15

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Alpine, an ITW Company

2400 Lake Orange Drive Suite 150 Orlando FL 32837
Florida Engineering Certificate of Authorization Number: 0 27
Florida Certificate of Product Approval # FL1999
 Document ID:1VXX9114Z0330152220

WILLIAM H. KRICK LICENSE No. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

Truss Fabricator:	Anderson Truss Company
Job Identification:	16-126A--Erkinger Home Builders /McClain res.. -- Lake City, FL
Truss Count:	7
Model Code:	Florida Building Code 5th Edition (2014)
Truss Criteria:	TPI-2007(STD)
Engineering Software:	Alpine Software,Version 15.01.
Structural Engineer of Record:	The identity of the structural EOR did not exist as of
Address:	the seal date per section 61G15-31.003(5a) of the FAC
Minimum Design Loads:	Roof - 37.0 PSF @ 1.25 Duration
	Floor - N/A
	Wind - 130 MPH ASCE 7-10 -Closed

Notes:

1. Determination as to the suitability of these truss components for the structure is the responsibility of the building designer/engineer of record, as defined in ANSI/TPI 1
2. The drawing date shown on this index sheet must match the date shown on the individual truss component drawing.
3. As shown on attached drawings; the drawing number is preceded by: HCUSR9114

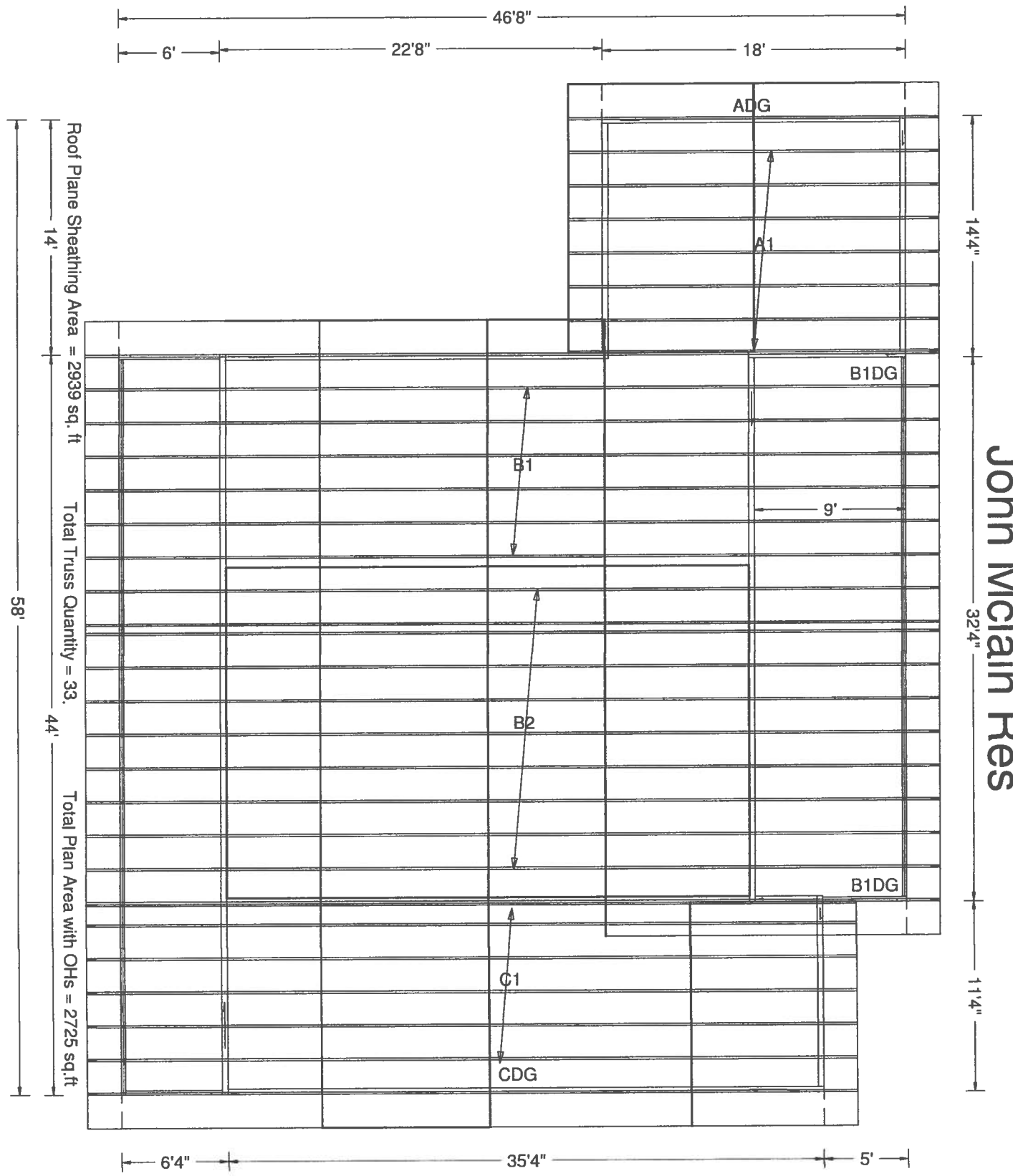
01/30/2017
William H. Krick
-Truss Design Engineer-

2400 Lake Orange Dr, Suite 150
Orlando FL, 32837

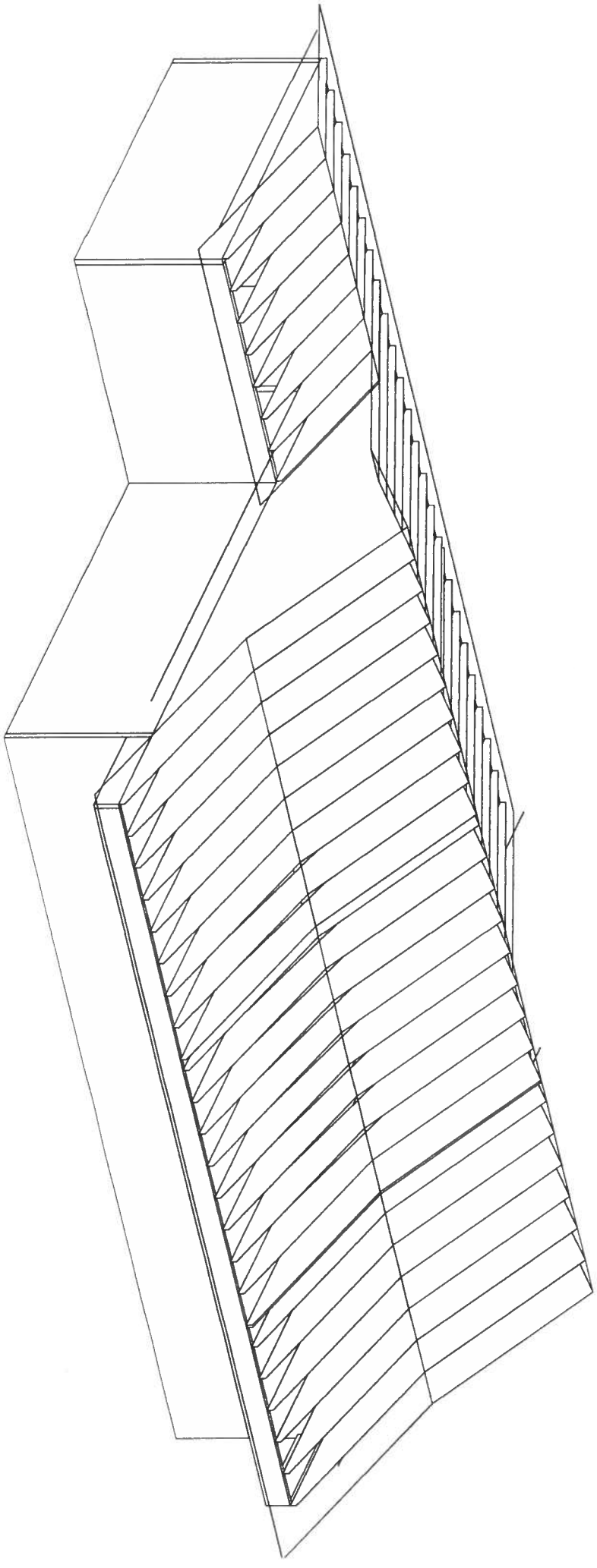
Details: 14015EC1-GBLLETIN-

#	Ref	Description	Drawing#	Date
1	99372--A1		17030002	01/30/17
2	99373--ADG		17030001	01/30/17
3	99374--B1		17030028	01/30/17
4	99375--B1DG		17030030	01/30/17
5	99376--B2		17030029	01/30/17
6	99377--C1		17030003	01/30/17
7	99378--CDG		17030004	01/30/17

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



PAGE NO: 1 OF 1	JOB NO: 16-126A	Customer: Erkinger Home Builders Job Name: McClain res.. : Job Numb: 16-126A Designer: Fill in later Salesman: CVB	: Created : 01-30-2017 : <Not Found>



(16-126A--Erkinger Home Builders /McClain res., -- Lake City, FL - A1)

THIS DWG PREPARED FROM COMPUTER INPUT (LOADS & DIMENSIONS) SUBMITTED BY TRUSS MFR.

Value Set: 13B (Effective 6/1/2013)

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

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

Bottom chord checked for 10.00 psf non-concurrent live load.

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.

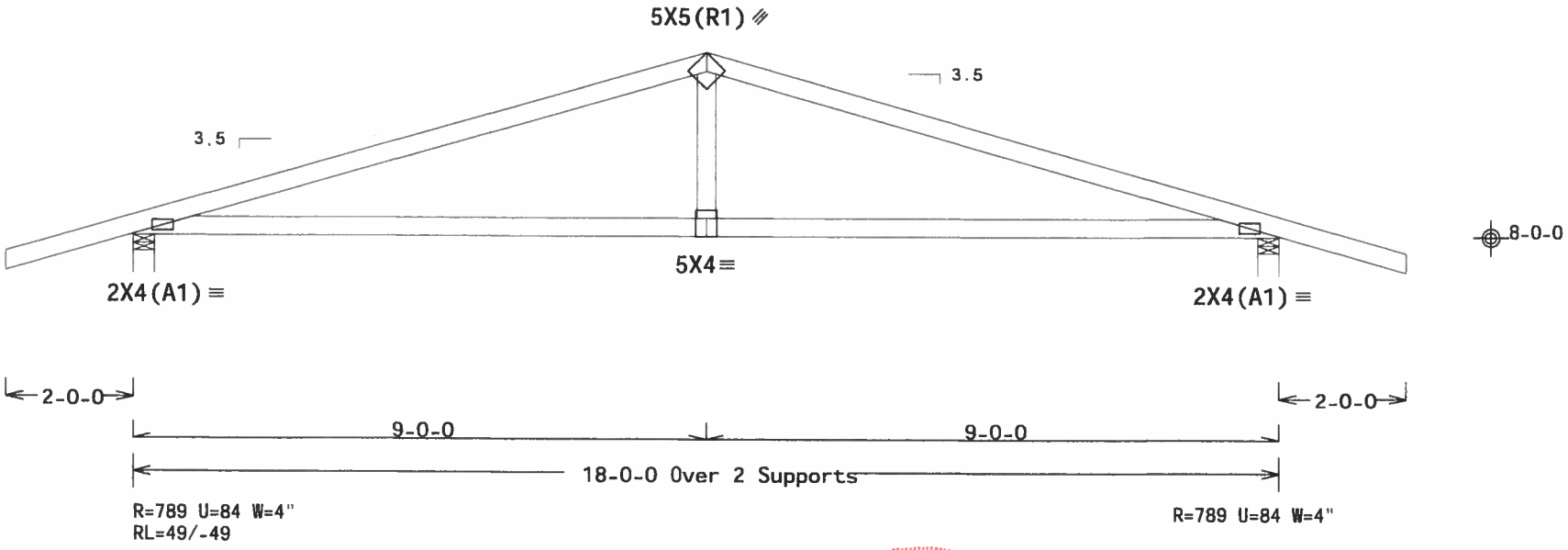
130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, Located anywhere in roof, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

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

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	45	-2.00	20.00
BC	75	0.15	17.85

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.



PLT TYP. Wave

Design Crit: FBC2014Res/TPI-2007(STD)
FT/RT=20%(0%)/5(2)

15.01.01.0424.16 QTY:7

FL/-/5/-/E/-/-

Scale =.375"/Ft.

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AN ITW COMPANY

2400 Lake Orange Dr., Suite 150
Orlando, FL 32837
FL COA #0 278

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 WTCA) 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 bracing installed 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.

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 & 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 this job's general notes page and these web sites:
ALPINE: www.alpineitw.com; TPI: www.tpinst.org; WTCA: www.sbcindustry.com; ICC: www.iccsafe.org

WILLIAM H. KRICK
No. 70861
STATE OF FLORIDA
PROFESSIONAL ENGINEER

William H. Krick Lic. Number 70861
01/30/2017

TC LL	20.0 PSF	REF	R9114- 99372
TC DL	7.0 PSF	DATE	01/30/17
BC DL	10.0 PSF	DRW	HCUSR9114 17030002
BC LL	0.0 PSF	HC-ENG	JB/WHK
TOT.LD.	37.0 PSF	SEQN-	122728
DUR.FAC.	1.25		
SPACING	24.0"	JREF-	1VXX9114Z03

Value Set: 13B (Effective 6/1/2013)

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:

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

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

Bottom chord checked for 10.00 psf non-concurrent live load.

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.

Truss designed to support 8" maximum gable end overhang.

130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, Located anywhere in roof, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

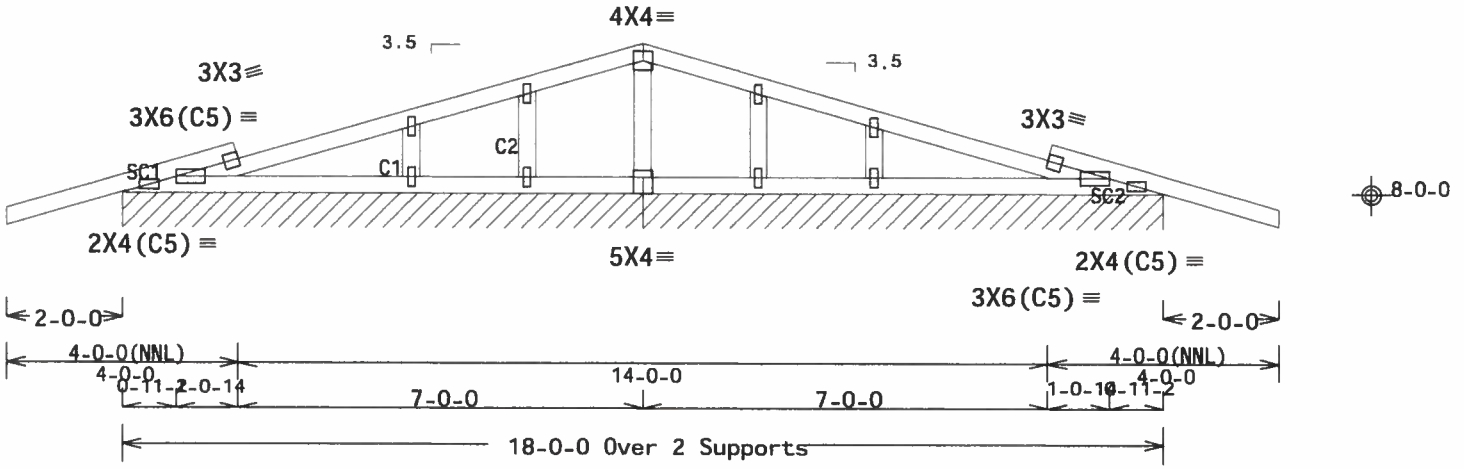
Wind loads and reactions based on MWFRS with additional C&C member design.

See DWGS A14015ENC101014 & GBLLETIN1014 for gable wind bracing requirements.

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	49	-2.13	1.88
TC	75	1.88	15.88
TC	49	15.88	19.88
BC	75	0.17	17.58

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.



R=99 PLF U=8 PLF W=9-0-0
RL=5/-5 PLF

R=77 PLF U=10 PLF W=9-0-0

Note: All Plates Are 1.5X4 Except As Shown.

Design Crit: FBC2014Res/TPI-2007(STD)

PLT TYP. Wave FT/RT=20%(0%)/5(2) 15.01.01.0424.36 QTY:1 FL/-/5/-/E/-/- Scale =.3125"/Ft.

ALPINE
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2400 Lake Orange Dr., Suite 150
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FL COA #0278

WILLIAM H. KRICK No. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

William H. Krick Lic. Number 70861
01/30/2017

TC LL	20.0 PSF	REF R9114- 99373
TC DL	7.0 PSF	DATE 01/30/17
BC DL	10.0 PSF	DRW HCUSR9114 17030001
BC LL	0.0 PSF	HC-ENG JB/WHK
TOT.LD.	37.0 PSF	SEQN- 122633
DUR.FAC.	1.25	
SPACING	24.0"	JREF- 1VXX9114Z03

(16-126A--Erkinger Home Builders /McClain res.. -- Lake City, FL - B1)

THIS DWG PREPARED FROM COMPUTER INPUT (LOADS & DIMENSIONS) SUBMITTED BY TRUSS MFR.

Value Set: 13B (Effective 6/1/2013)

Top chord 2x4 SP SS Dense :T3, T5 2x6 SP SS Dense:
:T4 2x4 SP #2:
Bot chord 2x4 SP SS Dense :B2 2x8 SP SS Dense:
Webs 2x4 SP #3 :W6 2x4 SP #2:
:W11 2x4 SP SS Dense:

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, not located within 6.50 ft from roof edge, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

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

Calculated horizontal deflection is 0.10" due to live load and 0.24" due to dead load.

JT No	PLATE SIZE	LATERAL SHIFT	CHORD BITE
[7]	W5X4	S	2.00
[8]	W4X6	S	1.25
[12]	W4X4	1.75 R	1.25
[16]	W4X8	S	5.25
[25]	W4X6	3.25 L	2.75
[32]	W4X6	2.50 L	1.25
[33]	W4X6	2.75 R	1.25

Left and right cantilevers are exposed to wind

(a) Continuous lateral restraint equally spaced on member. Or 1x4 "T" reinforcement, 80% length of web member. Same species & SRB grade or better, attached with 8d Box or Gun (0.113"x2.5",min.)nails @ 6" OC.

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	50	-2.00	17.88
TC	42	17.88	24.83
TC	43	24.83	27.95
TC	49	27.95	34.78
TC	51	34.78	48.67
BC	73	0.00	46.67

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.

Bottom chord checked for 10.00 psf non-concurrent live load.

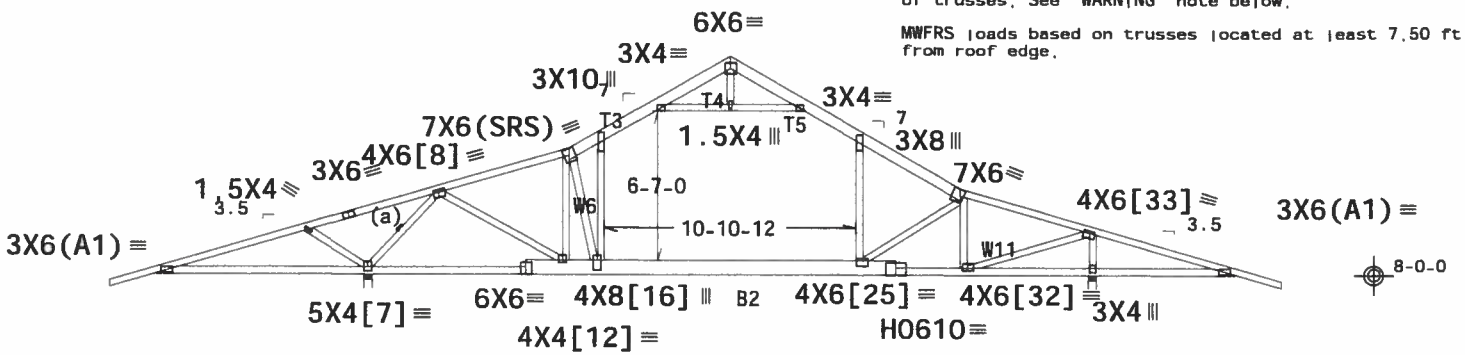
Collar-tie braced with continuous lateral bracing at 24" OC, or rigid ceiling.

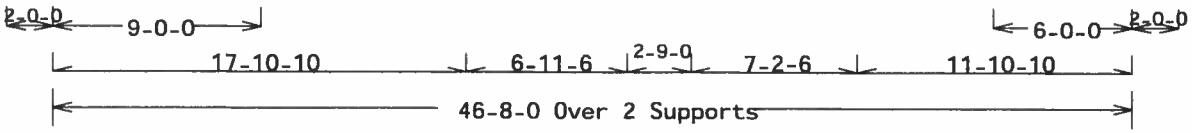
Attic room loading from 19-4-10 to 30-3-6: Live Load: 40 PSF, Dead Load: 10 PSF Ceiling: 10 PSF, Kneewalls: 10 PSF

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.

WARNING: Furnish a copy of this DWG to the installation contractor. Special care must be taken during handling, shipping and installation of trusses. See "WARNING" note below.

MWFRS loads based on trusses located at least 7.50 ft. from roof edge.





R=2862 U=142 W=4"
RL=179/-180

R=2545 U=127 W=4"

Design Crit: FBC2014Res/TPI-2007(STD)

PLT TYP. 20 Gauge HS,Wave FT/RT=20%(0%)/5(2) 15.01.01.0424.16 QTY:6 FL/-/5/-/E/-/- Scale =.125"/Ft.

ALPINE AN ITW COMPANY

2400 Lake Orange Dr., Suite 150
Orlando, FL 32837
FL COA #0278

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WILLIAM H. KRICK No. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

William H. Krick Lic. Number 70861
01/30/2017

TC LL	20.0 PSF	REF R9114- 99374
TC DL	7.0 PSF	DATE 01/30/17
BC DL	10.0 PSF	DRW HCUSR9114 17030028
BC LL	0.0 PSF	HC-ENG JB/WHK
TOT.LD.	37.0 PSF	SEQN- 123417
DUR.FAC.	1.25	
SPACING	24.0"	JREF- 1VXX9114Z03

THIS DWG PREPARED FROM COMPUTER INPUT (LOADS & DIMENSIONS) SUBMITTED BY TRUSS MFR.

Value Set: 13B (Effective 6/1/2013)

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

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

See DWGS A14015ENC101014 & GBLLETIN1014 for gable wind bracing requirements.

(a) Continuous lateral restraint equally spaced on member. Or 1x4 "T" reinforcement, 80% length of web member, Same species & SRB grade or better, attached with 8d Box or Gun (0.113"x2.5",min.)nails @ 6" OC.

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	49	-2.00	2.00
TC	75	2.00	44.67
TC	49	44.67	48.67
BC	75	0.29	46.38

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.

130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, Located anywhere in roof, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

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

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

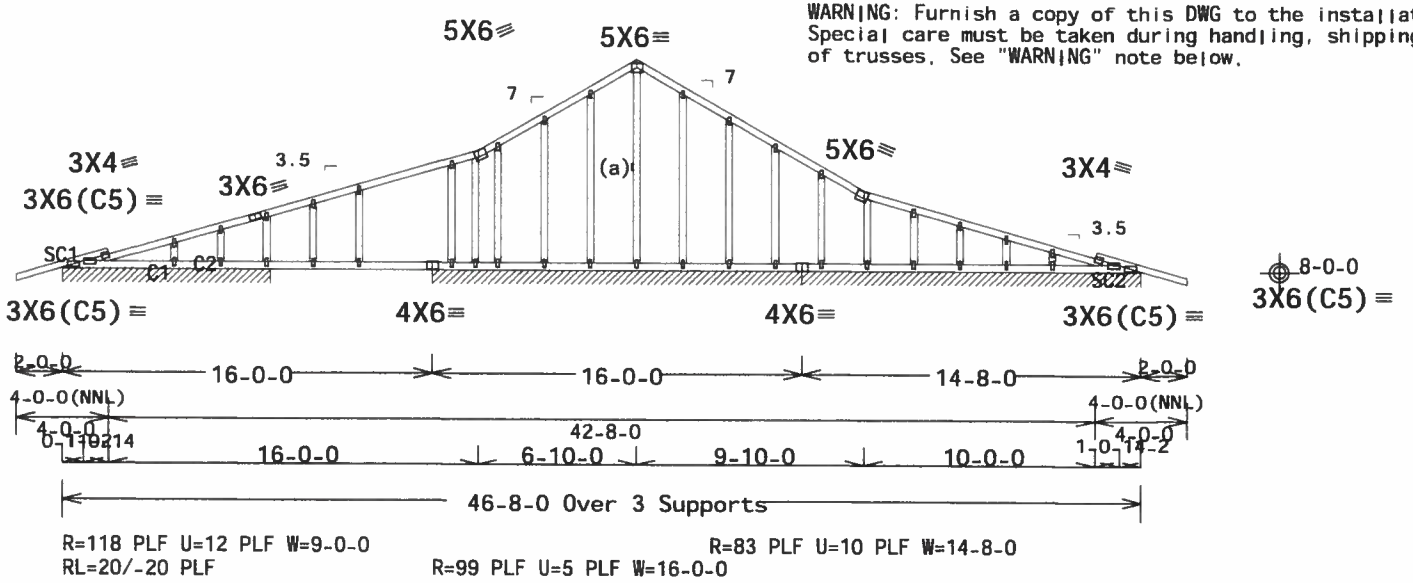
Stacked top chord must NOT be notched or cut in area (NNL). Dropped top chord braced at 24" o.c. intervals. Attach stacked top chord (SC) to dropped top chord in notchable area using 3x4 tie-plates 24" o.c. Center plate on stacked/dropped chord interface, plate length perpendicular to chord length. Splice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

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

Bottom chord checked for 10.00 psf non-concurrent live load.

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.

WARNING: Furnish a copy of this DWG to the installation contractor. Special care must be taken during handling, shipping and installation of trusses. See "WARNING" note below.



Note: All Plates Are 1.5X4 Except As Shown.

PLT TYP. Wave

Design Crit: FBC2014Res/TPI-2007(STD)
FT/RT=20%(0%)/5(2)

15.01.01.0424.16 QTY:2 FL/-/5/-/E/-/- Scale =.125"/Ft.

WARNING! READ AND FOLLOW ALL NOTES ON THIS DRAWING!
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FL COA #0278

WILLIAM H. KRICK No. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

William H. Krick Lic. Number 70861
01/30/2017

TC LL	20.0 PSF	REF	R9114- 99375
TC DL	7.0 PSF	DATE	01/30/17
BC DL	10.0 PSF	DRW	HCUSR9114 17030030
BC LL	0.0 PSF	HC-ENG	JB/WHK
TOT.LD.	37.0 PSF	SEQN-	123408
DUR.FAC.	1.25		
SPACING	24.0"	JREF-	1VXX9114Z03

Value Set: 13B (Effective 6/1/2013)

Top chord 2x4 SP #2
Bot chord 2x4 SP #2 :B4 2x4 SP SS Dense:
Webs 2x4 SP #3 :W11 2x4 SP #2:

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

Calculated horizontal deflection is 0.18" due to live load and 0.29" due to dead load.

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	43	-2.00	17.88
TC	35	17.88	24.83
TC	38	24.83	34.78
TC	40	34.78	48.67
BC	45	0.00	9.33
BC	71	9.33	24.83
BC	62	24.83	40.33
BC	64	40.33	46.67

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.

MWFRS loads based on trusses located at least 15.00 ft from roof edge.

130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, not located within 13.00 ft from roof edge, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

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

Left and right cantilevers are exposed to wind

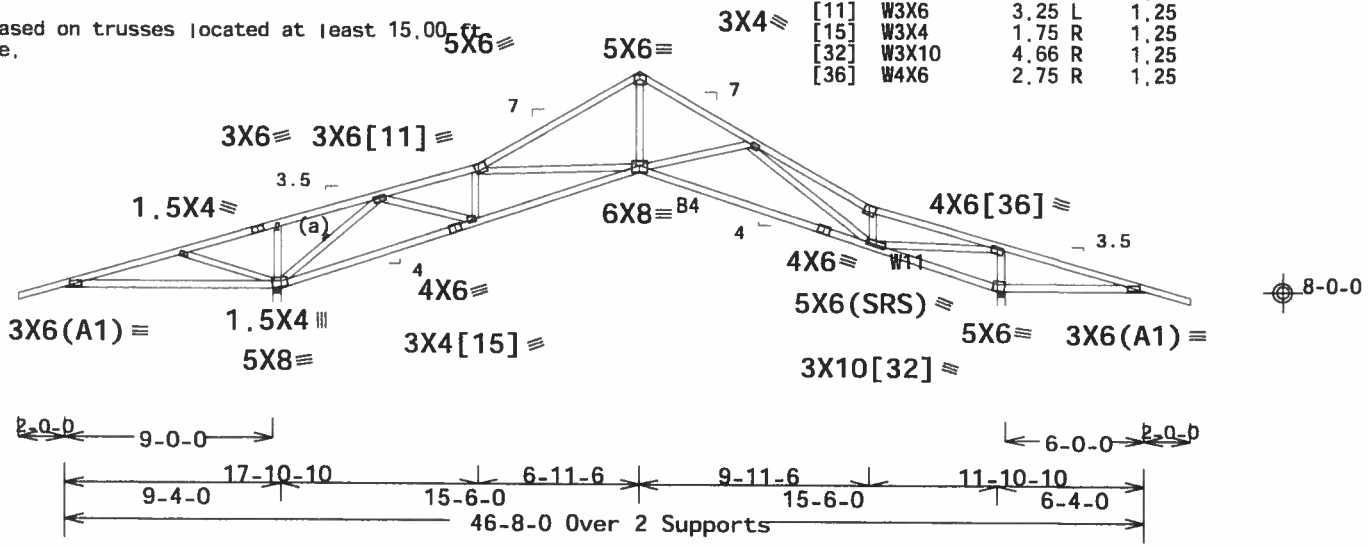
(a) Continuous lateral restraint equally spaced on member, Or 1x4 "T" reinforcement, 80% length of web member. Same species & SRB grade or better, attached with 8d Box or Gun (0.113"x2.5",min.)nails @ 6" OC.

Bottom chord checked for 10.00 psf non-concurrent live load.

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.

WARNING: Furnish a copy of this DWG to the installation contractor. Special care must be taken during handling, shipping and installation of trusses. See "WARNING" note below.

JT No	PLATE SIZE	LATERAL SHIFT	CHORD BITE
[11]	W3X6	3.25 L	1.25
[15]	W3X4	1.75 R	1.25
[32]	W3X10	4.66 R	1.25
[36]	W4X6	2.75 R	1.25



R=2111 U=108 W=4"
RL=180/-180

R=1792 U=51 W=4"

Design Crit: FBC2014Res/TPI-2007(STD)

PLT TYP. Wave

FT/RT=20%(0%)/5(2)

15_01_01_0424_16

QTY:10 FL/-/5/-/E/-/-

Scale =.125"/Ft.

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FL COA #0 278

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For more information see this job's general notes page and these web sites:
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WILLIAM H. KRICK LICENSED No. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

William H. Krick Lic. Number 70861

TC LL	20.0 PSF	REF R9114- 99376
TC DL	7.0 PSF	DATE 01/30/17
BC DL	10.0 PSF	DRW HCUSR9114 17030029
BC LL	0.0 PSF	HC-ENG JB/WHK
TOT.LD.	37.0 PSF	SEQN- 123405
DUR.FAC.	1.25	
SPACING	24.0"	JREF- 1VXX9114Z03

THIS DWG PREPARED FROM COMPUTER INPUT (LOADS & DIMENSIONS) SUBMITTED BY TRUSS MFR.

Value Set: 13B (Effective 6/1/2013)

Top chord 2x4 SP #2 :T4 2x4 SP SS Dense:
Bot chord 2x4 SP SS Dense :B3 2x4 SP #2:
Webs 2x4 SP #3 :W2 2x4 SP #2:

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

(a) Continuous lateral restraint equally spaced on member. Or 1x4 "T" reinforcement, 80% length of web member. Same species & SRB grade or better, attached with 8d Box or Gun (0.113"x2.5",min.)nails @ 6" OC.

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

Bottom chord checked for 10.00 psf non-concurrent live load.

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.

JT No	PLATE SIZE	LATERAL SHIFT	CHORD BITE
[7]	W4X6	S	1.25
[8]	W3X10	4.75 L	1.25
[21]	W3X4	S	1.25

Negative reaction(s) of -289# MAX. (See below) from a non-wind load case requires uplift connection.

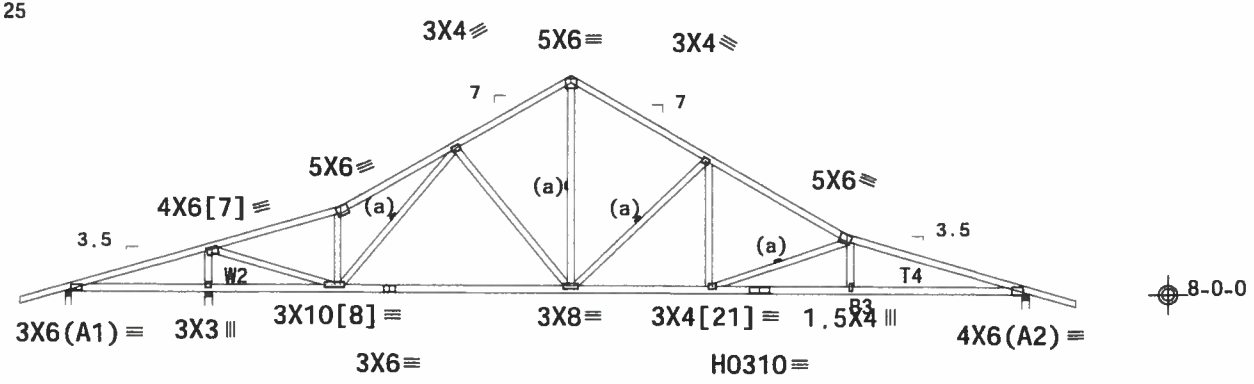
130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, Located anywhere in roof, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

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

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	49	-2.00	11.88
TC	51	11.88	21.83
TC	43	21.83	33.78
TC	39	33.78	43.67
BC	70	0.13	41.52

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.



R=148/-289 U=119 W=3"
RL=179/-179 R=2161 U=167 W=4"

R=1438 U=126 W=4"

Design Crit: FBC2014Res/TPI-2007(STD)

PLT TYP. 20 Gauge HS,Wave FT/RT=20%(0%)/5(2) 15.01.01.0424.16 QTY:6 FL/-/5/-/E/-/- Scale =.125"/Ft.

ALPINE AN ITW COMPANY

2400 Lake Orange Dr., Suite 150
Orlando, FL 32837
FL COA #0 278

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WILLIAM H. KRICK LIC. NO. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

William H. Krick Lic. Number 70861

TC LL	20.0 PSF	REF	R9114- 99377
TC DL	7.0 PSF	DATE	01/30/17
BC DL	10.0 PSF	DRW	HCUSR9114 17030003
BC LL	0.0 PSF	HC-ENG	JB/WHK
TOT.LD.	37.0 PSF	SEQN-	122617
DUR.FAC.	1.25		
SPACING	24.0"	JREF-	1VXX9114Z03

THIS DWG PREPARED FROM COMPUTER INPUT (LOADS & DIMENSIONS) SUBMITTED BY TRUSS MFR.

Value Set: 13B (Effective 6/1/2013)

Top chord 2x4 SP #2 :T4 2x4 SP SS Dense:
Bot chord 2x4 SP SS Dense :B3 2x4 SP #2:
Webs 2x4 SP #3
:Stack Chord SC1 2x4 SP #2::Stack Chord SC2 2x4 SP SS Dense:

Lumber value set "13B" uses design values approved 1/30/2013 by ALSC

See DWGS A14015ENC101014 & GBLLETIN1014 for gable wind bracing requirements.

(a) Continuous lateral restraint equally spaced on member. Or 1x4 "T" reinforcement, 80% length of web member. Same species & SRB grade or better, attached with 8d Box or Gun (0.113"x2.5",min.)nails @ 6" OC.

In lieu of structural panels or rigid ceiling use purlins to laterally brace chords as follows:

CHORD	SPACING(IN OC)	START(FT)	END(FT)
TC	49	-2.00	2.00
TC	75	2.00	39.67
TC	49	39.67	43.67
BC	75	0.29	41.38

Apply purlins to any chords above or below fillers at 24" OC unless shown otherwise above.

130 mph wind, 15.00 ft mean hgt, ASCE 7-10, CLOSED bldg, Located anywhere in roof, RISK CAT II, EXP B, wind TC DL=3.5 psf, wind BC DL=5.0 psf, GCpi(+/-)=0.18

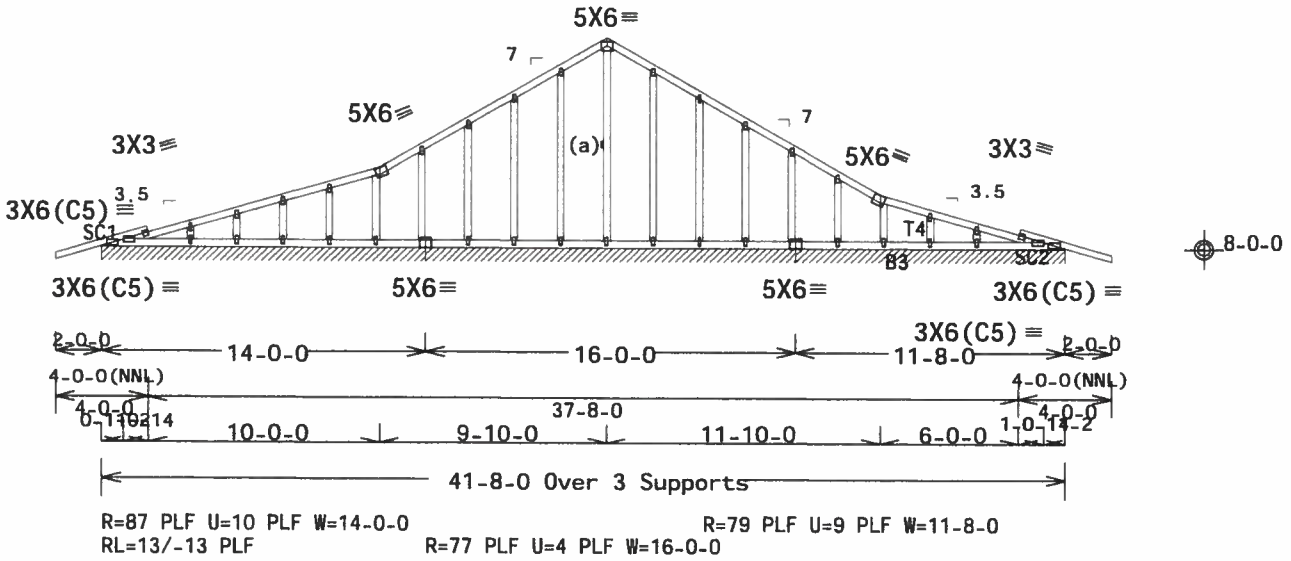
Wind loads and reactions based on MWFRS with additional C&C member design.

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

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

Bottom chord checked for 10.00 psf non-concurrent live load.

Deflection meets L/240 live and L/180 total load. Creep increase factor for dead load is 1.50.



Note: All Plates Are 1.5X4 Except As Shown.

Design Crit: FBC2014Res/TPI-2007(STD)

PLT TYP. Wave FT/RT=20%(0%)/5(2) 15.01.01.0424.16 QTY:1 FL/-/5/-/E/-/- Scale =.125"/Ft.

ALPINE AN ITW COMPANY

2400 Lake Orange Dr., Suite 150
Orlando, FL 32837
FL COA #0278

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William H. Krick Lic. Number 70861

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TC DL	7.0 PSF	DATE	01/30/17
BC DL	10.0 PSF	DRW	HCUSR9114 17030004
BC LL	0.0 PSF	HC-ENG	JB/WHK
TOT.LD.	37.0 PSF	SEQN-	122738
DUR.FAC.	1.25		
SPACING	24.0"	JREF-	1VXX9114Z03

01/30/2017

Gable Stud Reinforcement Detail

ASCE 7-10: 140 mph Wind Speed, 15' Mean Height, Enclosed, Exposure C, Kzt = 1.00

Or: 120 mph Wind Speed, 15' Mean Height, Partially Enclosed, Exposure C, Kzt = 1.00
Or: 120 mph Wind Speed, 15' Mean Height, Enclosed, Exposure D, Kzt = 1.00
Or: 100 mph Wind Speed, 15' Mean Height, Partially Enclosed, Exposure D, Kzt = 1.00

Max Gable Vertical Length

2x4 Gable Vertical Spacing	Species	Brace Grade	No Braces	(1) 1x4 "L" Brace * Group A	(1) 1x4 "L" Brace * Group B	(1) 2x4 "L" Brace * Group A	(1) 2x4 "L" Brace * Group B	(2) 2x4 "L" Brace ** Group A	(2) 2x4 "L" Brace ** Group B	(1) 2x6 "L" Brace * Group A	(1) 2x6 "L" Brace * Group B	(2) 2x6 "L" Brace ** Group A	(2) 2x6 "L" Brace ** Group B
24" o.c.	SPF HF	#1 / #2	4' 3"	7' 3"	7' 7"	8' 7"	8' 11"	10' 3"	10' 8"	13' 6"	14' 0"	14' 0"	14' 0"
		#3	4' 1"	6' 7"	7' 1"	8' 6"	8' 10"	10' 1"	10' 6"	13' 4"	13' 10"	14' 0"	14' 0"
		Stud	4' 1"	6' 7"	7' 0"	8' 6"	8' 10"	10' 1"	10' 6"	13' 4"	13' 10"	14' 0"	14' 0"
		Standard	4' 1"	5' 8"	6' 0"	7' 7"	8' 1"	10' 1"	10' 6"	11' 10"	12' 8"	14' 0"	14' 0"
	SP DFL	#1	4' 6"	7' 4"	7' 8"	8' 8"	9' 0"	10' 4"	10' 9"	13' 8"	14' 0"	14' 0"	14' 0"
		#2	4' 3"	7' 3"	7' 7"	8' 7"	8' 11"	10' 3"	10' 8"	13' 6"	14' 0"	14' 0"	14' 0"
		#3	4' 2"	6' 0"	6' 4"	7' 11"	8' 6"	10' 2"	10' 7"	12' 5"	13' 4"	14' 0"	14' 0"
		Stud	4' 2"	6' 0"	6' 4"	7' 11"	8' 6"	10' 2"	10' 7"	12' 5"	13' 4"	14' 0"	14' 0"
		Standard	4' 0"	5' 3"	5' 7"	7' 0"	7' 6"	9' 6"	10' 2"	11' 0"	11' 10"	14' 0"	14' 0"
16" o.c.	SPF HF	#1 / #2	4' 11"	8' 4"	8' 8"	9' 10"	10' 3"	11' 8"	12' 2"	14' 0"	14' 0"	14' 0"	14' 0"
		#3	4' 8"	8' 1"	8' 8"	9' 8"	10' 1"	11' 7"	12' 1"	14' 0"	14' 0"	14' 0"	14' 0"
		Stud	4' 8"	8' 1"	8' 6"	9' 8"	10' 1"	11' 7"	12' 1"	14' 0"	14' 0"	14' 0"	14' 0"
		Standard	4' 8"	6' 11"	7' 5"	9' 3"	9' 11"	11' 7"	12' 1"	14' 0"	14' 0"	14' 0"	14' 0"
	SP DFL	#1	5' 1"	8' 5"	8' 9"	9' 11"	10' 4"	11' 10"	12' 4"	14' 0"	14' 0"	14' 0"	14' 0"
		#2	4' 11"	8' 4"	8' 8"	9' 10"	10' 3"	11' 8"	12' 2"	14' 0"	14' 0"	14' 0"	14' 0"
		#3	4' 9"	7' 4"	7' 9"	9' 9"	10' 2"	11' 8"	12' 1"	14' 0"	14' 0"	14' 0"	14' 0"
		Stud	4' 9"	7' 4"	7' 9"	9' 9"	10' 2"	11' 8"	12' 1"	14' 0"	14' 0"	14' 0"	14' 0"
		Standard	4' 8"	6' 5"	6' 10"	8' 7"	9' 2"	11' 7"	12' 1"	13' 6"	14' 0"	14' 0"	14' 0"
12" o.c.	SPF HF	#1 / #2	5' 5"	9' 2"	9' 6"	10' 10"	11' 3"	11' 8"	13' 5"	14' 0"	14' 0"	14' 0"	14' 0"
		#3	5' 1"	9' 0"	9' 4"	10' 8"	11' 1"	12' 9"	13' 3"	14' 0"	14' 0"	14' 0"	14' 0"
		Stud	5' 1"	9' 0"	9' 4"	10' 8"	11' 1"	12' 9"	13' 3"	14' 0"	14' 0"	14' 0"	14' 0"
		Standard	5' 1"	8' 0"	8' 6"	10' 8"	11' 1"	12' 9"	13' 3"	14' 0"	14' 0"	14' 0"	14' 0"
	SP DFL	#1	5' 8"	9' 3"	9' 8"	10' 11"	11' 4"	13' 0"	13' 6"	14' 0"	14' 0"	14' 0"	14' 0"
		#2	5' 5"	9' 2"	9' 6"	10' 10"	11' 3"	12' 11"	13' 5"	14' 0"	14' 0"	14' 0"	14' 0"
		#3	5' 3"	8' 5"	9' 0"	10' 9"	11' 2"	12' 10"	13' 4"	14' 0"	14' 0"	14' 0"	14' 0"
		Stud	5' 3"	8' 5"	9' 0"	10' 9"	11' 2"	12' 10"	13' 4"	14' 0"	14' 0"	14' 0"	14' 0"
		Standard	5' 1"	7' 5"	7' 11"	9' 11"	10' 7"	12' 9"	13' 3"	14' 0"	14' 0"	14' 0"	14' 0"

Bracing Group Species and Grades:

Group A:

Spruce-Pine-Fir	
#1 / #2	Standard
#3	Stud

Hem-Fir	
#2	Stud
#3	Standard

Douglas Fir-Larch
#3
Stud
Standard

Southern Pine***
#3
Stud
Standard

Group B:

Hem-Fir
#1 & Btr
#1

Douglas Fir-Larch
#1
#2

Southern Pine***
#1
#2

1x4 Braces shall be SRB (Stress-Rated Board).

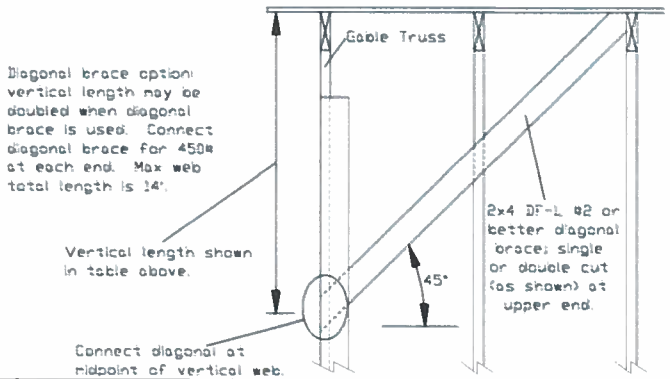
***For 1x4 So. Pine use only Industrial 55 or Industrial 45 Stress-Rated Boards. Group B values may be used with these grades.

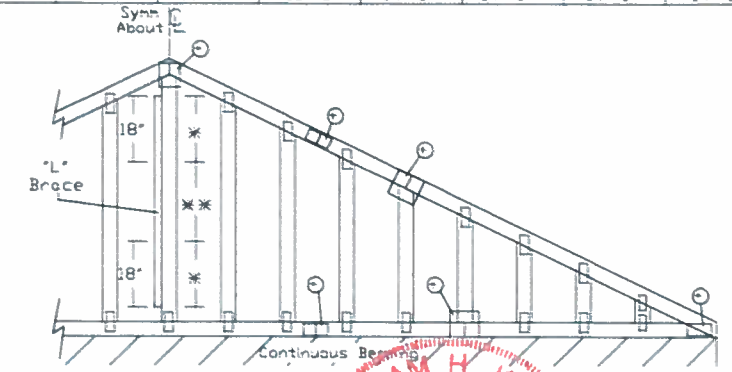
Gable Truss Detail Notes:

Wind Load deflection criterion is L/240.

Provide uplift connections for 55 plf over continuous bearing (5 psf TC Dead Load).

Gable end supports load from 4' 0" outlookers with 2' 0" overhang, or 12" plywood overhang.





Refer to chart above for max. gable vertical length.

Attach "L" braces with 10d (0.128"x3.0" min) nails.
* For (1) "L" brace: space nails at 2" o.c. in 18" end zones and 4" o.c. between zones.
** For (2) "L" braces: space nails at 3" o.c. in 18" end zones and 6" o.c. between zones.

"L" bracing must be a minimum of 80% of web member length.

Gable Vertical Plate Sizes

Vertical Length	No Splice
Less than 4' 0"	1X4 or 2X3
Greater than 4' 0"	3X4

+ Refer to common truss design for peak, splice, and heel plates.

Refer to the Building Designer for conditions not addressed by this detail.

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13723 Riverport Drive
Suite 200
Maryland Heights, MO 63043

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WILLIAM H. KRICK LICENSE No. 70861 STATE OF FLORIDA PROFESSIONAL ENGINEER

Jan 30 '17

William H. Krick Lic. Number 70861

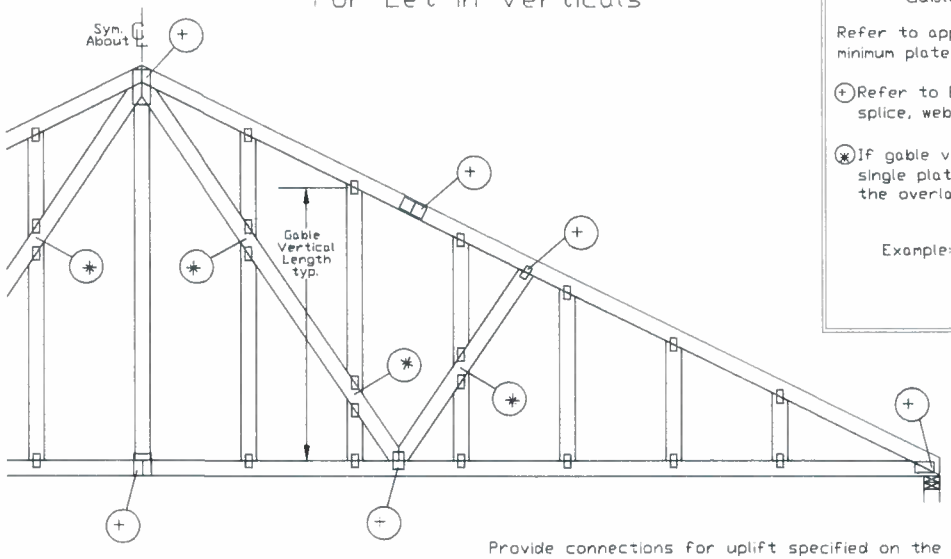
MAX TOT. LD 60 PSF

MAX SPACING 24.0"

REF	ASCE7-10-GAB14015
DATE	10/01/14
DRWG	A14015ENC101014

01/30/2017

Gable Detail
For Let-in Verticals



Gable Truss Plate Sizes

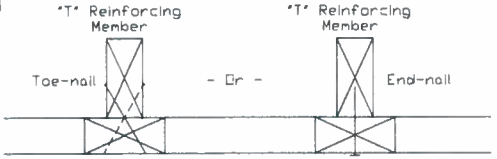
Refer to appropriate Alpine gable detail for minimum plate sizes for vertical studs.

(+) Refer to Engineered truss design for peak, splice, web, and heel plates.

(*) If gable vertical plates overlap, use a single plate that covers the total area of the overlapped plates to span the web.

Example:

"T" Reinforcement Attachment Detail

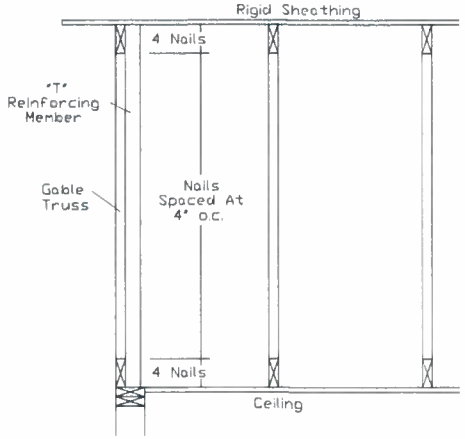


Provide connections for uplift specified on the engineered truss design.

Attach each "T" reinforcing member with

End Driven Nails:
10d Common (0.148"x 3.",min) Nails at 4" o.c. plus
(4) nails in the top and bottom chords.

Toenailed Nails:
10d Common (0.148"x3",min) Toenails at 4" o.c. plus
(4) toenails in the top and bottom chords.



This detail to be used with the appropriate Alpine gable detail for ASCE wind load.

ASCE 7-05 Gable Detail Drawings
A13015051014, A12015051014, A11015051014, A10015051014, A14015051014, A13030051014, A12030051014, A11030051014, A10030051014, A14030051014

ASCE 7-10 Gable Detail Drawings
A11515ENC101014, A12015ENC101014, A14015ENC101014, A16015ENC101014, A18015ENC101014, A20015ENC101014, A20015END101014, A20015PED101014, A11530ENC101014, A12030ENC101014, A14030ENC101014, A16030ENC101014, A18030ENC101014, A20030ENC101014, A20030END101014, A20030PED101014 S11515ENC100815, S12015ENC100815, S14015ENC100815, S16015ENC100815, S18015ENC100815, S20015ENC100815, S20015END100815, S20015PED100815, S11530ENC100815, S12030ENC100815, S14030ENC100815, S16030ENC100815, S18030ENC100815, S20030ENC100815, S20030END100815, S20030PED100815

See appropriate Alpine gable detail for maximum unreinforced gable vertical length.

To convert from "L" to "T" reinforcing members, multiply "T" increase by length (based on appropriate Alpine gable detail).

Maximum allowable "T" reinforced gable vertical length is 14' from top to bottom chord.

"T" reinforcing member material must match size, specie, and grade of the "L" reinforcing member.

Web Length Increase w/ "T" Brace

"T" Reinf. Mbr. Size	"T" Increase
2x4	30 %
2x6	20 %

Example:
ASCE 7-10 Wind Speed = 120 mph
Mean Roof Height = 30 ft, Kzt = 1.00
Gable Vertical = 24"o.c. SP #3
"T" Reinforcing Member Size = 2x4
"T" Brace Increase (From Above) = 30% = 1.30
(1) 2x4 "L" Brace Length = 8' 7"
Maximum "T" Reinforced Gable Vertical Length
1.30 x 8' 7" = 11' 2"

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Suite 200
Maryland Heights, MO 63043

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William H. Krick Lic. Number 70861

MAX. TOT. LD.	60 PSF
DUR. FAC.	ANY
MAX. SPACING	24.0"

REF	LET-IN VERT
DATE	10/01/14
DRWG	GBLLETIN1014

01/30/2017

(D)

COLUMBIA COUNTY BUILDING DEPARTMENT
RESIDENTIAL CHECK LIST

MINIMUM PLAN REQUIREMENTS: FLORIDA BUILDING CODE RESIDENTIAL 2014 EFFECTIVE 1 JULY 2015
AND THE NATIONAL ELECTRICAL 2011 EFFECTIVE 1 JULY 2015

ALL REQUIREMENTS ARE SUBJECT TO CHANGE

ALL BUILDING PLANS MUST INDICATE COMPLIANCE WITH THE CURRENT 2014 FLORIDA BUILDING CODES RESIDENTIAL, EFFECTIVE 1 JULY 2015. NATIONAL ELECTRICAL CODE 2011 EFFECTIVE 1 JULY 2015. ALL PLANS OR DRAWINGS SHALL PROVIDE CALCULATIONS AND DETAILS THAT HAVE THE SEAL AND SIGNATURE OF A CERTIFIED ARCHITECT OR ENGINEER REGISTERED IN THE STATE OF FLORIDA, OR ALTERNATE METHODOLOGIES, APPROVED BY THE STATE OF FLORIDA BUILDING COMMISSION FOR ONE-AND-TWO FAMILY DWELLINGS.

FOR DESIGN PURPOSES THE FOLLOWING BASIC WIND SPEEDS ARE PER FLORIDA BUILDING CODE FIGURE 1609-A THROUGH 1609-C ULTIMATE DESIGN WIND SPEEDS FOR RISK CATEGORY AND BUILDINGS AND OTHER STRUCTURES
Revised 7/1/15

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL				Items to Include- Each Box shall be Circled as Applicable		
				Yes	**No**	**N/A**
1	Two (2) complete sets of plans containing the following:			X		
2	All drawings must be clear, concise, drawn to scale. details that are not used shall be marked void			X		
3	**Condition space (Sq. Ft.)**		**Total (Sq. Ft.) under roof**	IIIIIIII	IIIIIIII	IIIII

Designers name and signature shall be on all documents and a licensed architect or engineer, signature and official embossed seal shall be affixed to the plans and documents as per the FLORIDA BUILDING CODES RESIDENTIAL R101.2.1

Site Plan information including:

4	Dimensions of lot or parcel of land	X		
5	Dimensions of all building set backs	X		
6	Location of all other structures (include square footage of structures) on parcel, existing or proposed well and septic tank and all utility easements.	X		
7	Provide a full legal description of property.	X		

Wind-load Engineering Summary, calculations and any details are required.

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL		Items to Include- Each Box shall be Circled as Applicable		
8	**Plans or specifications must show compliance with FBCR Chapter 3**	IIIIII	IIIII	IIIIII
		YES	**NO**	**N/A**
9	Basic wind speed (3-second gust), miles per hour	X		
10	(Wind exposure – if more than one wind exposure is used, the wind exposure and applicable wind direction shall be indicated)	X		
11	Wind importance factor and nature of occupancy	X		
12	The applicable internal pressure coefficient, Components and Cladding	X		
13	The design wind pressure in terms of psf (kN/m²), to be used for the design of exterior component, cladding materials not specifally designed by the registered design professional.	X		

Elevations Drawing including:

14	All side views of the structure	X		
15	Roof pitch	X		
16	Overhang dimensions and detail with attic ventilation	X		
17	Location, size and height above roof of chimneys	X		
18	Location and size of skylights with Florida Product Approval			N/A
18	Number of stories	X		
20A	Building height from the established grade to the roofs highest peak	X		

Floor Plan including:

20	Dimensioned area plan showing rooms. attached garage. breeze ways. covered porches. deck. balconies	X		
21	Raised floor surfaces located more than 30 inches above the floor or grade			N/A
22	All exterior and interior shear walls indicated	X		
23	Shear wall opening shown (Windows. Doors and Garage doors)	X		
24	Show compliance with Section FBCR 310 Emergency escape and rescue opening shown in each bedroom (net clear opening shown) and Show compliance with Section FBC 1405.13.2 where the opening of an operable window is located more than 72 inches above the finished grade or surface below. the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finished floor of the room in which the window is located. Glazing between the floor and 24 inches shall be fixed or have openings through which a 4-inch-diameter sphere cannot pass.	X		
25	Safety glazing of glass where needed	X		
26	Fireplaces types (gas appliance) (vented or non-vented) or wood burning with Hearth (see chapter 10 and chapter 24 of FBCR)			N/A
27	Show stairs with dimensions (width. tread and riser and total run) details of guardrails. Handrails			N/A
28	Identify accessibility of bathroom (see FBCR SECTION 320)	X		

All materials placed within opening or onto/into exterior walls, soffits or roofs shall have Florida product approval number and mfg. installation information submitted with the plans
(see Florida product approval form)

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable

FBCR 403: Foundation Plans

		YES	NO	N/A
29	Location of all load-bearing walls footings indicated as standard. monolithic, dimensions. size and type of reinforcing.	X		
30	All posts and/or column footing including size and reinforcing	X		
31	Any special support required by soil analysis such as piling.			N/A
32	Assumed load-bearing valve of soil _____ Pound Per Square Foot			N/A
33	Location of horizontal and vertical steel. for foundation or walls (include # size and type) **For** structures with foundation which establish new electrical utility companies service connection a Concrete Encased Electrode will be required within the foundation to serve as an grounding electrode system. Per the National Electrical Code article 250.52.3	X		

FBCR 506: CONCRETE SLAB ON GRADE

34	Show Vapor retarder (6mil. Polyethylene with joints lapped 6 inches and sealed)	X		
35	Show control joints, synthetic fiber reinforcement or welded fire fabric reinforcement and Supports	X		

FBCR 318: PROTECTION AGAINST TERMITES

36	Indicate on the foundation plan if soil treatment is used for subterranean termite prevention or Submit other approved termite protection methods. **Protection shall be provided by registered termiticides**	X		

FBCR 606: Masonry Walls and Stem walls (load bearing & shear Walls)

37	Show all materials making up walls, wall height, and Block size. mortar type	X		
38	Show all Lintel sizes, type, spans and tie-beam sizes and spacing of reinforcement	X		

Metal frame shear wall and roof systems shall be designed, signed and sealed by Florida Prof. Engineer or Architect

Floor Framing System: First and/or second story

39	Floor truss package shall including layout and details, signed and sealed by Florida Registered Professional Engineer			N/A
40	Show conventional floor joist type, size, span, spacing and attachment to load bearing walls, stem walls and/or priers			N/A
41	Girder type, size and spacing to load bearing walls, stem wall and or priers			N/A
42	Attachment of joist to girder			N/A
43	Wind load requirements where applicable	X		
44	Show required under-floor crawl space			N/A
45	Show required amount of ventilation opening for under-floor spaces			N/A
46	Show required covering of ventilation opening			N/A
47	Show the required access opening to access to under-floor spaces			N/A
48	Show the sub-floor structural panel sheathing type, thickness and fastener schedule on the edges & intermediate of the areas structural panel sheathing			
49	Show Draftstopping, Fire caulking and Fire blocking			
50	Show fireproofing requirements for garages attached to living spaces, per FBCR section 302.6			
51	Provide live and dead load rating of floor framing systems (psf).			

FBCR CHAPTER 6 WOOD WALL FRAMING CONSTRUCTION

	GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable		
		YES	NO	N/A
52	Stud type, grade, size, wall height and oc spacing for all load bearing or shear walls	X		
53	Fastener schedule for structural members per table IRC 602.3 are to be shown	X		
54	Show Wood structural panel's sheathing attachment to studs, joist, trusses, rafters and structural members, showing fastener schedule attachment on the edges & intermediate of the areas structural panel sheathing	X		
55	Show all required connectors with a max uplift rating and required number of connectors and oc spacing for continuous connection of structural walls to foundation and roof trusses or rafter systems	X		
56	Show sizes, type, span lengths and required number of support jack studs, king studs for shear wall opening and girder or header per FBCB 2308.9.5	X		
57	Indicate where pressure treated wood will be placed	X		
58	Show all wall structural panel sheathing, grade, thickness and show fastener schedule for structural panel sheathing edges & intermediate areas	X		
59	A detail showing gable truss bracing, wall balloon framing details or/ and wall hinge bracing detail	X		

FBCR :ROOF SYSTEMS:

60	Truss design drawing shall meet section FBCR 802.1.7.1 Wood trusses	X		
61	Include a layout and truss details, signed and sealed by Florida Professional Engineer	X		
62	Show types of connector's assemblies' and resistance uplift rating for all trusses and rafters	X		
63	Show gable ends with rake beams showing reinforcement or gable truss and wall bracing details	X		
64	Provide dead load rating of trusses	X		

FBCR 802:Conventional Roof Framing Layout

65	Rafter and ridge beams sizes, span, species and spacing	X		
66	Connectors to wall assemblies' include assemblies' resistance to uplift rating	X		
67	Valley framing and support details	X		
68	Provide dead load rating of rafter system	X		

FBCR 803 ROOF SHEATHING

69	Include all materials which will make up the roof decking, identification of structural panel sheathing, grade, thickness	X		
70	Show fastener Size and schedule for structural panel sheathing on the edges & intermediate areas	X		

ROOF ASSEMBLIES FRC Chapter 9

71	Include all materials which will make up the roof assembles covering	X		
72	Submit Florida Product Approval numbers for each component of the roof assembles covering	X		

FBCR Energy Conservation R.401

Residential construction shall comply with this code by using the following compliance methods in the Residential buildings compliance methods. **Two of the required forms are to be submitted**. *R 402-2014 As an alternative to the computerized Compliance Method A. the Alternate Residential Point System Method hand calculation, Alternate Form R 402-2014, may be used. All requirements specific to this calculation are located in Sub appendix C to Appendix G. Buildings complying by this alternative shall meet all mandatory requirements of this chapter. Computerized versions of the Alternate Residential Point System Method shall not be acceptable for code compliance.*

	GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable		
		YES	**NO**	**N/A**
73	Show the insulation R value for the following areas of the structure	X		
74	Attic space	X		
75	Exterior wall cavity	X		
76	Crawl space	X		

HVAC information

77	Submit two copies of a Manual J sizing equipment or equivalent computation study	X		
78	Exhaust fans shown in bathrooms **Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous required**			N/A
79	Show clothes dryer route and total run of exhaust duct	X		

Plumbing Fixture layout shown

80	All fixtures waste water lines shall be shown on the foundation plan	X		
81	Show the location of water heater	X		

Private Potable Water

82	Pump motor horse power	X		
83	Reservoir pressure tank gallon capacity	X		
84	Rating of cycle stop valve if used	X		

Electrical layout shown including

85	Show Switches, receptacles outlets, lighting fixtures and Ceiling fans	X		
86	Show all 120-volt, single phase, 15- and 20-ampere branch circuits outlets required to be protected by **Ground-Fault Circuit Interrupter (GFCI) Article 210.8 A**	X		
87	Show the location of smoke detectors & Carbon monoxide detectors	X		
88	Show service panel, sub-panel, location(s) and total ampere ratings	X		
89	On the electrical plans identify the electrical service overcurrent protection device for the main electrical service. This device shall be installed on the exterior of structures to serve as a disconnecting means for the utility company electrical service. Conductors used from the exterior disconnecting means to a panel or sub panel shall have four-wire conductors, of which one conductor shall be used as an equipment ground. Indicate if the utility company service entrance cable will be of the overhead or underground type. **For structures** with foundation which establish new electrical utility companies service connection a Concrete Encased Electrode will be required within the foundation to serve as an Grounding electrode system. Per the National Electrical Code article 250.52.3	X		
90	Appliances and HVAC equipment and disconnects	X		
91	Show all 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas shall be protected by a listed **Combination arc-fault circuit interrupter,** Protection device. NEC 210.12A	X		

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable

THE FOLLOWING ITEMS MUST BE SUBMITTED WITH BUILDING PLANS

		YES	NO	N/A
92	**Building Permit Application** A current Building Permit Application is to be completed, by following the Checklist all supporting documents must be submitted. There is a **$15.00** application fee. The completed application with attached documents and application fee can be mailed.	X		
93	**Parcel Number** The parcel number (Tax ID number) from the Property Appraisers Office (386) 758-1083 is required. A copy of property deed is also required. www.columbiacountyfla.com	X		
94	**Environmental Health Permit or Sewer Tap Approval** A copy of a approved Columbia County Environmental Health (386) 758-1058			
95	**City of Lake City** A City Water and/or Sewer letter. Call 386-752-2031			N/A
96	**Toilet facilities shall be provided for all construction sites**	X		
97	**Town of Fort White** (386) 497-2321 If the parcel in the application for building permit is within the Corporate city limits of Fort White, an approval land use development letter issued by the Town of Fort is required to be submitted with the application for a building permit.			N/A
98	**Flood Information:** All projects within the Floodway of the Suwannee or Santa Fe Rivers shall require permitting through the Suwannee River Water Management District, before submitting a application to this office. Any project located within a flood zone where the base flood elevation (100 year flood) has been established shall meet the requirements of Section 8.5.2 of the Columbia County Land Development Regulations. Any project located within a flood zone where the base flood elevation has not been established (Zone A) shall meet the requirements of Section 8.5.3 of the Columbia County Land Development Regulations			N/A
99	**CERTIFIED FINISHED FLOOR ELEVATIONS** will be required on any project where the approved FIRM Flood Maps show the property is in a AE, Floodway, and AH flood zones. Additionally One Foot Rise letters are required for AE and AH zones. In the Floodway Flood zones a Zero Rise letter is required.	X		
100	A Flood development permit is also required for AE, Floodway & AH. Development permit cost is **$50.00**			N/A
101	**Driveway Connection:** If the property does not have an existing access to a public road, then an application for a culvert permit (**$25.00**) must be made. County Public Works Dept. determines the size and length of every culvert before instillation and completes a final inspection before permanent power is granted. If the applicant feels that a culvert is not needed, they may apply for a culvert waiver (**$50.00**) Separate Check when issued. If the project is to be located on an F.D.O.T. maintained road, then an F.D.O.T. access permit is required.	X		
102	**911 Address:** An application for a 911address must be applied for and **received** through the Columbia County Emergency Management Office of 911 Addressing Department (386) 758-1125.	X		

Disclosure Statement for Owner Builders *If you as the applicant will be acting as an owner/builder under section 489.103(7) of the Florida Statutes, submit the required owner builder disclosure statement form.*

Notice Of Commencement

A notice of commencement form **recorded** in the Columbia County Clerk Office is required to be filed with the building department Before Any Inspections can be preformed.

Section R101.2.1 of the Florida Building Code Residential:

The provisions of Chapter 1, Florida Building Code shall govern the administration and enforcement of the Florida Building Code, Residential.

As required by Florida Statute 553.842 and Florida Administrative Code 9B-72, please provide the information and approval numbers on the building components listed below if they will be utilized on the construction project for which you are applying for a building permit. We recommend you contact your local product supplier should you not know the product approval number for any of the applicable listed products. Statewide approved products are listed online @ www.floridabuilding.org

Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
1. EXTERIOR DOORS			
A. SWINGING	Masonite	Fiberglass Ext. Door w/Composite Jm	FL4334-R9
B. SLIDING			
C. SECTIONAL/ROLL UP			
D. OTHER			
2. WINDOWS			
A. SINGLE/DOUBLE HUNG	Magnolia	Vinyle Single Hung w/Low E Glass	FL16475-R2
B. HORIZONTAL SLIDER			
C. CASEMENT			
D. FIXED			
E. MULLION			
F. SKYLIGHTS			
G. OTHER			
3. PANEL WALL			
A. SIDING	Hardi Board	HORIZONAL LAP SIDING	FL13192-R4
B. SOFFITS	Kaycan	Alum. Soffets	FL16503-R1
C. STOREFRONTS			
D. GLASS BLOCK			
E. OTHER			
4. ROOFING PRODUCTS			
A. ASPHALT SHINGLES	Certainteed	30 YR Architectural	FL5444-R8
B. NON-STRUCT METAL			
C. ROOFING TILES			
D. SINGLE PLY ROOF			
E. OTHER			
5. STRUCT COMPONENTS			
A. WOOD CONNECTORS			
B. WOOD ANCHORS			
C. TRUSS PLATES	Alpine	Truss Plates	FL1999-3
D. INSULATION FORMS			
E. LINTELS			
F. OTHERS			
6. NEW EXTERIOR			
ENVELOPE PRODUCTS			

The products listed below did not demonstrate product approval at plan review. I understand that at the time of inspection of these products, the following information must be available to the inspector on the jobsite; 1) copy of the product approval, 2) performance characteristics which the product was tested and certified to comply with, 3) copy of the applicable manufacturers installation requirements.
Further, I understand these products may have to be removed if approval cannot be demonstrated during inspection.

Contractor OR Agent Signature _____ Date _____

NOTES: _____

RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST

Florida Department of Business and Professional Regulation
Simulated Performance Alternative (Performance) Method

Applications for compliance with the 2014 Florida Building Code, Energy Conservation via the residential Simulated Performance method shall include

- ☐ *This checklist*
- ☐ *A Form R405 report that documents that the Proposed Design complies with Section R405.3 of the Florida Energy Code. This form shall include a summary page indicating home address, e-ratio and the pass or fail status along with summary areas and types of components, whether the home was simulated as a worst-case orientation, name and version of the compliance software tool, name of individual completing the compliance report (1 page) and an input summary checklist that can be used for field verification (usually 4 pages/may be greater).*
- ☐ *Energy Performance Level (EPL) Display Card (one page)*
- ☐ *Mandatory Requirements(three pages)*

Required prior to CO for the Performance Method:

- ☐ *Air Barrier and Insulation Inspection Component Criteria checklist (Table R402.4.1.1 - one page)*
- ☐ *A completed Envelope Leakage Test Report(usually one page)*
- ☐ *If Form R405 duct leakage type indicates anything other than "default leakage", then a completed Form R405 Duct Leakage Test Report (usually one page)*

FORM R405-2014

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	170000	Builder Name:	Erkinger Construction Group
Street:		Permit Office:	
City, State, Zip:	Lake City , FL ,	Permit Number:	
Owner:	John McClain Res	Jurisdiction:	
Design Location:	FL, Gainesville	County::	columbia (Florida Climate Zone 2)

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Single-family
3. Number of units, if multiple family	1
4. Number of Bedrooms	4
5. Is this a worst case?	Yes
6. Conditioned floor area above grade (ft²)	1721
Conditioned floor area below grade (ft²)	0

7. Windows(263.6 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.30	263.56 ft²
SHGC:	SHGC=0.22	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		9.650 ft.
Area Weighted Average SHGC:		0.220

8. Floor Types (1721.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	1721.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types (1642.7 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=20.0	1642.70 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (1721.0 sqft.)	Insulation	Area
a. Roof Deck (Unvented)	R=22.0	1721.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Main, Ret: Main, AH: Main	6	344.2

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	35.0	SEER:15.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	35.0	HSPF:8.60

14. Hot water systems	
a. Electric	Cap: 40 gallons EF: 0.950
b. Conservation features	
None	
15. Credits	Pstat

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

Glass/Floor Area: 0.153

Total Proposed Modified Loads: 50.03
Total Baseline Loads: 51.13

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: Evan Beamsley
DATE: 2017-02-01

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT:
DATE: 2-1-17

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL:
DATE:

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.2.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and an envelope leakage test report in accordance with R402.4.1.2.

FORM R405-2014

PROJECT

Title:	170000	Bedrooms:	4	Address Type:	Street Address
Building Type:	User	Conditioned Area:	1721	Lot #	
Owner:	John McClain Res	Total Stories:	1	Block/SubDivision:	
# of Units:	1	Worst Case:	Yes	PlatBook:	
Builder Name:	Erkinger Construction Group	Rotate Angle:	135	Street:	
Permit Office:		Cross Ventilation:		County:	columbia
Jurisdiction:		Whole House Fan:		City, State, Zip:	Lake City , FL ,
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
____	FL, Gainesville	FL_GAINESVILLE_REGI	2	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1721	13768

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1721	13768	Yes	8	4	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
____	1	Slab-On-Grade Edge Insulatio	Main	205 ft	0	1721 ft²	___	0.3	0.3	0.4

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
____	1	Gable or shed	Composition shingles	1993 ft²	502 ft²	Dark	0.92	No	0.9	No	22	30.3

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
____	1	Full attic	Unvented	0	1721 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
____	1	Under Attic (Unvented)	Main	0	Blown	1721 ft²	0.11	Wood

FORM R405-2014

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
____	1	N=>SE	Exterior	Frame - Wood	Main	20	14	4	8		114.7 ft²		0.23	0.75	0
____	2	E=>SW	Exterior	Frame - Wood	Main	20	9		8		72.0 ft²		0.23	0.75	0
____	3	N=>SE	Exterior	Frame - Wood	Main	20	32		8		256.0 ft²		0.23	0.75	0
____	4	W=>NE	Exterior	Frame - Wood	Main	20	4		8		32.0 ft²		0.23	0.75	0
____	5	N=>SE	Exterior	Frame - Wood	Main	20	11	8	8		93.3 ft²		0.23	0.75	0
____	6	E=>SW	Exterior	Frame - Wood	Main	20	35	8	8		285.3 ft²		0.23	0.75	0
____	7	S=>NW	Exterior	Frame - Wood	Main	20	44	0	8		352.0 ft²		0.23	0.75	0
____	8	W=>NE	Exterior	Frame - Wood	Main	20	22	8	8		181.3 ft²		0.23	0.75	0
____	9	S=>NW	Exterior	Frame - Wood	Main	20	14	0	8		112.0 ft²		0.23	0.75	0
____	10	W=>NE	Exterior	Frame - Wood	Main	20	18	0	8		144.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	E=>SW	Insulated	Main	None	.4	1		6	8	6.7 ft²
_____	2	N=>SE	Insulated	Main	None	.4	2		6	8	13.3 ft²
_____	3	S=>NW	Insulated	Main	None	.4	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered orientation (=>) changed to Worst Case.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Overhang Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	1	N=>SE	1	Metal	Low-E Double	Yes	0.3	0.22	12.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	2	E=>SW	2	Metal	Low-E Double	Yes	0.3	0.22	13.3 ft²	99 ft 0 in	0 ft 6 in	None	None
_____	3	N=>SE	3	Metal	Low-E Double	Yes	0.3	0.22	12.0 ft²	10 ft 6 in	0 ft 6 in	None	None
_____	4	N=>SE	3	Metal	Low-E Double	Yes	0.3	0.22	22.2 ft²	10 ft 6 in	0 ft 6 in	None	None
_____	5	N=>SE	5	Metal	Low-E Double	Yes	0.3	0.22	15.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	6	E=>SW	6	Metal	Low-E Double	Yes	0.3	0.22	30.0 ft²	1 ft 6 in	4 ft 0 in	None	None
_____	7	E=>SW	6	Metal	Low-E Double	Yes	0.3	0.22	6.0 ft²	1 ft 6 in	6 ft 0 in	None	None
_____	8	S=>NW	7	Metal	Low-E Double	Yes	0.3	0.22	90.0 ft²	7 ft 6 in	0 ft 6 in	None	None
_____	9	W=>NE	8	Metal	Low-E Double	Yes	0.3	0.22	15.0 ft²	1 ft 6 in	4 ft 0 in	None	None
_____	10	W=>NE	8	Metal	Low-E Double	Yes	0.3	0.22	12.0 ft²	1 ft 6 in	4 ft 0 in	None	None
_____	11	S=>NW	9	Metal	Low-E Double	Yes	0.3	0.22	12.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	12	W=>NE	10	Metal	Low-E Double	Yes	0.3	0.22	24.0 ft²	1 ft 6 in	2 ft 0 in	None	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	.0007	3159.9	173.48	326.25	.539	13.770

FORM R405-2014

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump	None	HSPF:8.6	35 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit	None	SEER: 15	35 kBtu/hr	1050 cfm	0.75	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	Main	0.95	40 gal	70 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

DUCTS

√	#	Supply Location	Supply R-Value	Supply Area	Return Location	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
_____	1	Main	6	344.2 ft	Main	1 ft²	Default Leakage	Main	(Default)	(Default)			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

FORM R405-2014

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 98

The lower the EnergyPerformance Index, the more efficient the home.

, Lake City, FL,

1. New construction or existing		New (From Plans)
2. Single family or multiple family		Single-family
3. Number of units, if multiple family		1
4. Number of Bedrooms		4
5. Is this a worst case?		Yes
6. Conditioned floor area (ft²)		1721
7. Windows**	Description	Area
a. U-Factor:	Dbl, U=0.30	263.56 ft²
SHGC:	SHGC=0.22	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		9.650 ft.
Area Weighted Average SHGC:		0.220

8. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	1721.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types	Insulation	Area
a. Frame - Wood, Exterior	R=20.0	1642.70 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types	Insulation	Area
a. Roof Deck (Unvented)	R=22.0	1721.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Main, Ret: Main, AH: Main	6	344.2

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	35.0	SEER:15.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	35.0	HSPF:8.60

14. Hot water systems	
a. Electric	Cap: 40 gallons
	EF: 0.95
b. Conservation features	
None	
15. Credits	Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: Matthew A. Eby Date: 2-1-17

Address of New Home: 220 SE Klondike Place City/FL Zip: Lake City, FL 32025

Lake City, F

*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

FORM R405-2014

Florida Department of Business and Professional Regulations
Residential Whole Building Performance and Prescriptive Methods

ADDRESS:	Permit Number:
Lake City , FL ,	

MANDATORY REQUIREMENTS See individual code sections for full details.

☐ **401.3 Energy Performance Level (EPL) display card (Mandatory).** The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law [Section 553.9085, Florida Statues] requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate compliance for the building. A copy of the EPL display card can be found in Appendix C.

☐ **R402.4 Air leakage (Mandatory).** The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.1 through R402.4.4.

- O **R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.
  - **R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table 402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.
  - **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

    During testing:
    1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures;
    2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
    3. Interior doors, if installed at the time of the test, shall be open;
    4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
    5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
    6. Supply and return registers, if installed at the time of the test, shall be fully open.
- O **R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers and outdoor combustion air.
- O **R402.4.3 Fenestration air leakage.** Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2), when tested according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

  Exception: Site-built windows, skylights and doors.
- O **R402.4.4 Recessed lighting.** Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

☐ **R403.1.1 Thermostat provision (Mandatory).** At least one thermostat shall be provided for each separate heating and cooling system.

☐ **R403.1.3 Heat pump supplementary heat (Mandatory).** Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

☐ **R403.2.2 Sealing (Mandatory).** All ducts, air handlers, and filter boxes and building cavities that form the primary air containment passageways for air distribution systems shall be considered ducts and plenum chambers, shall be constructed and sealed in accordance with Section C403.2.7.2 of the Commercial Provisions of this code and shall be shown to meet duct tightness criteria by post-construction or rough-in testing below.

Duct tightness shall be verified by testing to Section 803 of the RESNET Standards by either an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes, to be "substantially leak free" by either of the following:

1. Post-construction test: Total leakage shall be less than or equal to 4 cfm (113 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to 4 cfm (113 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm (85 L/min) per 100 square feet (9.29 m2) of conditioned floor area.

Exceptions:

1. The total leakage test is not required for ducts and air handlers located entirely within the building envelope.
2. Duct testing is not mandatory for buildings complying by Section R405 of this code.

MANDATORY REQUIREMENTS - (Continued)

☐ **R403.2.3 Building Cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums.

☐ **R403.3 Mechanical system piping insulation (Mandatory).** Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.,

R403.3.1 Protection of piping insulation.

☐ **R403.4.1 Circulating hot water systems (Mandatory).** Circulating hot water systems shall be provided with an automatic or readily accessible manual switch that can turn off the hot-water circulating pump when the system is not in use.

☐ **R403.4.3 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.

☐ **R403.4.4 Water heater efficiencies (Mandatory).**

- **R403.4.4.1 Storage water heater temperature controls**
  - **R403.4.4.1.1 Automatic controls.** Service water heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).
  - **R403.4.4.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water heating systems to be turned off.
- **R403.4.4.2 Water heating equipment.** Water heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water heating category. Solar water heaters shall met the criteria Section R403.4.4.2.1.
  - **R403.4.4.2.1 Solar water heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol, Collectors in installed solar water heating systems should meet the following criteria:
    1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
    2. Be installed at an orientation within 45 degrees of true south.

☐ **R403.5 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

☐ **R403.6 Heating and cooling equipment (Mandatory).** The following sections are mandatory for cooling and heating equipment.

- **R403.6.1 Equipment sizing.** Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This code does not allow designer safety factors, provisions for future expansion or other factors which affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems.
  - **R403.6.1.1 Cooling equipment capacity.** Cooling only equipment shall be selected so that its total capacity is not less than the calculated total load, but not more than 1.15 times greater than the total load calculated according to the procedure selected in Section 403.6, or the closest available size provided by the manufacturer's product lines. The corresponding latent capacity of the equipment shall not be less than the calculated latent load.

MANDATORY REQUIREMENTS - (Continued)

O **R403.6.1.1 Cooling equipment capacity. (continued)** The published value for AHRI total capacity is a nominal, rating-test value and shall not be used for equipment sizing. Manufacture's expanded performance data shall be used to select cooling-only equipment. This selection shall be used to select cooling-only equipment. This selection shall be based on the outdoor design dry bulb temperature for the load calculation (or entering water temperature for water-source equipment), the blower cfm provided by the expanded performance data, the design value for entering wet bulb temperature and the design value for entering dry bulb temperature.

Design values for entering wet bulb and dry bulb temperature shall be for the indoor dry bulb and relative humidity used for the load calculation and shall be adjusted for return side gains if the return duct(s) is installed in an unconditioned space.

Exceptions:

1. Attached single- and multi-family residential equipment sizing may be selected so that its cooling capacity is less than the calculated total sensible load but not less than 80 percent of that load.
2. When signed and sealed by a Florida-registered engineer, in attached single- and multi-family units, the capacity of equipment may be sized in accordance with good design practice.

O **R403.6.1.2 Heating equipment capacity**

- **R403.6.1.2.1 Heat pumps.** Heat pumps sizing shall be based on the cooling requirements as calculated according to Section R403.6.1.1 and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load.
- **R403.6.1.2.2 Electric resistance furnaces.** Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.6.1.
- **R403.6.1.2.3 Fossil fuel heating equipment.** The capacity of fossil fuel heating equipment with natural draft atmospheric burners shall not be less than the design load calculated in accordance with Section R403.6.1.

O **R403.6.1.3 Extra capacity required for special occasions.** Residences requiring excess cooling or heating equipment capacity on an intermittent basis, such as anticipated additional loads caused by major entertainment events, shall have equipment sized or controlled to prevent continuous space cooling or heating within that space by one or more of the following options:

1. A separate cooling or heating system is utilized to provide cooling or heating to the major entertainment areas.
2. A variable capacity system sized for optimum performance during base load periods is utilized.

☐ **R403.7 Systems serving multiple dwelling units (Mandatory).** Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the Commercial Provisions in lieu of Section R403.

☐ **R403.8 Snow melt system controls (Mandatory).** Snow and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 55°F, and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F.

☐ **R403.9 Swimming pools, inground spas and portable spas (Mandatory).** The energy requirements for residential pools and inground spas shall be as specified in Sections R403.9.1 through R403.9.3 and in accordance with ANSI/APSP-15. The energy requirements for portable spas shall be in accordance with ANSI/APSP-14.

O **R403.9.1 Pool and spa heaters.** All pool heaters shall be equipped with a readily accessible on-off switch that is mounted outside the heater to allow shutting off the heater without adjusting the thermostat setting.

- **R403.9.1.1 Gas and oil-fired pool and spa heaters.** All gas- and oil-fired pool and space heaters shall have a minimum thermal efficiency of 82 percent for heaters manufactured on or after April 16, 2013 when tested in accordance with ANSI Z 21.56. Pool heaters fired by natural gas or LP gas shall not have continuously burning pilot lights.
- **R403.9.1.2 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.

O **R403.9.2 Time switches.** Time switches or other control method that can automatically turn off and on heaters and pumps according to a preset schedule shall be installed on all heaters and pumps. Heaters, pumps and motors that have built in timers shall be deemed in compliance with this equipment.

Exceptions:

1. Where public health standards require 24-hour pump operations.
2. Where pumps are required to operate solar- and waste-heat-recovery pool heating systems.
3. Where pumps are powered exclusively from on-site renewable generation.

O **R403.9.3 Covers.** Heated swimming pools and inground permanently installed spas shall be equipped with a vapor-retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.

- **Exception:** Outdoor pools deriving over 70 percent of the energy for heating from site-recovered energy, such as a heat pump or solar energy source computed over an operating season.

☐ **RR404.1 Lighting equipment (Mandatory).** A minimum of 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or a minimum of 75 percent of permanently installed lighting fixtures shall contain only high efficacy lamps.

Exception: Low-voltage lighting shall not be required to utilize high-efficacy lamps.

O **R404.1.1 Lighting equipment (Mandatory).** Fuel gas lighting systems shall not have continuously burning pilot lights

☐ **R405.2 Performance ONLY.** All ducts not entirely inside the building thermal envelope shall be insulated to a minimum of R-6.

O **R405.2.1 Performance ONLY.** Ceilings shall have minimum insulation of R-19. Where single assemby of the exposed deck and beam type or concrete deck roofs do not have sufficent space, R-10 is allowed.

FORM R405-2014

TABLE 402.4.1.1

AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

Project Name:	170000	Builder Name:	Erkinger Construction Group
Street:		Permit Office:	
City, State, Zip:	Lake City , FL ,	Permit Number:	
Owner:	John McClain Res	Jurisdiction:	
Design Location:	FL, Gainesville		

COMPONENT	CRITERIA	CHECK
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top or exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.	
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.	
Rim joists	Rim joists are insulated and include an air barrier.	
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.	
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shaft openings to exterior or unconditioned space shall be sealed.	
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.	
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.	
Electrical/phone box on	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.	
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors	

Residential System Sizing Calculation

Summary

John McClain Res

Project Title:
170000

Lake City, FL

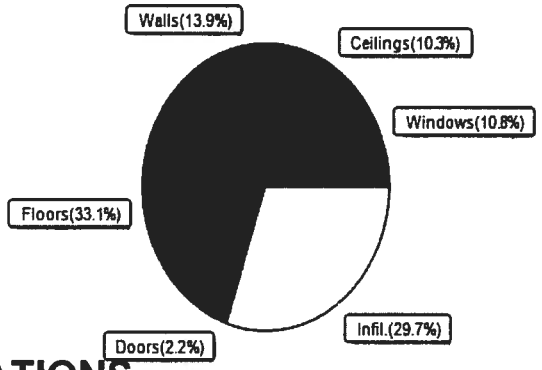
2/1/2017

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M) Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)					
Winter design temperature(TMY3 99%)	30	F	Summer design temperature(TMY3 99%)	94	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	40	F	Summer temperature difference	19	F
Total heating load calculation	**29219**	**Btuh**	**Total cooling load calculation**	**24192**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	119.8	35000	Sensible (SHR = 0.75)	150.3	26250
Heat Pump + Auxiliary(0.0kW)	119.8	35000	Latent	130.2	8750
			Total (Electric Heat Pump)	144.7	35000

WINTER CALCULATIONS

Winter Heating Load (for 1721 sqft)

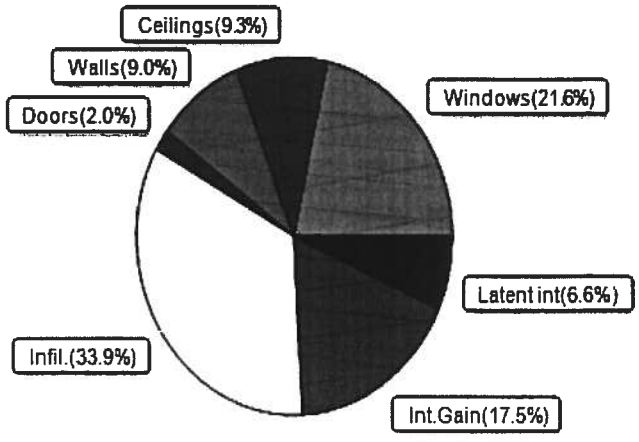
Load component			Load	
Window total	264	sqft	3163	Btuh
Wall total	1339	sqft	4069	Btuh
Door total	40	sqft	640	Btuh
Ceiling total	1721	sqft	3006	Btuh
Floor total	1721	sqft	9676	Btuh
Infiltration	198	cfm	8666	Btuh
Duct loss			0	Btuh
Subtotal			**29219**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**29219**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1721 sqft)

Load component			Load	
Window total	264	sqft	5231	Btuh
Wall total	1339	sqft	2177	Btuh
Door total	40	sqft	480	Btuh
Ceiling total	1721	sqft	2255	Btuh
Floor total			0	Btuh
Infiltration	148	cfm	3087	Btuh
Internal gain			4240	Btuh
Duct gain			0	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**17470**	**Btuh**
Latent gain(ducts)			0	Btuh
Latent gain(infiltration)			5123	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1600	Btuh
Total latent gain			**6723**	**Btuh**
TOTAL HEAT GAIN			**24192**	**Btuh**



8th Edition

EnergyGauge® System Sizing
PREPARED BY: Evan Beamsley
DATE: 2017-02-01

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

John McClain Res

Project Title:
170000

Lake City, FL

Building Type: User

2/1/2017

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)
This calculation is for Worst Case. The house has been rotated 225 degrees.

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	2, NFRC 0.22	Metal	0.30	SW	12.0	12.0	144 Btuh
2	2, NFRC 0.22	Metal	0.30	NW	13.3	12.0	160 Btuh
3	2, NFRC 0.22	Metal	0.30	SW	12.0	12.0	144 Btuh
4	2, NFRC 0.22	Metal	0.30	SW	22.2	12.0	267 Btuh
5	2, NFRC 0.22	Metal	0.30	SW	15.0	12.0	180 Btuh
6	2, NFRC 0.22	Metal	0.30	NW	30.0	12.0	360 Btuh
7	2, NFRC 0.22	Metal	0.30	NW	6.0	12.0	72 Btuh
8	2, NFRC 0.22	Metal	0.30	NE	90.0	12.0	1080 Btuh
9	2, NFRC 0.22	Metal	0.30	SE	15.0	12.0	180 Btuh
10	2, NFRC 0.22	Metal	0.30	SE	12.0	12.0	144 Btuh
11	2, NFRC 0.22	Metal	0.30	NE	12.0	12.0	144 Btuh
12	2, NFRC 0.22	Metal	0.30	SE	24.0	12.0	288 Btuh
	Window Total				263.6(sqft)		3163 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.076)	20.0/0.0	103	3.04	312 Btuh
2	Frame - Wood	- Ext	(0.076)	20.0/0.0	52	3.04	158 Btuh
3	Frame - Wood	- Ext	(0.076)	20.0/0.0	208	3.04	633 Btuh
4	Frame - Wood	- Ext	(0.076)	20.0/0.0	32	3.04	97 Btuh
5	Frame - Wood	- Ext	(0.076)	20.0/0.0	78	3.04	238 Btuh
6	Frame - Wood	- Ext	(0.076)	20.0/0.0	249	3.04	758 Btuh
7	Frame - Wood	- Ext	(0.076)	20.0/0.0	242	3.04	735 Btuh
8	Frame - Wood	- Ext	(0.076)	20.0/0.0	154	3.04	469 Btuh
9	Frame - Wood	- Ext	(0.076)	20.0/0.0	100	3.04	304 Btuh
10	Frame - Wood	- Ext	(0.076)	20.0/0.0	120	3.04	365 Btuh
	Wall Total				1339(sqft)		4069 Btuh

Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)		7	16.0	107 Btuh
2	Insulated - Exterior,	n	(0.400)		13	16.0	213 Btuh
3	Insulated - Exterior,	n	(0.400)		20	16.0	320 Btuh
	Door Total				40(sqft)		640Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Unvent Attic/D/Shing	(0.044)	0.0/22.0	1721	1.7	3006 Btuh
	Ceiling Total			1721(sqft)		3006Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	205.0 ft(perim.)	47.2	9676 Btuh
	Floor Total			1721 sqft		9676 Btuh

	Envelope Subtotal:	20553 Btuh

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.86	13768	1.00	197.9	8666 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

John McClain Res
Lake City, FL

Project Title:
170000
Building Type: User

2/1/2017

Duct load	Average sealed, R6.0, Supply(Con), Return(Con) (DLM of 0.000)	0 Btuh
All Zones	**Sensible Subtotal All Zones**	**29219 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	29219 Btuh 0 Btuh 29219 Btuh

EQUIPMENT

1. Electric Heat Pump	#	35000 Btuh

Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)

Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

John McClain Res

Project Title:
170000

Lake City, FL

2/1/2017

Reference City: Gainesville, FL Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.
This calculation is for Worst Case. The house has been rotated 225 degrees.

Component Loads for Whole House

Window	Type* Panes	SHGC	U	InSh	IS	Ornt	Overhang Len	Hgt	Window Area(sqft) Gross	Shaded	Unshaded	HTM Shaded	Unshaded	Load
1	2 NFRC	0.22, 0.30		No	No	SW	1.5ft.	0.5ft.	12.0	5.9	6.1	10	21	192 Btuh
2	2 NFRC	0.22, 0.30		No	No	NW	99.0f	0.5ft.	13.3	0.0	13.3	10	20	273 Btuh
3	2 NFRC	0.22, 0.30		No	No	SW	10.5f	0.5ft.	12.0	12.0	0.0	10	21	124 Btuh
4	2 NFRC	0.22, 0.30		No	No	SW	10.5f	0.5ft.	22.2	22.2	0.0	10	21	230 Btuh
5	2 NFRC	0.22, 0.30		No	No	SW	1.5ft.	0.5ft.	15.0	5.9	9.1	10	21	256 Btuh
6	2 NFRC	0.22, 0.30		No	No	NW	1.5ft.	4.0ft.	30.0	0.0	30.0	10	20	615 Btuh
7	2 NFRC	0.22, 0.30		No	No	NW	1.5ft.	6.0ft.	6.0	0.0	6.0	10	20	123 Btuh
8	2 NFRC	0.22, 0.30		No	No	NE	7.5ft.	0.5ft.	90.0	0.0	90.0	10	20	1844 Btuh
9	2 NFRC	0.22, 0.30		No	No	SE	1.5ft.	4.0ft.	15.0	0.0	15.0	10	21	322 Btuh
10	2 NFRC	0.22, 0.30		No	No	SE	1.5ft.	4.0ft.	12.0	0.0	12.0	10	21	258 Btuh
11	2 NFRC	0.22, 0.30		No	No	NE	1.5ft.	0.5ft.	12.0	0.0	12.0	10	20	246 Btuh
12	2 NFRC	0.22, 0.30		No	No	SE	1.5ft.	2.0ft.	24.0	2.8	21.2	10	21	484 Btuh
	Excursion													266 Btuh
	Window Total								264 (sqft)					5231 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.08	20.0/0.0	102.7	1.6	167 Btuh
2	Frame - Wood - Ext	0.08	20.0/0.0	52.0	1.6	85 Btuh
3	Frame - Wood - Ext	0.08	20.0/0.0	208.4	1.6	339 Btuh
4	Frame - Wood - Ext	0.08	20.0/0.0	32.0	1.6	52 Btuh
5	Frame - Wood - Ext	0.08	20.0/0.0	78.3	1.6	127 Btuh
6	Frame - Wood - Ext	0.08	20.0/0.0	249.3	1.6	405 Btuh
7	Frame - Wood - Ext	0.08	20.0/0.0	242.0	1.6	393 Btuh
8	Frame - Wood - Ext	0.08	20.0/0.0	154.3	1.6	251 Btuh
9	Frame - Wood - Ext	0.08	20.0/0.0	100.0	1.6	163 Btuh
10	Frame - Wood - Ext	0.08	20.0/0.0	120.0	1.6	195 Btuh
	Wall Total			1339 (sqft)		2177 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	6.7	12.0	80 Btuh
2	Insulated - Exterior	13.3	12.0	160 Btuh
3	Insulated - Exterior	20.0	12.0	240 Btuh
	Door Total	40 (sqft)		480 Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Unvented Attic/DarkShingle	0.044	0.0/22.0	1721.0	1.31	2255 Btuh
	Ceiling Total			1721 (sqft)		2255 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1721 (ft-perimeter)	0.0	0 Btuh
	Floor Total		1721.0 (sqft)		0 Btuh

	Envelope Subtotal:	10142 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

John McClain Res | Project Title: 170000 | Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2/1/2017

Infiltration	Type Natural	Average ACH 0.65	Volume(cuft) 13768		Wall Ratio 1	CFM= 148.4	Load 3087	Btuh
Internal gain		Occupants 8	Btuh/occupant X 230		+	Appliance 2400	Load 4240	Btuh
					Sensible Envelope Load:		17470	Btuh
Duct load	Average sealed, Supply(R6.0-Condi), Return(R6.0-Condi)				(DGM of 0.000)		0	Btuh
					Sensible Load All Zones		**17470**	**Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

John McClain Res | Project Title: 170000 | Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2/1/2017

WHOLE HOUSE TOTALS

	Sensible Envelope Load All Zones	**17470 Btuh**
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	**17470 Btuh**
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
Whole House	**Total sensible gain**	**17470 Btuh**
Totals for Cooling	Latent infiltration gain (for 51 gr. humidity difference)	5123 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**6723 Btuh**
	TOTAL GAIN	**24192 Btuh**

EQUIPMENT

1. Central Unit	#	35000 Btuh

*Key: Window types (Panes - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(½))
(Ornt - compass orientation)

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