

Trenco 818 Soundside Rd Edenton, NC 27932

Re: ACL

GREAT SOUTHER HOMES/ARIEL-II

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Builders FirstSource (Apex,NC).

Pages or sheets covered by this seal: I66947306 thru I66947307

My license renewal date for the state of North Carolina is December 31, 2024.

North Carolina COA: C-0844



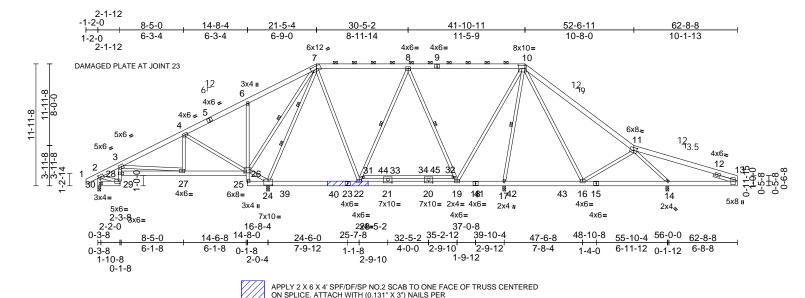
July 19,2024

Gilbert, Eric

IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which were given to MiTek or TRENCO. Any project specific information included is for MiTek's or TRENCO's customers file reference purpose only, and was not taken into account in the preparation of these designs. MiTek or TRENCO has not independently verified the applicability of the design parameters or the designs for any particular building. Before use, the building designer should verify applicability of design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.

Job	Truss	Truss Type	Qty	Ply	GREAT SOUTHER HOMES/ARIEL-II		
ACL	A01	Piggyback Base	1	1	Job Reference (optional)	166947306	

Run: 8 63 S. Jul 12 2024 Print: 8 630 S. Jul 12 2024 MiTek Industries. Inc. Thu Jul 18 08:08:03 ID:JkhVObKUXWoCtT5iZpLYBoyRuow-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f Page: 1



Scale = 1:113

Plate Offsets (X, Y): [2:0-2-11,0-2-8], [7:0-6-12,0-3-0], [10:0-8-0,0-4-0], [11:0-3-8,0-3-4], [13:0-4-12,0-2-8], [20:0-5-0,0-2-0], [21:0-5-0,0-2-0], [24:0-5-0,0-4-8], [26:0-2-8,0-2-4]

							3, 1					
Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	I/defI	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.82	Vert(LL)	-0.15	20-21	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.21	20-21	>999	240		
BCLL	0.0*	Rep Stress Incr	NO	WB	0.95	Horz(CT)	0.05	14	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS		Wind(LL)	-0.05	14-16	>999	240	Weight: 531 lb	FT = 20%

THE FOLLOWING NAIL SCHEDULE: 3 ROWS: SPACED @ 2" O.C. USE 2" MEMBER END DISTANCE.

LUMBER	BER WEBS 3-27=-477/553, 4-27=-11/351,		351,		6) * Th	nis truss	has be	een designed for	a live load of 20.	.0psf			
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS		Wind(LL)	-0.05	14-16	>999	240	Weight: 531 lb	FT = 20%	
BCLL	0.0*	Rep Stress Incr	NO	WB	0.95	Horz(CT)	0.05	14	n/a	n/a			
TCDL	10.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.21	20-21	>999	240			

TOP CHORD 2x6 SP No.2

BOT CHORD 2x6 SP No.2 *Except* 29-3,6-25:2x4 SP No.3

2x4 SP No.3 *Except*

16-10,19-10,8-19,8-22:2x4 SP No.2

SLIDER Right 2x4 SP No.3 -- 2-5-0

BRACING

WEBS

WFRS

TOP CHORD Structural wood sheathing directly applied or

6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 7-10.

BOT CHORD Rigid ceiling directly applied or 6-0-0 oc

bracing.

1 Row at midpt 7-26, 10-17, 8-19, 8-22

WEBS 2 Rows at 1/3 pts 7-24

REACTIONS (size) 14=0-3-8, 17=0-3-8, 24=0-3-8,

30=0-3-8 Max Horiz 30=193 (LC 9)

Max Uplift 14=-242 (LC 13), 17=-121 (LC 8),

24=-359 (LC 12), 30=-65 (LC 13)

Max Grav 14=1275 (LC 24), 17=1505 (LC 2)

24=2117 (LC 23), 30=410 (LC 23)

FORCES (lb) - Maximum Compression/Maximum

Tension

TOP CHORD 1-2=0/35, 2-3=-336/106, 3-4=-174/154, 4-6=-396/659, 6-7=-143/703, 7-8=-299/253,

8-10=-232/236 10-11=-407/186

11-13=-732/808, 2-30=-422/205

BOT CHORD 29-30=-256/183, 28-29=-64/62,

3-28=-18/102, 27-28=-489/542,

26-27=-62/154, 25-26=-170/26,

6-26=-397/505, 24-25=-37/15,

22-24=-223/422, 21-22=-41/349,

20-21=-41/349, 19-20=-41/349,

17-19=-265/411, 16-17=-108/360, 14-16=-68/364, 13-14=-693/722

4-26=-662/517, 24-26=-822/846, 7-26=-402/382, 7-24=-1625/780,

10-17=-1228/289, 2-29=-83/254,

10-16=-38/351, 11-16=-219/277,

11-14=-1295/677, 7-22=-48/671, 10-19=-119/686, 8-32=-434/211,

19-32=-426/199, 22-31=-374/186,

8-31=-384/192, 31-33=-26/53, 33-34=-26/53,

32-34=-26/53, 21-33=-128/6, 20-34=-103/13

NOTES

- Unbalanced roof live loads have been considered for 1) this design
- Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=32ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner (3) zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- WARNING: This long span truss requires extreme care and experience for proper and safe handling and erection. For general handling and erection guidance, see Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses ("BCSI"), jointly produced by SBCA and TPI. The building owner or the owner's authorized agent shall contract with a qualified registered design professional for the design and inspection of the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing. MiTek assumes no responsibility for truss manufacture, handling, erection, or bracing.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads

- on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Bearings are assumed to be: Joint 30 SP No.3 crushing capacity of 565 psi, Joint 24 SP No.2 crushing capacity of 565 psi, Joint 17 SP No.2 crushing capacity of 565 psi, Joint 14 SP No.2 crushing capacity of 565 psi.
- Bearing at joint(s) 30 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 359 lb uplift at joint 24, 121 lb uplift at joint 17, 65 lb uplift at joint 30 and 242 lb uplift at joint 14.
- 10) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 11) Load case(s) 2 has/have been modified. Building designer must review loads to verify that they are correct for the intended use of this truss.



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Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbcacomponents.com)



Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	GREAT SOUTHER HOMES/ARIEL-II	
ACL	A01	Piggyback Base	1	1	Job Reference (optional)	166947306

Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries. Inc. Thu Jul 18 08:08:03 ID: JkhVObKUXWoCtT5 iZpLYBoyRuow-RfC? PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC? full filter for the property of Page: 2

12) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

LOAD CASE(S) Standard

1) Dead + Roof Live (balanced): Lumber Increase=1.15, Plate Increase=1.15 Uniform Loads (lb/ft) Vert: 1-2=-60, 2-7=-60, 7-10=-60, 10-11=-60, 11-13=-60, 29-30=-20, 26-28=-20, 25-35=-20

Dead + 0.75 Roof Live (balanced) + 0.75 Uninhab. Attic Storage: Lumber Increase=1.15, Plate Increase=1.15 Uniform Loads (lb/ft)

Vert: 1-2=-50, 2-7=-50, 7-10=-50, 10-11=-50, 11-13=-50, 29-30=-20, 26-28=-20, 25-39=-20, 39-40=-50, 40-41=-20, 17-41=-50, 17-42=-20, 42-43=-50, 35-43=-20, 33-44=-30, 33-34=-30, 34-45=-30



818 Soundside Road Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	GREAT SOUTHER HOMES/ARIEL-II		
ACL	A02	Piggyback Base	1	1	Job Reference (optional)	166947307	

Run: 8 63 S. Jul 12 2024 Print: 8 630 S. Jul 12 2024 MiTek Industries. Inc. Thu Jul 18 08:08:04 ID:M79c4eJkapAkk5cByww?Y_yRuwh-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f

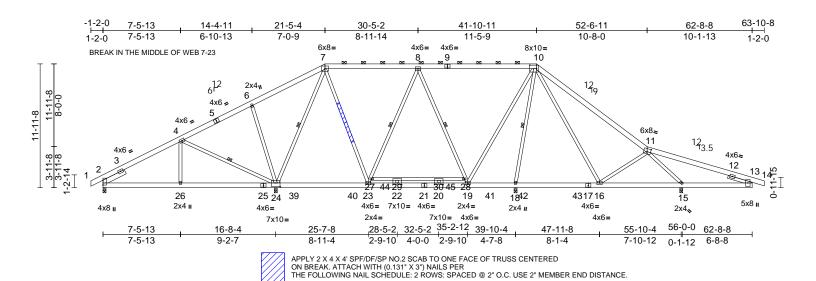


Plate Offsets (X, Y): [10:0-8-0,0-4-0], [11:0-4-0,0-3-8], [13:0-4-12,0-2-8], [20:0-5-0,0-2-0], [22:0-5-0,0-2-0], [24:0-5-0,0-4-4]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.82	Vert(LL)	-0.15	20-22	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.85	Vert(CT)	-0.21	20-22	>999	240		
BCLL	0.0*	Rep Stress Incr	NO	WB	0.81	Horz(CT)	0.02	15	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS		Wind(LL)	-0.05	15-16	>999	240	Weight: 510 lb	FT = 20%

TOP CHORD 2x6 SP No.2 2x6 SP No.2 **BOT CHORD** 2x4 SP No.3 *Except* WEBS

16-10,8-19,23-8,19-10:2x4 SP No.2

SLIDER Left 2x6 SP No.2 -- 2-5-0, Right 2x4 SP No.3

-- 2-5-0

BRACING

LUMBER

Structural wood sheathing directly applied or TOP CHORD 6-0-0 oc purlins, except

2-0-0 oc purlins (6-0-0 max.): 7-10.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc

bracing, Except: 6-0-0 oc bracing: 18-19

5-3-4 oc bracing: 13-15.

WEBS 1 Row at midpt 10-18, 4-24, 8-19, 7-24,

8-23

REACTIONS (size) 2=0-3-8, 15=0-3-8, 18=0-3-8,

24=0-3-8

Max Horiz 2=194 (LC 16)

2=-116 (LC 12), 15=-320 (LC 9), Max Uplift

18=-119 (LC 8), 24=-210 (LC 12)

Max Grav 2=641 (LC 23), 15=1422 (LC 24),

18=1479 (LC 2), 24=1809 (LC 25)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/31, 2-4=-574/339, 4-6=-24/226,

6-7=-7/342. 7-8=-445/357. 8-10=-333/303. 10-11=-485/160, 11-13=-891/1016,

13-14=0/20

BOT CHORD 2-26=-384/514, 24-26=-367/514,

23-24=-68/353, 22-23=-78/544, 20-22=-78/544, 19-20=-78/544, 18-19=-191/294, 16-18=-41/254 15-16=-19/390, 13-15=-892/958 **WEBS**

6-24=-411/501, 10-18=-1179/233, 11-15=-1489/958, 10-16=-26/334,

11-16=-186/246, 4-26=0/345, 4-24=-641/501, 8-28=-492/242, 19-28=-483/230, 7-24=-1053/189, 7-23=-51/600,

23-27=-278/164, 8-27=-290/175, 10-19=-150/749, 27-29=-27/56, 29-30=-27/56, 28-30=-27/56, 22-29=-130/3,

20-30=-101/14

NOTES

- 1) Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=32ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner (3) zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- WARNING: This long span truss requires extreme care and experience for proper and safe handling and erection. For general handling and erection guidance, see Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses ("BCSI"), jointly produced by SBCA and TPI. The building owner or the owner's authorized agent shall contract with a qualified registered design professional for the design and inspection of the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing. MiTek assumes no responsibility for truss manufacture, handling, erection, or bracing,
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.

- All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 116 lb uplift at joint 2, 210 lb uplift at joint 24, 119 lb uplift at joint 18 and 320 lb uplift at joint 15.

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- This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 10) Load case(s) 2 has/have been modified. Building designer must review loads to verify that they are correct for the intended use of this truss
- 11) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 12) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

Dead + Roof Live (balanced): Lumber Increase=1.15, Plate Increase=1.15 Uniform Loads (lb/ft)

Vert: 1-7=-60, 7-10=-60, 10-11=-60, 11-14=-60,



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Edenton, NC 27932

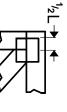
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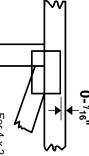
Dead + 0.75 Roof Live (balanced) + 0.75 Uninhab. Attic Storage: Lumber Increase=1.15, Plate Increase=1.15 Uniform Loads (lb/ft) Vert: 1-7=-50, 7-10=-50, 10-11=-50, 11-14=-50, 31-39=-20, 39-40=-50, 40-41=-20, 18-41=-50, 18-42=-20, 42-43=-50, 35-43=-20, 29-44=-30 (F), 29-30=-30 (F), 30-45=-30 (F)

Symbols

PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated.
Dimensions are in ft-in-sixteenths.
Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- ¹/16" from outside edge of truss.

₹

This symbol indicates the required direction of slots in connector plates.

*Plate location details available in MiTek software or upon request.

PLATE SIZE

4 × 4

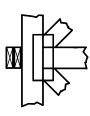
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

BEARING



Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur Min size shown is for crushing only.

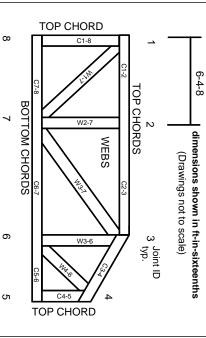
Industry Standards:

National Design Specification for Metal Plate Connected Wood Truss Construction Design Standard for Bracing.

Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

ANSI/TPI1: DSB-22:

Numbering System



JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

Product Code Approvals

ICC-ES Reports:

ESR-1988, ESR-2362, ESR-2685, ESR-3282 ESR-4722, ESL-1388

Design General Notes

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

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MiTek



MiTek Engineering Reference Sheet: MII-7473 rev. 1/2/2023

▲ General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

- Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI
- Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
- Never exceed the design loading shown and never stack materials on inadequately braced trusses.
- Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
- Cut members to bear tightly against each other.

'n

- Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
- Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
- Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
- Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
- Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
- Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
- Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
- Top chords must be sheathed or purlins provided at spacing indicated on design.
- Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
- 15. Connections not shown are the responsibility of others
- Do not cut or alter truss member or plate without prior approval of an engineer.
- 17. Install and load vertically unless indicated otherwise.
- Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
- Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
- Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.
- The design does not take into account any dynamic or other loads other than those expressly stated.