

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

CALCULATION PACKAGE

November 1, 2022

Yen Design, Inc.

Single Family Home Remodel 4029 97th Ave SE Mercer Island, WA

MULHERN & KULP STRUCTURAL ENGINEERING, INC.

Prepared By:

Spencer A. Schade, E.I.T. Staff Engineer

Nicholas J. Dastalfo, P.E. Project Engineer II

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



Exp: Oct. 6, 2024



4029 97TH AVE SE

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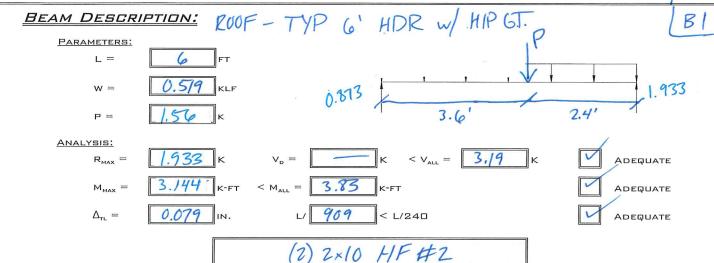
M&K PROJECT #:

251-22033

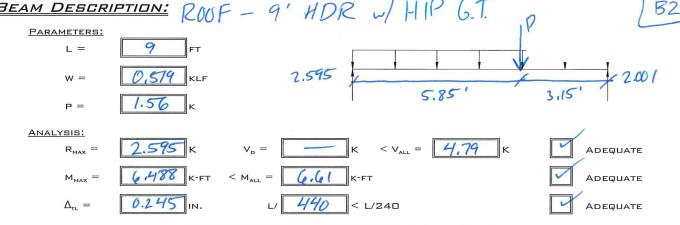
ENGINEER: SAS

14-Oct-22 DATE:

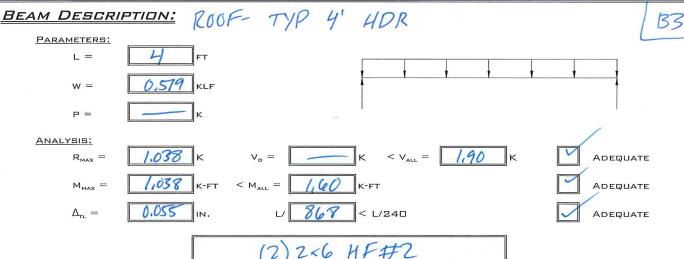
BEAM & HEADER CALCULATIONS



BEAM DESCRIPTION: ROOF - 9' HDR W/ HIP G.T.









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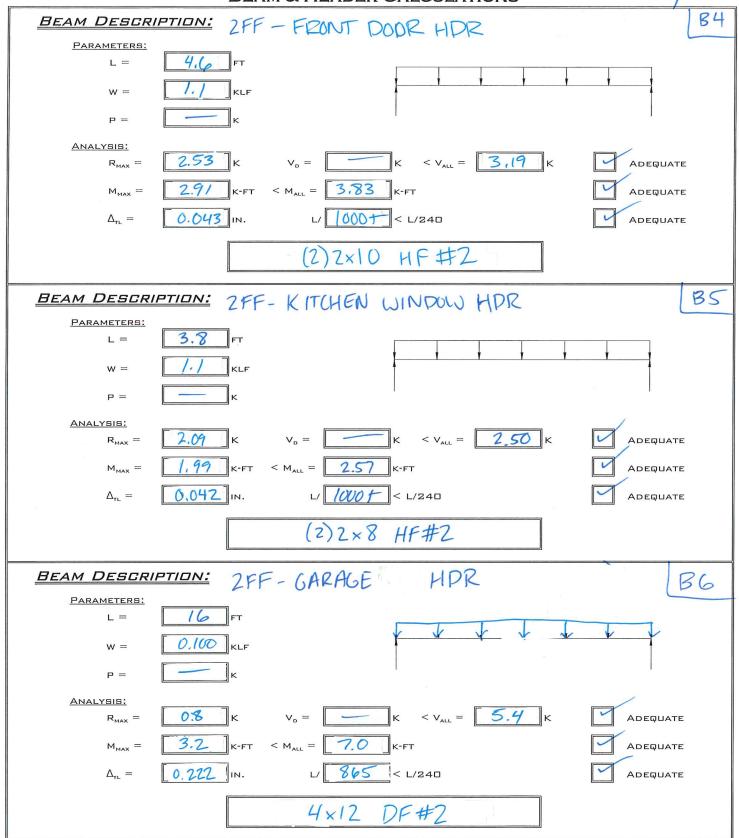
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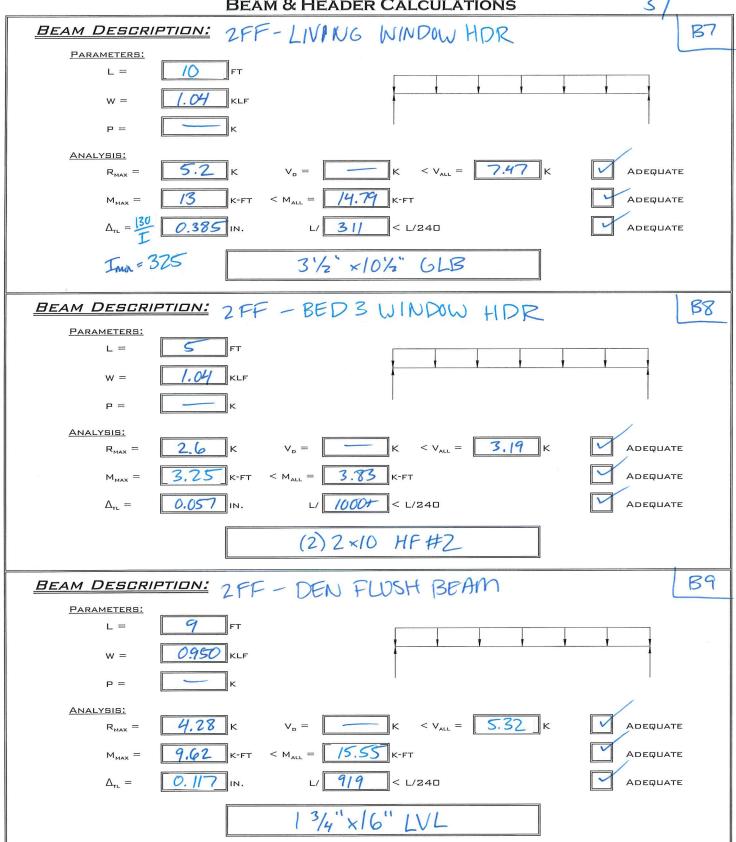
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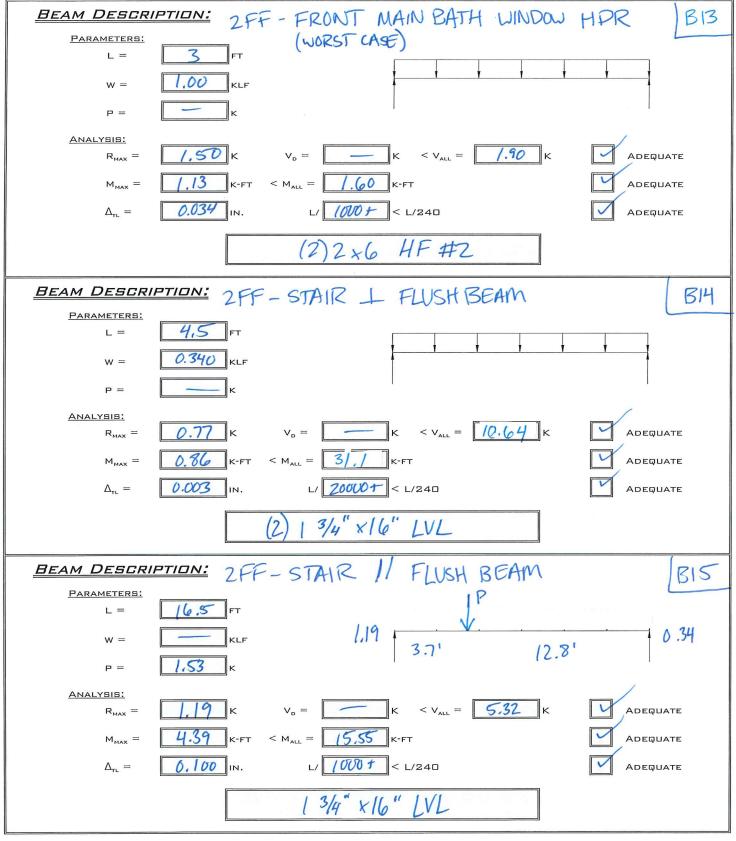
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BEAM & HEADER CALCULATIONS

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4029 97TH AVE SE

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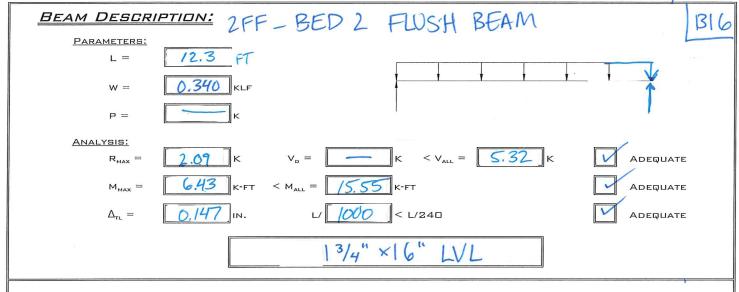
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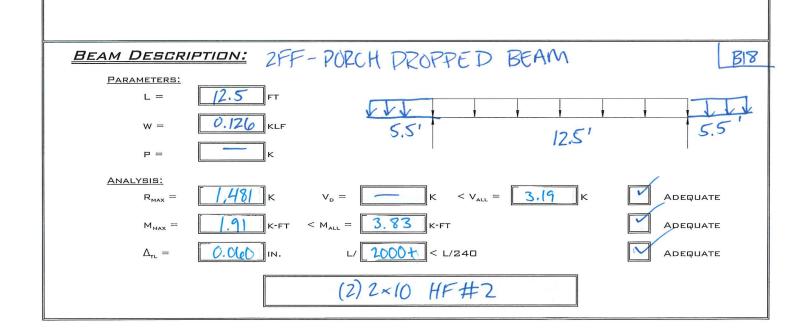
ENGINEER:

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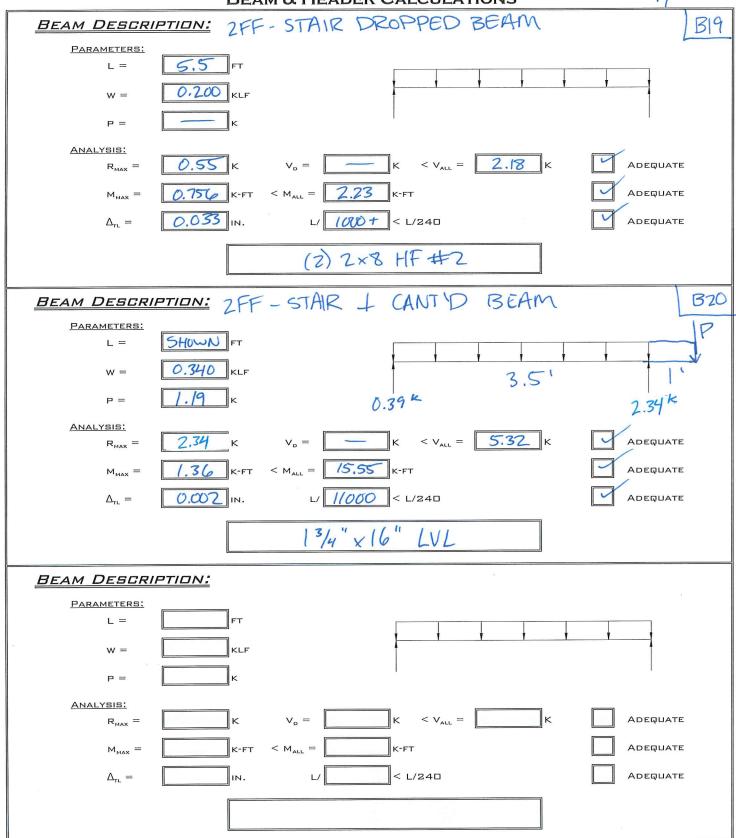
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SAS 14-OCT-22 DATE:

BEAM & HEADER CALCULATIONS



YEN DESIGN 4029 97TH AVE SE

MERCER ISLAND, WA

SHEAR WALL CALCULATIONS - WIND

REVIEWED BY: NJM

OCTOBER 14, 2022

PARAMETERS:

SINGLE FAMILY HOME

DESIGN WIND SPEED: 100 MPH

WIND EXPOSURE CATEGORY: B

SEISMIC DESIGN CATEGORY: D

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





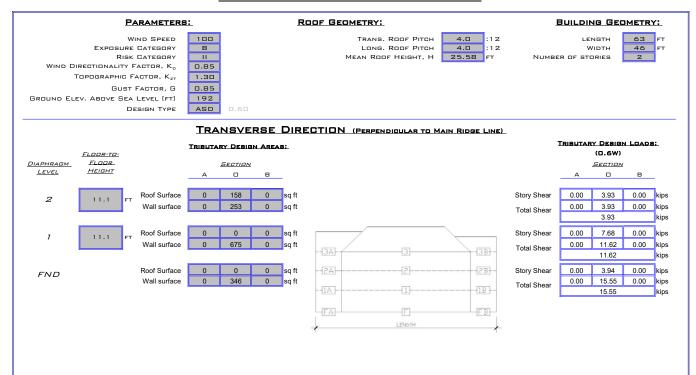
PROJECT NAME: 4029 97TH AVE SE

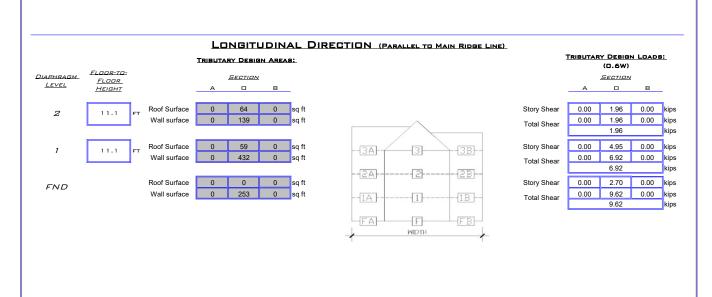
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WIND DESIGN SUMMARY PER ASCE 7-16







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SHEARWALL 201: 2ND - MASTER/BATH/B4 FRONT EXT. WALL
SHEARWALL PROPERTIES:
Wall Height, H 11.1 Ft. Max wall opening ht, H_c 6.0 Ft. Wall Length, L 45.0 Ft. Qualifying Wall Length, L 22.4 Ft. Shearwall Assembly P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 980 LBS 7118 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
OVERTURNING EVALUATION:
RESISTIVE DL 310 PLF OVERTURNING MOMENT 10.9 K-FT HOLD DOWN DESIGN LOAD 0 LB DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 282.5 K-FT HOLDOWN CAPACITY 0 LB
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 202: 2ND - BED 5 REAR EXT. WALL SHEARWALL PROPERTIES:
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.0 FT.
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.0 FT. WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: Total Shear Load on Wall Allowable Shearwall Capacity
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L TOTAL SHEAR LOAD ON WALL 980 LBS SHEARWALL ASSEMBLY P1 ALLOWABLE SHEARWALL CAPACITY 3209 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 980 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.0 FT. WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 980 LBS < 3209 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 310 PLF OVERTURNING MOMENT 10.9 K-FT HOLD DOWN DESIGN LOAD 0 LB
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.0 FT. WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 980 LBS < 3209 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 058 FASTENED W/ BD NAILS AT 60.0. PANEL EDGES & 120.0. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 310 PLF OVERTURNING MOMENT 10.9 K-FT HOLD DOWN DESIGN LOAD 0 LB DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 34.4 K-FT HOLD DOWN CAPACITY 0 LB



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SHEARWALL 203: 2ND - MASTER/STAIR SIDE EXT. WALL
Shearwall Properties:
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H _c 5.5 FT. WALL LENGTH, L 21.4 FT. QUALIFYING WALL LENGTH, L 19.0 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1960 LBS 6380 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 134 PLF OVERTURNING MOMENT 21.8 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 27.6 K-FT HOLDOWN CAPACITY 0 LBS
Hold-down Specification
No Holdown Required
SHEARWALL 204: 2ND - 84/85 SIDE EXT. WALL SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPERTIES:
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH,
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 24.7 FT. QUALIFYING WALL LENGTH, L CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1970 LBS ALLOWABLE SHEARWALL CAPACITY 8294 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L TOTAL SHEAR LOAD ON WALL 1970 LBS SHEARWALL ASSEMBLY P1 ALLOWABLE SHEARWALL CAPACITY 1970 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL L
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 24.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1970 LBS SHEARWALL CAPACITY 1970 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 SB FASTENED W/ BD NAILS AT 6 C.C. PANEL EDGES & 12 C.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 134 PLF OVERTURNING MOMENT 21.9 K-FT HOLD DOWN DESIGN LOAD 0 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 24.7 FT. WALL LENGTH, L 24.7 FT. WALL LENGTH, L CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1970 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 DVERTURNING EVALUATION: RESISTIVE DL 134 PLF OVERTURNING MOMENT 21.9 K-FT HOLD DOWN DESIGN LOAD LBS DL AT ENDS OF WALL D LBS RESISTIVE MOMENT 36.8 K-FT HOLDOWN CAPACITY USES LBS



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SHEARWALL XXX: - NOT USED
SHEARWALL PROPERTIES:
WALL HEIGHT, H D.O FT. MAX WALL OPENING HT, H _D D.O FT. WALL LENGTH, L D.O FT. QUALIFYING WALL LENGTH, L D.O FT. SHEARWALL ASSEMBLY PD
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY By H### #DIV/D! LBS
SHEARWALL ASSEMBLY SPECIFICATION
PO - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - UNBLOCKED #DIV/O!
Overturning Evaluation:
RESISTIVE DL 0 PLF OVERTURNING MOMENT #DIV/O! K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 0.0 K-FT HOLDOWN CAPACITY 0 LBS
Hold-down Specification
No Holdown Required
· ·
SHEARWALL 101: 1ST - LIVING REAR EXT. WALL SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.7 FT.
WALL LENGTH, L 35.7 FT. QUALIFYING WALL LENGTH, L 16.4 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2220 LBS 5507 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:
OVERTURNING EVALUATION: RESISTIVE DL 435 PLF OVERTURNING MOMENT 24.6 K-FT HOLD DOWN DESIGN LOAD 0 LBS
DVERTURNING EVALUATION: RESISTIVE DL 435 PLF OVERTURNING MOMENT 24.6 K-FT HOLD DOWN DESIGN LOAD DLBS DL AT ENDS OF WALL DLBS RESISTIVE MOMENT 249.5 K-FT HOLDOWN CAPACITY DLBS



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SHEARWALL PROPERTIES:
Wall Height, H 11.1 FT. Max wall opening ht, H_c 4.3 FT. Wall Length, L 20.0 FT. Qualifying Wall Length, L 15.0 FT. Shearwall Assembly P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1970 LBS 5037 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overturning Evaluation:
RESISTIVE DL 234 PLF OVERTURNING MOMENT 21.9 K-FT HOLD DOWN DESIGN LOAD DLBS DL AT ENDS OF WALL DLBS RESISTIVE MOMENT 42.1 K-FT HOLDOWN CAPACITY DLBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 103: 1ST - DEN OUTER SIDE EXT. WALL
SHEARWALL PROPERTIES:
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 20.0 FT. QUALIFYING WALL LENGTH, L 20.0 FT. SHEARWALL ASSEMBLY P1
WALL HEIGHT, H WALL LENGTH, L WALL L WALL LENGTH, L WALL L W
WALL HEIGHT, H WALL LENGTH, L WALL L WALL LENGTH, L WALL L WALL L WALL L WALL L WALL L WALL L WA
WALL HEIGHT, H WALL LENGTH, L WALL L WALL LENGTH, L WALL L W
WALL HEIGHT, H WALL LENGTH, L
WALL HEIGHT, H WALL LENGTH, L
WALL HEIGHT, H WALL LENGTH, L
WALL HEIGHT, H WALL LENGTH, L



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SHEARWALL 104: 1st - Den Inner Side Ext. Wall
SHEARWALL PROPERTIES:
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H _c 1.5 FT. WALL LENGTH, L 20.0 FT. QUALIFYING WALL LENGTH, L 15.0 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2560 LBS 5037 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 260 PLF OVERTURNING MOMENT 28.4 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 46.8 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 105: 1ST - GARAGE INNER SIDE EXT. WALL
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 19.5 FT. QUALIFYING WALL LENGTH, L 19.5 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 3140 LBS 6548 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
DVERTURNING EVALUATION: RESISTIVE DL 205 PLF OVERTURNING MOMENT 34.9 K-FT HOLD DOWN DESIGN LOAD DLBS DL AT ENDS OF WALL DLBS RESISTIVE MOMENT 35.1 K-FT HOLDOWN CAPACITY DLBS
HOLD-DOWN SPECIFICATION
No Holdown Required



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SHEARWALL	106: 1st -	GARAGE OUTER SID	E EXT. WALL		
SHEARWALL PROPERTIE	ES:				
		AX WALL OPENING HT, ${\sf H_c}$ LIFYING WALL LENGTH, L	2.0 FT. 41.5 FT.	SHEARWALL ASSEMBLY	P1
CAPACITY EVALUATION	<u>.</u>				
	TOTAL S	SHEAR LOAD ON WALL	_	HEARWALL CAPACITY	
			BEMBLY SPECIFICA		
			SIDE 7/16" USB	HUN_	
	FASTENED W/ 80	D NAILS AT 6 ["] O.C. PANE	//	ANEL FIELD - EDGES BLOCKE	D
Overturning Evalua	TION:				
RESISTIVE DL DL AT ENDS OF WALL	205 PLF O LBS	OVERTURNING MOMENT RESISTIVE MOMENT	29.6 K-FT	HOLD DOWN DESIGN LOAD HOLDOWN CAPACITY	O LBS
		Hald-day	N SPECIFICATION		
		No Hold	DOWN REQUIRED		
SHEARWALL		PANTRY/KITCHEN FR	RONT EXT. WALL		
SHEARWALL SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L	11.1 FT. MA	PANTRY/KITCHEN FR AX WALL OPENING HT, HC LIFYING WALL LENGTH, L	2.8 FT. 6.5 FT.	SHEARWALL ASSEMBLY	Ρl
SHEARWALL PROPERTII	ES: 11.1 FT. MA 10.3 FT. QUAL	AX WALL OPENING HT, HC	2.B FT.	SHEARWALL ASSEMBLY	P1
SHEARWALL PROPERTII WALL HEIGHT, H WALL LENGTH, L	ES: 11.1 FT. MA 10.3 FT. QUAL	AX WALL OPENING HT, HC	2.8 FT. 6.5 FT.	SHEARWALL ASSEMBLY SHEARWALL CAPACITY 2166 LBS	ΡΊ
SHEARWALL PROPERTII WALL HEIGHT, H WALL LENGTH, L	ES: 11.1 FT. MA 10.3 FT. QUAL	AX WALL OPENING HT, HC LIFYING WALL LENGTH, L GHEAR LOAD ON WALL 1400 LBS	2.8 FT. 6.5 FT. ALLOWABLE S SEMBLY SPECIFICA	SHEARWALL CAPACITY 2166 LBS	ΡΊ
SHEARWALL PROPERTII WALL HEIGHT, H WALL LENGTH, L	ES: 11.1 FT. MA 10.3 FT. QUAL TOTAL S	AX WALL OPENING HT, HC LIFYING WALL LENGTH, L SHEAR LOAD ON WALL 1400 LBS SHEARWALL AS: P1 - 1- O NAILS AT 6"O.C. PANE	2.8 FT. 6.5 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" DSB	SHEARWALL CAPACITY 2166 LBS	
SHEARWALL PROPERTII WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	ES: 11.1 FT. MA 10.3 FT. QUAL TOTAL S FASTENED W/ BE	AX WALL OPENING HT, HC LIFYING WALL LENGTH, L SHEAR LOAD ON WALL 1400 LBS SHEARWALL AS: P1 - 1- O NAILS AT 6"O.C. PANE	2.8 FT. 6.5 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" DSB L EDGES & 12"0.C. PA	SHEARWALL CAPACITY 2166 LBS TION	
SHEARWALL PROPERTII WALL HEIGHT, H WALL LENGTH, L	ES: 11.1 FT. MA 10.3 FT. QUAL TOTAL S FASTENED W/ BE	AX WALL OPENING HT, HC LIFYING WALL LENGTH, L SHEAR LOAD ON WALL 1400 LBS SHEARWALL AS: P1 - 1- O NAILS AT 6"O.C. PANE	2.8 FT. 6.5 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" DSB L EDGES & 12"0.C. PA	SHEARWALL CAPACITY 2166 LBS TION	
SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	FASTENED W/ 8E	AX WALL OPENING HT, HC LIFYING WALL LENGTH, L GHEAR LOAD ON WALL 1400 LBS SHEARWALL ASS P1 - 1- O NAILS AT 6"O.C. PANE OVERTURNING MOMENT RESISTIVE MOMENT	2.8 FT. 6.5 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" DSB L EDGES & 12"D.C. PA ADEQUATE	CHEARWALL CAPACITY 2166 LBS TION ANEL FIELD - EDGES BLOCKE	D LBS
SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	FASTENED W/ 8E	AX WALL OPENING HT, HC LIFYING WALL LENGTH, L GHEAR LOAD ON WALL 1 400 LBS SHEARWALL AS: O NAILS AT 6"O.C. PANE OVERTURNING MOMENT RESISTIVE MOMENT HOLD-DOV	2.8 FT. 6.5 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" OSB L EDGES & 12"O.C. PA ADEQUATE 15.5 K-FT 20.8 K-FT	CHEARWALL CAPACITY 2166 LBS TION ANEL FIELD - EDGES BLOCKE	D LBS



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SHEARWALL 108: 1st - Main Bath Front Ext. Wall
SHEARWALL PROPERTIES:
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H _c 2.8 FT. WALL LENGTH, L 10.9 FT. QUALIFYING WALL LENGTH, L 4.9 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1000 LBS 1652 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 435 PLF OVERTURNING MOMENT 11.1 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 23.3 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 109: 1st - Rear Garage Int. Wall
SHEARWALL PROPERTIES:
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 8.2 FT. QUALIFYING WALL LENGTH, L 8.2 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 8.2 FT. QUALIFYING WALL LENGTH, L 8.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 8.2 FT. QUALIFYING WALL LENGTH, L SHEARWALL ASSEMBLY P1 GAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1060 LBS 2754 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L B.2 FT. MAX WALL OPENING HT, HC WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 GAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1060 LBS < 2754 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L B.2 FT. MAX WALL DPENING HT, HC B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1060 LBS ALLOWABLE SHEARWALL CAPACITY 1060 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L B.2 FT. MAX WALL OPENING HT, HC WALL LENGTH, L B.2 FT. QUALIFYING WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1060 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL DURTURNING MOMENT 12.5 K-FT HOLD DOWN DESIGN LOAD 1156 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L B.2 FT. MAX WALL OPENING HT, HC WALL LENGTH, L B.2 FT. WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1060 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB FASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 12.5 K-FT HOLD DOWN DESIGN LOAD 1156 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 3.0 K-FT HOLDOWN CAPACITY 4935 LBS



4029 97TH AVE SE

M&K PROJECT #: 251-22033

ENGINEER: SAS

DATE: 14-0ct-22

SHEARWALL 110: 1ST - DEN FRONT EXT. WALL
SHEARWALL PROPERTIES:
WALL HEIGHT, H 11.9 FT. MAX WALL OPENING HT, H _c 0.0 FT. WALL LENGTH, L 8.7 FT. QUALIFYING WALL LENGTH, L 8.7 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 380 LBS 2921 LBS
SHEARWALL ASSEMBLY SPECIFICATION
P1 - 1-SIDE 7/16" DSB FASTENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
Overturning Evaluation:
RESISTIVE DL 134 PLF OVERTURNING MOMENT 4.5 K-FT HOLD DOWN DESIGN LOAD LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 4.6 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 111: 1ST - GARAGE FRONT EXT. WALL
SHEARWALL PROPERTIES: WALL HEIGHT, H 13.0 FT. MAX WALL OPENING HT, HC 7.0 FT. WALL LENGTH, L 20.9 FT. QUALIFYING WALL LENGTH, L 4.9 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 860 LBS 1478 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
<u>ADEQUATE</u>
ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 11.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 19.7 K-FT HOLDOWN CAPACITY 0 LBS
OVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 11.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS
DVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 11.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 19.7 K-FT HOLDOWN CAPACITY 0 LBS

YEN DESIGN 4029 97TH AVE SE

MERCER ISLAND, WA

SHEAR WALL CALCULATIONS - SEISMIC

REVIEWED BY: NJM

OCTOBER 14, 2022

PARAMETERS:

SINGLE FAMILY HOME

DESIGN WIND SPEED: 100 MPH

WIND EXPOSURE CATEGORY: B

SEISMIC DESIGN CATEGORY: D

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





PROJECT NAME: 4029 97TH AVE SE

YEN DESIGN

M&K PROJECT #: 251-22033

ENGINEER: SAS
DATE: 14-06T-22

SEISMIC CALCULATION - ASCE 7-16

Description Designal Description (1.5 to 2.5 to 2	DEER INFOUTS: DEER INFOUTS: DEER INFOUTS: DEED INFOU					
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STICK CONTRIDENT, N	Total Section Total Sectio					
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DEAD LOAD CALCULATION: 1	DEAD LOAD GALGULATION:					
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19	TRAIL PEAD LOAD OF STRUCTURE 63 SEISMIC RESPONSE COEFFICIENT: RESPONSE MODIFICATION FACTOR, R OCCUPANCY IMPORTANCE FACTOR, R SEISMIC RESPONSE COEFFICIENT, C, 0.173 0.173 BASE SHEARE: ULTIMATE LOAD TRANSVERSE LONGITUDINAL 1.1	17	0.0		0.0	
TOTAL DEAD LOAD OF STRUCTURE G3 SEISMIG RESPONSE COEFFICIENT: TRANSVERSE LONGITUDINAL RESPONSE MODIFICATION FACTOR, R G.5 G.5	TOTAL DEAD LOAD OF STRUCTURE 63 6.5	18			0.0	
Total Dead Load Of Structure 63 SEISMIC RESPONSE COEFFICIENT: TRANSVERSE LONGITUDINAL	TOTAL DEAD LOAD OF STRUCTURE 63					
RESPONSE MODIFICATION FACTOR, R	SEISMIC RESPONSE COEFFICIENT: RESPONSE MODIFICATION FACTOR, R 6.5 6.5 COCCUPANCY IMPORTANCE FACTOR, I	20	0.0		0.0	×
RESPONSE MODIFICATION FACTOR, R	SEISMIC RESPONSE COEFFICIENT: RESPONSE MODIFICATION FACTOR, R 6.5 6.5 COCCUPANCY IMPORTANCE FACTOR, I				TOTAL DEAD LOAD DE STRU	CTURE 63
TRANSVERSE COCCUPANCY IMPORTANCE FACTOR, IC CO. 1.0.0 CO.	RESPONSE MODIFICATION FACTOR, R	SEISMIC RESPONSE	COEFFICIENT:		<u> </u>	
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DOCUMENT IMPORTANCE FACTOR, Is D.0 D	Company Marker Company Compa	RESPONSE MODIFIC	ATION FACTOR, R 6.5	6.5		
Science Response Coefficient, C,	Science Response Coefficient Coefficie					
Base Shears:	BASE SHEARS:	OCCUPANCY IMPORT	TANCE FACTOR, I _E 1.00	1.00		
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11	11	DASE SHEARS.				
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4029 97TH AVE SE

M&K PROJECT #: 251-22033

ENGINEER: SAS

DATE: 14-0ct-22

SHEARWALL 201: 2ND - MASTER/BATH/B4 FRONT EXT. WALL
SHEARWALL PROPERTIES:
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H _c 6.0 FT. WALL LENGTH, L 45.0 FT. QUALIFYING WALL LENGTH, L 22.4 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2420 LBS 5085 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 310 PLF OVERTURNING MOMENT 26.9 K-FT HOLD DOWN DESIGN LOAD LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 282.5 K-FT HOLDOWN CAPACITY 0 LBS
HOLD-DOWN SPECIFICATION
No Holdown Required
SHEARWALL 202: 2ND - BED 5 REAR EXT. WALL
SHEARWALL 202: 2ND - BED 5 REAR EXT. WALL SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 11.1 FT. MAX WALL OPENING HT, HC G.O FT. WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC G.D FT. WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: ALLOWABLE SHEARWALL CAPACITY 2280 LBS CAPACITY 2292 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC G.D FT. 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 2280 LBS SHEARWALL ASSEMBLY SPECIFICATION
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L WALL LENGTH, L SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2280 LBS CAPACITY 2292 LBS
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.0 FT. WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2280 LBS < 2292 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 310 PLF OVERTURNING MOMENT 25.3 K-FT HOLD DOWN DESIGN LOAD DLBS DL AT ENDS OF WALL DLBS RESISTIVE MOMENT 34.4 K-FT HOLDOWN CAPACITY DLBS
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 6.0 FT. WALL LENGTH, L 15.7 FT. QUALIFYING WALL LENGTH, L 9.7 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2280 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" SB FASTENED W/ 8D NAILS AT 6"0.C. PANEL EDGES & 12"0.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 310 PLF OVERTURNING MOMENT 25.3 K-FT HOLD DOWN DESIGN LOAD 0 LBS



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M&K PROJECT #: 251-22033

ENGINEER: SAS
DATE: 14-0ct-22

SHEARWALL	203: 2ND - MASTER/STAIR SIDE EXT. WALL
SHEARWALL PROPERTIES	<u>i.</u>
	FT. MAX WALL OPENING HT, H _c 5.5 FT. 1.4 FT. QUALIFYING WALL LENGTH, L 19.0 FT. SHEARWALL ASSEMBLY P1
CAPACITY EVALUATION:	
	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2350 LBS 4557 LBS
	SHEARWALL ASSEMBLY SPECIFICATION
,	P1 - 1-SIDE 7/16" OSB astened w/ 8d nails at 6"d.c. panel edges & 12"d.c. panel field - edges blocked <u>adequate</u>
Overturning Evaluati	<u></u>
RESISTIVE DL 1 DL AT ENDS OF WALL	34 PLF OVERTURNING MOMENT 26.1 K-FT HOLD DOWN DESIGN LOAD O LBS RESISTIVE MOMENT 27.6 K-FT HOLDOWN CAPACITY O LBS
	HOLD-DOWN SPECIFICATION
	No Holdown Required
_	
SHEARWALL SHEARWALL PROPERTIES	204: 2ND - B4/B5 SIDE EXT. WALL
SHEARWALL PROPERTIES WALL HEIGHT, H 1	
SHEARWALL PROPERTIES WALL HEIGHT, H 1	I.1 FT. MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPERTIES WALL HEIGHT, H 1 WALL LENGTH, L 2	I.1 FT. MAX WALL OPENING HT, HC 0.0 FT.
SHEARWALL PROPERTIES WALL HEIGHT, H 1 WALL LENGTH, L 2	TOTAL SHEAR LOAD ON WALL 2350 LBS SHEARWALL ASSEMBLY SPECIFICATION
SHEARWALL PROPERTIES WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION:	TOTAL SHEAR LOAD ON WALL 2350 LBS
SHEARWALL PROPERTIES WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION:	TOTAL SHEAR LOAD ON WALL 2350 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB ASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERTIES WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION:	TOTAL SHEAR LOAD ON WALL 2350 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB ASTENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE
SHEARWALL PROPERTIES WALL HEIGHT, H 1 WALL LENGTH, L 2 CAPACITY EVALUATION: OVERTURNING EVALUATION RESISTIVE DL 1	I.1 FT. MAX WALL OPENING HT, HC
SHEARWALL PROPERTIES WALL HEIGHT, H 1 WALL LENGTH, L 2 CAPACITY EVALUATION:	TOTAL SHEAR LOAD ON WALL 2350 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB ASSTENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE DN: RESISTIVE MOMENT 26.1 K-FT HOLD DOWN DESIGN LOAD LBS RESISTIVE MOMENT 36.8 K-FT HOLD DOWN DESIGN LOAD LBS LBS LBS LBS LBS LBS LBS LB



4029 97TH AVE SE

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	XXX:	- NOT USED			
SHEARWALL PROPERTI	ES:				
WALL HEIGHT, H WALL LENGTH, L	0.0 FT.	MAX WALL OPENING HT, ${\sf H}_{\sf G}$ Qualifying Wall Length, L	0.0 FT.	SHEARWALL ASSEMBLY	PO
CAPACITY EVALUATION	<u>ı:</u>				
	То	TAL SHEAR LOAD ON WALL O LBS		SHEARWALL CAPACITY #DIV/O! LBS	
		SHEARWALL ASS	SEMBLY SPECIFICA	ATION	
	FASTENED	· · · · · · · · · · · · · · · · · · ·	SIDE 7/16" OSB EL EDGES & 12"o.c. #DIV/0!	PANEL FIELD - UNBLOCKED	
OVERTURNING EVALUA	TION:				
RESISTIVE DL DL AT ENDS OF WALL	O PLF	OVERTURNING MOMENT RESISTIVE MOMENT	0.0 K-FT	HOLD DOWN DESIGN LOAD HOLDOWN CAPACITY	O LBS
		Hald-day	N SPECIFICATION		
		No Hold	OWN REQUIRED		
_					_
SHEARWALL	101: 1	ST - LIVING REAR EXT. W	'ALL		
SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L	ES: 11.1 гт.	ST - LIVING REAR EXT. W MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L	6.7 FT.	SHEARWALL ASSEMBLY	P1
SHEARWALL PROPERTI	11.1 FT. 35.7 FT.	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL	6.7 FT. 16.4 FT. ALLOWABLE S	SHEARWALL CAPACITY	P1
SHEARWALL PROPERTI WALL HEIGHT, H WALL LENGTH, L	11.1 FT. 35.7 FT.	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L	6.7 16.4 FT.		Pl
SHEARWALL PROPERTI WALL HEIGHT, H WALL LENGTH, L	11.1 FT. 35.7 FT.	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL 3000 LBS	6.7 FT. 16.4 FT. ALLOWABLE S	SHEARWALL CAPACITY 3934 LBS	P1
SHEARWALL PROPERTI WALL HEIGHT, H WALL LENGTH, L	ES: 11.1 FT. 35.7 FT.	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL 3000 LBS SHEARWALL ASS P1 - 1- W/ 8D NAILS AT 6"0.C. PANE	6.7 FT. 16.4 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16 OSB	SHEARWALL CAPACITY 3934 LBS	
SHEARWALL PROPERTI WALL HEIGHT, H WALL LENGTH, L	### FT. 35.7 FT. TO	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL 3000 LBS SHEARWALL ASS P1 - 1- W/ 8D NAILS AT 6"0.C. PANE	6.7 FT. 16.4 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" OSB L EDGES & 12"O.C. P	SHEARWALL CAPACITY 3934 LBS ATION	
SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION	### FT. 35.7 FT. TO	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL 3000 LBS SHEARWALL ASS P1 - 1- W/ 8D NAILS AT 6"0.C. PANE	6.7 FT. 16.4 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" OSB L EDGES & 12"O.C. P	SHEARWALL CAPACITY 3934 LBS ATION	
SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	### FASTENED V	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL 3000 LBS SHEARWALL ASS P1 - 1- W/ BD NAILS AT 6"D.C. PANE OVERTURNING MOMENT RESISTIVE MOMENT	6.7 FT. 16.4 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16 OSB LEDGES & 12 O.C. P ADEQUATE	SHEARWALL CAPACITY 3934 LBS ATION PANEL FIELD - EDGES BLOCKED HOLD DOWN DESIGN LOAD HOLDOWN CAPACITY	D LBS
SHEARWALL PROPERTION WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION OVERTURNING EVALUATION RESISTIVE DL	### FASTENED V	MAX WALL OPENING HT, HC QUALIFYING WALL LENGTH, L TAL SHEAR LOAD ON WALL 3000 LBS SHEARWALL ASS P1 - 1- W/ 8D NAILS AT 6"0.C. PANE OVERTURNING MOMENT RESISTIVE MOMENT HOLD-DOW	6.7 FT. 16.4 FT. ALLOWABLE S SEMBLY SPECIFICA SIDE 7/16" OSB L EDGES & 12"O.C. P ADEQUATE 33.3 K-FT 249.5 K-FT	SHEARWALL CAPACITY 3934 LBS ATION PANEL FIELD - EDGES BLOCKED HOLD DOWN DESIGN LOAD HOLDOWN CAPACITY	D LBS



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SHEARWALL 1	02: 1st - Living Side Ext. Wall			
SHEARWALL PROPERTIES:				
WALL HEIGHT, H 11. WALL LENGTH, L 20.				
CAPACITY EVALUATION:				
	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2350 LBS 3598 LBS			
SHEARWALL ASSEMBLY SPECIFICATION				
FA	P1 - 1-SIDE 7/16 [®] OSB Gtened w/ 8d nails at 6 [®] o.c. panel edges & 12 [®] o.c. panel field - edges blocked ADEQUATE			
OVERTURNING EVALUATION				
RESISTIVE DL 234 DL AT ENDS OF WALL 0				
	HOLD-DOWN SPECIFICATION			
	No Holdown Required			
SHEARWALL 103: 1ST - DEN OUTER SIDE EXT. WALL				
SHEARWALL 1	O3: 1st - Den Outer Side Ext. Wall			
SHEARWALL 1	O3: 1st - Den Outer Side Ext. Wall			
	T FT. MAX WALL OPENING HT, HC 0.0 FT.			
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.	T FT. MAX WALL OPENING HT, HC 0.0 FT.			
SHEARWALL PROPERTIES: WALL HEIGHT, H 11. WALL LENGTH, L 20.	T FT. MAX WALL OPENING HT, HC 0.0 FT.			
SHEARWALL PROPERTIES: WALL HEIGHT, H 11. WALL LENGTH, L 20.	FT. MAX WALL OPENING HT, HC O.O FT. FT. QUALIFYING WALL LENGTH, L 20.0 FT. SHEARWALL ASSEMBLY P1 TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY			
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION:	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 480 LBS Total Shear Load On Wall ALLOWABLE SHEARWALL CAPACITY 4797 LBS			
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION: FA:	TOTAL SHEAR LOAD ON WALL 480 LBS SHEARWALL ASSEMBLY P1 TOTAL SHEAR LOAD ON WALL 4797 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB STENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE			
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L CAPACITY EVALUATION:	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 480 LBS < 4797 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB STENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE			
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 20. GAPACITY EVALUATION: FAI OVERTURNING EVALUATION RESISTIVE DL 261	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 480 LBS < 4797 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB STENED W/ BD NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE			
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 20. GAPACITY EVALUATION: FAI OVERTURNING EVALUATION RESISTIVE DL 261	TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 480 LBS SHEARWALL ABSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB STENED W/ 8D NAILS AT 6"D.C. PANEL EDGES & 12"D.C. PANEL FIELD - EDGES BLOCKED ADEQUATE LBS RESISTIVE MOMENT 5.3 K-FT HOLD DOWN DESIGN LOAD LBS RESISTIVE MOMENT 46.8 K-FT HOLD DOWN CAPACITY LBS			



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SHEARWALL 104: 1st - Den Inner Side Ext. Wall			
SHEARWALL PROPERTIES:			
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H ₀ 1.5 FT. WALL LENGTH, L 20.0 FT. QUALIFYING WALL LENGTH, L 15.0 FT. SHEARWALL ASSEMBLY P1			
CAPACITY EVALUATION:			
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 970 LBS 3598 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 260 PLF OVERTURNING MOMENT 10.8 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 46.8 K-FT HOLDOWN CAPACITY 0 LBS			
HOLD-DOWN SPECIFICATION			
No Holdown Required			
SHEARWALL 105: 1ST - GARAGE INNER SIDE EXT. WALL SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 0.0 FT.			
WALL LENGTH, L 19.5 FT. QUALIFYING WALL LENGTH, L 19.5 FT. SHEARWALL ASSEMBLY P1			
CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 2150 LBS 4677 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			
Disputibility Evaluation			
OVERTURNING EVALUATION: RESISTIVE DL 205 PLF OVERTURNING MOMENT 23.9 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 35.1 K-FT HOLDOWN CAPACITY 0 LBS			
RESISTIVE DL 205 PLF OVERTURNING MOMENT 23.9 K-FT HOLD DOWN DESIGN LOAD 0 LBS			
RESISTIVE DL 205 PLF OVERTURNING MOMENT 23.9 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 35.1 K-FT HOLDOWN CAPACITY 0 LBS			



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SHEARWALL 106: 1ST - GARAGE OUTER SIDE EXT. WALL				
SHEARWALL PROPERTIES:				
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H _c 2.0 FT. WALL LENGTH, L 45.5 FT. QUALIFYING WALL LENGTH, L 41.5 FT. SHEARWALL ASSEMBLY P1				
CAPACITY EVALUATION:				
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1650 LBS 9954 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 205 PLF OVERTURNING MOMENT 18.3 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 191.0 K-FT HOLDOWN CAPACITY 0 LBS				
HOLD-DOWN SPECIFICATION				
No Holdown Required				
SHEARWALL 107: 1ST - PANTRY/KITCHEN FRONT EXT. WALL				
SHEARWALL 107: 1ST - PANTRY/KITCHEN FRONT EXT. WALL SHEARWALL PROPERTIES:				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 2.8 FT.				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 2.8 FT. WALL LENGTH, L 10.3 FT. QUALIFYING WALL LENGTH, L 6.5 FT. SHEARWALL ASSEMBLY P1 GAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1500 LBS < 1547 LBS SHEARWALL ASSEMBLY SPECIFICATION				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 2.8 FT. WALL LENGTH, L 10.3 FT. QUALIFYING WALL LENGTH, L 6.5 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1500 LBS 1547 LBS				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC WALL LENGTH, L 10.3 FT. QUALIFYING WALL LENGTH, L 6.5 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1500 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, HC 2.8 FT. WALL LENGTH, L 10.3 FT. QUALIFYING WALL LENGTH, L 6.5 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1500 LBS < 1547 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED				
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L 10.3 FT. QUALIFYING WALL LENGTH, L CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1500 LBS SHEARWALL ABBEMBLY SPECIFICATION P1 - 1-SIDE 7/16" DSB FASTENED W/ 8D NAILS AT 6"0.C. PANEL EDGES & 12"0.C. PANEL FIELD - EDGES BLOCKED ADEQUATE DVERTURNING EVALUATION: RESISTIVE DL 4.35 PLF CVERTURNING MOMENT 16.7 K-FT HOLD DOWN DESIGN LOAD LBS RESISTIVE MOMENT 20.8 K-FT HOLD DOWN CAPACITY LBS				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.1 FT. MAX WALL DPENING HT, HC 2.8 FT. WALL LENGTH, L 10.3 FT. QUALIFYING WALL LENGTH, L 6.5 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1500 LBS < 1547 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 435 PLF OVERTURNING MOMENT 16.7 K-FT HOLD DOWN DESIGN LOAD 0 LBS				



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SHEARWALL 108: 1st - Main Bath Front Ext. Wall				
SHEARWALL PROPERTIES:				
WALL HEIGHT, H 11.1 FT. MAX WALL OPENING HT, H _c 2.8 FT. WALL LENGTH, L 10.9 FT. QUALIFYING WALL LENGTH, L 4.9 FT. SHEARWALL ASSEMBLY P1				
CAPACITY EVALUATION:				
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1100 LBS 1180 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 435 PLF OVERTURNING MOMENT 12.2 K-FT HOLD DOWN DESIGN LOAD O LBS				
RESISTIVE DL 435 PLF OVERTURNING MOMENT 12.2 K-FT HOLD DOWN DESIGN LOAD O LBS DL AT ENDS OF WALL O LBS RESISTIVE MOMENT 23.3 K-FT HOLDOWN CAPACITY O LBS				
Hold-down Specification				
No Holdown Required				
SHEARWALL 109: 1ST - REAR GARAGE INT. WALL SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC 0.0 FT.				
SHEARWALL PROPERTIES:				
SHEARWALL PROPERTIES:				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC 0.0 FT.				
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L B.2 FT. QUALIFYING WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1200 LBS SHEARWALL ASSEMBLY SPECIFICATION				
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L WALL LENGTH, L B.2 FT. QUALIFYING WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1200 LBS 1967 LBS				
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L B.2 FT. MAX WALL OPENING HT, HC WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1200 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE				
SHEARWALL PROPERTIES: WALL HEIGHT, H WALL LENGTH, L B.2 FT. MAX WALL OPENING HT, HC WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL 1200 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ 8D NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED				
SHEARWALL PROPERTIES: WALL HEIGHT, H 11.8 FT. MAX WALL OPENING HT, HC 0.0 FT. WALL LENGTH, L 8.2 FT. QUALIFYING WALL LENGTH, L 8.2 FT. SHEARWALL ASSEMBLY P1 CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1200 LBS < 1967 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16" OSB FASTENED W/ BD NAILS AT 6"O.C. PANEL EDGES & 12"O.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 14.2 K-FT HOLD DOWN DESIGN LOAD 135B LBS				
SHEARWALL PROPERTIES: WALL LENGTH, L B.2 FT. MAX WALL OPENING HT, HC WALL LENGTH, L B.2 FT. QUALIFYING WALL LENGTH, L B.2 FT. SHEARWALL ASSEMBLY P1 GAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 1 2 00 LBS SHEARWALL ASSEMBLY SPECIFICATION P1 - 1-SIDE 7/16 0 SB FASTENED W/ BD NAILS AT 6 0.C. PANEL EDGES & 12 0.C. PANEL FIELD - EDGES BLOCKED ADEQUATE OVERTURNING EVALUATION: RESISTIVE DL OLBS RESISTIVE DL OLBS RESISTIVE MOMENT 14.2 K-FT HOLD DOWN DESIGN LOAD 1358 LBS DL AT ENDS OF WALL OLBS RESISTIVE MOMENT 3.0 K-FT HOLDOWN CAPACITY 3695 LBS				



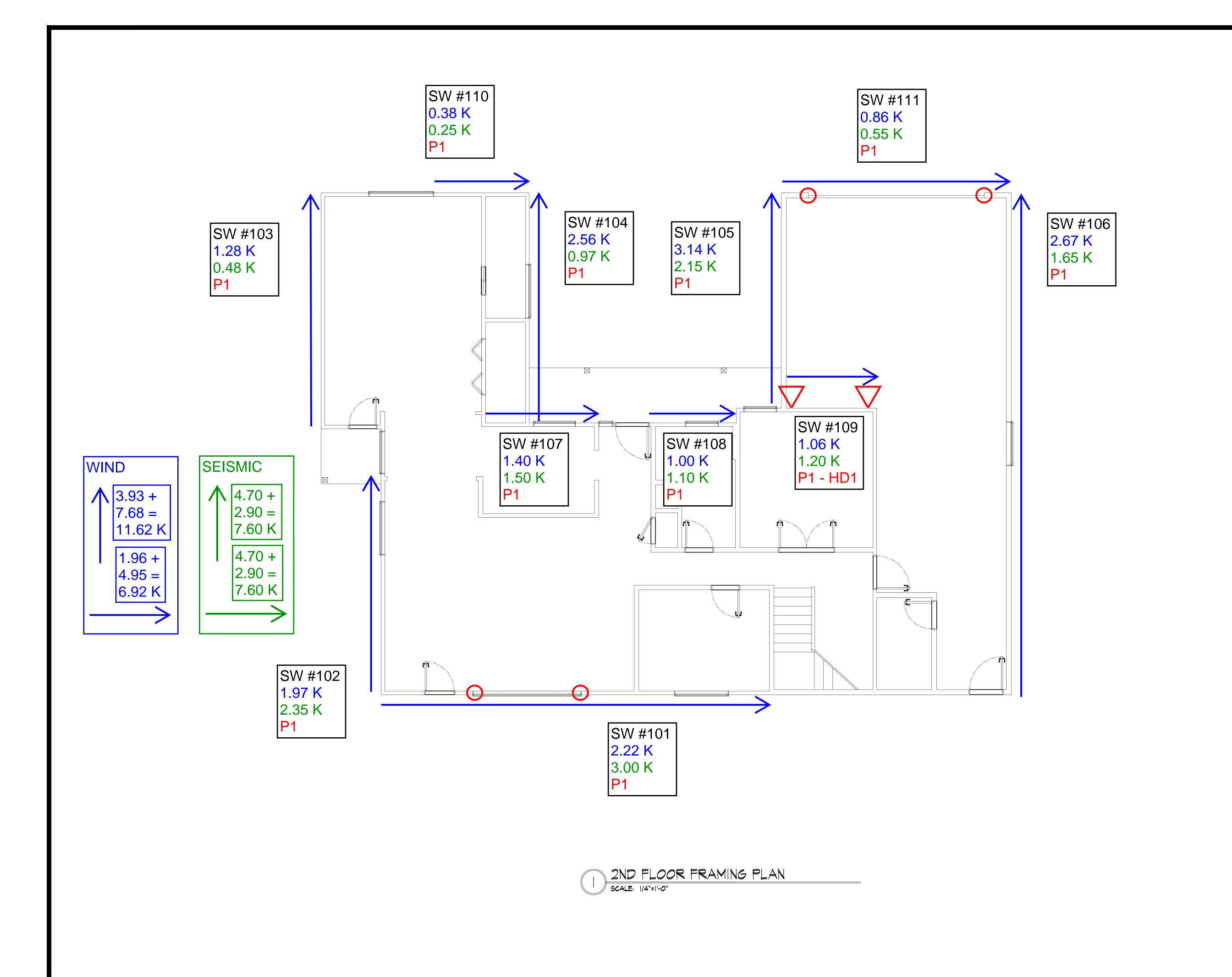
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SHEARWALL 110: 1ST - DEN FRONT EXT. WALL			
SHEARWALL PROPERTIES:			
WALL HEIGHT, H 11.9 FT. MAX WALL OPENING HT, H ₀ 0.0 FT. WALL LENGTH, L 8.7 FT. QUALIFYING WALL LENGTH, L 8.7 FT. SHEARWALL ASSEMBLY P1			
CAPACITY EVALUATION:			
TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 250 LBS 2087 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 134 PLF OVERTURNING MOMENT 3.0 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 4.6 K-FT HOLDOWN CAPACITY 0 LBS			
HOLD-DOWN SPECIFICATION			
No Holdown Required			
SHEARWALL 111: 1ST - GARAGE FRONT EXT. WALL			
SHEARWALL PROPERTIES: WALL HEIGHT, H 13.0 FT. MAX WALL OPENING HT, HC 7.0 FT.			
WALL LENGTH, L 20.9 FT. QUALIFYING WALL LENGTH, L 4.9 FT. SHEARWALL ASSEMBLY P1			
CAPACITY EVALUATION: TOTAL SHEAR LOAD ON WALL ALLOWABLE SHEARWALL CAPACITY 550 LBS 1055 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			
<u>ADEQUATE</u>			
ADEQUATE OVERTURNING EVALUATION:			
OVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 7.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS			
DVERTURNING EVALUATION: RESISTIVE DL 100 PLF OVERTURNING MOMENT 7.2 K-FT HOLD DOWN DESIGN LOAD 0 LBS DL AT ENDS OF WALL 0 LBS RESISTIVE MOMENT 19.7 K-FT HOLDOWN CAPACITY 0 LBS			



LEGEND

• IIIIII INTERIOR BEARING WALL

• 🗆 = = = BEARING WALL ABOVE (B.M.A.), OR SHEARWALL ABOVE (S.M.A.)

• — -- BEAM / HEADER

• INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL W/3" o.c. EDGE NAILING

...... INDICATES AREA OF ROOF OVERFRAMING

JL METAL HANGER

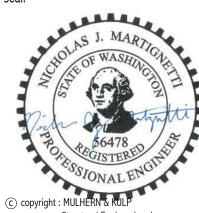
INDICATES POST ABOVE. PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE.

INDICATES HOLDOWN.

REFER TO S-0.0 FOR TYPICAL STRUCTURAL NOTES & SCHEDULES

HOLD-DOWN SCHEDULE

SYMBOL	SPECIFICATION	
HD-I	SIMPSON STHD14 HOLD-DOWN	



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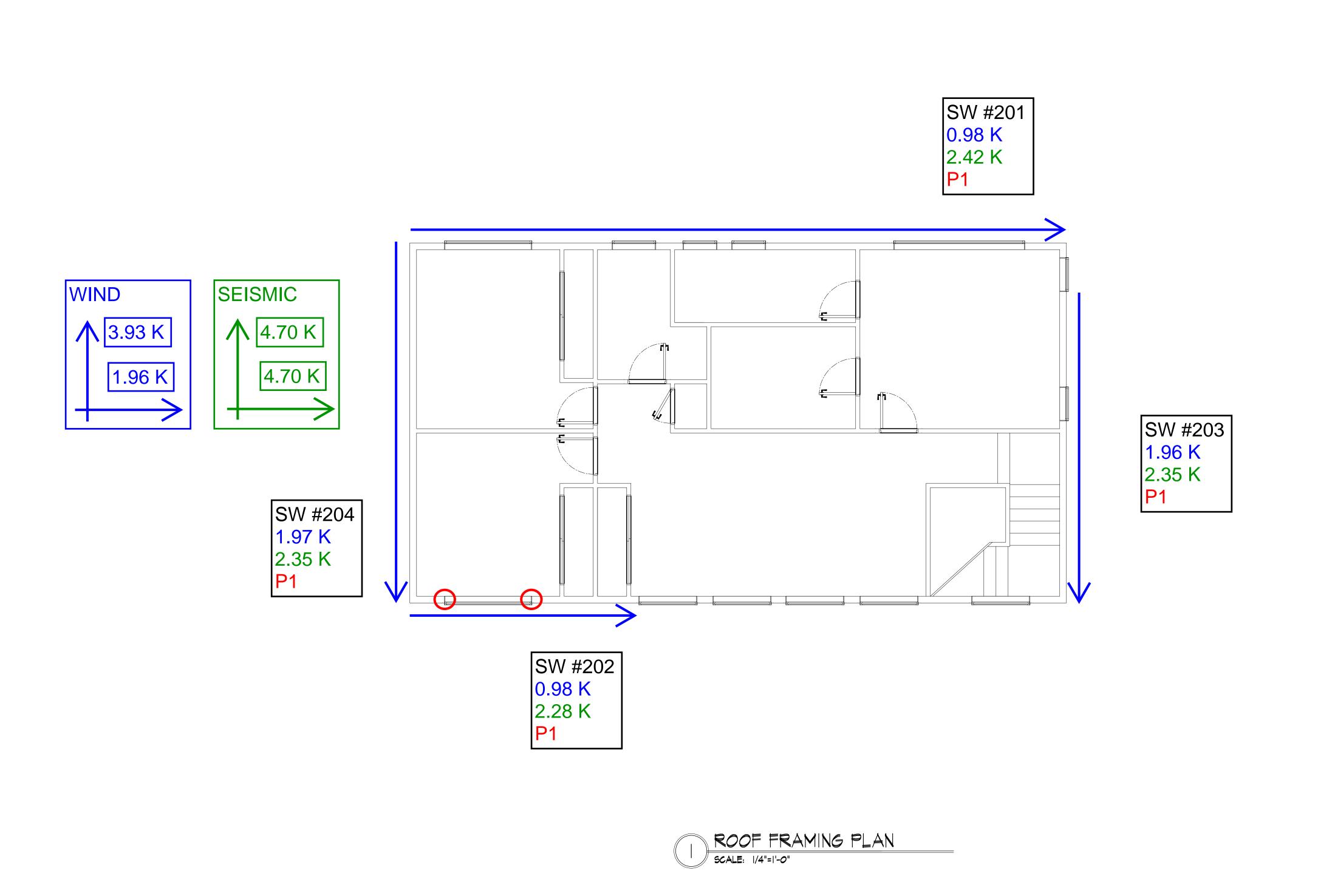
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NJM drawn by: 10-14-22

REVISIONS:

2ND FLOOR FRAMING PLAN 4029 97TH AVE SE 4029

S-2.0

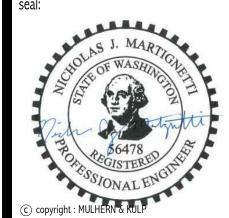


LEGEND

- [] INTERIOR BEARING WALL
- 🗆 = = = BEARING WALL ABOVE (B.W.A.), OR SHEARWALL ABOVE (S.W.A.)
- — -- BEAM / HEADER
- III INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL W/3" o.c. EDGE NAILING
- INDICATES AREA OF ROOF OVERFRAMING
- JL METAL HANGER
- 米 INDICATES POST ABOVE. PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE.

NDICATES HOLDOWN.

REFER TO S-0.0 FOR TYPICAL STRUCTURAL NOTES & SCHEDULES



Structural Engineering, Inc.

RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 350, San Diego, CA 92121

M&K project number:

251-22033 NJM drawn by: 10-14-22 REVISIONS:

ROOF FRAMING PLAN 4029 97TH AVE SE

S-3.0