



Generated by REScheck-Web Software
Compliance Certificate

Project 2B1003-V8

Energy Code: **2018 IECC**
 Location: **Alamance County, North Carolina**
 Construction Type: **Single-family**
 Project Type: **New Construction**
 Orientation: **Unspecified**
 Conditioned Floor Area: **2,635 ft2**
 Glazing Area: **12%**
 Climate Zone: **4 (3999 HDD)**
 Permit Date:
 Permit Number:

APPROVED BY



9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.

Roger Colson

Construction Site:
 Tbd Mineral Springs Rd
 Swepsonville, North Carolina 27359

Owner/Agent:
 CARRICO
 HBV

Designer/Contractor:
 R-Anell Housing Group, LLC
 Commodore Homes, LLC
 235 Anthony Grove Rd.
 Crouse, NC 28033

Compliance: Passes using UA trade-off

Compliance: **5.7% Better Than Code** Maximum UA: **420** Your UA: **396** Maximum SHGC: **0.40** Your SHGC: **0.25**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules. It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling 1: Flat Ceiling or Scissor Truss	2,635	38.0	0.0	0.030	0.026	79	69
Wall [1walls]: Wood Frame, 24" o.c. Orientation: Right side	427	19.0	0.0	0.059	0.060	22	22
Window - Kinro 3658 {Qty 4}: Vinyl Frame:Double Pane with Low-E SHGC: 0.24 Orientation: Right side	59			0.350	0.320	21	19
Wall [1walls]: Wood Frame, 24" o.c. Orientation: Left side	427	19.0	0.0	0.059	0.060	25	25
Window - Kinro 7112TRN {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.35 Orientation: Left side	6			0.320	0.320	2	2
Wall [1walls]: Wood Frame, 24" o.c. Orientation: Back	743	19.0	0.0	0.059	0.060	38	38
Door - Hinged - Exterior - 6 Panel {Qty 1}: Solid Orientation: Back	22			0.220	0.320	5	7
Door - Kinro 1600 Sliding Patio 7280 {Qty 1}: Glass SHGC: 0.25 Orientation: Back	40			0.330	0.320	13	13

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Window - Kinro 3656 Picture Saftey {Qty 2}: Vinyl Frame:Double Pane with Low-E SHGC: 0.24 Orientation: Back	29			0.330	0.320	10	9
Window - Kinro 3658 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.24 Orientation: Back	15			0.350	0.320	5	5
Wall [1walls]: Wood Frame, 24" o.c. Orientation: Front	743	19.0	0.0	0.059	0.060	34	35
Door - Hinged - Exterior - Half Lite - Pembroke {Qty 1}: Solid Orientation: Front	22			0.280	0.320	6	7
Window - (2) Kinro 3658 {Qty 3}: Vinyl Frame:Double Pane with Low-E SHGC: 0.24 Orientation: Front	88			0.350	0.320	31	28
Window - Kinro 3658 {Qty 3}: Vinyl Frame:Double Pane with Low-E SHGC: 0.24 Orientation: Front	44			0.350	0.320	15	14
Window - Kinro 3036 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.33 Orientation: Front	8			0.350	0.320	3	3
Floor 1: All-Wood Joist/Truss:Over Outside Air	2,635	30.0	0.0	0.033	0.047	87	124

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2018 IECC requirements in REScheck Version : REScheck-Web and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

N. Edwards - drafter
Name - Title

N. Edwards
Signature

9/23/2022
Date





REScheck Software Version : REScheck-Web

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the REScheck software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1] ¹ 	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
103.1, 103.2, 403.7 [PR3] ¹ 	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
302.1, 403.7 [PR2] ² 	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr _____ Cooling: Btu/hr _____	Heating: Btu/hr _____ Cooling: Btu/hr _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

APPROVED BY





9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.

Roger Colson

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------


Section # & Req.ID	Foundation Inspection	Complies?	Comments/Assumptions
303.2.1 [FO11] ² 	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.9 [FO12] ² 	Snow- and ice-melting system controls installed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

APPROVED BY
 9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
 Roger Colson


1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1] ¹	Door U-factor.	U-____	U-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
402.1.1, 402.3.1, 402.3.3, 402.5 [FR2] ¹	Glazing U-factor (area-weighted average).	U-____	U-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.3 [FR4] ¹	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.	APPROVED BY  9/26/2022 <small>Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.</small> Roger Colson		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.1.1 [FR23] ¹	Air barrier and thermal barrier installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.3 [FR20] ¹	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.5 [FR16] ²	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.1 [FR12] ¹	Supply and return ducts in attics insulated ≥ R-8 where duct is ≥ 3 inches in diameter and ≥ R-6 where < 3 inches. Supply and return ducts in other portions of the building insulated ≥ R-6 for diameter ≥ 3 inches and R-4.2 for < 3 inches in diameter.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.2 [FR13] ¹	Ducts, air handlers and filter boxes are sealed with joints/seams compliant with International Mechanical Code or International Residential Code, as applicable.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.5 [FR15] ³	Building cavities are not used as ducts or plenums.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.4 [FR17] ²	HVAC piping conveying fluids above 105 °F or chilled fluids below 55 °F are insulated to ≥R-3.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.4.1 [FR24] ¹	Protection of insulation on HVAC piping.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5.3 [FR18] ²	Hot water pipes are insulated to ≥R-3.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6 [FR19] ²	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	


Additional Comments/Assumptions:

APPROVED BY

 9/26/2022
Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
Roger Colson


1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13] ²	All installed insulation is labeled or the installed R-values provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.1.1, 402.2.6 [IN1] ¹	Floor insulation R-value.	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.2, 402.2.8 [IN2] ¹	Floor insulation installed per manufacturer's instructions and in substantial contact with the underside of the subfloor, or floor framing cavity insulation is in contact with the top side of sheathing, or continuous insulation is installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.1.1, 402.2.5, 402.2.6 [IN3] ¹	Wall insulation R-value. If this is a mass wall with at least 1/2 of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Mass <input type="checkbox"/> Steel	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Mass <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.2 [IN4] ¹	Wall insulation is installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

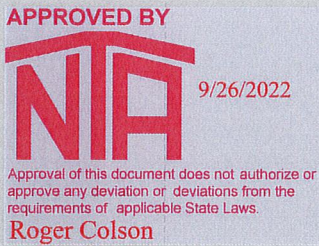
Additional Comments/Assumptions:

APPROVED BY

 9/26/2022
Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
Roger Colson

1 High Impact (Tier 1)
2 Medium Impact (Tier 2)
3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [F11] ¹	Ceiling insulation R-value.	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.1.1, 303.2 [F12] ¹	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft ² .	APPROVED BY  9/26/2022 <small>Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.</small> Roger Colson		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.2.3 [F122] ²	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.2.4 [F13] ¹	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.1.2 [F117] ¹	Blower door test @ 50 Pa. ≤=5 ach in Climate Zones 1-2, and ≤=3 ach in Climate Zones 3-8.	ACH 50 = ____	ACH 50 = ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.3 [F127] ¹	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	____ cfm/100 ft ²	____ cfm/100 ft ²	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.4 [F14] ¹	Duct tightness test result of ≤=4 cfm/100 ft ² across the system or ≤=3 cfm/100 ft ² without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft ²	____ cfm/100 ft ²	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.2.1 [F124] ¹	Air handler leakage designated by manufacturer at ≤=2% of design air flow.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.1.1 [F19] ²	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.1.2 [F110] ²	Heat pump thermostat installed on heat pumps.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5.1 [F111] ²	Circulating service hot water systems have automatic or accessible manual controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6.1 [FI25] ²	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits per Table R403.6.1.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.2 [FI26] ²	Hot water boilers supplying heat through one- or two-pipe heating systems have outdoor setback control to lower boiler water temperature based on outdoor temperature.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5.1.1 [FI28] ²	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5.1.2 [FI29] ²	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5.2 [FI30] ²	Demand recirculation water systems have controls that manage operation of the pump and limit the temperature of the water entering the cold water piping to <= 104°F.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5.4 [FI31] ²	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
404.1 [FI6] ¹	90% or more of permanent fixtures have high efficacy lamps.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
404.1.1 [FI23] ³	Fuel gas lighting systems have no continuous pilot light.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
401.3 [FI7] ²	Compliance certificate posted.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.3 [F118] ³	Manufacturer manuals for mechanical and water heating systems have been provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

APPROVED BY



9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.

Roger Colson

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------



2018 IECC Energy Efficiency Certificate

Insulation Rating **R-Value**

Above-Grade Wall	19.00
Below-Grade Wall	0.00
Floor	30.00
Ceiling / Roof	38.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating **U-Factor** **SHGC**

Window	0.35	0.24
Door	0.33	0.25

Heating & Cooling Equipment **Efficiency**

Heating System: _____	_____
Cooling System: _____	_____
Water Heater: _____	_____

Name: _____ **Date:** _____

Comments

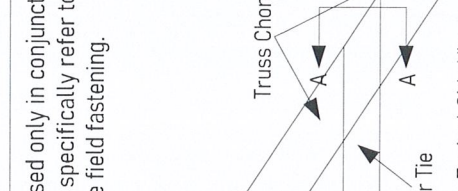

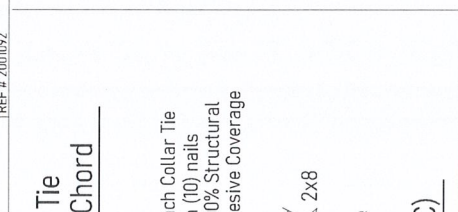
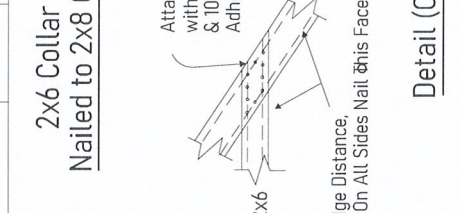
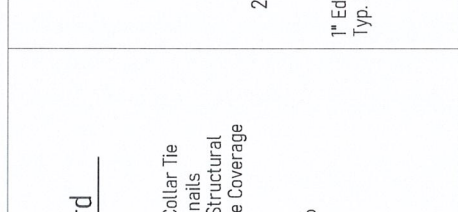
APPROVED BY



9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.


Roger Colson

Job 32802	Truss A098601	Truss Type RIGID COLLAR TIE CONNECTION DETAILS 1	Qty	PLY	UFP ENGINEERING 1 Bulletin 05-02 REF # 2001092
<p>Universal Forest Products Inc., Grand Rapids, MI 49525</p> <p>2x4 Collar Tie Nailed to 2x6 Chord</p>  <p>Attach Collar Tie with (6) nails with 100% Structural & 100% Adhesive Coverage</p> <p>2x4</p> <p>1" Edge Distance, Typ. On All Sides Nail this Face</p> <p>Detail (A)</p>	<p>2x6 Collar Tie Nailed to 2x6 Chord</p>  <p>Attach Collar Tie with (8) nails with 100% Structural & 100% Adhesive Coverage</p> <p>2x6</p> <p>1" Edge Distance, Typ. On All Sides Nail this Face</p> <p>Detail (B)</p>	<p>2x8 Collar Tie Nailed to 2x8 Chord</p>  <p>Attach Collar Tie with (10) nails with 100% Structural & 100% Adhesive Coverage</p> <p>2x8</p> <p>1" Edge Distance, Typ. On All Sides Nail this Face</p> <p>Detail (C)</p>	<p>This Bulletin to be used only in conjunction with UFP truss designs which specifically refer to this Bulletin by number for collar tie field fastening.</p>  <p>Truss Chord</p> <p>Collar Tie</p> <p>Typical Side View</p>	<p>Acceptable Alternate Applications</p> <p>* See truss print for which detail is actually used</p>  <p>1 Ply Truss</p> <p>1 or 2 Ply Truss</p> <p>Collar Tie (One Face)</p> <p>Collar Tie (Both Faces)</p>	<p>APPROVED BY</p> <p>NIA</p> <p>9/26/2022</p> <p>Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.</p> <p>Roger Colson</p>
<p>Power Driven Nails Rigid Collar Tie Connection Details</p> <p>A) Side member shall be fastened with structural adhesive that meets the requirements of ASTM-2559. Maximum wood to wood gap = 1/16".</p> <p>B) Bostitch .131" Dia. x 3" nails (or equal)</p>					
<p>WARNING - Verify design parameters and READ NOTES</p> <p>This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the erector. General guidance regarding member quality control, storage, delivery, erection and loading, consult UFP's Quality Standard (US-89 Backing Specifications and UFP's Quality Standard). For more information, contact UFP's Customer Service Department, 380 Potomac Drive, Madison, WI 53719. Copyright 2004, by Universal Forest Products, Inc.</p>					



Universal Forest Products, Inc.
2801 EAST BELLUM RD, NE
GRAND RAPIDS, MI 49506
PHONE (616) 344-4181 FAX (616) 345-0260

Copyright © 2021 UFP Industries, Inc. All Rights Reserved

APPROVED BY

 9/26/2022
 Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
 Roger Colson

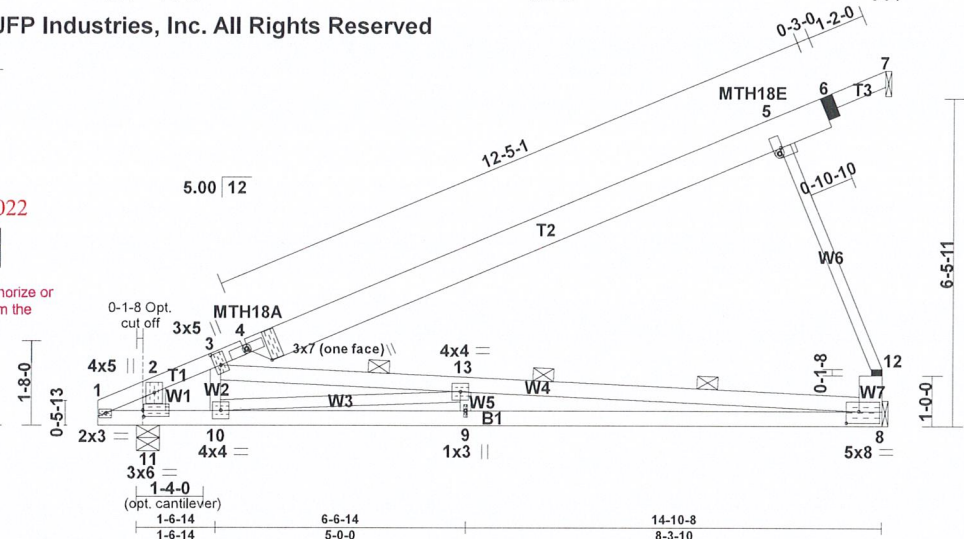


Plate Offsets (X,Y)-- [3:0-3-0,0-1-8], [4:0-4-6,Edge], [4:0-0-5,0-0-6], [5:0-0-11,0-1-2], [8:0-3-0,0-2-12], [11:0-0-4,0-1-8]

SPACING-- 2-0-0 LOADING (psf) TCLL 23.1 (Ground Snow=30.0) TCDL 10.0 BCLL 0.0 * BCDL 10.0	SPACING-- 1-4-0 LOADING (psf) TCLL 34.7 (Ground Snow=45.0) TCDL 15.0 BCLL 0.0 * BCDL 15.0	SPACING-- 2-0-0 Plate Grip DOL 1.15 Lumber DOL 1.15 Rep Stress Incr YES Code IBC2018/TPI2014	CSI. TC 0.85 BC 0.91 WB 0.94 Matrix-R	DEFL. in (loc) l/defl L/d Vert(LL) -0.29 8-9 >593 240 Vert(CT) -0.57 8-9 >299 180 Horz(CT) 0.04 8 n/a n/a	PLATES GRIP MT20 197/144 MT18HS 197/144 Weight: 97 lb FT = 0%
---	---	--	---	--	---

LUMBER- TOP CHORD 2x4 SP No.1 or 2x4 SPF No.2 *Except* T2: 2x8 SP No.2 or 2x8 SPF No.2, T3: 2x4 SPF No.2 BOT CHORD 2x4 SP No.1 or 2x4 SPF No.2 WEBS 2x3 SPF Stud *Except* W4: 2x4 SP No.2 or 2x4 SPF No.2, W7: 2x6 SP No.2 or 2x6 SPF No.2 W1: 2x6 SP No.1	BRACING- TOP CHORD Structural wood sheathing directly applied or 4-2-2 oc purlins, except end verticals. BOT CHORD Rigid ceiling directly applied or 5-5-6 oc bracing. WEBS 3 Rows at 1/4 pts 3-8
--	--

REACTIONS. (lb/size) 8=598/Mechanical, 7=0/Mechanical, 11=744/0-5-8 (min. 0-1-8) Max Horz 7=79(LC 9), 11=404(LC 9) Max Uplift 8=488(LC 9), 11=391(LC 9) Max Grav 8=602(LC 13), 11=747(LC 13)	REACTIONS. (lb/size) 10=814/0-5-8 (min. 0-1-8), 8=529/Mechanical, 7=0/Mechanical (Opt. 1-4-0 cantilever) Max Horz 10=404(LC 9), 7=79(LC 9) Max Uplift 10=427(LC 9), 8=451(LC 9) Max Grav 10=817(LC 13), 8=533(LC 13)
---	--

FORCES. (lb) - Maximum Compression/Maximum Tension TOP CHORD 1-2=-43/22, 2-3=-880/538, 3-4=-316/0, 4-5=-360/43, 5-6=-115/61, 6-7=-75/73, 8-12=-403/500, 2-11=-317/151 BOT CHORD 1-11=-7/65, 10-11=-932/776, 9-10=-520/1694, 8-9=-520/1694 WEBS 3-10=-235/369, 3-13=-624/742, 8-13=-1654/328, 5-12=-432/536, 9-13=0/289, 10-13=-1220/0
--

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
 6=94/70/52/0, 12=432/536/193/0

- NOTES-
- 1) Wind: ASCE 7-16; Vult=150mph (3-second gust) Vasd=119mph @24in o.c.; TCCL=4.0psf; BCDL=4.0psf; (Alt. 180mph @16in o.c.; TCCL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) -0-9-4 to 2-2-12, Interior(1) 2-2-12 to 14-10-3 zone; cantilever left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - 2) TCLL: ASCE 7-16; Pg=30.0 psf; Ps=23.1 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
 - 3) Roof design snow load has been reduced to account for slope.
 - 4) Unbalanced snow loads have been considered for this design.
 - 5) All plates are MT20 plates unless otherwise indicated.
 - 6) See HINGE PLATE DETAILS for plate placement.
 - 7) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
 - 8) All additional member connections shall be provided by others for forces as indicated.
 - 9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - 10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
 - 11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 488 lb uplift at joint 8 and 391 lb uplift at joint 12
 - 12) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
 - 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
 - 14) This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
 - 15) This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
 - 16) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service.
 - 17) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
 - 18) Based on: HMC88440. Changes: Cantilever style overhang.



The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

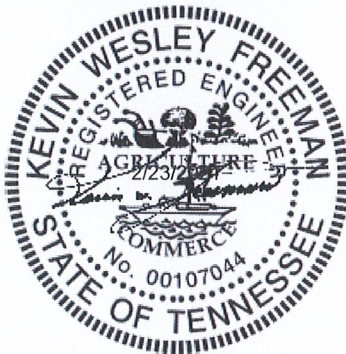
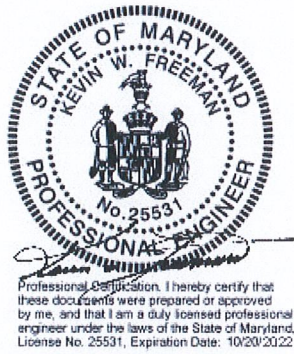




UFP INDUSTRIES

Job	Truss	MFG	Customer
105014	HMC88444	274	COMMODORE

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.



APPROVED BY



9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.

Roger Colson

Corporate Engineering

UFP Industries Inc., Grand Rapids, MI 49525, Andrew Muisiner 8.430 e Jan 4 2021 MiTek Industries, Inc. Mon Feb 28 10:49:37 2022 Page 1 of 1

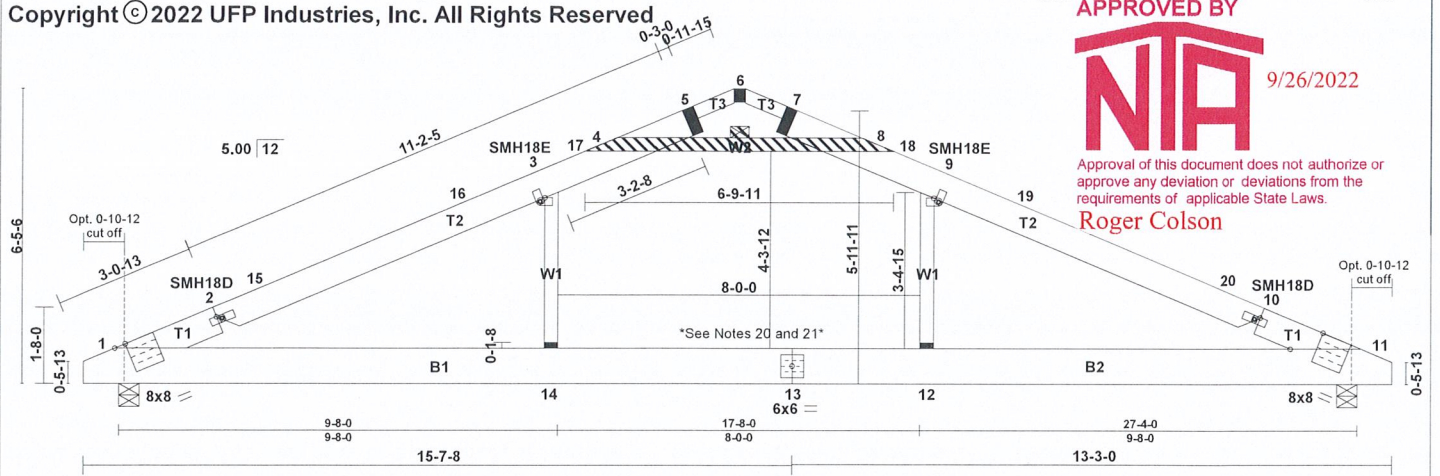


Plate Offsets (X,Y)-- [1:0-2-15,0-0-0], [2:0-1-4,0-0-14], [3:0-1-4,0-1-0], [9:0-1-4,0-1-0], [10:0-1-4,0-0-14], [11:0-6-7,Edge]

SPACING-: 2-0-0 LOADING (psf) TCLL 23.1 (Ground Snow=30.0) TCDL 10.0 BCLL 0.0 * BCDL 10.0	SPACING-: 1-4-0 LOADING (psf) TCLL 34.7 (Ground Snow=45.0) TCDL 15.0 BCLL 0.0 * BCDL 15.0	SPACING-: 2-0-0 Plate Grip DOL 1.15 Lumber DOL 1.15 Rep Stress Incr YES Code IBC2018/TPI2014	CSI. TC 0.61 BC 0.57 WB 0.40 Matrix-R	DEFL. in (loc) l/defl L/d Vert(LL) 0.20 1-14 >999 240 Vert(CT) -0.28 1-14 >999 180 Horz(CT) 0.03 11 n/a n/a Attic -0.12 12-14 849 360	PLATES GRIP MT20 197/144 MT18HS 197/144 Weight: 206 lb FT = 0%
---	---	--	---	---	--

LUMBER-
 TOP CHORD 2x8 SP No.2 or 2x8 SPF No.2 *Except* T3: 2x4 SP No.2 or 2x4 SPF No.2
 BOT CHORD 2x10 SP No.2 or 2x10 SPF No.2
 WEBS 2x4 SPF Stud *Except* W2: 2x4 SP No.2 or 2x4 SPF No.2

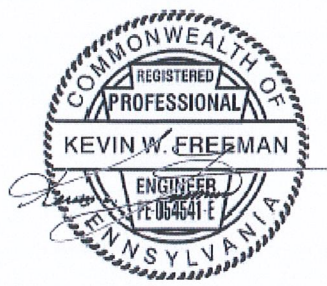
BRACING-
 TOP CHORD Structural wood sheathing directly applied or 4-6-12 oc purlins.
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
 WEBS 1 Row at midpt 4-8

REACTIONS. (lb/size) 1=1200/0-5-8 (min. 0-1-14), 11=1200/0-5-8 (min. 0-1-14)
 Max Horz 1=-185(LC 10)
 Max Uplift1=-612(LC 9), 11=-613(LC 10)
 Max Grav 1=1211(LC 14), 11=1211(LC 15)

FORCES. (lb) - Maximum Compression/Maximum Tension
 TOP CHORD 1-2=-2024/1042, 2-15=-1931/1023, 15-16=-1848/1032, 3-16=-1842/1039, 3-17=-1692/1059, 4-17=-1664/1066, 4-5=-148/63, 5-6=-71/76, 6-7=-70/76, 7-8=-149/63, 8-18=-1663/1066, 9-18=-1692/1059, 9-19=-1841/1039, 19-20=-1848/1032, 10-20=-1931/1024, 10-11=-2024/1043
 BOT CHORD 1-14=-785/1722, 13-14=-785/1722, 12-13=-785/1722, 11-12=-785/1722
 WEBS 9-12=-96/454, 3-14=-96/454, 4-8=-1672/1091

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
 4=1672/1091/26/0, 5=95/73/56/0, 6=62/77/46/0, 7=96/73/57/0, 8=1672/1091/26/0, 12=96/454/0/0, 14=96/454/0/0

- NOTES-**
- Wind: ASCE 7-16; Vult=150mph (3-second gust) Vasd=119mph @24in o.c.; TC DL=4.0psf; BCDL=4.0psf; (Alt. 180mph @16in o.c.; TC DL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-2-12 to 3-2-12, Interior(1) 3-2-12 to 10-7-12, Exterior(2R) 10-7-12 to 16-7-12, Interior(1) 16-7-12 to 24-1-4, Exterior(2E) 24-1-4 to 27-1-4 zone; cantilever left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - TCLL: ASCE 7-16; Pg=30.0 psf; Ps=23.1 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
 - Roof design snow load has been reduced to account for slope.
 - Unbalanced snow loads have been considered for this design.
 - All plates are MT20 plates unless otherwise indicated.
 - See HINGE PLATE DETAILS for plate placement.
 - Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
 - All additional member connections shall be provided by others for forces as indicated.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
 - Ceiling dead load (5.0 psf) on member(s), 3-4, 8-9, 4-8
 - Bottom chord live load (20.0 psf) and additional bottom chord dead load (0.0 psf) applied only to room, 12-14
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 612 lb uplift at joint 1 and 613 lb uplift at joint 14
 - This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
 - Attic room checked for L/360 deflection.
 - This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
 - This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
 - Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service
 - The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
 - Temporary supports are required to maintain the bottom chord in a level position during storage, transportation, and setup. Retain a design professional to specify all temporary bracing to support the truss until setup is complete. Temporary support(s) must not be removed until field connections are completed.
 - The bottom chord must be laterally braced during shipment and setup to prevent damage to the splice plate.
 - Based on: CCD21309. Changes: 9-1/4" cantilever style overhangs.



2/28/2022

The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rests with the building official or designated appointee.

WARNING - Verify design parameters and READ NOTES

UFP Industries, Inc. 2801 EAST BELTLINE RD, NE
 PHONE (616)-364-6161 FAX (616)-365-0060 GRAND RAPIDS, MI 49525

Truss shall not be cut or modified without approval of the truss design engineer.

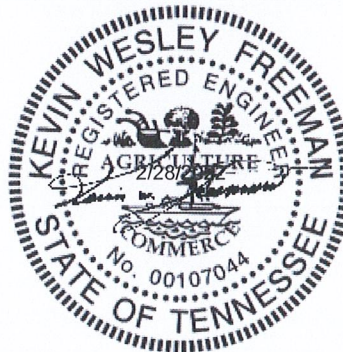
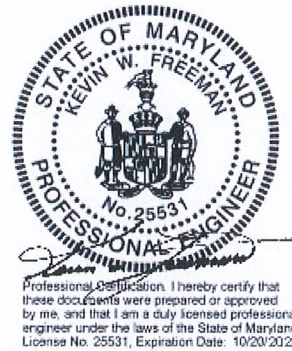
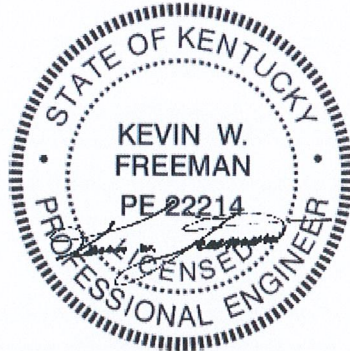
This component has only been designed for the loads noted on this drawing. Construction and lifting forces have not been considered. The builder is responsible for lifting methods and system design. Builder responsibilities are defined under TPI1. This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult BCSI 1-06 from the Wood Truss Council of America and Truss Plate Institute Recommendation available from WTCA, 6300 Enterprise LN, Madison, WI 53719 J:\support\MitekSuppl\templates\ufp.tpe



UFP INDUSTRIES

Job	Truss	MFG	Customer
109188	CCD21310	315	COMMODORE

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.



APPROVED BY

 9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
 Roger Colson

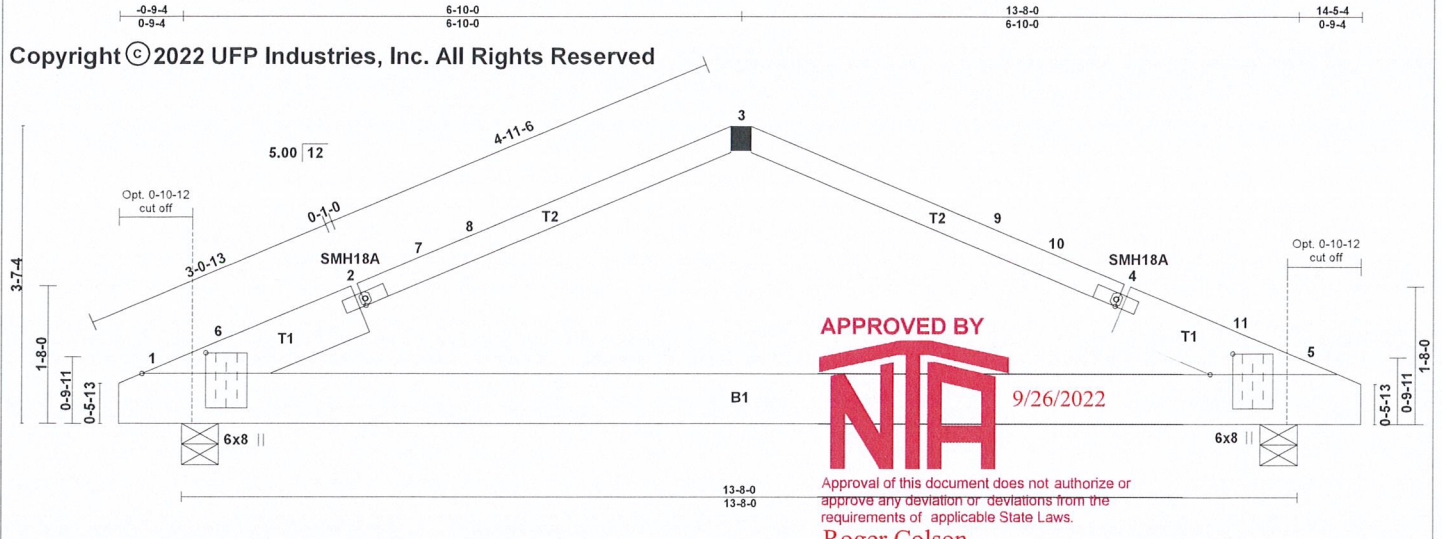


Plate Offsets (X,Y)-- [1:0-3-0,0-9-7], [2:0-0-4,0-1-0], [4:0-0-4,0-1-0], [5:0-3-0,0-3-7]

SPACING- 2-0-0 LOADING (psf) TCLL 23.1 (Ground Snow=30.0) TCDL 10.0 BCLL 0.0 * BCDL 10.0	SPACING- 1-4-0 LOADING (psf) TCLL 34.7 (Ground Snow=45.0) TCDL 15.0 BCLL 0.0 * BCDL 15.0	SPACING- 2-0-0 Plate Grip DOL 1.15 Lumber DOL 1.15 Rep Stress Incr YES Code IBC2018/TPI2014	CSI. TC 0.79 BC 0.72 WB 0.00 Matrix-R	DEFL. in (loc) l/defl L/d Vert(LL) 0.26 1-5 >599 240 Vert(CT) -0.47 1-5 >335 180 Horz(CT) 0.00 5 n/a n/a	PLATES GRIP MT20 197/144 MT18HS 197/144 Weight: 79 lb FT = 0%
--	--	---	---	---	---

LUMBER-
 TOP CHORD 2x8 SP No.2 or 2x8 SPF No.2 *Except*
 T2: 2x4 SP No.2 or 2x4 SPF No.2
 BOT CHORD 2x8 SP No.2 or 2x8 SPF No.2

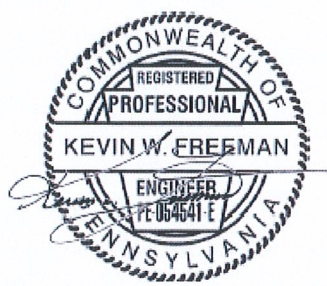
BRACING-
 TOP CHORD Structural wood sheathing directly applied or 4-9-4 oc purlins.
 BOT CHORD Rigid ceiling directly applied or 8-5-9 oc bracing.

REACTIONS. (lb/size) 1=569/0-5-8 (min. 0-1-8), 5=569/0-5-8 (min. 0-1-8)
 Max Horz 1=-99(LC 13)
 Max Uplift 1=-307(LC 12), 5=-308(LC 13)
 Max Grav 1=658(LC 18), 5=658(LC 19)

FORCES. (lb) - Maximum Compression/Maximum Tension
 TOP CHORD 1-6=-568/528, 2-6=-547/528, 2-7=-426/521, 7-8=-402/523, 3-8=-375/530, 3-9=-374/530, 9-10=-402/522, 4-10=-427/520, 4-11=-547/528, 5-11=-569/528
 BOT CHORD 1-5=-280/341

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
 3=342/532/241/0

- NOTES-**
- Wind: ASCE 7-16; Vult=150mph (3-second gust) Vasd=119mph @24in o.c.; TCCL=4.0psf; BCDL=4.0psf; (Alt. 180mph @16in o.c.; TCCL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-2-12 to 3-2-12, Interior(1) 3-2-12 to 3-9-12, Exterior(2R) 3-9-12 to 9-9-12, Interior(1) 9-9-12 to 10-5-4, Exterior(2E) 10-5-4 to 13-5-4 zone; cantilever left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - TCLL: ASCE 7-16; Pg=30.0 psf; Ps=23.1 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
 - Roof design snow load has been reduced to account for slope.
 - Unbalanced snow loads have been considered for this design.
 - All plates are MT20 plates unless otherwise indicated.
 - See HINGE PLATE DETAILS for plate placement.
 - Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
 - All additional member connections shall be provided by others for forces as indicated.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 307 lb uplift at joint 1 and 308 lb uplift at joint 2
 - This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
 - This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
 - This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
 - Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service.
 - The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
 - Based on: P1553216. Changes: 9-1/4" cantilever style overhangs.



The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rests with the building official or designated appointee.

2/28/2022

WARNING - Verify design parameters and READ NOTES

UFP Industries, Inc. 2801 EAST BELTLINE RD. NE
 PHONE (616)-364-6161 FAX (616)-365-0060 GRAND RAPIDS, MI 49525

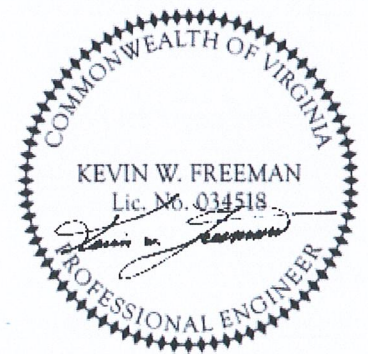
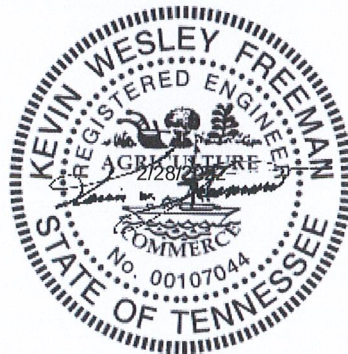
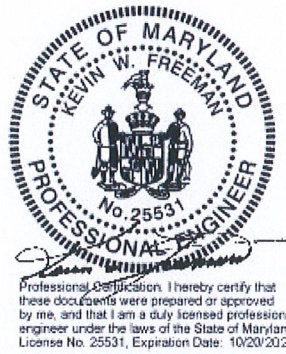
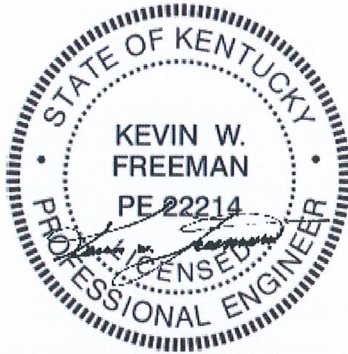
Truss shall not be cut or modified without approval of the truss design engineer.
 This component has only been designed for the loads noted on this drawing. Construction and lifting forces have not been considered. The builder is responsible for lifting methods and system design. Builder responsibilities are defined under TPI1. This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult BCSI 1-06 from the Wood Truss Council of America and Truss Plate Institute Recommendation available from WTCA, 6300 Enterprise LN, Madison, WI 53719 J:\support\MitekSuppl\templates\ufp.tpe



UFP INDUSTRIES

Job	Truss	MFG	Customer
109188	P1553217	315	COMMODORE

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.



APPROVED BY

 9/26/2022

Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
Roger Colson

