(64)

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

Job Address **BONANZA HOME - JEANLEA PLACE COLUMBIA COUNTY FL**

COLUMBIA COUNTY BUILDING DEPARTMENT Received for FILE COPY Code Compliance PLANS EXAMINER

Date: ***10/2/2020***

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***

Plans may be used as a master plan by the above contractor: ***No (circle one)***

Main House – HOME TO BE ON MONO SLAB OR STEMWALL WITH SLAB, NOT OFFGRADE

Mean Roof Height: **19.6** **End Zone Length** **7.0** **Max Overhang Length (Excluding Porches)** **30 inches**

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 = 8/12

HURRICANE CLIPS(HC)

Hurricane Clips - SIMPSON

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Truss Span Or Location	***Model HC End Zone***	***Model HC Interior Zone***
All Bearing Locations	***1-H-10 or 1 - H2.5A***	***All Other Areas*** ***1-H-10 or 1 -H 2.5A***
All Porch Beams/Bay Windows	***All Locations***	***1-H10 OR 1 H-2.5A***

GIRDER TRUSSES USE ***SIMPSON HTS20***

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

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

Job Address: _____

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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)
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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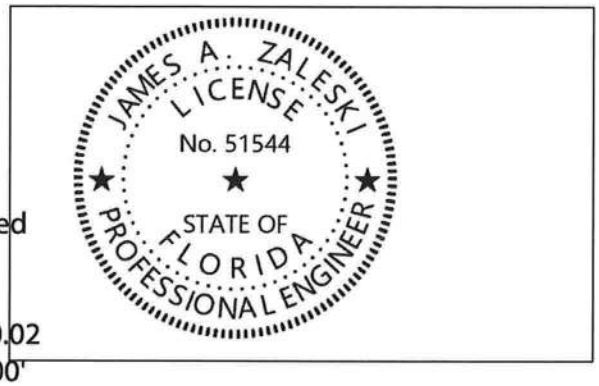

PROVIDE GABLE END BRACING DETAIL, all vaulted or high ceilings shall be balloon framed to the ceiling diaphram.

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 1609ASCE7-10, to comply with State Building Codes a space has been provided to indicate method used.

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

James Zaleski PE #51544 2305 Haverhill Rd Tall Fl 32312 ph 850-766-7778

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BONANZA HOME - JEANLEA PLACE COLUMBIA COUNTY FL

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**

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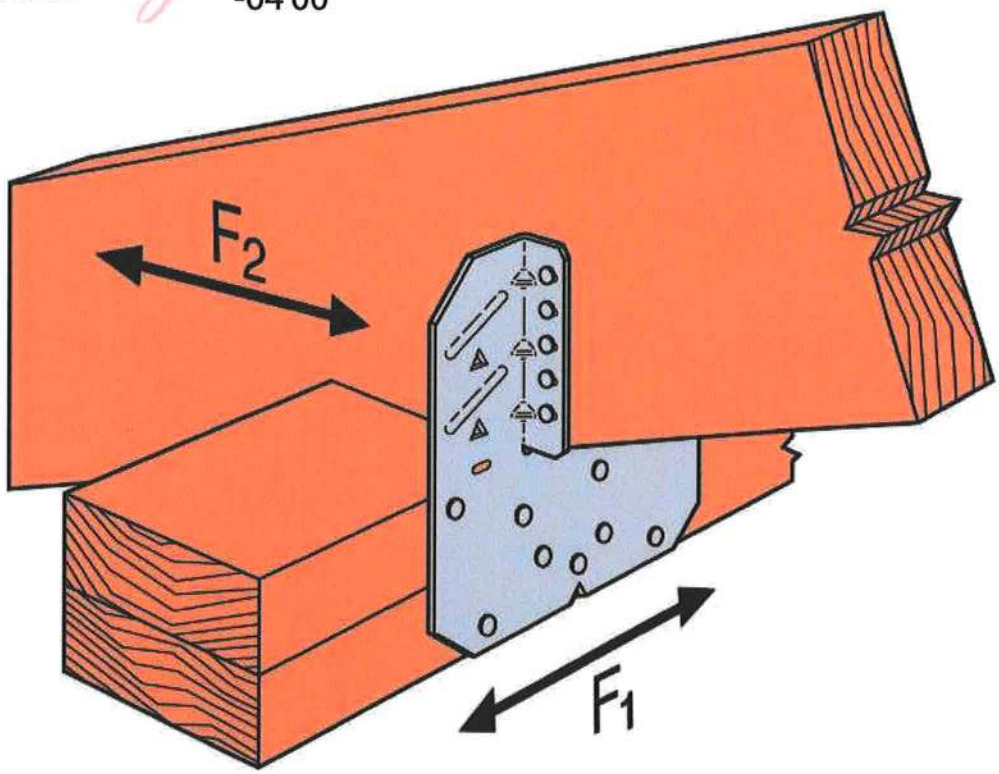
Date: 2020.10.02 08:49:13 -04'00'



H10A Installation

Figure 3.7a Ceiling Bracing Gable Endwall

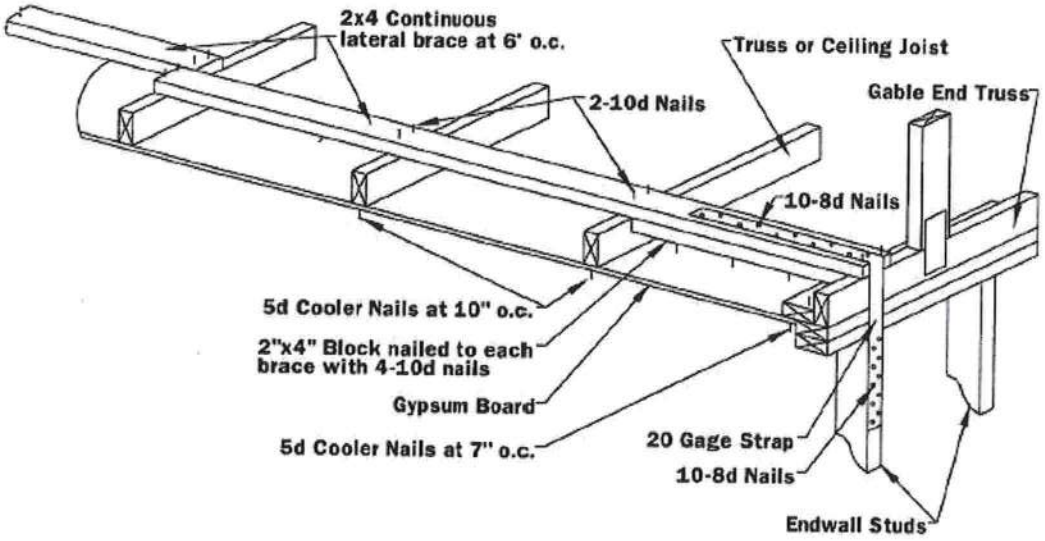
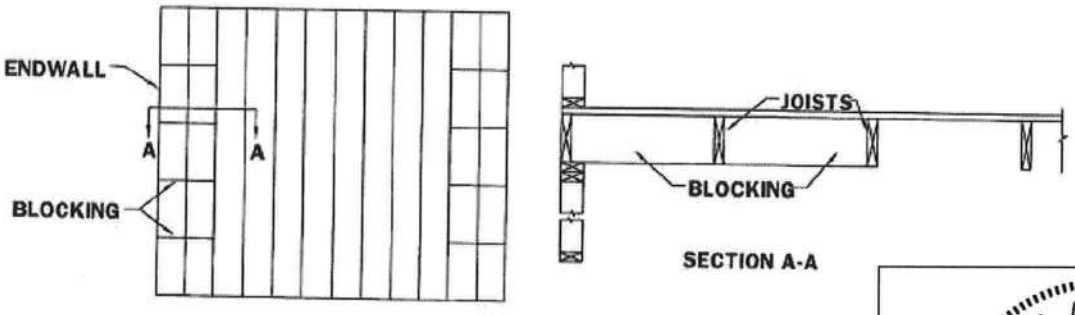


Figure 3.7b Floor Bracing Endwall



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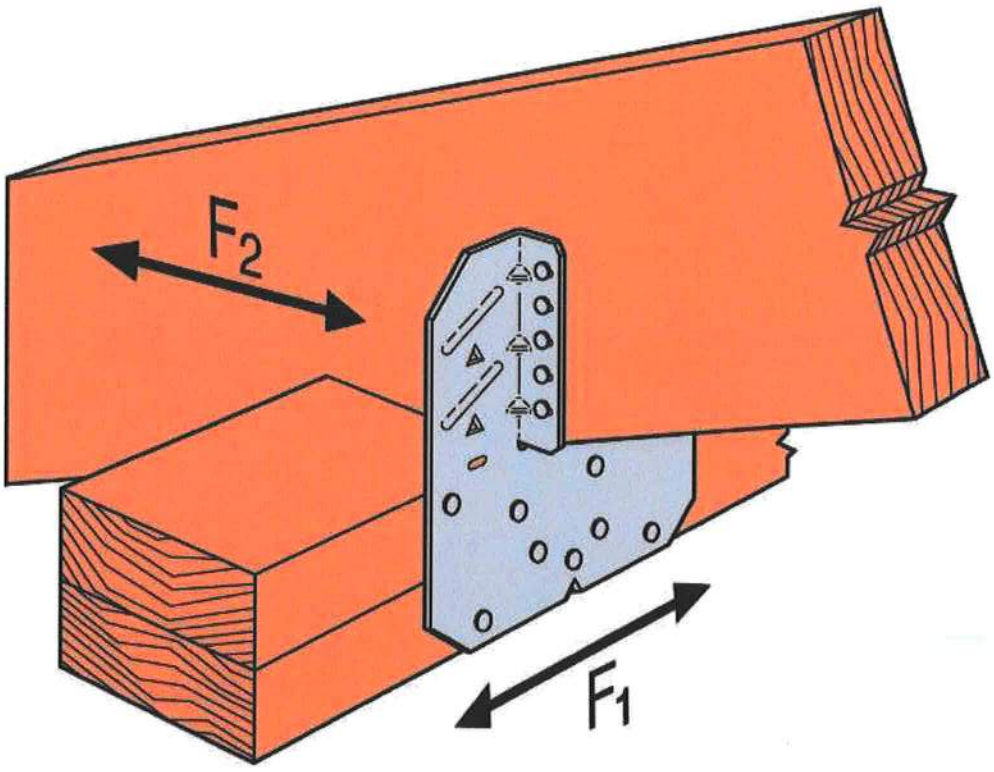

H10A Installation

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BONANZA HOME - JEANLEA PLACE COLUMBIA COUNTY FL

Figure 3.7a Ceiling Bracing Gable Endwall

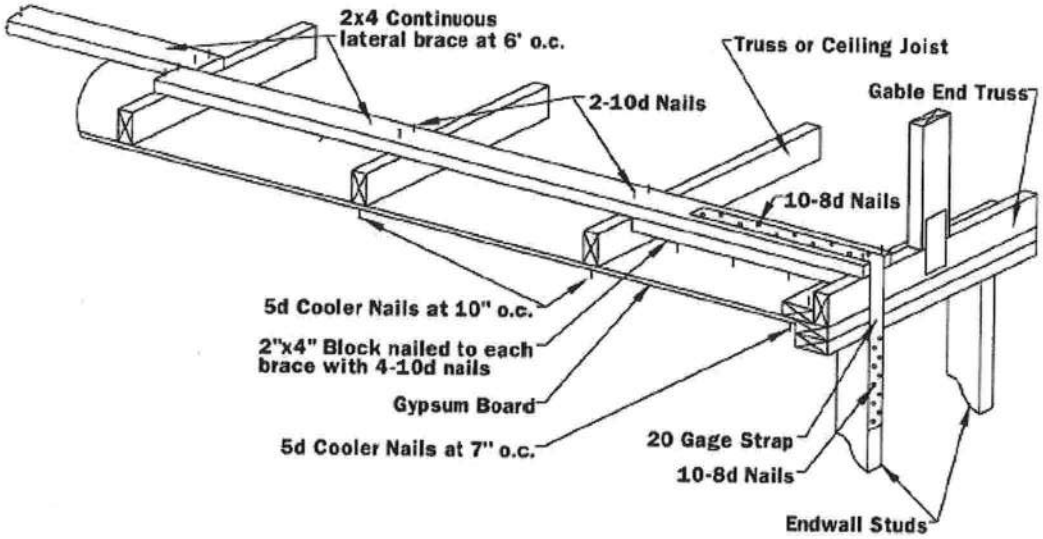
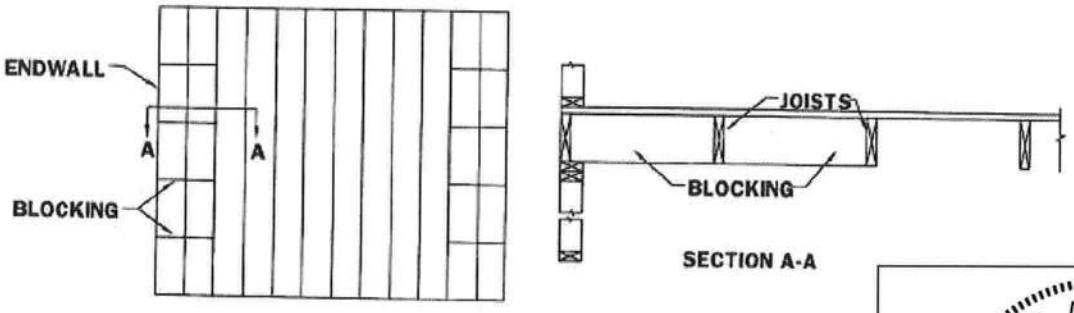


Figure 3.7b Floor Bracing Endwall



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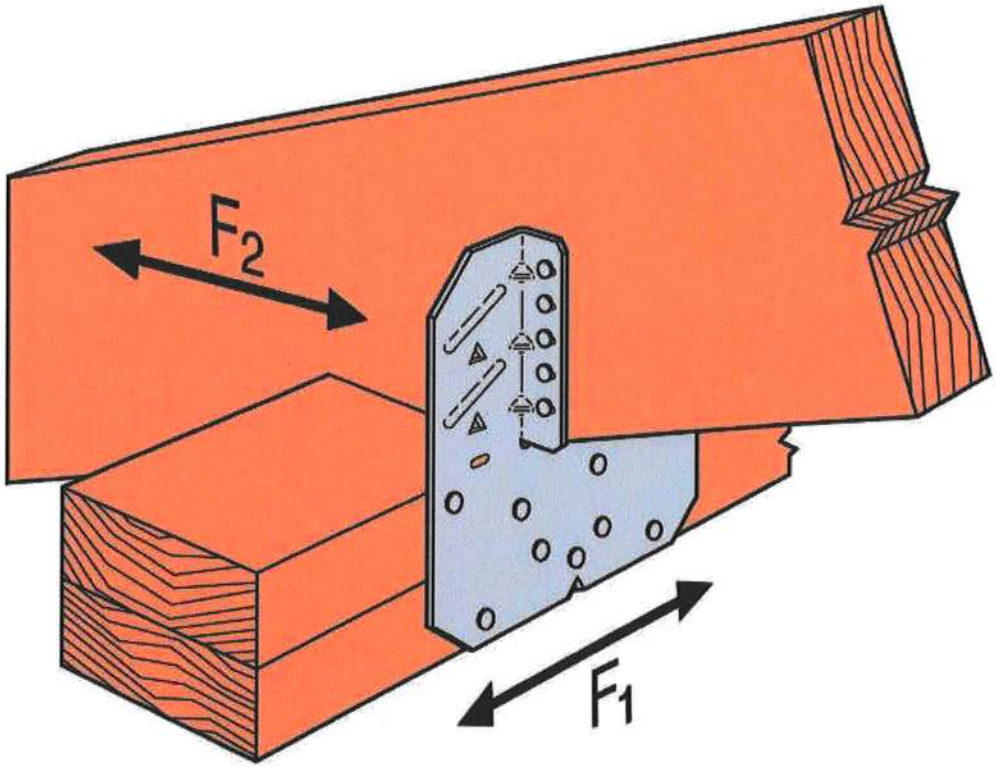

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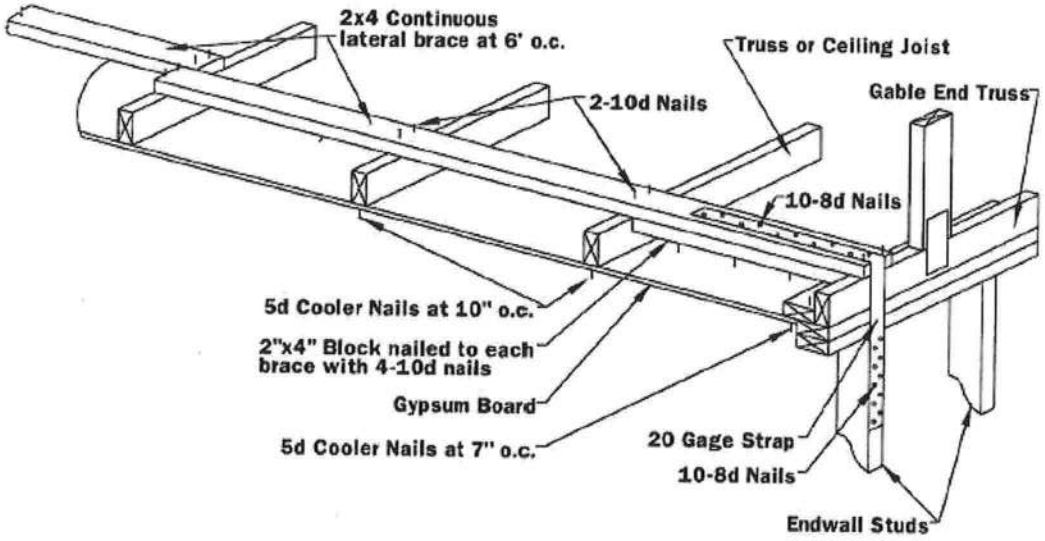

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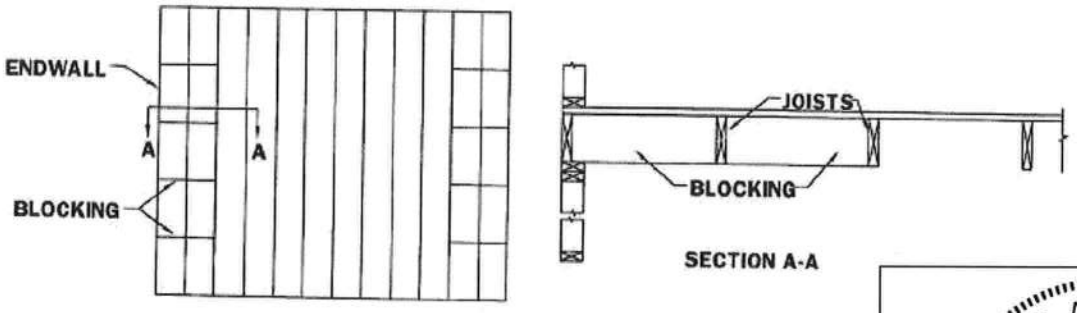

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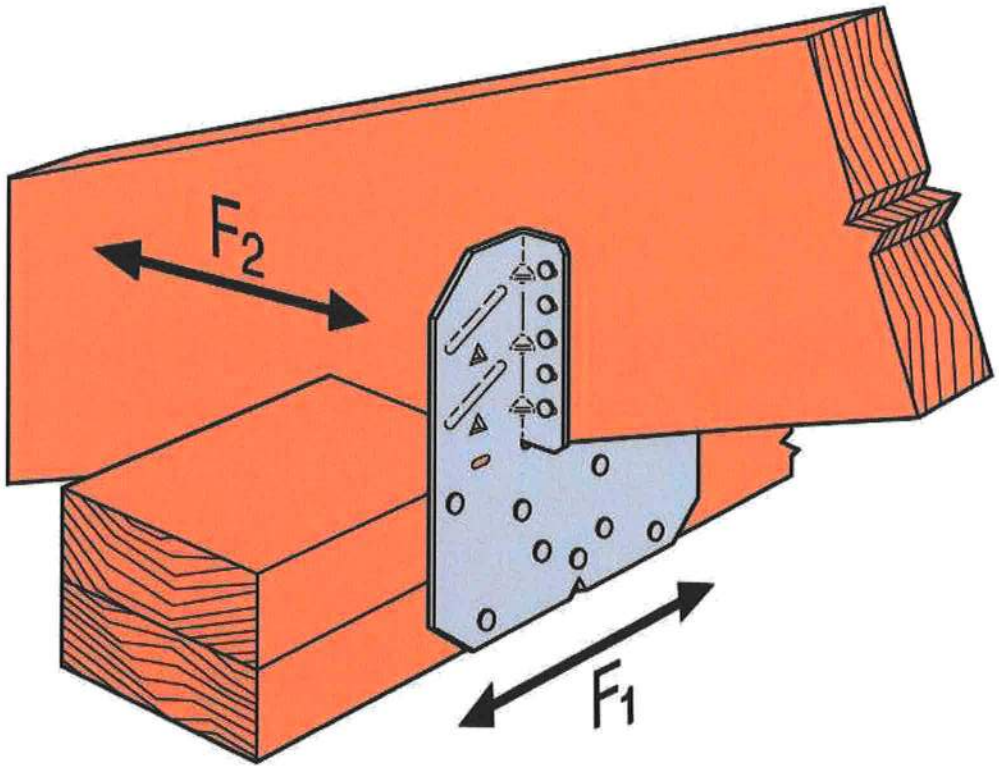

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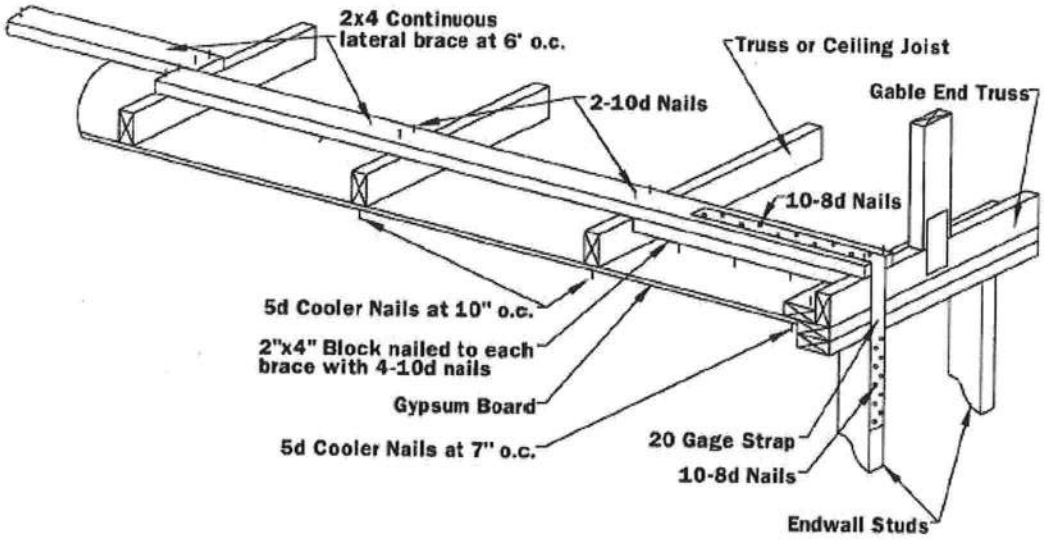
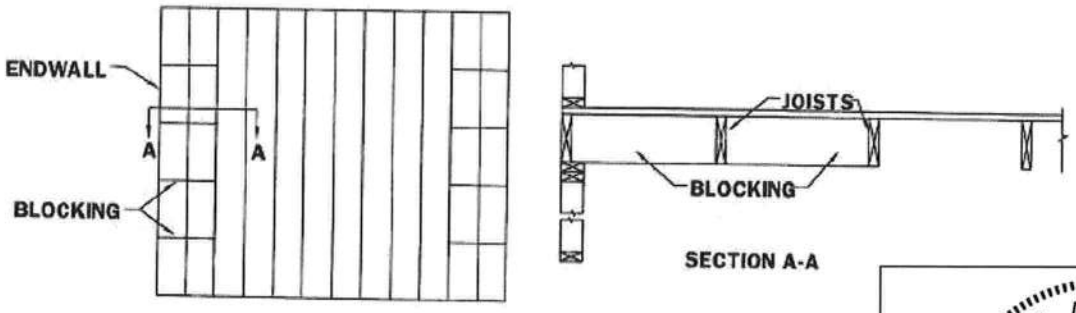
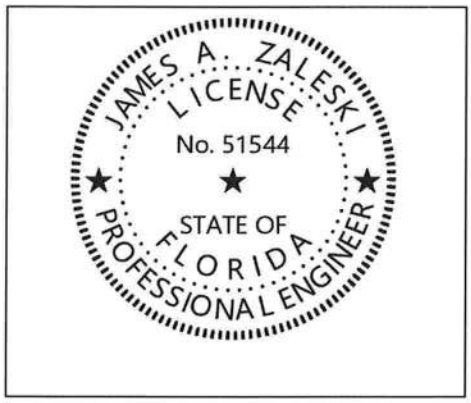


Figure 3.7b Floor Bracing Endwall





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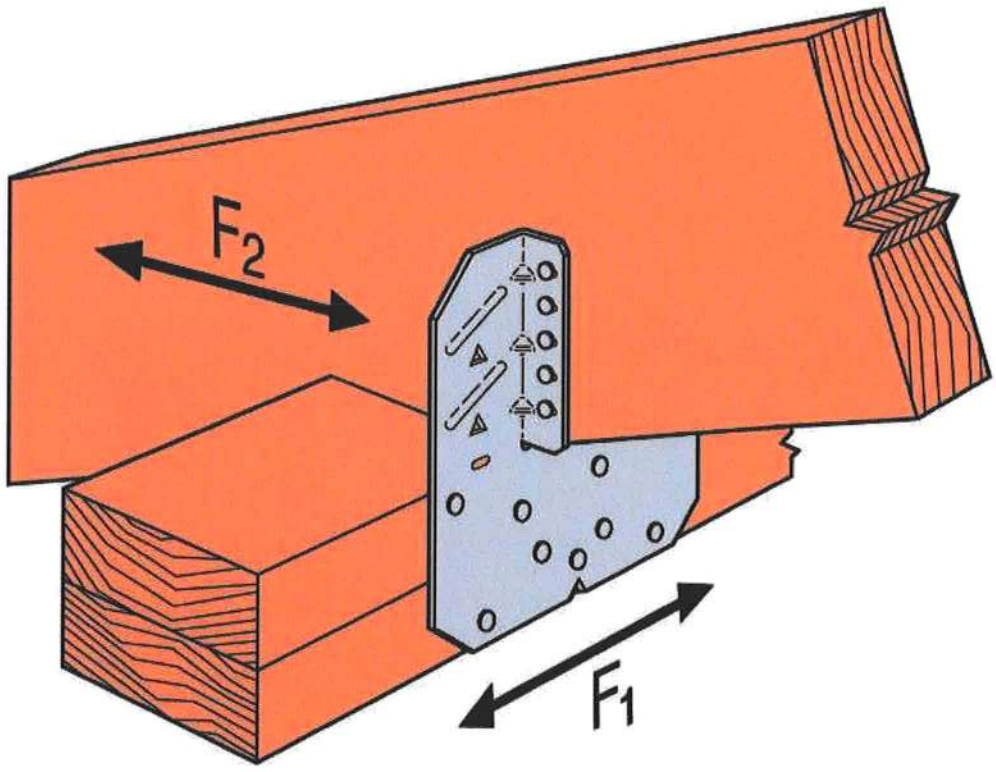

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BONANZA HOME - JEANLEA PLACE COLUMBIA COUNTY FL

Figure 3.7a Ceiling Bracing Gable Endwall

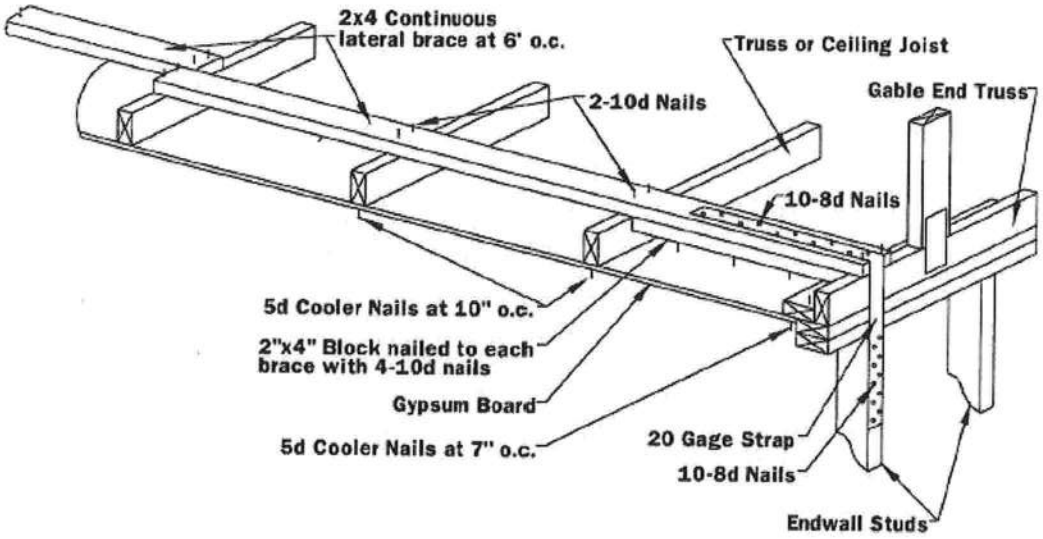
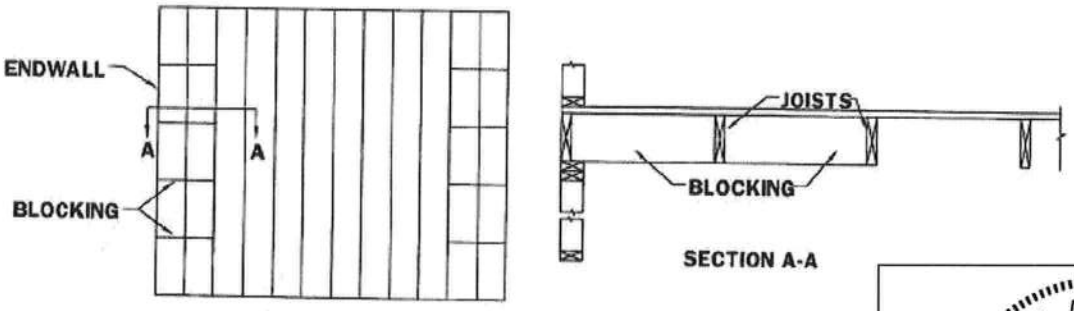


Figure 3.7b Floor Bracing Endwall



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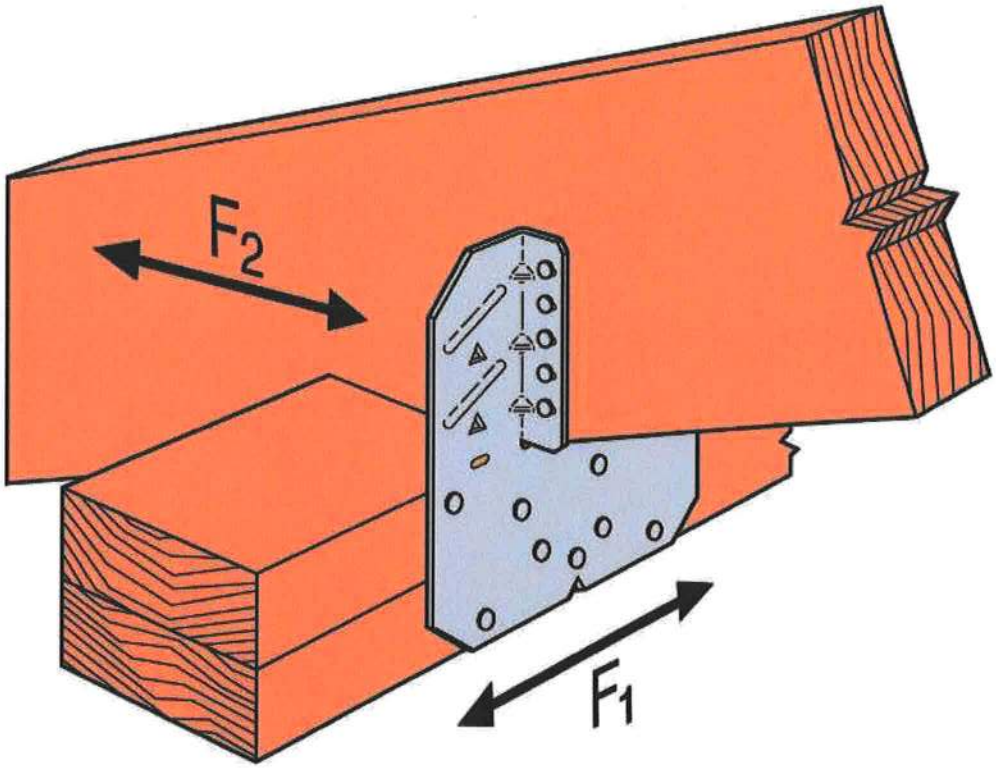

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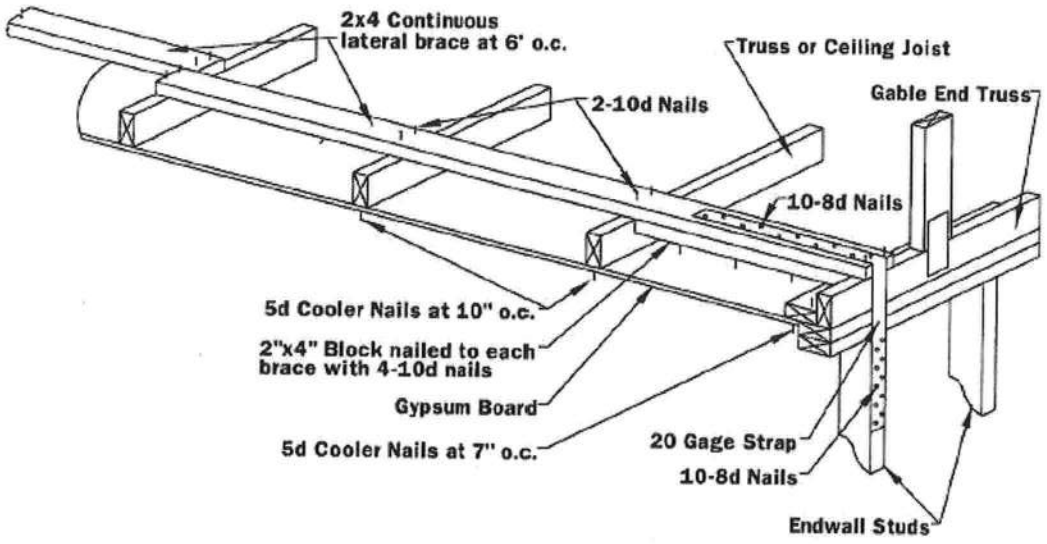

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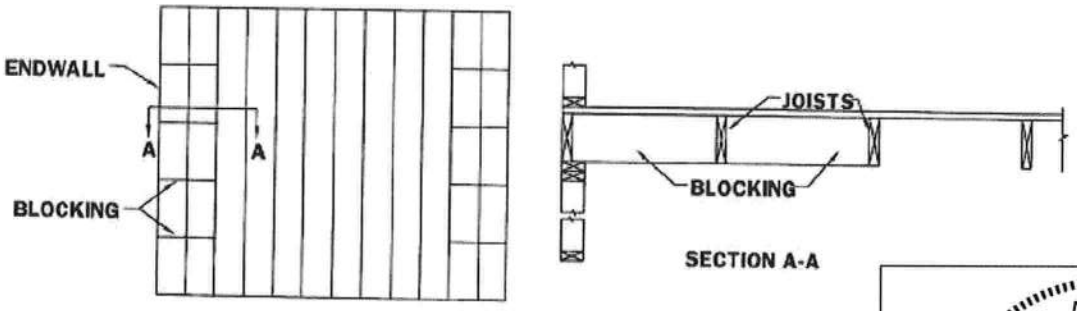

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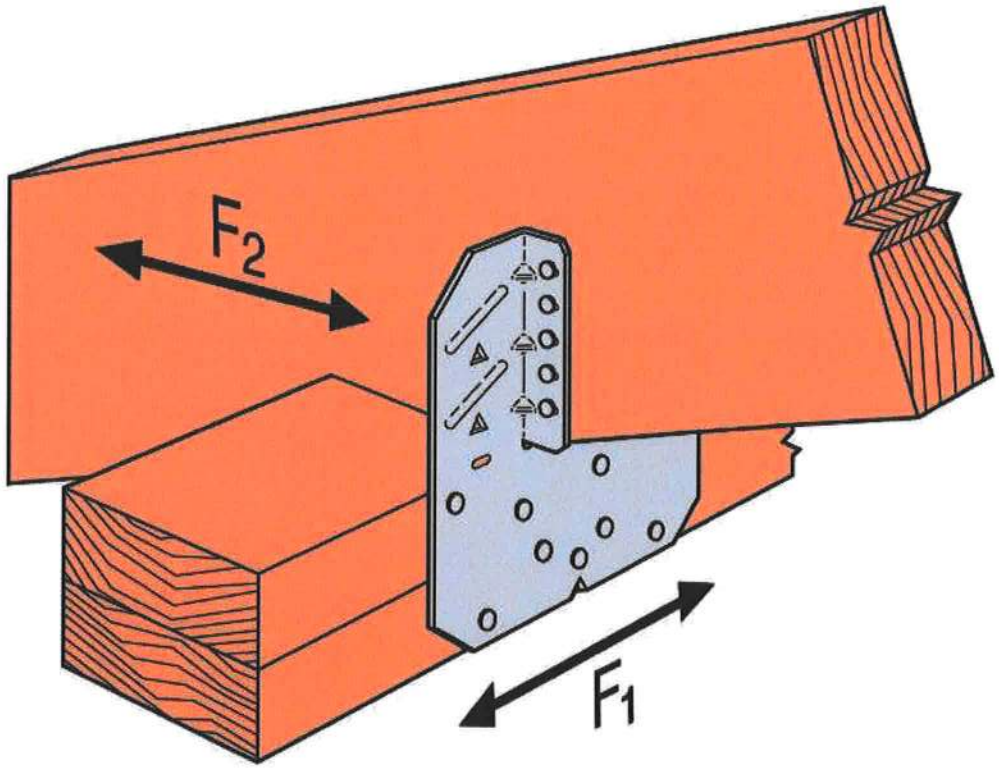

H10A Installation

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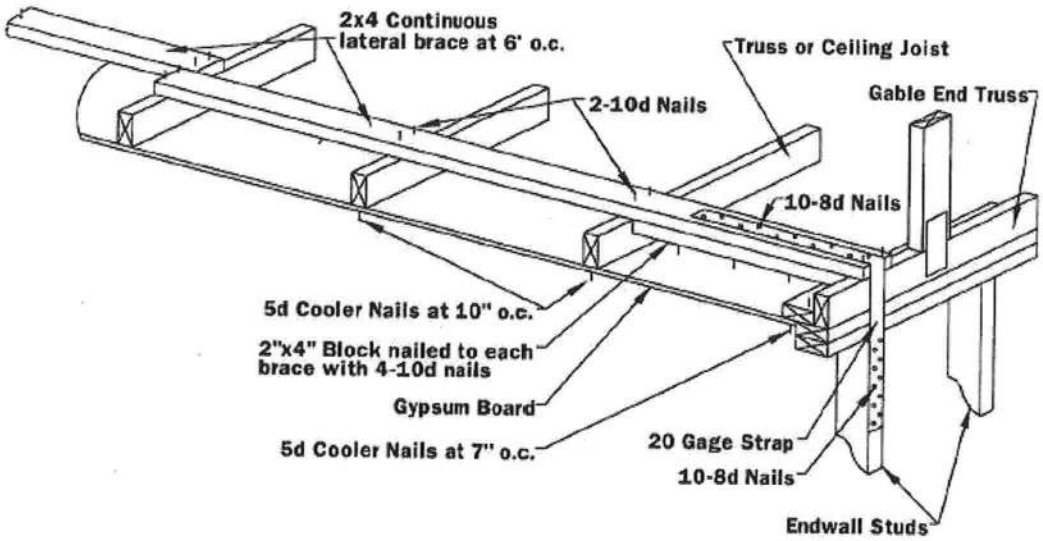
BONANZA HOME - JEANLEA PLACE COLUMBIA COUNTY FL

Figure 3.7a Ceiling Bracing Gable Endwall



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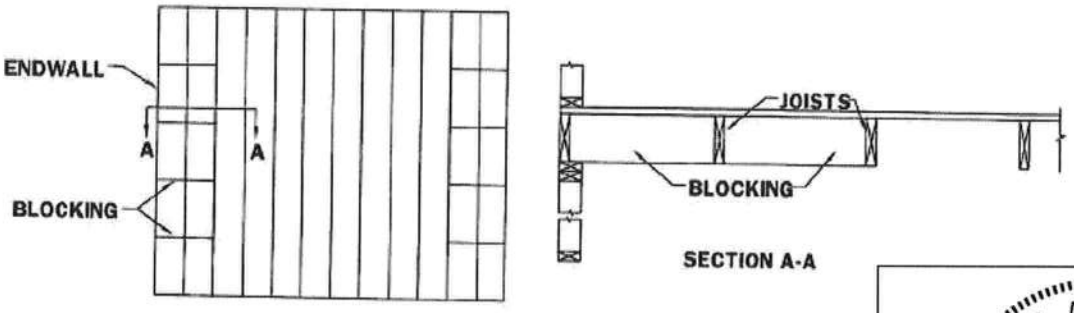

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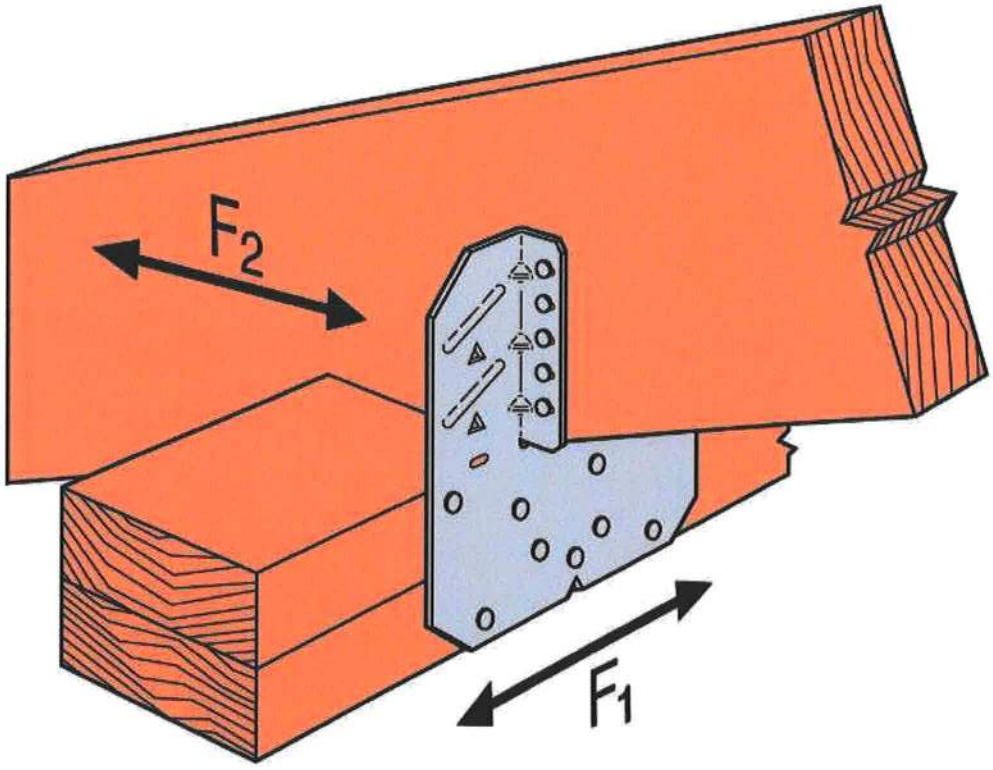

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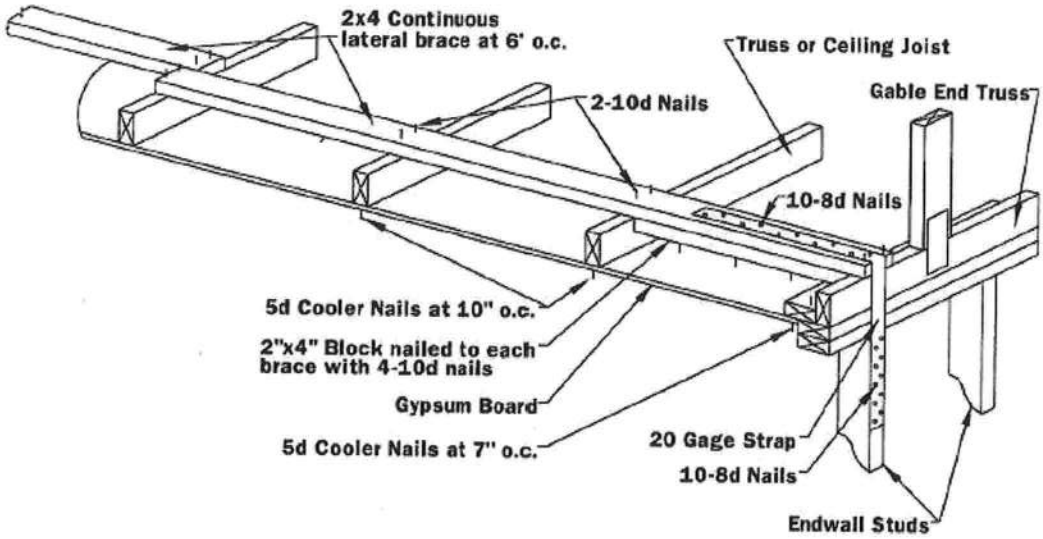
Figure 3.7a Ceiling Bracing Gable Endwall



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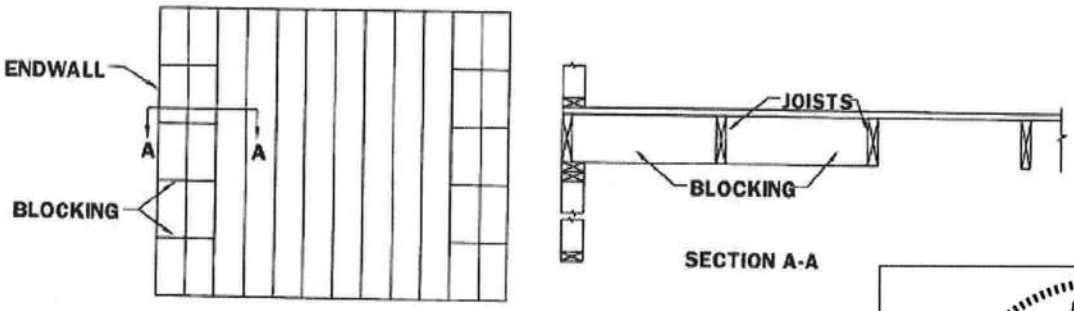

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Total Panel Shear Capacity	**Plf**	**209.1**

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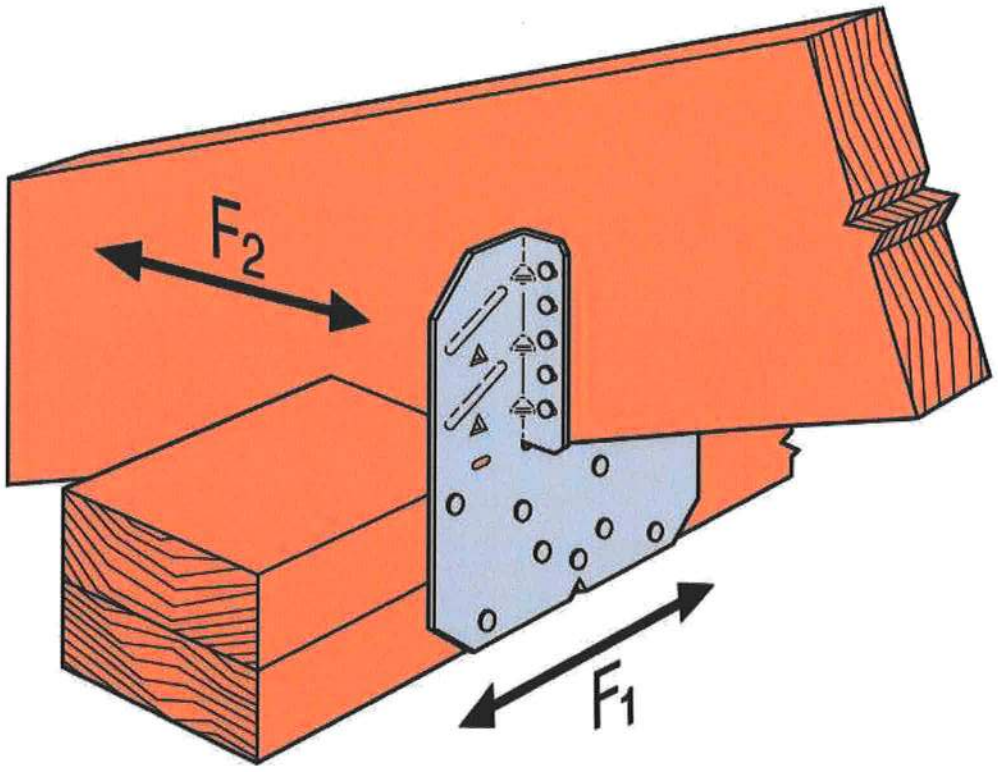

H10A Installation

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Figure 3.7a Ceiling Bracing Gable Endwall

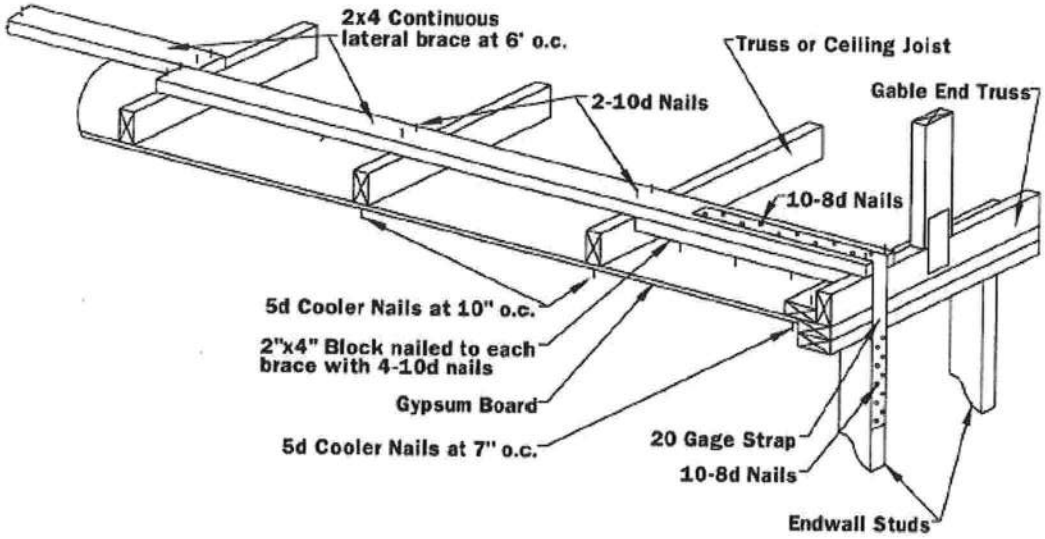
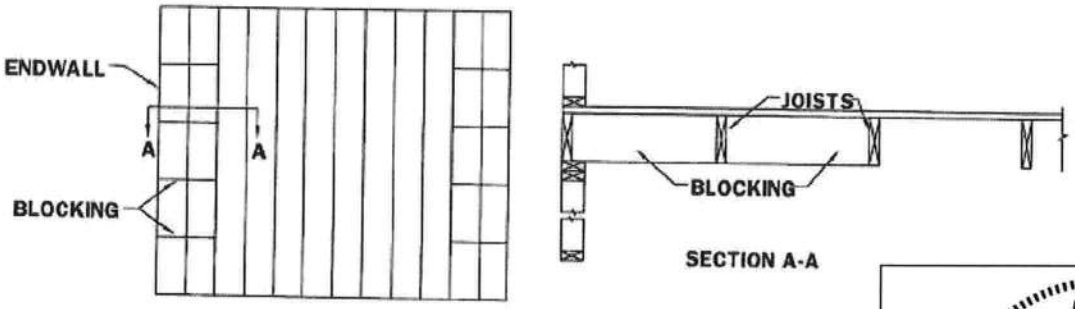


Figure 3.7b Floor Bracing Endwall



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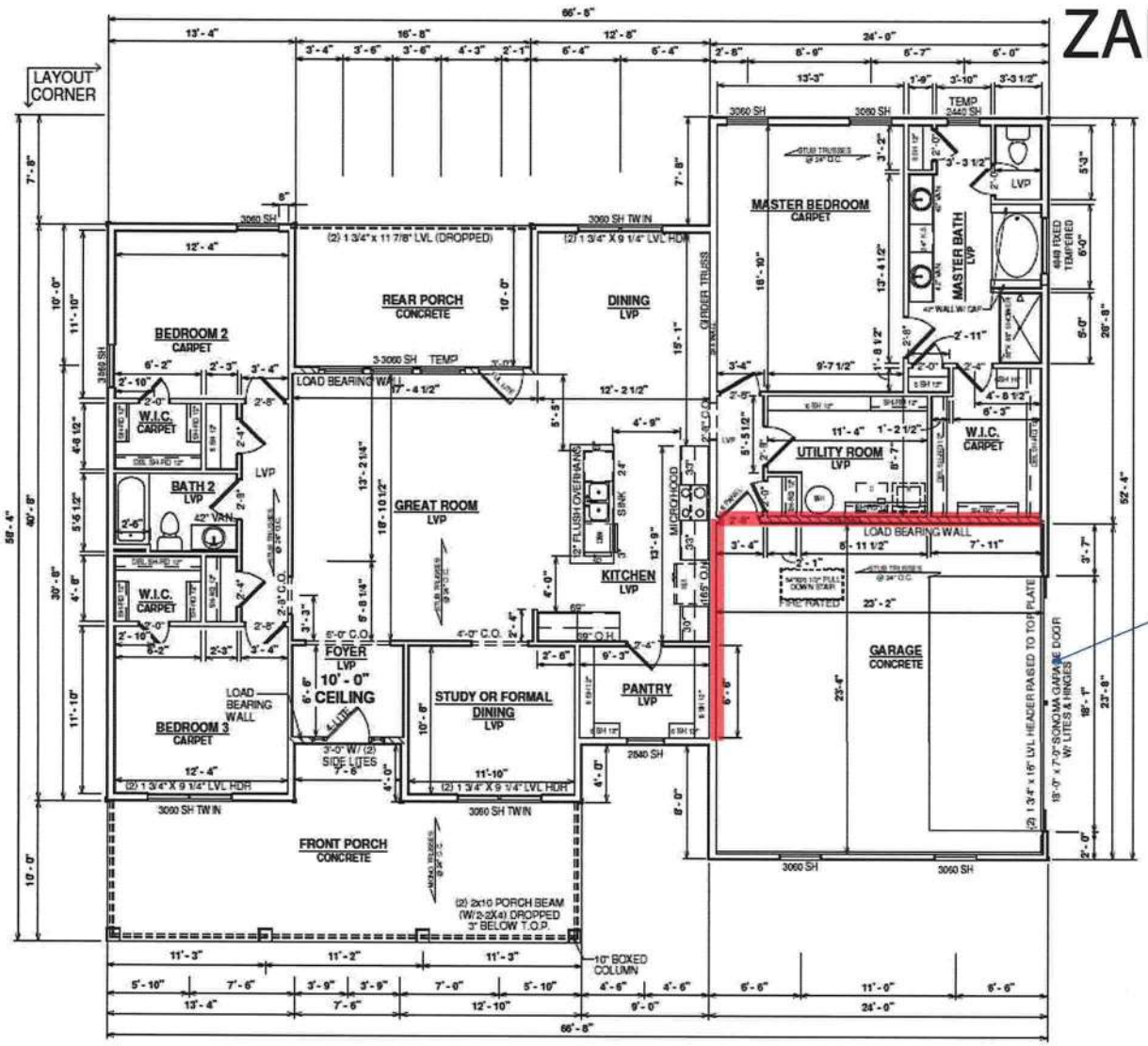

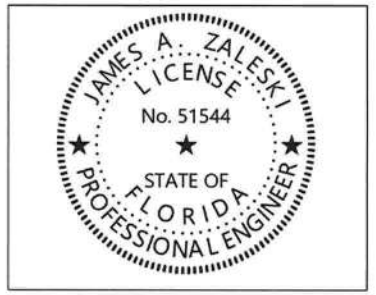

Sheath Exterior 100 %

Indicates Interior Shear Wall

See Portal Wall Detail for Garage

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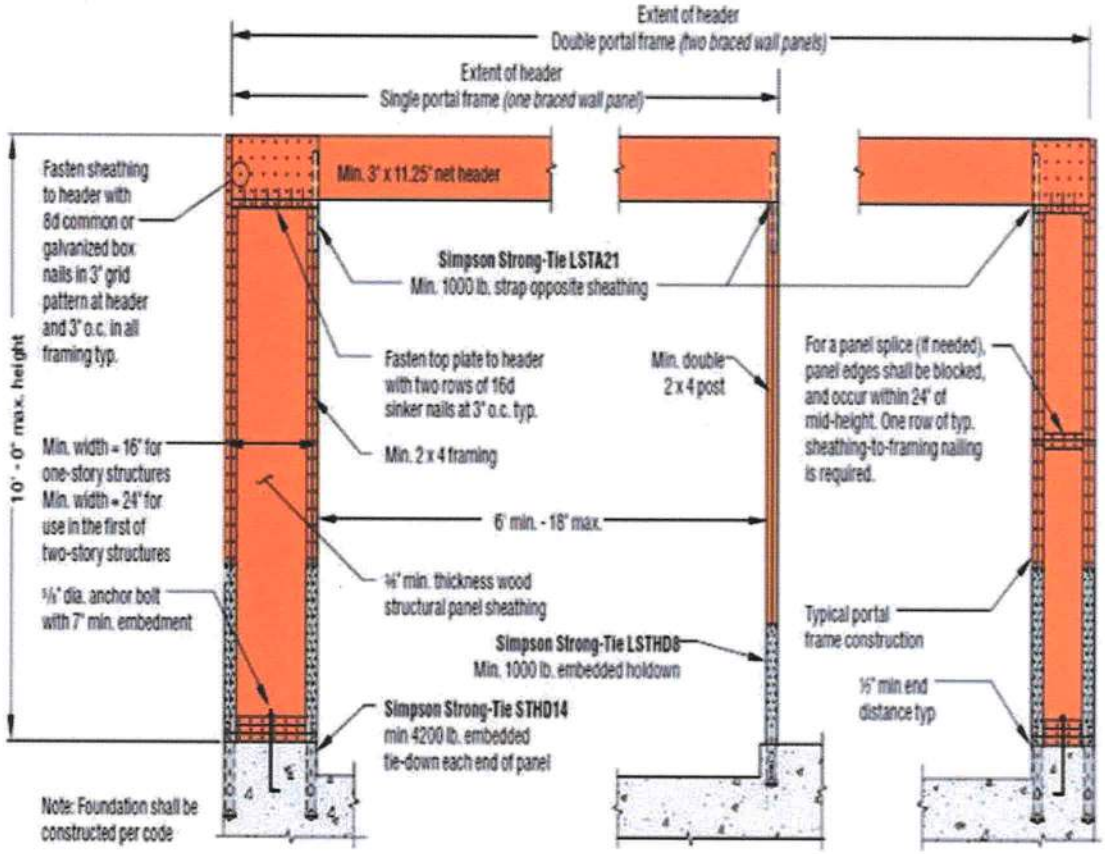
For vaulted ceilings, ballon framing required.

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.



Method PFH: Portal Frame with Holdowns

Use Portal Wall Framing and Strapping at Garage opening

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BONANZA HOME - JEANLEA PLACE COLUMBIA COUNTY FL

MecaWind v2353

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

Calculations Prepared by:
Date: Oct 02, 2020

Location: Jeanlea Place Columbia County Fl

Description:
Bonanza Home

File Location :

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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

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		: Gabled	=	
W	: Width Perp to Ridge = 58.330 ft	L	: Length Along Ridge	= 66.670 ft	
EHt	: Eave Height = 9.050 ft	RE	: Roof Entry Method	= Slope	
Slope	: Slope of Roof = 8.0 :12	OH	: Specify Roof to Wall intersections and Overhangs= Overhang		
Parapet	: Type of Parapet = None	Theta	: Roof Slope	= 33.69 Deg	
Par	: Is there a Parapet = False	OH_ALL	: Sofit	= 2.500 ft	
OH_ALL	: Sofit = 2.500 ft	OH_ALL	: Sofit	= 2.500 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 = 2.500 ft

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

EHt = Eave Height = 9.050 ft
RHt = Ridge Height = 30.160 ft
h = Mean Roof Height: 0.5*(EHt+RHt) = 19.605 ft
Zh = Mean Roof Height for Kh: h + Base_Dist = 19.605 ft
Kh = Since 15 ft [4.572 m] < Zh < Zg --> 2.01 * (Zh/zg)^(2/Alpha) = 0.620
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 = 5455.03 sq ft
LF = Load Factor based upon ASD Design = 0.60
qh = (0.00256 * Kh * Kzt * Kd * V^2) * LF = 11.66 psf
qin = For Negative Internal Pressure of Enclosed Building use qh*LF = 11.66 psf
qip = For Positive Internal Pressure of Enclosed Building use qh*LF = 11.66 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 = 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 = 0.889
G2 = 0.925*((1+1.7*lzm*3.4*Q)/(1+1.7*3.4*lzm)) = 0.860
Gust Factor Used in Analysis
G = Lessor Of G1 Or G2 = 0.850

MWFRS Wind Normal to Ridge (Ref Fig 27.4-1)

h = Mean Roof Height Of Building = 19.605 ft
RHt = Ridge Height Of Roof = 30.160 ft
B = Horizontal Dimension Of Building Normal To Wind Direction = 66.670 ft
L = Horizontal Dimension Of building Parallel To Wind Direction = 58.330 ft
L/B = Ratio Of L/B used For Cp determination = 0.875
h/L = Ratio Of h/L used For Cp determination = 0.336
Slope = Slope of Roof = 33.69 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) = 0.34, -0.1
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) = 0.34, -0.1
OH_Top_-Y = Overhang Coefficient Top Windward Edge = 0.34, -0.1
Roof_LW = Roof Coefficient (Leeward) = -0.6, -0.6
Roof_WW = Roof Coefficient (Windward) = 0.34, -0.1
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 ft	Kz	Kzt	qz psf	GCPi	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
9.05	0.575	1.000	10.81	0.18	5.25	-7.06	-9.04	12.30	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
9.05	0.575	1.000	10.81	-0.18	9.45	-2.86	-4.84	12.30	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

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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	-5.95	-5.95	-5.95	-5.95
OH_Top_+X-Y	N/A	N/A	0.340	-0.100	0.000	3.37	3.37	-0.99	-0.99
OH_Top_+Y	N/A	N/A	-0.600	-0.600	0.180	-3.85	-8.05	-3.85	-8.05
OH_Top_-X+Y	N/A	N/A	-0.600	-0.600	0.000	-5.95	-5.95	-5.95	-5.95
OH_Top_-X-Y	N/A	N/A	0.340	-0.100	0.000	3.37	3.37	-0.99	-0.99
OH_Top_-Y	N/A	N/A	0.340	-0.100	0.180	5.47	1.27	1.11	-3.09
Roof_LW	N/A	N/A	-0.600	-0.600	0.180	-3.85	-8.05	-3.85	-8.05
Roof_WW	N/A	N/A	0.340	-0.100	0.180	5.47	1.27	1.11	-3.09
Sofit_-Y	N/A	N/A	0.800	0.800	0.180	10.03	5.83	10.03	5.83

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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	= 19.605 ft
RHt	= Ridge Height Of Roof	= 30.160 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 58.330 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 66.670 ft
L/B	= Ratio Of L/B used For Cp determination	= 1.143
h/L	= Ratio Of h/L used For Cp determination	= 0.294
Slope	= Slope of Roof	= 33.69 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 2.500 ft)	= -0.18, -0.9
OH_Top_10	= Overhang Top Coeff (>2h) (>69.170 ft)	= -0.18, -0.3
OH_Top_2	= Overhang Top Coeff (0 to h/2) (0.000 ft to 2.500 ft)	= -0.18, -0.9
OH_Top_3	= Overhang Top Coeff (0 to h) (2.500 ft to 19.605 ft)	= -0.18, -0.9
OH_Top_4	= Overhang Top Coeff (0 to h) (2.500 ft to 19.605 ft)	= -0.18, -0.9
OH_Top_5	= Overhang Top Coeff (h to 2h) (19.605 ft to 39.210 ft)	= -0.18, -0.5
OH_Top_6	= Overhang Top Coeff (h to 2h) (19.605 ft to 39.210 ft)	= -0.18, -0.5
OH_Top_7	= Overhang Top Coeff (>2h) (>39.210 ft)	= -0.18, -0.3
OH_Top_8	= Overhang Top Coeff (>2h) (>39.210 ft)	= -0.18, -0.3
OH_Top_9	= Overhang Top Coeff (>2h) (>69.170 ft)	= -0.18, -0.3
Roof_1	= Roof Coeff (0 to h) (2.500 ft to 19.605 ft)	= -0.18, -0.9
Roof_2	= Roof Coeff (h to 2h) (19.605 ft to 39.210 ft)	= -0.18, -0.5
Roof_3	= Roof Coeff (>2h) (>39.210 ft)	= -0.18, -0.3
Cp_WW	= Windward Wall Coefficient (All L/B Values)	= 0.80
Cp_LW	= Leward Wall Coefficient Using L/B	= -0.47
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 ft	Kz	Kzt	qz psf	GCPi	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
30.16	0.702	1.000	13.19	0.18	6.87	-6.77	-9.04	13.64	9.60
17.02	0.596	1.000	11.20	0.18	5.52	-6.77	-9.04	12.29	9.60
9.05	0.575	1.000	10.81	0.18	5.25	-6.77	-9.04	12.02	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
30.16	0.702	1.000	13.19	-0.18	11.07	-2.57	-4.84	13.64	9.60
17.02	0.596	1.000	11.20	-0.18	9.72	-2.57	-4.84	12.29	9.60
9.05	0.575	1.000	10.81	-0.18	9.45	-2.57	-4.84	12.02	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	7.93	7.93	7.93	7.93
OH_Top_1 (-X+Y)	0.000	2.500	-0.180	-0.900	0.000	-1.78	-1.78	-8.92	-8.92
OH_Top_10 (+X-Y)	69.170	71.670	-0.180	-0.300	0.000	-1.78	-1.78	-2.97	-2.97
OH_Top_2 (-X-Y)	0.000	2.500	-0.180	-0.900	0.000	-1.78	-1.78	-8.92	-8.92
OH_Top_3 (-Y)	2.500	19.605	-0.180	-0.900	0.180	0.31	-3.88	-6.82	-11.02
OH_Top_4 (+Y)	2.500	19.605	-0.180	-0.900	0.180	0.31	-3.88	-6.82	-11.02
OH_Top_5 (-Y)	19.605	39.210	-0.180	-0.500	0.180	0.31	-3.88	-2.86	-7.06
OH_Top_6 (+Y)	19.605	39.210	-0.180	-0.500	0.180	0.31	-3.88	-2.86	-7.06
OH_Top_7 (-Y)	39.210	69.170	-0.180	-0.300	0.180	0.31	-3.88	-0.87	-5.07
OH_Top_8 (+Y)	39.210	69.170	-0.180	-0.300	0.180	0.31	-3.88	-0.87	-5.07
OH_Top_9 (+X+Y)	69.170	71.670	-0.180	-0.300	0.000	-1.78	-1.78	-2.97	-2.97
Roof_1 (+Y)	2.500	19.605	-0.180	-0.900	0.180	0.31	-3.88	-6.82	-11.02
Roof_2 (+Y)	19.605	39.210	-0.180	-0.500	0.180	0.31	-3.88	-2.86	-7.06
Roof_3 (+Y)	39.210	69.170	-0.180	-0.300	0.180	0.31	-3.88	-0.87	-5.07

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

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Components and Cladding (C&C) Calculations per Ch 30 Part 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)	= 58.330 ft
a1	= Min(0.1 * LHD, 0.4 * h)	= 5.833 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 5.833 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.336

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

Description	Zone ft	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:

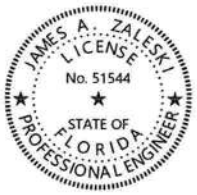
EHt	= Eave Height	= 9.050 ft
RHt	= Ridge Height	= 30.160 ft
h	= Mean Roof Height: 0.5*(EHt+RHt)	= 19.605 ft
Zh	= Shall not be less than 30 ft in Exp B [Table 30.3-1 Note 1]	= 30.000 ft
Kh	= Since 15 ft [4.572 m] < Zh < Zg --> 2.01 * (Zh/zg)^(2/Alpha)	= 0.701
Kzt	= Topographic Factor is 1 since no Topographic 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

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.



JAMES ZALESKI Digitally signed by JAMES ZALESKI Date: 2020.10.02 07:54:48 -04'00'

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)	= 58.330 ft
a1	= Min(0.1 * LHD, 0.4 * h)	= 5.833 ft
a	= Max(a1, 0.04 * LHD, 3 ft [0.9 m])	= 5.833 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.336

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.