

7220 Trade Street, Suite 350, San Diego, CA 92121 ▶ p 619-650-0010 ▶ mulhernkulp.com

CALCULATION PACKAGE

June 09, 2021

Yen Design

7511 SE 76th St.

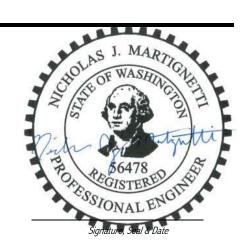
Mercer Island, Washington

MULHERN & KULP STRUCTURAL ENGINEERING, INC.

Prepared By:

Riley J. Denis, E.I.T. Staff Engineer

Nick J. Martignetti, P.E. Associate Owner + San Diego Office Director





PROJECT NAME:

7511 SE 76TH ST

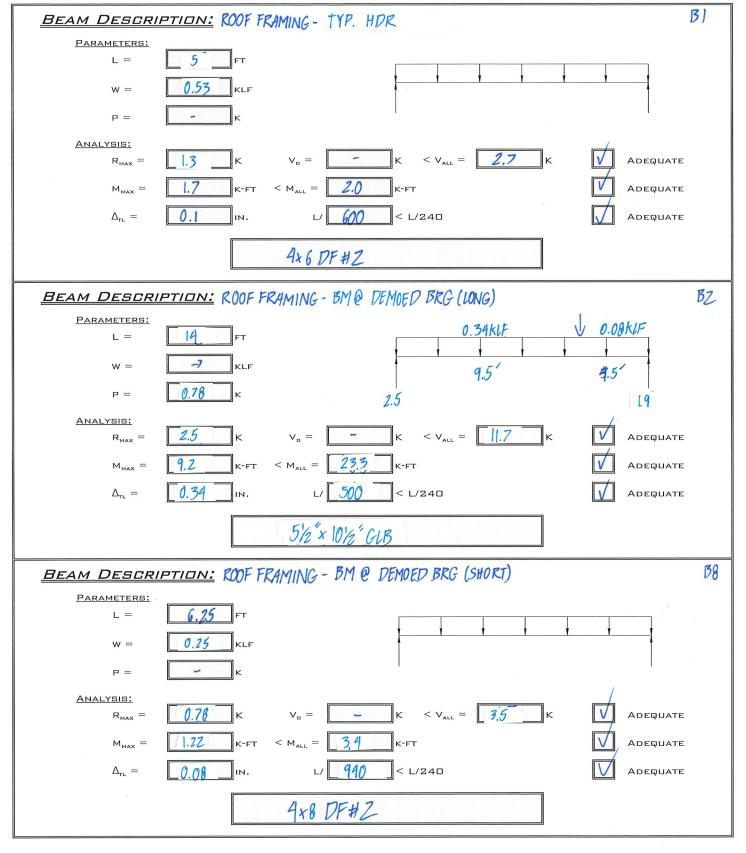
YEN DESIGN

M&K PROJECT #:

251-21001

Engineer: F

18-JAN-21





PROJECT NAME: 7511 SE 76TH ST

YEN DESIGN

M&K PROJECT #: 251-21001

ENGINEER: RJD DATE: 18-JAN-21

BEAM DESCRIPTION: UPPER FLOOR FRAMING - TYP. HDR	
PARAMETERS:	
L = 3 FT	
w = 0.95 KLF	
P =	
Analysis:	
$R_{MAX} = 1.4$ K $V_D = 1.7$ K $V_{ALL} = 1.7$ K $V_{ALL} = 1.7$ ADEQUATE	
$M_{MAX} = $	
$\Delta_{\text{TL}} = 0.02$ In. L/ 1000^{+} < L/240 $\sqrt{}$ Adequate	
4×6 DF#Z	
-1×6 1/+42	
BEAM DESCRIPTION: VPPER FLOOR FRAMING-BM @ BUMPOUT	
PARAMETERS:	
W = 0.3 KLF	
P =K	
ANALYSIS: $R_{MAX} = 0.9 K V_{D} = - K V_{ALL} = 2.7 K ADEQUATE$	
THAT I THE TOTAL	
$\Delta_{\text{TL}} = 0.11$ IN. L/ 655 < L/240 \checkmark ADEQUATE	
4×6 DF#Z	
BEAM DESCRIPTION: VPPER FLOOR FRAMING-BM @ S.W. ABOVE	39
PARAMETERS:	
SEE ENERCALC	
W = KLF OVTPM	
P = K	
Analysis:	
$R_{MAX} = $	
M _{MAX} = K-FT < M _{ALL} = K-FT ADEQUATE	
$\Delta_{rL} =$ In. L/ < L/240 Adequate	
(2)1 3/4"x11 1/4" LVL	



PROJECT NAME:

7511 SE 76TH ST

YEN DESIGN

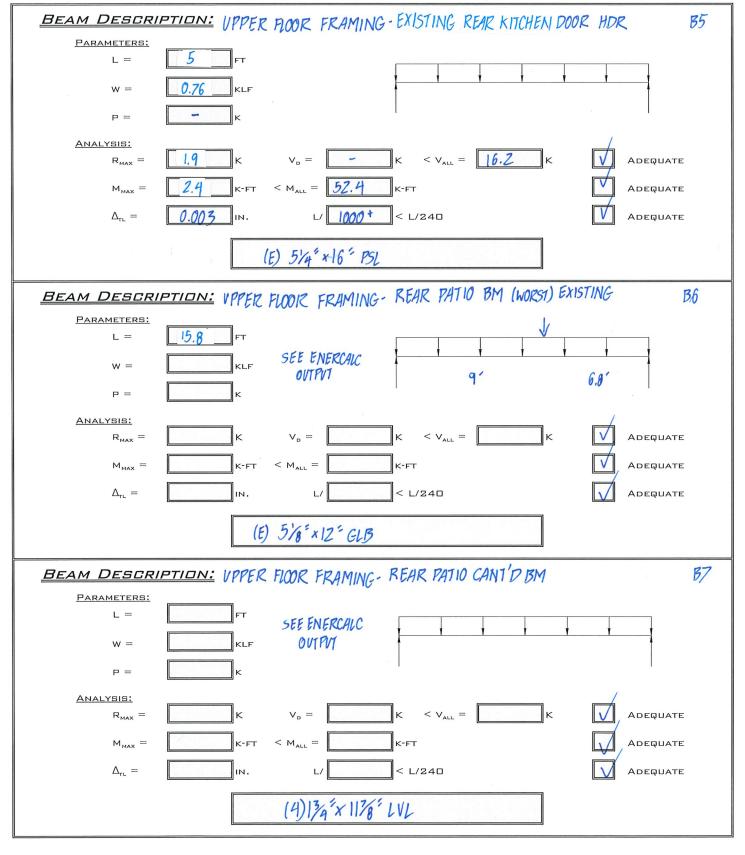
M&K PROJECT #:

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PROJECT NAME:

7511 SE 76TH ST

YEN DESIGN

251-21001

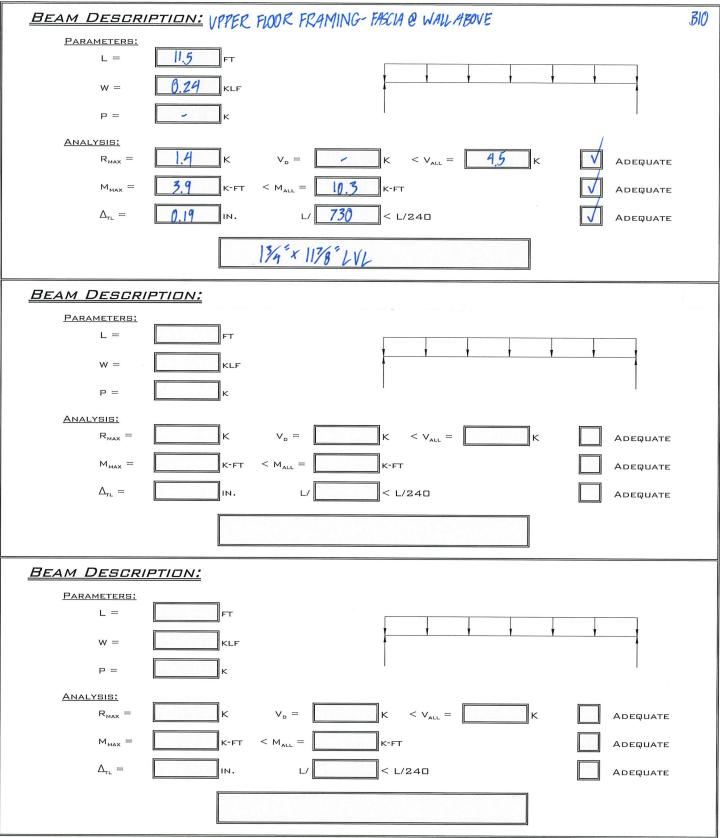
ENGINEER:

DATE:

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RJD

18-JAN-21



YEN DESIGN PROJECT NAME:

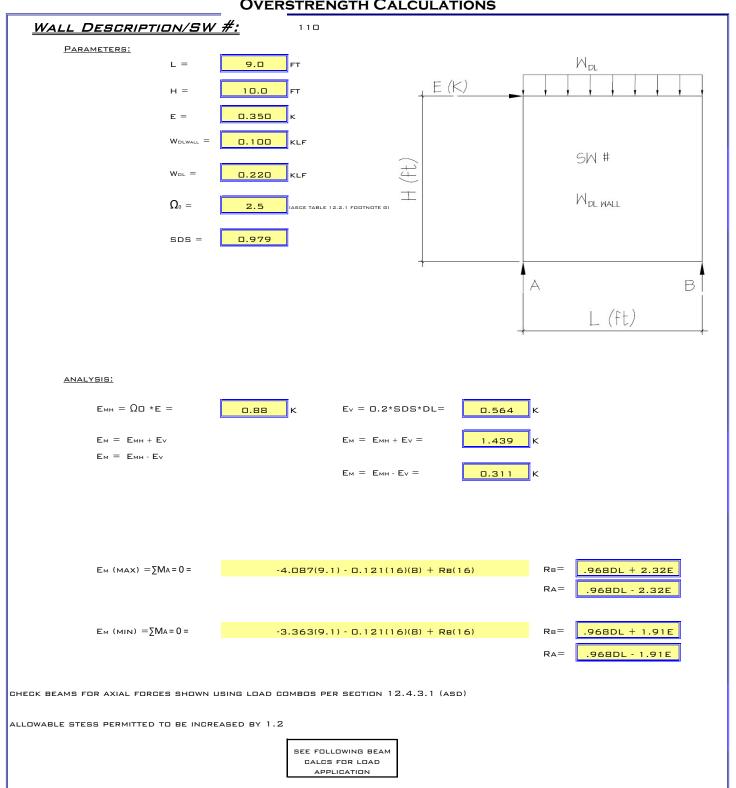
7511 SE 76TH S.

251-21001 M&K PROJECT #:

> RJD ENGINEER: DATE: 19-JAN-21



OVERSTRENGTH CALCULATIONS



PROJECT NAME: Y

YEN DESIGN

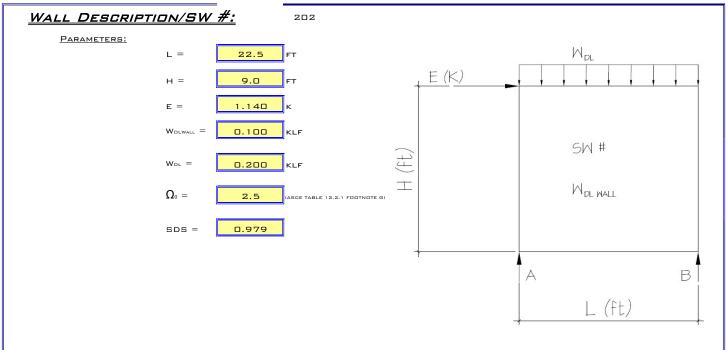
7511 SE 76TH

M&K PROJECT #: 251-21001

ENGINEER: RJD
DATE: 19-JAN-21



OVERSTRENGTH CALCULATIONS



ANALYSIS:

$$E_{MH} = \Omega \square *E =$$

$$2.85 \quad K \quad E_{V} = \square.2*SDS*DL =$$

$$E_{M} = E_{MH} + E_{V}$$

$$E_{M} = E_{MH} + E_{V} =$$

$$E_{M} = E_{MH} + E_{V} =$$

$$E_{M} = E_{MH} \cdot E_{V} =$$

CHECK BEAMS FOR AXIAL FORCES SHOWN USING LOAD COMBOS PER SECTION $1\,2.4.3.1$ (ASD)

ALLOWABLE STESS PERMITTED TO BE INCREASED BY 1.2

SEE FOLLOWING BEAM CALCS FOR LOAD APPLICATION

YEN DESIGN PROJECT NAME:

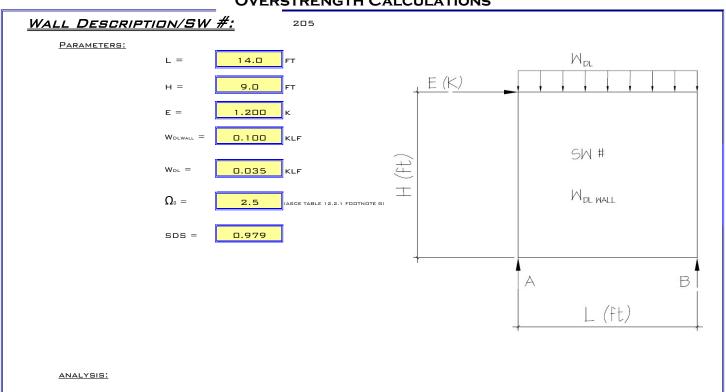
7511 SE 76TH S.

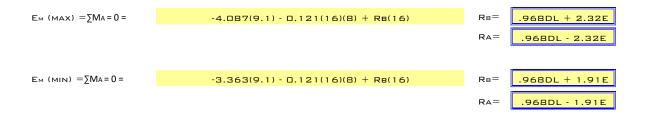
251-21001 M&K PROJECT #:

RJD ENGINEER: DATE: 19-JAN-21



OVERSTRENGTH CALCULATIONS





CHECK BEAMS FOR AXIAL FORCES SHOWN USING LOAD COMBOS PER SECTION $12.4.3.1\,$ (ASD)

ALLOWABLE STESS PERMITTED TO BE INCREASED BY 1.2

SEE FOLLOWING BEAM CALCS FOR LOAD APPLICATION

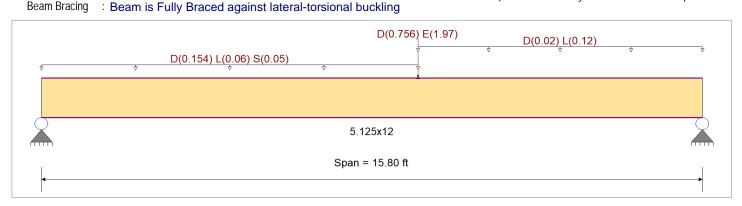
File: beam calcs with overstrength.ec6
Software copyright ENERCALC, INC. 1983-2020, Build:12.20.8.17
MULHERN & KULP STRUCTURAL ENGINEERING INC

Lic. #: KW-06004787

DESCRIPTION: Existing Patio Bm (B6)

Material Properties

Analysis Method : Allowable Stress Design	Fb +	2,400.0 psi	E : Modulus of Elasti	city	
,	Fb -	1,850.0 psi	Ebend- xx	1,800.0ksi	
	Fc - Prll	1,650.0 psi	Eminbend - xx	950.0ksi	
Wood Species : DF/DF	Fc - Perp	650.0 psi	Ebend- yy	1,600.0 ksi	
Wood Grade : 24F-V4	Fv .	265.0 psi	Eminbend - yy	850.0ksi	
11000 0,000	Ft	1,100.0 psi	Density	31.210 pcf	
Poom Procing Decre is Fully Dressed against lateral term	محاليا ويتحال	•	,	•	



Applied Loads

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

Beam self weight calculated and added to loads

Point Load: D = 0.7560, E = 1.970 k @ 9.0 ft, (SW)

Uniform Load: D = 0.1540, L = 0.060, S = 0.050 k/ft, Extent = 0.0 -->> 9.0 ft, Tributary Width = 1.0 ft

 $Uniform\ Load:\ D=0.020,\ L=0.120\ k/ft,\ Extent=9.0 -->> 15.80\ ft,\ Tributary\ Width=1.0\ ft$

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.362 1 Ma 5.125x12	ximum Shear Stress Ratio Section used for this span	=	0.165 : 1 5.125x12
fb: Actual	=	869.50psi	fv: Actual	=	43.66 psi
Fb: Allowable	=	2,400.00psi	Fv: Allowable	=	265.00 psi
Load Combination Location of maximum on span Span # where maximum occurs	= =	+D+L 8.880ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	= =	+D+L 0.000 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection		0.206 in Ratio = 0.000 in Ratio = 0.418 in Ratio = 0.000 in Ratio =	918 >= 360		

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+1.090D+0.750L+0.750S+0.5250E	1	0.4181	8.015		0.0000	0.000
Vertical Reactions			Suppo	rt notation : Far left is #1	Values in KIPS	
Load Combination		Suppor	t 1 Support 2			
Overall MAXimum		2.6	90 2.412			
Overall MINimum		0.0	48 1.122			
D Only		1.4	51 1.037			
+D+L		2.0	13 1.832			
+D+Lr		1.4	51 1.037			
+D+S		1.7	73 1.166			
+D+0.750Lr+0.750L		1.8	73 1.633			
+D+0.750L+0.750S		2.1	14 1.729			

7511 SE 76th St Yen Design 251-21001 RJD 01-18-21

Wood Beam File: beam calcs with overstrength.ec6 Software copyright ENERCALC, INC. 1983-2020, Build:12.20.8.17 Lic. #: KW-06004787 MULHERN & KULP STRUCTURAL ENGINEERING INC

DESCRIPTION: Existing Patio Bm (B6)

Vertical Reactions		Sup	port notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2			
+D+0.60W	1.451	1.037			
+1.126D+0.70E	2.228	1.954			
+D+0.750Lr+0.750L+0.450W	1.873	1.633			
+D+0.750L+0.750S+0.450W	2.114	1.729			
+1.090D+0.750L+0.750S+0.5250E	2.690	2.412			
+0.60D+0.60W	0.871	0.622			
+0.470D+0.70E	1.276	1.273			
D Only	1.451	1.037			
L Only	0.562	0.794			
S Only	0.322	0.128			
E Only	0.848	1.122			
H Only					

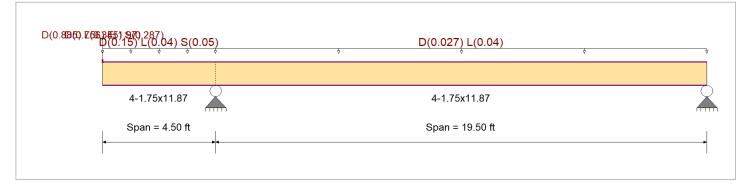
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Software copyright ENERCALC, INC. 1983-2020, Build:12.20.8.17
MULHERN & KULP STRUCTURAL ENGINEERING INC

Lic. # : KW-06004787

DESCRIPTION: New Cant'd Beam (B7)

Material Properties

Fb+	2600 psi	E : Modulus of Elas	ticity	
Fb -	2600 psi	Ebend- xx	2000ksi	
Fc - Prll	2510 psi	Eminbend - xx	1016.535 ksi	
Fc - Perp	750 psi			
Fv	285 psi			
Ft	1555 psi	Density	42.01 pcf	
ckling	·	,	•	
•	Fb - Fc - Prll Fc - Perp	Fb - 2600 psi Fc - Prll 2510 psi Fc - Perp 750 psi Fv 285 psi Ft 1555 psi	Fb - 2600 psi Ebend- xx Fc - Prll 2510 psi Eminbend - xx Fc - Perp 750 psi Fv 285 psi Ft 1555 psi Density	Fb - 2600 psi Ebend- xx 2000 ksi Fc - Prll 2510 psi Eminbend - xx 1016.535 ksi Fc - Perp 750 psi Fv 285 psi Ft 1555 psi Density 42.01 pcf



Applied Loads

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

Beam self weight calculated and added to loads

Load for Span Number 1

Uniform Load : D = 0.150, L = 0.040, S = 0.050, Tributary Width = 1.0 ft

Point Load: D = 0.7560, E = 1.970 k @ 0.0 ft, (From SW)

Point Load: D = 0.8850, L = 0.3450, S = 0.2870 k @ 0.0 ft, (From Bm)

Load for Span Number 2

Uniform Load : D = 0.0270, L = 0.040 , Tributary Width = 1.0 ft

				Design OK
=	0.312 1	Maximum Shear Stress Ratio	=	0.173 : 1
	4-1.75x11.87	Section used for this span		4-1.75x11.87
=	810.10psi	fv: Actual	=	49.44 psi
=	2,600.00psi	Fv: Allowable	=	285.00 psi
+D+L, L	L Comb Run (LL)	Load Combination	+D+l	L, LL Comb Run (L*)
=	4.500ft	Location of maximum on span	=	3.520 ft
=	Span # 1	Span # where maximum occurs	=	Span # 1
	0.062 in Ratio	o = 1748 >= 360		
	-0.049 in Ratio	o = 2194 >= 360		
	0.315 in Ratio	0 = 342 >= 300		
	-0.179 in Ratio	o = 1303 >=300		
	= = +D+L, L =	4-1.75x11.87 = 810.10psi = 2,600.00psi +D+L, LL Comb Run (LL) = 4.500ft = Span # 1 0.062 in Ratio -0.049 in Ratio 0.315 in Ratio	4-1.75x11.87 Section used for this span = 810.10psi fv: Actual = 2,600.00psi Fv: Allowable +D+L, LL Comb Run (LL) Load Combination = 4.500ft Location of maximum on span Span # 1 Span # where maximum occurs 0.062 in Ratio = 1748 >= 360 -0.049 in Ratio = 2194 >= 360 0.315 in Ratio = 342 >= 300	4-1.75x11.87 Section used for this span = 810.10psi fv: Actual = = 2,600.00psi Fv: Allowable = +D+L, LL Comb Run (LL) Load Combination +D+l = 4.500ft Location of maximum on span = Span # 1 Span # where maximum occurs = 0.062 in Ratio = 1748 >= 360 -0.049 in Ratio = 2194 >= 360 0.315 in Ratio = 342 >= 300

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S+0.450W, LL Comb	1	0.3146	0.000		0.0000	0.000
	2	0.0000	0.000	+D+0.750L+0.750S+0.450W, LL Comb	-0.1795	7.517
Vertical Reactions			Support	notation : Far left is #1	Values in KIPS	

Load Combination	Support 1	Support 2	Support 3
Overall MAXimum		6.187	-0.455
Overall MINimum		2.425	-0.092
D Only		3.394	0.031
+D+L, LL Comb Run (*L)		3.784	0.421

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MULHERN & KULP STRUCTURAL ENGINEERING INC

Lic. # : KW-06004787

DESCRIPTION: New Cant'd Beam (B7)

Vertical Reactions Support notation: Far left is #1 Values in KIPS

D-L, LL Comb Run (L')	Vertical Reactions		Suj	oport notation : Far left is # I	Values in KIPS
D+L, LL Comb Run (LL)	Load Combination	Support 1	Support 2	Support 3	
### ### ##############################	+D+L, LL Comb Run (L*)		4.019	-0.070	
### ### ##############################	+D+L, LL Comb Run (LL)		4.409	0.320	
## ## ## ## ## ## ## ## ## ## ## ## ##	+D+Lr, LL Comb Run (*L)		3.394	0.031	
3.998 -0.062 -0-0-750Lr+0.750Lr+0.750L, LL Comb Run ('L') 3.686 0.323 -0-0-750Lr+0.750L, LL Comb Run (L') 4.156 0.248 -0-0-750Lr+0.750L, LL Comb Run ('L') 4.156 0.248 -0-0-750Lr+0.750L, LL Comb Run ('L') 4.140 0.254 -0-0-750Lr+0.750L, LL Comb Run (L') 4.160 0.114 -0-0-750Lr+0.750L, LL Comb Run (LL) 4.609 0.179 -0-0-60W 3.394 0.031 -1.1260+0.750Lr+0.750L+0.450W, LL Comb R 3.863 0.045 -0-0-750Lr+0.750L+0.450W, LL Comb R 3.863 0.045 -0-0-750Lr+0.750L+0.450W, LL Comb R 3.863 0.045 -0-0-750Lr+0.750L+0.450W, LL Comb R 4.156 0.248 -0-0-750Lr+0.750L+0.450W, LL Comb R 4.156 0.248 -0-0-750Lr+0.750S+0.450W, LL Comb R 4.140 0.254 -0-0-750Lr+0.750S+0.450W, LL Comb R 4.140 0.254 -0-0-750Lr+0.750S+0.450W, LL Comb R 4.160 0.179 -1.09000+0.750L+0.750S+0.5250E, LL C 5.718 0.018 -1.0900D+0.750L+0.750S+0.5250E, LL C 5.718 0.018 -1.0900D+0.750L+0.750S+0.5250E, LL C 5.895 0.350 -1.0900D+0.750L+0.750S+0.5250E, LL C 5.895 0.350 -1.0900D+0.750L+0.750S+0.5250E, LL C 5.895 0.350 -0.010V 0.01V 0.3390 0.390 -0.01V, LL Comb Run ('L') 0.390 0.390 -0.01V, LL Comb Run ('L') 0.625 0.0100 -0.01V, LL Comb Run ('L') 0.625 0.0100 -0.01V, LL Comb Run ('L') 0.092 -0.01V, LL Comb Run (LL) 0.092	+D+Lr, LL Comb Run (L*)		3.394	0.031	
### Ph-0.750Lr+0.750L, LL Comb Run ("L) ### Ch-0.750Lr+0.750L, LL Comb Run (LT) ### Ch-0.750Lr+0.750L, LL Comb Run (LT) ### Ch-0.750Lr+0.750S, LL Comb Run (LT) ### Ch-0.750Lr+0.750Lr+0.750S, LL Comb Run (LT) ### Ch-0.750Lr+0.750Sr+0.5250E, LL C ### Ch-0.750Lr+0.750Sr+0.5250E, LL C ### Ch-0.750Lr+0.75	+D+Lr, LL Comb Run (LL)		3.394	0.031	
### P-0.750Lr+0.750L, LL Comb Run (L') ### C-0.750Lr+0.750L, LL Comb Run (LL) ### C-0.750Lr+0.750S, LL Comb Run (LL) ### C-0.750S, LL Comb Run (LL) ### C-0.750Lr+0.750S, LL Comb Run (LL) ### C-0.750Lr+0.750Lr+0.750Lr+0.750Lr+0.450W, LL Comb Run ### C-0.750Lr+0.750Lr+0.450W, LL Comb Run ### C-0.750Lr+0.750Sr+0.450W, LL Comb Run ### C-0.750Lr+0.750Sr+0.5250E, LL Cun ### C-0.750Lr+0.750S	+D+S		3.998	-0.062	
### P-0.750L+0.750L, LL Comb Run (LL) ### C-0.750L+0.750S, LL Comb Run (*1) ### C-0.750S, LL Comb Run (*1) ### C-0.750S, LL Comb Run (L) ### C-0.750S, LL Comb Run (L) ### C-0.750S, LL Comb Run (LL) ### C-0.750S, L.0.450W, LL Comb R ### C-0.750L+0.750L+0.450W, LL Comb R ### C-0.750L+0.750L+0.450W, LL Comb R ### C-0.750L+0.750L+0.450W, LL Comb Ru ### C-0.750L+0.750S+0.450W, LL Comb Ru ### C-0.750L+0.750S+0.5250E, LL C ### C-0.750S+0.5250E, LL C ### C-0.750S+0.5250E, LL C ### C-0.750S+0.5250E, LL C ### C-0.750S+0.5250E, LL C ### C-0.750S+0.750S+0.5250E, LL C ### C-0.750S+0.750S+0.750S+0.5250E, LL C ### C-0.750S+0.750S+0.750S+0.5250E, LL C ### C-0.750S+	+D+0.750Lr+0.750L, LL Comb Run (*L)		3.686	0.323	
### Ph-0.750L+0.750S, LL Comb Run (*L) ### Comb Run (L) ### Comb Run (LL) ### Comb Run (+D+0.750Lr+0.750L, LL Comb Run (L*)		3.863	-0.045	
### Ph-0.750L+0.750S, LL Comb Run (L') ### Ch-0.750L+0.750S, LL Comb Run (LL) #### Ch-0.750L+0.750L+0.450W, LL Comb Run (LC) #### Ch-0.750L+0.750S+0.450W, LL Comb Run (LC) #### Ch-0.750L+0.750S+0.5250E, LL Cn (LC) #### Ch-0.750L+0.750S+0.5250E, LL C	+D+0.750Lr+0.750L, LL Comb Run (LL)		4.156	0.248	
### Ph-0.750L+0.750S, LL Comb Run (LL) ### Ph-0.60W ### 3.394 ### 0.031 ### 1.126D+0.70E ### 0.284 ### 1.090L+0.450W, LL Comb R ### 1.090L+0.750L+0.450W, LL Comb Ru ### 1.090L+0.750L+0.750S+0.450W, LL Comb Ru ### 1.090L+0.750L+0.750S+0.450W, LL Comb Ru ### 1.090L+0.750L+0.750S+0.5250E, LL C ### 1.090L+0.750L+0.750S+0.5250E	+D+0.750L+0.750S, LL Comb Run (*L)		4.140	0.254	
#D+0.60W	+D+0.750L+0.750S, LL Comb Run (L*)		4.316	-0.114	
#1.126D+0.70E	+D+0.750L+0.750S, LL Comb Run (LL)		4.609	0.179	
#D+0.750Lr+0.750Lr+0.450W, LL Comb R	+D+0.60W		3.394	0.031	
#D+0.750L+0.450W, LL Comb R #D+0.750L+0.750L+0.450W, LL Comb R #D+0.750L+0.750L+0.450W, LL Comb R #D+0.750L+0.750S+0.450W, LL Comb Ru #D+0.750L+0.750S+0.5250E, LL C #D+0.750L+0.750S+0.	+1.126D+0.70E		5.519	-0.284	
#D+0.750L+0.750L+0.450W, LL Comb R	+D+0.750Lr+0.750L+0.450W, LL Comb R		3.686	0.323	
#D+0.750L+0.750S+0.450W, LL Comb Ru	+D+0.750Lr+0.750L+0.450W, LL Comb R		3.863	-0.045	
#B-D-0.750L+0.750S+0.450W, LL Comb Ru	+D+0.750Lr+0.750L+0.450W, LL Comb R		4.156	0.248	
#B-D-0.750L+0.750S+0.450W, LL Comb Ru	+D+0.750L+0.750S+0.450W, LL Comb Ru		4.140	0.254	
#1.090D+0.750L+0.750S+0.5250E, LL C	+D+0.750L+0.750S+0.450W, LL Comb Ru		4.316	-0.114	
F1.090D+0.750L+0.750S+0.5250E, LL C F1.090D+0.750S+0.5250E, LL C F1.090D+0.750	+D+0.750L+0.750S+0.450W, LL Comb Ru		4.609	0.179	
#1.090D+0.750L+0.750S+0.5250E, LL C 6.187 -0.057 #0.60D+0.60W 2.036 0.018 #0.470D+0.70E 3.292 -0.304 #0.0nly 3.394 0.031 #0.0nly, LL Comb Run (*L) 0.390 0.390 #0.0nly, LL Comb Run (L*) 0.625 -0.100 #0.0nly, LL Comb Run (LL) 1.015 0.290 #0.0nly Conly Co	+1.090D+0.750L+0.750S+0.5250E, LL C		5.718	0.018	
#0.60D+0.60W 2.036 0.018 #0.470D+0.70E 3.292 -0.304 #0.00lly 3.394 0.031 #0.00lly, LL Comb Run (*L) 0.390 0.390 #0.00lly, LL Comb Run (L*) 0.625 -0.100 #0.0lly, LL Comb Run (LL) 1.015 0.290 #0.0lly LL Comb Run (LL) 0.604 -0.092 #0.0lly Conly 0.455 #0.455	+1.090D+0.750L+0.750S+0.5250E, LL C		5.895	-0.350	
#0.470D+0.70E 3.292 -0.304 0.031 0.031 0.390 0.390 0.390 0.390 0.40b, LL Comb Run (L*) 0.625 -0.100 0.40b, LL Comb Run (LL) 1.015 0.290 0.50 0.90 0.50 0.90 0.50 0.50 0.50 0.	+1.090D+0.750L+0.750S+0.5250E, LL C		6.187	-0.057	
O Only 3.394 0.031 L Only, LL Comb Run (*L) 0.390 0.390 L Only, LL Comb Run (L*) 0.625 -0.100 L Only, LL Comb Run (LL) 1.015 0.290 G Only 0.604 -0.092 E Only 2.425 -0.455	+0.60D+0.60W		2.036	0.018	
L Only, LL Comb Run (*L) 0.390 0.390 L Only, LL Comb Run (L*) 0.625 -0.100 L Only, LL Comb Run (LL) 1.015 0.290 G Only 0.604 -0.092 E Only 2.425 -0.455	+0.470D+0.70E		3.292	-0.304	
L Only, LL Comb Run (L*) L Only, LL Comb Run (LL) S Only Only Only Only Only Only Only Only	D Only		3.394	0.031	
. Onlý, LL Comb Run (LL) 1.015 0.290 S Only 0.604 -0.092 E Only 2.425 -0.455	L Only, LL Comb Run (*L)		0.390	0.390	
S Only 0.604 -0.092 E Only 2.425 -0.455	L Only, LL Comb Run (L*)		0.625	-0.100	
E Only 2.425 -0.455	L Only, LL Comb Run (LL)		1.015	0.290	
,	S Only		0.604	-0.092	
d Only	E Only		2.425	-0.455	
	H Only				

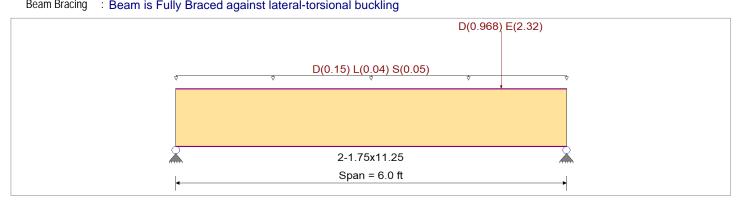
File: beam calcs with overstrength.ec6
Software copyright ENERCALC, INC. 1983-2020, Build:12.20.8.17
MULHERN & KULP STRUCTURAL ENGINEERING INC

Lic. # : KW-06004787

DESCRIPTION: Beam @ SW Above (B9)

Material Properties

Analysis Method: Allowable Stress Design	Fb+	2,600.0 psi	E : Modulus of Elas	ticity	
	Fb -	2,600.0 psi	Ebend- xx	2,000.0ksi	
	Fc - Prll	2,510.0 psi	Eminbend - xx	1,016.54ksi	
Wood Species : iLevel Truss Joist	Fc - Perp	750.0 psi			
Wood Grade : MicroLam LVL 2.0 E	Fv .	285.0 psi			
11000 01000 111101010101111111111111111	Ft	1,555.0 psi	Density	42.010 pcf	
Roam Bracing : Doom is Fully Proped against lateral tors	ional buokling	•	,	•	



Applied Loads

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

Beam self weight calculated and added to loads

Uniform Load : D = 0.150, L = 0.040, S = 0.050 , Tributary Width = 1.0 ft

Point Load: D = 0.9680, E = 2.320 k @ 5.0 ft, (From SW)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span fb: Actual	=	2-1.75x11.25 441.39psi	Maximum Shear Stress Ratio Section used for this span fv: Actual	=	0.221 : 1 2-1.75x11.25 100.57 psi
Fb: Allowable	=	4,160.00psi	Fv: Allowable	=	456.00 psi
Load Combination Location of maximum on span Span # where maximum occurs	= =	+1.126D+0.70E 4.993ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	= =	+1.126D+0.70E 5.080 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection	n	0.011 in Ratio 0.000 in Ratio 0.019 in Ratio 0.000 in Ratio	= 0<360 = 3786>=300		

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+1.090D+0.750L+0.750S+0.5250E	1	0.0190	3.241		0.0000	0.000
Vertical Reactions			Suppo	ort notation : Far left is #1	Values in KIPS	
Load Combination		Support	1 Support 2			
Overall MAXimum		1.10	9 2.807			
Overall MINimum		0.38	1.933			
D Only		0.64	1.291			
+D+L		0.76	66 1.411			
+D+Lr		0.64	1.291			
+D+S		0.79	96 1.441			
+D+0.750Lr+0.750L		0.73	36 1.381			
+D+0.750L+0.750S		0.84	1.494			
+D+0.60W		0.64	1.291			

7511 SE 76th St Yen Design 251-21001 RJD 01-18-21

Wood Beam File: beam calcs with overstrength.ec6 Software copyright ENERCALC, INC. 1983-2020, Build: 12.20.8.17 Lic. #: KW-06004787 MULHERN & KULP STRUCTURAL ENGINEERING INC

DESCRIPTION: Beam @ SW Above (B9)

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
+1.126D+0.70E	0.998	2.807	
+D+0.750Lr+0.750L+0.450W	0.736	1.381	
+D+0.750L+0.750S+0.450W	0.848	1.494	
+1.090D+0.750L+0.750S+0.5250E	1.109	2.625	
+0.60D+0.60W	0.387	0.775	
+0.470D+0.70E	0.574	1.960	
D Only	0.646	1.291	
L Only	0.120	0.120	
S Only	0.150	0.150	
E Only	0.387	1.933	
H Only			

YEN DESIGN 7511 SE 76TH ST

MERCER ISLAND, WA

SHEAR WALL CALCULATIONS - WIND

REVIEWED BY: NJM

JANUARY 19, 2021

PARAMETERS:

SINGLE FAMILY HOME

DESIGN WIND SPEED: 100 MPH

WIND EXPOSURE CATEGORY: B/C

SEISMIC DESIGN CATEGORY: D

CODE & DESIGN STANDARD: 2018 IBC CH. 1609, ASCE 7-16 CH. 26-30





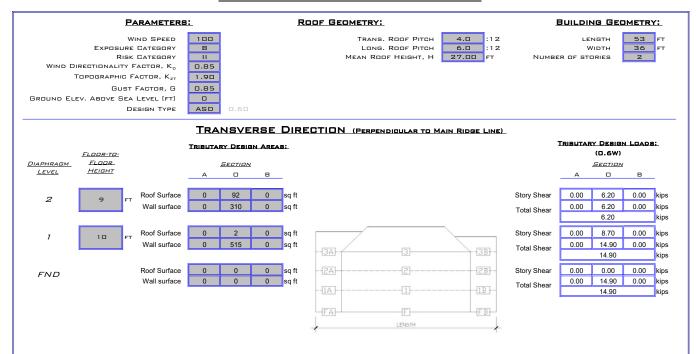
PROJECT NAME: 7511 SE 76TH ST

M&K PROJECT #: 251-2101

ENGINEER: RJD

DATE: 08-JUN-21

WIND DESIGN SUMMARY PER ASCE 7-16



LONGITUDINAL DIRECTION (PARALLEL TO MAIN RIDGE LINE) TRIBUTARY DESIGN LOADS: TRIBUTARY DESIGN AREAS: (D.6W) FLOOR-TO-DIAPHRAGM SECTION SECTION <u>FLOOR</u> HEIGHT LEVEL В В Roof Surface 0 0 0 sq ft Story Shear 0.00 0.00 0.00 kips 2 9 Wall surface 0 0 0 sq ft 0.00 0.00 0.00 kips Total Shear 0.00 kips 0.00 0.00 Roof Surface 0 0 0 saft Story Shear 0.00 kips -[3]-10 Wall surface 0 0 saft 0.00 0.00 0.00 kips 0 Total Shear 0.00 kips -[2] -[2B]--[2A] 0.00 0.00 kips Roof Surface 0 0 0 Story Shear 0.00 FND Wall surface 0 0 0 sq ft 0.00 0.00 0.00 kips -[1]--1A Total Shear 0.00 kips F FB-WIDTH



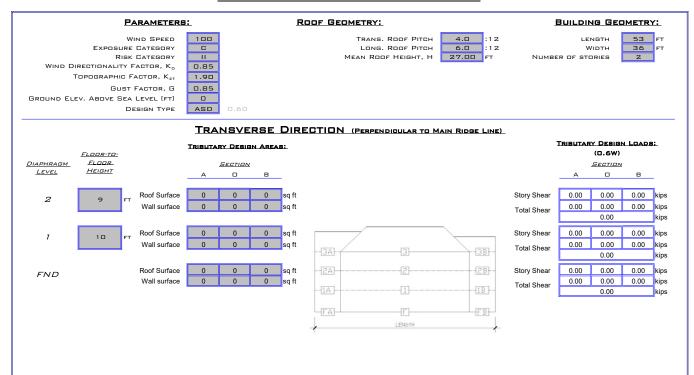
PROJECT NAME: 7511 SE 76TH ST

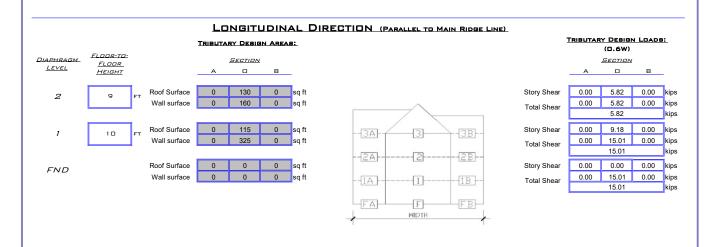
M&K PROJECT #: 251-21001

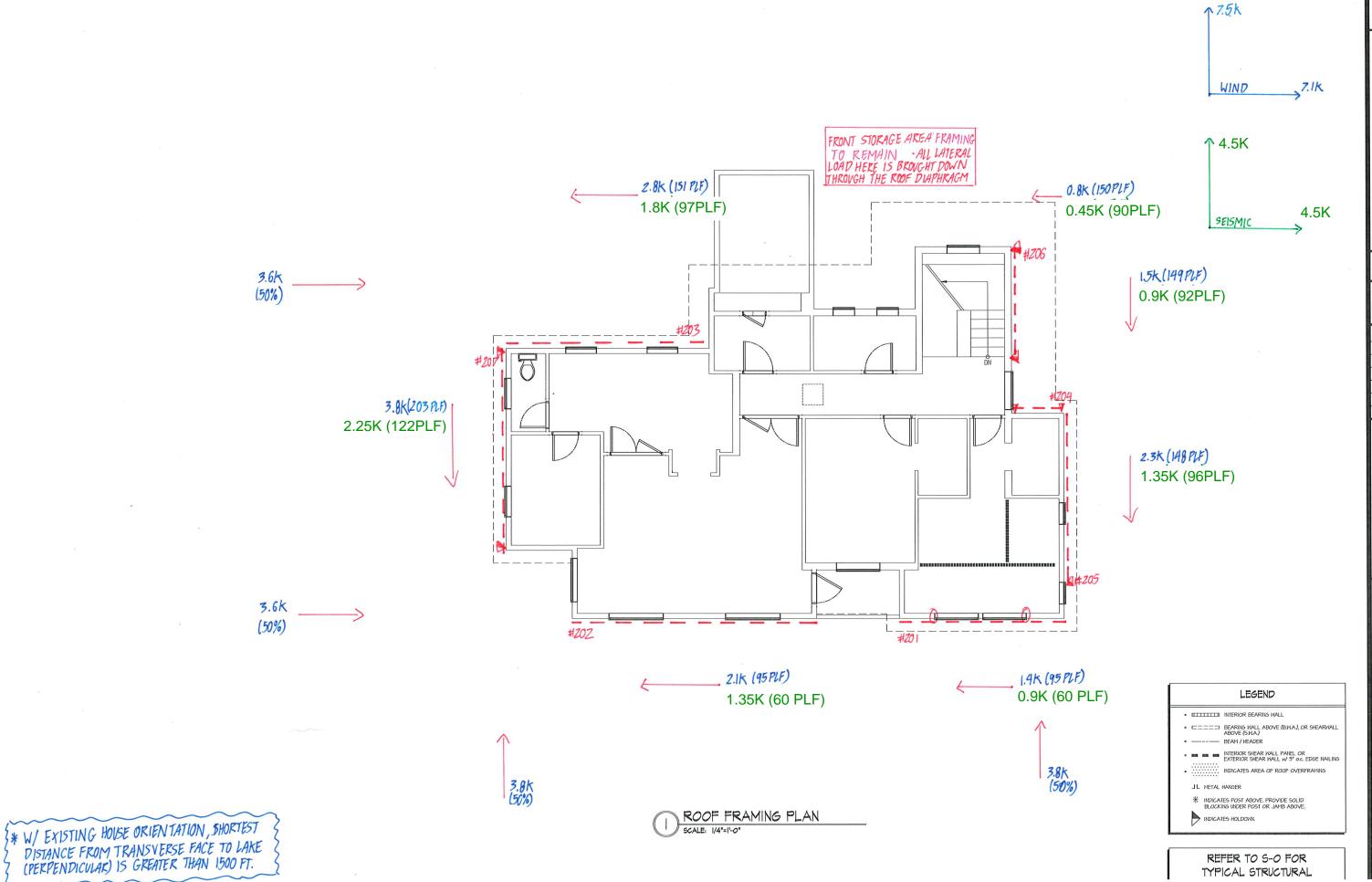
ENGINEER: RJD

DATE: 08-JUN-21

WIND DESIGN SUMMARY PER ASCE 7-16







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MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING

M&K project number: 251-2

project mgr: drawn by:

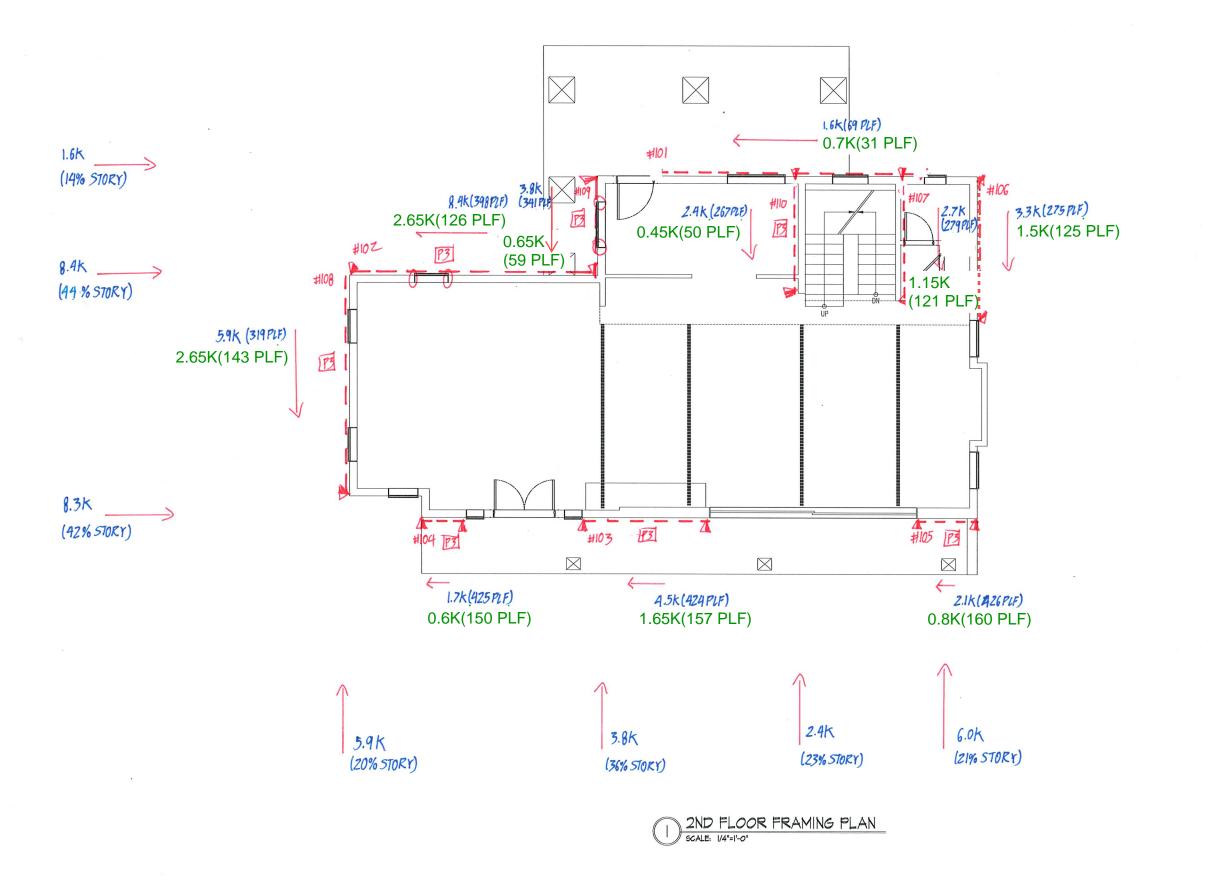
01. issue date:

REVISIONS:

YEN DESIGN

ROOF FRAMING PLAN

7511 SE 76TH Mercer Island. Washington



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TYPOTTERS CHIEF CHIEF CON PRISON CA DISTRICT
TYPOTTERS CHIEF → 18.2K (II.1K STORY) 6.4K (1.9K STORY) 6.4K → (1.9K STORY) - 251-2 YEN DESIGN 2ND FLOOR FRAMING PLAN 7511 SE 76TH Mercer Island. Washington LEGEND BEAM / HEADER INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL W/ 3° O.C. EDGE NAILIN INDICATES AREA OF ROOF OVERFRAMING * INDICATES POST ABOVE. PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE. INDICATES HOLDOWN.

REFER TO S-O FOR TYPICAL STRUCTURAL



7511 SE 76TH ST

M&K PROJECT #: 251-21001

ENGINEER: RJD Date: 19-Jan-21

SHEARWALL	201: 2ND - REAR EXTERIOR BED 3
SHEARWALL PROPERT	IES:
WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, H _c 6.0 FT. 15.0 FT. QUALIFYING WALL LENGTH, L 6.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION	<u>v:</u>
	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1420 LBS < 2268 LBS
	SHEARWALL ASSEMBLY SPECIFICATION
	P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overeuphine Evalua	
RESISTIVE DL DL AT ENDS OF WALL	150 PLF OVERTURNING MOMENT 12.8 K-FT HOLD DOWN DESIGN LOAD 0 LBS 300 LBS RESISTIVE MOMENT 12.8 K-FT HOLDOWN CAPACITY 0 LBS
	HOLD-DOWN SPECIFICATION
	No Holdown Required
SHEARWALL	202: 2ND - REAR EXTERIOR MASTER SUITE
SHEARWALL SHEARWALL PROPERT	
SHEARWALL PROPERT	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1 N: Total Shear Load on Wall Allowable Shearwall Capacity
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1 N: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2130 LBS 4200 LBS
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1 N: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2130 LBS < 4200 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1 N: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2130 LBS < 4200 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1 NI: TOTAL SHEAR LOAD ON WALL 21:30 LBS < 42:00 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE ATION: 305 PLF OVERTURNING MOMENT 19.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS
SHEARWALL PROPERT WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	P1 - 1-SIDE 7/16 OSB FASTENED W/ BD NAILS AT 6 O.C. PANEL EDGES & 12 O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE ALLOWABLE SHEARWALL CAPACITY 2130 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 OSB FASTENED W/ BD NAILS AT 6 O.C. PANEL EDGES & 12 O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE ATION: 305 PLF OVERTURNING MOMENT 19.2 K-FT HOLD DOWN DESIGN LOAD OLBS RESISTIVE MOMENT 51.0 K-FT HOLD DOWN CAPACITY OLBS



7511 SE 76TH ST

M&K PROJECT #: 251-21001

ENGINEER: RJD Date: 19-Jan-21

SHEARWALL	203: 2ND - FRONT EXTERIOR MASTER BATH
SHEARWALL PROPER	TIES:
WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, H _c 3.0 FT. 18.5 FT. QUALIFYING WALL LENGTH, L 13.0 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION	NI:
	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2800 LBS 4368 LBS
	SHEARWALL ASSEMBLY SPECIFICATION
	P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVAL	
RESISTIVE DL DL AT ENDS OF WALL	305 PLF OVERTURNING MOMENT 25.2 K-FT UPLIFT CONNECTOR DESIGN LOAD OLBS 400 LBS RESISTIVE MOMENT 35.8 K-FT HOLDOWN CAPACITY DESIGN LOAD LBS
	Hold-down Specification
	No Holdown Required
l	
SHEARWALL	204: 2ND - FRONT EXTERIOR W.I.C.
SHEARWALL	
SHEARWALL PROPER	TIES: 9.0 FT. MAX WALL OPENING HT, HC 0.0 FT. 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	TIES: 9.0 FT. MAX WALL OPENING HT, HC 0.0 FT. 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	9.0 FT. MAX WALL OPENING HT, HC 0.0 FT. 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	TIES: 9.0 FT. MAX WALL OPENING HT, HC 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 750 LBS 1680 LBS
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	TIES: 9.0 FT. MAX WALL OPENING HT, HC 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL 750 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATE OVERTURNING EVAL	TIES: 9.0 FT. MAX WALL OPENING HT, HC 0.0 FT. 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 750 LBS < 1680 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	TIES: 9.0 FT. MAX WALL OPENING HT, HC 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL 750 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	TIES: 9.0 FT. MAX WALL OPENING HT, HC 0.0 FT. 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 750 LBS < 1680 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 0SB FASTENED W/ 8D NAILS AT 6 0.0. PANEL EDGES & 12 0.0. PANEL FIELD - EDGES BLOCKED ADEQUATE ADEQUATE ATION: 135 PLF OVERTURNING MOMENT 6.8 K-FT HOLD DOWN DESIGN LOAD 908 LBS
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	TIES: 9.0 FT. MAX WALL DPENING HT, HC 0.0 FT. 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1 IN: TOTAL SHEAR LOAD ON WALL 750 LBS



7511 SE 76TH ST

M&K PROJECT #: 251-21001

ENGINEER: RJD

DATE: 19-JAN-21

SHEARWALL XXX: - NOT USED
SHEARWALL PROPERTIES:
WALL HEIGHT, H \bigcirc FT. MAX WALL OPENING HT, H $_{\rm c}$ \bigcirc FT. SHEARWALL ASSEMBLY PO
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY ULBS #### #DIV/U! LBS
SHEARWALL ASSEMBLY SPECIFICATION
PO - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - UNBLOCKED #DIV/O!
Overturning Evaluation:
RESISTIVE DL D PLF OVERTURNING MOMENT #DIV/O! K-FT UPLIFT CONNECTOR DESIGN LOAD D LBS DL AT ENDS OF WALL D LBS RESISTIVE MOMENT D.O K-FT HOLDOWN CAPACITY D LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 205: 2ND - SIDE EXTERIOR BED 3
SHEARWALL PROPERTIES: WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 14.0 FT. QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2300 LBS 4032 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" DSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 135 PLF OVERTURNING MOMENT 20.7 K-FT HOLD DOWN DESIGN LOAD 831 LBS DL AT ENDS OF WALL 135 LBS RESISTIVE MOMENT 9.1 K-FT HOLDOWN CAPACITY 1705 LBS
HOLD-DOWN SPECIFICATION
SIMPSON CS16 STRAP TIE (14" END LENGTH)



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M&K PROJECT #: 251-21001

ENGINEER: RJD
DATE: 19-JAN-21

SHEARWALL 206: 2ND - SIDE EXTERIOR STAIRS
SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, H $_{0}$ 0.0 FT. WALL LENGTH, L 9.8 FT. QUALIFYING WALL LENGTH, L 9.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1450 LBS 3276 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overturning Evaluation:
RESISTIVE DL 170 PLF OVERTURNING MOMENT 13.1 K-FT UPLIFT CONNECTOR DESIGN LOAD 781 LBS DL AT ENDS OF WALL 100 LBS RESISTIVE MOMENT 5.4 K-FT HOLDOWN CAPACITY 3985 LBS
HOLD-DOWN SPECIFICATION
SIMPSON MSTC52 STRAP TIE
SHEARWALL 207: 2ND - SIDE EXTERIOR W.I.C. & MASTER BATH SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC 3.0 FT. WALL LENGTH, L 18.5 FT. QUALIFYING WALL LENGTH, L 12.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 3750 LBS 4284 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 135 PLF OVERTURNING MOMENT 33.8 K-FT HOLD DOWN DESIGN LOAD 835 LBS DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 18.3 K-FT HOLDOWN CAPACITY 1705 LBS
HOLD-DOWN SPECIFICATION
SIMPSON CS16 STRAP TIE (14" END LENGTH)



7511 SE 76TH ST

M&K PROJECT #: 251-21001

ENGINEER: RJD
DATE: 19-JAN-21

SHEARWALL XXX: - NOT USED
SHEARWALL PROPERTIES:
WALL HEIGHT, H O.O FT. MAX WALL OPENING HT, H_c O.O FT. WALL LENGTH, L O.O FT. QUALIFYING WALL LENGTH, L O.O FT. SHEARWALL ASSEMBLY PO
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY D LBS #### #DIV/O! LBS
SHEARWALL ASSEMBLY SPECIFICATION
PO - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - UNBLOCKED #DIV/O!
OVERTURNING EVALUATION: RESISTIVE DL
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 101: 1ST - FRONT EXTERIOR FOYER
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 3.5 FT. WALL LENGTH, L 22.5 FT. QUALIFYING WALL LENGTH, L 14.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1550 LBS 4956 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 200 PLF OVERTURNING MOMENT 15.5 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 300 LBS RESISTIVE MOMENT 34.4 K-FT HOLDOWN CAPACITY 2590 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required



7511 SE 76TH ST

M&K PROJECT #: 251-21001

ENGINEER: RJD
DATE: 19-JAN-21

SHEARWALL 102: 1ST - FRONT EXTERIOR KITCHEN
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H _c 5.0 FT. WALL LENGTH, L 21.0 FT. QUALIFYING WALL LENGTH, L 18.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 8350 LBS 11340 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-side 7/16" OSB
FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overturning Evaluation:
RESISTIVE DL 500 PLF OVERTURNING MOMENT 112.1 K-FT UPLIFT CONNECTOR DESIGN LOAD 1708 LBS DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 76.2 K-FT HOLDOWN CAPACITY 2590 LBS
HOLD-DOWN SPECIFICATION
SIMPSON STHOB HOLDOWN
SHEARWALL 103: 1st - Rear Exterior Dining
SHEARWALL PROPERTIES: WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 10.5 FT. QUALIFYING WALL LENGTH, L 10.5 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 4450 LBS 6615 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-side 7/16" OSB
FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
ADEQUATE.
ADEQUATE OVERTURNING EVALUATION:
ADEQUATE.
ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 44.5 K-FT HOLD DOWN DESIGN LOAD 3195 LBS
ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 44.5 K-FT HOLD DOWN DESIGN LOAD 3195 LBS DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 11.0 K-FT HOLDOWN CAPACITY 5850 LBS



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ENGINEER: RJD
DATE: 19-JAN-21

SHEARWALL PROPERTIES:
SHEARWALL PROPERTIES.
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H _C 0.0 FT.
WALL LENGTH, L 4.0 FT. QUALIFYING WALL LENGTH, L 4.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
1700 LBS < 2363 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-side 7/16" OSB
fastened w/ 8d nails at 3° d.c. panel edges $\&~1~2^{\circ}$ d.c. panel field - edges blocked
<u>ADEQUATE</u>
OVERTURNING EVALUATION:
RESISTIVE DL 500 PLF OVERTURNING MOMENT 17.0 K-FT UPLIFT CONNECTOR DESIGN LOAD 3410 DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 3.4 K-FT HOLDOWN CAPACITY 4935
HOLD-DOWN SPECIFICATION
SIMPSON STHD14RJ HOLDOWN
SHEARWALL 105: 1ST - REAR EXTERIOR LIVING
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 0.0 FT.
WALL LENGTH, L 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWARE SHEARWALL CARACITY
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2130 LBS 3150 LBS
2130 LBS < 3150 LBS
2130 LBS < 3150 LBS SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
2130 LBS < 3150 LBS SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB
2130 LBS < 3150 LBS SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
2130 LBS < 3150 LBS SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
2130 LBS < 3150 LBS SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION:
SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 21.3 K-FT HOLD DOWN DESIGN LOAD 3398 DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 4.3 K-FT HOLDOWN CAPACITY 3985
SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 21.3 K-FT HOLD DOWN DESIGN LOAD 3398 DL AT ENDS OF WALL BOD LBS RESISTIVE MOMENT 4.3 K-FT HOLDOWN CAPACITY 3985 HOLD-DOWN SPECIFICATION
SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 21.3 K-FT HOLD DOWN DESIGN LOAD 3398 DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 4.3 K-FT HOLDOWN CAPACITY 3985
SHEARWALL ASSEMBLY SPECIFICATION P3 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 21.3 K-FT HOLD DOWN DESIGN LOAD 3398 DL AT ENDS OF WALL BOD LBS RESISTIVE MOMENT 4.3 K-FT HOLDOWN CAPACITY 3985 HOLD-DOWN SPECIFICATION



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ENGINEER: RJD Date: 19-Jan-21

SHEARWALL	xxx:	- NOT USED
SHEARWALL PROPE	RTIES:	
WALL HEIGHT, H WALL LENGTH, L	0.0 FT. 0.0 FT.	MAX WALL OPENING HT, H _o
CAPACITY EVALUATI	ON:	
	Tc	DTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY LBS #### #DIV/O! LBS
		SHEARWALL ASSEMBLY SPECIFICATION
	FASTENED	PO - 1-SIDE 7/16" OSB o w/ 8d nails at 6"o.c. panel edges & 12"o.c. panel field - UNBLOCKED #DIV/O!
Syspenius System		
OVERTURNING EVAL RESISTIVE DL DL AT ENDS OF WALL	O PLF	OVERTURNING MOMENT #DIV/O! K-FT UPLIFT CONNECTOR DESIGN LOAD O LBS RESISTIVE MOMENT O.O K-FT HOLDOWN CAPACITY O LBS
		HOLD-DOWN SPECIFICATION
		No Holdown Required
SHEARWALL	106:	1st - Side Exterior Bath
SHEARWALL SHEARWALL PROPE		1ST - SIDE EXTERIOR BATH
		MAX WALL OPENING HT, HC O.O FT.
SHEARWALL PROPE	10.0 FT. 12.0 FT.	MAX WALL OPENING HT, HC O.O FT.
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L	10.0 FT. 12.0 FT.	MAX WALL OPENING HT, HC O.O FT.
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L	10.0 FT. 12.0 FT.	MAX WALL OPENING HT, HC O.O FT. QUALIFYING WALL LENGTH, L 12.O FT. SHEARWALL ASSEMBLY P1 DTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L	RTIES: 10.0 FT. 12.0 FT. To	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY P1 ALLOWABLE SHEARWALL CAPACITY 3300 LBS 4032 LBS
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	### TO PERSONAL PROPERTY 10.0	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L DITAL SHEAR LOAD ON WALL 3300 LBS ALLOWABLE SHEARWALL CAPACITY 4032 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATI OVERTURNING EVAL	RTIES: 10.0 FT. 12.0 FT. To FASTENED	MAX WALL OPENING HT, HC
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	### TO PERSONAL PROPERTY 10.0	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L DITAL SHEAR LOAD ON WALL 3300 LBS ALLOWABLE SHEARWALL CAPACITY 4032 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATE OVERTURNING EVAL RESISTIVE DL	### TO PEFF	MAX WALL OPENING HT, HC
SHEARWALL PROPE WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATE OVERTURNING EVAL RESISTIVE DL	### TO PEFF	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY ALLOWABLE SHEARWALL CAPACITY 3300 LBS AUGUATE ALLOWABLE SHEARWALL CAPACITY 4032 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING MOMENT RESISTIVE MOMENT 8.1 K-FT HOLD DOWN DESIGN LOAD 2075 LBS RESISTIVE MOMENT 8.1 K-FT HOLD DOWN CAPACITY 2590 LBS



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SHEARWALL 107: 1st - Side Interior Bath
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H _C 0.0 FT.
WALL LENGTH, L 9.5 FT. QUALIFYING WALL LENGTH, L 9.5 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2650 LBS 3192 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 320 PLF OVERTURNING MOMENT 39.2 K-FT UPLIFT CONNECTOR DESIGN LOAD 3215 LBS
DL AT ENDS OF WALL D LBS RESISTIVE MOMENT 8.7 K-FT HOLDOWN CAPACITY 5850 LBS
HOLD-DOWN SPECIFICATION
SIMPSON MSTC66 STRAP TIE (24" END LENGTH)
SHEARWALL 108: 1ST - SIDE EXTERIOR KITCHEN
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 3.0 FT. WALL LENGTH, L 18.5 FT. QUALIFYING WALL LENGTH, L 12.8 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 5900 LBS 8033 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" DSB
FASTENED W/ 8D NAILS AT 3 ["] D.C. PANEL EDGES & 12 ["] D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 330 PLF OVERTURNING MOMENT 92.7 K-FT HOLD DOWN DESIGN LOAD 2582 LBS
DL AT ENDS OF WALL 1000 LBS RESISTIVE MOMENT 45.0 K-FT HOLDOWN CAPACITY 2590 LBS
HOLD-DOWN SPECIFICATION
SIMPSON STHOR HOLDOWN



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ENGINEER: RJD
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SHEARWALL 109: 1st - Side Exterior Foyer
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H _C 4.5 FT.
WALL LENGTH, L 11.0 FT. QUALIFYING WALL LENGTH, L 7.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 3750 LBS 4371 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.G. PANEL EDGES & 12"O.G. PANEL FIELD - EDGES BLOCKED
FASTENED W/ 8D NAILS AT 3 D.C. PANEL EDGES & 12 D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overturning Evaluation:
RESISTIVE DL 300 PLF OVERTURNING MOMENT 37.5 K-FT UPLIFT CONNECTOR DESIGN LOAD 1939 LBS DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 16.2 K-FT HOLDOWN CAPACITY 2590 LBS
HOLD-DOWN SPECIFICATION
SIMPSON STHOB HOLDOWN
SHEARWALL 110: 1st - Side Interior Foyer
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 0.0 FT.
WALL LENGTH, L 9.0 FT. QUALIFYING WALL LENGTH, L 9.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
2400 LBS < 5670 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-side 7/16" OSB
P3 - 1-SIDE 7/16 U5B FASTENED W/ 8D NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED
ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 320 PLF OVERTURNING MOMENT 24.0 K-FT HOLD DOWN DESIGN LOAD 1803 LBS
DL AT ENDS OF WALL O LBS RESISTIVE MOMENT 7.8 K-FT HOLDOWN CAPACITY 3985 LBS
HOLD-DOWN SPECIFICATION
SIMPSON MSTC52 STRAP TIE
SIMPSON MSTG52 STRAP TIE

YEN DESIGN 7511 SE 76TH ST

MERCER ISLAND, WA

SHEAR WALL CALCULATIONS - SEISMIC

REVIEWED BY: NJM

JANUARY 19, 2021

PARAMETERS:

SINGLE FAMILY HOME

DESIGN WIND SPEED: 100 MPH

WIND EXPOSURE CATEGORY: B/C

SEISMIC DESIGN CATEGORY: D

CODE & DESIGN STANDARD: 2018 IBC CH. 1609, ASCE 7-16 CH. 26-30





PROJECT NAME: 7511 SE 76TH ST

YEN DESIGN

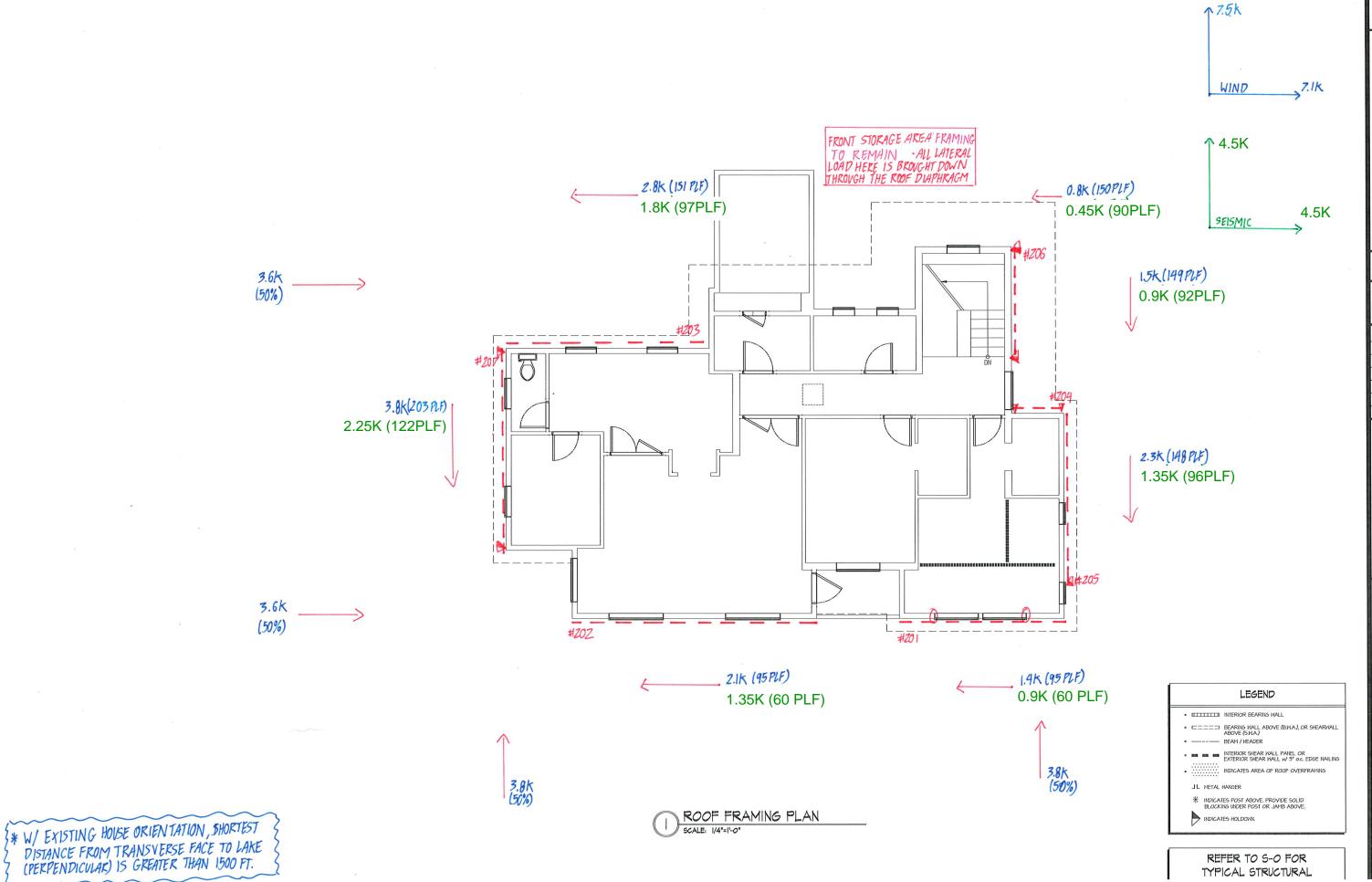
M&K PROJECT #: 251-21001

ENGINEER: RJD

DATE: 08-JUN-21

SEISMIC CALCULATION - ASCE 7-16

SEISMIC DESIGN CAT	EGORY:		BUILDING PERIOD DETERM	INATION:
USER INPUTS:			USER INPUTS:	
SITE CLASS		D	BUILDING PERIOD COEFFICIENT,	C _T 0.020
SPECTRAL RESPO	INSE ACCELERATION 0.2 SEC, SB	1.469	LONG-PERIOD TRANS PERIOD, 1	(SEC) 6
SPECTRAL RESPO	INSE ACCELERATION 1.0 SEC, S1	0.561	HT. ABV BASE TO HIGHEST LEVE	
OF ESTRAE RESIL	SHOE ADDELERATION THE BES, 21	0.561	TIT. ABV BASE TO HIGHEST LEVE	I, II _N 19
OCCUPANCY CAT	EGORY	11	CALCULATED VALUES:	
VARIABLES:			APPROXIMATE FUNDAMENTAL PERI	DD, T _A D.182
SITE COEFFICIENT	r, FA	1.20	T _o	0.111
SITE COEFFICIENT	r. Fv	1.74	T _s	0.553
CALCULATED VALL			5	
			SPECTRAL RESPONSE ACC., S, (G)	1.175
	RAL RESPONSE ACCELERATION, S _{MB}	1.763		·
MAXIMUM SPECTE	RAL RESPONSE ACCELERATION, S _{M1}	0.976		
DESIGN SPECTRAL RESPONSE ACCELERATION, Spe		1.175	SITE CLASS ASSUMPTION	
	L RESPONSE ACCELERATION, Sp1	0.650		16 SECTION 11.4.3
Cerenne Deeren	Street (street rest)			SS MAY BE ASSUMED
	CATEGORY (SHORT TERM) CATEGORY (1.0 SECOND TERM)	D	то ве D	
	RAL FORCE PROCEDURE			
DEAD LOAD CALC				
			DL OF EXT WALL TRIB.	
LEVEL	STORY HT. (FT.) AREA (FT ²)	DEAD LOAD (PSF)	TO LEVEL (KIPS)	TOTAL LEVEL D
1	10.0 1195	10	10.6	23
2	9.0 1355	17	5.1	28
3	0.0		0.0	
4	0.0		0.0	
5	0.0		0.0	
6	0.0	0	0.0	0
7 8	0.0		0.0	
9	0.0		0.0	
10	0.0		0.0	0 1
1.1	0.0		0.0	0 1
12	0.0		0.0	
13	0.0		0.0	
14	0.0		0.0	
15	0.0		0.0	
16	0.0		0.0	
17	0.0		0.0	0
1 <i>7</i> 18	0.0		0.0	
17	0.0		0.0	
17 18 19	0.0 0		0.0 0.0 0.0	
17 18 19	0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0.0 0.0	
17 18 19 20 SEISMIC RESPONS	0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LONGITUDINAL	0.0 0.0 0.0	
17 18 19 20	0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0.0 0.0 0.0	
17 18 19 20 SEISMIC RESPONS	0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LONGITUDINAL	0.0 0.0 0.0	
17 18 19 20 <u>SEISMIC RESPONS</u> RESPONSE MODIFIE	D.O O O O O O O O O O O O O O O O O O O	C C C C C C C C C C C C C C C C C C C	0.0 0.0 0.0	
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE DCCUPANCY IMPOR	D.O O O O O O O O O O O O O O O O O O O	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0 0.0 0.0	
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE DCCUPANCY IMPOR	0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LONGITUDINAL 6.5 1.00 0.181 x 0.7 =	O.O O.O O.O O.D TOTAL DEAD LOAD OF STR	
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPOR	D.O O O O O O O O O O O O O O O O O O O	LONGITUDINAL 6.5 1.00 0.181 x 0.7 =	O.O O.O O.O O.O ALLOWABLE LOADS	UCTURE 51
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPOR	0.0	LONGITUDINAL 6.5 1.00 0.181 x 0.7 =	O.O	UCTURE 51
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE DOGUPANDY IMPOR SEISMIC RESPONSE BASE SHEARS:	0.0	LONGITUDINAL 6.5 1.00 0.181 x 0.7 =	O.O	UCTURE 51
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANDY IMPOR SEISMIC RESPONSE BASE SHEARS:	0.0	LONGITUDINAL 6.5 1.00 0.181 x 0.7 =	O.O	UCTURE 51
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANDY IMPOR SEISMIC RESPONSE BASE SHEARS:	0.0	D D D D D D D D D D D D D D D D D D D	O.O	UCTURE 51
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE DECUPANCY IMPOR SEISMIC RESPONS: BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE VERT. DIST.	D.O O O O O O O O O O O O O O O O O O O	D	O.O	LONGITUDINAL LONGITUDINAL LONGITUDINAL
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE DECUPANCY IMPOR SEISMIC RESPONS: BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE VERT. DIST.	D.D	C	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE ALLOWABLE LOADS TRANSVERSE ALLOWABLE LOADS TRANSVERSE STORY SHEAR STORY SHE	LONGITUDINAL LONGITUDINAL LONGITUDINAL S.4 LONGITUDINAL LONGITUDINAL S.5 STORY SHEA
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPOR SEISMIC RESPONSE BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE VERT. DIST. EVEL FACTOR. G.W. 1 0.297 2 0.703	D.D	LONGITUDINAL 6.5 1.00 0.181 x 0.7 = K x 0.7 = Ex. STORY SH	ALLOWABLE LOADS TRANSVERSE G.4 ALLOWABLE LOADS TRANSVERSE G.4 ALLOWABLE LOADS TRANSVERSE EAR. F., \$\Siden \text{Story SHEAR} Story SHEA	LONGITUDINAL LONGITUDINAL LAR.F., \(\(\) STORY SHEA K \(\) 6.4
SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPOR SEISMIC RESPONSI BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONEN VERT. DIST. FACTOR. U _W 1 0.297 2 0.703 3 0.000	D.D	LONGITUDINAL 6.5 1.00 0.181 x 0.7 = K x 0.7 = E _A STORY SH K 4.1 K 0.1	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS ALLOWABL	D D D D D D D D D D
SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPORT SEISMIC RESPONSE BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE VERT. DIST. FACTOR. C.W. 1 0.297 2 0.703 3 0.000 4 0.000	D.D	LONGITUDINAL 6.5 1.00 0.181 x 0.7 = K X 0.7 = E _x STORY SH K 4.1. K 0.1	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 K ALLOWABLE LOADS TRANSVERSE 6.4 K 1.9 K 4.5 K 4.	D D D D D D D D D D
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIL OCCUPANCY IMPOR SEISMIC RESPONSI BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONEN YERT. DIST. EVEL FACTOR. Gw 1 0.297 2 0.703 3 0.000 4 0.000 5 0.000	D. D D D D D D D D D	LGNGITHDINAL 6.5 1.00 0.181 x 0.7 = K x 0.7 = Ex. STORY SH K 4.1 K 0.1 K 0.1 C.1 C.1 C.1 C.1 C.1 C.1 C.1	O.O □.O □.O □.O □.O □.O □.O □.O □.O □.O	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 4.5 K 0.0 K 0.0
SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPORT SEISMIC RESPONSE BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE VERT. DIST. FACTOR. C.W. 1 0.297 2 0.703 3 0.000 4 0.000	D.D	LONGITUDINAL 6.5 1.00 0.181 x 0.7 = K X 0.7 = E _x STORY SH K 4.1. K 0.1	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE	LONGITUDINAL 6.4 LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 4.5 K 0.0 K 0.0 K 0.0
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPOR SEISMIC RESPONS BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONEN YERT, DIST. FACTOR, G., 1 0.297 2 0.703 3 0.000 4 0.000 5 0.00	D. D D D D D D D D D	LONGITUDINAL 6.5 1.00 0.181 x 0.7 = 5.	ALLOWABLE LOADS TRANSVERSE 6.4	LONGITUDINAL 5.4 LONGITUDINAL 5.4 K 6.4 K 4.5 K 0.0 K 0.0 K 0.0 K 0.0 K 0.0
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE DCCUPANCY IMPOR SEISMIC RESPONS: BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE 1 0.297 2 0.703 3 0.000 4 0.000 5 0.000 6 0.000 7 0.000	D. D D D D D D D D D	CONGITUDINAL CO.7 = CO.7	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 K ALLOWABLE LOADS TRANSVERSE 9	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 4.5 K 0.0
17 18 19 20 SEISMIC RESPONS RESPONSE MODIFIE OCCUPANCY IMPOR SEISMIC RESPONSE BASE SHEARS: STORY SHEAR CALL DISTRIBUTION EXPONSE 1 0.297 2 0.703 3 0.000 4 0.000 5 0.00 6 0.00 7 0.00 8 0.00 9 0.00 10 0.00	D. D D D D D D D D D	CONGITUDINAL CONG	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS A	LONGITUDINAL 6.4 LONGITUDINAL 6.4 LONGITUDINAL 6.4 Κ 6.4 Κ 0.0
17	D. D D D D D D D D D	C	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 K ALLOWABLE LOADS TRANSVERSE 9 K 6.4 K 1.9 K 0.0	C C C C C C C C C C
17 18 19 20	D.O	C	ALLOWABLE LOADS TOTAL DEAD LOAD OF STR ALLOWABLE LOADS TRANSVERSE 6.4	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 6.4 K 0.0
17 18 19 20	D.O	CONGITUDINAL CONG	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS A	LONGITUDINAL 6.4 LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 0.0
17	D. D D D D D D D D D	CONGITUDINAL CO.7 = CO.7	ALLOWABLE LOADS TRANSVERSE 6.4	C C C C C C C C C C
17 18 19 20	D.O	CONGITUDINAL CONG	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE FOR ALLOWABLE LOADS TRANSVERSE	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 6.4 K 0.0
17 18 19 20	D. D D D D D D D D D	C	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 9	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 4.5 K 0.0
17	D. D. D. D.	C	ALLOWABLE LOADS TRANSVERSE 6.4 ALLOWABLE LOADS TRANSVERSE 6.4 K 6.4 K 1.9 K 6.4 K 6.0	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 6.5 K 0.0 K 0.0
17	D. D. D. D.	COLUMN C	ALLOWABLE LOADS TOTAL DEAD LOAD OF STR ALLOWABLE LOADS TRANSVERSE 6.4	LONGITUDINAL 6.4 LONGITUDINAL 6.4 K 6.4 K 6.4 K 0.0



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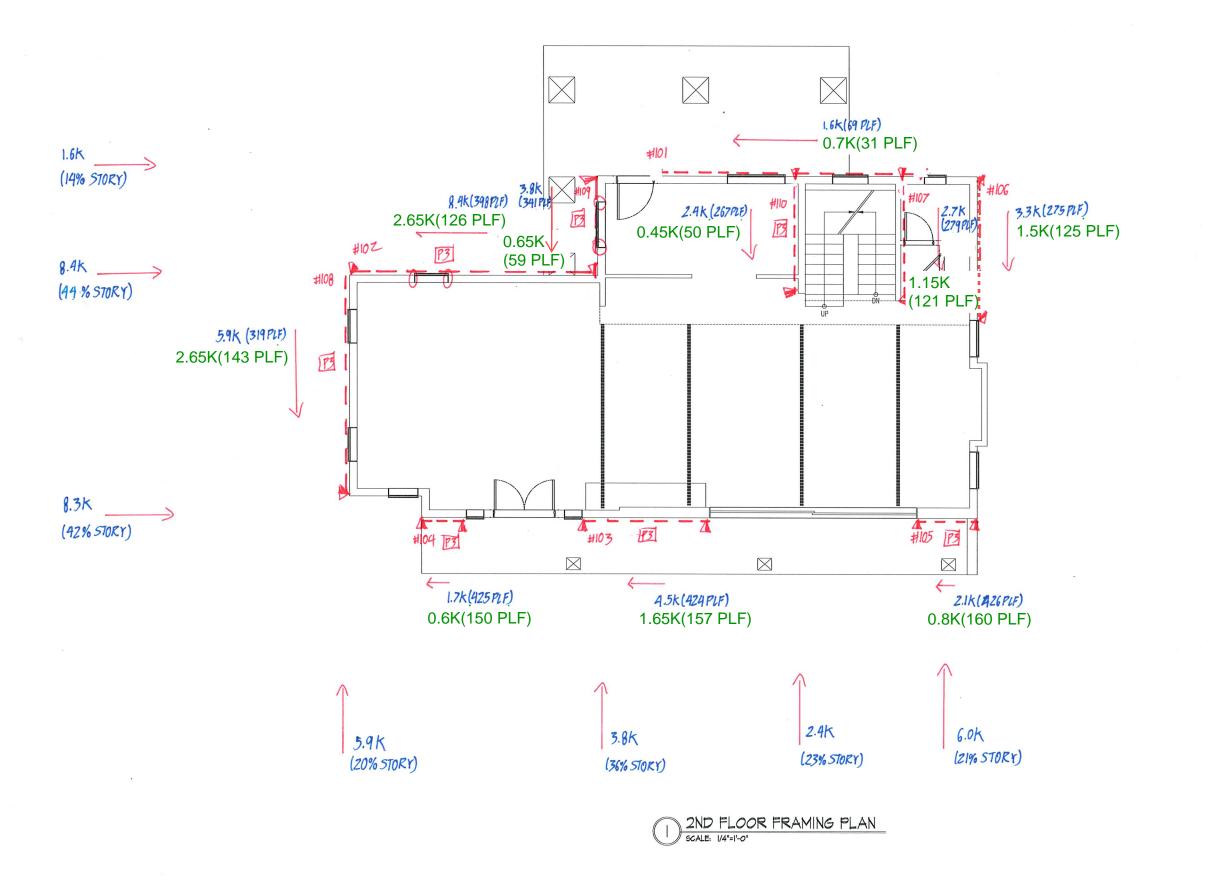
01. issue date:

REVISIONS:

YEN DESIGN

ROOF FRAMING PLAN

7511 SE 76TH Mercer Island. Washington



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TYPOTTERS CHIEF CHIEF CON PRISON CA DISTRICT
TYPOTTERS CHIEF → 18.2K (II.1K STORY) 6.4K (1.9K STORY) 6.4K → (1.9K STORY) - 251-2 YEN DESIGN 2ND FLOOR FRAMING PLAN 7511 SE 76TH Mercer Island. Washington LEGEND BEAM / HEADER INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL W/ 3° O.C. EDGE NAILIN INDICATES AREA OF ROOF OVERFRAMING * INDICATES POST ABOVE. PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE. INDICATES HOLDOWN.

REFER TO S-O FOR TYPICAL STRUCTURAL



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DATE: 19-JAN-21

SHEARWALL 201: 2ND - REAR EXTERIOR BED 3
SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, H ₀ 6.0 FT. WALL LENGTH, L 15.0 FT. QUALIFYING WALL LENGTH, L 6.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 900 LBS 1613 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 150 PLF OVERTURNING MOMENT 8.1 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 300 LBS RESISTIVE MOMENT 9.9 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 202: 2ND - REAR EXTERIOR MASTER SUITE SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC 6.0 FT. WALL LENGTH, L 22.5 FT. QUALIFYING WALL LENGTH, L 12.5 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1350 LBS 2988 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 305 PLF OVERTURNING MOMENT 12.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 350 LBS RESISTIVE MOMENT 39.4 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
HOLD-DOWN SPECIFICATION NO HOLDOWN REQUIRED



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SHEARWALL 203: 2ND - FRONT EXTERIOR MASTER BATH
SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, H ₀ 3.0 FT. WALL LENGTH, L 18.5 FT. QUALIFYING WALL LENGTH, L 13.0 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1800 LBS 3107 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-side 7/16" OSB
FASTENED W/ 8D NAILS AT 6"C.C. PANEL EDGES & 12"C.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overturning Evaluation:
RESISTIVE DL 305 PLF OVERTURNING MOMENT 16.2 K-FT UPLIFT CONNECTOR DESIGN LOAD LBS DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 27.6 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 204: 2ND - FRONT EXTERIOR W.I.C.
SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P1
GAPAGITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 450 LBS 1195 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 135 PLF OVERTURNING MOMENT 4.1 K-FT HOLD DOWN DESIGN LOAD 469 LBS
DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 1.7 K-FT HOLDOWN CAPACITY 1705 LBS
DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 1.7 K-FT HOLDOWN CAPACITY 1705 LBS



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SHEARWALL XXX: - NOT USED
SHEARWALL PROPERTIES:
WALL HEIGHT, H D.O FT. MAX WALL OPENING HT, H _C D.O FT. WALL LENGTH, L D.O FT. QUALIFYING WALL LENGTH, L D.O FT. SHEARWALL ASSEMBLY PO
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY LBS #### #DIV/O! LBS
SHEARWALL ASSEMBLY SPECIFICATION
PO - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - UNBLOCKED #DIV/O!
OVERTURNING EVALUATION: RESISTIVE DL
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 205: 2ND - SIDE EXTERIOR BED 3 SHEARWALL PROPERTIES:
SHEARWALL PROPERTIES: WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC 4.0 FT.
SHEARWALL PROPERTIES: WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC 4.0 FT. WALL LENGTH, L 14.0 FT. QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L GAPACITY EVALUATION: Total Shear Load on Wall Allowable Shearwall Capacity
SHEARWALL PROPERTIES: WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC 4.0 FT. WALL LENGTH, L 14.0 FT. QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1350 LBS 2868 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L TOTAL SHEAR LOAD ON WALL 1350 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L TOTAL SHEAR LOAD ON WALL 1350 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPERTIES: WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 14.0 FT. QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1350 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" SB FASTENED W/ BD NAILS AT 6"0.C. PANEL EDGES & 12"0.C. PANEL FIELD - EDGES BLOCKED ADEQUATE DVERTURNING EVALUATION: RESISTIVE DL 135 PLF OVERTURNING MOMENT 12.2 K-FT HOLD DOWN DESIGN LOAD 368 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 14.0 FT. MAX WALL DPENING HT, HC WALL LENGTH, L 14.0 FT. QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 135 DL AT ENDS OF WALL 135 LBS RESISTIVE MOMENT 7.0 K-FT HOLD DOWN DESIGN LOAD 368 LBS RESISTIVE MOMENT 7.0 K-FT HOLDOWN CAPACITY 1705 LBS



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SHEARWALL 206: 2ND - SIDE EXTERIOR STAIRS
SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, H ₀ 0.0 FT. WALL LENGTH, L 9.8 FT. QUALIFYING WALL LENGTH, L 9.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 900 LBS 2330 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 170 PLF OVERTURNING MOMENT 8.1 K-FT UPLIFT CONNECTOR DESIGN LOAD 401 LBS DL AT ENDS OF WALL 100 LBS RESISTIVE MOMENT 4.2 K-FT HOLDOWN CAPACITY 3985 LBS
Hai p-pawa Engaratian
HOLD-DOWN SPECIFICATION SIMPSON MSTC52 STRAP TIE
SIMPSON MS1652 STRAP TIE
SHEARWALL 207: 2ND - SIDE EXTERIOR W.I.C. & MASTER BATH
SHEARWALL PROPERTIES:
WALL HEIGHT, H 9.0 FT. MAX WALL OPENING HT, HC 3.0 FT. WALL LENGTH, L 18.5 FT. QUALIFYING WALL LENGTH, L 12.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2250 LBS 3047 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 135 PLF OVERTURNING MOMENT 20.3 K-FT Hold Down Design Load 331 LBS
DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 14.1 K-FT HOLDOWN CAPACITY 1705 LBS
HOLD-DOWN SPECIFICATION



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SHEARWALL XXX: - NOT USED
SHEARWALL PROPERTIES:
WALL HEIGHT, H D.D FT. MAX WALL OPENING HT, H_c D.D FT. WALL LENGTH, L D.D FT. QUALIFYING WALL LENGTH, L D.D FT. SHEARWALL ASSEMBLY PD
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY O LBS #### #DIV/O! LBS
SHEARWALL ASSEMBLY SPECIFICATION
PO - 1-SIDE 7/16" OSB
FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - UNBLOCKED #DIV/O!
OVERTURNING EVALUATION: RESISTIVE DL
DL AT ENDS OF WALL O LBS RESISTIVE MOMENT O.O K-FT HOLDOWN CAPACITY O LBS
Hold-down Specification
No Holdown Required
SHEARWALL 101: 1ST - FRONT EXTERIOR FOYER
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 3.5 FT. WALL LENGTH, L 22.5 FT. QUALIFYING WALL LENGTH, L 14.8 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 700 LBS 3525 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 200 PLF OVERTURNING MOMENT 7.0 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 300 LBS RESISTIVE MOMENT 26.6 K-FT HOLDOWN CAPACITY 2125 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required



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SHEARWALL 102: 1st - Front Exterior Kitchen
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H ₀ 5.0 FT. WALL LENGTH, L 21.0 FT. QUALIFYING WALL LENGTH, L 18.0 FT. SHEARWALL ASSEMBLY P3
CAPAGITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2650 LBS 8118 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
DVERTURNING EVALUATION: RESISTIVE DL 500 PLF OVERTURNING MOMENT 41.8 K-FT UPLIFT CONNECTOR DESIGN LOAD 0 LBS DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 58.8 K-FT HOLDOWN CAPACITY 21.25 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 103: 1ST - REAR EXTERIOR DINING SHEARWALL PROPERTIES: Wall Height, H 10.0 Ft. Max wall opening ht, Hc 0.0 Ft. Wall Length, L 10.5 Ft. Qualifying Wall Length, L 10.5 Ft. Shearwall Assembly P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1650 LBS 4736 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 16.5 K-FT HOLD DOWN DESIGN LOAD 766 LBS DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 8.5 K-FT HOLDOWN CAPACITY 5850 LBS
HOLD-DOWN SPECIFICATION
SIMPSON MSTC66 STRAP TIE (24" END LENGTH)



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SHEARWALL 104: 1st - Rear Exterior Kitchen
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H_c 0.0 FT. WALL LENGTH, L 4.0 FT. QUALIFYING WALL LENGTH, L 4.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
600 LBS < 1691 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" DSB FASTENED W/ 8D NAILS AT 3"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 500 PLF OVERTURNING MOMENT 6.0 K-FT UPLIFT CONNECTOR DESIGN LOAD 852 LBS DL AT ENDS OF WALL 400 LBS RESISTIVE MOMENT 2.6 K-FT HOLDOWN CAPACITY 3695 LBS
HOLD-DOWN SPECIFICATION
SIMPSON STHD14RJ HOLDOWN
SHEARWALL 105: 1st - REAR EXTERIOR LIVING
SHEARWALL PROPERTIES: WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 5.0 FT. QUALIFYING WALL LENGTH, L 5.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY BOO LBS 2255 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 255 PLF OVERTURNING MOMENT 8.0 K-FT HOLD DOWN DESIGN LOAD 934 LBS DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 3.3 K-FT HOLDOWN CAPACITY 3985 LBS
Hold-down Specification
SIMPSON MSTC52 STRAP TIE



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SHEARWALL	XXX:	- NOT USED
SHEARWALL PROPER	RTIES:	
WALL HEIGHT, H WALL LENGTH, L	0.0 FT. 0.0 FT.	MAX WALL OPENING HT, H _c
CAPACITY EVALUATION	ON:	
	To	OTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY O LBS #### #DIV/O! LBS
		SHEARWALL ASSEMBLY SPECIFICATION
	FASTENEC	PO - 1-SIDE 7/16" OSB D W/ 8d nails at 6"d.g. panel edges & 12"d.g. panel field - UNBLOCKED #DIV/d!
5		
OVERTURNING EVAL RESISTIVE DL DL AT ENDS OF WALL	O PLF	OVERTURNING MOMENT #DIV/O! K-FT UPLIFT CONNECTOR DESIGN LOAD O LBS RESISTIVE MOMENT O.O K-FT HOLDOWN CAPACITY O LBS
		HOLD-DOWN SPECIFICATION
		No Holdown Required
l		
SHEARWALL	106:	1st - Side Exterior Bath
SHEARWALL SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L		MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPER	10.0 FT. 12.0 FT.	MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	10.0 FT. 12.0 FT.	MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	10.0 FT. 12.0 FT.	MAX WALL OPENING HT, HC O.O FT. QUALIFYING WALL LENGTH, L 12.O FT. SHEARWALL ASSEMBLY P1 OTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	TO.O. FT. 12.O FT.	MAX WALL OPENING HT, HC
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L GAPACITY EVALUATION	10.0 FT. 12.0 FT. 12.0 FT. To	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L OTAL SHEAR LOAD ON WALL 1500 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 OSB W/ 8D NAILS AT 6 O.C. PANEL EDGES & 12 O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L	10.0 FT. 12.0 FT. 12.0 FT. To	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L OTAL SHEAR LOAD ON WALL 1500 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 OSB W/ 8D NAILS AT 6 O.C. PANEL EDGES & 12 O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVAL RESISTIVE DL	TIES: 10.0 FT. 12.0 FT. TO FASTENED UATION: 150 PLF	MAX WALL OPENING HT, HC
SHEARWALL PROPER WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVAL RESISTIVE DL	TIES: 10.0 FT. 12.0 FT. TO FASTENED UATION: 150 PLF	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L 12.0 FT. SHEARWALL ASSEMBLY ALLOWABLE SHEARWALL CAPACITY 1500 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING MOMENT RESISTIVE MOMENT 6.3 K-FT HOLD DOWN DESIGN LOAD 729 LBS



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SHEARWALL 107: 1st - Side Interior Bath
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H _G 0.0 FT. WALL LENGTH, L 9.5 FT. QUALIFYING WALL LENGTH, L 9.5 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1150 LBS 2271 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 320 PLF OVERTURNING MOMENT 17.6 K-FT UPLIFT CONNECTOR DESIGN LOAD 1153 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 6.7 K-FT HOLDOWN CAPACITY 5850 LBS
HOLD-DOWN SPECIFICATION
SIMPSON MSTC66 STRAP TIE (24" END LENGTH)
SHEARWALL 108: 1st - Side Exterior Kitchen
SHEARWALL PROPERTIES: WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 3.0 FT. WALL LENGTH, L 18.5 FT. QUALIFYING WALL LENGTH, L 12.8 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2650 LBS 5750 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 330 PLF OVERTURNING MOMENT 43.6 K-FT HOLD DOWN DESIGN LOAD 480 LBS DL AT ENDS OF WALL 1000 LBS RESISTIVE MOMENT 34.7 K-FT HOLDOWN CAPACITY 2125 LBS
HOLD-DOWN SPECIFICATION
SIMPSON STHOB HOLDOWN



7511 SE 76TH ST

M&K PROJECT #: 251-21001

ENGINEER: RJD Date: 19-Jan-21

SHEARWALL 109: 1st - Side Exterior Foyer
SHEARWALL PROPERTIES:
WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, H _c 4.5 FT. WALL LENGTH, L 11.0 FT. QUALIFYING WALL LENGTH, L 7.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
650 LBS < 3129 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 300 PLF OVERTURNING MOMENT 6.5 K-FT UPLIFT CONNECTOR DESIGN LOAD 0 LBS DL AT ENDS OF WALL 800 LBS RESISTIVE MOMENT 12.5 K-FT HOLDOWN CAPACITY 2125 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 110: 1st - Side Interior Foyer
SHEARWALL PROPERTIES: WALL HEIGHT, H 10.0 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 9.0 FT. QUALIFYING WALL LENGTH, L 9.0 FT. SHEARWALL ASSEMBLY P3
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 450 LBS 4059 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P3 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 3"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION: RESISTIVE DL 320 PLF OVERTURNING MOMENT 4.5 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 6.0 K-FT HOLDOWN CAPACITY 3985 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required