



MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING

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CALCULATION PACKAGE

March 8, 2019

REV. February 28, 2020

J Designs

3440 97th Ave

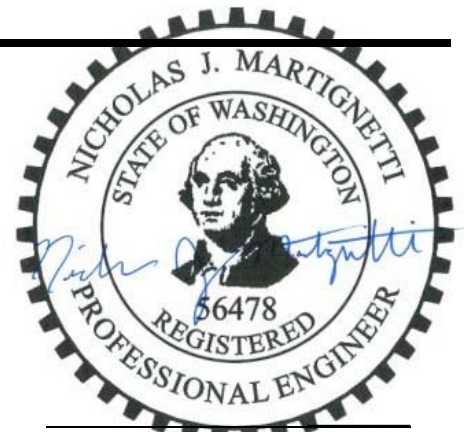
Mercer Island
Washington

MULHERN & KULP STRUCTURAL ENGINEERING, INC.

Prepared By:

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Nicholas J. Martignetti, P.E., S.E. *Project Manager*



Signature, Seal & Date



BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: TYP. EXT. HDR - WORST CASE LOAD

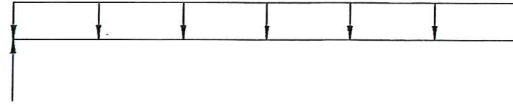
B1

PARAMETERS:

L = 5 FT

W = 0.5 KLF

P = - K



ANALYSIS:

R_{MAX} = 1.25 K

V_D = - K

< V_{ALL} = 3.89 K

ADEQUATE

M_{MAX} = 1.56 K-FT

< M_{ALL} = 4.11 K-FT

ADEQUATE

Δ_{TL} = 0.02 IN.

L/1000+ < L/240

ADEQUATE

4 x 10

BEAM DESCRIPTION: TYP. EXT. HDR - WORST CASE SPAN

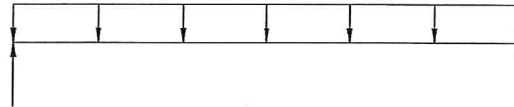
B1

PARAMETERS:

L = 6 FT

W = .46 KLF

P = - K



ANALYSIS:

R_{MAX} = 1.38 K

V_D = - K

< V_{ALL} = 3.89 K

ADEQUATE

M_{MAX} = 2.07 K-FT

< M_{ALL} = 4.11 K-FT

ADEQUATE

Δ_{TL} = 0.04 IN.

L/1000+ < L/240

ADEQUATE

4 x 10

BEAM DESCRIPTION: ROOF FRMG - HDR @ HIGH WINDOW @ OPEN TO BELOW

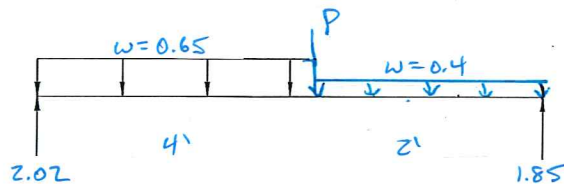
B2

PARAMETERS:

L = 6 FT

W = SHOWN KLF

P = 0.47 K



ANALYSIS:

R_{MAX} = 2.02 K

V_D = - K

< V_{ALL} = 4.47 K

ADEQUATE

M_{MAX} = 3.14 K-FT

< M_{ALL} = 4.74 K-FT

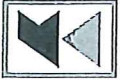
ADEQUATE

Δ_{TL} = 0.055 IN.

L/1000+ < L/240

ADEQUATE

4 x 10



BEAM & HEADER CALCULATIONS

83

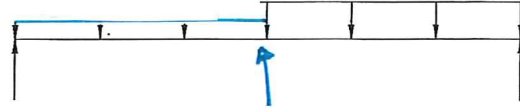
BEAM DESCRIPTION:

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

$< V_{ALL} =$ K

ADEQUATE

M_{MAX} = K-FT

$< M_{ALL} =$ K-FT

ADEQUATE

Δ_{TL} = IN.

L/ $< L/240$

ADEQUATE

84

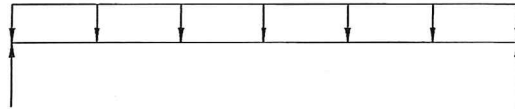
BEAM DESCRIPTION:

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

$< V_{ALL} =$ K

ADEQUATE

M_{MAX} = K-FT

$< M_{ALL} =$ K-FT

ADEQUATE

Δ_{TL} = IN.

L/ $< L/240$

ADEQUATE

85

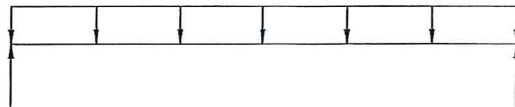
BEAM DESCRIPTION:

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

$< V_{ALL} =$ K

ADEQUATE

M_{MAX} = K-FT

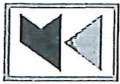
$< M_{ALL} =$ K-FT

ADEQUATE

Δ_{TL} = IN.

L/ $< L/240$

ADEQUATE



BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION:

136

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K V_D = K < V_{ALL} = K ADEQUATE

M_{MAX} = K-FT < M_{ALL} = K-FT ADEQUATE

Δ_{TL} = IN. L/ < L/240 ADEQUATE

BEAM DESCRIPTION: ROOF FRMG - REAR MUST BD WINDOW HDR

137

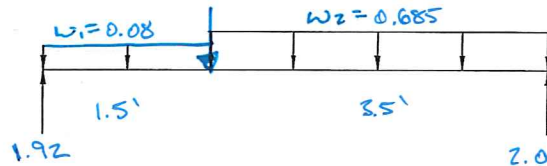
(WORST CASE) P = 1.4k

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K V_D = K < V_{ALL} = K ADEQUATE

M_{MAX} = K-FT < M_{ALL} = K-FT ADEQUATE

Δ_{TL} = IN. L/ < L/240 ADEQUATE

BEAM DESCRIPTION: 2nd FLZ FRMG - GARAGE DOOR HDR

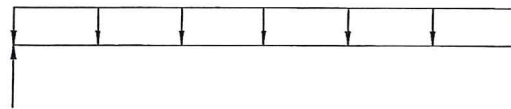
138

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K V_D = K < V_{ALL} = K ADEQUATE

M_{MAX} = K-FT < M_{ALL} = K-FT ADEQUATE

Δ_{TL} = $\frac{360.5}{I}$ IN. L/ < L/240 ADEQUATE



BEAM & HEADER CALCULATIONS

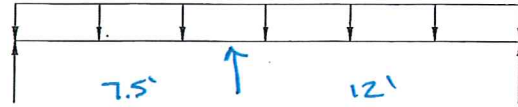
BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM e GARAGE

139

350
45
350

PARAMETERS:

L = FT
W = KLF
P = K



ANALYSIS:

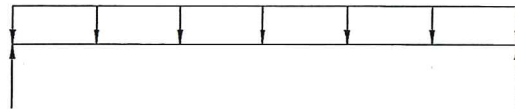
$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K ADEQUATE
 $M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT ADEQUATE
 $\Delta_{TL} =$ IN. $L/$ $< L/240$ ADEQUATE

BEAM DESCRIPTION: 2nd FLR FRMG - HDR e INT. JRG WALL e GARAGE

1310

PARAMETERS:

L = FT
W = KLF
P = K



ANALYSIS:

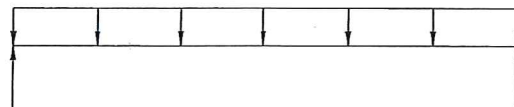
$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K ADEQUATE
 $M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT ADEQUATE
 $\Delta_{TL} =$ IN. $L/$ $< L/240$ ADEQUATE

BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM e KITCHEN/DINING

1311

PARAMETERS:

L = FT
W = KLF
P = K



ANALYSIS:

$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K ADEQUATE
 $M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT ADEQUATE
 $\Delta_{TL} =$ ⁶⁰⁸/_I IN. $L/$ $< L/240$ ADEQUATE



BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: 2nd FLR FRMG - PINING RM. REAR DOOR HDR

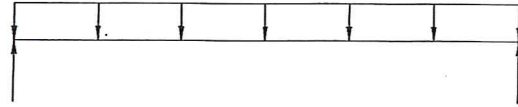
B12

PARAMETERS:

L = 8 FT

W = 0.97 KLF

P = - K



ANALYSIS:

R_{MAX} = 3.88 K

V_D = - K

< V_{ALL} = 8.73 K

ADEQUATE

M_{MAX} = 7.76 K-FT

< M_{ALL} = 10.17 K-FT

ADEQUATE

Δ_{TL} = 0.099 IN.

L/ 973 < L/240

ADEQUATE

6 x 12

465
465
480

BEAM DESCRIPTION: 2nd FLR FRMG - COV. PATIO BM. & REAR

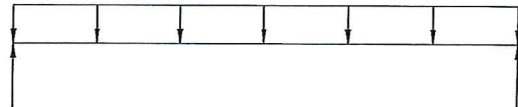
B13

PARAMETERS:

L = 14.5 FT

W = 0.22 KLF

P = - K



ANALYSIS:

R_{MAX} = 1.6 K

V_D = - K

< V_{ALL} = 7.21 K

ADEQUATE

M_{MAX} = 5.78 K-FT

< M_{ALL} = 6.94 K-FT

ADEQUATE

Δ_{TL} = 0.428 IN.

L/ 406 < L/240

ADEQUATE

6 x 10

BEAM DESCRIPTION: 2nd FLR FRMG - COV. PATIO BM. & SIDE

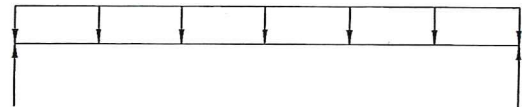
B14

PARAMETERS:

L = 10.5 FT

W = 0.1 KLF

P = - K



ANALYSIS:

R_{MAX} = 0.525 K

V_D = - K

< V_{ALL} = 7.21

ADEQUATE

M_{MAX} = 1.38 K-FT

< M_{ALL} = 6.94 K-FT

ADEQUATE

Δ_{TL} = 0.05 IN.

L/ 1000+ < L/240

ADEQUATE

6 x 10



BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM @ LIVING RM. B15

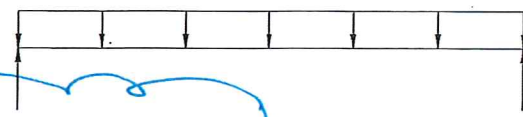
PARAMETERS:

L = 23.5 FT

W = KLF

P = K

SEE OVERSTRENGTH CALLS



ANALYSIS:

$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K

ADEQUATE

$M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT

ADEQUATE

$\Delta_{TL} =$ IN. $L/$ $< L/240$

ADEQUATE

W10 x 45

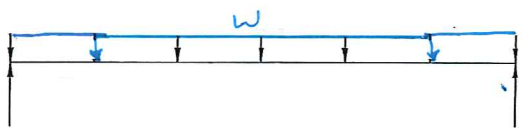
BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM @ STAIRS B16

PARAMETERS:

L = 8.5 FT

W = 0.23 KLF

P = K



ANALYSIS:

$R_{MAX} =$ 0.98 K $V_D =$ - K $< V_{ALL} =$ 3.95 K

ADEQUATE

$M_{MAX} =$ 2.08 K-FT $< M_{ALL} =$ 8.925 K-FT

ADEQUATE

$\Delta_{TL} =$ 0.055 IN. $L/$ $< L/240$

ADEQUATE

1 3/4" x 11 7/8" LVL

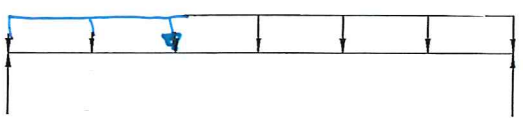
BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM @ OPEN TO ABOVE B17

PARAMETERS:

L = 9 FT

W = 0.325 KLF

P = - K



ANALYSIS:

$R_{MAX} =$ 1.46 K $V_D =$ - K $< V_{ALL} =$ 3.95 K

ADEQUATE

$M_{MAX} =$ 3.29 K-FT $< M_{ALL} =$ 8.925 K-FT

ADEQUATE

$\Delta_{TL} =$ 0.098 IN. $L/$ 1000+ $< L/240$

ADEQUATE

1 3/4" x 11 7/8" LVL



BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: 2nd FLR FRMG - CANT'D FLUSH BM BY STAIRS

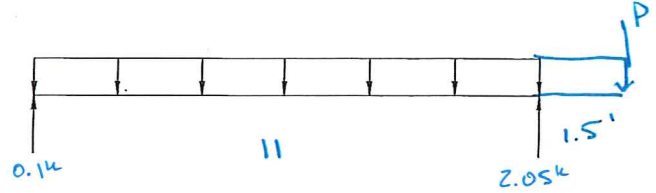
B18

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

$R_{MAX} =$ K

$V_D =$ K

$< V_{ALL} =$ K

ADEQUATE

$M_{MAX} =$ K-FT

$< M_{ALL} =$ K-FT

ADEQUATE

$\Delta_{TL} =$ IN.

L/ $< L/240$

ADEQUATE

BEAM DESCRIPTION: 2nd FLR FRMG - HDZ & INT. GUEST RM. BRG. WALL

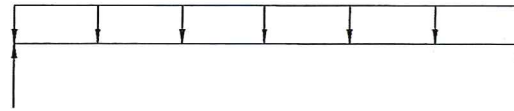
B19

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

$R_{MAX} =$ K

$V_D =$ K

$< V_{ALL} =$ K

ADEQUATE

$M_{MAX} =$ K-FT

$< M_{ALL} =$ K-FT

ADEQUATE

$\Delta_{TL} =$ IN.

L/ $< L/240$

ADEQUATE

BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM @ LOW ROOF (WORST CASE)

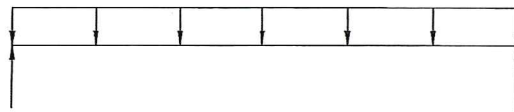
B20

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

$R_{MAX} =$ K

$V_D =$ K

$< V_{ALL} =$ K

ADEQUATE

$M_{MAX} =$ K-FT

$< M_{ALL} =$ K-FT

ADEQUATE

$\Delta_{TL} =$ IN.

L/ $< L/240$

ADEQUATE



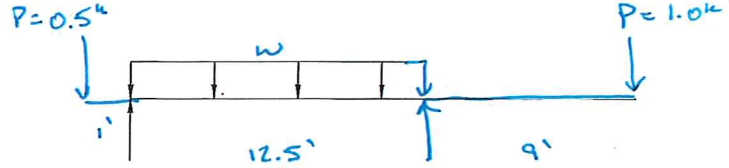
BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: 2nd FLR FRMG - LANT FLUSH RM & ENTRY ROOF

1321

PARAMETERS:

L = FT
W = KLF
P = K



ANALYSIS:

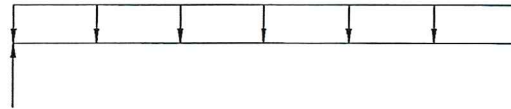
$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K ADEQUATE
 $M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT ADEQUATE
 $\Delta_{TL} =$ IN. $L/$ $< L/240$ ADEQUATE

BEAM DESCRIPTION: 2nd FLR FRMG -

1322

PARAMETERS:

L = FT
W = KLF
P = K



ANALYSIS:

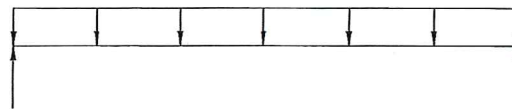
$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K ADEQUATE
 $M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT ADEQUATE
 $\Delta_{TL} =$ IN. $L/$ $< L/240$ ADEQUATE

BEAM DESCRIPTION: 1st FLR FRMG - FLUSH RM & REC RM.

1323

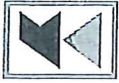
PARAMETERS:

L = FT
W = KLF
P = K



ANALYSIS:

$R_{MAX} =$ K $V_D =$ K $< V_{ALL} =$ K ADEQUATE
 $M_{MAX} =$ K-FT $< M_{ALL} =$ K-FT ADEQUATE
 $\Delta_{TL} = \frac{126.4}{I}$ IN. $L/$ $< L/240$ ADEQUATE



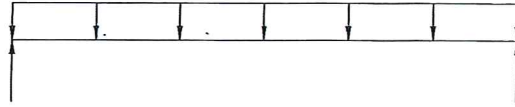
BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: 1ST FLR FRMG - CRAWL RM

B24

PARAMETERS:

L = 6.67 FT
W = .72 KLF
P = - K



ANALYSIS:

$R_{MAX} = 2.4$ K $V_D = -$ K $< V_{ALL} = 3.89$ K ADEQUATE
 $M_{MAX} = 4.0$ K-FT $< M_{ALL} = 4.12$ K-FT ADEQUATE
 $\Delta_{TL} = 0.087$ IN. $L/923 < L/240$ ADEQUATE

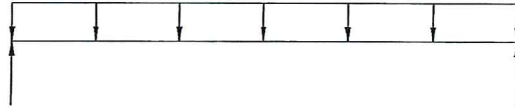
4 x 10

BEAM DESCRIPTION: 1ST FLR FRMG - HUSH RM & STAIRS

B25

PARAMETERS:

L = 8.5 FT
W = .28 KLF
P = - K



ANALYSIS:

$R_{MAX} = 1.19$ K $V_D = -$ K $< V_{ALL} = 3.95$ K ADEQUATE
 $M_{MAX} = 2.53$ K-FT $< M_{ALL} = 8.95$ K-FT ADEQUATE
 $\Delta_{TL} = 0.067$ IN. $L/1000 < L/240$ ADEQUATE

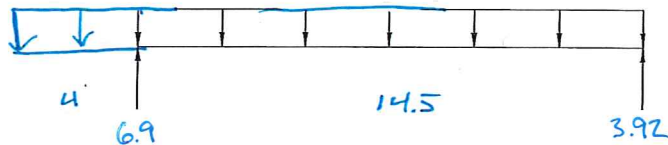
1 3/4" x 11 7/8" LVL

BEAM DESCRIPTION: 1ST FLR FRMG - DECK RM.

B26

PARAMETERS:

L = 14.5 FT w/ 4' cant.
W = .585 KLF
P = - K



ANALYSIS:

$R_{MAX} = 6.9$ K $V_D = -$ K $< V_{ALL} = 8.35$ K ADEQUATE
 $M_{MAX} = 16.04$ K-FT $< M_{ALL} = 21.26$ K-FT ADEQUATE
 $\Delta_{TL} = 0.312$ IN. $L/558 < L/240$ ADEQUATE

5 1/2" x 13 1/2" GLB



BEAM & HEADER CALCULATIONS

BEAM DESCRIPTION: 1ST FLR FRMG - HDR e INT. ISZG, WALL

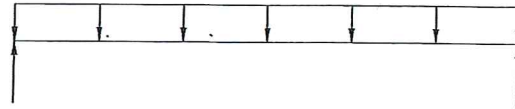
B27

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

< V_{ALL} = K

ADEQUATE

M_{MAX} = K-FT

< M_{ALL} = K-FT

ADEQUATE

Δ_{TL} = IN.

L/ < L/240

ADEQUATE

BEAM DESCRIPTION: 1ST FLR FRMG - FLUSH BM e STORAGE/UTILITY w/SWA

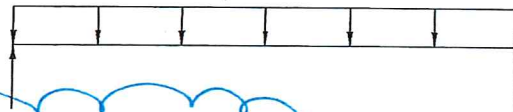
B28

PARAMETERS:

L = FT

W = KLF

P = K



SEE OVERSTRENGTH CALCS

ANALYSIS:

R_{MAX} = K

V_D = K

< V_{ALL} = K

ADEQUATE

M_{MAX} = K-FT

< M_{ALL} = K-FT

ADEQUATE

Δ_{TL} = IN.

L/ < L/240

ADEQUATE

BEAM DESCRIPTION: 1ST FLR FRMG - FLUSH CABT BM e REAR DECK

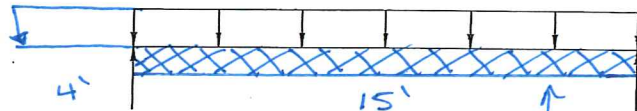
B29

PARAMETERS:

L = FT

W = KLF

P = K



CONST. SUPPORTED BY ISZG. WALL BELOW

ANALYSIS:

R_{MAX} = K

V_D = K

< V_{ALL} = K

ADEQUATE

M_{MAX} = K-FT

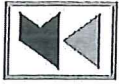
< M_{ALL} = K-FT

ADEQUATE

Δ_{TL} = IN.

2 L/ < L/240

ADEQUATE



BEAM & HEADER CALCULATIONS

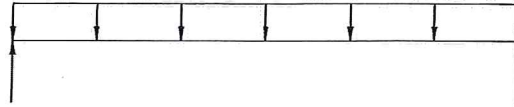
BEAM DESCRIPTION: 2nd FLR FRMG - FLUSH BM e LOW ROOF BY GUEST RM. B30

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

< V_{ALL} = K

ADEQUATE

M_{MAX} = K-FT

< M_{ALL} = K-FT

ADEQUATE

Δ_{TL} = IN.

L/ < L/240

ADEQUATE

3 1/2" x 11 7/8" LVL

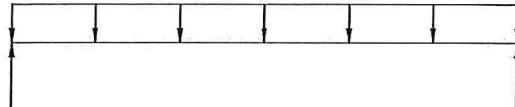
BEAM DESCRIPTION: FLUSH @ CRAWL ENTRY B31

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

< V_{ALL} = K

ADEQUATE

M_{MAX} = K-FT

< M_{ALL} = K-FT

ADEQUATE

Δ_{TL} = IN.

L/ < L/240

ADEQUATE

3 1/2" x 11 7/8" LVL

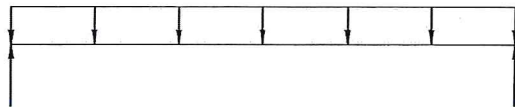
BEAM DESCRIPTION:

PARAMETERS:

L = FT

W = KLF

P = K



ANALYSIS:

R_{MAX} = K

V_D = K

< V_{ALL} = K

ADEQUATE

M_{MAX} = K-FT

< M_{ALL} = K-FT

ADEQUATE

Δ_{TL} = IN.

L/ < L/240

ADEQUATE

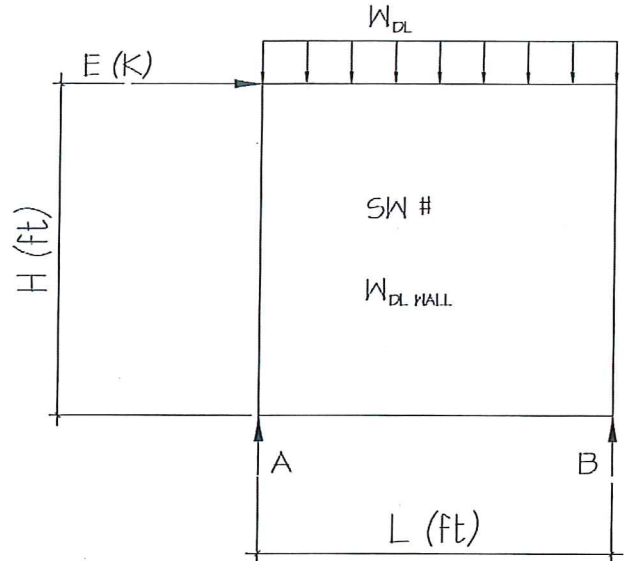


OVERSTRENGTH CALCULATIONS

WALL DESCRIPTION/SW #: 206

PARAMETERS:

- L = FT
- H = FT
- E = K
- W_{DL WALL} = KLF
- W_{DL} = KLF
- Ω₀ = (ASCE TABLE 12.2.1 FOOTNOTE G1)
- SDS =



ANALYSIS:

$$E_{MH} = \Omega_0 * E = \text{5.56} \text{ K} \quad E_v = 0.2 * SDS * DL = \text{1.06} \text{ K}$$

$$E_M = E_{MH} + E_v = \text{6.62} \text{ K}$$

$$E_M = E_{MH} - E_v = \text{4.5} \text{ K}$$

$$E_M \text{ (MAX)} = \sum M_A = 0 = -(6.62)(8) - .34(17)(8.5) + 17 R_B \quad R_B = \text{2.89D} + \text{3.11E}$$

$$R_A = \text{2.89D} - \text{3.11E}$$

$$E_M \text{ (MIN)} = \sum M_A = 0 = -(4.5)(8) - .34(17)(8.5) + 17 R_B \quad R_B = \text{2.89D} + \text{2.12E}$$

$$R_A = \text{2.89D} - \text{2.12E}$$

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

ALLOWABLE STRESS PERMITTED TO BE INCREASED BY 1.2

SEE FOLLOWING BEAM
CALCS FOR LOAD
APPLICATION

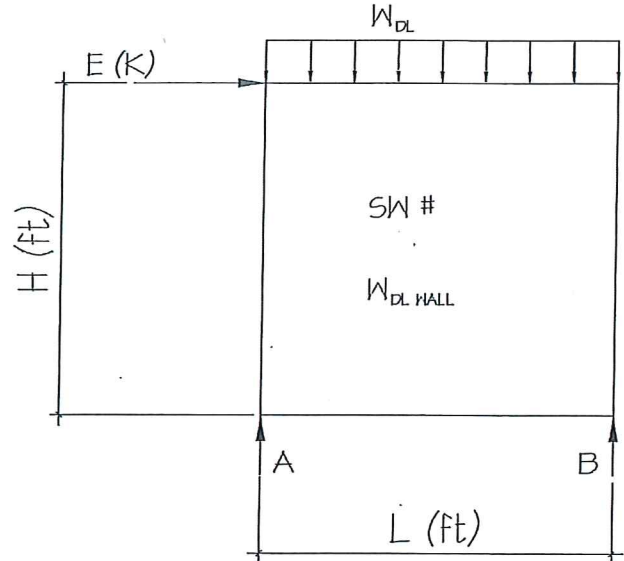


OVERSTRENGTH CALCULATIONS

WALL DESCRIPTION/SW #: 103

PARAMETERS:

L = 18 FT
H = 10 FT
E = 2 K
W_{DL WALL} = 0.1 KLF
W_{DL} = 0.134 KLF
Ω₀ = 2.5 (ASCE TABLE 12.2.1 FOOTNOTE D)
SDS = 0.922



ANALYSIS:

$E_{MH} = \Omega_0 * E = 5$ K $E_v = 0.2 * SDS * DL = 0.77$ K
 $E_M = E_{MH} + E_v = 5.77$ K
 $E_M = E_{MH} - E_v = 4.23$ K

$E_M (MAX) = \sum M_A = 0 = -(5.77)(10) - .234(18)(9) + 18R_B$

$R_B = 2.10 + 3.21E$
 $R_A = 2.10 - 5.21E$

$E_M (MIN) = \sum M_A = 0 = -(4.23)(10) - .234(18)(9) + 18R_B$

$R_B = 2.10 + 2.55$
 $R_A = 2.10 - 2.55$

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

ALLOWABLE STRESS PERMITTED TO BE INCREASED BY 1.2

SEE FOLLOWING BEAM
CALCS FOR LOAD
APPLICATION

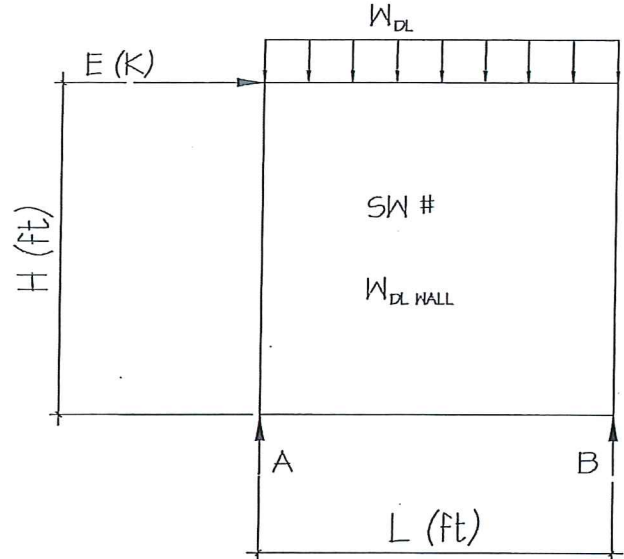


OVERSTRENGTH CALCULATIONS

WALL DESCRIPTION/SW #: 112

PARAMETERS:

L = 13.16 FT
 H = 10 FT
 E = 1.0 K
 W_{DL WALL} = 0.1 KLF
 W_{DL} = 0.134 KLF
 Ω₀ = 2.5 (ASCE TABLE 12.2.1 FOOTNOTE B)
 SDS = 0.922



ANALYSIS:

$E_{MH} = \Omega_0 * E = 2.5$ K $E_v = 0.2 * SDS * DL = 0.57$ K
 $E_M = E_{MH} + E_v = 3.07$ K
 $E_M = E_{MH} - E_v = 1.93$ K

$E_M (MAX) = \sum M_A = 0 = -(3.07)(10) - .234(13.16)\left(\frac{13.16}{2}\right) + 13.16 R_B$ $R_B = 1.54D + 2.53E$
 $R_A = 1.54D - 2.73E$

 $E_M (MIN) = \sum M_A = 0 = -(1.93)(10) - .234(13.16)\left(\frac{13.16}{2}\right) + 13.16 R_B$ $R_B = 1.54D + 1.47E$
 $R_A = 1.54D - 1.47E$

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

ALLOWABLE STRESS PERMITTED TO BE INCREASED BY 1.2

SEE FOLLOWING BEAM
CALCS FOR LOAD
APPLICATION

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Steel Beam

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Description : B15 - Flush Beam at Living Room

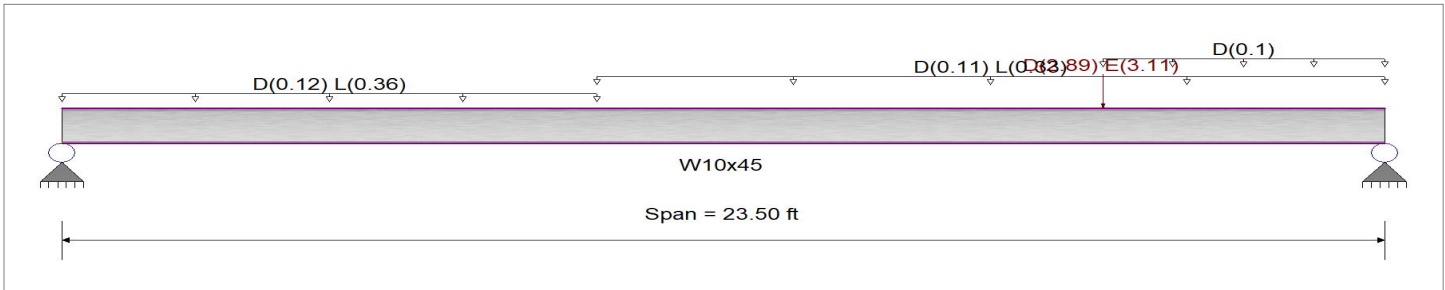
CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, CBC 2016, ASCE 7-10
 Load Combination Set : ASCE 7-10

Material Properties

Analysis Method : Allowable Strength Design
 Beam Bracing : Beam is Fully Braced against lateral-torsional buckling
 Bending Axis : Major Axis Bending

Fy : Steel Yield : 50.0 ksi
 E: Modulus : 29,000.0 ksi



Applied Loads

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

Beam self weight calculated and added to loading
 Load for Span Number 1

Uniform Load : D = 0.120, L = 0.360 k/ft, Extent = 0.0 -->> 9.50 ft, Tributary Width = 1.0 ft

Point Load : D = 2.890, E = 3.110 k @ 18.50 ft

Uniform Load : D = 0.110, L = 0.330 k/ft, Extent = 9.50 -->> 23.50 ft, Tributary Width = 1.0 ft

Uniform Load : D = 0.10 k/ft, Extent = 18.50 -->> 23.50 ft, Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.317 : 1	Maximum Shear Stress Ratio =	0.130 : 1
Section used for this span	W10x45	Section used for this span	W10x45
Ma : Applied	43.388 k-ft	Va : Applied	9.213 k
Mn / Omega : Allowable	136.976 k-ft	Vn/Omega : Allowable	70.70 k
Load Combination	+1.090D+0.750L+0.750S+0.5250E	Load Combination	+1.090D+0.750L+0.750S+0.5250E
Location of maximum on span	14.167ft	Location of maximum on span	23.500 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1
Maximum Deflection			
Max Downward Transient Deflection	0.326 in	Ratio =	864 >=360
Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Max Downward Total Deflection	0.610 in	Ratio =	462 >=300
Max Upward Total Deflection	0.000 in	Ratio =	0 <300

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	6.673	9.213
Overall MINimum	0.662	2.448
D Only	2.568	4.566
+D+L	6.673	8.501
+D+Lr	2.568	4.566
+D+S	2.568	4.566
+D+0.750Lr+0.750L	5.647	7.517
+D+0.750L+0.750S	5.647	7.517
+D+0.60W	2.568	4.566
+1.126D+0.70E	3.355	6.855
+D+0.750Lr+0.750L+0.450W	5.647	7.517
+D+0.750L+0.750S+0.450W	5.647	7.517
+1.090D+0.750L+0.750S+0.5250E	6.226	9.213
+0.60D+0.60W	1.541	2.739

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Beam

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Description : B15 - Flush Beam at Living Room

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
+0.470D+0.70E	1.670	3.860
D Only	2.568	4.566
Lr Only		
L Only	4.105	3.935
S Only		
W Only		
E Only	0.662	2.448
H Only		

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

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Description : B28 - Flush Beam at Storage/Utility

CODE REFERENCES

Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set : ASCE 7-10

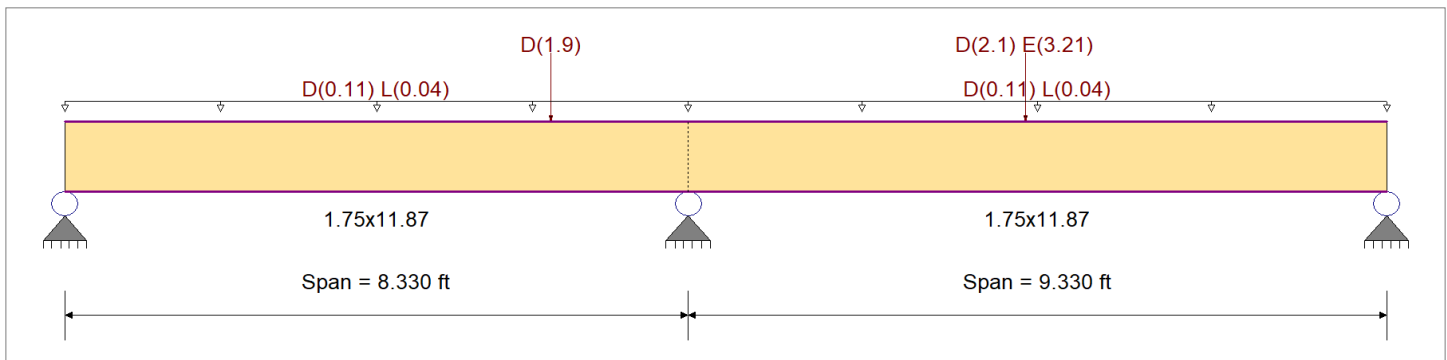
Material Properties

Analysis Method : Allowable Stress Design
 Load Combination : ASCE 7-10

Wood Species : iLevel Truss Joist
 Wood Grade : MicroLam LVL 1.9 E

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

Fb + 3,120.0 psi E : Modulus of Elasticity
 Fb - 3,120.0 psi Ebend- xx 2,000.0 ksi
 Fc - Prll 3,012.0 psi Eminbend - xx 965.71 ksi
 Fc - Perp 900.0 psi
 Fv 342.0 psi
 Ft 1,866.0 psi Density 32.210pcf



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 = 0.110, L = 0.040, Tributary Width = 1.0 ft

Point Load : D = 1.90 k @ 6.50 ft

Load for Span Number 2

Uniform Load : D = 0.110, L = 0.040, Tributary Width = 1.0 ft

Point Load : D = 2.10, E = 3.210 k @ 4.50 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.499	1	Maximum Shear Stress Ratio	=	0.552	1
Section used for this span		1.75x11.87		Section used for this span		1.75x11.87	
fb : Actual	=	2,492.73	psi	fv : Actual	=	170.04	psi
FB : Allowable	=	4,992.00	psi	Fv : Allowable	=	307.80	psi
Load Combination	=	+1.126D+0.70E		Load Combination	=	D Only	
Location of maximum on span	=	4.535 ft		Location of maximum on span	=	7.353 ft	
Span # where maximum occurs	=	Span # 2		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.135	in	Ratio =		829	>=360
Max Upward Transient Deflection		-0.048	in	Ratio =		2101	>=360
Max Downward Total Deflection		0.190	in	Ratio =		588	>=300
Max Upward Total Deflection		-0.029	in	Ratio =		3406	>=300

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values				
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v	
D Only																		
Length = 8.330 ft	1		0.439	0.552	0.90	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	2808.00	2.36	170.04	307.80	
Length = 9.330 ft	2		0.439	0.552	0.90	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	2808.00	1.97	170.04	307.80	
+D+L, LL Comb Run (*L)																		
Length = 8.330 ft	1		0.417	0.503	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.46	1,300.83	3120.00	2.38	172.03	342.00	

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

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Description : B28 - Flush Beam at Storage/Utility

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v
	Length = 9.330 ft	2	0.417	0.503	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.46	1,300.83	3120.00	2.14	172.03	342.00
+D+L, LL Comb Run (L*)	Length = 8.330 ft	1	0.411	0.528	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.39	1,281.48	3120.00	2.50	180.66	342.00
	Length = 9.330 ft	2	0.411	0.528	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.39	1,281.48	3120.00	1.99	180.66	342.00
+D+L, LL Comb Run (LL)						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.432	0.534	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.62	1,348.57	3120.00	2.53	182.65	342.00
	Length = 9.330 ft	2	0.432	0.534	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.62	1,348.57	3120.00	2.16	182.65	342.00
+D+Lr, LL Comb Run (*L)						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.316	0.398	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3900.00	2.36	170.04	427.50
	Length = 9.330 ft	2	0.316	0.398	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3900.00	1.97	170.04	427.50
+D+Lr, LL Comb Run (L*)						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.316	0.398	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3900.00	2.36	170.04	427.50
	Length = 9.330 ft	2	0.316	0.398	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3900.00	1.97	170.04	427.50
+D+Lr, LL Comb Run (LL)						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.316	0.398	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3900.00	2.36	170.04	427.50
	Length = 9.330 ft	2	0.316	0.398	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3900.00	1.97	170.04	427.50
+D+S						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.344	0.432	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3588.00	2.36	170.04	393.30
	Length = 9.330 ft	2	0.344	0.432	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	3588.00	1.97	170.04	393.30
+D+0.750Lr+0.750L, LL Comb Run						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.329	0.401	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	3900.00	2.38	171.53	427.50
	Length = 9.330 ft	2	0.329	0.401	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	3900.00	2.10	171.53	427.50
+D+0.750Lr+0.750L, LL Comb Run						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.326	0.416	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	3900.00	2.47	178.00	427.50
	Length = 9.330 ft	2	0.326	0.416	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	3900.00	1.98	178.00	427.50
+D+0.750Lr+0.750L, LL Comb Run						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.338	0.420	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	3900.00	2.49	179.50	427.50
	Length = 9.330 ft	2	0.338	0.420	1.25	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	3900.00	2.11	179.50	427.50
+D+0.750L+0.750S, LL Comb Run (						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.358	0.436	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	3588.00	2.38	171.53	393.30
	Length = 9.330 ft	2	0.358	0.436	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	3588.00	2.10	171.53	393.30
+D+0.750L+0.750S, LL Comb Run (						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.354	0.453	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	3588.00	2.47	178.00	393.30
	Length = 9.330 ft	2	0.354	0.453	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	3588.00	1.98	178.00	393.30
+D+0.750L+0.750S, LL Comb Run (						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.368	0.456	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	3588.00	2.49	179.50	393.30
	Length = 9.330 ft	2	0.368	0.456	1.15	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	3588.00	2.11	179.50	393.30
+D+0.60W						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.247	0.311	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	4992.00	2.36	170.04	547.20
	Length = 9.330 ft	2	0.247	0.311	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.23	1,233.74	4992.00	1.97	170.04	547.20
+1.126D+0.70E						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.401	0.475	1.60	1.000	1.00	1.00	1.00	1.00	1.00	6.86	2,001.47	4992.00	3.60	260.12	547.20
	Length = 9.330 ft	2	0.499	0.475	1.60	1.000	1.00	1.00	1.00	1.00	1.00	8.54	2,492.73	4992.00	3.60	260.12	547.20
+1.126D-0.70E						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.156	0.317	1.60	1.000	1.00	1.00	1.00	1.00	1.00	2.66	776.91	4992.00	2.40	173.28	547.20
	Length = 9.330 ft	2	0.156	0.317	1.60	1.000	1.00	1.00	1.00	1.00	1.00	2.66	776.91	4992.00	0.83	173.28	547.20
+D+0.750Lr+0.750L+0.450W, LL Cc						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.257	0.313	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	4992.00	2.38	171.53	547.20
	Length = 9.330 ft	2	0.257	0.313	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	4992.00	2.10	171.53	547.20
+D+0.750Lr+0.750L+0.450W, LL Cc						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.254	0.325	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	4992.00	2.47	178.00	547.20
	Length = 9.330 ft	2	0.254	0.325	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	4992.00	1.98	178.00	547.20
+D+0.750Lr+0.750L+0.450W, LL Cc						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.264	0.328	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	4992.00	2.49	179.50	547.20
	Length = 9.330 ft	2	0.264	0.328	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	4992.00	2.11	179.50	547.20
+D+0.750L+0.750S+0.450W, LL Co						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.257	0.313	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	4992.00	2.38	171.53	547.20
	Length = 9.330 ft	2	0.257	0.313	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.40	1,284.05	4992.00	2.10	171.53	547.20
+D+0.750L+0.750S+0.450W, LL Co						1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.254	0.325	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	4992.00	2.47	178.00	547.20

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

File = P:\CYJ7GB-PI0G6KEP-312018\19OFZT-V\Design(Gravity)\Overstrength.ec6 .
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Description : B28 - Flush Beam at Storage/Utility

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v
+D+0.750L+0.750S+0.450W, LL Co	Length = 9.330 ft	2	0.254	0.325	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.35	1,269.55	4992.00	1.98	178.00	547.20
	Length = 8.330 ft	1	0.264	0.328	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	4992.00	0.00	0.00	0.00
+1.090D+0.750L+0.750S+0.5250E,	Length = 9.330 ft	2	0.264	0.328	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.52	1,319.86	4992.00	2.49	179.50	547.20
	Length = 8.330 ft	1	0.371	0.437	1.60	1.000	1.00	1.00	1.00	1.00	1.00	6.36	1,854.30	4992.00	0.00	0.00	0.00
+1.090D+0.750L+0.750S+0.5250E,	Length = 9.330 ft	2	0.445	0.437	1.60	1.000	1.00	1.00	1.00	1.00	1.00	7.61	2,220.36	4992.00	3.32	239.36	547.20
	Length = 8.330 ft	1	0.369	0.422	1.60	1.000	1.00	1.00	1.00	1.00	1.00	6.31	1,839.79	4992.00	0.00	0.00	0.00
+1.090D+0.750L+0.750S+0.5250E,	Length = 9.330 ft	2	0.427	0.422	1.60	1.000	1.00	1.00	1.00	1.00	1.00	7.31	2,132.65	4992.00	3.20	230.91	547.20
	Length = 8.330 ft	1	0.379	0.439	1.60	1.000	1.00	1.00	1.00	1.00	1.00	6.48	1,890.11	4992.00	0.00	0.00	0.00
+1.090D+0.750L+0.750S-0.5250E, |	Length = 9.330 ft	2	0.441	0.439	1.60	1.000	1.00	1.00	1.00	1.00	1.00	7.55	2,201.95	4992.00	3.33	240.31	547.20
	Length = 8.330 ft	1	0.187	0.317	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.21	935.88	4992.00	0.00	0.00	0.00
+1.090D+0.750L+0.750S-0.5250E, |	Length = 9.330 ft	2	0.187	0.317	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.21	935.88	4992.00	3.33	240.31	547.20
	Length = 8.330 ft	1	0.185	0.328	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.16	921.37	4992.00	0.00	0.00	0.00
+1.090D+0.750L+0.750S-0.5250E, |	Length = 9.330 ft	2	0.185	0.328	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.16	921.37	4992.00	2.49	179.67	547.20
	Length = 8.330 ft	1	0.195	0.331	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.33	971.69	4992.00	1.12	179.67	547.20
+0.60D+0.60W	Length = 9.330 ft	2	0.195	0.331	1.60	1.000	1.00	1.00	1.00	1.00	1.00	3.33	971.69	4992.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.148	0.186	1.60	1.000	1.00	1.00	1.00	1.00	1.00	2.54	740.24	4992.00	0.00	0.00	0.00
+0.470D+0.70E	Length = 9.330 ft	2	0.148	0.186	1.60	1.000	1.00	1.00	1.00	1.00	1.00	2.54	740.24	4992.00	1.41	102.02	547.20
	Length = 8.330 ft	1	0.239	0.305	1.60	1.000	1.00	1.00	1.00	1.00	1.00	4.09	1,192.14	4992.00	1.18	102.02	547.20
+0.470D-0.70E	Length = 9.330 ft	2	0.349	0.305	1.60	1.000	1.00	1.00	1.00	1.00	1.00	5.97	1,741.00	4992.00	0.00	0.00	0.00
	Length = 8.330 ft	1	0.098	0.113	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.68	490.08	4992.00	2.31	166.95	547.20
	Length = 9.330 ft	2	0.133	0.113	1.60	1.000	1.00	1.00	1.00	1.00	1.00	2.28	665.43	4992.00	0.86	61.73	547.20
	Length = 8.330 ft	1	0.133	0.113	1.60	1.000	1.00	1.00	1.00	1.00	1.00	2.28	665.43	4992.00	0.65	61.73	547.20

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+1.126D+0.70E	1	0.0000	0.000	E Only	-0.0476	4.840
	2	0.1903	4.952		0.0000	4.840

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Overall MAXimum	0.534	6.755	2.091
Overall MINimum	0.119	2.343	1.227
D Only	0.387	4.543	1.094
+D+L, LL Comb Run (*L)	0.360	4.782	1.256
+D+L, LL Comb Run (L*)	0.534	4.747	1.077
+D+L, LL Comb Run (LL)	0.507	4.986	1.239
+D+Lr, LL Comb Run (*L)	0.387	4.543	1.094
+D+Lr, LL Comb Run (L*)	0.387	4.543	1.094
+D+Lr, LL Comb Run (LL)	0.387	4.543	1.094
+D+S	0.387	4.543	1.094
+D+0.750Lr+0.750L, LL Comb Run (*L)	0.367	4.722	1.216
+D+0.750Lr+0.750L, LL Comb Run (L*)	0.497	4.696	1.081
+D+0.750Lr+0.750L, LL Comb Run (LL)	0.477	4.875	1.203
+D+0.750L+0.750S, LL Comb Run (*L)	0.367	4.722	1.216
+D+0.750L+0.750S, LL Comb Run (L*)	0.497	4.696	1.081
+D+0.750L+0.750S, LL Comb Run (LL)	0.477	4.875	1.203
+D+0.60W	0.387	4.543	1.094
+1.126D+0.70E	0.184	6.755	2.091
+D+0.750Lr+0.750L+0.450W, LL Comb R	0.367	4.722	1.216
+D+0.750Lr+0.750L+0.450W, LL Comb R	0.497	4.696	1.081
+D+0.750Lr+0.750L+0.450W, LL Comb R	0.477	4.875	1.203

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

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Description : B28 - Flush Beam at Storage/Utility

Load Combination	Support notation : Far left is #1			Values in KIPS
	Support 1	Support 2	Support 3	
+D+0.750L+0.750S+0.450W, LL Comb Ru	0.367	4.722	1.216	
+D+0.750L+0.750S+0.450W, LL Comb Ru	0.497	4.696	1.081	
+D+0.750L+0.750S+0.450W, LL Comb Ru	0.477	4.875	1.203	
+1.090D+0.750L+0.750S+0.5250E, LL C	0.212	6.361	1.959	
+1.090D+0.750L+0.750S+0.5250E, LL C	0.343	6.335	1.824	
+1.090D+0.750L+0.750S+0.5250E, LL C	0.323	6.514	1.945	
+0.60D+0.60W	0.232	2.726	0.657	
+0.470D+0.70E	-0.070	3.775	1.373	
D Only	0.387	4.543	1.094	
Lr Only, LL Comb Run (*L)				
Lr Only, LL Comb Run (L*)				
Lr Only, LL Comb Run (LL)				
L Only, LL Comb Run (*L)	-0.028	0.239	0.162	
L Only, LL Comb Run (L*)	0.147	0.204	-0.018	
L Only, LL Comb Run (LL)	0.119	0.443	0.144	
S Only				
W Only				
E Only	-0.360	2.343	1.227	
H Only				

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Project Name/Number : foundation wa
Title 3440.97th Ave
Dsgnr: NJD
Description....
Detail 1 (2 Sim.)

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Date: 13 NOV 2019

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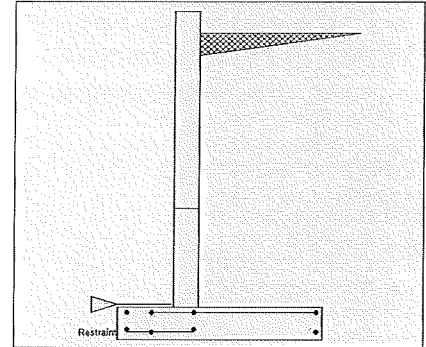
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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Criteria	
Retained Height	= 8.33 ft
Wall height above soil	= 0.67 ft
Slope Behind Wall	= 0.00
Height of Soil over Toe	= 0.00 in
Water height over heel	= 0.0 ft

Soil Data	
Allow Soil Bearing	= 2,000.0 psf
Equivalent Fluid Pressure Method	
Active Heel Pressure	= 55.0 psf/ft
	=
Passive Pressure	= 250.0 psf/ft
Soil Density, Heel	= 110.0 pcf
Soil Density, Toe	= 0.00 pcf
Footings||Soil Friction	= 0.400
Soil height to ignore for passive pressure	= 12.00 in



Surcharge Loads	
Surcharge Over Heel	= 0.0 psf
Used To Resist Sliding & Overturning	
Surcharge Over Toe	= 0.0 psf
Used for Sliding & Overturning	

Lateral Load Applied to Stem	
Lateral Load	= 0.0 #/ft
...Height to Top	= 0.00 ft
...Height to Bottom	= 0.00 ft
Load Type	= Wind (W) (Service Level)
Wind on Exposed Stem	= 0.0 psf (Service Level)

Adjacent Footing Load	
Adjacent Footing Load	= 0.0 lbs
Footing Width	= 0.00 ft
Eccentricity	= 0.00 in
Wall to Ftg CL Dist	= 0.00 ft
Footing Type	Line Load
Base Above/Below Soil at Back of Wall	= 0.0 ft
Poisson's Ratio	= 0.300

Axial Load Applied to Stem	
Axial Dead Load	= 0.0 lbs
Axial Live Load	= 0.0 lbs
Axial Load Eccentricity	= 0.0 in

Design Summary	
Wall Stability Ratios	
Overturning	= 2.10 OK
Slab Resists All Sliding !	
Total Bearing Load	= 4,779 lbs
...resultant ecc.	= 12.46 in
Soil Pressure @ Toe	= 1,861 psf OK
Soil Pressure @ Heel	= 0 psf OK
Allowable	= 2,000 psf
Soil Pressure Less Than Allowable	
ACI Factored @ Toe	= 2,606 psf
ACI Factored @ Heel	= 0 psf
Footing Shear @ Toe	= 17.3 psi OK
Footing Shear @ Heel	= 17.8 psi OK
Allowable	= 82.2 psi
Sliding Calcs	
Lateral Sliding Force	= 2,393.8 lbs

Stem Construction		2nd	Bottom
Design Height Above Ftg	ft =	Stem OK 3.00	Stem OK 0.00
Wall Material Above "Ht"	=	Concrete	Concrete
Design Method	=	LRFD	LRFD
Thickness	=	8.00	8.00
Rebar Size	=	# 5	# 5
Rebar Spacing	=	16.00	8.00
Rebar Placed at	=	6.5 in	6.5 in
Design Data			
fb/FB + fa/Fa	=	0.337	0.669
Total Force @ Section			
Service Level	lbs =		
Strength Level	lbs =	1,250.0	3,053.1
Moment....Actual			
Service Level	ft-# =		
Strength Level	ft-# =	2,220.8	8,477.5
Moment....Allowable	ft-# =	6,561.4	12,644.5
Shear.....Actual			
Service Level	psi =		
Strength Level	psi =	16.0	39.1
Shear.....Allowable	psi =	82.2	82.2
Anet (Masonry)	in2 =		
Rebar Depth 'd'	in =	6.50	6.50
Masonry Data			
f _m	psi =		
F _s	psi =		
Solid Grouting	=		
Modular Ratio 'n'	=		
Wall Weight	psf =	100.0	100.0
Short Term Factor	=		
Equiv. Solid Thick.	=		
Masonry Block Type	=	Medium Weight	
Masonry Design Method	=	ASD	
Concrete Data			
f _c	psi =	3,000.0	3,000.0
F _y	psi =	60,000.0	60,000.0

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors	
Building Code	IBC 2015,ACI
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.000
Seismic, E	1.000

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Project Name/Number : foundation wa
Title 3440:97th Ave
Dsgnr: NJD
Description....
Detail 1 (2 Sim.)

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Cantilevered Retaining Wall

Code: IBC 2015, ACI 318-14, ACI 530-13

Concrete Stem Rebar Area Details

	Vertical Reinforcing	Horizontal Reinforcing
2nd Stem		
As (based on applied moment) :	0.0798 in2/ft	
(4/3) * As :	0.1065 in2/ft	Min Stem T&S Reinf Area 1.152 in2
200bd/fy : 200(12)(6.5)/60000 :	0.26 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in2/ft
0.0018bh : 0.0018(12)(8) :	0.1728 in2/ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.1728 in2/ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.2325 in2/ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	1.0567 in2/ft	#6@ 27.50 in #6@ 55.00 in

	Vertical Reinforcing	Horizontal Reinforcing
Bottom Stem		
As (based on applied moment) :	0.3048 in2/ft	
(4/3) * As :	0.4064 in2/ft	Min Stem T&S Reinf Area 0.576 in2
200bd/fy : 200(12)(6.5)/60000 :	0.26 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in2/ft
0.0018bh : 0.0018(12)(8) :	0.1728 in2/ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.3048 in2/ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.465 in2/ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	1.0567 in2/ft	#6@ 27.50 in #6@ 55.00 in

Footing Data

Toe Width	=	1.50 ft
Heel Width	=	4.00
Total Footing Width	=	5.50
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f'c =	3,000 psi	Fy = 60,000 psi
Footing Concrete Density	=	150.00 pcf
Min. As %	=	0.0018
Cover @ Top	2.00	@ Btm.= 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 2,606	0 psf
Mu' : Upward	= 31,751	2,214 ft-#
Mu' : Downward	= 2,430	7,109 ft-#
Mu: Design	= 1,166	4,895 ft-#
Actual 1-Way Shear	= 17.27	17.80 psi
Allow 1-Way Shear	= 82.16	82.16 psi
Toe Reinforcing	= # 4 @ 8.00 in	
Heel Reinforcing	= # 4 @ 8.00 in	
Key Reinforcing	= None Spec'd	
Footing Torsion, Tu	=	0.00 ft-lbs
Footing Allow. Torsion, phi Tu	=	0.00 ft-lbs

If torsion exceeds allowable, provide
supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Heel: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Key: No key defined

Min footing T&S reinf Area	1.43	in2
Min footing T&S reinf Area per foot	0.26	in2 /ft
If one layer of horizontal bars:		If two layers of horizontal bars:
#4@ 9.26 in		#4@ 18.52 in
#5@ 14.35 in		#5@ 28.70 in
#6@ 20.37 in		#6@ 40.74 in

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Project Name/Number : foundation wa
 Title 3440.97th Ave
 Dsgnr: NJD
 Description....
 Detail 1 (2 Sim.)

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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING.....			.....RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
HL Act Pres (ab water tbl)	2,393.8	3.11	7,444.9	Soil Over HL (ab. water tbl)	3,054.3	3.83	11,708.3
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		3.83	11,708.3
Hydrostatic Force				Watre Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =				Surcharge Over Heel =			
Surcharge Over Toe =				Adjacent Footing Load =			
Adjacent Footing Load =				Axial Dead Load on Stem =			
Added Lateral Load =				* Axial Live Load on Stem =			
Load @ Stem Above Soil =				Soil Over Toe =			
=				Surcharge Over Toe =			
				Stem Weight(s) =	900.0	1.83	1,650.0
				Earth @ Stem Transitions =			
Total	= 2,393.8	O.T.M. =	7,444.9	Footing Weighl =	825.0	2.75	2,268.8
				Key Weight =			
				Vert. Component =			
Resisting/Overturning Ratio		=	2.10	Total =	4,779.3 lbs	R.M.=	15,627.0
Vertical Loads used for Soil Pressure =			4,779.3 lbs	* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.			

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci
 Horizontal Defl @ Top of Wall (approximate only) 0.085 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

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Project Name/Number : foundation wa
 Title 3440.97th Ave
 Dsgnr: NJD
 Description....
 DTL 3 (DTL 15 Sim.)

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 Date: 18 JAN 2019

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Cantilevered Retaining Wall

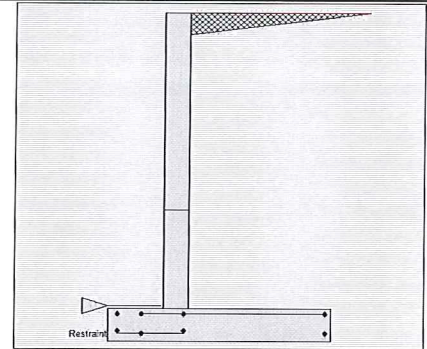
Code: IBC 2015,ACI 318-14,ACI 530-13

Criteria

Retained Height = 9.00 ft
 Wall height above soil = 0.00 ft
 Slope Behind Wall = 0.00
 Height of Soil over Toe = 0.00 in
 Water height over heel = 0.0 ft

Soil Data

Allow Soil Bearing = 2,000.0 psf
 Equivalent Fluid Pressure Method
 Active Heel Pressure = 55.0 psf/ft
 Passive Pressure = 250.0 psf/ft
 Soil Density, Heel = 110.00 pcf
 Soil Density, Toe = 0.00 pcf
 Footing||Soil Friction = 0.400
 Soil height to ignore for passive pressure = 12.00 in



Surcharge Loads

Surcharge Over Heel = 0.0 psf
 Used To Resist Sliding & Overturning
 Surcharge Over Toe = 0.0 psf
 Used for Sliding & Overturning

Lateral Load Applied to Stem

Lateral Load = 0.0 #/ft
 ...Height to Top = 0.00 ft
 ...Height to Bottom = 0.00 ft
 Load Type = Wind (W)
 (Service Level)
 Wind on Exposed Stem = 0.0 psf
 (Service Level)

Adjacent Footing Load

Adjacent Footing Load = 0.0 lbs
 Footing Width = 0.00 ft
 Eccentricity = 0.00 in
 Wall to Ftg CL Dist = 0.00 ft
 Footing Type = Line Load
 Base Above/Below Soil at Back of Wall = 0.0 ft
 Poisson's Ratio = 0.300

Axial Load Applied to Stem

Axial Dead Load = 0.0 lbs
 Axial Live Load = 0.0 lbs
 Axial Load Eccentricity = 0.0 in

Design Summary

Wall Stability Ratios

Overturning = 2.17 OK
 Slab Resists All Sliding !

Total Bearing Load = 5,595 lbs
 ...resultant ecc. = 13.09 in

Soil Pressure @ Toe = 1,954 psf OK
 Soil Pressure @ Heel = 0 psf OK
 Allowable = 2,000 psf
 Soil Pressure Less Than Allowable

ACI Factored @ Toe = 2,736 psf
 ACI Factored @ Heel = 0 psf

Footing Shear @ Toe = 18.4 psi OK
 Footing Shear @ Heel = 19.4 psi OK
 Allowable = 82.2 psi

Sliding Calcs

Lateral Sliding Force = 2,750.0 lbs

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code IBC 2015,ACI
 Dead Load 1.200
 Live Load 1.600
 Earth, H 1.600
 Wind, W 1.000
 Seismic, E 1.000

Stem Construction

	2nd	Bottom
Design Height Above Ftg	ft = Stem OK	Stem OK
Wall Material Above "Ht"	= Concrete	Concrete
Design Method	= LRFD	LRFD
Thickness	= 8.00	8.00
Rebar Size	= # 5	# 5
Rebar Spacing	= 16.00	8.00
Rebar Placed at	= 6.5 in	6.5 in

Design Data

fb/FB + fa/Fa = 0.482 0.845

Total Force @ Section

Service Level lbs =
 Strength Level lbs = 1,584.0 3,564.0

Moment....Actual

Service Level ft-# =
 Strength Level ft-# = 3,168.0 10,692.0

Moment....Allowable ft-# = 6,561.4 12,644.5

Shear....Actual

Service Level psi =
 Strength Level psi = 20.3 45.7

Shear....Allowable psi = 82.2 82.2

Anet (Masonry) in2 =

Rebar Depth 'd' in = 6.50 6.50

Masonry Data

f_m psi =
 F_s psi =

Solid Grouting =

Modular Ratio 'n' =

Wall Weight psf = 100.0 100.0

Short Term Factor =

Equiv. Solid Thick. =

Masonry Block Type = Medium Weight

Masonry Design Method = ASD

Concrete Data

f_c psi = 3,000.0 3,000.0

F_y psi = 60,000.0 60,000.0

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Project Name/Number : foundation wa
Title 3440.97th Ave
Dsgnr: NJD
Description....
DTL 3 (DTL 15 Sim.)

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Cantilevered Retaining Wall

Code: IBC 2015, ACI 318-14, ACI 530-13

Concrete Stem Rebar Area Details

2nd Stem	Vertical Reinforcing	Horizontal Reinforcing
As (based on applied moment) :	0.1139 in ² /ft	
(4/3) * As :	0.1519 in ² /ft	Min Stem T&S Reinf Area 1.152 in ²
200bd/fy : 200(12)(6.5)/60000 :	0.26 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.1728 in ² /ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.2325 in ² /ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	1.0567 in ² /ft	#6@ 27.50 in #6@ 55.00 in

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing
As (based on applied moment) :	0.3844 in ² /ft	
(4/3) * As :	0.5125 in ² /ft	Min Stem T&S Reinf Area 0.576 in ²
200bd/fy : 200(12)(6.5)/60000 :	0.26 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.3844 in ² /ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.465 in ² /ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	1.0567 in ² /ft	#6@ 27.50 in #6@ 55.00 in

Footing Data

Toe Width	=	1.50 ft
Heel Width	=	4.50
Total Footing Width	=	6.00
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f _c =	3,000 psi	F _y = 60,000 psi
Footing Concrete Density	=	150.00 pcf
Min. As %	=	0.0018
Cover @ Top	2.00	@ Btm.= 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 2,736	0 psf
Mu' : Upward	= 33,708	3,592 ft-#
Mu' : Downward	= 2,430	10,051 ft-#
Mu: Design	= 1,266	6,459 ft-#
Actual 1-Way Shear	= 18.37	19.45 psi
Allow 1-Way Shear	= 82.16	82.16 psi
Toe Reinforcing	= # 4 @ 8.00 in	
Heel Reinforcing	= # 4 @ 8.00 in	
Key Reinforcing	= None Spec'd	
Footing Torsion, Tu	=	0.00 ft-lbs
Footing Allow. Torsion, phi Tu	=	0.00 ft-lbs

If torsion exceeds allowable, provide
supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Heel: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Key: No key defined

Min footing T&S reinf Area	1.56	in ²
Min footing T&S reinf Area per foot	0.26	in ² /ft
If one layer of horizontal bars:		If two layers of horizontal bars:
#4@ 9.26 in		#4@ 18.52 in
#5@ 14.35 in		#5@ 28.70 in
#6@ 20.37 in		#6@ 40.74 in

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Project Name/Number : foundation wa
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 DTL 3 (DTL 15 Sim.)

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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING.....			.....RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
HL Act Pres (ab water tbl)	2,750.0	3.33	9,166.7	Soil Over HL (ab. water tbl)	3,795.0	4.08	15,496.3
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		4.08	15,496.3
Hydrostatic Force				Watre Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =				Surcharge Over Heel =			
Surcharge Over Toe =				Adjacent Footing Load =			
Adjacent Footing Load =				Axial Dead Load on Stem =			
Added Lateral Load =				* Axial Live Load on Stem =			
Load @ Stem Above Soil =				Soil Over Toe =			
				Surcharge Over Toe =			
				Stem Weight(s) =	900.0	1.83	1,650.0
				Earth @ Stem Transitions =			
Total	= 2,750.0	O.T.M. =	9,166.7	Footing Weight =	900.0	3.00	2,700.0
				Key Weight =			
				Vert. Component =			
Resisting/Overturning Ratio		= 2.17		Total =	5,595.0 lbs	R.M.=	19,846.3
Vertical Loads used for Soil Pressure =		5,595.0 lbs		* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.			

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci
 Horizontal Defl @ Top of Wall (approximate only) 0.081 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

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Project Name/Number : foundation wa
 Title 3440.97th Ave
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 Description....
 DTL 14 - Reverse Retaining at Garage

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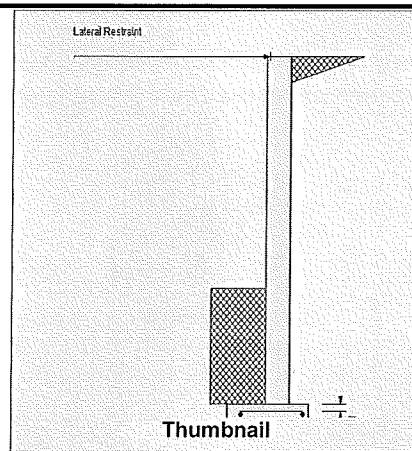
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Restrained Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Criteria		Soil Data	
Retained Height	= 9.00 ft	Allow Soil Bearing	= 2,000.0 psf
Wall height above soil	= 0.00 ft	Equivalent Fluid Pressure Method	
Total Wall Height	= 9.00 ft	At-Rest Heel Pressure	= 35.0 psf/ft
			=
Top Support Height	= 9.00 ft	Passive Pressure	= 250.0 psf/ft
Slope Behind Wal	= 0.00	Soil Density	= 110.00 pcf
Height of Soil over Toe	= 36.00 in	Footing||Soil Frictior	= 0.400
		Soil height to ignore for passive pressure	= 12.00 in



Surcharge Loads	
Surcharge Over Heel	= 0.0 psf
>>>Used To Resist Sliding & Overturning	
Surcharge Over Toe	= 0.0 psf
Used for Sliding & Overturning	

Uniform Lateral Load Applied to Stem	
Lateral Load	= 0.0 #/ft
...Height to Top	= 0.00 ft
...Height to Bottom	= 0.00 ft

Adjacent Footing Load	
Adjacent Footing Load	= 0.0 lbs
Footing Width	= 0.00 ft
Eccentricity	= 0.00 in
Wall to Ftg CL Dist	= 0.00 ft
Footing Type	Line Load
Base Above/Below Soil at Back of Wall	= 0.0 ft
Poisson's Ratio	= 0.300

Axial Load Applied to Stem	
Axial Dead Load	= 0.0 lbs
Axial Live Load	= 0.0 lbs
Axial Load Eccentricity	= 0.0 in

Load Type	= Wind (W) (Strength Level)
Wind on Exposed Stem	= 0.0 psf

Earth Pressure Seismic Load	
-----------------------------	--

K_h Soil Density Multiplier	= 0.200 g	Added seismic per unit area	= 0.0 psf
-------------------------------	-----------	-----------------------------	-----------

Design Summary	
Total Bearing Load	= 2,265 lbs
...resultant ecc.	= 0.00 in
Soil Pressure @ Toe	= 906 psf OK
Soil Pressure @ Heel	= 906 psf OK
Allowable	= 2,000 psf
Soil Pressure Less Than Allowable	
ACI Factored @ Toe	= 1,087 psf
ACI Factored @ Heel	= 1,087 psf
Footing Shear @ Toe	= 2.7 psi OK
Footing Shear @ Heel	= 1.4 psi OK
Allowable	= 75.0 psi
Reaction at Top	= 282.5 lbs
Reaction at Bottom	= 1,466.5 lbs
Sliding Stability Ratio	= 1.90 OK
Sliding Calcs	
Lateral Sliding Force	= 1,466.5 lbs
less 100% Passive Force	= - 1,875.0 lbs
less 100% Friction Force	= - 906.0 lbs
Added Force Req'd	= 0.0 lbs OK
....for 1.5 Stability	= 0.0 lbs OK

Concrete Stem Construction		Mmax Between Top & Base		
		@ Top Support		@ Base of Wall
Thickness	= 8.00 in	Stem OK	Stem OK	Stem OK
Wall Weight	= 100.0 psf			
Stem is FIXED to top of footing				
F_y	= 60,000 psi			
f_c	= 3,000 psi			
Design Height Above Ftg	= 9.00 ft	9.00 ft	5.02 ft	0.00 ft
Rebar Size	= # 5	# 5	# 5	# 4
Rebar Spacing	= 16.00 in	16.00 in	16.00 in	12.00 in
Rebar Placed at	= Edge	Edge	Edge	Edge
Rebar Depth 'd'	= 5.50 in	5.50 in	6.00 in	5.50 in
Design Data				
fb/FB + fa/Fa	= 0.000	0.202	0.570	
Mu....Actual	= 0.0 ft-#	1,217.1 ft-#	2,721.7 ft-#	
Mn * Phi....Allowable	= 5,515.2 ft-#	6,038.3 ft-#	4,773.0 ft-#	
Shear Force @ this height	= 453.6 lbs			1,814.4 lbs
Shear.....Actual	= 6.87 psi			27.49 psi
Shear.....Allowable	= 82.16 psi			82.16 psi

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors	
Building Code	IBC 2015,ACI
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.000
Seismic, E	1.000

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Project Name/Number : foundation wa
Title 3440.97th Ave
Dsgnr: NJD
Description....
DTL 14 - Reverse Retaining at Garage

Page : 2
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Restrained Retaining Wall

Code: IBC 2015, ACI 318-14, ACI 530-13

Concrete Stem Rebar Area Details

	Vertical Reinforcing	Horizontal Reinforcing	
Top Support			
As (based on applied moment) :	0 in ² /ft		
(4/3) * As :	0 in ² /ft	Min Stem T&S Reinf Area 1.728 in ²	
200bd/fy : 200(12)(5.5)/60000 :	0.22 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft	
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :	
	=====	One layer of :	Two layers of :
Required Area :	0.1728 in ² /ft	#4@ 12.50 in	#4@ 25.00 in
Provided Area :	0.2325 in ² /ft	#5@ 19.38 in	#5@ 38.75 in
Maximum Area :	0.8941 in ² /ft	#6@ 27.50 in	#6@ 55.00 in

	Vertical Reinforcing	Horizontal Reinforcing	
Mmax Between Ends			
As (based on applied moment) :	0.0476 in ² /ft		
(4/3) * As :	0.0635 in ² /ft	Min Stem T&S Reinf Area 0.763 in ²	
200bd/fy : 200(12)(6)/60000 :	0.24 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft	
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :	
	=====	One layer of :	Two layers of :
Required Area :	0.1728 in ² /ft	#4@ 12.50 in	#4@ 25.00 in
Provided Area :	0.2325 in ² /ft	#5@ 19.38 in	#5@ 38.75 in
Maximum Area :	0.9754 in ² /ft	#6@ 27.50 in	#6@ 55.00 in

	Vertical Reinforcing	Horizontal Reinforcing	
Base Support			
As (based on applied moment) :	0.1167 in ² /ft		
(4/3) * As :	0.1556 in ² /ft	Min Stem T&S Reinf Area 0.965 in ²	
200bd/fy : 200(12)(5.5)/60000 :	0.22 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft	
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :	
	=====	One layer of :	Two layers of :
Required Area :	0.1728 in ² /ft	#4@ 12.50 in	#4@ 25.00 in
Provided Area :	0.2 in ² /ft	#5@ 19.38 in	#5@ 38.75 in
Maximum Area :	0.8941 in ² /ft	#6@ 27.50 in	#6@ 55.00 in

Footing Strengths & Dimensions

Toe Width	=	1.25 ft
Heel Width	=	1.25
Total Footing Width	=	2.50
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f'c =	2,500 psi	Fy = 60,000 psi
Footing Concrete Density	=	150.00 pcf
Min. As %	=	0.0018
Cover @ Top	=	2.00 in @ Btm.= 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 1,087	1,087 psf
Mu' : Upward	= 849	185 ft-#
Mu' : Downward	= 450	233 ft-#
Mu: Design	= 399	48 ft-#
Actual 1-Way Shear	= 2.71	1.44 psi
Allow 1-Way Shear	= 75.00	75.00 psi

Other Acceptable Sizes & Spacings:

Toe: # 4 @ 18.00 in	-or-	Not req'd: Mu < phi*5*lambda*sqrt(f'c)*Sm
Heel: # 4 @ 18.00 in	-or-	Not req'd: Mu < phi*5*lambda*sqrt(f'c)*Sm
Key: No key defined	-or-	No key defined
Min footing T&S reinf Area		0.65 in ²
Min footing T&S reinf Area per foot		0.26 in ² /ft
If one layer of horizontal bars:		If two layers of horizontal bars:
#4@ 9.26 in		#4@ 18.52 in
#5@ 14.35 in		#5@ 28.70 in
#6@ 20.37 in		#6@ 40.74 in

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Project Name/Number : foundation wa
Title 3440.97th Ave
Dsgnr: NJD
Description....
DTL 14 - Reverse Retaining at Garage

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Restrained Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Summary of Forces on Footing : Slab is NOT providing sliding, stem is FIXED at footing

Forces acting on footing for sliding & soil pressure....

Sliding Forces		Load & Moment Summary For Footing : For Soil Pressure Calcs			
Stem Shear @ Top of Footing =	-1,134.0 lbs	Moment @ Top of Footing Applied from Stem =			-1,701.0ft-#
Heel Active Pressure =	-332.5	Surcharge Over Heel			
Sliding Force =	1,466.5 lbs	Adjacent Footing Load =	lbs	ft	ft-#
		Axial Dead Load on Stem =	lbs	ft	ft-#
Net Moment User For Soil Pressure Calculations		Soil Over Toe =	412.5 lbs	0.63 ft	257.8ft-#
	0.0 ft-#	Surcharge Over Toe =	lbs	ft	ft-#
		Stem Weight =	900.0 lbs	1.58 ft	1,425.0ft-#
		Soil Over Heel =	577.5 lbs	2.21 ft	1,275.3ft-#
		Footing Weight =	375.0 lbs	1.25 ft	468.8ft-#
		Total Vertical Force =	2,265.0 lbs	Base Moment =	1,725.8ft-#

Vertical component of active lateral soil pressure IS NOT considered in
the calculation of Sliding Resistance.

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Project Name/Number : foundation wa
 Title 3440.97th Ave
 Dsgnr: NJD
 Description....
 DTL 19 - Cant'd Wall at basement egress

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Cantilevered Retaining Wall

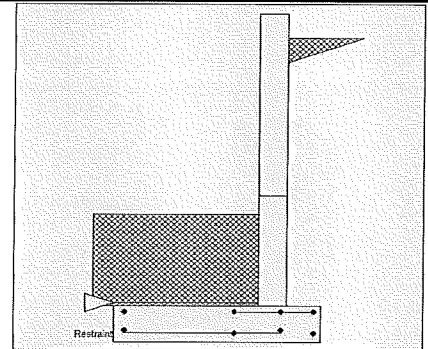
Code: IBC 2015,ACI 318-14,ACI 530-13

Criteria

Retained Height = 7.33 ft
 Wall height above soil = 0.67 ft
 Slope Behind Wall = 0.00
 Height of Soil over Toe = 30.00 in
 Water height over heel = 0.0 ft

Soil Data

Allow Soil Bearing = 2,500.0 psf
 Equivalent Fluid Pressure Method
 Active Heel Pressure = 55.0 psf/ft
 Passive Pressure = 250.0 psf/ft
 Soil Density, Heel = 110.0 pcf
 Soil Density, Toe = 30.00 pcf
 Footing||Soil Friction = 0.400
 Soil height to ignore for passive pressure = 12.00 in



Surcharge Loads

Surcharge Over Heel = 0.0 psf
 Used To Resist Sliding & Overturning
 Surcharge Over Toe = 0.0 psf
 Used for Sliding & Overturning

Lateral Load Applied to Stem

Lateral Load = 0.0 #/ft
 ...Height to Top = 0.00 ft
 ...Height to Bottom = 0.00 ft
 Load Type = Wind (W)
 (Service Level)
 Wind on Exposed Stem = 0.0 psf
 (Service Level)

Adjacent Footing Load

Adjacent Footing Load = 0.0 lbs
 Footing Width = 0.00 ft
 Eccentricity = 0.00 in
 Wall to Ftg CL Dist = 0.00 ft
 Footing Type = Line Load
 Base Above/Below Soil at Back of Wall = 0.0 ft
 Poisson's Ratio = 0.300

Axial Load Applied to Stem

Axial Dead Load = 0.0 lbs
 Axial Live Load = 0.0 lbs
 Axial Load Eccentricity = 0.0 in

Design Summary

Wall Stability Ratios
 Overturning = 1.60 OK
 Slab Resists All Sliding !

Total Bearing Load = 2,484 lbs
 ...resultant ecc. = 14.63 in

Soil Pressure @ Toe = 1,293 psf OK
 Soil Pressure @ Heel = 0 psf OK
 Allowable = 2,500 psf
 Soil Pressure Less Than Allowable

ACI Factored @ Toe = 1,810 psf
 ACI Factored @ Heel = 0 psf
 Footing Shear @ Toe = 14.6 psi OK
 Footing Shear @ Heel = 8.4 psi OK
 Allowable = 82.2 psi

Sliding Calcs

Lateral Sliding Force = 1,908.2 lbs

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code = IBC 2015,ACI
 Dead Load = 1.200
 Live Load = 1.600
 Earth, H = 1.600
 Wind, W = 1.000
 Seismic, E = 1.000

Stem Construction

	2nd	Bottom
Design Height Above Ftg	ft = 3.00	Stem OK
Wall Material Above "Ht"	= Concrete	Concrete
Design Method	= LRFD	LRFD
Thickness	= 8.00	8.00
Rebar Size	= # 5	# 5
Rebar Spacing	= 16.00	8.00
Rebar Placed at	= 6.5 in	6.5 in

Design Data

fb/FB + fa/Fa = 0.180 0.456

Total Force @ Section

Service Level lbs =
 Strength Level lbs = 825.0 2,364.1

Moment...Actual

Service Level ft-# =
 Strength Level ft-# = 1,190.7 5,776.2

Moment....Allowable ft-# = 6,561.4 12,644.5

Shear....Actual

Service Level psi =
 Strength Level psi = 10.6 30.3

Shear....Allowable psi = 82.2 82.2

Anet (Masonry) in2 =

Rebar Depth 'd' in = 6.50 6.50

Masonry Data

f'm psi =
 F's psi =

Solid Grouting =

Modular Ratio 'n' =

Wall Weight psf = 100.0 100.0

Short Term Factor =

Equiv. Solid Thick. =

Masonry Block Type = Medium Weight

Masonry Design Method = ASD

Concrete Data

f'c psi = 3,000.0 3,000.0

Fy psi = 60,000.0 60,000.0

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Project Name/Number : foundation wa
Title 3440 97th Ave
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Description....
DTL 19 - Cant'd Wall at basement egress

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Cantilevered Retaining Wall

Code: IBC 2015, ACI 318-14, ACI 530-13

Concrete Stem Rebar Area Details

2nd Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0428 in2/ft		
(4/3) * As :	0.0571 in2/ft	Min Stem T&S Reinf Area 0.960 in2	
200bd/fy : 200(12)(6.5)/60000 :	0.26 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in2/ft	
0.0018bh : 0.0018(12)(8) :	0.1728 in2/ft	Horizontal Reinforcing Options :	
	=====	One layer of :	Two layers of :
Required Area :	0.1728 in2/ft	#4@ 12.50 in	#4@ 25.00 in
Provided Area :	0.2325 in2/ft	#5@ 19.38 in	#5@ 38.75 in
Maximum Area :	1.0567 in2/ft	#6@ 27.50 in	#6@ 55.00 in

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.2077 in2/ft		
(4/3) * As :	0.2769 in2/ft	Min Stem T&S Reinf Area 0.576 in2	
200bd/fy : 200(12)(6.5)/60000 :	0.26 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in2/ft	
0.0018bh : 0.0018(12)(8) :	0.1728 in2/ft	Horizontal Reinforcing Options :	
	=====	One layer of :	Two layers of :
Required Area :	0.26 in2/ft	#4@ 12.50 in	#4@ 25.00 in
Provided Area :	0.465 in2/ft	#5@ 19.38 in	#5@ 38.75 in
Maximum Area :	1.0567 in2/ft	#6@ 27.50 in	#6@ 55.00 in

Footing Data

Toe Width	=	3.50 ft
Heel Width	=	1.50
Total Footing Width	=	5.00
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f'c =	3,000 psi	Fy = 60,000 psi
Footing Concrete Density	=	150.00 pcf
Min. As %	=	0.0018
Cover @ Top	2.00	@ Btm= 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 1,810	0 psf
Mu' : Upward	= 92,660	0 ft-#
Mu' : Downward	= 37,485	398 ft-#
Mu: Design	= 1,137	398 ft-#
Actual 1-Way Shear	= 14.58	8.39 psi
Allow 1-Way Shear	= 82.16	82.16 psi
Toe Reinforcing	= # 4 @ 8.00 in	
Heel Reinforcing	= # 4 @ 8.00 in	
Key Reinforcing	= None Spec'd	
Footing Torsion, Tu	=	0.00 ft-lbs
Footing Allow. Torsion, phi Tu	=	0.00 ft-lbs

If torsion exceeds allowable, provide
supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Heel: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Key: No key defined

Min footing T&S reinf Area	1.30	in2
Min footing T&S reinf Area per foot	0.26	in2 /ft
If one layer of horizontal bars:	If two layers of horizontal bars:	
#4@ 9.26 in	#4@ 18.52 in	
#5@ 14.35 in	#5@ 28.70 in	
#6@ 20.37 in	#6@ 40.74 in	

Use menu item Settings > Printing & Title Block to set these five lines of information for your program.

Project Name/Number : foundation wa
 Title 3440:97th Ave
 Dsgnr: NJD
 Description....
 DTL 19 - Cant'd Wall at basement egress

Page : 3
 Date: 7 MAR 2019

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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING.....			.....RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
HL Act Pres (ab water tbl)	1,908.2	2.78	5,298.4	Soil Over HL (ab. water tbl)	671.9	4.58	3,079.6
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		4.58	3,079.6
Hydrostatic Force				Watre Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =				Surcharge Over Heel =			
Surcharge Over Toe =				Adjacent Footing Load =			
Adjacent Footing Load =				Axial Dead Load on Stem =			
Added Lateral Load =				* Axial Live Load on Stem =			
Load @ Stem Above Soil =				Soil Over Toe =	262.5	1.75	459.4
=				Surcharge Over Toe =			
				Stem Weight(s) =	800.0	3.83	3,066.7
				Earth @ Stem Transitions =			
Total	= 1,908.2	O.T.M. =	5,298.4	Footing Weighl =	750.0	2.50	1,875.0
				Key Weight =			
				Vert. Component =			
Resisting/Overturning Ratio		= 1.60		Total =	2,484.4 lbs	R.M.=	8,480.7
Vertical Loads used for Soil Pressure =		2,484.4 lbs		* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.			

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci
 Horizontal Defl @ Top of Wall (approximate only) 0.057 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Use menu item Settings > Printing & Title Block to set these five lines of information for your program.

Project Name/Number : foundation wa
 Title 3440.97th Ave
 Dsgnr: NJD
 Description....
 DTL 20

Page : 1
 Date: 28 FEB 2020

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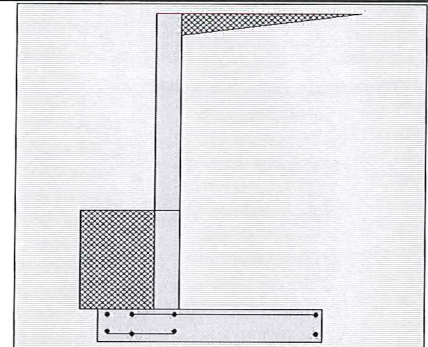
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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Criteria		
Retained Height	=	9.00 ft
Wall height above soil	=	0.00 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	36.00 in
Water height over heel	=	0.0 ft

Soil Data		
Allow Soil Bearing	=	2,000.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	55.0 psf/ft
Passive Pressure	=	250.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	0.00 pcf
Footings|Soil Friction	=	0.400
Soil height to ignore for passive pressure	=	0.00 in



Surcharge Loads		
Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0 psf
Used for Sliding & Overturning		

Lateral Load Applied to Stem		
Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem	=	0.0 psf (Service Level)

Adjacent Footing Load		
Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type	=	Line Load
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Axial Load Applied to Stem		
Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Design Summary		
Wall Stability Ratios		
Overturning	=	2.17 OK
Sliding	=	1.54 OK
Total Bearing Load = 5,595 lbs		
...resultant ecc.	=	13.09 in
Soil Pressure @ Toe	=	1,954 psf OK
Soil Pressure @ Heel	=	0 psf OK
Allowable	=	2,000 psf
Soil Pressure Less Than Allowable		
ACI Factored @ Toe	=	2,736 psf
ACI Factored @ Heel	=	0 psf
Footing Shear @ Toe	=	14.3 psi OK
Footing Shear @ Heel	=	19.4 psi OK
Allowable	=	82.2 psi
Sliding Calcs		
Lateral Sliding Force	=	2,750.0 lbs
less 100% Passive Force	= -	2,000.0 lbs
less 100% Friction Force	= -	2,238.0 lbs
Added Force Req'd	=	0.0 lbs OK
....for 1.5 Stability	=	0.0 lbs OK

Stem Construction			2nd	Bottom
Design Height Above Ftg	ft =	Stem OK	3.00	Stem OK
Wall Material Above "Ht"	=	Concrete	Concrete	0.00
Design Method	=	LRFD	LRFD	
Thickness	=	8.00	8.00	
Rebar Size	=	# 5	# 5	
Rebar Spacing	=	16.00	8.00	
Rebar Placed at	=	6.5 in	6.5 in	
Design Data				
fb/FB + fa/Fa	=	0.482	0.845	
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	1,584.0	3,564.0	
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	3,168.0	10,692.0	
Moment....Allowable				
ft-# =		6,561.4	12,644.5	
Shear....Actual				
Service Level	psi =			
Strength Level	psi =	20.3	45.7	
Shear....Allowable	psi =	82.2	82.2	
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	6.50	6.50	
Masonry Data				
f _m	psi =			
F _s	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	100.0	100.0	
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=	Medium Weight		
Masonry Design Method	=	ASD		
Concrete Data				
f _c	psi =	3,000.0	3,000.0	
F _y	psi =	60,000.0	60,000.0	

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors		
Building Code		IBC 2015,ACI
Dead Load		1.200
Live Load		1.600
Earth, H		1.600
Wind, W		1.000
Seismic, E		1.000

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Project Name/Number : foundation wa
Title 3440 97th Ave
Dsgnr: NJD
Description....
DTL 20

Page : 2
Date: 28 FEB 2020

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Cantilevered Retaining Wall

Code: IBC 2015, ACI 318-14, ACI 530-13

Concrete Stem Rebar Area Details

2nd Stem	Vertical Reinforcing	Horizontal Reinforcing
As (based on applied moment) :	0.1139 in ² /ft	
(4/3) * As :	0.1519 in ² /ft	Min Stem T&S Reinf Area 1.152 in ²
200bd/fy : 200(12)(6.5)/60000 :	0.26 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.1728 in ² /ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.2325 in ² /ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	1.0567 in ² /ft	#6@ 27.50 in #6@ 55.00 in

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing
As (based on applied moment) :	0.3844 in ² /ft	
(4/3) * As :	0.5125 in ² /ft	Min Stem T&S Reinf Area 0.576 in ²
200bd/fy : 200(12)(6.5)/60000 :	0.26 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.3844 in ² /ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.465 in ² /ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	1.0567 in ² /ft	#6@ 27.50 in #6@ 55.00 in

Footing Data

Toe Width	=	1.50 ft
Heel Width	=	4.50
Total Footing Width	=	6.00
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f'c =	3,000 psi	Fy = 60,000 psi
Footing Concrete Density	=	150.00 pcf
Min. As %	=	0.0018
Cover @ Top	2.00	@ Btm.= 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 2,736	0 psf
Mu' : Upward	= 33,708	3,592 ft-#
Mu' : Downward	= 7,776	10,051 ft-#
Mu: Design	= 821	6,459 ft-#
Actual 1-Way Shear	= 14.27	19.45 psi
Allow 1-Way Shear	= 82.16	82.16 psi
Toe Reinforcing	= # 4 @ 8.00 in	
Heel Reinforcing	= # 4 @ 8.00 in	
Key Reinforcing	= None Spec'd	
Footing Torsion, Tu	=	0.00 ft-lbs
Footing Allow. Torsion, phi Tu	=	0.00 ft-lbs

If torsion exceeds allowable, provide
supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Heel: #4@ 9.25 in, #5@ 14.34 in, #6@ 20.36 in, #7@ 27.77 in, #8@ 36.56 in, #9@ 46
Key: No key defined

Min footing T&S reinf Area	1.56	in ²
Min footing T&S reinf Area per foot	0.26	in ² /ft
If one layer of horizontal bars:		If two layers of horizontal bars:
#4@ 9.26 in		#4@ 18.52 in
#5@ 14.35 in		#5@ 28.70 in
#6@ 20.37 in		#6@ 40.74 in

Use menu item Settings > Printing & Title Block to set these five lines of information for your program.

Project Name/Number : foundation wa
 Title 3440:97th Ave
 Dsgnr: NJD
 Description....
 DTL 20

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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING.....			.....RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
HL Act Pres (ab water tbl)	2,750.0	3.33	9,166.7	Soil Over HL (ab. water tbl)	3,795.0	4.08	15,496.3
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		4.08	15,496.3
Hydrostatic Force				Watre Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =				Surcharge Over Heel =			
Surcharge Over Toe =				Adjacent Footing Load =			
Adjacent Footing Load =				Axial Dead Load on Stem =			
Added Lateral Load =				* Axial Live Load on Stem =			
Load @ Stem Above Soil =				Soil Over Toe =		0.75	
				Surcharge Over Toe =			
				Stem Weight(s) =	900.0	1.83	1,650.0
				Earth @ Stem Transitions =			
Total	= 2,750.0	O.T.M. =	9,166.7	Footing Weighl =	900.0	3.00	2,700.0
				Key Weight =			
				Vert. Component =			
Resisting/Overturning Ratio		= 2.17		Total =	5,595.0 lbs	R.M.=	19,846.3
Vertical Loads used for Soil Pressure =		5,595.0 lbs		* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.			

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci

Horizontal Defl @ Top of Wall (approximate only) 0.081 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

J DESIGNS
3440 97TH AVE

MERCER ISLAND, WA

SHEAR WALL CALCULATIONS - WIND

REVIEWED BY:

MARCH 8, 2019

PARAMETERS:

SINGLE FAMILY HOME

DESIGN WIND SPEED: 110 MPH

WIND EXPOSURE CATEGORY: C

SEISMIC DESIGN CATEGORY: D

CODE & DESIGN STANDARD: 2015 IBC CH. 1609, ASCE 7-10 CH. 26-30



WIND DESIGN SUMMARY PER ASCE 7-10

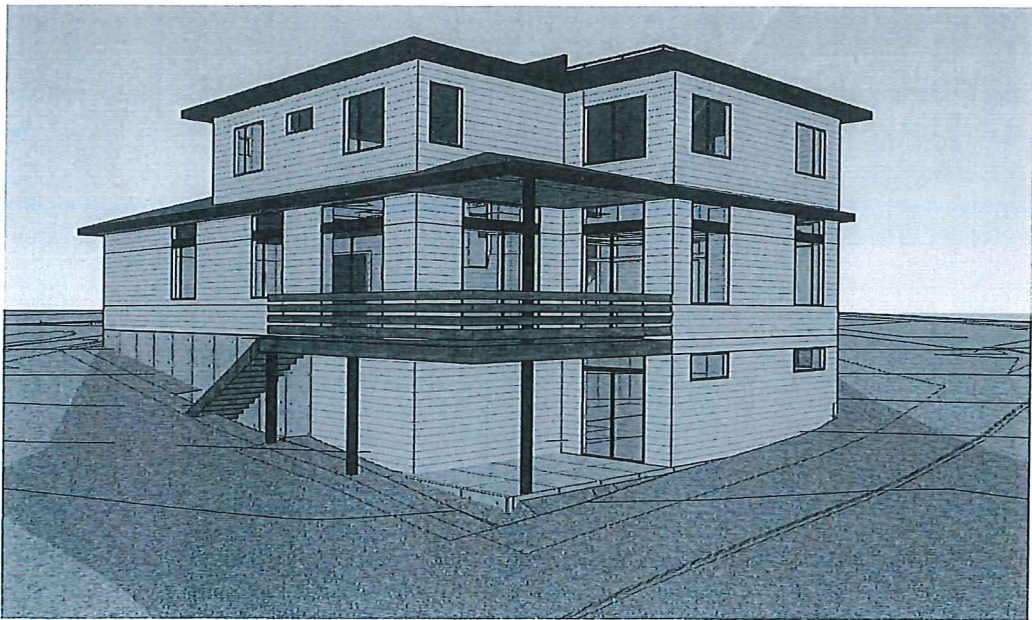
PARAMETERS:		ROOF GEOMETRY:		BUILDING GEOMETRY:	
WIND SPEED	110	TRANS. ROOF PITCH	3 : 12	LENGTH	52 FT
EXPOSURE CATEGORY	C	LONG. ROOF PITCH	3 : 12	WIDTH	64 FT
RISK CATEGORY	II	MEAN ROOF HEIGHT, H	31.00 FT	NUMBER OF STORIES	3
WIND DIRECTIONALITY FACTOR, K_D	0.85				
TOPOGRAPHIC FACTOR, K_{ZT}	1.00				
GUST FACTOR, G	0.85				
DESIGN TYPE	ASD				

TRANSVERSE DIRECTION (PERPENDICULAR TO MAIN RIDGE LINE)

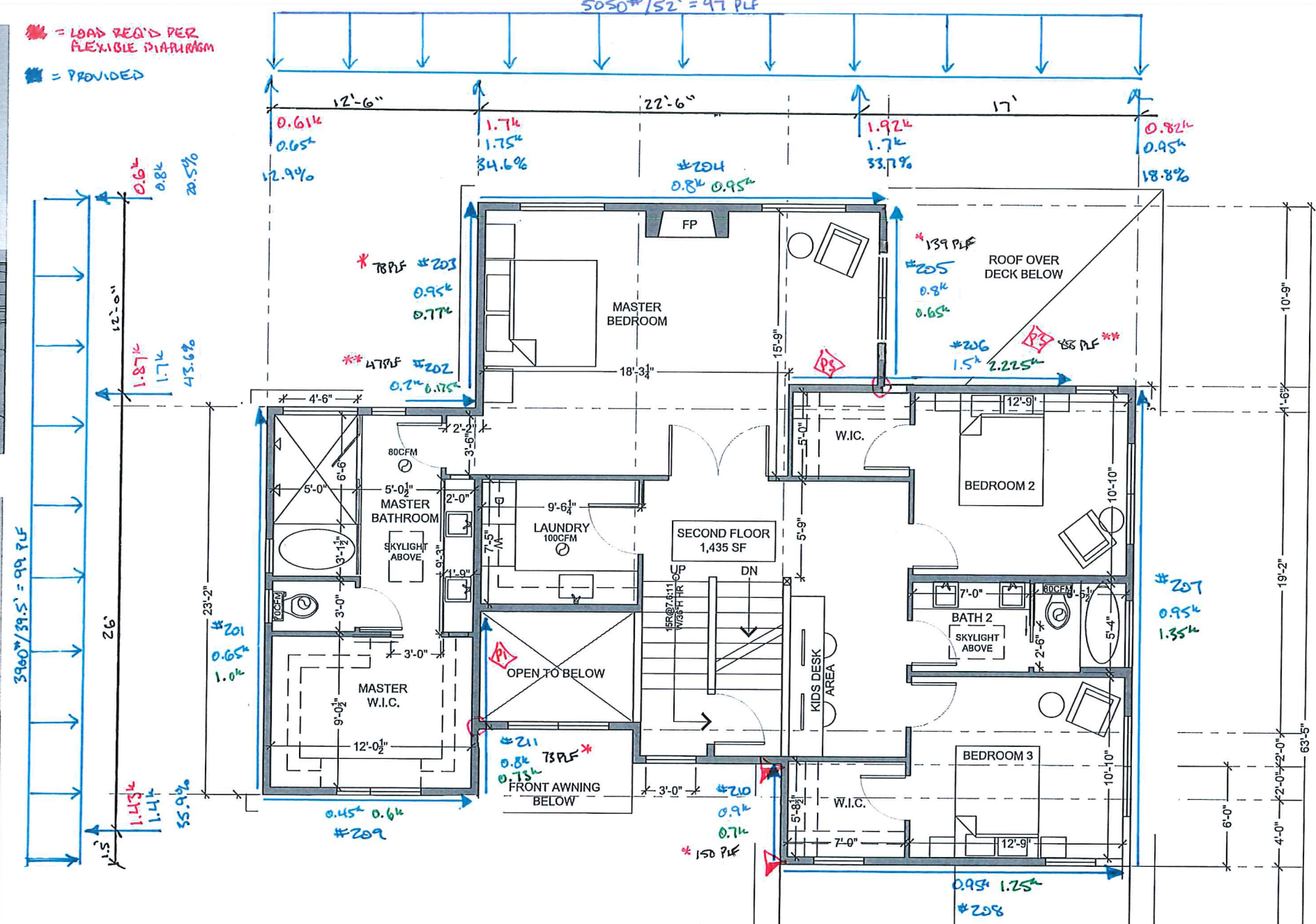
DIAPHRAGM LEVEL	FLOOR-TO-FLOOR HEIGHT	SECTION	TRIBUTARY DESIGN AREAS			sq ft	SECTION	TRIBUTARY DESIGN LOADS: (0.6W)			kips
			A	O	B			A	O	B	
3	8 FT		0	94	0	sq ft		0.00	5.04	0.00	kips
			0	271	0	sq ft		0.00	5.04	0.00	kips
								5.04			kips
2	10 FT		0	49	0	sq ft		0.00	7.67	0.00	kips
			0	473	0	sq ft		0.00	12.71	0.00	kips
								12.71			kips
1	8 FT		0	0	0	sq ft		0.00	7.02	0.00	kips
			0	463	0	sq ft		0.00	19.73	0.00	kips
								19.73			kips
FND			0	0	0	sq ft		0.00	0.00	0.00	kips
			0	0	0	sq ft		0.00	19.73	0.00	kips
								19.73			kips

LONGITUDINAL DIRECTION (PARALLEL TO MAIN RIDGE LINE)

DIAPHRAGM LEVEL	FLOOR-TO-FLOOR HEIGHT	SECTION	TRIBUTARY DESIGN AREAS			sq ft	SECTION	TRIBUTARY DESIGN LOADS: (0.6W)			kips
			A	O	B			A	O	B	
3	8 FT		0	118	0	sq ft		0.00	3.86	0.00	kips
			0	180	0	sq ft		0.00	3.86	0.00	kips
								3.86			kips
2	10 FT		0	151	0	sq ft		0.00	8.11	0.00	kips
			0	438	0	sq ft		0.00	11.97	0.00	kips
								11.97			kips
1	8 FT		0	0	0	sq ft		0.00	5.74	0.00	kips
			0	364	0	sq ft		0.00	17.70	0.00	kips
								17.70			kips
FND			0	0	0	sq ft		0.00	0.00	0.00	kips
			0	0	0	sq ft		0.00	17.70	0.00	kips
								17.70			kips



👉 = LOAD REQ'D PER FLEXIBLE DIAPHRAGM
👉 = PROVIDED

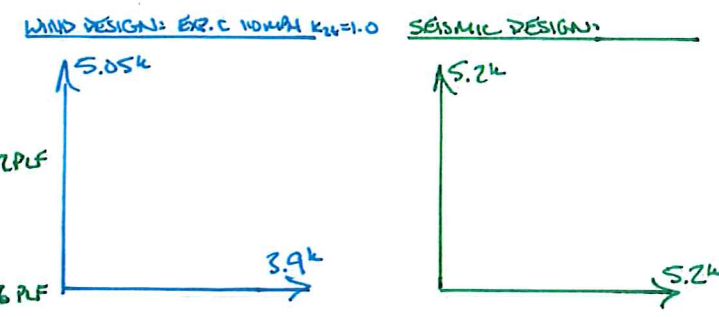


TRIS. LOAD CALCS:

- ALL RESULTANT LOCATIONS WERE DETERMINED BASED ON DISTANCE + MAGNITUDE OF LOAD FOR EA. SHEARWALL
- SOME RESULTANT FORCES ARE LESS THAN THE REQUIRED SUPPORT REACTIONS BASED ON A FLEXIBLE DIAPHRAGM. IT IS OUR PROFESSIONAL OPINION THAT THE MAGNITUDE OF THE PROVIDED LOADS ARE WITHIN AN ACCEPTABLE RANGE OF THESE REQ'D LOADS + THE TOTAL LOAD IS RESISTED BY THE SHEARWALLS SHOWN.

DIAPHRAGM CAPACITIES:

- UNSHOCKED DIAPHRAGM w 8d COMMON NAILS @ 6" o.c. EDGE NAILING + 2" MIN. NOMINAL FRAMING w/ 1/16" MIN. SHEATHING THICKNESS.
- MAX CAPACITY (CASE #1):
 $\frac{645 \text{ PLF} (0.92)}{2} = 297 \text{ PLF}$ $\frac{460 \text{ PLF} (0.92)}{2} = 212 \text{ PLF}$
- MAX CAPACITY (CASE #2):
 $\frac{475 \text{ PLF} (0.92)}{2} = 218 \text{ PLF}$ $\frac{340 \text{ PLF} (0.92)}{2} = 156 \text{ PLF}$



* SW #203 (18 PLF) + SW #211 (18 PLF) AS WELL AS SW #205 (139 PLF) + SW #210 (150 PLF) ARE WITHIN AN ACCEPTABLE TOLERANCE TO BE CONSIDERED PROPORTIONAL ALONG THEIR RESPECTIVE WALL LINES *

** SW #202 + SW #206 UNITSHEARS COMPARED BASED ON SHEAR WALL CAPACITY:
 $\frac{P1}{P3} = \frac{336}{650} = 0.533$
 $88 (0.533) = 46 \text{ PLF}$
 47 PLF + 46 PLF ARE WITHIN AN ACCEPTABLE TOLERANCE TO BE CONSIDERED PROPORTIONAL. **

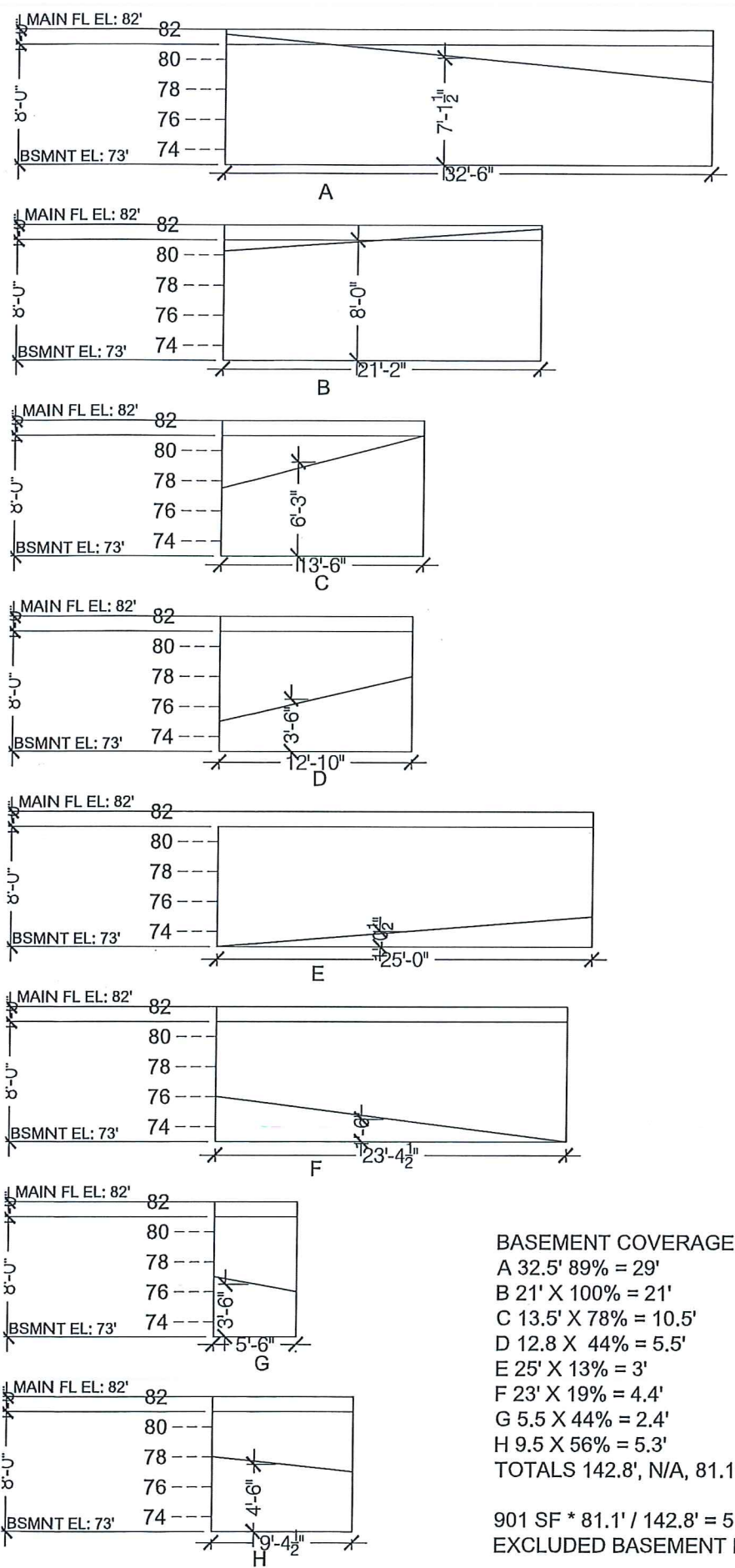
1 UPPER FLOOR PLAN

SCALE: 1/4" = 1'-0"

SUBMITTAL	
SD	9
DD	11

3440 97TH AVE
 MERCER ISLAND, WA

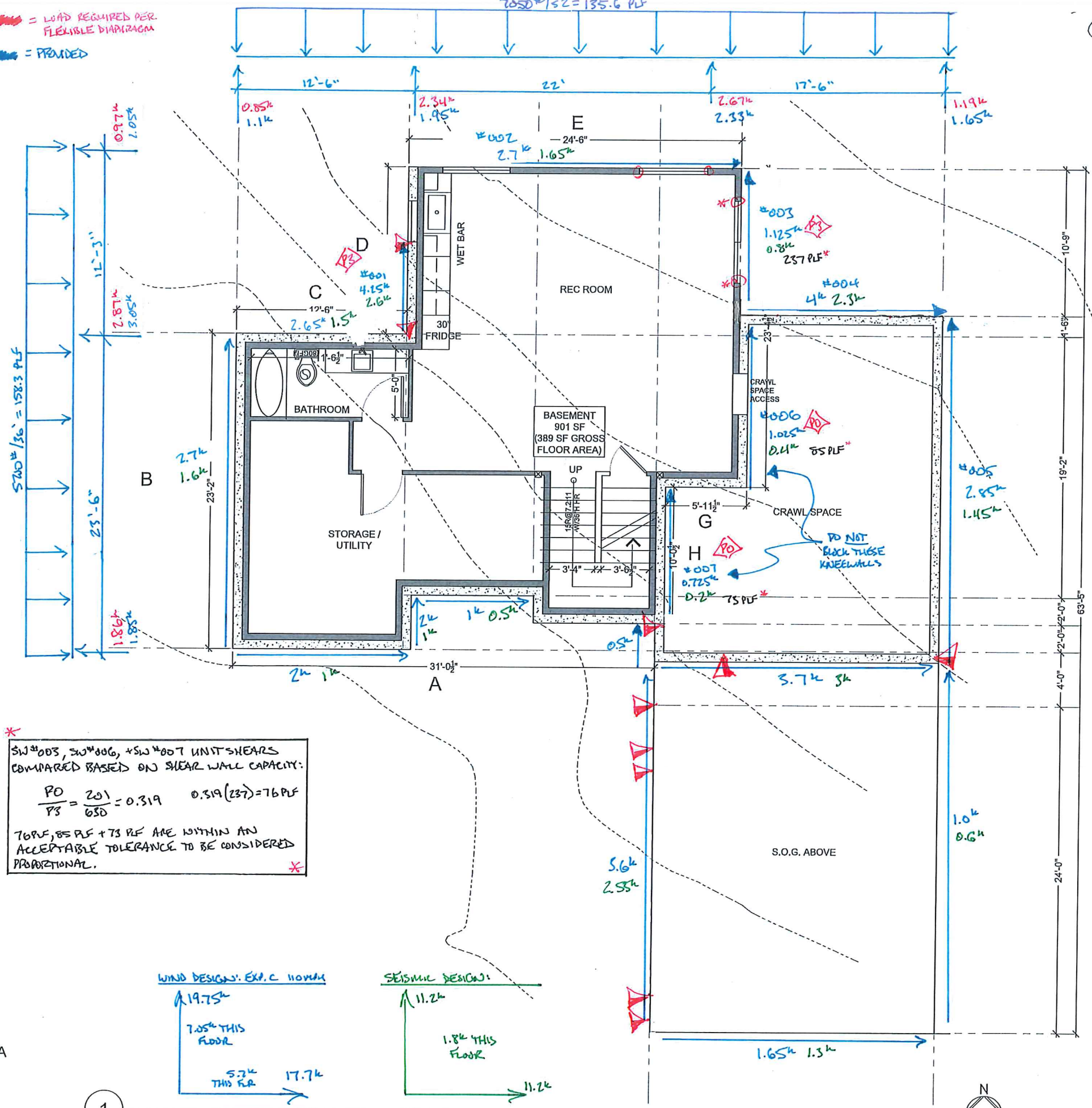
DRAWING INFORMATION
 OWNER:
 MY BACKYARD, LLC
 PROJECT#
 DRAWING NAME:
ROOF PLAN



BASEMENT COVERAGE CALCULATIONS:
 A 32.5' 89% = 29'
 B 21' X 100% = 21'
 C 13.5' X 78% = 10.5'
 D 12.8 X 44% = 5.5'
 E 25' X 13% = 3'
 F 23' X 19% = 4.4'
 G 5.5 X 44% = 2.4'
 H 9.5 X 56% = 5.3'
 TOTALS 142.8', N/A, 81.1'

901 SF * 81.1' / 142.8' = 511.7 SF
 EXCLUDED BASEMENT FLOOR AREA

LOAD REQUIRED PER FLEXIBLE DIAPHRAGM
PROVIDED



* SW #003, SW #006, + SW #007 UNIT SHEARS COMPARED BASED ON SHEAR WALL CAPACITY:
 $\frac{PO}{PS} = \frac{201}{650} = 0.319$ $0.319 (237) = 76 \text{ PLF}$
 TOP REIN, BS PLF + TS PLF ARE WITHIN AN ACCEPTABLE TOLERANCE TO BE CONSIDERED PROPORTIONAL. *

BSMNT WALL COVERAGE DIAGRAMS

1 BASEMENT PLAN

SCALE: 1/4" = 1'-0"

SHEARWALL DESIGN SUMMARY

SHEARWALL 201: 2ND - SIDE EXT. WALL OF MASTER WIC/MAST BD

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="1.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="23.2"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="18.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="650"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="6102"/>	LBS
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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	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="5.2"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="100"/>	LBS	RESISTIVE MOMENT	<input type="text" value="23.0"/>	K-FT	HOLD DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD DOWN REQUIRED

SHEARWALL 202: 2ND - REAR EXT. WALL OF MASTER BATH

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="4.3"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="4.3"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="200"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1428"/>	LBS
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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	<input type="text" value="260"/>	PLF	OVERTURNING MOMENT	<input type="text" value="1.6"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="195"/>	LBS	RESISTIVE MOMENT	<input type="text" value="1.9"/>	K-FT	HOLD DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD DOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 203: 2ND - SIDE EXT. WALL OF MASTER BD BY BATH

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="12.3"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="12.3"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="950"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4116"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.6"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="250"/>	LBS	RESISTIVE MOMENT	<input type="text" value="7.9"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 204: 2ND - REAR EXT. WALL OF MASTER BD

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="24.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="14.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="800"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3951"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="355"/>	PLF	OVERTURNING MOMENT	<input type="text" value="6.4"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="69.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 205: 2ND - SIDE EXT. WALL OF MAST BD BY WIG

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="10.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="5.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="800"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1734"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="6.4"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="335"/>	LBS	RESISTIVE MOMENT	<input type="text" value="6.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 206: 2ND - REAR EXT. WALL OF BD#2

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="17.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="17.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1500"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="10710"/>	LBS
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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	<input type="text" value="340"/>	PLF	OVERTURNING MOMENT	<input type="text" value="12.0"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="0"/>	LBS	RESISTIVE MOMENT	<input type="text" value="29.5"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 207: 2ND - SIDE EXT. WALL OF BD#2 / BD#3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="28.7"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="14.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="950"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4624"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.6"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="200"/>	LBS	RESISTIVE MOMENT	<input type="text" value="36.5"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 208: 2ND - FRONT EXT. WALL OF BD#3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="1.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="21.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="950"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="5040"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="340"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.6"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="200"/>	LBS	RESISTIVE MOMENT	<input type="text" value="47.5"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 209: 2ND - FRONT EXT. WALL OF MASTER WIC

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="3.7"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="13.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="8.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="450"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2364"/>	LBS
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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	<input type="text" value="260"/>	PLF	OVERTURNING MOMENT	<input type="text" value="3.6"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="535"/>	LBS	RESISTIVE MOMENT	<input type="text" value="17.4"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 210: 2ND - SIDE EXT. WALL OF BD#3 WIC

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="6.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="6.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="900"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2016"/>	LBS
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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	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.2"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="798"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="268"/>	LBS	RESISTIVE MOMENT	<input type="text" value="2.4"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="1705"/>	LBS

HOLD-DOWN SPECIFICATION

SIMPSON CS16 STRAP TIE (14" END LENGTH)
FASTENED W/ 26-8D NAILS



SHEARWALL DESIGN SUMMARY

SHEARWALL 211: 2ND - SIDE EXT. WALL OF MAST WIG BY ENTRY

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS < ALLOWABLE SHEARWALL CAPACITY 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 PLF OVERTURNING MOMENT K-FT UPLIFT CONNECTOR DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS **#####** ALLOWABLE SHEARWALL CAPACITY 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/0!

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT HOLD DOWN DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 101: 1ST - SIDE EXT. WALL OF GUEST ROOM/BATH #3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="23.2"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="18.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1600"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4280"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="16.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="370"/>	LBS	RESISTIVE MOMENT	<input type="text" value="42.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 102: 1ST - REAR EXT. WALL OF BATH #3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="12.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="10.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1710"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4599"/>	LBS
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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	<input type="text" value="410"/>	PLF	OVERTURNING MOMENT	<input type="text" value="17.1"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="250"/>	LBS	RESISTIVE MOMENT	<input type="text" value="21.1"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 103: 1ST - SIDE EXT. WALL OF LIVING ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="18.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2800"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="5103"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="28.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="700"/>	LBS	RESISTIVE MOMENT	<input type="text" value="30.3"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 104: 1ST - REAR EXT. WALL OF LIVING ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="24.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="14.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1650"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3704"/>	LBS
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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	<input type="text" value="365"/>	PLF	OVERTURNING MOMENT	<input type="text" value="16.5"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="71.6"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 105: 1ST - SIDE EXT. WALL OF LIVING ROOM BY COV DECK

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="10.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="10.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1050"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3612"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="10.5"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="1700"/>	LBS	RESISTIVE MOMENT	<input type="text" value="19.1"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 106: 1ST - REAR EXT. WALL OF DINING ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="8.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="15.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="7.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1890"/>	LBS	=	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1890"/>	LBS
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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	<input type="text" value="495"/>	PLF	OVERTURNING MOMENT	<input type="text" value="18.9"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="600"/>	LBS	RESISTIVE MOMENT	<input type="text" value="38.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS ALLOWABLE SHEARWALL CAPACITY 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
#DIV/0!

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT UPLIFT CONNECTOR DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 108: 1ST - SIDE EXT. WALL OF KITCHEN

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS ALLOWABLE SHEARWALL CAPACITY 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 PLF OVERTURNING MOMENT K-FT HOLD DOWN DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 109: 1ST - SIDE EXT. WALL OF GARAGE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="11.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="27.3"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="22.3"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1000"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4994"/>	LBS
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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	<input type="text" value="275"/>	PLF	OVERTURNING MOMENT	<input type="text" value="11.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="67.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 110: 1ST - FRONT EXT. WALL OF GARAGE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="11.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="8.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="21.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="18.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1900"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1924"/>	LBS
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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	<input type="text" value="100"/>	PLF	OVERTURNING MOMENT	<input type="text" value="20.9"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="800"/>	LBS	RESISTIVE MOMENT	<input type="text" value="23.3"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 111: 1ST - FRONT EXT. WALL OF GUEST ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="13.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="8.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1500"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1966"/>	LBS
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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	<input type="text" value="425"/>	PLF	OVERTURNING MOMENT	<input type="text" value="15.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="935"/>	LBS	RESISTIVE MOMENT	<input type="text" value="28.8"/>	K-FT	HOLD-DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD-DOWN REQUIRED

SHEARWALL 112: 1ST - SIDE EXT. WALL OF GUEST RM BY ENTRY

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="13.2"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="13.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1500"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4422"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="15.0"/>	K-FT	HOLD-DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="834"/>	LBS	RESISTIVE MOMENT	<input type="text" value="18.7"/>	K-FT	HOLD-DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD-DOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 113: 1ST - REAR INT. WALL OF GARAGE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="15.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="3350"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="9973"/>	LBS
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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	<input type="text" value="180"/>	PLF	OVERTURNING MOMENT	<input type="text" value="33.5"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="1186"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="125"/>	LBS	RESISTIVE MOMENT	<input type="text" value="14.7"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="3105"/>	LBS

HOLD-DOWN SPECIFICATION

SIMPSON HTT4 HOLDOWN
FASTENED W/ 18-10D NAILS W/ 5/8" DIA. ALL-THREAD ROD

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="0.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="0.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="0.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="0"/>	LBS	####	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="#DIV/0!"/>	LBS
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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
#DIV/0!

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="0"/>	PLF	OVERTURNING MOMENT	<input type="text" value="#DIV/0!"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="0"/>	LBS	RESISTIVE MOMENT	<input type="text" value="0.0"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 1: BASEMENT - SIDE EXT. KNEEWALL OF REC RM WET BAR

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="2.8"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="6.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="6.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="4250"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4253"/>	LBS
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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	<input type="text" value="334"/>	PLF	OVERTURNING MOMENT	<input type="text" value="11.7"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="815"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="6.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="3105"/>	LBS

HOLD-DOWN SPECIFICATION

SIMPSON HTT4 HOLDOWN
FASTENED W/ 18-10D NAILS W/ 5/8" DIA. ALL-THREAD ROD

SHEARWALL 2: BASEMENT - REAR EXT. WALL OF REC ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="17.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="12.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2700"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2742"/>	LBS
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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	<input type="text" value="520"/>	PLF	OVERTURNING MOMENT	<input type="text" value="21.6"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="800"/>	LBS	RESISTIVE MOMENT	<input type="text" value="53.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 3: BASEMENT - SIDE EXT. WALL OF REC ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="6.7"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="10.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="4.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1125"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1126"/>	LBS
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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	<input type="text" value="334"/>	PLF	OVERTURNING MOMENT	<input type="text" value="9.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="2000"/>	LBS	RESISTIVE MOMENT	<input type="text" value="24.5"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 4: BASEMENT - REAR EXT. WALL OF CRAWLSPACE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="15.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="4000"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="5040"/>	LBS
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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	<input type="text" value="505"/>	PLF	OVERTURNING MOMENT	<input type="text" value="32.0"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="1000"/>	LBS	RESISTIVE MOMENT	<input type="text" value="43.1"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 5: BASEMENT - SIDE EXT. WALL OF CRAWLSPACE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="5.3"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="25.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="25.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2850"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="8568"/>	LBS
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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	<input type="text" value="334"/>	PLF	OVERTURNING MOMENT	<input type="text" value="15.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="800"/>	LBS	RESISTIVE MOMENT	<input type="text" value="77.4"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 6: BASEMENT - KNEEWALL AT CRAWLSPACE BY REC RM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="4.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P0"/>
WALL LENGTH, L	<input type="text" value="12.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="12.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1025"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2412"/>	LBS
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SHEARWALL ASSEMBLY SPECIFICATION

P0 - 1-SIDE 7/16" OSB
FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - UNBLOCKED
ADEQUATE

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="100"/>	PLF	OVERTURNING MOMENT	<input type="text" value="4.1"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="150"/>	LBS	RESISTIVE MOMENT	<input type="text" value="5.4"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 7: BASEMENT - KNEEWALL AT CRAWLSPACE BY STARIS

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="4.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="PO"/>
WALL LENGTH, L	<input type="text" value="10.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="10.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="725"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2010"/>	LBS
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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
ADEQUATE

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="100"/>	PLF	OVERTURNING MOMENT	<input type="text" value="2.9"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="150"/>	LBS	RESISTIVE MOMENT	<input type="text" value="3.9"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="0.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="PO"/>
WALL LENGTH, L	<input type="text" value="0.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="0.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="0"/>	LBS	#####	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="#DIV/0!"/>	LBS
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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/0!

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="0"/>	PLF	OVERTURNING MOMENT	<input type="text" value="#DIV/0!"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="0"/>	LBS	RESISTIVE MOMENT	<input type="text" value="0.0"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

J DESIGNS
3440 97TH AVE

MERCER ISLAND, WA

SHEAR WALL CALCULATIONS - SEISMIC

REVIEWED BY:

MARCH 8, 2019

PARAMETERS:

SINGLE FAMILY HOME

DESIGN WIND SPEED: 110 MPH

WIND EXPOSURE CATEGORY: C

SEISMIC DESIGN CATEGORY: D

CODE & DESIGN STANDARD: 2015 IBC CH. 1609, ASCE 7-10 CH. 26-30



SEISMIC CALCULATION - ASCE 7-10

SEISMIC DESIGN CATEGORY:

USER INPUTS:

SITE CLASS	D
SPECTRAL RESPONSE ACCELERATION 0.2 SEC, S_s	1.384
SPECTRAL RESPONSE ACCELERATION 1.0 SEC, S₁	0.532
OCCUPANCY CATEGORY	II

VARIABLES:

SITE COEFFICIENT, F _A	1.00
SITE COEFFICIENT, F _V	1.50

CALCULATED VALUES:

MAXIMUM SPECTRAL RESPONSE ACCELERATION, S_{MS}	1.384
MAXIMUM SPECTRAL RESPONSE ACCELERATION, S_{M1}	0.798
DESIGN SPECTRAL RESPONSE ACCELERATION, S_{DS}	0.923
DESIGN SPECTRAL RESPONSE ACCELERATION, S_{D1}	0.532
SEISMIC DESIGN CATEGORY (SHORT TERM)	D
SEISMIC DESIGN CATEGORY (1.0 SECOND TERM)	D

BUILDING PERIOD DETERMINATION:

USER INPUTS:

BUILDING PERIOD COEFFICIENT, C _T	0.020
LONG-PERIOD TRANS PERIOD, T _L (SEC)	6
HT. ABV BASE TO HIGHEST LEVEL, h _N	26

CALCULATED VALUES:

APPROXIMATE FUNDAMENTAL PERIOD, T _A , T	0.230
T ₀	0.115
T _B	0.577
SPECTRAL RESPONSE ACCELERATION, S _A (G)	0.923

EQUIVALENT LATERAL FORCE PROCEDURE

DEAD LOAD CALCULATION:

LEVEL	STORY HT. (FT.)	AREA (FT ²)	DEAD LOAD (PSF)	DL OF EXT WALL TRIBUTARY TO LEVEL (KIPS)	TOTAL LEVEL DL
1	8.0	932	10	28.9	38 K
2	10.0	2046	10	19.6	40 K
3	8.0	1566	17	7.6	34 K
4	0.0	0	0	0.0	0 K
5	0.0	0	0	0.0	0 K
6	0.0	0	0	0.0	0 K
7	0.0	0	0	0.0	0 K
8	0.0	0	0	0.0	0 K
9	0.0	0	0	0.0	0 K
10	0.0	0	0	0.0	0 K

TOTAL DEAD LOAD OF STRUCTURE 113 KIPS

SEISMIC RESPONSE COEFFICIENT:

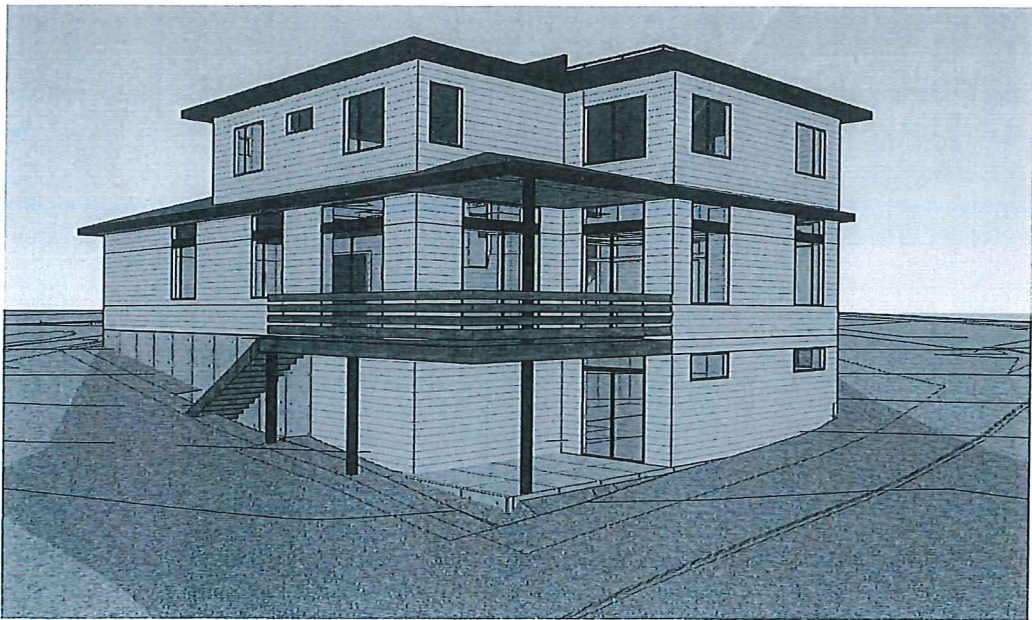
	TRANSVERSE	LONGITUDINAL
RESPONSE MODIFICATION FACTOR, R	6.5	6.5
OCCUPANCY IMPORTANCE FACTOR, I _e	1.00	1.00
SEISMIC RESPONSE COEFFICIENT, C _s	0.142	0.142

BASE SHEARS:

ULTIMATE LOADS		x 0.7 =	ALLOWABLE LOADS	
TRANSVERSE	LONGITUDINAL		TRANSVERSE	LONGITUDINAL
16 K	16 K		11 K	11 K

STORY SHEAR CALCULATION:

DISTRIBUTION EXPONENT	1.00						
	ULTIMATE LOADS		x 0.7 =	ALLOWABLE LOADS			
	TRANSVERSE	LONGITUDINAL		TRANSVERSE	LONGITUDINAL	TRANSVERSE	LONGITUDINAL
LEVEL	VERT. DIST. FACTOR, C _{dh}	STORY SHEAR, F _x	STORY SHEAR, F _y	STORY SHEAR, F _x	Σ STORY SHEAR	STORY SHEAR, F _y	Σ STORY SHEAR
1	0.159	2.5 K	2.5 K	1.8 K	11.2 K	1.8 K	11.2 K
2	0.376	6.0 K	6.0 K	4.2 K	9.4 K	4.2 K	9.4 K
3	0.465	7.4 K	7.4 K	5.2 K	5.2 K	5.2 K	5.2 K
4	0.000	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K
5	0.00	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K
6	0.00	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K
7	0.00	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K
8	0.00	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K
9	0.00	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K
10	0.00	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K	0.0 K



TRIS. LOAD CALCS:

- ALL RESULTANT LOCATIONS WERE DETERMINED BASED ON DISTANCE + MAGNITUDE OF LOAD FOR EA. SHEARWALL
- SOME RESULTANT FORCES ARE LESS THAN THE REQUIRED SUPPORT REACTIONS BASED ON A FLEXIBLE DIAPHRAGM. IT IS OUR PROFESSIONAL OPINION THAT THE MAGNITUDE OF THE PROVIDED LOADS ARE WITHIN AN ACCEPTABLE RANGE OF THESE REQ'D LOADS + THE TOTAL LOAD IS RESISTED BY THE SHEARWALLS SHOWN.

DIAPHRAGM CAPACITIES:

- UNSHOCKED DIAPHRAGM w 8d COMMON NAILS @ 6" o.c. EDGE NAILING + 2" MIN. NOMINAL FRAMING w/ 1/16" MIN. SHEATHING THICKNESS.

- MAX CAPACITY (CASE #1):

$$\frac{645 \text{ PLF} (0.92)}{2} = 297 \text{ PLF} \quad \frac{460 \text{ PLF} (0.92)}{2} = 212 \text{ PLF}$$

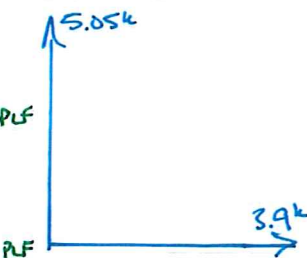
- MAX CAPACITY (CASE #2):

$$\frac{475 \text{ PLF} (0.92)}{2} = 218 \text{ PLF} \quad \frac{340 \text{ PLF} (0.92)}{2} = 156 \text{ PLF}$$

👉 = LOAD REQ'D PER FLEXIBLE DIAPHRAGM
👈 = PROVIDED

WIND DESIGN: EX. C NORMAL $K_{zt}=1.0$

SEISMIC DESIGN:



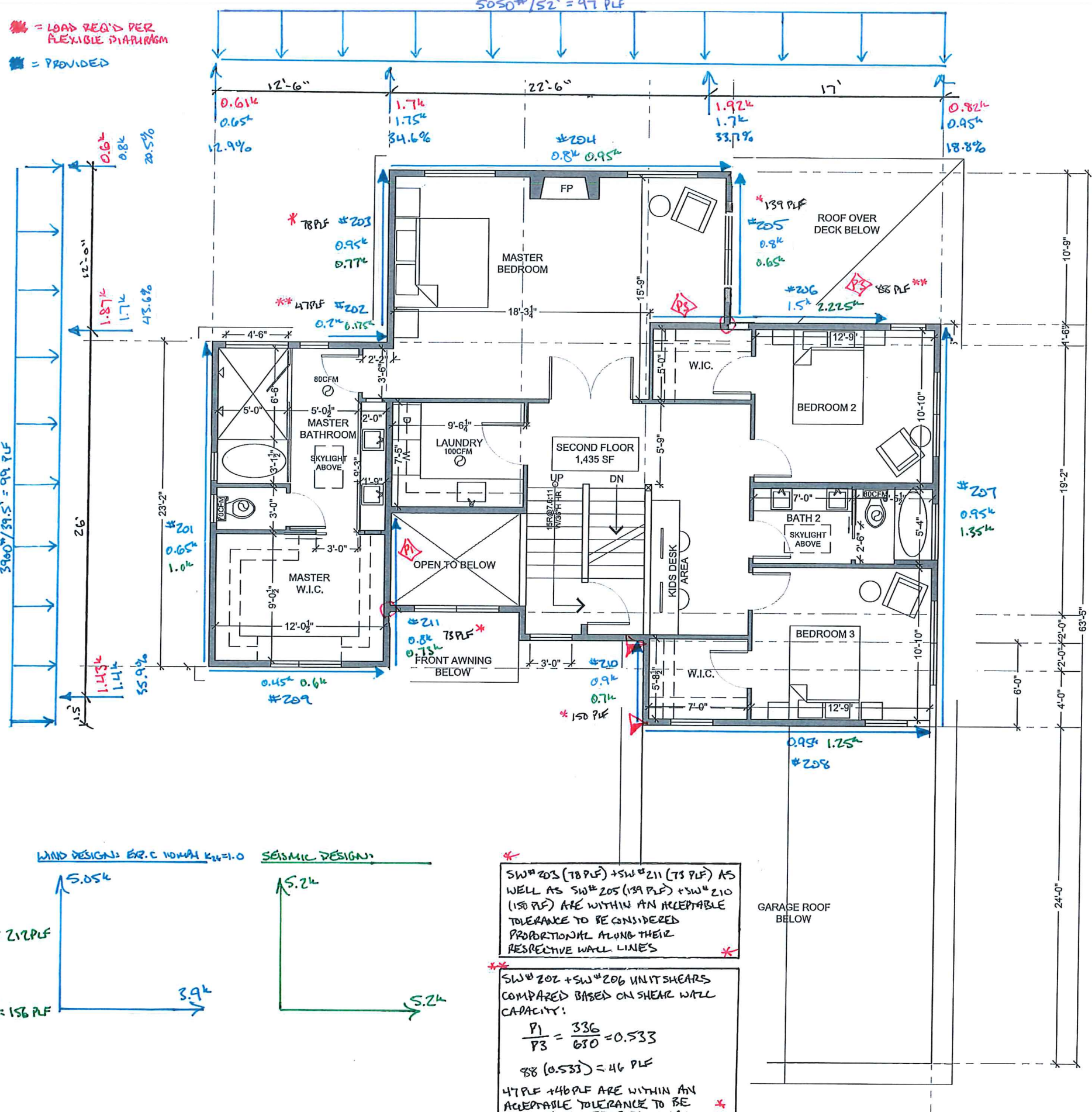
* SW #203 (78 PLF) + SW #211 (78 PLF) AS WELL AS SW #205 (139 PLF) + SW #210 (150 PLF) ARE WITHIN AN ACCEPTABLE TOLERANCE TO BE CONSIDERED PROPORTIONAL ALONG THEIR RESPECTIVE WALL LINES *

** SW #202 + SW #206 UNIT SHEARS COMPARED BASED ON SHEAR WALL CAPACITY:

$$\frac{P1}{P3} = \frac{336}{650} = 0.533$$

$$88 (0.533) = 46 \text{ PLF}$$

47 PLF + 46 PLF ARE WITHIN AN ACCEPTABLE TOLERANCE TO BE CONSIDERED PROPORTIONAL. **



1 UPPER FLOOR PLAN

SCALE: 1/4" = 1'-0"

SUBMITTAL	
SD	9
DD	11

3440 97TH AVE
 MERCER ISLAND, WA

DRAWING INFORMATION
 OWNER:
 MY BACKYARD, LLC

PROJECT#

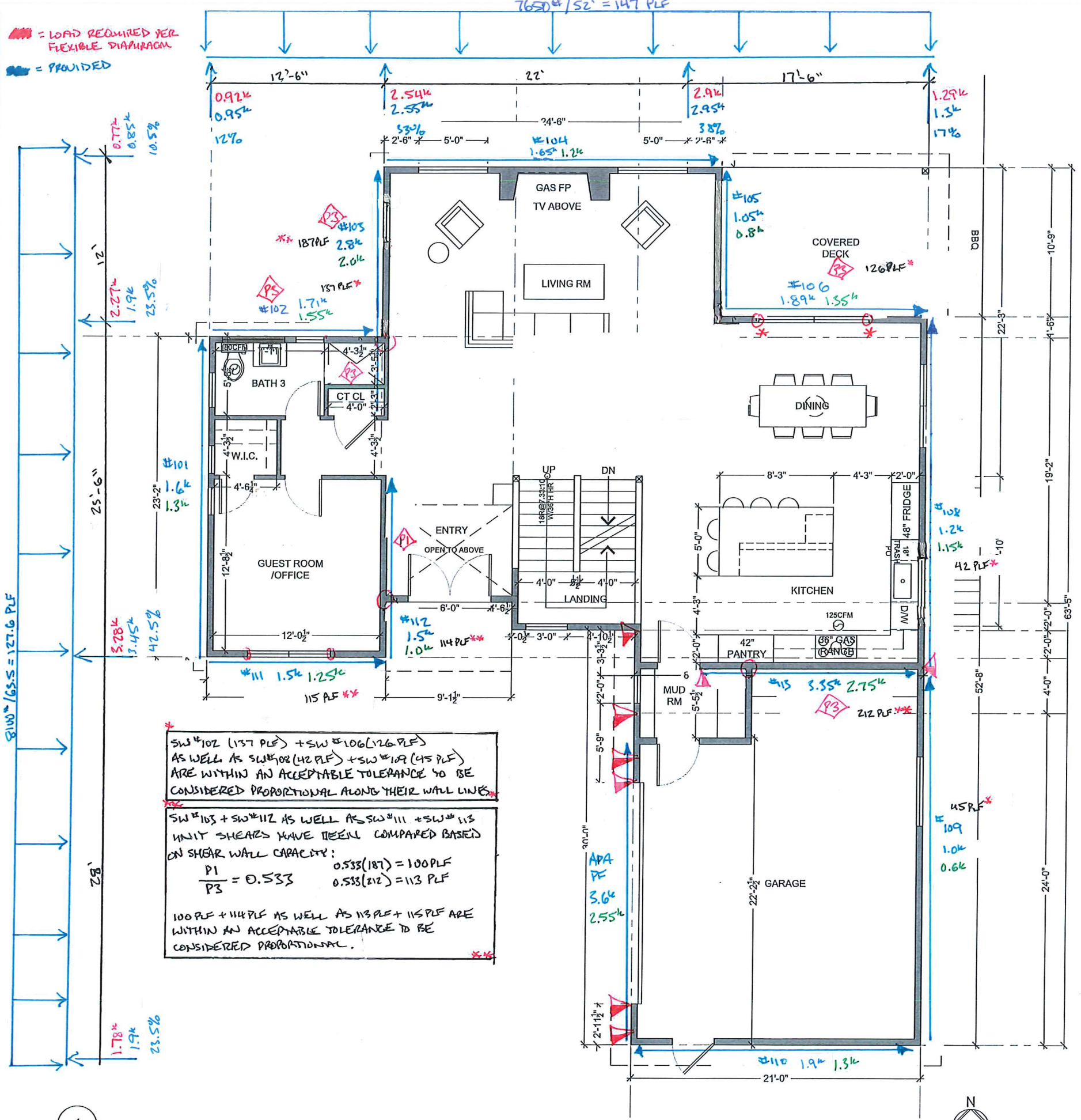
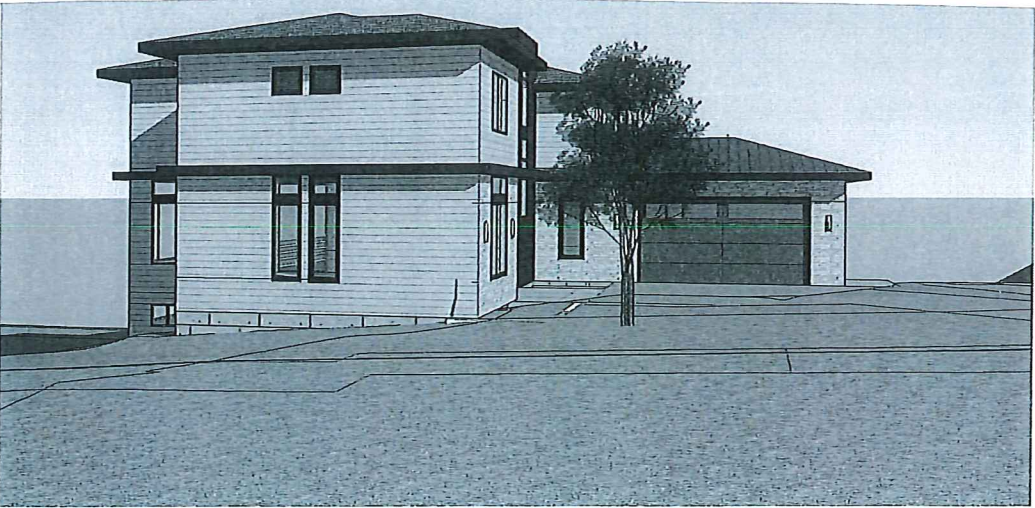
DRAWING NAME:
ROOF PLAN

A2.1



WIND DESIGN: EXP. C 110MPH
 12.7k THIS FLOOR
 7.05k THIS FLOOR
 3.1k THIS FLOOR
 12k

SEISMIC DESIGN:
 19.4k
 4.2k THIS FLOOR
 9.4k



1 MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"



2425 SW ROXBUR
 SEATTLE, WA 981
 206.234.4411
 JACQUELINE
 JDESIGN@SEATTLE

SUBMITTAL
 SD 9
 DD 11

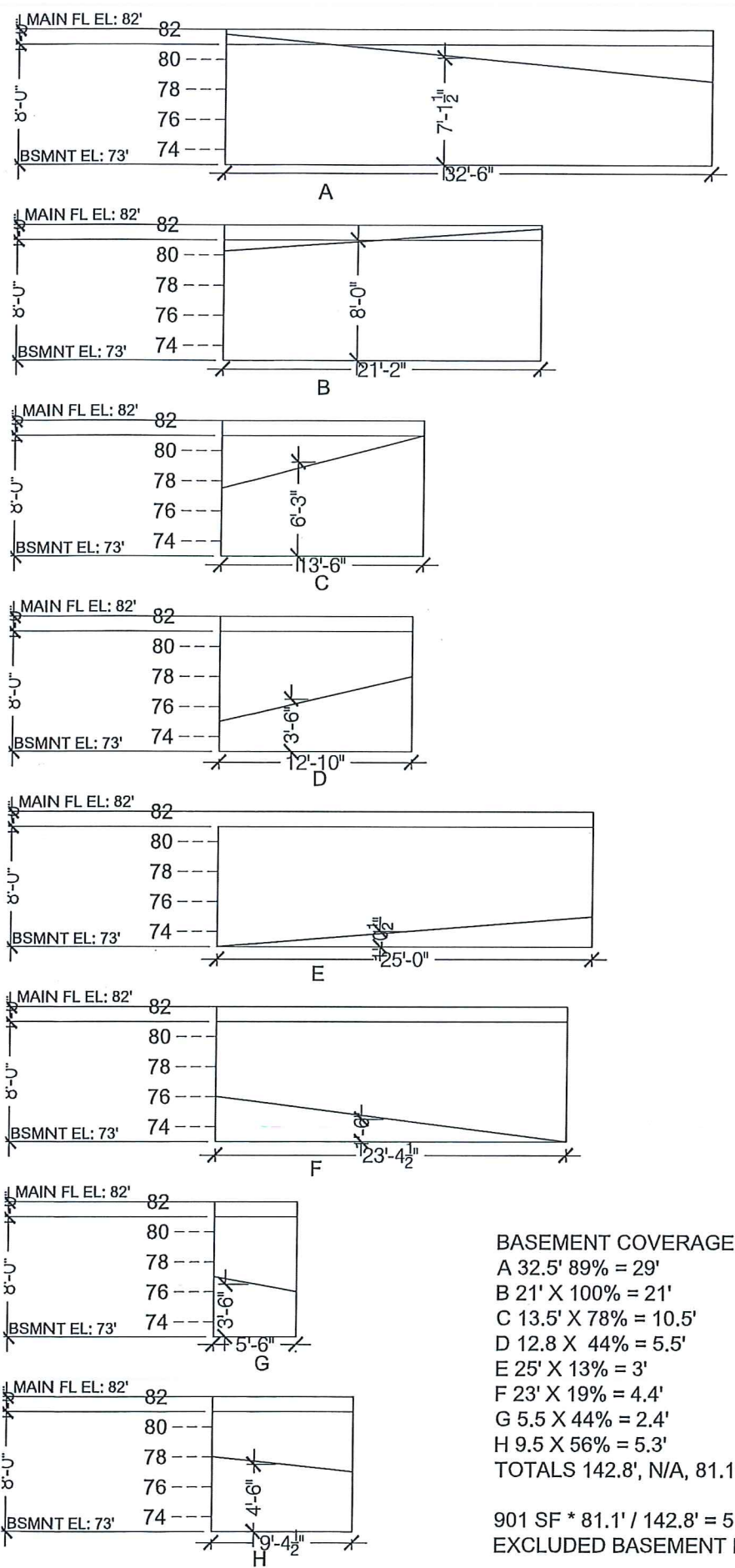
3440 97TH AVE
 MERCER ISLAND, WA

DRAWING INFORMATION
 OWNER:
 MY BACKYARD, LLC

PROJECT#

DRAWING NAME:
 FLOOR PL

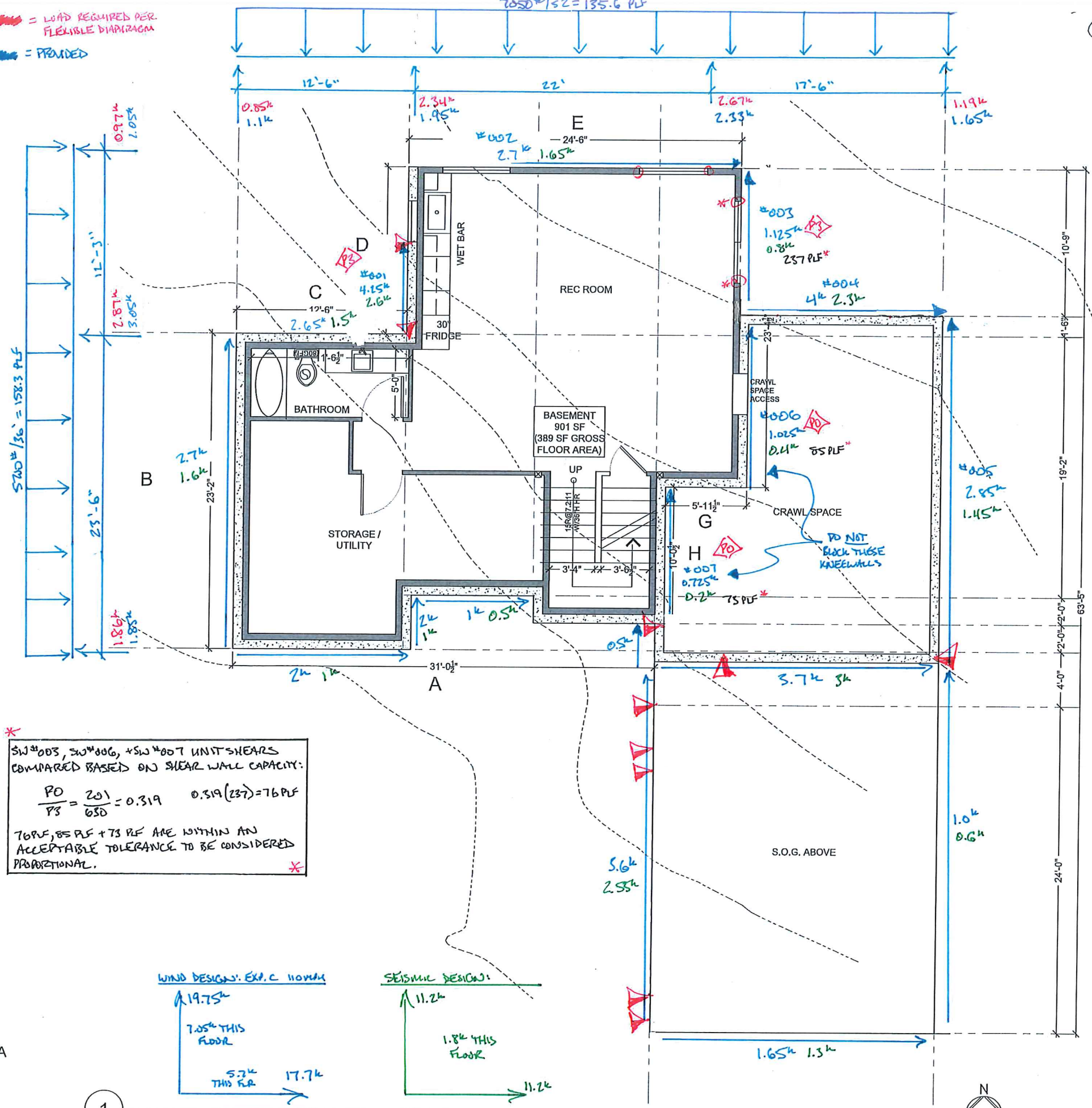
A2.



BASEMENT COVERAGE CALCULATIONS:
 A 32.5' 89% = 29'
 B 21' X 100% = 21'
 C 13.5' X 78% = 10.5'
 D 12.8 X 44% = 5.5'
 E 25' X 13% = 3'
 F 23' X 19% = 4.4'
 G 5.5 X 44% = 2.4'
 H 9.5 X 56% = 5.3'
 TOTALS 142.8', N/A, 81.1'

901 SF * 81.1' / 142.8' = 511.7 SF
 EXCLUDED BASEMENT FLOOR AREA

LOAD REQUIRED PER FLEXIBLE DIAPHRAGM
PROVIDED



* SW #003, SW #006, + SW #007 UNIT SHEARS COMPARED BASED ON SHEAR WALL CAPACITY:
 $\frac{PD}{PS} = \frac{201}{650} = 0.319$ $0.319(237) = 76 \text{ PLF}$
 TOP PLF, BS PLF + TS PLF ARE WITHIN AN ACCEPTABLE TOLERANCE TO BE CONSIDERED PROPORTIONAL. *

WIND DESIGN: EXP. C NORMAL
 19.75k
 7.05k THIS FLOOR
 5.7k THIS RA 17.7k

SEISMIC DESIGN:
 11.2k
 1.8k THIS FLOOR
 11.2k

BSMNT WALL COVERAGE DIAGRAMS

1 BASEMENT PLAN

SCALE: 1/4" = 1'-0"

SHEARWALL DESIGN SUMMARY

SHEARWALL 201: 2ND - SIDE EXT. WALL OF MASTER WIC/MAST BD

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="1.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="23.2"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="18.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1000"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="4340"/>	LBS
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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	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="8.0"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="100"/>	LBS	RESISTIVE MOMENT	<input type="text" value="18.0"/>	K-FT	HOLD DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD DOWN REQUIRED

SHEARWALL 202: 2ND - REAR EXT. WALL OF MASTER BATH

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="4.3"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="4.3"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="175"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1016"/>	LBS
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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	<input type="text" value="260"/>	PLF	OVERTURNING MOMENT	<input type="text" value="1.4"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="195"/>	LBS	RESISTIVE MOMENT	<input type="text" value="1.5"/>	K-FT	HOLD DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD DOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 203: 2ND - SIDE EXT. WALL OF MASTER BD BY BATH

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="12.3"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="12.3"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="770"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2928"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="6.2"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="250"/>	LBS	RESISTIVE MOMENT	<input type="text" value="6.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 204: 2ND - REAR EXT. WALL OF MASTER BD

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="24.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="14.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="950"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2811"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="355"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.6"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="54.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 205: 2ND - SIDE EXT. WALL OF MAST BD BY WIG

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="10.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="5.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="650"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1233"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="5.2"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="335"/>	LBS	RESISTIVE MOMENT	<input type="text" value="5.3"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 206: 2ND - REAR EXT. WALL OF BD#2

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="17.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="17.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2225"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="7667"/>	LBS
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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	<input type="text" value="340"/>	PLF	OVERTURNING MOMENT	<input type="text" value="17.8"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="0"/>	LBS	RESISTIVE MOMENT	<input type="text" value="23.1"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 207: 2ND - SIDE EXT. WALL OF BD#2 / BD#3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="28.7"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="14.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1350"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3289"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="10.8"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="200"/>	LBS	RESISTIVE MOMENT	<input type="text" value="28.6"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 208: 2ND - FRONT EXT. WALL OF BD#3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="1.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="21.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1250"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3585"/>	LBS
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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

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="340"/>	PLF	OVERTURNING MOMENT	<input type="text" value="10.0"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="200"/>	LBS	RESISTIVE MOMENT	<input type="text" value="37.3"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 209: 2ND - FRONT EXT. WALL OF MASTER WIC

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="3.7"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="13.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="8.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="600"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1682"/>	LBS
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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	<input type="text" value="260"/>	PLF	OVERTURNING MOMENT	<input type="text" value="4.8"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="535"/>	LBS	RESISTIVE MOMENT	<input type="text" value="13.6"/>	K-FT	HOLD-DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD-DOWN REQUIRED

SHEARWALL 210: 2ND - SIDE EXT. WALL OF BD#3 WIC

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="6.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="6.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="700"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1434"/>	LBS
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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	<input type="text" value="134"/>	PLF	OVERTURNING MOMENT	<input type="text" value="5.6"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="618"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="268"/>	LBS	RESISTIVE MOMENT	<input type="text" value="1.9"/>	K-FT	HOLD-DOWN CAPACITY	<input type="text" value="1705"/>	LBS

HOLD-DOWN SPECIFICATION

SIMPSON CS16 STRAP TIE (14" END LENGTH)
FASTENED W/ 26-8D NAILS



SHEARWALL DESIGN SUMMARY

SHEARWALL 211: 2ND - SIDE EXT. WALL OF MAST WIG BY ENTRY

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS < ALLOWABLE SHEARWALL CAPACITY 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 PLF OVERTURNING MOMENT K-FT UPLIFT CONNECTOR DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS **#####** ALLOWABLE SHEARWALL CAPACITY 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/0!

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT HOLD DOWN DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 101: 1ST - SIDE EXT. WALL OF GUEST ROOM/BATH #3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="23.2"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="18.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1550"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3044"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="15.5"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="370"/>	LBS	RESISTIVE MOMENT	<input type="text" value="33.6"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 102: 1ST - REAR EXT. WALL OF BATH #3

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="12.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="10.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1400"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3292"/>	LBS
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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	<input type="text" value="410"/>	PLF	OVERTURNING MOMENT	<input type="text" value="14.0"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="250"/>	LBS	RESISTIVE MOMENT	<input type="text" value="16.6"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 103: 1ST - SIDE EXT. WALL OF LIVING ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="18.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2000"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3653"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="20.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="700"/>	LBS	RESISTIVE MOMENT	<input type="text" value="23.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 104: 1ST - REAR EXT. WALL OF LIVING ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="24.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="14.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1200"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2635"/>	LBS
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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	<input type="text" value="365"/>	PLF	OVERTURNING MOMENT	<input type="text" value="12.0"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="56.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 105: 1ST - SIDE EXT. WALL OF LIVING ROOM BY COV DECK

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="10.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="10.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="800"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="2569"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="8.0"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="1700"/>	LBS	RESISTIVE MOMENT	<input type="text" value="15.0"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 106: 1ST - REAR EXT. WALL OF DINING ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="8.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="15.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="7.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1350"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1353"/>	LBS
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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	<input type="text" value="495"/>	PLF	OVERTURNING MOMENT	<input type="text" value="13.5"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="600"/>	LBS	RESISTIVE MOMENT	<input type="text" value="30.5"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS ALLOWABLE SHEARWALL CAPACITY LBS
#DIV/0!

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
#DIV/0!

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT UPLIFT CONNECTOR DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 108: 1ST - SIDE EXT. WALL OF KITCHEN

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS ALLOWABLE SHEARWALL CAPACITY LBS
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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 PLF OVERTURNING MOMENT K-FT HOLD DOWN DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 109: 1ST - SIDE EXT. WALL OF GARAGE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="11.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="27.3"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="22.3"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="600"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3552"/>	LBS
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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	<input type="text" value="275"/>	PLF	OVERTURNING MOMENT	<input type="text" value="6.6"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="53.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 110: 1ST - FRONT EXT. WALL OF GARAGE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="11.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="8.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="21.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="18.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1300"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1369"/>	LBS
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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	<input type="text" value="100"/>	PLF	OVERTURNING MOMENT	<input type="text" value="14.3"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="800"/>	LBS	RESISTIVE MOMENT	<input type="text" value="18.3"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 111: 1ST - FRONT EXT. WALL OF GUEST ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="5.5"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="13.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="8.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1250"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1398"/>	LBS
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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	<input type="text" value="425"/>	PLF	OVERTURNING MOMENT	<input type="text" value="12.5"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="935"/>	LBS	RESISTIVE MOMENT	<input type="text" value="22.6"/>	K-FT	HOLD-DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD-DOWN REQUIRED

SHEARWALL 112: 1ST - SIDE EXT. WALL OF GUEST RM BY ENTRY

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="10.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="13.2"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="13.2"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1000"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3145"/>	LBS
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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	<input type="text" value="234"/>	PLF	OVERTURNING MOMENT	<input type="text" value="10.0"/>	K-FT	HOLD-DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="834"/>	LBS	RESISTIVE MOMENT	<input type="text" value="14.7"/>	K-FT	HOLD-DOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLD-DOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 113: 1ST - REAR INT. WALL OF GARAGE

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS < ALLOWABLE SHEARWALL CAPACITY LBS

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 PLF OVERTURNING MOMENT K-FT UPLIFT CONNECTOR DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

SIMPSON HTT4 HOLDOWN
FASTENED W/ 18-10D NAILS W/ 5/8" DIA. ALL-THREAD ROD

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS **#####** ALLOWABLE SHEARWALL CAPACITY 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
#DIV/0!

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT HOLD DOWN DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 1: BASEMENT - SIDE EXT. KNEEWALL OF REC RM WET BAR

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="2.8"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="6.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="6.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2600"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3044"/>	LBS
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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	<input type="text" value="334"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.2"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="340"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="400"/>	LBS	RESISTIVE MOMENT	<input type="text" value="4.9"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="3105"/>	LBS

HOLD-DOWN SPECIFICATION

SIMPSON HTT4 HOLDOWN
FASTENED W/ 18-10D NAILS W/ 5/8" DIA. ALL-THREAD ROD

SHEARWALL 2: BASEMENT - REAR EXT. WALL OF REC ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="4.2"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="17.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="12.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1650"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1950"/>	LBS
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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	<input type="text" value="520"/>	PLF	OVERTURNING MOMENT	<input type="text" value="13.2"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="800"/>	LBS	RESISTIVE MOMENT	<input type="text" value="41.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 3: BASEMENT - SIDE EXT. WALL OF REC ROOM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="6.7"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P3"/>
WALL LENGTH, L	<input type="text" value="10.8"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="4.8"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="800"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="806"/>	LBS
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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	<input type="text" value="334"/>	PLF	OVERTURNING MOMENT	<input type="text" value="6.4"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="2000"/>	LBS	RESISTIVE MOMENT	<input type="text" value="19.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 4: BASEMENT - REAR EXT. WALL OF CRAWLSPACE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="8.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="15.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="15.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="2300"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="3585"/>	LBS
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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	<input type="text" value="505"/>	PLF	OVERTURNING MOMENT	<input type="text" value="18.4"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="1000"/>	LBS	RESISTIVE MOMENT	<input type="text" value="33.8"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 5: BASEMENT - SIDE EXT. WALL OF CRAWLSPACE

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="5.3"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P1"/>
WALL LENGTH, L	<input type="text" value="25.5"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="25.5"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="1450"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="6095"/>	LBS
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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	<input type="text" value="334"/>	PLF	OVERTURNING MOMENT	<input type="text" value="7.6"/>	K-FT	UPLIFT CONNECTOR DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="800"/>	LBS	RESISTIVE MOMENT	<input type="text" value="60.7"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL 6: BASEMENT - KNEEWALL AT CRAWLSPACE BY REC RM

SHEARWALL PROPERTIES:

WALL HEIGHT, H	<input type="text" value="4.0"/>	FT.	MAX WALL OPENING HT, H _c	<input type="text" value="0.0"/>	FT.	SHEARWALL ASSEMBLY	<input type="text" value="P0"/>
WALL LENGTH, L	<input type="text" value="12.0"/>	FT.	QUALIFYING WALL LENGTH, L	<input type="text" value="12.0"/>	FT.		

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL	<input type="text" value="400"/>	LBS	<	ALLOWABLE SHEARWALL CAPACITY	<input type="text" value="1728"/>	LBS
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SHEARWALL ASSEMBLY SPECIFICATION

P0 - 1-SIDE 7/16" OSB
FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - UNBLOCKED
ADEQUATE

OVERTURNING EVALUATION:

RESISTIVE DL	<input type="text" value="100"/>	PLF	OVERTURNING MOMENT	<input type="text" value="1.6"/>	K-FT	HOLD DOWN DESIGN LOAD	<input type="text" value="0"/>	LBS
DL AT ENDS OF WALL	<input type="text" value="150"/>	LBS	RESISTIVE MOMENT	<input type="text" value="4.2"/>	K-FT	HOLDOWN CAPACITY	<input type="text" value="0"/>	LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED



SHEARWALL DESIGN SUMMARY

SHEARWALL 7: BASEMENT - KNEEWALL AT CRAWLSPACE BY STARIS

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS < ALLOWABLE SHEARWALL CAPACITY 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
ADEQUATE

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT UPLIFT CONNECTOR DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED

SHEARWALL XXX: - NOT USED

SHEARWALL PROPERTIES:

WALL HEIGHT, H FT. MAX WALL OPENING HT, H_c FT.
WALL LENGTH, L FT. QUALIFYING WALL LENGTH, L FT. SHEARWALL ASSEMBLY

CAPACITY EVALUATION:

TOTAL SHEAR LOAD ON WALL LBS ##### ALLOWABLE SHEARWALL CAPACITY 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/0!

OVERTURNING EVALUATION:

RESISTIVE DL PLF OVERTURNING MOMENT K-FT HOLD DOWN DESIGN LOAD LBS
DL AT ENDS OF WALL LBS RESISTIVE MOMENT K-FT HOLDDOWN CAPACITY LBS

HOLD-DOWN SPECIFICATION

NO HOLDOWN REQUIRED