 8 in column the plate needs to be at least 13.5 in across -- or, on a W shape, set the column to W and put them between the flanges.

! The 10 in footing leaves 7 in of embedment, short of the usual 12 in.

Footing Specification — as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Steel
Footing width	5' 6"
Footing length	5' 6"
Footing depth	10"
Column width	8"
Column length	20"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	steel column
Post base	base plate
Cap	welded cap plate

Reinforcement	
Bottom mat	Bot.(7) #4 Long, (6) #4 Short
Bars the long way	(7) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Base plate: AISC Design Guide 1, concentric axial, A36 plate assumed; minimum 0.678 in for Pu = 62,275 lbs -- use 3/4".
- Anchor rods are specified, not designed: nothing in the model puts tension or shear on them. OSHA 1926.755(a)(1) requires at least four at a column; holes and plate washers per AISC Manual Table 14-2.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	4,529	2,115	12,431	Linked from: Beam #32, Support 1
2 - Point (lb)	--	N/A	3,549	6,133	10,411	Linked from: Beam #43, Support 2
3 - Point (lb)	--	N/A	902.5	1,395	3,317	Linked from: Header #53, Support 1

SpotFtg Bm #33-1

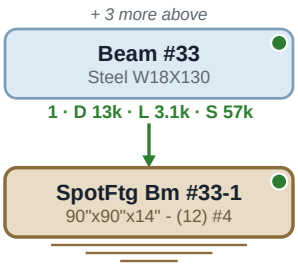
PASSED

Spot Footing 7' 6" x 7' 6" x 14" deep -- Bot.(12) #4 Long, (12) #4 Short

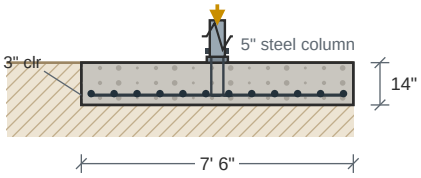
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Steel column 5" x 5" | ACI 318-14

Controls: Two-Way Shear 99% used
Adequacy 1.2% (capacity to spare)

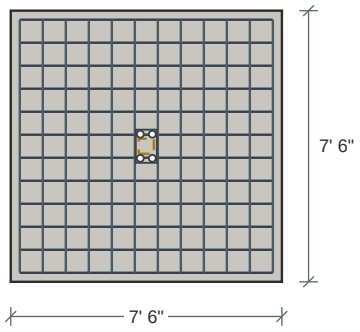
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



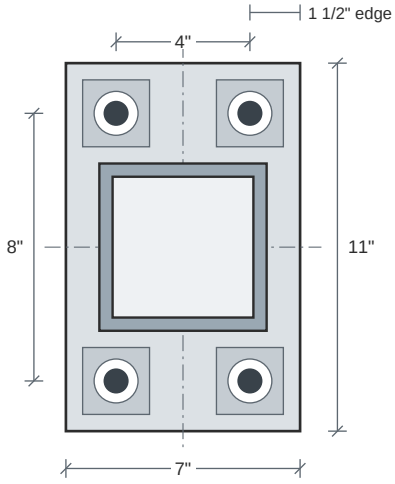
Bot.(12) #4 Long, (12) #4 Short

Carrying: Dead 12,558 lb Floor Live 3,122 lb Snow 56,676 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,400	1,500	Passed (93%)	ASD	D+S
One-Way Shear X (lbs)	39,013	75,791	Passed (51%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	39,013	75,791	Passed (51%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	105,644	106,970	Passed (99%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	96,477	107,312	Passed (90%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	96,477	107,312	Passed (90%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	108,873	255,255	Passed (43%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	11	Passed (56%)	code	ACI 318-14 13.3.1.2
Base Plate Thickness (in)	1	0.923 min	Passed	LRFD	1.2D+1.6S+L

Base Plate and Anchor Rods

plate size as entered on the footing; thickness per AISC Design Guide 1



Specification	
Plate	7" x 11" x 1" thick
Minimum thickness	0.923 in -> 1"
Plate steel	ASTM A36 (assumed; no grade specified)
Column	HSS5x5x1/4 (5" x 5")
Anchor rods	(4) 3/4" dia. ASTM F1554 Gr. 36
Holes	1 5/16" dia. (AISC Manual Table 14-2)
Plate washers	2" x 2" x 1/4"
Rod pattern	4" x 8" on centres
Edge distance	1 1/2" (min 1 1/16")
Embedment	11" into a 14" footing
Bearing (LRFD)	Pu 108,873 lb vs phiPp 255,255 lb
Anchorage	standard minimum (see notes)

! The 14 in footing leaves 11 in of embedment, short of the usual 12 in.

SpotFtg Bm #33-1 (continued)

Spot Footing | 7' 6" x 7' 6" x 14" deep -- Bot.(12) #4 Long, (12) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Steel, HSS5x5x1/4
Footing width	7' 6"
Footing length	7' 6"
Footing depth	14"
Column width	5"
Column length	5"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	HSS5x5x1/4 steel column
Post base	base plate
Cap	welded cap plate
Column check	14' tall: 94% used (AISC E3)

Reinforcement	
Bottom mat	Bot.(12) #4 Long, (12) #4 Short
Bars the long way	(12) #4
Bars the short way	(12) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Base plate: AISC Design Guide 1, concentric axial, A36 plate assumed; minimum 0.923 in for Pu = 108,873 lbs -- use 1".
- Anchor rods are specified, not designed: nothing in the model puts tension or shear on them. OSHA 1926.755(a)(1) requires at least four at a column; holes and plate washers per AISC Manual Table 14-2.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	12,558	3,122	56,676	Linked from: Beam #33, Support 1

SpotFtg Bm #33-2

Spot Footing 7' 6" x 7' 6" x 14" deep -- Bot.(12) #4 Long, (12) #4 Short

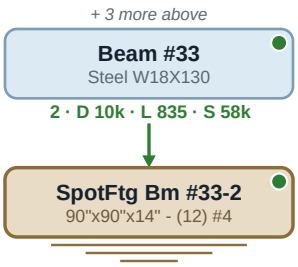
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Steel column 5" x 5" | ACI 318-14

PASSED

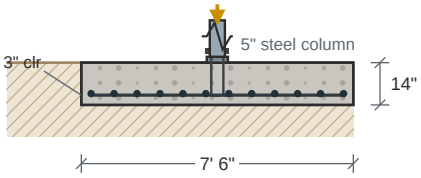
Controls: Two-Way Shear 97% used

Adequacy 3% (capacity to spare)

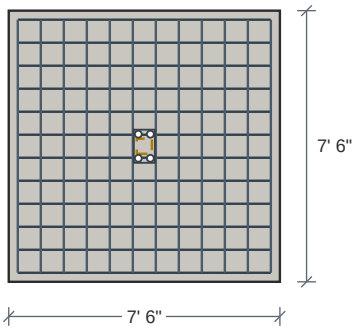
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



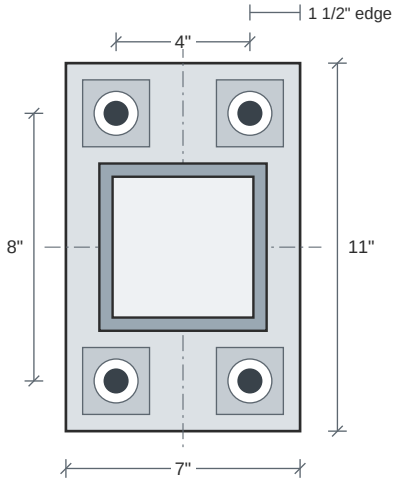
Bot.(12) #4 Long, (12) #4 Short

Carrying: Dead 10,468 lb Floor Live 835 lb Snow 58,466 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,395	1,500	Passed (93%)	ASD	D+S
One-Way Shear X (lbs)	38,321	75,791	Passed (51%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	38,321	75,791	Passed (51%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	103,771	106,970	Passed (97%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	94,766	107,312	Passed (88%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	94,766	107,312	Passed (88%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	106,942	255,255	Passed (42%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	11	Passed (56%)	code	ACI 318-14 13.3.1.2
Base Plate Thickness (in)	1	0.915 min	Passed	LRFD	1.2D+1.6S+L

Base Plate and Anchor Rods

plate size as entered on the footing; thickness per AISC Design Guide 1



Specification	
Plate	7" x 11" x 1" thick
Minimum thickness	0.915 in -> 1"
Plate steel	ASTM A36 (assumed; no grade specified)
Column	HSS5x5x1/4 (5" x 5")
Anchor rods	(4) 3/4" dia. ASTM F1554 Gr. 36
Holes	1 5/16" dia. (AISC Manual Table 14-2)
Plate washers	2" x 2" x 1/4"
Rod pattern	4" x 8" on centres
Edge distance	1 1/2" (min 1 1/16")
Embedment	11" into a 14" footing
Bearing (LRFD)	Pu 106,942 lb vs phiPp 255,255 lb
Anchorage	standard minimum (see notes)

! The 14 in footing leaves 11 in of embedment, short of the usual 12 in.

SpotFtg Bm #33-2 (continued)

Spot Footing | 7' 6" x 7' 6" x 14" deep -- Bot.(12) #4 Long, (12) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Steel, HSS5x5x1/4
Footing width	7' 6"
Footing length	7' 6"
Footing depth	14"
Column width	5"
Column length	5"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	HSS5x5x1/4 steel column
Post base	base plate
Cap	welded cap plate
Column check	14' tall: 94% used (AISC E3)

Reinforcement	
Bottom mat	Bot.(12) #4 Long, (12) #4 Short
Bars the long way	(12) #4
Bars the short way	(12) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Base plate: AISC Design Guide 1, concentric axial, A36 plate assumed; minimum 0.915 in for Pu = 106,942 lbs -- use 1".
- Anchor rods are specified, not designed: nothing in the model puts tension or shear on them. OSHA 1926.755(a)(1) requires at least four at a column; holes and plate washers per AISC Manual Table 14-2.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	10,468	835.3	58,466	Linked from: Beam #33, Support 2

SpotFtg Bm #34-2

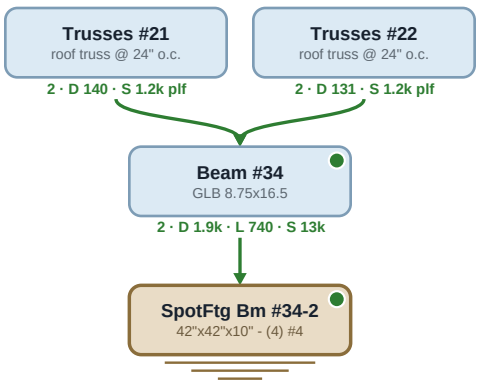
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 12" x 12" | ACI 318-14

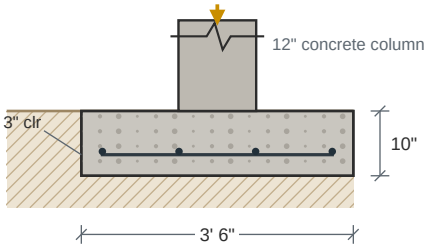
PASSED

Controls: Soil Bearing Pressure 91% used
Adequacy 9.4% (capacity to spare)

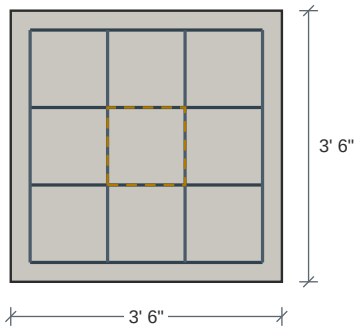
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,908 lb Floor Live 740 lb Snow 13,254 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,359	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	5,049	21,567	Passed (23%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,049	21,567	Passed (23%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	19,533	79,036	Passed (25%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,410	21,693	Passed (25%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,410	21,693	Passed (25%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	24,236	477,360	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	12"
Column length	12"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,908	739.5	13,254	Linked from: Beam #34, Support 2

SpotFtg Bm #34-3

Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

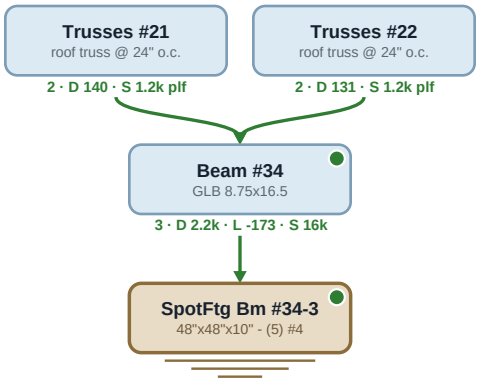
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 12" x 12" | ACI 318-14

PASSED

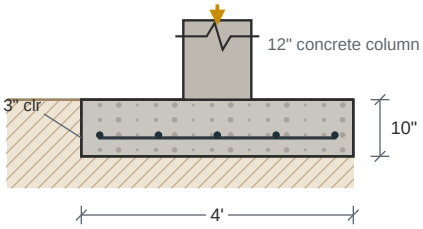
Controls: Depth Above Bars 89% used

Adequacy 17.7% (capacity to spare)

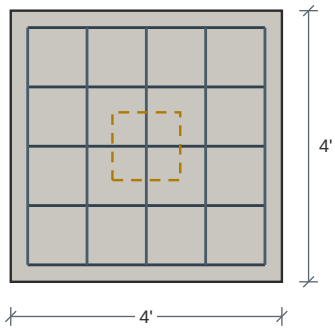
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,182 lb Floor Live -173 lb Snow 15,642 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,235	1,500	Passed (82%)	ASD	D+S
One-Way Shear X (lbs)	6,768	24,648	Passed (27%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,768	24,648	Passed (27%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	23,539	79,036	Passed (30%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	7,775	27,022	Passed (29%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	7,775	27,022	Passed (29%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	27,646	477,360	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	12"
Column length	12"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(2) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,182	-172.6	15,642	Linked from: Beam #34, Support 3

SpotFtg Bm #34-4

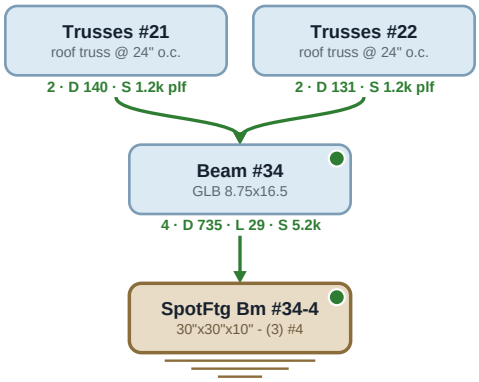
Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

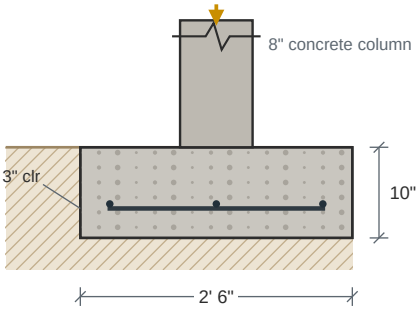
PASSED

Controls: Depth Above Bars 89% used
Adequacy 29% (capacity to spare)

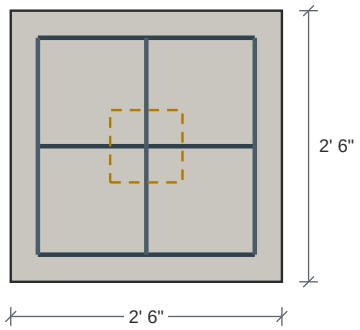
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 735 lb Floor Live 29 lb Snow 5,168 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,065	1,500	Passed (71%)	ASD	D+S
One-Way Shear X (lbs)	1,453	15,405	Passed (9%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,453	15,405	Passed (9%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	7,034	61,947	Passed (11%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,543	16,240	Passed (9%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,543	16,240	Passed (9%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	9,179	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	734.9	28.5	5,168	Linked from: Beam #34, Support 4

SpotFtg Bm #35-1

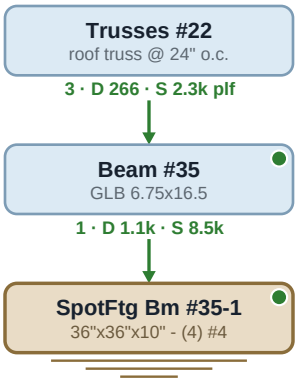
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

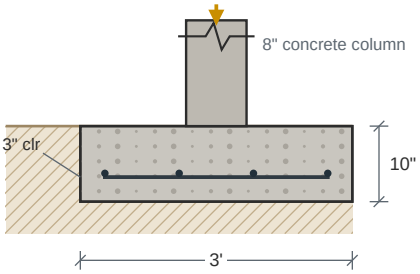
PASSED

Controls: Depth Above Bars 89% used
Adequacy 21.1% (capacity to spare)

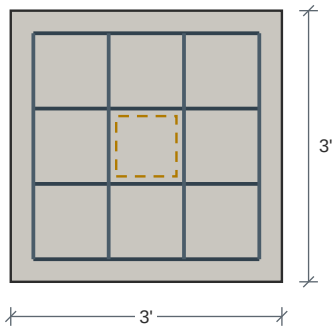
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,057 lb Snow 8,511 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,184	1,500	Passed (79%)	ASD	D+S
One-Way Shear X (lbs)	3,205	18,486	Passed (17%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,205	18,486	Passed (17%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	12,471	61,947	Passed (20%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,377	21,559	Passed (16%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,377	21,559	Passed (16%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	14,886	212,160	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,057	8,511	Linked from: Beam #35, Support 1

SpotFtg Bm #35-2

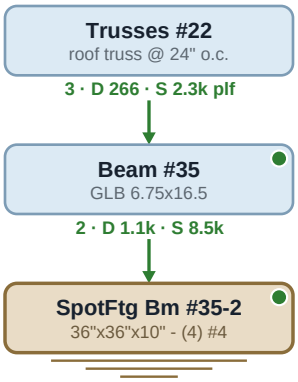
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

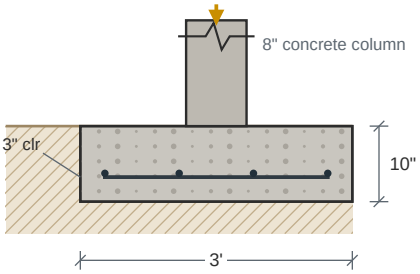
PASSED

Controls: Depth Above Bars 89% used
Adequacy 21.1% (capacity to spare)

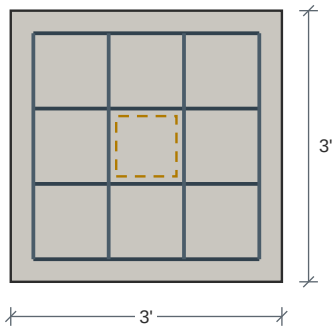
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,057 lb Snow 8,511 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,184	1,500	Passed (79%)	ASD	D+S
One-Way Shear X (lbs)	3,205	18,486	Passed (17%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,205	18,486	Passed (17%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	12,471	61,947	Passed (20%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,377	21,559	Passed (16%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,377	21,559	Passed (16%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	14,886	212,160	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,057	8,511	Linked from: Beam #35, Support 2

SpotFtg Bm #36-1

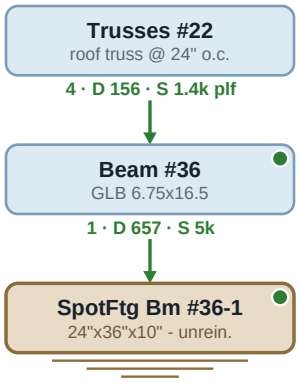
Spot Footing 2' x 3' x 10" deep -- Unreinforced (Plain)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

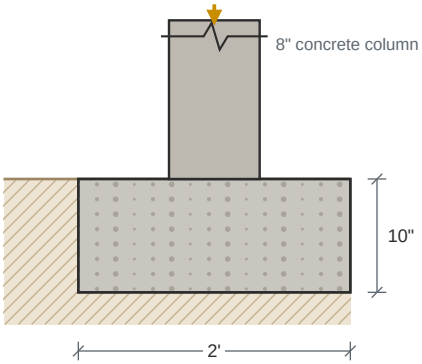
PASSED

Controls: Minimum Thickness 80% used
Adequacy 29.3% (capacity to spare)

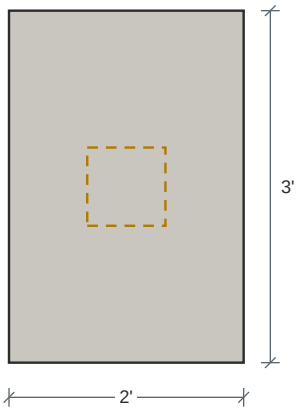
WHAT LOADS IT



SECTION



PLAN -- PLAIN CONCRETE, NO REINFORCING



Unreinforced (Plain)

Carrying: Dead 657 lb Snow 4,982 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,061	1,500	Passed (71%)	ASD	D+S
One-Way Shear X (lbs)	1,460	8,413	Passed (17%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	6,164	44,757	Passed (14%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,987	3,505	Passed (57%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	973	5,258	Passed (19%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,759	195,840	Passed (4%)	LRFD	1.2D+1.6S+L
Minimum Thickness (in)	8	10	Passed (80%)	code	ACI 318-14 Ch. 14

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Reinforcing	none -- plain concrete
Plain concrete (no reinforcing)	Yes
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	656.7	4,982	Linked from: Beam #36, Support 1

SpotFtg Bm #36-2

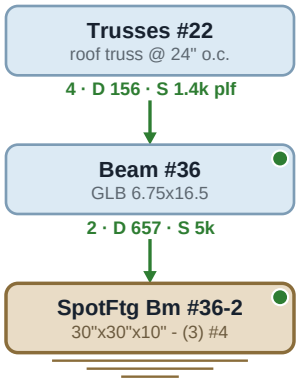
Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

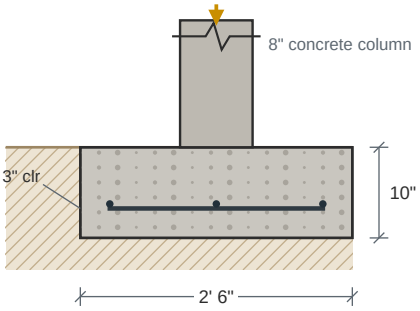
PASSED

Controls: Depth Above Bars 89% used
Adequacy 31.8% (capacity to spare)

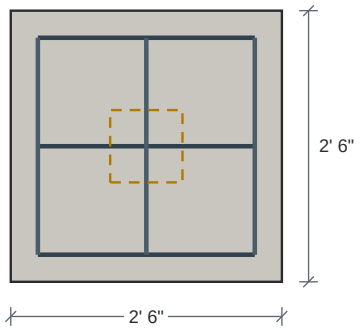
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 657 lb Snow 4,982 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,023	1,500	Passed (68%)	ASD	D+S
One-Way Shear X (lbs)	1,387	15,405	Passed (9%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,387	15,405	Passed (9%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	6,713	61,947	Passed (11%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,472	16,240	Passed (9%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,472	16,240	Passed (9%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,759	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	10x10 post
Post base	fabricated
Cap	(1) HL55, p. 315

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	656.7	4,982	Linked from: Beam #36, Support 2

SpotFtg Bm #38-1

Spot Footing 5' 6" x 5' 6" x 10" deep -- Bot.(7) #4 Long, (7) #4 Short

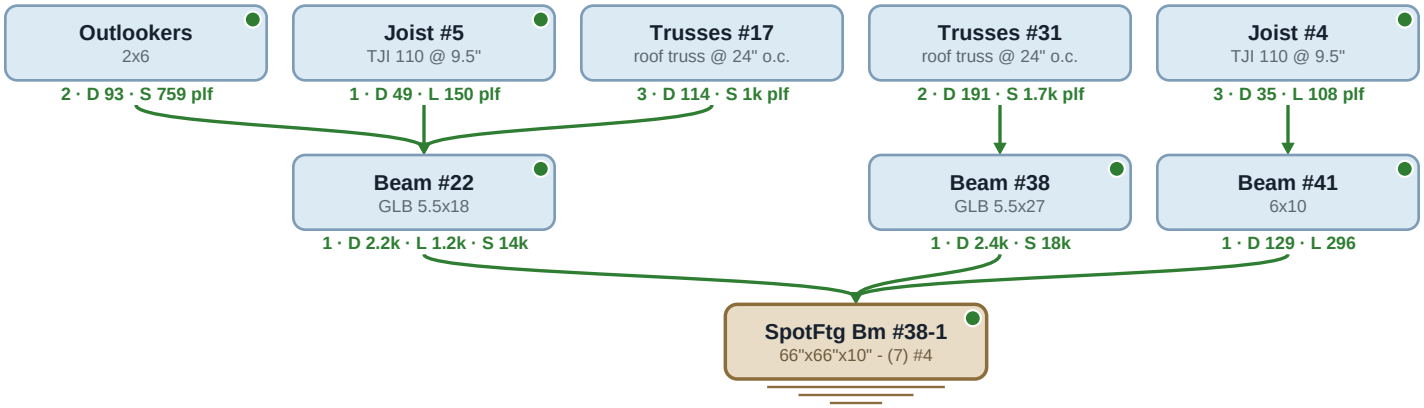
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 8" x 8" | ACI 318-14

PASSED

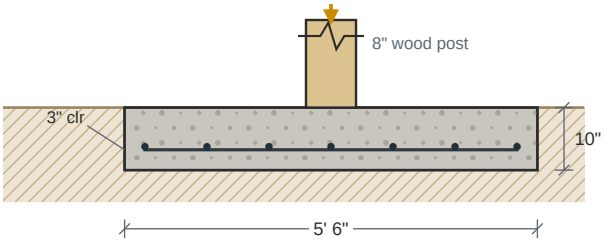
Controls: Moment X 93% used
Adequacy 7.1% (capacity to spare)

What Loads It

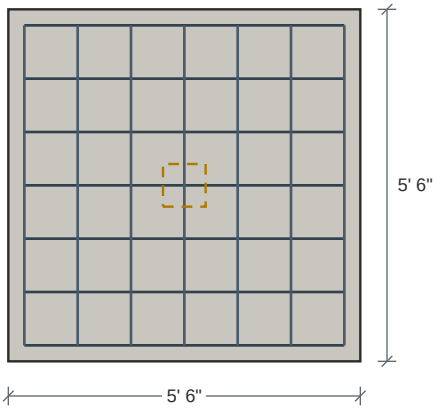
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(7) #4 Long, (7) #4 Short

Carrying: Dead 4,708 lb Snow 31,732 lb Floor Live 1,483 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,325	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	19,959	33,890	Passed (59%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	19,959	33,890	Passed (59%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	55,108	61,947	Passed (89%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	35,129	37,803	Passed (93%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	35,129	37,803	Passed (93%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	57,903	212,160	Passed (27%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

SpotFtg Bm #38-1 (continued)

Spot Footing | 5' 6" x 5' 6" x 10" deep -- Bot.(7) #4 Long, (7) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	5' 6"
Footing length	5' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(7) #4 Long, (7) #4 Short
Bars the long way	(7) #4
Bars the short way	(7) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,373	--	17,789	Linked from: Beam #38, Support 1
2 - Point (lb)	--	N/A	129.3	295.7	--	Linked from: Beam #41, Support 1
3 - Point (lb)	--	N/A	2,206	1,188	13,943	Linked from: Beam #22, Support 1

SpotFtg Bm #39-1

PASSED

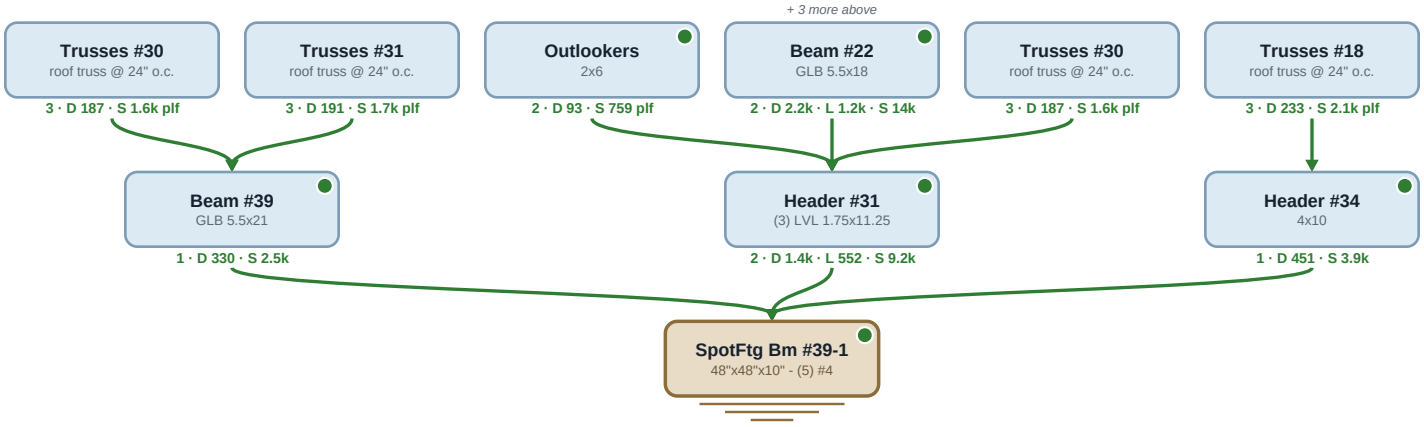
Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

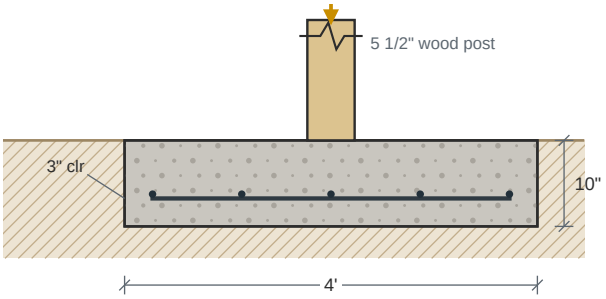
Controls: Depth Above Bars 89% used
Adequacy 17.8% (capacity to spare)

What Loads It

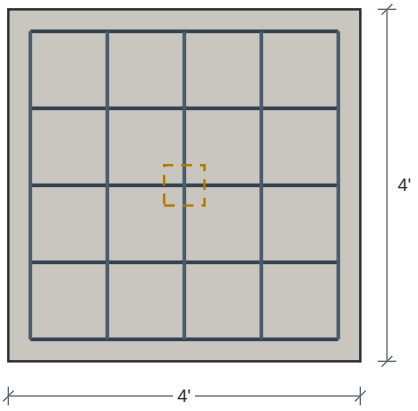
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,153 lb Snow 15,639 lb Floor Live 552 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,233	1,500	Passed (82%)	ASD	D+S
One-Way Shear X (lbs)	8,800	24,648	Passed (36%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	8,800	24,648	Passed (36%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	26,399	51,267	Passed (51%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	12,512	27,022	Passed (46%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	12,512	27,022	Passed (46%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	28,159	100,279	Passed (28%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

SpotFtg Bm #39-1 (continued)

Spot Footing | 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	330	--	2,547	Linked from: Beam #39, Support 1
2 - Point (lb)	--	N/A	1,372	551.7	9,237	Linked from: Header #31, Support 2
3 - Point (lb)	--	N/A	450.8	--	3,855	Linked from: Header #34, Support 1

SpotFtg Bm #39-2

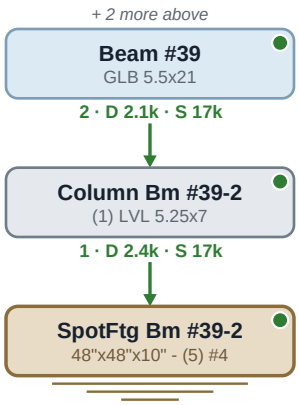
Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/4" x 7" | ACI 318-14

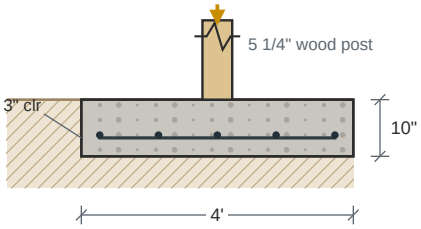
PASSED

Controls: Depth Above Bars 89% used
Adequacy 12.7% (capacity to spare)

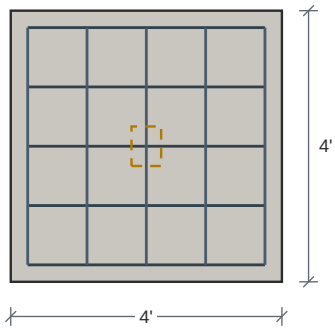
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,402 lb Snow 16,623 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,310	1,500	Passed (87%)	ASD	D+S
One-Way Shear X (lbs)	8,752	24,648	Passed (36%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	9,289	24,648	Passed (38%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	27,450	53,937	Passed (51%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	12,668	27,022	Passed (47%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	13,172	27,022	Passed (49%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	29,479	121,826	Passed (24%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	5 1/4"
Column length	7"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,402	16,623	Linked from: Column Bm #39-2, Support 1

SpotFtg Bm #39-3

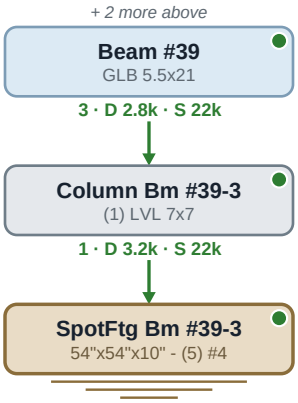
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

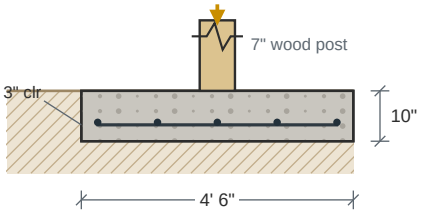
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 7" x 7" | ACI 318-14

Controls: Soil Bearing Pressure 91% used
Adequacy 9.2% (capacity to spare)

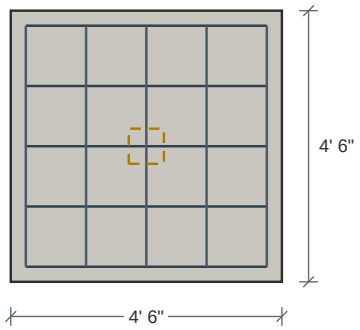
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 3,173 lb Snow 21,949 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,361	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	12,434	27,728	Passed (45%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	12,434	27,728	Passed (45%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	36,492	57,675	Passed (63%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	19,149	27,145	Passed (71%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	19,149	27,145	Passed (71%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	38,925	162,435	Passed (24%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	7"
Column length	7"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,173	21,949	Linked from: Column Bm #39-3, Support 1

SpotFtg Bm #42-1

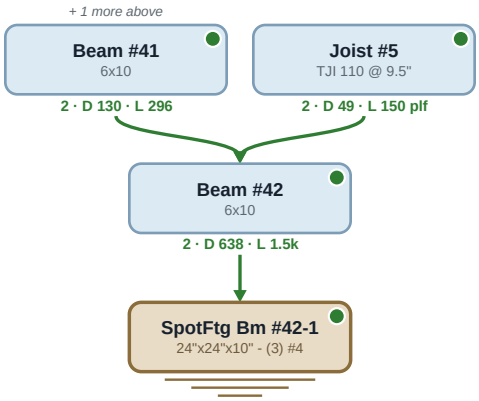
PASSED

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

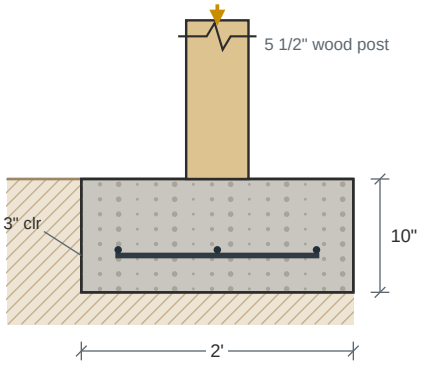
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 55.6% (capacity to spare)

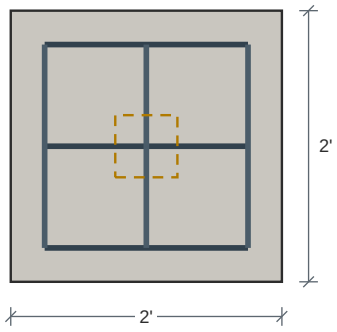
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 638 lb Floor Live 1,541 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	666	1,500	Passed (44%)	ASD	D+L
One-Way Shear X (lbs)	404	12,324	Passed (3%)	LRFD	1.2D+1.6L+0.5Lr
One-Way Shear Y (lbs)	404	12,324	Passed (3%)	LRFD	1.2D+1.6L+0.5Lr
Two-Way Shear (lbs)	2,424	51,267	Passed (5%)	LRFD	1.2D+1.6L+0.5Lr
Moment X (ft-lbs)	633	16,081	Passed (4%)	LRFD	1.2D+1.6L+0.5Lr
Moment Y (ft-lbs)	633	16,081	Passed (4%)	LRFD	1.2D+1.6L+0.5Lr
Crushing (lbs)	3,232	100,279	Passed (3%)	LRFD	1.2D+1.6L+0.5Lr
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
1 - Point (lb)	--	N/A	638.2	1,541	Linked from: Beam #42, Support 2

SpotFtg Bm #42-2

Spot Footing 2' x 2' x 10" deep -- Unreinforced (Plain)

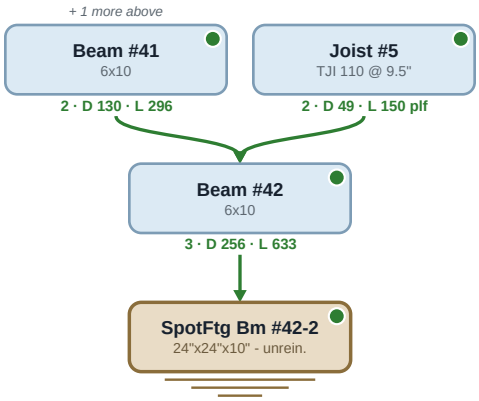
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

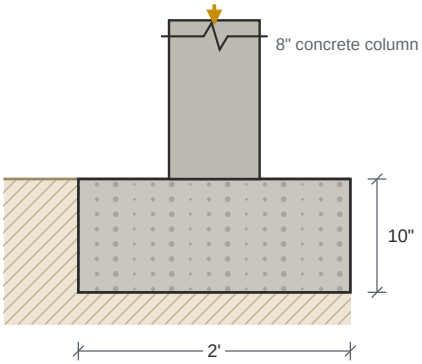
Controls: Minimum Thickness 80% used

Adequacy 77.1% (capacity to spare)

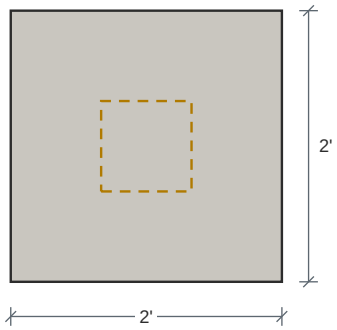
WHAT LOADS IT



SECTION



PLAN -- PLAIN CONCRETE, NO REINFORCING



Unreinforced (Plain)

Carrying: Dead 256 lb Floor Live 633 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	343	1,500	Passed (23%)	ASD	D+L
Two-Way Shear (lbs)	733	44,757	Passed (2%)	LRFD	1.2D+1.6L+0.5Lr
Moment X (ft-lbs)	147	3,505	Passed (4%)	LRFD	1.2D+1.6L+0.5Lr
Moment Y (ft-lbs)	147	3,505	Passed (4%)	LRFD	1.2D+1.6L+0.5Lr
Crushing (lbs)	1,320	195,840	Passed (1%)	LRFD	1.2D+1.6L+0.5Lr
Minimum Thickness (in)	8	10	Passed (80%)	code	ACI 318-14 Ch. 14

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Reinforcing	none -- plain concrete
Plain concrete (no reinforcing)	Yes
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Comments
1 - Point (lb)	--	N/A	256.1	632.9	Linked from: Beam #42, Support 3

SpotFtg Gdr #1-2

PASSED

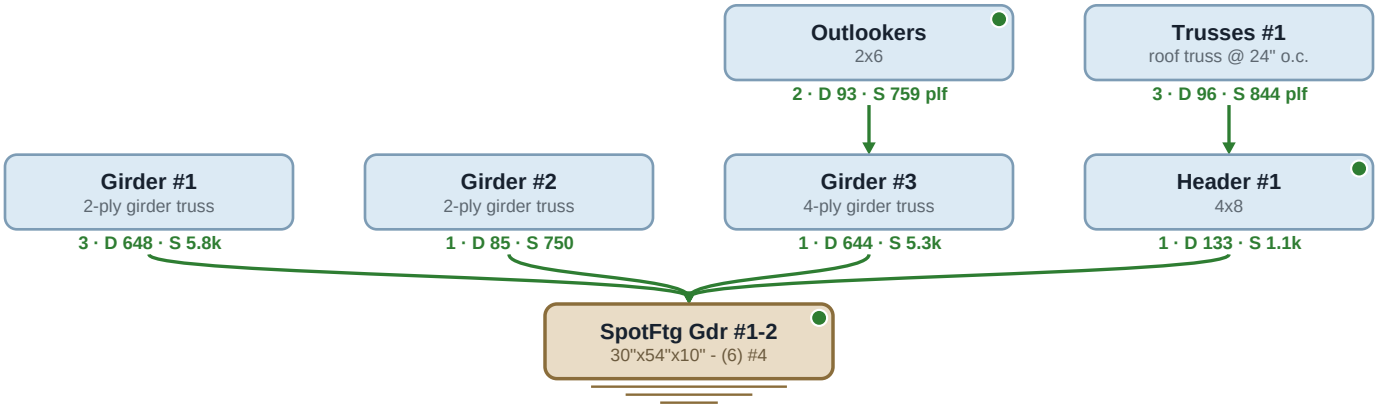
Spot Footing 2' 6" x 4' 6" x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 48" | ACI 318-14

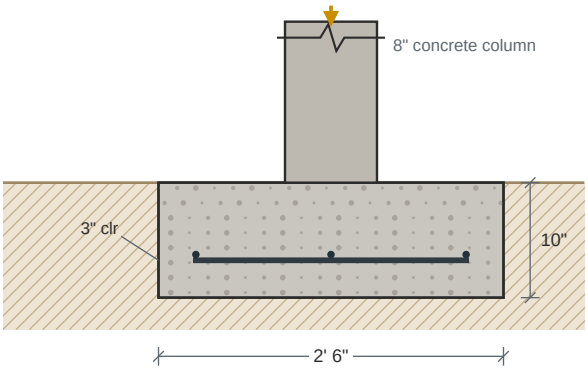
Controls: Soil Bearing Pressure 94% used
Adequacy 6.3% (capacity to spare)

What Loads It

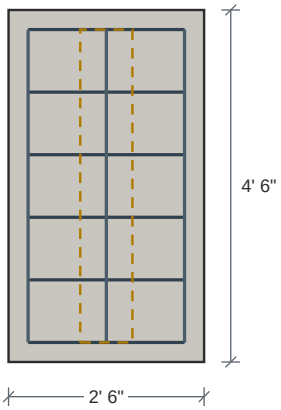
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Carrying: Dead 1,511 lb Snow 12,948 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,406	1,500	Passed (94%)	ASD	D+S
One-Way Shear X (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,567	27,728	Passed (13%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	156	16,240	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,786	32,338	Passed (12%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	22,529	1,272,960	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

SpotFtg Gdr #1-2 (continued)

Spot Footing | 2' 6" x 4' 6" x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	4' 6"
Footing depth	10"
Column width	8"
Column length	48"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	8 x 48 concrete pier
Cap	truss layout

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	648.1	5,772	Linked from: Girder #1, Support 3
2 - Point (lb)	--	N/A	85	750	Linked from: Girder #2, Support 1
3 - Point (lb)	--	N/A	644.4	5,318	Linked from: Girder #3, Support 1
4 - Point (lb)	--	N/A	133.1	1,108	Linked from: Header #1, Support 1

SpotFtg Gdr #2-2

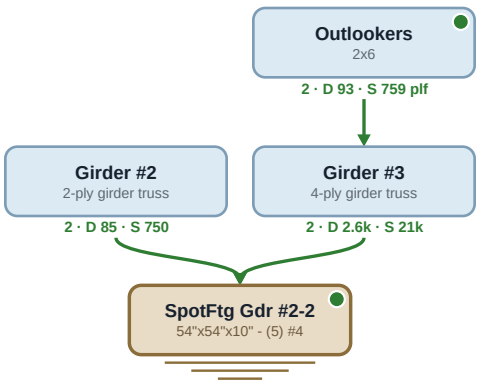
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

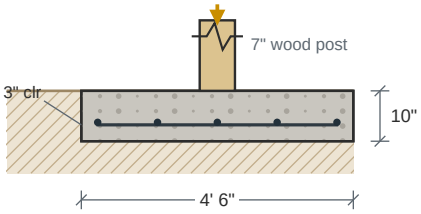
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 7" x 7" | ACI 318-14

Controls: Soil Bearing Pressure 90% used
Adequacy 10% (capacity to spare)

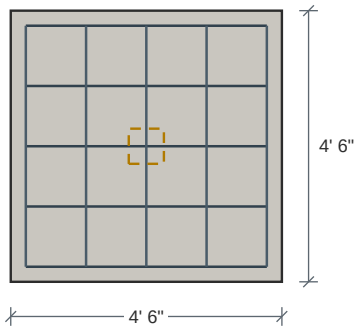
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,686 lb Snow 22,212 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,350	1,500	Passed (90%)	ASD	D+S
One-Way Shear X (lbs)	12,383	27,728	Passed (45%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	12,383	27,728	Passed (45%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	36,340	57,675	Passed (63%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	19,069	27,145	Passed (70%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	19,069	27,145	Passed (70%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	38,763	162,435	Passed (24%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	7"
Column length	7"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	7 x 7 2.0E PSL post
Post base	fabricated
Cap	truss layout

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	85	750	Linked from: Girder #2, Support 2

SpotFtg Gdr #2-2 (continued)

Spot Footing | 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
2 - Point (lb)	--	N/A	2,601	21,462	Linked from: Girder #3, Support 2

SpotFtg Gdr #4-1

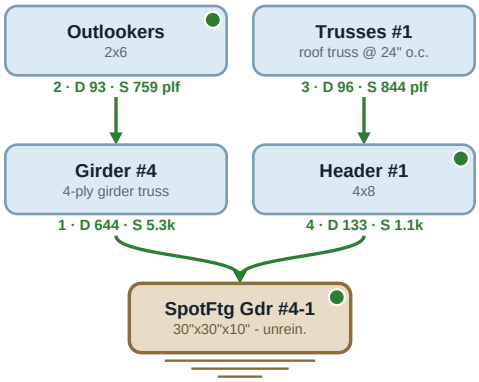
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Unreinforced (Plain)

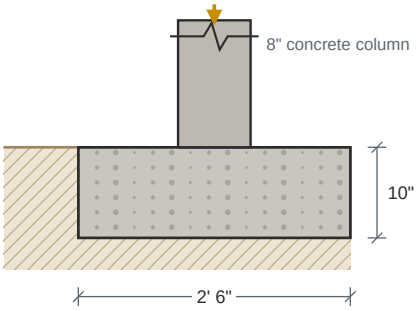
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Soil Bearing Pressure 85% used
Adequacy 15.1% (capacity to spare)

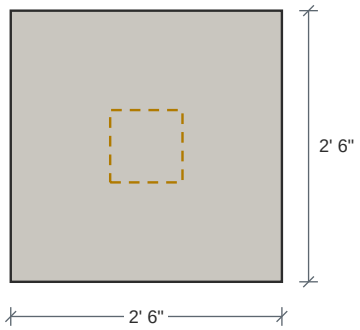
WHAT LOADS IT



SECTION



PLAN -- PLAIN CONCRETE, NO REINFORCING



Unreinforced (Plain)

Carrying: Dead 778 lb Snow 6,426 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,273	1,500	Passed (85%)	ASD	D+S
One-Way Shear X (lbs)	1,121	10,516	Passed (11%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,121	10,516	Passed (11%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	8,025	44,757	Passed (18%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,885	4,382	Passed (43%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,885	4,382	Passed (43%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,214	195,840	Passed (6%)	LRFD	1.2D+1.6S+L
Minimum Thickness (in)	8	10	Passed (80%)	code	ACI 318-14 Ch. 14

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Reinforcing	none -- plain concrete
Plain concrete (no reinforcing)	Yes
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	644.4	5,318	Linked from: Girder #4, Support 1
2 - Point (lb)	--	N/A	133.1	1,108	Linked from: Header #1, Support 4

SpotFtg Gdr #4-2

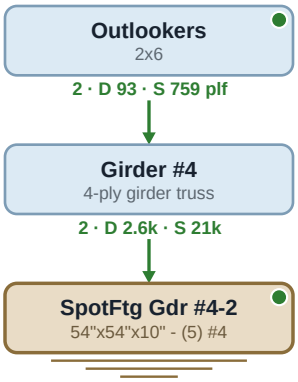
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

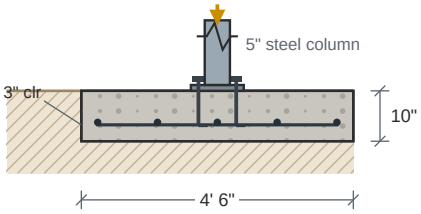
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Steel column 5" x 5" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 12.7% (capacity to spare)

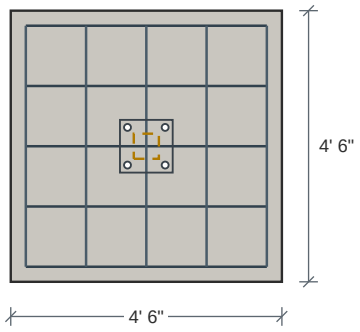
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



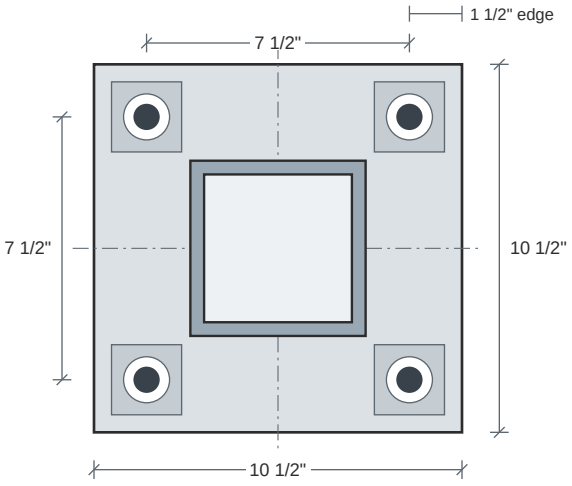
Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,601 lb Snow 21,462 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,309	1,500	Passed (87%)	ASD	D+S
One-Way Shear X (lbs)	12,660	27,728	Passed (46%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	12,660	27,728	Passed (46%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	35,762	49,131	Passed (73%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	19,166	27,145	Passed (71%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	19,166	27,145	Passed (71%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	37,461	365,479	Passed (10%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2
Base Plate Thickness (in)	0.5	0.416 min	Passed	LRFD	1.2D+1.6S+L

Base Plate and Anchor Rods

plate sized here for the column, four rods outside it; thickness per AISC Design Guide 1



Specification	
Plate	10 1/2" x 10 1/2" x 1/2" thick
Minimum thickness	0.416 in -> 1/2"
Plate steel	ASTM A36 (assumed; no grade specified)
Column	HSS5x5x1/4 (5" x 5")
Anchor rods	(4) 3/4" dia. ASTM F1554 Gr. 36
Holes	1 5/16" dia. (AISC Manual Table 14-2)
Plate washers	2" x 2" x 1/4"
Rod pattern	7 1/2" x 7 1/2" on centres
Edge distance	1 1/2" (min 1 1/16")
Embedment	7" into a 10" footing
Bearing (LRFD)	Pu 37,461 lb vs phiPp 365,479 lb
Anchorage	standard minimum (see notes)

! The 10 in footing leaves 7 in of embedment, short of the usual 12 in.

SpotFtg Gdr #4-2 (continued)

Spot Footing | 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Steel, HSS5x5x1/4
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	5"
Column length	5"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Base plate: proposed here for the HSS5x5x1/4 set on this footing, which has no plate of its own -- 10 1/2" x 10 1/2", four rods outside the column; AISC Design Guide 1, concentric axial, A36 plate assumed; minimum 0.416 in for Pu = 37,461 lbs, 1/2" used (no thinner than 1/2" is proposed).
- Anchor rods are specified, not designed: nothing in the model puts tension or shear on them. OSHA 1926.755(a)(1) requires at least four at a column; holes and plate washers per AISC Manual Table 14-2.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,601	21,462	Linked from: Girder #4, Support 2

SpotFtg Gdr #4-3

PASSED

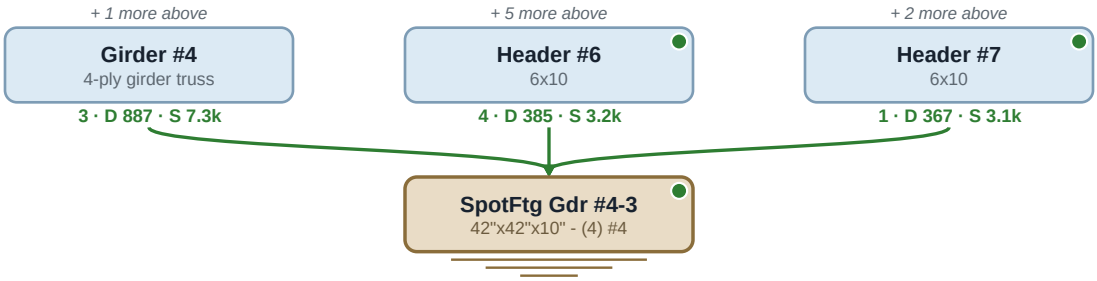
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

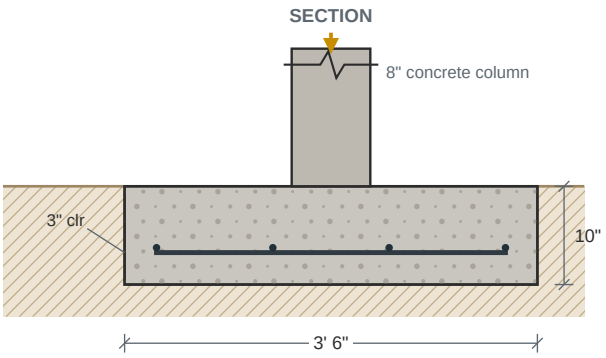
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

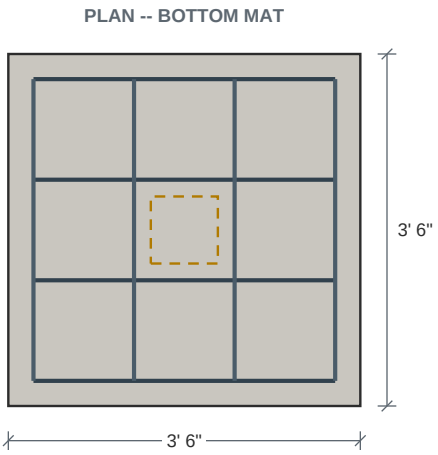
Controls: Soil Bearing Pressure 91% used
Adequacy 9% (capacity to spare)

What Loads It

click a box to go to that member







Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,640 lb Snow 13,607 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,365	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	6,076	21,567	Passed (28%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,076	21,567	Passed (28%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	20,909	61,947	Passed (34%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,806	21,693	Passed (31%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	6,806	21,693	Passed (31%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	23,738	212,160	Passed (11%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

SpotFtg Gdr #4-3 (continued)

Spot Footing | 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	385.2	3,174	Linked from: Header #6, Support 4
2 - Point (lb)	--	N/A	367.2	3,112	Linked from: Header #7, Support 1
3 - Point (lb)	--	N/A	887.1	7,321	Linked from: Girder #4, Support 3

SpotFtg Gdr #5-2

PASSED

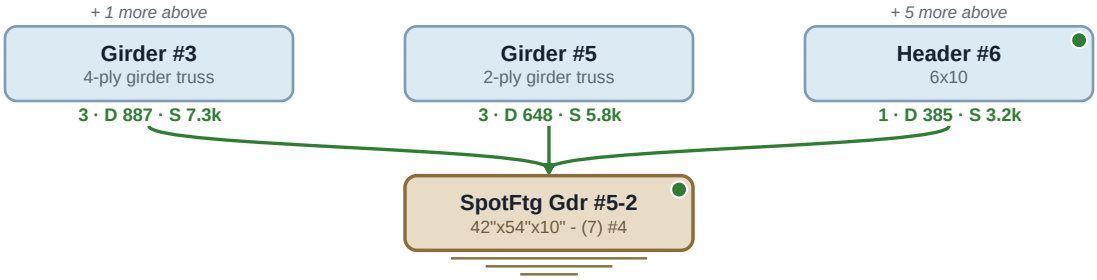
Spot Footing 3' 6" x 4' 6" x 10" deep -- Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3.5 ft

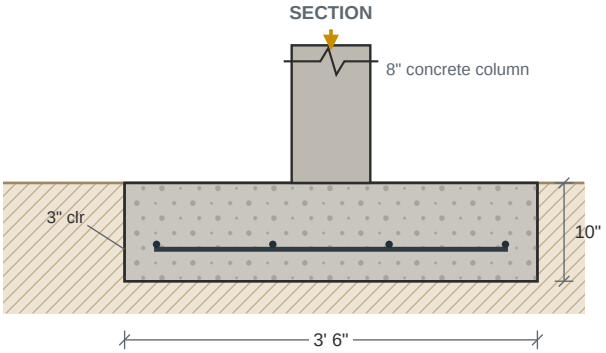
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

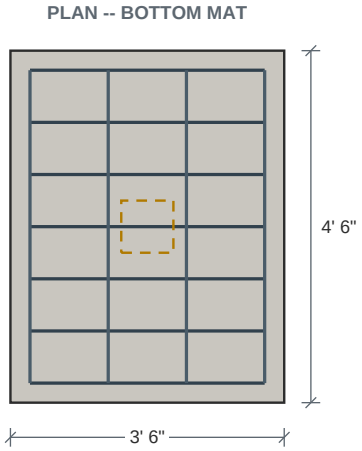
Controls: Depth Above Bars 89% used
Adequacy 15% (capacity to spare)

What Loads It

click a box to go to that member







Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3.5 ft

Carrying: Dead 1,920 lb Snow 16,267 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,276	1,500	Passed (85%)	ASD	D+S
One-Way Shear X (lbs)	8,788	21,567	Passed (41%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	7,251	27,728	Passed (26%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	25,705	61,947	Passed (41%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	11,564	21,693	Passed (53%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	8,123	37,453	Passed (22%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	28,331	212,160	Passed (13%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	4' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

SpotFtg Gdr #5-2 (continued)

Spot Footing | 3' 6" x 4' 6" x 10" deep -- Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3.5 ft

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	6x6 post (assumed)
Post base	CB66, p. 87
Cap	truss layout

Reinforcement	
Bottom mat	Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in
Bars the long way	(7) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	648.1	5,772	Linked from: Girder #5, Support 3
2 - Point (lb)	--	N/A	887.1	7,321	Linked from: Girder #3, Support 3
3 - Point (lb)	--	N/A	385.2	3,174	Linked from: Header #6, Support 1

SpotFtg Gdr #8-1

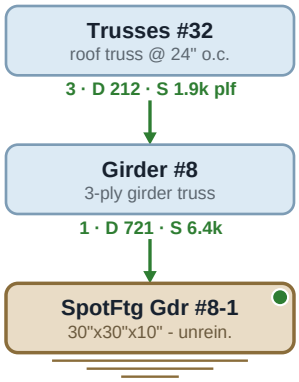
Spot Footing 2' 6" x 2' 6" x 10" deep -- Unreinforced (Plain)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

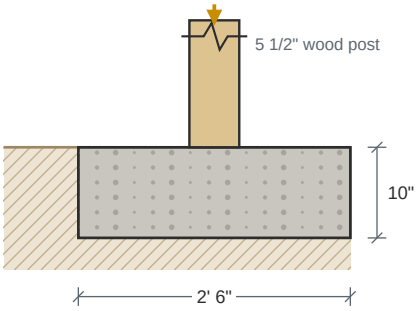
PASSED

Controls: Soil Bearing Pressure 84% used
Adequacy 16.4% (capacity to spare)

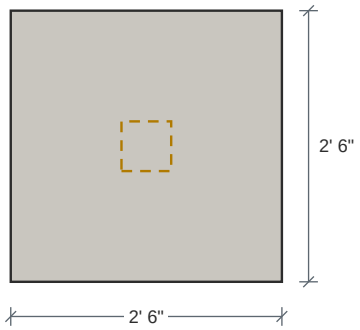
WHAT LOADS IT



SECTION



PLAN -- PLAIN CONCRETE, NO REINFORCING



Unreinforced (Plain)

Carrying: Dead 721 lb Snow 6,365 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,255	1,500	Passed (84%)	ASD	D+S
One-Way Shear X (lbs)	1,565	10,516	Passed (15%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,565	10,516	Passed (15%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	8,813	37,764	Passed (23%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,849	4,382	Passed (65%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,849	4,382	Passed (65%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,050	92,565	Passed (12%)	LRFD	1.2D+1.6S+L
Minimum Thickness (in)	8	10	Passed (80%)	code	ACI 318-14 Ch. 14

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Reinforcing	none -- plain concrete
Plain concrete (no reinforcing)	Yes
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	721.4	6,365	Linked from: Girder #8, Support 1

SpotFtg Gdr #8-2

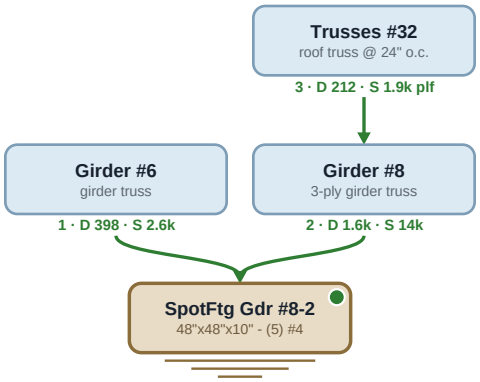
Spot Footing 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

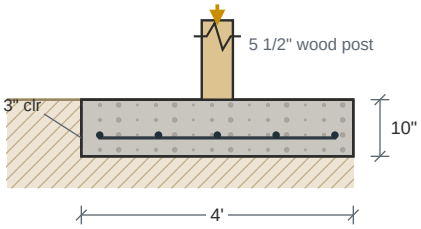
PASSED

Controls: Depth Above Bars 89% used
Adequacy 15.1% (capacity to spare)

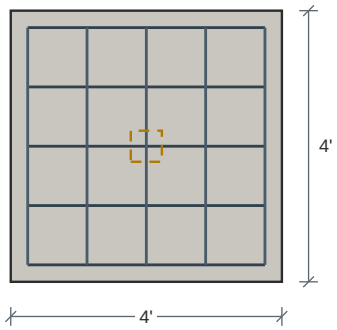
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 1,976 lb Snow 16,477 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,274	1,500	Passed (85%)	ASD	D+S
One-Way Shear X (lbs)	8,980	24,648	Passed (36%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	8,980	24,648	Passed (36%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	26,939	51,267	Passed (53%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	12,768	27,022	Passed (47%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	12,768	27,022	Passed (47%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	28,735	100,279	Passed (29%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	4'
Footing length	4'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties and Post	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0
Post	6x6 post
Post base	ABU66Z, p. 76
Cap	truss layout

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,578	13,922	Linked from: Girder #8, Support 2

SpotFtg Gdr #8-2 (continued)

Spot Footing | 4' x 4' x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
2 - Point (lb)	--	N/A	398.4	2,555	Linked from: Girder #6, Support 1

SpotFtg Hdr #1-2

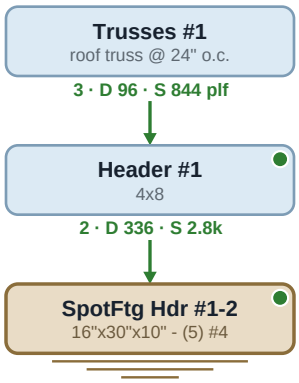
Spot Footing 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

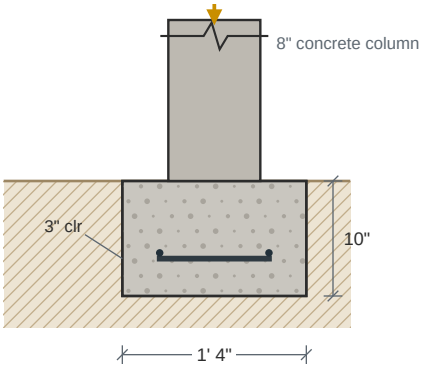
PASSED

Controls: Depth Above Bars 89% used
Adequacy 29.3% (capacity to spare)

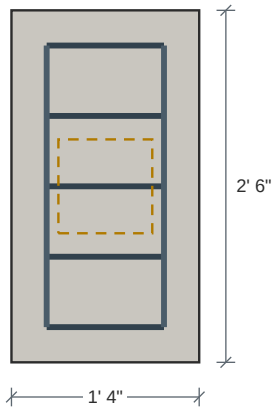
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 336 lb Snow 2,795 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,060	1,500	Passed (71%)	ASD	D+S
One-Way Shear X (lbs)	772	8,216	Passed (9%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	2,739	61,947	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	819	10,721	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	203	26,360	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	4,874	212,160	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #1-2 (continued)

Spot Footing | 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	335.9	2,795	Linked from: Header #1, Support 2

SpotFtg Hdr #1-3

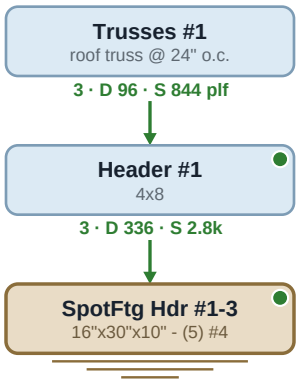
PASSED

Spot Footing 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

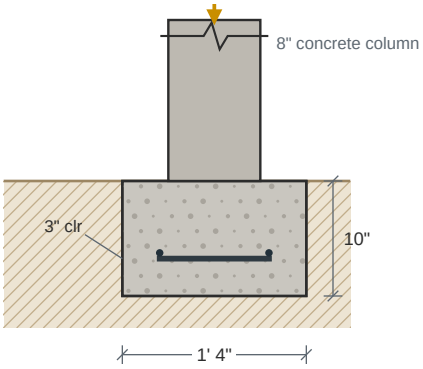
Controls: Depth Above Bars 89% used
Adequacy 29.3% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

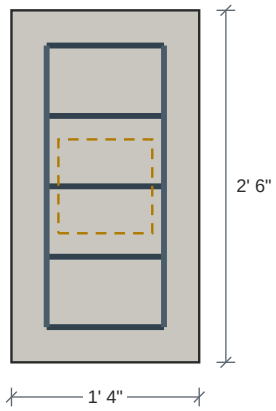
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 336 lb Snow 2,795 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,060	1,500	Passed (71%)	ASD	D+S
One-Way Shear X (lbs)	772	8,216	Passed (9%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	2,739	61,947	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	819	10,721	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	203	26,360	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	4,874	212,160	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #1-3 (continued)

Spot Footing | 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	335.9	2,795	Linked from: Header #1, Support 3

SpotFtg Hdr #2-1

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

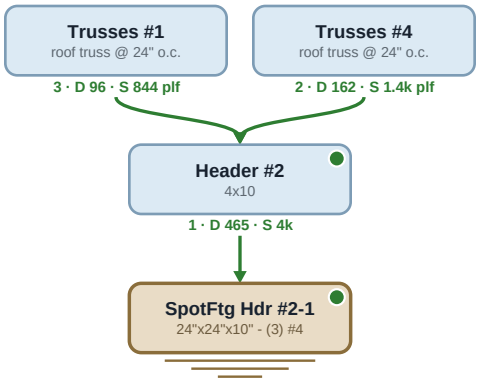
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

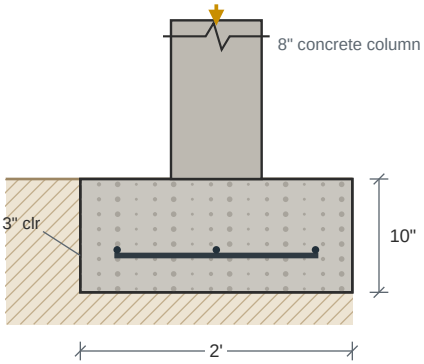
Controls: Depth Above Bars 89% used

Adequacy 17.8% (capacity to spare)

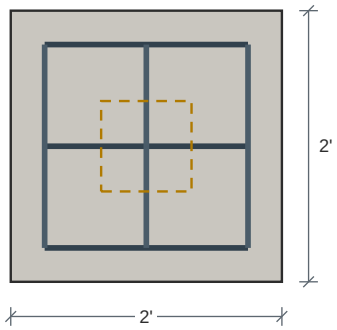
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 465 lb Snow 3,986 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,233	1,500	Passed (82%)	ASD	D+S
One-Way Shear X (lbs)	506	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	506	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,403	61,947	Passed (7%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	770	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	770	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,934	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	464.6	3,986	Linked from: Header #2, Support 1

SpotFtg Hdr #2-2

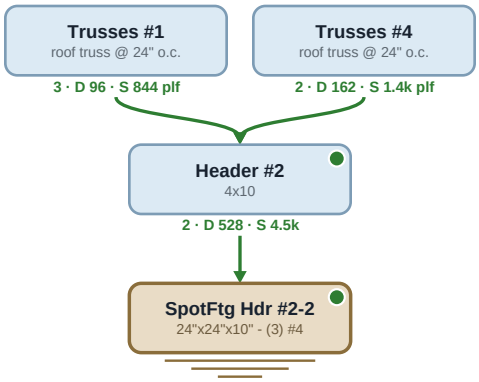
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

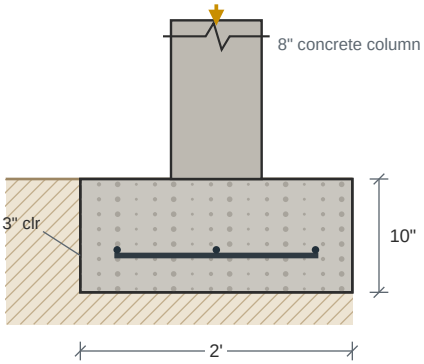
PASSED

Controls: Soil Bearing Pressure 92% used
Adequacy 7.7% (capacity to spare)

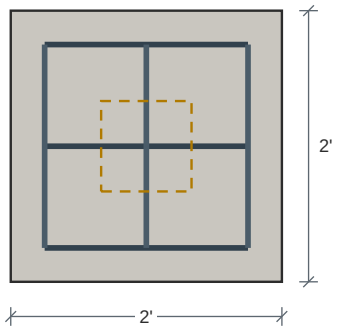
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 528 lb Snow 4,527 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,385	1,500	Passed (92%)	ASD	D+S
One-Way Shear X (lbs)	574	12,324	Passed (5%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	574	12,324	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,002	61,947	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	875	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	875	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	7,877	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	527.8	4,527	Linked from: Header #2, Support 2

SpotFtg Hdr #7-2

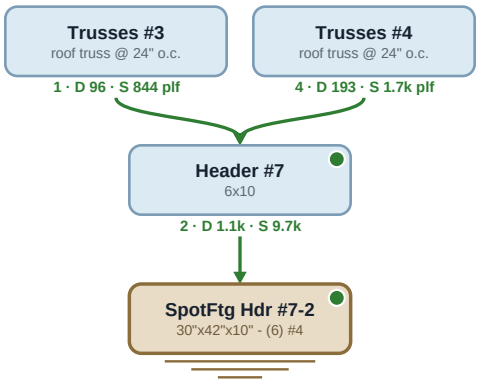
PASSED

Spot Footing 2' 6" x 3' 6" x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

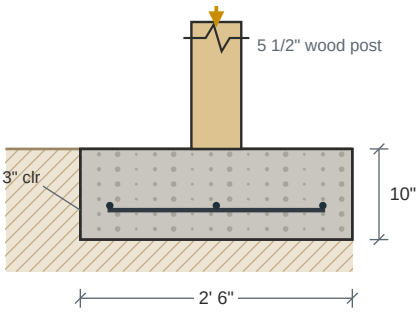
Controls: Soil Bearing Pressure 90% used
Adequacy 9.6% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

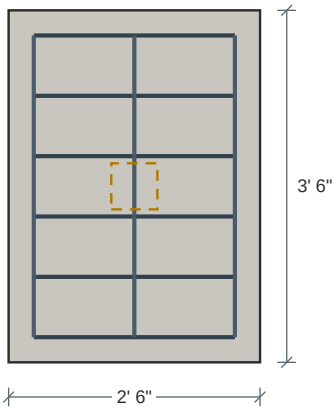
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Carrying: Dead 1,140 lb Snow 9,663 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,355	1,500	Passed (90%)	ASD	D+S
One-Way Shear X (lbs)	4,808	15,405	Passed (31%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,366	21,567	Passed (16%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	14,905	51,267	Passed (29%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,430	16,240	Passed (40%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	4,339	31,935	Passed (14%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	16,828	100,279	Passed (17%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2' 6"
Footing length	3' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

SpotFtg Hdr #7-2 (continued)

Spot Footing | 2' 6" x 3' 6" x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2.5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,140	9,663	Linked from: Header #7, Support 2

SpotFtg Hdr #7-3

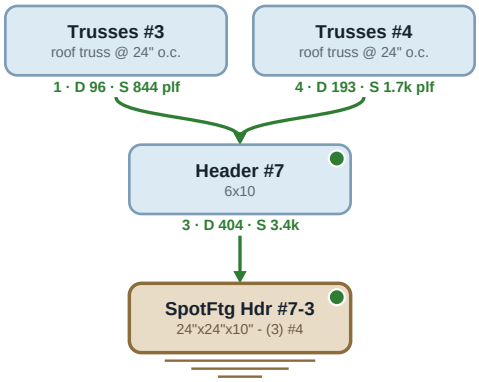
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

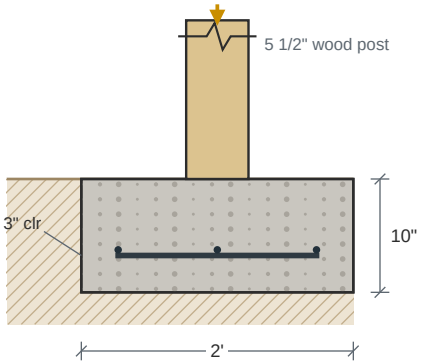
PASSED

Controls: Depth Above Bars 89% used
Adequacy 28.1% (capacity to spare)

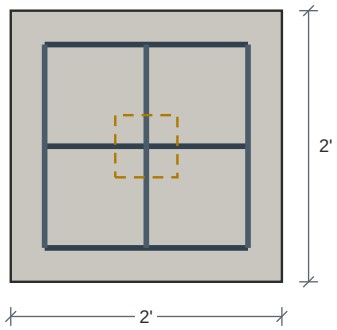
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 404 lb Snow 3,426 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,078	1,500	Passed (72%)	ASD	D+S
One-Way Shear X (lbs)	746	12,324	Passed (6%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	746	12,324	Passed (6%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,475	51,267	Passed (9%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,169	16,081	Passed (7%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,169	16,081	Passed (7%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	5,966	100,279	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	404.3	3,426	Linked from: Header #7, Support 3

SpotFtg Hdr #8-1

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

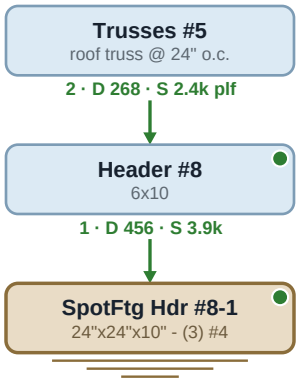
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

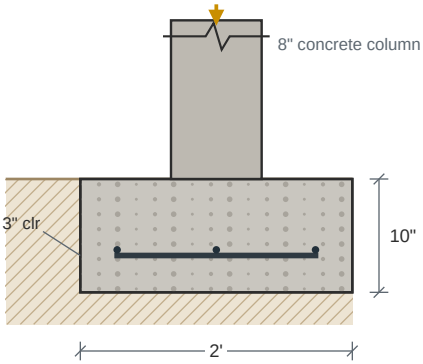
Controls: Depth Above Bars 89% used

Adequacy 20.1% (capacity to spare)

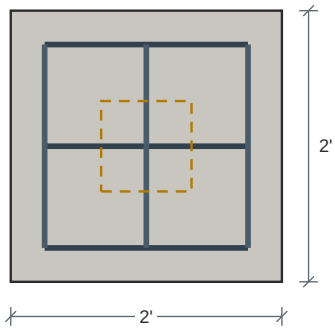
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 456 lb Snow 3,853 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,198	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	489	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	489	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,262	61,947	Passed (7%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	746	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	746	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,712	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	456.1	3,853	Linked from: Header #8, Support 1

SpotFtg Hdr #8-2

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

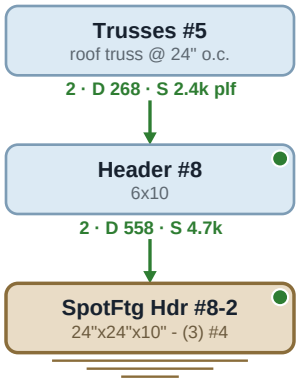
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

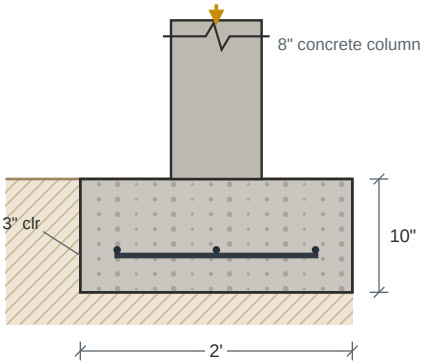
Controls: Soil Bearing Pressure 96% used

Adequacy 4.1% (capacity to spare)

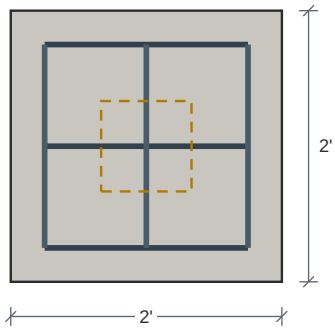
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 558 lb Snow 4,711 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,438	1,500	Passed (96%)	ASD	D+S
One-Way Shear X (lbs)	598	12,324	Passed (5%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	598	12,324	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,212	61,947	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	912	16,081	Passed (6%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	912	16,081	Passed (6%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,207	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	557.7	4,711	Linked from: Header #8, Support 2

SpotFtg Hdr #9-1

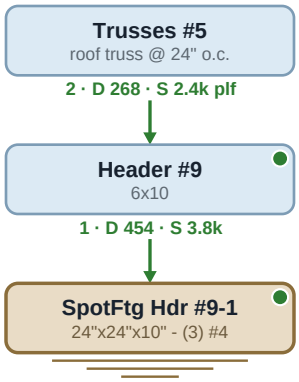
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

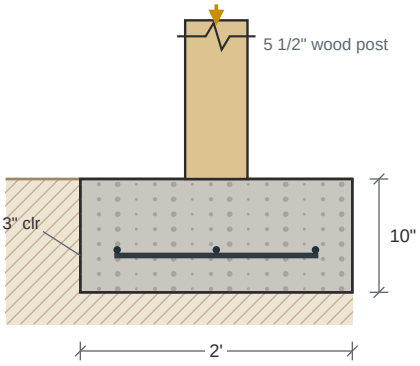
PASSED

Controls: Depth Above Bars 89% used
Adequacy 20.4% (capacity to spare)

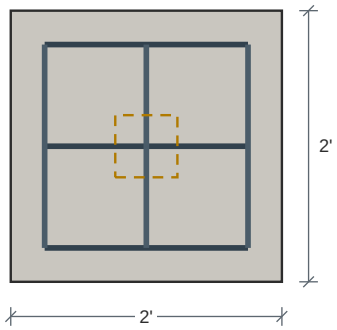
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 454 lb Snow 3,839 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,194	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	836	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	836	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,016	51,267	Passed (10%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,311	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,311	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,688	100,279	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	454.4	3,839	Linked from: Header #9, Support 1

SpotFtg Hdr #9-2

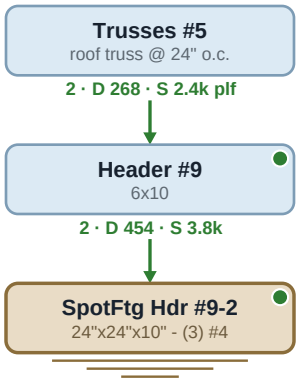
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

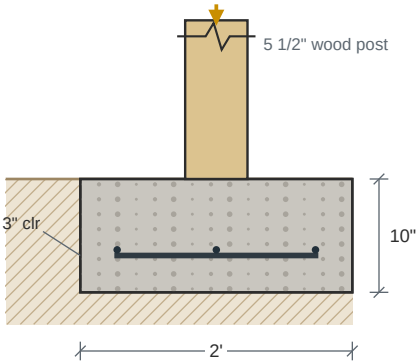
PASSED

Controls: Depth Above Bars 89% used
Adequacy 20.4% (capacity to spare)

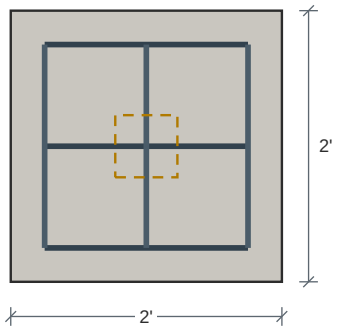
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 454 lb Snow 3,839 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,194	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	836	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	836	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,016	51,267	Passed (10%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,311	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,311	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,688	100,279	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	454.4	3,839	Linked from: Header #9, Support 2

SpotFtg Hdr #11-1

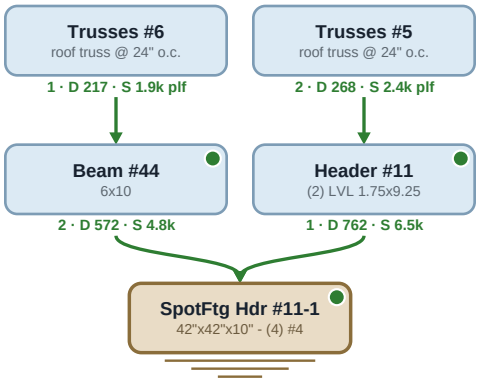
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

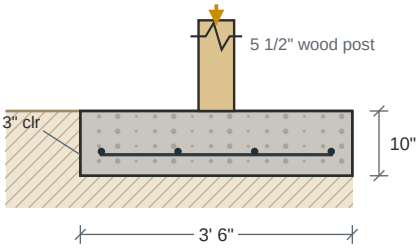
PASSED

Controls: Depth Above Bars 89% used
Adequacy 23.3% (capacity to spare)

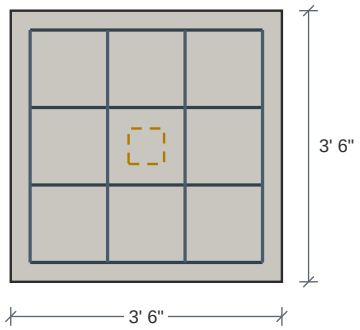
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,334 lb Snow 11,278 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,150	1,500	Passed (77%)	ASD	D+S
One-Way Shear X (lbs)	5,613	21,567	Passed (26%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,613	21,567	Passed (26%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	18,042	51,267	Passed (35%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	7,506	21,693	Passed (35%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	7,506	21,693	Passed (35%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	19,646	100,279	Passed (20%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	762.3	6,497	Linked from: Header #11, Support 1

SpotFtg Hdr #11-1 (continued)

Spot Footing | 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
2 - Point (lb)	--	N/A	571.6	4,781	Linked from: Beam #44, Support 2

SpotFtg Hdr #11-2

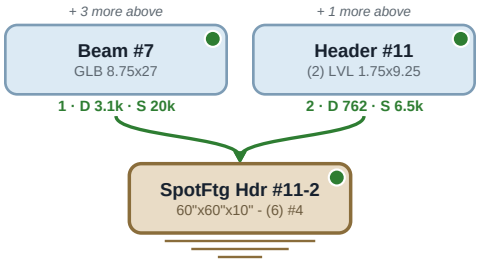
PASSED

Spot Footing 5' x 5' x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

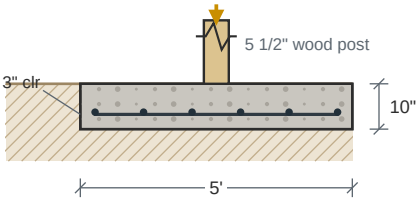
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 11.2% (capacity to spare)

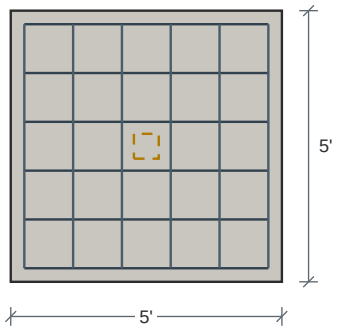
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 3,858 lb Snow 26,432 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,332	1,500	Passed (89%)	ASD	D+S
One-Way Shear X (lbs)	16,422	30,809	Passed (53%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	16,422	30,809	Passed (53%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	45,044	51,267	Passed (88%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	26,699	32,479	Passed (82%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	26,699	32,479	Passed (82%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	46,921	100,279	Passed (47%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	5'
Footing length	5'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	762.3	6,497	Linked from: Header #11, Support 2
2 - Point (lb)	--	N/A	3,095	19,935	Linked from: Beam #7, Support 1

SpotFtg Hdr #13-1

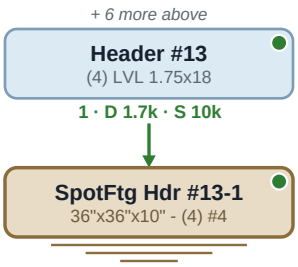
PASSED

Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

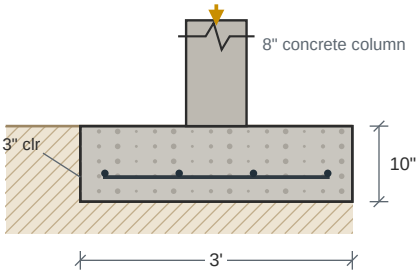
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Soil Bearing Pressure 96% used
Adequacy 3.8% (capacity to spare)

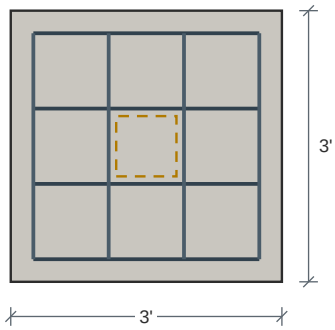
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,698 lb Snow 10,205 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,443	1,500	Passed (96%)	ASD	D+S
One-Way Shear X (lbs)	3,954	18,486	Passed (21%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,954	18,486	Passed (21%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	15,387	61,947	Passed (25%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	4,166	21,559	Passed (19%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	4,166	21,559	Passed (19%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	18,366	212,160	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,698	10,205	Linked from: Header #13, Support 1

SpotFtg Hdr #13-2

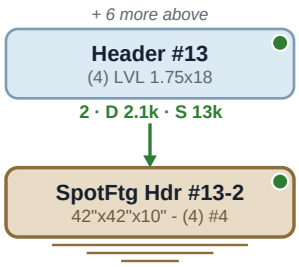
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

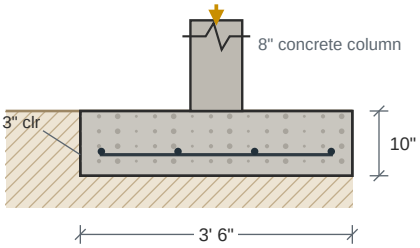
PASSED

Controls: Soil Bearing Pressure 92% used
Adequacy 8.1% (capacity to spare)

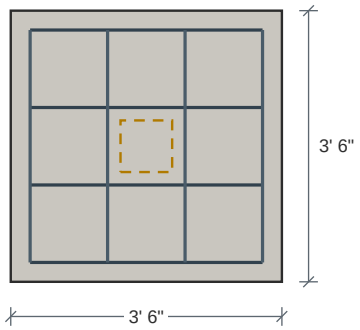
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 2,110 lb Snow 13,293 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,378	1,500	Passed (92%)	ASD	D+S
One-Way Shear X (lbs)	6,092	21,567	Passed (28%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,092	21,567	Passed (28%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	20,964	61,947	Passed (34%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,824	21,693	Passed (31%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	6,824	21,693	Passed (31%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	23,801	212,160	Passed (11%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,110	13,293	Linked from: Header #13, Support 2

SpotFtg Hdr #14-1

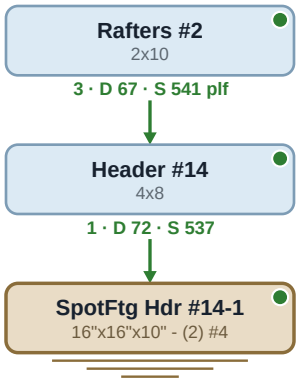
PASSED

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

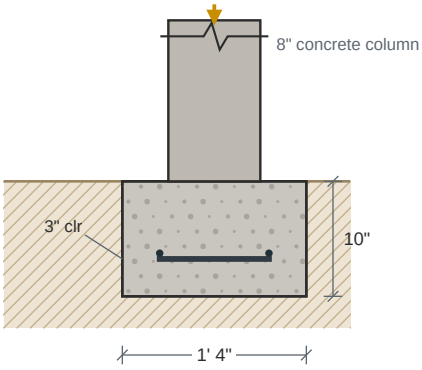
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 69.1% (capacity to spare)

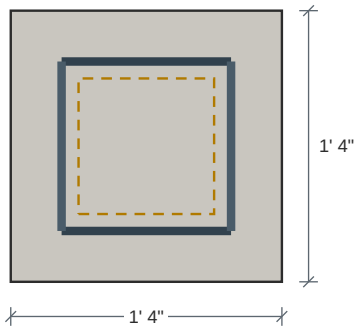
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 72 lb Snow 537 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	464	1,500	Passed (31%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	169	61,947	Passed (0%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	39	10,721	Passed (0%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	39	10,721	Passed (0%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	947	212,160	Passed (0%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	72.3	537.5	Linked from: Header #14, Support 1

SpotFtg Hdr #15-1

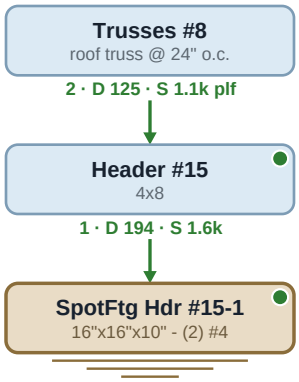
PASSED

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

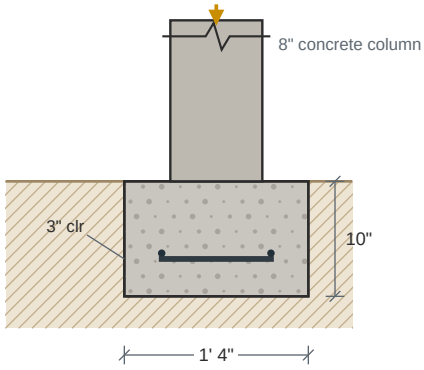
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 23.5% (capacity to spare)

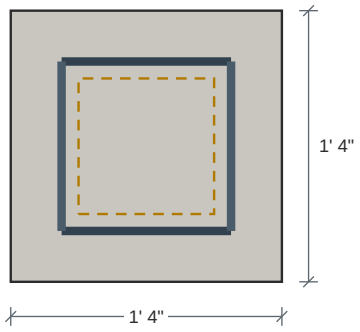
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 194 lb Snow 1,633 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,148	1,500	Passed (77%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	508	61,947	Passed (1%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	119	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	119	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	2,845	212,160	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	193.6	1,633	Linked from: Header #15, Support 1

SpotFtg Hdr #16-1

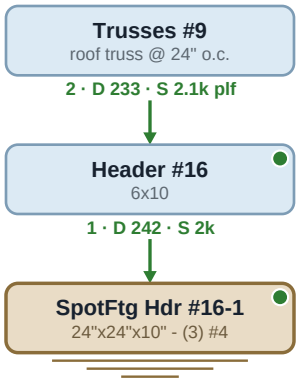
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

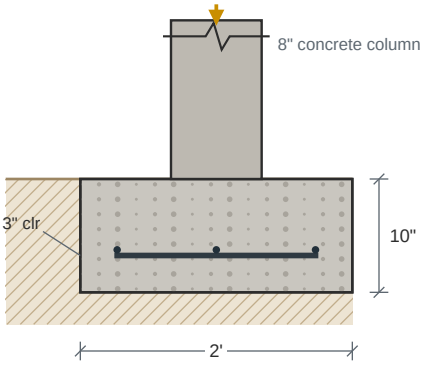
PASSED

Controls: Depth Above Bars 89% used
Adequacy 54.1% (capacity to spare)

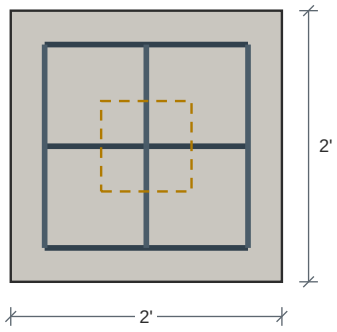
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 242 lb Snow 2,030 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	689	1,500	Passed (46%)	ASD	D+S
One-Way Shear X (lbs)	258	12,324	Passed (2%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	258	12,324	Passed (2%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	2,247	61,947	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	393	16,081	Passed (2%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	393	16,081	Passed (2%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	3,539	212,160	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	241.8	2,030	Linked from: Header #16, Support 1

SpotFtg Hdr #16-2

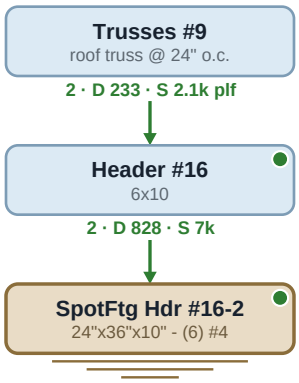
PASSED

Spot Footing 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

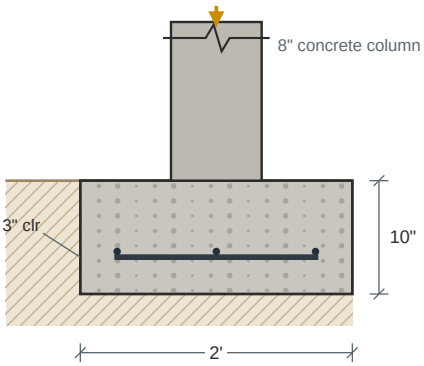
Controls: Soil Bearing Pressure 95% used
Adequacy 5.5% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

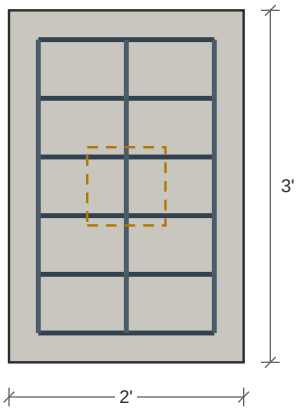
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 828 lb Snow 6,955 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,418	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	2,609	12,324	Passed (21%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	884	18,486	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,171	61,947	Passed (15%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,750	16,081	Passed (17%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,347	31,632	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	12,121	212,160	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #16-2 (continued)

Spot Footing | 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	827.7	6,955	Linked from: Header #16, Support 2

SpotFtg Hdr #16-3

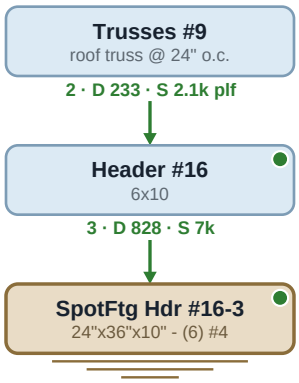
PASSED

Spot Footing 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

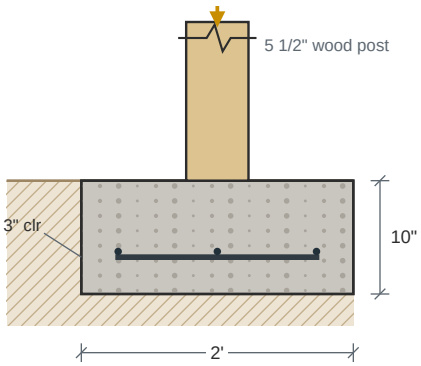
Controls: Soil Bearing Pressure 95% used
Adequacy 5.5% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

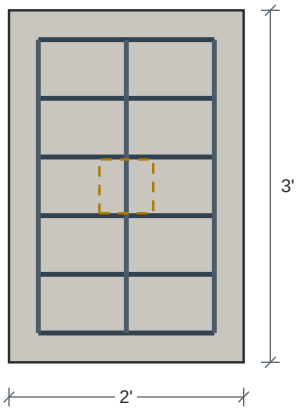
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 828 lb Snow 6,955 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,418	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	3,030	12,324	Passed (25%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,515	18,486	Passed (8%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	10,101	51,267	Passed (20%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,877	16,081	Passed (24%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,376	31,632	Passed (8%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	12,121	100,279	Passed (12%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	3'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

SpotFtg Hdr #16-3 (continued)

Spot Footing | 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	827.7	6,955	Linked from: Header #16, Support 3

SpotFtg Hdr #20-1

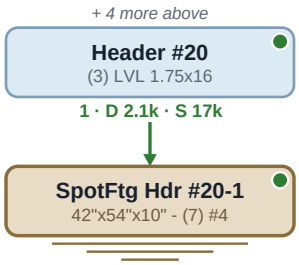
PASSED

Spot Footing 3' 6" x 4' 6" x 10" deep -- Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3.5 ft

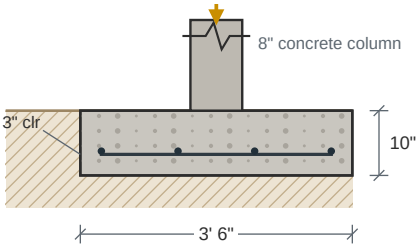
Controls: Soil Bearing Pressure 91% used
Adequacy 9% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

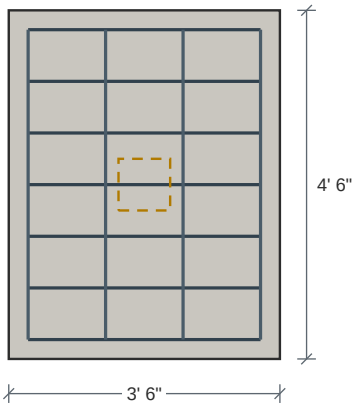
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3.5 ft

Carrying: Dead 2,113 lb Snow 17,478 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,365	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	9,461	21,567	Passed (44%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	7,807	27,728	Passed (28%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	27,673	61,947	Passed (45%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	12,450	21,693	Passed (57%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	8,745	37,453	Passed (23%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	30,501	212,160	Passed (14%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	4' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in
Bars the long way	(7) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #20-1 (continued)

Spot Footing | 3' 6" x 4' 6" x 10" deep -- Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3.5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	2,113	17,478	Linked from: Header #20, Support 1

SpotFtg Hdr #20-2

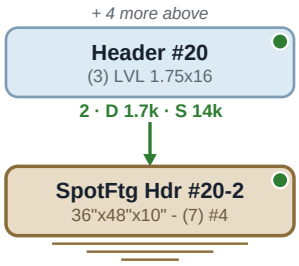
PASSED

Spot Footing 3' x 4' x 10" deep -- Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3 ft

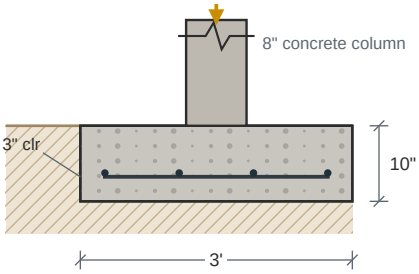
Controls: Soil Bearing Pressure 96% used
Adequacy 4.4% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

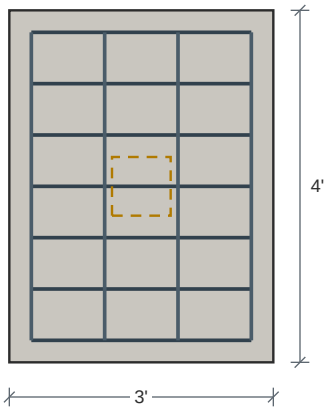
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3 ft

Carrying: Dead 1,731 lb Snow 14,022 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,434	1,500	Passed (96%)	ASD	D+S
One-Way Shear X (lbs)	7,022	18,486	Passed (38%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,277	24,648	Passed (21%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	21,530	61,947	Passed (35%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	8,511	21,559	Passed (39%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,561	37,213	Passed (15%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	24,512	212,160	Passed (12%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	4'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in
Bars the long way	(7) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #20-2 (continued)

Spot Footing | 3' x 4' x 10" deep -- Bot.(7) #4 Long, (4) #4 Short - 5 of the Long in the center 3 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,731	14,022	Linked from: Header #20, Support 2

SpotFtg Hdr #21-1

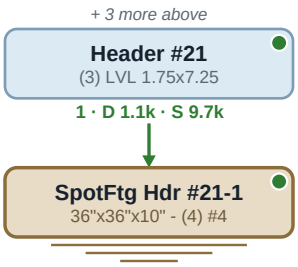
PASSED

Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

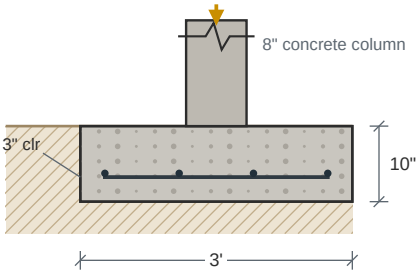
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 11.8% (capacity to spare)

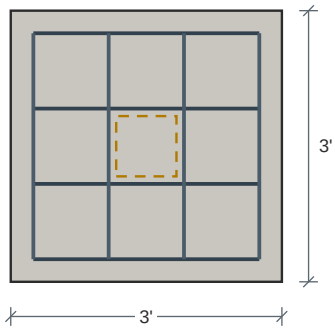
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,130 lb Snow 9,689 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,323	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	3,629	18,486	Passed (20%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,629	18,486	Passed (20%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	14,124	61,947	Passed (23%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,824	21,559	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	3,824	21,559	Passed (18%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	16,859	212,160	Passed (8%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,130	9,689	Linked from: Header #21, Support 1

SpotFtg Hdr #21-2

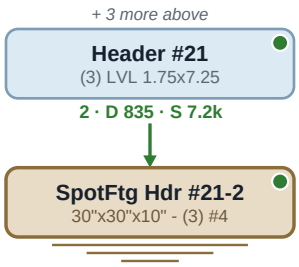
Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

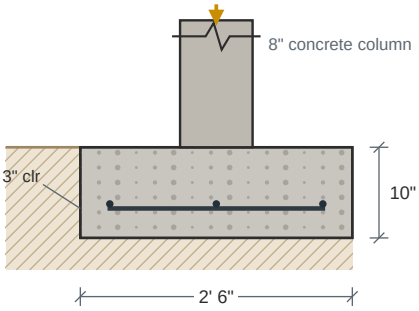
PASSED

Controls: Soil Bearing Pressure 94% used
Adequacy 6.4% (capacity to spare)

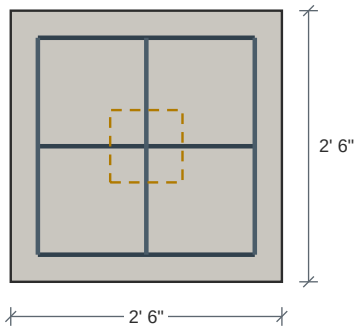
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 835 lb Snow 7,186 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,404	1,500	Passed (94%)	ASD	D+S
One-Way Shear X (lbs)	1,979	15,405	Passed (13%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,979	15,405	Passed (13%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,580	61,947	Passed (15%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,101	16,240	Passed (13%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,101	16,240	Passed (13%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	12,500	212,160	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	835.1	7,186	Linked from: Header #21, Support 2

SpotFtg Hdr #22-1

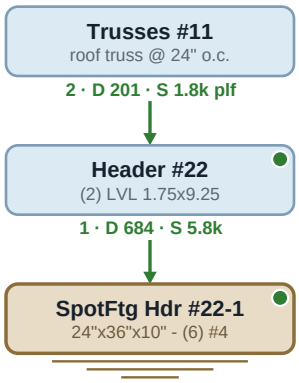
PASSED

Spot Footing 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

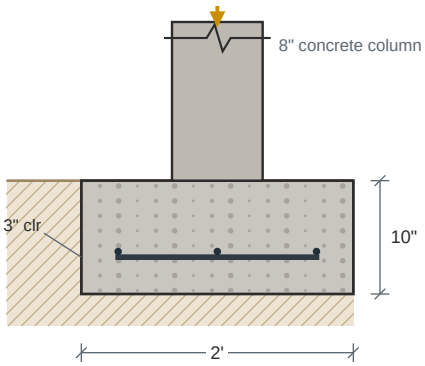
Controls: Depth Above Bars 89% used
Adequacy 20.3% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

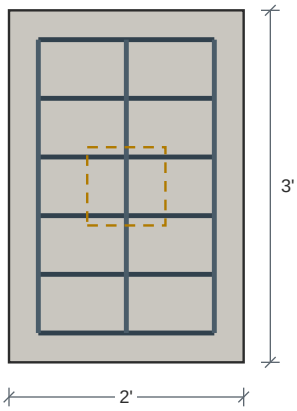
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 684 lb Snow 5,764 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,196	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	2,162	12,324	Passed (18%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	732	18,486	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	7,600	61,947	Passed (12%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,278	16,081	Passed (14%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,116	31,632	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,044	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #22-1 (continued)

Spot Footing | 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	684	5,764	Linked from: Header #22, Support 1

SpotFtg Hdr #22-2

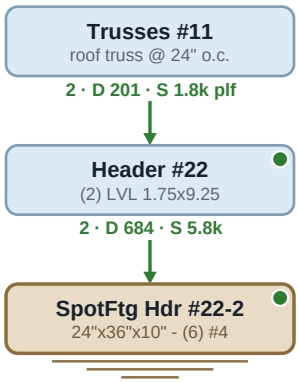
PASSED

Spot Footing 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

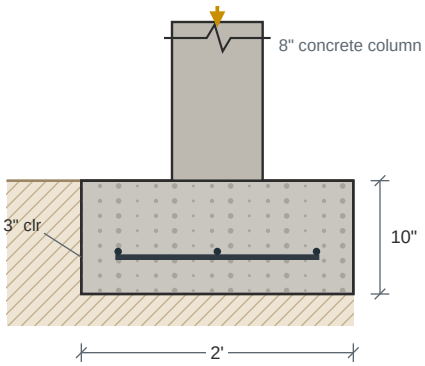
Controls: Depth Above Bars 89% used
Adequacy 20.3% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

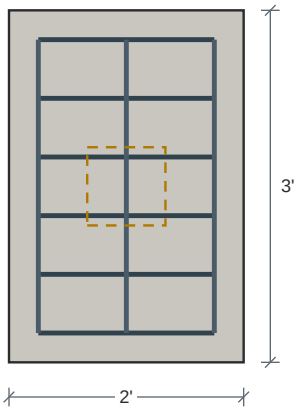
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 684 lb Snow 5,764 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,196	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	2,162	12,324	Passed (18%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	732	18,486	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	7,600	61,947	Passed (12%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,278	16,081	Passed (14%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,116	31,632	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,044	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #22-2 (continued)

Spot Footing | 2' x 3' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	684	5,764	Linked from: Header #22, Support 2

SpotFtg Hdr #24-1

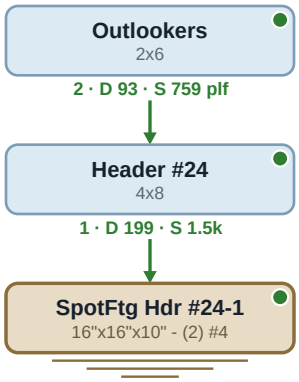
PASSED

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

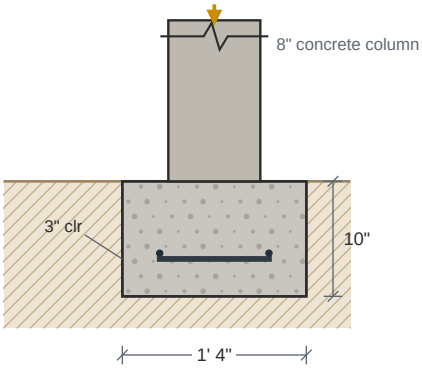
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 27.3% (capacity to spare)

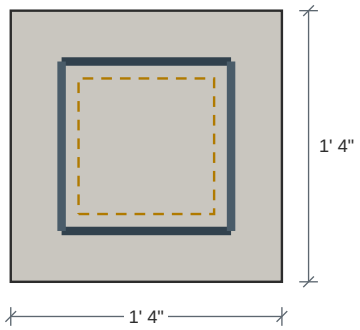
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 199 lb Snow 1,525 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,091	1,500	Passed (73%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	479	61,947	Passed (1%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	112	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	112	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	2,679	212,160	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	198.8	1,525	Linked from: Header #24, Support 1

SpotFtg Hdr #25-1

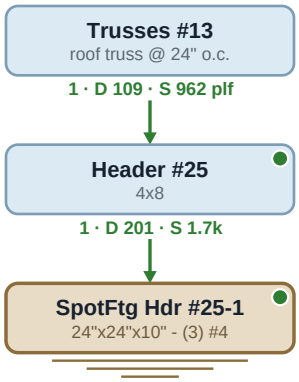
PASSED

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

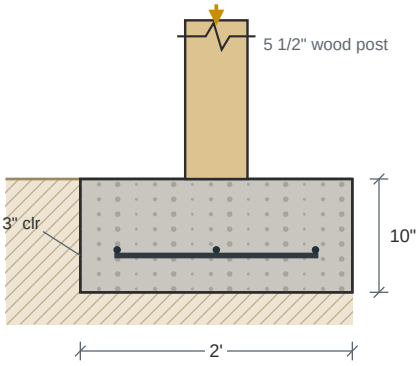
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 60.5% (capacity to spare)

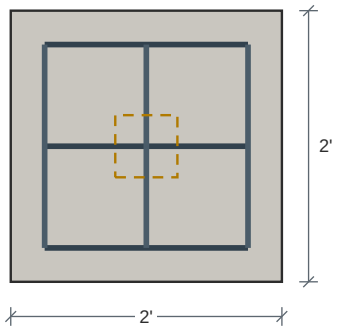
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 201 lb Snow 1,684 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	592	1,500	Passed (39%)	ASD	D+S
One-Way Shear X (lbs)	367	12,324	Passed (3%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	367	12,324	Passed (3%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	2,202	51,267	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	575	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	575	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	2,936	100,279	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	201	1,684	Linked from: Header #25, Support 1

SpotFtg Hdr #25-2

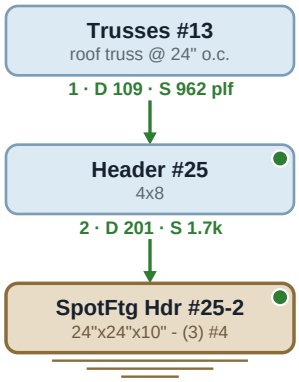
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

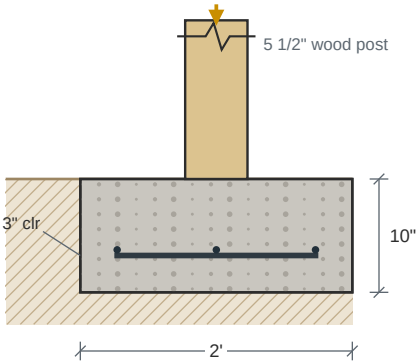
PASSED

Controls: Depth Above Bars 89% used
Adequacy 60.5% (capacity to spare)

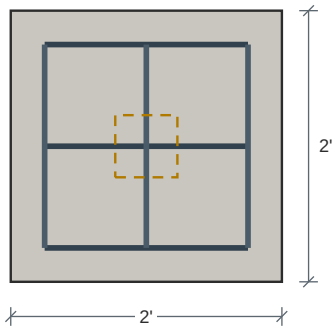
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 201 lb Snow 1,684 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	592	1,500	Passed (39%)	ASD	D+S
One-Way Shear X (lbs)	367	12,324	Passed (3%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	367	12,324	Passed (3%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	2,202	51,267	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	575	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	575	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	2,936	100,279	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	201	1,684	Linked from: Header #25, Support 2

SpotFtg Hdr #26-1

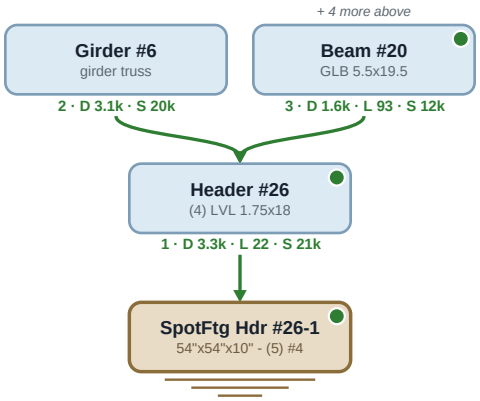
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

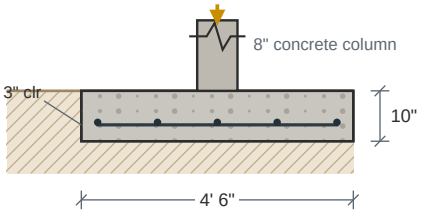
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 12.6% (capacity to spare)

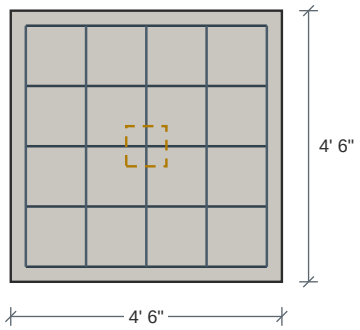
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 3,316 lb Floor Live 22 lb Snow 20,795 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,311	1,500	Passed (87%)	ASD	D+S
One-Way Shear X (lbs)	11,562	27,728	Passed (42%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	11,562	27,728	Passed (42%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	34,586	61,947	Passed (56%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	15,214	27,145	Passed (56%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	15,214	27,145	Passed (56%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	37,273	212,160	Passed (18%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	3,316	22.1	20,795	Linked from: Header #26, Support 1

SpotFtg Hdr #26-2

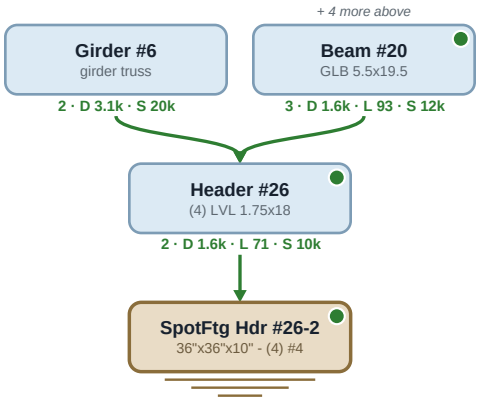
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

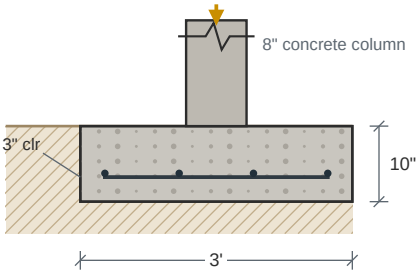
PASSED

Controls: Soil Bearing Pressure 97% used
Adequacy 3.3% (capacity to spare)

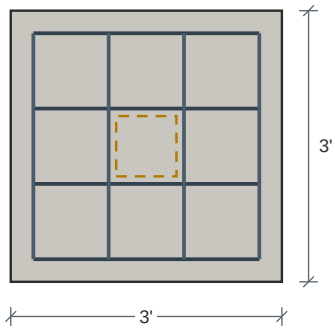
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,568 lb Floor Live 71 lb Snow 10,395 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,450	1,500	Passed (97%)	ASD	D+S
One-Way Shear X (lbs)	4,001	18,486	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	4,001	18,486	Passed (22%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	15,570	61,947	Passed (25%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	4,216	21,559	Passed (20%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	4,216	21,559	Passed (20%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	18,585	212,160	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,568	70.7	10,395	Linked from: Header #26, Support 2

SpotFtg Hdr #27-1

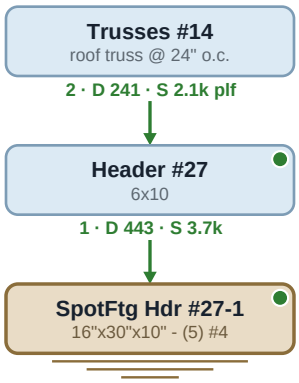
PASSED

Spot Footing 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

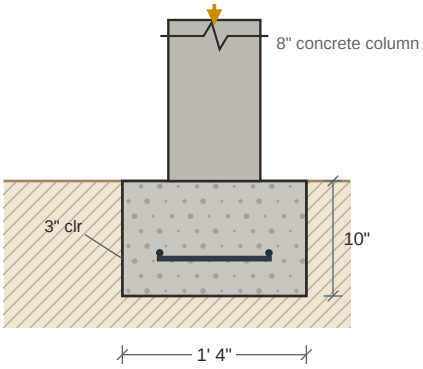
Controls: Soil Bearing Pressure 91% used
Adequacy 8.5% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

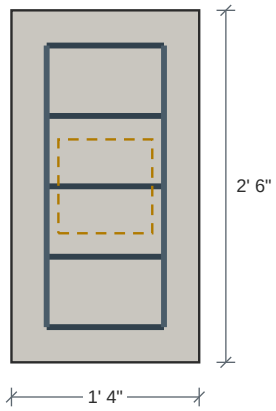
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 443 lb Snow 3,729 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,372	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	1,029	8,216	Passed (13%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	3,652	61,947	Passed (6%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,092	10,721	Passed (10%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	271	26,360	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,498	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #27-1 (continued)

Spot Footing | 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	443.4	3,729	Linked from: Header #27, Support 1

SpotFtg Hdr #27-2

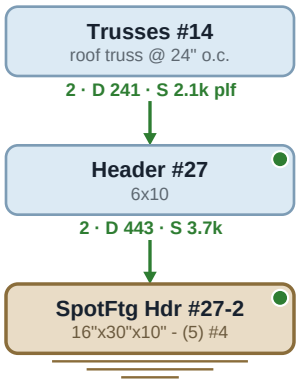
PASSED

Spot Footing 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

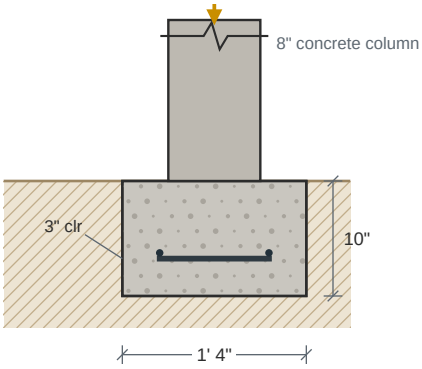
Controls: Soil Bearing Pressure 91% used
Adequacy 8.5% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

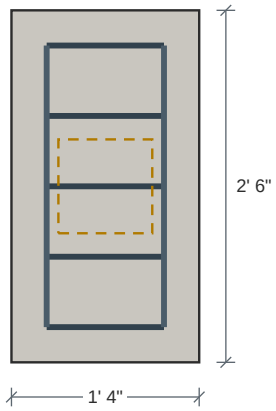
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 443 lb Snow 3,729 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,372	1,500	Passed (91%)	ASD	D+S
One-Way Shear X (lbs)	1,029	8,216	Passed (13%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	15,405	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	3,652	61,947	Passed (6%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,092	10,721	Passed (10%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	271	26,360	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,498	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #27-2 (continued)

Spot Footing | 1' 4" x 2' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	443.4	3,729	Linked from: Header #27, Support 2

SpotFtg Hdr #28-1

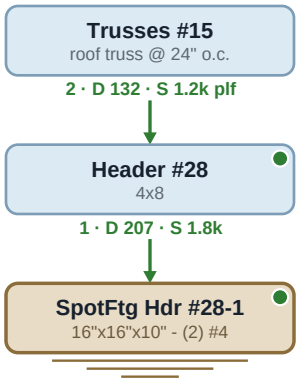
PASSED

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

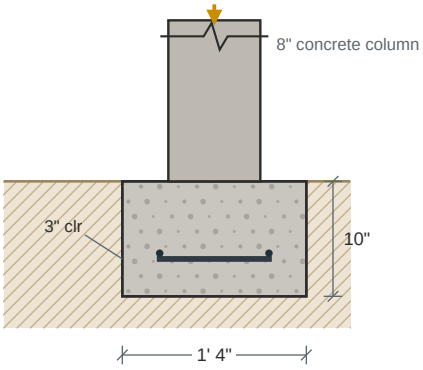
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 18.5% (capacity to spare)

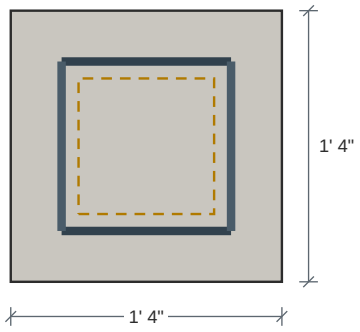
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 207 lb Snow 1,750 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,222	1,500	Passed (81%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	545	61,947	Passed (1%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	127	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	127	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	3,049	212,160	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	207	1,750	Linked from: Header #28, Support 1

SpotFtg Hdr #28-2

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

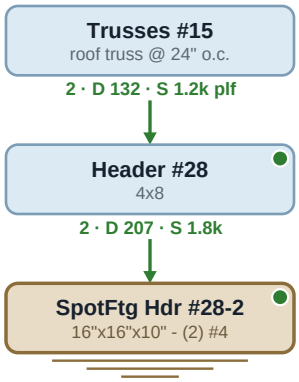
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

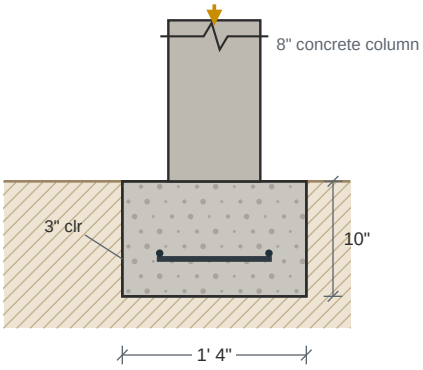
Controls: Depth Above Bars 89% used

Adequacy 18.5% (capacity to spare)

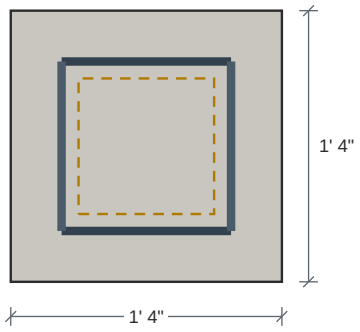
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 207 lb Snow 1,750 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,222	1,500	Passed (81%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	545	61,947	Passed (1%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	127	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	127	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	3,049	212,160	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	207	1,750	Linked from: Header #28, Support 2

SpotFtg Hdr #30-1

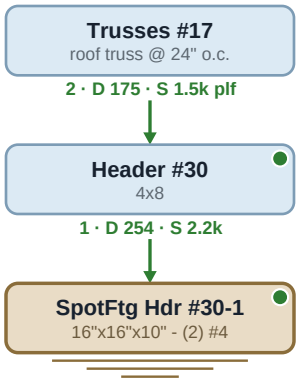
PASSED

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

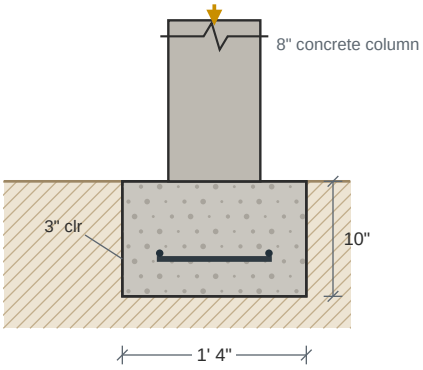
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Soil Bearing Pressure 99% used
Adequacy 1.1% (capacity to spare)

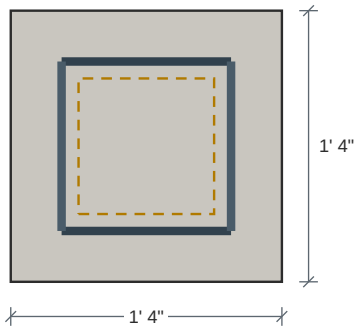
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 254 lb Snow 2,170 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,484	1,500	Passed (99%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	675	61,947	Passed (1%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	157	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	157	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	3,776	212,160	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	254	2,170	Linked from: Header #30, Support 1

SpotFtg Hdr #30-2

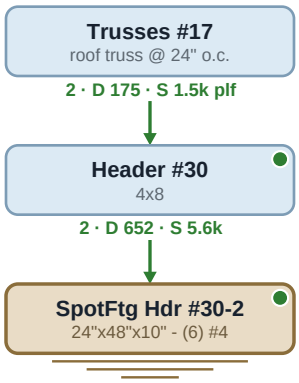
PASSED

Spot Footing 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

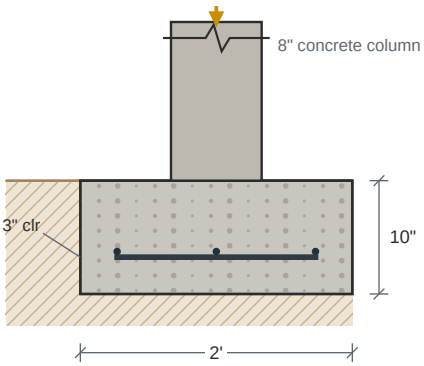
Controls: Depth Above Bars 89% used
Adequacy 40.1% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

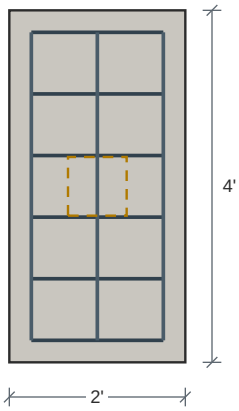
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 652 lb Snow 5,568 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	898	1,500	Passed (60%)	ASD	D+S
One-Way Shear X (lbs)	2,776	12,324	Passed (23%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	707	24,648	Passed (3%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	7,923	61,947	Passed (13%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,365	16,081	Passed (21%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,077	32,162	Passed (3%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	9,691	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	4'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #30-2 (continued)

Spot Footing | 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	651.9	5,568	Linked from: Header #30, Support 2

SpotFtg Hdr #30-3

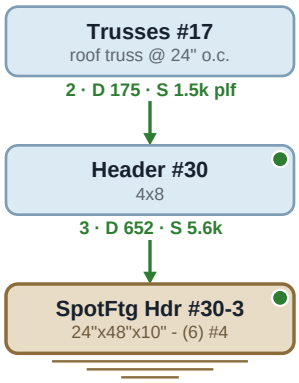
PASSED

Spot Footing 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

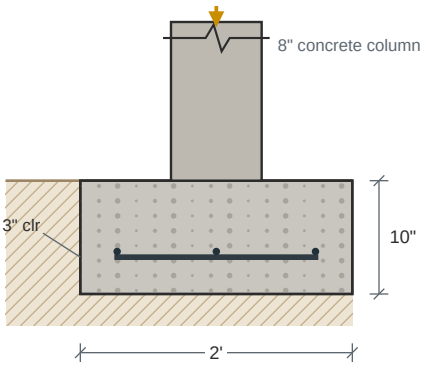
Controls: Depth Above Bars 89% used
Adequacy 40.1% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

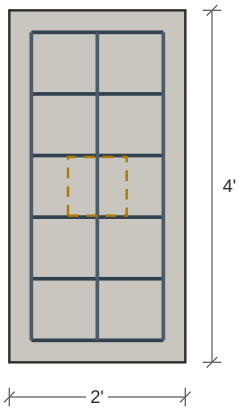
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 652 lb Snow 5,568 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	898	1,500	Passed (60%)	ASD	D+S
One-Way Shear X (lbs)	2,776	12,324	Passed (23%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	707	24,648	Passed (3%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	7,923	61,947	Passed (13%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	3,365	16,081	Passed (21%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,077	32,162	Passed (3%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	9,691	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	4'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #30-3 (continued)

Spot Footing | 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	651.9	5,568	Linked from: Header #30, Support 3

SpotFtg Hdr #31-1

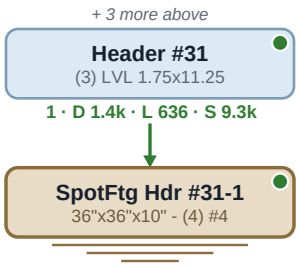
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

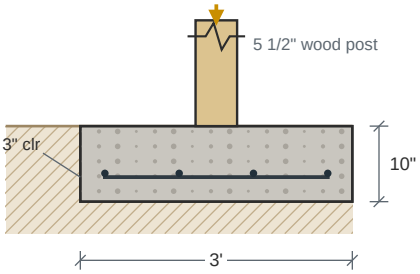
PASSED

Controls: Depth Above Bars 89% used
Adequacy 12.2% (capacity to spare)

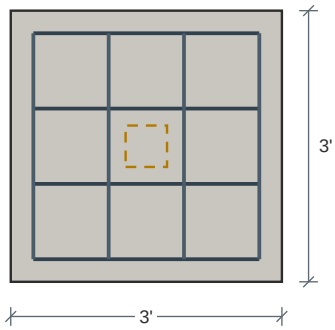
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,435 lb Floor Live 636 lb Snow 9,335 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,318	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	4,324	18,486	Passed (23%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	4,324	18,486	Passed (23%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	15,373	51,267	Passed (30%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,532	21,559	Passed (26%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,532	21,559	Passed (26%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	17,294	100,279	Passed (17%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,435	635.8	9,335	Linked from: Header #31, Support 1

SpotFtg Hdr #33-1

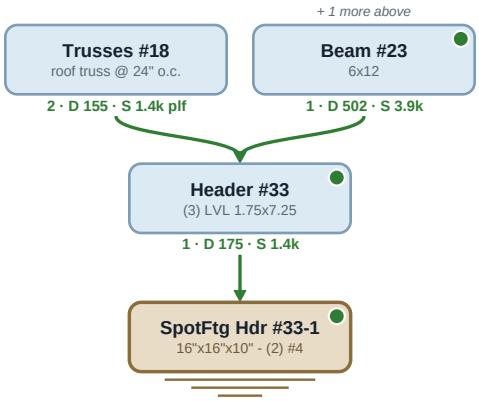
PASSED

Spot Footing 1' 4" x 1' 4" x 10" deep -- Bot.(2) #4 Long, (2) #4 Short

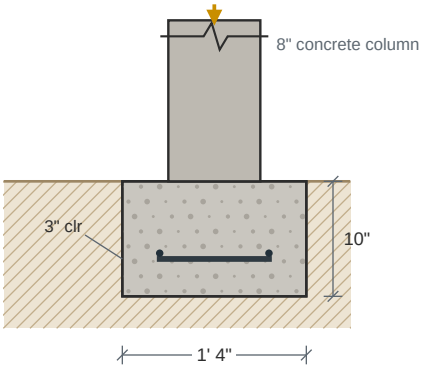
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 31% (capacity to spare)

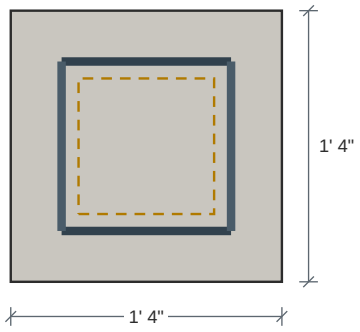
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(2) #4 Long, (2) #4 Short

Carrying: Dead 175 lb Snow 1,449 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,035	1,500	Passed (69%)	ASD	D+S
One-Way Shear X (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	8,216	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	452	61,947	Passed (1%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	105	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	105	10,721	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	2,529	212,160	Passed (1%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	1' 4"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(2) #4 Long, (2) #4 Short
Bars the long way	(2) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	175.3	1,449	Linked from: Header #33, Support 1

SpotFtg Hdr #33-2

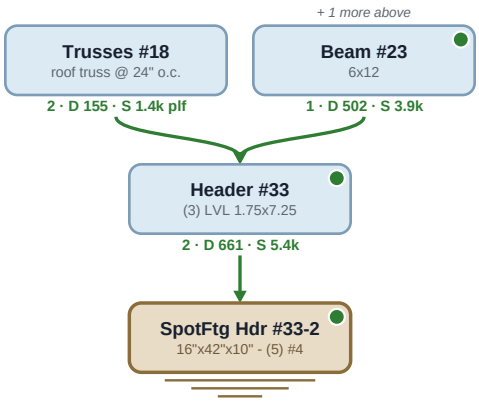
PASSED

Spot Footing 1' 4" x 3' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

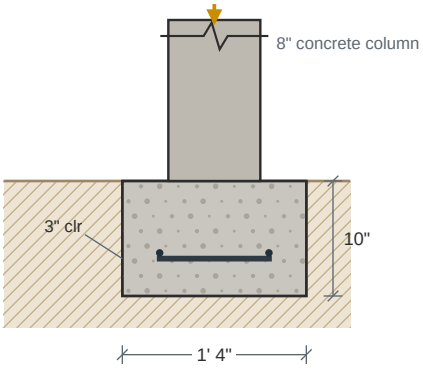
Controls: Soil Bearing Pressure 95% used
Adequacy 5.3% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

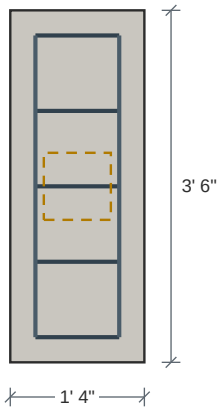
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 661 lb Snow 5,404 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,420	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	2,416	8,216	Passed (29%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	21,567	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	6,486	61,947	Passed (10%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,706	10,721	Passed (25%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	393	26,864	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	9,439	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #33-2 (continued)

Spot Footing | 1' 4" x 3' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	660.8	5,404	Linked from: Header #33, Support 2

SpotFtg Hdr #33-3

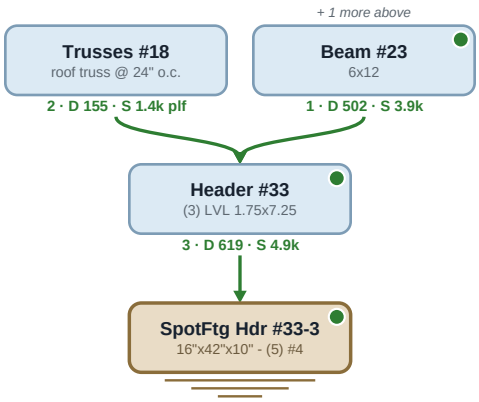
PASSED

Spot Footing 1' 4" x 3' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

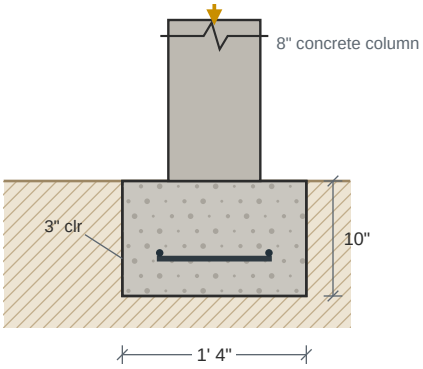
Controls: Depth Above Bars 89% used
Adequacy 13% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

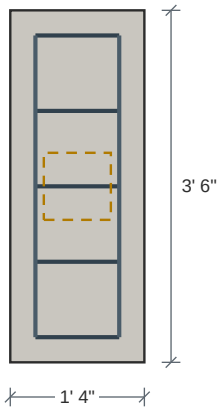
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 619 lb Snow 4,905 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,305	1,500	Passed (87%)	ASD	D+S
One-Way Shear X (lbs)	2,199	8,216	Passed (27%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	21,567	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,903	61,947	Passed (10%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,463	10,721	Passed (23%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	358	26,864	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,592	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #33-3 (continued)

Spot Footing | 1' 4" x 3' 6" x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	619.2	4,905	Linked from: Header #33, Support 3

SpotFtg Hdr #34-2

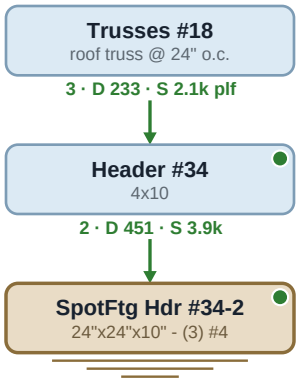
Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

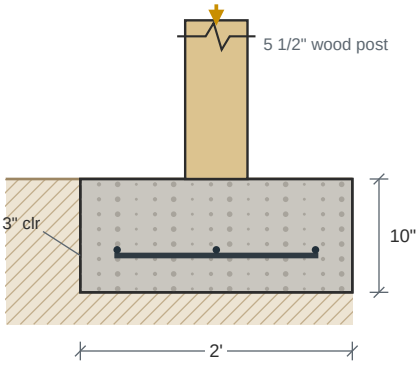
PASSED

Controls: Depth Above Bars 89% used
Adequacy 20.2% (capacity to spare)

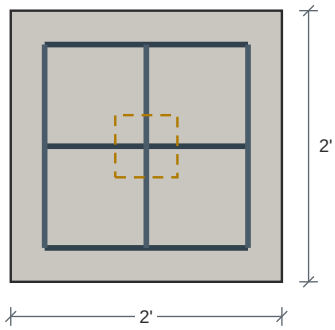
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 451 lb Snow 3,855 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,197	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	839	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	839	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,032	51,267	Passed (10%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,315	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,315	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,710	100,279	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	450.8	3,855	Linked from: Header #34, Support 2

SpotFtg Hdr #35-1

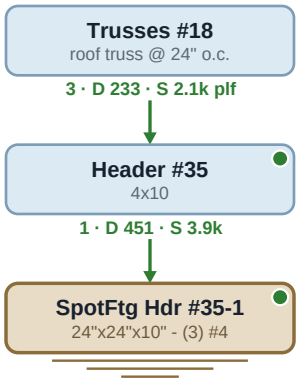
PASSED

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

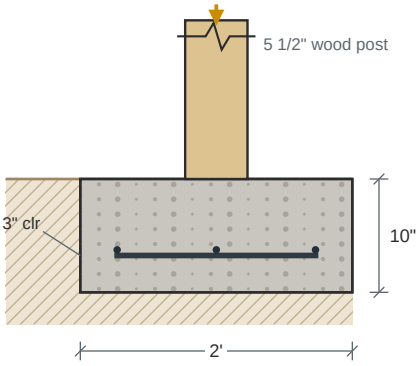
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 20.2% (capacity to spare)

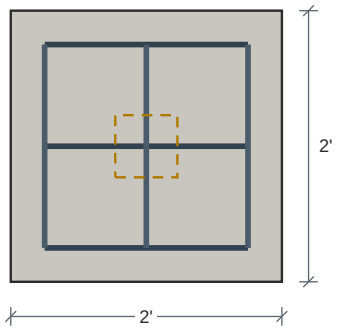
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 451 lb Snow 3,855 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,197	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	839	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	839	12,324	Passed (7%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,032	51,267	Passed (10%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,315	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,315	16,081	Passed (8%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,710	100,279	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	450.8	3,855	Linked from: Header #35, Support 1

SpotFtg Hdr #35-2

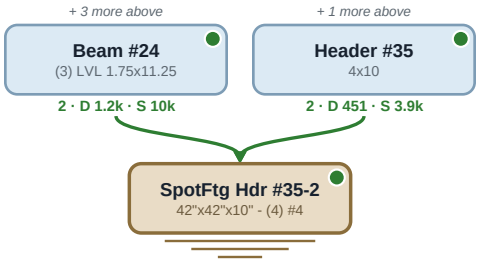
PASSED

Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

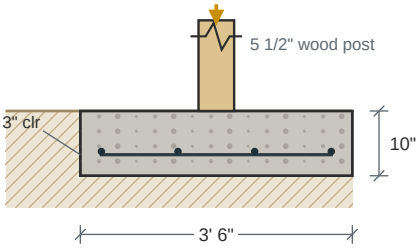
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Soil Bearing Pressure 93% used
Adequacy 6.8% (capacity to spare)

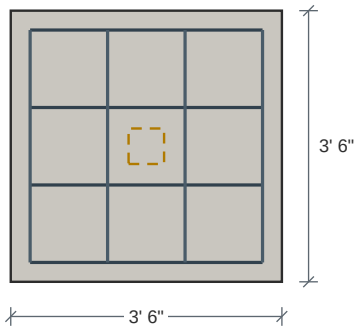
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,658 lb Snow 13,988 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,398	1,500	Passed (93%)	ASD	D+S
One-Way Shear X (lbs)	6,963	21,567	Passed (32%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,963	21,567	Passed (32%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	22,381	51,267	Passed (44%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	9,312	21,693	Passed (43%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	9,312	21,693	Passed (43%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	24,371	100,279	Passed (24%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,207	10,133	Linked from: Beam #24, Support 2
2 - Point (lb)	--	N/A	450.8	3,855	Linked from: Header #35, Support 2

SpotFtg Hdr #36-1

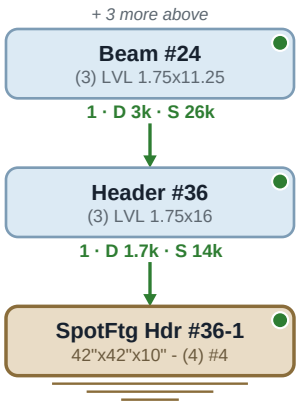
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

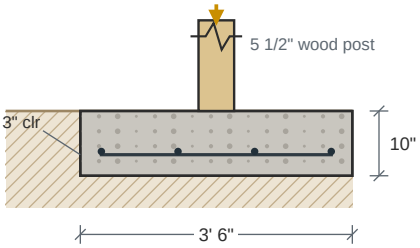
PASSED

Controls: Soil Bearing Pressure 93% used
Adequacy 7.4% (capacity to spare)

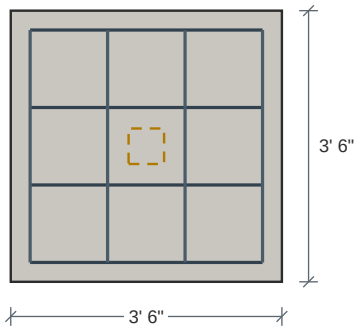
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,654 lb Snow 13,885 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,389	1,500	Passed (93%)	ASD	D+S
One-Way Shear X (lbs)	6,915	21,567	Passed (32%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,915	21,567	Passed (32%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	22,225	51,267	Passed (43%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	9,247	21,693	Passed (43%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	9,247	21,693	Passed (43%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	24,201	100,279	Passed (24%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,654	13,885	Linked from: Header #36, Support 1

SpotFtg Hdr #36-2

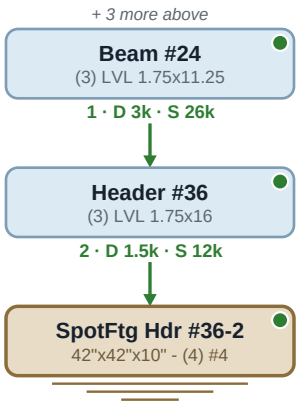
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

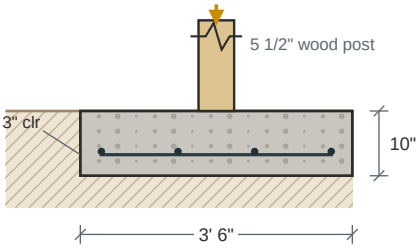
PASSED

Controls: Depth Above Bars 89% used
Adequacy 17.5% (capacity to spare)

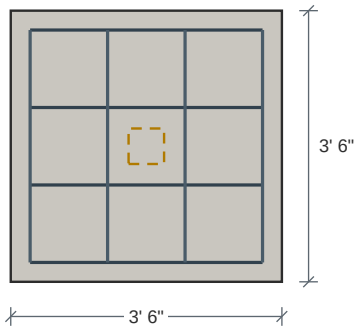
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,462 lb Snow 12,225 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,238	1,500	Passed (83%)	ASD	D+S
One-Way Shear X (lbs)	6,090	21,567	Passed (28%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	6,090	21,567	Passed (28%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	19,575	51,267	Passed (38%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	8,144	21,693	Passed (38%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	8,144	21,693	Passed (38%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	21,315	100,279	Passed (21%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,462	12,225	Linked from: Header #36, Support 2

SpotFtg Hdr #37-1

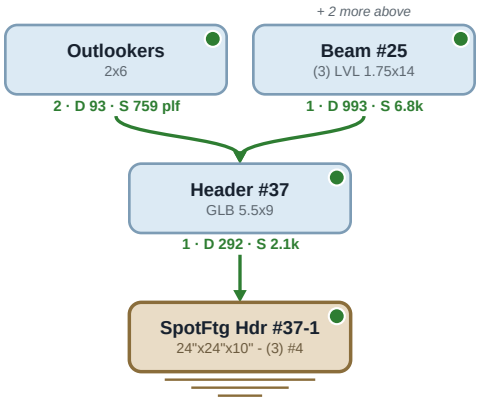
PASSED

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

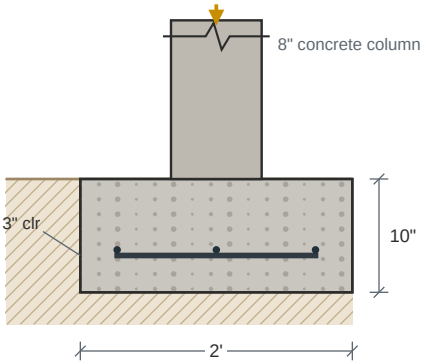
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 52.5% (capacity to spare)

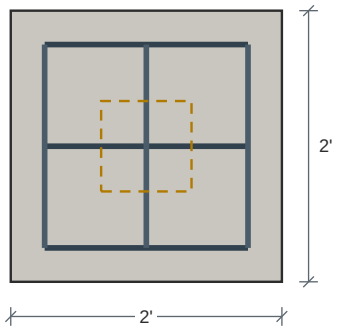
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 292 lb Snow 2,077 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	713	1,500	Passed (48%)	ASD	D+S
One-Way Shear X (lbs)	268	12,324	Passed (2%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	268	12,324	Passed (2%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	2,333	61,947	Passed (4%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	408	16,081	Passed (3%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	408	16,081	Passed (3%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	3,674	212,160	Passed (2%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	292.1	2,077	Linked from: Header #37, Support 1

SpotFtg Hdr #37-2

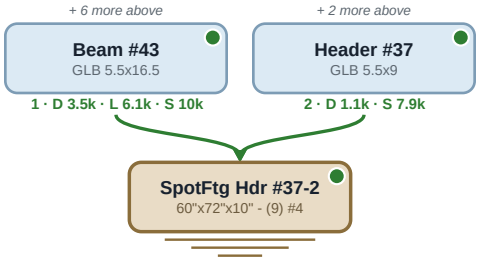
PASSED

Spot Footing 5' x 6' x 10" deep -- Bot.(9) #4 Long, (6) #4 Short - 7 of the Long in the center 5 ft

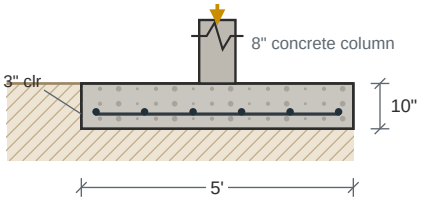
Controls: Depth Above Bars 89% used
Adequacy 41.5% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 30" | ACI 318-14

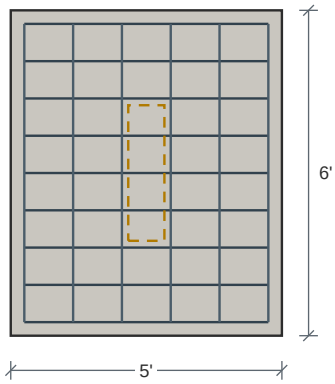
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(9) #4 Long, (6) #4 Short - 7 of the Long in the center 5 ft

Carrying: Dead 4,647 lb Snow 17,960 lb Floor Live 6,133 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	878	1,500	Passed (59%)	ASD	D+0.75L+0.75S
One-Way Shear X (lbs)	8,286	30,809	Passed (27%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	13,313	36,971	Passed (36%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	35,490	83,522	Passed (42%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	10,322	32,479	Passed (32%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	18,987	48,243	Passed (39%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	40,445	795,600	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5'
Footing length	6'
Footing depth	10"
Column width	8"
Column length	30"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(9) #4 Long, (6) #4 Short - 7 of the Long in
Bars the long way	(9) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #37-2 (continued)

Spot Footing | 5' x 6' x 10" deep -- Bot.(9) #4 Long, (6) #4 Short - 7 of the Long in the center 5 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,132	--	7,883	Linked from: Header #37, Support 2
2 - Point (lb)	--	N/A	3,515	6,133	10,076	Linked from: Beam #43, Support 1

SpotFtg Hdr #38-1

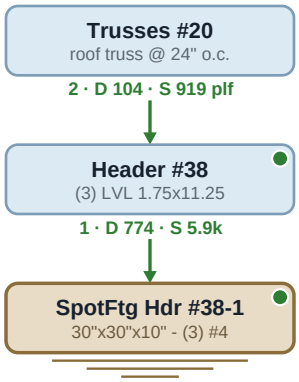
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

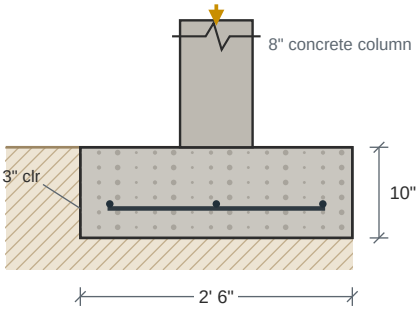
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 21.2% (capacity to spare)

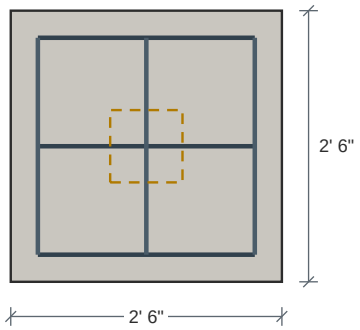
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 774 lb Snow 5,857 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,182	1,500	Passed (79%)	ASD	D+S
One-Way Shear X (lbs)	1,631	15,405	Passed (11%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,631	15,405	Passed (11%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	7,893	61,947	Passed (13%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,731	16,240	Passed (11%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,731	16,240	Passed (11%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,300	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	773.6	5,857	Linked from: Header #38, Support 1

SpotFtg Hdr #38-2

Spot Footing 5' 6" x 5' 6" x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

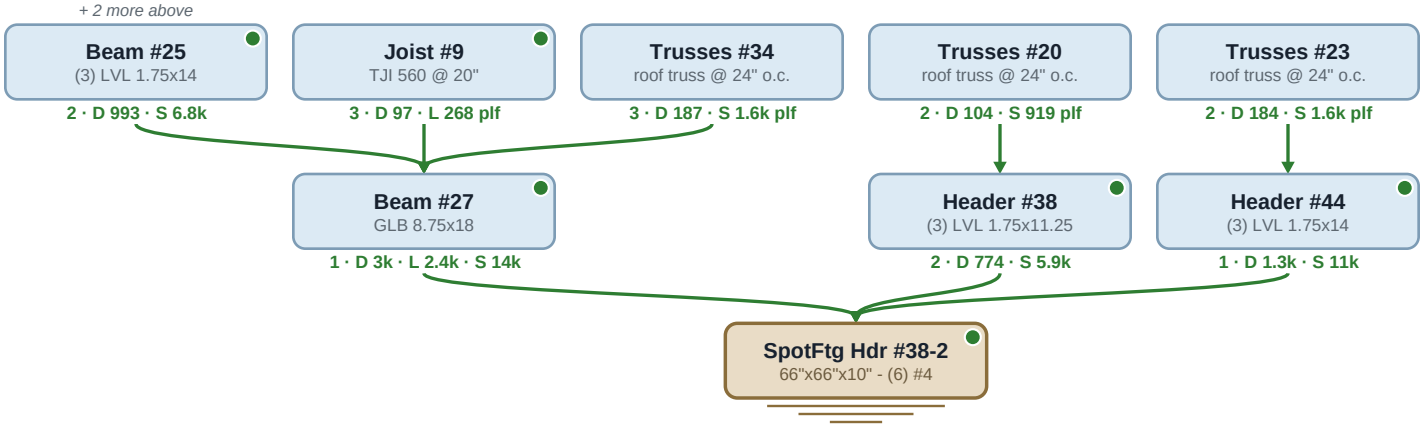
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 30" | ACI 318-14

PASSED

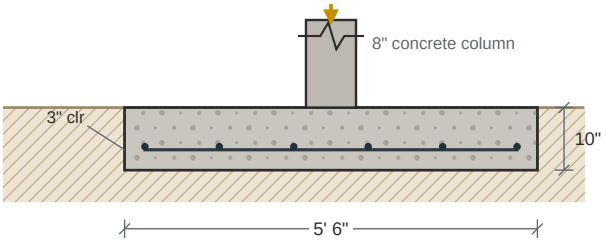
Controls: Moment Y 94% used
Adequacy 6.1% (capacity to spare)

What Loads It

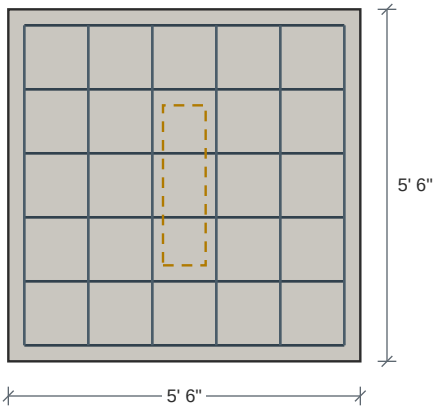
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (6) #4 Short

Carrying: Dead 5,097 lb Snow 30,696 lb Floor Live 2,409 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,304	1,500	Passed (87%)	ASD	D+S
One-Way Shear X (lbs)	10,262	33,890	Passed (30%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	19,868	33,890	Passed (59%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	50,636	83,522	Passed (61%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	11,790	32,595	Passed (36%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	30,603	32,595	Passed (94%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	57,639	795,600	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

SpotFtg Hdr #38-2 (continued)

Spot Footing | 5' 6" x 5' 6" x 10" deep -- Bot.(6) #4 Long, (6) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	5' 6"
Footing length	5' 6"
Footing depth	10"
Column width	8"
Column length	30"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (6) #4 Short
Bars the long way	(6) #4
Bars the short way	(6) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	773.6	--	5,857	Linked from: Header #38, Support 2
2 - Point (lb)	--	N/A	1,334	--	10,545	Linked from: Header #44, Support 1
3 - Point (lb)	--	N/A	2,989	2,409	14,294	Linked from: Beam #27, Support 1

SpotFtg Hdr #41-2

PASSED

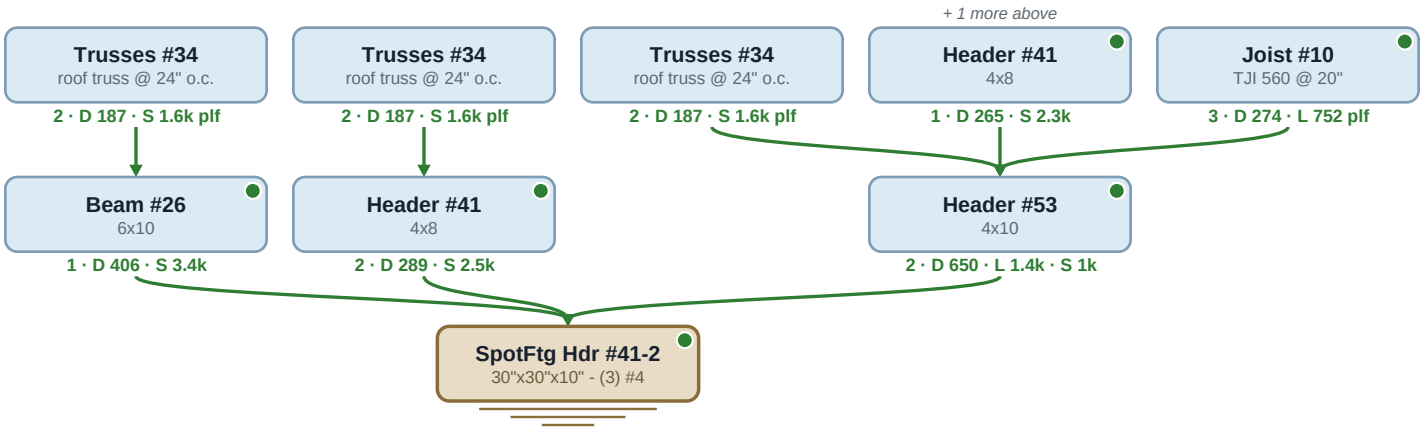
Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

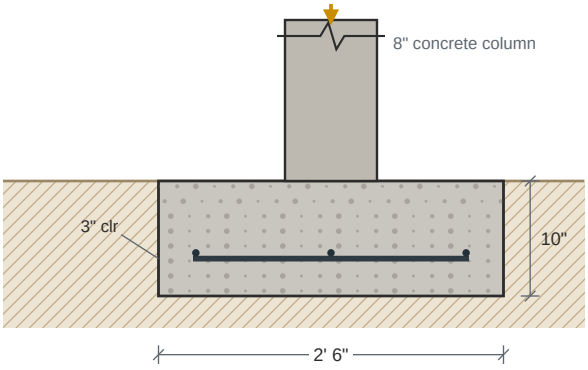
Controls: Soil Bearing Pressure 96% used
Adequacy 4.5% (capacity to spare)

What Loads It

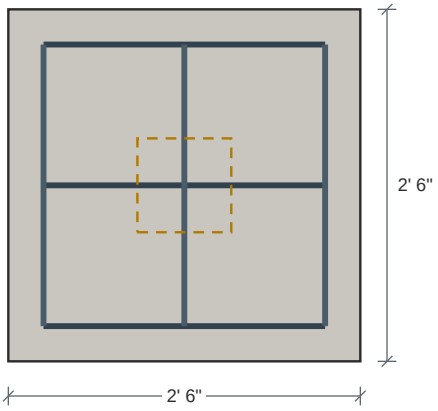
click a box to go to that member



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 1,344 lb Floor Live 1,424 lb Snow 6,855 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,433	1,500	Passed (96%)	ASD	D+S
One-Way Shear X (lbs)	2,217	15,405	Passed (14%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	2,217	15,405	Passed (14%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	10,733	61,947	Passed (17%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,354	16,240	Passed (14%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,354	16,240	Passed (14%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	14,004	212,160	Passed (7%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

SpotFtg Hdr #41-2 (continued)

Spot Footing | 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	649.5	1,424	1,014	Linked from: Header #53, Support 2
2 - Point (lb)	--	N/A	288.8	--	2,472	Linked from: Header #41, Support 2
3 - Point (lb)	--	N/A	405.7	--	3,369	Linked from: Beam #26, Support 1

SpotFtg Hdr #42-1

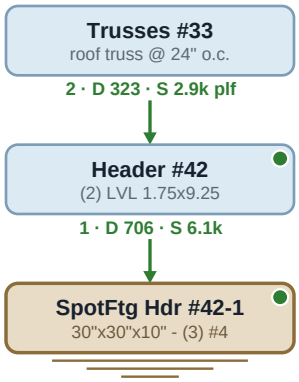
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

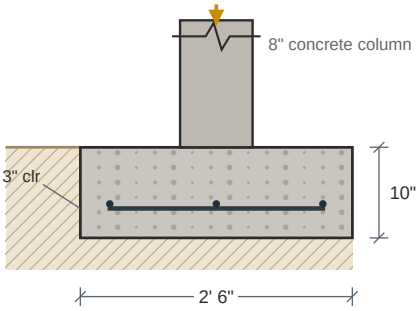
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 19.8% (capacity to spare)

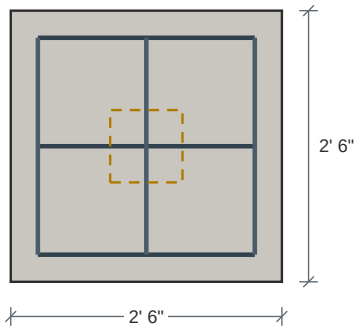
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 706 lb Snow 6,056 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,203	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	1,668	15,405	Passed (11%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,668	15,405	Passed (11%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	8,076	61,947	Passed (13%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,771	16,240	Passed (11%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,771	16,240	Passed (11%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,538	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	706.4	6,056	Linked from: Header #42, Support 1

SpotFtg Hdr #42-2

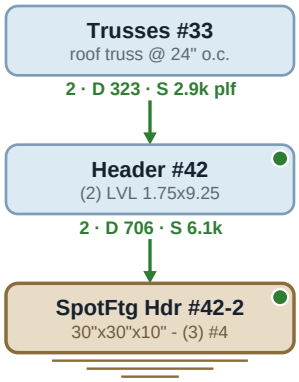
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

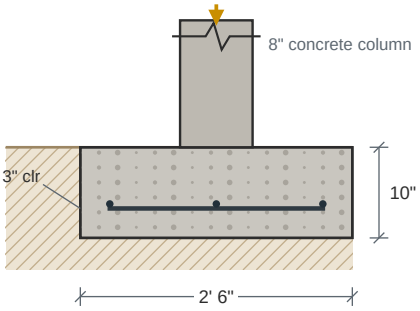
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 19.8% (capacity to spare)

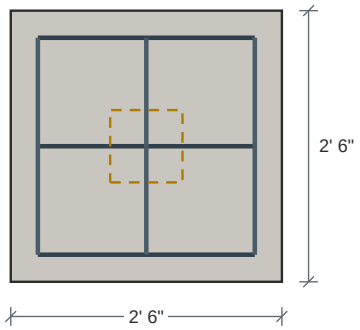
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 706 lb Snow 6,056 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,203	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	1,668	15,405	Passed (11%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,668	15,405	Passed (11%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	8,076	61,947	Passed (13%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,771	16,240	Passed (11%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,771	16,240	Passed (11%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,538	212,160	Passed (5%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	706.4	6,056	Linked from: Header #42, Support 2

SpotFtg Hdr #44-2

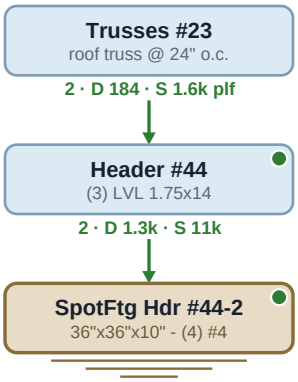
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

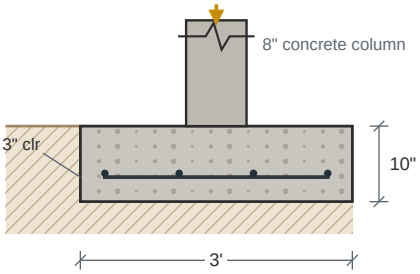
PASSED

Controls: Soil Bearing Pressure 96% used
Adequacy 3.9% (capacity to spare)

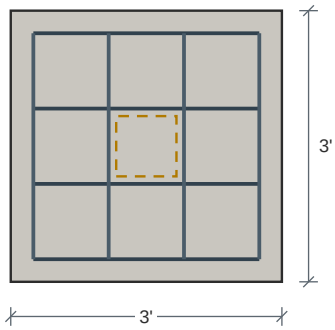
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,334 lb Snow 10,545 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,441	1,500	Passed (96%)	ASD	D+S
One-Way Shear X (lbs)	3,977	18,486	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,977	18,486	Passed (22%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	15,476	61,947	Passed (25%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	4,191	21,559	Passed (19%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	4,191	21,559	Passed (19%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	18,473	212,160	Passed (9%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,334	10,545	Linked from: Header #44, Support 2

SpotFtg Hdr #45-1

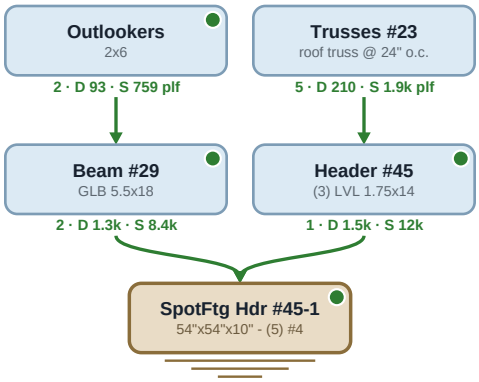
PASSED

Spot Footing 4' 6" x 4' 6" x 10" deep -- Bot.(5) #4 Long, (5) #4 Short

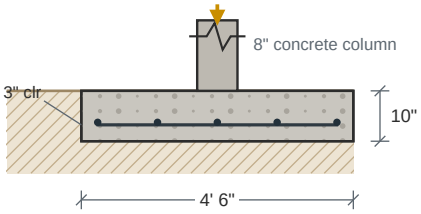
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 15.4% (capacity to spare)

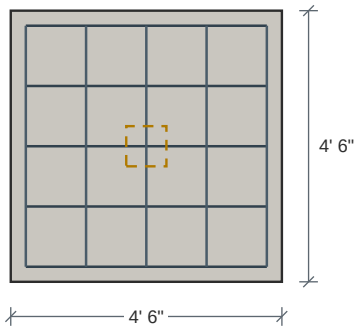
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (5) #4 Short

Carrying: Dead 2,785 lb Snow 20,452 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,268	1,500	Passed (85%)	ASD	D+S
One-Way Shear X (lbs)	11,187	27,728	Passed (40%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	11,187	27,728	Passed (40%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	33,465	61,947	Passed (54%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	14,721	27,145	Passed (54%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	14,721	27,145	Passed (54%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	36,066	212,160	Passed (17%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	4' 6"
Footing length	4' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (5) #4 Short
Bars the long way	(5) #4
Bars the short way	(5) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,278	8,385	Linked from: Beam #29, Support 2
2 - Point (lb)	--	N/A	1,507	12,068	Linked from: Header #45, Support 1

SpotFtg Hdr #45-2

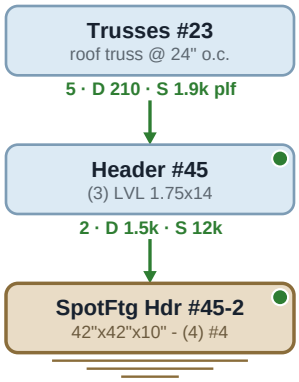
Spot Footing 3' 6" x 3' 6" x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

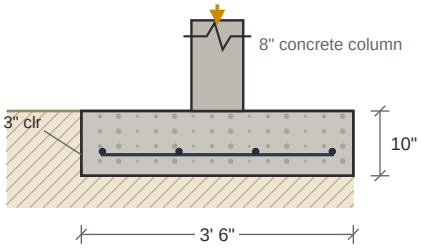
PASSED

Controls: Depth Above Bars 89% used
Adequacy 18.1% (capacity to spare)

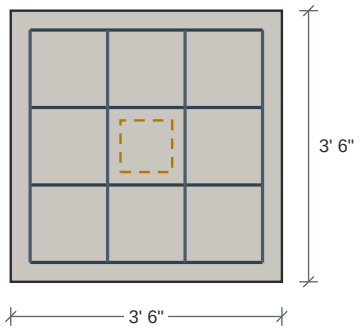
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,507 lb Snow 12,068 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,229	1,500	Passed (82%)	ASD	D+S
One-Way Shear X (lbs)	5,405	21,567	Passed (25%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	5,405	21,567	Passed (25%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	18,600	61,947	Passed (30%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	6,054	21,693	Passed (28%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	6,054	21,693	Passed (28%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	21,117	212,160	Passed (10%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	3' 6"
Footing length	3' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,507	12,068	Linked from: Header #45, Support 2

SpotFtg Hdr #46-1

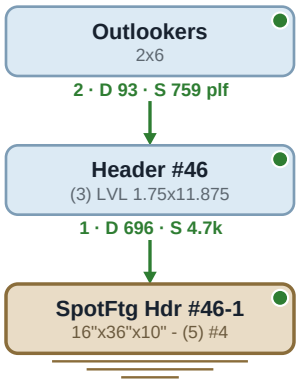
PASSED

Spot Footing 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

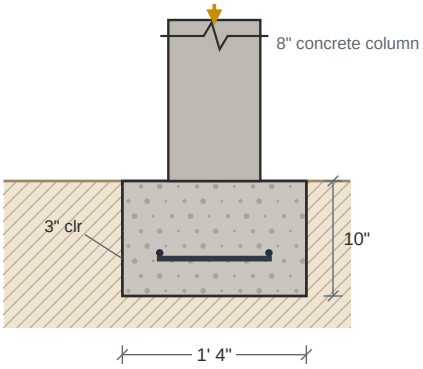
Controls: Soil Bearing Pressure 99% used
Adequacy 1.2% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

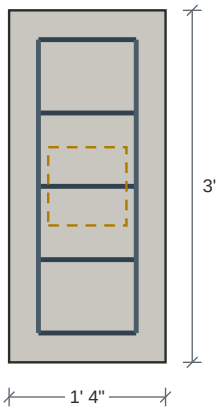
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 696 lb Snow 4,746 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,481	1,500	Passed (99%)	ASD	D+S
One-Way Shear X (lbs)	1,815	8,216	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,352	61,947	Passed (9%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,912	10,721	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	351	26,654	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,429	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #46-1 (continued)

Spot Footing | 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	696.1	4,746	Linked from: Header #46, Support 1

SpotFtg Hdr #46-2

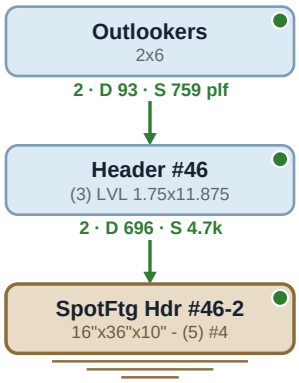
PASSED

Spot Footing 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

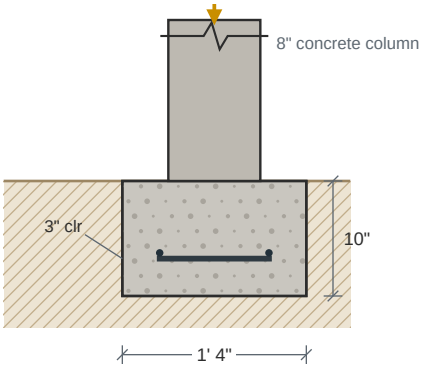
Controls: Soil Bearing Pressure 99% used
Adequacy 1.2% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

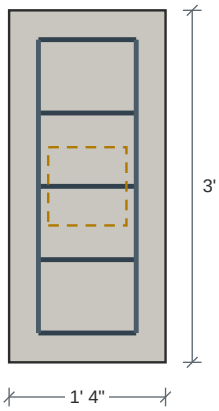
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 696 lb Snow 4,746 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,481	1,500	Passed (99%)	ASD	D+S
One-Way Shear X (lbs)	1,815	8,216	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,352	61,947	Passed (9%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,912	10,721	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	351	26,654	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,429	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #46-2 (continued)

Spot Footing | 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	696.1	4,746	Linked from: Header #46, Support 2

SpotFtg Hdr #47-1

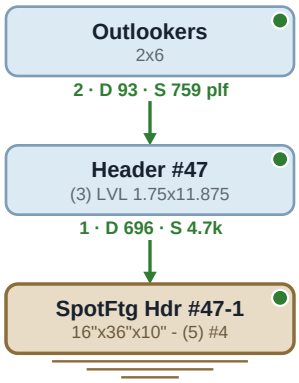
PASSED

Spot Footing 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

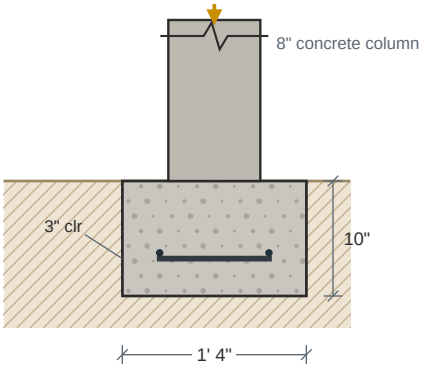
Controls: Soil Bearing Pressure 99% used
Adequacy 1.2% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

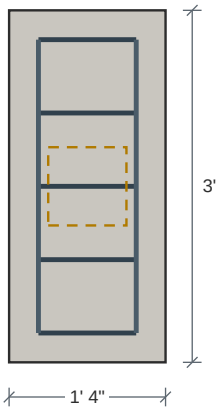
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 696 lb Snow 4,746 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,481	1,500	Passed (99%)	ASD	D+S
One-Way Shear X (lbs)	1,815	8,216	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,352	61,947	Passed (9%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,912	10,721	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	351	26,654	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,429	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #47-1 (continued)

Spot Footing | 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	696.1	4,746	Linked from: Header #47, Support 1

SpotFtg Hdr #47-2

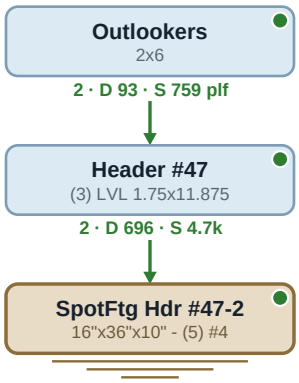
PASSED

Spot Footing 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

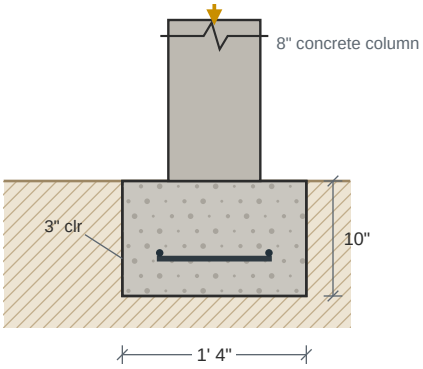
Controls: Soil Bearing Pressure 99% used
Adequacy 1.2% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

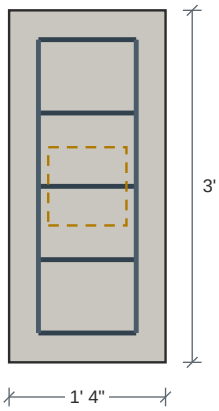
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Carrying: Dead 696 lb Snow 4,746 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,481	1,500	Passed (99%)	ASD	D+S
One-Way Shear X (lbs)	1,815	8,216	Passed (22%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	0	18,486	Passed (0%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	5,352	61,947	Passed (9%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,912	10,721	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	351	26,654	Passed (1%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	8,429	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	1' 4"
Footing length	3'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in
Bars the long way	(5) #4
Bars the short way	(2) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #47-2 (continued)

Spot Footing | 1' 4" x 3' x 10" deep -- Bot.(5) #4 Long, (2) #4 Short - 3 of the Long in the center 1.33 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	696.1	4,746	Linked from: Header #47, Support 2

SpotFtg Hdr #48-1

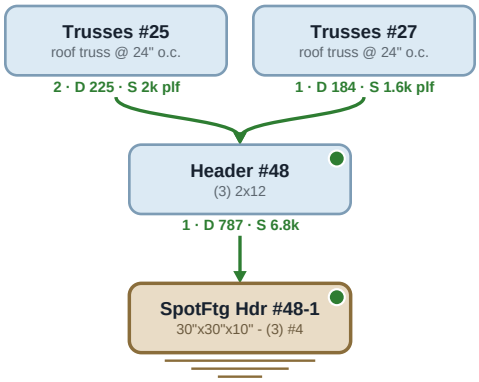
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

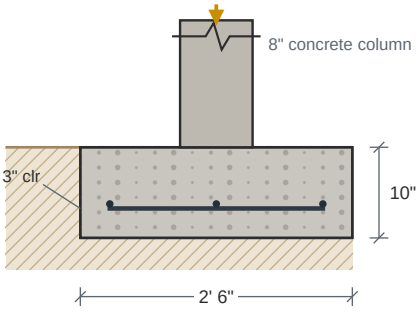
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 11.5% (capacity to spare)

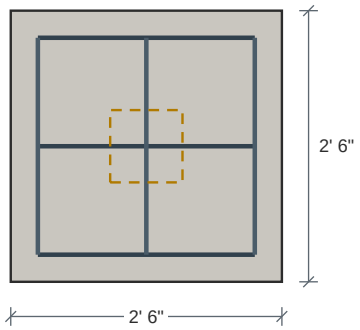
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 787 lb Snow 6,756 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,328	1,500	Passed (89%)	ASD	D+S
One-Way Shear X (lbs)	1,861	15,405	Passed (12%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,861	15,405	Passed (12%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,008	61,947	Passed (15%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,975	16,240	Passed (12%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,975	16,240	Passed (12%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,754	212,160	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	787.3	6,756	Linked from: Header #48, Support 1

SpotFtg Hdr #48-2

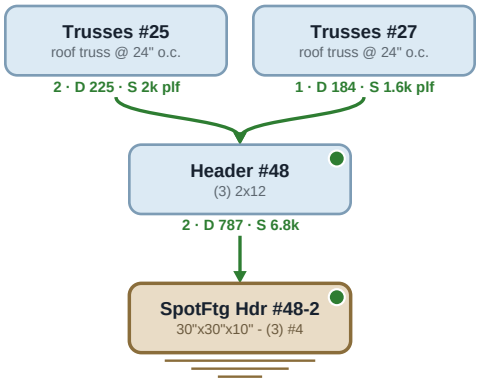
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

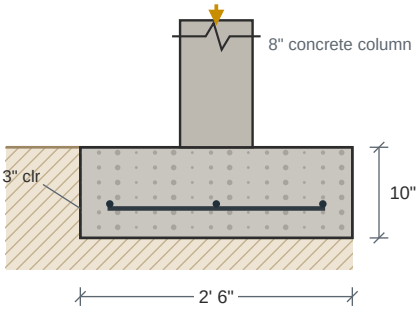
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 11.5% (capacity to spare)

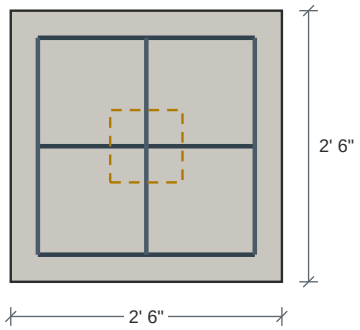
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 787 lb Snow 6,756 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,328	1,500	Passed (89%)	ASD	D+S
One-Way Shear X (lbs)	1,861	15,405	Passed (12%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,861	15,405	Passed (12%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,008	61,947	Passed (15%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	1,975	16,240	Passed (12%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,975	16,240	Passed (12%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,754	212,160	Passed (6%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	787.3	6,756	Linked from: Header #48, Support 2

SpotFtg Hdr #51-1

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

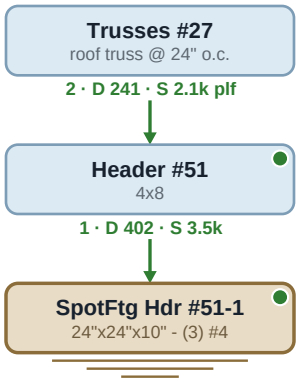
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

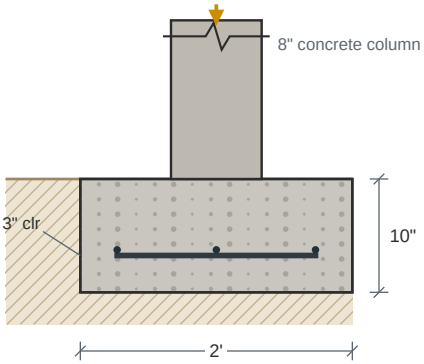
Controls: Depth Above Bars 89% used

Adequacy 27.5% (capacity to spare)

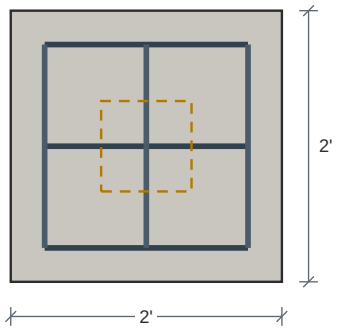
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 402 lb Snow 3,462 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,087	1,500	Passed (72%)	ASD	D+S
One-Way Shear X (lbs)	439	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	439	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	3,824	61,947	Passed (6%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	669	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	669	16,081	Passed (4%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	6,022	212,160	Passed (3%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	401.8	3,462	Linked from: Header #51, Support 1

SpotFtg Hdr #52-1

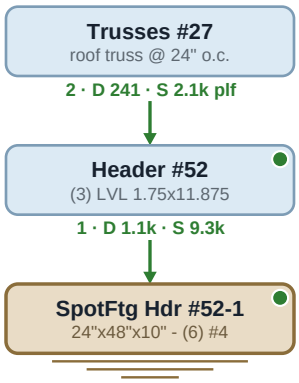
PASSED

Spot Footing 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

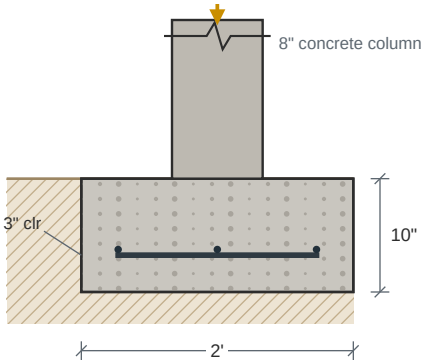
Controls: Soil Bearing Pressure 95% used
Adequacy 4.8% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

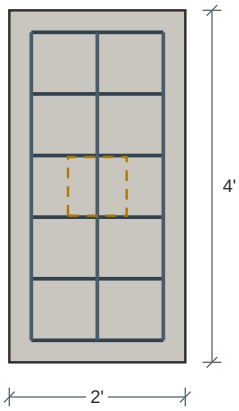
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 1,136 lb Snow 9,322 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,428	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	4,663	12,324	Passed (38%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,187	24,648	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	13,307	61,947	Passed (21%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,652	16,081	Passed (35%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,809	32,162	Passed (6%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	16,278	212,160	Passed (8%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	4'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #52-1 (continued)

Spot Footing | 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,136	9,322	Linked from: Header #52, Support 1

SpotFtg Hdr #52-2

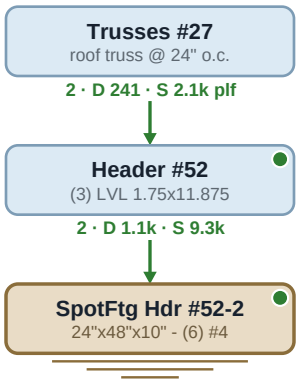
PASSED

Spot Footing 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

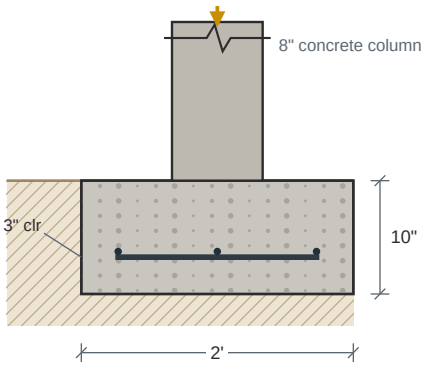
Controls: Soil Bearing Pressure 95% used
Adequacy 4.8% (capacity to spare)

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

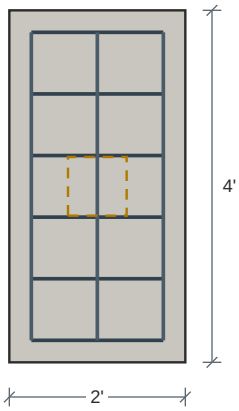
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Carrying: Dead 1,136 lb Snow 9,322 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,428	1,500	Passed (95%)	ASD	D+S
One-Way Shear X (lbs)	4,663	12,324	Passed (38%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	1,187	24,648	Passed (5%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	13,307	61,947	Passed (21%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,652	16,081	Passed (35%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	1,809	32,162	Passed (6%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	16,278	212,160	Passed (8%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	4'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in
Bars the long way	(6) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

SpotFtg Hdr #52-2 (continued)

Spot Footing | 2' x 4' x 10" deep -- Bot.(6) #4 Long, (3) #4 Short - 4 of the Long in the center 2 ft

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,136	9,322	Linked from: Header #52, Support 2

SpotFtg Hdr #54-1

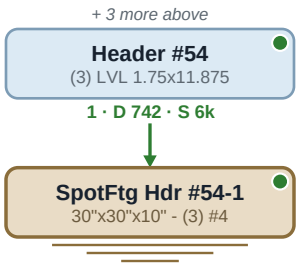
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

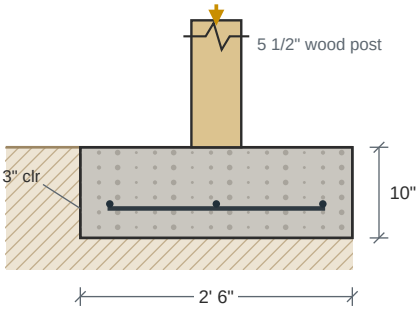
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 20% (capacity to spare)

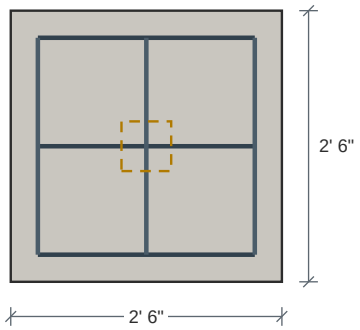
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 742 lb Snow 6,004 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,200	1,500	Passed (80%)	ASD	D+S
One-Way Shear X (lbs)	2,099	15,405	Passed (14%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	2,099	15,405	Passed (14%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	8,817	51,267	Passed (17%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,706	16,240	Passed (17%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,706	16,240	Passed (17%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	10,496	100,279	Passed (10%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	741.7	6,004	Linked from: Header #54, Support 1

SpotFtg Hdr #54-2

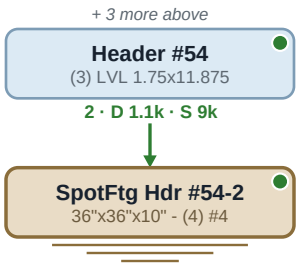
Spot Footing 3' x 3' x 10" deep -- Bot.(4) #4 Long, (4) #4 Short

Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

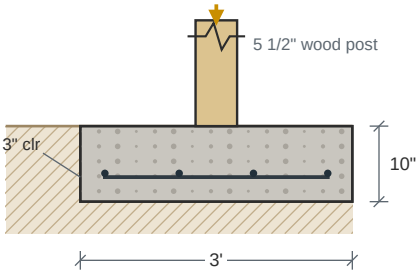
PASSED

Controls: Depth Above Bars 89% used
Adequacy 17.3% (capacity to spare)

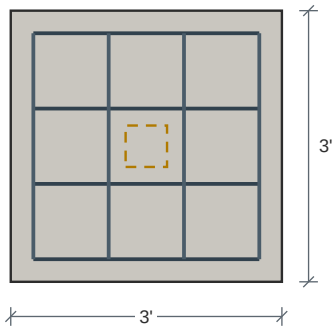
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(4) #4 Long, (4) #4 Short

Carrying: Dead 1,077 lb Snow 8,994 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,240	1,500	Passed (83%)	ASD	D+S
One-Way Shear X (lbs)	3,921	18,486	Passed (21%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	3,921	18,486	Passed (21%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	13,940	51,267	Passed (27%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	5,017	21,559	Passed (23%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	5,017	21,559	Passed (23%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	15,683	100,279	Passed (16%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	3'
Footing length	3'
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(4) #4 Long, (4) #4 Short
Bars the long way	(4) #4
Bars the short way	(4) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	1,077	8,994	Linked from: Header #54, Support 2

SpotFtg Hdr #55-1

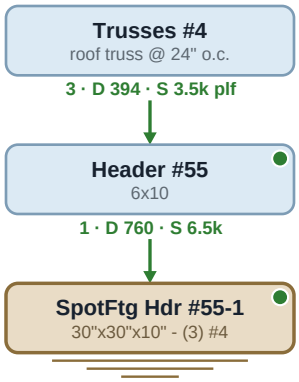
PASSED

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

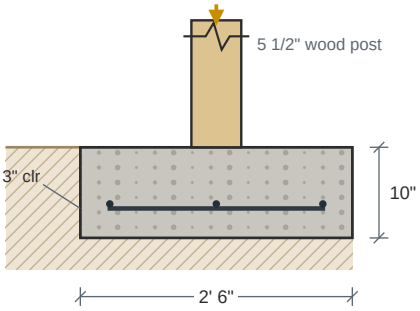
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

Controls: Depth Above Bars 89% used
Adequacy 14.4% (capacity to spare)

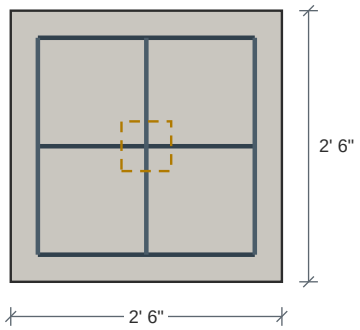
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 760 lb Snow 6,512 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,284	1,500	Passed (86%)	ASD	D+S
One-Way Shear X (lbs)	2,266	15,405	Passed (15%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	2,266	15,405	Passed (15%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,518	51,267	Passed (19%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,922	16,240	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,922	16,240	Passed (18%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,331	100,279	Passed (11%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	760.3	6,512	Linked from: Header #55, Support 1

SpotFtg Hdr #55-2

Spot Footing 2' 6" x 2' 6" x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

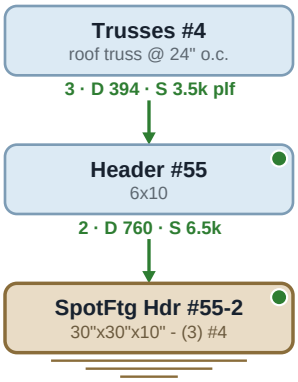
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Wood column 5 1/2" x 5 1/2" | ACI 318-14

PASSED

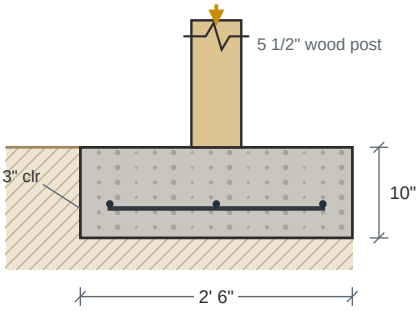
Controls: Depth Above Bars 89% used

Adequacy 14.4% (capacity to spare)

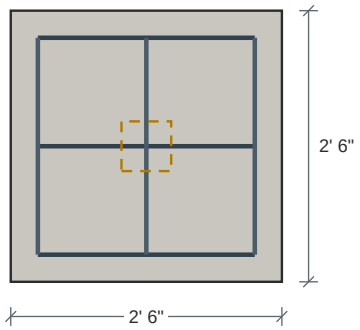
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 760 lb Snow 6,512 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,284	1,500	Passed (86%)	ASD	D+S
One-Way Shear X (lbs)	2,266	15,405	Passed (15%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	2,266	15,405	Passed (15%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	9,518	51,267	Passed (19%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	2,922	16,240	Passed (18%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	2,922	16,240	Passed (18%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	11,331	100,279	Passed (11%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Wood
Footing width	2' 6"
Footing length	2' 6"
Footing depth	10"
Column width	5 1/2"
Column length	5 1/2"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.
- Wood post: check bearing on the post itself, its Fc-perp can govern below the concrete value.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	760.3	6,512	Linked from: Header #55, Support 2

SpotFtg Hdr #56-1

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

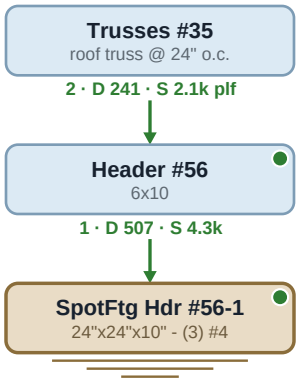
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

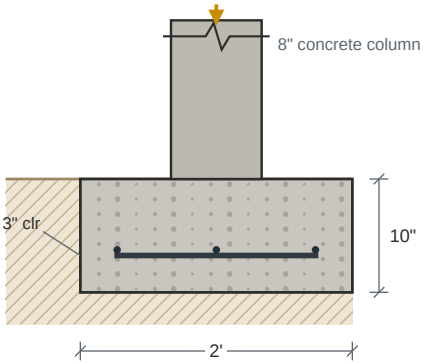
Controls: Depth Above Bars 89% used

Adequacy 12.5% (capacity to spare)

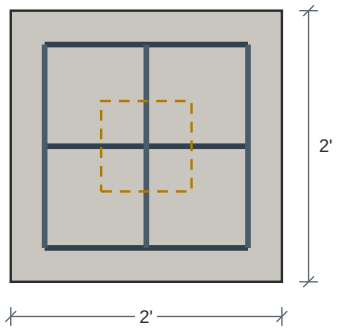
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 507 lb Snow 4,261 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,313	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	541	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	541	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,716	61,947	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	825	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	825	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	7,426	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

Footing Specification

as entered on the footing, and the mat the check selected

Geometry	
Shape	Square
Column type	Concrete
Footing width	2'
Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	506.8	4,261	Linked from: Header #56, Support 1

SpotFtg Hdr #56-2

Spot Footing 2' x 2' x 10" deep -- Bot.(3) #4 Long, (3) #4 Short

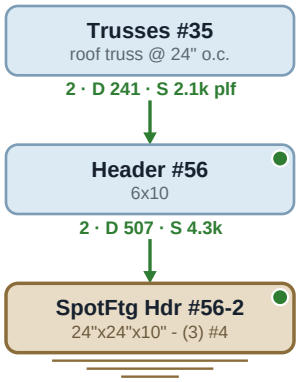
Level: Basement | f'c 3,000 psi | rebar Fy 60 ksi | soil 1,500 psf | Concrete column 8" x 8" | ACI 318-14

PASSED

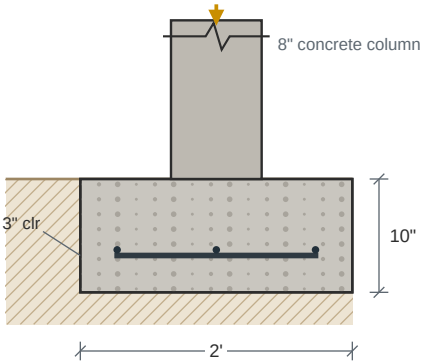
Controls: Depth Above Bars 89% used

Adequacy 12.5% (capacity to spare)

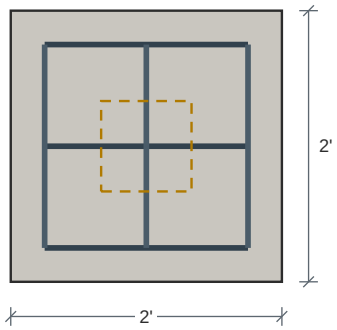
WHAT LOADS IT



SECTION



PLAN -- BOTTOM MAT



Bot.(3) #4 Long, (3) #4 Short

Carrying: Dead 507 lb Snow 4,261 lb

Design Results	Actual	Allowed	Result	Method	Load Combination
Soil Bearing Pressure (psf)	1,313	1,500	Passed (88%)	ASD	D+S
One-Way Shear X (lbs)	541	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
One-Way Shear Y (lbs)	541	12,324	Passed (4%)	LRFD	1.2D+1.6S+L
Two-Way Shear (lbs)	4,716	61,947	Passed (8%)	LRFD	1.2D+1.6S+L
Moment X (ft-lbs)	825	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Moment Y (ft-lbs)	825	16,081	Passed (5%)	LRFD	1.2D+1.6S+L
Crushing (lbs)	7,426	212,160	Passed (4%)	LRFD	1.2D+1.6S+L
Depth Above Bars (in)	6	7	Passed (89%)	code	ACI 318-14 13.3.1.2

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as entered on the footing, and the mat the check selected

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Shape	Square
Column type	Concrete
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Footing length	2'
Footing depth	10"
Column width	8"
Column length	8"
Pedestal height	4"
Pedestal width	4"
Pedestal length	4"

Footing Properties	
Steel yield strength	60,000 psi
Concrete strength	3,000 psi
Soil bearing pressure	1,500 psf
Concrete density	145 pcf
Top reinf. cover	3"
Bottom reinf. cover	3"
Side reinf. cover	3"
Aggregate diameter	3/4"

Soil Properties	
Soil depth above footing	0
Soil density	140 pcf
Soil cohesion	0 psf
Friction angle	30°
Water level	0

Reinforcement	
Bottom mat	Bot.(3) #4 Long, (3) #4 Short
Bars the long way	(3) #4
Bars the short way	(3) #4
Selected for	moment and minimum steel
Plain concrete (no reinforcing)	No
Override rebar	No
Include water level	No
Allow bearing pressure increase	No

- Soil bearing is checked at service level (ASD) and includes the footing's own weight; shear, moment and crushing at strength level (LRFD), ACI 318-14, loads combined to ASCE 7-16.
- Reinforcement is selected for the moment and for minimum steel (ACI 318-14: 0.0018 Ag for Grade 60), at no more than 3h or 18 in.

Applied Loads	Location	Trib. Width	Dead (0.90)	Snow (1.15)	Comments
1 - Point (lb)	--	N/A	506.8	4,261	Linked from: Header #56, Support 2

Hangers for every member end set flush in a hanger, or hung from a foundation wall's mud sill; a cap and a base for every post -- from Simpson Strong-Tie's Wood Construction Connectors catalog C-C-2026. Each is checked at every ASD load combination against the catalog's allowable load for that load duration (hangers: floor 100, snow 115, roof 125; caps and bases: as printed, no increase; uplift 160, reduced where gravity governs), for the lower specific gravity of the members. Use = the governing demand over that allowable. Fabricated: nothing in the catalog carries it (or chosen so); it is designed here as a steel plate hanger -- face plate, seat, side plates, fasteners and welds to the 2018 NDS and AISC 360-16, for its reactions and the ASCE 7 1.4.4 tie -- and listed under Fasteners, Use being the governing check; where it can't be, design it to the load shown. Each fabricated hanger's design sheet follows this schedule; one locked as drawn is checked as built. A hanger off a member that is not in the model, a crawl space header for one, is listed under the member it carries by its note key, with how many; its load is on each.

32 hung ends: 28 Simpson, 4 fabricated.

Member	End	Hanger	Hangs on	Design load (ASD)	Use	Fasteners
Beam #2	1	CBH2.37x7.63 concealed beam hanger, p. 168	Beam #1, 8 3/4 x 18 glulam	4,907 lb D+S	72%	(18) SDS25600 supported beam + (18) SDS25300 supporting column or beam / straight/ inclined
Beam #3	3	CBH2.37x7.63 concealed beam hanger, p. 168	Beam #4, 8 3/4 x 18 glulam	4,757 lb D+S	70%	(18) SDS25600 supported beam + (18) SDS25300 supporting column or beam / straight/ inclined
Beam #14	1	HGUS410 face mount, p. 160	Beam #15, 4-ply 1 3/4 x 11 7/8 LVL	7,291 lb D+S	80%	(46) 0.162 x 3 1/2 face + (16) 0.162 x 3 1/2 joist
Beam #18	2	CBH2.37x7.63 concealed beam hanger, p. 168	Beam #17, 8 3/4 x 18 glulam	5,485 lb D+S	81%	(18) SDS25600 supported beam + (18) SDS25300 supporting column or beam / straight/ inclined
Beam #19	2	HGU5.25-SDS face mount, order H 11 1/4, p. 162	Beam #20, 5 1/2 x 19 1/2 glulam	9,838 lb D+S	75%	(36) 1/4 x 2 1/2 SDS face + (24) 1/4 x 2 1/2 SDS joist
Beam #20	1	MGU5.50-SDS face mount, order H 19 1/2, p. 163	Beam #21, 5 1/2 x 21 glulam	6,573 lb D+S	87%	(24) 1/4 x 2 1/2 SDS face + (16) 1/4 x 2 1/2 SDS joist
Beam #25	2	MGU5.25-SDS face mount, order H 14, p. 162	Beam #27, 8 3/4 x 18 glulam	7,821 lb D+S	83%	(24) 1/4 x 2 1/2 SDS face + (16) 1/4 x 2 1/2 SDS joist
Beam #27	2	**FAB HANGER BM 27-2**	Beam #32, W18X130	18,654 lb D+S	85%	side plates welded into the flange pocket, seat tabs through slots; (2) side plates 11-1/4 x 17-11/16 x 3/8; seat plate (tabbed) 6 x 10-1/8 x 1-1/4; (2) 3/4 in bolts through the beam; uplift rating 3,710 lb (C_D 1.6)
Beam #28	1	**FAB HANGER BM 28-1**	Beam #32, W18X130	17,872 lb D+S	81%	side plates welded into the flange pocket, seat tabs through slots; (2) side plates 11-1/4 x 17-11/16 x 3/8; seat plate (tabbed) 6 x 10-1/8 x 1-1/4; (2) 3/4 in bolts through the beam; uplift rating 3,710 lb (C_D 1.6)
Beam #28	2	**FAB HANGER BM 28-2**	Beam #30, W18X130	17,872 lb D+S	97.7%	side plates welded into the flange pocket, seat tabs through slots; (2) side plates 11-1/4 x 19-3/16 x 3/8; seat plate (tabbed) 6 x 10-1/8 x 1-1/4; (2) 3/4 in bolts through the beam; uplift rating 4,745 lb (C_D 1.6)
Beam #29	1	**FAB HANGER BM 29-1**	Beam #30, W18X130	9,663 lb D+S	94%	side plates welded into the flange pocket, seat tabs through slots; (2) side plates 11-1/4 x 16-7/8 x 3/8; seat plate (tabbed) 6 x 6-7/8 x 5/8; (2) 3/4 in bolts through the beam; uplift rating 2,330 lb (C_D 1.6)
Beam #41	2	HU68 face mount, p. 118	Beam #42, 5 1/2 x 9 1/2 sawn	426 lb D+L	29%	(10) 0.162 x 3 1/2 header + (4) 0.162 x 3 1/2 joist
Joists #12	1	ITS1.81/9.5 top flange on the sill, p. 197	2x mud sill (SPF/HF)	286 lb D+L	25%	(6) 0.148 x 3 header
Joists #12	5	ITS1.81/9.5 top flange on the sill, p. 197	2x mud sill (SPF/HF)	444 lb D+L	39%	(6) 0.148 x 3 header
Joists #12	X2	(2) IUS1.81/9.5 face mount, p. 158 (first that works), 1 each side	Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL	427 lb D+L	45%	(8) 0.148 x 3 face
Joists #12	X2B	(2) IUS1.81/9.5 face mount, p. 158 (first that works), 1 each side	Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL	427 lb D+L	45%	(8) 0.148 x 3 face
Joists #12	X2C	(2) IUS1.81/9.5 face mount, p. 158 (first that works), 1 each side	Crawl space header at support 2, 3 1/2 x 11 1/4 sawn	427 lb D+L	45%	(8) 0.148 x 3 face
Joists #12	X2D	(2) IUS1.81/9.5 face mount, p. 158, 1 each side	Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL	427 lb D+L	45%	(8) 0.148 x 3 face
Joists #12	X4	(2) IUS1.81/9.5 face mount, p. 158, 1 each side	Crawl space header at support 4, 2-ply 1 3/4 x 9 1/2 LVL	558 lb D+L	59%	(8) 0.148 x 3 face

Hangers (continued)

Member	End	Hanger	Hangs on	Design load (ASD)	Use	Fasteners
Joists #13	5	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	224 lb D+L	19%	(6) 0.148 x 3 header
Joists #13	X2	(2) IUS1.81/9.5 face mount, p. 158 (first that works), 1 each side	Crawl space header at support 2, 2-ply 1 3/4 x 9 1/2 LVL	585 lb D+L	62%	(8) 0.148 x 3 face
Joists #13	X3	(2) IUS1.81/9.5 face mount, p. 158 (first that works), 1 each side	Crawl space header at support 3, 2-ply 1 3/4 x 9 1/2 LVL	517 lb D+L	54%	(8) 0.148 x 3 face
Joists #13	X4	(2) IUS1.81/9.5 face mount, p. 158 (first that works), 1 each side	Crawl space header at support 4, 2-ply 1 3/4 x 9 1/2 LVL	507 lb D+L	53%	(8) 0.148 x 3 face
Joists #14	1	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	501 lb D+L	44%	(6) 0.148 x 3 header
Joists #14	5	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	501 lb D+L	44%	(6) 0.148 x 3 header
Joists #15	5	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	280 lb D+L	24%	(6) 0.148 x 3 header
Joists #16	7	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	472 lb D+L	41%	(6) 0.148 x 3 header
Joists #17	7	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	472 lb D+L	41%	(6) 0.148 x 3 header
Joists #19	6	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	313 lb D+L	27%	(6) 0.148 x 3 header
Joists #20	1	BA1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	586 lb D+L	33%	(16) 0.162 x 3 1/2 header + (2) 0.148 x 1 1/2 joist
Joists #20	4	ITS1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	343 lb D+L	30%	(6) 0.148 x 3 header
Joists #21	2	BA1.81/9.5 top flange on the sill, p. 197 (first that works)	2x mud sill (SPF/HF)	478 lb D+L	27%	(16) 0.162 x 3 1/2 header + (2) 0.148 x 1 1/2 joist

39 posts, 1 of them assumed 6x6. A post is a spot footing with beams on it, or a column; its size is the job's, else the pad's column, else an assumed 6x6 (the pa

Post	Size	On it	Cap	Base	Design load (ASD)
Column Bm #1-1	10x10 post	Beam #1 1	(1) HL55, p. 315	**Fabricated**	14,196 lb D+S
Column Bm #39-2	5 1/4 x 7 PSL	Beam #39 2	CCQ66SDS2.5, p. 99 62%	CB7 1/8-6, p. 87 29%	18,768 lb D+S
Column Bm #39-3	7 x 7 PSL	Beam #39 3	CCQ6-7.13SDS2.5, p. 99 66%	CB7 1/8-7, p. 87 32%	24,778 lb D+S
SpotFtg Bm #1-2	10x10 post	Beam #1 2	(2) HL55, p. 315	**Fabricated**	18,437 lb D+S
SpotFtg Bm #1-3	10x10 post	Beam #1 3	(2) HL55, p. 315	**Fabricated**	21,327 lb D+S
SpotFtg Bm #1-4	10x10 post	Beam #1 4	(1) HL55, p. 315	**Fabricated**	6,703 lb D+S
SpotFtg Bm #2-2	10x10 post	Beam #2 2	(2) HL55, p. 315	**Fabricated**	28,705 lb D+S
SpotFtg Bm #2-3	10x10 post	Beam #2 3, Beam #3 1	(2) HL55, p. 315	**Fabricated**	19,325 lb D+S
SpotFtg Bm #3-2	10x10 post	Beam #3 2	(2) HL55, p. 315	**Fabricated**	28,449 lb D+S
SpotFtg Bm #4-1	10x10 post	Beam #4 1	(1) HL55, p. 315	**Fabricated**	13,303 lb D+S
SpotFtg Bm #4-2	10x10 post	Beam #4 2	(2) HL55, p. 315	**Fabricated**	16,801 lb D+S
SpotFtg Bm #4-3	10x10 post	Beam #4 3	(2) HL55, p. 315	**Fabricated**	21,466 lb D+S
SpotFtg Bm #4-4	10x10 post	Beam #4 4, Beam #7 2	(2) HL55, p. 315	**Fabricated**	41,791 lb D+S
SpotFtg Bm #8-2	10x10 post	Beam #8 2, Beam #12 1	(1) HL55, p. 315	**Fabricated**	44,321 lb D+S
SpotFtg Bm #9-1	10x10 post	Beam #9 2	(2) HL55, p. 315	**Fabricated**	11,508 lb D+S
SpotFtg Bm #10-1	10x10 post	Beam #10 2	(2) HL55, p. 315	**Fabricated**	11,508 lb D+S
SpotFtg Bm #12-2	10x10 post	Beam #12 2	(2) HL55, p. 315	**Fabricated**	28,421 lb D+S
SpotFtg Bm #12-3	10x10 post	Beam #12 3	(2) HL55, p. 315	**Fabricated**	32,440 lb D+S
SpotFtg Bm #12-4	10x10 post	Beam #12 4	(1) HL55, p. 315	**Fabricated**	11,593 lb D+S
SpotFtg Bm #17-1	10x10 post	Beam #17 1	(1) HL55, p. 315	**Fabricated**	7,767 lb D+S
SpotFtg Bm #17-2	10x10 post	Beam #17 2	(2) HL55, p. 315	**Fabricated**	19,986 lb D+S
SpotFtg Bm #17-3	10x10 post	Beam #17 3	(1) HL55, p. 315	**Fabricated**	17,063 lb D+S
SpotFtg Bm #20-2	6x8 2.0E LVL post	Beam #20 2	CCQ68SDS2.5, p. 99 86%	CB6-7, p. 87 85%	32,634 lb D+S
SpotFtg Bm #21-1	12x12 2.0E PSL post	Beam #21 1	BC460, p. 93	CB1212, p. 87 26%	34,899 lb D+S
SpotFtg Bm #21-2	6x6 post	Beam #21 2, Beam #34 1	(1) HL55, p. 315	**Fabricated**	9,890 lb D+S
SpotFtg Bm #30-1	HSS5x5x1/4 steel column	Beam #30 2	welded cap plate	base plate	36,205 lb D+S
SpotFtg Bm #30-2	steel column	Beam #30 3	welded cap plate	base plate	111,706 lb D+S
SpotFtg Bm #32-1	steel column	Beam #32 1	welded cap plate	base plate	16,978 lb D+S

Posts (continued)

Post	Size	On it	Cap	Base	Design load (ASD)
SpotFtg Bm #33-1	HSS5x5x1/4 steel column	Beam #33 1	welded cap plate	base plate	69,221 lb D+S
SpotFtg Bm #33-2	HSS5x5x1/4 steel column	Beam #33 2	welded cap plate	base plate	68,934 lb D+S
SpotFtg Bm #34-2	10x10 post	Beam #34 2	(2) HL55, p. 315	**Fabricated**	15,162 lb D+S
SpotFtg Bm #34-3	10x10 post	Beam #34 3	(2) HL55, p. 315	**Fabricated**	17,824 lb D+S
SpotFtg Bm #34-4	10x10 post	Beam #34 4	(1) HL55, p. 315	**Fabricated**	5,903 lb D+S
SpotFtg Bm #35-2	10x10 post	Beam #35 2	(1) HL55, p. 315	**Fabricated**	9,568 lb D+S
SpotFtg Bm #36-2	10x10 post	Beam #36 2	(1) HL55, p. 315	**Fabricated**	5,638 lb D+S
SpotFtg Gdr #1-2	8 x 48 concrete pier	Girder #1 3, Girder #3 1	by the truss layout	--	12,382 lb D+S
SpotFtg Gdr #2-2	7 x 7 2.0E PSL post	Girder #3 2	by the truss layout	**Fabricated**	24,064 lb D+S
SpotFtg Gdr #5-2	6x6 post (assumed)	Girder #3 3, Girder #5 3	by the truss layout	CB66, p. 87 48%	14,628 lb D+S
SpotFtg Gdr #8-2	6x6 post	Girder #6 1	by the truss layout	ABU66Z, p. 76 23%	2,953 lb D+S

Simpson hardware

Every Simpson Strong-Tie part the job uses, by model: how many, where each goes, its fasteners and its worst use. The catalog page each is on is printed at the back of this package; a model named anywhere in the package links to its page.

Hangers -- 9 models, 40 pieces

Model	Qty	Where	Fasteners	Use	Catalog
BA1.81/9.5	2	Joists #20 1 on mud sill; Joists #21 2 on mud sill	(16) 0.162 x 3 1/2 header + (2) 0.148 x 1 1/2 joist	33%	p. 197
CBH2.37x7.63	3	Beam #2 1 on Beam #1; Beam #3 3 on Beam #4; Beam #18 2 on Beam #17	(18) SDS25600 supported beam + (18) SDS25300 supporting column or beam / straight/ inclined	81%	p. 168
HGU5.25-SDS	1	Beam #19 2 on Beam #20	(36) 1/4 x 2 1/2 SDS face + (24) 1/4 x 2 1/2 SDS joist	75%	p. 162
HGUS410	1	Beam #14 1 on Beam #15	(46) 0.162 x 3 1/2 face + (16) 0.162 x 3 1/2 joist	80%	p. 160
HU68	1	Beam #41 2 on Beam #42	(10) 0.162 x 3 1/2 header + (4) 0.162 x 3 1/2 joist	29%	p. 118
ITS1.81/9.5	10	Joists #12 1 on mud sill; Joists #12 5 on mud sill; Joists #13 5 on mud sill; Joists #14 1 on mud sill; Joists #14 5 on mud sill; Joists #15 5 on mud sill; Joists #16 7 on mud sill; Joists #17 7 on mud sill; Joists #19 6 on mud sill; Joists #20 4 on mud sill	(6) 0.148 x 3 header	44%	p. 197
IUS1.81/9.5	16	Joists #12 X2 on Crawl space header at support 2; Joists #12 X2B on Crawl space header at support 2; Joists #12 X2C on Crawl space header at support 2; Joists #12 X2D on Crawl space header at support 2; Joists #12 X4 on Crawl space header at support 4; Joists #13 X2 on Crawl space header at support 2; Joists #13 X3 on Crawl space header at support 3; Joists #13 X4 on Crawl space header at support 4	(8) 0.148 x 3 face	62%	p. 158
MGU5.25-SDS	1	Beam #25 2 on Beam #27	(24) 1/4 x 2 1/2 SDS face + (16) 1/4 x 2 1/2 SDS joist	83%	p. 162
MGU5.50-SDS	1	Beam #20 1 on Beam #21	(24) 1/4 x 2 1/2 SDS face + (16) 1/4 x 2 1/2 SDS joist	87%	p. 163
Fabricated (design to the load in the schedule)	4	Beam #27 2 on Beam #32; Beam #28 1 on Beam #32; Beam #28 2 on Beam #30; Beam #29 1 on Beam #30		--	--

Post caps -- 5 models, 45 pieces

Model	Qty	Where	Fasteners	Use	Catalog
BC460	1	SpotFtg Bm #21-1 (Beam #21 1)	(6) 0.162 x 3 1/2 post flange + (4) 0.162 x 3 1/2 base bottom	--	p. 93
CCQ6-7.13SDS2.5	1	Column Bm #39-3 (Beam #39 3)	16 beam / ccq + 14 beam / eccq + 14 post	66%	p. 99
CCQ66SDS2.5	1	Column Bm #39-2 (Beam #39 2)	16 beam / ccq + 14 beam / eccq + 14 post	62%	p. 99
CCQ68SDS2.5	1	SpotFtg Bm #20-2 (Beam #20 2)	16 beam / ccq + 14 beam / eccq + 14 post	86%	p. 99

Simpson hardware (continued)

Model	Qty	Where	Fasteners	Use	Catalog
HL55	41	Column Bm #1-1 (Beam #1 1); SpotFtg Bm #1-2 (Beam #1 2); SpotFtg Bm #1-3 (Beam #1 3); SpotFtg Bm #1-4 (Beam #1 4); SpotFtg Bm #2-2 (Beam #2 2); SpotFtg Bm #2-3 (Beam #2 3, Beam #3 1); SpotFtg Bm #3-2 (Beam #3 2); SpotFtg Bm #4-1 (Beam #4 1); SpotFtg Bm #4-2 (Beam #4 2); SpotFtg Bm #4-3 (Beam #4 3); SpotFtg Bm #4-4 (Beam #4 4, Beam #7 2); SpotFtg Bm #8-2 (Beam #8 2, Beam #12 1); SpotFtg Bm #9-1 (Beam #9 2); SpotFtg Bm #10-1 (Beam #10 2); SpotFtg Bm #12-2 (Beam #12 2); SpotFtg Bm #12-3 (Beam #12 3); SpotFtg Bm #12-4 (Beam #12 4); SpotFtg Bm #17-1 (Beam #17 1); SpotFtg Bm #17-2 (Beam #17 2); SpotFtg Bm #17-3 (Beam #17 3); SpotFtg Bm #21-2 (Beam #21 2, Beam #34 1); SpotFtg Bm #34-2 (Beam #34 2); SpotFtg Bm #34-3 (Beam #34 3); SpotFtg Bm #34-4 (Beam #34 4); SpotFtg Bm #35-2 (Beam #35 2); SpotFtg Bm #36-2 (Beam #36 2)	(8) 1/2 in bolts each angles	--	p. 315

Post bases -- 6 models, 33 pieces

Model	Qty	Where	Fasteners	Use	Catalog
ABU66Z	1	SpotFtg Gdr #8-2 (Girder #6 1)	5/8 anchor dia. + (12) 0.162 x 3 1/2 nails	23%	p. 76
CB6-7	1	SpotFtg Bm #20-2 (Beam #20 2)	2 bolts / qty. + 5/8 bolts / dia. (in.)	85%	p. 87
CB7 1/8-6	1	Column Bm #39-2 (Beam #39 2)	2 bolts / qty. + 3/4 bolts / dia. (in.)	29%	p. 87
CB7 1/8-7	1	Column Bm #39-3 (Beam #39 3)	2 bolts / qty. + 3/4 bolts / dia. (in.)	32%	p. 87
CB66	1	SpotFtg Gdr #5-2 (Girder #3 3, Girder #5 3)	2 bolts / qty. + 5/8 bolts / dia. (in.)	48%	p. 87
CB1212	1	SpotFtg Bm #21-1 (Beam #21 1)	2 bolts / qty. + 3/4 bolts / dia. (in.)	26%	p. 87
Fabricated (design to the load in the schedule)	27	Column Bm #1-1 (Beam #1 1); SpotFtg Bm #1-2 (Beam #1 2); SpotFtg Bm #1-3 (Beam #1 3); SpotFtg Bm #1-4 (Beam #1 4); SpotFtg Bm #2-2 (Beam #2 2); SpotFtg Bm #2-3 (Beam #2 3, Beam #3 1); SpotFtg Bm #3-2 (Beam #3 2); SpotFtg Bm #4-1 (Beam #4 1); SpotFtg Bm #4-2 (Beam #4 2); SpotFtg Bm #4-3 (Beam #4 3); SpotFtg Bm #4-4 (Beam #4 4, Beam #7 2); SpotFtg Bm #8-2 (Beam #8 2, Beam #12 1); SpotFtg Bm #9-1 (Beam #9 2); SpotFtg Bm #10-1 (Beam #10 2); SpotFtg Bm #12-2 (Beam #12 2); SpotFtg Bm #12-3 (Beam #12 3); SpotFtg Bm #12-4 (Beam #12 4); SpotFtg Bm #17-1 (Beam #17 1); SpotFtg Bm #17-2 (Beam #17 2); SpotFtg Bm #17-3 (Beam #17 3); SpotFtg Bm #21-2 (Beam #21 2, Beam #34 1); SpotFtg Bm #34-2 (Beam #34 2); SpotFtg Bm #34-3 (Beam #34 3); SpotFtg Bm #34-4 (Beam #34 4); SpotFtg Bm #35-2 (Beam #35 2); SpotFtg Bm #36-2 (Beam #36 2); SpotFtg Gdr #2-2 (Girder #3 2)		--	--

Beam Hanger Design

Adams · Job 26-015 · Beam #28 2

10/7/2026
NDS 2018 (ASD) · AISC 360-16 · ASCE 7-16

PASSES · 2.3%

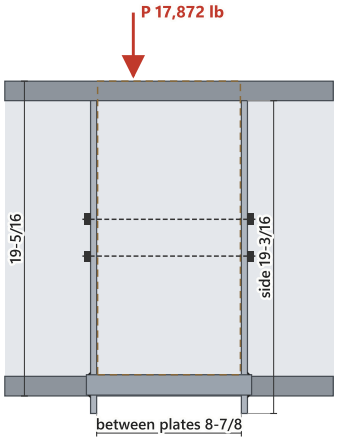
Governs: Steel beam: bending + warping stress at the hanger under D+S + H

Uplift rating **4,745 lb** (C_D 1.6) · Beam: shear at the side bolts, uplift

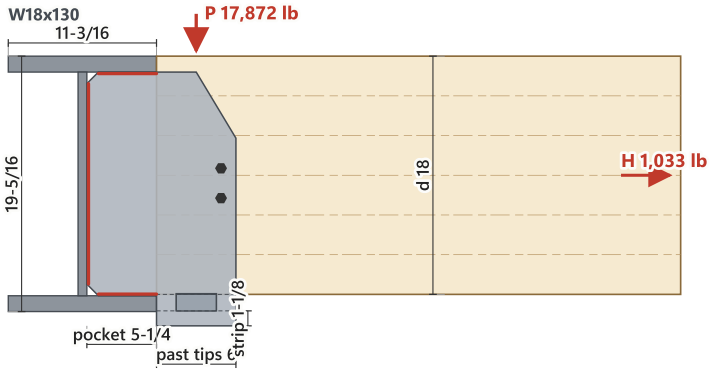
Side plates welded into the W18x130's flange pocket

DRAWING

FACE PLATE (BEAM END SHOWN DASHED)



SIDE VIEW



CONNECTOR

QTY	PLATE	L × W × T (IN)	WEIGHT
2	Side plates	11-1/4 × 19-3/16 × 3/8	43.4 lb
1	Seat plate (tabbed)	6 × 10-1/8 × 1-1/4	20.2 lb
	Steel	A36	**63.6 lb**

FASTENERS

Bracket	Side plates welded into the flange pocket (top flange, web, bottom flange) the seat's 3 in tabs through slots in them, 16-7/8 in clear between the flanges, 5-1/4 in pocket
Side plates	2 × 3/4" bolts through the beam 4-7/8 in past the flange tips

MATERIAL LIST

QTY	ITEM	NOTE
1	Side plates shop-welded into the steel beam's flange pocket (top flange, web, bottom flange, both faces); seat tabs through the slots, welded all around	E70XX fillets per the weld table
2	3/4" x 11" hex bolts (A307) with nuts	through the side plates and the beam
2	Side plates 3/8 x 19-3/16 x 11-1/4 in (A36)	43.4 lb
1	Seat plate (tabbed) 1-1/4 x 10-1/8 x 6 in (A36)	20.2 lb

WELD (E70XX FILLET)	SIZE	LENGTH	NEEDS	MIN / MAX	
Each side plate to the steel beam: top flange, web and bottom flange, both faces	3/16	23-15/16	0.029	3/16 / 3/8	OK
Seat tab through each side plate, all around at its outside face	3/16	8-1/2	0.071	3/16 / 1-1/4	OK

WOOD (NDS 2018) 48%: Beam bearing on the seat

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Beam bearing on the seat Fc-perp' 650 psi x 8-3/4 x 6 in (the seat past the beam end gap)	NDS 3.10.1	D+S C_D 1.15	17,872	34,125	48%	OK
Side-plate bolts in the beam: lateral	NDS 12.3, 11.3.1	D + H C_D 1	1,033	5,182	80%	OK
Beam: row tear-out s_crit = 4-7/8 in	NDS Appendix E.3	D + H C_D 1	1,033	16,278	94%	OK
Beam: group tear-out A group-net = 12.58 in2	NDS Appendix E.4	D + H C_D 1	1,033	21,975	95%	OK
Beam: net section tension An = 143.28 in2	NDS 3.1.2, 3.8.1	D + H C_D 1	1,033	157,609	99%	OK

STEEL (AISC 360-16) 2.3%: Steel beam: bending + warping stress at the hanger

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Steel beam: bending + warping stress at the hanger psi; torque 145.6 kip-in at 14.5 ft of a 31.08 ft span, ends torsionally pinned (DG9 Case 3, a = 64 in): warping 10287, its own bending 18961	H3.3(a); Design Guide 9	D+S + H C_D 1.15	29,248	29,940	2.3%	OK

Side plates: the strip under the slot, bending (each) lb-in: the tab's load over the 3-1/16 in slot on a 1-1/8 in strip, its ends held by the 1-1/2 in shoulders beside the slot (their stiffness)	F11	D+S C_D 1.15	2,080	2,558	19%	OK
Side plates: the shoulder beside the slot, tension + bending (each) 1-1/2 in wide at the flange tips: 2080 lb-in holding the strip's end, 4468 lb hanging from it	H1-1	D+S C_D 1.15	1	1	20%	OK
Seat plate: bending across the side plates lb-in per inch: the beam's bearing over 3 in, spanning 8-7/8 in between the tabs	F11 (plate strip)	D+S C_D 1.15	6,702	8,421	20%	OK
Side plates: the strip under the slot, shear (each end)	J4.2(a)	D+S C_D 1.15	4,468	6,075	26%	OK
Steel beam: web shear, torsion + bending psi; St. Venant 3153, its own shear 6806	H3.3(b); Design Guide 9	D+S + H C_D 1.15	9,960	17,964	45%	OK
Steel beam: flange shear, torsion + bending psi; St. Venant 5648, warping 456, its own shear 1588	H3.3(b); Design Guide 9	D+S + H C_D 1.15	7,692	17,964	57%	OK
Seat tabs: bearing on the slot's bottom edge (each) 3 in tab on the 3/8 in side plate	J4.4 (compression yielding)	D+S C_D 1.15	8,936	24,251	63%	OK
Side plates: the shoulder beside the slot, shear (each) 1-1/2 in wide, 1-5/16 in tall (the slot)	J4.2(a)	D+S C_D 1.15	0	1	70%	OK
Seat plate: shear at each tab 3 in tab x 1-1/4 in	J4.2(a)	D+S C_D 1.15	8,936	54,000	83%	OK
Side plates: base metal at the welds to the steel beam lb per inch, both fillets into the plate	J4.2(a)	worst	859	5,400	84%	OK
Side plates: shear rupture through the cut-in mark (each) 10-11/16 in of plate left at the worst section through the mark	J4.2(b)	D+S C_D 1.15	8,936	69,755	87%	OK
Side plates: shear at the flange tips (each)	J4.2(a)	D+S C_D 1.15	8,936	103,545	91%	OK
Side plates: bending through the cut-in mark (net section, each) lb-in; taken at the flange tips; plastic modulus 19.65 in3 at the worst section	F11	D+S + H C_D 1.15	28,905	350,690	92%	OK
Side plates: shear rupture at the slot (each)	J4.2(b)	D+S C_D 1.15	8,936	116,553	92%	OK

Steel beam: web at the side-plate welds lb per inch: this plate's two fillets plus the far bracket's (Beam #29 1), back to back on the web	J4.2(b)	worst	916	13,065	93%		OK
Side plates: bending at the flange tips (each) lb-in; seat reaction 3 in out, F11-2 lateral-torsional (Lb 6 in, Cb 1: taken unbraced); pull-out added as an equivalent moment	F11, H1-1b	D+S + H C_D 1.15	28,858	615,122	95%		OK
Side-plate bolts: shear (A307, double shear)	J3.6	D + H C_D 1	1,033	23,856	96%		OK
Side plates: bolt bearing and tear-out (each)	J3.10(a)	D + H C_D 1	517	18,759	97%		OK
Side plates: bending at the slot (net section, each) lb-in; plastic modulus 30.47 in3 net of the slot	F11	D+S C_D 1.15	13,683	656,761	98%		OK
Steel beam: top flange bending under a side plate lb, the plate's weld line pushing on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	2,193	134,731	98%		OK
Steel beam: bottom flange bending under a side plate lb, the plate's weld line pulling on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	2,193	134,731	98%		OK
Steel beam: web local yielding at the top flange lb; one side plate	J10.2	D+S + H C_D 1.15	2,193	187,042	99%		OK
Steel beam: web local yielding at the bottom flange lb; one side plate	J10.2	D+S + H C_D 1.15	2,193	187,042	99%		OK
Steel beam: web crippling at the top flange lb, one side plate	J10.3	D+S + H C_D 1.15	2,193	296,402	99%		OK
Side plates: tension yielding at the bolts (each)	D2(a)	D + H C_D 1	517	129,746	100%		OK
Side plates: tension rupture at the bolts (each)	D2(b)	D + H C_D 1	517	155,513	100%		OK

▾ WELDS (AISC J2) 62%: Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/2 in long)

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY		
Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/2 in long) lb per inch per fillet; min 3/16, max 1-1/4	J2.4, Table J2.4	worst	1,051	2,784	62%		OK

Each side plate to the steel beam: top flange, web and bottom flange, both faces (3/16 in fillet, 23-15/16 in long) lb per inch per fillet; min 3/16, max 3/8	J2.4, Table J2.4	worst	429	2,784	85%		OK

▾ SPACING, EDGE, END DISTANCE, PENETRATION all met

MEMBER	REQUIREMENT	REFERENCE	PROVIDED	REQUIRED	MINIMUM	C_Δ	
Side plates	Row spacing in plate	AISC J3.3	2-1/4 in	2-1/4 in	2 in		OK
Side plates	End distance in plate	AISC Table J3.4	1-1/8 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	7-1/4 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	7-1/4 in	1 in			OK
Beam	End distance, parallel tension	Table 12.5.1A	4-7/8 in	5-1/4 in	2-5/8 in	0.929	OK
Beam	Edge distance, parallel, edge 1 l/D = 11.7	Table 12.5.1C	7-1/4 in	1-1/8 in			OK
Beam	Edge distance, parallel, edge 2 l/D = 11.7	Table 12.5.1C	8-1/2 in	1-1/8 in			OK
Beam	Spacing between rows, parallel	Table 12.5.1D	2-1/4 in	1-1/8 in			OK
Beam	Outermost fasteners across the grain unless the detail lets the wood shrink (slotted holes, separate plates)	NDS Table 12.5.1F	2-1/4 in	at most 10 in			OK
Seat	Seat bearing (past the beam end gap)	minimum (fabrication)	6 in	1-1/2 in			OK
Side plates	Side bolts fit alongside the beam	AISC J3.4 / 1.5D	16-13/16 in	4-1/2 in			OK
Side plates	Side plate under the slot	fabrication	1-1/8 in	1/2 in			OK
Seat	Seat tab between the shoulders	fabrication	3 in	1 in			OK
Side plates	Side-plate bolts (two at least: his standard)	standard	2	2			OK

▾ SIDE-PLATE BOLTS IN THE CARRIED BEAM (NDS 12.3)

mode IIIs, 5,182 lb for 2

MODE	WHAT YIELDS	Z (LB)
IIIs	one hinge in the fastener, side member crushes	2,790
IV	two hinges in the fastener	3,087
Im	main member bearing (crushing)	7,681
Is	side member bearing (crushing)	10,228

D in equations	627/1000 in root diameter Dr = 0.627 in: the threads bear in the 3/8 in side plate at the nut, more than 1/4 of it (12.3.7.2)
l_s / l_m	3/8 / 8-3/4 in
F_{es} / F_{em}	87,000 / 5,600 psi
C_M C_t C_g C_Δ	1 · 1 · 1.000 · 0.929

Group, C_D 1.0 5,182 lb (2 fasteners)

LOAD CASES

CASE	P (LB)	H (LB)	C_D
D	3,022	0	0.9
D + H	3,022	1,033	1
D+L	5,817	0	1
D+L + H	5,817	1,033	1
D+S	17,872	0	1.15
D+S + H	17,872	1,033	1.15

Seat plate: one way across between the side plates, carried on its tabs (pinned), the bearing over the tab length. Beam Fc-perp' 650 psi.

NOTES AND LIMITS

- Pull-out H = 1,033 lb: 5% of D + L + S (ASCE 7 1.4.4 minimum tie, snow counted), with each gravity combination
- Bracket: two 3/8 in side plates fill the W18x130's flange pocket (the clear 16-7/8 in between the flanges, 5-1/4 in out from the web, corners clipped 7/8 in for the fillets), welded to the top flange, web and bottom flange, both faces, and run 6 in past the flange tips; the 1-1/4 in seat's tabs pass through a slot in each side plate and bear on its bottom edge, welded all around where they come through
- The glulam ends at the flange tips, 0 in off them (not notched), and bears on 6 in of the seat
- Outside the flange tips the side plates step down 2-1/4 in below the bottom flange's top: 1-1/8 in of plate under the slot to carry the tab
- The side plates hang 1-1/16 in below the steel beam's bottom outside the flange tips -- check the ceiling
- Side plate bending at the flange tips is taken as an unbraced cantilever (F11, Lb = 6 in, Cb = 1), though the seat and the side bolts brace it
- The seat tabs bear on the slots (the gravity load does not rely on the tab welds), and the tab welds alone could carry it too
- Steel beam torsion: 145.6 kip-in at 14.5 ft of its 31.08 ft span (D+S + H), ends torsionally pinned, no restraint between them taken -- net of Beam #29 1's dead load hung back to back; it twists 3.14 deg at the hanger, the beam end dropping 0.472 in
- The web's out-of-plane bending at the side-plate welds is not taken: each side plate is welded full depth to both flanges, which take its moment as a couple in their own plane
- Cut-in mark BM 28-2: stencil block letters 1-13/16 in tall cut through both side plates in the flange pocket, reading bottom to top, 10-11/16 in long -- sized for a plasma's worst kerf (0.10 in): every web of plate between cuts at least 3/16 in, so nothing is closed in and nothing drops out, the plate's corners at the letters rounded 1/16 in (AISC M2.2); the plates' net section through it is checked. One part makes both plates, so one mark reads from its plate's outside face and the other from the inside
- Uplift rating 4,745 lb at C_D 1.6 (as Simpson's 160): Beam: shear at the side bolts, uplift

Not checked here:

- Torsion from any other member hung on the steel beam
- The steel beam's own bending and shear capacity with this reaction (its own design)

Beam Hanger Design

Adams · Job 26-015 · Beam #27 2

10/7/2026
NDS 2018 (ASD) · AISC 360-16 · ASCE 7-16

PASSES · 15%

Governs: Side plates: the strip under the slot, bending (each) under D+S

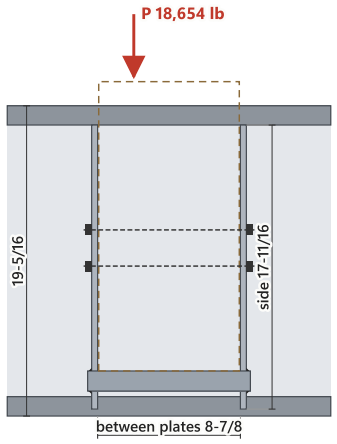
Designed here: side plate / seat length, seat thickness, side plate thickness, side-plate bolts, strip under the slot, slot shoulder

Uplift rating **3,710 lb** (C_D 1.6) · Beam: shear at the side bolts, uplift

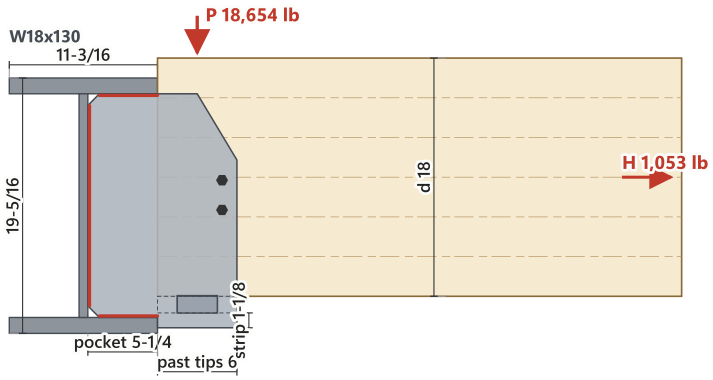
Side plates welded into the W18x130's flange pocket

DRAWING

FACE PLATE (BEAM END SHOWN DASHED)



SIDE VIEW



CONNECTOR

QTY	PLATE	L × W × T (IN)	WEIGHT
2	Side plates	11-1/4 × 17-11/16 × 3/8	41.5 lb
1	Seat plate (tabbed)	6 × 10-1/8 × 1-1/4	20.2 lb
	Steel	A36	**61.7 lb**

FASTENERS

Bracket	Side plates welded into the flange pocket (top flange, web, bottom flange) the seat's 3 in tabs through slots in them, 16-7/8 in clear between the flanges, 5-1/4 in pocket

MATERIAL LIST

QTY	ITEM	NOTE
1	Side plates shop-welded into the steel beam's flange pocket (top flange, web, bottom flange, both faces); seat tabs through the slots, welded all around	E70XX fillets per the weld table
2	3/4" x 11" hex bolts (A307) with nuts	through the side plates and the beam
2	Side plates 3/8 x 17-11/16 x 11-1/4 in (A36)	41.5 lb
1	Seat plate (tabbed) 1-1/4 x 10-1/8 x 6 in (A36)	20.2 lb

Side plates	2 × 3/4" bolts through the beam 4-7/8 in past the flange tips

WELD (E70XX FILLET)	SIZE	LENGTH	NEEDS	MIN / MAX	
Each side plate to the steel beam: top flange, web and bottom flange, both faces	3/16	23-15/16	0.030	3/16 / 3/8	OK
Seat tab through each side plate, all around at its outside face	3/16	8-1/2	0.074	3/16 / 1-1/4	OK

WOOD (NDS 2018) 45%: Beam bearing on the seat

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Beam bearing on the seat Fc-perp' 650 psi x 8-3/4 x 6 in (the seat past the beam end gap)	NDS 3.10.1	D+S C_D 1.15	18,654	34,125	45%	OK
Side-plate bolts in the beam: lateral	NDS 12.3, 11.3.1	D + H C_D 1	1,053	5,182	80%	OK
Beam: row tear-out s_crit = 4-7/8 in	NDS Appendix E.3	D + H C_D 1	1,053	16,278	94%	OK
Beam: group tear-out A group-net = 12.58 in2	NDS Appendix E.4	D + H C_D 1	1,053	21,975	95%	OK
Beam: net section tension An = 143.28 in2	NDS 3.1.2, 3.8.1	D + H C_D 1	1,053	157,609	99%	OK

STEEL (AISC 360-16) 15%: Side plates: the strip under the slot, bending (each)

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Side plates: the strip under the slot, bending (each) lb-in: the tab's load over the 3-1/16 in slot on a 1-1/8 in strip, its ends held by the 1-1/2 in shoulders beside the slot (their stiffness)	F11	D+S C_D 1.15	2,171	2,558	15%	OK

Side plates: the shoulder beside the slot, tension + bending (each) 1-1/2 in wide at the flange tips: 2171 lb-in holding the strip's end, 4664 lb hanging from it	H1-1	D+S C_D 1.15	1	1	16%	OK
Seat plate: bending across the side plates lb-in per inch: the beam's bearing over 3 in, spanning 8-7/8 in between the tabs	F11 (plate strip)	D+S C_D 1.15	6,995	8,421	17%	OK
Side plates: the strip under the slot, shear (each end)	J4.2(a)	D+S C_D 1.15	4,664	6,075	23%	OK
Seat tabs: bearing on the slot's bottom edge (each) 3 in tab on the 3/8 in side plate	J4.4 (compression yielding)	D+S C_D 1.15	9,327	24,251	62%	OK
Steel beam: flange shear, torsion + bending psi; St. Venant 5965, warping 447, its own shear 489	H3.3(b); Design Guide 9	D+S + H C_D 1.15	6,901	17,964	62%	OK
Steel beam: bending + warping stress at the hanger psi; torque 142.1 kip-in at 19 ft of a 32.08 ft span, ends torsionally pinned (DG9 Case 3, a = 64 in): warping 10017, its own bending 0	H3.3(a); Design Guide 9	D+S + H C_D 1.15	10,017	29,940	67%	OK
Side plates: the shoulder beside the slot, shear (each) 1-1/2 in wide, 1-5/16 in tall (the slot)	J4.2(a)	D+S C_D 1.15	0	1	69%	OK
Steel beam: web shear, torsion + bending psi; St. Venant 3331, its own shear 2094	H3.3(b); Design Guide 9	D+S + H C_D 1.15	5,425	17,964	70%	OK
Seat plate: shear at each tab 3 in tab x 1-1/4 in	J4.2(a)	D+S C_D 1.15	9,327	54,000	83%	OK
Side plates: base metal at the welds to the steel beam lb per inch, both fillets into the plate	J4.2(a)	worst	899	5,400	83%	OK
Side plates: shear rupture through the cut-in mark (each) 11-1/8 in of plate left at the worst section through the mark	J4.2(b)	D+S C_D 1.15	9,327	72,610	87%	OK
Side plates: shear at the flange tips (each)	J4.2(a)	D+S C_D 1.15	9,327	95,445	90%	OK
Steel beam: web at the side-plate welds lb per inch: this plate's two fillets plus the far bracket's (Beam #28 1), back to back on the web	J4.2(b)	worst	1,219	13,065	91%	OK
Side plates: shear rupture at the slot (each)	J4.2(b)	D+S C_D 1.15	9,327	106,765	91%	OK

Side plates: bending through the cut-in mark (net section, each) lb-in; taken at the flange tips; plastic modulus 20.25 in3 at the worst section	F11	D+S + H C_D 1.15	30,133	367,630	92%	OK
Side plates: bending at the flange tips (each) lb-in; seat reaction 3 in out, F11-2 lateral-torsional (Lb 6 in, Cb 1: taken unbraced); pull-out added as an equivalent moment	F11, H1-1b	D+S + H C_D 1.15	29,941	531,811	94%	OK
Side-plate bolts: shear (A307, double shear)	J3.6	D + H C_D 1	1,053	23,856	96%	OK
Side plates: bolt bearing and tear-out (each)	J3.10(a)	D + H C_D 1	527	18,759	97%	OK
Side plates: bending at the slot (net section, each) lb-in; plastic modulus 25.65 in3 net of the slot	F11	D+S C_D 1.15	14,282	553,010	97%	OK
Steel beam: top flange bending under a side plate lb, the plate's weld line pushing on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	2,293	134,731	98%	OK
Steel beam: bottom flange bending under a side plate lb, the plate's weld line pulling on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	2,293	134,731	98%	OK
Steel beam: web local yielding at the top flange lb; one side plate	J10.2	D+S + H C_D 1.15	2,293	187,042	99%	OK
Steel beam: web local yielding at the bottom flange lb; one side plate	J10.2	D+S + H C_D 1.15	2,293	187,042	99%	OK
Steel beam: web crippling at the top flange lb, one side plate	J10.3	D+S + H C_D 1.15	2,293	296,402	99%	OK
Side plates: tension yielding at the bolts (each)	D2(a)	D + H C_D 1	527	117,620	100%	OK
Side plates: tension rupture at the bolts (each)	D2(b)	D + H C_D 1	527	139,200	100%	OK

▾ WELDS (AISC J2) 61%: Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/2 in long)

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/2 in long) lb per inch per fillet; min 3/16, max 1-1/4	J2.4, Table J2.4	worst	1,097	2,784	61%	OK

Each side plate to the steel beam: top flange, web and bottom flange, both faces (3/16 in fillet, 23-15/16 in long) lb per inch per fillet; min 3/16, max 3/8	J2.4, Table J2.4	worst	450	2,784	84%		OK

▾ SPACING, EDGE, END DISTANCE, PENETRATION all met

MEMBER	REQUIREMENT	REFERENCE	PROVIDED	REQUIRED	MINIMUM	C_Δ	
Side plates	Row spacing in plate	AISC J3.3	2-1/4 in	2-1/4 in	2 in		OK
Side plates	End distance in plate	AISC Table J3.4	1-1/8 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	6-1/2 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	6-1/2 in	1 in			OK
Beam	End distance, parallel tension	Table 12.5.1A	4-7/8 in	5-1/4 in	2-5/8 in	0.929	OK
Beam	Edge distance, parallel, edge 1 l/D = 11.7	Table 12.5.1C	6-1/2 in	1-1/8 in			OK
Beam	Edge distance, parallel, edge 2 l/D = 11.7	Table 12.5.1C	9-1/4 in	1-1/8 in			OK
Beam	Spacing between rows, parallel	Table 12.5.1D	2-1/4 in	1-1/8 in			OK
Beam	Outermost fasteners across the grain unless the detail lets the wood shrink (slotted holes, separate plates)	NDS Table 12.5.1F	2-1/4 in	at most 10 in			OK
Seat	Seat bearing (past the beam end gap)	minimum (fabrication)	6 in	1-1/2 in			OK
Side plates	Side bolts fit alongside the beam	AISC J3.4 / 1.5D	15-5/16 in	4-1/2 in			OK
Side plates	Side plate under the slot	fabrication	1-1/8 in	1/2 in			OK
Seat	Seat tab between the shoulders	fabrication	3 in	1 in			OK
Side plates	Side-plate bolts (two at least: his standard)	standard	2	2			OK

▾ SIDE-PLATE BOLTS IN THE CARRIED BEAM (NDS 12.3)

mode IIIs, 5,182 lb for 2

MODE	WHAT YIELDS	Z (LB)
IIIs	one hinge in the fastener, side member crushes	2,790
IV	two hinges in the fastener	3,087
Im	main member bearing (crushing)	7,681
Is	side member bearing (crushing)	10,228

D in equations	627/1000 in root diameter Dr = 0.627 in: the threads bear in the 3/8 in side plate at the nut, more than 1/4 of it (12.3.7.2)
l_s / l_m	3/8 / 8-3/4 in
F_{es} / F_{em}	87,000 / 5,600 psi
C_M C_t C_g C_Δ	1 · 1 · 1.000 · 0.929

Group, C_D 1.0 5,182 lb (2 fasteners)

LOAD CASES

CASE	P (LB)	H (LB)	C_D
D	3,020	0	0.9
D + H	3,020	1,053	1
D+L	5,429	0	1
D+L + H	5,429	1,053	1
D+S	18,654	0	1.15
D+S + H	18,654	1,053	1.15

Seat plate: one way across between the side plates, carried on its tabs (pinned), the bearing over the tab length. Beam Fc-perp' 650 psi.

NOTES AND LIMITS

- Pull-out H = 1,053 lb: 5% of D + L + S (ASCE 7 1.4.4 minimum tie, snow counted), with each gravity combination
- Bracket: two 3/8 in side plates fill the W18x130's flange pocket (the clear 16-7/8 in between the flanges, 5-1/4 in out from the web, corners clipped 7/8 in for the fillets), welded to the top flange, web and bottom flange, both faces, and run 6 in past the flange tips; the 1-1/4 in seat's tabs pass through a slot in each side plate and bear on its bottom edge, welded all around where they come through
- The glulam ends at the flange tips, 0 in off them (not notched), and bears on 6 in of the seat
- Outside the flange tips the side plates step down 3/4 in below the bottom flange's top: 1-1/8 in of plate under the slot to carry the tab
- Side plate bending at the flange tips is taken as an unbraced cantilever (F11, Lb = 6 in, Cb = 1), though the seat and the side bolts brace it
- The seat tabs bear on the slots (the gravity load does not rely on the tab welds), and the tab welds alone could carry it too
- Steel beam torsion: 142.1 kip-in at 19 ft of its 32.08 ft span (D+S + H), ends torsionally pinned, no restraint between them taken -- net of Beam #28 1's dead load hung back to back; it twists 3.08 deg at the hanger, the beam end dropping 0.462 in
- The web's out-of-plane bending at the side-plate welds is not taken: each side plate is welded full depth to both flanges, which take its moment as a couple in their own plane
- Cut-in mark BM 27-2: stencil block letters 1-13/16 in tall cut through both side plates in the flange pocket, reading bottom to top, 10-11/16 in long -- sized for a plasma's worst kerf (0.10 in): every web of plate between cuts at least 3/16 in, so nothing is closed in and nothing drops out, the plate's corners at the letters rounded 1/16 in (AISC M2.2); the plates' net section through it is checked. One part makes both plates, so one mark reads from its plate's outside face and the other from the inside
- Uplift rating 3,710 lb at C_D 1.6 (as Simpson's 160): Beam: shear at the side bolts, uplift

Not checked here:

- Torsion from any other member hung on the steel beam
- The steel beam's own bending and shear capacity with this reaction (its own design)

Beam Hanger Design

Adams · Job 26-015 · Beam #28 1

10/7/2026
NDS 2018 (ASD) · AISC 360-16 · ASCE 7-16

PASSES · 19%

Governs: Side plates: the strip under the slot, bending (each) under D+S

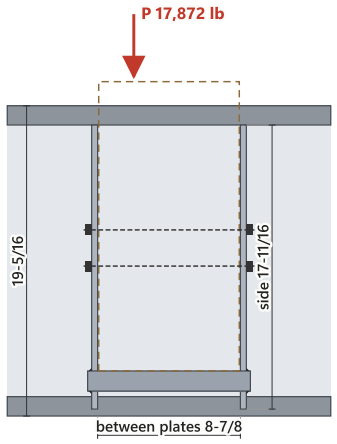
Designed here: side plate / seat length, seat thickness, side plate thickness, side-plate bolts, strip under the slot, slot shoulder

Uplift rating **3,710 lb** (C_D 1.6) · Beam: shear at the side bolts, uplift

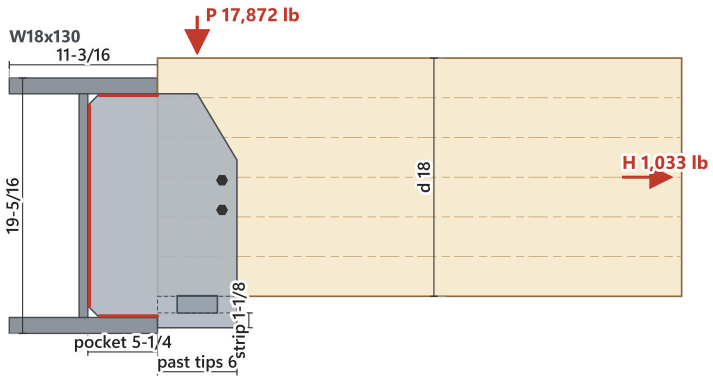
Side plates welded into the W18x130's flange pocket

DRAWING

FACE PLATE (BEAM END SHOWN DASHED)



SIDE VIEW



CONNECTOR

QTY	PLATE	L × W × T (IN)	WEIGHT
2	Side plates	11-1/4 × 17-11/16 × 3/8	41.5 lb
1	Seat plate (tabbed)	6 × 10-1/8 × 1-1/4	20.2 lb
	Steel	A36	**61.7 lb**

FASTENERS

Bracket	Side plates welded into the flange pocket (top flange, web, bottom flange) the seat's 3 in tabs through slots in them, 16-7/8 in clear between the flanges, 5-1/4 in pocket

MATERIAL LIST

QTY	ITEM	NOTE
1	Side plates shop-welded into the steel beam's flange pocket (top flange, web, bottom flange, both faces); seat tabs through the slots, welded all around	E70XX fillets per the weld table
2	3/4" x 11" hex bolts (A307) with nuts	through the side plates and the beam
2	Side plates 3/8 x 17-11/16 x 11-1/4 in (A36)	41.5 lb
1	Seat plate (tabbed) 1-1/4 x 10-1/8 x 6 in (A36)	20.2 lb

Side plates	2 × 3/4" bolts through the beam 4-7/8 in past the flange tips

WELD (E70XX FILLET)	SIZE	LENGTH	NEEDS	MIN / MAX	
Each side plate to the steel beam: top flange, web and bottom flange, both faces	3/16	23-15/16	0.029	3/16 / 3/8	OK
Seat tab through each side plate, all around at its outside face	3/16	8-1/2	0.071	3/16 / 1-1/4	OK

WOOD (NDS 2018) 48%: Beam bearing on the seat

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Beam bearing on the seat Fc-perp' 650 psi x 8-3/4 x 6 in (the seat past the beam end gap)	NDS 3.10.1	D+S C_D 1.15	17,872	34,125	48%	OK
Side-plate bolts in the beam: lateral	NDS 12.3, 11.3.1	D + H C_D 1	1,033	5,182	80%	OK
Beam: row tear-out s_crit = 4-7/8 in	NDS Appendix E.3	D + H C_D 1	1,033	16,278	94%	OK
Beam: group tear-out A group-net = 12.58 in2	NDS Appendix E.4	D + H C_D 1	1,033	21,975	95%	OK
Beam: net section tension An = 143.28 in2	NDS 3.1.2, 3.8.1	D + H C_D 1	1,033	157,609	99%	OK

STEEL (AISC 360-16) 19%: Side plates: the strip under the slot, bending (each)

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Side plates: the strip under the slot, bending (each) lb-in: the tab's load over the 3-1/16 in slot on a 1-1/8 in strip, its ends held by the 1-1/2 in shoulders beside the slot (their stiffness)	F11	D+S C_D 1.15	2,080	2,558	19%	OK

Side plates: the shoulder beside the slot, tension + bending (each) 1-1/2 in wide at the flange tips: 2080 lb-in holding the strip's end, 4468 lb hanging from it	H1-1	D+S C_D 1.15	1	1	20%	OK
Seat plate: bending across the side plates lb-in per inch: the beam's bearing over 3 in, spanning 8-7/8 in between the tabs	F11 (plate strip)	D+S C_D 1.15	6,702	8,421	20%	OK
Side plates: the strip under the slot, shear (each end)	J4.2(a)	D+S C_D 1.15	4,468	6,075	26%	OK
Seat tabs: bearing on the slot's bottom edge (each) 3 in tab on the 3/8 in side plate	J4.4 (compression yielding)	D+S C_D 1.15	8,936	24,251	63%	OK
Steel beam: flange shear, torsion + bending psi; St. Venant 5683, warping 426, its own shear 489	H3.3(b); Design Guide 9	D+S + H C_D 1.15	6,597	17,964	63%	OK
Steel beam: bending + warping stress at the hanger psi; torque 135.3 kip-in at 19 ft of a 32.08 ft span, ends torsionally pinned (DG9 Case 3, a = 64 in): warping 9543, its own bending 0	H3.3(a); Design Guide 9	D+S + H C_D 1.15	9,543	29,940	68%	OK
Side plates: the shoulder beside the slot, shear (each) 1-1/2 in wide, 1-5/16 in tall (the slot)	J4.2(a)	D+S C_D 1.15	0	1	70%	OK
Steel beam: web shear, torsion + bending psi; St. Venant 3173, its own shear 2094	H3.3(b); Design Guide 9	D+S + H C_D 1.15	5,267	17,964	71%	OK
Seat plate: shear at each tab 3 in tab x 1-1/4 in	J4.2(a)	D+S C_D 1.15	8,936	54,000	83%	OK
Side plates: base metal at the welds to the steel beam lb per inch, both fillets into the plate	J4.2(a)	worst	862	5,400	84%	OK
Side plates: shear rupture through the cut-in mark (each) 11-5/8 in of plate left at the worst section through the mark	J4.2(b)	D+S C_D 1.15	8,936	75,872	88%	OK
Side plates: shear at the flange tips (each)	J4.2(a)	D+S C_D 1.15	8,936	95,445	91%	OK
Steel beam: web at the side-plate welds lb per inch: this plate's two fillets plus the far bracket's (Beam #27 2), back to back on the web	J4.2(b)	worst	1,220	13,065	91%	OK
Side plates: shear rupture at the slot (each)	J4.2(b)	D+S C_D 1.15	8,936	106,765	92%	OK

Side plates: bending through the cut-in mark (net section, each) lb-in; taken at the flange tips; plastic modulus 21.45 in3 at the worst section	F11	D+S + H C_D 1.15	28,949	389,455	93%	OK
Side plates: bending at the flange tips (each) lb-in; seat reaction 3 in out, F11-2 lateral-torsional (Lb 6 in, Cb 1: taken unbraced); pull-out added as an equivalent moment	F11, H1-1b	D+S + H C_D 1.15	28,731	531,811	95%	OK
Side-plate bolts: shear (A307, double shear)	J3.6	D + H C_D 1	1,033	23,856	96%	OK
Side plates: bolt bearing and tear-out (each)	J3.10(a)	D + H C_D 1	517	18,759	97%	OK
Side plates: bending at the slot (net section, each) lb-in; plastic modulus 25.65 in3 net of the slot	F11	D+S C_D 1.15	13,683	553,010	98%	OK
Steel beam: top flange bending under a side plate lb, the plate's weld line pushing on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	2,197	134,731	98%	OK
Steel beam: bottom flange bending under a side plate lb, the plate's weld line pulling on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	2,197	134,731	98%	OK
Steel beam: web local yielding at the top flange lb; one side plate	J10.2	D+S + H C_D 1.15	2,197	187,042	99%	OK
Steel beam: web local yielding at the bottom flange lb; one side plate	J10.2	D+S + H C_D 1.15	2,197	187,042	99%	OK
Steel beam: web crippling at the top flange lb, one side plate	J10.3	D+S + H C_D 1.15	2,197	296,402	99%	OK
Side plates: tension yielding at the bolts (each)	D2(a)	D + H C_D 1	517	117,620	100%	OK
Side plates: tension rupture at the bolts (each)	D2(b)	D + H C_D 1	517	139,200	100%	OK

▾ WELDS (AISC J2) 62%: Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/2 in long)

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/2 in long) lb per inch per fillet; min 3/16, max 1-1/4	J2.4, Table J2.4	worst	1,051	2,784	62%	OK

Each side plate to the steel beam: top flange, web and bottom flange, both faces (3/16 in fillet, 23-15/16 in long) lb per inch per fillet; min 3/16, max 3/8	J2.4, Table J2.4	worst	431	2,784	85%		OK

▾ SPACING, EDGE, END DISTANCE, PENETRATION all met

MEMBER	REQUIREMENT	REFERENCE	PROVIDED	REQUIRED	MINIMUM	C_Δ	
Side plates	Row spacing in plate	AISC J3.3	2-1/4 in	2-1/4 in	2 in		OK
Side plates	End distance in plate	AISC Table J3.4	1-1/8 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	6-1/2 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	6-1/2 in	1 in			OK
Beam	End distance, parallel tension	Table 12.5.1A	4-7/8 in	5-1/4 in	2-5/8 in	0.929	OK
Beam	Edge distance, parallel, edge 1 l/D = 11.7	Table 12.5.1C	6-1/2 in	1-1/8 in			OK
Beam	Edge distance, parallel, edge 2 l/D = 11.7	Table 12.5.1C	9-1/4 in	1-1/8 in			OK
Beam	Spacing between rows, parallel	Table 12.5.1D	2-1/4 in	1-1/8 in			OK
Beam	Outermost fasteners across the grain unless the detail lets the wood shrink (slotted holes, separate plates)	NDS Table 12.5.1F	2-1/4 in	at most 10 in			OK
Seat	Seat bearing (past the beam end gap)	minimum (fabrication)	6 in	1-1/2 in			OK
Side plates	Side bolts fit alongside the beam	AISC J3.4 / 1.5D	15-5/16 in	4-1/2 in			OK
Side plates	Side plate under the slot	fabrication	1-1/8 in	1/2 in			OK
Seat	Seat tab between the shoulders	fabrication	3 in	1 in			OK
Side plates	Side-plate bolts (two at least: his standard)	standard	2	2			OK

▾ SIDE-PLATE BOLTS IN THE CARRIED BEAM (NDS 12.3)

mode IIIs, 5,182 lb for 2

MODE	WHAT YIELDS	Z (LB)
IIIs	one hinge in the fastener, side member crushes	2,790
IV	two hinges in the fastener	3,087
Im	main member bearing (crushing)	7,681
Is	side member bearing (crushing)	10,228

D in equations	627/1000 in root diameter Dr = 0.627 in: the threads bear in the 3/8 in side plate at the nut, more than 1/4 of it (12.3.7.2)
l_s / l_m	3/8 / 8-3/4 in
F_{es} / F_{em}	87,000 / 5,600 psi
C_M C_t C_g C_Δ	1 · 1 · 1.000 · 0.929

Group, C_D 1.0 5,182 lb (2 fasteners)

LOAD CASES

CASE	P (LB)	H (LB)	C_D
D	3,022	0	0.9
D + H	3,022	1,033	1
D+L	5,817	0	1
D+L + H	5,817	1,033	1
D+S	17,872	0	1.15
D+S + H	17,872	1,033	1.15

Seat plate: one way across between the side plates, carried on its tabs (pinned), the bearing over the tab length. Beam Fc-perp' 650 psi.

NOTES AND LIMITS

- Pull-out H = 1,033 lb: 5% of D + L + S (ASCE 7 1.4.4 minimum tie, snow counted), with each gravity combination
- Bracket: two 3/8 in side plates fill the W18x130's flange pocket (the clear 16-7/8 in between the flanges, 5-1/4 in out from the web, corners clipped 7/8 in for the fillets), welded to the top flange, web and bottom flange, both faces, and run 6 in past the flange tips; the 1-1/4 in seat's tabs pass through a slot in each side plate and bear on its bottom edge, welded all around where they come through
- The glulam ends at the flange tips, 0 in off them (not notched), and bears on 6 in of the seat
- Outside the flange tips the side plates step down 3/4 in below the bottom flange's top: 1-1/8 in of plate under the slot to carry the tab
- Side plate bending at the flange tips is taken as an unbraced cantilever (F11, Lb = 6 in, Cb = 1), though the seat and the side bolts brace it
- The seat tabs bear on the slots (the gravity load does not rely on the tab welds), and the tab welds alone could carry it too
- Steel beam torsion: 135.3 kip-in at 19 ft of its 32.08 ft span (D+S + H), ends torsionally pinned, no restraint between them taken -- net of Beam #27 2's dead load hung back to back; it twists 2.93 deg at the hanger, the beam end dropping 0.440 in
- The web's out-of-plane bending at the side-plate welds is not taken: each side plate is welded full depth to both flanges, which take its moment as a couple in their own plane
- Cut-in mark BM 28-1: stencil block letters 1-13/16 in tall cut through both side plates in the flange pocket, reading bottom to top, 9-3/4 in long -- sized for a plasma's worst kerf (0.10 in): every web of plate between cuts at least 3/16 in, so nothing is closed in and nothing drops out, the plate's corners at the letters rounded 1/16 in (AISC M2.2); the plates' net section through it is checked. One part makes both plates, so one mark reads from its plate's outside face and the other from the inside
- Uplift rating 3,710 lb at C_D 1.6 (as Simpson's 160): Beam: shear at the side bolts, uplift

Not checked here:

- Torsion from any other member hung on the steel beam
- The steel beam's own bending and shear capacity with this reaction (its own design)

Beam Hanger Design

Adams · Job 26-015 · Beam #29 1

10/7/2026
NDS 2018 (ASD) · AISC 360-16 · ASCE 7-16

PASSES · 5.7%

Governs: Seat plate: bending across the side plates under D+S

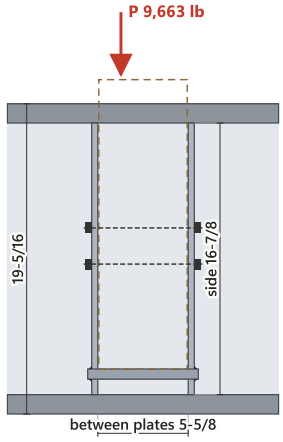
Designed here: side plate / seat length, seat thickness, side plate thickness, side-plate bolts, strip under the slot, slot shoulder

Uplift rating **2,330 lb** (C_D 1.6) · Beam: shear at the side bolts, uplift

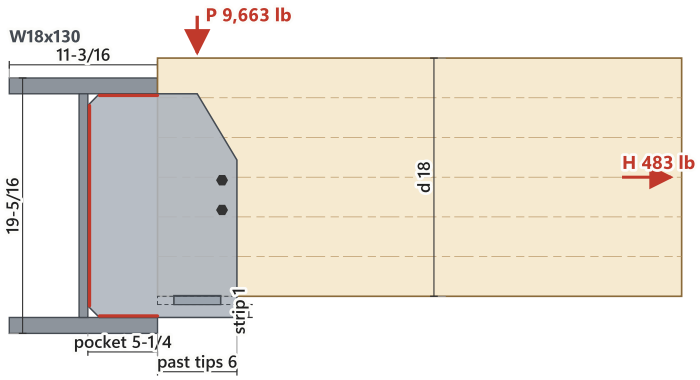
Side plates welded into the W18x130's flange pocket

DRAWING

FACE PLATE (BEAM END SHOWN DASHED)



SIDE VIEW



CONNECTOR

QTY	PLATE	L × W × T (IN)	WEIGHT
2	Side plates	11-1/4 × 16-7/8 × 3/8	40.5 lb
1	Seat plate (tabbed)	6 × 6-7/8 × 5/8	6.8 lb
	Steel	A36	**47.3 lb**

FASTENERS

Bracket	Side plates welded into the flange pocket (top flange, web, bottom flange) the seat's 3-1/2 in tabs through slots in them, 16-7/8 in clear between the flanges, 5-1/4 in pocket

MATERIAL LIST

QTY	ITEM	NOTE
1	Side plates shop-welded into the steel beam's flange pocket (top flange, web, bottom flange, both faces); seat tabs through the slots, welded all around	E70XX fillets per the weld table
2	3/4" x 7-1/2" hex bolts (A307) with nuts	through the side plates and the beam
2	Side plates 3/8 x 16-7/8 x 11-1/4 in (A36)	40.5 lb
1	Seat plate (tabbed) 5/8 x 6-7/8 x 6 in (A36)	6.8 lb

Side plates	2 × 3/4" bolts through the beam 4-7/8 in past the flange tips

WELD (E70XX FILLET)	SIZE	LENGTH	NEEDS	MIN / MAX	
Each side plate to the steel beam: top flange, web and bottom flange, both faces	3/16	23-15/16	0.016	3/16 / 3/8	OK
Seat tab through each side plate, all around at its outside face	3/16	8-1/4	0.039	3/16 / 5/8	OK

WOOD (NDS 2018) 55%: Beam bearing on the seat

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Beam bearing on the seat Fc-perp' 650 psi x 5-1/2 x 6 in (the seat past the beam end gap)	NDS 3.10.1	D+S C_D 1.15	9,663	21,450	55%	OK
Side-plate bolts in the beam: lateral	NDS 12.3, 11.3.1	D + H C_D 1	483	5,182	91%	OK
Beam: row tear-out s_crit = 4-7/8 in	NDS Appendix E.3	D + H C_D 1	483	10,232	95%	OK
Beam: group tear-out A group-net = 7.91 in2	NDS Appendix E.4	D + H C_D 1	483	13,813	97%	OK
Beam: net section tension An = 90.06 in2	NDS 3.1.2, 3.8.1	D + H C_D 1	483	99,069	100%	OK

STEEL (AISC 360-16) 5.7%: Seat plate: bending across the side plates

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Seat plate: bending across the side plates lb-in per inch: the beam's bearing over 3-1/2 in, spanning 5-5/8 in between the tabs	F11 (plate strip)	D+S C_D 1.15	1,984	2,105	5.7%	OK

Steel beam: bending + warping stress at the hanger psi; torque 64.3 kip-in at 14.5 ft of a 31.08 ft span, ends torsionally pinned (DG9 Case 3, a = 64 in): warping 4542, its own bending 18961	H3.3(a); Design Guide 9	D+S + H C_D 1.15	23,503	29,940	21%	OK
Side plates: the strip under the slot, bending (each) lb-in: the tab's load over the 3-9/16 in slot on a 1 in strip, its ends held by the 1-1/4 in shoulders beside the slot (their stiffness)	F11	D+S C_D 1.15	1,499	1,921	22%	OK
Side plates: the shoulder beside the slot, tension + bending (each) 1-1/4 in wide at the plate's end: 1305 lb-in holding the strip's end, 2361 lb hanging from it	H1-1	D+S C_D 1.15	1	1	37%	OK
Side plates: the strip under the slot, shear (each end)	J4.2(a)	D+S C_D 1.15	2,470	5,265	53%	OK
Steel beam: web shear, torsion + bending psi; St. Venant 1392, its own shear 6806	H3.3(b); Design Guide 9	D+S + H C_D 1.15	8,199	17,964	54%	OK
Side plates: the shoulder beside the slot, shear (each) 1-1/4 in wide, 11/16 in tall (the slot)	J4.2(a)	D+S C_D 1.15	0	1	57%	OK
Steel beam: flange shear, torsion + bending psi; St. Venant 2494, warping 201, its own shear 1588	H3.3(b); Design Guide 9	D+S + H C_D 1.15	4,283	17,964	76%	OK
Seat tabs: bearing on the slot's bottom edge (each) 3-1/2 in tab on the 3/8 in side plate	J4.4 (compression yielding)	D+S C_D 1.15	4,832	28,293	83%	OK
Seat plate: shear at each tab 3-1/2 in tab x 5/8 in	J4.2(a)	D+S C_D 1.15	4,832	31,500	85%	OK
Side plates: base metal at the welds to the steel beam lb per inch, both fillets into the plate	J4.2(a)	worst	465	5,400	91%	OK
Steel beam: web at the side-plate welds lb per inch: this plate's two fillets plus the far bracket's (Beam #28 2), back to back on the web	J4.2(b)	worst	915	13,065	93%	OK
Side plates: shear rupture through the cut-in mark (each) 11-5/8 in of plate left at the worst section through the mark	J4.2(b)	D+S C_D 1.15	4,832	75,872	94%	OK
Side plates: shear at the flange tips (each)	J4.2(a)	D+S C_D 1.15	4,832	91,260	95%	OK
Side plates: shear rupture at the slot (each)	J4.2(b)	D+S C_D 1.15	4,832	105,787	95%	OK

Side plates: bending through the cut-in mark (net section, each) lb-in; taken at the flange tips; plastic modulus 21.45 in3 at the worst section	F11	D+S + H C_D 1.15	15,504	392,922	96%	OK
Side plates: bending at the flange tips (each) lb-in; seat reaction 3 in out, F11-2 lateral-torsional (Lb 6 in, Cb 1: taken unbraced); pull-out added as an equivalent moment	F11, H1-1b	D+S + H C_D 1.15	15,362	490,524	97%	OK
Side-plate bolts: shear (A307, double shear)	J3.6	D + H C_D 1	483	23,856	98%	OK
Side plates: bending at the slot (net section, each) lb-in; plastic modulus 24.89 in3 net of the slot	F11	D+S C_D 1.15	8,606	536,618	98%	OK
Side plates: bolt bearing and tear-out (each)	J3.10(a)	D + H C_D 1	242	18,759	99%	OK
Steel beam: top flange bending under a side plate lb, the plate's weld line pushing on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	1,187	134,731	99%	OK
Steel beam: bottom flange bending under a side plate lb, the plate's weld line pulling on the flange	J10.1 (half the flange)	D+S + H C_D 1.15	1,187	134,731	99%	OK
Steel beam: web local yielding at the top flange lb; both side plates, 6 in apart: their spreads overlap	J10.2	D+S + H C_D 1.15	2,375	321,042	99%	OK
Steel beam: web local yielding at the bottom flange lb; both side plates, 6 in apart: their spreads overlap	J10.2	D+S + H C_D 1.15	2,375	321,042	99%	OK
Steel beam: web crippling at the top flange lb, one side plate	J10.3	D+S + H C_D 1.15	1,187	296,402	100%	OK
Side plates: tension yielding at the bolts (each)	D2(a)	D + H C_D 1	242	111,355	100%	OK
Side plates: tension rupture at the bolts (each)	D2(b)	D + H C_D 1	242	130,772	100%	OK

▾ WELDS (AISC J2) 79%: Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/4 in long)

CHECK	REFERENCE	LOAD CASE	DEMAND	ALLOWABLE	ADEQUACY	
Seat tab through each side plate, all around at its outside face (3/16 in fillet, 8-1/4 in long) lb per inch per fillet; min 3/16, max 5/8	J2.4, Table J2.4	worst	586	2,784	79%	OK

Each side plate to the steel beam: top flange, web and bottom flange, both faces (3/16 in fillet, 23-15/16 in long) lb per inch per fillet; min 3/16, max 3/8	J2.4, Table J2.4	worst	232	2,784	92%		OK

▾ SPACING, EDGE, END DISTANCE, PENETRATION all met

MEMBER	REQUIREMENT	REFERENCE	PROVIDED	REQUIRED	MINIMUM	C_Δ	
Side plates	Row spacing in plate	AISC J3.3	2-1/4 in	2-1/4 in	2 in		OK
Side plates	End distance in plate	AISC Table J3.4	1-1/8 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	6-1/2 in	1 in			OK
Side plates	Edge distance in plate	AISC Table J3.4	6-1/2 in	1 in			OK
Beam	End distance, parallel tension	Table 12.5.1A	4-7/8 in	5-1/4 in	2-5/8 in	0.929	OK
Beam	Edge distance, parallel, edge 1 l/D = 7.3	Table 12.5.1C	6-1/2 in	1-1/8 in			OK
Beam	Edge distance, parallel, edge 2 l/D = 7.3	Table 12.5.1C	9-1/4 in	1-1/8 in			OK
Beam	Spacing between rows, parallel	Table 12.5.1D	2-1/4 in	1-1/8 in			OK
Beam	Outermost fasteners across the grain unless the detail lets the wood shrink (slotted holes, separate plates)	NDS Table 12.5.1F	2-1/4 in	at most 10 in			OK
Seat	Seat bearing (past the beam end gap)	minimum (fabrication)	6 in	1-1/2 in			OK
Side plates	Side bolts fit alongside the beam	AISC J3.4 / 1.5D	15-5/16 in	4-1/2 in			OK
Side plates	Side plate under the slot	fabrication	1 in	1/2 in			OK
Seat	Seat tab between the shoulders	fabrication	3-1/2 in	1 in			OK
Side plates	Side-plate bolts (two at least: his standard)	standard	2	2			OK

▾ SIDE-PLATE BOLTS IN THE CARRIED BEAM (NDS 12.3)

mode IIIs, 5,182 lb for 2

MODE	WHAT YIELDS	Z (LB)
IIIs	one hinge in the fastener, side member crushes	2,790
IV	two hinges in the fastener	3,087
Im	main member bearing (crushing)	4,828
Is	side member bearing (crushing)	10,228

D in equations	627/1000 in root diameter Dr = 0.627 in: the threads bear in the 3/8 in side plate at the nut, more than 1/4 of it (12.3.7.2)
l_s / l_m	3/8 / 5-1/2 in
F_{es} / F_{em}	87,000 / 5,600 psi
C_M C_t C_g C_Δ	1 · 1 · 1.000 · 0.929

Group, C_D 1.0 5,182 lb (2 fasteners)

LOAD CASES

CASE	P (LB)	H (LB)	C_D
D	1,278	0	0.9
D + H	1,278	483	1
D+S	9,663	0	1.15
D+S + H	9,663	483	1.15

Seat plate: one way across between the side plates, carried on its tabs (pinned), the bearing over the tab length. Beam Fc-perp' 650 psi.

NOTES AND LIMITS

- Pull-out H = 483 lb: 5% of D + L + S (ASCE 7 1.4.4 minimum tie, snow counted), with each gravity combination
- Bracket: two 3/8 in side plates fill the W18x130's flange pocket (the clear 16-7/8 in between the flanges, 5-1/4 in out from the web, corners clipped 7/8 in for the fillets), welded to the top flange, web and bottom flange, both faces, and run 6 in past the flange tips; the 5/8 in seat's tabs pass through a slot in each side plate and bear on its bottom edge, welded all around where they come through
- The glulam ends at the flange tips, 0 in off them (not notched), and bears on 6 in of the seat
- Side plate bending at the flange tips is taken as an unbraced cantilever (F11, Lb = 6 in, Cb = 1), though the seat and the side bolts brace it
- The seat tabs bear on the slots (the gravity load does not rely on the tab welds), and the tab welds alone could carry it too
- Steel beam torsion: 64.3 kip-in at 14.5 ft of its 31.08 ft span (D+S + H), ends torsionally pinned, no restraint between them taken -- net of Beam #28 2's dead load hung back to back; it twists 1.39 deg at the hanger, the beam end dropping 0.208 in
- The web's out-of-plane bending at the side-plate welds is not taken: each side plate is welded full depth to both flanges, which take its moment as a couple in their own plane
- Cut-in mark BM 29-1: stencil block letters 1-13/16 in tall cut through both side plates in the flange pocket, reading bottom to top, 9-3/4 in long -- sized for a plasma's worst kerf (0.10 in): every web of plate between cuts at least 3/16 in, so nothing is closed in and nothing drops out, the plate's corners at the letters rounded 1/16 in (AISC M2.2); the plates' net section through it is checked. One part makes both plates, so one mark reads from its plate's outside face and the other from the inside
- Uplift rating 2,330 lb at C_D 1.6 (as Simpson's 160): Beam: shear at the side bolts, uplift

Not checked here:

- Torsion from any other member hung on the steel beam
- The steel beam's own bending and shear capacity with this reaction (its own design)

Adjustable and Standoff Post Bases

Additional standoff bases are on p. 360.

The AB series of retrofit adjustable post bases provide a 1" standoff for the post, are slotted for adjustability and can be installed with nails, Strong-Drive® SD Connector screws or bolts (ABU). Depending on the application needs, these adjustable standoff post bases are designed for versatility, cost-effectiveness and maximum uplift performance.

Features:

- The slot in the base enables flexible positioning around the anchor bolt, making precise post placement easier
- The 1" standoff helps prevent rot at the end of the post and meets code requirements for structural posts installed in basements or exposed to weather or water splash

Material: Varies (see table)

Finish: ZMAX® coating and some in stainless steel

Installation:

- Use all specified fasteners; see General Notes.
- See our *Anchoring, Fastening, Restoration and Strengthening Systems for Concrete and Masonry* catalog, or visit **strongtie.com** for retrofit anchor options, such as Titen HD®, Stainless-Steel Titen HD or SET-3G®.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non-top-supported installations (such as fences or unbraced carports).
- Place the base, cut washer(s) or load transfer plate(s) and nut(s) on the anchor bolt(s). Make any necessary adjustments to post placement and tighten the nut securely on the anchor bolt.
- Base anchors must extend less than 1" from concrete to avoid interference with standoff.
- See **strongtie.com** for information on hollow column installation.

ABW

Place the standoff base and then the post in the ABW and fasten on three vertical sides, using nails or Strong-Drive SD Connector screws

– Bend up the fourth side of the ABW and fasten using the correct fasteners

ABU

Place the standoff base and then the post in the ABU

– Fasten using nails or Strong-Drive SD Connector screws or bolts (ABU88Z, ABU1010Z, ABU1212Z – SDS optional)

ABA

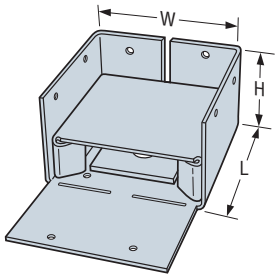
Place the post in the ABA

– Fasten using nails or Strong-Drive SD Connector screws

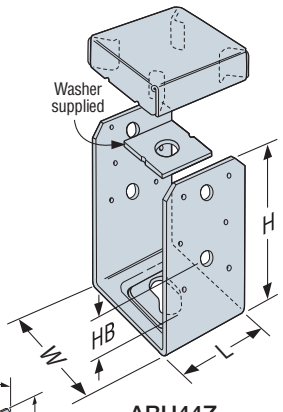
Codes: See p. 12 for Code Reference Key Chart

Web Applications: Visit **app.strongtie.com/pfd** to access our Post-to-Foundation Designer web application.

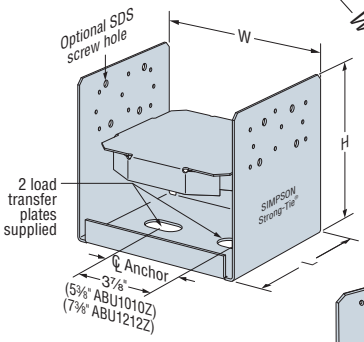
SD Many of these products are approved for installation with Strong-Drive SD Connector screws. See pp. 380–382 for more information.



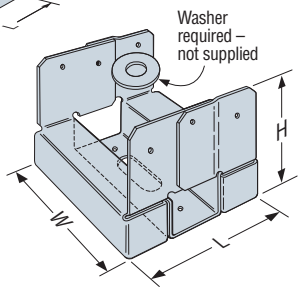
ABWZ



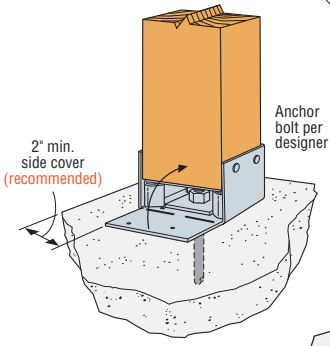
ABU44Z
(other sizes similar)



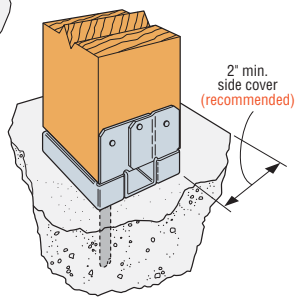
ABU88Z
(other sizes similar)



ABA44Z
(other sizes similar)



Typical ABWZ Installation

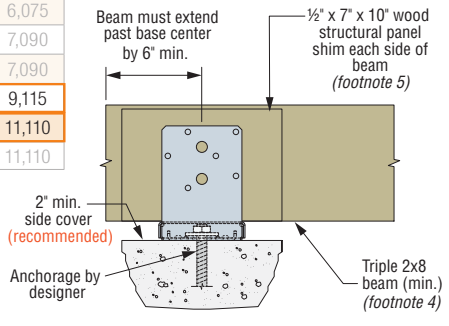


Typical ABA44Z Installation

Allowable Loads — Beam Installation

Model No.	Nominal Beam Size	Material (ga.)		Dimensions (in.)			Fasteners (in.)		DF/SP Allowable Loads		SPF/HF Allowable Loads	
		Base	Strap	W	L	H	Anchor Dia.	Nails	Uplift (160)	Down (100)	Uplift (160)	Down (100)
ABA24-2Z	Double 2x	16	16	3⅛	3⅜	3⅛	½	(6) 0.148 x 2½	640	4,425	585	3,140
ABU46Z	Double 2x	12	12	3⅜	5	7	⅝	(12) 0.162 x 3½	2,030	8,475	1,820	6,075
ABU46Z	4x	12	12	3⅜	5	7	⅝	(12) 0.162 x 3½	2,155	9,890	1,850	7,090
ABU46RZ	Rough 4x	12	12	4⅛	5	6¾	⅝	(12) 0.162 x 3½	2,155	9,890	1,850	7,090
ABU66Z	Triple 2x	12	10	5½	5	6⅛	⅝	(12) 0.162 x 3½	1,405	12,715	1,165	9,115
ABU66Z	6x	12	10	5½	5	6⅛	⅝	(12) 0.162 x 3½	1,905	12,920	1,640	11,110
ABU66RZ	Rough 6x	12	10	6⅛	5	5 13⁄16	⅝	(12) 0.162 x 3½	1,905	12,920	1,640	11,110

1. Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern.
2. Downloads may not be increased for short-term loading.
3. Specifier is to design concrete and anchorage for uplift capacity.
4. Beam depth must be a minimum of 7¼".
5. Shims are required for ABU46Z double 2x (1 shim) and ABU66Z triple 2x (2 shims) installations as shown in the illustration. Additional fastening of shim to beam is not required.
6. **Fasteners:** Nail dimensions are listed diameter by length. See pp. 25–26 for fastener information.



ABU66Z Beam Installation

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Column Base (cont.)

These products are available with additional corrosion protection. For more information, see pp. 13–19. SS For stainless-steel fasteners, see p. 25.

	Model No.	Nominal Column Size	Dimensions (in.)		Column Fasteners		DF/SP/SPF/HF Allowable Uplift Loads (160)				Download (100)	Code Ref.
					Bolts		Wind and SDC A&B		SDC C–F			
			W_1	W_2	Qty.	Dia. (in.)	Uncracked	Cracked	Uncracked	Cracked		
SS	CB44	4x4	3⁹⁄₁₆	3⁹⁄₁₆	2	⅝	6,110	4,510	5,640	3,945	19,020	
SS	CB46	4x6	3⁹⁄₁₆	5½	2	⅝	6,110	4,510	5,640	3,945	28,585	IBC, FL, LA
	CB48	4x8	3⁹⁄₁₆	7½	2	⅝	6,110	4,510	5,640	3,945	35,970	
	CB5-4.5	Glulam	4½	5⅛	2	⅝	6110	4,510	5,640	3,945	38,055	
	CB5-6	Glulam	6	5⅛	2	⅝	6110	4,510	5,640	3,945	50,740	—
	CB64	6x4	5½	3⁹⁄₁₆	2	⅝	6,110	4,510	5,640	3,945	28,585	
SS	CB66	6x6	5½	5½	2	⅝	6,110	4,510	5,640	3,945	30,250	IBC, FL, LA
	CB6-7	6x	5½	7	2	⅝	6,110	4,510	5,640	3,945	38,500	—
	CB68	6x8	5½	7½	2	⅝	6,110	4,510	5,640	3,945	41,250	IBC, FL, LA
	CB610	6x10	5½	9½	2	⅝	6,445	4,510	5,640	3,945	52,250	
	CB612	6x12	5½	11½	2	⅝	6,445	4,510	5,640	3,945	63,250	
	CB7 1/8-4	PSL	7⅛	3½	2	¾	6,445	4,510	5,640	3,945	41,145	
	CB7 1/8-6	PSL	7⅛	5½	2	¾	6,445	4,510	5,640	3,945	64,660	
	CB7 1/8-7	PSL	7⅛	7	2	¾	6,445	4,510	5,640	3,945	78,410	
	CB7-6	Glulam	6	6¾	2	¾	6,445	4,510	5,640	3,945	66,825	
	CB7-7.5	Glulam	7½	6¾	2	¾	6,445	4,510	5,640	3,945	79,345	
	CB7-9	Glulam	9	6¾	2	¾	6,445	4,510	5,640	3,945	91,620	
	CB7-10.5	Glulam	10½	6¾	2	¾	6,445	4,510	5,640	3,945	103,790	
	CB86	8x6	7½	5½	2	¾	6,110	4,510	5,640	3,945	41,250	—
	CB88	8x8	7½	7½	2	¾	6,445	4,510	5,640	3,945	56,250	
	CB810	8x10	7½	9½	2	¾	6,445	4,510	5,640	3,945	71,250	
	CB812	8x12	7½	11½	2	¾	6,445	4,510	5,640	3,945	86,250	
	CB9-6	Glulam	6	8¾	2	¾	6,445	4,510	5,640	3,945	81,940	
	CB9-7.5	Glulam	7½	8¾	2	¾	6,445	4,510	5,640	3,945	97,165	
	CB9-9	Glulam	9	8¾	2	¾	6,445	4,510	5,640	3,945	112,200	
	CB9-10.5	Glulam	10½	8¾	2	¾	6,445	4,510	5,640	3,945	127,105	
	CB1010	10x10	9½	9½	2	¾	6,445	4,510	5,640	3,945	90,250	
	CB1012	10x12	9½	11½	2	¾	6,445	4,510	5,640	3,945	109,250	
	CB1212	12x12	11½	11½	2	¾	6,445	4,510	5,640	3,945	132,250	

1. Uplift loads may not be increased for duration of load.
2. Concrete shall have a minimum compressive strength of f'_c = 2,500 psi.
3. Multiply seismic and wind ASD uplift and lateral load values by 1.43 or 1.67, respectively, to obtain LRFD capacities.
4. In accordance with IBC, Section 1613.1, detached one- and two-family dwellings in Seismic Design Category (SDC) C may use “Wind and SDC A&B” allowable loads.
5. Downloads shall be reduced where limited by capacity of the post.
6. Designer is responsible for concrete design.
7. All references to bolts are for structural quality through bolts (not lag screws or carriage bolts) equal to or better than ASTM A307, Grade A.
8. Tabulated allowable download is based on capacity determined from following compression-parallel-to-grain stress (F_{cll}) for wood post: 1,650 psi for glulam, 1,350 psi for 4"-wide sawn lumber, and 1,000 psi for 5"-wide or wider sawn lumber, as applicable.

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Post Caps

The BCS allows for the connection of (2) 2x's to a 4x post or (3) 2x's to a 6x post. Double-shear nailing between beam and post gives added strength. The BC series offers dual purpose post cap/base for light cap or base connections.

Material: 18 gauge

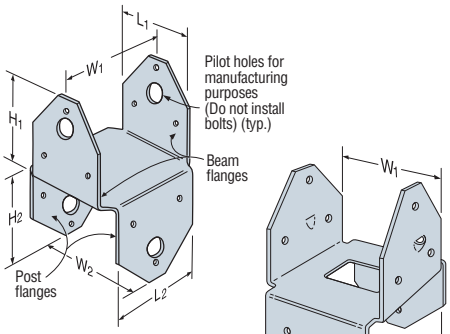
Finish: Galvanized. Some products available in ZMAX® coating.

Installation:

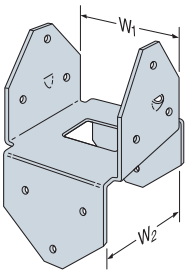
- Use all specified fasteners; see General Notes
- Do not install bolts into pilot holes
- BCS — Install dome nails on beam; drive nails at an angle through the beam into the post below to achieve the table loads
- BC — Install with 0.162" x 3½" nails or 0.162" x 2½" nails
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non-top-supported installations (such as fences or unbraced carports)
- To tie multiple 2x members together, the designer must determine the fasteners required to join members to act as one unit without splitting the wood

Codes: See p. 12 for Code Reference Key Chart

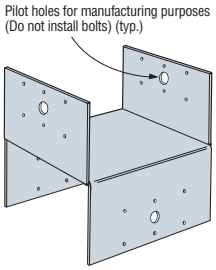
Web Applications: Visit **app.strongtie.com/pbs** to access our Post-to-Beam Selector web application.



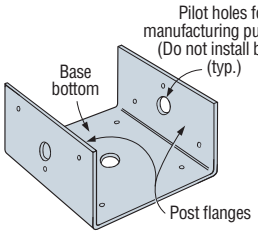
BC4 Cap/Base
(BC6 similar)



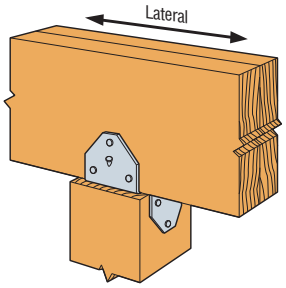
BCS2-2/4



BC8 Cap/Base



BC60 Half Base
(other similar)



Typical BCS Installation

These products are available with additional corrosion protection. For more information, see pp. 13–19.

SS For stainless-steel fasteners, see p. 25.

SD Many of these products are approved for installation with Strong-Drive® SD Connector screws. See pp. 380–382 for more information.

	Model No.	Dimensions (in.)						Fasteners (in.)			DF/SP Allowable Loads (160)		Code Ref.
		W_1	W_2	L_1	L_2	H_1	H_2	Beam Flange	Post Flange	Base Bottom	Uplift	Lateral	
	Caps												
SS	BC4	3⁹⁄₁₆	3⁹⁄₁₆	2⅞	2⅞	3	3	(6) 0.162 x 3½	(6) 0.162 x 3½	—	605	1,000	IBC, FL, LA
	BC46	3⁹⁄₁₆	5½	4⅞	2⅞	3½	2½	(12) 0.162 x 3½	(6) 0.162 x 3½	—	945	1,000	
	BC4R	4	4	4	4	3	3	(12) 0.162 x 3½	(12) 0.162 x 3½	—	605	1,000	
SS	BC6	5½	5½	4⅜	4⅜	3⅜	3⅜	(12) 0.162 x 3½	(12) 0.162 x 3½	—	1,185	1,825	
	BC6R	6	6	6	6	3	3	(12) 0.162 x 3½	(12) 0.162 x 3½	—	1,185	1,825	
	BC8	7½	7½	7½	7½	4	4	(12) 0.162 x 3½	(12) 0.162 x 3½	—	1,660	1,825	
SS	BCS2-2/4	3⅛	3⁹⁄₁₆	2⅞	2⅞	2¹⁵⁄₁₆	2¹⁵⁄₁₆	(8) 0.148 x 3	(6) 0.148 x 3	—	895	890	
SS	BCS2-3/6	4⅝	5⁹⁄₁₆	4⅜	2⅞	3⁵⁄₁₆	2¹⁵⁄₁₆	(12) 0.162 x 3½	(6) 0.162 x 3½	—	895	1,330	
	Bases												
SS	BC40	3⁹⁄₁₆	—	3¼	—	2¼	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	510	735	
	BC40R	4	—	4	—	3	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	510	735	
	BC460	5½	—	3⅜	—	3	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	450	735	
	BC60	5½	—	5½	—	3	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	450	735	—
	BC60R	6	—	6	—	3	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	450	735	
	BC80	7½	—	7½	—	4	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	450	735	
	BC80R	8	—	8	—	4	—	—	(6) 0.162 x 3½	(4) 0.162 x 3½	450	735	

1. Allowable loads have been increased for wind or earthquake loading with no further increase allowed. Reduce where other loads govern.
2. Structural composite lumber columns have sides that show either the wide face or the edges of the lumber strands/veneers known as the narrow face. Values in the tables reflect installation into the wide face. See technical bulletin T-C-SCLCLM at **strongtie.com** for load reductions resulting from narrow-face installations.
3. Base allowable loads assume that nails have full penetration into the supporting member. Loads do not apply to end-grain post installations.
4. Spliced beams, where the ends of two beams are supported by the wood post and connected to the BC post cap connector, are not permitted.
5. **Fasteners:** Nail dimensions are listed diameter by length. See pp. 25–26 for fastener information.

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Column Caps (cont.)

These products are available with additional corrosion protection. For more information, see pp. 13–19.

SS For stainless-steel fasteners, see p. 25.

	Model No.	Beam Width (in.)	Dimensions (in.)					No. of ¼" x 2½" SDS Screws			DF/SP Allowable Loads				Code Ref.	CCOQ/ECCOQ Model No. (No Legs)
			W_1	W_2	L		H	Beam		Post	CCQ		ECCQ			
					CCQ	ECCQ		CCQ	ECCQ		Uplift (160)	Down (100)	Uplift (160)	Down (100)		
SS	CCQ3-4SDS2.5	3⅛	3¼	3⅝	11	8½	7	16	14	14	5,370	16,980	3,465	6,125		CCOQ3-SDS2.5 ECCOQ3-SDS2.5
SS	CCQ3-6SDS2.5	3⅛	3¼	5½	11	8½	7	16	14	14	5,370	21,485	3,465	10,740		
SS	CCQ44SDS2.5	3½	3⅝	3⅝	11	8½	7	16	14	14	5,370	19,020	3,785	7,655		CCOQ4-SDS2.5 ECCOQ4-SDS2.5
SS	CCQ46SDS2.5	3½	3⅝	5½	11	8½	7	16	14	14	6,785	24,065	3,785	12,030		
SS	CCQ48SDS2.5	3½	3⅝	7½	11	8½	7	16	14	14	6,785	24,065	3,785	16,405		
	CCQ4.62-3.62SDS	4½	4⅝	3⅝	11	8½	7	16	14	14	5,370	23,390	3,785	9,845		CCOQ4.62-SDS2.5 ECCOQ4.62-SDS2.5
	CCQ4.62-4.62SDS	4½	4⅝	4⅝	11	8½	7	16	14	14	5,370	30,070	3,785	12,655		
	CCQ4.62-5.50SDS	4½	4⅝	5½	11	8½	7	16	14	14	6,785	30,940	3,785	15,470		
SS	CCQ5-4SDS2.5	5⅛	5¼	3⅝	11	8½	7	16	14	14	5,370	26,635	3,785	11,210		CCOQ5-SDS2.5 ECCOQ5-SDS2.5
SS	CCQ5-6SDS2.5	5⅛	5¼	5½	11	8½	7	16	14	14	6,785	28,190	5,355	17,615		
SS	CCQ5-8SDS2.5	5⅛	5¼	7½	11	8½	7	16	14	14	6,785	35,235	5,355	24,025		
SS	CCQ64SDS2.5	5¼, 5½	5½	3⅝	11	8½	7	16	14	14	5,370	28,585	3,785	12,030		
SS	CCQ66SDS2.5	5¼, 5½	5½	5½	11	8½	7	16	14	14	6,785	30,250	3,785	18,905		CCOQ6-SDS2.5 ECCOQ6-SDS2.5
SS	CCQ68SDS2.5	5¼, 5½	5½	7½	11	8½	7	16	14	14	6,785	37,815	3,785	25,780		
SS	CCQ6-7.13SDS2.5	5¼, 5½	5½	7⅛	11	8½	7	16	14	14	6,785	37,815	3,785	24,490		
SS	CCQ74SDS2.5	6¾	6⅞	3⅝	11	8½	7	16	14	14	5,370	33,490	3,785	15,355	IBC, FL, LA	CCOQ7-SDS2.5 ECCOQ7-SDS2.5
SS	CCQ76SDS2.5	6¾	6⅞	5½	11	8½	7	16	14	14	6,785	37,125	5,355	24,130		
	CCQ77SDS2.5	6¾	6⅞	6⅞	11	8½	7	16	14	14	6,785	48,265	5,355	29,615		
	CCQ78SDS2.5	6¾	6⅞	7½	11	8½	7	16	14	14	6,785	48,265	5,355	32,905		
SS	CCQ7.1-4SDS2.5	7	7⅛	3⅝	11	8½	7	16	14	14	5,370	34,730	3,785	18,375		CCOQ7.12-SDS2.5 ECCOQ7.12-SDS2.5
SS	CCQ7.1-6SDS2.5	7	7⅛	5½	11	8½	7	16	14	14	6,785	38,500	5,355	28,875		
	CCQ7.1-7.1SDS2.5	7	7⅛	7⅛	11	8½	7	16	14	14	6,785	57,750	5,355	36,750		
	CCQ7.1-8SDS2.5	7	7⅛	7½	11	8½	7	16	14	14	6,785	52,500	5,355	39,375		
	CCQ84SDS2.5	7½	7½	3⅝	11	8½	7	16	14	14	6,785	37,210	5,355	16,405		CCOQ8-SDS2.5 ECCOQ8-SDS2.5
	CCQ86SDS2.5	7½	7½	5½	11	8½	7	16	14	14	6,785	41,250	5,355	25,780		
	CCQ88SDS2.5	7½	7½	7½	11	8½	7	16	14	14	6,785	51,565	5,355	35,155		
	CCQ94SDS2.5	8¾	8⅞	3⅝	11	8½	7	16	14	14	6,785	47,545	5,355	19,905		CCOQ9-SDS2.5 ECCOQ9-SDS2.5
	CCQ96SDS2.5	8¾	8⅞	5½	11	8½	7	16	14	14	6,785	48,125	5,355	31,280		
	CCQ98SDS2.5	8¾	8⅞	7½	11	8½	7	16	14	14	6,785	62,565	5,355	42,655		
	CCQ106SDS2.5	9¼	9½	5½	11	8½	7	16	14	14	6,785	52,250	5,355	32,655		CCOQ10-SDS2.5 ECCOQ10-SDS2.5

1. Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern.
2. Downloads shall be reduced where limited by capacity of the post.
3. Uplift loads do not apply to spliced conditions. Spliced conditions must be detailed by the designer to transfer tension loads between spliced members by means other than the post cap.
4. Spliced conditions must be detailed by the designer to transfer tension loads between spliced members by means other than the column cap.
5. Column sides are assumed to be aligned in the same vertical plane as the beam sides. CCQ4.62 models assume a minimum 3½"-wide post.
6. Structural composite lumber columns have sides that show either the wide face or the edges of the lumber strands/veneers known as the narrow face. Values in the tables reflect installation into the wide face. See technical bulletin T-C-SCLCLM at **strongtie.com** for load reductions resulting from narrow-face installations.
7. Beam depth must be a minimum of 7".
8. For 5¼" engineered lumber, use 5½" models.
9. CCOQ and ECCOQ welded to a steel column will achieve maximum load listed for the beam and the post cap as CCQ and ECCQ. The steel column width shall match the beam width. Weld by designer.

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Face-Mount Hangers — Solid Sawn Lumber (DF/SP)

These products are available with additional corrosion protection. For more information, see pp. 13–19.

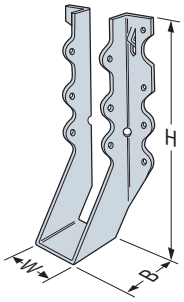
SS For stainless-steel fasteners, see p. 25.

SD Many of these products are approved for installation with Strong-Drive® SD Connector screws. See pp. 380–382 for more information.

Joist Size	Model No.	Ga.	Dimensions (in.) W	H	B	Min./ Max.	Fasteners (in.) Header	Joist	DF/SP Allowable Loads (lb.) Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Installed Cost Index (ICI)	Code Ref.
Sawn Lumber Sizes														
	U414	16	3⁹⁄₁₆	10	2	—	(16) 0.162 x 3½	(6) 0.148 x 3	990	2,305	2,610	2,815	Lowest	
4x16	HUS412	14	3⁹⁄₁₆	10¾	2	—	(10) 0.162 x 3½	(10) 0.162 x 3½	3,435	2,720	3,070	3,300	19%	
	HU416 / HUC416	14	3⁹⁄₁₆	13¹¹⁄₁₆	2½	Min.	(20) 0.162 x 3½	(8) 0.148 x 3	1,510	2,980	3,360	3,600	167%	
		14	3⁹⁄₁₆	13¹¹⁄₁₆	2½	Max.	(26) 0.162 x 3½	(12) 0.148 x 3	2,015	3,870	4,365	4,695	178%	
6x6	U66	16	5½	5	2	—	(8) 0.162 x 3½	(4) 0.148 x 3	535	1,150	1,305	1,410	*	
SS	HU66 / HUC66	14	5½	4³⁄₁₆	2½	Min.	(8) 0.162 x 3½	(4) 0.162 x 3½	895	1,190	1,345	1,440	*	
		14	5½	4³⁄₁₆	2½	Max.	(12) 0.162 x 3½	(6) 0.162 x 3½	1,345	1,785	2,015	2,165	*	
6x8	U66	16	5½	5	2	—	(8) 0.162 x 3½	(4) 0.148 x 3	535	1,150	1,305	1,410	*	
SS	HU68 / HUC68	14	5½	5¹³⁄₁₆	2½	Min.	(10) 0.162 x 3½	(4) 0.162 x 3½	895	1,490	1,680	1,800	*	
		14	5½	5¹³⁄₁₆	2½	Max.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,085	2,350	2,530	*	
6x10	U610	16	5½	8½	2	—	(14) 0.162 x 3½	(6) 0.148 x 3	990	2,015	2,280	2,465	*	
SS	HU610 / HUC610	14	5½	7⅝	2½	Min.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,085	2,350	2,520	*	
		14	5½	7⅝	2½	Max.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,680	3,020	3,250	*	
SS	HUCQ610-SDS	14	5½	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	4,680	5,185	5,185	*	
6x12	HU612 / HUC612	14	5½	9⅜	2½	Min.	(16) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,385	2,690	2,880	*	
SS		14	5½	9⅜	2½	Max.	(22) 0.162 x 3½	(8) 0.162 x 3½	1,795	3,275	3,695	3,970	*	
SS	HUCQ610-SDS	14	5½	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	4,680	5,185	5,185	*	
SS	HUCQ612-SDS	14	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	*	IBC, FL, LA
6x14	HU614 / HUC614	14	5½	11⅞	2½	Min.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,780	2,680	3,025	3,240	*	
		14	5½	11⅞	2½	Max.	(24) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,570	4,030	4,335	*	
SS	HUCQ610-SDS	14	5½	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	4,680	5,185	5,185	*	
SS	HUCQ612-SDS	14	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	*	
6x16	HU616 / HUC616	14	5½	13⅜	2½	Min.	(20) 0.162 x 3½	(8) 0.162 x 3½	1,780	2,980	3,360	3,600	*	
		14	5½	13⅜	2½	Max.	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	*	
SS	HUCQ612-SDS	14	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	*	
8x8	HU88 / HUC88	14	7½	6⅝	2½	Min.	(10) 0.162 x 3½	(4) 0.162 x 3½	895	1,490	1,680	1,800	*	
		14	7½	6⅝	2½	Max.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,085	2,350	2,530	*	
8x10	HU810 / HUC810	14	7½	8⅜	2½	Min.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,085	2,350	2,520	*	
		14	7½	8⅜	2½	Max.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,680	3,020	3,250	*	
8x12	HU812 / HUC812	14	7½	10⅛	2½	Min.	(16) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,385	2,690	2,880	*	
		14	7½	10⅛	2½	Max.	(22) 0.162 x 3½	(8) 0.162 x 3½	1,795	3,275	3,695	3,970	*	
8x14	HU814 / HUC814	14	7½	11⅞	2½	Min.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,780	2,680	3,025	3,240	*	
		14	7½	11⅞	2½	Max.	(24) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,570	4,030	4,335	*	
8x16	HU816 / HUC816	14	7½	13⅝	2½	Min.	(20) 0.162 x 3½	(8) 0.162 x 3½	1,780	2,980	3,360	3,600	*	
		14	7½	13⅝	2½	Max.	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	*	

1. Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern.
2. For minimum nailing quantity and load values, fill all round holes; for maximum nailing quantity and load values, fill all round and triangular holes.
3. DF/SP loads can be used for SCL with an equivalent specific gravity of 0.50 or greater.
4. Truss chord cross-grain tension may limit allowable loads in accordance with ANSI/TPI 1-2014. Simpson Strong-Tie Hanger Selector web application includes the evaluation of cross-grain tension in its hanger allowable loads. For additional information, contact Simpson Strong-Tie.
5. **Fasteners:** Nail dimensions are listed diameter by length. SDS screws are Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws. See pp. 25–26 for fastener information.
6. Hangers with an "*" do not have an Installed Cost Index.

Codes: See p. 12 for Code Reference Key Chart



HS Hanger Selector

Specify joist-to-beam connections by visiting **app.strongtie.com/hs** to access our Hanger Selector web application.

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Simpson Strong-Tie® Wood Construction Connectors

Face-Mount Hangers — I-Joists, Glulam and SCL

Web Applications:
Visit **app.strongtie.com/hs** to access our Hanger Selector web application.

Codes: See p. 12 for Code Reference Key Chart.

Actual Joist Size (in.)	Model No.	Ga.	I-Joist Compatible	Web Stiff Reqd.	Dimensions (in.) W	H	B	Min./ Max.	Fasteners (in.) Face	Joist	Allowable Loads DF/SP Species Header Uplift (160)	Floor (100)	Snow (115)	Roof (125)	SPF/HF Species Header Floor (100)	Snow (115)	Roof (125)	Code Ref.
1½ x 9½	U210	16	•	✓	1⁹⁄₁₆	7¹³⁄₁₆	2	—	(6) 0.148 x 3	(6) 0.148 x 1½	990	1,220	1,380	1,480	1,050	1,185	1,275	IBC, FL, LA
	MIU1.56/9	16	•	—	1⁹⁄₁₆	8¹⁵⁄₁₆	2½	—	(16) 0.162 x 3½	(2) 0.148 x 1½	230	2,305	2,615	2,820	1,980	2,245	2,425	
1½ x 11⅞	U210	16	•	✓	1⁹⁄₁₆	7¹³⁄₁₆	2	—	(6) 0.148 x 3	(6) 0.148 x 1½	990	1,220	1,380	1,480	1,050	1,185	1,275	
	MIU1.56/11	16	•	—	1⁹⁄₁₆	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	230	2,880	3,135	3,135	2,475	2,695	2,695	
1¾ x 5½	HU1.81/5	14		—	1 ¹³⁄₁₆	5⅜	2½	Min.	(12) 0.162 x 3½	(4) 0.148 x 1½	610	1,785	2,015	2,165	1,540	1,735	1,865	
								Max.	(16) 0.162 x 3½	(6) 0.148 x 1½	915	2,380	2,685	2,890	2,050	2,315	2,490	
1¾ x 7¼	HU7	14		—	1 ¹³⁄₁₆	6¹¹⁄₁₆	2½	Min.	(12) 0.162 x 3½	(4) 0.148 x 1½	610	1,785	2,015	2,165	1,540	1,735	1,865	
								Max.	(16) 0.162 x 3½	(8) 0.148 x 1½	1515	2,380	2,685	2,890	2,050	2,315	2,490	
1¾ x 9½	IUS1.81/9.5	18	•	—	1⅞	9½	2	—	(8) 0.148 x 3	—	70	950	1,080	1,165	815	925	1,000	
	HU9	14	•	✓	1 ¹³⁄₁₆	9⁵⁄₁₆	2½	Min.	(18) 0.162 x 3½	(6) 0.148 x 1½	915	2,680	3,020	3,250	2,305	2,605	2,800	
								Max.	(24) 0.162 x 3½	(10) 0.148 x 1½	1,795	3,570	4,030	4,335	3,075	3,470	3,735	
	HUS1.81/10	16		—	1 ¹³⁄₁₆	8⅞	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	2,635	5,515	5,830	5,830	4,360	4,675	4,885	
	HUCQ1.81/9-SDS	14		—	1 ¹³⁄₁₆	9	3	—	(8) ¼ x 1¾ SDS	(4) ¼ x 1¾ SDS	1,310	2,000	2,300	2,500	1,440	1,655	1,800	
	MIU1.81/9	16	•	—	1 ¹³⁄₁₆	8¹³⁄₁₆	2½	—	(16) 0.162 x 3½	(2) 0.148 x 1½	230	2,305	2,615	2,820	1,980	2,245	2,425	
1¾ x 11⅞	IUS1.81/11.88	18	•	—	1⅞	11⅞	2	—	(10) 0.148 x 3	—	70	1,185	1,345	1,455	1,020	1,160	1,250	
	MIU1.81/11	16	•	—	1 ¹³⁄₁₆	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	230	2,880	3,135	3,135	2,475	2,695	2,695	
	HUS1.81/10	16		—	1 ¹³⁄₁₆	8⅞	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	2,635	5,515	5,830	5,830	4,360	4,675	4,885	
	HU11	14	•	✓	1 ¹³⁄₁₆	11⅛	2½	Min.	(22) 0.162 x 3½	(6) 0.148 x 1½	915	3,275	3,695	3,970	2,820	3,180	3,425	
								Max.	(30) 0.162 x 3½	(10) 0.148 x 1½	1,795	4,465	4,705	4,810	3,845	4,340	4,600	
	HUCQ1.81/11-SDS	14		—	1 ¹³⁄₁₆	11	3	—	(10) ¼ x 1¾ SDS	(4) ¼ x 1¾ SDS	1,310	2,500	2,875	3,125	1,800	2,070	2,250	
1¾ x 14	IUS1.81/14	18	•	—	1⅞	14	2	Min.	(12) 0.148 x 3	—	70	1,420	1,615	1,745	1,220	1,390	1,500	
								Max.	(14) 0.148 x 3	—	70	1,660	1,805	1,805	1,425	1,550	1,550	
	MIU1.81/14	16	•	—	1 ¹³⁄₁₆	13⁵⁄₁₆	2½	—	(22) 0.162 x 3½	(2) 0.148 x 1½	230	3,170	3,595	3,875	2,725	3,090	3,335	
	HUS1.81/10	16		—	1 ¹³⁄₁₆	8⅞	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	2,635	5,515	5,830	5,830	4,360	4,675	4,885	
	U14	16	•	✓	1 ¹³⁄₁₆	10¼	2	—	(14) 0.162 x 3½	(6) 0.148 x 1½	970	2,015	2,285	2,465	1,735	1,965	2,120	
	HU14	14	•	✓	1 ¹³⁄₁₆	13¹¹⁄₁₆	2½	Min.	(28) 0.162 x 3½	(8) 0.148 x 1½	1,515	4,165	4,420	4,505	3,590	4,050	4,335	
								Max.	(36) 0.162 x 3½	(14) 0.148 x 1½	1,795	5,055	5,275	5,420	4,615	5,000	5,130	
	HUCQ1.81/11-SDS	14		—	1 ¹³⁄₁₆	11	3	—	(10) ¼ x 1¾ SDS	(4) ¼ x 1¾ SDS	1,310	2,500	2,875	3,125	1,800	2,070	2,250	
1¾ x 16	IUS1.81/16	18	•	—	1⅞	16	2	Min.	(14) 0.148 x 3	—	70	1,660	1,805	1,805	1,425	1,555	1,555	
								Max.	(16) 0.148 x 3	—	70	1,805	1,805	1,805	1,555	1,555	1,555	
	MIU1.81/16	16	•	—	1 ¹³⁄₁₆	15⁵⁄₁₆	2½	—	(24) 0.162 x 3½	(2) 0.148 x 1½	230	3,455	3,920	4,045	2,970	3,370	3,480	
1¾ x 18	MIU1.81/18	16	•	—	1 ¹³⁄₁₆	17⁵⁄₁₆	2½	—	(26) 0.162 x 3½	(2) 0.148 x 1½	230	3,745	4,020	4,045	3,220	3,460	3,480	
2 x 9½	IUS2.06/9.5	18	•	—	2⅛	9½	2	—	(8) 0.148 x 3	—	70	950	1,080	1,165	815	925	1,000	
	HU2.1/9	14	•	✓	2⅛	9³⁄₁₆	2½	—	(14) 0.162 x 3½	(6) 0.148 x 1½	915	2,085	2,350	2,530	1,795	2,025	2,180	
2 x 11⅞	IUS2.06/11.88	18	•	—	2⅛	11⅞	2	—	(10) 0.148 x 3	—	70	1,185	1,345	1,455	1,020	1,160	1,250	
	MIU2.1/11	16	•	✓	2⅛	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	230	2,880	3,135	3,135	2,475	2,695	2,695	
	HU2.1/11	14	•	✓	2⅛	11	2½	—	(16) 0.162 x 3½	(6) 0.148 x 1½	915	2,380	2,685	2,890	2,050	2,315	2,490	
2 x 14	IUS2.06/14	18	•	—	2⅛	14	2	Min.	(12) 0.148 x 3	—	70	1,420	1,615	1,745	1,220	1,390	1,500	
								Max.	(14) 0.148 x 3	—	70	1,660	1,805	1,805	1,425	1,555	1,555	
	MIU2.1/11	16	•	✓	2⅛	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	230	2,880	3,135	3,135	2,475	2,695	2,695	
	HU2.1/11	14	•	✓	2⅛	11	2½	—	(16) 0.162 x 3½	(6) 0.148 x 1½	915	2,380	2,685	2,890	2,050	2,315	2,490	
2 x 16	IUS2.06/16	18	•	—	2⅛	16	2	Min.	(14) 0.148 x 3	—	70	1,660	1,805	1,805	1,425	1,555	1,555	
								Max.	(16) 0.148 x 3	—	70	1,805	1,805	1,805	1,555	1,555	1,555	
	HU2.1/11	14	•	✓	2⅛	11	2½	—	(16) 0.162 x 3½	(6) 0.148 x 1½	915	2,380	2,685	2,890	2,050	2,315	2,490	
2⅛ x 9½	IUS2.06/9.5	18	•	—	2⅛	9½	2	—	(8) 0.148 x 3	—	70	950	1,080	1,165	815	925	1,000	
	HU2.1/9	14	•	✓	2⅛	9³⁄₁₆	2½	—	(14) 0.162 x 3½	(6) 0.148 x 1½	915	2,085	2,350	2,530	1,795	2,025	2,180	
2⅛ x 11⅞	IUS2.06/11.88	18	•	—	2⅛	11⅞	2	—	(10) 0.148 x 3	—	70	1,185	1,345	1,455	1,020	1,160	1,250	
	MIU2.1/11	16	•	✓	2⅛	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	230	2,880	3,135	3,135	2,475	2,695	2,695	
	HU2.1/11	14	•	✓	2⅛	11	2½	—	(16) 0.162 x 3½	(6) 0.148 x 1½	915	2,380	2,685	2,890	2,050	2,315	2,490	

See footnotes on p. 164.

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Simpson Strong-Tie® Wood Construction Connectors

Face-Mount Hangers — I-Joists, Glulam and SCL

SIMPSON Strong-Tie

These products are available with additional corrosion protection. For more information, see pp. 13–19.

Codes: See p. 12 for Code Reference Key Chart.

Actual Joist Size (in.)	Model No.	Ga.	I-Joist Compatible	Web Stiff Reqd.	Dimensions (in.) W	H	B	Min./ Max.	Fasteners (in.) Face	Joist	Allowable Loads DF/SP Species Header Uplift (160)	Floor (100)	Snow (115)	Roof (125)	SPF/HF Species Header Floor (100)	Snow (115)	Roof (125)	Code Ref.
2½ x 16	IUS2.56/16	18	•	—	2⅝	16	2	Min.	(14) 0.148 x 3	—	70	1,660	1,805	1,805	1,425	1,555	1,555	IBC, FL, LA
								Max.	(16) 0.148 x 3	—	70	1,805	1,805	1,805	1,555	1,555	1,555	
	MIU2.56/16	16	•	—	2⅝16	15⅞16	2½	—	(24) 0.162 x 3½	(2) 0.148 x 1½	230	3,455	3,920	4,045	2,970	3,370	3,480	
	U314	16	•	✓	2⅝16	10½	2	—	(16) 0.162 x 3½	(6) 0.148 x 1½	970	1,945	2,205	2,375	1,675	1,895	2,045	
	HU316 / HUC316	14	•	✓	2⅝16	14⅜16	2½	—	(20) 0.162 x 3½	(8) 0.148 x 1½	1,515	2,975	3,360	3,610	2,565	2,895	3,110	
2½ x 18	MIU2.56/18	16	•	—	2⅝16	17⅞16	2½	—	(26) 0.162 x 3½	(2) 0.148 x 1½	230	3,745	4,045	4,045	3,220	3,480	3,480	
	HU316 / HUC316	14	•	✓	2⅝16	14⅛	2½	—	(20) 0.162 x 3½	(8) 0.148 x 1½	1515	2,975	3,360	3,610	2,565	2,895	3,110	
2½ x 20	MIU2.56/20	16	•	—	2⅝16	19⅞16	2½	—	(28) 0.162 x 3½	(2) 0.148 x 1½	230	4,030	4,060	4,060	3,465	3,495	3,495	
2½ x 22 to 26	MIU2.56/20	16	•	✓	2⅝16	19⅞16	2½	—	(28) 0.162 x 3½	(2) 0.148 x 1½	230	4,030	4,060	4,060	3,465	3,495	3,495	
2⅝16 x 9¼ to 26	2⅝16" wide joists use the same hangers as 2½" wide joists and have the same loads.																	
3 x 9½	MIU3.12/9	16	•	—	3⅛	9⅛16	2½	—	(16) 0.162 x 3½	(2) 0.148 x 1½	230	2,305	2,615	2,820	1,980	2,245	2,425	
	HU210-2 / HUC210-2	14	•	✓	3⅛	8⅝16	2½	Max.	(18) 0.162 x 3½	(10) 0.148 x 3	1,795	2,680	3,020	3,250	2,305	2,605	2,800	
3 x 11⅞	MIU3.12/11	16	•	—	3⅛	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	230	2,880	3,135	3,135	2,475	2,695	2,695	
	HU212-2 / HUC212-2	14	•	✓	3⅛	10⅜16	2½	Max.	(22) 0.162 x 3½	(10) 0.148 x 3	1,795	3,275	3,695	3,970	2,820	3,180	3,425	
3⅛ glulam	HU3.25/12 / HUC3.25/12	14		—	3¼	11¾	2½	—	(24) 0.162 x 3½	(12) 0.148 x 3	1,795	3,570	4,030	4,335	3,075	3,470	3,735	
	HU3.25/16 / HUC3.25/16	14		—	3¼	13¹³⁄16	2½	Min.	(20) 0.162 x 3½	(8) 0.148 x 3	1,515	2,975	3,360	3,610	2,560	2,890	3,105	
				—				Max.	(26) 0.162 x 3½	(12) 0.148 x 3	1,795	3,870	4,365	4,695	3,330	3,755	4,040	
	HUCQ210-2-SDS	14		—	3¼	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,345	4,315	4,315	4,315	3,600	3,710	3,710	
	HGUS3.25/10	12		—	3¼	8⅝	4	—	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100	7,825	7,825	7,825	
	HGUS3.25/12	12		—	3¼	10⅝	4	—	(56) 0.162 x 3½	(20) 0.162 x 3½	5,205	11,915	13,330	14,290	10,015	11,550	12,045	
	LGU3.25-SDS	10		—	3¼	8 to 30	4½	—	(16) ¼ x 2½ SDS	(12) ¼ x 2½ SDS	5,555	6,720	7,310	7,310	4,840	5,265	5,265	
3½ x 5¼	HHUS46	14		—	3⅝	5⅛	3	—	(14) 0.162 x 3½	(6) 0.162 x 3½	1,320	2,785	3,155	3,405	2,395	2,715	2,930	
	HGUS46	12		—	3⅝	5⅝16	4	—	(20) 0.162 x 3½	(8) 0.162 x 3½	2,155	4,355	4,875	5,230	3,755	4,875	5,230	
3½ x 7¼	HUS48	14		—	3⅝16	6¹⁵⁄16	2	—	(6) 0.162 x 3½	(6) 0.162 x 3½	1,320	1,630	1,840	1,980	1,400	1,580	1,705	
	HHUS48	14		—	3⅝	7⅛	3	—	(22) 0.162 x 3½	(8) 0.162 x 3½	1,780	4,210	4,770	5,140	3,615	4,095	4,415	
	HGUS48	12		—	3⅝	7⅛16	4	—	(36) 0.162 x 3½	(12) 0.162 x 3½	3,235	7,460	7,460	7,460	6,415	6,415	6,415	
3½ x 9½	IUS3.56/9.5	18	•	—	3⅝	9½	2	—	(10) 0.148 x 3	—	70	1,185	1,345	1,455	1,020	1,160	1,250	IBC, FL, LA
	MIU3.56/9	16	•	—	3⅝16	8¹³⁄16	2½	—	(16) 0.162 x 3½	(2) 0.148 x 1½	210	2,305	2,615	2,820	1,980	2,245	2,425	
	U410	16	•	✓	3⅝16	8⅜	2	—	(14) 0.162 x 3½	(6) 0.148 x 3	970	2,015	2,285	2,465	1,735	1,965	2,120	
	HUS410	14		—	3⅝16	8¹⁵⁄16	2	—	(8) 0.162 x 3½	(8) 0.162 x 3½	3,285	2,175	2,455	2,640	1,870	2,110	2,270	
	HHUS410	14		—	3⅝	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,445	4,845	5,486	5,545	
	HU410/HUC410	14	•	✓	3⅝16	8⅜	2½	Min.	(14) 0.162 x 3½	(6) 0.148 x 3	1,135	2,085	2,350	2,530	1,795	2,020	2,165	
								Max.	(18) 0.162 x 3½	(10) 0.148 x 3	1,795	2,680	3,020	3,250	2,305	2,605	2,800	
	HUCQ410-SDS	14		—	3⅝16	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,265	4,500	4,500	4,500	3,240	3,240	3,240	
	HGUS410	12		—	3⅝	9⅛16	4	—	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100	7,825	7,825	7,825	
	LGU3.63-SDS	10		—	3⅝	8 to 30	4½	—	(16) ¼ x 2½ SDS	(12) ¼ x 2½ SDS	5,555	6,720	6,720	6,720	4,840	4,840	4,840	
	MGU3.63-SDS	10		—	3⅝	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
3½ x 11⅞	IUS3.56/11.88	18	•	—	3⅝	11⅞	2	—	(12) 0.148 x 3	—	70	1,420	1,615	1,745	1,220	1,390	1,485	
	MIU3.56/11	16	•	—	3⅝16	11⅛	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	210	2,880	3,135	3,135	2,475	2,695	2,695	
	U414	16	•	✓	3⅝16	10	2	—	(16) 0.162 x 3½	(6) 0.148 x 3	970	2,305	2,615	2,820	1,980	2,245	2,425	
	HHUS410	14		—	3⅝	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,445	4,845	5,486	5,545	
	HUS412	14		—	3⅝16	10¾	2	—	(10) 0.162 x 3½	(10) 0.162 x 3½	3,435	2,720	3,070	3,300	2,340	2,640	2,840	
	HU412 / HUC412	14	•	✓	3⅝16	10⅝16	2½	Min.	(16) 0.162 x 3½	(6) 0.148 x 3	1,135	2,380	2,685	2,890	2,050	2,315	2,490	
								Max.	(22) 0.162 x 3½	(10) 0.148 x 3	1,795	3,275	3,695	3,970	2,820	3,180	3,425	
	HUCQ412-SDS	14		—	3⅝16	11		—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,265	5,045	5,045	5,045	3,630	3,630	3,630	
	HGUS412	12		—	3⅝	10⅞16	4	—	(56) 0.162 x 3½	(20) 0.162 x 3½	5,205	11,915	13,330	14,290	10,280	12,160	12,420	
	LGU3.63-SDS	10		—	3⅝	8 to 30	4½	—	(16) ¼ x 2½ SDS	(12) ¼ x 2½ SDS	5,555	6,720	6,720	6,720	4,840	4,840	4,840	
	MGU3.63-SDS	10		—	3⅝	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
	HGU3.63-SDS	7		—	3⅝	11 to 30	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	9,460	13,160	13,160	13,160	9,475	9,475	9,475	

See footnotes on p. 164.

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Face-Mount Hangers — I-Joists, Glulam and SCL

Codes: See p. 12 for Code Reference Key Chart.

Actual Joist Size (in.)	Model No.	Ga.	I-Joist Compatible	Web Stiff Reqd.	Dimensions (in.) W	H	B	Min./ Max.	Fasteners (in.) Face	Joist	Allowable Loads DF/SP Species Header Uplift (160)	Floor (100)	Snow (115)	Roof (125)	SPF/HF Species Header Floor (100)	Snow (115)	Roof (125)	Code Ref.
4½ x 9½ to 20	Double 2¼"-wide joists use the same hangers as double 2⁵⁄₁₆"-wide joists with the following loads adjustments: MIU and U downloads are the lesser of the table load or 2,140 lb.																	
4⅝ x 9½	MIU4.75/9	16	•	—	4¾	9¹⁄₁₆	2½	—	(16) 0.162 x 3½	(2) 0.148 x 1½	210	2,305	2,615	2,820	1,980	2,245	2,425	
	U3510-2	16	•	✓	4¾	8¾	2	—	(14) 0.162 x 3½	(6) 0.148 x 3	970	2,015	2,285	2,465	1,735	1,965	2,120	
	HU4.75/9 / HUC4.75/9	14	•	✓	4¾	9	2½	—	(18) 0.162 x 3½	(8) 0.148 x 3	1,515	2,680	3,020	3,250	2,305	2,605	2,800	
4⅝ x 11⅞	MIU4.75/11	16	•	—	4¾	11 ¹⁄₁₆	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	210	2,880	3,135	3,135	2,475	2,695	2,695	
	U3512-2	16	•	✓	4¾	11¼	2	—	(16) 0.162 x 3½	(6) 0.148 x 3	970	2,305	2,615	2,820	1,980	2,245	2,425	
	HU4.75/11 / HUC4.75/11	14	•	✓	4¾	11	2½	—	(22) 0.162 x 3½	(8) 0.148 x 3	1,515	3,275	3,695	3,970	2,820	3,180	3,425	
4⅝ x 14	MIU4.75/14	16	•	—	4¾	13½	2½	—	(22) 0.162 x 3½	(2) 0.148 x 1½	210	3,170	3,595	3,875	2,725	3,090	3,335	
	HU3514-2 / HUC3514-2	14	•	✓	4¾	13¼	2½	—	(18) 0.162 x 3½	(8) 0.148 x 3	1,515	2,680	3,020	3,250	2,305	2,605	2,800	
4⅝ x 16	MIU4.75/16	16	•	—	4¾	15½	2½	—	(24) 0.162 x 3½	(2) 0.148 x 1½	210	3,455	3,920	4,045	2,970	3,370	3,480	
	HU3516-2 / HUC3516-2	14	•	✓	4¾	15¼	2½	Max.	(26) 0.162 x 3½	(12) 0.148 x 3	1,795	3,870	4,365	4,695	3,330	3,760	4,045	
4⅝ x 18	MIU4.75/18	16	•	—	4¾	17½	2½	—	(26) 0.162 x 3½	(2) 0.148 x 1½	210	3,745	4,045	4,045	3,220	3,480	3,480	
	HU3516-2 / HUC3516-2	14	•	✓	4¾	15¼	2½	Max.	(26) 0.162 x 3½	(12) 0.148 x 3	1,795	3,870	4,365	4,695	3,330	3,760	4,045	
4⅝ x 20	MIU4.75/20	16	•	—	4¾	19½	2½	—	(28) 0.162 x 3½	(2) 0.148 x 1½	210	4,030	4,060	4,060	3,465	3,495	3,495	
	HU3520-2	14	•		4¾	19¼	2½	Max.	(26) 0.162 x 3½	(12) 0.148 x 3	1,795	3,870	4,365	4,695	3,330	3,760	4,045	
4⅝ x 21 to 30	MIU4.75/20	16	•	✓	4¾	19½	2½	—	(28) 0.162 x 3½	(2) 0.148 x 1½	210	4,030	4,060	4,060	3,465	3,495	3,495	
	HU3520-2	14	•		4¾	19¼	2½	Max.	(26) 0.162 x 3½	(12) 0.148 x 3	1,795	3,870	4,365	4,695	3,330	3,760	4,045	
5 x 9½	MIU5.12/9	16	•	—	5⅛	8 ¹³⁄₁₆	2½	—	(16) 0.162 x 3½	(2) 0.148 x 1½	210	2,305	2,615	2,820	1,980	2,245	2,425	
	HU310-2 / HUC310-2	14	•	✓	5⅛	7 ¹³⁄₁₆	2½	—	(14) 0.162 x 3½	(6) 0.148 x 3	1,135	2,085	2,350	2,530	1,795	2,025	2,170	
5 x 11⅞	MIU5.12/11	16	•	—	5⅛	11⅞	2½	—	(20) 0.162 x 3½	(2) 0.148 x 1½	210	2,880	3,135	3,135	2,475	2,695	2,695	
	HU312-2 / HUC312-2	14	•	✓	5⅛	10⅝	2½	—	(16) 0.162 x 3½	(6) 0.148 x 3	1,135	2,380	2,685	2,890	2,050	2,315	2,490	
5 x 14	MIU5.12/14	16	•	—	5⅛	13 ⁵⁄₁₆	2½	—	(22) 0.162 x 3½	(2) 0.148" x 1½	210	3,170	3,595	3,875	2,725	3,090	3,335	
	HU314-2 / HUC314-2	14	•	✓	5⅛	12⅝	2½	—	(18) 0.162 x 3½	(8) 0.148 x 3	1,515	2,680	3,020	3,250	2,305	2,605	2,800	IBC, FL, LA
5 x 16	MIU5.12/16	16	•	—	5⅛	15 ⁵⁄₁₆	2½	—	(24) 0.162 x 3½	(2) 0.148 x 1½	210	3,455	3,920	4,045	2,970	3,370	3,480	
	HU314-2 / HUC314-2	14	•	✓	5⅛	12⅝	2½	—	(18) 0.162 x 3½	(8) 0.148 x 3	1515	2,680	3,020	3,250	2,305	2,605	2,800	
5 x 18	MIU5.12/18	16	•	—	5⅛	17 ⁵⁄₁₆	2½	—	(26) 0.162 x 3½	(2) 0.148 x 1½	210	3,745	4,045	4,045	3,220	3,480	3,480	
	HU314-2 / HUC314-2	14	•	✓	5⅛	12⅝	2½	—	(18) 0.162 x 3½	(8) 0.148 x 3	1515	2,680	3,020	3,250	2,305	2,605	2,800	
5 x 20	MIU5.12/20	16	•	—	5⅛	19 ⁵⁄₁₆	2½	—	(28) 0.162 x 3½	(2) 0.148 x 1½	210	4,030	4,060	4,060	3,465	3,495	3,495	
	HU314-2 / HUC314-2	14	•	✓	5⅛	12⅝	2½	—	(18) 0.162 x 3½	(8) 0.148 x 3	1515	2,680	3,020	3,250	2,305	2,605	2,800	
5 x 21 to 30	MIU5.12/20	16	•	✓	5⅛	19 ⁵⁄₁₆	2½	—	(28) 0.162 x 3½	(2) 0.148 x 1½	210	4,030	4,060	4,060	3,465	3,495	3,495	
5¼ glulam	HUCQ5.25/9-SDS	14		—	5¼	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,265	4,500	4,500	4,500	3,240	3,240	3,240	
	HUCQ5.25/11-SDS	14		—	5¼	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,265	5,045	5,045	5,045	3,630	3,630	3,630	
	LGU5.25-SDS	10		—	5¼	8 to 30	4½	—	(16) ¼ x 2½ SDS	(12) ¼ x 2½ SDS	5,555	6,720	6,720	6,720	4,840	4,840	4,840	
	MGU5.25-SDS	10		—	5¼	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
	HGUS5.25/10	12		—	5¼	9 ⁹⁄₁₆	4	—	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100	7,825	7,825	7,825	
	HGU5.25-SDS	7		—	5¼	11 to 30	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	9,460	13,160	13,160	13,160	9,475	9,475	9,475	
	HU5.125/12 / HUC5.125/12	14		—	5¼	10¼	2½	—	(22) 0.162 x 3½	(8) 0.162 x 3½	1,515	3,275	3,695	3,970	2,820	3,180	3,425	
	HGUS5.25/12	12		—	5¼	10 ⁹⁄₁₆	4	—	(56) 0.162 x 3½	(20) 0.162 x 3½	5,205	11,915	13,330	14,290	10,280	12,420	12,420	
	HU5.125/13.5 / HUC5.125/13.5	14		—	5¼	13¼	2½	—	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	3,330	3,760	4,045	
	HU5.125/16/ HUC5.125/16	14		—	5¼	13⅞	2½	—	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	3,330	3,760	4,045	
5¼ x 7¼	HU68 / HUC68	14		—	5½	5 ¹³⁄₁₆	2½	Min.	(10) 0.162 x 3½	(4) 0.162 x 3½	760	1,490	1,680	1,805	1,280	1,445	1,555	
					5½	5 ¹³⁄₁₆	2½	Max.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,135	2,085	2,350	2,530	1,795	2,025	2,180	
	HGUS5.50/8	12		—	5½	6 ¹⁵⁄₁₆	4	—	(36) 0.162 x 3½	(12) 0.162 x 3½	3,235	7,460	7,460	7,460	6,415	6,415	6,415	

See footnotes on p. 164.

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Simpson Strong-Tie® Wood Construction Connectors

Face-Mount Hangers — I-Joists, Glulam and SCL

SIMPSON Strong-Tie

These products are available with additional corrosion protection. For more information, see pp. 13–19.

SS For stainless-steel fasteners, see p. 25.

Codes: See p. 12 for Code Reference Key Chart.

Actual Joist Size (in.)	Model No.	Ga.	I-Joist Compatible	Web Stiff Reqd.	Dimensions (in.) W	H	B	Min./ Max.	Fasteners (in.) Face	Joist	Allowable Loads DF/SP Species Header Uplift (160)	Floor (100)	Snow (115)	Roof (125)	SPF/HF Species Header Floor (100)	Snow (115)	Roof (125)	Code Ref.
5¼ x 9½	HU610 / HUC610	14		—	5½	7⅝	2½	Min.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,085	2,350	2,530	1,795	2,025	2,180	
					5½	7⅝	2½	Max.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,680	3,020	3,250	2,305	2,605	2,800	
	HGUS5.50/10	12		—	5½	8 15/16	4	—	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100	7,825	7,825	7,825	
	HHUS5.50/10	14		—	5½	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,880	4,845	5,490	5,915	
	HUCQ610-SDS	14		—	5½	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	4,680	5,185	5,185	3,370	3,735	3,735	
	MGU5.50-SDS	10		—	5½	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
	HHUS5.50/10	14		—	5½	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,880	4,845	5,490	5,915	
	MGU5.50-SDS	10		—	5½	9¼ to 30	4½		(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
5¼ x 11⅞	HU612 / HUC612	14		—	5½	9⅜	2½	Min.	(16) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,380	2,685	2,890	2,050	2,315	2,490	
					5½	9⅜	2½	Max.	(22) 0.162 x 3½	(8) 0.162 x 3½	1,795	3,275	3,695	3,970	2,820	3,180	3,425	
	HGUS5.50/12	12		—	5½	10½	4	—	(56) 0.162 x 3½	(20) 0.162 x 3½	5,205	11,915	13,330	14,290	10,280	12,420	12,420	
SS	HUCQ612-SDS	14		—	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	3,735	3,735	3,735	
	HHUS5.50/10	14		—	5½	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,880	4,845	5,490	5,915	
	MGU5.50-SDS	10		—	5½	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
SS	HUCQ612-SDS	14		—	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	3,735	3,735	3,735	
5¼ x 14	HGU5.50-SDS	7		—	5½	11 to 30	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	9,460	13,160	13,160	13,160	9,475	9,475	9,475	
	HGUS5.50/14	12		—	5½	12½	4	—	(66) 0.162 x 3½	(22) 0.162 x 3½	5,360	13,860	14,350	14,350	11,960	12,420	12,420	
	HU614 / HUC614	14		—	5½	11⅝	2½	Min.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,975	3,360	3,610	2,565	2,895	3,110	
					5½	11⅝	2½	Max.	(24) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	3,330	3,760	4,045	
	HHGU5.50-SDS	3		—	5½	13 to 30	5¼	—	(44) ¼ x 2½ SDS	(28) ¼ x 2½ SDS	14,145	17,345	17,345	17,345	12,490	12,490	12,490	
	HHUS5.50/10	14		—	5½	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,880	4,845	5,490	5,915	
	MGU5.50-SDS	10		—	5½	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
SS	HUCQ612-SDS	14		—	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	3,735	3,735	3,735	
5¼ x 16	HGU5.50-SDS	7		—	5½	11 to 30	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	9,460	13,160	13,160	13,160	9,475	9,475	9,475	IBC, FL, LA
	HGUS5.50/14	12		—	5½	12½	4	—	(66) 0.162 x 3½	(22) 0.162 x 3½	5,360	13,860	14,350	14,350	11,960	12,420	12,420	
	HU616 / HUC616	14		—	5½	13⅜	2½	Min.	(20) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,975	3,360	3,610	2,565	2,895	3,110	
					5½	13⅜	2½	Max.	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	3,330	3,760	4,045	
	HHGU5.50-SDS	3		—	5½	13 to 30	5¼	—	(44) ¼ x 2½ SDS	(28) ¼ x 2½ SDS	14,145	17,345	17,345	17,345	12,490	12,490	12,490	
SS	HUCQ612-SDS	14		—	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	3,735	3,735	3,735	
	HGUS5.50/14	12		—	5½	12½	4	—	(66) 0.162 x 3½	(22) 0.162 x 3½	5,360	13,860	14,350	14,350	11,960	12,420	12,420	
5¼ x 18	HU616 / HUC616	14		—	5½	12 11/16	2½	Min.	(20) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,975	3,360	3,610	2,565	2,895	3,110	
					5½	12 11/16	2½	Max.	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	3,330	3,760	4,045	
	HGU5.50-SDS	7		—	5½	16 to 17⅞	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	9,460	13,160	13,160	13,160	9,475	9,475	9,475	
	MGU5.50-SDS	10		—	5½	16 to 17⅞	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
	HHGU5.50-SDS	3		—	5½	16 to 17⅞	5¼	—	(44) ¼ x 2½ SDS	(28) ¼ x 2½ SDS	14,145	17,345	17,345	17,345	12,490	12,490	12,490	
	MGU5.50-SDS	10		—	5½	18 to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
5¼ x 20 to 30	HGU5.50-SDS	7		—	5½	18 to 30	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	9,460	13,160	13,160	13,160	9,475	9,475	9,475	
	HHGU5.50-SDS	3		—	5½	18 to 30	5¼	—	(44) ¼ x 2½ SDS	(28) ¼ x 2½ SDS	14,145	17,345	17,345	17,345	12,490	12,490	12,490	
5½ glulam	HU610 / HUC610	14		—	5½	7⅝	2½	Max.	(18) 0.162 x 3½	(8) 0.162 x 3½	1,795	2,680	3,020	3,250	2,305	2,605	2,800	
	HGUS5.50/10	12		—	5½	8 15/16	4	—	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100	7,825	7,825	7,825	
	HUCQ610-SDS	14		—	5½	9	3	—	(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	4,680	5,185	5,185	3,370	3,735	3,735	
	HHUS5.50/10	14		—	5½	9	3	—	(30) 0.162 x 3½	(10) 0.162 x 3½	3,565	5,635	6,380	6,880	4,845	5,490	5,915	
	MGU5.62-SDS	10		—	5⅝	9¼ to 30	4½	—	(24) ¼ x 2½ SDS	(16) ¼ x 2½ SDS	7,260	9,450	9,450	9,450	6,805	6,805	6,805	
	HU612 / HUC612	14		—	5½	9⅜	2½	Max.	(22) 0.162 x 3½	(8) 0.162 x 3½	1,795	3,275	3,695	3,970	2,820	3,180	3,425	
	HUCQ612-SDS	14		—	5½	11	3	—	(14) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,325	5,185	5,185	5,185	3,735	3,735	3,735	
	HGU5.62-SDS	7		—	5⅝	11 to 30	5¼	—	(36) ¼ x 2½ SDS	(24) ¼ x 2½ SDS	5,360	13,735	14,360	14,360	11,810	12,350	12,350	
	HGUS5.50/14	12		—	5½	12½	4	—	(66) 0.162 x 3½	(22) 0.162 x 3½	5,515	13,860	14,350	14,350	11,960	12,420	12,420	
	HU616 / HUC616	14		—	5½	13⅜	2½	Max.	(26) 0.162 x 3½	(12) 0.162 x 3½	2,695	3,870	4,365	4,695	3,330	3,760	4,045	
	HHGU5.62-SDS	3		—	5⅝	13 to 30	5¼	—	(44) ¼ x 2½ SDS	(28) ¼ x 2½ SDS	14,145	17,345	17,345	17,345	12,490	12,490	12,490	

See footnotes on p. 164.

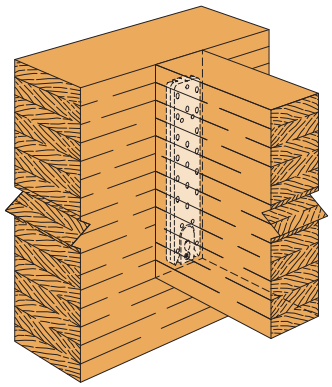
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Concealed Beam Hangers (End Grain) (cont.)

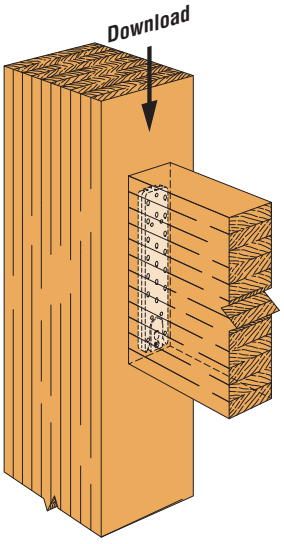
Allowable Downloads

Model No.	Dimensions (in.)		Fasteners		Configuration	Allowable Downloads						Code Ref.
	Width	Height	Supported Beam	Supporting Column or Beam		DF/SP			SPF/HF			
				Straight/ Inclined		Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	
CBH2.37x5.5	2⅜	5½	(13) SDS25600	(13) SDS25300	Beam to Beam	5,045	5,045	5,045	3,900	4,320	4,320	
				(13) SDS25600	Beam to Column	5,460	5,700	5,700	3,900	4,485	4,485	
CBH2.37x7.63	2⅜	7⅝	(18) SDS25600	(18) SDS25300	Beam to Beam	6,790	6,790	6,790	5,400	5,815	5,815	
				(18) SDS25600	Beam to Column	6,925	6,925	6,925	5,400	5,930	5,930	
CBH2.37x9.75	2⅜	9¾	(23) SDS25600	(23) SDS25300	Beam to Beam	9,175	9,175	9,175	6,900	7,855	7,855	IBC
				(23) SDS25600	Beam to Column	9,335	9,335	9,335	6,900	7,935	7,935	
ACBH3x15.37	3	15⅜	(24) SDCF8x160	(7) SDCF8x120/ (17) SDCF8x120	Beam to Column	19,870	20,875	20,875	13,635	15,680	17,045	
					Beam to Beam	14,820	17,040	18,525	13,305	15,200	16,630	
				(7) SDCF8x120/ (17) SDCF8x160	Beam to Column	19,870	20,875	20,875	14,095	16,210	17,200	
					Beam to Beam	18,420	21,185	22,265	14,095	16,210	17,200	
				(7) SDCF8x160/ (17) SDCF8x160	Beam to Column	20,050	21,130	21,130	14,095	16,210	17,620	
					Beam to Beam	19,555	22,265	22,265	14,095	16,210	17,620	
NEW SCBH3x15.37	3	15⅜	(24) SDCF8x160	(7) SDCF8x120/ (17) SDCF8x120	Beam to Column	19,820	21,935	21,935	13,680	15,735	17,105	
					Beam to Beam	14,820	17,040	18,525	13,305	15,200	16,630	

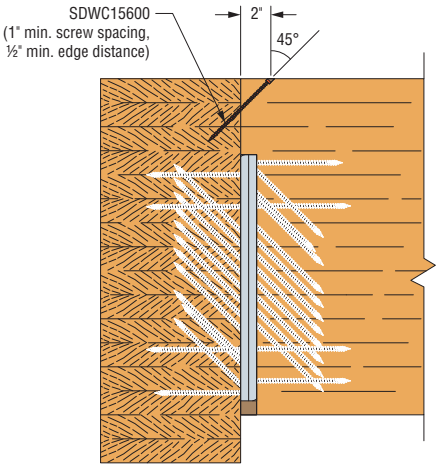
1. Table loads for ACBH and SCBH are for minimum beam width of 5⅝" (e_{side} ≥ 1 5⁄16"). For beam widths between 5⅛" and 5⅝" (1 1⁄16" ≤ e_{side} < 1 5⁄16"), multiply allowable load by 0.93.
2. Table loads for CBH require a 5½" minimum carried beam width. For 5⅛" ≤ carried beam width < 5½", multiply allowable load by 0.81. For 3½" ≤ carried beam widths < 5⅛", refer to engineering letter L-C-CBHSKWSLP at **strongtie.com**. For the CBH installed centered on a 3½"-wide member, e_{side} = 9⁄16".
3. For installation of Simpson Strong-Tie Strong-Drive® SDWC® Truss screws (SDWC15600) into the top of the beam for uplift: install screw at a 45° angle 2" from the end of the beam. Minimum spacing requirements for SDWC15600 screws are ½" edge distance and 1" screw spacing when using multiple screws. Uplift capacity is 555 lbf for DF/SP and 485 lbf for SPF/HF per screw. Use multiple screws for additional uplift.
4. Allowable load for double connections are equivalent to the allowable load of one connection multiplied by 2.
5. CBH may be installed on supporting vertical columns using SDS ¼" x 3" screws with reduced download capacities. Beam to beam allowable download capacities apply.
6. See Connection Geometry Requirements table and connection geometry illustrations for requirements on beam hanger placement.
7. **Fasteners:** SDCF8x120 and SDCF8x160 = 8 mm (0.315") OD x 120 mm (4¾") long and 160 mm (6¼") long Strong-Drive SDCF Timber-CF screw, respectively. SDS25300 and SDS25600 are ¼" x 3" long and 6" long Strong-Drive SDS Heavy-Duty Connector screw, respectively. See pp. 25–26 for fastener information.



Beam to Beam
(ACBH shown, CBH and SCBH similar)



Beam to Column
(ACBH shown, CBH and SCBH similar)



Installation with SDWC15600 for Uplift Capacity
(ACBH shown, CBH and SCBH similar)

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Simpson Strong-Tie® Wood Construction Connectors

Top-Flange Hangers – I-Joists, Glulam and SCL



Visit **app.strongtie.com/hs** to learn more about our Hanger Selector web application.

Actual Joist Size (in.)	Model No.	Ga.	I-Joist Compatible	Web Stiff Reqd.[7]	Dimensions (in.)				Fasteners (in.)		Allowable Loads Header Type						
					W	H	B	TF	Header	Joist	Uplift (160)	LVL	PSL	LSL	DF/SP	SPF/HF	DF/SCL I-Joist[4]
1½ x 9½	BA1.56/9.5 (Min.)	12	•	—	1⁹⁄₁₆	9½	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,205	2,660	1,495
	BA1.56/9.5 (Max.)	12	•	✓	1⁹⁄₁₆	9½	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,645	4,005	1,495
	WP1.56 H=9.5	7⁄12	•	✓	1⁹⁄₁₆	5⅜ to 30	4¾	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1½ x 11⅞	ITS1.56/11.88	18	•	—	1⅝	11¹³⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	BA1.56/11.88 (Min.)	12	•	—	1⁹⁄₁₆	11⅞	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA1.56/11.88 (Max.)	12	•	✓	1⁹⁄₁₆	11⅞	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,645	4,005	1,495
	WP1.56 H=11.875	7⁄12	•	✓	1⁹⁄₁₆	5⅜ to 30	4¾	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 7¼	BA1.81/7.25 (Min.)	14	•	—	1¹³⁄₁₆	7¼	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,205	2,660	1,495
	BA1.81/7.25 (Max.)	14	•	✓	1¹³⁄₁₆	7¼	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=7.25	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 9¼	BA1.81/9.25 (Min.)	12	•	—	1¹³⁄₁₆	9¼	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	2,980	2,660	1,495
	BA1.81/9.25 (Max.)	12	•	✓	1¹³⁄₁₆	9¼	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=9.25	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 9½	ITS1.81/9.5	18	•	—	1⅞	9⁷⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	MIT9.5	16	•	—	1¹³⁄₁₆	9½	2½	2⁵⁄₁₆	(8) 0.162 x 3½	(2) 0.148 x 1½	215	2,550	2,140	2,115	2,575	1,665	1,230
	BA1.81/9.5 (Min.)	14	•	—	1¹³⁄₁₆	9½	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,205	2,660	1,495
	BA1.81/9.5 (Max.)	14	•	✓	1¹³⁄₁₆	9½	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=9.5	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 11¼	BA1.81/11.25 (Min.)	12	•	—	1¹³⁄₁₆	11¼	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA1.81/11.25 (Max.)	12	•	✓	1¹³⁄₁₆	11¼	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=11.25	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 11⅞	ITS1.81/11.88	18	•	—	1⅞	11¹³⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	MIT11.88	16	•	—	1¹³⁄₁₆	11⅞	2½	2⁵⁄₁₆	(8) 0.162 x 3½	(2) 0.148 x 1½	215	2,550	2,140	2,115	2,575	1,665	1,230
	BA1.81/11.88 (Min.)	14	•	—	1¹³⁄₁₆	11⅞	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA1.81/11.88 (Max.)	14	•	✓	1¹³⁄₁₆	11⅞	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=11.875	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 14	ITS1.81/14	18	•	—	1⅞	13¹⁵⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	MIT1.81/14	16	•	—	1¹³⁄₁₆	14	2½	2⁵⁄₁₆	(8) 0.162 x 3½	(2) 0.148 x 1½	215	2,550	2,140	2,115	2,575	1,665	1,230
	BA1.81/14 (Min.)	14	•	—	1¹³⁄₁₆	14	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA1.81/14 (Max.)	14	•	✓	1¹³⁄₁₆	14	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=14	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
1¾ x 16	ITS1.81/16	18	•	—	1⅞	15¹⁵⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	MIT1.81/16	16	•	—	1¹³⁄₁₆	16	2½	2⁵⁄₁₆	(8) 0.162 x 3½	(2) 0.148 x 1½	215	2,550	2,140	2,115	2,575	1,665	1,230
	BA1.81/16 (Min.)	14	•	—	1¹³⁄₁₆	16	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA1.81/16 (Max.)	14	•	✓	1¹³⁄₁₆	16	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP1.81 H=16	7⁄12	•	✓	1¹³⁄₁₆	5⅜ to 30	4	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
2 x 9½	ITS2.06/9.5	18	•	—	2⅛	9⁷⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	BA2.1/9.5 (Min.)	12	•	—	2⅛	9½	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	2,980	2,660	1,495
	BA2.1/9.5 (Max.)	12	•	✓	2⅛	9½	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP2.1 H=9.5	7⁄12	•	✓	2⅛	5⅜ to 30	2½	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030
2 x 11⅞	ITS2.06/11.88	18	•	—	2⅛	11¹³⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	MIT2.1/11.88	16	•	—	2⅛	11⅞	2½	2⁵⁄₁₆	(8) 0.162 x 3½	(2) 0.148 x 1½	215	2,550	2,140	2,115	2,575	1,665	1,230
	BA2.1/11.88 (Min.)	14	•	—	2⅛	11⅞	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA2.1/11.88 (Max.)	14	•	✓	2⅛	11⅞	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP2.1 H=11.875	7⁄12	•	✓	2⅛	5⅜ to 30	2½	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2.985	2,230	2,030
2 x 14	ITS2.06/14	18	•	—	2⅛	13¹⁵⁄₁₆	2	1⁷⁄₁₆	(6) 0.148 x 3	—	120	1,550	1,365	1,780	1,470	1,150	1,085
	BA2.1/14 (Min.)	12	•	—	2⅛	14	3	2½	(16) 0.162 x 3½	(2) 0.148 x 1½	255	4,015	3,705	4,005	3,780	3,095	1,495
	BA2.1/14 (Max.)	12	•	✓	2⅛	14	3	2½	(16) 0.162 x 3½	(8) 0.148 x 1½	1,275	4,715	4,320	4,500	4,720	4,005	1,495
	WP2.1 H=14	7⁄12	•	✓	2⅛	5⅜ to 30	2½	2³⁄₁₆	(4) 0.162 x 2½	(2) 0.148 x 1½	—	3,095	3,605	3,605	2,985	2,230	2,030

See footnotes on p. 206.

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HL

Heavy Angle and Gusset

Versatile angle gussets and heavy angles promote standardization and construction economy, and are compatible with Simpson Strong-Tie structural hardware.

Finish: 7 gauge models — galvanized;
3 gauge models — Simpson Strong-Tie gray paint.
May be ordered HDG or black powder coat (add HDG or PC to model no.).

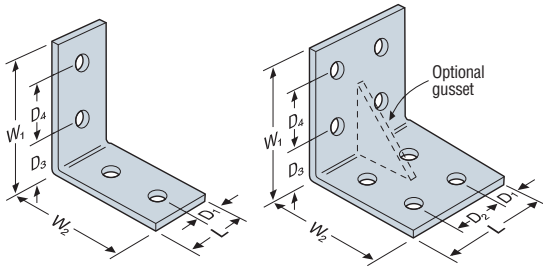
Options:

- Gussets may be added to HL models when L ≥ 5" (specify G after model number, as in HL46G).

Codes: See p. 12 for Code Reference Key Chart

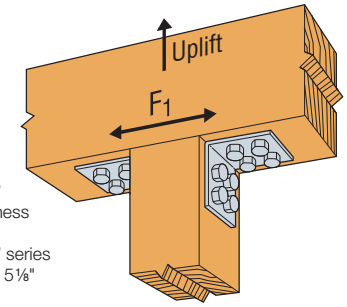
These products are available with additional corrosion protection. For more information, see pp. 13–19.

Model No.	Ga.	Dimensions (in.)						Bolts (Total)		DF/SP Allowable Loads		Code Ref.
		W_1 and W_2	L	D_1	D_2	D_3	D_4	Qty.	Dia.	Uplift (160)	F_1 (160)	
Single Row Angles												
HL33	7	3¼	2½	1¼	—	2	—	2	½	740	1,040	
HL35	7	3¼	5	1¼	2½	2	—	4	½	740	1,310	
HL37	7	3¼	7½	1¼	2½	2	—	6	½	740	1,310	
HL43	3	4¼	3	1½	—	2¾	—	2	¾	1,275	1,445	—
HL46	3	4¼	6	1½	3	2¾	—	4	¾	1,275	1,680	
HL49	3	4¼	9	1½	3	2¾	—	6	¾	1,275	1,680	
Double Row Angles												
HL53	7	5¾	2½	1¼	—	2	2½	4	½	740	1,310	
HL55	7	5¾	5	1¼	2½	2	2½	8	½	740	1,310	
HL57	7	5¾	7½	1¼	2½	2	2½	12	½	740	1,310	—
HL73	3	7¼	3	1½	—	2¾	3	4	¾	2,445	2,885	
HL76	3	7¼	6	1½	3	2¾	3	8	¾	2,445	4,310	
HL79	3	7¼	9	1½	3	2¾	3	12	¾	2,445	4,310	



HL53 HL55

1. See pp. 288–289 for Straps and Ties General Notes.
2. For SPF/HF lumber, use 0.85 x DF/SP allowable loads.
3. Parts should be centered on the face of the member, which is at least as wide as the angle, to which they are attached.
4. Wood members for the "3" and "5" series must have a minimum thickness of 3½" for table loads to apply.
5. Wood members for the "4" and "7" series must have a minimum thickness of 5⅛" for table loads to apply.
6. Allowable loads are for a single connector. Uplift loads may be doubled when using two connectors. Connectors are required on both sides to achieve lateral loads in both directions. Lateral loads may not be doubled.
7. Lag screws of equal diameter (minimum 5" long) may be substituted for bolts in the beam with no reduction in load.
8. All references to bolts are for structural-quality through bolts (not lag screws or carriage bolts) equal to or better than ASTM A307, Grade A.



Typical HL55 Installation

Z

Clip

The Z clip secures 2x4 flat blocking between joists or trusses to support sheathing.

Material: See table

Finish: Galvanized

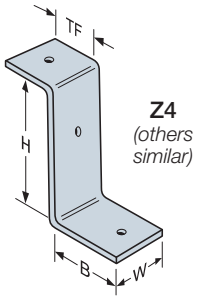
Installation:

- Use all specified fasteners; see General Notes.
- Z clips do not provide lateral stability. Do not walk on stiffeners or apply load until diaphragm is installed and nailed to stiffeners.

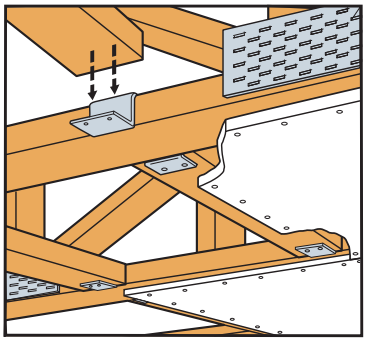
Codes: See p. 12 for Code Reference Key Chart

Model No.	Ga.	Dimensions (in.)				Fasteners[1] (Total) (in.)	DF/SP Allowable Download (100/115/125/160)	Code Ref.
		W	H	B	TF			
Z2	20	2⁵⁄₁₆	1½	1⅜	1⅜	(4) 0.148 x 1½	420	IBC, FL, LA
Z4	12	1½	3½	2⅛	1¾	(2) 0.162 x 3½	420	
Z28	28	2⁵⁄₁₆	1½	1⅜	1⅜	0.148 x 1½[1]	—	—
Z38	28	2⁵⁄₁₆	2½	1⅜	1⅜	0.148 x 1½[1]	—	
Z44	12	2½	3½	2	1⅜	(4) 0.162 x 3½	775	IBC, FL, LA

1. Z28 and Z38 do not have nail holes. Fastener quantity and type shall be per designer.
2. Z4 loads apply with a nail in the top and a nail in the seat.
3. For SPF/HF lumber, use 0.86 x DF/SP allowable loads.
4. **Fasteners:** Nail dimensions are listed diameter by length. See pp. 25–26 for fastener information.



Z4 *(others similar)*



Typical Z2 Installation

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