WIND ANALYSIS -- 120 MPH Wind Velocity or as interpolated
2017 6th edition Florida Building Code
Calculations as per Section 1609ASCE 7-10

Prepared By James Zaleski PE 51544

(stamp: COLUMBIA COUNTY BUILDING DEPARTMENT — Received for FILE COPY — Code Compliance — PLANS EXAMINER)

Job Address: Colony Drive Lake City FL - Kramer Job
Date: 06/23/2020

Contractor ___AHP_____   -
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_____
Plans may be used as a master plan by the above contractor: **No (circle one)**
Initials_____

Mean Roof Height: 17.75   **End Zone Length** 7.0   **Max Overhang Length (Excluding Porches)** 1.5 ft

Studs(SPECIES SPF) 2 x 4 Studs up to 10'-0" at 16 Inches o.c
2x4 studs up to 12.0 feet at 12" o.c.

TOP AND BOTTOM PLATE SPECIES (SPF)   ALL LUMBER GRADE 1 OR 2
Walls over 10'-0" Require 2 Rows of Blocking

Roof Slope = 7/12

HURRICANE CLIPS(HC)
Hurricane Clips - SIMPSON

Truss Span Or Location	Model HC End Zone	Model HC Interior Zone	
All Bearing Locations	1-H-10 or 2 -H2.5A	All Other Areas	1-H-10 or 2 -H 2.5A
All Porch Beams/Bay Windows	All Locations	2-H2.5A	

ALL GIRDER TRUSSES – SIMPSON VGT
ONE SIMPSON SDWC 15600 6" SCREW PER TRUSS BEARING MAY BE USED IN LIEU 1 – H2.5A

ROOF SHEATHING MATERIAL: __7/16" OSB_____   (be specific such as 7/16" OSB)

Fastener	**8D** Ringshank	NAILING	Edges (perimeter)	Field
	PATTERN:	4" o.c.	6 o.c.	

Plan May Be Mirrored at Contractors Option –

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Job Address: _____

Stud To Bottom Plate   Simpson SPH4 @ 48" o.c

Stud to top plate   Simpson SPH4   @   48 in. on center

Anchor bolts   1/2"x10" J-Bolt   @   48 in. on center

Stud To Bottom Plate   Simpson SPH4 @ 48" o.c

WALL BRACING___ SEE PLANS FOR DETAILS _ 100% continuous or as required: *See Note 1*, below.

Walls (See Plans For Details)
SHEATH ALL EXTERIOR WALLS
100% CONTINOUS

First 96"	From Each	Corner
Material	7/16" OSB	
Nailing	Edges	4" o.c.
	Field	12" o.c.
All Areas		
Material	7/16" OSB	
Nailing	Edges	6" o.c.
	Field	12 o.c.

ALL SHEATHING FASTENERS - 8d Wall

Or use 7/16" OSB structural sheathing with 8d nails in lieu of strapping 3" o.c along top and bottom plates. Centered Vertically on the 2 x 4 extreme top and bottom member. Screws may be used if placed at the center of the top plate or within installation guidelines.

OR IN SMALL AREAS WHERE SHEATHING IS CONTINOUS

When Structural Sheathing is used in lieu of SPH4 on Gable ends, the Gable truss must be secured to the top plate sith a SIMPSON A21 angle bracket at 24" o.c or SIMPSON HGA10KT at 36" o.c

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

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

<u>**COMPONENTS AND**</u>
<u>**CLADDING**</u>
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

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)*

<u>Instructions:</u>
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 1609ASCE7-10, 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.

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HEADER SIZE AND STRAPPING CHART

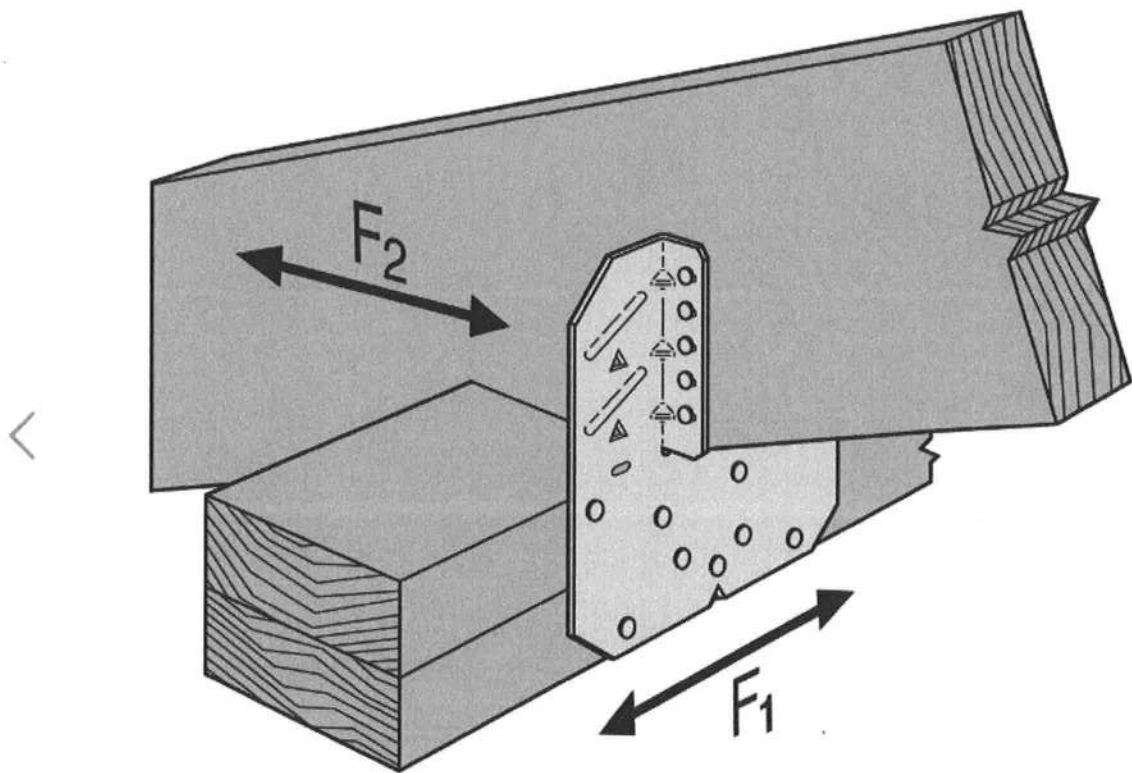| SPAN	HEADER SIZE	QUANTITY OF JACK STUDS AT EACH END	QUANTITY OF KING STUDS AT EACH END	STRAPPING TO JACK STUDS AT EACH END	STRAPPING TO KING STUDS AT EACH END
0'-0" TO 3'-6"	2 - 2X8" WITH ½" PLATE	1	1	NONE	1 SIMPSON SP4H
3-6" – 6'-6"	2 2X10" WITH ½" PLATE	2	1	1 SIMPSON MSTA24	1 SIMPSON SP4H
6'-6" – 9'-3"	2 -2X12" WITH ½" PLATE OR 4-2 X 10" WITH ½" PLATE	3	2	2 SIMPSON MSTA24	2 SIMPSON SP4H
9'-3" – 12'-0"	2- 1 ¾" X 9 ¼" LVL	3	2	2 SIMPSON MSTA24	2 SIMPSON SP4H
12'-0" – 15'-9"	2- 1 ¾" X 11 ¼" LVL	4	3	4 SIMPSON MSTA24	2 SIMPSON SP4H

JACK AND KING STUDS ARE 2 X4 IN ALL CASES SHEATH ALL EXTERIOR WALLS WITH 7/16" OSB ALL STUDS OVER 10'-0" TO RECEIVE 1 ROW OF BLOCKING

SIMPSON STRONG TIE HH4 HEADER HANGERS OR EQUAL SHOULD BE PROVIDED ON BEARINGS WALLS OR OPENINGS OVER 6'-0"

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Shear Panel Capacity 209.1 PLF Shear Walls and Exterior Walls

Interior Panel Grade	Gypsum Wallboard (Green)	
Minimum Panel Thickness (inch)	1/2 In	
Wall Construction	Unblocked	
Nail Spacing - Edge	7 In O.c.	
Nail Spacing - Intermediate	12 In O.c.	
Minimum Nail Size	5d Cooler	
	Or wallboard screws	
Total Panel Shear Capacity	Plf	209.1

H10A Installation

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Figure 3.7a   Ceiling Bracing Gable Endwall

2x4 Continuous lateral brace at 6' o.c.

2-10d Nails

Truss or Ceiling Joist

Gable End Truss

10-8d Nails

5d Cooler Nails at 10" o.c.

2"x4" Block nailed to each brace with 4-10d nails

Gypsum Board

5d Cooler Nails at 7" o.c.

20 Gage Strap

10-8d Nails

Endwall Studs

Figure 3.7b   Floor Bracing Endwall

ENDWALL

BLOCKING

JOISTS

BLOCKING

SECTION A-A

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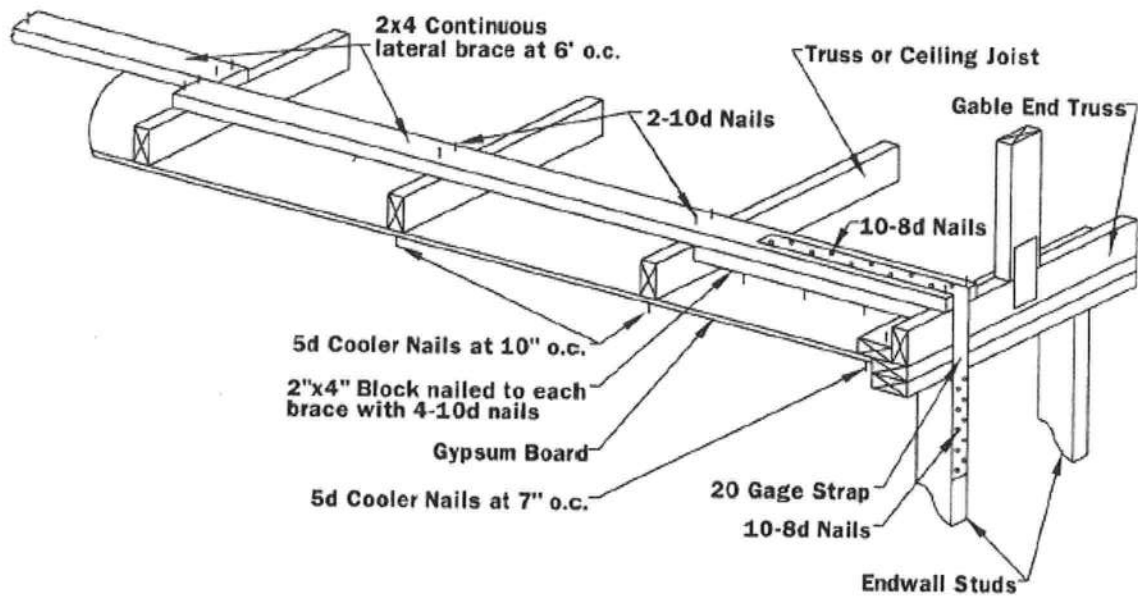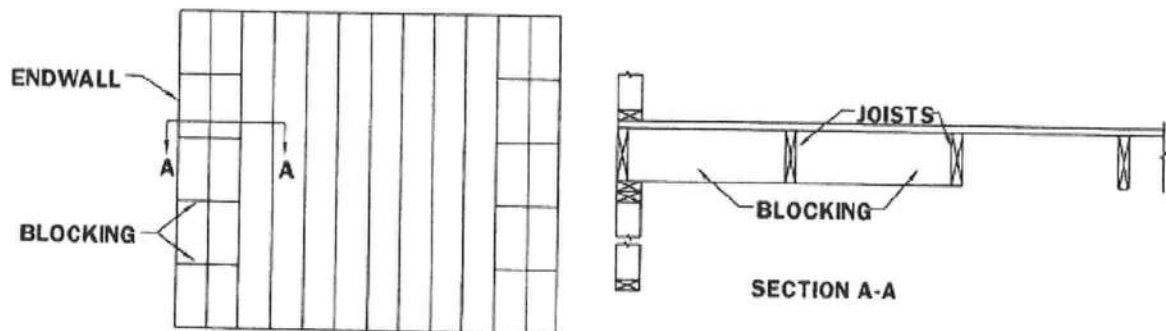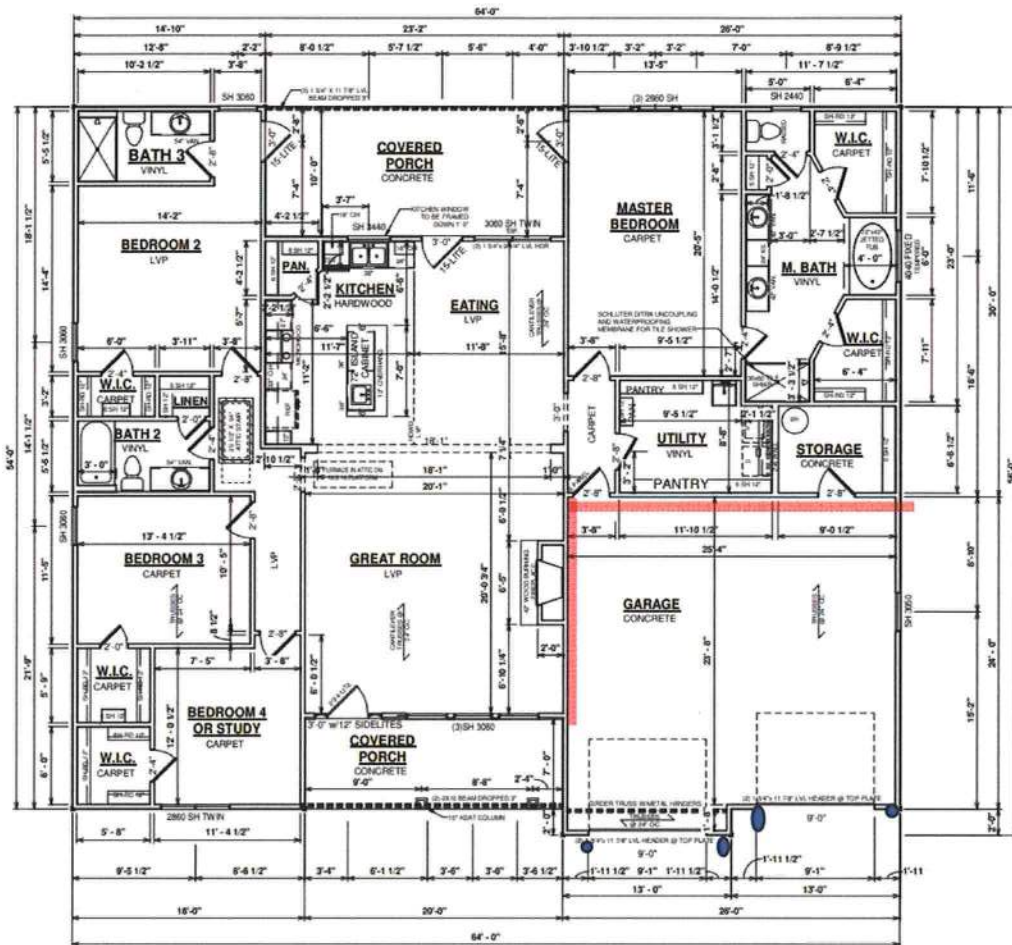
For vaulted ceilings, ballon framing required.

Structural grade Thermo-ply sheathing on interior of wall w/ 3" edge & 6" field spacing may be used as an alternate to OSB for interior shear walls.

Porch posts to have min. ABU Col Base w/ (12) 16d nails & PC Col Cap w/ (8) 16d nails to post & (12) 16d nails to beam, or approved alternative, unless noted otherwise.

BATH 3
VINYL

COVERED PORCH
CONCRETE

MASTER BEDROOM
CARPET

W.I.C.
CARPET

BEDROOM 2
LVP

PAN.

KITCHEN
HARDWOOD

EATING
LVP

M. BATH
VINYL

W.I.C.
CARPET

W.I.C.
CARPET

LINEN

BATH 2
VINYL

PANTRY

UTILITY
VINYL

STORAGE
CONCRETE

PANTRY

BEDROOM 3
CARPET

GREAT ROOM
LVP

GARAGE
CONCRETE

W.I.C.
CARPET

BEDROOM 4 OR STUDY
CARPET

COVERED PORCH
CONCRETE

W.I.C.
CARPET

Legend:

● Indicates Simpson HDU 5 Holddowns

Indicates Interior Shear Walls

Sheath Exterior 100%

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Kramer Plan – Colony Drive Lake City FL

MecaWind v2344

Software Developer: Meca Enterprises Inc., www.meca.biz, Copyright © 2018

Calculations Prepared by:
Date: Jun 23, 2020   Project #: Kramer

File Location :

Basic Wind Parameters

Wind Load Standard	= ASCE 7-10	Exposure Category	= B
Wind Design Speed	= 120.0 mph	Risk Category	= II
Structure Type	= Building	Building Type	= Enclosed

General Wind Settings

	= ASCE 7-10 Wind Parameters		=
Incl_LF	= Include ASD Load Factor of 0.6 in Pressures		= True
DynType	= Dynamic Type of Structure		= Rigid
NF	= Natural Frequency of Structure (Mode 1)		= 1.000 Hz
NF	= Natural Frequency of Structure		= 1.000 Hz
Alt	= Altitude (Ground Elevation) above Sea Level		= 0.000 ft
Bdist	= Base Elevation of Structure		= 0.000 ft
GenElev	= Specify the Elevations For Wind Pressures		= Mean Roof Ht
SDB	= Simple Diaphragm Building		= True
MWFRS	= Analysis Procedure being used for MWFRS		= Ch 27 Pt 1
C&C	= Analysis Procedure being used for C&C		= Ch 30 Pt 1
MWFRSType	= MWFRS Method Selected		= Ch 27 Pt 1

Topographic Factor per Fig 26.8-1

Topo	= Topographic Feature	= None
K_{zt}	= Topographic Factor	= 1.000

Building Inputs

RoofType: Building Roof Type	= Gabled		: Gabled	=
W : Width Perp to Ridge	= 56.000 ft	L	: Length Along Ridge	= 64.000 ft
EHt : Eave Height	= 9.000 ft	RE	: Roof Entry Method	= Slope
Slope : Slope of Roof	= 7.0 :12	OH	: Specify Roof to Wall intersections and Overhangs	= Overhang
Parapet : Type of Parapet	= None	Theta	: Roof Slope	= 30.26 Deg
Par : Is there a Parapet	= False	OH_ALL	: Sofit	= 2.000 ft
OH_ALL : Sofit	= 2.000 ft	OH_ALL	: Sofit	= 2.000 ft

Exposure Constants per Table 26.9-1:

Alpha: Const from Table 26.9-1= 7.000		Zg: Const from Table 26.9-1= 1200.000 ft	
At: Const from Table 26.9-1= 0.143		Bt: Const from Table 26.9-1= 0.840	
Am: Const from Table 26.9-1= 0.250		Bm: Const from Table 26.9-1= 0.450	
C: Const from Table 26.9-1= 0.300		Eps: Const from Table 26.9-1= 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:
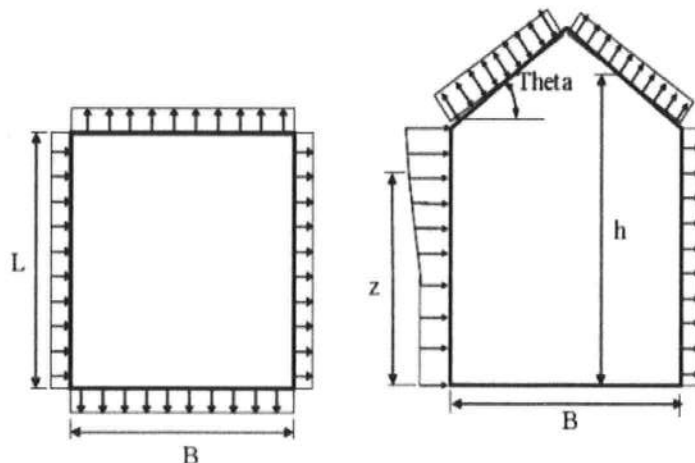
EHt	= Eave Height		= 9.000 ft
RHt	= Ridge Height		= 26.500 ft
h	= Mean Roof Height: 0.5*(EHt+RHt)		= 17.750 ft

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Zh       = Mean Roof Height for Kh: h + Base_Dist                           = 17.750 ft
Kh       = Since 15 ft [4.572 m] < Zh < Zg --> 2.01 * (Zh/zg)^(2/Alpha)     = 0.603
Kzt      = Topographic Factor is 1 since no Topographic feature specified    = 1.000
Kd       = Wind Directionality Factor per Table 26.6-1                       = 0.85
GCPi     = Ref Table 26.11-1 for Enclosed Building                          = +/-0.18
RA       = Roof Area                                                         = 4723.43 sq ft
LF       = Load Factor based upon ASD Design                                = 0.60
qh       = (0.00256 * Kh * Kzt * Kd * V^2) * LF                             = 11.34 psf
qin      = For Negative Internal Pressure of Enclosed Building use qh*LF    = 11.34 psf
qip      = For Positive Internal Pressure of Enclosed Building use qh*LF    = 11.34 psf
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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       = 0.6 * Ht                                                          = 30.000 ft
Izm      = Cc * (33 / Zm) ^ 0.167                                           = 0.305
Lzm      = L * (Zm / 33) ^ Epsilon                                          = 309.993
Q        = (1 / (1 + 0.63 * ((B + Ht) / Lzm)^0.63))^0.5                     = 0.893
G2       = 0.925*((1+1.7*lzm*3.4*Q)/(1+1.7*3.4*lzm))                        = 0.862
Gust Factor Used in Analysis
G        = Lessor Of G1 Or G2                                               = 0.850
```

MWFRS Wind Normal to Ridge (Ref Fig 27.4-1)
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h              = Mean Roof Height Of Building                               = 17.750 ft
RHt            = Ridge Height Of Roof                                       = 26.500 ft
B              = Horizontal Dimension Of Building Normal To Wind Direction  = 64.000 ft
L              = Horizontal Dimension Of building Parallel To Wind Direction = 56.000 ft
L/B            = Ratio Of L/B used For Cp determination                     = 0.875
h/L            = Ratio Of h/L used For Cp determination                     = 0.317
Slope          = Slope of Roof                                             = 30.26 Deg
OH_Top_+X+Y= Overhang Coefficient Overhang +X+Y (Leeward)                  = -0.6, -0.6
OH_Top_+X-Y= Overhang Coefficient Overhang +X-Y (Windward)                 = 0.28, -0.19
OH_Top_+Y = Overhang Coefficient Top +Y (Leeward)                          = -0.6, -0.6
OH_Top_-X+Y= Overhang Coefficient Overhang -X+Y (Leeward)                  = -0.6, -0.6
OH_Top_-X-Y= Overhang Coefficient Overhang -X-Y (Windward)                 = 0.28, -0.19
OH_Top_-Y = Overhang Coefficient Top Windward Edge                         = 0.28, -0.19
Roof_LW        = Roof Coefficient (Leeward)                                = -0.6, -0.6
Roof_WW        = Roof Coefficient (Windward)                               = 0.28, -0.19
Sofit_-Y = Overhang Coefficient 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                          = -0.50
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) - Normal to Ridge
All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
9.00	0.575	1.000	10.81	0.18	5.31	-6.86	-8.79	12.17	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	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
9.00	0.575	1.000	10.81	-0.18	9.39	-2.78	-4.71	12.17	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 27.4.7 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 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

OH_Top_+X+Y	N/A	N/A	-0.600	-0.600	0.000	-5.78	-5.78	-5.78	-5.78
OH_Top_+X-Y	N/A	N/A	0.280	-0.190	0.000	2.70	2.70	-1.83	-1.83
OH_Top_+Y	N/A	N/A	-0.600	-0.600	0.180	-3.74	-7.82	-3.74	-7.82
OH_Top_-X+Y	N/A	N/A	-0.600	-0.600	0.000	-5.78	-5.78	-5.78	-5.78
OH_Top_-X-Y	N/A	N/A	0.280	-0.190	0.000	2.70	2.70	-1.83	-1.83
OH_Top_-Y	N/A	N/A	0.280	-0.190	0.180	4.74	0.66	0.21	-3.87
Roof_LW	N/A	N/A	-0.600	-0.600	0.180	-3.74	-7.82	-3.74	-7.82
Roof_WW	N/A	N/A	0.280	-0.190	0.180	4.74	0.66	0.21	-3.87
Sofit_-Y	N/A	N/A	0.800	0.800	0.180	9.75	5.67	9.75	5.67

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 27.4-1)

h	= Mean Roof Height Of Building	= 17.750 ft
RHt	= Ridge Height Of Roof	= 26.500 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 56.000 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 64.000 ft
L/B	= Ratio Of L/B used For Cp determination	= 1.143
h/L	= Ratio Of h/L used For Cp determination	= 0.277
Slope	= Slope of Roof	= 30.26 Deg
OH_Bot	= Overhang Bottom (Windward Face Only)	= 0.8, 0.8
OH_Top_1	= Overhang Top Coeff (0 to h/2) (0.000 ft to 2.000 ft)	= -0.18, -0.9
OH_Top_10	= Overhang Top Coeff (>2h) (>66.000 ft)	= -0.18, -0.3
OH_Top_2	= Overhang Top Coeff (0 to h/2) (0.000 ft to 2.000 ft)	= -0.18, -0.9
OH_Top_3	= Overhang Top Coeff (0 to h) (2.000 ft to 17.750 ft)	= -0.18, -0.9
OH_Top_4	= Overhang Top Coeff (0 to h) (2.000 ft to 17.750 ft)	= -0.18, -0.9
OH_Top_5	= Overhang Top Coeff (h to 2h) (17.750 ft to 35.500 ft)	= -0.18, -0.5
OH_Top_6	= Overhang Top Coeff (h to 2h) (17.750 ft to 35.500 ft)	= -0.18, -0.5
OH_Top_7	= Overhang Top Coeff (>2h) (>35.500 ft)	= -0.18, -0.3
OH_Top_8	= Overhang Top Coeff (>2h) (>35.500 ft)	= -0.18, -0.3
OH_Top_9	= Overhang Top Coeff (>2h) (>66.000 ft)	= -0.18, -0.3
Roof_1	= Roof Coeff (0 to h) (2.000 ft to 17.750 ft)	= -0.18, -0.9
Roof_2	= Roof Coeff (h to 2h) (17.750 ft to 35.500 ft)	= -0.18, -0.5
Roof_3	= Roof Coeff (>2h) (>35.500 ft)	= -0.18, -0.3
Cp_WW	= Windward Wall Coefficient (All L/B Values)	= 0.80
Cp_LW	= Leeward Wall Coefficient Using L/B	= -0.47
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	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
-----	-----	-----	-----	----	--------	-------	-----	-----	---------
26.50	0.676	1.000	12.71	0.18	6.60	-6.58	-8.79	13.19	9.60
17.00	0.596	1.000	11.20	0.18	5.57	-6.58	-8.79	12.16	9.60
9.00	0.575	1.000	10.81	0.18	5.31	-6.58	-8.79	11.89	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	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
-----	-----	-----	-----	-----	--------	-------	-----	-----	---------
26.50	0.676	1.000	12.71	-0.18	10.69	-2.50	-4.71	13.19	9.60
17.00	0.596	1.000	11.20	-0.18	9.66	-2.50	-4.71	12.16	9.60
9.00	0.575	1.000	10.81	-0.18	9.39	-2.50	-4.71	11.89	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 27.4.7 no less than 9.60 psf (Incl LF) applied to Walls
+ Pressures Acting TOWARD Surface   - Pressures Acting AWAY from Surface
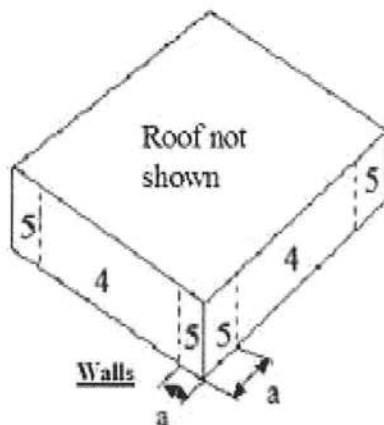
Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

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
OH_Bot	N/A	N/A	0.800	0.800	0.000	7.71	7.71	7.71	7.71
OH_Top_1 (-X+Y)	0.000	2.000	-0.180	-0.900	0.000	-1.73	-1.73	-8.67	-8.67
OH_Top_10 (+X-Y)	66.000	68.000	-0.180	-0.300	0.000	-1.73	-1.73	-2.89	-2.89
OH_Top_2 (-X-Y)	0.000	2.000	-0.180	-0.900	0.000	-1.73	-1.73	-8.67	-8.67
OH_Top_3 (-Y)	2.000	17.750	-0.180	-0.900	0.180	0.31	-3.78	-6.63	-10.71
OH_Top_4 (+Y)	2.000	17.750	-0.180	-0.900	0.180	0.31	-3.78	-6.63	-10.71
OH_Top_5 (-Y)	17.750	35.500	-0.180	-0.500	0.180	0.31	-3.78	-2.78	-6.86
OH_Top_6 (+Y)	17.750	35.500	-0.180	-0.500	0.180	0.31	-3.78	-2.78	-6.86
OH_Top_7 (-Y)	35.500	66.000	-0.180	-0.300	0.180	0.31	-3.78	-0.85	-4.93
OH_Top_8 (+Y)	35.500	66.000	-0.180	-0.300	0.180	0.31	-3.78	-0.85	-4.93
OH_Top_9 (+X+Y)	66.000	68.000	-0.180	-0.300	0.000	-1.73	-1.73	-2.89	-2.89
Roof_1 (+Y)	2.000	17.750	-0.180	-0.900	0.180	0.31	-3.78	-6.63	-10.71
Roof_2 (+Y)	17.750	35.500	-0.180	-0.500	0.180	0.31	-3.78	-2.78	-6.86
Roof_3 (+Y)	35.500	66.000	-0.180	-0.300	0.180	0.31	-3.78	-0.85	-4.93

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 1:

Gable Roof 27° < ϴ <= 45°

Zh	= Shall not be less than 30 ft in Exp B [Table 30.3-1 Note 1]	= 30.000 ft
Kh	= Since 15 ft [4.572 m] < Zh < Zg --> 2.01 * (Zh/zg)^(2/Alpha)	= 0.701
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCPi	= Ref Table 26.11-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * V^2) * LF	= 13.17 psf
LHD	= Least Horizontal Dimension: Min(B, L)	= 56.000 ft
a1	= Min(0.1 * LHD, 0.4 * h)	= 5.600 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 5.600 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.317

Wind Pressures for C&C Ch 30 Pt 1
All wind pressures include a load factor of 0.6

Description ft	Zone	Width ft	Span ft	Area sq ft	1/3 Rule	Ref Fig	GCp Max	GCp Min	p Max psf	p Min psf
Zone 1	1	1.000	1.000	1.00	No	30.4-2C	0.900	-1.000	14.23	-15.54
Zone 2	2	1.000	1.000	1.00	No	30.4-2C	0.900	-1.200	14.23	-18.18
Zone 3	3	1.000	1.000	1.00	No	30.4-2C	0.900	-1.200	14.23	-18.18
Zone 4	4	1.000	1.000	1.00	No	30.4-1	1.000	-1.100	15.54	-16.86

```
Zone 5      5  1.000  1.000  1.00  No  30.4-1  1.000  -1.400  15.54  -20.81
```

```
Area      = Span Length x Effective Width
1/3 Rule  = Effective width need not be less than 1/3 of the span length
GCp       = External Pressure Coefficients taken from Figures 30.4-1 through 30.4-7
p         = Wind Pressure:  qh*(GCp - GCpi)  [Eqn 30.4-1]*
*Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}
```

Components and Cladding (C&C) Overhang Calculations per Section 30.10:

EHt	= Eave Height	= 9.000 ft
RHt	= Ridge Height	= 26.500 ft
h	= Mean Roof Height: 0.5*(EHt+RHt)	= 17.750 ft
Zh	= Shall not be less than 30 ft in Exp B [Table 30.3-1 Note 1]	= 30.000 ft
Kh	= Since 15 ft [4.572 m] < Zh < Zg --> 2.01 * (Zh/zg)^(2/Alpha)	= 0.701
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCPi	= Ref Table 26.11-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * V^2) * LF	= 13.17 psf
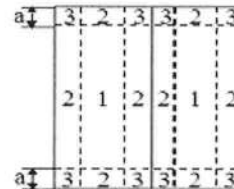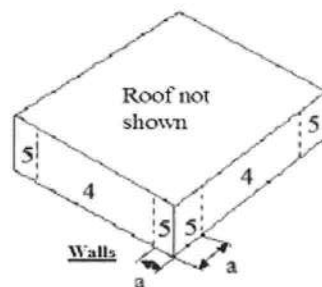
Gable Roof 27° < Θ <= 45°

Wind Pressures for C&C per Section 30.10 & Figure 30.4-2
All wind pressures include a load factor of 0.6

Description	Zone	Width ft	Span Length ft	Area sq ft	1/3 Rule	Ref Fig	GCpi +/-	GCp Max	GCp Min	p Max psf	p Min psf
Zone 2_OH	2_OH	1.000	1.000	1.00	No	30.4-2C	0.00	0.000	-2.000	9.60	-26.34
Zone 2_OHS	2_OHS	1.000	1.000	1.00	No	30.4-2C	0.00	0.000	-2.000	9.60	-28.71
Zone 3_OH	3_OH	1.000	1.000	1.00	No	30.4-2C	0.00	0.000	-2.000	9.60	-26.34
Zone 3_OHS	3_OHS	1.000	1.000	1.00	No	30.4-2C	0.00	0.000	-2.000	9.60	-28.71

```
#_OH      = Zone # on Overhang with Zero Internal Pressure (GCPi = 0)
#_OHS     = Zone # on Overhang w/ Sofit w/ Buildings Internal Pressure (GCPi = +/-0.18)
Area      = Span Length x Effective Width
1/3 Rule  = Effective width need not be less than 1/3 of the span length
p         = Wind Pressure:  qh*(GCp - GCpi)*LF  [Eqn 30.4-1]*
*Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}
Values of GCp for overhangs include contributions from both upper and lower surfaces.
```

Components and Cladding (C&C) Zone Summary per Ch 30 Pt 1:

Zh	= Shall not be less than 30 ft in Exp B [Table 30.3-1 Note 1]	= 30.000 ft
Kh	= Since 15 ft [4.572 m] < Zh < Zg --> 2.01 * (Zh/zg)^(2/Alpha)	= 0.701
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCPi	= Ref Table 26.11-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * V^2) * LF	= 13.17 psf
LHD	= Least Horizontal Dimension: Min(B, L)	= 56.000 ft
a1	= Min(0.1 * LHD, 0.4 * h)	= 5.600 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 5.600 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.317

Wind Pressure Summary for C&C Zones based Upon Areas Ch 30 Pt 1 (Table 1 of 2)
All wind pressures include a load factor of 0.6

Zone	Figure	A <= 10.00 sq ft psf	A = 20.00 sq ft psf	A = 50.00 sq ft psf
1	30.4-2C	14.23 -15.54	13.83 -14.75	13.30 -13.70

2		30.4-2C		14.23 -18.18		13.83 -17.38		13.30 -16.34
2_OH		30.4-2C		9.60 -26.34		9.60 -25.55		9.60 -24.50
2_OHS		30.4-2C		9.60 -28.71		9.60 -27.92		9.60 -26.87
3		30.4-2C		14.23 -18.18		13.83 -17.38		13.30 -16.34
3_OH		30.4-2C		9.60 -26.34		9.60 -25.55		9.60 -24.50
3_OHS		30.4-2C		9.60 -28.71		9.60 -27.92		9.60 -26.87
4		30.4-1		15.54 -16.86		14.84 -16.16		13.92 -15.23
5		30.4-1		15.54 -20.81		14.84 -19.41		13.92 -17.56

Wind Pressure Summary for C&C Zones based Upon Areas Ch 30 Pt 1 (Table 2 of 2)
All wind pressures include a load factor of 0.6

Zone		Figure		A = 100.00 sq ft psf		A = 200.00 sq ft psf		A > 500.00 sq ft psf
1		30.4-2C		12.91 -12.91		12.91 -12.91		12.91 -12.91
2		30.4-2C		12.91 -15.54		12.91 -15.54		12.91 -15.54
2_OH		30.4-2C		9.60 -23.71		9.60 -23.71		9.60 -23.71
2_OHS		30.4-2C		9.60 -26.08		9.60 -26.08		9.60 -26.08
3		30.4-2C		12.91 -15.54		12.91 -15.54		12.91 -15.54
3_OH		30.4-2C		9.60 -23.71		9.60 -23.71		9.60 -23.71
3_OHS		30.4-2C		9.60 -26.08		9.60 -26.08		9.60 -26.08
4		30.4-1		13.22 -14.53		12.52 -13.83		11.59 -12.91
5		30.4-1		13.22 -16.16		12.52 -14.76		11.59 -12.91

* 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
* Overhang pressures calculated per Para 30.10
*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.