Overview SECTION [0101] - 1

Type	No./Date	Name	Address	Zip
Client	C001	Bryna Holland	15 Blanca Drive, Novato	94947
Project	P010	Residence Remodel	55 Loring Avenue, Mill Valley	94941
Drawings	Dec. 1 , 2020	PR-01 to PR-11	55 Loring Avenue, Mill Valley	94941

Governing Codes SECTION [0101] - 2

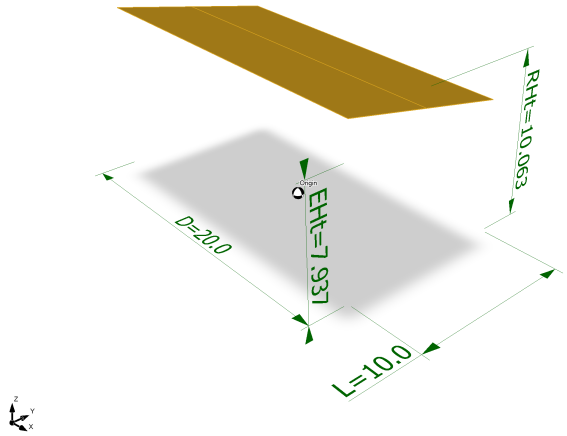

Figure 1: Wind load 1 02 - F01

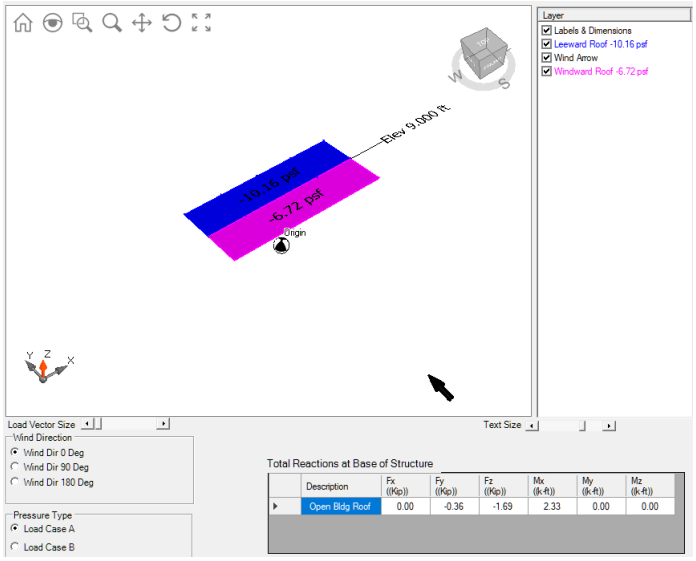

Figure 2: Wind load 2 02 - F02

Table 01: Standards 02 - T01

Category	Standard	Year
Loading	ASCE-7	2016
Concrete	ACI-318	2014
Wood-National Design Specifications	AWC-NDS	2018
Wood-Special Design Provisions for Wind and Seismic	AWC-SDPWS	2015
Wood Frame Construction Manual	AWC-WFCM	2018

Table 02: Load Types 02 - T02

Sym	Load Effect	Notes
D	Dead load	See IBC 1606 and Chapter 3 of this publication
E	Combined effect of horizontal and vertical earthquake-induced forces as defined in ASCE/SEI 12.4.2	See IBC 1613, ASCE/SEI 12.4.2 and Chapter 6 of this publication
Em	Maximum seismic load effect of horizontal and vertical forces as set forth in ASCE/SEI 12.4.3	See IBC 1613, ASCE/SEI 12.4.3 and Chapter 6 of this publication
H	Load due to lateral earth pressures, ground water pressure or pressure of bulk materials	See IBC 1610 for soil lateral loads
L	Live load, except roof live load, including any permitted live load reduction	See IBC 1607 and Chapter 3 of this publication
Li	Roof live load including any permitted live load reduction	See IBC 1607 and Chapter 3 of this publication
R	Rain load	See IBC 1611 and Chapter 3 of this publication
W	Load due to wind pressure	See IBC 1609 and Chapter 5 of this publication

Table 03: Load Combinations 02 - T03

CBC 2019 reference	Equation
Equation 16-1	1.4(D +F)
Equation 16-2	1.2(D + F) + l.6(L + H) + 0.5(L
Equation 16-3	1.2(D + F) + l.6(Lr or S or R) + l.6H + (f1L or 0.5W)
Equation 16-4	1.2(D + F) + 1.0W + f1L +1.6H + 0.5(Lr or S or R)

...continued on next page

CBC 2019 reference	Equation
Equation 16-5	1.2(D + F) + 1.0E + f1L + l.6H + f2S
Equation 16-6	0.9D+ l.0W+ l.6H
Equation 16-7	0.9(D + F) + 1.0E+ l.6H

Gravity Loads and Seismic Mass SECTION [0101] - 3

Table 04: Roof unit dead loads 03 - T04

variable	value	[value]	description
ld1	2.0 psf	0.10 KPa	Urethane foam (4 inch thick)
ld2	1.0 psf	0.05 KPa	Three-ply roofing
ld3	5.0 psf	0.24 KPa	Doug Fir decking 2-in.
ld4	1.0 psf	0.05 KPa	Doug Fir beams 4x12 at 12 ft o.c.
_ _	_ _	_ _	Total
roofdl1	9.0 psf	0.43 KPa	Total roof unit load

Table 05: Floor unit dead loads 03 - T05

variable	value	[value]	description
ld1	3.0 psf	0.14 KPa	3/4 in. hardwood flooring
ld2	2.0 psf	0.10 KPa	1/2 in. plywood subfloor
ld3	4.0 psf	0.19 KPa	2x10 joists at 16 in. o.c.
ld4	1.5 psf	0.07 KPa	fixtures
_ _	_ _	_ _	Total
floordl1	10.5 psf	0.50 KPa	Total floor unit load

Table 06: Interior wall unit dead loads 03 - T06

variable	value	[value]	description
ld1	5.5 psf	0.26 KPa	5/8" sheet rock (2)
ld2	2 psf	0.10 KPa	2x4 studs at 16" o.c.
ld3	1.5 psf	0.07 KPa	fixtures
_ _	_ _	_ _	Total
intwalldl1	9 psf	0.43 KPa	Total interior wall unit load

Table 07: Exterior wall unit dead loads 03 - T07

variable	value	[value]	description
ld1	2.0 psf	0.10 KPa	1/2 in plywood sheathing
ld2	2.0 psf	0.10 KPa	2x4 studs at 16 in o.c.
ld3	3.0 psf	0.14 KPa	5/8 in sheet rock
ld4	1.5 psf	0.07 KPa	fixtures
_ _	_ _	_ _	Total
extwalldl1	8.5 psf	0.41 KPa	Total exterior wall unit load

Table 08: Areas 03 - T08

variable	value	[value]	description
arearf1	1700.00 sf	157.94 SM	roof area
areaflr1	1200.00 sf	111.48 SM	floor area
htwall1	9.00 ft	2.74 m	wall height
lenwall1	110.00 ft	33.53 m	interior wall length
lenwall2	155.00 ft	47.24 m	exterior wall length 2

Eq. 1: Roof weight 03 - E01

$$rfwt_1 = arearf_1 \cdot roofdl_1$$

$$15.30\ kip = 1700.00\ sf \cdot 9.00\ psf$$

Eq. 2: Floor weight 03 - E02

$$flrwt_1 = areaflr_1 \cdot floordl_1$$

$$12.60\ kip = 10.50\ psf \cdot 1200.00\ sf$$

Eq. 3: Partition weight 03 - E03

$$partwt_1 = htwall_1 \cdot intwalldl_1 \cdot lenwall_1$$

$$8.91\ kip = 110.00\ ft \cdot 9.00\ ft \cdot 9.00\ psf$$

Eq. 4: Exterior wall weight 03 - E04

$$exwallwt_1 = extwalldl_1 \cdot htwall_1 \cdot lenwall_2$$

$$11.86\ \text{kip} = 155.00\ \text{ft} \cdot 8.50\ \text{psf} \cdot 9.00\ \text{ft}$$

Eq. 5: Total building weight 03 - E05

$$\text{totwt}_1 = \text{exwallwt}_1 + \text{flrwt}_1 + \text{partwt}_1 + \text{rfwt}_1$$

$$48.67\ \text{kip} = 11857.50\ \text{lbs} + 12600.00\ \text{lbs} + 15300.00\ \text{lbs} + 8910.00\ \text{lbs}$$

Table 09: Weights 03 - T09

variable	value	[value]	description [eq. number]
rfwt1	15.30 kip	68.06 KN	Roof weight [01]
flrwt1	12.60 kip	56.05 KN	Floor weight [02]
partwt1	8.91 kip	39.63 KN	Partition weight [03]
exwallwt1	11.86 kip	52.74 KN	Exterior wall weight [04]
totwt1	48.67 kip	216.48 KN	Total building weight [05]

Material Densities and Seismic Models SECTION [0101] - 4

Eq. 6: Effective model floor load 04 - E06

$$\text{eflrdl}_1 = \frac{\text{flrwt}_1 + \text{partwt}_1}{\text{areaflr}_1}$$

$$17.93\ \text{psf} = \frac{12600.00\ \text{lbs} + 8910.00\ \text{lbs}}{1200.00\ \text{sf}}$$

Eq. 7: Effective model floor density 04 - E07

$$\text{eflrdens}_1 = \frac{\text{eflrdl}_1}{0.5 \cdot \text{IN}}$$

$$0.25\ \text{pci} = \frac{17.93\ \text{lbs/sf}}{0.5 \cdot \text{in}}$$

Eq. 8: Effective model roof density 04 - E08

$$erfdens_1 = \frac{roofdl_1}{1.5 \cdot IN}$$

$$0.04\ pci = \frac{9.00\ psf}{1.5 \cdot in}$$

Eq. 9: Effective model wall density 04 - E09

$$ewalldens_1 = \frac{extwalldl_1}{0.5 \cdot IN}$$

$$0.12\ pci = \frac{8.50\ psf}{0.5 \cdot in}$$

Table 10: Model loads 04 - T10

variable	value	[value]	description [eq. number]
eflrdl1	17.93 psf	0.86 KPa	Effective model floor load [06]
eflrdens1	0.25 pci	67.58 KNcM	Effective model floor density [07]
erfdens1	0.04 pci	11.31 KNcM	Effective model roof density [08]
ewalldens1	0.12 pci	32.05 KNcM	Effective model wall density [09]

Abbreviations and References SECTION [0101] - 5

References

ACI
American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331
318–14

AISC

American Institute of Steel
130 East Randolph Street, Suite 2000
Chicago, IL 60601-6219
ANSI/AISC 341–16
Seismic Provisions for Structural Steel Buildings

AISI
American Iron and Steel Institute
25 Massachusetts Avenue, NW Suite 800
Washington, DC 20001
AISI S100–16
North American Specification for the Design of Cold-formed
Steel Structural Members, 2016

ASCE/SEI
American Society of Civil Engineers
Structural Engineering Institute
1801 Alexander Bell Drive
Reston, VA 20191-4400
7–16 Minimum Design Loads and Associated Criteria for
Buildings and Other Structures with Supplement No. 1

AWC
American Wood Council
222 Catoctin Circle SE, Suite 201
Leesburg, VA 20175
ANSI/AWC NDS–2018
National Design Specification (NDS) for
Wood Construction–with 2018 NDS Supplement
ANSI/AWC SDPWS–2015
Special Design Provisions for Wind and Seismic

CBC
International Code Council
500 New Jersey Avenue, NW
6th Floor, Washington, DC 20001
California Building Standards Commission
2525 Natomas Park Dr # 130, Sacramento, CA 95833
California Building Code
Part 2 of Title 24, 2019 Edition

CRC
International Code Council
500 New Jersey Avenue, NW
6th Floor, Washington, DC 20001

California Building Standards Commission
2525 Natomas Park Dr # 130, Sacramento, CA 95833
California Residential Code
Part 2.5 of Title 24, 2019 Edition

Drawings

55 LORING - RESIDENCE REMODEL AND SEISMIC STRENGTHENING

PR.01: COVER AND INDEX
PR.02: PROJECT SCOPE
PR.03: GENERAL NOTES, CONTRACTORS
PR.04: SITE PLAN
PR.05: PLANS
PR.06: ELEVATIONS
PR.07: KITCHEN AND BATH REMODEL
PR.08: MASTER BATH, CLOSET, LAUNDRY
PR.09: RESIDENCE STRENGTHENING
PR.10: CARPORT STRENGTHENING
PR.11: SITE IMPROVEMENTS

Abbreviations - Terms

ASD	Allowable Stress Design
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AB	Anchor Bolt
BDRY	Boundry
CBC	Califiornia Building Code
CRC	Califiornia Residential Code
CIP	Cast-In-Place
CLR	Clear
CONC	Concrete
CMU	Concrete Masonry Unit
CRSI	Concrete Reinforcing Steel Institute
CONST JT	Construction Joint
CONT	Continuous
CJ	Control Joint
D-C	Demand-Capacity (ratio)
DIA	Diameter
DIM	Dimension

EA	Each
EF	Each Face
EJ	Expansion Joint
ES	Each Side
EW	Each Way
EXP Bolt	Expansion Bolt
EXP JT	Expansion Joint
FTG	Footing
FND	Foundation
GALV	Galvanized
GA	Gauge
GR	Grade
HT	Height
IN	Inch
ID	Inside Diameter
ICBO	International Conference of Building Officials
K	Kip (1000 Pounds)
LWC	Light Weight Concrete
LRFD	Load and Resistance Factor Design
NWC	Normal Weight Concrete
NIC	Not in Contract
OC	On Center
OD	Outside Diameter
OPNG	Opening
PVC	Polyvinyl Chloride
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
R	Radius
REINF	Reinforced
SIM	Similar
SOG	Slab on Grade
SL	Splice Length
SQ	Square
STD	Standard
SDI	Steel Deck Institute
SF	Step Footing or Square Foot
SYM	Symmetrical
THK	Thick or Thickness
T & B	Top and Bottom
T & G	Tongue and Groove
TOC	Top of Concrete
TOF	Top of Foundation
TOS	Top of Steel
TOW	Top of Wall
TYP	Typical

UNO	Unless Noted Otherwise
WWF	Welded Wire Fabric
W/	With
WP	Working Point

Abbreviations - Math

D = dead load

L = live load

D_m = module dead load

E = earthquake load

F_a = acceleration site coefficient

F_v = velocity site coefficient

F_N = normal wind force

GC_{Ms} = net moment static coefficient

GC_{Md} = net moment dynamic coefficient

GC_M = net moment coefficient

GC_P = net pressure coefficient

GC_{Ps} = net static pressure coefficient

GC_{Pd} = net dynamic pressure coefficient

k_1 = hazard coefficient

k_2 = terrain and structure coefficient

k_3 = topography coefficient

Kzt = topographic Factor

K_z = velocity pressure exposure coefficient

MRI = mean return interval

p_d = net design wind pressure on module - Pa

$SDOF$ = single degree of freedom

S_s = short period mapped acceleration

S_{DS} = site design response acceleration

S_1 = 1 second period mapped acceleration

S_{MS} = short period parameter

S_{M1} = 1 second period parameter

T = fundamental period of structure

M_{tor} = wind moment about panel center

T_0 = short period spectral cap

T_S = long period spectral cap

V_b = basic wind speed

V_B = seismic design base shear

W = wind load

W = seismic weight of structure