# General Land Use Application

**1 page**

| | |
|---|---|
| **Name of Project:** | 21-013 FAC Smoky Hearth CS |
| **Location or Address:** | 16607 Champion Way Ste 100, Sandy, OR 97055 |

| **Map & Tax Lot #** | **T:** | **R:** | **Section:** | **Tax Lot (s):** |
|---|---|---|---|---|
| | | | | 24E15A 00215 |

**Request:** This project is to build a covered structure for outdoor dining at the Smoky Hearth Restaurant. The structure will be 31.5' x 30' and L-shaped and will connect to the building at the primary entrance to the restaurant. Structural elements will include a 6:12 pitched metal roof, heavy timber construction with metal bracketing, stone wrapping at the base of the supports, at least one light fixture and multiple electrical outlets. A parking analysis and setback information are attached.

I am the (check one) ☐ owner ☐ lessee of the property listed above, and the statements and information contained herein are in all respects true, complete and correct to the best of my knowledge and belief.

| Applicant (if different than owner) | Owner |
|---|---|
| City of Sandy Economic Development Office | Bonnie & Mark Gritsch |
| Address 39250 Pioneer Boulevard | Address 16607 Champion Way Ste 100 |
| City/State/Zip Sandy, OR 97055 | City/State/Zip Sandy, OR 97055 |
| Email dsnider@ci.sandy.or.us | Email Smokyhearth@gmail.com |
| Phone (503) 489-2159 | Phone (503) 668-4466 |
| Signature | Signature Mark Gritsch |

22-009 DR

Staff Use Only

| File #: 21-013 FAC | Date: 2/28/22 | Fee$: 560 | Planner: n/a - Cov Str project |
|---|---|---|---|

Type of review: Type I ☑ Type II ☐ Type III ☐ Type IV ☐

Has applicant attended a pre-app? Yes ☐ No ☑ If yes, date of pre-app meeting:

**21-013 FAC Smoky Hearth CS**
**Parking analysis & setback information for covered structure project**

**Data sources**:

- 03-029 DR Prestige Development Phase II Report
- CC&R for Pioneer Corporate Park (recorded in ClackCo, 6/19/2002)
- Email from Sandy Cinema owner Elie Kassab dated February 23, 2022.

**Off-street parking analysis**

- Shared parking agreement for entire complex (CCR doc, Section 6.2 (Common Area Facilities) shows parking calculations used when the complex was originally built
- 1 parking space for every 6 theater seats (1,226 *planned* per CC&Rs; 826 seats were actually built per Elie Kassab in 2/23/22 email)
    - 826/6 = **137.67** theater parking spaces), **plus**
- 1 parking space for each 300 SF of building area (minus restrooms & utility closets)
    - Building 1 (retail store, tanning, SH): total SF = 5,600
    - Building 2 (salon, phys therapy): total SF = 5,000
    - Building 3 (church): total SF = 10,600
    - Total - 3 buildings: 21,200 SF (37,500 SF *planned*)
    - 21,200/300 = **70.67** parking spaces
- Parking usage – miscellaneous items
    - Theater usage has declined dramatically since COVID-19 pandemic
    - Building 3 is a church – building/parking used on *SUNDAYS ONLY*
- Covered structure project will replace 4 non-ADA parking spaces
- Total minimum required off street parking for complex: **137.67 + 70.67 = ~208 spaces**
- Current total on-site parking (total spaces): **260 spaces**
- Total off street parking after project completion: **256 spaces**

**Setback information**

- Prior to construction, the setback distance from the southeast facing side of the Smoky Hearth building to Champion Way is approximately **564 feet**.
- After construction of the proposed structure, the setback distance from the southeast facing side of the proposed covered structure to Champion Way will be approximately **496 feet**.

# Smokey Hearth Cover Structure
# 16607 Champion Way, Unit 100
# Sandy, OR 97055

**March 5, 2021**

**For:** Todd Spec
Mountain View Contracting

The JAS Engineering design team has received the request from you to provide drawings for the proposed design of a new roof shade structure to be constructed at Smoky Hearth Bar & Grill in Sandy, Oregon. We understand the project involves the design of these elements and the determination of the loading requirements for the new roof shade structure. We understand it is to be similar to the preliminary plans we assessed for previous projects then discussed with you. We can prepare these structural drawings with backup calculations for the City of Sandy for permitting.

## OBJECTIVES

The project consists of constructing a new L-shaped roof shade structure that is intended to be 30'x20' with a bump out connecting to the existing building located at the property noted above in Sandy, Oregon. We will need dimensions for this portion of the project as none are included on the drawings we have been given. The total cover structure will be approximately 600 SF plus the bump out. We understand it will have 10' high columns (above grade) mounted on 3' high concrete pedestals (from the bottom of the footing). The location of the new roof shade structure may be limited by setbacks and will be placed on the lot based on information provided by others. JAS Engineering will provide roof framing and foundation plans for the roof shade structure. We will include detail sheets, a structural notes sheet and structural calculations as part of the package that is to be submitted to the City of Sandy for permitting.

**Design Criteria:**

| | |
|---|---|
| **IBC 2018:** | With 2019 Oregon State Amendments (OSSC) |
| **Snow Load:** | 25 PSF |
| **Roof Dead Load:** | 15 PSF |
| **Floor Live Load:** | 40 PSF |
| **Floor Dead Load:** | 15 PSF |
| **Wind Load:** | 100 MPH, Exposure B |
| **Seismic:** | Ss=0.722, S1=0.321 |

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
18858SE
OREGON
NOVEMBER 12, 1996
JOHN ANDREW STEMBER

EXPIRES: 6-30-2022

2-21-22

JAS ENGINEERING
1419 Washington Street, Suite 100
Oregon City, OR 97045
Work: 503-657-9800 Fax: 503-656-0186

Client MVC
Project SMOKEY HEARTH BAR & GRILL COVER STRUCTURE
Project No. 22-006

Sheet 1L of
Design by DAJ
Date 2/21/22
Checked by
Date

## SEISMIC DESIGN

$$V = C_S \cdot W$$

$$C_S = \frac{S_{DS}}{R/I}, \quad R = 1.5 \text{ CANTILEVER COLUMNS}$$

$$S_{DS} = \frac{2}{3} S_{MS}$$

$$S_{MS} = F_a \cdot S_S$$

$$S_S = 0.722g$$

$$F_a = 1.223$$

$$S_{MS} = (1.223)\,0.722g = 0.882g$$

$$S_{DS} = \frac{2}{3}(0.882g) = 0.588g$$

$$C_S = \frac{0.588g}{1.5/1.0} = 0.392$$

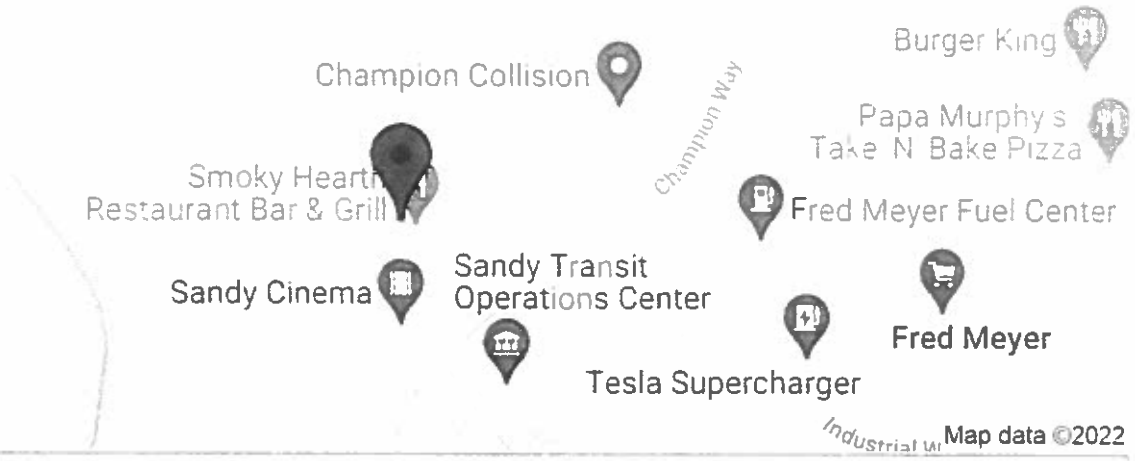
$$V = 0.392 \cdot W$$

OSHPD

# SMOKEY HEARTH BAR & GRILL COVER STRUCTURE

## 16607 Champion Way Ste 100, Sandy, OR 97055, USA

Latitude, Longitude: 45.4036779, -122.2981904




| | |
|---|---|
| **Date** | 2/21/2022, 12:46:41 PM |
| **Design Code Reference Document** | ASCE7-16 |
| **Risk Category** | II |
| **Site Class** | D - Default (See Section 11.4.3) |

| Type | Value | Description |
|---|---|---|
| $S_S$ | 0.722 | $MCE_R$ ground motion. (for 0.2 second period) |
| $S_1$ | 0.321 | $MCE_R$ ground motion. (for 1.0s period) |
| $S_{MS}$ | 0.882 | Site-modified spectral acceleration value |
| $S_{M1}$ | null -See Section 11.4.8 | Site-modified spectral acceleration value |
| $S_{DS}$ | 0.588 | Numeric seismic design value at 0.2 second SA |
| $S_{D1}$ | null -See Section 11.4.8 | Numeric seismic design value at 1.0 second SA |

| Type | Value | Description |
|---|---|---|
| SDC | null -See Section 11.4.8 | Seismic design category |
| $F_a$ | 1.223 | Site amplification factor at 0.2 second |
| $F_v$ | null -See Section 11.4.8 | Site amplification factor at 1.0 second |
| PGA | 0.323 | $MCE_G$ peak ground acceleration |
| $F_{PGA}$ | 1.277 | Site amplification factor at PGA |
| $PGA_M$ | 0.413 | Site modified peak ground acceleration |
| $T_L$ | 16 | Long-period transition period in seconds |
| SsRT | 0.722 | Probabilistic risk-targeted ground motion. (0.2 second) |
| SsUH | 0.81 | Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration |
| SsD | 1.5 | Factored deterministic acceleration value. (0.2 second) |
| S1RT | 0.321 | Probabilistic risk-targeted ground motion. (1.0 second) |
| S1UH | 0.367 | Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration. |
| S1D | 0.6 | Factored deterministic acceleration value. (1.0 second) |
| PGAd | 0.5 | Factored deterministic acceleration value. (Peak Ground Acceleration) |
| $C_{RS}$ | 0.89 | Mapped value of the risk coefficient at short periods |
| $C_{R1}$ | 0.873 | Mapped value of the risk coefficient at a period of 1 s |

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Checked by
Date

- SECTION (1) -

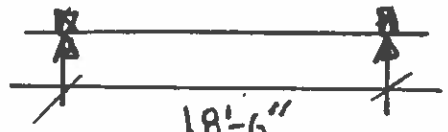
$W_R = (22'-6'' \times 31'-6'')\ 15\#/SF = 10,631.3\#$

SEISMIC BASE SHEAR $V = 0.392\ (10,631.3\#)$

$= 4167.5\#$

SEISMIC LONGITUDINAL

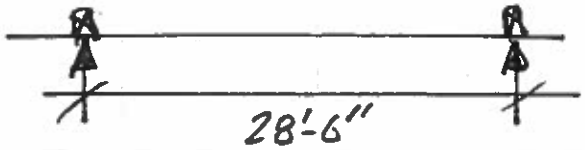
$v = \frac{4167.5\#}{18'-6''} = 225.3\#/ft$, $V = \frac{225.3\#/ft\,(18'-6'')}{2} = 2083.8\#$




2083.8# 2083.8#

SEISMIC TRANSVERSE

$v = \frac{4167.5\#}{28'-6''} = 146.2\#/ft$, $V = \frac{146.2\#/ft\,(28'-6'')}{2} = 2083.8\#$




2083.8# 2083.8#

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— SECTION (2) —

$W_R = (12'-9'' \times 14')15PSF = 2677.5^{\#}$

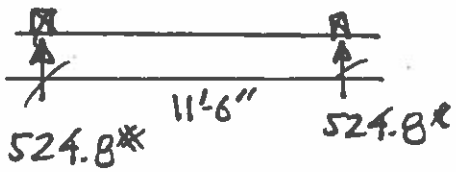
SEISMIC BASE SHEAR

$V = 0.392(2677.5^{\#})$

$= 1049.6^{\#}$

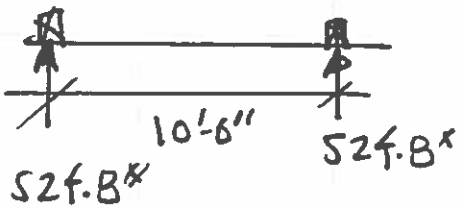
SEISMIC LONGITUDINAL

$v = \frac{1049.6^{\#}}{11'-6''} = 91.3^{\#}/ft$, $V = \frac{91.3^{\#}/ft(11'-6'')}{2} = 524.8^{\#}$




SEISMIC TRANSVERSE

$v = \frac{1049.6^{\#}}{10'-6''} = 99.9^{\#}/ft$, $V = \frac{99.9^{\#}/ft(10'-6'')}{2} = 524.8^{\#}$



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# WIND DESIGN

-ASCE 7-10 27.1.5-

MW. DESIGN WIND FORCE FOR OPEN BUILDING = 16 PSF

120 MPH EXPOSURE B

ARCTAN (6/12) = 26.6°

$q_h = 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2$ (27.3-1)

$K_z = 0.57$ FOR EXPOSURE B & $z = 0-15$ FT

$K_{zt} = 1.0$

$K_d = 0.85$

$q_h = 0.00256(0.57)(1.0)(0.85)(120\text{MPH})^2$

$= 17.9$ PSF

$P_H = q_H \cdot G \cdot C_N$ (27.4-3)

$G = 0.85$

$C_N = 1.3$ (FIG. 27.4-5)

$P_H = (17.9\text{PSF})(0.85)(1.3)$

$P_H = 19.8$ PSF $> P_{MW} = 16$ PSF

$q_z = 17.9$ PSF

$P_z = (17.9\text{PSF})(0.85)(-1.7)$

$= -25.9$ PSF UPLIFT

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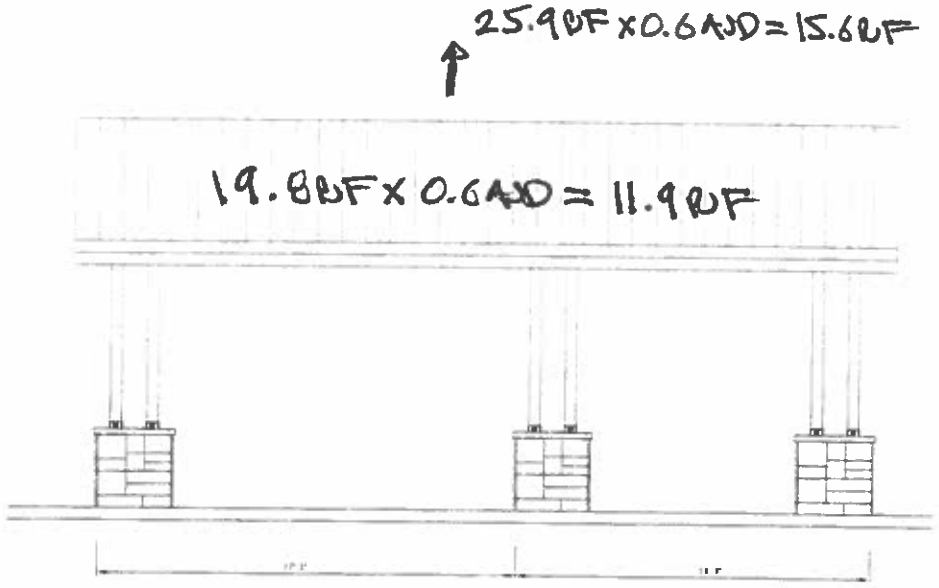
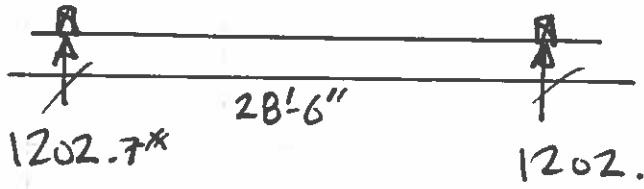



## WWD TRANSVERSE

$W_R = (6'-5'' \times 31'-6'')\,11.9\,PLF = 2405.3\#$

$V = \frac{2405.3\#}{28'-6''} = 84.4\#/ft$

$V = \frac{84.4\#/ft\,(28'-6'')}{2} = 1202.7\#$



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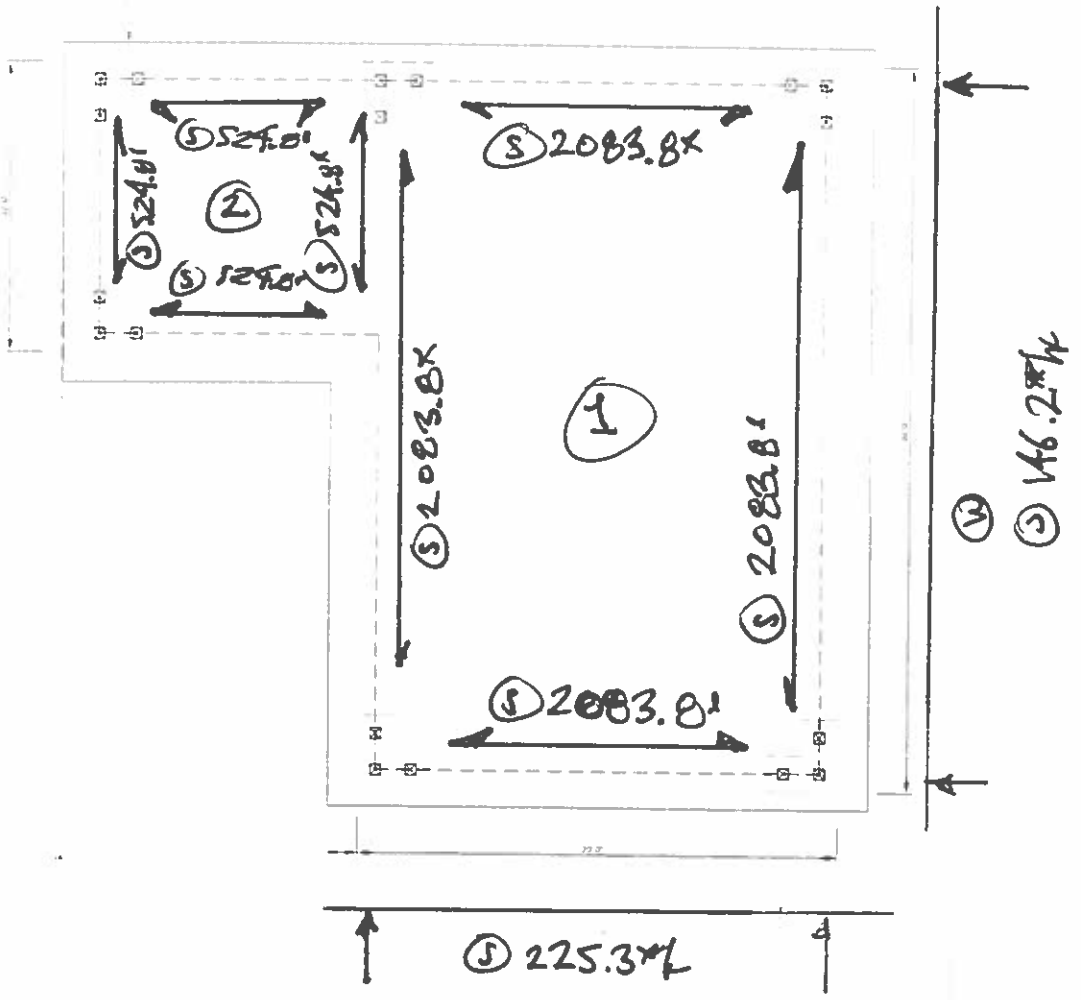
# SHEAR LINE LOADS ON STRUCTURE



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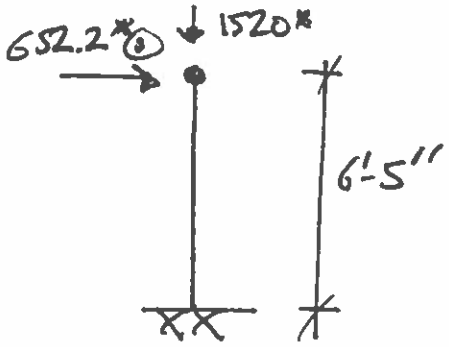
## POST FOR ROOF BEAM

6'-5" UNBRACED LENGTH




ROOF BEAM: VOL = 1520#

$P_{LAT}$ (5) $= \frac{2083.8\# + 524.8\#}{4 \text{ POST}} = 652.2\#$

∴ USE 6x6 DF-L (PT)

## MOMENT POST BASE CHECK

$\text{Moment} = P \cdot L = (652.2\# \times \overset{\text{ADD}}{0.7}) \, 6'\text{-}5''$

$= 2929.5\# \cdot \text{ft} < 3,730\#\text{ft}$ ALLOWABLE

∴ USE SIMPSON MPB66Z

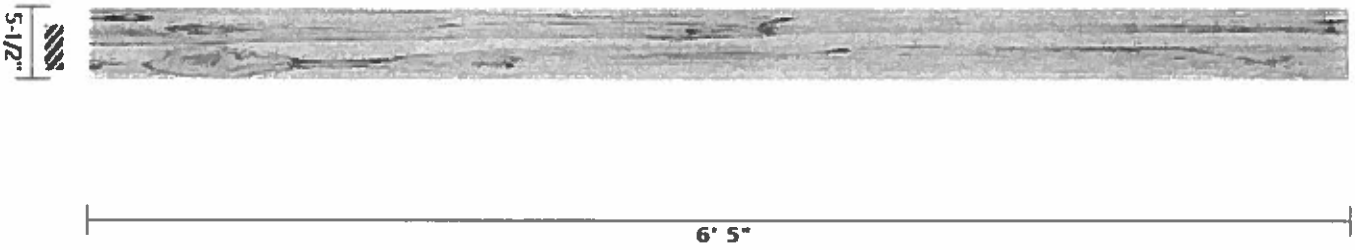
9L/

# PASS

| | | | |
|---|---|---|---|
| DATE: | 2/21/2022 | COMPANY: | JAS Engineering INC |
| VITRUVIUS BUILD: | Base | DESIGNED BY: | DAS |
| CUSTOMER: | | REVIEWED BY: | JAS |
| PROJ. ADDRESS: | -- | PROJECT NAME: | 22-006 SMOKEY HEARTH COVER |
| | -- | | |
| LEVEL: | NOT YET ASSIGNED | LOADING: | ASD |
| MEMBER NAME: | POST FOR ROOF BEAM | CODE: | 2018 International Building Code |
| MEMBER TYPE: | COLUMN | NDS: | 2018 NDS |
| MATERIAL: | Solid Sawn | | |

| | | | | | |
|---|---|---|---|---|---|
| Douglas Fir-Larch | No. 1 | (1) 5.5 X 5.5 | DRY | INCISED | |

## POST FOR ROOF BEAM DIAGRAM




## COLUMN PROPERTIES

Start(ft) 0 End(ft): 6.41667

| Area ($in^2$) | Ix ($in^4$) | Iy ($in^4$) | BSW (lbf/ft) | Lams | G | Kcr Creep Factor |
|---|---|---|---|---|---|---|
| 30.25 | 76.26 | 76.26 | 6.9 | 1 | 0.5 | 1 |

## STRENGTH PROPERTIES

| | Fb (psi) | Ft (psi) | Fv (psi) | Fc (psi) | Fc⊥ (psi) | E (psi) x$10^3$ | Emin (psi) x$10^3$ |
|---|---|---|---|---|---|---|---|
| Base Values | 1200 | 825 | 170 | 1000 | 625 | 1600 | 580 |
| Adjusted Values | 960 | 660 | 136 | 800 | 625 | 1520 | 551 |
| $C_M$ | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| $C_T$ | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| $C_i$ | 0.8 | 0.8 | 0.8 | 0.8 | 1 | 0.95 | 0.95 |
| $C_E$ | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Bending Adjustment Factors $C_{fu} = 0.74C_r = 1$

## COLUMN DATA

| Span | Length (ft) | Unbraced Length (ft) X | Unbraced Length (ft) Y | Column End Offset | CP | Ke(X Axis) | Ke(Y Axis) | KeL/d (X Axis) | KeL/d (Y Axis) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.41667 | 6.41667 | 6.41667 | 0 | 0.37 | 2.10 | 2.10 | 29.4 | 29.4 |

## PASS-FAIL

| | PASS/FAIL | MAGNITUDE | STRENGTH | LOCATION (ft) | LOAD COMBO | DURATION FACTOR CD |
|---|---|---|---|---|---|---|
| Shear Stress Y (psi) | PASS (89.6%) | 22.6 | 217.6 | 0 | D+0.7E(+) | 1.6 |
| Bending Stress Y (psi) | PASS (17.3%) | 1267.7 | 1533.1 | 0 | D+0.7E(+) | 1.6 |
| Compressive Stress (psi) | PASS (87.5%) | 51.7 | 412.9 | 0 | D | 0.9 |
| Bearing Stress (psi) | PASS (98.1%) | 23.7 | 1280.0 | 0 | D+0.7E(+) | 1.6 |
| Bending-Compression (Unit) | PASS (7.0%) | 0.93 | 1.00 | 0 | D+0.7E(+) | 1.6 |

LOL

Member Name POST FOR ROOF BEAM

## REACTIONS

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

| Z axis | DEAD | LIVE | LIVE ROOF | SNOW | WIND + | WIND - | SEISMIC + | SEISMIC - | ICE | RAIN | EARTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1564 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y axis | | | | | | | | | | | |
| A | 0 | 0 | 0 | 0 | 0 | 0 | 652 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| M@x | | | | | | | | | | | |
| A | 0 | 0 | 0 | 0 | 0 | 0 | 4185 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Reaction Location


## LOAD LIST

| Type | Left Magnitude | Right Magnitude | Load Start (ft) | Load End (ft) | Load Type | Direction |
|---|---|---|---|---|---|---|
| Point (lbf) | 652.2 | - | 6.41667 | - | Seismic(+) | Y |
| Point (lbf) | -1520 | - | 6.41667 | - | Dead | Z |
| Self Weight (lbf/ft) | 6.9 | 6.9 | 0 | 6.41667 | Dead | Z |

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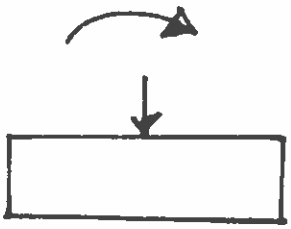
## FOOTING MOMENT DESIGN



POST FOR RB(1): $P_{DL} = 1520^{\#}$

POST FOR RB(2): $P_{DL} = 1090^{\#}$

CONC. PEDESTAL:

$W_{CONC} = 145PCF(1'\text{-}6'' \times 1'\text{-}6'')3' = 978.8^{\#} \times 3 = 2936.3^{\#}$

$P_{MAX} = 1520^{\#} + 1090^{\#} + 2936.3^{\#} = 5,546.3^{\#}$

$M_{MAX} = 652.5^{\#} \times (6'\text{-}5'') = 4185^{\#\cdot ft}$

$e = M/P = \frac{4185^{\#\cdot ft}}{5,546.3^{\#}} = 0.75 > B/6 = 3.75/6 = 0.625$

∴ RESULTANT OUTSIDE MIDDLE THIRD.

$q_{MAX} = \frac{2P}{BX}$, $X = 3(L/2 - e)$

$= 3(3.75/2 - 0.75)$

$= 3.375$

$q_{MAX} = \frac{2(5,546.3^{\#})}{3.75(3.375)} = 876.5^{\#}/SF < P_a = 1500\,UF$

∴ USE 3'-9" SQ. X 1'-6" DEEP W/ (9)-#4 BARS EA. WAY TOP & BOTTOM

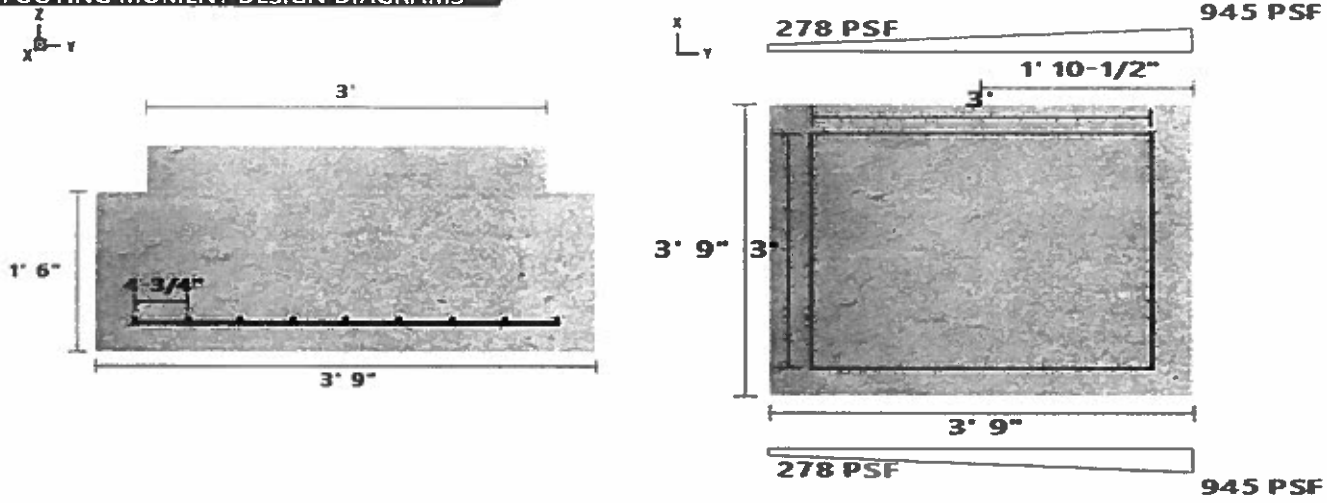
RL

# PASS

| | | | |
|---|---|---|---|
| DATE: | 2/21/2022 | COMPANY: | JAS Engineering INC |
| VITRUVIUS BUILD: | Base | DESIGNED BY: | DAS |
| CUSTOMER: | | REVIEWED BY: | JAS |
| PROJ. ADDRESS: | --<br>-- | PROJECT NAME: | 22-006 SMOKEY HEARTH COVER |
| LEVEL: | NOT YET ASSIGNED | LOADING: | |
| MEMBER NAME: | FOOTING MOMENT DESIGN | CODE: | 2018 International Building Code |
| MEMBER TYPE: | ISOLATED FOOTING | ACI: | ACI 318-14 |
| MATERIAL: | Concrete | | |

| | | |
|---|---|---|
| 3.75 (ft) X 3.75 (ft) X 18 (in) | Soil Depth TOF: 0 (ft) | (9) #4 Long, (9) #4 Short |

## FOOTING MOMENT DESIGN DIAGRAMS




## MATERIAL PROPERTIES

FOOTING

| fc' (psi) | Ec (psi) | Density (lbf/ft³) | Width (ft) | Length (ft) | Depth (in) | Volume (ft³) |
|---|---|---|---|---|---|---|
| 2500 | 2880952 | 145 | 3.75 | 3.75 | 18 | 21.09 |

CALCULATION VARIABLES

| Bo (in) | Φ-X | Φ-Y |
|---|---|---|
| 0 | 0 | 0 |

COLUMN

| Width (in) | Length (in) | Material | Offset (in) |
|---|---|---|---|
| 36 | 36 | Concrete | 0 |

SOIL

| Bearing Strength (lbf/ft²) | Density (lbf/ft³) | Cohesion | Friction Angle | Depth (ft) | Rankine Coefficient (Kp) |
|---|---|---|---|---|---|
| 1500 | 140 | 0 | 30 | 0 | 3 |

REBAR

| Bar Size # | # Bars Long | # Bars Short | fy (psi) | Es (psi) |
|---|---|---|---|---|
| 4 | 9 | 9 | 40000 | 2.9E+07 |

## PASS-FAIL

| | PASS/FAIL | MAGNITUDE | STRENGTH | LOAD COMBO |
|---|---|---|---|---|
| Soil Bearing Pressure (lbf/ft²) | PASS (37.0%) | 945.2 | 1500.0 | D+0.7E(+) |
| Moment X (lbf-ft) | PASS (99.4%) | 145.6 | 24000.0 | 1.4D |
| Moment Y (lbf-ft) | PASS (99.0%) | 242.0 | 24000.0 | 1.2D+1.0E(+)+L+0.2S |
| Crushing (psi) | PASS (99.2%) | 11.6 | 1381.3 | 1.2D+1.0E(+)+L+0.2S |
| Overturning (lbf-ft) | PASS (72.8%) | 2929.5 | 10756.1 | D+0.7E(+) |

## LOAD LIST

| Type | Left Magnitude | Right Magnitude | Load Start (ft) | Load End (ft) | Load Type | Direction |
|---|---|---|---|---|---|---|
| Point (lbf) | 5546.3 | - | 0 | - | Dead | Z |
| Moment (lbf-ft) | 4185 | - | 0 | - | Seismic(+) | X |

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Client: Mt View Contracting | Sheet: 1 of
Project: Smoken Hearth Cover Structure | Design by: JAS | Date: 2-11-22
Checked by:
Project No.: 22-006 | Date:

## RAFTER

10' SPAN 2' CANT 32" OC TL (25) = 66.7 #/ft (15) = 40 #/ft

$$V = \frac{66.7\ \#/ft\ (10')}{2} = 333.5\ \#$$

$$V = \frac{40\ \#/ft\ (10')}{2} = 200\ \#$$

USE 4x8 @ 32" OC

## RIDGE BEAM

29' SPAN 10' TRIB 25 = 250 #/ft 15 = 150 #/ft

$$V = \frac{250\ \#/ft\ (29')}{2} = 3625\ \#$$

$$V = \frac{150\ \#/ft\ (29')}{2} = 2175\ \#$$

USE 5 1/8 x 16 1/2 GLB

# General Timber Beam



**Description** Roof Rafter

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000, Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 4x6 | Center Span | 10.00 ft | Lu | 2.00 ft |
| Beam Width | 3.500 in | Left Cantilever | ft | Lu | 0.00 ft |
| Beam Depth | 5.500 in | Right Cantilever | ft | Lu | 0.00 ft |
| Member Type | Sawn | | | | |
| | | Fb Base Allow | 900.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 180.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 625.0 psi | | |
| | | E | 1,600.0 ksi | | |

## Full Length Uniform Loads

| | | | | |
|---|---|---|---|---|
| Center | DL | 40.00 #/ft | LL | 66.70 #/ft |
| Left Cantilever | DL | #/ft | LL | #/ft |
| Right Cantilever | DL | #/ft | LL | #/ft |

## Summary

**Beam Design OK**

Span= 10.00ft, Beam Width = 3.500in x Depth = 5.5in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.676 : 1 | | |
| Maximum Moment | 1.3 k-ft | Maximum Shear * 1.5 | 0.7 k |
| Allowable | 2.0 k-ft | Allowable | 4.0 k |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Max. Positive Moment | 1.33 k-ft | at | 5.000 ft | Shear: | @ Left | 0.53 k |
| Max. Negative Moment | 0.00 k-ft | at | 0.000 ft | | @ Right | 0.53 k |
| Max @ Left Support | 0.00 k-ft | | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | | @ Center | 0.174 in |
| Max. M allow | 1.97 | | | | @ Right | 0.000 in |
| | | | | Reactions... | | |
| fb | 907.01 psi | fv | 37.91 psi | Left DL | 0.20 k | Max | 0.53 k |
| Fb | 1,342.52 psi | Fv | 207.00 psi | Right DL | 0.20 k | Max | 0.53 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.116 in | -0.309 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 5.000 ft | 5.000 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 1,035.2 | 388.10 | Right Cantilever... | | |
| Camber ( using 1.5 * D.L. Defl ) ... | | | Deflection | 0.000 in | 0.000 in |
| @ Center | 0.174 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Left | 0.000 in | | | | |
| @ Right | 0.000 in | | | | |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 31.887 | Le | 4.118 ft | Sxx | 17.646 in3 | Area | 19.250 in2 |
| Cf | 1.300 | Rb | 4.711 | Cl | 0.998 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 1.33 k-ft | 11.92 in3 | 1,342.52 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 1,345.50 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 1,345.50 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 0.73 k | 0.73 k |
| Area Required | 3.526 in2 | 3.526 in2 |
| Fv: Allowable | 207.00 psi | 207.00 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 0.53 k | Bearing Length Req'd | 0.244 in |
| Max. Right Reaction | 0.53 k | Bearing Length Req'd | 0.244 in |

## General Timber Beam



**Description** Roof Rafter

### Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 0.53 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |

Rev: 580004
User: KW-0607733, Ver:5.8.0, 1-Dec-2003
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# General Timber Beam



**Description** Ridge Beam

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000 Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 5.125x16.5 | Center Span | 29.00 ft | Lu | 2.67 ft |
| Beam Width | 5.125 in | Left Cantilever | ft | Lu | 0.00 ft |
| Beam Depth | 16.500 in | Right Cantilever | ft | Lu | 0.00 ft |
| Member Type | GluLam | | | | |
| | | Fb Base Allow | 2,400.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 265.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 650.0 psi | | |
| | | E | 1,800.0 ksi | | |

## Full Length Uniform Loads

| | | | | |
|---|---|---|---|---|
| Center | DL | 150.00 #/ft | LL | 250.00 #/ft |
| Left Cantilever | DL | #/ft | LL | #/ft |
| Right Cantilever | DL | #/ft | LL | #/ft |

## Summary

**Beam Design OK**

Span= 29.00ft, Beam Width = 5.125in x Depth = 16.5in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.843 : 1 | | |
| Maximum Moment | 42.0 k-ft | Maximum Shear * 1.5 | 7.9 k |
| Allowable | 49.9 k-ft | Allowable | 25.8 k |

| | | | | | |
|---|---|---|---|---|---|
| Max. Positive Moment | 42.05 k-ft | at 14.500 ft | Shear: | @ Left | 5.80 k |
| Max. Negative Moment | 0.00 k-ft | at 29.000 ft | | @ Right | 5.80 k |
| Max @ Left Support | 0.00 k-ft | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | @ Center | 1.037 in |
| Max. M allow | 49.89 | | | @ Right | 0.000 in |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| fb | 2,169.88 psi | fv | 93.83 psi | Reactions... | | | |
| Fb | 2,574.69 psi | Fv | 304.75 psi | Left DL | 2.17 k | Max | 5.80 k |
| | | | | Right DL | 2.17 k | Max | 5.80 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.691 in | -1.843 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 14.500 ft | 14.500 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 503.5 | 188.80 | | | |
| **Camber ( using 1.5 * D.L. Defl ) ...** | | | **Right Cantilever...** | | |
| @ Center | 1.037 in | | Deflection | 0.000 in | 0.000 in |
| @ Left | 0.000 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Right | 0.000 in | | | | |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 20.711 | Le | 5.498 ft | Sxx | 232.547 in3 | Area | 84.563 in2 |
| Cv | 0.938 | Rb | 6.439 | Ci | 0.995 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 42.05 k-ft | 195.98 in3 | 2,574.69 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 2,588.58 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 2,588.58 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 7.93 k | 7.93 k |
| Area Required | 26.036 in2 | 26.036 in2 |
| Fv: Allowable | 304.75 psi | 304.75 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 5.80 k | Bearing Length Req'd | 1.741 in |
| Max. Right Reaction | 5.80 k | Bearing Length Req'd | 1.741 in |

**Description** Ridge Beam

### Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 5.80 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |

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Client MT VIEW CONTRACTING Sheet 6 of
Project SMOKEY HEARTH COVER STRUCTURE Design by JAS
Date 2-11-22
Checked by
Project No. 22-006 Date

SIDE BEAM

10' SPAN $6/2 + 2 = 5'$ TRIB (25) = 125 #/ft (15) = 75 #/ft

$V = \frac{125\#/ft(10')}{2} = 625\#$

$V = \frac{75\#/ft(10')}{2} = 375\#$

USE 6 x 10 PT

RIDGE BEAM

12' SPAN $10'/2 = 5'$ TRIB (25) = 125 (15) = 75 #/ft

$V = \frac{125\#/ft(10')}{2} = 625\#$

$V = \frac{75\#/ft(10')}{2} = 375\#$

USE 6x10 PT

Title : Smokey Hearth Cover Structure  Job # 22-006
Dsgnr: JAS  Date 3:42PM 14 FEB 22
Description : Mt View Contracting

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Scope : Design Cover Structure



# General Timber Beam



**Description** Side Beam 20' Span
10'0"

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000 Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 6x10 | Center Span | 12.00 ft | .....Lu | 2.67 ft |
| Beam Width | 5.500 in | Left Cantilever | ft | .....Lu | 0.00 ft |
| Beam Depth | 9.500 in | Right Cantilever | ft | .....Lu | 0.00 ft |
| Member Type | Sawn | | | | |
| | | Fb Base Allow | 1,350.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 170.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 625.0 psi | | |
| | | E | 1,600.0 ksi | | |

## Full Length Uniform Loads

| | | | | | |
|---|---|---|---|---|---|
| Center | DL | 75.00 #/ft | LL | 125.00 #/ft | |
| Left Cantilever | DL | #/ft | LL | #/ft | |
| Right Cantilever | DL | #/ft | LL | #/ft | |

## Summary

**Beam Design OK**

Span= 12.00ft, Beam Width = 5.500in x Depth = 9.5in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.337 : 1 | | |
| Maximum Moment | 3.6 k-ft | Maximum Shear * 1.5 | 1.6 k |
| Allowable | 10.7 k-ft | Allowable | 10.2 k |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Max. Positive Moment | 3.60 k-ft | at | 6.000 ft | Shear: | @ Left | 1.20 k |
| Max. Negative Moment | 0.00 k-ft | at | 12.000 ft | | @ Right | 1.20 k |
| Max @ Left Support | 0.00 k-ft | | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | | @ Center | 0.083 in |
| Max. M allow | 10.68 | | | | @ Right | 0.000 in |

| | | | | Reactions... | | | |
|---|---|---|---|---|---|---|---|
| fb | 522.19 psi | fv | 30.04 psi | Left DL | 0.45 k | Max | 1.20 k |
| Fb | 1,548.78 psi | Fv | 195.50 psi | Right DL | 0.45 k | Max | 1.20 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.056 in | -0.148 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 6.000 ft | 6.000 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 2,587.5 | 970.31 | **Right Cantilever...** | | |
| **Camber ( using 1.5 * D.L. Defl ) ...** | | | Deflection | 0.000 in | 0.000 in |
| @ Center | 0.083 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Left | 0.000 in | | | | |
| @ Right | 0.000 in | | | | |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 26.035 | Le | 5.498 ft | Sxx | 82.729 in3 | Area | 52.250 in2 |
| Cf | 1.000 | Rb | 4.553 | Cl | 0.998 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 3.60 k-ft | 27.89 in3 | 1,548.78 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 1,552.50 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 1,552.50 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 1.57 k | 1.57 k |
| Area Required | 8.029 in2 | 8.029 in2 |
| Fv: Allowable | 195.50 psi | 195.50 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 1.20 k | Bearing Length Req'd | 0.349 in |
| Max. Right Reaction | 1.20 k | Bearing Length Req'd | 0.349 in |

## General Timber Beam



**Description** Side Beam 20' Span

### Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 1.20 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |

Title : Smokey Hearth Cover Structure  Job # 22-006
Dsgnr: JAS  Date: 3:22PM, 14 FEB 22
Description : Mt View Contracting
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Scope : Design Cover Structure



# General Timber Beam



**Description** Ridge Beam

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 6x10 | Center Span | 12.00 ft | Lu | 2.67 ft |
| Beam Width | 5.500 in | Left Cantilever | ft | Lu | 0.00 ft |
| Beam Depth | 9.500 in | Right Cantilever | ft | Lu | 0.00 ft |
| Member Type | Sawn | | | | |
| | | Fb Base Allow | 1,350.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 170.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 625.0 psi | | |
| | | E | 1,600.0 ksi | | |

## Full Length Uniform Loads

| | | | | | |
|---|---|---|---|---|---|
| Center | DL | 75.00 #/ft | LL | 125.00 #/ft | |
| Left Cantilever | DL | #/ft | LL | #/ft | |
| Right Cantilever | DL | #/ft | LL | #/ft | |

## Summary

**Beam Design OK**

Span= 12.00ft, Beam Width = 5.500in x Depth = 9.5in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.337 : 1 | | |
| Maximum Moment | 3.6 k-ft | Maximum Shear * 1.5 | 1.6 k |
| Allowable | 10.7 k-ft | Allowable | 10.2 k |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Max. Positive Moment | 3.60 k-ft | at | 6.000 ft | Shear: | @ Left | 1.20 k |
| Max. Negative Moment | 0.00 k-ft | at | 12.000 ft | | @ Right | 1.20 k |
| Max @ Left Support | 0.00 k-ft | | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | | @ Center | 0.083 in |
| Max. M allow | 10.68 | | | | @ Right | 0.000 in |
| | | | Reactions .. | | | |
| fb 522.19 psi | | fv | 30.04 psi | Left DL | 0.45 k | Max | 1.20 k |
| Fb 1,548.78 psi | | Fv | 195.50 psi | Right DL | 0.45 k | Max | 1.20 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.056 in | -0.148 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 6.000 ft | 6.000 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 2,587.5 | 970.31 | **Right Cantilever...** | | |
| **Camber ( using 1.5 * D.L. Defl ) ...** | | | Deflection | 0.000 in | 0.000 in |
| @ Center | 0.083 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Left | 0.000 in | | | | |
| @ Right | 0.000 in | | | | |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 26.035 | Le | 5.498 ft | Sxx | 82.729 in3 | Area | 52.250 in2 |
| Cf | 1.000 | Rb | 4.553 | Cl | 0.998 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 3.60 k-ft | 27.89 in3 | 1,548.78 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 1,552.50 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 1,552.50 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 1.57 k | 1.57 k |
| Area Required | 8.029 in2 | 8.029 in2 |
| Fv: Allowable | 195.50 psi | 195.50 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 1.20 k | Bearing Length Req'd | 0.349 in |
| Max. Right Reaction | 1.20 k | Bearing Length Req'd | 0.349 in |

**Description** Ridge Beam

## Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 1.20 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |

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Client MT VIEW CONTRACTING Sheet 11 of
Project SMOKEN HEARTH COVER STRUCTURE Design by TAS
Date 2-11-22
Checked by
Project No. 22-006 Date

SIDE BEAM

29' SPAN $10/2 + 2 = 7'$ TRIB (25) = 175 #/ft
(15) = 105 #/ft

$V = \frac{175\#/ft\ (29')}{2} = 2538\ \#$

$V = \frac{105\ (29)}{2} = 1522.5\#$

USE 5 1/8 x 15 GLB

SIDE BEAM W- CONC LOADS

29' SPAN

175 #/ft
105 #/ft

625 #
375 # @ 6'

625 #
375 # @ 11'4"

USE 5 1/8 x 15 GLB

# General Timber Beam



**Description** Side Beam

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 5.125x15 | Center Span | 29.00 ft | Lu | 2.67 ft |
| Beam Width | 5.125 in | Left Cantilever | ft | Lu | 0.00 ft |
| Beam Depth | 15.000 in | Right Cantilever | ft | Lu | 0.00 ft |
| Member Type | GluLam | | | | |
| | | Fb Base Allow | 2,400.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 265.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 650.0 psi | | |
| | | E | 1,800.0 ksi | | |

## Full Length Uniform Loads

| | | | | | |
|---|---|---|---|---|---|
| Center | DL | 105.00 #/ft | LL | 175.00 #/ft | |
| Left Cantilever | DL | #/ft | LL | #/ft | |
| Right Cantilever | DL | #/ft | LL | #/ft | |

## Summary

**Beam Design OK**

Span= 29.00ft, Beam Width = 5.125in x Depth = 15.in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.707 : 1 | | |
| Maximum Moment | 29.4 k-ft | Maximum Shear * 1.5 | 5.6 k |
| Allowable | 41.7 k-ft | Allowable | 23.4 k |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Max. Positive Moment | 29.43 k-ft | at | 14.500 ft | Shear: | @ Left | 4.06 k |
| Max. Negative Moment | 0.00 k-ft | at | 0.000 ft | | @ Right | 4.06 k |
| Max @ Left Support | 0.00 k-ft | | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | | @ Center | 0.966 in |
| Max. M allow | 41.65 | | | | @ Right | 0.000 in |

| | | | | Reactions... | | | |
|---|---|---|---|---|---|---|---|
| fb | 1,837.89 psi | fv | 72.88 psi | Left DL | 1.52 k | Max | 4.06 k |
| Fb | 2,600.60 psi | Fv | 304.75 psi | Right DL | 1.52 k | Max | 4.06 k |

## Deflections

| Center Span... | Dead Load | Total Load |
|---|---|---|
| Deflection | -0.644 in | -1.717 in |
| ...Location | 14.500 ft | 14.500 ft |
| ...Length/Defl | 540.4 | 202.64 |
| **Camber ( using 1.5 * D.L. Defl ) ...** | | |
| @ Center | 0.966 in | |
| @ Left | 0.000 in | |
| @ Right | 0.000 in | |

| Left Cantilever... | Dead Load | Total Load |
|---|---|---|
| Deflection | 0.000 in | 0.000 in |
| ...Length/Defl | 0.0 | 0.0 |
| **Right Cantilever...** | | |
| Deflection | 0.000 in | 0.000 in |
| ...Length/Defl | 0.0 | 0.0 |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 20.711 | Le | 5.498 ft | Sxx | 192.188 in3 | Area | 76.875 in2 |
| Cv | 0.947 | Rb | 6.139 | Cl | 0.995 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 29.43 k-ft | 135.82 in3 | 2,600.60 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 2,613.37 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 2,613.37 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 5.60 k | 5.60 k |
| Area Required | 18.385 in2 | 18.385 in2 |
| Fv: Allowable | 304.75 psi | 304.75 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 4.06 k | Bearing Length Req'd | 1.219 in |
| Max. Right Reaction | 4.06 k | Bearing Length Req'd | 1.219 in |

**Description** Side Beam

## Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 4.06 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |

# General Timber Beam



**Description** Side Beam W Concentrated Loads

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000 Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 5.125x16.5 | Center Span | 29.00 ft | .....Lu | 2.67 ft |
| Beam Width | 5.125 in | Left Cantilever | ft | .....Lu | 0.00 ft |
| Beam Depth | 16.500 in | Right Cantilever | ft | .....Lu | 0.00 ft |
| Member Type | GluLam | | | | |
| | | Fb Base Allow | 2,400.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 265.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 650.0 psi | | |
| | | E | 1,800.0 ksi | | |

## Full Length Uniform Loads

| | | | | |
|---|---|---|---|---|
| Center | DL | 105.00 #/ft | LL | 175.00 #/ft |
| Left Cantilever | DL | #/ft | LL | #/ft |
| Right Cantilever | DL | #/ft | LL | #/ft |

## Point Loads

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dead Load | 375.0 lbs | 375.0 lbs | lbs | lbs | lbs | lbs | lbs |
| Live Load | 625.0 lbs | 625.0 lbs | lbs | lbs | lbs | lbs | lbs |
| ...distance | 6.000 ft | 11.330 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft |

## Summary

**Beam Design OK**

Span= 29.00ft, Beam Width = 5.125in x Depth = 16.5in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.776 : 1 | | |
| Maximum Moment | 38.7 k-ft | Maximum Shear * 1.5 | 7.7 k |
| Allowable | 49.9 k-ft | Allowable | 25.8 k |

| | | | | | |
|---|---|---|---|---|---|
| Max. Positive Moment | 38.74 k-ft | at 12.412 ft | Shear: | @ Left | 5.46 k |
| Max. Negative Moment | 0.00 k-ft | at 0.000 ft | | @ Right | 4.66 k |
| Max @ Left Support | 0.00 k-ft | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | @ Center | 0.943 in |
| Max. M allow | 49.89 | | | @ Right | 0.000 in |

| | | | | Reactions... | | | |
|---|---|---|---|---|---|---|---|
| fb | 1,998.95 psi | fv | 90.56 psi | Left DL | 2.05 k | Max | 5.46 k |
| Fb | 2,574.69 psi | Fv | 304.75 psi | Right DL | 1.75 k | Max | 4.66 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.629 in | -1.677 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 14.152 ft | 14.152 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 553.3 | 207.48 | **Right Cantilever...** | | |
| **Camber ( using 1.5 * D.L. Defl ) ...** | | | Deflection | 0.000 in | 0.000 in |
| @ Center | 0.943 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Left | 0.000 in | | | | |
| @ Right | 0.000 in | | | | |

# General Timber Beam



**Description** Side Beam W Concentrated Loads

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 20.711 | Le | 5.498 ft | Sxx | 232.547 in3 | Area | 84.563 in2 |
| Cv | 0.938 | Rb | 6.439 | Cl | 0.995 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 38.74 k-ft | 180.55 in3 | 2,574.69 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 2,588.58 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 2,588.58 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 7.66 k | 6.45 k |
| Area Required | 25.128 in2 | 21.166 in2 |
| Fv: Allowable | 304.75 psi | 304.75 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 5.46 k | Bearing Length Req'd | 1.640 in |
| Max. Right Reaction | 4.66 k | Bearing Length Req'd | 1.398 in |

## Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 5.46 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |



Mmax = 38.73 k-ft

Dmax = -2.2324 in

Rmax = 5.462 k

Vmax @ left = 5.462 k

Rmax = 4.657 k

Vmax @ rt = 4.657 k

JAS ENGINEERING
1419 Washington Street, Suite 100
Oregon City, OR 97045
Work: 503-657-9800 Fax: 503-656-0186

Client MT VIEW CONTRACTING Sheet 17 of
Project SMOKEY HEARTH Design by JAS
COVER STRUCTURES Date 2-11-22
Checked by
Project No. 22-006 Date

END BEAM

12' SPAN

625#
375# @ 6'

$\frac{625\#(6')}{12'} =$

$\frac{375\#(6')}{12'} =$

USE 6x10 PT

END BEAM

20' SPAN

3625#
2175# @ 10'o.c.

$\frac{3625(10')}{20'} =$

$\frac{2175(10')}{20'} =$

USE 5 1/8 x 15 GLB

Rev: 58000d
User: KW-0607733, Ver 5.3.0, 1-Dec-2003


# General Timber Beam



**Description** End Beam 12' Span

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000, Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 6x10 | Center Span | 12.00 ft | Lu | 2.67 ft |
| Beam Width | 5.500 in | Left Cantilever | ft | Lu | 0.00 ft |
| Beam Depth | 9.500 in | Right Cantilever | ft | Lu | 0.00 ft |
| Member Type | Sawn | | | | |
| | | Fb Base Allow | 1,350.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 170.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 625.0 psi | | |
| | | E | 1,600.0 ksi | | |

## Point Loads

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dead Load | 375.0 lbs | lbs | lbs | lbs | lbs | lbs | lbs |
| Live Load | 625.0 lbs | lbs | lbs | lbs | lbs | lbs | lbs |
| ...distance | 6.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft |

## Summary

**Beam Design OK**

Span= 12.00ft, Beam Width = 5.500in x Depth = 9.5in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.281 : 1 | | |
| Maximum Moment | 3.0 k-ft | Maximum Shear * 1.5 | 0.8 k |
| Allowable | 10.7 k-ft | Allowable | 10.2 k |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Max. Positive Moment | 3.00 k-ft | at | 6.000 ft | Shear: | @ Left | 0.50 k |
| Max. Negative Moment | 0.00 k-ft | at | 0.000 ft | | @ Right | 0.50 k |
| Max @ Left Support | 0.00 k-ft | | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | | @ Center | 0.056 in |
| Max. M allow | 10.68 | | | | @ Right | 0.000 in |

Reactions...

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| fb | 435.15 psi | fv | 14.35 psi | Left DL | 0.19 k | Max | 0.50 k |
| Fb | 1,548.78 psi | Fv | 195.50 psi | Right DL | 0.19 k | Max | 0.50 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.037 in | -0.099 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 6.000 ft | 6.000 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 3,881.2 | 1,455.44 | Right Cantilever... | | |
| Camber ( using 1.5 * D.L. Defl ) ... | | | Deflection | 0.000 in | 0.000 in |
| @ Center | 0.056 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Left | 0.000 in | | | | |
| @ Right | 0.000 in | | | | |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 26.035 | Le | 5.498 ft | Sxx | 82.729 in3 | Area | 52.250 in2 |
| Cf | 1.000 | Rb | 4.553 | Cl | 0.998 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 3.00 k-ft | 23.24 in3 | 1,548.78 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 1,552.50 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 1,552.50 psi |

| Shear Analysis | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 0.75 k | 0.75 k |
| Area Required | 3.836 in2 | 3.836 in2 |
| Fv: Allowable | 195.50 psi | 195.50 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 0.50 k | Bearing Length Req'd | 0.145 in |
| Max. Right Reaction | 0.50 k | Bearing Length Req'd | 0.145 in |

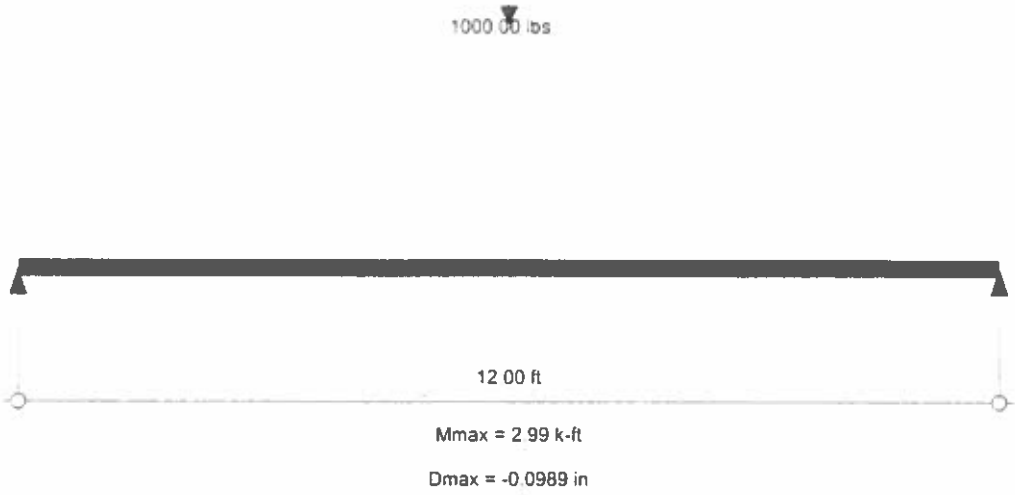
## General Timber Beam



**Description** End Beam 12' Span

### Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 0.50 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |


1000.00 lbs
12.00 ft
Mmax = 2.99 k-ft
Dmax = -0.0989 in
Rmax = 0.500 k
Vmax @ left = 0.500 k
Rmax = 0.500 k
Vmax @ rt = 0.500 k

Title : Smokey Hearth Cover Structure  Job # 22-006
Dsgnr: JAS  Date: 3:16PM, 14 FEB 22
Description : Mt View Contracting

Scope : Design Cover Structure



# General Timber Beam



**Description** End Beam

## General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

| | | | | | |
|---|---|---|---|---|---|
| Section Name | 5.125x15 | Center Span | 20.00 ft | Lu | 2.67 ft |
| Beam Width | 5.125 in | Left Cantilever | ft | Lu | 0.00 ft |
| Beam Depth | 15.000 in | Right Cantilever | ft | Lu | 0.00 ft |
| Member Type | GluLam | | | | |
| | | Fb Base Allow | 2,400.0 psi | | |
| Load Dur. Factor | 1.150 | Fv Allow | 265.0 psi | | |
| Beam End Fixity | Pin-Pin | Fc Allow | 650.0 psi | | |
| | | E | 1,800.0 ksi | | |

## Point Loads

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dead Load | 2,175.0 lbs | lbs | lbs | lbs | lbs | lbs | lbs |
| Live Load | 3,625.0 lbs | lbs | lbs | lbs | lbs | lbs | lbs |
| ...distance | 10.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft | 0.000 ft |

## Summary

**Beam Design OK**

Span= 20.00ft, Beam Width = 5.125in x Depth = 15 in, Ends are Pin-Pin

| | | | |
|---|---|---|---|
| Max Stress Ratio | 0.671 : 1 | | |
| Maximum Moment | 29.0 k-ft | Maximum Shear * 1.5 | 4.4 k |
| Allowable | 43.2 k-ft | Allowable | 23.4 k |

| | | | | | | |
|---|---|---|---|---|---|---|
| Max. Positive Moment | 29.00 k-ft | at | 10.000 ft | Shear: | @ Left | 2.90 k |
| Max. Negative Moment | 0.00 k-ft | at | 20.000 ft | | @ Right | 2.90 k |
| Max @ Left Support | 0.00 k-ft | | | Camber: | @ Left | 0.000 in |
| Max @ Right Support | 0.00 k-ft | | | | @ Center | 0.362 in |
| Max. M allow | 43.22 | | | | @ Right | 0.000 in |

| | | | | Reactions... | | | |
|---|---|---|---|---|---|---|---|
| fb | 1,810.73 psi | fv | 56.59 psi | Left DL | 1.09 k | Max | 2.90 k |
| Fb | 2,698.50 psi | Fv | 304.75 psi | Right DL | 1.09 k | Max | 2.90 k |

## Deflections

| Center Span... | Dead Load | Total Load | Left Cantilever... | Dead Load | Total Load |
|---|---|---|---|---|---|
| Deflection | -0.241 in | -0.644 in | Deflection | 0.000 in | 0.000 in |
| ...Location | 10.000 ft | 10.000 ft | ...Length/Defl | 0.0 | 0.0 |
| ...Length/Defl | 994.1 | 372.78 | Right Cantilever... | | |
| Camber ( using 1.5 * D.L. Defl ) ... | | | Deflection | 0.000 in | 0.000 in |
| @ Center | 0.362 in | | ...Length/Defl | 0.0 | 0.0 |
| @ Left | 0.000 in | | | | |
| @ Right | 0.000 in | | | | |

## Stress Calcs

**Bending Analysis**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ck | 20.711 | Le | 5.498 ft | Sxx | 192.188 in3 | Area | 76.875 in2 |
| Cv | 0.983 | Rb | 6.139 | Cl | 0.995 | | |

| | Max Moment | Sxx Req'd | Allowable fb |
|---|---|---|---|
| @ Center | 29.00 k-ft | 128.96 in3 | 2,698.50 psi |
| @ Left Support | 0.00 k-ft | 0.00 in3 | 2,712.30 psi |
| @ Right Support | 0.00 k-ft | 0.00 in3 | 2,712.30 psi |

| **Shear Analysis** | @ Left Support | @ Right Support |
|---|---|---|
| Design Shear | 4.35 k | 4.35 k |
| Area Required | 14.274 in2 | 14.274 in2 |
| Fv: Allowable | 304.75 psi | 304.75 psi |

**Bearing @ Supports**

| | | | |
|---|---|---|---|
| Max. Left Reaction | 2.90 k | Bearing Length Req'd | 0.871 in |
| Max. Right Reaction | 2.90 k | Bearing Length Req'd | 0.871 in |

## General Timber Beam



**Description** End Beam

### Query Values

| M, V, & D @ Specified Locations | | Moment | Shear | Deflection |
|---|---|---|---|---|
| @ Center Span Location = | 0.00 ft | 0.00 k-ft | 2.90 k | 0.0000 in |
| @ Right Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |
| @ Left Cant. Location = | 0.00 ft | 0.00 k-ft | 0.00 k | 0.0000 in |