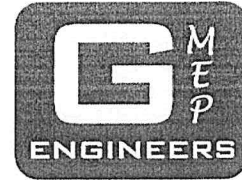**GMEP Engineers**
26439 Rancho Parkway S., Ste 120
Lake Forest, CA 92630
Ph: (949)267-9095
www.gmepe.com

October 3, 2022

Re: 56778 Twenty-Nine Palms Hwy.
      GMEP Project Id: 22-817
      Located in the City of   Yucca Valley
      Plan Check Number: 2022-1529

Structural

The following items are in response to the Plan Check Correction which have been incorporated into the construction documents.

Item No	Sheet No.	Responses to Comments
2.	S-2	Detailed roof structure layout of existing building has been provided.
4.	SN-2 & SD-1	Structural alteration details that are signed, stamped, and dated by a licensed engineer have been provided.

If you should have any questions, please contact our office.

Thank you,

Connor Brown
Project Engineer (Structural)

Structural Calculation
(CBC 2019 ASD Load Combination)

Nice Dreams Ice Cream
56778 Twenty-Nine Palms Highway,
Yucca Valley, CA 92284

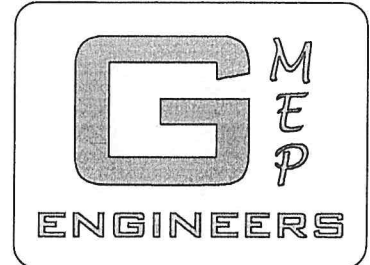Engineer of Record:
Seal:

List of Content:

Design Criteria

Seismic Load

Beam Calcs

Allen Chun-Ying Wu
C69385 Exp. Date 06/30/24

26439 Rancho Pkwy. S., Ste 120
Lake Forest, CA 92630
Tel· 949-267-9095

Design Criteria

Roof Dead Load = 22 psf
Roof Live Load = 20 psf

Exterior Wall = 16 psf
Interior Wall = 7 psf

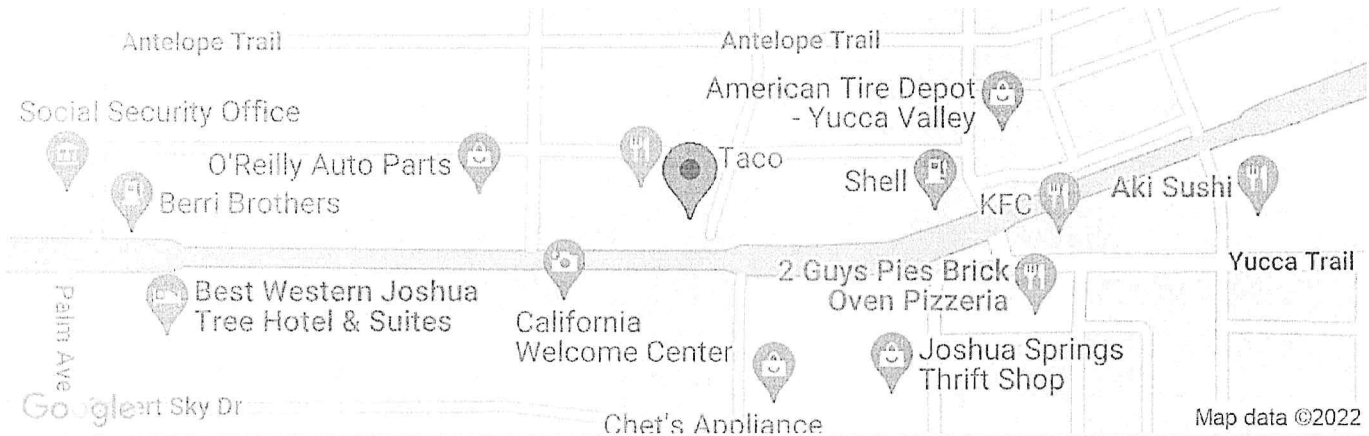Risk Category = II

Wind Speed = 95 mph
Wind Exposure = C

Seismic parameters are attached next page

56778 Twentynine Palms Highway, Yucca Valley, CA 92284, USA

Latitude, Longitude: 34.1209365, -116.4253367

Map data ©2022

Date	10/3/2022, 2:02:02 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	2.272	MCE_R ground motion. (for 0.2 second period)
S_1	0.811	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.726	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.818	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	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.951	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	1.142	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.272	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.513	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.312	Factored deterministic acceleration value. (0.2 second)
S1RT	0.811	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.909	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.841	Factored deterministic acceleration value. (1.0 second)
PGAd	0.951	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.972	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.904	Mapped value of the risk coefficient at short periods

Type	Value	Description
C_{R1}	0.892	Mapped value of the risk coefficient at a period of 1 s
C_V	1.5	Vertical coefficient

DISCLAIMER

Wood Beam

Project File: 22-817_Nice Dreams Ice Cream.ec6

LIC# : KW-06012964, Build:20.22.5.16   GMEP Engineers   (c) ENERCALC INC 1983-2022

DESCRIPTION: Beam 1

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design	Fb +	2900 psi	E : Modulus of Elasticity	
Load Combination : ASCE 7-16	Fb -	2900 psi	Ebend- xx	2000 ksi
	Fc - Prll	2900 psi	Eminbend - xx	1016.535 ksi
Wood Species : iLevel Truss Joist	Fc - Perp	750 psi		
Wood Grade : Parallam PSL 2.0E	Fv	290 psi		
	Ft	2025 psi	Density	45.07 pcf
Beam Bracing : Completely Unbraced				

D(0.319) Lr(0.29)

5.25x14.0

Span = 14.50 ft
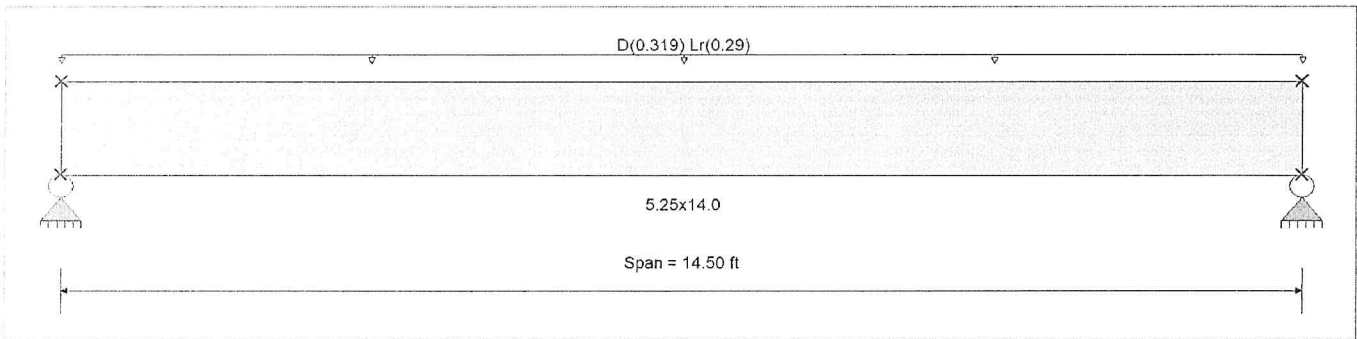
Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
  Uniform Load : D = 0.0220, Lr = 0.020 ksf, Tributary Width = 14.50 ft, (Roof)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.323 : 1	Maximum Shear Stress Ratio	=	0.209 : 1
Section used for this span		**5.25x14.0**	Section used for this span		**5.25x14.0**
fb: Actual	=	1,119.90 psi	fv: Actual	=	75.64 psi
Fb: Allowable	=	3,470.75 psi	Fv: Allowable	=	362.50 psi
Load Combination		+D+Lr	Load Combination		+D+Lr
Location of maximum on span	=	7.250 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection
Max Downward Transient Deflection	0.121 in	Ratio =	1439 >=360	Span: 1 : Lr Only
Max Upward Transient Deflection	0 in	Ratio =	0 <360	n/a
Max Downward Total Deflection	0.254 in	Ratio =	685 >=180	Span: 1 : +D+Lr
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios									Moment Values			Shear Values		
Segment Length	Span #	M	V	C_d	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	M	fb	F'b	V	fv	F'v
D Only													0.00	0.00	0.00	0.00
Length = 14.50 ft	1	0.231	0.152	0.90	1.000	1.00	1.00	1.00	1.00	0.97	8.38	586.62	2543.08	1.94	39.62	261.00
+D+Lr					1.000	1.00	1.00	1.00	1.00	0.97			0.00	0.00	0.00	0.00
Length = 14.50 ft	1	0.323	0.209	1.25	1.000	1.00	1.00	1.00	1.00	0.96	16.01	1,119.90	3470.75	3.71	75.64	362.50
+D+0.750Lr					1.000	1.00	1.00	1.00	1.00	0.96			0.00	0.00	0.00	0.00
Length = 14.50 ft	1	0.284	0.184	1.25	1.000	1.00	1.00	1.00	1.00	0.96	14.10	986.58	3470.75	3.27	66.63	362.50
+0.60D					1.000	1.00	1.00	1.00	1.00	0.96			0.00	0.00	0.00	0.00
Length = 14.50 ft	1	0.081	0.051	1.60	1.000	1.00	1.00	1.00	1.00	0.93	5.03	351.97	4331.75	1.16	23.77	464.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr	1	0.2538	7.303		0.0000	0.000

Wood Beam

Project File: 22-817_Nice Dreams Ice Cream.ec6

LIC# : KW-06012964, Build:20.22.5.16   GMEP Engineers   (c) ENERCALC INC 1983-2022

DESCRIPTION: Beam 1

Vertical Reactions

Support notation : Far left is #1   Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	4.415	4.415
Overall MINimum	2.103	2.103
D Only	2.313	2.313
+D+Lr	4.415	4.415
+D+0.750Lr	3.890	3.890
+0.60D	1.388	1.388
Lr Only	2.103	2.103