WIND ANALYSIS -- 130 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

THE: **NOTTELY MODERN FARMHOUSE**

FOR: **SUZANNE TOWNSEND**

SW DON COOK WAY
FORT WHITE, FL

Date: 07/22/2021 *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: 16.15 End Zone Length 5.0 Max Overhang Length (Excluding Porches) 2.0

Roof Slope =7/12 - 3.0/12

HURRICANE CLIPS(HC)

Hurricane Clips – SIMPSON

TRUSS SPAN/LOCATION

HC MODEL AT END ZONE –1 Simpson H-10A

HC MODEL INTERIOR ZONE –1- SIMPSON H10A

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

GIRDER TRUSS USE 1-SIMPSON HTS20

ROOF SHEATHING MATERIAL – 7/16"OSB

NAILING – USE 10D RINGSHANK

NAILING PATTERN EDGES- 4" 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

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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 FEET
2 X 4 STUD SPACING 12" O.C UP TO 12 FEET – WALLS OVER 10 FEET REQUIRE 2 ROWS OF BLOCKING

MIN NAIL PENETRATION – 1-1/2"
Nail Type 8D
Edge Nail Spacing 4" o.c
Intermediate Nail Spacing 8" o.cSIMPSON SPH4 AT 32" O.C

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

See Attached for Additional Details

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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

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 _____ __, there are not_X_____ __ 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.

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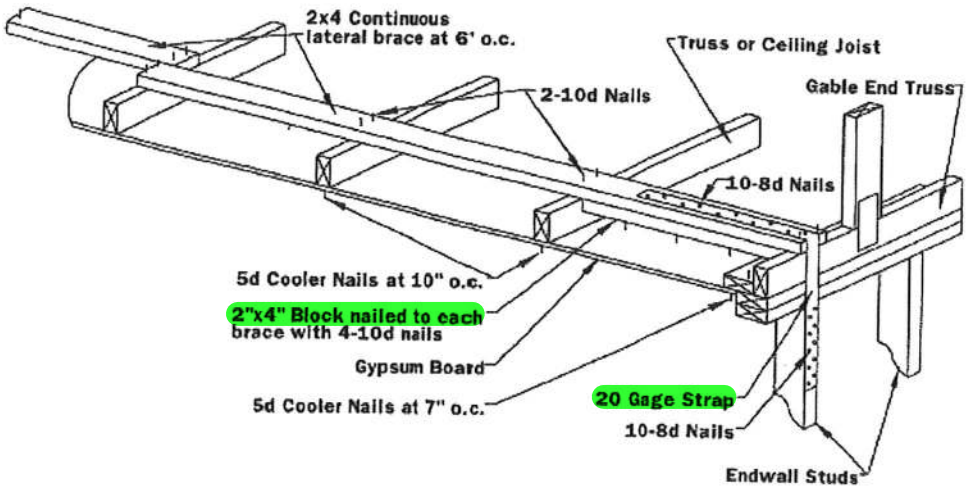
Job Address: _____

Figure 3.7a **Ceiling Bracing Gable Endwall**



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

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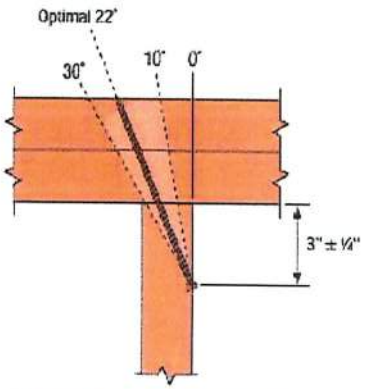
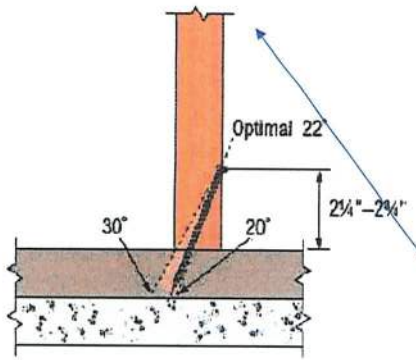
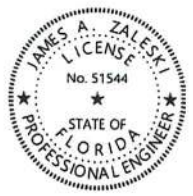


Stud-to-Top Plate Connection
(This application requires SDWC15600)



Stud-to-Bottom Plate Connection Over Concrete/Masonry Foundation
(This application requires SDWC15450)



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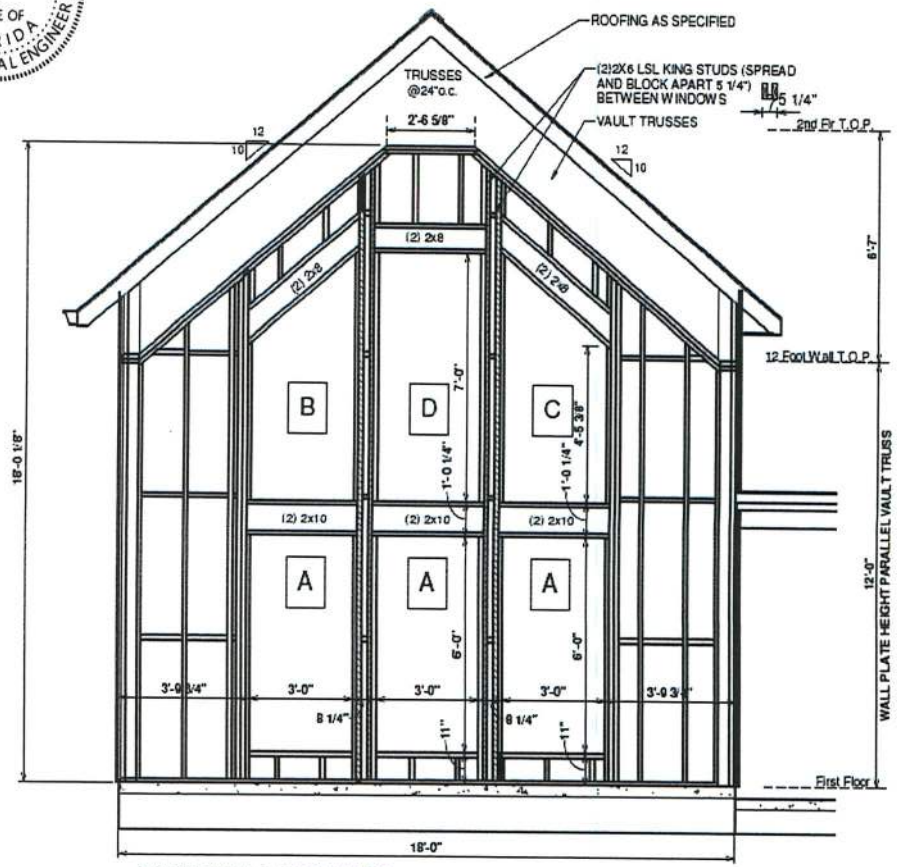
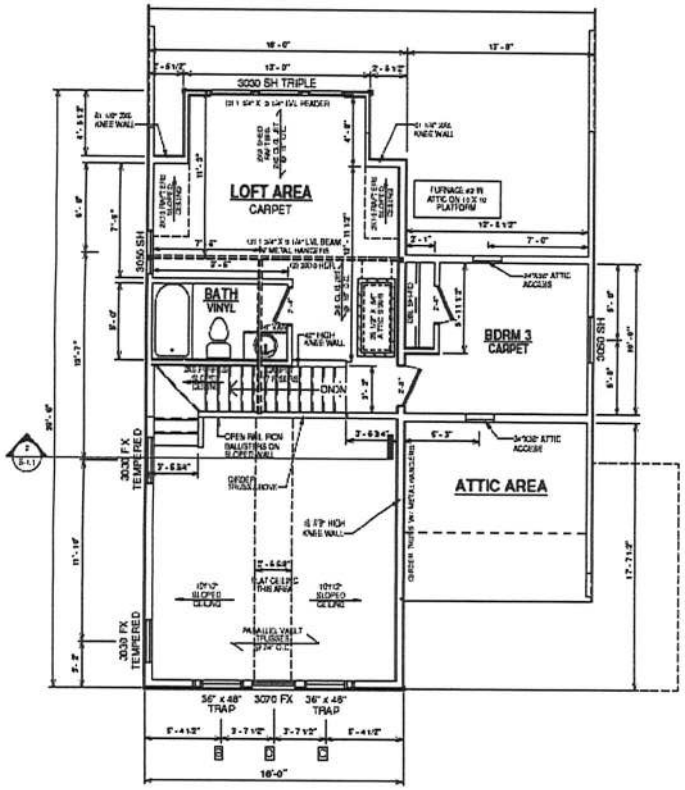


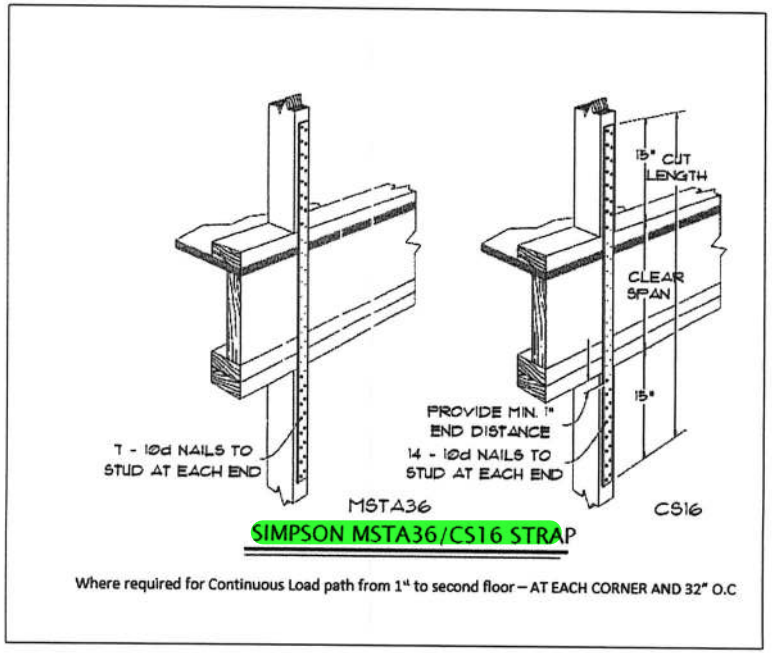
VIEW WALL FRAMING

ALL STUDS IN VIEW FRAMING WALL TO BE 2X6 SPF UP TO 12'-0" - IF STUD HEIGHT EXCEEDS 12 FEET USE 2X6 LSL STUDS

ALL STUDS IN VIEW WALL TO HAVE SIMPSON SDWC SCREWS AS SHOWN TOP AND BOTTOM



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

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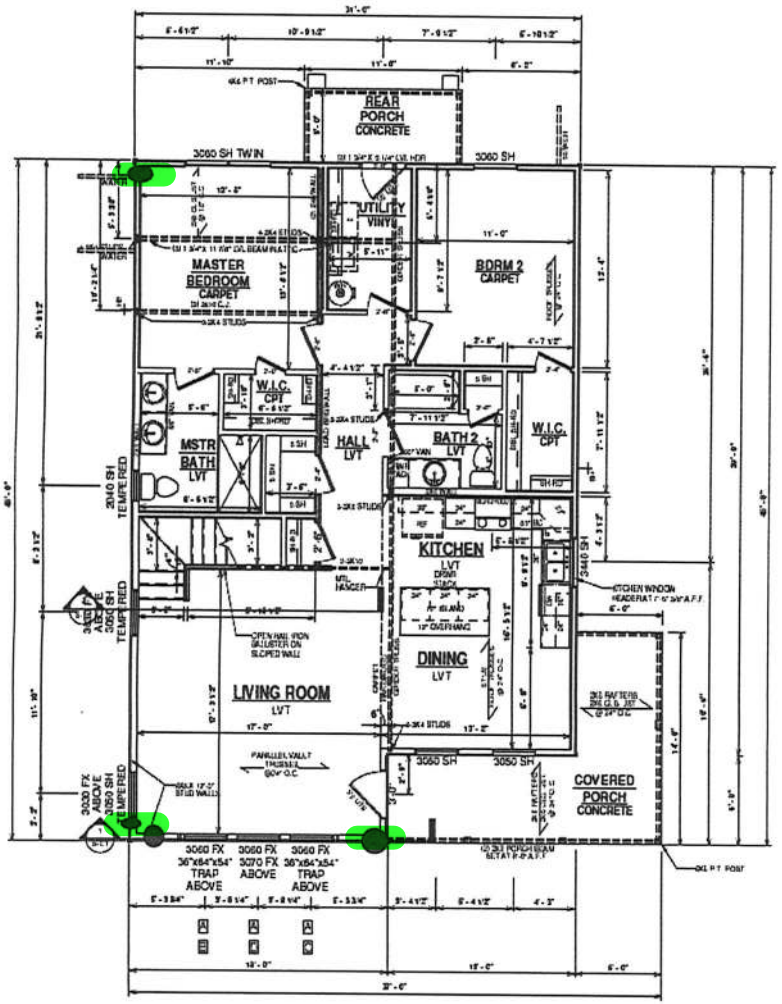

FIRST FLOOR PLAN

Indicates SIMPSON HDU4-SDS2.5 HOLDDOWN

SHEATH EXTERIOR 100%

Porch Posts use Simpson ABU Base and Simpson BC Cap

½ X 10" J-BOLTS 32" O.C

SIMPSON SDWC15600 SCREWS MAY BE USED AT THE TOP OF STUDS AT 32" O.S AND SIMPSON SDWC15450 AT THE BASE OF THE STUDS AT 32" O.C IN LIEU OF SIMPSON SPH STRAPS

(SEE DETAIL ON VIEWING WALL FOR ADDITIONAL REQUIREMENTS FOR SDWC SCREWS)

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Date: 2021.07.22 11:25:07 -04'00'

MecaWind v2387

Software Developer: Meca Enterprises Inc., www.meca.biz Copyright © 2020

Calculations Prepared by:
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PH 850-766-7778
TALLAHASSEE, FLORIDA, 32312
Date: Jul 22, 2021

Description:
TOWNSEND

Basic Wind Parameters

Wind Load Standard	= ASCE 7-16	Exposure Category	= B
Wind Design Speed	= 130.0 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
NF	= Natural Frequency of Structure (Mode 1)	= 1.000 Hz
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 = Gabled	W	: Width Perp to Ridge	= 45.000 ft	
L	: Length Along Ridge = 37.000 ft	EHt	: Eave Height	= 9.000 ft	
RE	: Roof Entry Method = Slope	Slope	: Slope of Roof	= 7.0 :12	
Theta	: Roof Slope = 30.26 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 ft	
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	= 16.146 ft
Kh	= 15 ft [4.572 m]< Z <Zg -->(2.01*(Z/zg)^(2/Alpha) {Table 26.10-1}	= 0.587
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	= 2325.83 sq ft
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF	= 12.95 psf
qin	= For Negative Internal Pressure of Enclosed Building use qh*LF	= 12.95 psf
qip	= For Positive Internal Pressure of Enclosed Building use qh*LF	= 12.95 psf

Gust Factor Calculation:

Gust Factor Category I Rigid Structures - Simplified Method		
Gl	= 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	= 0.910
G2	= 0.925*((1+1.7*lzm*3.4*Q)/(1+1.7*3.4*lzm))	= 0.872
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	= 16.146 ft
RHt	= Ridge Height Of Roof	= 23.292 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 37.000 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 45.000 ft
L/B	= Ratio Of L/B used For Cp determination	= 1.216
h/L	= Ratio Of h/L used For Cp determination	= 0.359
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)	= 0.26, -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)	= 0.26, -0.19
OH_Top_-Y	= Overhang Coefficient Top Windward Edge	= 0.26, -0.19
Roof_LW	= Roof Coefficient (Leeward)	= -0.6, -0.6
Roof_WW	= Roof Coefficient (Windward)	= 0.26, -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	= -0.46
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

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
9.00	0.575	1.000	12.68	0.18	6.29	-7.36	-10.04	13.65	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
9.00	0.575	1.000	12.68	-0.18	10.95	-2.70	-5.37	13.65	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 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	-6.60	-6.60	-6.60	-6.60
OH_Top_+X-Y	N/A	N/A	0.260	-0.190	0.000	2.86	2.86	-2.09	-2.09
OH_Top_+Y	N/A	N/A	-0.600	-0.600	0.180	-4.27	-8.94	-4.27	-8.94
OH_Top_-X+Y	N/A	N/A	-0.600	-0.600	0.000	-6.60	-6.60	-6.60	-6.60
OH_Top_-X-Y	N/A	N/A	0.260	-0.190	0.000	2.86	2.86	-2.09	-2.09

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OH_Top_-Y	N/A	N/A	0.260	-0.190	0.180	5.19	0.53	0.24	-4.42
Roof_LW	N/A	N/A	-0.600	-0.600	0.180	-4.27	-8.94	-4.27	-8.94
Roof_WW	N/A	N/A	0.260	-0.190	0.180	5.19	0.53	0.24	-4.42
Sofit_-Y	N/A	N/A	0.800	0.800	0.180	11.14	6.48	11.14	6.48

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	= 16.146 ft
RHt	= Ridge Height Of Roof	= 23.292 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 45.000 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 37.000 ft
L/B	= Ratio Of L/B used For Cp determination	= 0.822
h/L	= Ratio Of h/L used For Cp determination	= 0.436
Slope	= Slope of Roof	= 30.26 Deg
OH_Bot	= Overhang Bottom (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, -0.9
OH_Top	= Overhang Top Coeff (0 to h/2) (2.000 ft to 8.073 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (h/2 to h) (8.073 ft to 16.146 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (h to 2h) (16.146 ft to 32.292 ft)	= -0.18, -0.5
OH_Top	= Overhang Top Coeff (>2h) (>32.292 ft)	= -0.18, -0.3
OH_Top	= Overhang Top Coeff (>2h) (>39.000 ft)	= -0.18, -0.3
Roof	= Roof Coeff (0 to h/2) (2.000 ft to 8.073 ft)	= -0.18, -0.9
Roof	= Roof Coeff (h/2 to h) (8.073 ft to 16.146 ft)	= -0.18, -0.9
Roof	= Roof Coeff (h to 2h) (16.146 ft to 32.292 ft)	= -0.18, -0.5
Roof	= Roof Coeff (>2h) (>32.292 ft)	= -0.18, -0.3
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) - 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
23.29	0.652	1.000	14.38	0.18	7.45	-7.84	-10.04	15.28	9.60
16.15	0.587	1.000	12.95	0.18	6.48	-7.84	-10.04	14.31	9.60
9.00	0.575	1.000	12.68	0.18	6.29	-7.84	-10.04	14.13	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
23.29	0.652	1.000	14.38	-0.18	12.11	-3.17	-5.37	15.28	9.60
16.15	0.587	1.000	12.95	-0.18	11.14	-3.17	-5.37	14.31	9.60
9.00	0.575	1.000	12.68	-0.18	10.95	-3.17	-5.37	14.13	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
OH_Bot	N/A	N/A	0.800	0.800	0.000	8.81	8.81	8.81	8.81
OH_Bot	N/A	N/A	0.800	0.800	0.000	8.81	8.81	8.81	8.81
OH_Top (-X+Y)	0.000	2.000	-0.180	-0.900	0.000	-1.98	-1.98	-9.91	-9.91
OH_Top (-X-Y)	0.000	2.000	-0.180	-0.900	0.000	-1.98	-1.98	-9.91	-9.91
OH_Top (-Y)	2.000	8.073	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
OH_Top (+Y)	2.000	8.073	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
OH_Top (-Y)	8.073	16.146	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
OH_Top (+Y)	8.073	16.146	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
OH_Top (-Y)	16.146	32.292	-0.180	-0.500	0.180	0.35	-4.31	-3.17	-7.84
OH_Top (+Y)	16.146	32.292	-0.180	-0.500	0.180	0.35	-4.31	-3.17	-7.84
OH_Top (-Y)	32.292	39.000	-0.180	-0.300	0.180	0.35	-4.31	-0.97	-5.63
OH_Top (+Y)	32.292	39.000	-0.180	-0.300	0.180	0.35	-4.31	-0.97	-5.63
OH_Top (+X+Y)	39.000	41.000	-0.180	-0.300	0.000	-1.98	-1.98	-3.30	-3.30
OH_Top (+X-Y)	39.000	41.000	-0.180	-0.300	0.000	-1.98	-1.98	-3.30	-3.30
Roof (+Y)	2.000	8.073	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
Roof (-Y)	2.000	8.073	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
Roof (+Y)	8.073	16.146	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
Roof (-Y)	8.073	16.146	-0.180	-0.900	0.180	0.35	-4.31	-7.58	-12.24
Roof (+Y)	16.146	32.292	-0.180	-0.500	0.180	0.35	-4.31	-3.17	-7.84
Roof (-Y)	16.146	32.292	-0.180	-0.500	0.180	0.35	-4.31	-3.17	-7.84
Roof (+Y)	32.292	39.000	-0.180	-0.300	0.180	0.35	-4.31	-0.97	-5.63
Roof (-Y)	32.292	39.000	-0.180	-0.300	0.180	0.35	-4.31	-0.97	-5.63

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:

h/W	= Ratio of mean roof height to building width	= 0.359
h/L	= Ratio of mean roof height to building length	= 0.436
h	= Mean Roof Height above grade	= 16.146 ft
Kh	= 15 ft [4.572 m]< Z <Zg -->(2.01*(Z/zg)^(2/Alpha) {Table 26.10-1}	= 0.587
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 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF	= 12.95 psf
LHD	= Least Horizontal Dimension: Min(B, L)	= 37.000 ft
a1	= Min(0.1 * LHD, 0.4 * h	= 3.700 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 3.700 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.436

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	30.3-2D	0.900	-1.800	13.99	-25.64
Zone 2e	2e	1.000	1.000	1.00	No	30.3-2D	0.900	-1.800	13.99	-25.64
Zone 2n	2n	1.000	1.000	1.00	No	30.3-2D	0.900	-2.000	13.99	-28.23

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Zone 2r	2r	1.000	1.000	1.00	No	30.3-2D	0.900	-1.800	13.99	-25.64
Zone 3e	3e	1.000	1.000	1.00	No	30.3-2D	0.900	-3.200	13.99	-43.77
Zone 3r	3r	1.000	1.000	1.00	No	30.3-2D	0.900	-2.000	13.99	-28.23
Zone 4	4	1.000	1.000	1.00	No	30.3-1	1.000	-1.100	15.28	-16.58
Zone 5	5	1.000	1.000	1.00	No	30.3-1	1.000	-1.400	15.28	-20.46

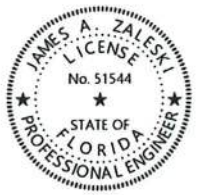
Area = Span Length x Effective Width
1/3 Rule = Effective width need not be less than 1/3 of the span length
GCp = External Pressure Coefficients taken from Figures 30.3-1 through 30.3-7
p = Wind Pressure: qh*(GCp - GCpi) [Eqn 30.3-1]*
* Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}

Components and Cladding (C&C) Overhang Calculations per Section 30.9:

h	= Mean Roof Height above grade	= 16.146 ft
Kh	= 15 ft [4.572 m]< Z <Zg -->(2.01*(Z/zg)^(2/Alpha) {Table 26.10-1}	= 0.587
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 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF	= 12.95 psf

Wind Pressures for C&C per Section 30.9 & Figure 30.3-2
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 1_OH	1_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-33.67
Zone 1_OHS	1_OHS	1.000	1.000	1.00	No	30.3-2D	0.18	0.000	-2.600	9.60	-36.00
Zone 2e_OH	2e_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-33.67
Zone 2e_OHS	2e_OHS	1.000	1.000	1.00	No	30.3-2D	0.18	0.000	-2.600	9.60	-36.00
Zone 2n_OH	2n_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.800	9.60	-36.26
Zone 2n_OHS	2n_OHS	1.000	1.000	1.00	No	30.3-2D	0.18	0.000	-2.800	9.60	-38.59
Zone 2r_OH	2r_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-33.67
Zone 2r_OHS	2r_OHS	1.000	1.000	1.00	No	30.3-2D	0.18	0.000	-2.600	9.60	-36.00
Zone 3e_OH	3e_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-4.000	9.60	-51.80
Zone 3e_OHS	3e_OHS	1.000	1.000	1.00	No	30.3-2D	0.18	0.000	-4.000	9.60	-54.13
Zone 3r_OH	3r_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.800	9.60	-36.26
e 3r_OHS	3r_OHS	1.000	1.000	1.00	No	30.3-2D	0.18	0.000	-2.800	9.60	-38.59



#_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 30.3-1]*
* 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.

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

h/W	= Ratio of mean roof height to building width	= 0.359
h/L	= Ratio of mean roof height to building length	= 0.436
h	= Mean Roof Height above grade	= 16.146 ft
Kh	= 15 ft [4.572 m]< Z <Zg -->(2.01*(Z/zg)^(2/Alpha) {Table 26.10-1}	= 0.587
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 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF	= 12.95 psf
LHD	= Least Horizontal Dimension: Min(B, L)	= 37.000 ft
a1	= Min(0.1 * LHD, 0.4 * h	= 3.700 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 3.700 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.436

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 <=	A =	A =	A =

		2.00 sq ft psf	10.00 sq ft psf	20.00 sq ft psf	50.00 sq ft psf
1	30.3-2D	13.99 -25.64	13.99 -25.64	12.43 -21.74	10.37 -16.59
1_OH	30.3-2D	9.60 -33.67	9.60 -33.67	9.60 -29.77	9.60 -24.62
1_OHS	30.3-2D	9.60 -36.00	9.60 -36.00	9.60 -32.10	9.60 -26.95
2e	30.3-2D	13.99 -25.64	13.99 -25.64	12.43 -21.74	10.37 -16.59
2e_OH	30.3-2D	9.60 -33.67	9.60 -33.67	9.60 -29.77	9.60 -24.62
2e_OHS	30.3-2D	9.60 -36.00	9.60 -36.00	9.60 -32.10	9.60 -26.95
2n	30.3-2D	13.99 -28.23	13.99 -28.23	12.43 -25.24	10.37 -21.27
2n_OH	30.3-2D	9.60 -36.26	9.60 -36.26	9.60 -33.26	9.60 -29.30
2n_OHS	30.3-2D	9.60 -38.59	9.60 -38.59	9.60 -35.60	9.60 -31.63
2r	30.3-2D	13.99 -25.64	13.99 -25.64	12.43 -21.74	10.37 -16.59
2r_OH	30.3-2D	9.60 -33.67	9.60 -33.67	9.60 -29.77	9.60 -24.62
2r_OHS	30.3-2D	9.60 -36.00	9.60 -36.00	9.60 -32.10	9.60 -26.95
3e	30.3-2D	13.99 -43.77	13.99 -34.62	12.43 -30.68	10.37 -25.47
3e_OH	30.3-2D	9.60 -51.80	9.60 -42.65	9.60 -38.71	9.60 -33.50
3e_OHS	30.3-2D	9.60 -54.13	9.60 -44.98	9.60 -41.04	9.60 -35.83
3r	30.3-2D	13.99 -28.23	13.99 -28.23	12.43 -25.24	10.37 -21.27
3r_OH	30.3-2D	9.60 -36.26	9.60 -36.26	9.60 -33.26	9.60 -29.30
3r_OHS	30.3-2D	9.60 -38.59	9.60 -38.59	9.60 -35.60	9.60 -31.63
4	30.3-1	15.28 -16.58	15.28 -16.58	14.59 -15.89	13.68 -14.98
5	30.3-1	15.28 -20.46	15.28 -20.46	14.59 -19.09	13.68 -17.27

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 = 300.00 sq ft psf	A > 500.00 sq ft psf
1	30.3-2D	9.60 -12.69	9.60 -12.69	9.60 -12.69	9.60 -12.69
1_OH	30.3-2D	9.60 -20.72	9.60 -20.72	9.60 -20.72	9.60 -20.72
1_OHS	30.3-2D	9.60 -23.05	9.60 -23.05	9.60 -23.05	9.60 -23.05
2e	30.3-2D	9.60 -12.69	9.60 -12.69	9.60 -12.69	9.60 -12.69
2e_OH	30.3-2D	9.60 -20.72	9.60 -20.72	9.60 -20.72	9.60 -20.72
2e_OHS	30.3-2D	9.60 -23.05	9.60 -23.05	9.60 -23.05	9.60 -23.05
2n	30.3-2D	9.60 -18.28	9.60 -15.28	9.60 -15.28	9.60 -15.28
2n_OH	30.3-2D	9.60 -26.31	9.60 -23.31	9.60 -23.31	9.60 -23.31
2n_OHS	30.3-2D	9.60 -28.64	9.60 -25.64	9.60 -25.64	9.60 -25.64
2r	30.3-2D	9.60 -12.69	9.60 -12.69	9.60 -12.69	9.60 -12.69
2r_OH	30.3-2D	9.60 -20.72	9.60 -20.72	9.60 -20.72	9.60 -20.72
2r_OHS	30.3-2D	9.60 -23.05	9.60 -23.05	9.60 -23.05	9.60 -23.05
3e	30.3-2D	9.60 -21.53	9.60 -17.59	9.60 -15.28	9.60 -15.28
3e_OH	30.3-2D	9.60 -29.56	9.60 -25.62	9.60 -23.31	9.60 -23.31
3e_OHS	30.3-2D	9.60 -31.89	9.60 -27.95	9.60 -25.64	9.60 -25.64
3r	30.3-2D	9.60 -18.28	9.60 -15.28	9.60 -15.28	9.60 -15.28
3r_OH	30.3-2D	9.60 -26.31	9.60 -23.31	9.60 -23.31	9.60 -23.31
3r_OHS	30.3-2D	9.60 -28.64	9.60 -25.64	9.60 -25.64	9.60 -25.64
4	30.3-1	12.99 -14.29	12.31 -13.60	11.90 -13.20	11.40 -12.69
5	30.3-1	12.99 -15.89	12.31 -14.51	11.90 -13.71	11.40 -12.69

* 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
* Overhang pressures calculated per Para 30.9
* 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.

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