WIND ANALYSIS -- 120 MPH Wind Velocity or as interpolated

2020 7th edition Florida Building Code

*Calculations as per Section **1609ASCE 7-16***

Prepared By
James Zaleski PE 51544

ADDRESS RIOS HOME - 7313 W US HWY 90, Lake City FL

Date: ***1/14/22*** ***Contractor*** ***AMERICAS HOMEPLACE***
Prepared by (print legibly): ***James Zaleski***
Design Professional FL Lic. #: ***51544***

Importance factor: ***1.0*** ***Building Category:*** ***ENCLOSED***
Wind Exposure (s): ***B*** ***Risk Category II***
Internal Pressure Coefficient *+/-.18*

Mean Roof Height: **31.00 End Zone Length** 8.0 **Max Overhang Length (Excluding Porches)** 2.0

Roof Slope =8/12
HURRICANE CLIPS(HC)
Hurricane Clips – SIMPSON

TRUSS SPAN/LOCATION
HC MODEL AT END ZONE –1 Simpson H-10A

HC MODEL INTERIOR ZONE –**1-** SIMPSON H10-A

ALL PORCH BEAMS AND BAY WINDOWS – 2- SIMPSON H2.5A

ROOF SHEATHING MATERIAL – 7/16 "OSB
NAILING – USE 10D RINGSHANK

NAILING PATTERN EDGES- 6" O.C ***FIELD – 6" O.C***
EDGE SPACING TO BE 3" O.C ON THE FIRST PANEL AT ALL EAVES

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Plan May Be Mirrored at Contractors Option

Columbia County Building Department
Plans Reviewed for Code Compliance
State of Florida

JAMES A. ZALESKI
LICENSE
No. 51544
STATE OF FLORIDA
PROFESSIONAL ENGINEER

1-15-22

Job Address: _____

Wall Exterior Panel – Sheath with 7/16" OSB
PANEL GRADE – OSB STRUCTURAL 1
2 X 4 STUD SPACING 16" O.C UP TO 10.0 FEET (All Load Bearing and Shear Walls)
(IF REQUIRED)

MIN NAIL PENETRATION – 1-1/2"
Nail Type 8D
Edge Nail Spacing 4" o.c
Intermediate Nail Spacing 8" o.c

SIMPSON SPH4 @48" O.C. top and bottom of stud

INTERIOR GYPSUM WALLBOARD GREEN ½"
Edge Nailing 5" o.c
Intermediate Nailing 12 " o.c
Nails 5d Coolers Nails or Wallboard Screws

½ x 10 J-Bolt at 32" o.c AND 6" FROM EACH CORNER

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JAMES A. ZALESKI LICENSE No. 51544 STATE OF FLORIDA PROFESSIONAL ENGINEER

1-15-22

James Zaleski P.E. #51544 2305 haverhill rd tall fl 32312 ph 850-766-7778

COMPONENTS AND CLADDING PRESSURES: (WORST CASE LOADS MAY BE USED)

COMPONENTS AND CLADDING

ZONE per

SEE ATTACHED

MAIN WIND FORCE RESISTING SYSTEMS (MWFRS) (WORST CASE LOADS MAY BE USED)

SEE ATTACHED

All Load Bearing and Shear Walls To be Framed as per FBC
Alternative Hurricane Clips are acceptable as long as they meet the requirements shown

See Attached header schedule

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PROVIDE GABLE END BRACING DETAIL, all vaulted or high ceilings shall be balloon framed to the ceiling diaphram.

NOTES: PLEASE READ & complete all blanks!!!!

1. ***See floor plan for wall bracing locations or circle 100% if structural sheathing is required on all exterior walls, with the nailing pattern indicated above.***
2. ***There are X , there are not ____ interior shear walls, locate interior shear walls on plan.***
3. ***Gable ends required to be sheathed with same material as shear wall? Yes or No* (circle one)**
4. ***Wall sheathing used in lieu of vertical straps: Nailing @ N/A o.c. along top & bottom plates***
5. ***Provide detail for 2 story bldgs showing continuous load path between 2nd floor stud & 1st floor studs.***
6. ***Provide additional information for column base & column/beam connection if required for porches.***
7. ***Provide calculations or documentation to substantiate method used as an attachment to this form(SEE PLANS)***

Instructions:

1. The form should be completed & signed, sealed & dated by a Fla. licensed engineer or architect.
2. Since more than one methodology for determination of wind forces is permitted under Section 1609ASCE7-16, to comply with State Building Codes a space has been provided to indicate method used.
3. Wind Analysis Forms submitted & permitted to be used as Master Plans will be for identical plans only, minor deviations such as door swings. Any deviation from the exterior form, opening sizes or locations will not be permitted unless noted by the design professional.

JAMES A. ZALESKI LICENSE No. 51544 STATE OF FLORIDA PROFESSIONAL ENGINEER

1-15-22

Job Address: _____

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HEADER SIZE AND STRAPPING CHART

SPAN	HEADER SIZE	QUANTITY OF JACK STUDS AT EACH END	QUANTITY OF KING STUDS AT EACH END	STRAPPING TO JACK STUDS AT EACH END	STRAPPING TO KING STUDS AT EACH END
0'-0" TO 3'-6"	2 - 2X8" WITH ½" PLATE	1	1	NONE	1 SIMPSON SPH4
3-6" – 8'-6"	2 2X10" WITH ½" PLATE	2	1	1 SIMPSON MSTA24	1 SIMPSON SPH4
8'-6" – 11'-3"	2 -2X12" WITH ½" PLATE OR 4-2 X 10" WITH ½" PLATE	3	2	2 SIMPSON MSTA24	2 SIMPSON SPH4
11'-3" – 14'-0"	2- 1 ¾" X 9 ¼" LVL	3	2	2 SIMPSON MSTA24	2 SIMPSON SPH4

JAMES A. ZALESKI LICENSE No. 51544 STATE OF FLORIDA PROFESSIONAL ENGINEER

1-25-22

James Zaleski P.E. #51544 2305 haverhill rd tall fl 32312 ph 850-766-7778

MecaWind v2397

Calculations Prepared by:
JAMES ZALESKI PE 51544
2305 HAVERHILL RD
PH 850-766-7778
TALLAHASSEE, FLORIDA, 32312
Description: RIOS
Date: Jan 12, 2022

Basic Wind Parameters

Wind Load Standard	= ASCE 7-16	Exposure Category	= B
Wind Design Speed	= 120.0 mph	Risk Category	= II
Structure Type	= Building	Building Type	= Enclosed

General Wind Settings

Incl_LF	= Include ASD Load Factor of 0.6 in Pressures	= True
DynType	= Dynamic Type of Structure	= Rigid
Zg	= Altitude (Ground Elevation) above Sea Level	= 0.000 ft
Bdist	= Base Elevation of Structure	= 0.000 ft
SDB	= Simple Diaphragm Building	= True
Reacs	= Show the Base Reactions in the output	= False
MWFRSType	= MWFRS Method Selected	= Ch 27 Pt 1

Topographic Factor per Fig 26.8-1

Topo	= Topographic Feature	= None
Kzt	= Topographic Factor	= 1.000

Building Inputs

RoofType:	Building Roof Type = Hipped	W	: Width Perp to Ridge	= 74.000 ft	
L	: Length Along Ridge = 61.000 ft	EHt	: Eave Height	= 18.000 ft	
Hip	: Ridge Hipped Length = 32.000 ft	RE	: Roof Entry Method	= Slope	
Slope	: Slope of Roof = 8.0 :12	Theta	: Roof Slope	= 33.69 Deg	
Par	: Is there a Parapet = False				

Exposure Constants per Table 26.11-1:

Alpha:	Table 26.11-1 Const = 7.000	Zg:	Table 26.11-1 Const	= 1200.000	
At:	Table 26.11-1 Const = 0.143	Bt:	Table 26.11-1 Const	= 0.840	
Am:	Table 26.11-1 Const = 0.250	Bm:	Table 26.11-1 Const	= 0.450	
C:	Table 26.11-1 Const = 0.300	Eps:	Table 26.11-1 Const	= 0.333	

Overhang Inputs:

Std	= Overhangs on all sides are the same	= True
OHType	= Type of Roof Wall Intersections	= Sofit
OH	= Overhang of Roof Beyond Wall	= 2.000 ft

Main Wind Force Resisting System (MWFRS) Calculations per Ch 27 Part 1:

h	= Mean Roof Height above grade	= 31.000 ft
Kh	= 15 ft [4.572 m]< Z <Zg -->(2.01*(Z/zg)^(2/Alpha) {Table 26.10-1}	= 0.707
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
Zg	= Elevation above Sea Level	= 0.000 ft
Ke	= Ground Elevation Factor: Ke = e^-(0.0000362*Zg) {Table 26.9-1}	= 1.000
GCPi	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18
RA	= Roof Area	= 6618.28 sq ft
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF	= 13.30 psf
qin	= For Negative Internal Pressure of Enclosed Building use qh*LF	= 13.30 psf
qip	= For Positive Internal Pressure of Enclosed Building use qh*LF	= 13.30 psf

Gust Factor Calculation:

Gust Factor Category I Rigid Structures - Simplified Method		
G1	= For Rigid Structures (Nat. Freq.>1 Hz) use 0.85	= 0.85
Gust Factor Category II Rigid Structures - Complete Analysis		
Zm	= Max(0.6 * Ht, Zmin)	= 30.000 ft
Izm	= Cc * (33 / Zm) ^ 0.167	= 0.305

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Lzm       = L * (Zm / 33) ^ Eps                                    = 309.993
Q         = (1 / (1 + 0.63 * ((B + Ht) / Lzm)^0.63))^0.5           = 0.879
G2        = 0.925*((1+0.7*Izm*3.4*Q)/(1+0.7*3.4*Izm))              = 0.854
Gust Factor Used in Analysis
G         = Lessor Of G1 Or G2                                     = 0.850

MWFRS Wind Normal to Ridge (Ref Fig 27.3-1)
h         = Mean Roof Height Of Building                           = 31.000 ft
RHt       = Ridge Height Of Roof                                   = 44.000 ft
B         = Horizontal Dimension Of Building Normal To Wind Direction = 61.000 ft
L         = Horizontal Dimension Of building Parallel To Wind Direction = 74.000 ft
L/B       = Ratio Of L/B used For Cp determination                 = 1.213
h/L       = Ratio Of h/L used For Cp determination                 = 0.419
Slope     = Slope of Roof                                          = 33.69 Deg
OH_Top_+Y = Overhang Top +Y (Leeward)                              = -0.6, -0.6
OH_Top_-Y = Overhang Top Windward Edge                             = 0.31, -0.15
OH_X      = Overhang Top +/-X Coeff (0 to h/2) (0.000 ft to 2.000 ft) = -0.18, -0.9
OH_X      = Overhang Top +/-X Coeff (0 to h/2) (2.000 ft to 15.500 ft) = -0.18, -0.9
OH_X      = Overhang Top +/-X Coeff (h/2 to h) (15.500 ft to 31.000 ft) = -0.18, -0.9
OH_X      = Overhang Top +/-X Coeff (h to 2h) (31.000 ft to 39.000 ft) = -0.18, -0.5
OH_X      = Overhang Top +/-X Coeff (h to 2h) (39.000 ft to 62.000 ft) = -0.18, -0.5
OH_X      = Overhang Top +/-X Coeff (>2h) (>62.000 ft)             = -0.18, -0.3
OH_X      = Overhang Top +/-X Coeff (>2h) (>76.000 ft)             = -0.18, -0.3
Roof_LW   = Roof (Leeward)                                         = -0.6, -0.6
Roof_WW   = Roof (Windward)                                        = 0.31, -0.15
Roof_X    = Roof +/-X Coeff (0 to h/2) (2.000 ft to 15.500 ft)     = -0.18, -0.9
Roof_X    = Roof +/-X Coeff (h/2 to h) (15.500 ft to 31.000 ft)    = -0.18, -0.9
Roof_X    = Roof +/-X Coeff (h to 2h) (31.000 ft to 62.000 ft)     = -0.18, -0.5
Roof_X    = Roof +/-X Coeff (>2h) (>62.000 ft)                     = -0.18, -0.3
Sofit_-Y  = Overhang Sofit -Y                                      = 0.8, 0.8

Cp_WW     = Windward Wall Coefficient (All L/B Values)             = 0.80
Cp_LW     = Leward Wall Coefficient using L/B                      = -0.46
Cp_SW     = Side Wall Coefficient (All L/B values)                 = -0.70
GCpn_WW   = Parapet Combined Net Pressure Coefficient (Windward Parapet) = 1.50
GCpn_LW   = Parapet Combined Net Pressure Coefficient (Leeward Parapet)  = -1.00
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Wall Wind Pressures based On Positive Internal Pressure (+GCPi) - Normal to Ridge
All wind pressures include a load factor of 0.6

Elev ft	Kz	Kzt	qz psf	GCPi	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
18.00	0.605	1.000	11.38	0.18	5.35	-7.56	-10.30	12.91	9.60

Wall Wind Pressures based on Negative Internal Pressure (-GCPi) - Normal to Ridge
All wind pressures include a load factor of 0.6

Elev ft	Kz	Kzt	qz psf	GCPi	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
18.00	0.605	1.000	11.38	-0.18	10.13	-2.78	-5.52	12.91	9.60

Notes Wall Pressures:
Kz = Velocity Press Exp Coeff — Kzt = Topographical Factor
qz = 0.00256*Kz*Kzt*Kd*V^2 — GCPi = Internal Press Coefficient
Side = qh * G * Cp_SW - qip * +GCPi — Windward = qz * G * Cp_WW - qip * +GCPi
Leeward = qh * G * Cp_LW - qip * +GCPi — Total = Windward Press - Leeward Press
* Minimum Pressure: Para 27.1.5 no less than 9.60 psf (Incl LF) applied to Walls
+ Pressures Acting TOWARD Surface — - Pressures Acting AWAY from Surface

Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCPi) - Normal to Ridge
All wind pressures include a load factor of 0.6

Roof Var	Start Dist	End Dist	Cp_min	Cp_max	GCPi	Pressure Pn_min*	Pressure Pp_min*	Pressure Pn_max	Pressure Pp_max

	ft	ft				psf	psf	psf	psf
OH_Top_+Y	N/A	N/A	-0.600	-0.600	0.180	-4.39	-9.17	-4.39	-9.17
OH_Top_+Y	N/A	N/A	-0.600	-0.600	0.180	-4.39	-9.17	-4.39	-9.17
OH_Top_-Y	N/A	N/A	0.310	-0.150	0.180	5.90	1.11	0.70	-4.09
OH_Top_-Y	N/A	N/A	0.310	-0.150	0.180	5.90	1.11	0.70	-4.09
OH_X (+X)	0.000	2.000	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
OH_X (-X)	0.000	2.000	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
OH_X (+X)	2.000	15.500	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
OH_X (-X)	2.000	15.500	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
OH_X (+X)	15.500	31.000	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
OH_X (-X)	15.500	31.000	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
OH_X (+X)	31.000	39.000	-0.180	-0.500	0.180	0.36	-4.43	-3.26	-8.04
OH_X (-X)	31.000	39.000	-0.180	-0.500	0.180	0.36	-4.43	-3.26	-8.04
OH_X (+X)	39.000	62.000	-0.180	-0.500	0.180	0.36	-4.43	-3.26	-8.04
OH_X (-X)	39.000	62.000	-0.180	-0.500	0.180	0.36	-4.43	-3.26	-8.04
OH_X (+X)	62.000	76.000	-0.180	-0.300	0.180	0.36	-4.43	-1.00	-5.78
OH_X (-X)	62.000	76.000	-0.180	-0.300	0.180	0.36	-4.43	-1.00	-5.78
OH_X (+X)	76.000	78.000	-0.180	-0.300	0.180	0.36	-4.43	-1.00	-5.78
OH_X (-X)	76.000	78.000	-0.180	-0.300	0.180	0.36	-4.43	-1.00	-5.78
Roof_LW	N/A	N/A	-0.600	-0.600	0.180	-4.39	-9.17	-4.39	-9.17
Roof_WW	N/A	N/A	0.310	-0.150	0.180	5.90	1.11	0.70	-4.09
Roof_X (+X)	2.000	15.500	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
Roof_X (-X)	2.000	15.500	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
Roof_X (+X)	15.500	31.000	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
Roof_X (-X)	15.500	31.000	-0.180	-0.900	0.180	0.36	-4.43	-7.78	-12.56
Roof_X (+X)	31.000	62.000	-0.180	-0.500	0.180	0.36	-4.43	-3.26	-8.04
Roof_X (-X)	31.000	62.000	-0.180	-0.500	0.180	0.36	-4.43	-3.26	-8.04
Roof_X (+X)	62.000	76.000	-0.180	-0.300	0.180	0.36	-4.43	-1.00	-5.78
Roof_X (-X)	62.000	76.000	-0.180	-0.300	0.180	0.36	-4.43	-1.00	-5.78
Sofit_-Y	N/A	N/A	0.800	0.800	0.180	11.43	6.65	11.43	6.65

Notes Roof Pressures:
Start Dist = Start Dist from Windward Edge End Dist = End Dist from Windward Edge
Cp_Max = Largest Coefficient Magnitude Cp_Min = Smallest Coefficient Magnitude
Pp_max = qh*G*Cp_max - qip*(+GCPi) Pn_max = qh*G*Cp_max - qin*(-GCPi)
Pp_min* = qh*G*Cp_min - qip*(+GCPi) Pn_min* = qh*G*Cp_min - qin*(-GCPi)
OH = Overhang X = Dir along Ridge Y = Dir Perpendcular to Ridge Z = Vertical
* The smaller uplift pressures due to Cp_Min can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7
+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

MWFRS Wind Parallel to Ridge (Ref Fig 27.3-1)

h	= Mean Roof Height Of Building	= 31.000 ft
RHt	= Ridge Height Of Roof	= 44.000 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 74.000 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 61.000 ft
L/B	= Ratio Of L/B used For Cp determination	= 0.824
h/L	= Ratio Of h/L used For Cp determination	= 0.508
Slope	= Slope of Roof	= 33.69 Deg
Hip_End	= **Hipped End Coeff (0 to h/2) (2.000 ft to 15.500 ft)	= -0.18, -0.902
Hip_End	= Hipped End Coeff (h/2 to h) (15.500 ft to 16.500 ft)	= -0.18, -0.897
Hip_End	= Hipped End Coeff (h to 2h) (48.500 ft to 62.000 ft)	= -0.18, -0.503
Hip_End	= Hipped End Coeff (>2h) (>62.000 ft)	= -0.18, -0.307
OH_Bot	= Sofit (Windward Face Only)	= 0.8, 0.8
OH_Top	= **Overhang Top Coeff (0 to h/2) (0.000 ft to 2.000 ft)	= -0.18, -0.902
OH_Top	= **Overhang Top Coeff (0 to h/2) (2.000 ft to 15.500 ft)	= -0.18, -0.902
OH_Top	= Overhang Top Coeff (h/2 to h) (15.500 ft to 31.000 ft)	= -0.18, -0.897
OH_Top	= Overhang Top Coeff (h to 2h) (31.000 ft to 32.500 ft)	= -0.18, -0.503
OH_Top	= Overhang Top Coeff (h to 2h) (32.500 ft to 62.000 ft)	= -0.18, -0.503
OH_Top	= Overhang Top Coeff (>2h) (>62.000 ft)	= -0.18, -0.307
OH_Top	= Overhang Top Coeff (>2h) (>63.000 ft)	= -0.18, -0.307
Roof	= **Roof Coeff (0 to h/2) (2.000 ft to 15.500 ft)	= -0.18, -0.902
Roof	= Roof Coeff (h/2 to h) (15.500 ft to 31.000 ft)	= -0.18, -0.897
Roof	= Roof Coeff (h to 2h) (31.000 ft to 62.000 ft)	= -0.18, -0.503
Roof	= Roof Coeff (>2h) (>62.000 ft)	= -0.18, -0.307

**Includes Reduction Factor 0.8 For roof area, applied To Cp=-1.3 For h/L>=1 & (0 To h/2)

Cp_WW	= Windward Wall Coefficient (All L/B Values)	= 0.80

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Cp_LW = Leward Wall Coefficient using L/B = -0.50
Cp_SW = Side Wall Coefficient (All L/B values) = -0.70
GCpn_WW = Parapet Combined Net Pressure Coefficient (Windward Parapet) = 1.50
GCpn_LW = Parapet Combined Net Pressure Coefficient (Leeward Parapet) = -1.00

Wall Wind Pressures based On Positive Internal Pressure (+GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Elev ft	Kz	Kzt	qz psf	GCPi	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
18.00	0.605	1.000	11.38	0.18	5.35	-8.04	-10.30	13.39	9.60

Wall Wind Pressures based on Negative Internal Pressure (-GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Elev ft	Kz	Kzt	qz psf	GCPi	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
18.00	0.605	1.000	11.38	-0.18	10.13	-3.26	-5.52	13.39	9.60

Notes Wall Pressures:
Kz = Velocity Press Exp Coeff
Kzt = Topographical Factor
qz = 0.00256*Kz*Kzt*Kd*V^2
GCPi = Internal Press Coefficient
Side = qh * G * Cp_SW - qip * +GCPi
Windward = qz * G * Cp_WW - qip * +GCPi
Leeward = qh * G * Cp_LW - qip * +GCPi
Total = Windward Press - Leeward Press
* Minimum Pressure: Para 27.1.5 no less than 9.60 psf (Incl LF) applied to Walls
+ Pressures Acting TOWARD Surface
- Pressures Acting AWAY from Surface

Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Roof Var	Start Dist ft	End Dist ft	Cp_min	Cp_max	GCPi	Pressure Pn_min* psf	Pressure Pp_min* psf	Pressure Pn_max psf	Pressure Pp_max psf
Hip_End (-X)	2.000	15.500	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
Hip_End (-X)	15.500	16.500	-0.180	-0.897	0.180	0.36	-4.43	-7.74	-12.53
Hip_End (+X)	48.500	62.000	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
Hip_End (+X)	62.000	63.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Bot	N/A	N/A	0.800	0.800	0.180	11.43	6.65	11.43	6.65
OH_Top (-X)	0.000	2.000	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (-X)	0.000	2.000	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (-X)	0.000	2.000	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (-X)	0.000	2.000	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (+Y)	0.000	2.000	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (-Y)	0.000	2.000	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (+Y)	2.000	15.500	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (-Y)	2.000	15.500	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
OH_Top (+Y)	15.500	31.000	-0.180	-0.897	0.180	0.36	-4.43	-7.74	-12.53
OH_Top (-Y)	15.500	31.000	-0.180	-0.897	0.180	0.36	-4.43	-7.74	-12.53
OH_Top (+Y)	31.000	32.500	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
OH_Top (-Y)	31.000	32.500	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
OH_Top (+Y)	32.500	62.000	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
OH_Top (-Y)	32.500	62.000	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
OH_Top (+Y)	62.000	63.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (-Y)	62.000	63.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (+X)	63.000	65.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (+X)	63.000	65.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (+X)	63.000	65.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (+X)	63.000	65.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (+Y)	63.000	65.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
OH_Top (-Y)	63.000	65.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
Roof (+Y)	2.000	15.500	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
Roof (-Y)	2.000	15.500	-0.180	-0.902	0.180	0.36	-4.43	-7.80	-12.59
Roof (+Y)	15.500	31.000	-0.180	-0.897	0.180	0.36	-4.43	-7.74	-12.53

Roof (-Y)	15.500	31.000	-0.180	-0.897	0.180	0.36	-4.43	-7.74	-12.53
Roof (+Y)	31.000	62.000	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
Roof (-Y)	31.000	62.000	-0.180	-0.503	0.180	0.36	-4.43	-3.29	-8.08
Roof (+Y)	62.000	63.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86
Roof (-Y)	62.000	63.000	-0.180	-0.307	0.180	0.36	-4.43	-1.07	-5.86

Notes Roof Pressures:
Start Dist = Start Dist from Windward Edge End Dist = End Dist from Windward Edge
Cp_Max = Largest Coefficient Magnitude Cp_Min = Smallest Coefficient Magnitude
Pp_max = qh*G*Cp_max - qip*(+GCPi) Pn_max = qh*G*Cp_max - qin*(-GCpi)
Pp_min* = qh*G*Cp_min - qip*(+GCPi) Pn_min* = qh*G*Cp_min - qin*(-GCPi)
OH = Overhang X = Dir along Ridge Y = Dir Perpendcular to Ridge Z = Vertical
* The smaller uplift pressures due to Cp_Min can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7
+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

Components and Cladding (C&C) Calculations per Ch 30 Part 4:

h	= Mean Roof Height	= 31.000 ft
LF	= Load Factor based upon ASD Design	= 0.60
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
EAF	= Adjustment factor per Table 30.6-2 to Fig 30.4-1 pressures	= 1.009
Slope	= Roof Slope	= 33.69 Deg
LHD	= Least Horizontal Dimension: Min(B, L)	= 61.000 ft
a1	= Min(0.1 * LHD, 0.4 * h)	= 6.100 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 6.100 ft
2a	= Parameter used to define zone width: 2*a	= 12.200 ft
EAF	= Adjustment factor per Table 30.6-2 to Fig 30.4-1 pressures	= 1.009

Wind Pressures for Components and Cladding per Fig 30.4-1
All wind pressures include a load factor of 0.6

Description	Zone	Width ft	Span ft	Area ft	1/3 Rule	Ptable Pos psf	Ptable Neg psf	p Pos psf	p Neg psf
Zone 1	1	1.000	1.000	1.000	No	18.30	-36.90	11.07	-22.33
Zone 1_OH	1_OH	1.000	1.000	1.000	No	0.00	-50.50	9.60	-30.56
Zone 2e	2e	1.000	1.000	1.000	No	18.30	-44.10	11.07	-26.69
Zone 2e_OH	2e_OH	1.000	1.000	1.000	No	0.00	-60.90	9.60	-36.85
Zone 2r	2r	1.000	1.000	1.000	No	18.30	-59.90	11.07	-36.25
Zone 2r_OH	2r_OH	1.000	1.000	1.000	No	0.00	-73.50	9.60	-44.48
Zone 3	3	1.000	1.000	1.000	No	18.30	-58.60	11.07	-35.46
Zone 3_OH	3_OH	1.000	1.000	1.000	No	0.00	-72.20	9.60	-43.69
Zone 4	4	1.000	1.000	1.000	No	25.90	-28.10	15.67	-17.00
Zone 5	5	1.000	1.000	1.000	No	25.90	-34.70	15.67	-21.00

Ptable = Pressure taken from Fig 30.4-1
p = Wind Pressure: Ptable * Lambda * Kzt * LF [Eqn 30.7-1 & Table 30.6-2 Note 5]
* Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}
Pressures on overhangs include Pressure from the top and bottom surface of overhang

Components and Cladding (C&C) Zone Summary per Ch 30 Pt 4:

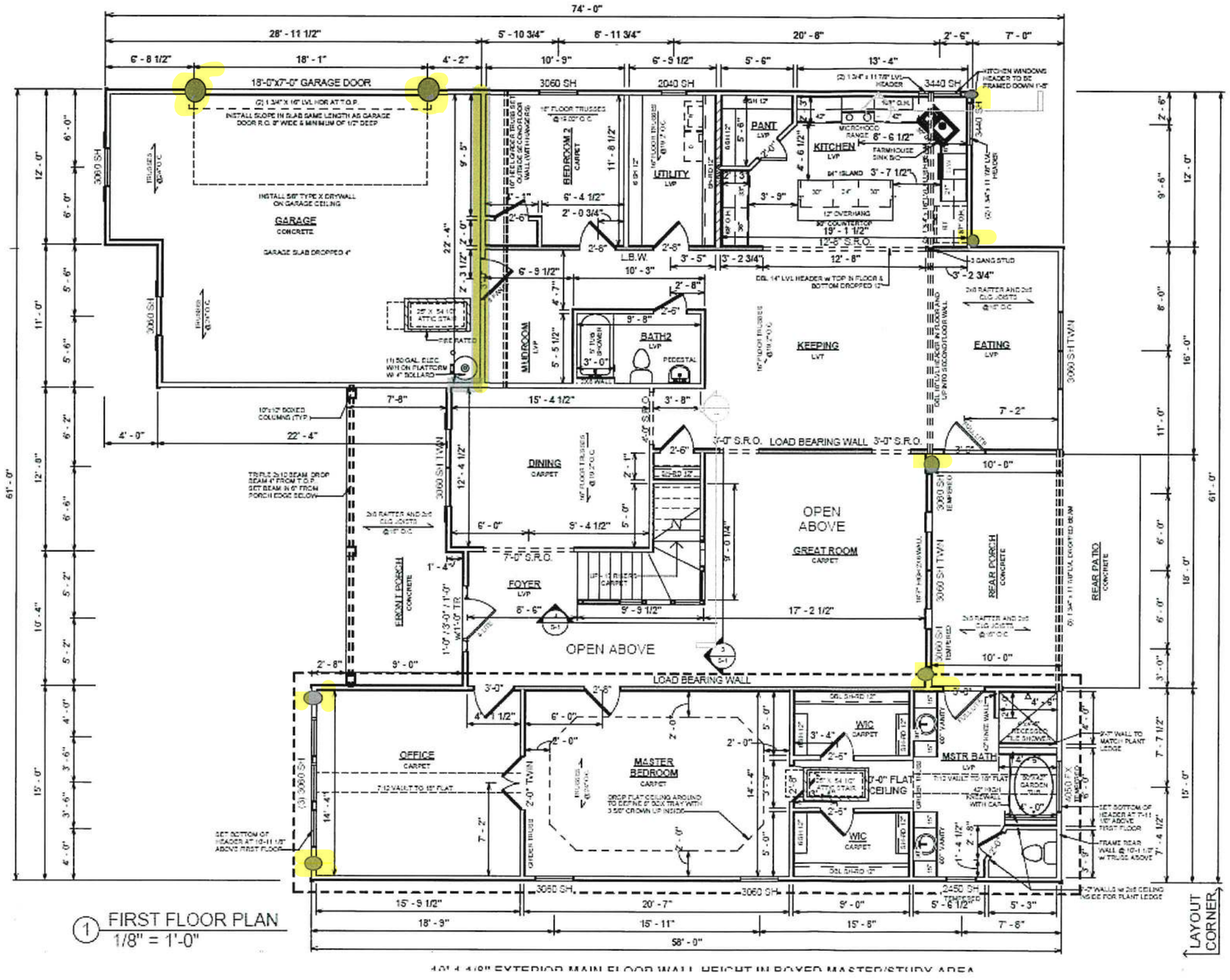
h	= Mean Roof Height	= 31.000 ft
LF	= Load Factor based upon ASD Design	= 0.60
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
EAF	= Adjustment factor per Table 30.6-2 to Fig 30.4-1 pressures	= 1.009
Slope	= Roof Slope	= 33.69 Deg
LHD	= Least Horizontal Dimension: Min(B, L)	= 61.000 ft
a1	= Min(0.1 * LHD, 0.4 * h)	= 6.100 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 6.100 ft
2a	= Parameter used to define zone width: 2*a	= 12.200 ft
EAF	= Adjustment factor per Table 30.6-2 to Fig 30.4-1 pressures	= 1.009

Wind Pressure Summary for C&C Zones based Upon Areas Ch 30 Pt 4
All wind pressures include a load factor of 0.6

Zone	Table	A <= 10.00 sq ft psf	A = 20.00 sq ft psf	A = 50.00 sq ft psf	A > 100.00 sq ft psf

1	30.4-1	11.07 -22.33	9.68 -19.85	9.60 -16.58	9.60 -16.58
1_OH	30.4-1	9.60 -30.56	9.60 -28.08	9.60 -24.87	9.60 -24.87
2e	30.4-1	11.07 -26.69	9.68 -21.12	9.60 -13.80	9.60 -13.80
2e_OH	30.4-1	9.60 -36.85	9.60 -30.50	9.60 -22.15	9.60 -22.15
2r	30.4-1	11.07 -36.25	9.68 -30.08	9.60 -21.85	9.60 -21.85
2r_OH	30.4-1	9.60 -44.48	9.60 -38.31	9.60 -30.14	9.60 -30.14
3	30.4-1	11.07 -35.46	9.68 -26.93	9.60 -15.67	9.60 -15.67
3_OH	30.4-1	9.60 -43.69	9.60 -35.16	9.60 -23.90	9.60 -23.90
4	30.4-1	15.67 -17.00	14.95 -16.28	14.04 -15.37	14.04 -15.37
5	30.4-1	15.67 -21.00	14.95 -19.61	14.04 -17.73	14.04 -17.73

* A is effective wind area for C&C: Span Length * Effective Width
* Effective width need not be less than 1/3 of the span length
* Maximum and minimum values of pressure shown.
* + Pressures acting toward surface, - Pressures acting away from surface
* _OH represents an Overhang in the zone specified
* Overhangs follow Sec 30.6.1.3, Zones as shown in Table 30.6-2 with pressures from Fig 3
* Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}
* Interpolation can be used for values of A that are between those values shown.



Wall Exterior Panel – Sheath with 7/16" OSB

PANEL GRADE – OSB STRUCTURAL 1
2 X 4 STUD SPACING 16" O.C UP TO 10.0 FEET (All Load Bearing and Shear Walls)
(IF REQUIRED)

MIN NAIL PENETRATION – 1-1/2"
Nail Type 8D
Edge Nail Spacing 4" o.c
Intermediate Nail Spacing 8" o.c

SIMPSON SPH4 @48" O.C. top and bottom of stud

INTERIOR GYPSUM WALLBOARD GREEN ½"
Edge Nailing 5" o.c
Intermediate Nailing 12 " o.c
Nails 5d Coolers Nails or Wallboard Screws
½ x 10 J-Bolt at 32" o.c AND 6" FROM EACH CORNER

SHEATH EXTERIOR 100%

INDICATES INTERIOR SHEAR WALL

INDICATES SIMPSON HDU5 HOLD DOWN

FOOTERS UNDER ALL LOAD BEARING WALLS

1-15-22

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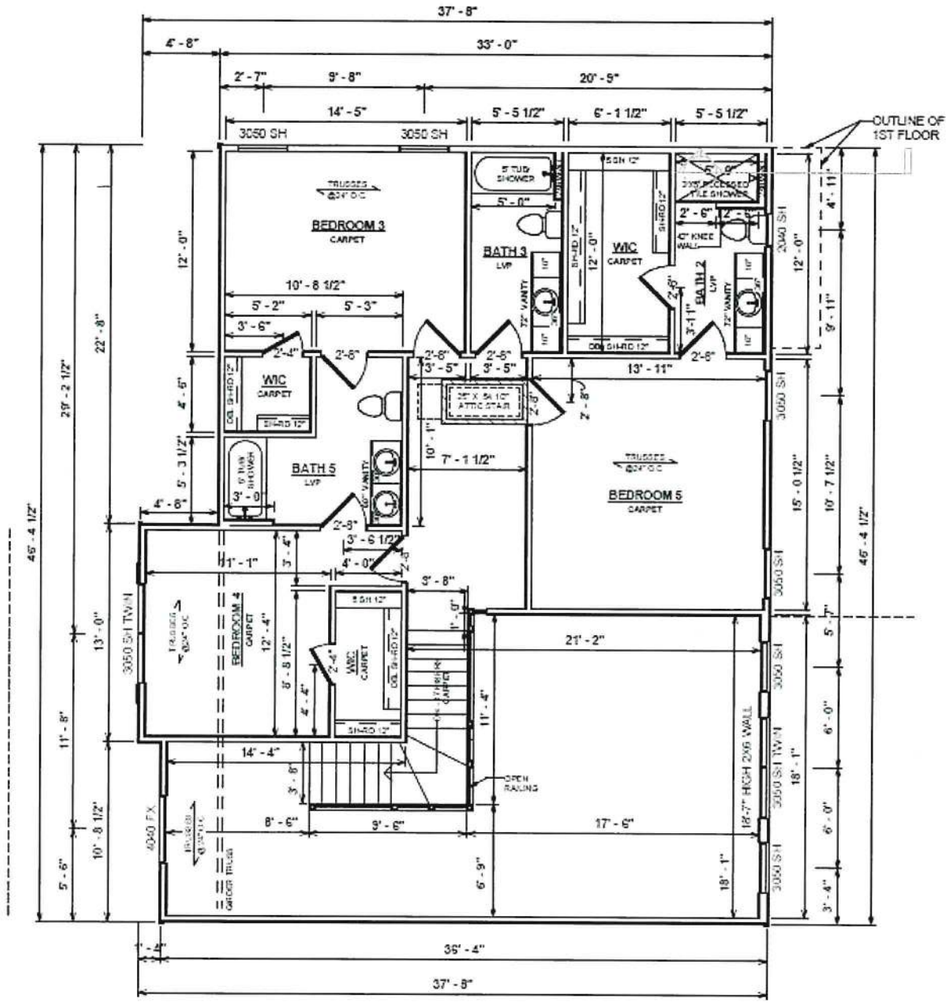
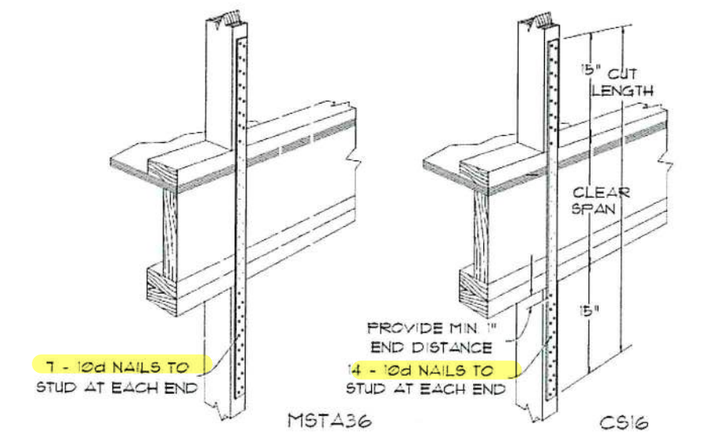
FOR-7313 W US HWY 90, Lake City FL Rios Home

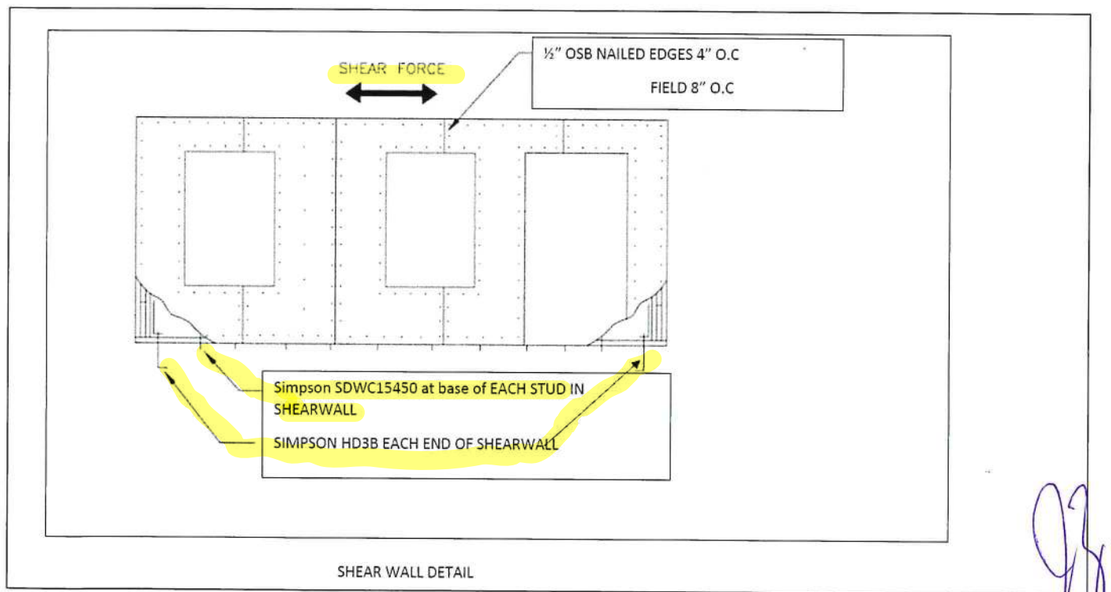


1 SECOND FLOOR PLAN



SIMPSON MSTA36/CS16 STRAP

Where required for Continuous Load path from 1st to second floor – AT EACH CORNER AND 32" O.C



SHEAR WALL DETAIL

James Zaleski P.E. 51544 2305 Haverhill Rd Tallahassee, Fl 32312 PH 850-766-7778

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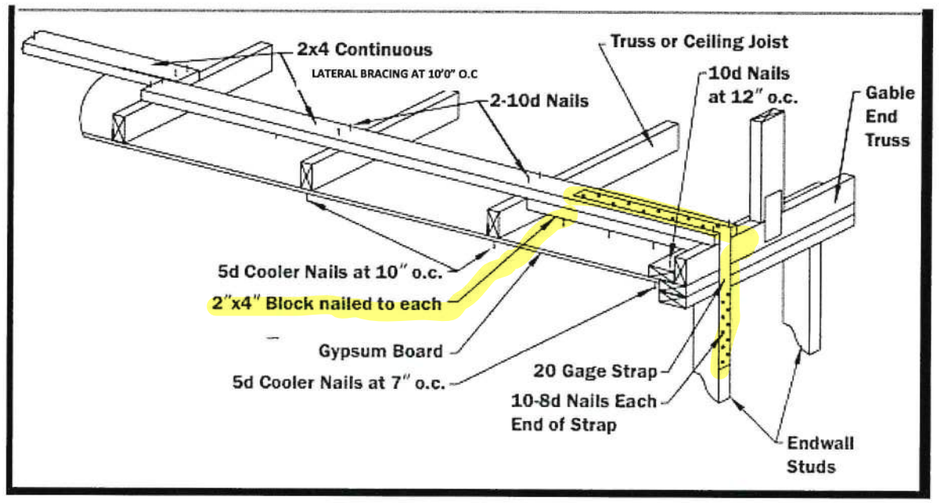
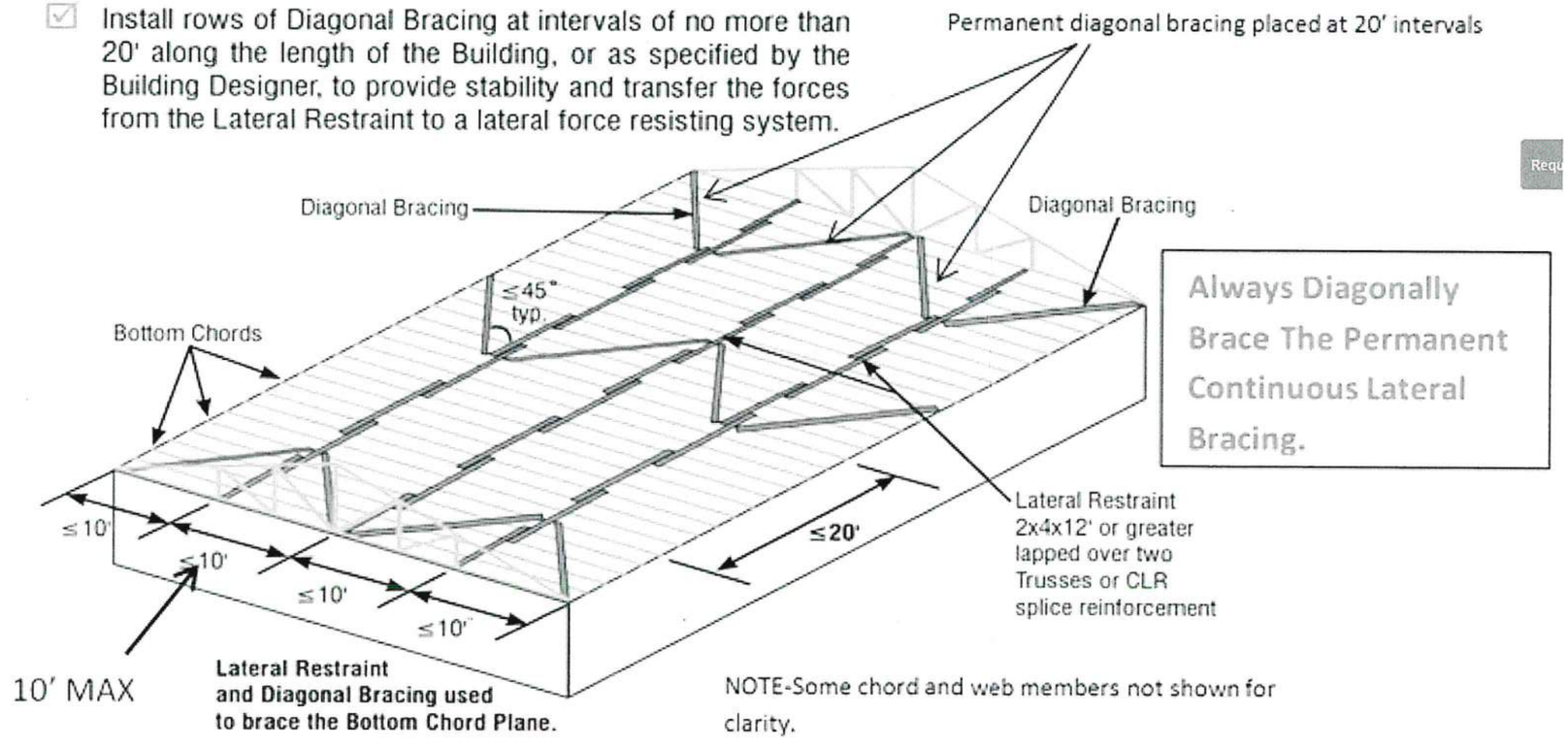
GABLE END BRACING



This item has been digitally signed and sealed by James A Zaleski on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

JAMES A. ZALESKI LICENSE No. 51544 STATE OF FLORIDA PROFESSIONAL ENGINEER

☑ Install rows of Diagonal Bracing at intervals of no more than 20' along the length of the Building, or as specified by the Building Designer, to provide stability and transfer the forces from the Lateral Restraint to a lateral force resisting system.



Always Diagonally Brace The Permanent Continuous Lateral Bracing.

1-15-2

1· CONCRETE REQUIREMENTS:
ALL CONCRETE SHALL BE OF AT LEAST 3000PSI 28-DAY COMPRESSIVE STRENGTH·
ALL CONCRETE GRADE BEAMS AND SLABS SHALL BE RUN CONTINUOUSLY AS TO BEHAVE IN A MONOLITHIC FASHION·
CONCRETE SLAB THICKNESS SHALL BE 4" ABOVE THE FOOTERS, AS SHOWN IN THE DETAILS·
STEP DOWNS AND LEDGES IN THE CONCRETE SHALL NOT REDUCE THE CONCRETE COVER REQUIREMENT FOR STEEL REINFORCEMENT·
A 6 MIL VAPOR BARRIER SHALL BE PLACED PRIOR TO CONCRETE POUR, AS SHOWN IN THE DETAILS·

2· REINFORCEMENT REQUIREMENTS:
ALL STEEL REINFORCEMENT SHALL BE GRADE 60 (60 KSI)·
3" OF PROPER, MINIMUM COVER OVER REBAR SHALL BE MAINTAINED FROM ALL CONCRETE SURFACES , AS SHOWN IN THE DETAILS·
NO· 2 WIRE TIES SHALL BE PLACED 48" ON CENTER WITH A MINIMUM OF THREE TIES PER BAR, AS SHOWN IN THE DETAILS·
ALL LONGITUDINAL REBAR SHALL BE RUN CONTINUOUSLY SUCH THAT THE FOUNDATION SYSTEM ACTS IN A MONOLITHIC FASHION·
ALL REBAR OVERLAPS (LAP SPLICES) SHALL BE AT LEAST 40"·

3· SOIL REQUIREMENTS:
SATISFACTORY FILL MATERIAL SHALL BE FREE OF VEGETATION AND ORGANIC MATTER, WITH NOT MORE THAN 20 PERCENT BY WEIGHT PASSING THE 200 SIEVE·
FILL LIFTS SHALL BE 12 INCHES MAXIMUM·
ALL TOP SOIL CONTAINING UNSUITABLE MATERIAL SHALL BE REMOVED PRIOR TO THE PLACEMENT OF CLEAN FILL MATERIAL·
ALL CLEAN FILL SHALL BE PLACED ON TOP OF UNDISTURBED SOIL, FREE OF DELETERIOUS AND ORGANIC MATERIALS, AS NOTED ABOVE·

MORTAR: MORTAR SHALL BE TYPE M OR TYPE S: (28 DAY STRENGTH OF 2000 PSI)· MASONRY SHALL BE LAID IN A RUNNING BOND·

4· CONCRETE MASONRY UNITS:
A· CMU SHALL MEET THE REQUIREMENTS OF ASTM C 90·
B· THE MINIMUM COMPRESSIVE STRENGTH OF THE MASONRY SHALL BE F'M = 1500 PSI·
C· WHEN 12" CMU IS UTILIZED INSTEAD OF 8" CMU, THE OVERALL WIDTH OF THE FOOTER SHALL BE INCREASED BY 4" UNLESS OTHERWISE SPECIFIED ON THE DETAILS·
D· ALTERNATIVE REINFORCING BAR SIZES AND SPACINGS HAVING AN EQUIVALENT CROSS-SECTIONAL AREA OF REINFORCEMENT PER LINEAL FOOT OF WALL SHALL BE PERMITTED PROVIDED THE SPACING OF THE REINFORCEMENT DOES NOT EXCEED 72 INCHES·
E· VERTICAL REINFORCEMENT SHALL BE GRADE 60 MINIMUM· THE DISTANCE FROM THE FACE OF THE SOIL SIDE OF THE WALL TO THE CENTER OF VERTICAL REINFORCEMENT SHALL BE AT LEAST 5 INCHES FOR 8" CMU AND 8-3/4" INCHES FOR 12" CMU·

GENERAL LUMBER NOTES

1· LUMBER AND WOOD FRAMING SHALL COMPLY WITH CHAPTER 23 OF THE 2020 FLORIDA BUILDING CODE 7TH EDITION
2· ALL STRUCTURAL LUMBER TO BE MIN SOUTHERN YELLOW PINE NUMBER 2
3· MICROLAM LVL BEAMS USED AS MULTIPLE ASSEMBLY BEAMS TO BE CONNECTED WITH 3 ROWS OF 16D NAILS AT 12" O·C·

STRUCTURAL GLUED LAMINATED TIMBER SHALL BE PRODUCED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC). MINIMUM ALLOWABLE BENDING STRESS SHALL BE 2,400 PSI (DRY CONDITIONS).

PROVIDE DRESSED SEASONED LUMBER, S4S, WITH A MAXIMUM MOISTURE CONTENT OF 19% AT TIME OF DRESSING AS LISTED BELOW.

INTERIOR AND EXTERIOR LOAD-BEARING WALLS:
SOUTERN PINE, NO. 2 GRADE.

LINTELS, FLOOR JOISTS AND BEAMS:
SOUTERN PINE, NO. 2 GRADE.

WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE FOUNDATION GRADE PRESSURE-TREATED. USE GALVANIZED NAILS IN PRESSURE-TREATED WOOD. THE PROTECTIVE COATING ON LIGHT GAUGE STEEL CONNECTIONS IN CONTACT W/ PRESURE-TREATED WOOD SHALL BE IN ACCORDANCE WITH THE CONNECTOR MANUFACTURERS RECOMMENDATIONS.

This item has been digitally signed and sealed by James A Zaleski on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

JAMES ZALESKI P.E. 51544 2305 HAVERHILL RD TALLAHASSEE, FL 32312 PH 850-766-7778