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STRUCTURAL CALCULATION REPORT

CITY OF CORONA

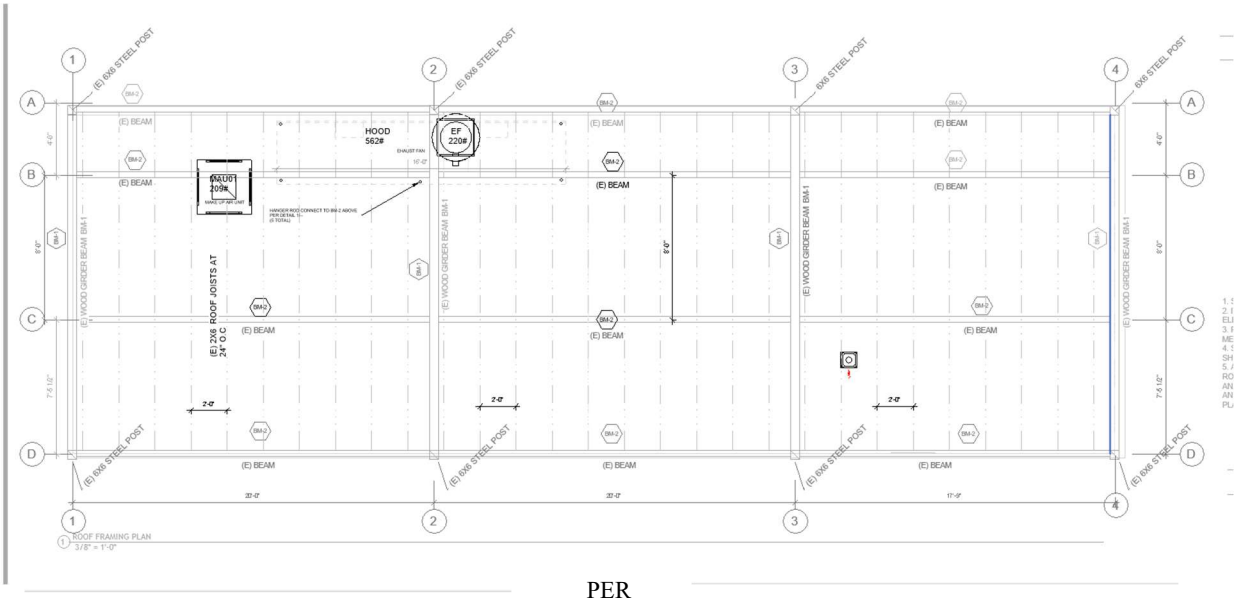
STRUCTURAL ANALYSIS

FOR PROJECT

LEVANTY TAKE OUT RESTURAUNT

PROJECT ADDRESS

115 N MCKINLEY ST. STE 107, CORONA CA 92879



PER

PER ASCE 7-22

THE EXISITING BUILDING TO BE ANALYZED BY CHECKING THE EXISTING MOMENT FRAME SYSTEM AGAINST ANY ADDED WEIGHT & REINFORCE STRUCTURE RESISTING SYSTEM ACCORDINGLY, BOTH EXISTING AND NEW SYSTEM SHALL RESIST THE SEISMIC FORCES AND/OR ANY OTHER LATERAL FORCES PER ASCE-7-22.

REGISTERED PROFESSIONAL ENGINEER
MOSTAFA H. BAYOUMI
No. C94270
Exp. 12-31-24
CIVIL
STATE OF CALIFORNIA

AFFILIATIONS

ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS
CONTRACTORS STATE LICENSE BOARD
SEI STRUCTURAL ENGINEERING INSTITUTE
AWS American Welding Society

DESIGN BY: BEN HAMED, AM.ASCE.,AIA.
REVIEW BY: MOSTAFA BAYOUMI, P.E.

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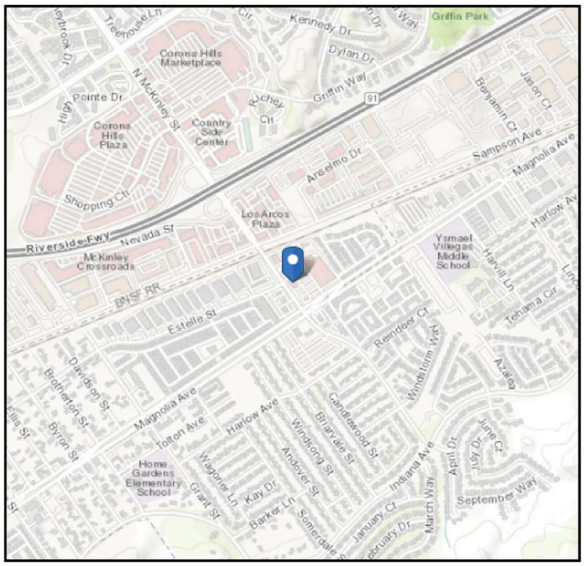
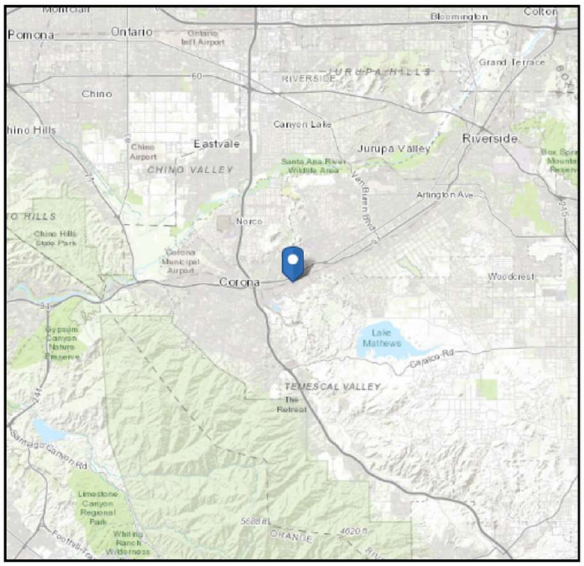
ASCE Hazards Report

Address:
115 N McKinley St
Ste 107, Corona
California

Standard: ASCE/SEI 7-22
Risk Category: II
Soil Class: Default

Latitude: 33.882906
Longitude: -117.514683
Elevation: 675.1312511940944 ft (NAVD 88)





Wind

Results:

Wind Speed	95 Vmph
10-year MRI	66 Vmph
25-year MRI	72 Vmph
50-year MRI	77 Vmph
100-year MRI	82 Vmph
300-year MRI	89 Vmph
700-year MRI	95 Vmph
1,700-year MRI	102 Vmph
3,000-year MRI	106 Vmph
10,000-year MRI	115 Vmph
100,000-year MRI	133 Vmph
1,000,000-year MRI	151 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu May 09 2024

I.ASCE.,AIA.
REVIEW BY: MOSTAFA BAYOUMI, P.E.

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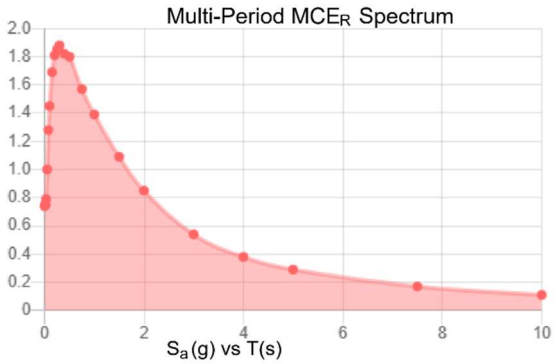
Seismic

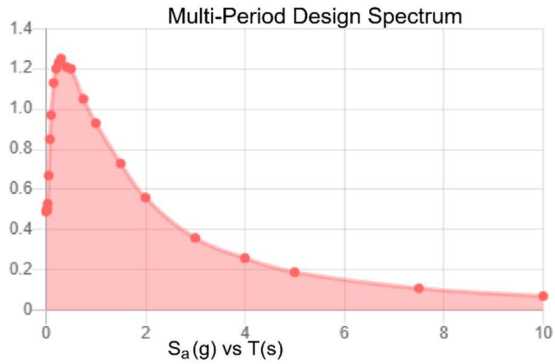
Site Soil Class: Default

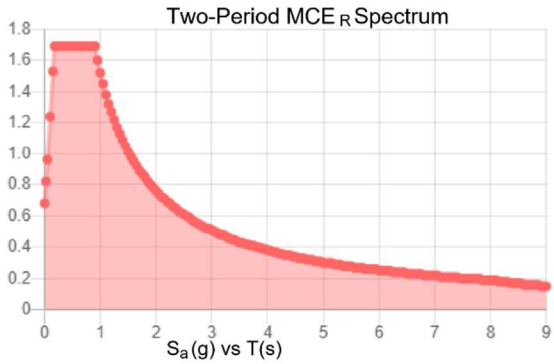
Results:

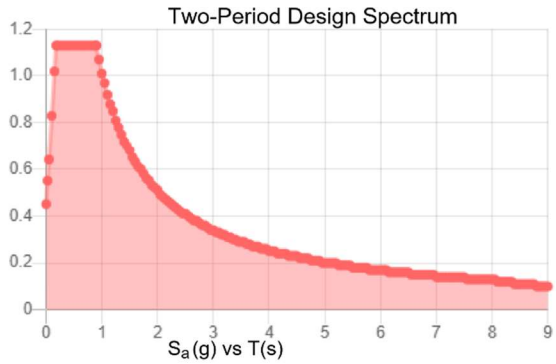
PGA_M :	0.61	T_L :	8
S_{MS} :	1.69	S_S :	1.57
S_{M1} :	1.52	S_1 :	0.6
S_{DS} :	1.13	V_{S30} :	260
S_{D1} :	1.01		

Seismic Design Category: D









MCER Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

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BUILDING LOADS CALCULATIONS

DEAD LOAD			LIVE LOAD		
LEVEL	**SOURCE**	**LOAD** (P.S.F)	**LEVEL**	**SOURCE**	**LOAD** (P.S.F)
ROOF	PLYWOOD MATERIALS WEIGHT	2.5 P.S.F	ROOF	LIVE LOAD	20 P.S.F
ROOF	INSULATION MATERIALS WEIGHT	1.5 P.S.F	Hood weight	562 lbs		
			Exhaust Fan weight	220 lbs		
ROOF	GYPSUM BOARD MATERIALS WEIGHT	2.7 P.S.F	Make up Air unit weight	209 lbs		
ROOF	FLOORING MATERIALS WEIGHT	2.5 P.S.F				
ROOF	FRAMING MATERIALS WEIGHT	4 P.S.F				
ROOF	MISC.LEVEL	1.8 P.S.F				
TOTAL	DEAD LOAD	20 P.S.F				
TOTAL WEIGHT CONTRIBUTING	24,623.5 LBS					

BUILDING SEISMIC LOAD CALCULATION:

Structural Components:

- **Roof Joists (2x6 wood studs):** Typically, 2x6 wood studs weigh about 2 lbs per foot. The area covered by the studs can be estimated by the building area:
  - Area = 1160 sq.ft.
  - Assume approximately 1.5 times the linear footage of studs per square foot due to spacing and overlaps.
  - Total weight = 1160 sq.ft. × 1.5 ft/ft² × 2 lbs/ft = 3,480 lbs

- **Glue Lam Beams and Cross Beams:**
  - Glue lam beams and other larger timber members can be estimated by their cross-sectional area and a typical weight of 35 lbs per cubic foot for glued laminated timber.
  - Main girder beam dimensions (assumed continuous over 57.9 feet): 5.25" x 30"
    - Volume = 57.9 ft × (5.25/12) ft × (30/12) ft = 38.7 cubic feet
    - Weight = 38.7 cu.ft. × 35 lbs/cu.ft. = 1,354.5 lbs
  - Cross beams (4x16 every 8 feet on center, spanning 20 feet):
    - Volume per beam = 20 ft × (4/12) ft × (16/12) ft = 8.89 cubic feet
    - There are 57.9 ft / 8 ft = approx. 7 cross beams
    - Total volume = 7 × 8.89 cu.ft. = 62.23 cu.ft.
    - Weight = 62.23 cu.ft. × 35 lbs/cu.ft. = 2,178 lbs

- **Framing and Walls:**
  - Metal stud framing for walls: Typically, metal studs weigh around 1.5 lbs per linear foot.
  - Assume about 300 linear feet of walls (external + internal minimal).
  - Total weight = 300 ft × 1.5 lbs/ft = 450 lbs

Non-Structural Components:

- **Roofing:**
  - Built-up roofing typically weighs about 10 lbs per sq.ft. including insulation.
  - Total weight = 1160 sq.ft. × 10 lbs/sq.ft. = 11,600 lbs

- **Ceiling Systems** (T-bar ceiling, lights, ducts):
  - Lightweight ceiling systems typically add around 2 to 4 lbs per sq.ft.
  - Total weight = 1160 sq.ft. × 3 lbs/sq.ft. (average) = 3,480 lbs

2. Live Loads Contributing to Seismic Weight:

- **Roof Equipment:**
  - Hood, exhaust fan, and make-up air units = 1081 lbs
  - Air conditioning units and other machinery = Assume similar weight ≈ 1000 lbs

3. Calculate Total Seismic Weight:

Total seismic weight = Sum of all weights calculated above.

- Structural components = 3,480 lbs + 1,354.5 lbs + 2,178 lbs + 450 lbs = 7,462.5 lbs
- Non-structural components = 11,600 lbs + 3,480 lbs = 15,080 lbs
- Roof equipment = 1081 lbs + 1000 lbs = 2,081 lbs
- Total Seismic Weight = 7,462.5 lbs + 15,080 lbs + 2,081 lbs = 24,623.5 lbs

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SEISMIC DESIGN CRITERIA & PARAMETERS PER ASCE 7-22			
Site Classification= (Default)		D	ASCE 7-22 Section 11.4.2
Risk Category=		II	ASCE 7-22 Table 1.5-1
Seismic Design Category=		SDC	ASCE 7-22 Section 11.6
Importance Factor=	I=	1	ASCE 7-22 Section 11.5 Table 1.5-2
Response Modification Factor	R=	5	ASCE 7-22 Table 12.2-1 (Existing building system)
System Overstrength Factor	Ω_o=	1.25	ASCE 7-22 Table 12.2-1
Deflection Amplification Factor	C_d=	1.25	ASCE 7-22 Table 12.2-1
Rho Factor (ρ)	ρ=	1.3	ASCE 7-22 Section 12.3.4.2 Reliability Redundancy Factor
Approximate Fundamental Period	T =	0.4	ASCE 7-22 Section 12.8-2
Long Period	T_L=	8	ASCE 7-22 Figure 22-14 to 22-17 ASCE 7 Hazard Report
Spectral Response Short Period	S_s=	1.57	ASCE 7-22 Chapter 22 ASCE 7 Hazard Report
Spectral Response Long Period	S_1=	0.6	ASCE 7-22 Chapter 22 ASCE 7 Hazard Report
Short Period Site Coefficient F_a=		1. 1	ASCE 7-22 Section 11.4.4 Site Coefficients MCER
Long Period Site Coefficient	F_V=	2.5	ASCE 7-22 Section 11.4.4 Site Coefficients MCER
Spectral Response Accelerations Short	S_{MS}=FaS_s=	1.13	ASCE 7-22 Section 11.4.4 Site Coefficients MCE_R
Spectral Response Accelerations Long	S_{M1}=FvS_1=	1.52	ASCE 7-22 Section 11.4.4 Site Coefficients MCER
Spectral Response Short Period	**S_{DS}=**	**1.13**	ASCE 7-22 Section 11.4.5 Design Spectral Acceleration.
Spectral Response Long Period	S_{D1}=	1.01	ASCE 7-16 Section 11.4.5 Design Spectral Acceleration
$T_s = (S_{D1} / S_{DS})$	T_s=	0.1452	ASCE 7-22 Section 11.4.6 .095<1.5xT_S=0.830*
Coefficient as determined from table 12.8-2	C_t =	0.02	ASCE 7-22 table 12.8-2
Structural Height as defined in section 11.2	h_n =	16	ASCE 7-22 table 12.8-2
Coefficient as determined from table 12.8-2	x =	0.75	ASCE 7-22 Section 12.8-2
Approximate Fundamental Period	$T_a = (Ct * h_n^x)$ =	.0144	ASCE 7-22 Section 12.8-8
Seismic Response Coefficient	**CS =**	**0.226**	ASCE 7-22 Eq. 12.8-2 Seismic Response Coefficient
Maximum Seismic Response Coefficient	C_{Smax} =		ASCE 7-22 Eq. 12.8-3 Maximum
Minimum Seismic Response Coefficient			ASCE 7-22 Eq. 12.8-5 or 12.8-6 Minimum
*Site specific ground motion analysis is not required per ASCE 7-22 Section 11.4.8 Exception 2 Seismic Design Category specified from Table 11.4-2			

- $C_t = 0.02$ (updated coefficient)
- $x = 0.75$ (exponent for height)
- $h_n = 14$ feet (total height of the building)

From the formula:

$$T_a = C_t \times h_n^x$$

Substituting the values:

$$T_a = 0.02 \times (14^{0.75})$$

$$T_a = 0.02 \times 7.26$$

$$T_a \approx 0.1452$$

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$$F_P = \left(\frac{0.4 \times a_p \times S_{DS} \times W_P \times \left(1+2\frac{z}{h}\right)}{R_P/I_P} \right)$$

- a_p: Component Amplification Factor = 2.5 (ASCE 7-22, Section 13.3 "Component Amplification Factors")
- S_{DS}: Design Spectral Response Acceleration at Short Periods = 1.13 (ASCE 7-22, Section 11.4 "Design Spectral Response Acceleration Parameters")
- R_P: Component Response Modification Factor = 5 (ASCE 7-22, Section 13.3 "Component Response Modification Factors")
- I_P: Importance Factor = 1 (ASCE 7-22, Section 1.5 "Importance Factors")
- z: Height of the center of mass of the component above the base = 14 feet
- h: Total height of the building = 15 feet
- z/h: Ratio of the height of the center of mass of the component to the total height of the building = 0.93

1. Hood:

- $W_P = 562$ lbs

$$F_P = \left(\frac{0.4 \times 2.5 \times 1.13 \times 562 \times (1+2 \times 0.93)}{5/1} \right)$$
$$F_P = \left(\frac{0.4 \times 2.5 \times 1.13 \times 562 \times 2.86}{5} \right)$$
$$F_P = \left(\frac{1602.57}{5} \right)$$
$$F_P \approx 320.514 \text{ lbs}$$

2. Exhaust Fan:

- $W_P = 220$ lbs

$$F_P = \left(\frac{0.4 \times 2.5 \times 1.13 \times 220 \times (1+2 \times 0.93)}{5/1} \right)$$
$$F_P = \left(\frac{0.4 \times 2.5 \times 1.13 \times 220 \times 2.86}{5} \right)$$
$$F_P = \left(\frac{625.012}{5} \right)$$
$$F_P \approx 125.002 \text{ lbs}$$

3. Make up Air Unit:

- $W_P = 209$ lbs

$$F_P = \left(\frac{0.4 \times 2.5 \times 1.13 \times 209 \times (1+2 \times 0.93)}{5/1} \right)$$
$$F_P = \left(\frac{0.4 \times 2.5 \times 1.13 \times 209 \times 2.86}{5} \right)$$
$$F_P = \left(\frac{594.674}{5} \right)$$
$$F_P \approx 118.935 \text{ lbs}$$

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MECHANICAL EQUIPMENT MAXIMUM COMPRESSION IN THE DIRECTION OF GRAVITY

$$E_v = W \times \left(1 + \frac{E_{vp}}{g}\right)$$

- W is the weight of the unit.
- E_{vp} is the vertical seismic load effect as $\rho \times C_s \times W$, where ρ is the Rho factor (ρ) = 1.3
  C_s is the seismic response coefficient, and g is the acceleration due to gravity

Calculations for Each Unit:

For each mechanical unit:

1. **Hood**
   - Weight (W): 562 lbs
   - Seismic Load: $E_{vp} = \rho \times C_s \times W = 1.3 \times 0.226 \times 562$
   - $E_{vp} \approx 1.3 \times 0.226 \times 562 \approx 167.838$ lbs
   - $E_v = 562 \times (1 + 167.838/562) = 562 \times 1.299$
   - $E_v \approx 730.378$ lbs
2. **Exhaust Fan**
   - Weight (W): 220 lbs
   - Seismic Load: $E_{vp} = 1.3 \times 0.226 \times 220$
   - $E_{vp} \approx 1.3 \times 0.226 \times 220 \approx 64.828$ lbs
   - $E_v = 220 \times (1 + 64.828/220) = 220 \times 1.295$
   - $E_v \approx 284.9$ lbs
3. **Make up Air Unit**
   - Weight (W): 209 lbs
   - Seismic Load: $E_{vp} = 1.3 \times 0.226 \times 209$
   - $E_{vp} \approx 1.3 \times 0.226 \times 209 \approx 61.886$ lbs
   - $E_v = 209 \times (1 + 61.886/209) = 209 \times 1.296$
   - $E_v \approx 270.944$ lbs

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Calculation of Total Axial Load:

1. **Hood:**

$$\text{Total Axial Load} = \text{Static Weight} + E_v = 562 \text{ lbs} + 730.378 \text{ lbs} = 1292.378 \text{ lbs}$$

2. **Exhaust Fan:**

$$\text{Total Axial Load} = \text{Static Weight} + E_v = 220 \text{ lbs} + 284.9 \text{ lbs} = 504.9 \text{ lbs}$$

3. **Make Up Air Unit:**

$$\text{Total Axial Load} = \text{Static Weight} + E_v = 209 \text{ lbs} + 270.944 \text{ lbs} = 479.944 \text{ lbs}$$

Screw Strength

Model No.	Size x Length	Nominal Strength (lb.)		Load Resistance Factor Design (LRFD) (lb.)		Allowable Stress Design (ASD) (lb.)	
		Shear	Tension	Shear	Tension	Shear	Tension
		P_{ss}	P_{ts}	ϕP_{ss}	ϕP_{ts}	P_{ss}/Ω	P_{ts}/Ω
Steel to Steel							
FPHSD34S1016	#10 x ¾"	1,710	2,215	855	1,110	570	740
FPHSD34S1214	#12 x ¾"	2,535	3,380	1,265	1,690	845	1,125
PHSD34S0818	#8 x ¾"	1,495	1,810	750	905	500	605
E1B1414	#14 x 1"	3,130	5,395	1,565	2,700	1,045	1,800
XEQ34B1016	#10 x ¾"	1,390	2,350	695	1,175	465	785
Steel Decking							
XU34S1016	#10 x ¾"	1,735	2,895	870	1,450	580	965
X1S1016	#10 x 1"	1,625	2,930	810	1,465	540	975
X1S1214	#12 x 1"	2,525	3,750	1,265	1,875	840	1,250
XMQ114S1224	#12 x 1¼"	3,110	4,985	1,555	2,495	1,035	1,660
XLQ114T1224	#12 x 1¼"	3,110	4,985	1,555	2,495	1,035	1,660
Metal-Roofing Clip to Steel							
PCSD1S1016	#10 x 1"	1,705	2,380	850	1,190	570	795
PCSD1S1214	#12 x 1"	1,760	3,180	880	1,590	585	1,060
SSPCSD1S1016	#10 x 1"	1,892	3,045	985	1,588	631	1,015
Metal-Roofing Clip to Wood							
PC1BS1012	#10-12 x 1"	1,415	2,080	710	1,040	470	695
PC1BS1211	#12-11 x 1"	1,715	3,080	860	1,540	570	1,025
Drywall							
DWF114PS	#6 x 1¼"	1,255	1,575	630	790	420	525
DWF158PS	#6 x 1⅝"	1,255	1,575	630	790	420	525
DWFSD158PS	#6 x 1⅝"	1,260	1,720	630	860	420	575
DWFSDQ114PS	#6 x 1¼"	1,260	1,720	630	860	420	575
DWFSD178PS	#6 x 1⅞"	1,260	1,720	630	860	420	575
DWFSD238PS	#8 x 2⅜"	1,260	1,720	630	860	420	575
Wood to Steel							
FHSD114S0818	#8 x 1¼"	1,221	1,884	637	983	407	628
SSFHSD112S1016	#10 x 1½"	2,275	3,435	1,140	1,720	760	1,145
PPHD11516S0817	#8 x 1 15/16"	1,265	2,075	630	1,035	420	690
PPHD134S1016	#10 x 1¾"	1,265	2,675	630	1,335	420	890
PPHD3S1016	#10 x 3"	1,265	2,675	630	1,335	420	890
PPHD134S1214	#12 x 1¾"	2,380	3,880	1,190	1,940	795	1,295
CBSDQ158S	#8 x 1⅝"	1,745	2,500	870	1,250	580	835
CBSDQ214S	#10 x 2¼"	2,205	3,295	1,105	1,650	735	1,100
TB1445S	#14 x 1¾"	3,690	4,625	1,845	2,315	1,230	1,540
TB1460S	#14 x 2⅜"	3,690	4,625	1,845	2,315	1,230	1,540
TB1475S	#14 x 3"	3,690	4,625	1,845	2,315	1,230	1,540

1. Table based on testing per AISI Standard Test Method S904-08.
2. Factor of Safety (Ω), and Resistance Factor (ϕ) are determined per AISI S100-12 Section F1.
3. P_{ss} and P_{ts} are nominal shear strength and nominal tension strength values for the screw, respectively, and are also known as the average (ultimate) values of all tests; determined by independent laboratory testing.

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BUILDING SEISMIC CALCULATION

1. Calculate Seismic Response Coefficient (C_S)

The Seismic Response Coefficient C_S is calculated using the formula from ASCE 7-22:

$$C_S = \frac{S_{DS}}{R/I}$$

Where:

- $S_{DS} = 1.13$ (Spectral Response Acceleration at Short Period)
- $R = 5$ (Response Modification Factor)
- $I = 1$ (Importance Factor)

Plugging in the values:

$$C_S = \frac{1.13}{5/1} = 0.226$$

2. Adjust C_S with Seismic Coefficients

C_S must not be less than:

$$C_S = \frac{0.044 \times S_{DS} \times I}{R}$$

Plugging in the values:

$$C_S = \frac{0.044 \times 1.13 \times 1}{5} = 0.01$$

Since 0.226 is greater than 0.01, we do not need to adjust the C_S value upward based on this lower limit.

C_S must also not exceed:

$$C_S = \frac{S_{DS}}{R}$$

$C_S = \frac{1.13}{5} = 0.226$ (which is the same as initially calculated, so no adjustment is needed here)

3. Calculate Base Shear (V)

The Base Shear V is then calculated as:

$$V = C_S \times W$$

Where:

- $W = 24.624$ kips (Total seismic weight from the previous calculation)

$$V = 0.226 \times 24.624 = 5.565 \text{ kips}$$

Conclusion

- **Seismic Response Coefficient (C_S)**: 0.226
- **Base Shear (V)**: 5.565 kips

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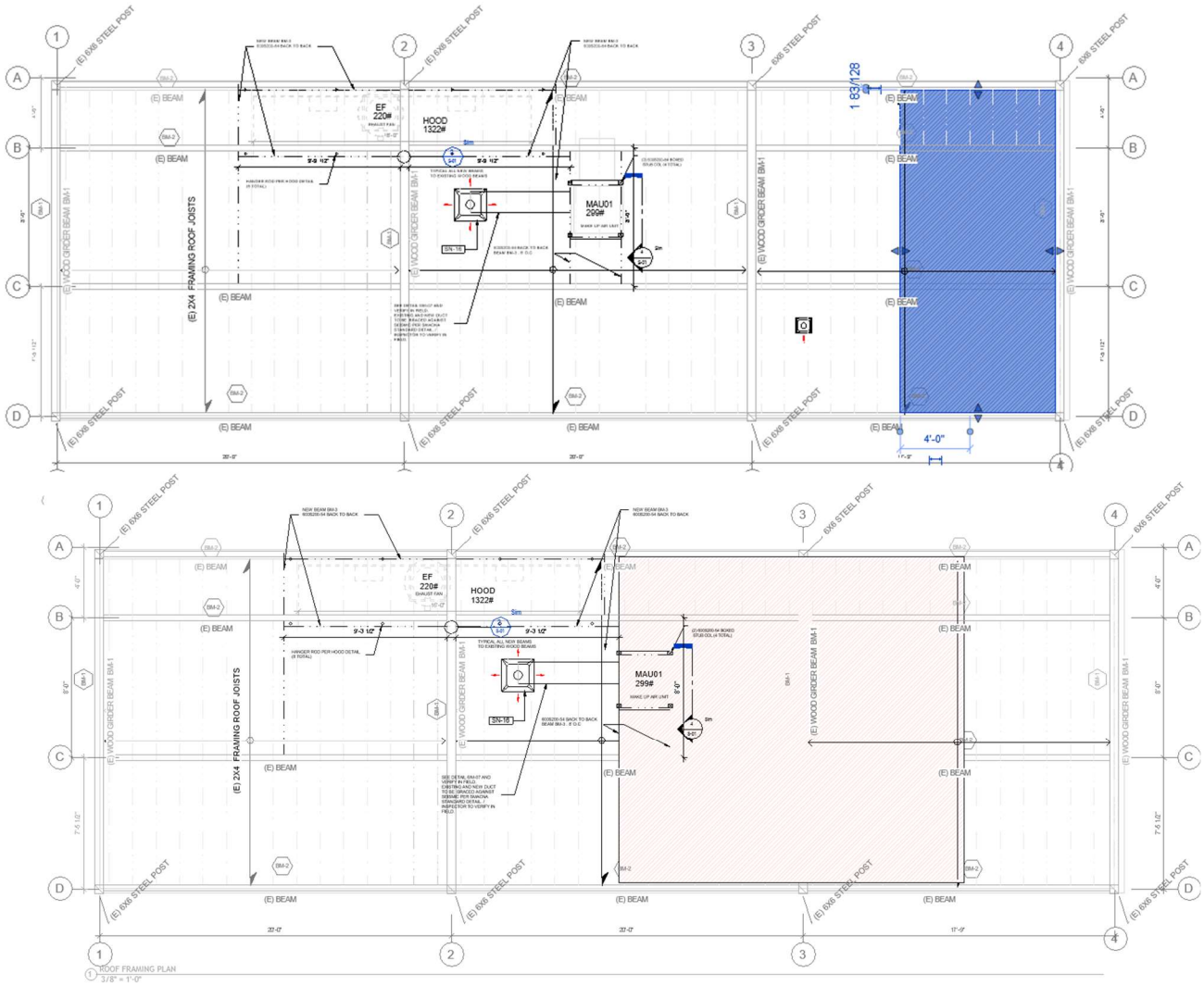
RESISTING SYSTEM LATERAL DISTRIBUTION (MEMBERS TRIBUTARY AREAS)



- FRAME #04 TRIBUTARY AREA = 166 SQ.FT
- FRAME #03 TRIBUTARY AREA = 364.49 SQ.FT

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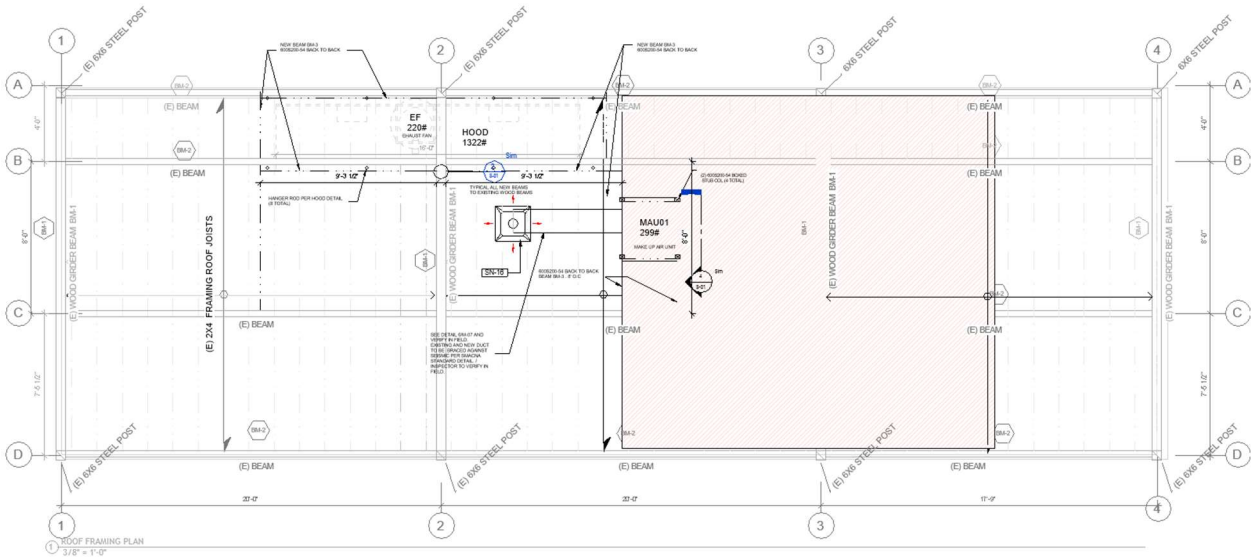

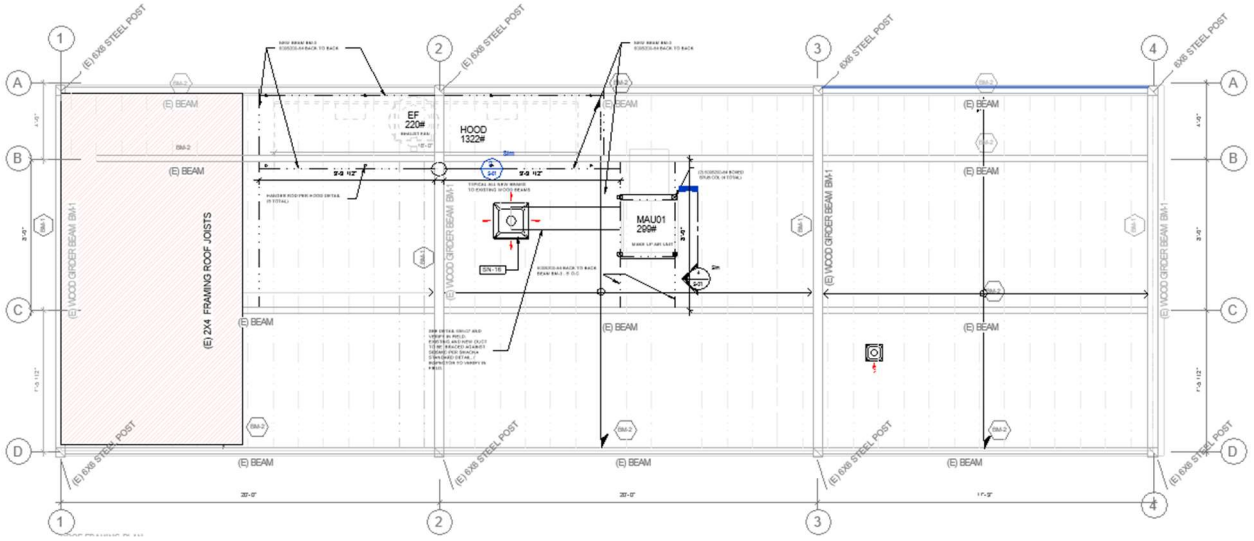

- FRAME #02 TRIBUTARY AREA = 371 SQ.FT
- FRAME #01 TRIBUTARY AREA = 178 SQ.FT

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TOTAL SEISMIC FORCE ON FRAME#01 = 178 x .0042 = 0.7476 KIP = 747.6 LBS

TOTAL SEISMIC FORCE ON FRAME#02 = 371x.0042 1.558KIP = 1559 LBS

TOTAL SEISMIC FORCE ON FRAME#03 = 364.49 x.0042 = 1.5 KIP = 1530 LBS

TOTAL SEISMIC FORCE ON FRAME#04 = 166 x.0042 = 0.7 KIP = 700 LBS

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EXISTING BEAM CHECK AFTER THE ADDED WEIGHT

Wood Beam Project File: LEVANTY RESTURAUNT.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

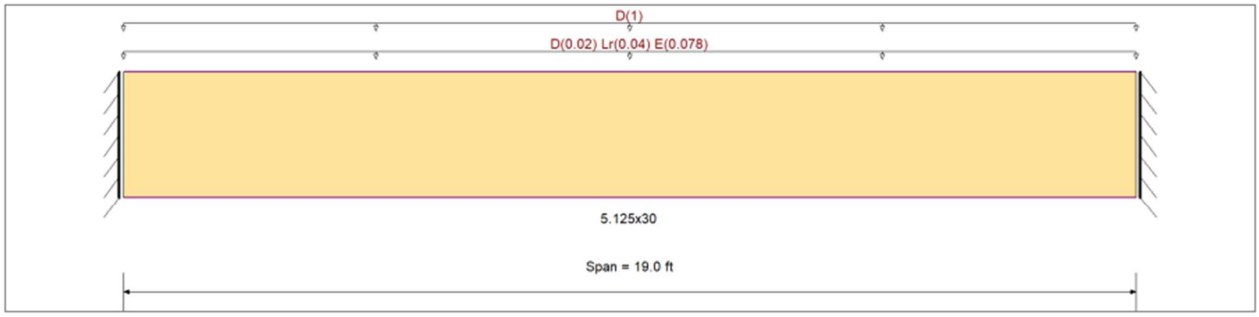
DESCRIPTION: (E) MAIN GIRDER BM-1 FRAME#03 CHECK AT LARGEST LOAD.

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method :	Load Resistance Factor D	Fb +	2,900.0 psi	*E : Modulus of Elasticity*	
Load Combination	IBC 2021	Fb -	2,900.0 psi	Ebend- xx	2,000.0 ksi
		Fc - Prll	2,900.0 psi	Eminbend - xx	1,016.54 ksi
Wood Species :	iLevel Truss Joist	Fc - Perp	750.0 psi		
Wood Grade :	Parallam PSL 2.0E	Fv	290.0 psi		
		Ft	2,025.0 psi	Density	45.070 pcf
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

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

Beam self weight calculated and added to loading
Uniform Load : D = 0.020, Lr = 0.040, E = 0.0780 , Tributary Width = 1.0 ft, (SEISMIC LOAD, DEAD LOAD, LIVE LOAD DISTRI
Uniform Load : D = 1.0 , Tributary Width = 1.0 ft, (CONSERVATIVE CHECK)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.203 : 1	Maximum Shear Stress Ratio	=	0.272 : 1
Section used for this span		5.125x30	Section used for this span		5.125x30
fb: Actual	=	702.21 psi	fv: Actual	=	102.18 psi
F'b	=	3,463.82 psi	F'v	=	375.84 psi
Load Combination		+1.40D	Load Combination		+1.40D
Location of maximum on span	=	19.000 ft	Location of maximum on span	=	16.504 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.002 in	Ratio =	114952 >=360	Span: 1 : E Only
Max Upward Transient Deflection	0 in	Ratio =	0 <360	n/a
Max Downward Total Deflection	0.029 in	Ratio =	7986 >=180	Span: 1 : +D+0.70E
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	CM	C_t	CLx	C_V	Cfu	C_i	C_r	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.40D														0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.203	0.272	0.60	1.00	1.00	1.00	0.922	1.00	1.00	1.00	44.99	702.2	3,463.8	10.47	102.2	375.8
+1.20D+0.50Lr					1.00	1.00	1.00	0.922	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.132	0.177	0.80	1.00	1.00	1.00	0.922	1.00	1.00	1.00	39.16	611.3	4,618.4	9.12	88.9	501.1
+1.20D					1.00	1.00	1.00	0.922	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.130	0.175	0.80	1.00	1.00	1.00	0.922	1.00	1.00	1.00	38.56	601.9	4,618.4	8.98	87.6	501.1
+1.20D+1.60Lr					1.00	1.00	1.00	0.922	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.137	0.183	0.80	1.00	1.00	1.00	0.922	1.00	1.00	1.00	40.48	632.0	4,618.4	9.43	92.0	501.1
+1.426D+1.30E					1.00	1.00	1.00	0.922	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.132	0.177	1.00	1.00	1.00	1.00	0.922	1.00	1.00	1.00	48.87	762.9	5,773.0	11.38	111.0	626.4

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EXISTING BEAM CHECK AFTER THE ADDED WEIGHT

Wood Beam Project File: LEVANTY RESTURAUNT.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

DESCRIPTION: (E) MAIN GIRDER BM-1 FRAME#03 CHECK AT LARGEST LOAD.

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	λ_v	CM	C_t	CLx	C_V	Cfu	C_i	C_r	Mu	fb	Fb	Vu	fv	Fv
+0.90D					1.00	1.00	1.00	0.922	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.078	0.105	1.00	1.00	1.00	1.00	0.922	1.00	1.00	1.00	28.92	451.4	5,773.0	6.73	65.7	626.4
+0.6740D+1.30E					1.00	1.00	1.00	0.922	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 19.0 ft	1	0.067	0.090	1.00	1.00	1.00	1.00	0.922	1.00	1.00	1.00	24.71	385.7	5,773.0	5.75	56.1	626.4

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.70E	1	0.0285	9.569		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	10.666	10.666
Max Upward from Load Combinations	10.666	10.666
Max Upward from Load Cases	10.147	10.147
D Only	10.147	10.147
+D+Lr	10.527	10.527
+D+0.750Lr	10.432	10.432
+D+0.70E	10.666	10.666
+D+0.5250E	10.536	10.536
+0.60D	6.088	6.088
+0.60D+0.70E	6.607	6.607
Lr Only	0.380	0.380
E Only	0.741	0.741

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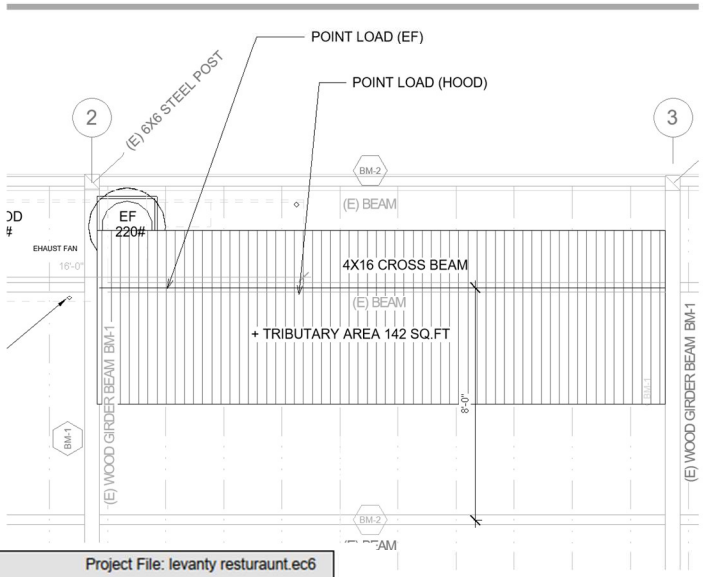


Wood Beam

Project File: levanty resturaunt.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

DESCRIPTION: 4X16 CROSS BEAM ABOVE HOOD. 142 SQFT T.A . P.L AT 2' 3" AND AT 7'

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method : Load Resistance Factor D
Load Combination : IBC 2021

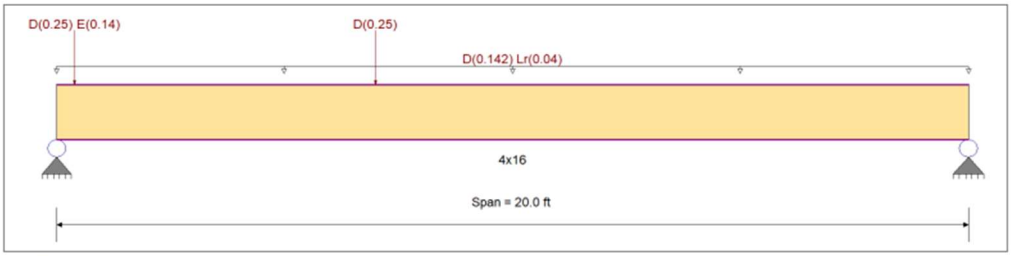
Wood Species : Douglas Fir-Larch (North)
Wood Grade : No. 1/No. 2

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb +	850.0 psi
Fb -	850.0 psi
Fc - Prll	1,400.0 psi
Fc - Perp	625.0 psi
Fv	180.0 psi
Ft	500.0 psi

E : Modulus of Elasticity

Ebend- xx	1,600.0 ksi
Eminbend - xx	580.0 ksi
Density	30.590 pcf



Applied Loads

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

Beam self weight calculated and added to loading
Uniform Load : D = 0.1420, Lr = 0.040 , Tributary Width = 1.0 ft, (T.A (E) LOAD)
Point Load : D = 0.250 k @ 7.0 ft, (HOOD ATTACHMENT)
Point Load : D = 0.250, E = 0.140 k @ 0.40 ft, (E.F HALF LOADS TRANSFERED FROM 2 2X6)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.969 : 1	Maximum Shear Stress Ratio	=	0.253 : 1
Section used for this span		4x16	Section used for this span		4x16
fb: Actual	=	1,067.46 psi	fv: Actual	=	59.04 psi
F'b	=	1,101.60 psi	F'v	=	233.28 psi
Load Combination		+1.40D	Load Combination		+1.40D
Location of maximum on span	=	9.416 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	0.088 in	Ratio =	2742 >=360	Span: 1 : Lr Only
Max Upward Transient Deflection	0 in	Ratio =	0 <360	n/a
Max Downward Total Deflection	0.464 in	Ratio =	517 >=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	λ	CM	C_t	CLx	C_F	Cfu	C_i	C_r	Mu	fb	Fb	Vu	fv	Fv
+1.40D														0.0	0.00	0.0	0.0
Length = 20.0 ft	1	0.969	0.253	0.60	1.00	1.00	1.00	1.000	1.00	1.00	1.00	12.07	1,067.5	1,101.6	2.10	59.0	233.3
+1.20D+0.50Lr					1.00	1.00	1.00	1.000	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 20.0 ft	1	0.683	0.179	0.80	1.00	1.00	1.00	1.000	1.00	1.00	1.00	11.34	1,003.1	1,468.8	1.98	55.5	311.0
+1.20D					1.00	1.00	1.00	1.000	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 20.0 ft	1	0.623	0.163	0.80	1.00	1.00	1.00	1.000	1.00	1.00	1.00	10.34	915.0	1,468.8	1.80	50.6	311.0
+1.20D+1.60Lr					1.00	1.00	1.00	1.000	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 20.0 ft	1	0.815	0.213	0.80	1.00	1.00	1.00	1.000	1.00	1.00	1.00	13.54	1,197.3	1,468.8	2.36	66.4	311.0
+1.20D+E					1.00	1.00	1.00	1.000	1.00	1.00	1.00			0.0	0.00	0.0	0.0

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Wood Beam

Project File: levanty resturaunt.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering

DESCRIPTION: 4X16 CROSS BEAM ABOVE HOOD. 142 SQFT T.A . P.L AT 2' 3" AND AT 7'

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	λ	CM	C_t	CLx	C_F	Cfu	C_i	C_r	Mu	fb	Fb	Vu	fv	Fv
Length = 20.0 ft	1	0.500	0.130	1.00	1.00	1.00	1.00	1.000	1.00	1.00	1.00	10.37	917.6	1,836.0	1.80	50.5	388.8
+0.90D					1.00	1.00	1.00	1.000	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 20.0 ft	1	0.374	0.098	1.00	1.00	1.00	1.00	1.000	1.00	1.00	1.00	7.76	686.2	1,836.0	1.35	38.0	388.8
+0.90D+E					1.00	1.00	1.00	1.000	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 20.0 ft	1	0.375	0.097	1.00	1.00	1.00	1.00	1.000	1.00	1.00	1.00	7.79	688.8	1,836.0	1.35	37.9	388.8

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr	1	0.4641	9.927		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	2.341	2.026
Max Upward from Load Combinations	2.341	2.026
Max Upward from Load Cases	1.941	1.626
D Only	1.941	1.626
+D+Lr	2.341	2.026
+D+0.750Lr	2.241	1.926
+D+0.70E	2.037	1.628
+D+0.5250E	2.013	1.627
+0.60D	1.165	0.976
+0.60D+0.70E	1.261	0.977
Lr Only	0.400	0.400
E Only	0.137	0.003

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Wood Beam

Project File: levanty resturaunt.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

DESCRIPTION: 2X6 ROOF JOISTS

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method : Load Resistance Factor D
Load Combination : IBC 2021

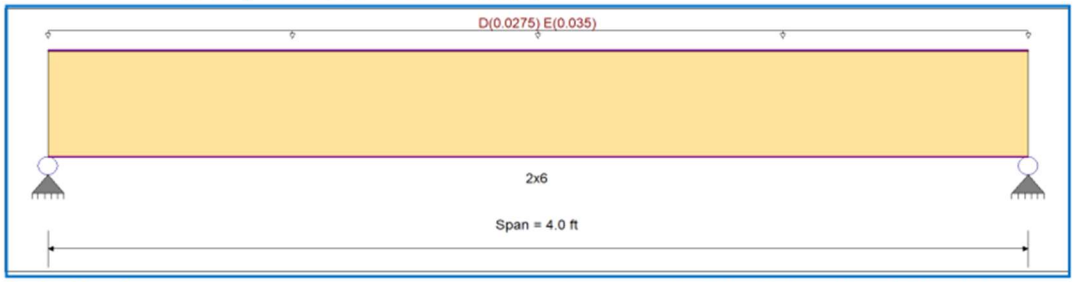
Wood Species : Douglas Fir-Larch (North)
Wood Grade : No. 1/No. 2

Fb +	850.0 psi
Fb -	850.0 psi
Fc - Prll	1,400.0 psi
Fc - Perp	625.0 psi
Fv	180.0 psi
Ft	500.0 psi

E : Modulus of Elasticity

Ebend- xx	1,600.0 ksi
Eminbend - xx	580.0 ksi
Density	30.590 pcf

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling



Applied Loads

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

Beam self weight calculated and added to loading
Uniform Load : D = 0.02750, E = 0.0350 , Tributary Width = 1.0 ft, (EF HALF WEIGHT)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.093 : 1	Maximum Shear Stress Ratio	=	0.051 : 1
Section used for this span		2x6	Section used for this span		2x6
fb: Actual	=	222.48 psi	fv: Actual	=	19.72 psi
F'b	=	2,386.80 psi	F'v	=	388.80 psi
Load Combination		+1.20D+E	Load Combination		+1.20D+E
Location of maximum on span	=	2.000 ft	Location of maximum on span	=	3.547 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.006 in	Ratio =	7876 >=360	Span: 1 : E Only
Max Upward Transient Deflection	0 in	Ratio =	0 <360	n/a
Max Downward Total Deflection	0.009 in	Ratio =	5128 >=180	Span: 1 : +D+0.70E
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	CM	C_t	CLx	C_F	Cfu	C_i	C_r	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.40D														0.0	0.00	0.0	0.0
Length = 4.0 ft	1	0.091	0.049	0.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.08	130.0	1,432.1	0.06	11.5	233.3
+1.20D					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 4.0 ft	1	0.058	0.032	0.80	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.07	111.4	1,909.4	0.05	9.9	311.0
+1.20D+E					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 4.0 ft	1	0.093	0.051	1.00	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.14	222.5	2,386.8	0.11	19.7	388.8
+0.90D					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 4.0 ft	1	0.035	0.019	1.00	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.05	83.6	2,386.8	0.04	7.4	388.8
+0.90D+E					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 4.0 ft	1	0.082	0.044	1.00	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.12	194.6	2,386.8	0.09	17.3	388.8

Wood Beam

Project File: levanty resturaunt.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

DESCRIPTION: 2X6 ROOF JOISTS

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.70E	1	0.0094	2.015		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.108	0.108
Max Upward from Load Combinations	0.108	0.108
Max Upward from Load Cases	0.070	0.070
D Only	0.059	0.059
+D+0.70E	0.108	0.108
+D+0.5250E	0.095	0.095
+0.60D	0.035	0.035
+0.60D+0.70E	0.084	0.084
E Only	0.070	0.070

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Wood Beam

Project File: levanty resturaunt.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

DESCRIPTION: 2X6 AT LONG SPAN

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method : Load Resistance Factor D
Load Combination : IBC 2021

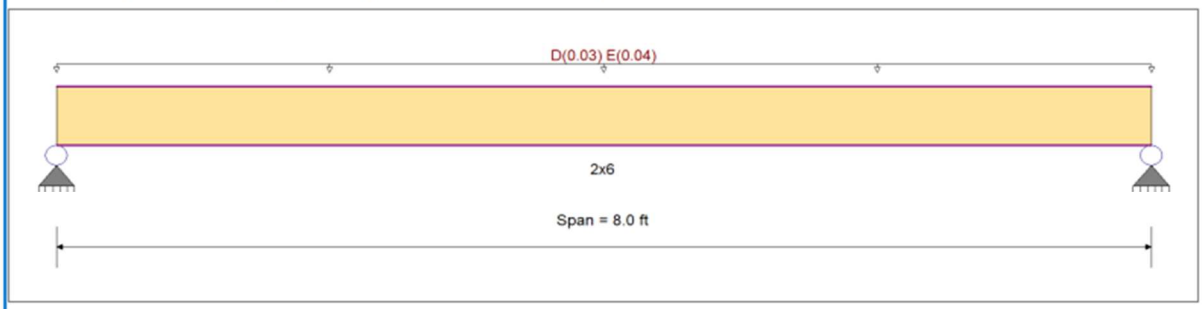
Wood Species : Douglas Fir-Larch (North)
Wood Grade : No. 1/No. 2

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb +	850.0 psi
Fb -	850.0 psi
Fc - Prll	1,400.0 psi
Fc - Perp	625.0 psi
Fv	180.0 psi
Ft	500.0 psi

E : Modulus of Elasticity

Ebend- xx	1,600.0 ksi
Eminbend - xx	580.0 ksi
Density	30.590 pcf



Applied Loads

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

Beam self weight calculated and added to loading
Uniform Load : D = 0.030, E = 0.040 , Tributary Width = 1.0 ft, (MAKE UP AIR)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.415 : 1	Maximum Shear Stress Ratio	=	0.130 : 1
Section used for this span		2x6	Section used for this span		2x6
fb: Actual	=	991.46 psi	fv: Actual	=	50.58 psi
F'b	=	2,386.80 psi	F'v	=	388.80 psi
Load Combination		+1.20D+E	Load Combination		+1.20D+E
Location of maximum on span	=	4.000 ft	Location of maximum on span	=	7.562 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.111 in	Ratio =	861 >=360	Span: 1 : E Only
Max Upward Transient Deflection	0 in	Ratio =	0 <360	n/a
Max Downward Total Deflection	0.166 in	Ratio =	576 >=180	Span: 1 : +D+0.70E
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	CM	C_t	CLx	C_F	Cfu	C_i	C_r	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.40D														0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.394	0.123	0.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.36	564.3	1,432.1	0.16	28.8	233.3
+1.20D					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.253	0.079	0.80	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.30	483.7	1,909.4	0.14	24.7	311.0
+1.20D+E					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.415	0.130	1.00	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.62	991.5	2,386.8	0.28	50.6	388.8
+0.90D					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.152	0.048	1.00	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.23	362.8	2,386.8	0.10	18.5	388.8
+0.90D+E					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.365	0.114	1.00	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.55	870.5	2,386.8	0.24	44.4	388.8

951-903-2284
www.accandengineering.com
714-844-2140
Ben@accandengineering.com
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Wood Beam

Project File: levanty resturaunt.ec6

LIC# : KW-06018864, Build:20.24.01.31 ACC & Engineering (c) ENERCALC INC 1983-2023

DESCRIPTION: 2X6 AT LONG SPAN

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.70E	1	0.1665	4.029		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.239	0.239
Max Upward from Load Combinations	0.239	0.239
Max Upward from Load Cases	0.160	0.160
D Only	0.127	0.127
+D+0.70E	0.239	0.239
+D+0.5250E	0.211	0.211
+0.60D	0.076	0.076
+0.60D+0.70E	0.188	0.188
E Only	0.160	0.160

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General Footing

Project File: LEVANTY.ec6

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DESCRIPTION: EXISTING CONC. CHECK

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Material Properties

f'c : Concrete 28 day strength	=	2.50 ksi
fy : Rebar Yield	=	60.0 ksi
Ec : Concrete Elastic Modulus	=	3,122.0 ksi
Concrete Density	=	145.0 pcf
φ Values Flexure	=	0.90
Shear	=	0.750

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.0 : 1
Min. Sliding Safety Factor	=	1.0 : 1
Add Ftg Wt for Soil Pressure	:	Yes
Use ftg wt for stability, moments & shears	:	Yes
Add Pedestal Wt for Soil Pressure	:	No
Use Pedestal wt for stability, mom & shear	:	No

Soil Design Values

Allowable Soil Bearing	=	1.50 ksf
Soil Density	=	110.0 pcf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	250.0 pcf
Soil/Concrete Friction Coeff.	=	0.30

Increases based on footing Depth

Footing base depth below soil surface	=	1.50 ft
Allow press. increase per foot of depth	=	ksf
when footing base is below	=	ft

Increases based on footing plan dimension

Allowable pressure increase per foot of depth	=	ksf
when max. length or width is greater than	=	ft

Dimensions

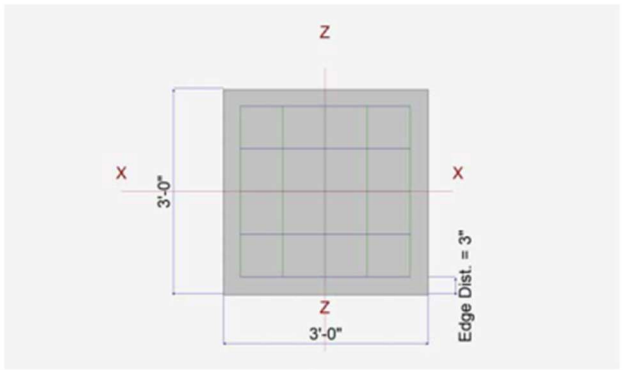
Width parallel to X-X Axis	=	3.0 ft
Length parallel to Z-Z Axis	=	3.0 ft
Footing Thickness	=	18.0 in

Pedestal dimensions...

px : parallel to X-X Axis	=	0.0 in
pz : parallel to Z-Z Axis	=	0.0 in
Height	=	0.0 in

Rebar Centerline to Edge of Concrete...

at Bottom of footing	=	3.125 in



Reinforcing

Bars parallel to X-X Axis			
Number of Bars	=		5
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis			
Number of Bars	=		5
Reinforcing Bar Size	=	#	5

Bandwidth Distribution Check (ACI 15.4.4.2)

Direction Requiring Closer Separation	n/a
# Bars required within zone	n/a
# Bars required on each side of zone	n/a

Applied Loads

		D	Lr	L	S	W	E	H
P : Column Load	=	0.7740	0.0	3.096	0.0	0.0	0.0	0.0 k
OB : Overburden	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ksf
M-xx	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 k-ft
M-zz	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 k-ft
V-x	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 k
V-z	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 k

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General Footing

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DESCRIPTION: EXISTING CONC. CHECK

DESIGN SUMMARY

Design OK

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.4317	Soil Bearing	0.6475 ksf	1.50 ksf	+D+L about Z-Z axis
PASS	n/a	Overturning - X-X	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Overturning - Z-Z	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Sliding - X-X	0.0 k	0.0 k	No Sliding
PASS	n/a	Sliding - Z-Z	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift
PASS	0.02217	Z Flexure (+X)	0.7353 k-ft/ft	33.171 k-ft/ft	+1.20D+1.60L
PASS	0.02217	Z Flexure (-X)	0.7353 k-ft/ft	33.171 k-ft/ft	+1.20D+1.60L
PASS	0.02217	X Flexure (+Z)	0.7353 k-ft/ft	33.171 k-ft/ft	+1.20D+1.60L
PASS	0.02217	X Flexure (-Z)	0.7353 k-ft/ft	33.171 k-ft/ft	+1.20D+1.60L
PASS	0.01318	1-way Shear (+X)	0.9886 psi	75.0 psi	+1.20D+1.60L
PASS	0.01318	1-way Shear (-X)	0.9886 psi	75.0 psi	+1.20D+1.60L
PASS	0.01318	1-way Shear (+Z)	0.9886 psi	75.0 psi	+1.20D+1.60L
PASS	0.01318	1-way Shear (-Z)	0.9886 psi	75.0 psi	+1.20D+1.60L
PASS	0.03649	2-way Punching	5.474 psi	150.0 psi	+1.20D+1.60L

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xecc (in)	Zecc (in)	Actual Soil Bearing Stress @ Location: Bottom, -Z	Top, +Z	Left, -X	Right, +X	Actual / Allow Ratio
X-X, D Only	1.50	n/a	0.0	0.3035	0.3035	n/a	n/a	0.202
X-X, +D+L	1.50	n/a	0.0	0.6475	0.6475	n/a	n/a	0.432
X-X, +D+0.750L	1.50	n/a	0.0	0.5615	0.5615	n/a	n/a	0.374
X-X, +0.60D	1.50	n/a	0.0	0.1821	0.1821	n/a	n/a	0.121
Z-Z, D Only	1.50	0.0	n/a	n/a	n/a	0.3035	0.3035	0.202
Z-Z, +D+L	1.50	0.0	n/a	n/a	n/a	0.6475	0.6475	0.432
Z-Z, +D+0.750L	1.50	0.0	n/a	n/a	n/a	0.5615	0.5615	0.374
Z-Z, +0.60D	1.50	0.0	n/a	n/a	n/a	0.1821	0.1821	0.121

Overturning Stability

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
Footing Has NO Overturning				

Sliding Stability

All units k

Force Application Axis Load Combination...	Sliding Force	Resisting Force	Stability Ratio	Status
Footing Has NO Sliding				

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
X-X, +1.40D	0.1355	+Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.40D	0.1355	-Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.20D+1.60L	0.7353	+Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.20D+1.60L	0.7353	-Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.20D+0.50L	0.3096	+Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.20D+0.50L	0.3096	-Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.20D	0.1161	+Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +1.20D	0.1161	-Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +0.90D	0.08708	+Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
X-X, +0.90D	0.08708	-Z	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.40D	0.1355	-X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.40D	0.1355	+X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.20D+1.60L	0.7353	-X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.20D+1.60L	0.7353	+X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.20D+0.50L	0.3096	-X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.20D+0.50L	0.3096	+X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +1.20D	0.1161	-X	Bottom	0.3888	AsMin	0.5167	33.171	OK

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General Footing

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DESCRIPTION: EXISTING CONC. CHECK

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
Z-Z, +1.20D	0.1161	+X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +0.90D	0.08708	-X	Bottom	0.3888	AsMin	0.5167	33.171	OK
Z-Z, +0.90D	0.08708	+X	Bottom	0.3888	AsMin	0.5167	33.171	OK

One Way Shear

Load Combination...	Vu @ -X	Vu @ +X	Vu @ -Z	Vu @ +Z	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D	0.18 psi	0.18 psi	0.18 psi	0.18 psi	0.18 psi	75.00 psi	0.00	OK
+1.20D+1.60L	0.99 psi	0.99 psi	0.99 psi	0.99 psi	0.99 psi	75.00 psi	0.01	OK
+1.20D+0.50L	0.42 psi	0.42 psi	0.42 psi	0.42 psi	0.42 psi	75.00 psi	0.01	OK
+1.20D	0.16 psi	0.16 psi	0.16 psi	0.16 psi	0.16 psi	75.00 psi	0.00	OK
+0.90D	0.12 psi	0.12 psi	0.12 psi	0.12 psi	0.12 psi	75.00 psi	0.00	OK

Two-Way "Punching" Shear

All units k

Load Combination...	Vu	Phi*Vn	Vu / Phi*Vn	Status
+1.40D	1.01 psi	150.00 psi	0.006722	OK
+1.20D+1.60L	5.47 psi	150.00 psi	0.03649	OK
+1.20D+0.50L	2.31 psi	150.00 psi	0.01537	OK
+1.20D	0.86 psi	150.00 psi	0.005762	OK
+0.90D	0.65 psi	150.00 psi	0.004322	OK

END OF REPORT

REGARDS

DESIGN BY : BEN, HAMED, AM.ASCE,AIA
REVIEW BY : M.BAYOUMI, P.E.,ASCE.