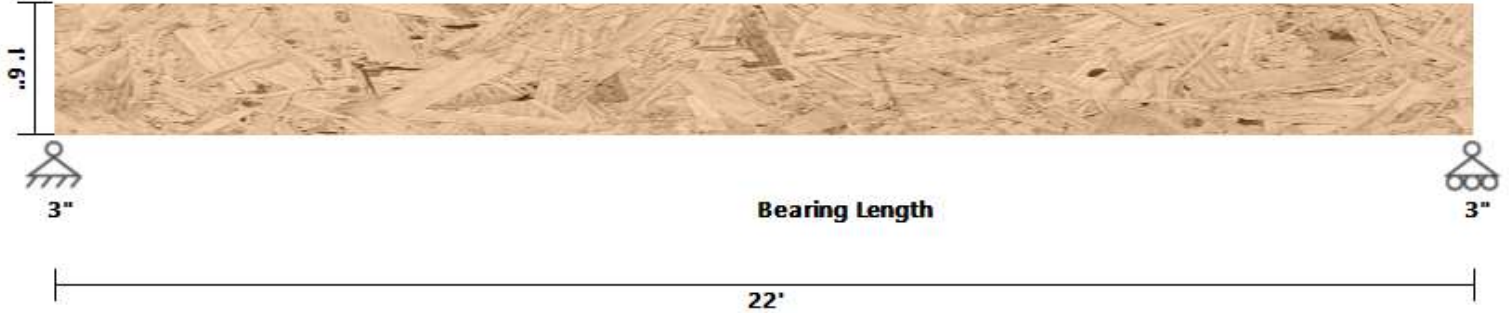


DATE:	7/26/2022	COMPANY:	Sparks Engineering, PLLC
VITRUVIUS BUILD:	StruCalc Pro	DESIGNED BY:	Ronald Sparks, PE
CUSTOMER:	Home Ownership Center	REVIEWED BY:	Ronald Sparks, PE
PROJ. ADDRESS:	2763 Byrds Mills Rd Erwin, NC	PROJECT NAME:	Home Ownership Center Project
LEVEL:	Main Floor	LOADING:	ASD
MEMBER NAME:	STEEL REPLACEMENT LVL [1/8]	CODE:	2021 International Building Code
MEMBER TYPE:	FLOOR BEAM	NDS:	2018 NDS
MATERIAL:	Structural Composite Lumber		
Louisiana Pacific	2.0E LVL	(5) 1.75 X 18	DRY

STEEL REPLACEMENT LVL [1/8] DIAGRAM



BEAM PROPERTIES

Start (ft): 0 End (ft): 22 Member Slope: 0/12 Actual Length (ft): 22

Area (in ²)	I _x (in ⁴)	I _y (in ⁴)	BSW (lbf/ft)	Lams	C _{fn}	K _{cr} Creep Factor
157.5	4252.5	40.2	44.84	5	9	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _{c⊥} (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	2900	1800	285	3200	750	2000	1000
Adjusted Values	2900	1800	285	3200	750	2000	1000
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1

Bending Adjustment Factors C_V = 0.96C_r = 1 Volume factor I_s applied on a load combination basis And I_s Not reflected in the adjusted values

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	22	0	22	0	1.00	0.16	1.00	1.00

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	PASS (61.6%)	109.5	285.0	0	D+L	1
Bending Stress Y (psi)	PASS (42.1%)	1605.4	2772.2	11	D+L	1
Deflection (in)	PASS (15.5%)	0.620 (=L/426)	0.733 (=L/360)	11	L	
Bearing Stress (psi)	PASS (41.6%)	437.8	750.0	0	D+L	1

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	LIVE	LIVE ROOF	SNOW	WIND +	WIND -	SEISMIC +	SEISMIC -	ICE	RAIN	EARTH
A	493	11000	0	0	0	0	0	0	0	0	0
B	493	11000	0	0	0	0	0	0	0	0	0

Reaction Location

A

B

LOAD LIST

Type	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	40	40	0	22	Live	Y
Uniform (lbf/ft)	960	960	0	22	Live	Y
Self Weight (lbf/ft)	44.84	44.84	0	22	Dead	Y

VMD DIAGRAMS

SHEAR



MOMENT



DEFLECTION



Ronald Wayne Sparks
7-27-2022

