

**W.B. Howland Truss Co.**  
610 11th St. SW  
Live Oak, FL 32064  
(386) 362-1235  
(386) 362-7124 (Fax)  
howlandtruss@gmail.com

ROOF PITCH: 6/12  
 OVERHANG: 18" \*\*VERIFY\*\*  
 CEILING: 8' w/ Vault  
 EXT. WALLS: 4"  
 LOADING: 40psf  
 WIND LOAD: 130mph  
 EXPOSURE: C  
 DATE: 5/8/24





COA #0 278  
Florida Certificate of Product Approval #FL1999  
05/23/2024

Alpine, an ITW Company  
155 Harlem Ave  
North Building, 4th Floor  
Glenview, IL 60025  
Phone: (800)755-6001  
www.alpineitw.com

This item has been digitally signed by Douglas Fleming 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.

Site Information:	Page 1:
Customer: W. B. Howland Company, Inc.	Job Number: 24-1173
Job Description: Hollingsworth	
Address: FL	

Job Engineering Criteria:	
Design Code: FBC 8th Ed. 2023 Res. HVHZ	IntelliVIEW Version: 23.02.04 JRef #: 1Y022150005
Wind Standard: ASCE 7-22      Wind Speed (mph): 130	Design Loading (psf): 40.00
Building Type: Closed	

This package contains general notes pages, 6 truss drawing(s) and 1 detail(s).

Item	Drawing Number	Truss
1	143.24.1648.11310	A01
3	143.24.1654.17193	B01
5	143.24.1648.31577	B03
7	160TL	

Item	Drawing Number	Truss
2	143.24.1648.13350	A02
4	143.24.1648.30220	B02
6	143.24.1648.33547	B04





## **General Notes**

### **Truss Design Engineer Scope of Work, Design Assumptions and Design Responsibilities:**

The design responsibilities assumed in the preparation of these design drawings are those specified in ANSI/TPI 1, Chapter 2; and the National Design Standard for Metal Plate Connected Wood Truss Construction, by the Truss Plate Institute. The truss component designs conform to the applicable provisions of ANSI/TPI 1 and NDS, the National Design Specification for Wood Construction by AWC. The truss component designs are based on the specified loading and dimension information furnished by others to the Truss Design Engineer. The Truss Design Engineer has no duty to independently verify the accuracy or completeness of the information provided by others and may rely on that information without liability. The responsibility for verification of that information remains with others neither employed nor controlled by the Truss Design Engineer. The Truss Design Engineer's seal and signature on the attached drawings, or cover page listing these drawings, indicates acceptance of professional engineering responsibility solely for the truss component designs and not for the technical information furnished by others which technical information and consequences thereof remain their sole responsibility.

The suitability and use of these drawings for any particular structure is the responsibility of the Building Designer in accordance with ANSI/TPI 1 Chapter 2. The Building Designer is responsible for determining that the dimensions and loads for each truss component match those required by the plans and by the actual use of the individual component, and for ascertaining that the loads shown on the drawings meet or exceed applicable building code requirements and any additional factors required in the particular application. Truss components using metal connector plates with integral teeth shall not be placed in environments that will cause the moisture content of the wood in which plates are embedded to exceed 19% and/or cause corrosion of connector plates and other metal fasteners.

The Truss Design Engineer shall not be responsible for items beyond the specific scope of the agreed contracted work set forth herein, including but not limited to: verifying the dimensions of the truss component, calculation of any of the truss component design loads, inspection of the truss components before or after installation, the design of temporary or permanent bracing and their attachment required in the roof and/or floor systems, the design of diaphragms or shear walls, the design of load transfer connections to and from diaphragms and shear walls, the design of load transfer to the foundation, the design of connections for truss components to their bearing supports, the design of the bearing supports, installation of the truss components, observation of the truss component installation process, review of truss assembly procedures, sequencing of the truss component installation, construction means and methods, site and/or worker safety in the installation of the truss components and/or its connections.

This document may be a high-quality facsimile of the original engineering document which is a digitally signed electronic file with third party authentication. A wet or embossed seal copy of this engineering document is available upon request.

### **Temporary Lateral Restraint and Bracing:**

Temporary lateral restraint and diagonal bracing shall be installed according to the provisions of BCSI chapters B1, B2, B7 and/or B10 (Building Component Safety Information, by TPI and SBCE), or as specified by the Building Designer or other Registered Design Professional. The required locations for lateral restraint and/or bracing depicted on these drawings are only for the permanent lateral support of the truss members to reduce buckling lengths, and do not apply to and may not be relied upon for the temporary stability of the truss components during their installation.

### **Permanent Lateral Restraint and Bracing:**

The required locations for lateral restraint or bracing depicted on these drawings are for the permanent lateral support of the truss members to reduce buckling lengths. Permanent lateral support shall be installed according to the provisions of BCSI chapters B3, B7 and/or B10, or as specified by the Building Designer or other Registered Design Professional. These drawings do not depict or specify installation/erection bracing, wind bracing, portal bracing or similar building stability bracing which are parts of the overall building design to be specified, designed, and detailed by the Building Designer.

### **Connector Plate Information:**

Alpine connector plates are made of ASTM A653 or ASTM A1063 galvanized steel with the following designations, gauges and grades: W=Wave, 20ga, grade 40; H=High Strength, 20ga, grade 60; S=Super Strength, 18ga, grade 60. Information on model code compliance is contained in the ICC Evaluation Service report ESR-1118, available on-line at [www.icc-es.org](http://www.icc-es.org).

### **Fire Retardant Treated Lumber:**

Fire retardant treated lumber must be properly re-dried and maintained below 19% or less moisture level through all stages of construction and usage. Fire retardant treated lumber may be more brittle than untreated lumber. Special handling care must be taken to prevent breakage during all handling activities.





## **General Notes** (continued)

### **Key to Terms:**

Information provided on drawings reflects a summary of the pertinent information required for the truss design. Detailed information on load cases, reactions, member lengths, forces and members requiring permanent lateral support may be found in calculation sheets available upon written request.

BCDL = Bottom Chord standard design Dead Load in pounds per square foot.  
BCLL = Bottom Chord standard design Live Load in pounds per square foot.  
C = Coated lumber.  
C-AT = AtTEK coated lumber.  
C-FX = FX Lumber Guard coated lumber.  
C -TW = TechWood 4400 coated lumber.  
CL = Certified lumber.  
Des Ld = total of TCDL, TCDL, BCLL and BCDL Design Load in pounds per square foot.  
FRT = Fire Retardant Treated lumber.  
FRT-DB = D-Blaze Fire Retardant Treated lumber.  
FRT-DC = Dricon Fire Retardant Treated lumber.  
FRT-FP = FirePRO Fire Retardant Treated lumber.  
FRT-FL = FlamePRO Fire Retardant Treated lumber.  
FRT-FT = FlameTech Fire Retardant Treated lumber.  
FRT-PG = PYRO-GUARD Fire Retardant Treated lumber.  
FRT-PR = ProWood Fire Retardant Treated lumber.  
g = green lumber.  
HORZ(LL) = maximum Horizontal panel point deflection due to Live Load, in inches.  
HORZ(TL) = maximum Horizontal panel point long term deflection in inches, due to Total Load, including creep adjustment.  
HPL = additional Horizontal Load added to a truss Piece in pounds per linear foot or pounds.  
Ic = Incised lumber.  
FJ = Finger Jointed lumber.  
L/# = user specified divisor for limiting span/deflection ratio for evaluation of actual L/defl value.  
L/defl = ratio of Length between bearings, in inches, divided by the vertical Deflection due to creep, in inches, at the referenced panel point. Reported as 999 if greater than or equal to 999.  
Loc = Location, starting location of left end of bearing or panel point (joint) location of deflection.  
Max BC CSI = Maximum bending and axial Combined Stress Index for Bottom Chords for all load cases.  
Max TC CSI = Maximum bending and axial Combined Stress Index for Top Chords for all load cases.  
Max Web CSI = Maximum bending and axial Combined Stress Index for Webs for all load cases.  
NCBCLL = Non-Concurrent Bottom Chord design Live Load in pounds per square foot.  
PL = additional Load applied at a user specified angle on a truss Piece in pounds per linear foot or pounds.  
PLB = additional vertical load added to a Bottom chord Piece of a truss in pounds per linear foot or pounds.  
PLT = additional vertical load added to a Top chord Piece of a truss in pounds per linear foot or pounds.  
PP = Panel Point.  
R = maximum downward design Reaction, in pounds, from all specified gravity load cases, at the indicated location (Loc).  
-R = maximum upward design Reaction, in pounds, from all specified gravity load cases, at the identified location (Loc).  
Rh = maximum horizontal design Reaction in either direction, in pounds, from all specified gravity load cases, at the indicated location (Loc).  
RL = maximum horizontal design Reaction in either direction, in pounds, from all specified non-gravity (wind or seismic) load cases, at the indicated location (Loc).  
Rw = maximum downward design Reaction, in pounds, from all specified non-gravity (wind or seismic) load cases, at the identified location (Loc).  
TCDL = Top Chord standard design Dead Load in pounds per square foot.  
TCLL = Top Chord standard design Live Load in pounds per square foot.  
U = maximum Upward design reaction, in pounds, from all specified non-gravity (wind or seismic) load cases, at the indicated location (Loc).  
VERT(CL) = maximum Vertical panel point deflection in inches due to Live Load and Creep Component of Dead Load in inches.  
VERT(CTL) = maximum Vertical panel point deflection ratios due to Live Load and Creep Component of Dead Load, and maximum long term Vertical panel point deflection in inches due to Total load, including creep adjustment.  
VERT(LL) = maximum Vertical panel point deflection in inches due to Live Load.  
VERT(TL) = maximum Vertical panel point long term deflection in inches due to Total load, including creep adjustment.  
W = Width of non-hanger bearing, in inches.





## **General Notes** (continued)

Refer to ASCE-7 for Wind and Seismic abbreviations.

Uppercase Acronyms not explained above are as defined in TPI 1.

### **References:**

1. AWC: American Wood Council; 222 Catoctin Circle SE, Suite 201; Leesburg, VA 20175; [www.awc.org](http://www.awc.org).
2. ICC: International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
3. Alpine, a division of ITW Building Components Group Inc.: 155 Harlem Ave, North Building, 4th Floor, Glenview, IL 60025; [www.alpineitw.com](http://www.alpineitw.com).
4. TPI: Truss Plate Institute, 2670 Crain Highway, Suite 203, Waldorf, MD 20601; [www.tpinst.org](http://www.tpinst.org).
5. SBCA: Wood Truss Council of America, 6300 Enterprise Lane, Madison, WI 53719; [www.sbcacomponents.com](http://www.sbcacomponents.com)

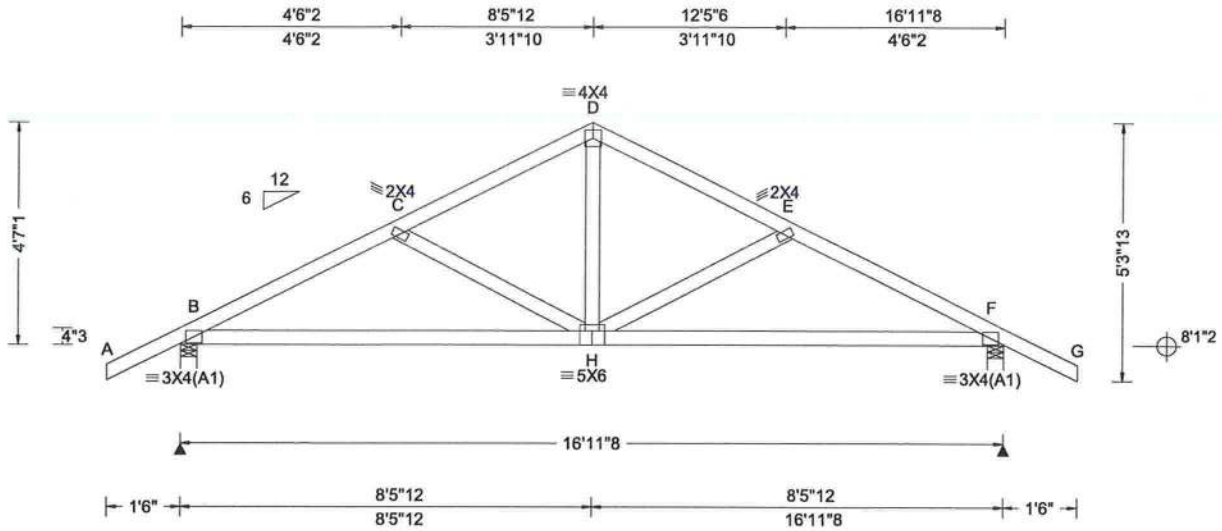








SEQN: 763211 FROM: CDM	COMN Ply: 1 Qty: 3	Job Number: 24-1173 Hollingsworth Truss Label: A02	Cust: R 215 JRef: 1Y022150005 T1 DrwNo: 143.24.1648.13350 SSB / DF 05/22/2024
---------------------------	--------------------------	--	---



Loading Criteria (psf)	Wind Criteria	Snow Criteria (Pg,Pf in PSF)	Defl/CSI Criteria	Maximum Reactions (lbs)
TCLL: 20.00 TCDL: 10.00 BCLL: 0.00 BCDL: 10.00 Des Ld: 40.00 NCBCLL: 10.00 Soffit: 2.00 Load Duration: 1.25 Spacing: 24.0 "	Wind Std: ASCE 7-22 Speed: 130 mph Enclosure: Closed Risk Category: II EXP: C Kzt: NA Mean Height: 15.00 ft TCDL: 5.0 psf BCDL: 5.0 psf MWFRS Parallel Dist: 0 to h/2 C&C Dist a: 3.00 ft Loc. from endwall: Any GCpi: 0.18 Wind Duration: 1.60	Pg: NA Ct: NA CAT: NA Pf: NA Ce: NA Lu: NA Cs: NA Snow Duration: NA Building Code: FBC 8th Ed. 2023 Res. HVHZ TPI Std: 2014 Rep Fac: Yes FT/RT:20(0)/10(0) Plate Type(s): WAVE	PP Deflection in loc L/defl L/# VERT(LL): 0.028 H 999 240 VERT(CL): 0.056 H 999 180 HORZ(LL): 0.012 F - - HORZ(TL): 0.024 F - - Creep Factor: 2.0 Max TC CSI: 0.191 Max BC CSI: 0.638 Max Web CSI: 0.185 VIEW Ver: 23.02.04.0123.14	Gravity Non-Gravity Loc R+ /R- /Rh /Rw /U /RL B 799 /- /- /489 /145 /147 F 799 /- /- /489 /145 /- Wind reactions based on MWFRS B Brg Wid = 4.0 Min Req = 1.5 (Truss) F Brg Wid = 4.0 Min Req = 1.5 (Truss) Bearings B & F are a rigid surface. Members not listed have forces less than 375# Maximum Top Chord Forces Per Ply (lbs) Chords Tens.Comp. Chords Tens. Comp. B - C 472 -1095 D - E 365 -829 C - D 365 -829 E - F 472 -1095

#### Lumber

Top chord: 2x4 SP #2;  
Bot chord: 2x4 SP #2;  
Webs: 2x4 SP #3;

#### Wind

Wind loads based on MWFRS with additional C&C member design.

Wind loading based on both gable and hip roof types.

#### Additional Notes

The overall height of this truss excluding overhang is 4'-7-1.

#### Maximum Bot Chord Forces Per Ply (lbs)

Chords	Tens.Comp.	Chords	Tens. Comp.
B - H	932 -301	H - F	932 -308

#### Maximum Web Forces Per Ply (lbs)

Webs	Tens.Comp.
D - H	485 -127



COA #0248  
Florida Certificate of Product Approval #FL1999  
05/23/2024

**\*\*WARNING\*\*** READ AND FOLLOW ALL NOTES ON THIS DRAWING!  
**\*\*IMPORTANT\*\*** FURNISH THIS DRAWING TO ALL CONTRACTORS INCLUDING THE INSTALLERS  
Trusses require extreme care in fabricating, handling, shipping, installing and bracing. Refer to and follow the latest edition of BCSI (Building Component Safety Information, by TPI and SBCE) for safety practices prior to performing these functions. Installers shall provide temporary bracing per BCSI. Unless noted otherwise, top chord shall have properly attached structural sheathing and bottom chord shall have a properly attached rigid ceiling. Locations shown for permanent lateral restraint of webs shall have continuous lateral restraint (CLR), installed with diagonal bracing installed on the CLR per BCSI sections B3, B7, or B10, as applicable. Apply plates to each face of truss and position as shown above and on the Joint Details, unless noted otherwise. Refer to drawings 160A-Z for standard plate positions. Refer to job's General Notes page for additional information.  
Alpine, a division of ITW Building Components Group Inc. shall not be responsible for any deviation from this drawing, any failure to build the truss in conformance with ANSI/TPI 1, or for handling, shipping, installation and bracing of trusses. A seal on this drawing or cover page listing this drawing, indicates acceptance of professional engineering responsibility solely for the design shown. The suitability and use of this drawing for any structure is the responsibility of the Building Designer per ANSI/TPI 1 Sec.2.  
For more information see these web sites: Alpine: [alpineitw.com](http://alpineitw.com); TPI: [tpinst.org](http://tpinst.org); SBCE: [sbcecomponents.com](http://sbcecomponents.com); ICC: [iccsafe.org](http://iccsafe.org); AWC: [awc.org](http://awc.org)

**ALPINE**  
AN ITW COMPANY  
155 Harlem Ave  
North Building, 4th Floor  
Glenview, IL 60025

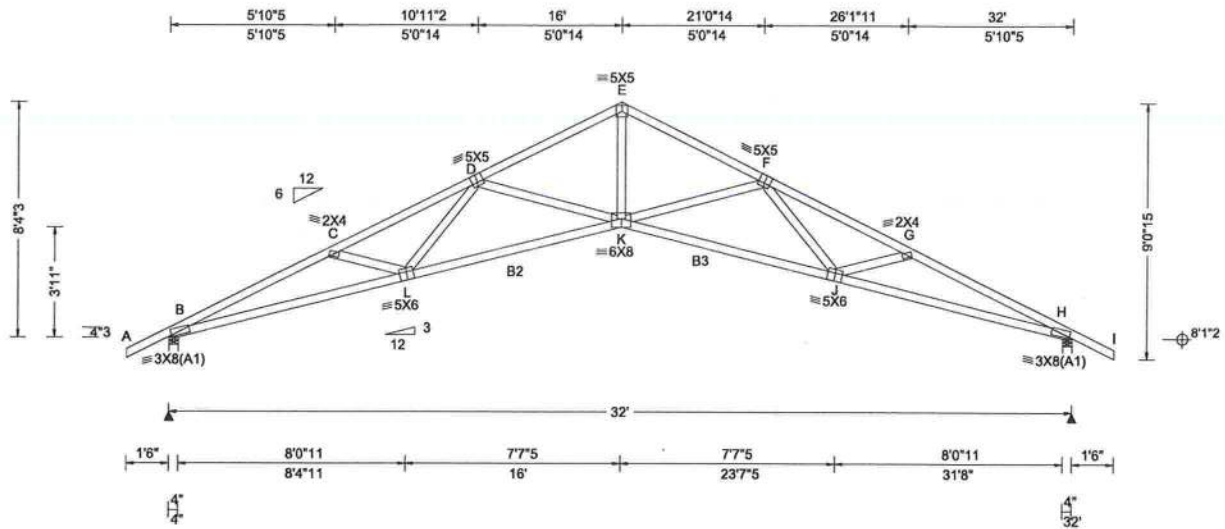








SEQN: 763208 FROM: CDM	COMN Ply: 1 Qty: 7	Job Number: 24-1173 Hollingsworth Truss Label: B02	Cust: R215 JRef: 1Y022150005 T5 DrwNo: 143.24.1648.30220 SSB / DF 05/22/2024
---------------------------	--------------------------	--	--



Loading Criteria (psf)	Wind Criteria	Snow Criteria (Pg,Pf in PSF)	Defl/CSI Criteria	Maximum Reactions (lbs)
TCLL: 20.00 TCDL: 10.00 BCLL: 0.00 BCDL: 10.00 Des Ld: 40.00 NCBCLL: 10.00 Soffit: 2.00 Load Duration: 1.25 Spacing: 24.0 "	Wind Std: ASCE 7-22 Speed: 130 mph Enclosure: Closed Risk Category: II EXP: C Kzt: NA Mean Height: 15.00 ft TCDL: 5.0 psf BCDL: 5.0 psf MWFRS Parallel Dist: h/2 to h C&C Dist a: 3.20 ft Loc. from endwall: not in 9.00 ft GCpi: 0.18 Wind Duration: 1.60	Pg: NA Ct: NA CAT: NA Pf: NA Ce: NA Lu: NA Cs: NA Snow Duration: NA  Building Code: FBC 8th Ed. 2023 Res. HVHZ TPI Std: 2014 Rep Fac: Yes FT/RT: 20(0)/10(0) Plate Type(s): WAVE	PP Deflection in loc L/defl L/# VERT(LL): 0.408 K 933 240 VERT(CL): 0.832 K 457 180 HORZ(LL): 0.285 H - - HORZ(TL): 0.582 H - - Creep Factor: 2.0 Max TC CSI: 0.687 Max BC CSI: 0.960 Max Web CSI: 0.858  VIEW Ver: 23.02.04.0123.14	Gravity Non-Gravity Loc R+ / R- / Rh / Rw / U / RL B 1428 - / - / - / 852 / 252 / 245 H 1428 - / - / - / 852 / 252 / - Wind reactions based on MWFRS B Brg Wid = 4.0 Min Req = 1.5 (Truss) H Brg Wid = 4.0 Min Req = 1.5 (Truss) Bearings B & H are a rigid surface. Members not listed have forces less than 375# Maximum Top Chord Forces Per Ply (lbs) Chords Tens.Comp. Chords Tens. Comp. B - C 856 -4351 E - F 559 -2941 C - D 746 -3998 F - G 738 -3998 D - E 551 -2941 G - H 849 -4351

**Lumber**  
Top chord: 2x4 SP #2;  
Bot chord: 2x4 SP M-31; B2,B3 2x4 SP #2;  
Webs: 2x4 SP #3;

**Wind**  
Wind loads based on MWFRS with additional C&C member design.  
Wind loading based on both gable and hip roof types.

**Additional Notes**  
The overall height of this truss excluding overhang is 8-4.3.

Maximum Bot Chord Forces Per Ply (lbs)			
Chords	Tens.Comp.	Chords	Tens. Comp.
B - L	3938 -699	K - J	3400 -484
L - K	3400 -500	J - H	3938 -684

Maximum Web Forces Per Ply (lbs)			
Webs	Tens.Comp.	Webs	Tens. Comp.
L - D	517 -30	E - K	2252 -318
D - K	286 -743	F - J	517 -29
K - F	286 -743		



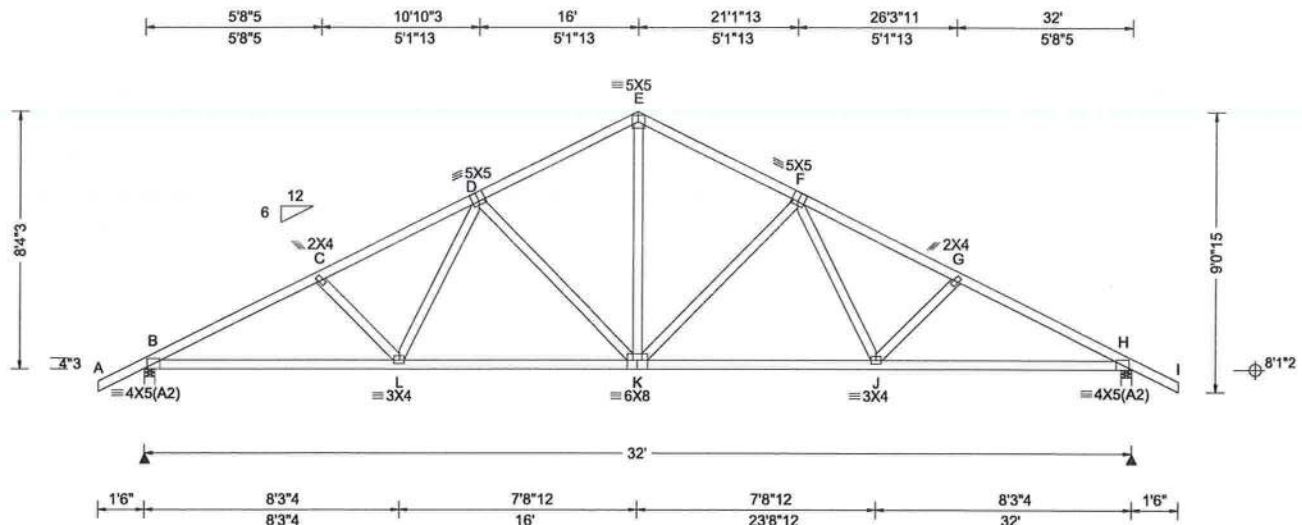
COA #0 278  
Florida Certificate of Product Approval #FL1999  
05/23/2024

**\*\*WARNING\*\*** READ AND FOLLOW ALL NOTES ON THIS DRAWING!  
**\*\*IMPORTANT\*\*** FURNISH THIS DRAWING TO ALL CONTRACTORS INCLUDING THE INSTALLERS  
Trusses require extreme care in fabricating, handling, shipping, installing and bracing. Refer to and follow the latest edition of BCSI (Building Component Safety Information, by TPI and SBCA) for safety practices prior to performing these functions. Installers shall provide temporary bracing per BCSI. Unless noted otherwise, top chord shall have properly attached structural sheathing and bottom chord shall have a properly attached rigid ceiling. Locations shown for permanent lateral restraint of webs shall have continuous lateral restraint (CLR), installed with diagonal bracing installed on the CLR per BCSI sections B3, B7, or B10, as applicable. Apply plates to each face of truss and position as shown above and on the Joint Details, unless noted otherwise. Refer to drawings 160A-Z for standard plate positions. Refer to job's General Notes page for additional information.  
Alpine, a division of ITW Building Components Group Inc. shall not be responsible for any deviation from this drawing, any failure to build the truss in conformance with ANSI/TPI 1, or for handling, shipping, installation and bracing of trusses. A seal on this drawing or cover page listing this drawing, indicates acceptance of professional engineering responsibility solely for the design shown. The suitability and use of this drawing for any structure is the responsibility of the Building Designer per ANSI/TPI 1 Sec.2.  
For more information see these web sites: Alpine: [alpineitw.com](http://alpineitw.com); TPI: [tpinst.org](http://tpinst.org); SBCA: [sbcacomponents.com](http://sbcacomponents.com); ICC: [iccsafe.org](http://iccsafe.org); AWC: [awc.org](http://awc.org)

**ALPINE**  
AN ITW COMPANY  
155 Harlem Ave  
North Building, 4th Floor  
Glenview, IL 60025



SEQN: 763205 FROM: CDM	COMN	Ply: 1 Qty: 10	Job Number: 24-1173 Hollingsworth Truss Label: B03	Cust: R 215 JRef: 1Y022150005 T3 DrwNo: 143.24.1648.31577 SSB / DF 05/22/2024
---------------------------	------	-------------------	--	---



Loading Criteria (psf)	Wind Criteria	Snow Criteria (Pg, Pf in PSF)	Defl/CSI Criteria	▲ Maximum Reactions (lbs)
TCCL: 20.00 TCDL: 10.00 BCCL: 0.00 BCDL: 10.00 Des Ld: 40.00 NCBCLL: 10.00 Soffit: 2.00 Load Duration: 1.25 Spacing: 24.0 "	Wind Std: ASCE 7-22 Speed: 130 mph Enclosure: Closed Risk Category: II EXP: C Kzt: NA Mean Height: 15.00 ft TCDL: 5.0 psf BCDL: 5.0 psf MWFRS Parallel Dist: 0 to h/2 C&C Dist a: 3.20 ft Loc. from endwall: not in 4.50 ft GCpi: 0.18 Wind Duration: 1.60	Pg: NA Ct: NA CAT: NA Pf: NA Ce: NA Lu: NA Cs: NA Snow Duration: NA  Building Code: FBC 8th Ed. 2023 Res. HVHZ TPI Std: 2014 Rep Fac: Yes FT/RT: 20(0)/10(0) Plate Type(s): WAVE	PP Deflection in loc L/defl L/# VERT(LL): 0.134 K 999 240 VERT(CL): 0.257 K 999 180 HORZ(LL): 0.054 H - - HORZ(TL): 0.104 H - - Creep Factor: 2.0 Max TC CSI: 0.367 Max BC CSI: 0.765 Max Web CSI: 0.656  VIEW Ver: 23.02.04.0123.14	Gravity Loc R+ / R- / Rh Non-Gravity / Rw / U / RL B 1501 - / - / 849 / 253 / 245 H 1501 - / - / 849 / 253 / - Wind reactions based on MWFRS B Brg Wid = 4.0 Min Req = 1.8 (Truss) H Brg Wid = 4.0 Min Req = 1.8 (Truss) Bearings B & H are a rigid surface. Members not listed have forces less than 375# Maximum Top Chord Forces Per Ply (lbs) Chords Tens.Comp. Chords Tens. Comp. B - C 527 -2570 E - F 454 -1671 C - D 509 -2347 F - G 509 -2347 D - E 454 -1671 G - H 527 -2570

#### Lumber

Top chord: 2x4 SP #2;  
Bot chord: 2x4 SP #2;  
Webs: 2x4 SP #3;

#### Loading

Truss passed check for 20 psf additional bottom  
chord live load in areas with 42"-high x 24"-wide  
clearance.

#### Wind

Wind loads based on MWFRS with additional C&C  
member design.

Wind loading based on both gable and hip roof types.

#### Additional Notes

The overall height of this truss excluding overhang is  
8-4-3.



COA #0 278  
Florida Certificate of Product Approval #FL1999  
05/23/2024

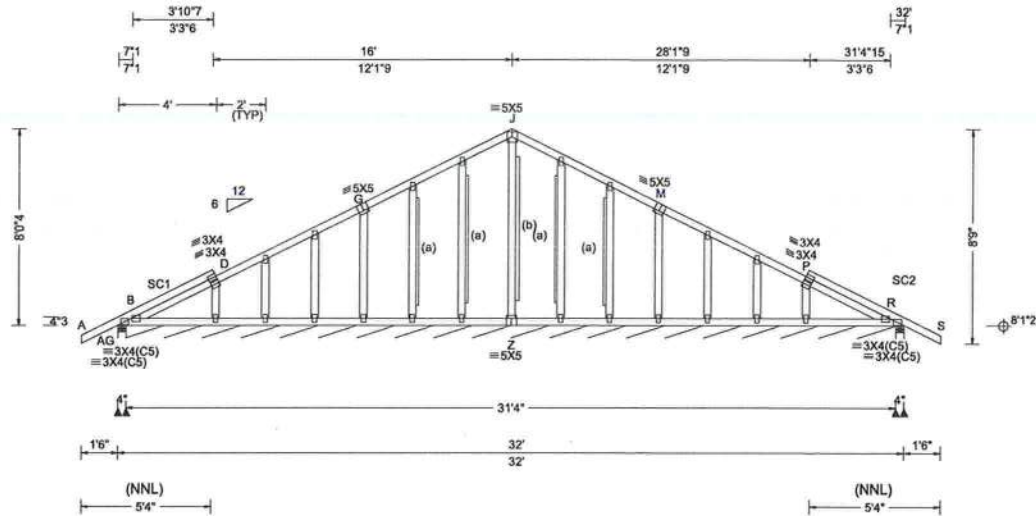
**\*\*WARNING\*\*** READ AND FOLLOW ALL NOTES ON THIS DRAWING!  
**\*\*IMPORTANT\*\*** FURNISH THIS DRAWING TO ALL CONTRACTORS INCLUDING THE INSTALLERS  
Trusses require extreme care in fabricating, handling, shipping, installing and bracing. Refer to and follow the latest edition of BCSI (Building Component Safety Information, by TPI and SBCEA) for safety practices prior to performing these functions. Installers shall provide temporary bracing per BCSI. Unless noted otherwise, top chord shall have properly attached structural sheathing and bottom chord shall have a properly attached rigid ceiling. Locations shown for permanent lateral restraint of webs shall have continuous lateral restraint (CLR), installed with diagonal bracing installed on the CLR per BCSI sections B3, B7, or B10, as applicable. Apply plates to each face of truss and position as shown above and on the Joint Details, unless noted otherwise. Refer to drawings 160A-Z for standard plate positions. Refer to job's General Notes page for additional information.  
Alpine, a division of ITW Building Components Group Inc. shall not be responsible for any deviation from this drawing, any failure to build the truss in conformance with ANSI/TPI 1, or for handling, shipping, installation and bracing of trusses. A seal on this drawing or cover page listing this drawing, indicates acceptance of professional engineering responsibility solely for the design shown. The suitability and use of this drawing for any structure is the responsibility of the Building Designer per ANSI/TPI 1 Sec.2.  
For more information see these web sites: Alpine: [alpineitw.com](http://alpineitw.com); TPI: [tpinst.org](http://tpinst.org); SBCEA: [sbceacomponents.com](http://sbceacomponents.com); ICC: [iccsafe.org](http://iccsafe.org); AWC: [awc.org](http://awc.org)

**ALPINE**  
AN ITW COMPANY  
155 Harlem Ave  
North Building, 4th Floor  
Glenview, IL 60025





SEQN: 763202 FROM: CDM	GABL Qty: 1	Ply: 1 Qty: 1	Job Number: 24-1173 Hollingsworth Truss Label: B04	Cust: R 215 JRef: 1Y022150005 T4 DrwNo: 143.24.1648.33547 SSB / DF 05/22/2024
---------------------------	----------------	------------------	--	---



Loading Criteria (psf)	Wind Criteria	Snow Criteria (Pg, Pf in PSF)	Defl/CSI Criteria	Maximum Reactions (lbs), or *=PLF
TCLL: 20.00 TCDL: 10.00 BCLL: 0.00 BCDL: 10.00 Des Ld: 40.00 NCBCLL: 10.00 Soffit: 2.00 Load Duration: 1.25 Spacing: 24.0"	Wind Std: ASCE 7-22 Speed: 130 mph Enclosure: Closed Risk Category: II EXP: C Kzt: NA Mean Height: 15.00 ft TCDL: 5.0 psf BCDL: 5.0 psf MWFRS Parallel Dist: 0 to h/2 C&C Dist a: 3.20 ft Loc. from endwall: Any GCpi: 0.18 Wind Duration: 1.60	Pg: NA Ct: NA CAT: NA Pf: NA Ce: NA Lu: NA Cs: NA Snow Duration: NA  Building Code: FBC 8th Ed. 2023 Res. HVHZ TPI Std: 2014 Rep Fac: Yes FT/RT: 20(0)/10(0) Plate Type(s): WAVE	PP Deflection in loc L/defl L/# VERT(LL): 0.001 J 999 240 VERT(CL): 0.003 B 999 180 HORZ(LL): 0.005 P - - HORZ(TL): 0.005 P - - Creep Factor: 2.0 Max TC CSI: 0.270 Max BC CSI: 0.066 Max Web CSI: 0.985  VIEW Ver: 23.02.04.0123.14	Gravity Non-Gravity Loc R+ / R- / Rh / Rw / U / RL AG 304 /- /- /163 /41 /243 B* 71 /- /- /39 /13 /- R 304 /- /- /201 /38 /- Wind reactions based on MWFRS AG Brg Wid = 4.0 Min Req = 1.5 (Truss) B Brg Wid = 376 Min Req = - R Brg Wid = 4.0 Min Req = 1.5 (Truss) Bearings AG, B, & R are a rigid surface. Members not listed have forces less than 375#

#### Lumber

Top chord: 2x4 SP #2;  
Bot chord: 2x4 SP #2;  
Webs: 2x4 SP #3;  
Stack Chord: SC1 2x4 SP #2;  
Stack Chord: SC2 2x4 SP #2;

#### Plating Notes

All plates are 2X4 except as noted.

#### Loading

Gable end supports 8" max rake overhang. Top chord must not be cut or notched.

#### Wind

Wind loads based on MWFRS with additional C&C member design.  
Wind loading based on both gable and hip roof types.  
Gable meets L/120 deflection criteria for wind load applied to face. Calculated deflection ratio is L/222.

#### Gable Reinforcement

(a) 1x4 "L" reinforcement. Any species and grade. 80% length of web member. Attach with 10d (0.131"x3", min.) nails @ 2" oc at each end for the first 18" and then 4" oc for the remainder.  
(b) 2x4 "L" reinforcement. Same species and grade as web. 80% length of web member. Attach with 10d (0.131"x3", min.) nails @ 2" oc at each end for the first 18" and then 4" oc for the remainder.

#### Additional Notes

Exposed portion of gable face shall be reinforced with sheathing and the wind pressures shall be transferred into lateral diaphragms. Connections and designs for diaphragms is the responsibility of the Building Designer in accordance with ANSI/TPI 1.

Stacked top chord must NOT be notched or cut in area (NNL). Dropped top chord braced at 24" oc intervals. Attach stacked top chord (SC) to dropped top chord in notchable area using 3x4 tie-plates 24" oc. Center plate on stacked/dropped chord interface, plate length perpendicular to chord length. Splice top chord in notchable area using 3x6.

The overall height of this truss excluding overhang is 8'-0".



COA #0 278  
Florida Certificate of Product Approval #FL1999  
05/23/2024

#### \*\*WARNING\*\* READ AND FOLLOW ALL NOTES ON THIS DRAWING!

**\*\*IMPORTANT\*\*** FURNISH THIS DRAWING TO ALL CONTRACTORS INCLUDING THE INSTALLERS  
Trusses require extreme care in fabricating, handling, shipping, installing and bracing. Refer to and follow the latest edition of BCSI (Building Component Safety Information, by TPI and SBCA) for safety practices prior to performing these functions. Installers shall provide temporary bracing per BCSI. Unless noted otherwise, top chord shall have properly attached structural sheathing and bottom chord shall have a properly attached rigid ceiling. Locations shown for permanent lateral restraint of webs shall have continuous lateral restraint (CLR), installed with diagonal bracing installed on the CLR per BCSI sections B3, B7, or B10, as applicable. Apply plates to each face of truss and position as shown above and on the Joint Details, unless noted otherwise. Refer to drawings 160A-Z for standard plate positions. Refer to job's General Notes page for additional information.

Alpine, a division of ITW Building Components Group Inc. shall not be responsible for any deviation from this drawing, any failure to build the truss in conformance with ANSI/TPI 1, or for handling, shipping, installation and bracing of trusses. A seal on this drawing or cover page listing this drawing, indicates acceptance of professional engineering responsibility solely for the design shown. The suitability and use of this drawing for any structure is the responsibility of the Building Designer per ANSI/TPI 1 Sec.2.

For more information see these web sites: Alpine: [alpineitw.com](http://alpineitw.com); TPI: [tpinst.org](http://tpinst.org); SBCA: [sbccomponents.com](http://sbccomponents.com); ICC: [iccsafe.org](http://iccsafe.org); AWC: [awc.org](http://awc.org)

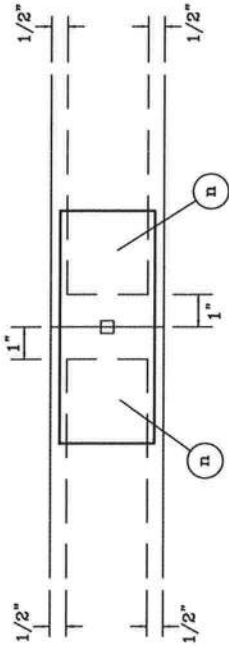


155 Harlem Ave  
North Building, 4th Floor  
Glenview, IL 60025



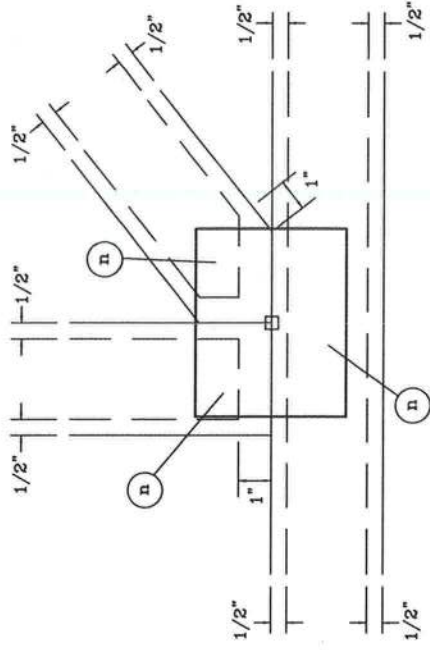
# TRULOX INFORMATION DETAIL

TYPICAL OFF PANEL SPLICE

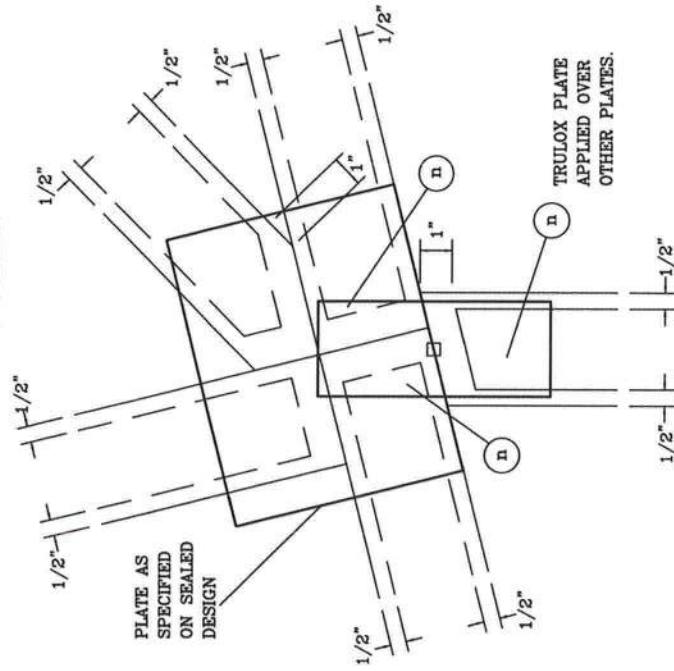


DO NOT APPLY NAILS WITHIN 1/2" OF LUMBER EDGES OR 1" OF LUMBER ENDS ON EACH FACE, AS SHOWN BY DASHED LINES.  
NAILS MUST NOT SPLIT LUMBER.

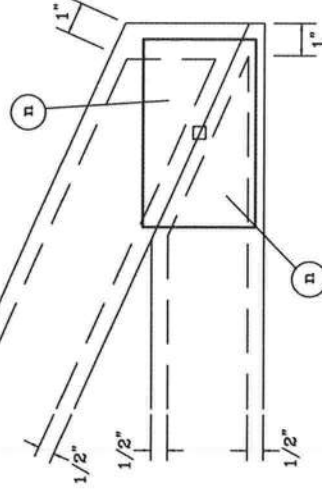
TYPICAL PANEL POINT WITHOUT SPLICE



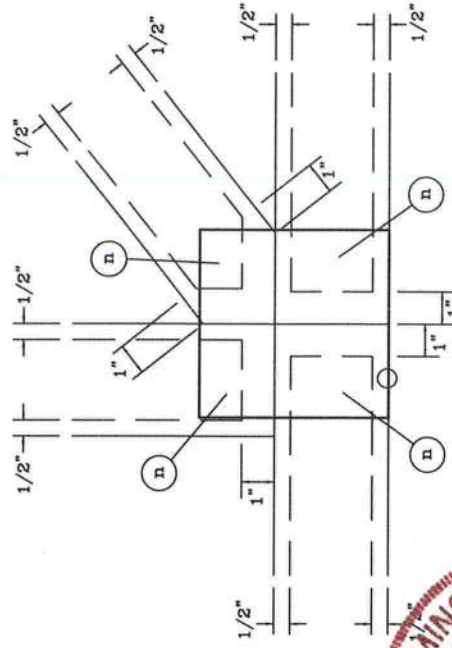
TYPICAL FILLER



TYPICAL HEEL



TYPICAL PANEL POINT SPLICE



## NOTES:

- (n) IS THE REQUIRED NUMBER OF 0.120" X 1.375" NAILS, OR EQUAL, PER PLY AS SPECIFIED ON THE SEALED DESIGN REFERENCING THIS DETAIL.
- LOCATES PLATE CORNER OR FLUSH EDGE.
- LOCATES PLATE CENTER.

TRULOX PLATING







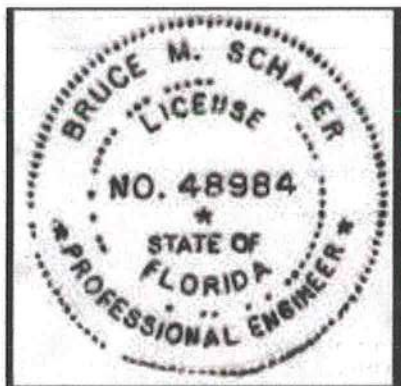
Prepared for:

JOHN NORRIS CONSTRUCTION  
HOLLINGSWORTH RESIDENCE  
COLUMBIA COUNTY, FLORIDA

By:

Schafer Engineering, LLC

386-462-1340



Digitally signed  
by Bruce M  
Schafer

Date: 2023.08.18  
08:55:29 -04'00'

This item has been digitally  
signed and sealed by Bruce M  
Schafer PE.

Printed copies of this  
document are not considered  
signed and sealed and the  
signature must be verified on  
any electronic copies.

*NO COPIES ARE TO BE PERMITTED*

SCHAFER ENGINEERING, LLC  
7104 NW 42ND LANE \ GAINESVILLE FL. 32606  
PHONE: 386-462-1340

Trusses: Pre-engineered, pre-fabricated with the manufacturer's required bracing system installed.

Roof Sheathing: Type: OSB Size: 7/16" Fastener type nails: 8d / .113 Ring Shank

Interior zone spacing: Interior: 6" Periphery: 4"  
Edge and end zone spacing: Interior: 6" Periphery: 4"

Double Top Plate: Type: Spruce Grade: #2 Size: 2 x 4 Nail Size & Spacing: 10d min" @ 8 o.c.

Stud Type: Spruce Grade: #2 Size: 2 x 4 min.

Interior stud spacing: 16" End stud spacing: 16"

Required Shear Wall Siding: Type: OSB Thickness: 7/16"

28 ft Trans: Fastener 8d/131 Spacing: Int: 8 Edge: 4"

30 ft Long: Fastener 8d/131 Spacing: Int: 8 Edge: 4"

Allowable Unit Shear on Shear Walls: 314 pounds per linear foot  
Allowable Unit Shear Transferred from Diaphragm: Trans: 113 Long: 113

Wall Tension Transferred by: Siding Nails: 8d/131 @ 4" O.C. Edges

Foundation Anchor Bolts: Concrete Strength: 3000 psi Size: 1/2"

Washer: 2" Embedment: 7" Location of first anchor bolt from corner: 8"

Anchor Bolts @ 48" o.c. Model: A307 Loc. from corner: 8"

Type of Foundation: (1) - #5 rebar continuous required in bond beam.

Floor Slab: 4" Cmu size: 8" x 16" Height: 48" Rein.: #5 at 72" o.c.

Monolithic Footing: Depth: 20" Bottom Width: 12 Rein.: 2 #5 rebars

Stemwall Footing: Width: 20 Depth: 10 Rein.: 2 #5 rebar

Interior Footings 20" Wide X 12" Deep with 2-#5 rebar continuous

Porch Columns: 6 X 6 X 8' syp #2 pt @ 6'-4" o.c. max. spacing Column Fasteners: Simpson PC66 \ PBS66 or equal

Special Comments: Install 2 ply 2 x 12 syp #2 with 7/16" osb flitch beam or equal over all doors and windows.

Notes:

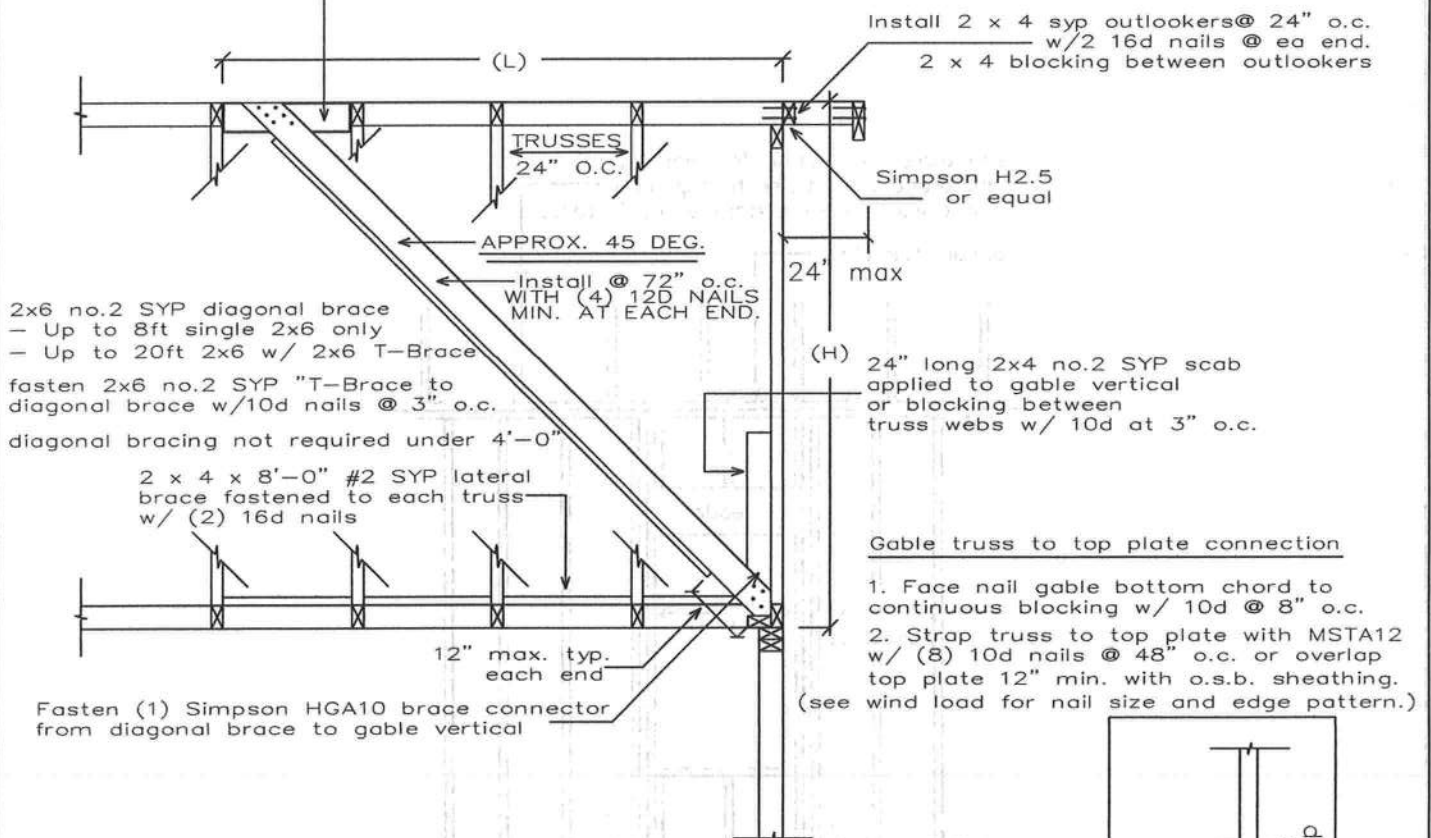
1. Balloon frame all gable ends unless accompanied by gable end detail
2. All walls to be nailed with same nailing pattern as the shear walls.
3. This wind load is not valid without a raised, embossed seal. (NO COPIES).
4. 1500 psf soil bearing pressure minimum.
5. Fiber mesh or WWM may be used in concrete slab. All steel must be grade 40 min. Install standard 10" ACI hook top and bottom.
6. Trusses must be installed and anchored in accordance to the truss engineering.
7. This is a windload only. Not a structural analysis. Schafer Engineering strongly recommends always having a structural analysis.
8. The foundation is for minimum design use, and may be increased.
9. Wind load is for one use only \ FBC-2020 \ No copies permitted
10. Install anchor bolts a 48" o.c., & Simpson SP1 at bottom plate and Simpson SP2 at top plate or equal @ 32" O.C. for all interior bearing walls.
11. Truss company to use all exterior porch walls for bearing when possible.
12. If soil conditions in this project do not meet or exceed the min. 1500 psf soil bearing capacity, the contractor is required to contact Schafer Engineering prior to the foundation pour for verification of the foundation design. The soil is to be compacted to at least 95% of max. dry density as determined by ASTM-1557 (modified proctor)

Bruce Schafer, P. E. #48984  
7104 NW 42ND LN  
GAINESVILLE, FL. 32606

# SCHAFFER ENGINEERING, LLC

7104 NW 42ND LANE \ GAINESVILLE FL. 32606  
PHONE: 386-462-1340

Toe-Nail min 2x6 No 2 SYP blocking  
between truss top chords with  
(3) 10d each end min.



2x6 #2 SYP diagonal brace  
@ 72" o.c.

Fasten (1) Simpson HGA10 brace  
connector from the diagonal  
brace to gable vertical

2 x 4 x 8'-0" #2 SYP lateral  
brace @ 48" o.c. fastened to  
each truss connection w/ (2) 16d nails

2x4 #2 SYP continuous blocking  
fasten to dbl top plate w/ 10d  
at 3" o.c.

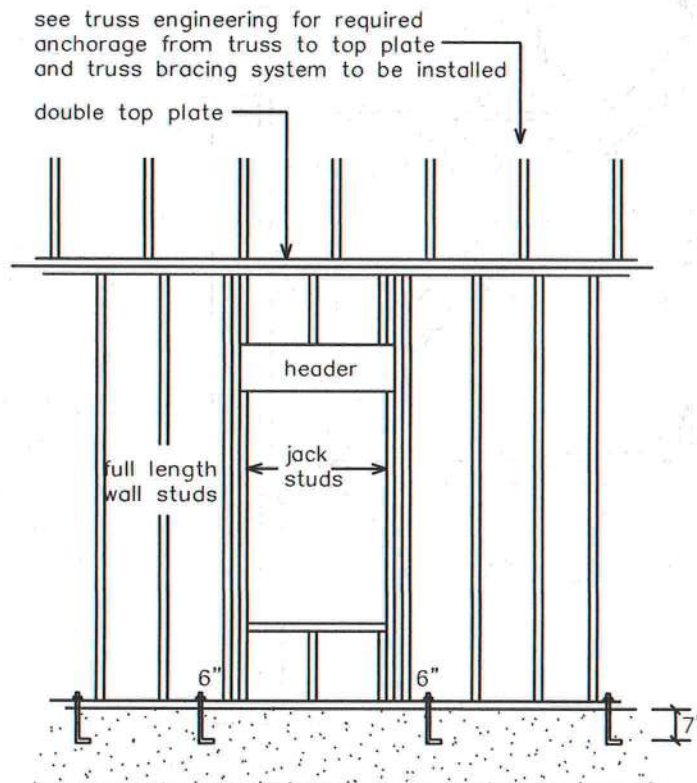
## TYPICAL GABLE END BRACING

Bruce Schaffer, P. E. #48984  
7104 NW 42ND LN  
GAINESVILLE, FL. 32606



SCHAFER ENGINEERING, LLC ca 9312  
7104 NW 42ND LANE \ GAINESVILLE FL. 32606  
PHONE: 386-462-1340

---



total each truss uplift on the header and divide  
by two for the top and bottom header anchorages.



# SCHAFFER ENGINEERING, LLC

7104 NW 42ND LANE \ GAINESVILLE FL. 32606  
PHONE: 386-462-1340

## TIE-DOWN TABLES

### HEADER STRAPPING

Uplift Lbs	Top Connector	Rating Lbs	Bottom Connector	Rating Lbs
to 455	LSTA9	635	H3	320
to 910	LSTA12	795	2-H3	640
to 1265	LSTA18	1110	LTT19	1305
to 1750	2-LSTA12	1810	LTT20	1750
to 2530	2-LSTA18	2530	HD2A-2.5	2165
to 2865	3-LSTA18	3255	HD2A-3.5	2565
to 3700	3-LSTA24	3880	HD5A-3	3130

Total the uplift for each truss sitting on the header and divide by 2 to determine the uplift on the header. Use proper bolt anchors sufficient to support required uplift loads.

### TRUSSES \ GIRDERS

Uplift Lbs	Top Connector	Bottom Connector	Rating Lbs
to 535	H2.5A	NA	
to 1015	H10A	NA	
to 1215	TS22	LTT19	1305
to 1750	2-TS22	LTT20	1750
to 2570	2-TS22	HD2A	2565
to 3665	3-TS22	HD5A	3645
to 5420	2-MST37	HTT22	5250
to 9660	2-MST60	HD10A	8160

Two 12d common toenails are required per truss for each bearing point into top plate. It is the contractors responsibility to provide a continuous load path from truss to foundation.

	TOP CONNECTOR	RATING LBS	BOTTOM CONNECTOR	RATING LBS
BEAM SEATS	LSTA18	1110	LTT19	1305
POSTS	2-LSTA18	2220	ABU44	2200

1. Simpson or equivalent hardware may be used. For nailing into spruce members, multiply table values by .86
2. See truss engineering for anchor uplift values.
3. This schedule is not meant to be a replacement to the specified values of any manufactures values.

User Input Data		
Structure Type	Building	
Basic Wind Speed (V)	135	mph
Structural Category	II	
Exposure	B	
Struc Nat Frequency (n1)	1	Hz
Slope of Roof (Theta)	26.6	Deg
Type of Roof	Gabled	
Eave Height (Eht)	8.00	ft
Ridge Height (RHt)	16.50	ft
Mean Roof Height (Ht)	12.25	ft
Width Perp. to Wind (B)	32.00	ft
Width Parallel to Wind (L)	42.17	ft
Damping Ratio (beta)	0.01	

Red values should be changed only through "Main Menu"

Calculated Parameters	
Type of Structure	
Height/Least Horizontal Dim	0.38
Flexible Structure	No

Calculated Parameters		
Importance Factor	1	
Non-Hurricane, Hurricane (v=85-100 mph) & Alaska		
Table C6-4 Values		
Alpha =	7.000	
zg =	1200.000	
At =	0.143	
Bt =	0.840	
Am =	0.250	
Bm =	0.450	
Cc =	0.300	
I =	320.00	ft
Epsilon =	0.333	
Zmin =	30.00	ft

Gust Factor Category I: Rigid Structures - Simplified Method			
Gust1	For rigid structures (Nat Freq > 1 Hz) use 0.85	0.85	
Gust Factor Category II: Rigid Structures - Complete Analysis			
Zm	Zmin	30.00	ft
Izm	$Cc * (33/z)^{0.167}$	0.3048	
Lzm	$I * (zm/33)^{Epsilon}$	309.99	ft
Q	$(1/(1+0.63*((B+Ht)/Lzm)^{0.63}))^{0.5}$	0.9187	
Gust2	$0.925 * ((1+1.7 * Izm * 3.4 * Q)/(1+1.7 * 3.4 * Izm))$	0.8770	
Gust Factor Category III: Flexible or Dynamically Sensitive Structures			
Vhref	$V * (5280/3600)$	198.00	ft/s
Vzm	$bm * (zm/33)^{Am} * Vhref$	87.00	ft/s
NF1	$NatFreq * Lzm / Vzm$	3.56	Hz
Rn	$(7.47 * NF1) / (1 + 10.302 * NF1)^{1.667}$	0.0627	
Nh	$4.6 * NatFreq * Ht / Vzm$	0.65	
Nb	$4.6 * NatFreq * B / Vzm$	1.69	
Nd	$15.4 * NatFreq * Depth / Vzm$	7.46	
Rh	$1/Nh - (1/(2 * Nh^2) * (1 - Exp(-2 * Nh)))$	0.6784	
Rb	$1/Nb - (1/(2 * Nb^2) * (1 - Exp(-2 * Nb)))$	0.4223	
Rd	$1/Nd - (1/(2 * Nd^2) * (1 - Exp(-2 * Nd)))$	0.1250	
RR	$((1/Beta) * Rn * Rh * Rb * (0.53 + 0.47 * Rd))^{0.5}$	1.0286	
gg	$+(2 * LN(3600 * n1))^{0.5} + 0.577 / (2 * LN(3600 * n1))^{0.5}$	4.19	
Gust3	$0.925 * ((1 + 1.7 * Izm * (3.4^2 * Q^2 + GG^2 * RR^2)^{0.5}) / (1 + 1.7 * 3.4 * Izm))$	1.26	

Gust Factor Summary			
Main Wind-force resisting system:		Components and Cladding:	
Gust Factor Category:	I	Gust Factor Category:	I
Gust Factor (G)	0.88	Gust Factor (G)	0.88

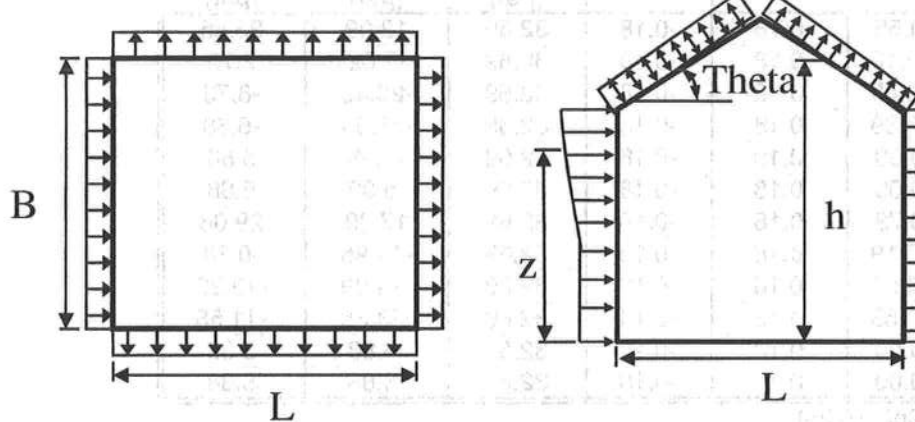


### 6.5.12.2.1 Design Wind Pressure - Buildings of All Heights (Non-flexible)

Elev. ft	Kz	Kzt	Kd	qz lb/ft <sup>2</sup>	Pressure (lb/ft <sup>2</sup> ) Windward Wall*	
					+GCpi	-GCpi
16.5	0.70	1.00	1.00	32.69	18.11	27.76
15	0.70	1.00	1.00	32.69	18.11	27.76

**Figure 6-3 - External Pressure Coefficients, Cp**

Loads on Main Wind-Force Resisting Systems



Variable	Formula	Value	Units
Kh	$2.01 \cdot (15/z_g)^{2/\alpha}$	0.57	
Kht	Topographic factor (Fig 6-2)	1.00	
Qh	$.00256 \cdot (V)^2 \cdot \text{ImpFac} \cdot K_h \cdot K_{ht} \cdot K_d$	26.81	psf

Wall Pressure Coefficients, Cp	
Surface	Cp
Windward Wall (See Figure 6.5.12.2.1 for Pressures)	0.80

Roof Pressure Coefficients, Cp	
Roof Area (sq. ft.)	-
Reduction Factor	1.00

Description	Cp	Pressure (psf)	
		+GCpi	-GCpi
Leeward Walls (Wind Dir Parallel to 32 ft wall)	-0.44	-15.09	-5.44
Leeward Walls (Wind Dir Parallel to 42.17 ft wall)	-0.50	-16.58	-6.93
Side Walls	-0.70	-21.29	-11.64
Roof - Normal to Ridge (Theta ≥ 10)			
Windward - Max Negative	-0.21	-9.79	-0.14
Windward - Max Positive	0.28	1.85	11.50
Leeward Normal to Ridge	-0.60	-18.94	-9.28
Overhang Top	-0.21	-4.96	-4.96
Overhang Bottom	0.80	0.70	0.70
Roof - Parallel to Ridge (All Theta)			
Dist from Windward Edge: 0 ft to 6.125 ft	-0.90	-25.99	-16.34
Dist from Windward Edge: 6.125 ft to 12.25 ft	-0.90	-25.99	-16.34
Dist from Windward Edge: 12.25 ft to 24.5 ft	-0.50	-16.58	-6.93
Dist from Windward Edge: > 24.5 ft	-0.30	-11.88	-2.23

\* Horizontal distance from windward edge

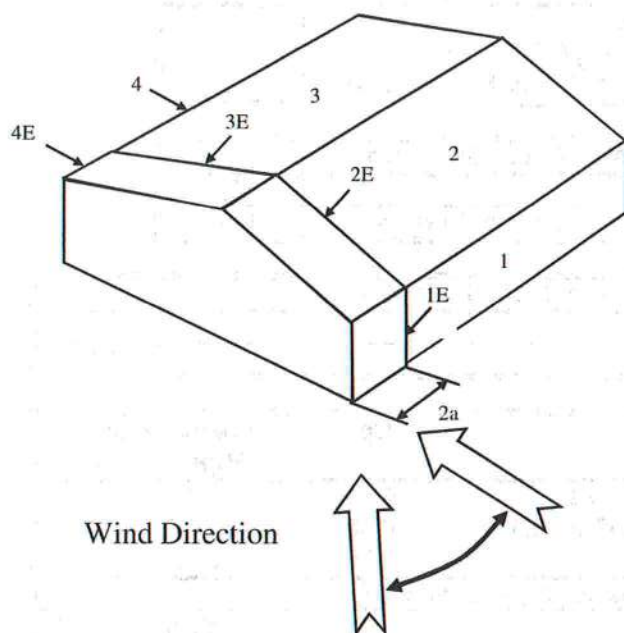
**Figure 6-4 - External Pressure Coefficients, GCpf**

## Loads on Main Wind-Force Resisting Systems w/ Ht ≤ 60 ft

$$\begin{aligned}
 K_h &= 2.01 \cdot (15/z_g)^{(2/\alpha)} &= & 0.57 \\
 K_{ht} &= \text{Topographic factor (Fig 6-2)} &= & 1.00 \\
 Q_h &= 0.00256 \cdot (V)^2 \cdot \text{ImpFac} \cdot K_h \cdot K_{ht} \cdot K_d &= & 26.81
 \end{aligned}$$

Case A						
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	0.55	0.18	-0.18	32.69	12.09	23.85
2	-0.10	0.18	-0.18	32.69	-9.02	2.75
3	-0.45	0.18	-0.18	32.69	-20.49	-8.73
4	-0.39	0.18	-0.18	32.69	-18.64	-6.88
5	0.00	0.18	-0.18	32.69	-5.88	5.88
6	0.00	0.18	-0.18	32.69	-5.88	5.88
1E	0.73	0.18	-0.18	32.69	17.89	29.66
2E	-0.19	0.18	-0.18	32.69	-11.95	-0.18
3E	-0.58	0.18	-0.18	32.69	-24.99	-13.22
4E	-0.53	0.18	-0.18	32.69	-23.35	-11.58
5E	0.00	0.18	-0.18	32.69	-5.88	5.88
6E	0.00	0.18	-0.18	32.69	-5.88	5.88

$$* p = q_h \cdot (GC_{pf} - GC_{pi})$$

**Figure 6-4 - External Pressure Coefficients, GCpf**

Loads on Main Wind-Force Resisting Systems w/ Ht ≤ 60 ft

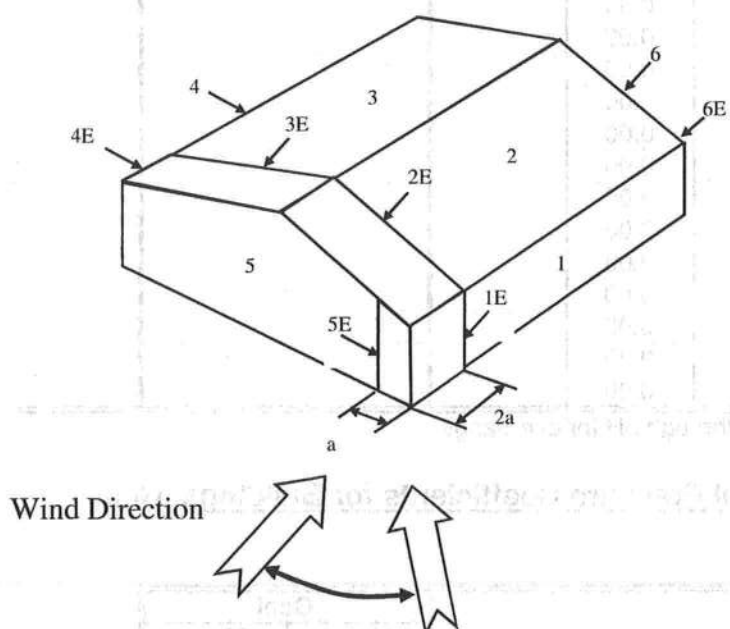
$$\begin{aligned}
 K_h &= 2.01 \cdot (15/z_g)^{(2/\alpha)} &= & 0.57 \\
 K_{ht} &= \text{Topographic factor (Fig 6-2)} &= & 1.00 \\
 Q_h &= 0.00256 \cdot (V)^2 \cdot \text{ImpFac} \cdot K_h \cdot K_{ht} \cdot K_d &= & 26.81
 \end{aligned}$$

**Case B**



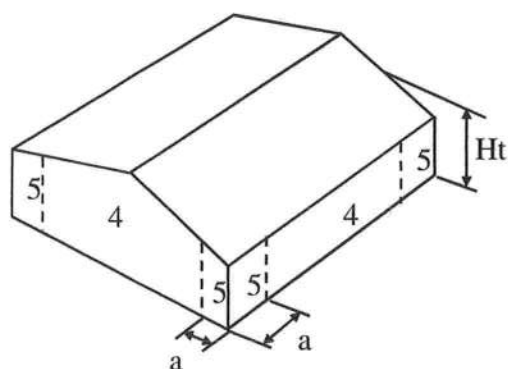
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	-0.45	0.18	-0.18	32.69	-20.59	-8.83
2	-0.69	0.18	-0.18	32.69	-28.44	-16.67
3	-0.37	0.18	-0.18	32.69	-17.98	-6.21
4	-0.45	0.18	-0.18	32.69	-20.59	-8.83
5	0.40	0.18	-0.18	32.69	7.19	18.96
6	-0.29	0.18	-0.18	32.69	-15.36	-3.60
1E	-0.48	0.18	-0.18	32.69	-21.57	-9.81
2E	-1.07	0.18	-0.18	32.69	-40.86	-29.09
3E	-0.53	0.18	-0.18	32.69	-23.21	-11.44
4E	-0.48	0.18	-0.18	32.69	-21.57	-9.81
5E	0.61	0.18	-0.18	32.69	14.06	25.82
6E	-0.43	0.18	-0.18	32.69	-19.94	-8.17

$$* p = qh * (GCpf - GCpi)$$



**Figure 6-5 - External Pressure Coefficients, GCp**

Loads on Components and Cladding for Buildings w/ Ht ≤ 60 ft



Gabled Roof  
10 < Theta ≤ 45

Note: \* Enter Zone 1 through 5, or 1H through 3H for overhangs.

**Table 6-7 Internal Pressure Coefficients for Buildings,  $G_{cpi}$**

Condition	Gcpi	
	Max +	Max -
Open Buildings	0.00	0.00
Partially Enclosed Buildings	0.55	-0.55
Enclosed Buildings	0.18	-0.18
<b>Enclosed Buildings</b>	<b>0.18</b>	<b>-0.18</b>