





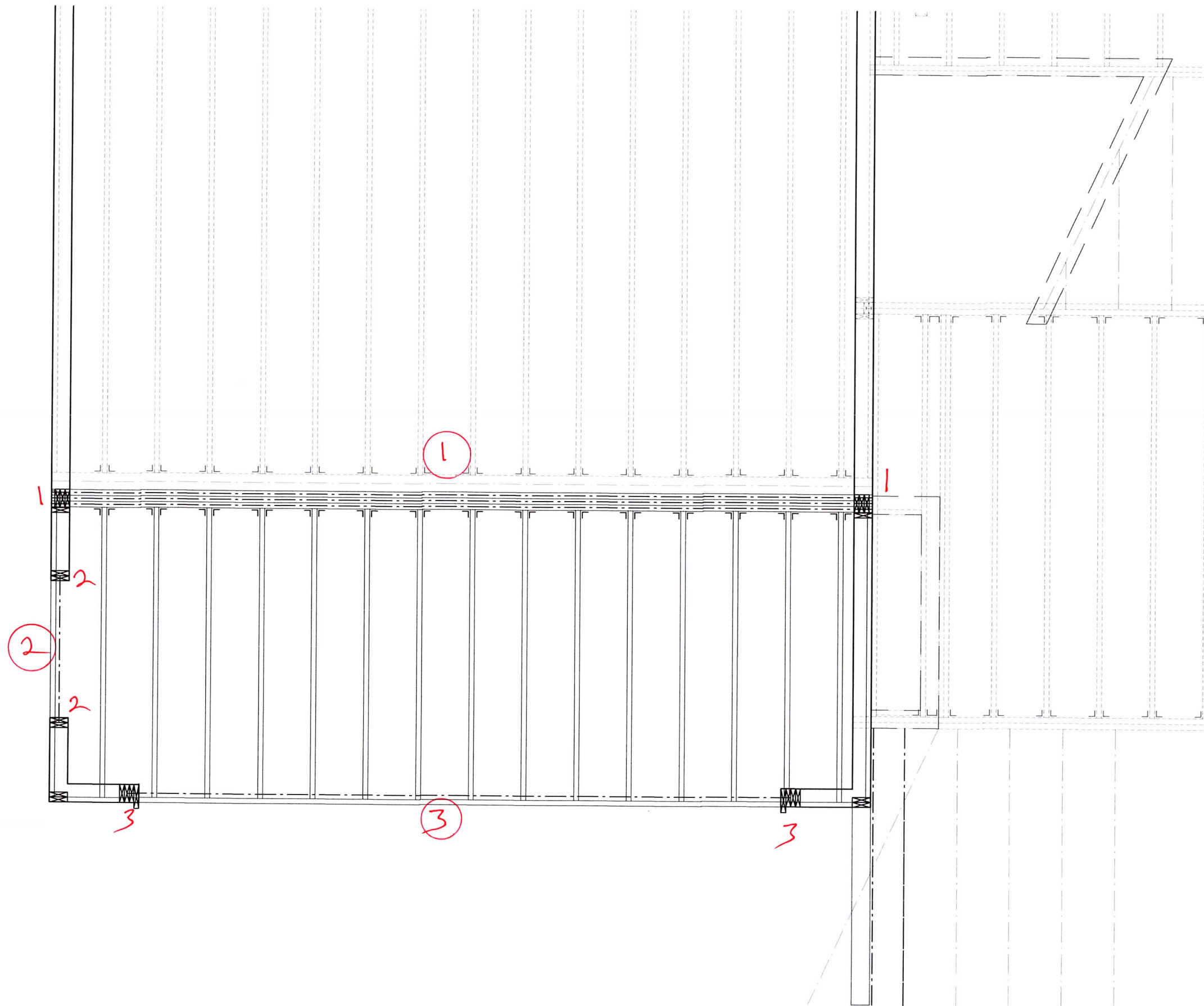
# Post Calculations

24-006 Vert 2/4/2025

#	Location	I.D.	Length (ft.)		I.D.	X-section (in.)		Load Factors		Load Type		Span (ft.)	Placement (ft.)		Spacing (ft.)		C <sub>D</sub>	C <sub>F</sub>	C <sub>b</sub>	K <sub>f</sub>	C <sub>P</sub>	Bearing		Buckling		All.	Trib.		Total	#	Footin g Size 1500		
			y-y	x-x		Live	Dead	#l <sub>i</sub>	#l <sub>f</sub>	X <sub>i</sub> /X <sub>p</sub>	X <sub>f</sub>		Sp <sub>i</sub>	Sp <sub>f</sub>	F <sub>v</sub> , F <sub>c</sub>	F <sub>c</sub>						F <sub>c⊥</sub>	All.	Act.	All.		Act.	Live				Dead	
1	Deck	3-2x6		10.00	SPF					D	D	24.10		24.10	12.10	12.10							0.67	460	442	537	442	11,392	8,748	2,187	10,940	1	32
2	Deck	2x6		10.00	SPF					D	D	3.20		3.20	2.00	2.00							0.67	425	29	537	29	3,506	192	48	240	2	5
3	Deck	2x6		10.00	SPF					D	D	20.40		20.40	4.00	4.00							0.67	425	371	537	371	3,506	2,448	612	3,060	3	17

# Beam Calculations

Beam			Loading								Adjustment factors				Stresses								Deflection								
#			Load Factors		Type		Span	Placement (ft.)		Spacing (ft.)		C <sub>D</sub>	C <sub>r</sub>	C <sub>F</sub>	C <sub>v</sub>	Loads (lb)		Shear (psi)			Moments				Live			Total			#
#	Location	I.D.	Live	Dead	#1 <sub>i</sub>	#1 <sub>f</sub>	(ft.)	X <sub>i</sub> /X <sub>p</sub>	X <sub>f</sub>	Sp <sub>i</sub>	Sp <sub>f</sub>					Left	Right	f <sub>V</sub>	F' <sub>V</sub>	%	M <sub>max</sub> (lb-ft)	f <sub>b</sub>	F' <sub>b</sub>	%	Δ <sub>act.</sub>	Δ <sub>all.</sub>	%	Δ <sub>act.</sub>	Δ <sub>all.</sub>	%	#
1	Deck	5.125x12 GLB + (3) 16" LVL			D	D	20.00		20.00	12.00	12.00				0.96	9000	9000	136	265	195	45000	1798	2298	128	0.53	0.67	126	0.66	0.67	101	1
2	Deck	4x8			D	D	3.20		3.20	2.00	2.00			1.30		240	240	14	250		192	75	1235		0.00	0.11		0.00	0.11		2
3	Deck	5.5x12 GLB			D	D	16.40		16.40	4.00	4.00					2460	2460	56	265	474	10086	917	2443	266	0.27	0.55	200	0.34	0.55	160	3



# DECK FRAMING PLAN

SCALE  $\frac{1}{4}'' = 1'-0''$

Deck Framing Gravity  
Load Keyplan

# Main Wind Force Resisting System

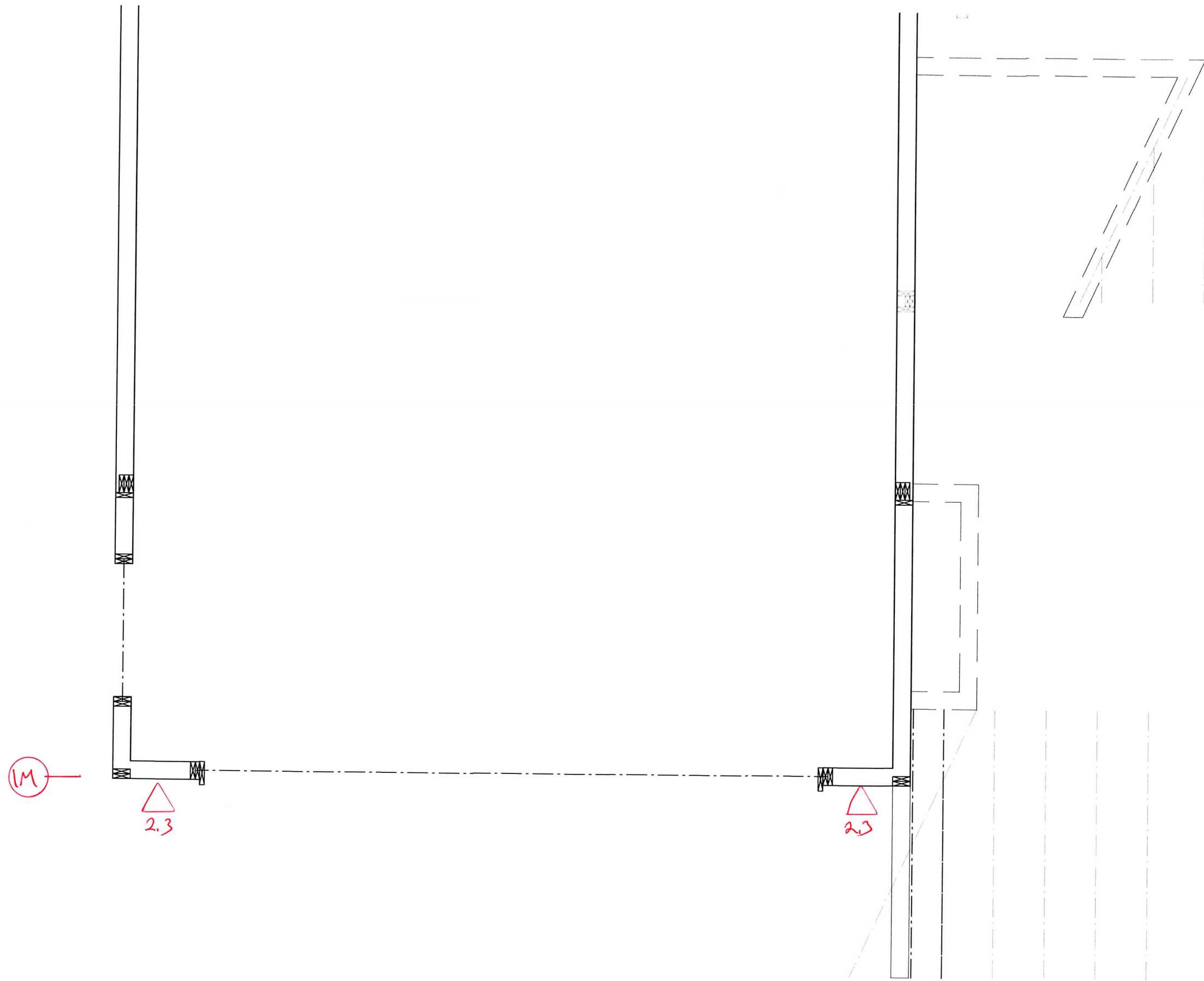
Grid #	Factor	Grid # for Load Above	L (ft)	B (ft)	Proj. Area (ft <sup>2</sup> )	Surface Direction	Surface Type	Roof Angle		Pressure Coefficients		Design Pressure	Design Load		Min. Design Load		Load used for Design <i>F</i> (lb)							
								Pitch	$\theta$ (Deg)	<i>C<sub>p</sub></i> (Fig 27.3.1) External	<i>GC<sub>pi</sub></i> (Table 26.13-1) Internal	<i>p</i> (Eq 27.3-1) (psf)	Tributary <i>F</i> (lb)	Total <i>F</i> (lb)	Tributary <i>F</i> (lb)	Total <i>F</i> (lb)								
1M			67.0	59.0	50	Windward	Wall			0.80	-0.18	21.4	1071	1704	800	800	1022							
			67.0	59.0	50	Leeward	Wall			-0.47	0.18	12.7	633											

# Seismic Calculations

<b>Spectral Response Acceleration, <math>S_s = 140.20</math></b> <b>Site Class = D</b> <b>Site Coefficient, <math>F_a = 1.20</math></b> <b>Height Coefficient, <math>F = 1.10</math></b>										<b>Maximum Spectral Response Acceleration, <math>S_{MS} = 1.68</math></b> <b>5%Damped Design Spectral Response Acceleration, <math>S_{DS} = 1.12</math></b> <b>Default Response Modification Coefficient, <math>R = 6.50</math></b> <b>Seismic Design Category = D</b>												
Grid #	Load Type	Level	Direction (On Page)	Areas (ft <sup>2</sup> )	Code Sect.	Fctr.	$\Omega_o$	R	Loads						$\rho_{used}$	Eq. 12.4-3	Eq. 5	Eq. 12.4-7				
									Live (lb/ft <sup>2</sup> )	Dead (lb/ft <sup>2</sup> )	$w_x$ (lb)	$FS_{DS}/R$	$F_{xi}$ (lb)	$Q_E$ (lb)		$E = \rho Q_E$ (lb)	$0.7 * E$ (lb)	$E_m = \Omega_o Q_E$ (lb)				
1M	D	Main Floor	L-R	252						15.0	3780	0.190	717	717	717	718	1.30	933	718			

# Panel Analysis

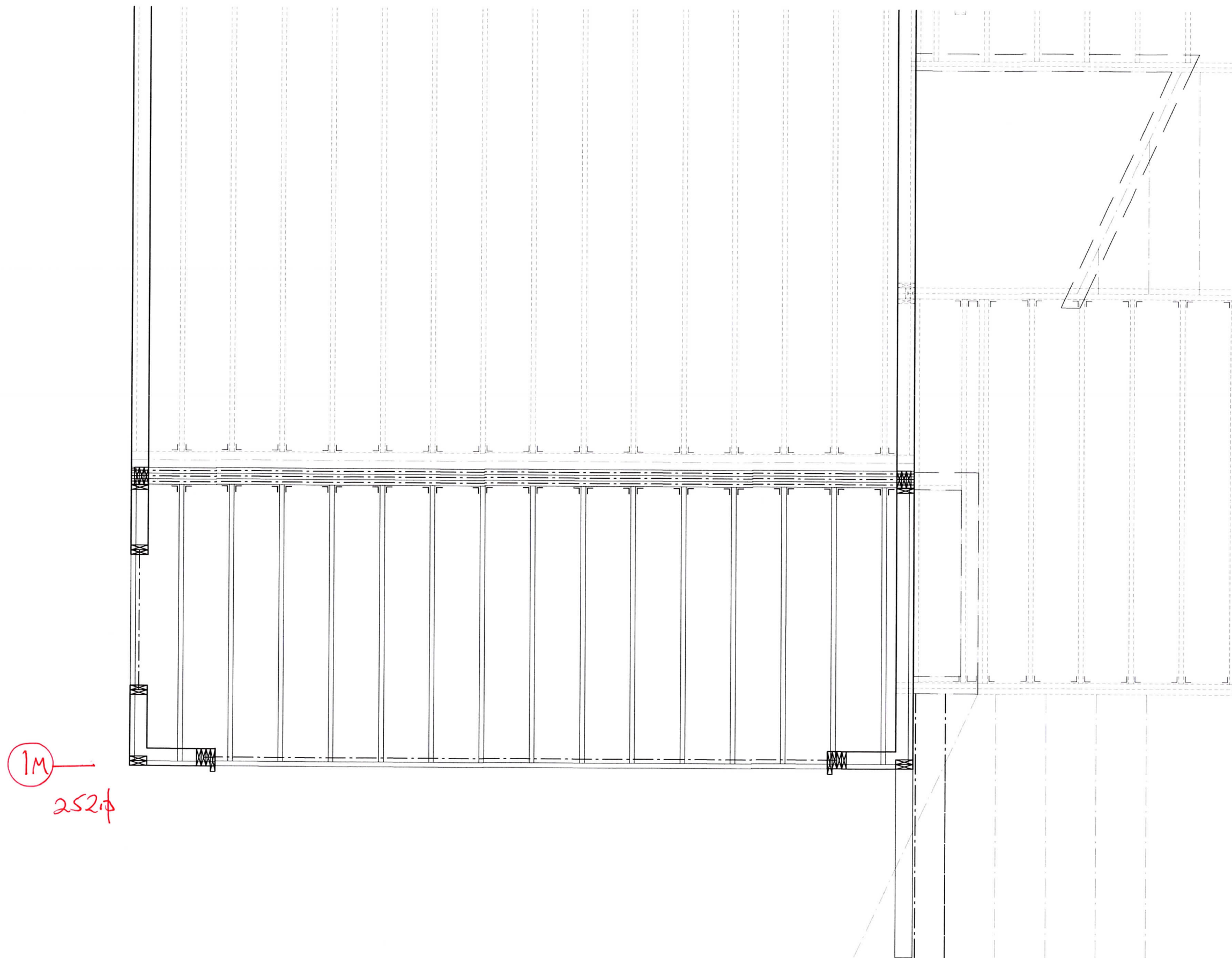
Panel															Design Loads		Panel Shears								Holdown Options												
Grid #		Materials				Height (ft.)	Individual Panel Lengths						Shear Panel Adjustments			Wind (lb)	Seismic (lb)	Wind			Seismic				Post Loads			Anchor Bolt Holdowns									
Level <sub>i</sub>	Grid Above	Wall Size	Nail Size	Panel Type	S.G.		#1 (ft)	#2 (ft)	#3 (ft)	#4 (ft)	#5 (ft)	#6 (ft)	Perforated Panel					S.G.	Act. (lb/ft)	Allowable			Act. (lb/ft)	Allowable				Uplift (lb)	2/3 Dead (lb)	Net (lb)	Model	Post		Cap. (lb)	Tie Straps		
													Max Height (ft)	Total Width (ft)	%					C <sub>o</sub>	C <sub>SG</sub>	Type		Base (lb/ft)	Cap. (lb/ft)	Type	Base (lb/ft)					C <sub>s</sub>	Cap. (lb/ft)		Grade	Size	Model
Defaults (Dflt.)																																					
		2x6	8d	15/32" Ply	0.4																																
1M						9.0	2.3	2.3							0.93	1,022	718	222	P1-6	365	339	156	<b>P1-4</b>	380	0.51	181	2000		2000	HDU2			2215	MSTC40	2320	10	



# DECK FRAMING PLAN

SCALE 1/4" = 1'-0"

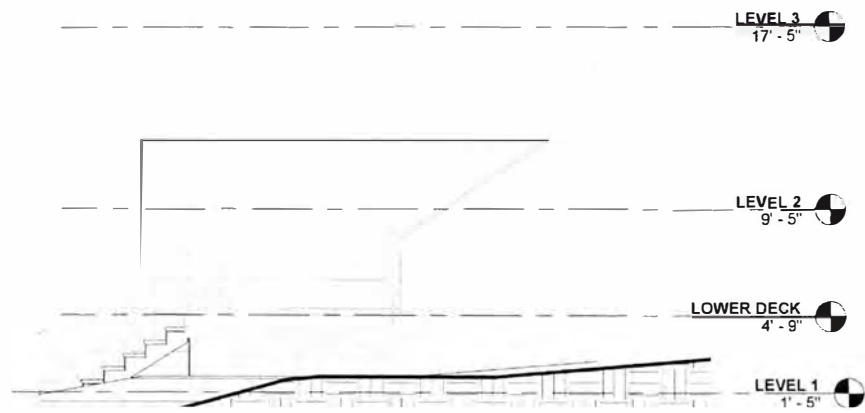
Main Floor  
Shearwall Plan



# DECK FRAMING PLAN

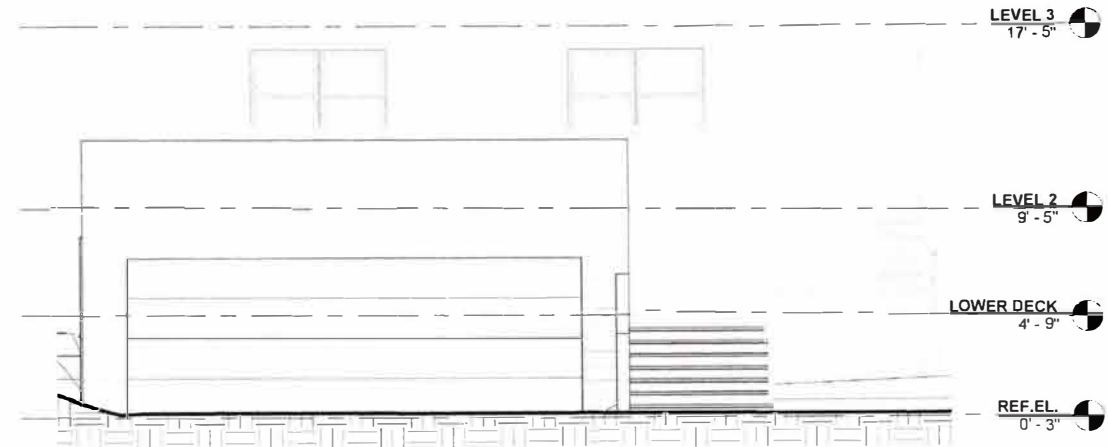
SCALE  $\frac{1}{4}'' = 1'-0''$

Area Takeoff for Deck  
Framing Seismic Loads



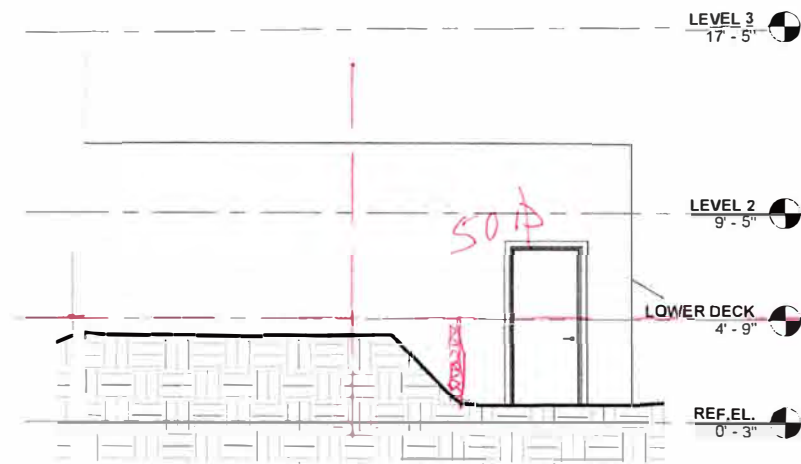
**1. NORTH ELEVATION PROPOSED**

A3.00 SCALE: 3/16" = 1'-0"



**3. EAST ELEVATION PROPOSED**

A3.00 SCALE: 3/16" = 1'-0"



**2. SOUTH ELEVATION PROPOSED**

A3.00 SCALE: 3/16" = 1'-0"



**9825 SE 40th Street, Mercer  
Island, WA 98040**

**DISCLAIMER**  
ANY DESIGN SHALL NOT BE HELD LIABLE FOR ANY DIRECT  
INDIRECT INCIDENTAL OR CONSEQUENTIAL  
DAMAGES ARISING FROM THE USE OF THE DESIGN SERVICES OR  
DOCUMENTS

NOTICE:

TEAM R.Y.  
CHECKED

DRAWING REVISION

DESCRIPTION	NO.	DATE
PERMIT SET		2023-01-15

**Area Takeoff for  
Wind Loads**

ELEV. PROPOSED  
**A3.00**