

RE: 2411-0320-A - Cooper III Rev.4-El.1,4,6,7,9-Floor

Trenco  
818 Soundside Rd  
Edenton, NC 27932

**Site Information:**

Project Customer: DRB Raleigh Project Name: DRB Raleigh Model Track

Lot/Block: Subdivision:

Model:

Address:

City:

State:

**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 25.2

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	I74501334	2FGR3	6/28/25
2	I74501335	2FGR4	6/28/25
3		2F3GE	6/28/25
4	I74501337	2F3A	6/28/25
5	I74501338	2F3	6/28/25
6	I74501339	2F4	6/28/25
7	I74501340	2F4A	6/28/25
8	I74501341	2FGR5	6/28/25
9	I74501342	2F1C	6/28/25
10	I74501343	2F1B	6/28/25
11	I74501344	1F2	6/28/25
12		1FGE2	6/28/25
13	I74501346	1F1	6/28/25
14	I74501347	1F1A	6/28/25
	I74501348	1FGE1	6/28/25
16	I74501349	1F4	6/28/25
17	I74501350	1FGE4	6/28/25
18	I74501351	1F5	6/28/25
19	I74501352	1F4A	6/28/25
20	I74501353	1F3A	6/28/25
21		1F7	6/28/25
22	I74501355	1FGE5	6/28/25
23	I74501356	1FGR1	6/28/25
	I74501357	1FGE3	6/28/25
25	I74501358	1FGE6	6/28/25
26	I74501359	1F3	6/28/25
27	I74501360	2FGR1	6/28/25
28	I74501361	2FGR2	6/28/25
29	I74501362	2F1	6/28/25
30		2F1A	6/28/25
31	I74501364	2F2GE	6/28/25
32	I74501365	2F2	6/28/25

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: Gilbert, Eric

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.



June 28, 2025

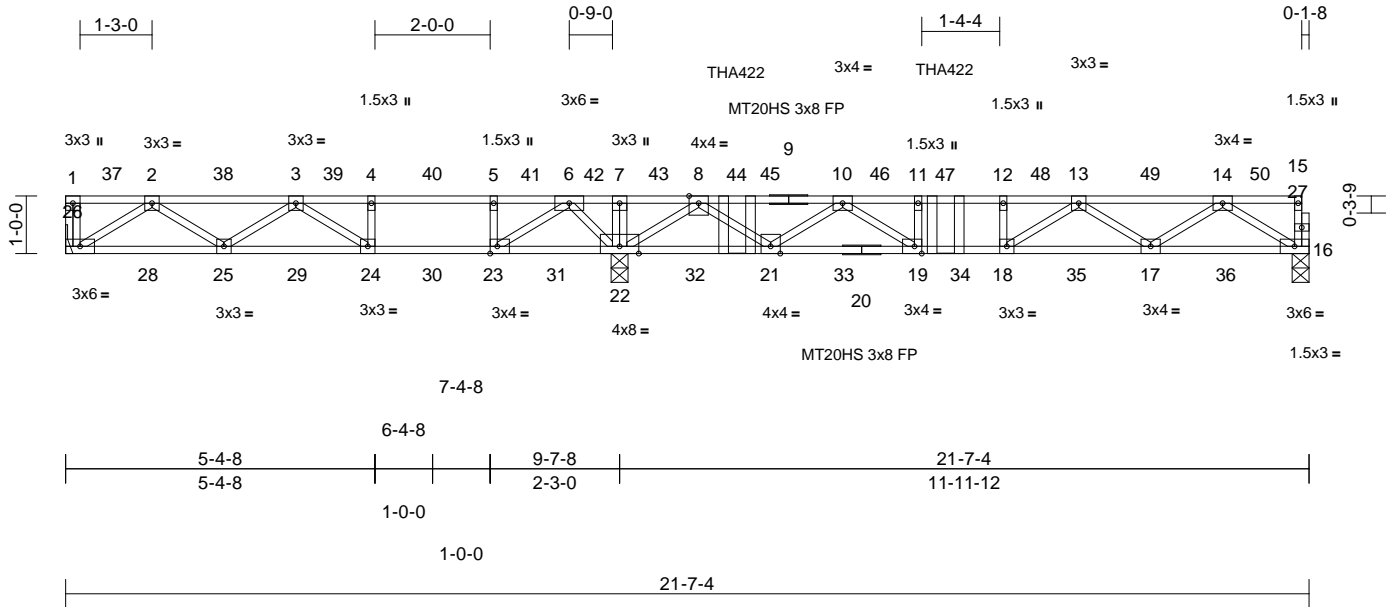


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2FGR3	Floor Girder	1	1	Job Reference (optional)
					I74501334

Structural, LLC, Thurmont, MD - 21788,

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Scale = 1:40

Plate Offsets (X, Y): [19:0-1-8,Edge], [23:0-1-8,Edge]

Loading	(psf)	Spacing	1-7-3	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.86	Vert(LL)	-0.15	24-25	>764	480	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.00	BC	0.51	Vert(CT)	-0.20	24-25	>583	360	MT20	244/190
BCLL	0.0	Rep Stress Incr	NO	WB	0.47	Horz(CT)	0.03	16	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S								
											Weight: 105 lb	FT = 20%F, 12%E

#### LUMBER

TOP CHORD 2x4 SP No.2(flat)  
BOT CHORD 2x4 SP SS(flat)  
WEBS 2x4 SP No.3(flat)  
OTHERS 2x4 SP No.3(flat)

#### BRACING

TOP CHORD Structural wood sheathing directly applied or  
6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc  
bracing.

**REACTIONS** (size) 16=0-3-8, 22=0-3-8, 26=  
Mechanical  
Max Grav 16=612 (LC 7), 22=1312 (LC 8),  
26=402 (LC 3)

**FORCES** (lb) - Maximum Compression/Maximum  
Tension  
TOP CHORD 1-26=-261/31, 15-16=-258/37, 1-2=0/0,  
2-3=-852/0, 3-4=-878/316, 4-5=-878/316,  
5-6=-878/316, 6-7=0/1067, 7-8=0/1068,  
8-10=-1241/0, 10-11=-2336/0, 11-12=-2336/0,  
12-13=-2336/0, 13-14=-1466/0, 14-15=-18/3

BOT CHORD 25-26=0/574, 24-25=-75/1039,  
23-24=-316/878, 22-23=-722/224,  
21-22=-50/504, 19-21=0/1926, 18-19=0/2336,  
17-18=0/1996, 16-17=0/905

WEBS 4-24=-74/179, 5-23=-377/0, 7-22=-242/78,  
2-26=-681/0, 2-25=-14/392, 3-25=-229/168,  
3-24=-468/0, 8-22=-1609/0, 14-16=-1070/0,  
8-21=0/920, 14-17=0/694, 10-21=-876/0,  
13-17=-647/0, 10-19=0/687, 13-18=0/572,  
11-19=-359/0, 12-18=-297/0, 6-22=-662/0,  
6-23=0/986

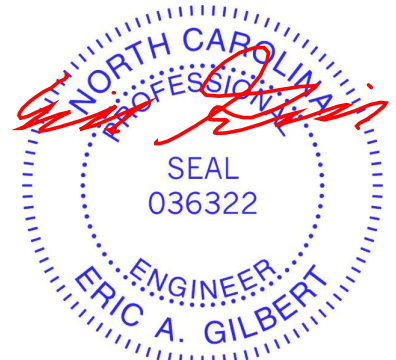
#### NOTES

- 1) Unbalanced floor live loads have been considered for this design.
- 2) All plates are MT20 plates unless otherwise indicated.
- 3) Refer to girder(s) for truss to truss connections.

- 4) 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.
- 5) Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- 6) CAUTION, Do not erect truss backwards.
- 7) Use Simpson Strong-Tie THA422 (Single Chord Girder) or equivalent spaced at 3-7-8 oc max. starting at 11-8-0 from the left end to 15-3-8 to connect truss(es) to front face of top chord.
- 8) Fill all nail holes where hanger is in contact with lumber.
- 9) 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

- 1) Dead + Floor Live (balanced): Lumber Increase=1.00,  
Plate Increase=1.00  
Uniform Loads (lb/ft)  
Vert: 16-26=-8, 1-15=-80  
Concentrated Loads (lb)  
Vert: 44=-129 (F), 47=-223 (F)



June 28,2025

**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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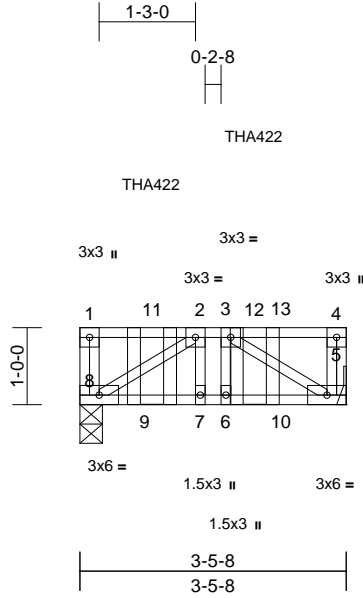


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2FGR4	Floor Girder	1	1	Job Reference (optional)
					I74501335

Structural, LLC, Thurmont, MD - 21788,

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Loading	(psf)	Spacing	1-4-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.67	Vert(LL)	-0.02	7-8	>999	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.51	Vert(CT)	-0.02	7-8	>999	360		
BCLL	0.0	Rep Stress Incr	NO	WB	0.11	Horz(CT)	0.00	5	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 21 lb	FT = 20%F, 12%E

#### LUMBER

TOP CHORD 2x4 SP No.2(flat)  
BOT CHORD 2x4 SP No.2(flat)  
WEBS 2x4 SP No.3(flat)

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 3-5-8 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 5= Mechanical, 8=0-3-8  
Max Grav 5=477 (LC 11), 8=510 (LC 7)

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

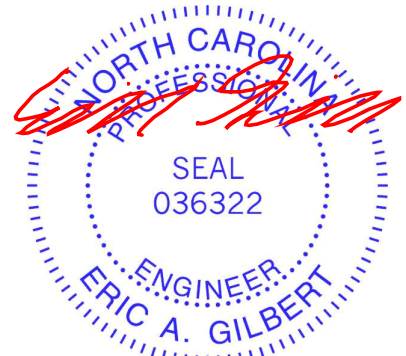
TOP CHORD 1-8=-324/0, 4-5=-291/0, 1-2=0/0, 2-3=-499/0, 3-4=0/0  
BOT CHORD 7-8=0/499, 6-7=0/499, 5-6=0/499  
WEBS 3-5=-584/0, 2-8=-584/0, 2-7=-132/210, 3-6=-124/214

#### NOTES

- Unbalanced floor live loads have been considered for this design.
- Refer to girder(s) for truss to truss connections.
- 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.
- Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- Use Simpson Strong-Tie THA422 (Single Chord Girder) or equivalent spaced at 1-4-0 oc max. starting at 0-11-4 from the left end to 2-3-4 to connect truss(es) to front face of top chord.
- Fill all nail holes where hanger is in contact with lumber.
- 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 + Floor Live (balanced): Lumber Increase=1.00, Plate Increase=1.00  
Uniform Loads (lb/ft)  
Vert: 5-8=-7, 1-4=-67  
Concentrated Loads (lb)  
Vert: 11=-172 (F), 12=-172 (F)



June 28,2025

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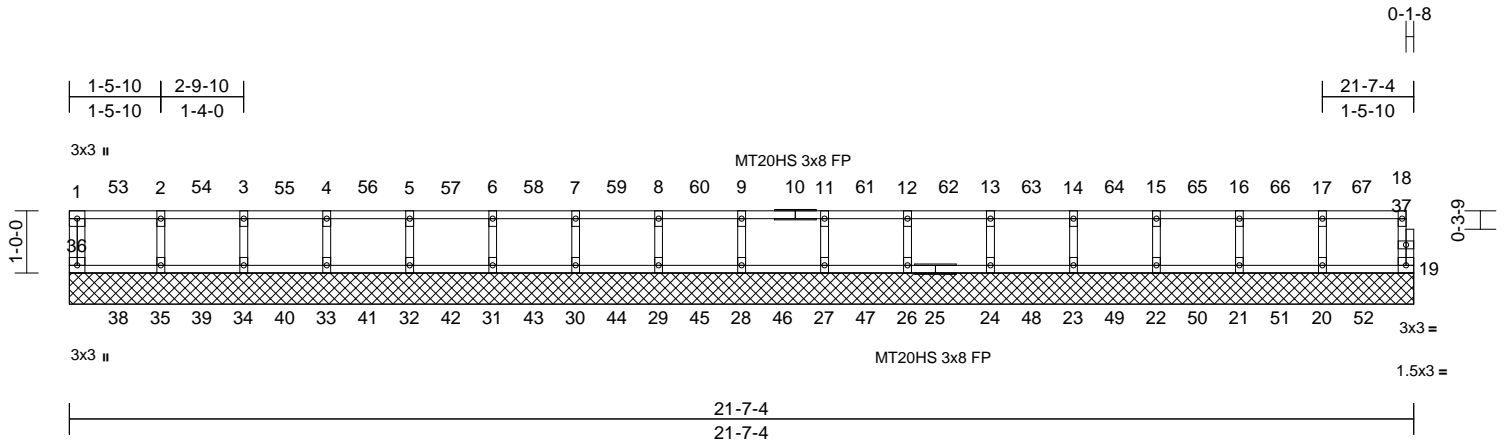


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2F3GE	Floor Supported Gable	1	1	Job Reference (optional)
					I74501336

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Scale = 1:37

Loading	(psf)	Spacing	1-7-3	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.28	Vert(LL)	n/a	-	n/a	999	MT20 244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.29	Vert(TL)	n/a	-	n/a	999	MT20HS 187/143
BCLL	0.0	Rep Stress Incr	YES	WB	0.05	Horiz(TL)	0.00	19	n/a	n/a	
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-R							Weight: 85 lb FT = 20%F, 12%E

**LUMBER**  
TOP CHORD 2x4 SP No.2(flat)  
BOT CHORD 2x4 SP No.2(flat)  
WEBS 2x4 SP No.3(flat)  
OTHERS 2x4 SP No.3(flat)

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 19=21-7-4, 20=21-7-4, 21=21-7-4, 22=21-7-4, 23=21-7-4, 24=21-7-4, 26=21-7-4, 27=21-7-4, 28=21-7-4, 29=21-7-4, 30=21-7-4, 31=21-7-4, 32=21-7-4, 33=21-7-4, 34=21-7-4, 35=21-7-4, 36=21-7-4  
Max Uplift 19=9 (LC 50), 21=3 (LC 51), 26=1 (LC 12), 27=2 (LC 46), 34=3 (LC 36), 36=8 (LC 37)  
Max Grav 19=267 (LC 68), 20=286 (LC 67), 21=285 (LC 66), 22=285 (LC 65), 23=285 (LC 64), 24=285 (LC 63), 26=285 (LC 62), 27=285 (LC 61), 28=285 (LC 60), 29=285 (LC 59), 30=285 (LC 58), 31=285 (LC 57), 32=285 (LC 56), 33=285 (LC 55), 34=285 (LC 54), 35=286 (LC 53), 36=268 (LC 52)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-36=-263/16, 18-19=-259/16, 1-2=-28/3, 2-3=-28/3, 3-4=-28/3, 4-5=-28/3, 5-6=-28/3, 6-7=-28/3, 7-8=-28/3, 8-9=-28/3, 9-11=-28/3, 11-12=-28/3, 12-13=-28/3, 13-14=-28/3, 14-15=-28/3, 15-16=-28/3, 16-17=-28/3, 17-18=-28/3

**BOT CHORD** 35-36=-3/28, 34-35=-3/28, 33-34=-3/28, 32-33=-3/28, 31-32=-3/28, 30-31=-3/28, 29-30=-3/28, 28-29=-3/28, 27-28=-3/28, 26-27=-3/28, 24-26=-3/28, 23-24=-3/28, 22-23=-3/28, 21-22=-3/28, 20-21=-3/28, 19-20=-3/28  
**WEBS** 9-28=-272/10, 8-29=-272/10, 7-30=-272/10, 6-31=-272/10, 5-32=-272/10, 4-33=-273/10, 3-34=-272/10, 2-35=-273/10, 11-27=-272/10, 12-26=-272/12, 13-24=-272/10, 14-23=-272/10, 15-22=-273/10, 16-21=-272/10, 17-20=-273/10

**NOTES**  
1) All plates are MT20 plates unless otherwise indicated.  
2) All plates are 1.5x3 (||) MT20 unless otherwise indicated.  
3) Gable requires continuous bottom chord bearing.  
4) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).  
5) Gable studs spaced at 1-4-0 oc.  
6) N/A  
7) 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.  
8) Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.  
9) CAUTION, Do not erect truss backwards.

**LOAD CASE(S)** Standard



June 28,2025

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

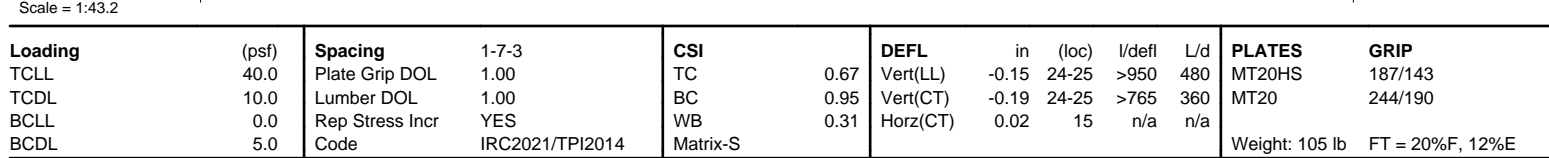
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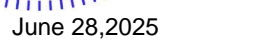
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<b>REACTIONS</b>	(size)	15=0-3-8, 21=0-3-8, 26=
		Mechanical
	Max Grav	15=348 (LC 4), 21=1110 (LC 1), 26=482 (LC 3)

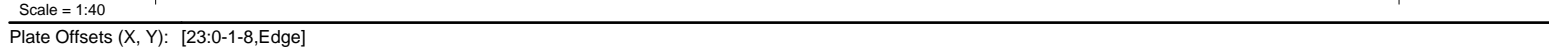
**NOTES**

- 1) Unbalanced floor live loads have been considered for this design.
- 2) All plates are MT20 plates unless otherwise indicated.
- 3) All plates are 3x3 (=) MT20 unless otherwise indicated.
- 4) Refer to girder(s) for truss to truss connections.





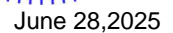
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<b>LUMBER</b>		<p>5) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.</p> <p>6) Recommend 2x6 strongbacks, on edge, spaced at 10'-00" oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.</p> <p>7) CAUTION, Do not erect truss backwards.</p>
TOP CHORD	2x4 SP No.2(flat)	
BOT CHORD	2x4 SP No.2(flat)	
WEBS	2x4 SP No.3(flat)	
OTHERS	2x4 SP No.3(flat)	
<b>BRACING</b>		<p><b>LOAD CASE(S)</b> Standard</p>
TOP CHORD	Structural wood sheathing directly applied or 6'-0" oc purlins, except end verticals.	
BOT CHORD	Rigid ceiling directly applied or 2'-2" oc bracing.	

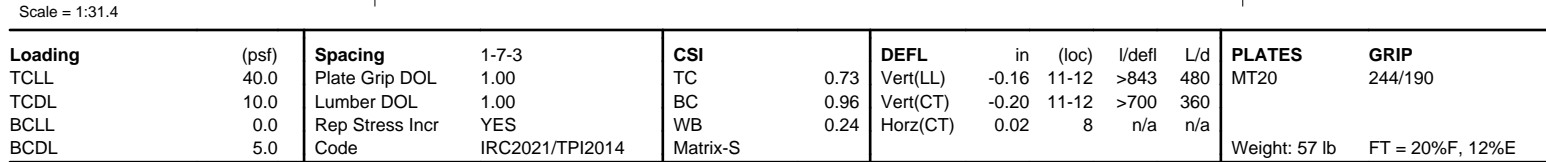
**NOTES**

- 1) Unbalanced floor live loads have been considered for this design.
- 2) All plates are MT20 plates unless otherwise indicated.
- 3) All plates are 3x3 (=) MT20 unless otherwise indicated.
- 4) Refer to girder(s) for truss to truss connections.





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June 28, 2025

WARNING – Verify design parameters and READ NOTES ON THIS AND INCLUDED MITTEL REFERENCE PAGE MIT-TR-17-0169, 1/12/2023 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/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Components Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

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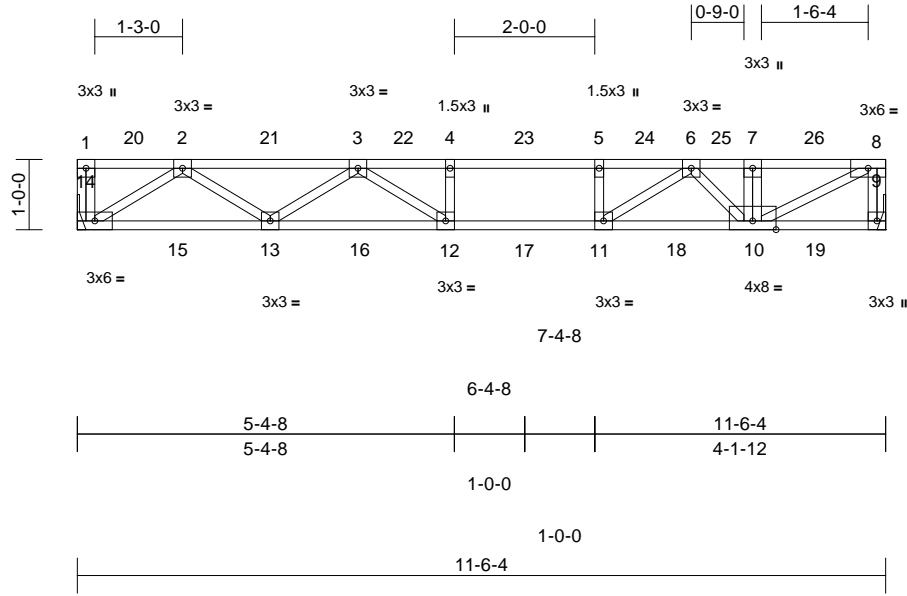


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2F4A	Floor	1	1	Job Reference (optional)
					I74501340

Structural, LLC, Thurmont, MD - 21788,

Run: 25.20 S May 13 2025 Print: 25.2.0 S May 13 2025 MiTek Industries, Inc. Thu Jun 26 11:23:18  
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Page: 1



Scale = 1:32.8

Loading	(psf)	Spacing	1-7-3	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL	40.0	Plate Grip DOL	1.00	TC	0.59	Vert(LL)	-0.16	12-13	>842	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.95	Vert(CT)	-0.19	12-13	>695	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.45	Horz(CT)	0.02	9	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 58 lb	FT = 20%F, 12%E

#### LUMBER

TOP CHORD 2x4 SP No.2(flat)  
BOT CHORD 2x4 SP No.2(flat)  
WEBS 2x4 SP No.3(flat)

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:  
2-2-0 oc bracing: 12-13.

REACTIONS (size) 9= Mechanical, 14= Mechanical  
Max Grav 9=496 (LC 1), 14=496 (LC 1)

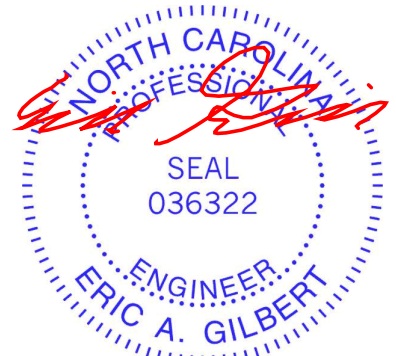
FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-14=-260/32, 8-9=-484/0, 1-2=0/0,  
2-3=-1114/0, 3-4=-1542/0, 4-5=-1542/0,  
5-6=-1542/0, 6-7=-851/0, 7-8=-846/0  
BOT CHORD 13-14=0/717, 12-13=0/1462, 11-12=0/1542,  
10-11=0/1135, 9-10=0/0  
WEBS 4-12=-162/129, 5-11=-239/60, 2-14=-850/0,  
2-13=0/495, 3-13=-424/15, 3-12=-243/311,  
8-10=0/946, 6-10=-421/32, 6-11=-61/569,  
7-10=-267/39

#### NOTES

- Unbalanced floor live loads have been considered for this design.
- Refer to girder(s) for truss to truss connections.
- 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.
- Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.

LOAD CASE(S) Standard



June 28,2025

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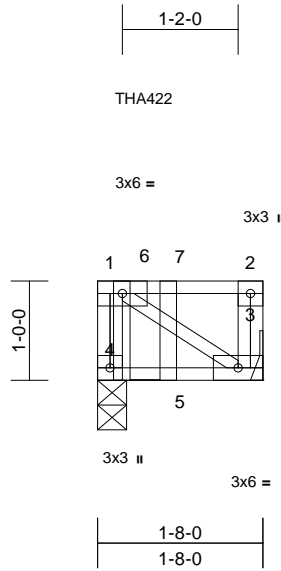


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2FGR5	Floor Girder	1	1	Job Reference (optional)
					I74501341

Structural, LLC, Thurmont, MD - 21788,

Run: 25.20 S May 13 2025 Print: 25.2.0 S May 13 2025 MiTek Industries, Inc. Thu Jun 26 11:23:19  
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Page: 1



Scale = 1:23.2

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.98	Vert(LL)	-0.02	3-4	>916	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.50	Vert(CT)	-0.02	3-4	>874	360		
BCLL	0.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.00	3	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-P							Weight: 11 lb	FT = 20%F, 12%E

#### LUMBER

TOP CHORD 2x4 SP No.2(flat)  
BOT CHORD 2x4 SP No.2(flat)  
WEBS 2x4 SP No.3(flat)

#### BRACING

TOP CHORD Structural wood sheathing directly applied or  
1-8-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc  
bracing.

**REACTIONS** (size) 3= Mechanical, 4=0-3-8  
Max Grav 3=395 (LC 8), 4=638 (LC 3)

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

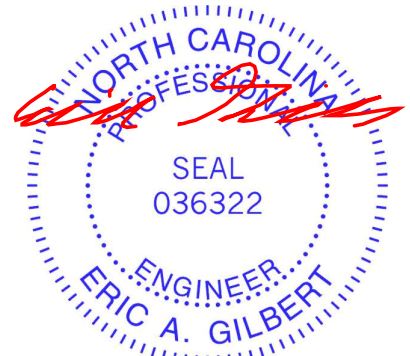
TOP CHORD 1-4=-631/0, 2-3=-388/0, 1-2=0/0  
BOT CHORD 3-4=0/0  
WEBS 1-3=0/0

#### NOTES

- 1) Refer to girder(s) for truss to truss connections.
- 2) 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.
- 3) Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- 4) Use Simpson Strong-Tie THA422 (Single Chord Girder) or equivalent at 0-5-12 from the left end to connect truss (es) to back face of top chord.
- 5) Fill all nail holes where hanger is in contact with lumber.
- 6) 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

- 1) Dead + Floor Live (balanced): Lumber Increase=1.00,  
Plate Increase=1.00  
Uniform Loads (lb/ft)  
Vert: 3-4=-10, 1-2=-100  
Concentrated Loads (lb)  
Vert: 6=-438 (B)



June 28,2025

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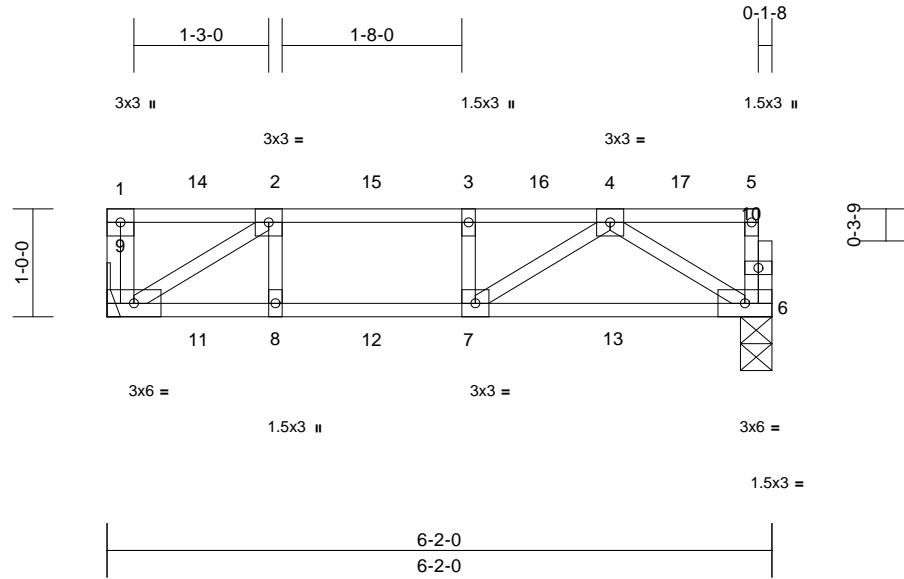


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2F1C	Floor	2	1	Job Reference (optional)
					I74501342

Structural, LLC, Thurmont, MD - 21788,

Run: 25.20 S May 13 2025 Print: 25.2.0 S May 13 2025 MiTek Industries, Inc. Thu Jun 26 11:23:17  
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Loading	(psf)	Spacing	1-4-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.41	Vert(LL)	-0.13	6-7	>555	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.90	Vert(CT)	-0.14	6-7	>509	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.09	Horz(CT)	0.00	6	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 31 lb	FT = 20%F, 12%E

#### LUMBER

TOP CHORD 2x4 SP No.2(flat)  
BOT CHORD 2x4 SP No.2(flat)  
WEBS 2x4 SP No.3(flat)  
OTHERS 2x4 SP No.3(flat)

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 6=0-3-8, 9= Mechanical  
Max Grav 6=311 (LC 22), 9=312 (LC 19)

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

TOP CHORD 1-9=-256/36, 5-6=-259/22, 1-2=0/0,  
2-3=-413/0, 3-4=-413/0, 4-5=-18/2

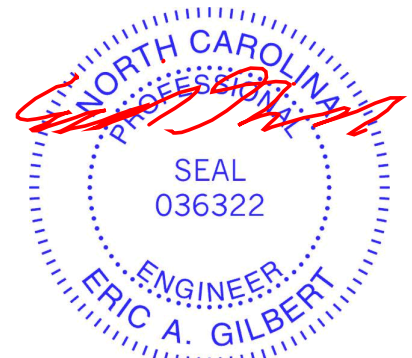
BOT CHORD 8-9=0/413, 7-8=0/413, 6-7=0/366

WEBS 4-6=-434/0, 2-9=-483/0, 4-7=-139/242,  
2-8=-27/226, 3-7=-140/117

#### NOTES

- Unbalanced floor live loads have been considered for this design.
- Refer to girder(s) for truss to truss connections.
- 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.
- Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- CAUTION, Do not erect truss backwards.

**LOAD CASE(S)** Standard



June 28,2025

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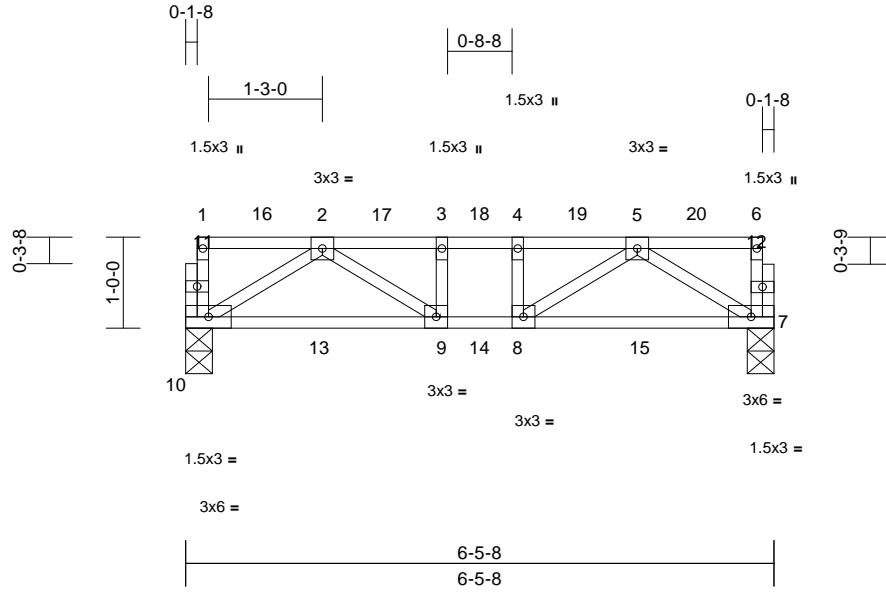


Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-El.1,4,6,7,9-Floor
2411-0320-A	2F1B	Floor	7	1	Job Reference (optional)
					I74501343

Structural, LLC, Thurmont, MD - 21788,

Run: 25.20 S May 13 2025 Print: 25.2.0 S May 13 2025 MiTek Industries, Inc. Thu Jun 26 11:23:17  
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Page: 1



Scale = 1:25.3

Loading	(psf)	Spacing	1-4-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.34	Vert(LL)	-0.10	9-10	>777	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.81	Vert(CT)	-0.10	9-10	>732	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.12	Horz(CT)	0.00	7	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 34 lb	FT = 20%F, 12%E

#### LUMBER

TOP CHORD	2x4 SP No.2(flat)
BOT CHORD	2x4 SP No.2(flat)
WEBS	2x4 SP No.3(flat)
OTHERS	2x4 SP No.3(flat)

#### BRACING

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

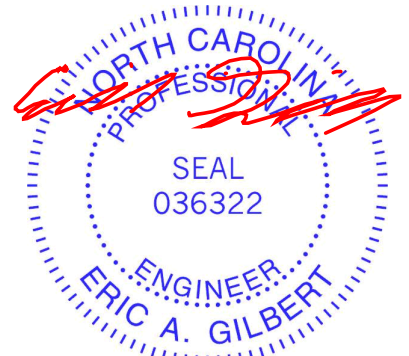
REACTIONS	(size) 7=0-3-8, 10=0-3-8
	Max Grav 7=314 (LC 26), 10=314 (LC 23)

FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	1-10=-260/16, 6-7=-260/16, 1-2=-19/1, 2-3=-512/0, 3-4=-512/0, 4-5=-512/0, 5-6=-19/1
BOT CHORD	9-10=0/378, 8-9=0/512, 7-8=0/378
WEBS	5-7=-448/0, 2-10=-448/0, 5-8=-82/303, 2-9=-82/303, 3-9=-183/159, 4-8=-183/159

#### NOTES

- Unbalanced floor live loads have been considered for this design.
- 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.
- Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.

LOAD CASE(S) Standard



June 28,2025

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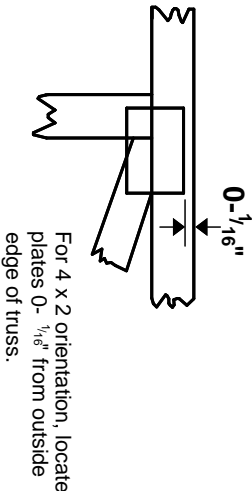
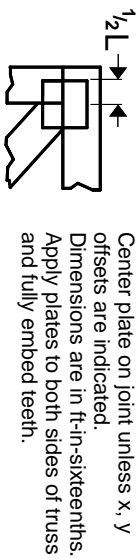
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# Symbols

## 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

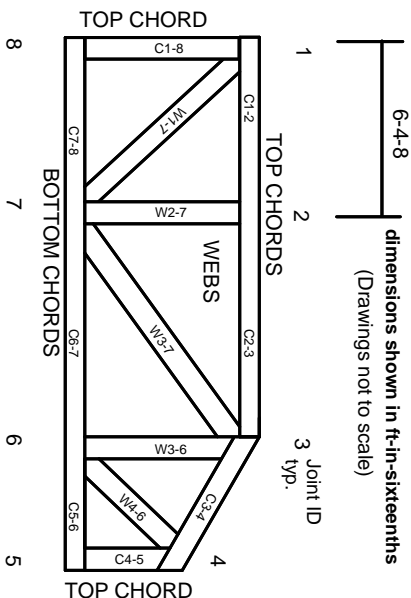


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## 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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