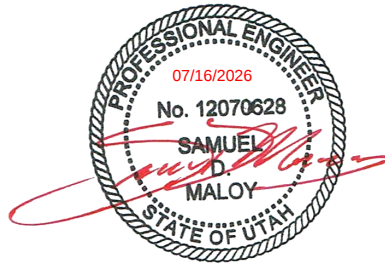


Structural Design
(801) 876-3501



Structural Calculations

Feller Residence
1893 E. 12200 S.
DRAPER, UT

Prepared For:

FILL IN
FILL IN
FILL IN

7/16/2026

7/16/2026

STRUCTURAL CALCULATIONS

For: FILL IN
Plan #: Feller Residence
Location: 1893 E. 12200 S.

From: York Engineering Inc.
4883 Old Highway Rd. Suite A
Morgan, Utah 84050
(801) 876-3501

Design Criteria 2021 IRC

Roof Loads:

Roof Snow Load (psf): 30
Roof Dead Load (psf): 15

Floor Loads:

Floor Live Load (psf): 40
Floor Dead Load (psf): 12
Seismic Design Category: D
Wind Speed: 115 mph for Exposure C

Material Properties:

Concrete (f'_c): 3000 psi (foundation) to 4000 psi (suspended slab)
Concrete Reinforcement: ASTM A615 Grade 60
Site Conditions: Dry & stable granular based, 1500 psf bearing capacity, granular based
Backfill: KH = 35 pcf, slope not to exceed 20%
Setback: See IRC section R403.1.7
Dimensional Lumber: Doug Fir #2 or better
Posts and Timbers: Doug Fir #1 or better
Steel: ASTM Grade 50

Use straps and tie downs, and meet nailing, reinforcement and other structural requirements as noted on the drawing and within the pages of this document. These structural calculations are based on conditions and assumptions listed above. If the conditions listed herein are not met or are different, contractor shall notify York Engineering prior to construction. Prefab trusses to be engineered by the supplier. This engineering assumes that the building site is dry and stable, a high water table or adverse soils such as plastic clays, fills etc. could cause future flooding, settlement, site instability, or other adverse conditions. Verification of and liability for the soil bearing pressure, site stability, and all other site conditions, including site engineering as required, is the responsibility of others. This engineering assumes that the site is stable having no global stability concerns or hazards. If this is not true, contact soils engineer and provide soils/slope stability report to York Engineering for review and further design. These calculations and engineering are for the new building structure only and do not provide any engineering analysis of or liability/warranty for the non-structural portions of the building, or the site itself. York Engineering Inc. does not assume the role of "Registered Design Professional in Responsible Charge" on this project. The purpose of these calculations and engineering is to help reduce structural damage and loss of life due to seismic activity and/or high wind conditions. York Engineering liability is limited to five times the fee collected for services. The contractor(s) must read, understand, and accept all York Engineering documents applicable to this design prior to utilizing the design. By using the design, the owner/contractor accepts the design, assumed loads, and limits on liability stated. If any discrepancies occur between the structural and other project documents, notify York Engineering of the discrepancy prior to construction.

The following general requirements shall be followed during construction:

1. Attach (2) ply headers together with (3) 16d at 12" O.C. [(2) 16d OK for 2x6 headers], use (3) 16d at 12" O.C. each side of (3) ply headers [use (4) 16d when header height is greater than 11"]. Attach (4) ply headers together with (2) 1/2" through bolts at 16" O.C. or (2) SDS 1/4" x 6" screws at 16" O.C. each side of header U.N.O., see plan.
2. Contractor shall assure that all materials are used per manufactures recommendations.
3. Site engineering and liability shall be provided by the owner/builder as required.
4. Contractor shall assure that footings are properly drained, soil is dry, footings rest on undisturbed native soil, building horizontal clearance from footings to adjacent slopes is per See IRC section R403.1.7. If setback requirements of See IRC section R403.1.7 cannot be met then contact engineer for further design requirements.
5. The contractor shall conform to all building codes and practices as per the current IRC
6. Provide solid blocking through structure down to footing for all load paths
7. Builder shall follow all recommendations found in all applicable geotechnical reports.
8. Stacking of two sill plates is permitted with 5/8" J-Bolts through both plates. Stacking more than two plates is not permitted without special engineering.
9. All footings, foundations, and interior slabs shall be normal wt. concrete with a compressive strength of 2,500 PSI min. U.N.O. to meet strength requirements (see calcs., no special inspections required U.N.O., see plan) however, per IRC 402.2 use 3000 PSI concrete for durability purposes.

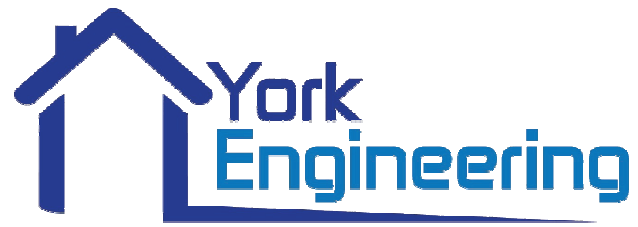


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SNOW CALCULATION:	
Elevation:	4568
Utah Snow Load	Utah Snow Loads
Idaho Snow Load	Idaho Snow Loads
P_g (psf)	33
C_e	1
C_t	1.1
I	1
C_s	1
P_f (psf)	30

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

LOCATION	PASS	PASS	PASS	PASS	PASS
	Back FS: 1.66 DL+S	Front FS: 1.66 DL+S	Left FS: 1.83 DL+0.75LL+0.75S	Right FS: 1.89 DL+0.75LL+0.75S	Interior FS: 1.83 DL+0.75LL+0.75S
SOIL SPECS					
Density (pcf)	125	125	125	125	125
Soil Pressure (psf)	1500	1500	1500	1500	1500
Weight (k/ft)	0.04	0.04	0.04	0.04	0.04
BUILDING LOADS					
Roof Span (ft)	36	36	19	10	18
Floor Span (ft)	4	4	16	22	17
Wall Height (ft)	20	20	20	20	20
Suspended Slab Span (ft)	0	0	0	0	0
Total Load (k/ft)	1.23	1.23	1.09	1.05	1.09
FOOTING SPECS					
Footing Width (in)	20	20	20	20	20
Footing Height (in)	10	10	10	10	10
FOUNDATION					
Height Above Grade (ft)	0.67	0.67	0.67	0.67	0.67
Wall Thickness (ft)	0.67	0.67	0.67	0.67	0.67
Weight (k/ft)	0.07	0.07	0.07	0.07	0.07
CONCRETE SPECS					
Density (pcf)	150	150	150	150	150
Strength (psi)	2500	2500	2500	2500	2500
Clear Cover Thickness (in)	3	3	3	3	3
CALCULATIONS					
Total Weight on Soil (k/ft)	1.51	1.51	1.37	1.32	1.37
Soil Load (ksf)	0.91	0.91	0.82	0.79	0.82
FOOTING SELECTION	F-20	F-20	F-20	F-20	F-20

Plan: Feller Residence
Date: #####
Location: 1893 E. 12200 S.

LOADING SUMMARY	
Roof Live Load (psf):	30
Roof Dead Load (psf):	15
Floor Live Load (psf):	40
Floor Dead Load (psf):	12
Exterior Wall Dead Load (psf):	20
Interior Wall Dead Load (psf):	10
Suspended Slab Dead Load (psf):	115
Suspended Slab Live Load (psf):	60

Table 1											
Building Weight											
	Ext Wall Length (ft)	Wall Height (ft)	Roof SQFT	Weight. (psf)	Snow Wgt. (psf)	Floor SQFT	Weight. (psf)	Misc weight	Diaphragm Weight (lb)	Wall Weight	Total Weight (lb)
Roof	---	---	0	15	0	---	---	0	0	15,700	15,700
---	0	0	0	0	0	0	0	0	0	0	0
Floor 2	157	10	3883.4	15	0	2146.4	12	0	84,008	31,700	115,708
Floor 1	160	10	5405.6	15	0	3512	12	0	123,228	17,600	140,828

Design Criteria 2021 IRC

SNOW LOAD PARAMETERS	
Roof Slope (x/12):	8
Roof Pitch (θ):	33.69
Total Roof Load (psf):	45.00

Table 2 VERTICAL SEISMIC FORCE DISTRIBUTION								Table 3 STORY DIAPHRAGM TABLE					
	H _x (ft)	W _x (kip)	H _x x W _x	% Force	Total Shear (kip)	F _x	V _x	ΣF _i (i=x to n) ρ = 1.0	ΣW _i (i=x to n)	F _{px}	(0.4*S _{as} *I _e *W _{px})	(0.2*S _{as} *I _e *W _p)	Design F _{px}
Roof	28.25	15.70	444	24%	5.73	5.73	5.73	4.41	15.70	4.41	5.66	2.83	4.41
---	---	0.00	0	0%	0.00	0.00	5.73	0.00	15.70	0.00	0.00	0.00	0.00
Floor 2	12.00	115.71	1,388	76%	23.67	17.94	23.67	18.21	131.41	16.03	0.00	20.84	0.00
Floor 1	1.00	0.00	0	0%	23.67	0.00	23.67	18.21	0.00	0.00	0.00	0.00	0.00
TOTALS	0.01	131.41	1832.02	100%	---	---	23.67						

SEISMIC LOAD PARAMETERS	
Site Class:	D
Importance Factor	1.00
F _a :	1.20
R _t :	6.5
S _s :	1.610
S _{MS} :	1.932
S _{DS} :	1.287
C _s :	0.198
Redundancy Factor, ρ :	1.30
ASD Load Combination Factor:	0.70
Factored C _s :	0.180

Base shear Check (not distributed)
Base Shear Force lb: 23,672 **23672** lbs
Floor 1 Lateral Force lb: 0
Floor 2 Diaphragm Force lb: 20,844
Roof Lateral Force lb: 2,828

Diaphragm Forces (from table 3)		Max Diaphragm Shear (lb)	Diaphragm	F.S.	ω Diaphragm (plf) Front/Back Left/Right	Chord Forces (lbs) Front/Back Left/Right
Floor 1 Diaphragm Force lb:	0	---	---	---	---	---
Floor 2 Diaphragm Force lb:	0	0	3/4 OSB	---	0 0	- 0
---	0	---	---	---	---	---
Roof Diaphragm Force lb:	4408	67	7/16 OSB	2.55	134 97	799 1520

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

	Seismic (kips)		Wind (kips)		Shear Wall Allowable Loads (plf)	
	total	---	left/right	front/back	seismic	wind
2nd Floor	0 kips	---	#VALUE!	16.4	SW-1	350
1st Floor	6 kips	---	6.2	5.7	SW-2	450
Basement	0.0 kips	---	0.0	0.0	SW-3	585

MISC AREAS *			
Location	Area	Location	Area
Entry Porch	320	Pizzal	308
Primary Suite	164.5		
Mud Room	34		
Balcony	116.8		

*Enter in cov porches, decks, and then reference

Location	Loft L	Loft M	Loft R	Back	Left Side	R Chimney	R Stairs	Storage	Equip Storage	Backside	Craft Rm	Gym Left
	Front side	Front side	Front side	Back side	Left side	Right side	Right side	Front side	Front side	Back side	Back side	Left side
Floor	2	2	2	2	2	2	2	2	2	2	2	2
Lines up w/	none	none	none	none	none	none	none	none	none	none	none	none
Width	12	6.83	12	33	45.33	16.5	28.83	27	6	28.25	6	25.83
Depth	45.33	43.66	48	43	31.3	33	30.4	49	7.5	41.5	26	27.3
Area (sqft)	271.98	149.0989	288	709.5	709.4145	272.25	438.216	661.5	80.9	586.1875	136.4	469.3795
Force (lb)	540	296	572	1408	1408	540	870	1313	161	1163	271	931
Adj. Force	541	296	572	1410	1419	545	877	1315	161	1165	271	939
% of floor	9%	5%	10%	25%	25%	10%	15%	23%	3%	20%	5%	16%
Transferred Source	none	none	none	none	none	none	none	none	none	none	none	none
Transferred Forces	0	0	0	0	0	0	0	0	0	0	0	0
Forces from Upper	0	0	0	0	0	0	0	0	0	0	0	0
Total Seismic	541	296	572	1410	1419	545	877	1315	161	1165	271	939
Wind (lb)	1545	847	1636	4031	#VALUE!	#VALUE!	#VALUE!	3758	460	3330	775	#VALUE!
Adj. Force	1548	848	1639	4037	#VALUE!	#VALUE!	#VALUE!	3764	460	3335	776	#VALUE!
% of total	9%	5%	10%	25%	#VALUE!	#VALUE!	#VALUE!	23%	3%	20%	5%	#VALUE!
Total Wind	1548	848	1639	4037	#VALUE!	#VALUE!	#VALUE!	3764	460	3335	776	#VALUE!
Sheathing	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"
Shear Wall	4.9	6.83	4.9	To Below	45.33	16.5	28.83	27	6	28.25	6	17.32
Aspect Ratio	1	1	1	1	1	1	1	1	1	1	1	1
PSW Adj. C _v	0.99	1	0.99	1	1	1	1	1	1	1	1	0.91
Seis Load (plf)	110	43	117	#VALUE!	31	33	30	49	27	41	45	54
Wind Load (plf)	316	124	334					139	77	118	129	
Shear Wall	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1

Uplift												
% Force on pier	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Wall Length (ft)	12	6.83	12	To Below	45.33	16.5	28.83	27	6	28.25	6	25.83
Wall Height (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Floor Span (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Roof Span (ft)	4	13	4	0	0	0	0	0	0	0	15	0
Wall Load (plf)	200	200	200	200	200	200	200	200	200	200	200	200
06D-0.7E _v (plf)	97	125	97	84	84	84	84	84	84	84	131	84
Seis.Uplift (lbs)	0	7	0	-	0	0	0	0	16	0	58	0
Wind Uplift (lbs)	466	633	543	-	-	-	-	0	407	0	731	-

Location	Bed 2	Piano RM	Entry	Stairs	Office	Hers Jog	reat Backwa	Kitchen	Bed 2	Office	Office R	Primary Suite
	Front side	Front side	Front side	Front side	Front side	Front side	ront/Back mi	Left side	Left side	Left/Right mi	Right side	Right side
Floor	1	1	1	1	1	1	1	1	1	1	1	1
Lines up w/	none	2-front-Loft	L2-front-Loft	N2-front-Loft R	none	none	2-back-Back-Left-Left	Sid-Left-Left	Sid-right-R	Stair	none	ight-R Chimn
Width	18	9	11.75	9	19.25	3	67	22.66	30	25.66	11.5	42.66
Depth	49.2	45.33	47.83	45.33	55	42.66	62	66	43.6	54.16	20.6	51.6
Area (sqft)	442.8	203.985	601.00125	203.985	529.375	63.99	2241.5	747.78	654	854.8728	118.45	1265.128
Force (lb)	880	406	1195	406	1052	127	4456	1487	1300	1699	235	2515
Adj. Force	866	399	1175	399	1035	125	4383	1506	1317	1722	239	2548
% of floor	5%	2%	7%	2%	6%	1%	24%	8%	7%	10%	1%	14%
Transferred Source	none	none	none	none	none	none	none	none	none	none	none	none
Transferred Forces	0	0	0	0	0	0	0	0	0	0	0	0
Forces from Upper	0	541	296	572	0	0	1410	710	710	877	0	545
Total Seismic	866	939	1472	971	1035	125	5793	2216	2027	2598	239	3093
Wind (lb)	279	129	379	129	334	40	1414	516	451	590	82	873
Adj. Force	275	127	373	127	328	40	1391	523	457	598	83	885
% of total	5%	2%	7%	2%	6%	1%	24%	8%	7%	10%	1%	14%
Total Wind	275	1674	1221	1765	328	40	5428	2033	1967	2463	83	2043
Sheathing	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"
Shear Wall	10	Strong Wall	TRONG WAI	Strong wall	13.32	3	17.75	16.8	22.87	8.83	FTW	33.3
Aspect Ratio	1	1	1	1	1	1	1	1	1	1	1	1
PSW Adj. C _v	0.87				0.8	0.83	1	0.99	0.85	1		0.99
Seis Load (plf)	87	#VALUE!	#VALUE!	#VALUE!	78	42	326	132	89	294		93
Wind Load (plf)	27				25	13	306	121	86	279		61
Shear Wall	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1

Uplift												
% Force on pier	100%	100%	100%	100%	100%	100%	17%	100%	100%	100%	100%	100%
Wall Length (ft)	18	Strong Wall	TRONG WAI	Strong wall	19.25	3	3	22.66	30	8.83	FTW	42.66
Wall Height (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Floor Span (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Roof Span (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Wall Load (plf)	200	200	200	200	200	200	200	200	200	200	200	200
06D-0.7E _v (plf)	84	84	84	84	84	84	84	84	84	84	84	84
Seis.Uplift (lbs)	0	-	-	-	0	351	3157	27	0	2572	-	0
Wind Uplift (lbs)	0	-	-	-	0	0	2896	0	0	2259	-	0

STHD10 LSTD08

Location	Mud RM	2 Car	antry Hallwa	Laundry R	Garage Rb	Garage Rm	Garage RT	RV Front	ickball-PRN	Foam Pit	RV Left	Rv Midwall
	Left side	Left side	Right side	Right side	Right side	Right side	Right side	Front side	Front side	Front side	Left side	Left/Right mi
Floor	1	1	1	1	1	1	1	1	1	1	1	1
Lines up w/	Left-Storage L-Left-Gym Le	none	right-Storage	right-Gym R-right-Gym R	Fit-Equip-Stor	none	none	none	none	none	none	none
Width	7.5	43.25	11.16	31.25	7	15	7	16	28.5	12	45	45
Depth	13.5	24.9	15	16.8	28.25	30.25	28.25	45	33	39	16	64.7
Area (sqft)	50.625	538.4625	83.7	570.5	98.875	226.875	98.875	360	470.25	234	360	1455.75
Force (lb)	101	1070	166	1134	197	451	197	716	935	465	716	2894
Adj. Force	102	1084	169	1149	199	457	199	704	920	458	725	2932
% of floor	1%	6%	1%	6%	1%	3%	1%	4%	5%	3%	4%	16%
Transferred Source	none	none	none	ht-Pantry Hal	none	none	none	ht-Pickball F	none	ht-Pickball F	none	none
Transferred Forces	0	0	0	169	0	0	0	460	0	460	0	0
Forces from Upper	0	939	0	1109	166	166	217	0	0	0	0	0
Total Seismic	312	2024	169	2427	365	623	416	1164	920	917	725	2932
Wind (lb)	35	372	58	394	68	157	68	227	297	148	248	1005
Adj. Force	35	376	59	399	69	159	69	223	292	145	252	1018
% of total	1%	6%	1%	6%	1%	3%	1%	4%	5%	3%	4%	16%
Total Wind	700	2374	59	2817	422	511	530	369	292	291	252	1018
Sheathing	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"
Shear Wall	Transferred	16.41	Transferred	17.16	FTW	FTW	FTW	Portal	transferred	FTW	38	24
Aspect Ratio	1	1	1	1	2	4	3			5	1	1
PSW Adj. C _v		1		1							0.99	1
Seis Load (plf)	123		141								19	122
Wind Load (plf)	145		164								7	42
Shear Wall	SW-1		SW-1	SW-1	SW-1	SW-1	SW-1			SW-1	SW-1	SW-1

Uplift												
% Force on pier	100%	44%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Wall Length (ft)	Transferred	7.25	Transferred	17.16	FTW	FTW	FTW	Portal	transferred	FTW	45	24
Wall Height (ft)	10	10	10	10	10	10	10	15	19	12	19	15
Floor Span (ft)	0	0	0	16	0	0	0	0	0	0	0	0
Roof Span (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Wall Load (plf)	200	200	200	200	200	200	200	300	380	240	380	300
06D-0.7E _v (plf)	84	84	84	124	84	84	84	126	160	101	160	126
Seis.Uplift (lbs)	-	924	-	348	-	-	-	-	-	-	0	321
Wind Uplift (lbs)	-	1006	-	118	-	-	-	-	-	-	0	0

STHD10

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

1-right-Office R

LOAD PARAMETERS

Seismic Load (lb):	239
Wind Load (lb):	83

SHEAR WALL SELECTION

Sheathing	7/16"
Shear Wall Callout:	SW-1
Seismic Strength (lb/ft):	350
Edge Nailing (in o.c.):	4
Field Nailing (in o.c.):	12
Seismic FS	5.87
Wind FS	23.67

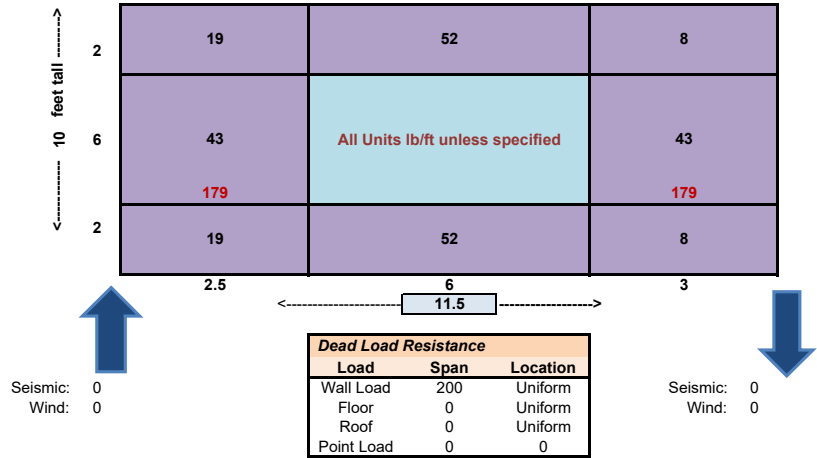
ASPECT RATIO

Left Aspect Ratio:	95%
Right Aspect Ratio:	100%

CONNECTORS

Force-Transfer Wall Location:	Corner
Tie-Down:	STHD10/RJ
Tie-Down Seismic FS	Not Needed
Tie-Down Wind FS	Not Needed
Window Strap:	CS16
Window Strap Connector:	Nails
Strap FS	9.53
Bolt Diameter (in):	1/2
Bolt Spacing (in o.c.):	32
Bolt Capacity (plf):	390
Bolt FS	18.80
Stud Size:	2x4
Tension (lb):	145
Stress (psi):	30
F _T (psi)	920
Stud FS:	30.89

FORCE TRANSFER WALL



FORCE TRANSFER WALL DESIGN	
Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
Tie-Down:	STHD10/RJ
Straps:	CS16 --- Nails to Connect
Bolts:	1/2" Bolts @ 32" O.C.
Studs:	2x4 Studs

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

1-right-Garage Rb

LOAD PARAMETERS

Seismic Load (lb):	365
Wind Load (lb):	422

SHEAR WALL SELECTION

Sheathing	7/16"
Shear Wall Callout:	SW-1
Seismic Strength (lb/ft):	350
Edge Nailing (in o.c.):	4
Field Nailing (in o.c.):	12
Seismic FS	4.63
Wind FS	5.61

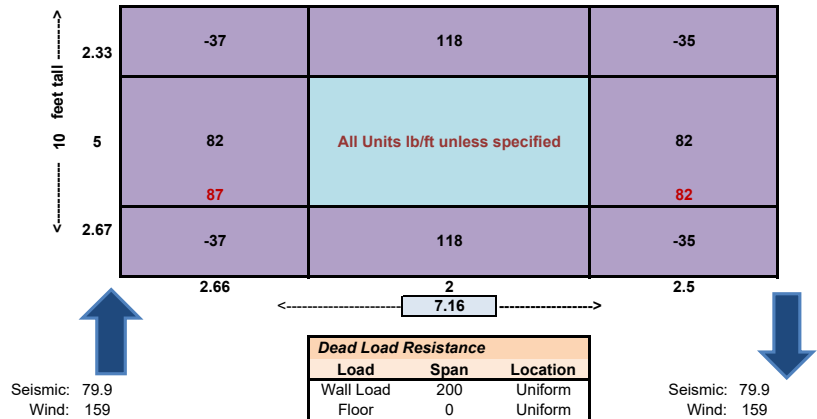
ASPECT RATIO

Left Aspect Ratio:	100%
Right Aspect Ratio:	100%

CONNECTORS

Force-Transfer Wall Location:	Corner
Tie-Down:	STHD10/RJ
Tie-Down Seismic FS	36.79
Tie-Down Wind FS	21.98
Window Strap:	CS16
Window Strap Connector:	Nails
Strap FS	19.51
Bolt Diameter (in):	1/2
Bolt Spacing (in o.c.):	32
Bolt Capacity (plf):	390
Bolt FS	6.62
Stud Size:	2x4
Tension (lb):	412
Stress (psi):	85
F _T (psi)	920
Stud FS:	10.88

FORCE TRANSFER WALL



Dead Load Resistance		
Load	Span	Location
Wall Load	200	Uniform
Floor	0	Uniform
Roof	0	Uniform
Point Load	0	0

FORCE TRANSFER WALL DESIGN

Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
Tie-Down:	STHD10/RJ
Straps:	CS16 --- Nails to Connect
Bolts:	1/2" Bolts @ 32" O.C.
Studs:	2x4 Studs

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

1-right-Garage RT

LOAD PARAMETERS

Seismic Load (lb):	416
Wind Load (lb):	530

SHEAR WALL SELECTION

Sheathing	7/16"
Shear Wall Callout:	SW-1
Seismic Strength (lb/ft):	350
Edge Nailing (in o.c.):	4
Field Nailing (in o.c.):	12
Seismic FS	4.06
Wind FS	4.46

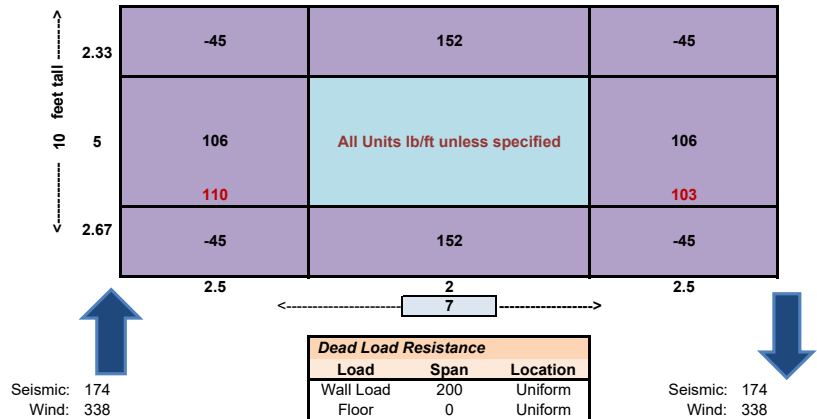
ASPECT RATIO

Left Aspect Ratio:	100%
Right Aspect Ratio:	100%

CONNECTORS

Force-Transfer Wall Location:	Corner
Tie-Down:	STHD10/RJ
Tie-Down Seismic FS	16.87
Tie-Down Wind FS	10.36
Window Strap:	CS16
Window Strap Connector:	Nails
Strap FS	15.51
Bolt Diameter (in):	1/2
Bolt Spacing (in o.c.):	32
Bolt Capacity (plf):	390
Bolt FS	5.15
Stud Size:	2x4
Tension (lb):	530
Stress (psi):	109
F _T (psi)	920
Stud FS:	8.46

FORCE TRANSFER WALL



FORCE TRANSFER WALL DESIGN

Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
Tie-Down:	STHD10/RJ
Straps:	CS16 --- Nails to Connect
Bolts:	1/2" Bolts @ 32" O.C.
Studs:	2x4 Studs

1-right-Garage Rm

FORCE TRANSFER WALL

The diagram illustrates a building footprint with dimensions and load resistance data. The footprint is a rectangle with a total width of 15 feet and a total height of 10 feet. The width is divided into three sections: 2.75 feet on the left, 9.5 feet in the center, and 2.75 feet on the right. The height is divided into three sections: 2.33 feet at the top, 5 feet in the middle, and 2.67 feet at the bottom. The central 9.5-foot wide section is highlighted in light blue and contains the text "All Units lb/ft unless specified". The other sections are purple. The load resistance values are as follows:

Section	Top (2.33 ft)	Middle (5 ft)	Bottom (2.67 ft)
Left (2.75 ft)	30	113	30
Center (9.5 ft)	83	All Units lb/ft unless specified	83
Right (2.75 ft)	30	113	30

Below the footprint, a blue arrow points upwards on the left and a blue arrow points downwards on the right. The seismic and wind load resistance values are:

Seismic: 0
Wind: 0

Seismic: 0
Wind: 0

A table titled "Dead Load Resistance" provides the following data:

Load	Span	Location
Wall Load	200	Uniform
Floor	0	Uniform
Roof	0	Uniform
Point Load	0	0

Dead Load Resistance

Load	Span	Location
Wall Load	200	Uniform
Floor	0	Uniform
Roof	0	Uniform
Point Load	0	0

FORCE TRANSFER WALL DESIGN	
Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
Tie-Down:	STHD10/RJ
Straps:	CS16 --- Nails to Connect
Bolts:	1/2" Bolts @ 32" O.C.
Studs:	2x4 Studs

Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
-------------	--

Tie-Down:	STHD10/RJ
-----------	-----------

Straps:	CS16 --- Nails to Connect
---------	---------------------------

Bolts:	1/2" Bolts @ 32" O.C.
--------	-----------------------

Studs:	2x4 Studs
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Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

1-front-Foam Pit

LOAD PARAMETERS

Seismic Load (lb):	917
Wind Load (lb):	291

SHEAR WALL SELECTION

Sheathing	7/16"
Shear Wall Callout:	SW-1
Seismic Strength (lb/ft):	350
Edge Nailing (in o.c.):	4
Field Nailing (in o.c.):	12
Seismic FS	1.40
Wind FS	6.16

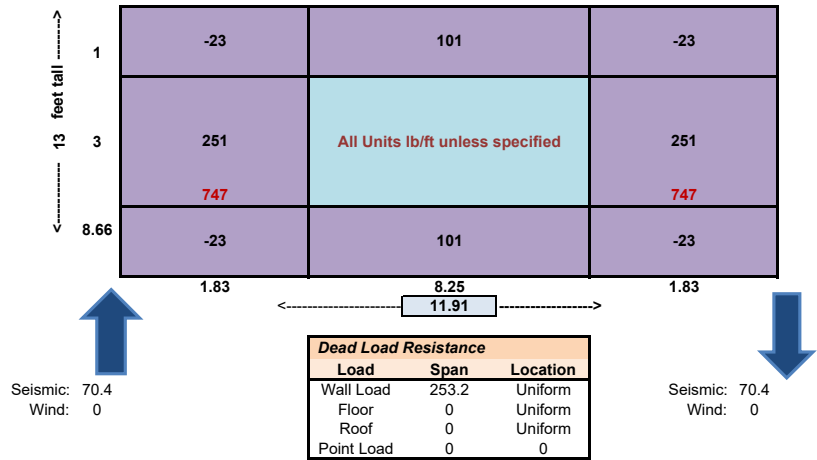
ASPECT RATIO

Left Aspect Ratio:	100%
Right Aspect Ratio:	100%

CONNECTORS

Force-Transfer Wall Location:	Corner
Tie-Down:	STHD10/RJ
Tie-Down Seismic FS	41.73
Tie-Down Wind FS	Not Needed
Window Strap:	CS16
Window Strap Connector:	Nails
Strap FS	2.28
Bolt Diameter (in):	1/2
Bolt Spacing (in o.c.):	32
Bolt Capacity (plf):	390
Bolt FS	5.06
Stud Size:	2x4
Tension (lb):	683
Stress (psi):	140
F _T (psi)	920
Stud FS:	6.57

FORCE TRANSFER WALL



FORCE TRANSFER WALL DESIGN	
Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
Tie-Down:	STHD10/RJ
Straps:	CS16 --- Nails to Connect
Bolts:	1/2" Bolts @ 32" O.C.
Studs:	2x4 Studs

2-WINDOW FORCE TRANSFER WALL

LOAD PARAMETERS

Seismic Load (lb):	821
Wind Load (lb):	1,747

SHEAR WALL SELECTION

Sheathing	7/16"
Shear Wall Callout:	SW-1

Seismic Strength (lb/ft):	350
Edge Nailing (in o.c.):	4
Field Nailing (in o.c.):	12

Seismic FS	3.79
Wind FS	2.49

ASPECT RATIO

Left Aspect Ratio:	100%
Central Aspect Ratio:	100%
Right Aspect Ratio:	100%

CONNECTORS

Force-Transfer Wall Location:	Corner
Tie-Down:	LSTHD8/RJ
Tie-Down Seismic FS	Not Needed
Tie-Down Wind FS	289.83

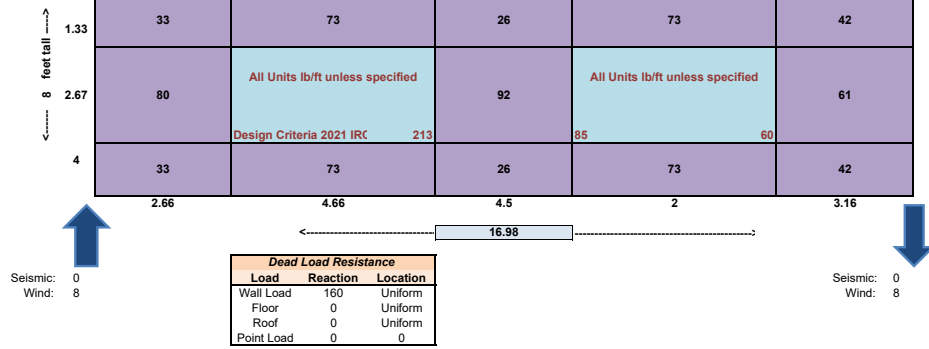
Window Strap:	CS16
Window Strap Connector:	Nails

Strap FS	8.02
Bolt Diameter (in):	1/2
Bolt Spacing (in o.c.):	32

Bolt Capacity (plf):	390
Bolt FS	3.79
Stud Size:	2x4

Tension (lb):	576
Stress (psi):	118
F _y (psi):	920

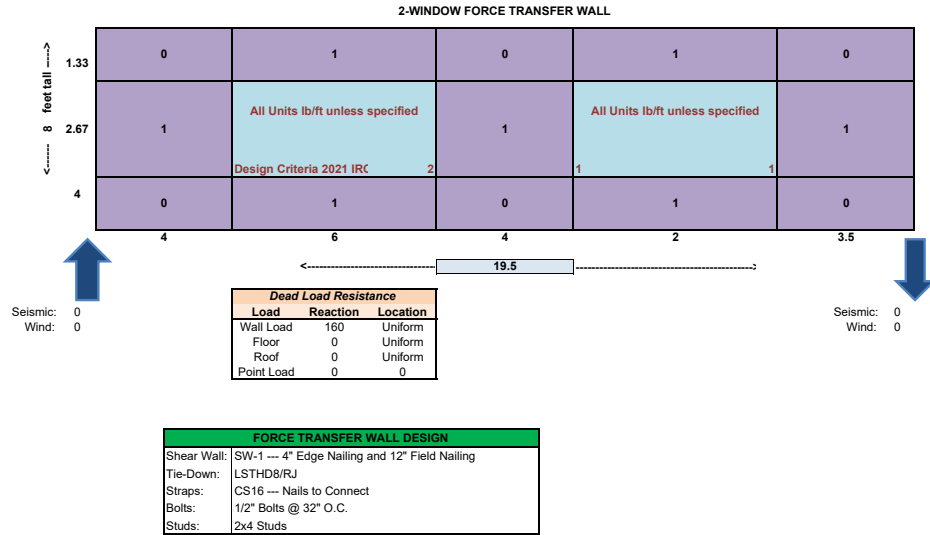
Stud FS:	7.78
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FORCE TRANSFER WALL DESIGN

Shear Wall:	SW-1 --- 4" Edge Nailing and 12" Field Nailing
Tie-Down:	LSTHD8/RJ
Straps:	CS16 --- Nails to Connect
Bolts:	1/2" Bolts @ 32" O.C.
Studs:	2x4 Studs

LOAD PARAMETERS	
Seismic Load (lb):	10
Wind Load (lb):	10
SHEAR WALL SELECTION	
Sheathing	7/16"
Shear Wall Callout:	SW-1
Seismic Strength (lb/ft):	350
Edge Nailing (in o.c.):	4
Field Nailing (in o.c.):	12
Seismic FS	338.43
Wind FS	473.80
ASPECT RATIO	
Left Aspect Ratio:	100%
Central Aspect Ratio:	100%
Right Aspect Ratio:	100%
CONNECTORS	
Force-Transfer Wall Location:	Corner
Tie-Down:	LSTHD8/RJ
Tie-Down Seismic FS	Not Needed
Tie-Down Wind FS	Not Needed
Window Strap:	CS16
Window Strap Connector:	Nails
Strap FS	738.37
Bolt Diameter (in):	1/2
Bolt Spacing (in o.c.):	32
Bolt Capacity (plf):	390
Bolt FS	760.50
Stud Size:	2x4
Tension (lb):	3
Stress (psi):	1
F _y (psi):	920
Stud FS:	1561.74



Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

LEFT AND RIGHT LOADING

Wind Loading Calculations using Main Windforce-Resisting System (MWFRS)

Longitudinal Direction

Table 27.5-1 Steps to Determine MWFRS Loads Enclosed Simple Diaphragm Buildings

Risk Category	II	Table 1.5-1	
Wind speed	115	Figure 26.5-1 A-B or C	
Exposure Category	C	Section 26.7	
		Cp Winward	Cp Leeward
L/B 3rd Floor	---	0.8	-0.2
L/B 2nd floor	1.38	0.8	-0.3
L/B 1st floor	0.60	0.8	-0.5
Roof Height	14.50		
Mean roof Height	28.3		
Truss Span	43.5		
Roof Slope		8 /12	
Lower Truss Span	43.5		
Lower roof Slope		8 /12	
Wind directionality factor Kd		0.85 Table 26.6-1	
Topography factor Kzt		1 section 26.8	
Ground elevation factor Ke		0.848 Section 26.9	
Gust Factor		0.85 Section 26.11	
Internal Pressure Coeff (GCpi)		0.18 +- table 26.13-1	enclosed building
α (table 26.11-1)		9.50	
Zg (ft) Table 26.11-1		900	
Load combination factor	0.6	(ASCE 7-16 2.4.1)	
	elevation (ft)	Kz & Kh (Table 26.10-1)	qz
qh (leeward and roof)	28.3	0.97	23.7
3rd floor, top	N/A	N/A	N/A
2nd floor, top	21.0	0.91	22.2
1st floor, top	11.0	0.85	20.7
Basement floor, top	1.0	0.85	20.7
Basement floor, bottom	0.0	0.85	20.7
3rd Floor (psf)			
Net Pressure	N/A	Windward	N/A
		Leeward	N/A
Note, Used Negative pressure case to maximize windward pressures			
2nd Floor (psf)			
Net Pressure	12.4	Windward	11.3
		Leeward	1.1
Main Floor (psf)			
Net Pressure	14.5	Windward	11.0
		Leeward	3.5
Basement Floor (psf)			
Net Pressure	14.5	Windward	11.0
		Leeward	3.5
Roof (psf)			
	Windward	Leeward	
Load Case 1	0.1	-4.7	
Load Case 2	5.9	-4.7	
Lower Roof (psf)			
	Windward	Leeward	
Load Case 1	0.1	-4.7	
Load Case 2	5.9	-4.7	
Roof Load			
Roof Height	Length	Area (ft ²)	Gable area
14.50	33.00	Design Criteria 2021 IRC	330
			Horizontal Force (lbs)
			#VALUE!
Lower Roof Load			
Low Roof Height	Upper Length	Lower length	Low Roof Length(ft)
14.50	33	50	17
			Area (ft ²)
			390.0
			Horizontal Force (lbs)
			4111.6
Wall Load			
		(height)	(height)
	Basement	1	1st floor
	ft ²	force (lbs)	ft ²
Windward	50	550.1	550
Leeward	50	173.9	550
			force (lbs)
			6051.6
			1912.7
		(height)	(height)
	2nd floor	11	3rd floor
	ft ²	force (lbs)	ft ²
Windward	363	4106.6	0
Leeward	363	386.4	0
			force (lbs)
			0.0
			0.0
Diaphragm Forces			
Base Shear Force lb:	#VALUE!	ω Diaphragm Loading	Diaphragm Shear
Floor 1 Lateral Force lb:	0	(plf)	(plf)
Floor 2 Lateral Force lb:	6,229	189	68
---	0	---	---
Roof Lateral Force lb:	#VALUE!	#VALUE!	#VALUE!
			7/16 OSB
			#VALUE!
			#VALUE!
			(used 19/32 unblocked values)
			(used 19/32 unblocked values)
			(used 19/32 unblocked values)
			(used 7/16 unblocked values)
Hurricane Ties			
		Factors of Safety	
Uplift	(lbs)	H1	H2.5
Roof (per truss)	0.0	100.00	100.00
Low roof (per truss)	-292.7	-2.00	-2.05
Lateral	(lbs)	H1	H2.5
Roof (per truss)	#VALUE!	#VALUE!	#VALUE!
Low roof (per truss)	-	-	-

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

FRONT AND BACK LOADING

Wind Loading Calculations using Main Windforce-Resisting System (MWFRS)

Longitudinal Direction

Table 27.5-1 Steps to Determine MWFRS Loads Enclosed Simple Diaphragm Buildings

Risk Category	II	Table 1.5-1
Wind speed	115	Figure 26.5-1 A-B or C
Exposure Category	C	Section 26.7
Cp Winward Cp Leeward Figure 27.3-1		
L/B 3rd Floor	---	0.8 -0.2
L/B 2nd floor	0.73	0.8 -0.5
L/B 1st floor	1.67	0.8 -0.3
Roof Height	14.50	
Mean roof Height	28.3	
Truss Span	43.5	
Roof Slope	8 /12	
Lower Truss Span	43.5	
Lower roof Slope	8 /12	
Wind directionality factor Kd	0.85 Table 26.6-1	
Topography factor Kzt	1 section 26.8	
Ground elevation factor Ke	0.848 Section 26.9	
Gust Factor	0.85 Section 26.11	
Internal Pressure Coeff (GCpi)	0.18 +- table 26.13-1	enclosed building
α (table 26.11-1)	9.50	
Zg (ft) Table 26.11-1	900	
Load combination factor	0.6 (ASCE 7-16 2.4.1)	

Design Criteria 2021 IRC

elevation (ft)	Kz & Kh (Table 26.10-1)	qz	qh
qh (leeward and roof)	28.3	0.97	23.7
3rd floor, top	N/A	N/A	N/A
2nd floor, top	21.0	0.91	22.2
1st floor, top	11.0	0.85	20.7
Basement floor, top	1.0	0.85	20.7
Basement floor, bottom	0.0	0.85	20.7

3rd Floor (psf)			
Net Pressure	N/A	Windward	N/A
		Leeward	N/A
2nd Floor (psf)			
Net Pressure	14.8	Windward	11.3
		Leeward	3.5
Main Floor (psf)			
Net Pressure	12.1	Windward	11.0
		Leeward	1.1
Basement Floor (psf)			
Net Pressure	12.1	Windward	11.0
		Leeward	1.1

Roof (psf)			
Load Case 1	0.1	Windward	-4.7
Load Case 2	5.9	Leeward	-4.7

Lower Roof (psf)			
Load Case 1	0.1	Windward	-4.7
Load Case 2	5.9	Leeward	-4.7

Roof Load				
Roof Height	Length	Area (ft ²)	Gable area	Horizontal Force (lbs)
14.50	45.50	550.0	467	12706

Lower Roof Load					
Low Roof Height	Upper Length	Lower length	Low Roof Length(ft)	Area (ft ²)	Horizontal Force (lbs)
14.50	46	30	-16	350.0	3689.9

Wall Load			
	(height)	(height)	
Basement		1st floor	11
	ft ²	ft ²	force (lbs)
Windward	30	330	3630.9
Leeward	30	330	351.3
2nd floor		3rd floor	1
	ft ²	ft ²	force (lbs)
Windward	501	0	0.0
Leeward	501	0	0.0

Diaphragm Forces		ω Diaphragm Loading	Diaphragm Shear	Diaphragm	F.S.	Chord Forces (Left & Right top plates)
Base Shear Force lb:	28,143	(plf)	(plf)			(lbs)
Floor 1 Lateral Force lb:	0	---	---	---	---	---
Floor 2 Lateral Force lb:	5,692	125	86	3/4 OSB	2.49	563 (used 19/32 unblocked values)
---	0	---	---	---	---	---
Roof Lateral Force lb:	16,407	361	249	7/16 OSB	0.68	5655 (used 7/16 unblocked values)

Hurricane Ties		Factors of Safety	
Uplift	(lbs)	H1	H2.5
Roof (per truss)	0.0	100.00	100.00
Low roof (per truss)	-	-	-
Lateral	(lbs)	H1	H2.5
Roof (per truss)	385.0	2.04	1.06
Low roof (per truss)	-	-	-

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

Beam Page 1

RB-1: W14x53 Steel Gr 50
RB-2: (1) 1 3/4" x 14" LVL 2.0E 2600 Fb
RB-3: (1) 1 3/4" x 14" LVL 2.0E 2600 Fb
RB-4: (1) 1 3/4" x 14" LVL 2.0E 2600 Fb
RB-5: 3 1/8" x 21" GLB 24F-V4
RB-6: (4) 1 3/4" x 16" LVL 2.0E 2600 Fb
RB-7: (3) 1 3/4" x 11 7/8" LV 2.0E 2600 Fb

RB-9: (2) 2X8's DF #2
RB-12: (2) 2X10's DF #2

Beam Page 2

RB-13: (2) 2X6's DF #2
RB-14: (2) 2X8's DF #2
RB-15: (2) 2X10's DF #2
RB-16: (3) 2X10's DF #2
RB-17: (2) 1 3/4" x 9 1/2" LVL 2.0E 2600 Fb
RB-18: (2) 2X8's DF #2
RB-19: (2) 2X6's DF #2

RB-22: (2) 1 3/4" x 11 7/8" LVL 2.0E 2600 Fb
RB-24: 5 1/8" x 21" GLB 24F-V4
RB-25: (2) 2X6's DF #2
RB-26: (2) 1 3/4" x 11 7/8" LVL 2.0E 2600 Fb
RB-27: (2) 1 3/4" x 9 1/2" LVL 2.0E 2600 Fb

Beam Page 3

RB-28: (2) 1 3/4" x 7 1/4" LVL 2.0E 2600 Fb
RB-30: (2) 2X6's DF #2
RB-32: (2) 1 3/4" x 14" LVL 2.0E 2600 Fb
RB-33: (2) 1 3/4" x 14" LVL 2.0E 2600 Fb
RB-34: (2) 1 3/4" x 14" LVL 2.0E 2600 Fb
RB-35: (2) 2X6's DF #2
RB-36: (2) 2X6's DF #2

RB-39: (3) 1 3/4" x 18" LVL 2.0E 2600 Fb

Beam Page 4

UFB-1: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-2: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-3: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-4: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-5: (2) 1 3/4" x 7 1/4" LVL 2.0E 2600 Fb
UFB-6: (2) 2X8's DF #2
UFB-7: (3) 1 3/4" x 18" LVL 2.0E 2600 Fb

UFB-10: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-11: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-12: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-13: (3) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-14: (3) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-15: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb

Beam Page 5

UFB-1f (2) 2X6's DF #2
UFB-1i (2) 2X6's DF #2
UFB-1f (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-1f (2) 2X6's DF #2
UFB-2f (2) 2X6's DF #2
UFB-2' (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-2' (2) 1 3/4" x 18" LVL 2.0E 2600 Fb

UFB-2f (3) 1 3/4" x 18" LVL 2.0E 2600 Fb
UFB-2f (2) 1 3/4" x 18" LVL 2.0E 2600 Fb

UFB-2f W16x57 Steel Gr 50

Beam Page 6

FB-1: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-2: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-3: (4) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-4: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-5: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-6: (4) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-7: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb

FB-10: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-11: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-12: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-13: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-14: (2) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-15: (2) 1 3/4" x 14" LVL 2.0E 2600 Fb

Beam Page 7

FB-16: (2) 1 3/4" x 9 1/2" LVL 2.0E 2600 Fb
FB-17: (1) 1 3/4" x 18" LVL 2.0E 2600 Fb
FB-18: (2) 2X8's DF #2
FB-19: (2) 1 3/4" x 11 7/8" LV 2.0E 2600 Fb

Plan: Feller Residence
Date: 07/15/2026
Location: 1893 E. 12200 S.

2 trimmers required 2 trimmers required 2 trimmers required 2 trimmers required 2 trimmers required 2 trimmers required

2 trimmers required

	PASS	PASS	PASS	PASS	PASS	PASS	PASS	#VALUE!	PASS	PASS
	W14x53 Steel	(1) 1 3/4" x 14" LVL	(1) 1 3/4" x 14" LVL	(1) 1 3/4" x 14" LVL	3 1/8" x 21" GLB	(4) 1 3/4" x 16" LVL	(3) 1 3/4" x 11 7/8" LVL	#VALUE!	(2) 2X8's DF #2	(2) 2X10's DF #2
LL Deflection: L/897	DL+S	Moment: 3.7	Moment: 2.92	Shear: 1.99	Moment: 1.73	TL Deflection: L/427	TL Deflection: L/447	#VALUE!	Moment: 1.35	Moment: 1.32
Controlling Load Case	DL+S	DL+S	DL+S	DL+S	DL+S	DL+S	DL+S	#VALUE!	DL+S	DL+S
Name	RB-1	RB-2	RB-3	RB-4	RB-5	RB-6	RB-7	RB-8	RB-9	RB-12
Grade	Steel	LVL	LVL	LVL	GLB	LVL	LVL	LVL	DF #2	DF #2
LOADING PARAMETERS								Design Criteria 2021 IRC		
Floor Live Load (psf)	40	40	40	40	40	40	40	#VALUE!	40	40
Floor Total Load (psf)	52	52	52	52	52	52	52	#VALUE!	52	52
Roof Live Load (psf)	30	30	30	30	30	30	30	#VALUE!	30	30
Roof Total Load (psf)	45	45	45	45	45	45	45	#VALUE!	45	45
Wall Load (psf)	20	20	20	20	20	20	20	#VALUE!	20	20
BEAM SPECIFICATIONS										
Beam Span (ft)	29.66	12	13.5	13.66	21.66	22	19.66	22.75	5.25	7
Beam Weight (plf)	53.00	7.11	7.11	7.11	15.93	32.48	18.09	32.48	4.35	5.55
BEAM SIZING										
Beam Depth (in)	14	14	14	14	21	16	11.88	16	7.25	9.25
Beam Width (or Weight/Series)	53	1.75	1.75	1.75	3.125	7	5.25	7	3	3
UNIFORM LOADING										
	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case
Floor Span (ft)	0	0	0	0	0	0	0	0	0	0
Roof Span (ft)	7.66	9	9	7	22.5	23.25	9.33	4	4	22
Wall Height (ft)	0	0	0	0	0	0	0	0	4	0
Total Uniform Floor Load (plf)	0	0	0	0	0	0	0	#VALUE!	0	0
Total Live Floor Load (plf)	0	0	0	0	0	0	0	#VALUE!	0	0
Total Uniform Roof Load (plf)	172.35	202.5	202.5	157.5	506.25	523.125	209.925	#VALUE!	90	495
Total Live Roof Load (plf)	114.9	135	135	105	337.5	348.75	139.95	#VALUE!	60	330
Total Uniform Wall Load (plf)	0	0	0	0	0	0	0	0	80	0
PARTIALLY UNIFORM LOADING										
Partially Uniform Load 1	Roof	----	----	----	----	----	----	----	----	----
1 Span/Height (ft)	5	0	0	0	0	0	0	0	0	0
1 Start Point (ft)	0	0	0	0	0	0	0	0	0	0
1 End Point (ft)	6	0	0	0	0	0	0	0	0	0
1 Total Partially Uniform Load (plf)	112.5	0	0	0	0	0	0	#VALUE!	0	0
Partially Uniform Load 2	Roof	----	----	----	----	----	----	----	----	----
2 Span/Height (ft)	7	0	0	0	0	0	0	0	0	0
2 Start Point (ft)	6	0	0	0	0	0	0	0	0	0
2 End Point (ft)	23.66	0	0	0	0	0	0	0	0	0
2 Total Partially Uniform Load (plf)	157.5	0	0	0	0	0	0	#VALUE!	0	0
Partially Uniform Load 3	Roof	----	----	----	----	----	----	----	----	----
3 Span/Height (ft)	5	0	0	0	0	0	0	0	0	0
3 Start Point (ft)	23.66	0	0	0	0	0	0	0	0	0
3 End Point (ft)	29.66	0	0	0	0	0	0	0	0	0
3 Total Partially Uniform Load (plf)	112.5	0	0	0	0	0	0	#VALUE!	0	0
Partially Uniform Load 4	Roof	----	----	----	----	----	----	----	----	----
4 Span/Height (ft)	0	0	0	0	0	0	0	0	0	0
4 Start Point (ft)	0	0	0	0	0	0	0	0	0	0
4 End Point (ft)	0	0	0	0	0	0	0	0	0	0
4 Total Partially Uniform Load (plf)	0	0	0	0	0	0	0	#VALUE!	0	0
POINT LOADS										
Point Load 1	RB-4 Right	---	---	RB-2 Right	---	---	---	RB-6 Right	RB-4 Left	---
1 Location (ft)	5.5	0	0	13.66	0	0	0	15.5	2.6	0
1 Total Load (lb)	2689	0	0	671	0	0	0	#VALUE!	1124	0
Point Load 2	RB-4 Right	---	---	RB-3 Right	---	---	---	---	---	---
2 Location (ft)	24.25	0	0	13.66	0	0	0	0	0	0
2 Total Load (lb)	2689	0	0	894	0	0	0	#VALUE!	0	0
Point Load 3	---	---	---	---	---	---	---	---	---	---
3 Location (ft)	0	0	0	0	0	0	0	0	0	0
3 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	0	0
Point Load 4	---	---	---	---	---	---	---	---	---	---
4 Location (ft)	0	0	0	0	0	0	0	0	0	0
4 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	0	0
REACTIONS & MOMENT										
Duration Increase	1.15	1.15	1.15	1.15	1.15	1.15	1.15	#VALUE!	1.15	1.15
Left Reaction (lb)	8089	1258	1415	1124	5655	6112	2241	#VALUE!	1025	1752
Right Reaction (lb)	8105	1258	1415	2689	5655	6112	2241	#VALUE!	1014	1752
Max Moment (lb-ft)	55825	3773	4775	3839	30623	33614	11016	0	2020	3066
Max Shear (lb)	8105	1258	1415	2689	5655	6112	2241	#VALUE!	1025	1752
C ₁	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C ₂	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.20	1.10
Area (in ²)	---	24.50	24.50	24.50	65.63	112.00	62.37	112.00	21.75	27.75
Moment of Inertia I (in ⁴)	541	400	400	400	2412	2389	734	2389	95	198
Maximum Bending Stress (psi)	8668	792	1002	806	1600	1351	1070	0	922	860
Allowable Bending Stress (psi)	362917	2928	2928	2928	2760	2875	2994	#VALUE!	1242	1139
Allowable Moment (lb-ft)	217315	13949	13949	13949	52828	71562	30812	#VALUE!	2720	4059

2 trimmers required 2 trimmers required

Beams (2)

Plan: Feller Residence
Date: 07/15/2026
Location: 1893 E. 12200 S.

2 trimmers required 2 trimmers required 2 trimmers required

EnnerCalc

	PASS	PASS	PASS	PASS	PASS	PASS	PASS	#VALUE!	#VALUE!	PASS
	(2) 1 3/4" x 7 1/4" LVL	(2) 2X6's DF #2	(2) 1 3/4" x 14" LVL	(2) 1 3/4" x 14" LVL	(2) 1 3/4" x 14" LVL	(2) 2X6's DF #2	(2) 2X6's DF #2	#VALUE!	#VALUE!	(3) 1 3/4" x 18" LVL
	Moment: 2.69	Shear: 5.73	TL Deflection: L/434	Moment: 55.69	TL Deflection: L/1000	Moment: 1.13	Moment: 1.64	#VALUE!	#VALUE!	Moment: 1.31
Controlling Load Case	DL+S	DL+S	DL+S	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+S	DL+S	#VALUE!	#VALUE!	DL+S
Name	RB-28	RB-30	RB-32	RB-33	RB-34	RB-35	RB-36	RB-37	RB-38	RB-39
Grade	LVL	DF #2	LVL	LVL	LVL	DF #2	DF #2	LVL	LVL	LVL
LOADING PARAMETERS										
Floor Live Load (psf)	40	40	40	40	40	40	40	Design Criteria 2021 IRC	40	40
Floor Total Load (psf)	52	52	52	52	52	52	52	#VALUE!	52	52
Roof Live Load (psf)	30	30	30	30	30	30	30	30	30	30
Roof Total Load (psf)	45	45	45	45	45	45	45	45	45	45
Wall Load (psf)	20	20	20	20	20	20	20	20	20	20
BEAM SPECIFICATIONS										
Beam Span (ft)	3.5	2	18.25	15.66	19.75	2	6	16.25	3	21.25
Beam Weight (plf)	7.36	3.30	14.21	14.21	14.21	3.30	3.30	18.27	7.36	27.41
BEAM SIZING										
Beam Depth (in)	7.25	5.5	14	14	14	5.5	5.5	18	7.25	18
Beam Width (or Weight/Series)	3.5	3	3.5	3.5	3.5	3	3	3.5	3.5	5.25
UNIFORM LOADING	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case	Controlling Case
Floor Span (ft)	0	0	0	0	0	0	0	0	0	0
Roof Span (ft)	4	17.5	13.625	0	0	4	6.5	30.16	4	6.33
Wall Height (ft)	0	0	0	0	0	10	4	0	4	0
Total Uniform Floor Load (plf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0
Total Live Floor Load (plf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0
Total Uniform Roof Load (plf)	90	393.75	306.5625	0	0	90	146.25	#VALUE!	#VALUE!	142.425
Total Live Roof Load (plf)	60	262.5	204.375	0	0	60	97.5	#VALUE!	#VALUE!	94.95
Total Uniform Wall Load (plf)	0	0	0	0	0	200	80	0	80	0
PARTIALLY UNIFORM LOADING										
Partially Uniform Load 1	----	----	----	----	----	----	----	----	----	Roof
1 Span/Height (ft)	0	0	0	0	0	0	0	0	0	14
1 Start Point (ft)	0	0	0	0	0	0	0	0	0	14.75
1 End Point (ft)	0	0	0	0	0	0	0	0	0	21.25
1 Total Partially Uniform Load (plf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	315
Partially Uniform Load 2	----	----	----	----	----	----	----	----	----	Roof
2 Span/Height (ft)	0	0	0	0	0	0	0	0	0	6.5
2 Start Point (ft)	0	0	0	0	0	0	0	0	0	0
2 End Point (ft)	0	0	0	0	0	0	0	0	0	8
2 Total Partially Uniform Load (plf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	146.25
Partially Uniform Load 3	----	----	----	----	----	----	----	----	----	Roof
3 Span/Height (ft)	0	0	0	0	0	0	0	0	0	8.5
3 Start Point (ft)	0	0	0	0	0	0	0	0	0	8
3 End Point (ft)	0	0	0	0	0	0	0	0	0	21.25
3 Total Partially Uniform Load (plf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	191.25
Partially Uniform Load 4	----	----	----	----	----	----	----	----	----	----
4 Span/Height (ft)	0	0	0	0	0	0	0	0	0	0
4 Start Point (ft)	0	0	0	0	0	0	0	0	0	0
4 End Point (ft)	0	0	0	0	0	0	0	0	0	0
4 Total Partially Uniform Load (plf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0
POINT LOADS										
Point Load 1	RB-27 Right	---	---	---	---	Roof	---	---	RB-37 Left	Roof
1 Location (ft)	1.75	0	0	0	0	1	0	0	1.5	8
1 Total Load (lb)	3409	0	0	0	0	3000	0	#VALUE!	#VALUE!	4825
Point Load 2	---	---	---	---	---	---	---	---	---	---
2 Location (ft)	0	0	0	0	0	0	0	0	0	0
2 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0
Point Load 3	---	---	---	---	---	---	---	---	---	---
3 Location (ft)	0	0	0	0	0	0	0	0	0	0
3 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0
Point Load 4	---	---	---	---	---	---	---	---	---	---
4 Location (ft)	0	0	0	0	0	0	0	0	0	0
4 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0
REACTIONS & MOMENT										
Duration Increase	1.15	1.15	1.15	1.00	1.00	1.15	1.15	#VALUE!	#VALUE!	1.15
Left Reaction (lb)	1875	397	2927	111	140	1793	689	#VALUE!	#VALUE!	7562
Right Reaction (lb)	1875	397	2927	111	140	1793	689	#VALUE!	#VALUE!	8797
Max Moment (lb-ft)	3047	199	13355	436	693	1497	1033	0	0	50855
Max Shear (lb)	1875	397	2927	111	140	1793	689	#VALUE!	#VALUE!	8797
C _r	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C _i	1.00	1.30	1.00	1.00	1.00	1.30	1.30	1.00	1.00	1.00
Area (in ²)	25.38	16.50	49.00	49.00	49.00	16.50	16.50	63.00	25.38	94.50
Moment of Inertia I (in ⁴)	111	42	800	800	800	42	42	1701	111	2552
Maximum Bending Stress (psi)	1192	158	1402	46	73	1187	820	0	0	2153
Allowable Bending Stress (psi)	3202	1346	2928	2546	2546	1346	1346	#VALUE!	#VALUE!	2830
Allowable Moment (lb-ft)	8182	1696	27897	24258	24258	1696	1696	#VALUE!	#VALUE!	66849

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Plan: Feller Residence
Date: 07/15/2026
Location: 1893 E. 12200 S.

2 trimmers required 2 trimmers required

2 trimmers required 2 trimmers required

	PASS (2) 2X6's DF #2 Shear: 3.26 DL+0.75LL+0.75S	PASS (2) 2X6's DF #2 Moment: 1.04 DL+0.75LL+0.75S	PASS (1) 1 3/4" x 18" LVL Shear: 7.04 DL+LL	PASS (2) 2X6's DF #2 Shear: 4.84 DL+LL	PASS (2) 2X6's DF #2 Shear: 2.13 DL+0.75LL+0.75S	PASS (1) 1 3/4" x 18" LVL Moment: 2.87 DL+0.75LL+0.75S	PASS (2) 1 3/4" x 18" LVL Moment: 1.6 DL+0.75LL+0.75S	#VALUE! #VALUE! #VALUE!	#VALUE! #VALUE! #VALUE!	PASS (3) 1 3/4" x 18" LVL TL Deflection: L337 DL+0.75LL+0.75S	PASS (2) 1 3/4" x 18" LVL Shear: 1.79 DL+LL	#DIV/0! #DIV/0! #VALUE!	PASS W16x57 Steel TL Deflection: L71086 DL+LL	#VALUE! #VALUE! #VALUE!
Controlling Load Case	UFB-16 DF #2	UFB-17 DF #2	UFB-18 LVL	UFB-19 DF #2	UFB-20 DF #2	UFB-21 LVL	UFB-22 LVL	UFB-23 LVL	UFB-24 LVL	UFB-25 LVL	UFB-26 LVL	UFB-27 Steel	UFB-28 Steel	UFB-29 LVL
Grade														
LOADING PARAMETERS								Design Criteria 2021 IRC						
Floor Live Load (psf)	40	40	40	60	40	40	40		40	40	40	40	40	40
Floor Total Load (psf)	52	52	52	72	52	52	52		52	52	52	52	52	52
Roof Live Load (psf)	30	30	30	30	30	30	30		30	30	30	30	30	30
Roof Total Load (psf)	45	45	45	45	45	45	45		45	45	45	45	45	45
Wall Load (psf)	20	20	20	20	20	20	20		20	20	20	20	20	20
BEAM SPECIFICATIONS												57" max unbraced	57" max unbraced	
Beam Span (ft)	2	6	4	2.5	2	13	20	17.5	15.75	23	14.5	29	29	20
Beam Weight (psf)	3.30	3.30	9.14	3.30	3.30	9.14	18.27	27.41	18.27	27.41	18.27	57.00	57.00	27.41
BEAM SIZING														
Beam Depth (in)	5.5	5.5	18	5.5	5.5	18	18	18	18	18	18	16	16	18
Beam Width (or Weight)Series	3	3	1.75	3	3	1.75	3.5	5.25	3.5	5.25	3.5	57	57	5.25
UNIFORM LOADING														
Floor Span (ft)	0	4	16	9	27.83	4	4	16	4	2	29.5	4	4	0
Roof Span (ft)	22	4	0	0	15	4	4	0	4	4	0	0	0	0
Wall Height (ft)	10	10	0	0	10	10	0	0	10	10	0	0	0	0
Total Uniform Floor Load (plf)	0	84	416	324	584.43	84	84	#VALUE!	#VALUE!	42	767	#VALUE!	104	#VALUE!
Total Live Floor Load (plf)	0	60	320	270	417.45	60	60	#VALUE!	#VALUE!	30	590	#VALUE!	80	#VALUE!
Total Uniform Roof Load (plf)	495	75	0	0	281.25	75	75	#VALUE!	#VALUE!	75	0	#VALUE!	0	#VALUE!
Total Live Roof Load (plf)	330	45	0	0	168.75	45	45	#VALUE!	#VALUE!	45	0	#VALUE!	0	#VALUE!
Total Uniform Wall Load (plf)	200	200	0	0	200	200	0	0	200	200	0	0	0	0
PARTIALLY UNIFORM LOADING														
Partially Uniform Load 1	----	----	----	----	----	----	Wall	Wall	----	----	Roof	Wall	Wall	Floor
1 Span/Height (ft)	0	0	0	0	0	0	10	10	0	0	6.25	10	10	23
1 Start Point (ft)	0	0	0	0	0	0	5	9.5	0	0	10	16.5	16.5	2.75
1 End Point (ft)	0	0	0	0	0	0	17.25	17.5	0	0	14.5	29	29	17.25
1 Total Partially Uniform Load (plf)	0	0	0	0	0	0	200	#VALUE!	#VALUE!	0	46.875	#VALUE!	200	#VALUE!
Partially Uniform Load 2	----	----	----	----	----	----	Roof	Roof	----	----	Roof	Roof	Roof	Floor
2 Span/Height (ft)	0	0	0	0	0	0	14.75	0	0	0	6.25	7.66	7.66	29
2 Start Point (ft)	0	0	0	0	0	0	9.25	0	0	0	23	23	23	0
2 End Point (ft)	0	0	0	0	0	0	17.5	0	0	0	4	29	29	2.75
2 Total Partially Uniform Load (plf)	0	0	0	0	0	0	#VALUE!	#VALUE!	0	46.875	#VALUE!	57.45	#VALUE!	#VALUE!
Partially Uniform Load 3	----	----	----	----	----	----	Roof	----	----	----	----	----	----	Floor
3 Span/Height (ft)	0	0	0	0	0	0	20	0	0	0	0	0	0	29
3 Start Point (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	17.25
3 End Point (ft)	0	0	0	0	0	0	9.5	0	0	0	0	0	0	20
3 Total Partially Uniform Load (plf)	0	0	0	0	0	0	#VALUE!	#VALUE!	0	0	#VALUE!	0	#VALUE!	#VALUE!
Partially Uniform Load 4	----	----	----	----	----	----	----	----	----	----	----	----	----	----
4 Span/Height (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Start Point (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 End Point (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Total Partially Uniform Load (plf)	0	0	0	0	0	0	#VALUE!	#VALUE!	0	0	#VALUE!	0	#VALUE!	#VALUE!
POINT LOADS														
Point Load 1	----	----	----	----	----	----	UFB-15 Left	UFB-24 Right	RB-38 Left	Roof	RB-36 Left	RB-37 Right	UFB-26 Right	UFB-27 Left
1 Location (ft)	0	0	0	0	0	0	5.5	9.66	0	1.66	0	16.5	23	2.75
1 Total Load (lb)	0	0	0	0	0	0	4273	#VALUE!	#VALUE!	3868	396	#VALUE!	5897	#VALUE!
Point Load 2	----	----	----	----	----	----	RB-27 Left	----	RB-35 Right	RB-35 Left	RB-36 Right	RB-39 Left	----	UFB-28 Left
2 Location (ft)	0	0	0	0	0	0	15.66	0	11.16	0	16.5	0	0	17.25
2 Total Load (lb)	0	0	0	0	0	0	2850	#VALUE!	#VALUE!	1778	396	7582	0	#VALUE!
Point Load 3	----	----	----	----	----	----	----	----	----	RB-35 Right	----	UFB-26 Left	----	----
3 Location (ft)	0	0	0	0	0	0	0	0	0	13.16	0	23	0	0
3 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	1778	0	#VALUE!	0	#VALUE!
Point Load 4	----	----	----	----	----	----	----	----	----	Roof	----	----	----	----
4 Location (ft)	0	0	0	0	0	0	0	0	0	22.66	0	0	0	0
4 Total Load (lb)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	3337	0	#VALUE!	0	#VALUE!
REACTIONS & MOMENT														
Duration Increase	1.15	1.15	1.00	1.00	1.15	1.15	1.15	#VALUE!	#VALUE!	1.15	1.00	#VALUE!	1.00	#VALUE!
Left Reaction (lb)	698	1087	850	409	1069	2393	5072	#VALUE!	#VALUE!	9275	6680	#VALUE!	4129	#VALUE!
Right Reaction (lb)	698	1087	850	409	1069	2393	7058	#VALUE!	#VALUE!	9408	6680	#VALUE!	9282	#VALUE!
Max Moment (lb-ft)	349	1630	850	255	7777	27794	0	0	45251	21062	0	49217	0	0
Max Shear (lb)	698	1087	850	409	1069	2393	7058	#VALUE!	#VALUE!	9408	6680	#VALUE!	9282	#VALUE!
C _v	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C _t	1.30	1.30	1.00	1.30	1.30	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area (in ²)	16.50	16.50	31.50	16.50	16.50	31.50	63.00	94.50	63.00	94.50	63.00	---	---	94.50
Moment of Inertia I (in ⁴)	42	42	851	42	42	851	1701	2552	1701	2552	1701	758	758	2552
Maximum Bending Stress (psi)	277	1294	108	203	424	988	1765	0	0	1915	1337	0	6233	0
Allowable Bending Stress (psi)	1346	1346	2461	1170	1346	2630	2630	#VALUE!	#VALUE!	2461	437500	437500	437500	#VALUE!
Allowable Moment (lb-ft)	1696	1696	19377	1475	1696	22283	44566	#VALUE!	#VALUE!	66849	38753	281976	261976	#VALUE!

Plan: Feller Residence
Date: 07/15/2025
Location: 1833 E. 12200 S.

2 timbers required

2 timbers required

2 timbers required

2 timbers required

2 timbers required

2 timbers required

2 timbers required

3 timbers required

2 timbers required

2 timbers required

	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
	(2) 1 3/4" x 18" LVL	(1) 1 3/4" x 18" LVL	(4) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL	(4) 1 3/4" x 18" LVL	(1) 1 3/4" x 18" LVL	(1) 1 3/4" x 18" LVL	(1) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL	(1) 1 3/4" x 18" LVL	(1) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL	(2) 1 3/4" x 18" LVL
	Shear: 2.0	Shear: 1.5	Normal: 1.3	Shear: 1.4	Shear: 1.2	Normal: 1.3	Shear: 2.3	Shear: 2.3	Shear: 1.2	Shear: 1.2	Shear: 1.2	Shear: 1.2	Shear: 1.2	Shear: 1.2	Shear: 1.2	Shear: 1.2
	DL+LL	DL+LL	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+S	DL+0.75LL+0.75S	DL+S	DL+S	DL+LL	DL+0.75LL+0.75S	DL+0.75LL+0.75S
	FB-1	FB-2	FB-3	FB-4	FB-5	FB-6	FB-7	FB-8	FB-9	FB-10	FB-11	FB-12	FB-13	FB-14	FB-15	FB-15
	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL	LVL
Controlling Load Case																
Name																
LOADING PARAMETERS																
Floor Live Load (psf)	40	40	40	40	40	40	40	Design Criteria 2021 IRC	40	40	40	40	40	40	40	40
Floor Total Load (psf)	52	52	52	52	52	52	52	#VALUE!	52	52	52	52	52	52	52	52
Roof Live Load (psf)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Roof Total Load (psf)	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
Wall Load (psf)	20	20	20	20	20	20	20	20	20	20	20	35	20	20	20	20
BEAM SPECIFICATIONS																
Beam Span (ft)	7	4	20.33	5.75	11	20.33	5.33	2.75	8.5	4.5	6.83	2.25	6.83	11.66	4.33	
Beam Weight (psf)	18.27	9.14	36.54	18.27	18.27	36.54	9.14	9.14	18.27	18.27	9.14	9.14	9.14	18.27	14.21	
BEAM SIZING																
Beam Depth (in)	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	14
Beam Width (or Weight/Series)	3.5	1.75	7	3.5	3.5	7	1.75	1.75	3.5	3.5	1.75	1.75	1.75	3.5	3.5	
UNIFORM LOADING																
Floor Span (ft)	43	22	16.5	4	15.5	4.68	15.5	9	4	4	4	0	4	13	29	
Roof Span (ft)	0	0	0	0	0	0	9	0	0	0	0	7.5	0	0	0	
Wall Height (ft)	0	0	0	0	10	0	10	0	0	0	0	35	10	0	0	
Total Uniform Floor Load (psf)	1118	572	346.5	84	325.5	97.86	325.5	#VALUE!	#VALUE!	24	84	0	24	338	609	
Total Live Floor Load (psf)	860	440	247.5	60	232.5	69.9	232.5	#VALUE!	#VALUE!	0	60	0	0	280	435	
Total Uniform Roof Load (psf)	0	0	0	0	0	0	168.75	#VALUE!	#VALUE!	0	0	168.75	0	0	0	
Total Live Roof Load (psf)	0	0	0	0	0	0	101.25	#VALUE!	#VALUE!	0	0	112.5	0	0	0	
Total Uniform Wall Load (psf)	0	0	0	0	200	0	200	0	0	0	1225	200	0	0	0	
PARTIALLY UNIFORM LOADING																
Partially Uniform Load 1	----	----	----	----	----	----	----	----	----	----	Wall	----	Roof	----	----	
1 Span/Height (ft)	0	0	0	0	0	0	0	0	0	0	35	0	20	0	0	
1 Start Point (ft)	0	0	0	0	0	0	0	0	0	0	3.5	0	2	0	0	
1 End Point (ft)	0	0	0	0	0	0	0	0	0	0	6.83	0	6.83	0	0	
1 Total Partially Uniform Load (psf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0	700	0	450	0	0	
Partially Uniform Load 2	----	----	----	----	----	----	----	----	----	Wall	----	Roof	----	----	----	
2 Span/Height (ft)	0	0	0	0	0	0	0	0	0	10	0	4	0	0	0	
2 Start Point (ft)	0	0	0	0	0	0	0	0	0	0	3.5	0	0	0	0	
2 End Point (ft)	0	0	0	0	0	0	0	0	4.5	0	6.83	0	0	0	0	
2 Total Partially Uniform Load (psf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0	75	0	0	0	0	
Partially Uniform Load 3	----	----	----	----	----	----	----	----	----	Roof	----	----	----	----	----	
3 Span/Height (ft)	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	
3 Start Point (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3 End Point (ft)	0	0	0	0	0	0	0	0	4.83	0	6	0	6	0	0	
3 Total Partially Uniform Load (psf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0	0	0	0	0	0	
Partially Uniform Load 4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
4 Span/Height (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4 Start Point (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4 End Point (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4 Total Partially Uniform Load (psf)	0	0	0	0	0	0	0	#VALUE!	#VALUE!	0	0	0	0	0	0	
POINT LOADS																
Point Load 1	----	----	FB-5 Right	UFB-5 Right	RB-1 Left	UFB-13 Left	RB-2 Left	----	FB-8 Right	UFB-11 Right	UFB-6 Right	----	Primary Bath Horizontal	FB-12 Left	FB-4 Right	
1 Location (ft)	0	0	1.5	5	7.5	12.5	4	0	4.25	0.66	3.5	0	2	4	1	
1 Total Load (lb)	0	0	7566	1155	6711	11256	1055	#VALUE!	#VALUE!	6943	1070	0	5237	1452	9776	
Point Load 2	----	----	FB-4 Left	UFB-10 Left	----	RB-7 Right	----	UFB-4 Right	UFB-5 Right	UFB-12 Left	----	----	FB-12 Left	UFB-6 Left	----	
2 Location (ft)	0	0	1.5	5	0	1.5	0	0	4.25	0.66	0	3.66	4	0	0	
2 Total Load (lb)	0	0	2756	6132	0	1897	0	#VALUE!	#VALUE!	818	1547	0	1578	898	0	
Point Load 3	----	----	UFB-13 Right	UFB-7 Left	----	FB-5 Left	----	UFB-5 Left	UFB-6 Left	----	----	----	----	----	----	
3 Location (ft)	0	0	12.5	5	0	1.5	0	0	4.25	0.66	0	0	0	0	0	
3 Total Load (lb)	0	0	8446	3502	0	5126	0	#VALUE!	#VALUE!	1127	0	0	0	0	0	
Point Load 4	----	----	UFB-5 Left	----	----	----	----	RB-1 Right	----	----	----	----	----	----	----	
4 Location (ft)	0	0	0	0.5	0	0	0	0	1.75	0	0	0	0	0	0	
4 Total Load (lb)	0	0	0	1155	0	0	0	#VALUE!	#VALUE!	0	0	0	0	0	0	
REACTIONS & MOMENT																
Duration Increase	1.00	1.00	1.15	1.15	1.15	1.15	1.15	#VALUE!	#VALUE!	1.15	1.15	1.15	1.15	1.15	1.15	
Left Reaction (lb)	3977	1162	16707	2796	5126	12207	2138	#VALUE!	#VALUE!	7678	2187	1578	6001	3620	8867	
Right Reaction (lb)	3977	1162	9848	9776	7566	8605	2666	#VALUE!	#VALUE!	1399	3647	1578	4580	2863	3607	
Max Moment (b-ft)	6960	1162	64692	7136	23151	12207	3248	#VALUE!	#VALUE!	4921	7104	887	11337	11514	8067	
Max Shear (lb)	3977	1162	16707	9776	7566	12207	2666	#VALUE!	#VALUE!	7679	3647	1578	6001	3620	8867	
C _v	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
C _t	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Area (in ²)	63.00	31.50	126.00	63.00	63.00	126.00	31.50	63.00	63.00	31.50	31.50	63.00	31.50	63.00	49.00	
Moment of Inertia I (in ⁴)	1701	851	3402	1701	1701	3402	851	1701	1701	851	851	1701	851	1701	800	
Maximum Bending Stress (psi)	442	148	2054	453	1470	2036	412	0	0	312	902	113	1440	731	947	
Allowable Bending Stress (psi)	2461	2461	2830	2830	2830	2830	2830	#VALUE!	#VALUE!	2830	2830	2830	2830	2461	2928	
Allowable Moment (b-ft)	38753	19377	89132	44566	44566	89132	22283	#VALUE!	#VALUE!	44566	22283	22283	22283	38753	27897	

Plan: Feller Residence
Date: 07/15/2026
Location: 1893 E. 12200 S.

2 trimmers required

	PASS	PASS	PASS	PASS
	(2) 1 3/4" x 9 1/2" LVL	(1) 1 3/4" x 18" LVL	(2) 2X8's DF #2	(2) 1 3/4" x 11 7/8" LVL
	Shear: 10.06	Shear: 21.16	Moment: 1.33	Moment: 1.62
Controlling Load Case	DL+LL	DL+LL	DL+LL	DL+LL
Name	FB-16	FB-17	FB-18	FB-19
Grade	LVL	LVL	DF #2	LVL
LOADING PARAMETERS				
Floor Live Load (psf)	40	40	40	40
Floor Total Load (psf)	52	52	52	52
Roof Live Load (psf)	30	30	30	30
Roof Total Load (psf)	45	45	45	45
Wall Load (psf)	20	20	20	20
BEAM SPECIFICATIONS				
Beam Span (ft)	4.25	5	4.33	11
Beam Weight (plf)	9.64	9.14	4.35	12.06
BEAM SIZING				
Beam Depth (in)	9.5	18	7.25	11.88
Beam Width (or Weight/Series)	3.5	1.75	3	3.5
UNIFORM LOADING	Controlling Case	Controlling Case	Controlling Case	Controlling Case
Floor Span (ft)	11	4	29	27.66
Roof Span (ft)	0	0	0	0
Wall Height (ft)	0	0	0	0
Total Uniform Floor Load (plf)	286	104	754	719.16
Total Live Floor Load (plf)	220	80	580	553.2
Total Uniform Roof Load (plf)	0	0	0	0
Total Live Roof Load (plf)	0	0	0	0
Total Uniform Wall Load (plf)	0	0	0	0
PARTIALLY UNIFORM LOADING				
Partially Uniform Load 1	----	----	----	----
1 Span/Height (ft)	0	0	0	0
1 Start Point (ft)	0	0	0	0
1 End Point (ft)	0	0	0	0
1 Total Partially Uniform Load (plf)	0	0	0	0
Partially Uniform Load 2	----	----	----	----
2 Span/Height (ft)	0	0	0	0
2 Start Point (ft)	0	0	0	0
2 End Point (ft)	0	0	0	0
2 Total Partially Uniform Load (plf)	0	0	0	0
Partially Uniform Load 3	----	----	----	----
3 Span/Height (ft)	0	0	0	0
3 Start Point (ft)	0	0	0	0
3 End Point (ft)	0	0	0	0
3 Total Partially Uniform Load (plf)	0	0	0	0
Partially Uniform Load 4	----	----	----	----
4 Span/Height (ft)	0	0	0	0
4 Start Point (ft)	0	0	0	0
4 End Point (ft)	0	0	0	0
4 Total Partially Uniform Load (plf)	0	0	0	0
POINT LOADS				
Point Load 1	---	---	---	---
1 Location (ft)	0	0	0	0
1 Total Load (lb)	0	0	0	0
Point Load 2	---	---	---	---
2 Location (ft)	0	0	0	0
2 Total Load (lb)	0	0	0	0
Point Load 3	---	---	---	---
3 Location (ft)	0	0	0	0
3 Total Load (lb)	0	0	0	0
Point Load 4	---	---	---	---
4 Location (ft)	0	0	0	0
4 Total Load (lb)	0	0	0	0
REACTIONS & MOMENT				
Duration Increase	1.00	1.00	1.00	1.00
Left Reaction (lb)	628	283	1642	4022
Right Reaction (lb)	628	283	1642	4022
Max Moment (lb-ft)	667	354	1777	11060
Max Shear (lb)	628	283	1642	4022
C _v	1.00	1.00	1.00	1.00
C _r	1.00	1.00	1.20	1.00
Area (in ²)	33.25	31.50	21.75	41.58
Moment of Inertia I (in ⁴)	250	851	95	489
Maximum Bending Stress (psi)	152	45	811	1612
Allowable Bending Stress (psi)	2684	2461	1080	2604
Allowable Moment (lb-ft)	11775	19377	2365	17862

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

	PASS	PASS	PASS	#VALUE!	#VALUE!
	3 1/2" x 5 1/4" Paralli/2"	3 1/2" x 5 1/4" Paralli	(3) 2x6	#VALUE!	#VALUE!
Controlling Load Case	DL+S	DL+S	DL+0.75LL+0.75S	#VALUE!	#VALUE!
Controlling Factor	FS:2.1	FS:1.3	FS:1.9	#VALUE!	#VALUE!
Location:	P1	P2	P3	P4	P5
	UFB-10 L	UFB-11 R	FB-4/5	FB-9R/10L	RB-5L
COLUMN DIMENSIONS:					
Total Column Length (ft):	10	10	10	10	10
X-Unbraced Length (ft):	10	10	10	10	10
Y-Unbraced Length (ft):	0	0	0	0	0
MATERIAL SPECS:					
Material:	Parallam	Parallam	Doug Fir #2	Parallam	Doug Fir #2
Depth-x (in):	5.25	3.5	5.5	5.25	5.5
Width-y (in):	3.5	5.25	1.5	3.5	1.5
# Members	1	1	3	1	2
Load Sources	Post	Post	Post	Post	Post
	UFB-7 Left	UFB-6 Left	FB-5 Right	FB-9 Right	RB-5 Left
	UFB-10 Left	UFB-5 Right	FB-4 Left	FB-10 Left	RB-8 Left
	UFB-5 Right	UFB-11 Right	---	---	---
	---	---	---	---	---
Post, Axial Load (lbs)	11267	8888	10322	#VALUE!	#VALUE!
				#VALUE!	#VALUE!

MATERIAL PROPERTIES:					
Area (in ²)	18.38	18.38	24.75	18.38	16.50
F _c	2,500	2,500	1,350	2,500	1,350
E	1,800,000	1,800,000	1,600,000	1,800,000	1,600,000
E _{min}	914,880	914,880	580,000	914,880	580,000
Lex/dx	22.86	34.29	21.82	22.86	21.82
Ley/dy	0.00	0.00	0.00	0.00	0.00
FACTORS:					
C _d (axial loads)	1	1	1	1	1
F _c *	2,500	2,500	1,485	2,500	1,485
F _{ce}	1,439	640	1,002	1,439	1,002
C _p	0.52	0.25	0.54	0.52	0.54
F' _c	1,299	619	808	1,299	808
Allowable Load (lbs)	23,868	11,381	20,007	23,868	13,338
F. S. Axial Compression	2.1	1.3	1.9	100.0	100.0

	PASS	PASS	PASS		
	(2) 2x6	(2) 2x6	1/2" x 5 1/4" Paralli		
Controlling Load Case	DL+0.75LL+0.75S	DL+0.75LL+0.75S	DL+LL		
Controlling Factor	FS:2.4	FS:2.7	FS:2.1		
Location:	P8	P9	P10	---	---
	UFB-14L	UFB-14R	FB-11R	---	---
COLUMN DIMENSIONS:					
Total Column Length (ft):	10	10	10	10	10
X-Unbraced Length (ft):	10	10	10	10	10
Y-Unbraced Length (ft):	0	0	0	0	0
MATERIAL SPECS:					
Material:	Doug Fir #2	Doug Fir #2	Parallam	Doug Fir #2	Doug Fir #2
Depth-x (in):	5.5	5.5	5.25	5.5	5.5
Width-y (in):	1.5	1.5	3.5	1.5	1.5
# Members	2	2	1	2	2
Choose Post or Stud spacing	Post	Post	Post	Post	Post
Load Sources	Floor	Floor	FB-11 Right	---	---
	---	---	FB-14 Left	---	---
	---	---	---	---	---
	---	---	---	---	---
Post, Axial Load (lbs)	9204	8258	7083	0	0

	Adjusted load not referenced	Adjusted load not referenced			
MATERIAL PROPERTIES:					
Area (in ²)	16.50	16.50	18.38	16.50	16.50
F _c	2,500	2,500	1,350	2,500	1,350
E	1,800,000	1,800,000	1,600,000	1,800,000	1,600,000
E _{min}	914,880	914,880	580,000	914,880	580,000
Lex/dx	21.82	21.82	22.86	21.82	21.82
Ley/dy	0.00	0.00	0.00	0.00	0.00
FACTORS:					
C _d (axial loads)	1	1	1	1	1
F _c *	2,750	2,750	1,350	2,750	1,485
F _{ce}	1,580	1,580	913	1,580	1,002
C _p	0.48	0.48	0.59	0.48	0.54
F' _c	1,330	1,330	797	1,330	808
Allowable Load (lbs)	21,952	21,952	14,653	21,952	13,338
F. S. Axial Compression	2.4	2.7	2.1	100.0	100.0

Plan: Feller Residence
Date: 7/15/2026
Location: 1893 E. 12200 S.

Controlling Load Case	PASS	PASS	#VALUE!	#VALUE!	#VALUE!
	Pipe3STD	Pipe3STD	#VALUE!	#VALUE!	#VALUE!
	DL+0.75LL+0.75S FS: 1.52	DL+LL FS: 2.42	#VALUE!	#VALUE!	#VALUE!
Location:	ST-1 FB-3L	ST-2 FB-3R	ST-3 UFB-29L	ST-4 UFB-29R	ST-5 UFB-27R
COLUMN DIMENSIONS:					
X-Unbraced Length (ft):	10	10	10	10	10
Y-Unbraced Length (ft):	10	10	10	10	10
MATERIAL SPECS:					
Column Shape	STD_Pipe	STD_Pipe	STD_Pipe	STD_Pipe	STD_Pipe
Member	Pipe3STD	Pipe3STD	Pipe3STD	Pipe3STD	Pipe3STD
r _x (in.)	1.17	1.17	1.17	1.17	1.17
r _y (in.)	1.17	1.17	1.17	1.17	1.17
A _g (in ²)	2.07	2.07	2.07	2.07	2.07
Load Sources	FB-3 Left	FB-3 Right	UFB-29 Left	UFB-29 Right	UFB-27 Right
	---	---	---	---	---
	---	---	---	---	---
	---	---	---	---	---
	---	---	---	---	---
Axial Load:	16,707	10,484	#VALUE!	#VALUE!	#VALUE!
MATERIAL PROPERTIES:					
E (ksi)	29,000	29,000	29,000	29,000	29,000
KL/r _x	102.56	102.56	102.56	102.56	102.56
KL/r _y	102.56	102.56	102.56	102.56	102.56
FACTORS:					
K	1	1	1	1	1
F _e (ksi)	27.21	27.21	27.21	27.21	27.21
F _{cr} (ksi)	20.43	20.43	20.43	20.43	20.43
Allowable Load (lbs)	25,322	25,322	25,322	25,322	25,322

Controlling Load Case	PASS	#VALUE!	PASS		
	Pipe3STD	#VALUE!	Pipe3STD		
	DL+S FS: 3.46	#VALUE!	DL+LL FS: 6.37		
Location:	ST-8 Rb-39R	ST-9 Rb-39L	ST-10 FB-1L	ST-11 ---	ST-12 ---
COLUMN DIMENSIONS:					
X-Unbraced Length (ft):	10	10	10	10	10
Y-Unbraced Length (ft):	10	10	10	10	10
MATERIAL SPECS:					
Column Shape	STD_Pipe	STD_Pipe	STD_Pipe	STD_Pipe	STD_Pipe
Member	Pipe3STD	Pipe3STD	Pipe3STD	Pipe3STD	Pipe3STD
r _x (in.)	1.17	1.17	1.17	1.17	1.17
r _y (in.)	1.17	1.17	1.17	1.17	1.17
A _g (in ²)	2.07	2.07	2.07	2.07	2.07
Load Sources	RB-39 Right	RB-39 Left	FB-1 Left	---	---
	---	RB-37 Right	---	---	---
	---	---	---	---	---
	---	---	---	---	---
	---	---	---	---	---
Axial Load:	7,320	#VALUE!	3,977	0	0
MATERIAL PROPERTIES:					
F _y (ksi)	35	35	35	35	35
E (ksi)	29,000	29,000	29,000	29,000	29,000
KL/r _x	102.56	102.56	102.56	102.56	102.56
KL/r _y	102.56	102.56	102.56	102.56	102.56
FACTORS:					
K	1	1	1	1	1
F _e (ksi)	27.21	27.21	27.21	27.21	27.21
F _{cr} (ksi)	20.43	20.43	20.43	20.43	20.43
Allowable Load (lbs)	25,322	25,322	25,322	25,322	25,322