ENGINEERING BY
TRENCO
A MiTek Affiliate

Trenco
818 Soundside Rd
Edenton, NC 27932

RE: 2411-0320-A - Cooper III Rev.4-Floor

Site Information:

Project Customer: DRB Raleigh Project Name: DRB Raleigh Model Track
Lot/Block: Subdivision:
Model: Cooper III Rev.4
Address:
City: 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

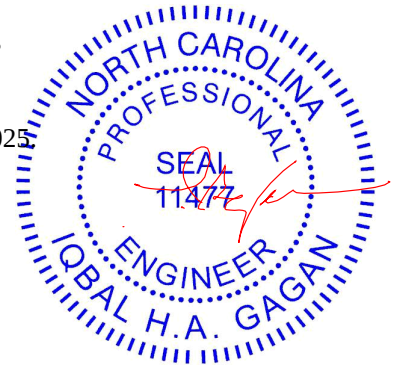
Design Program: MiTek 20/20 8.8
Design Method: MWFRS (Envelope)/C-C hybrid Wind ASCE 7-16
Floor Load: N/A psf

Exposure Category: B

No.	Seal#	Truss Name	Date
1		2FGR5	2/5/25
2	I71190822	2FGR2	2/5/25
3	I71190823	2FGR4	2/5/25
4	I71190824	2F1A	2/5/25
5	I71190825	2F1C	2/5/25
6	I71190826	2F1	2/5/25
7	I71190827	2F1B	2/5/25
8	I71190828	2FGR1	2/5/25
9	I71190829	2F2GE	2/5/25
10		2F2	2/5/25
11	I71190831	2F4A	2/5/25
12	I71190832	2F4	2/5/25
13	I71190833	2FGR3	2/5/25
14	I71190834	2F3GE	2/5/25
	I71190835	2F3A	2/5/25
16	I71190836	2F3	2/5/25

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: Gagan, Iqbal
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.

February 5,2025

Gagan, Iqbal

Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2FGR5	Floor Girder	1	1	Job Reference (optional)	I71190821

Structural, LLC, Thurmont, MD - 21788,

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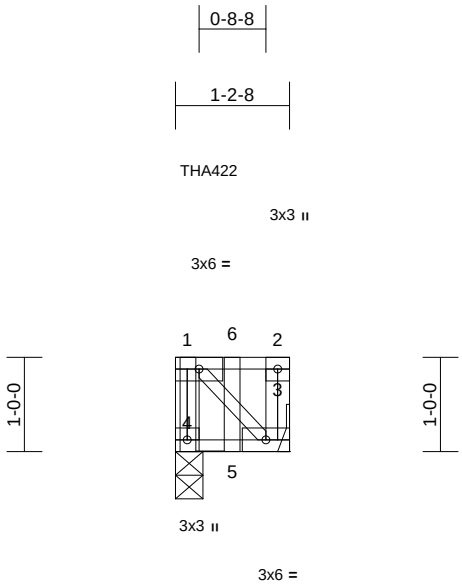

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.32	Vert(LL)	-0.01	3-4	>999	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.31	Vert(CT)	-0.01	3-4	>999	360		
BCLL	0.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.00	3	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-P							Weight: 10 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)

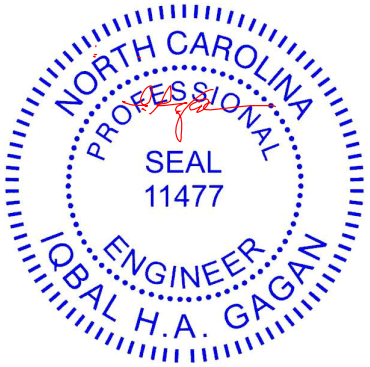
BRACING
TOP CHORD Structural wood sheathing directly applied or 1-2-8 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 3= Mechanical, 4=0-3-8
Max Grav 3=267 (LC 5), 4=501 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-4=-496/0, 2-3=-263/0, 1-2=0/0
BOT CHORD 3-4=0/0
WEBS 1-3=0/0

NOTES
1) Bearings are assumed to be: Joint 4 SP No.2 .
2) Refer to girder(s) for truss to truss connections.
3) 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.
4) 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.
5) Use Simpson Strong-Tie THA422 (Single Chord Girder) or equivalent at 0-4-6 from the left end to connect truss (es) to back face of top chord.
6) Fill all nail holes where hanger is in contact with lumber.
7) 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: 1=-448 (B)



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Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2FGR4	Floor Girder	1	1	Job Reference (optional)	I71190823

Structural, LLC, Thurmont, MD - 21788,

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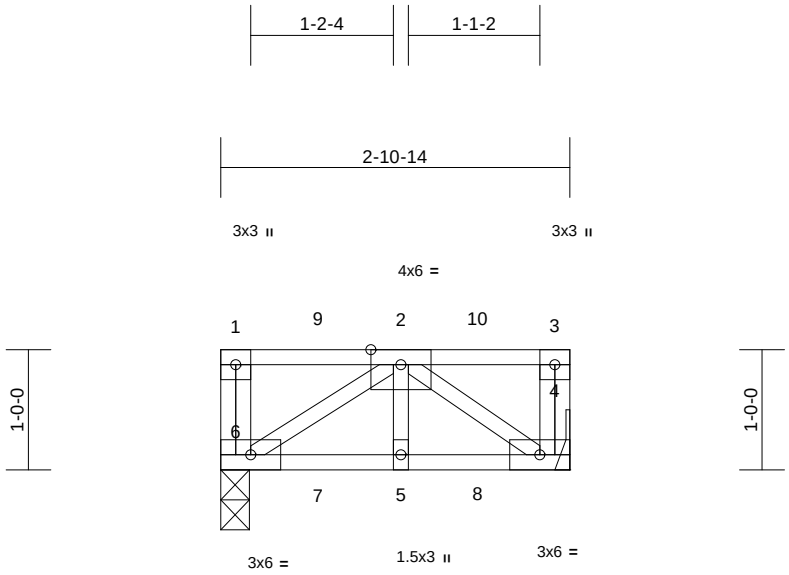

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Loading	(psf)	Spacing	1-4-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.39	Vert(LL)	-0.01	5-6	>999	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.20	Vert(CT)	-0.01	5-6	>999	360		
BCLL	0.0	Rep Stress Incr	NO	WB	0.10	Horz(CT)	0.00	4	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-P							Weight: 18 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)

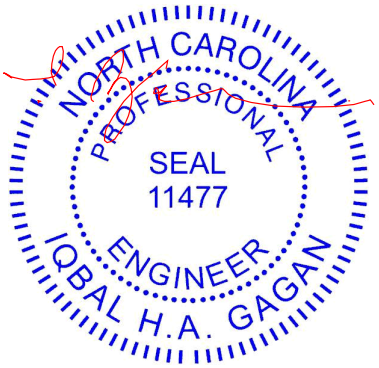
BRACING
TOP CHORD Structural wood sheathing directly applied or 2-10-14 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 4= Mechanical, 6=0-2-14
Max Grav 4=306 (LC 6), 6=367 (LC 1)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-6=-313/0, 3-4=-260/18
WEBS 2-6=-293/0, 2-4=-300/0, 2-5=0/257

NOTES
1) Refer to girder(s) for truss to truss connections.
2) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 6.
3) 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.
4) 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.
5) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 186 lb down at 0-1-8, and 172 lb down at 1-8-10 on top chord. The design/selection of such connection device (s) is the responsibility of others.
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: 4-6=-7, 1-3=-67
Concentrated Loads (lb)
Vert: 1=-186 (F), 2=-172 (F)



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Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F1C	Floor	2	1	Job Reference (optional)	I71190825

Structural, LLC, Thurmont, MD - 21788,

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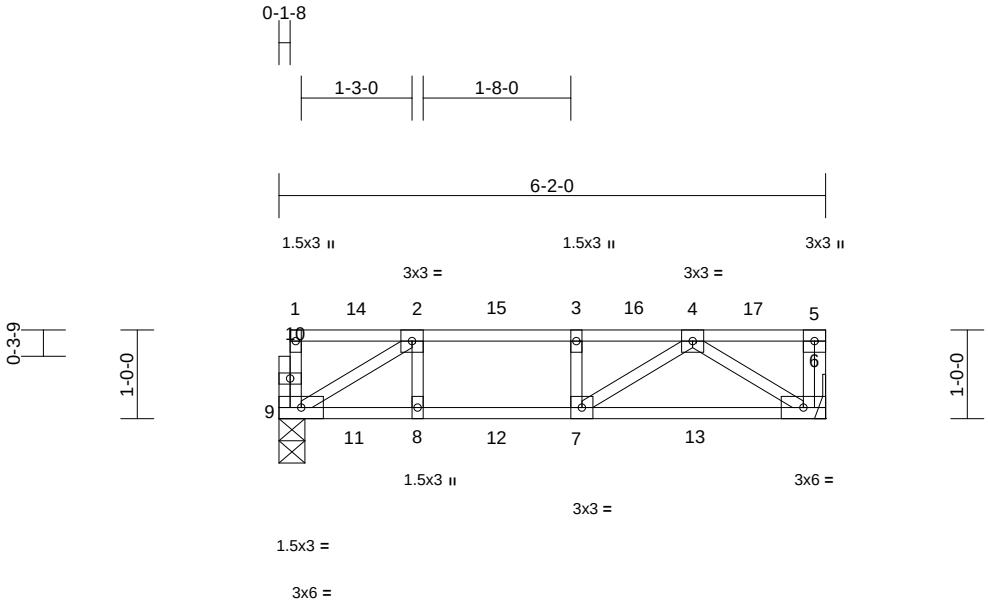


Scale = 1:21.6

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	0.40	Vert(LL)	-0.13	6-7	>556	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.90	Vert(CT)	-0.14	6-7	>510	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)

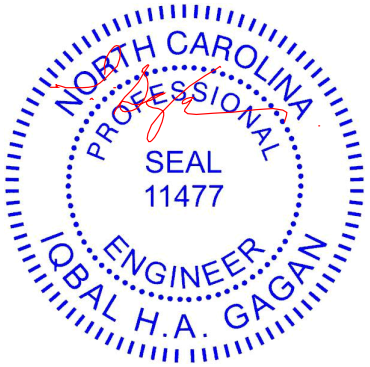
BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 6= Mechanical, 9=0-3-8
Max Grav 6=312 (LC 24), 9=311 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-9=-256/39, 5-6=-259/20, 1-2=-18/3, 2-3=-413/0, 3-4=-413/0, 4-5=0/0
BOT CHORD 8-9=0/413, 7-8=0/413, 6-7=0/366
WEBS 4-6=-434/0, 2-9=-486/0, 4-7=-139/242, 2-8=-27/226, 3-7=-140/118

NOTES
1) Unbalanced floor live loads have been considered for this design.
2) Bearings are assumed to be: Joint 9 SP No.2 .
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.

LOAD CASE(S) Standard



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Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F1B	Floor	7	1	Job Reference (optional)	I71190827

Structural, LLC, Thurmont, MD - 21788, Run: 8.83 S Jan 17 2025 Print: 8.830 S Jan 17 2025 MiTek Industries, Inc. Tue Feb 04 08:37:04 Page: 1
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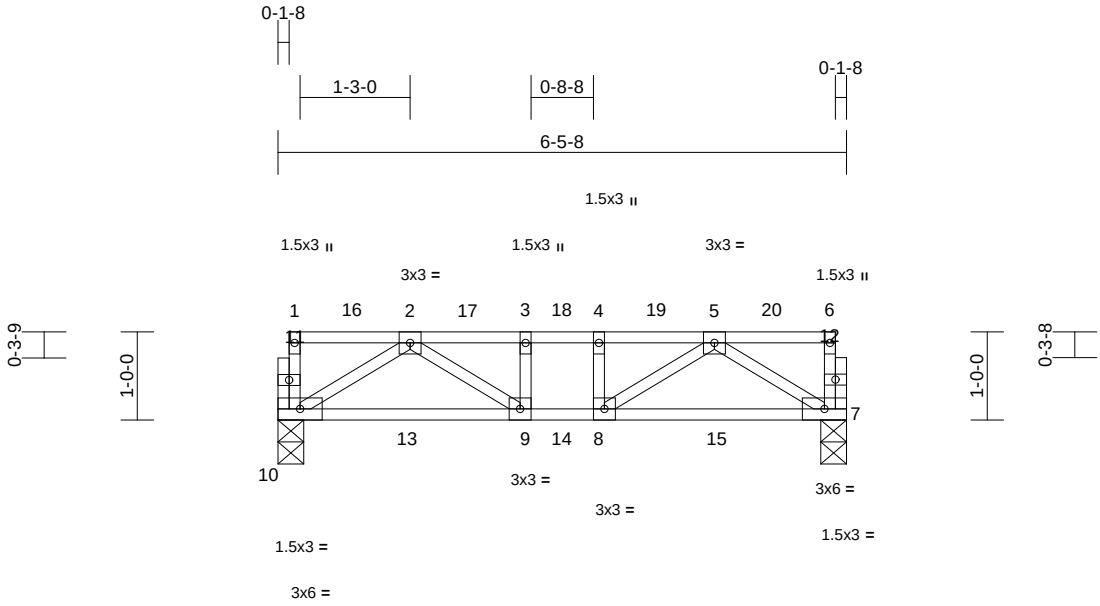


Scale = 1:21.6

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)

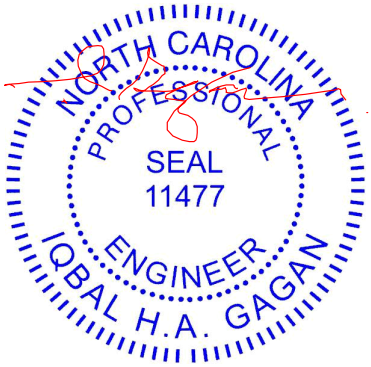
BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

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
1) Unbalanced floor live loads have been considered for this design.
2) All bearings are assumed to be SP No.2 .
3) 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.
4) 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



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Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F4A	Floor	1	1	Job Reference (optional)	I71190831

Structural, LLC, Thurmont, MD - 21788,

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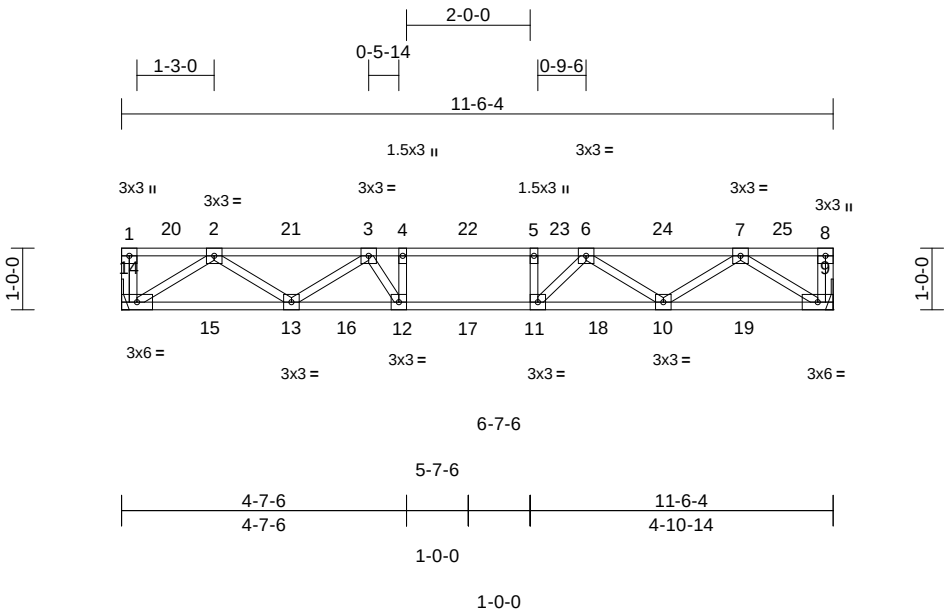

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Loading	(psf)	Spacing	1-7-3	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.57	Vert(LL)	-0.11	10-11	>999	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.81	Vert(CT)	-0.13	10-11	>999	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.23	Horz(CT)	0.02	9	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 57 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)

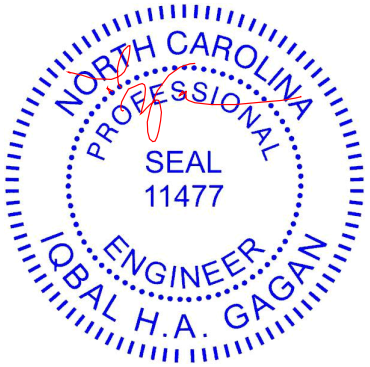
BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

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=-259/29, 8-9=-259/31, 1-2=0/0, 2-3=-1105/0, 3-4=-1557/0, 4-5=-1557/0, 5-6=-1557/0, 6-7=-1107/0, 7-8=0/0
BOT CHORD 13-14=0/714, 12-13=0/1473, 11-12=0/1557, 10-11=0/1465, 9-10=0/715
WEBS 4-12=-269/234, 5-11=-207/161, 2-14=-846/0, 2-13=0/489, 3-13=-449/40, 3-12=-300/372, 7-9=-848/0, 7-10=0/491, 6-10=-436/26, 6-11=-248/326

NOTES
1) Unbalanced floor live loads have been considered for this design.
2) Refer to girder(s) for truss to truss connections.
3) 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.
4) 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



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Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F4	Floor	3	1	Job Reference (optional)	I71190832

Structural, LLC, Thurmont, MD - 21788,

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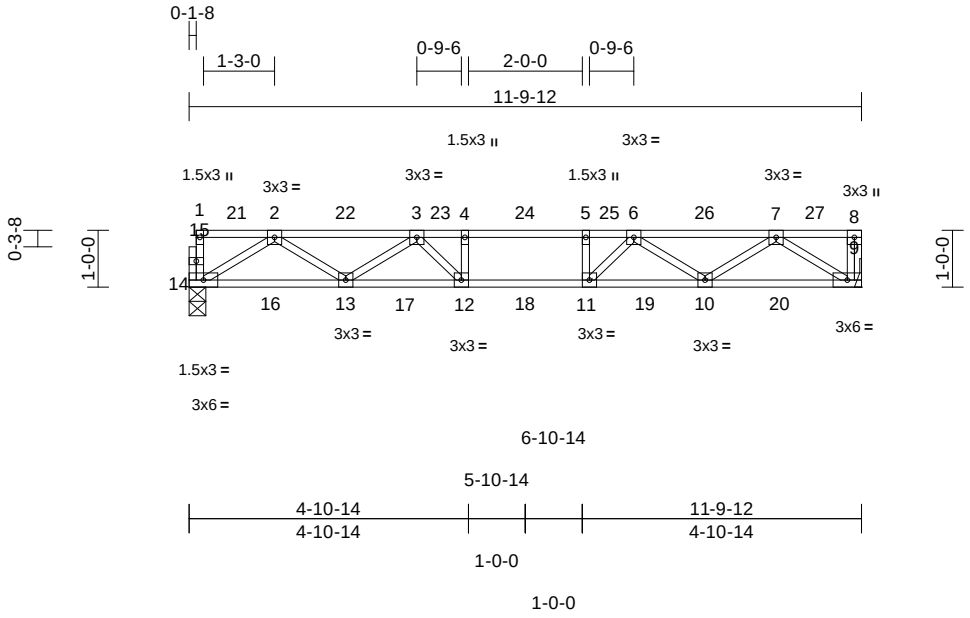


Loading	(psf)	Spacing	1-7-3	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.58	Vert(LL)	-0.11	10-11	>999	480	MT20	244/190
TCDL	10.0	Lumber DOL	1.00	BC	0.81	Vert(CT)	-0.14	10-11	>999	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.24	Horz(CT)	0.02	9	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	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)
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) 9= Mechanical, 14=0-3-8
Max Grav 9=509 (LC 1), 14=504 (LC 1)

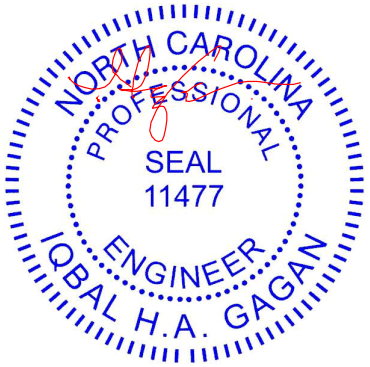
FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-14=-259/34, 8-9=-259/31, 1-2=-18/2, 2-3=-1144/0, 3-4=-1639/0, 4-5=-1639/0, 5-6=-1639/0, 6-7=-1144/0, 7-8=0/0
BOT CHORD 13-14=0/735, 12-13=0/1523, 11-12=0/1639, 10-11=0/1522, 9-10=0/735
WEBS 4-12=-218/153, 5-11=-218/154, 2-14=-868/0, 2-13=0/499, 3-13=-463/18, 3-12=-235/359, 7-9=-872/0, 7-10=0/499, 6-10=-462/18, 6-11=-236/359

NOTES

1) Unbalanced floor live loads have been considered for this design.
2) Bearings are assumed to be: Joint 14 SP No.2 .
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.

LOAD CASE(S) Standard

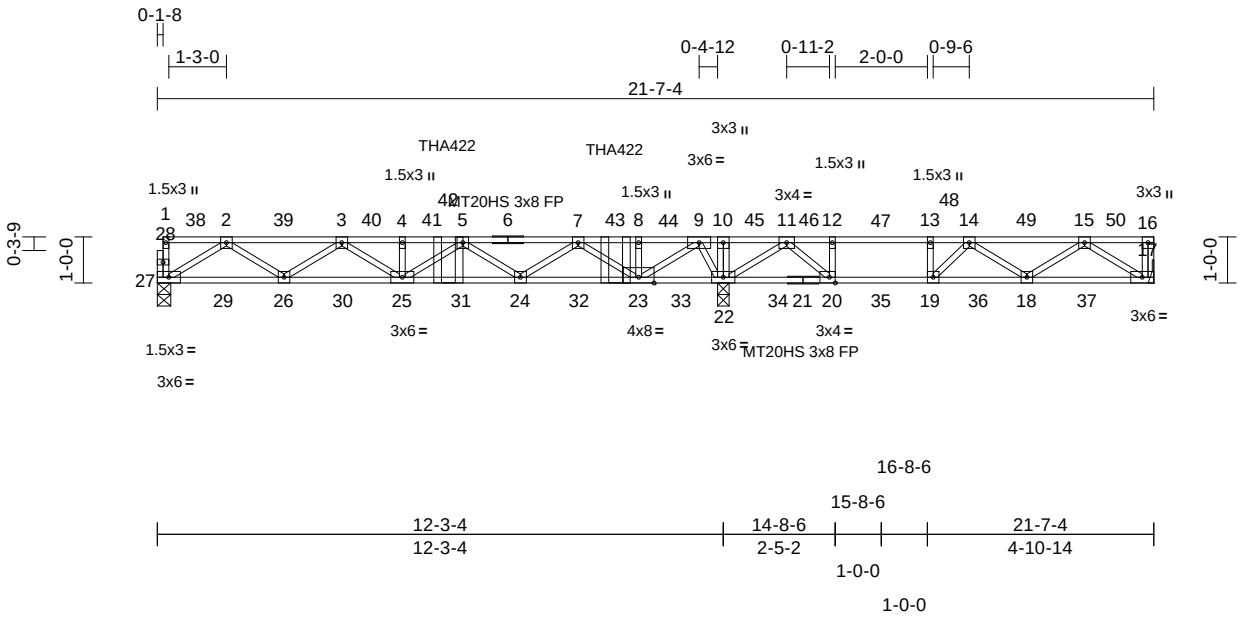


February 5,2025

ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2FGR3	Floor Girder	1	1	Job Reference (optional)	I71190833

Structural, LLC, Thurmont, MD - 21788, Run: 8.83 S Jan 17 2025 Print: 8.830 S Jan 17 2025 MiTek Industries, Inc. Tue Feb 04 08:37:07 Page: 1
ID:8u6KLWxnGopkdWK_aqSiqmzqdMx-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:43.1

Plate Offsets (X, Y): [20:0-1-8,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	0.88	Vert(LL)	-0.11	18-19	>964	480	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.00	BC	0.96	Vert(CT)	-0.15	18-19	>725	360	MT20	244/190
BCLL	0.0	Rep Stress Incr	NO	WB	0.55	Horz(CT)	0.03	17	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 108 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)

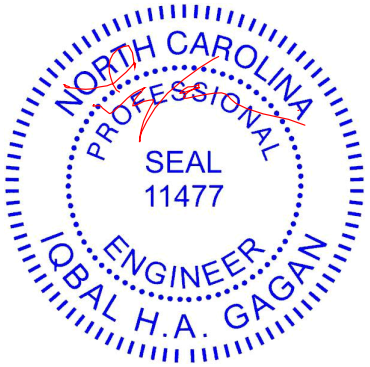
BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 17= Mechanical, 22=0-3-0, 27=0-3-8
Max Grav 17=382 (LC 4), 22=1163 (LC 7), 27=567 (LC 8)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-27=-259/37, 16-17=-260/30, 1-2=-18/3, 2-3=-1333/0, 3-4=-2038/0, 4-5=-2038/0, 5-7=-1697/0, 7-8=-556/147, 8-9=-556/147, 9-10=-16/1021, 10-11=-14/1025, 11-12=-805/278, 12-13=-805/278, 13-14=-805/278, 14-15=-782/0, 15-16=0/0
BOT CHORD 26-27=0/833, 25-26=0/1801, 24-25=0/2097, 23-24=0/1271, 22-23=-601/108, 20-22=-581/352, 19-20=-278/805, 18-19=-89/946, 17-18=0/539
WEBS 12-20=-405/0, 13-19=-87/239, 2-27=-985/0, 2-26=0/611, 3-26=-571/0, 3-25=-138/326, 4-25=-270/53, 11-22=-773/0, 11-20=0/815, 15-17=-639/0, 15-18=-24/412, 14-18=-260/137, 14-19=-422/63, 10-22=-287/36, 5-25=-257/234, 5-24=-517/4, 7-24=0/550, 7-23=-892/0, 8-23=-270/36, 9-23=0/1150, 9-22=-794/0

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) Bearings are assumed to be: Joint 27 SP No.2 , Joint 22 SP No.2 .
5) Refer to girder(s) for truss to truss connections.
6) 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.
7) 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.
8) CAUTION, Do not erect truss backwards.
9) Use Simpson Strong-Tie THA422 (Single Chord Girder) or equivalent spaced at 3-7-8 oc max. starting at 6-3-12 from the left end to 9-11-4 to connect truss(es) to back face of top chord.
10) Fill all nail holes where hanger is in contact with lumber.
11) 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: 17-27=-8, 1-16=-80
Concentrated Loads (lb)
Vert: 42=-133 (B), 43=-13 (B)

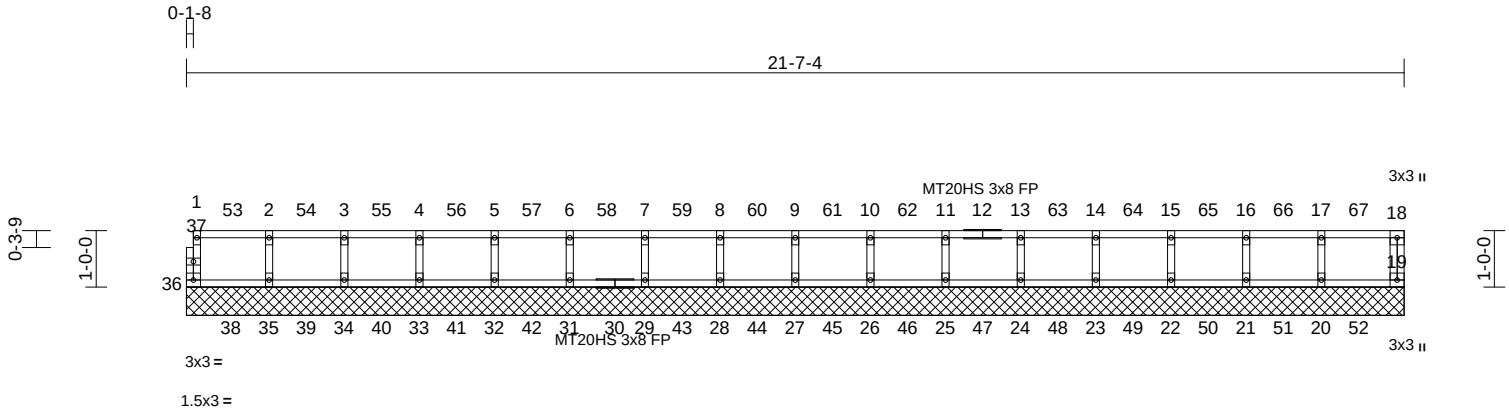


February 5,2025

ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F3GE	Floor Supported Gable	1	1	Job Reference (optional)	I71190834

Structural, LLC, Thurmont, MD - 21788, Run: 8.83 S Jan 17 2025 Print: 8.830 S Jan 17 2025 MiTek Industries, Inc. Tue Feb 04 08:37:05 Page: 1
ID:HmxNqXbjjVV6_r3unoUSW3zqdPy-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:41.6

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)

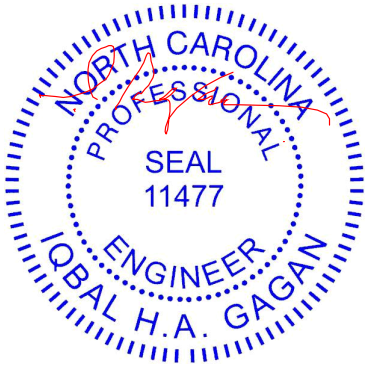
BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

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, 25=21-7-4, 26=21-7-4, 27=21-7-4, 28=21-7-4, 29=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=-8 (LC 52), 21=-3 (LC 53), 28=-3 (LC 43), 34=-3 (LC 38), 36=-9 (LC 39)
Max Grav 19=268 (LC 70), 20=286 (LC 69), 21=285 (LC 68), 22=285 (LC 67), 23=285 (LC 66), 24=285 (LC 65), 25=285 (LC 64), 26=285 (LC 63), 27=285 (LC 62), 28=285 (LC 61), 29=285 (LC 60), 31=285 (LC 59), 32=285 (LC 58), 33=285 (LC 57), 34=285 (LC 56), 35=286 (LC 55), 36=267 (LC 54)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-36=-259/16, 18-19=-263/16, 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, 9-10=-28/3, 10-11=-28/3, 11-13=-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, 29-31=-3/28, 28-29=-3/28, 27-28=-3/28, 26-27=-3/28, 25-26=-3/28, 24-25=-3/28, 23-24=-3/28, 22-23=-3/28, 21-22=-3/28, 20-21=-3/28, 19-20=-3/28
WEBS 9-27=-272/10, 8-28=-272/10, 7-29=-272/10, 6-31=-272/10, 5-32=-272/10, 4-33=-273/10, 3-34=-272/10, 2-35=-273/10, 10-26=-272/10, 11-25=-272/10, 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) All bearings are assumed to be SP No.2 .
7) N/A
8) 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.
9) 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.
10) CAUTION, Do not erect truss backwards.

LOAD CASE(S) Standard



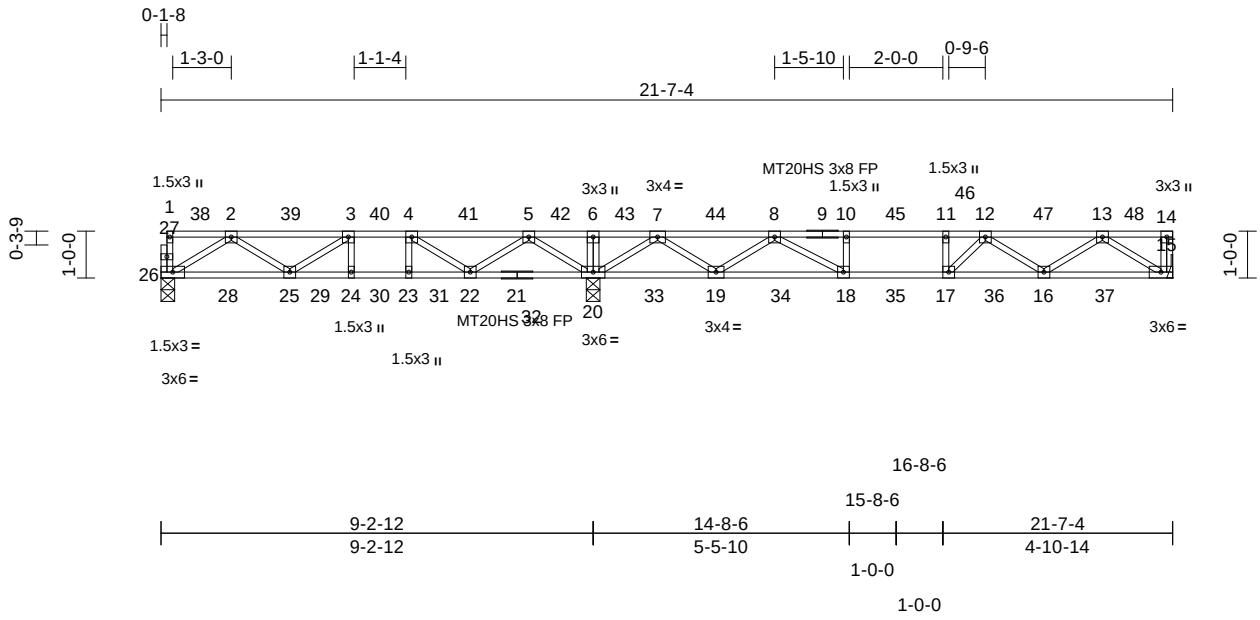
February 5,2025

ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F3A	Floor	3	1	Job Reference (optional)	I71190835

Structural, LLC, Thurmont, MD - 21788,

Run: 8.83 S Jan 17 2025 Print: 8.830 S Jan 17 2025 MiTek Industries, Inc. Tue Feb 04 08:37:05 ID:_Lv05thgNS2lUKqTuYeszFzqdR7-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:43.1

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	0.67	Vert(LL)	-0.13	18-19	>999	480	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.00	BC	0.83	Vert(CT)	-0.15	18-19	>993	360	MT20	244/190
BCLL	0.0	Rep Stress Incr	YES	WB	0.32	Horz(CT)	0.02	15	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 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) 15= Mechanical, 20=0-3-8, 26=0-3-8
Max Grav 15=474 (LC 4), 20=1128 (LC 1), 26=345 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-26=-257/48, 14-15=-259/30, 1-2=-18/3, 2-3=-666/31, 3-4=-787/164, 4-5=-442/411, 5-6=0/1100, 6-7=0/1100, 7-8=-521/113, 8-10=-1413/0, 10-11=-1413/0, 11-12=-1413/0, 12-13=-1047/0, 13-14=0/0

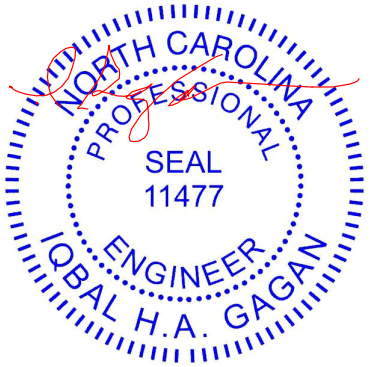
BOT CHORD 25-26=0/496, 24-25=-164/787, 23-24=-164/787, 22-23=-164/787, 20-22=-623/118, 19-20=-337/118, 18-19=0/1040, 17-18=0/1413, 16-17=0/1366, 15-16=0/683

WEBS 6-20=-271/56, 10-18=-215/45, 11-17=-184/171, 5-20=-833/0, 2-26=-586/0, 5-22=0/504, 2-25=-66/337, 4-22=-566/24, 3-25=-213/246, 3-24=-150/127, 4-23=-65/208, 7-20=-1053/0, 7-19=0/676, 8-19=-664/0, 8-18=-43/565, 13-15=-809/0, 13-16=0/483, 12-16=-390/49, 12-17=-275/247

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) Bearings are assumed to be: Joint 26 SP No.2 , Joint 20 SP No.2 .
5) Refer to girder(s) for truss to truss connections.
6) 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.
7) 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.
8) CAUTION, Do not erect truss backwards.

LOAD CASE(S) Standard



February 5,2025

ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Cooper III Rev.4-Floor	
	2F3	Floor	1	1	Job Reference (optional)	I71190836

Structural, LLC, Thurmont, MD - 21788, Run: 8.83 S Jan 17 2025 Print: 8.830 S Jan 17 2025 MiTek Industries, Inc. Tue Feb 04 08:37:05 Page: 1

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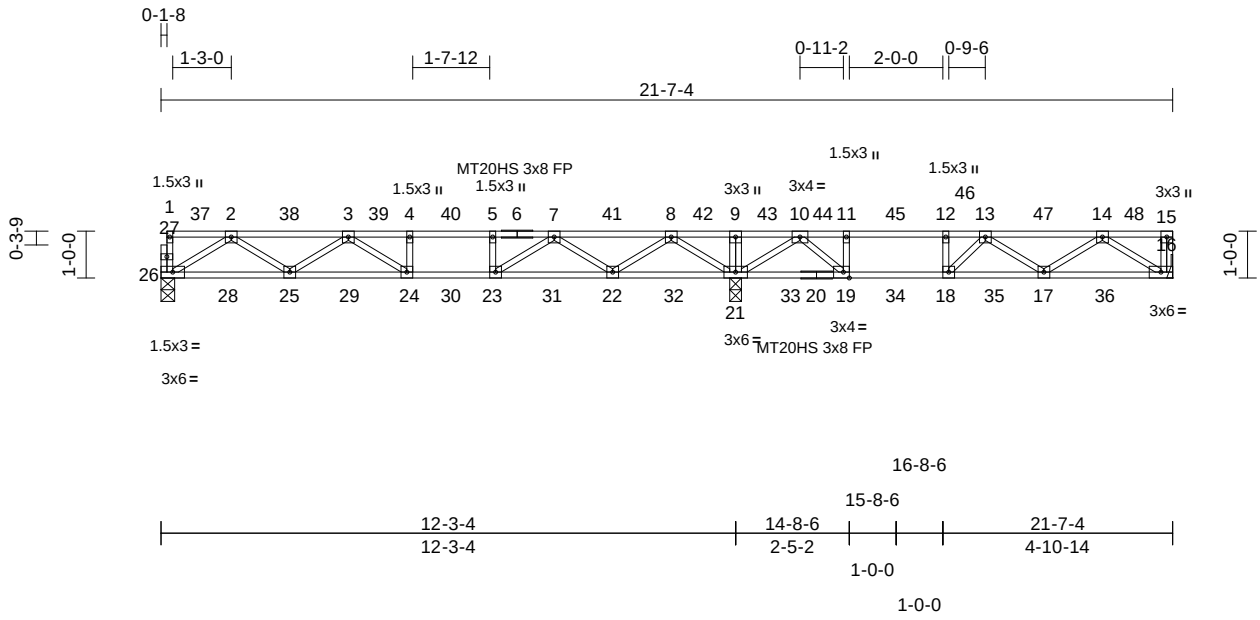


Scale = 1:43.1

Plate Offsets (X, Y): [19:0-1-8,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	0.68	Vert(LL)	-0.14	24-25	>999	480	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.00	BC	0.93	Vert(CT)	-0.17	24-25	>849	360	MT20	244/190
BCLL	0.0	Rep Stress Incr	YES	WB	0.35	Horz(CT)	0.03	16	n/a	n/a		
BCDL	5.0	Code	IRC2021/TPI2014	Matrix-S							Weight: 104 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 2-2-0 oc bracing.

REACTIONS (size) 16= Mechanical, 21=0-3-0, 26=0-3-8
Max Grav 16=389 (LC 4), 21=1044 (LC 1), 26=491 (LC 10)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-26=-259/35, 15-16=-260/30, 1-2=-18/3, 2-3=-1112/0, 3-4=-1556/0, 4-5=-1556/0, 5-7=-1556/0, 7-8=-803/25, 8-9=-62/717, 9-10=-62/717, 10-11=-854/132, 11-12=-854/132, 12-13=-854/132, 13-14=-804/0, 14-15=0/0

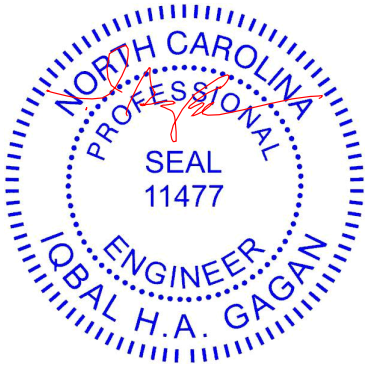
BOT CHORD 25-26=0/716, 24-25=0/1464, 23-24=0/1556, 22-23=0/1278, 21-22=-200/299, 19-21=-381/407, 18-19=-132/854, 17-18=0/980, 16-17=0/551

WEBS 9-21=-282/29, 11-19=-372/0, 12-18=-99/230, 8-21=-987/0, 2-26=-846/0, 8-22=0/633, 2-25=0/493, 7-22=-611/0, 3-25=-430/17, 7-23=-94/460, 3-24=-231/271, 4-24=-151/123, 5-23=-212/66, 10-21=-744/0, 10-19=0/728, 14-16=-653/0, 14-17=0/421, 13-17=-272/122, 13-18=-386/87

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) Bearings are assumed to be: Joint 26 SP No.2 , Joint 21 SP No.2 .
5) Refer to girder(s) for truss to truss connections.
6) 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.
7) 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.
8) CAUTION, Do not erect truss backwards.

LOAD CASE(S) Standard

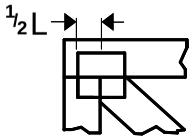


February 5,2025

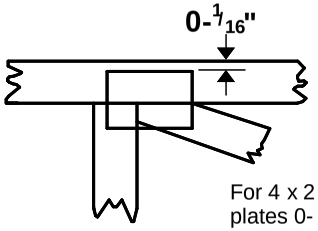
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

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.

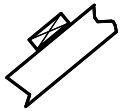
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

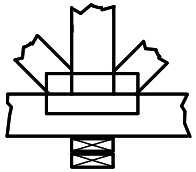
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

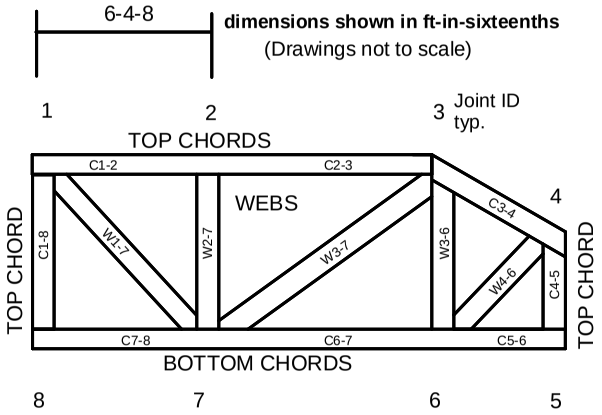


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: Design Standard for Bracing.
BCSI: 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/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

MiTek®

ENGINEERING BY TRENCO
A MiTek Affiliate

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

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/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 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/TPI 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.