

RE: 2503-3124-A - The Farm at Neills Creek Lot 00.0055 Roof

Trenco  
818 Soundside Rd  
Edenton, NC 27932

**Site Information:**

Project Customer: DRB Raleigh Project Name: The Farm at Neills Creek Lot 00.0055

Lot/Block: 00.0055

Subdivision: The Farm at Neills Creek

Model: Cooper 3

Address: 579 Winding Creek Dr.

City: Lillington

State: NC

**General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):**

Design Code: IRC2021/TPI2014

Wind Code: ASCE 7-16

Wind Speed: 120 mph

Roof Load: 40.0 psf

Mean Roof Height (feet): 25

Design Program: MiTek 20/20 8.8

Design Method: MWFRS (Envelope)/C-C hybrid Wind ASCE 7-16

Floor Load: N/A psf

Exposure Category: B

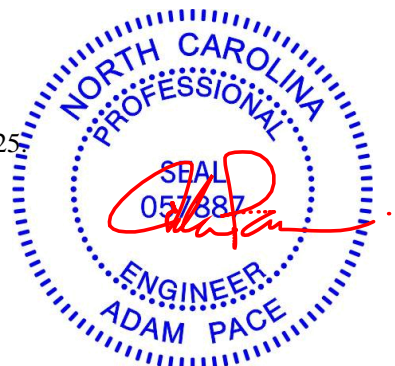
No.	Seal#	Truss Name	Date
1	I72541390	PB1	4/9/25
2	I72541391	A1T	4/9/25

The truss drawing(s) referenced above have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Structural, LLC.

Truss Design Engineer's Name: Pace, Adam

My license renewal date for the state of North Carolina is December 31, 2025.

**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.



April 9, 2025

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0055 Roof
2503-3124-A	PB1	Piggyback	36	1	172541390
					Job Reference (optional)

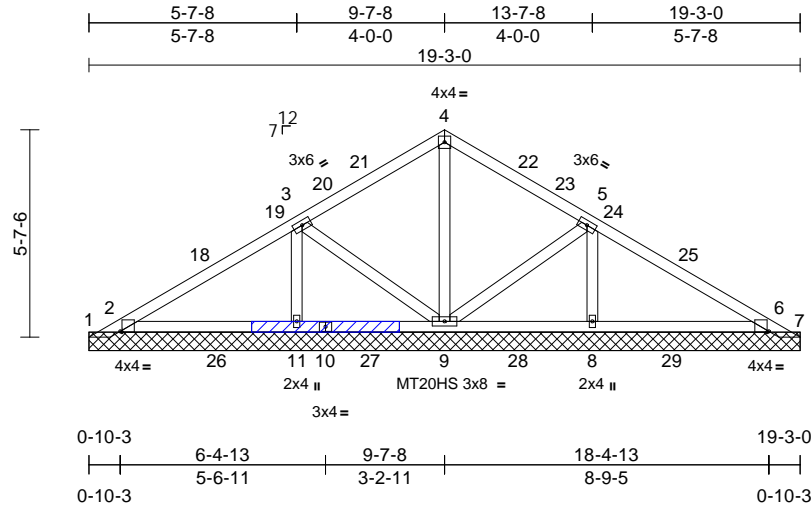
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REPAIR:  
PLATE DAMAGED ON ONE SIDE AT JOINT 10



APPLY 2 X 4 X 4' SPF/DF/SP NO.2 SCAB TO DAMAGED FACE OF TRUSS CENTERED ON SPLICE OR AS SHOWN. ATTACH WITH (0.131" X 3") NAILS PER THE FOLLOWING NAIL SCHEDULE: 2 X 3'S - 1 ROW, 2 X 4'S - 2 ROWS, 2 X 6'S AND LARGER - 3 ROWS: SPACED @ 2" O.C. USE 2" MEMBER END DISTANCE.

Scale = 1:62.4

Plate Offsets (X, Y): [2:0-0-9,Edge], [6:0-0-9,Edge]

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	0.47	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.79	Vert(TL)	n/a	-	n/a	999	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.14	Horiz(TL)	0.00	15	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-AS								
BCDL	10.0											
											Weight: 88 lb	FT = 20%

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.3  
WEBS 2x4 SP No.3  
OTHERS 2x4 SP No.3

#### BRACING

TOP CHORD Structural wood sheathing directly applied.  
BOT CHORD Rigid ceiling directly applied.

#### REACTIONS

(size) 1=19-3-0, 2=19-3-0, 6=19-3-0,  
7=19-3-0, 8=19-3-0, 9=19-3-0,  
11=19-3-0  
Max Horiz 1=87 (LC 13)  
Max Uplift 1=394 (LC 46), 2=14 (LC 16),  
6=10 (LC 17), 7=391 (LC 49)  
Max Grav 1=141 (LC 44), 2=689 (LC 46),  
6=675 (LC 49), 7=144 (LC 60),  
8=417 (LC 71), 9=413 (LC 70),  
11=417 (LC 69)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=92/211, 2-3=146/209, 3-4=116/58,  
4-5=116/56, 5-6=146/207, 6-7=12/209  
BOT CHORD 2-11=214/75, 9-11=24/75, 8-9=0/60,  
6-8=214/60  
WEBS 4-9=261/13, 3-11=270/44, 5-8=270/42,  
3-9=77/54, 5-9=77/56

#### NOTES

1) Unbalanced roof live loads have been considered for this design.

- 2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) 0-3-8 to 3-3-8, Interior (1) 3-3-8 to 9-7-8, Exterior(2R) 9-7-8 to 12-7-8, Interior (1) 12-7-8 to 18-11-8 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
- 3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- 4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
- 5) Unbalanced snow loads have been considered for this design.
- 6) All plates are MT20 plates unless otherwise indicated.
- 7) Plates checked for a plus or minus 5 degree rotation about its center.
- 8) Gable requires continuous bottom chord bearing.
- 9) Gable studs spaced at 4-0-0 oc.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) \* 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.
- 12) All bearings are assumed to be SP No.3.
- 13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 14 lb uplift at joint 2, 10 lb uplift at joint 6, 394 lb uplift at joint 1, 391 lb uplift at joint 7, 14 lb uplift at joint 2 and 10 lb uplift at joint 6.

- 14) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
- 15) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.
- 16) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

LOAD CASE(S) Standard



April 9, 2025

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

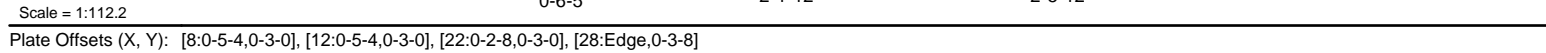
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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.sbcacompoments.com)

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NUMBER	WEBS	0.33, 0.015, 0.33, 1.170/52, 11.10, 0.1072	11) One U2-5A Simpson Strong-Tie connectors
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SLIDER	Left 2x4 SP No.3 -- 1-6-0	NOTES	panels and at all panel points along the Top Chord and
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WEBS	2 Rows at 1/3 pts	11-20	31-70, Exterior (2R)	31-70 to 44-51, Interior (1)	44-9-13 to 50-10-4 zone: cantilever left and right	LOAD CASE(S)	Standard
REACTIONS (kips)	0.0 0.0	15.0 0.0 0.0 0.0 0.0					

**FORCES** (lb) - Maximum Compression/Maximum

9) \* This truss has been designed for a live load of 20.0psf

10) All bearings are assumed to be SP No.2.

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITER REFERENCE PAGE MIT-7473 Rev. 1/2/2023 BEFORE USE.**

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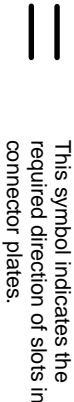
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# Symbols

## PLATE LOCATION AND ORIENTATION



\* Plate location details available in MITek software or upon request.

## PLATE SIZE

**4 X 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.

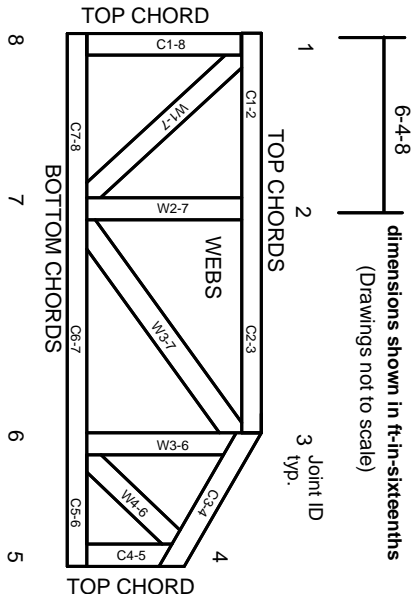
## BEARING



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:**  
ANSI/TP1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
DSB-22: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

# 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/TP1 section 6.3. These truss designs rely on lumber values established by others.

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# General Safety Notes

**Failure to Follow Could Cause Property Damage or Personal Injury**

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. 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.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TP1 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. 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.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TP1 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.

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