Fortress Building Products Evolution Steel Roof Framing Project ENG-2603-334
August 31, 2026

Mr. Geoff Luczycki
Fortress Building Products
1720 North 1st Street
Garland, TX 75040

Re: Evolution Steel Roof Framing Evaluation[1,2,3]

Dear Mr. Luczycki:

DrJ Engineering, LLC (DrJ) has been contracted to provide a professional engineering services in support of Fortress Building Products' goals and objectives to provide documentation for using Evolution Steel Roof Framing products for roofing applications in the US.

Scope of Work

This report provides a structural evaluation of Evolution Steel Framing roof members for use in the United States. The evaluation establishes allowable spans for rafters and beams under prescribed roof gravity loads and incorporates available ASD bracket, hanger, post-bracket, splice, and post-capacity information as reaction checks for the configurations expressly identified herein.

The scope of work includes:

1. Review of manufacturer product data, drawings, and supporting literature.
2. Review and incorporation of available tested ASD vertical bracket/post-support values and AISI S100 post compression capacities for the configurations expressly identified herein.
3. Determination of applicable U.S. building code load requirements.
4. Structural analysis in accordance with AISI S100 and AISI S240 of cold-formed steel members for:
    a. Rafter applications
    b. Beam applications
5. Development of span tables under the stated assumptions, limitations, and serviceability criteria.

This report is limited to gravity-load resistance for roof dead, roof live, and/or snow loading.

The bracket, hanger, post-bracket, splice, and post capacity values incorporated herein are used as ASD vertical reaction limits only where the installed configuration, fastener schedule, member orientation, and supporting members are consistent with the referenced data.

Any project-specific loading condition is the responsibility of the Registered Design Professional unless expressly addressed herein.

This report is subject to review one year after published date.

This work has been performed pursuant to our collective areas of expertise.

Product Description

Evolution Steel Framing is a cold-formed steel framing system consisting of galvanized steel members installed with manufacturer-specified brackets, hangers, tracks, beam components, and fasteners. For this roof-framing report, the evaluated members are limited to the roof rafter and beam profiles identified in the project scope.

Evolution 2x6 Rafters are manufactured from galvanized, 16-gauge carbon structural steel conforming to ASTM A653 G60 with a yield strength of 34 ksi. Nominal section profile is shown in **Figure 1**.

In this report, the profile designated for rafters (i.e., 2x6, 16-gauge) has also been evaluated for use as single and double beams.

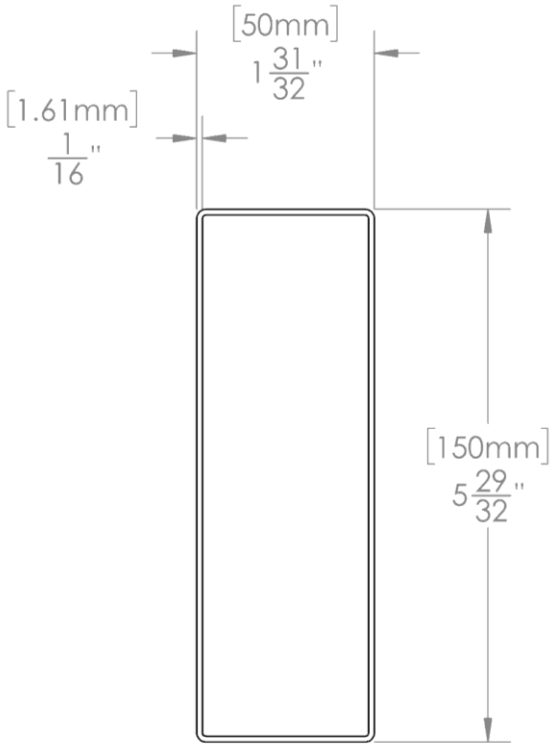

Figure 1. Evolution Steel Framing – Rafter Profile

Evolution 2x11 Beams are provided in single and double beams. Single beams consist of two galvanized, 16-gauge structural steel conforming to ASTM A653 G60 J-channels, with a yield strength of 50 ksi, that are factory-welded to form a hollow, rectangular profile. The webs of the beams have an embossed pattern spaced 6 inches on center. Double beams consist of two single beams, factory assembled with two double beam tracks fastened to the top and bottom edges with screws. Nominal section profile is shown in **Figure 2** and **Figure 3**.

Figure 2. Evolution Steel Framing – Beams

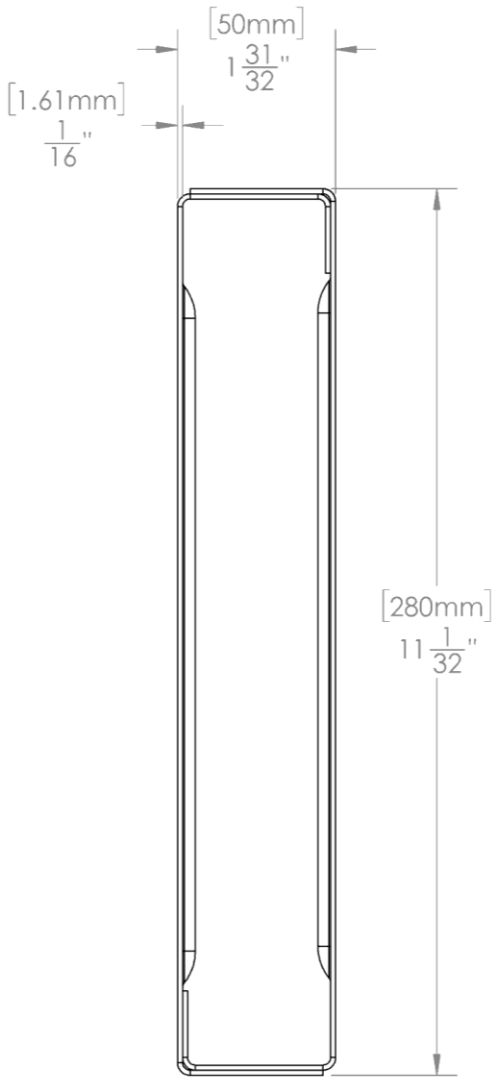

Figure 3. Evolution Steel Framing – Beam Profile

Support posts are manufactured from galvanized, 11-gauge or 12-gauge carbon structural steel conforming to ASTM A653 G60 with a yield strength of 34 ksi. Nominal section profiles are shown in **Figure 4**.

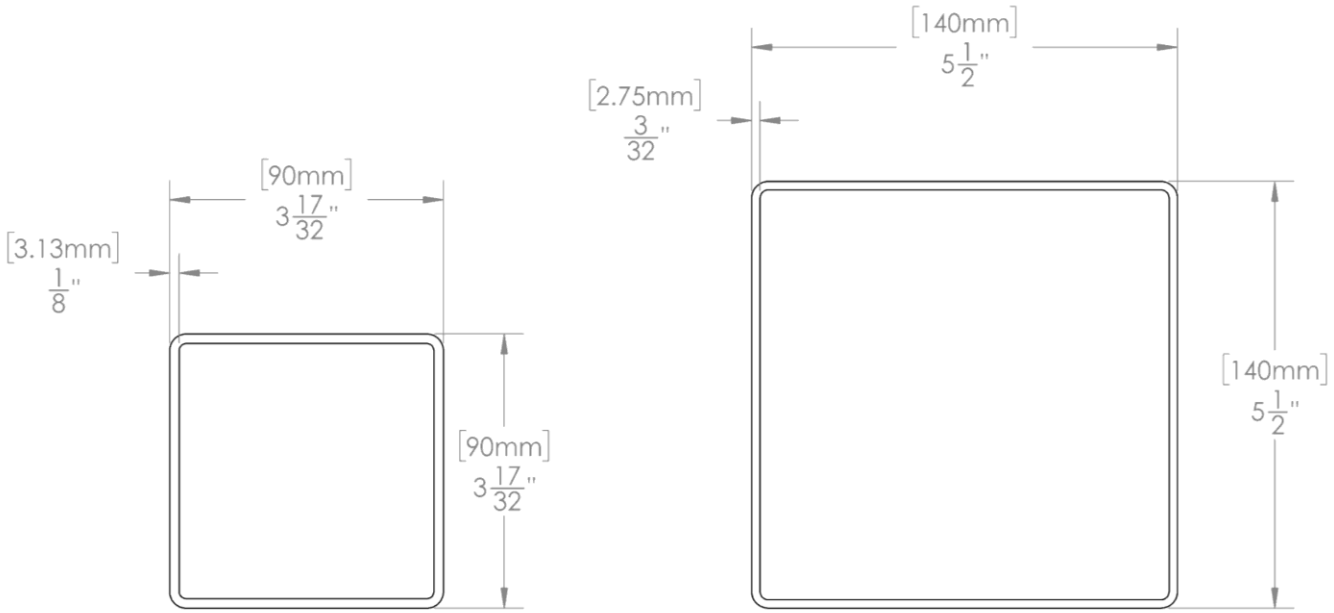

Figure 4. Evolution Steel Framing – Post Profiles

Applicable Codes and Standards

Reference Standards[4,5]

1. ASCE/SEI 7-22: Minimum Design Loads and Associated Criteria for Buildings and Other Structures
2. AISI S100-16 (2020) w/S3-22: North American Specification for the Design of Cold-Formed Steel Structural Members
3. AISI S240-20: North American Standard for Cold-Formed Steel Structural Framing

Regulations

1. IBC – 18, 21, 24: International Building Code®
2. IRC – 18, 21, 24: International Residential Code®

Design Assumptions

Load Cases

1. Uniform roof loads evaluated:
    a. Dead load: 10 psf
        i. Used as a representative light-roof dead load for span-table development. Project-specific dead loads greater than 10 psf require separate evaluation.
    b. Live roof load: 20 psf
    c. Snow load: 30 psf, 40 psf, 50 psf, 60 psf, 80 psf, and 100 psf
2. Loads are evaluated as uniform gravity loads applied over the tributary width of the member.
    a. Support reactions from the resulting rafter and beam span conditions are checked against the applicable ASD bracket, hanger, post-bracket, splice, and post-support capacities where those components are part of the evaluated load path.
3. Dead load is evaluated along the actual sloped length of the roof member.
4. Live roof loads and snow loads are evaluated as a vertical load acting on the horizontal projection of the roof.
5. Maximum slope of rafters is assumed not to exceed a roof pitch of 6:12.

6. Tabulated rafter span lengths are measured along the member sloped length between supports.
7. Tabulated beam spans are measured along the beam centerline.
    a. For horizontal beam configurations, the tabulated beam span is the horizontal beam length.
    b. For sloped beam configurations, where expressly identified in the applicable table or figure, the tabulated beam span is the sloped beam length based on local member bending, shear, web crippling, and deflection checks using the transformed load component normal to the sloped beam.
8. Web crippling resistance was evaluated using the applicable AISI S100 web crippling provisions for a single web channel or C-section member.
    a. For single 2x6 and 2x11 beams, the calculated single-web resistance was assumed to be additive based on the number of effective webs participating in bearing. As a result, the web crippling resistance of a single box beam was taken as 2.0 times the calculated single-web resistance, since the single beam contains two effective webs.
    b. For double box beam assemblies, the web crippling resistance was taken as 4.0 times the calculated single-web resistance, since the double assembly contains four effective webs.

Tributary Widths (Beams)

1. 2 ft, 4 ft, 6 ft, 8 ft, 10 ft

Rafter Spacing

1. 12 in. o.c.
2. 16 in. o.c.
3. 24 in. o.c.

Boundary Conditions

1. Simply supported
2. Maximum overhang for rafters and beams are limited to the lower of 25% of the tabulated spans or 24 inches.
    a. Overhang limitations apply to both ends of the beam.

Configurations include:

Rafters

1. **Table 2** - Joists/Rafters clear spans. Tabulated spans allow for span/4 (or 24″, whichever is lower) maximum overhangs on one side.

Beams

1. **Table 3** - Beams not supporting any rafter/joist overhangs.
2. **Table 4** - Beams supporting rafter/joist of span/4 maximum overhangs.
3. Tabulated spans allow for span/4 (or 24″, whichever is lower) maximum overhangs on one or both sides.

Openings, cuts, and splices in members were not considered. Other cantilever, continuity, or support conditions require separate project-specific engineering evaluation.

Limitations

This report applies to Evolution Steel Framing members manufactured in accordance with the reviewed specifications, manufacturer drawings, and applicable material certification requirements.

1. Member capacities assume installation, bracing, bearing, and load transfer consistent with AISI S100, AISI S240, the manufacturer's installation instructions, and the assumptions used in the supporting calculations.
    a. Members have been evaluated assuming rafters and beams are sufficiently restrained against lateral-torsional buckling. As a minimum, rafters shall be blocked at mid-span in all conditions.
2. Durability, corrosion protection beyond the specified coating/material system, fire-resistance performance, and environmental exposure effects are provided by others unless expressly addressed in separate documentation.
3. Project-specific design conditions and the use of the tabulated vales in this report are to be verified by the RDP.
    a. Wind uplift anchorage, roof diaphragm behavior, lateral bracing systems, global frame stability, and lateral-force-resisting systems, are outside the scope of this report.

Analysis Methodology

Structural analysis was performed in accordance with AISI S100 and AISI S240 using elastic analysis principles and the member properties applicable to the evaluated cold-formed steel profiles.

Strength Limit States

1. Members were evaluated for:
    a. Flexural strength
    b. Shear strength
    c. Web crippling
    d. Combined bending and shear interaction
    e. Combined bending and web crippling interaction
    f. Connection reaction check
        i. Bracket, hanger, post-bracket, and splice capacities are treated as separate ASD reaction limit states. The span tables do not derive these capacities from the rafter or beam member calculations. Instead, support reactions from the rafter and beam span analyses are compared with the applicable ASD connection capacities from the referenced connection-capacity report. Where a connection is part of the evaluated gravity-load path, the allowable span is limited so that the service reaction demand does not exceed the applicable ASD connection capacity.
        ii. Connection ASD capacities are provided in **Table 1** below.

Table 1. ASD Connection Capacity Inputs Used for Reaction Checks

Connection / Support Configuration	ASD Capacity Used as Reaction Limit	Fastener / Detail Basis
F50 bracket to ledger / joist	1,002 lb	Three (3) #12-14 TEKS screws at bracket-to-ledger and bracket-to-joist locations
Ledger bracket to backside of ledger / joist	1,510 lb	Backside of ledger condition and two (2) #12-14 TEKS screws at bracket-to-joist location
45-degree bracket to ledger / joist	4,622 lb	Six (6) #12-14 TEKS screws to ledger and two (2) #12-14 TEKS screws to joist
Single hanger bracket to beam / joist	748 lb	Six (6) #12-14 TEKS screws to beam and two (2) #12-14 TEKS screws to joist
Double hanger bracket to beam / joist	1,012 lb	Six (6) #12-14 TEKS screws to beam and two (2) #12-14 TEKS screws to joist
Post bracket to single beam / post	1,335 lb	Fourteen (14) #12-14 TEKS screws to single beam and fourteen (14) #12-14 TEKS screws to post
Post bracket to double beam / post	5,207 lb	Fourteen (14) #12-14 TEKS screws to double beam and fourteen (14) #12-14 TEKS screws to post
Post bracket to post connection	5,344 lb	Eight (8) #12-14 TEKS screws connecting post bracket to post
Beam splice connection	3,632 lb	Four (4) 3/8-inch stainless steel Condition A through-bolts connecting beam to beam

2. Strength capacities reported in this report are based on allowable stress design (ASD). Nominal strengths were converted to allowable strengths using the applicable AISI S100 safety factors. Reported span tables and associated allowable loads are therefore presented on an ASD basis.

Serviceability Limit States

1. Span tables are governed by:
    a. L/360
        i. Intended for roof assemblies supporting brittle finishes or other deflection-sensitive materials.
        ii. Brittle or deflection-sensitive finishes include materials or assemblies that may be adversely affected by relatively small deflections, such as finishes, coverings, or components susceptible to cracking, separation, leakage, or serviceability-related damage.
    b. L/240
        i. Intended for general roof framing applications where the supported roof assembly is not considered unusually brittle or highly deflection-sensitive.
        ii. This limit is appropriate for typical roof framing serviceability evaluation where a moderate level of deflection control is desired.
    c. L/180
        i. Intended only for roof assemblies with non-sensitive finishes or conditions where larger deflections are acceptable.
        ii. Non-sensitive finishes generally include flexible or non-brittle materials, exposed framing conditions, or other roof assemblies where increased deflection will not adversely affect the performance or appearance of the supported materials.

Controlling Condition

Allowable spans are governed by the most restrictive of:

1. The applicable ASD strength limit state, including flexure, shear, web crippling, applicable interaction equations, and connection capacities as applicable.
2. The applicable deflection limit, including L/360, L/240, or L/180 as selected for the project condition.

Where roof-slope geometry introduces axial force in the rafter or beam, combined axial and bending effects require separate verification unless explicitly included in the supporting span-table calculations.

Results

The span tables below are based on the assumptions boundary conditions, member configurations, and loading conventions stated in this report. For each table, the permitted span is the lesser of the strength span and the applicable serviceability span selected by the registered design professional (RDP).

Figure 5 illustrates the rafter and beam span definitions used for the roof-framing span tables. This report provides both the sloped member length along the rafter centerline between supports and the horizontal projected length of the rafter. **Figure 5** also identifies the maximum permitted roof slope, beam span measured between post supports, and the maximum overhang condition used in the supporting calculations.

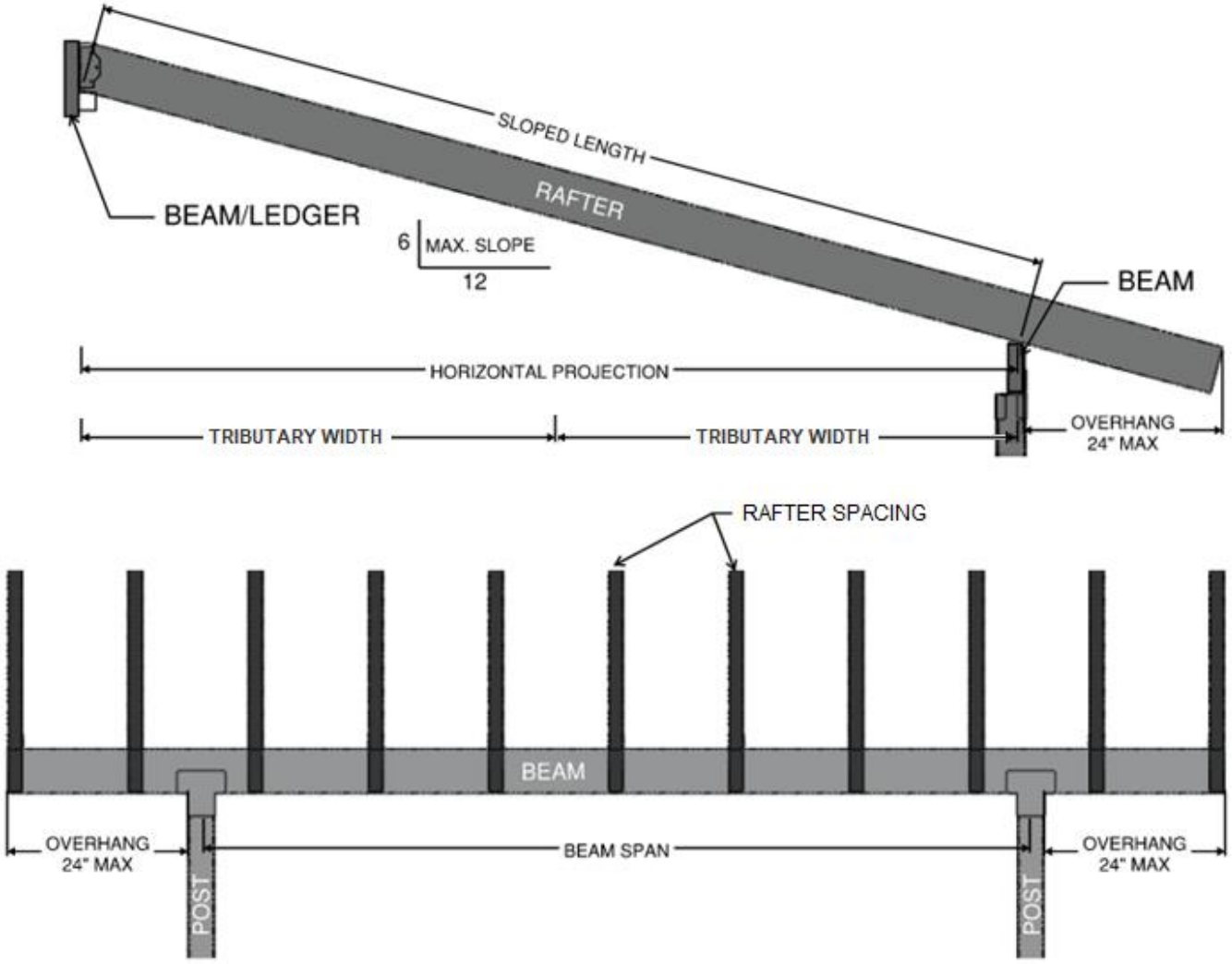

Figure 5. Rafter and Beam Span Definitions for Attached Sloped Roof Framing

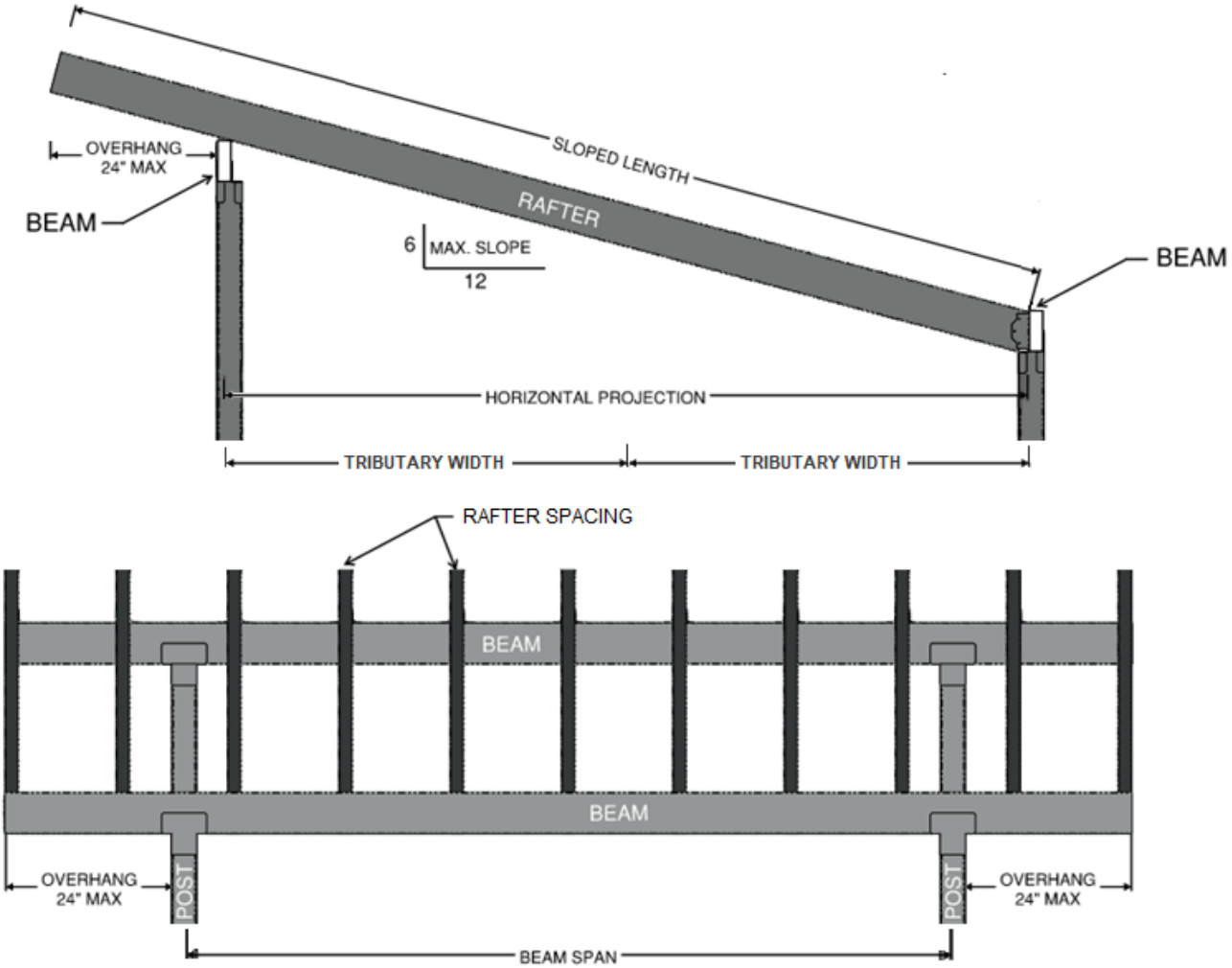

Figure 6. Rafter and Beam Span Definitions for Freestanding Sloped Rafters Roof Framing

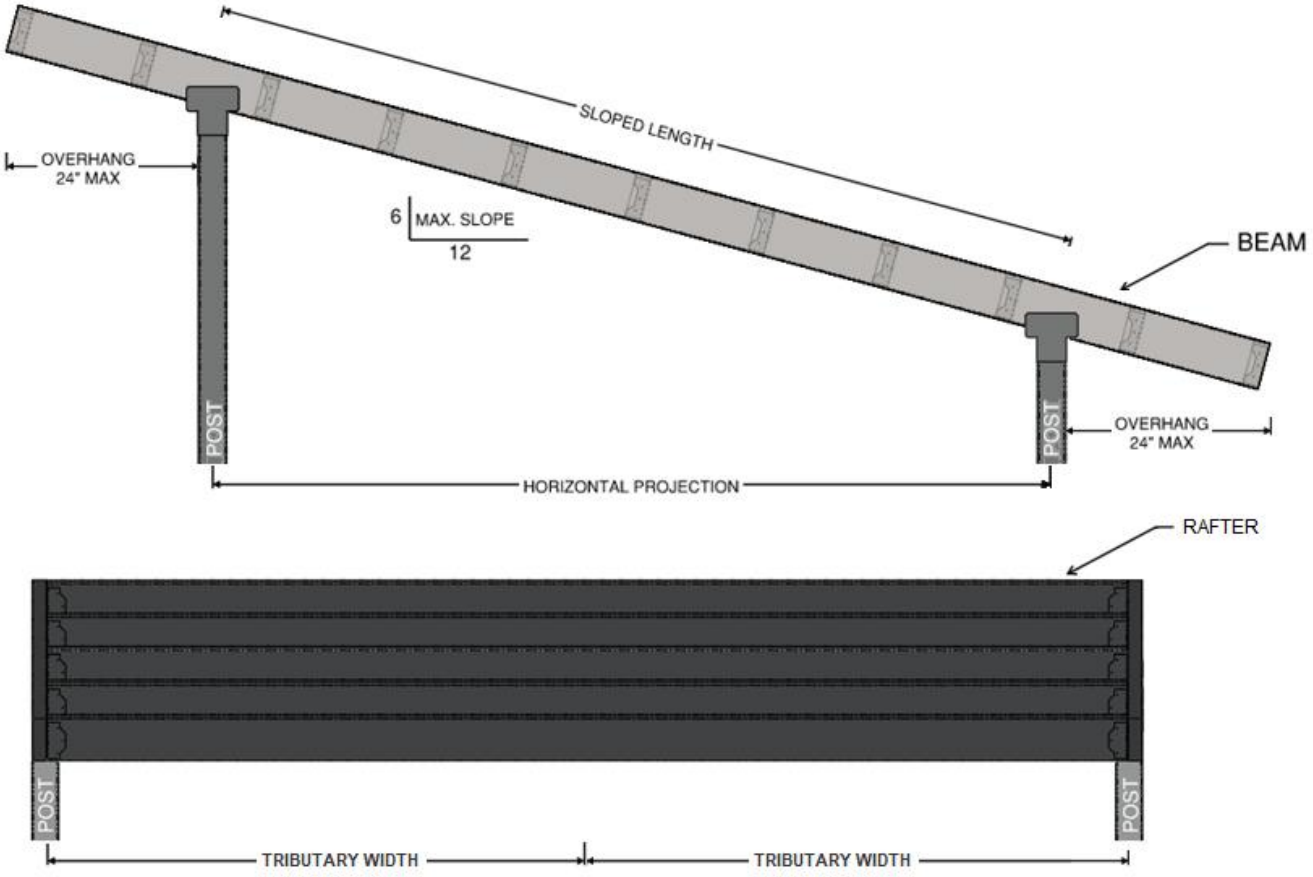

Figure 7. Rafter and Beam Span Definitions for Freestanding Sloped Beams Roof Framing

Rafter Span Tables

Maximum rafter spans are provided in **Table 2**.

Table 2. Allowable Rafter Spans[1,2,3,4,5,6] - 2 in. x 6 in., 16 ga

Live or Snow Loads (psf)	Joist Spacing (in. o.c.)	L/360		L/240		L/180	
		Sloped Length	Horizontal Projection	Sloped Length	Horizontal Projection	Sloped Length	Horizontal Projection
20	12"	19' 6"	17' 5"	22' 4"	19' 11"	24' 7"	21' 11"
	16"	17' 8"	15' 10"	20' 3"	18' 1"	22' 4"	19' 11"
	24"	15' 5"	13' 10"	17' 8"	15' 10"	19' 6"	17' 5"
30	12"	17' 9"	15' 10"	20' 4"	18' 2"	22' 5"	20' 0"
	16"	16' 1"	14' 5"	18' 6"	16' 6"	20' 4"	18' 2"
	24"	14' 1"	12' 7"	16' 1"	14' 5"	17' 1"	15' 4"
40	12"	16' 6"	14' 9"	18' 11"	16' 11"	20' 10"	18' 7"
	16"	15' 0"	13' 5"	17' 2"	15' 4"	18' 10"	16' 10"
	24"	13' 1"	11' 8"	15' 0"	13' 5"	15' 4"	13' 9"
50	12"	15' 7"	13' 11"	17' 10"	15' 11"	19' 7"	17' 6"
	16"	14' 2"	12' 8"	16' 2"	14' 6"	17' 2"	15' 5"
	24"	12' 4"	11' 0"	14' 0"	12' 7"	14' 0"	12' 7"
60	12"	14' 9"	13' 3"	16' 11"	15' 2"	18' 5"	16' 6"
	16"	13' 5"	12' 0"	15' 5"	13' 9"	15' 11"	14' 3"
	24"	11' 9"	10' 6"	13' 0"	11' 8"	13' 0"	11' 8"
80	12"	13' 7"	12' 2"	15' 7"	13' 11"	16' 3"	14' 7"
	16"	12' 4"	11' 1"	14' 1"	12' 7"	14' 1"	12' 7"
	24"	9' 8"	8' 8"	9' 8"	8' 8"	9' 8"	8' 8"
100	12"	12' 9"	11' 5"	14' 7"	13' 1"	14' 9"	13' 2"
	16"	11' 7"	10' 4"	12' 9"	11' 5"	12' 9"	11' 5"
	24"	7' 6"	6' 8"	7' 6"	6' 8"	7' 6"	6' 8"

SI: 1 in = 25.4 mm, 1 ft = 0.305 m, 1 psf = 0.0479 kPa

1. Allowable spans assume a dead load of 10 psf in addition to the live/snow loads shown.
2. Dead evaluated along the slopped length of the member and live/snow loads evaluated over the horizontal projection of the span.
3. Maximum slope of rafters shall not to exceed a 6:12 pitch.
4. Maximum overhang for rafters is limited to the lower of 25% of the tabulated spans or 24 inches. Rafters are assumed to overhang on one end.
5. For gravity loads, the F50 and F10 brackets shall be used (F50 brackets for flush installation; F10 brackets for overhanging installation).
6. Connections for rafter axial loads, which impose a thrust load onto the brackets, are outside the scope of this report and shall be sized by other means (i.e. rafter ties, ceiling joist/rafters, etc.).

Beam Span Tables

Horizontal Beams

For beam tables, tributary width is the supported roof width contributing gravity load to the beam. Table values assume the load distribution, member continuity, and overhang geometry used in the supporting calculations.

Maximum beam spans are provided in **Table 3** and **Table 4**.

Table 3. Allowable Beam Spans[1,2,3,4,5] – Flush Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
20	2.00	15' 5"	19' 6"	25' 10"	32' 7"	17' 8"	22' 4"	29' 7"	37' 4"	19' 6"	24' 7"	32' 7"	41' 1"
	4.00	12' 3"	15' 5"	20' 6"	25' 10"	13' 11"	17' 8"	22' 3"	29' 7"	13' 11"	19' 6"	22' 3"	32' 7"
	6.00	10' 8"	13' 6"	13' 4"	22' 7"	11' 4"	15' 5"	13' 4"	25' 10"	11' 4"	16' 1"	13' 4"	26' 10"
	8.00	8' 11"	12' 3"	8' 11"	20' 6"	8' 11"	13' 11"	8' 11"	23' 3"	8' 11"	13' 11"	8' 11"	23' 3"
	10.00	7' 1"	11' 5"	7' 1"	19' 0"	7' 1"	12' 5"	7' 1"	20' 10"	7' 1"	12' 5"	7' 1"	20' 10"
30	2.00	14' 1"	17' 9"	23' 7"	29' 8"	16' 1"	20' 4"	27' 0"	34' 0"	17' 1"	22' 5"	28' 8"	37' 5"
	4.00	11' 2"	14' 1"	15' 9"	23' 7"	12' 1"	16' 1"	15' 9"	27' 0"	12' 1"	17' 1"	15' 9"	28' 8"
	6.00	9' 0"	12' 4"	9' 0"	20' 7"	9' 0"	14' 0"	9' 0"	23' 5"	9' 0"	14' 0"	9' 0"	23' 5"
	8.00	6' 9"	11' 2"	6' 9"	18' 8"	6' 9"	12' 1"	6' 9"	20' 3"	6' 9"	12' 1"	6' 9"	20' 3"
	10.00	5' 4"	10' 4"	5' 4"	17' 4"	5' 4"	10' 10"	5' 4"	18' 1"	5' 4"	10' 10"	5' 4"	18' 1"
40	2.00	13' 1"	16' 6"	21' 11"	27' 7"	15' 0"	18' 11"	25' 1"	31' 7"	15' 4"	20' 10"	25' 8"	34' 10"
	4.00	10' 5"	13' 1"	11' 9"	21' 11"	10' 10"	15' 0"	11' 9"	25' 1"	10' 10"	15' 4"	11' 9"	25' 8"
	6.00	7' 2"	11' 5"	7' 2"	19' 2"	7' 2"	12' 6"	7' 2"	21' 0"	7' 2"	12' 6"	7' 2"	21' 0"
	8.00	5' 5"	10' 5"	5' 5"	17' 5"	5' 5"	10' 10"	5' 5"	18' 2"	5' 5"	10' 10"	5' 5"	18' 2"
	10.00	4' 4"	9' 8"	4' 4"	16' 2"	4' 4"	9' 8"	4' 4"	16' 3"	4' 4"	9' 8"	4' 4"	16' 3"
50	2.00	12' 4"	15' 7"	20' 8"	26' 0"	14' 0"	17' 10"	22' 9"	29' 9"	14' 0"	19' 7"	22' 9"	32' 9"
	4.00	9' 1"	12' 4"	9' 1"	20' 8"	9' 1"	14' 0"	9' 1"	23' 6"	9' 1"	14' 0"	9' 1"	23' 6"
	6.00	6' 0"	10' 9"	6' 0"	18' 0"	6' 0"	11' 5"	6' 0"	19' 2"	6' 0"	11' 5"	6' 0"	19' 2"
	8.00	4' 6"	9' 9"	4' 6"	16' 4"	4' 6"	9' 11"	4' 6"	16' 7"	4' 6"	9' 11"	4' 6"	16' 7"
	10.00	3' 7"	8' 10"	3' 7"	14' 10"	3' 7"	8' 10"	3' 7"	14' 10"	3' 7"	8' 10"	3' 7"	14' 10"

Table 3. Allowable Beam Spans[1,2,3,4,5] – Flush Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
60	2.00	11' 9"	14' 9"	18' 11"	24' 9"	13' 0"	16' 11"	18' 11"	28' 4"	13' 0"	18' 5"	18' 11"	30' 10"
	4.00	7' 9"	11' 9"	7' 9"	19' 7"	7' 9"	13' 0"	7' 9"	21' 9"	7' 9"	13' 0"	7' 9"	21' 9"
	6.00	5' 2"	10' 3"	5' 2"	17' 2"	5' 2"	10' 7"	5' 2"	17' 9"	5' 2"	10' 7"	5' 2"	17' 9"
	8.00	3' 10"	9' 2"	3' 10"	15' 5"	3' 10"	9' 2"	3' 10"	15' 5"	3' 10"	9' 2"	3' 10"	15' 5"
	10.00	3' 1"	8' 3"	3' 1"	13' 9"	3' 1"	8' 3"	3' 1"	13' 9"	3' 1"	8' 3"	3' 1"	13' 9"
80	2.00	10' 10"	13' 7"	13' 9"	22' 9"	11' 6"	15' 7"	13' 9"	26' 1"	11' 6"	16' 3"	13' 9"	27' 3"
	4.00	6' 1"	10' 10"	6' 1"	18' 1"	6' 1"	11' 6"	6' 1"	19' 3"	6' 1"	11' 6"	6' 1"	19' 3"
	6.00	4' 0"	9' 5"	4' 0"	15' 8"	4' 0"	9' 5"	4' 0"	15' 8"	4' 0"	9' 5"	4' 0"	15' 8"
	8.00	3' 0"	8' 1"	3' 0"	13' 4"	3' 0"	8' 1"	3' 0"	13' 4"	3' 0"	8' 1"	3' 0"	13' 4"
	10.00	2' 5"	7' 3"	2' 5"	9' 9"	2' 5"	7' 3"	2' 5"	9' 9"	2' 5"	7' 3"	2' 5"	9' 9"
100	2.00	10' 1"	12' 9"	10' 6"	21' 4"	10' 5"	14' 7"	10' 6"	24' 5"	10' 5"	14' 9"	10' 6"	24' 8"
	4.00	5' 0"	10' 1"	5' 0"	16' 11"	5' 0"	10' 5"	5' 0"	17' 5"	5' 0"	10' 5"	5' 0"	17' 5"
	6.00	3' 4"	8' 6"	3' 4"	14' 3"	3' 4"	8' 6"	3' 4"	14' 3"	3' 4"	8' 6"	3' 4"	14' 3"
	8.00	2' 6"	7' 4"	2' 6"	10' 1"	2' 6"	7' 4"	2' 6"	10' 1"	2' 6"	7' 4"	2' 6"	10' 1"
	10.00	2' 0"	6' 7"	2' 0"	7' 9"	2' 0"	6' 7"	2' 0"	7' 9"	2' 0"	6' 7"	2' 0"	7' 9"

SI: 1 in = 25.4 mm, 1 ft = 0.305 m, 1 psf = 0.0479 kPa

1. Allowable spans assume a dead load of 10 psf in addition to the live/snow loads shown.
2. The applied load from the rafter onto the beam is determined as follows. Dead evaluated along the slopped length of the member and live/snow loads evaluated over the horizontal projection of the span.
3. Maximum slope of rafters shall not to exceed a 6:12 pitch.
4. Maximum overhang for beams are limited to the lower of 25% of the tabulated spans or 24 inches. Applicable to both ends of the beams.
5. Post bracket connections (i.e. bracket to beam and bracket to post) are detailed in **Table 1**.

Table 4. Allowable Beam Spans[1,2,3,4,5] – Overhanging Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
20	2.00	13' 4"	16' 9"	22' 3"	28' 1"	15' 3"	19' 3"	25' 6"	32' 2"	15' 9"	21' 2"	26' 4"	35' 5"
	4.00	10' 7"	13' 4"	12' 7"	22' 3"	11' 1"	15' 3"	12' 7"	25' 6"	11' 1"	15' 9"	12' 7"	26' 4"
	6.00	7' 7"	11' 7"	7' 7"	19' 5"	7' 7"	12' 10"	7' 7"	21' 6"	7' 7"	12' 10"	7' 7"	21' 6"
	8.00	5' 8"	10' 7"	5' 8"	17' 8"	5' 8"	11' 1"	5' 8"	18' 7"	5' 8"	11' 1"	5' 8"	18' 7"
	10.00	4' 6"	9' 10"	4' 6"	16' 5"	4' 6"	9' 11"	4' 6"	16' 8"	4' 6"	9' 11"	4' 6"	16' 8"
30	2.00	12' 2"	15' 4"	20' 4"	25' 7"	13' 8"	17' 6"	21' 5"	29' 3"	13' 8"	19' 3"	21' 5"	32' 3"
	4.00	8' 7"	12' 2"	8' 7"	20' 4"	8' 7"	13' 8"	8' 7"	22' 11"	8' 7"	13' 8"	8' 7"	22' 11"
	6.00	5' 9"	10' 7"	5' 9"	17' 9"	5' 9"	11' 2"	5' 9"	18' 8"	5' 9"	11' 2"	5' 9"	18' 8"
	8.00	4' 3"	9' 7"	4' 3"	16' 1"	4' 3"	9' 8"	4' 3"	16' 2"	4' 3"	9' 8"	4' 3"	16' 2"
	10.00	3' 5"	8' 8"	3' 5"	14' 6"	3' 5"	8' 8"	3' 5"	14' 6"	3' 5"	8' 8"	3' 5"	14' 6"
40	2.00	11' 3"	14' 3"	16' 4"	23' 9"	12' 3"	16' 3"	16' 4"	27' 3"	12' 3"	17' 5"	16' 4"	29' 1"
	4.00	6' 11"	11' 3"	6' 11"	18' 10"	6' 11"	12' 3"	6' 11"	20' 7"	6' 11"	12' 3"	6' 11"	20' 7"
	6.00	4' 7"	9' 10"	4' 7"	16' 6"	4' 7"	10' 0"	4' 7"	16' 9"	4' 7"	10' 0"	4' 7"	16' 9"
	8.00	3' 5"	8' 8"	3' 5"	14' 6"	3' 5"	8' 8"	3' 5"	14' 6"	3' 5"	8' 8"	3' 5"	14' 6"
	10.00	2' 9"	7' 9"	2' 9"	13' 0"	2' 9"	7' 9"	2' 9"	13' 0"	2' 9"	7' 9"	2' 9"	13' 0"
50	2.00	10' 7"	13' 5"	12' 11"	22' 5"	11' 3"	15' 4"	12' 11"	25' 8"	11' 3"	15' 11"	12' 11"	26' 7"
	4.00	5' 9"	10' 7"	5' 9"	17' 9"	5' 9"	11' 3"	5' 9"	18' 9"	5' 9"	11' 3"	5' 9"	18' 9"
	6.00	3' 10"	9' 2"	3' 10"	15' 4"	3' 10"	9' 2"	3' 10"	15' 4"	3' 10"	9' 2"	3' 10"	15' 4"
	8.00	2' 10"	7' 11"	2' 10"	13' 3"	2' 10"	7' 11"	2' 10"	13' 3"	2' 10"	7' 11"	2' 10"	13' 3"
	10.00	2' 3"	7' 1"	2' 3"	11' 10"	2' 3"	7' 1"	2' 3"	11' 10"	2' 3"	7' 1"	2' 3"	11' 10"
60	2.00	10' 1"	12' 9"	10' 6"	21' 4"	10' 5"	14' 7"	10' 6"	24' 5"	10' 5"	14' 9"	10' 6"	24' 8"
	4.00	5' 0"	10' 1"	5' 0"	16' 11"	5' 0"	10' 5"	5' 0"	17' 5"	5' 0"	10' 5"	5' 0"	17' 5"
	6.00	3' 4"	8' 6"	3' 4"	14' 3"	3' 4"	8' 6"	3' 4"	14' 3"	3' 4"	8' 6"	3' 4"	14' 3"
	8.00	2' 6"	7' 4"	2' 6"	12' 4"	2' 6"	7' 4"	2' 6"	12' 4"	2' 6"	7' 4"	2' 6"	12' 4"
	10.00	2' 0"	6' 7"	2' 0"	11' 0"	2' 0"	6' 7"	2' 0"	11' 0"	2' 0"	6' 7"	2' 0"	11' 0"

Table 4. Allowable Beam Spans[1,2,3,4,5] – Overhanging Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
80	2.00	7' 9"	11' 9"	7' 9"	19' 7"	7' 9"	13' 0"	7' 9"	21' 9"	7' 9"	13' 0"	7' 9"	21' 9"
	4.00	3' 10"	9' 2"	3' 10"	15' 5"	3' 10"	9' 2"	3' 10"	15' 5"	3' 10"	9' 2"	3' 10"	15' 5"
	6.00	2' 7"	7' 6"	2' 7"	12' 7"	2' 7"	7' 6"	2' 7"	12' 7"	2' 7"	7' 6"	2' 7"	12' 7"
	8.00	1' 11"	6' 6"	1' 11"	10' 10"	1' 11"	6' 6"	1' 11"	10' 10"	1' 11"	6' 6"	1' 11"	10' 10"
	10.00	1' 6"	5' 10"	1' 6"	9' 1"	1' 6"	5' 10"	1' 6"	9' 1"	1' 6"	5' 10"	1' 6"	9' 1"
100	2.00	6' 4"	11' 0"	6' 4"	18' 4"	6' 4"	11' 9"	6' 4"	19' 9"	6' 4"	11' 9"	6' 4"	19' 9"
	4.00	3' 2"	8' 4"	3' 2"	13' 11"	3' 2"	8' 4"	3' 2"	13' 11"	3' 2"	8' 4"	3' 2"	13' 11"
	6.00	2' 1"	6' 9"	2' 1"	11' 4"	2' 1"	6' 9"	2' 1"	11' 4"	2' 1"	6' 9"	2' 1"	11' 4"
	8.00	1' 7"	5' 10"	1' 7"	9' 4"	1' 7"	5' 10"	1' 7"	9' 4"	1' 7"	5' 10"	1' 7"	9' 4"
	10.00	1' 3"	5' 3"	1' 3"	7' 5"	1' 3"	5' 3"	1' 3"	7' 5"	1' 3"	5' 3"	1' 3"	7' 5"

SI: 1 in = 25.4 mm, 1 ft = 0.305 m, 1 psf = 0.0479 kPa

1. Allowable spans assume a dead load of 10 psf in addition to the live/snow loads shown.
2. The applied load from the rafter onto the beam is determined as follows. Dead evaluated along the slopped length of the member and live/snow loads evaluated over the horizontal projection of the span.
3. Maximum slope of rafters shall not to exceed a 6:12 pitch.
4. Maximum overhang for beams are limited to the lower of 25% of the tabulated spans or 24 inches. Applicable to both ends of the beams.
5. Post bracket connections (i.e. bracket to beam and bracket to post) are detailed in **Table 1**.

Inclined Beams

Table 5 provides the horizontal projected beam spans for inclined beam configurations corresponding to the flush rafter installation values in **Table 3**. Values in **Table 5** are horizontal projected spans for inclined beam configurations and are determined from the corresponding allowable beam spans from **Table 3**. Values are based on a 6:12 maximum slope.

Table 5. Horizontal Projected Beam Spans[1,2,3,4,5] – Flush Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
20	2.00	13' 10"	17' 5"	23' 1"	29' 2"	15' 10"	19' 11"	26' 6"	33' 4"	17' 5"	21' 11"	29' 2"	36' 9"
	4.00	10' 11"	13' 10"	18' 4"	23' 1"	12' 5"	15' 10"	19' 11"	26' 6"	12' 5"	17' 5"	19' 11"	29' 2"
	6.00	9' 7"	12' 1"	11' 11"	20' 2"	10' 2"	13' 10"	11' 11"	23' 1"	10' 2"	14' 4"	11' 11"	24' 0"
	8.00	7' 11"	10' 11"	7' 11"	18' 4"	7' 11"	12' 5"	7' 11"	20' 10"	7' 11"	12' 5"	7' 11"	20' 10"
	10.00	6' 4"	10' 2"	6' 4"	17' 0"	6' 4"	11' 1"	6' 4"	18' 7"	6' 4"	11' 1"	6' 4"	18' 7"
30	2.00	12' 7"	15' 10"	21' 1"	26' 7"	14' 5"	18' 2"	24' 1"	30' 5"	15' 4"	20' 0"	25' 7"	33' 6"
	4.00	10' 0"	12' 7"	14' 1"	21' 1"	10' 10"	14' 5"	14' 1"	24' 1"	10' 10"	15' 4"	14' 1"	25' 7"
	6.00	8' 0"	11' 0"	8' 0"	18' 5"	8' 0"	12' 6"	8' 0"	20' 11"	8' 0"	12' 6"	8' 0"	20' 11"
	8.00	6' 0"	10' 0"	6' 0"	16' 9"	6' 0"	10' 10"	6' 0"	18' 1"	6' 0"	10' 10"	6' 0"	18' 1"
	10.00	4' 9"	9' 3"	4' 9"	15' 6"	4' 9"	9' 8"	4' 9"	16' 2"	4' 9"	9' 8"	4' 9"	16' 2"
40	2.00	11' 8"	14' 9"	19' 7"	24' 8"	13' 5"	16' 11"	22' 5"	28' 3"	13' 9"	18' 7"	23' 0"	31' 1"
	4.00	9' 3"	11' 8"	10' 6"	19' 7"	9' 8"	13' 5"	10' 6"	22' 5"	9' 8"	13' 9"	10' 6"	23' 0"
	6.00	6' 5"	10' 3"	6' 5"	17' 1"	6' 5"	11' 2"	6' 5"	18' 9"	6' 5"	11' 2"	6' 5"	18' 9"
	8.00	4' 10"	9' 3"	4' 10"	15' 6"	4' 10"	9' 8"	4' 10"	16' 3"	4' 10"	9' 8"	4' 10"	16' 3"
	10.00	3' 10"	8' 7"	3' 10"	14' 5"	3' 10"	8' 8"	3' 10"	14' 6"	3' 10"	8' 8"	3' 10"	14' 6"
50	2.00	11' 0"	13' 11"	18' 5"	23' 3"	12' 7"	15' 11"	20' 4"	26' 8"	12' 7"	17' 6"	20' 4"	29' 4"
	4.00	8' 2"	11' 0"	8' 2"	18' 5"	8' 2"	12' 7"	8' 2"	21' 0"	8' 2"	12' 7"	8' 2"	21' 0"
	6.00	5' 5"	9' 8"	5' 5"	16' 1"	5' 5"	10' 3"	5' 5"	17' 2"	5' 5"	10' 3"	5' 5"	17' 2"
	8.00	4' 0"	8' 9"	4' 0"	14' 8"	4' 0"	8' 10"	4' 0"	14' 10"	4' 0"	8' 10"	4' 0"	14' 10"
	10.00	3' 3"	7' 11"	3' 3"	13' 3"	3' 3"	7' 11"	3' 3"	13' 3"	3' 3"	7' 11"	3' 3"	13' 3"

Table 5. Horizontal Projected Beam Spans[1,2,3,4,5] – Flush Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
60	2.00	10' 6"	13' 3"	16' 11"	22' 1"	11' 8"	15' 2"	16' 11"	25' 4"	11' 8"	16' 6"	16' 11"	27' 7"
	4.00	6' 11"	10' 6"	6' 11"	17' 7"	6' 11"	11' 8"	6' 11"	19' 6"	6' 11"	11' 8"	6' 11"	19' 6"
	6.00	4' 7"	9' 2"	4' 7"	15' 4"	4' 7"	9' 6"	4' 7"	15' 11"	4' 7"	9' 6"	4' 7"	15' 11"
	8.00	3' 5"	8' 3"	3' 5"	13' 9"	3' 5"	8' 3"	3' 5"	13' 9"	3' 5"	8' 3"	3' 5"	13' 9"
	10.00	2' 9"	7' 4"	2' 9"	12' 4"	2' 9"	7' 4"	2' 9"	12' 4"	2' 9"	7' 4"	2' 9"	12' 4"
80	2.00	9' 8"	12' 2"	12' 4"	20' 4"	10' 3"	13' 11"	12' 4"	23' 4"	10' 3"	14' 7"	12' 4"	24' 4"
	4.00	5' 5"	9' 8"	5' 5"	16' 2"	5' 5"	10' 3"	5' 5"	17' 2"	5' 5"	10' 3"	5' 5"	17' 2"
	6.00	3' 7"	8' 5"	3' 7"	14' 0"	3' 7"	8' 5"	3' 7"	14' 0"	3' 7"	8' 5"	3' 7"	14' 0"
	8.00	2' 8"	7' 3"	2' 8"	11' 11"	2' 8"	7' 3"	2' 8"	11' 11"	2' 8"	7' 3"	2' 8"	11' 11"
	10.00	2' 2"	6' 6"	2' 2"	8' 9"	2' 2"	6' 6"	2' 2"	8' 9"	2' 2"	6' 6"	2' 2"	8' 9"
100	2.00	9' 0"	11' 5"	9' 5"	19' 1"	9' 4"	13' 1"	9' 5"	21' 10"	9' 4"	13' 2"	9' 5"	22' 0"
	4.00	4' 5"	9' 0"	4' 5"	15' 1"	4' 5"	9' 4"	4' 5"	15' 7"	4' 5"	9' 4"	4' 5"	15' 7"
	6.00	2' 11"	7' 7"	2' 11"	12' 8"	2' 11"	7' 7"	2' 11"	12' 8"	2' 11"	7' 7"	2' 11"	12' 8"
	8.00	2' 2"	6' 7"	2' 2"	9' 1"	2' 2"	6' 7"	2' 2"	9' 1"	2' 2"	6' 7"	2' 2"	9' 1"
	10.00	1' 9"	5' 10"	1' 9"	6' 11"	1' 9"	5' 10"	1' 9"	6' 11"	1' 9"	5' 10"	1' 9"	6' 11"

SI: 1 in = 25.4 mm, 1 ft = 0.305 m, 1 psf = 0.0479 kPa

1. Allowable spans assume a dead load of 10 psf in addition to the live/snow loads shown.
2. The applied load from the rafter onto the beam is determined as follows. Dead evaluated along the slopped length of the member and live/snow loads evaluated over the horizontal projection of the span.
3. Maximum slope of rafters shall not to exceed a 6:12 pitch.
4. Maximum overhang for beams are limited to the lower of 25% of the tabulated spans or 24 inches. Applicable to both ends of the beams.
5. Post bracket connections (i.e. bracket to beam and bracket to post) are detailed in **Table 1**.

Table 6 provides the horizontal projected beam spans for inclined beam configurations corresponding to the overhanging rafter installation values in **Table 4**. Values in **Table 6** are horizontal projected spans for inclined beam configurations and are determined from the corresponding allowable beam spans from **Table 4**. Values are based on a 6:12 maximum slope.

Table 6. Horizontal Projected Beam Spans[1,2,3,4,5] – Overhanging Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
20	2.00	11' 11"	15' 0"	19' 11"	25' 1"	13' 8"	17' 2"	22' 10"	28' 9"	14' 1"	18' 11"	23' 7"	31' 8"
	4.00	9' 5"	11' 11"	11' 3"	19' 11"	9' 11"	13' 8"	11' 3"	22' 10"	9' 11"	14' 1"	11' 3"	23' 7"
	6.00	6' 9"	10' 5"	6' 9"	17' 5"	6' 9"	11' 6"	6' 9"	19' 3"	6' 9"	11' 6"	6' 9"	19' 3"
	8.00	5' 1"	9' 5"	5' 1"	15' 10"	5' 1"	9' 11"	5' 1"	16' 8"	5' 1"	9' 11"	5' 1"	16' 8"
	10.00	4' 1"	8' 9"	4' 1"	14' 8"	4' 1"	8' 11"	4' 1"	14' 11"	4' 1"	8' 11"	4' 1"	14' 11"
30	2.00	10' 10"	13' 8"	18' 2"	22' 11"	12' 3"	15' 8"	19' 2"	26' 2"	12' 3"	17' 3"	19' 2"	28' 10"
	4.00	7' 8"	10' 10"	7' 8"	18' 2"	7' 8"	12' 3"	7' 8"	20' 6"	7' 8"	12' 3"	7' 8"	20' 6"
	6.00	5' 1"	9' 6"	5' 1"	15' 10"	5' 1"	10' 0"	5' 1"	16' 9"	5' 1"	10' 0"	5' 1"	16' 9"
	8.00	3' 10"	8' 7"	3' 10"	14' 5"	3' 10"	8' 8"	3' 10"	14' 6"	3' 10"	8' 8"	3' 10"	14' 6"
	10.00	3' 1"	7' 9"	3' 1"	12' 11"	3' 1"	7' 9"	3' 1"	12' 11"	3' 1"	7' 9"	3' 1"	12' 11"
40	2.00	10' 1"	12' 9"	14' 7"	21' 3"	11' 0"	14' 7"	14' 7"	24' 4"	11' 0"	15' 6"	14' 7"	26' 0"
	4.00	6' 2"	10' 1"	6' 2"	16' 11"	6' 2"	11' 0"	6' 2"	18' 4"	6' 2"	11' 0"	6' 2"	18' 4"
	6.00	4' 1"	8' 10"	4' 1"	14' 9"	4' 1"	8' 11"	4' 1"	15' 0"	4' 1"	8' 11"	4' 1"	15' 0"
	8.00	3' 1"	7' 9"	3' 1"	13' 0"	3' 1"	7' 9"	3' 1"	13' 0"	3' 1"	7' 9"	3' 1"	13' 0"
	10.00	2' 5"	6' 11"	2' 5"	11' 7"	2' 5"	6' 11"	2' 5"	11' 7"	2' 5"	6' 11"	2' 5"	11' 7"
50	2.00	9' 6"	12' 0"	11' 7"	20' 1"	10' 0"	13' 9"	11' 7"	22' 11"	10' 0"	14' 3"	11' 7"	23' 9"
	4.00	5' 2"	9' 6"	5' 2"	15' 11"	5' 2"	10' 0"	5' 2"	16' 10"	5' 2"	10' 0"	5' 2"	16' 10"
	6.00	3' 5"	8' 2"	3' 5"	13' 8"	3' 5"	8' 2"	3' 5"	13' 8"	3' 5"	8' 2"	3' 5"	13' 8"
	8.00	2' 7"	7' 1"	2' 7"	11' 10"	2' 7"	7' 1"	2' 7"	11' 10"	2' 7"	7' 1"	2' 7"	11' 10"
	10.00	2' 0"	6' 4"	2' 0"	10' 7"	2' 0"	6' 4"	2' 0"	10' 7"	2' 0"	6' 4"	2' 0"	10' 7"

Table 6. Horizontal Projected Beam Spans[1,2,3,4,5] – Overhanging Rafter Installation

Live or Snow Loads (psf)	Tributary Length (ft)	L/360				L/240				L/180			
		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam		2 x 6 Beam		2 x 11 Beam	
		Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam	Single Beam	Double Beam
60	2.00	9' 0"	11' 5"	9' 5"	19' 1"	9' 4"	13' 0"	9' 5"	21' 10"	9' 4"	13' 2"	9' 5"	22' 0"
	4.00	4' 5"	9' 0"	4' 5"	15' 1"	4' 5"	9' 4"	4' 5"	15' 7"	4' 5"	9' 4"	4' 5"	15' 7"
	6.00	2' 11"	7' 7"	2' 11"	12' 8"	2' 11"	7' 7"	2' 11"	12' 8"	2' 11"	7' 7"	2' 11"	12' 8"
	8.00	2' 2"	6' 7"	2' 2"	11' 0"	2' 2"	6' 7"	2' 2"	11' 0"	2' 2"	6' 7"	2' 2"	11' 0"
	10.00	1' 9"	5' 10"	1' 9"	9' 10"	1' 9"	5' 10"	1' 9"	9' 10"	1' 9"	5' 10"	1' 9"	9' 10"
80	2.00	6' 11"	10' 6"	6' 11"	17' 6"	6' 11"	11' 8"	6' 11"	19' 6"	6' 11"	11' 8"	6' 11"	19' 6"
	4.00	3' 5"	8' 3"	3' 5"	13' 9"	3' 5"	8' 3"	3' 5"	13' 9"	3' 5"	8' 3"	3' 5"	13' 9"
	6.00	2' 3"	6' 8"	2' 3"	11' 3"	2' 3"	6' 8"	2' 3"	11' 3"	2' 3"	6' 8"	2' 3"	11' 3"
	8.00	1' 8"	5' 10"	1' 8"	9' 9"	1' 8"	5' 10"	1' 8"	9' 9"	1' 8"	5' 10"	1' 8"	9' 9"
	10.00	1' 4"	5' 2"	1' 4"	8' 2"	1' 4"	5' 2"	1' 4"	8' 2"	1' 4"	5' 2"	1' 4"	8' 2"
100	2.00	5' 8"	9' 10"	5' 8"	16' 5"	5' 8"	10' 6"	5' 8"	17' 7"	5' 8"	10' 6"	5' 8"	17' 7"
	4.00	2' 10"	7' 5"	2' 10"	12' 5"	2' 10"	7' 5"	2' 10"	12' 5"	2' 10"	7' 5"	2' 10"	12' 5"
	6.00	1' 10"	6' 1"	1' 10"	10' 2"	1' 10"	6' 1"	1' 10"	10' 2"	1' 10"	6' 1"	1' 10"	10' 2"
	8.00	1' 5"	5' 3"	1' 5"	8' 4"	1' 5"	5' 3"	1' 5"	8' 4"	1' 5"	5' 3"	1' 5"	8' 4"
	10.00	1' 1"	4' 8"	1' 1"	6' 8"	1' 1"	4' 8"	1' 1"	6' 8"	1' 1"	4' 8"	1' 1"	6' 8"

SI: 1 in = 25.4 mm, 1 ft = 0.305 m, 1 psf = 0.0479 kPa

1. Allowable spans assume a dead load of 10 psf in addition to the live/snow loads shown.
2. The applied load from the rafter onto the beam is determined as follows. Dead evaluated along the slopped length of the member and live/snow loads evaluated over the horizontal projection of the span.
3. Maximum slope of rafters shall not to exceed a 6:12 pitch.
4. Maximum overhang for beams are limited to the lower of 25% of the tabulated spans or 24 inches. Applicable to both ends of the beams.
5. Post bracket connections (i.e. bracket to beam and bracket to post) are detailed in **Table 1**.

Post Height and Capacities

The post capacities in **Table 7** are reported as ASD axial capacities for the 3.5-inch and the 5.5-inch square posts at the listed unbraced post heights. The post capacity check shall be performed by comparing the calculated vertical reaction delivered to each post against the listed allowable post capacity.

Where the vertical reaction is applied concentrically through the centroid of the post, the “Concentric Loading” capacity may be used.

Where the reaction is applied with eccentricity (i.e. single-beam post connection, or other condition that introduces bending into the post), the “Eccentric Loading” capacity shall be used.

Post foundation, post-base anchorage, and supporting construction remain project-specific.

Table 7. Allowable Post Heights[1] and Capacities[2]

Post Height (in)	Post Capacity (lb)			
	Concentric Loading[3]		Eccentric Loading[4]	
	3.5-inch Square Post	5.5-inch Square Post	3.5-inch Square Post	5.5-inch Square Post
96	23,250	35,550	13,050	24,600
108	21,925	35,000	12,125	24,050
120	20,550	34,375	11,225	23,425
132	19,150	33,700	10,300	22,800
144	17,700	32,975	9,425	22,100
156	16,250	32,200	8,550	21,400
168	14,825	31,375	7,750	20,650
180	13,425	30,150	6,975	19,675
192	12,075	28,875	6,250	18,700
204	10,775	27,600	5,575	17,725
216	9,625	26,300	4,975	16,750
228	8,625	30,750	4,450	20,150
240	7,775	23,675	4,025	14,875

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. Capacities shown are ASD post capacities for vertical gravity loading.
2. Post height is the unsupported post height.
3. The “Concentric Loading” capacity applies where the applied vertical reaction is transferred concentrically through the post.
4. The “Eccentric Loading” capacity applies where the applied vertical reaction is transferred with eccentricity or where the support condition introduces combined axial load and bending into the post. Listed values assumed 3/4" load eccentricity for both the 3.5-inch and 5.5-inch support posts.

General Code Compliance and Approval

DrJ has undertaken its engineering evaluation following Texas professional engineering law, and under the auspices of our ANSI National Accreditation Board (ANAB) ISO/IEC 17065 product evaluation process, which is the identical accredited certification approval process[6] used by all ANAB approved agencies.[7]

DrJ's procedures are fully compliant with ISO/IEC 17065 certification procedures and DrJ's scope of professional expertise, which is attached.

If there are any additional questions or concerns, we will gladly provide a Texas professional engineering[8] and ANAB ISO/IEC 17065 accredited approved agency[9] response. If there are concerns, pursuant to Section 1707.1 of the IBC, we would sincerely appreciate knowing the specific building regulations and/or professional engineering law that this 17065 Research Report does not comply with, so that we can cure any non-conformance.[10] From specifics, we can then delineate a path forward that will serve everyone's free and fair market[11] competition's best interests.

Our goal with this 17065 evaluation and certification is to provide both the accepted engineering analysis and regulatory compliance substance that supports efficient approval. Please contact us if we can help further in any way. If your request is time-sensitive, please contact Jill Zimmerman at (920) 988-7165. Thank you very much.

Respectfully Yours,

Chris Scoville
Vice President, Product Certification
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608-310-6720

[1] The scope of work contained herein is limited to the specific engineering and/or code compliance analysis undertaken in this duly authenticated report which is also known as a technical evaluation, evaluation report, research report, accepted evaluation to a reasonable degree of engineering certainty and so forth. This work has been prepared by an Approved Source, who is a Registered Design Professional (RDP). No representation or warranty is expressed or implied by this duly authenticated report beyond the scope of work performed. Information, data, and/or analysis that becomes available in the future may justify modifications to this professional evaluation report.

[2] Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, and Appendix A: Definitions/Commentary. Otherwise, terms not defined shall have ordinarily accepted meanings as the context implies.

[3] The links referenced herein use un-amended versions of the 2021 International Code Council (ICC) model codes as foundation references. Colorado, Illinois or Wyoming versions of the IBC 2021 and the Colorado versions of the IRC 2021 are un-amended. DrJ staff has reviewed and evaluated all state and local amendments to confirm compliance.

[4] https://www.astm.org/catalog/category/view/id/31/

[5] https://www.appliedbuildingtech.com/standards

[6] https://icc-es.org/#:~:text=Accredited%20under%20ISO,Accreditation%20Board%20(ANAB)

[7] https://up.codes/viewer/california/ca-building-code-2022/chapter/17/special-inspections-and-tests#1707:~:text=the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Sections%20104.11

[8] Approved source. An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses, which is a professional engineer. An approved source is "approved" when a professional engineer (i.e., Registered Design Professional [RDP]) is properly licensed to transact engineering commerce. To find licensed professional engineers please see this website: https://www.nspe.org/resources/licensure/licensing-boards The regulatory authority governing approved sources is the state legislature via its professional engineering regulations. Commercial and professional engineering laws affirm that the RDP has the ability to undertake commerce applying engineering principles in their area of expertise without restraint or discrimination. Ohio has set legal precedent.

[9] An approved agency shall be objective, competent and independent. Language is found in Section 1703.1.1.

[10] Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved; Language is found in Section 104.11.

[11] Competition provides businesses the opportunity to compete on price, quality, innovation, and wages, in an open market and on a level playing field, unhampered by anticompetitive restraints. https://www.justice.gov/atr/mission. State statutes by topic can be found here: https://www.law.cornell.edu/wex/unfair_competition. Finally, given that government employees have monopoly approval power they are held to a high standards as it relates to bias in commerce (i.e. discrimination) as found here: https://www.justice.gov/crt/deprivation-rights-under-color-law.