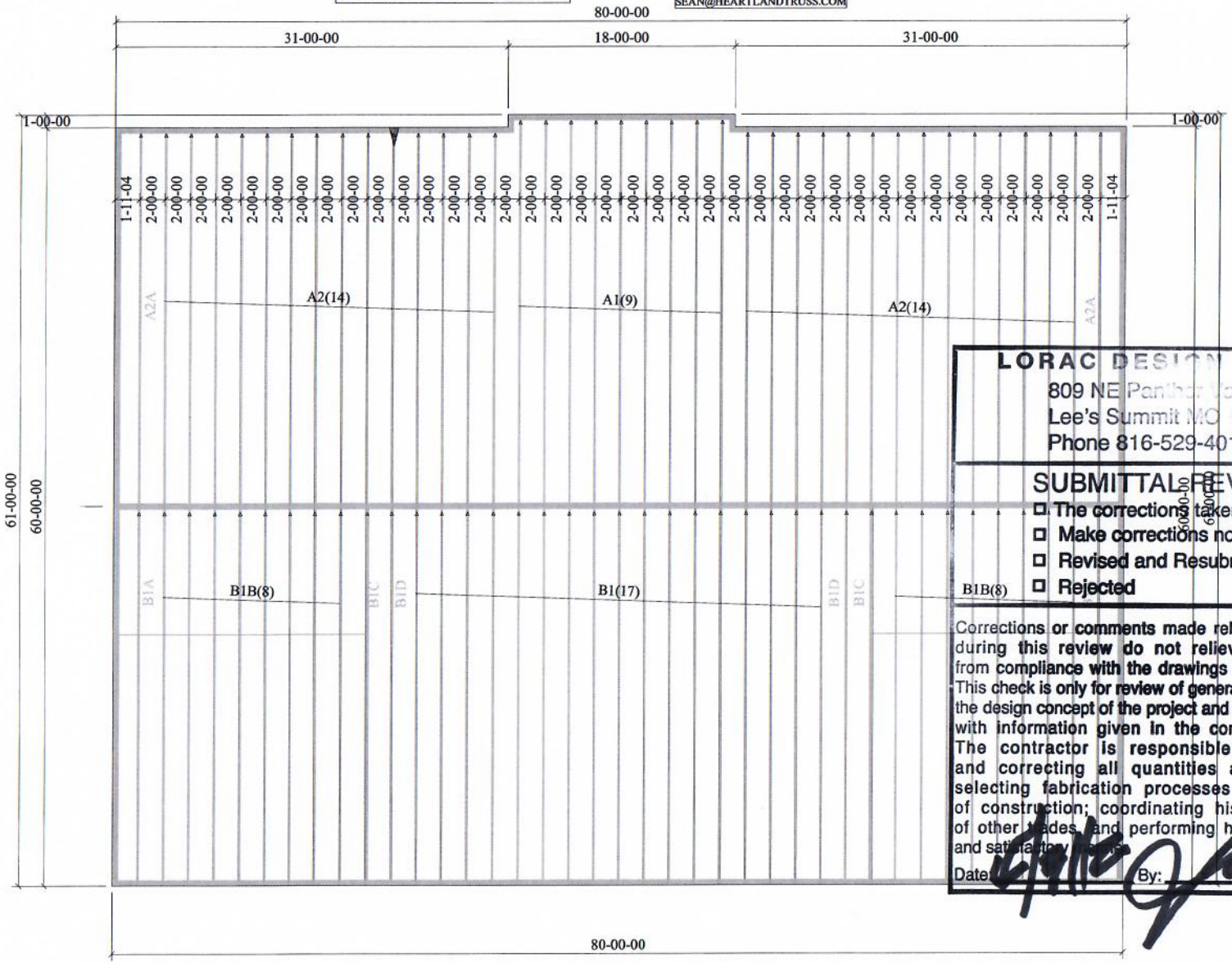
JOB # 220286
DOUGLAS ROAD CENTER LOT 4
ROOF AREA = 4819.05

REFER TO PROVIDED BSCI-B1 BRACING SUMMARY SHEET FOR TEMPORARY, PERMANENT AND GABLE END BRACING

HEARTLAND TRUSS, INC.
500 MID AMERICA DR.
PLATTSBURG, MO 64477
PH. 816-930-3177

DESIGN BY: SEAN FEEHAN
SEAN@HEARTLANDTRUSS.COM



LORAC DESIGN GROUP
809 NE Panther Valley
Lee's Summit MO 64064
Phone 816-529-4019

SUBMITTAL REVIEW
- ☐ The corrections taken
- ☐ Make corrections noted
- ☐ Revised and Resubmit
- ☐ Rejected

APP.

Corrections or comments made relative to submittals during this review do not relieve the contractor from compliance with the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with information given in the contract documents. The contractor is responsible for conforming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

Date: 6/7/22 By:

RELEASED FOR CONSTRUCTION
As Noted on Plans Review

Development Services Department
Lee's Summit, Missouri
06/01/2022

MiTek

MiTek USA, Inc.
16023 Swingley Ridge Rd
Chesterfield, MO 63017
314-434-1200

Re: 220286
Buildforce/Douglas Rd. Center

The truss drawing(s) referenced below have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Heartland Truss, Inc..

Pages or sheets covered by this seal: I49478243 thru I49478250

My license renewal date for the state of Missouri is December 31, 2023.

Missouri COA: Engineering 001193

LORAC DESIGN GROUP
809 NE Panther Valley
Lee's Summit MO 64064
Phone 816-529-4019

SUBMITTAL REVIEW
- ☐ The corrections taken
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- ☐ Rejected

APP

Corrections or comments made relative to submittals during this review do not relieve the contractor from compliance with the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with information given in the contract documents. The contractor is responsible for conforming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades and performing his work in a safe and satisfactory manner.

Date: 6/1/22 By:

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER PE-2001018807
PROFESSIONAL ENGINEER

December 31,2021

Sevier, Scott ,Engineer

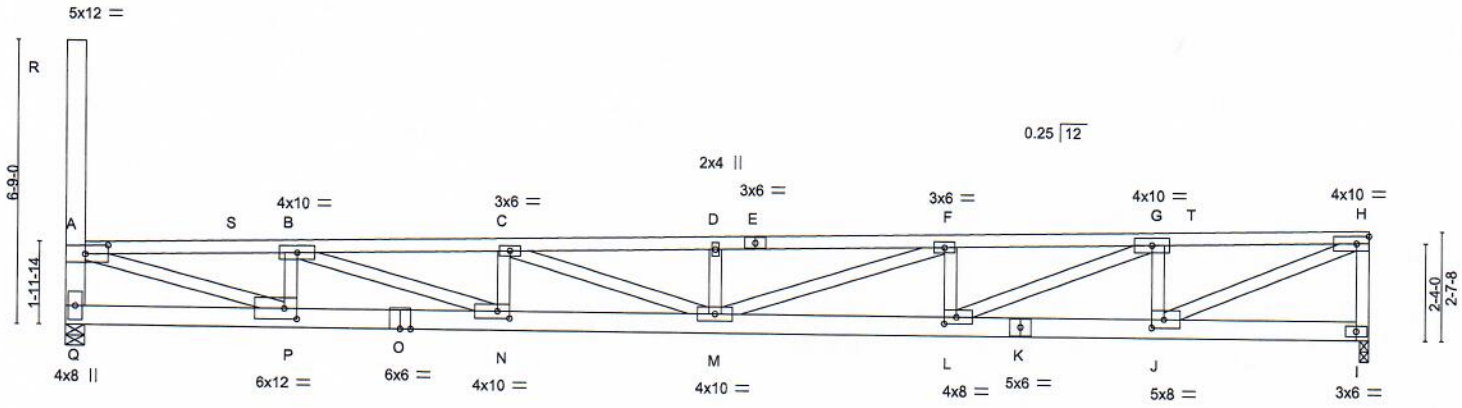
IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which 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	Buildforce/Douglas Rd. Center
220286	A1	Monopitch	9	1	Job Reference (optional)

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:07 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-2WiZ3v1KzWV4AqnIlbyl8FPmxvfMV3nNwDlj4Wy42Ic

5-4-4	10-5-1	15-5-8	21-0-11	25-11-12	30-11-12
5-4-4	5-0-13	5-0-7	5-7-3	4-11-1	5-0-0

Scale = 1:52.6



5-4-4	10-5-1	15-5-8	21-0-11	25-11-12	30-11-12
5-4-4	5-0-13	5-0-7	5-7-3	4-11-1	5-0-0

Plate Offsets (X,Y)-- [A:0-6-9,0-2-8], [H:0-3-7,0-2-0], [J:0-3-8,0-2-8], [L:0-3-8,0-2-0], [N:0-3-8,0-2-0], [P:0-3-8,0-3-0]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/def	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.87	Vert(LL)	-0.61	M-N	>599	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.96	Vert(CT)	-1.02	M-N	>360	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.98	Horz(CT)	0.09	I	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 192 lb	FT = 20%

LUMBER-
TOP CHORD 2x4 SP 2400F 2.0E *Except* A-E: 2x4 SP 1650F 1.5E
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except* Q-R: 2x6 SP No.1, A-P,H-J: 2x4 SP No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-11-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 5-3-15 oc bracing.

REACTIONS. (size) Q=0-5-8, I=0-2-8
Max Horz Q=320(LC 13)
Max Uplift Q=-285(LC 10), I=-324(LC 14)
Max Grav Q=1690(LC 20), I=1994(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-1570/570, A-B=-4029/1648, B-C=-6021/2093, C-D=-6443/2102, D-F=-6444/2108, F-G=-5480/1733, G-H=-3506/1096, H-I=-1910/652
BOT CHORD P-Q=-796/913, N-P=-1718/4022, M-N=-2156/6016, L-M=-1779/5475, J-L=-1135/3496
WEBS A-P=-1380/3977, B-P=-1164/483, B-N=-778/2105, C-N=-555/307, C-M=-301/448, D-M=-436/220, F-M=-404/1024, F-L=-724/331, G-L=-702/2160, G-J=-1512/580, H-J=-1185/3728

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-2-12 to 4-2-12, Exterior(2) 4-2-12 to 26-10-0, Corner(3) 26-10-0 to 30-10-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) I considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) I.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) Q=285, I=324.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER PE-2001018807
PROFESSIONAL ENGINEER

December 31,2021

Continued on page 2

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	I49478243
220286	A1	Monopitch	9	1	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:07 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-2WiZ3v1KzWV4AqnIlbyl8FPmxvfMV3nNwDlj4Wy42Ic

LOAD CASE(S) Standard
Uniform Loads (plf)
Vert: G-S=-70, G-H=-170, I-Q=-20
Trapezoidal Loads (plf)
Vert: A=-130-to-S=-70

LORAC DESIGN GROUP
809 NE Panther Valley
Lee's Summit MO 64064
Phone 816-529-4019

SUBMITTAL REVIEW
☐ The corrections taken
☐ Make corrections noted
☐ Revised and Resubmit
☐ Rejected

Corrections or comments made relative to submittals during this review do not relieve the contractor from compliance with the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with information given in the contract documents. The contractor is responsible for conforming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

Date: _____ By: _____

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	I49478244
220286	A2	Monopitch	28	1	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:00 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60RqyI0H8-WjFxGF2ykqdxo_MxsIT_hTywIl0fEXcX9tUGczy42Ib

4-4-4	9-5-1	14-5-8	20-0-11	24-11-12	29-11-12
4-4-4	5-0-13	5-0-7	5-7-3	4-11-1	5-0-0

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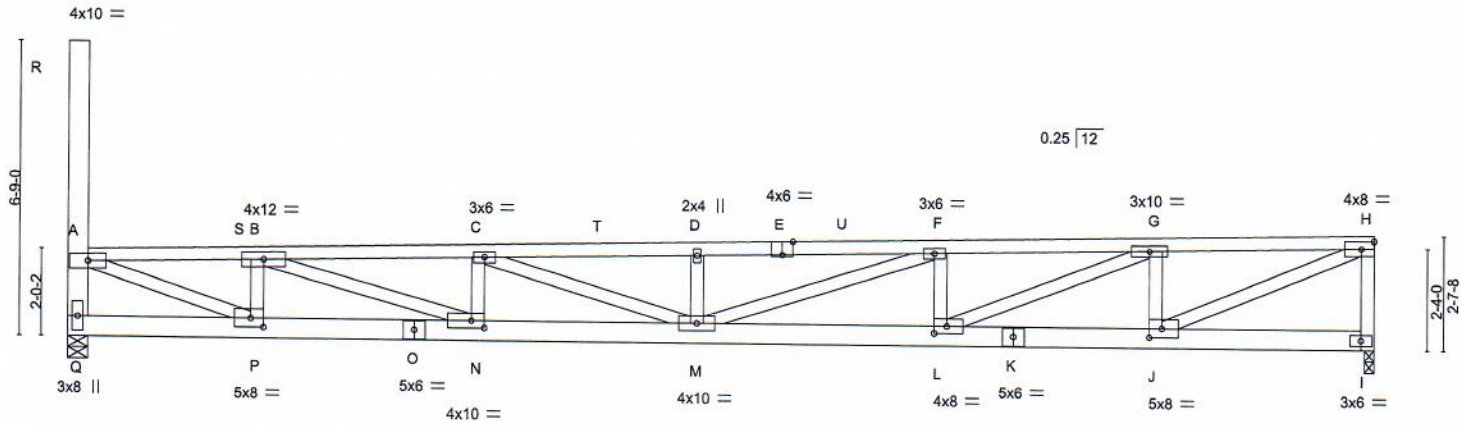


4-4-4	9-5-1	14-5-8	20-0-11	24-11-12	29-11-12
4-4-4	5-0-13	5-0-7	5-7-3	4-11-1	5-0-0

Plate Offsets (X,Y)-- [E:0-3-0,Edge], [H:0-3-7,0-2-0], [J:0-3-8,0-2-8], [L:0-3-8,0-2-0], [N:0-3-8,0-2-0], [P:0-3-8,0-2-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.96	Vert(LL)	-0.57	M	>624	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.89	Vert(CT)	-0.95	M	>374	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.94	Horz(CT)	0.08	I	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 187 lb	FT=20%

LUMBER-
TOP CHORD 2x4 SP 1650F 1.5E
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except*
Q-R: 2x6 SP No.1, A-P,H-J: 2x4 SP No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 1-9-15 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 5-3-10 oc bracing.

REACTIONS. (size) Q=0-5-8, I=0-2-8
Max Horz Q=319(LC 11)
Max Uplift Q=-279(LC 10), I=-317(LC 14)
Max Grav Q=1637(LC 20), I=1940(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-1542/602, A-B=-3292/1552, B-C=-5439/2099, C-D=-6021/2149, D-F=-6021/2155, F-G=-5220/1809, G-H=-3380/1152, H-I=-1853/680
BOT CHORD P-Q=-775/934, N-P=-1623/3286, M-N=-2163/5434, L-M=-1856/5215, J-L=-1192/3370
WEBS A-P=-1279/3362, B-P=-1189/516, B-N=-896/2268, C-N=-619/353, C-M=-361/618, D-M=-437/225, F-M=-375/852, F-L=-666/340, G-L=-724/2013, G-J=-1453/606, H-J=-1242/3585

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-2-12 to 12-2-12, Exterior(2) 12-2-12 to 17-10-0, Corner(3) 17-10-0 to 29-10-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) I considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) I.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) Q=279, I=317.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (plf)
Vert: G-S=-70, G-H=-170, I-Q=-20

Continued on page 2

December 31,2021

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center
220286	A2	Monopitch	28	1	Job Reference (optional)

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:08 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-WjFxGF2ykqdxo_MxsIT_hTywII0fEXcX9tUGczy42Ib

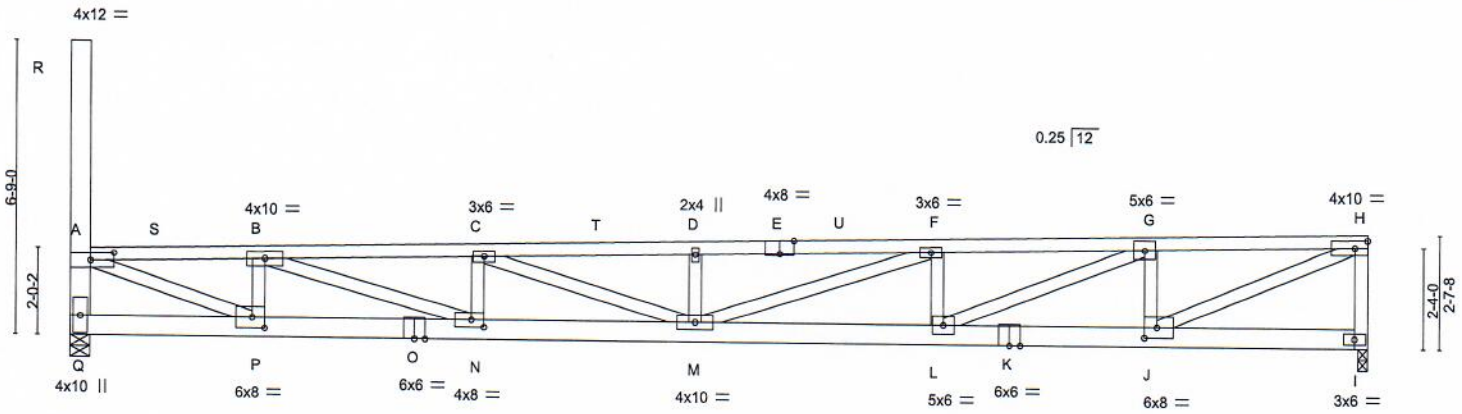
LOAD CASE(S) Standard
Trapezoidal Loads (plf)
Vert: A=-130-to-S=-70

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	
220286	A2A	Monopitch	2	1	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:09 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-_vpJTb2aV7loQ7x8Q0_DDgU4ciO_z13gNXEq9Py42la

4-4-4	9-5-1	14-5-8	20-0-11	24-11-12	29-11-12
4-4-4	5-0-13	5-0-7	5-7-3	4-11-1	5-0-0

Scale = 1:51.1



4-4-4	9-5-1	14-5-8	20-0-11	24-11-12	29-11-12
4-4-4	5-0-13	5-0-7	5-7-3	4-11-1	5-0-0

Plate Offsets (X,Y)-- [A:0-6-9,0-2-0], [E:0-4-0,Edge], [H:0-3-7,0-2-0], [J:0-3-8,0-3-0], [N:0-3-8,0-2-0], [P:0-3-8,0-3-0]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.98	Vert(LL)	-0.57	M	>625	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.69	Vert(CT)	-0.96	M	>369	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.73	Horz(CT)	0.09	I	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-MS							Weight: 187 lb	FT = 20%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SP 2400F 2.0E
BOT CHORD 2x6 SP No.1 *Except*
K-O: 2x6 SP 2400F 2.0E
WEBS 2x4 SP No.3 *Except*
Q-R: 2x6 SP No.1, H-I,B-N,G-L: 2x4 SP No.2
A-P,H-J: 2x4 SP 1650F 1.5E

BRACING-
TOP CHORD Structural wood sheathing directly applied, except end verticals.
BOT CHORD Rigid ceiling directly applied or 5-7-8 oc bracing.

REACTIONS. (size) Q=0-5-8, I=0-2-8
Max Horz Q=319(LC 11)
Max Uplift Q=-339(LC 10), I=-390(LC 14)
Max Grav Q=1999(LC 20), I=2379(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-1898/729, A-B=-4162/1869, B-C=-6947/2642, C-D=-7683/2750, D-F=-7684/2756, F-G=-6643/2322, G-H=-4235/1461, H-I=-2289/838
BOT CHORD P-Q=-775/916, N-P=-1940/4156, M-N=-2707/6940, L-M=-2370/6637, J-L=-1501/4223
WEBS A-P=-1592/4274, B-P=-1523/633, B-N=-1142/2939, C-N=-834/432, C-M=-422/783, D-M=-595/283, F-M=-468/1106, F-L=-910/428, G-L=-948/2633, G-J=-1841/747, H-J=-1577/4508

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-2-12 to 12-2-12, Exterior(2) 12-2-12 to 17-10-0, Corner(3) 17-10-0 to 29-10-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) I considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) I.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) Q=339, I=390.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

Continued on page 2

MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	
220286	A2A	Monopitch	2	1	Job Reference (optional)	I49408915

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:09 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-_vpJTb2aV7loQ7x8Q0_DDgU4ciO_z13gNXEq9Py42la

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (plf)
Vert: G-S=-100, G-H=-200, I-Q=-20
Trapezoidal Loads (plf)
Vert: A=-130-to-S=-100

LORAC DESIGN GROUP
809 NE Parkview Valley
Lee's Summit, MO 64064
Phone 816-520-4010

SUBMITTAL REVIEW
☐ The corrections taken
☐ Make corrections noted
☐ Revised and Resubmit
☐ Rejected

Corrections or comments made relative to submittals during this review do not relieve the contractor from compliance with the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with information given in the contract documents. The contractor is responsible for conforming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

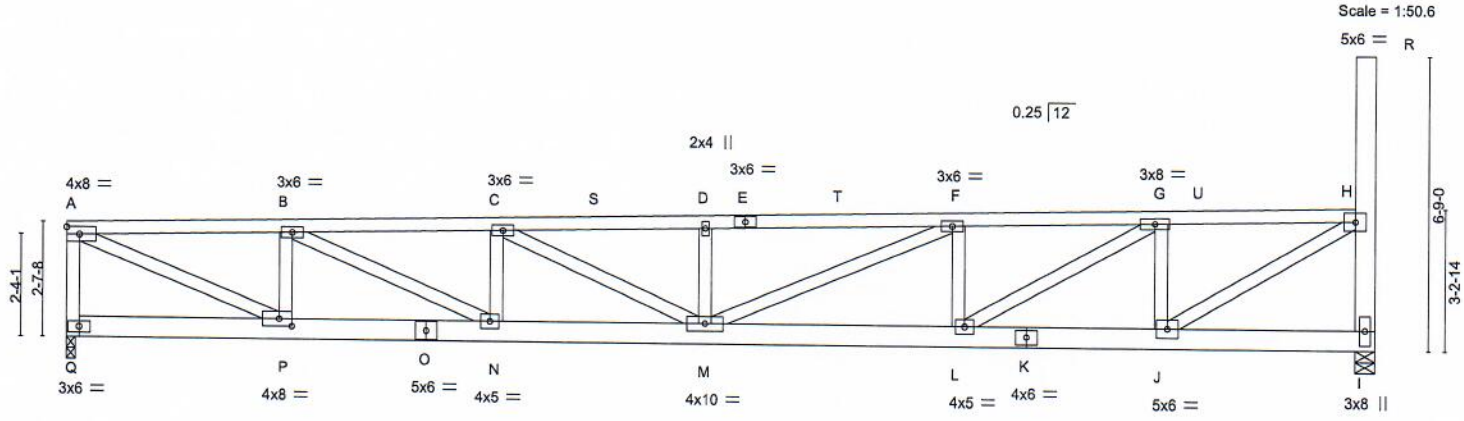
Date: 6/1/22 By:

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	I49478246
220286	B1	MONOPITCH	17	1	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:10 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-T5Nhhx3CGRuf1HWKzjVSmu1Hu6kviTAqcBzNhry42lZ

5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Scale = 1:50.6



5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Plate Offsets (X,Y)-- [P:0-3-8,0-2-0]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.89	Vert(LL)	-0.34	M	>999	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.57	M	>618	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.81	Horz(CT)	0.06	I	n/a	n/a		
BCLL	0.0	Code IRC2018/TPI2014		Matrix-MS								
BCDL	10.0											

Weight: 193 lb FT = 20%

LUMBER-
TOP CHORD 2x4 SP 1650F 1.5E
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except*
I-R: 2x6 SP No.1, A-P,H-J: 2x4 SP No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-7-11 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-3-10 oc bracing.

REACTIONS. (size) I=0-5-8, Q=0-2-8
Max Horz Q=282(LC 11)
Max Uplift I=-225(LC 14), Q=-326(LC 10)
Max Grav I=1638(LC 20), Q=1942(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-1857/675, A-B=-3103/1049, B-C=-4322/1488, C-D=-4607/1621, D-F=-4609/1627, F-G=-3790/1448, G-H=-2267/1021, H-I=-1565/609
BOT CHORD P-Q=-438/272, N-P=-1294/3094, M-N=-1563/4316, L-M=-1193/3785, J-L=-746/2262
WEBS A-P=-1124/3284, B-P=-1324/558, B-N=-481/1359, C-N=-477/253, C-M=-144/322, D-M=-448/230, F-M=-391/900, F-L=-784/391, G-L=-641/1776, G-J=-1285/526, H-J=-905/2567

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-1-12 to 12-1-12, Exterior(2) 12-1-12 to 17-9-0, Corner(3) 17-9-0 to 29-9-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) Q considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) Q.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) I=225, Q=326.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (plf)
Vert: A-B=-170, B-U=-70, I-Q=-20

December 31,2021

Continued on page 2

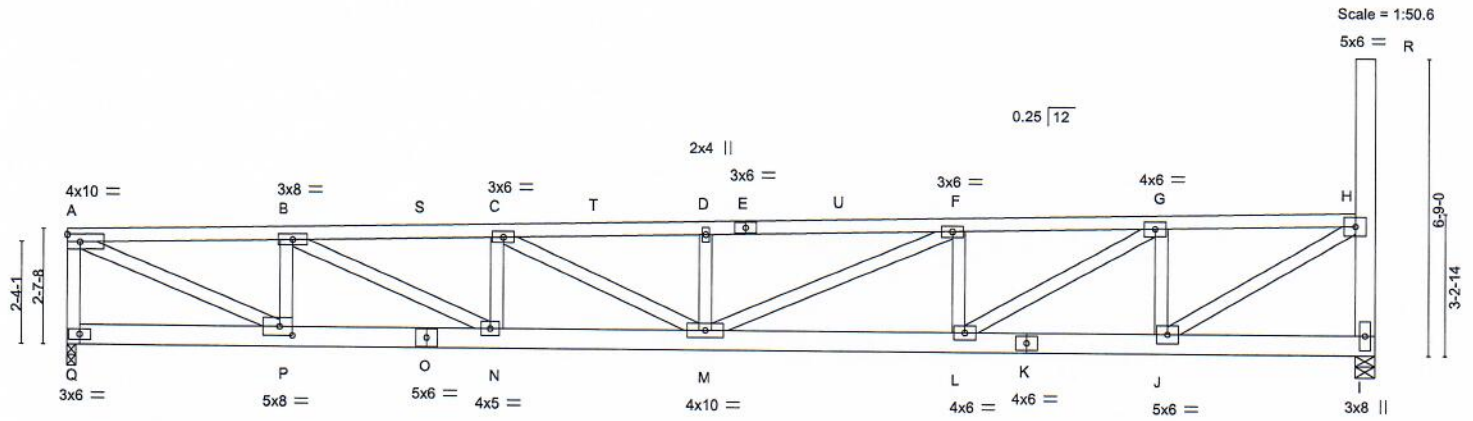
LOAD CASE(S) Standard
Trapezoidal Loads (plf)
Vert: U=-70-to-H=-130

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	
220286	B1A	MONOPITCH	2	1	Job Reference (optional)	I84102627

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:12 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-PUVS6d5So28NHbgi58YwrJ6fZwOOAKt63VSUlky42lX

5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Scale = 1:50.6



5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Plate Offsets (X,Y)-- [P:0-3-8,0-2-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.75	Vert(LL)	-0.36	M	>986	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.61	M	>586	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.98	Horz(CT)	0.07	I	n/a	n/a		
BCLL	0.0	Code IRC2018/TPI2014		Matrix-MS								
BCDL	10.0										Weight: 193 lb	FT = 20%

LUMBER-
TOP CHORD 2x4 SP 1650F 1.5E *Except* A-E: 2x4 SP 2400F 2.0E
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except* A-Q,A-P,H-J: 2x4 SP No.2, I-R: 2x6 SP No.1

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-5-9 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 5-8-3 oc bracing.

REACTIONS. (size) I=0-5-8, Q=0-2-8
Max Horz Q=282(LC 11)
Max Uplift I=-227(LC 14), Q=-391(LC 10)
Max Grav I=1650(LC 20), Q=2330(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-2241/814, A-B=-3782/1295, B-C=-5277/1832, C-D=-5293/1869, D-F=-5294/1876, F-G=-4170/1585, G-H=-2417/1076, H-I=-1577/613
BOT CHORD P-Q=-443/287, N-P=-1552/3771, M-N=-1924/5269, L-M=-1337/4165, J-L=-801/2413
WEBS A-P=-1389/4014, B-P=-1634/670, B-N=-591/1666, C-N=-617/303, C-M=-414/199, D-M=-445/231, F-M=-519/1237, F-L=-925/444, G-L=-742/2042, G-J=-1382/563, H-J=-977/2757

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-1-12 to 12-1-12, Exterior(2) 12-1-12 to 17-9-0, Corner(3) 17-9-0 to 29-9-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) Q considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) Q.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) I=227, Q=391.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
10) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 262 lb down and 76 lb up at 10-1-12 on top chord. The design/selection of such connection device(s) is the responsibility of others.

LOAD CASE(S) Standard

Continued on page 2

December 31,2021

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center
220286	B1A	MONOPITCH	2	1	I49478247
					Job Reference (optional)

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:07 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-PUVS6d5So28NHbgi58YwrJ6fZwOOAKt63VSUlky42tX

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (plf)
Vert: A-B=-200, B-S=-100, C-H=-70, I-Q=-20
Concentrated Loads (lb)
Vert: C=-200
Trapezoidal Loads (plf)
Vert: S=-100-to-C=-126

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809 NE Panther Valley
Lee's Summit MO 64064
Phone 816-529-4019

SUBMITTAL REVIEW
☐ The corrections taken
☐ Make corrections noted
☐ Revised and Resubmit
☐ Rejected

Corrections or comments made relative to submittals during this review do not relieve the contractor from compliance with the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with information given in the contract documents. The contractor is responsible for confirming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

Date: 6/3/22 By:

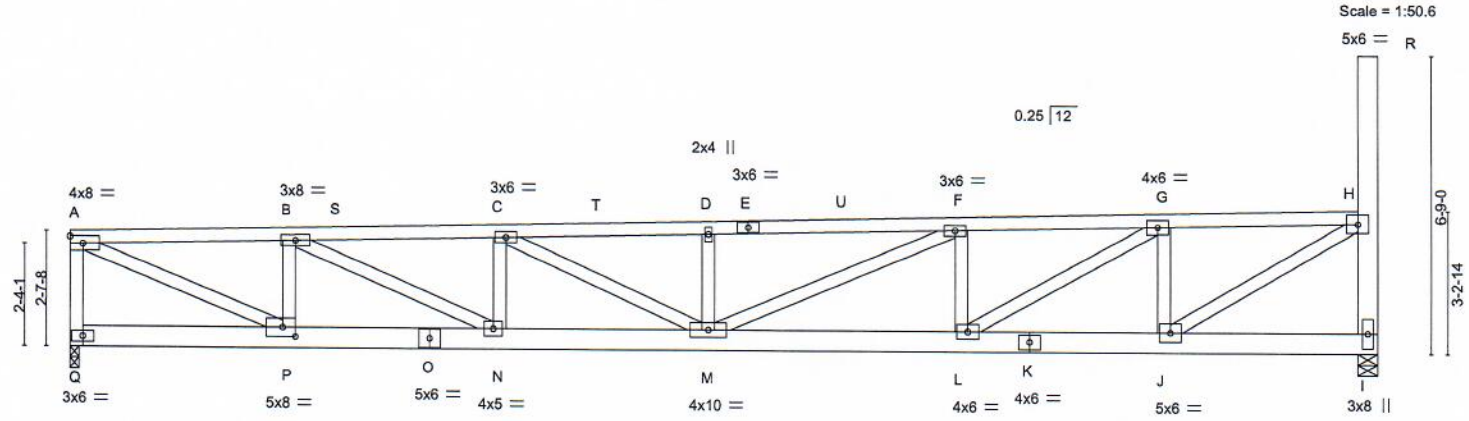
Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center
220286	B1B	MONOPITCH	16	1	I49478248

Job Reference (optional)

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:03 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-tg3qJz65ZMGEvIFvfr39OWfniJlkvo7GI9C1IAy42IW

5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Scale = 1:50.6



5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Plate Offsets (X,Y)-- [P:0-3-8,0-2-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.91	Vert(LL)	-0.38	M	>925	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.64	M-N	>551	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.92	Horz(CT)	0.07	I	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-MS							Weight: 193 lb	FT = 20%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SP 1650F 1.5E
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except*
I-R: 2x6 SP No.1, A-P,H-J: 2x4 SP No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-5-8 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-9-8 oc bracing.

REACTIONS. (size) I=0-5-8, Q=0-2-8
Max Horz Q=282(LC 13)
Max Uplift I=-223(LC 14), Q=-360(LC 10)
Max Grav I=1625(LC 20), Q=2145(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-2058/747, A-B=-3529/1203, B-C=-5071/1758, C-D=-5134/1811, D-F=-5135/1817, F-G=-4086/1555, G-H=-2375/1060, H-I=-1552/604
BOT CHORD P-Q=-439/274, N-P=-1456/3519, M-N=-1847/5065, L-M=-1305/4081, J-L=-786/2371
WEBS A-P=-1292/3750, B-P=-1517/628, B-N=-611/1719, C-N=-643/313, C-M=-347/178, D-M=-438/227, F-M=-487/1154, F-L=-895/433, G-L=-724/1994, G-J=-1357/553, H-J=-958/2708

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-1-12 to 12-1-12, Exterior(2) 12-1-12 to 17-9-0, Corner(3) 17-9-0 to 29-9-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) Q considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) Q.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) I=223, Q=360.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
10) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 262 lb down and 76 lb up at 10-1-12 on top chord. The design/selection of such connection device(s) is the responsibility of others.

LOAD CASE(S) Standard

December 31,2021

Continued on page 2

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center
220286	B1B	MONOPITCH	16	1	I49478248
					Job Reference (optional)

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:05 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-tg3qJz65ZMGEvIFvfr39OWfniJIkvo7GI9C1IAy42IW

LOAD CASE(S) Standard

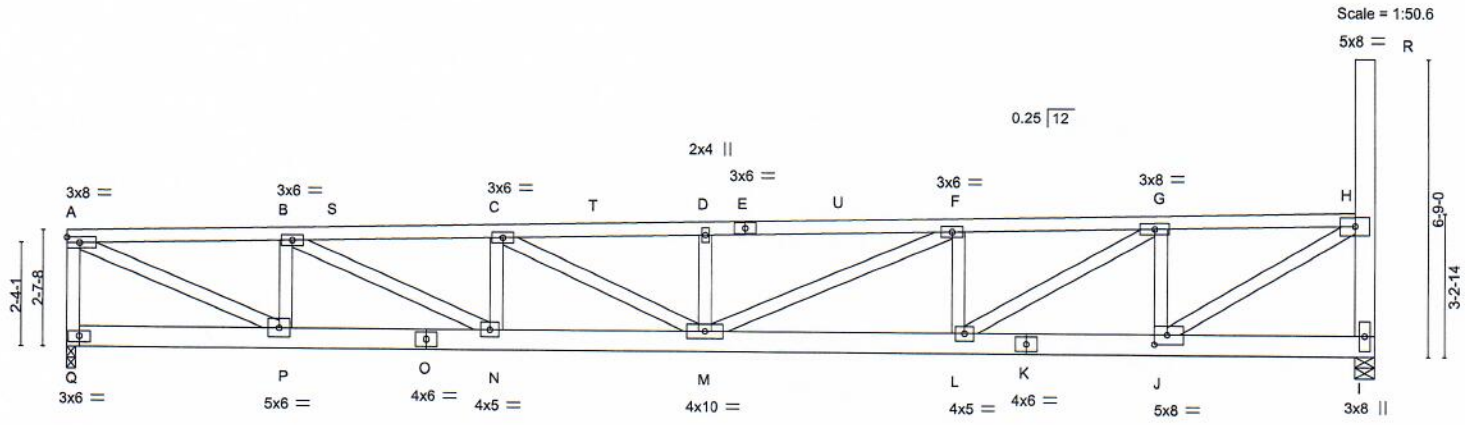
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (plf)
   Vert: A-B=-170, B-S=-70, C-H=-70, I-Q=-20
   Concentrated Loads (lb)
   Vert: C=-200
   Trapezoidal Loads (plf)
   Vert: S=-70-to-C=-126

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	I49478249
220286	B1C	MONOPITCH	2	2	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:14 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-LsdCXJ6jKgO5Wvp5CZaOwkC_Wj7ceEAPXpxbqdy42lV

5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Scale = 1:50.6



5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Plate Offsets (X,Y)-- [J:0-3-8,0-2-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.78	Vert(LL)	-0.31	M	>999	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.60	Vert(CT)	-0.54	M	>660	180		
TCDL	10.0	Rep Stress Incr	NO	WB	1.00	Horz(CT)	0.06	I	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-MS							Weight: 387 lb	FT = 20%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SP 1650F 1.5E *Except*
A-E: 2x4 SP No.2
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except*
I-R: 2x6 SP No.1, A-P: 2x4 SP No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-6-14 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (size) I=0-5-8, Q=0-2-8
Max Horz Q=282(LC 11)
Max Uplift I=-488(LC 11), Q=-471(LC 10)
Max Grav I=2945(LC 20), Q=2813(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-2715/985, A-B=-4886/1694, B-C=-7720/2716, C-D=-8524/3035, D-F=-8527/3042, F-G=-7131/2655, G-H=-4243/1735, H-I=-2843/1094
BOT CHORD P-Q=-445/291, N-P=-1971/4876, M-N=-2853/7713, L-M=-2460/7120, J-L=-1459/4233
WEBS A-P=-1826/5226, B-P=-2143/854, B-N=-1131/3156, C-N=-1261/536, C-M=-352/900, D-M=-1007/442, F-M=-632/1535, F-L=-1579/693, G-L=-1245/3365, G-J=-2499/987, H-J=-1760/4818

NOTES-
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.
Webs connected as follows: 2x4 - 1 row at 0-9-0 oc.
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
3) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-1-12 to 12-1-12, Exterior(2) 12-1-12 to 17-9-0, Corner(3) 17-9-0 to 29-9-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
4) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) Bearing at joint(s) Q considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate at joint(s) Q.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) I=488, Q=471.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

Continued on page 2

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER PE-2001018807
PROFESSIONAL ENGINEER
December 31,2021

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	
220286	B1C	MONOPITCH	2	2	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:14 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-LsdCXJ6jKgO5Wvp5CZaOwkC_Wj7ceEAPXpxbqdy42IV

NOTES-

12) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 262 lb down and 76 lb up at 10-1-12 on top chord. The design/selection of such connection device(s) is the responsibility of others.

LOAD CASE(S) Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (plf)
   Vert: A-B=-170, B-S=-70, C-H=-170, I-Q=-20
   Concentrated Loads (lb)
   Vert: C=-200
   Trapezoidal Loads (plf)
   Vert: S=-70-to-C=-126

LORAC DESIGN GROUP
809 NE Panther Valley
Lee's Summit, MO 64064
Phone 816-520-4010

SUBMITTAL REVIEW
- ☐ The corrections taken
- ☐ Make corrections noted
- ☐ Revised and Resubmit
- ☐ Rejected

Corrections or comments made relative to submittals during this review do not relieve the contractor from compliance with the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with information given in the contract documents. The contractor is responsible for conforming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

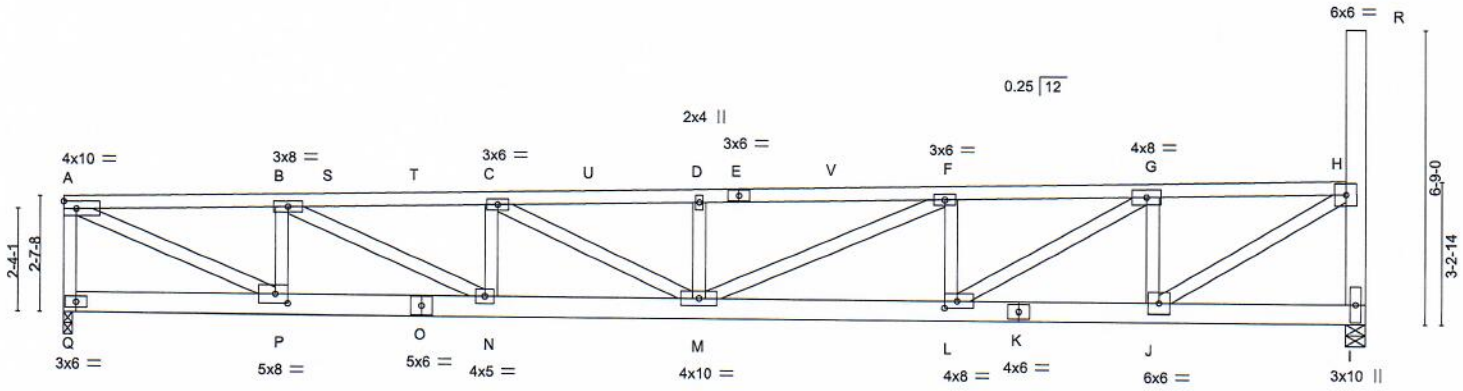
Date: 5/9/21 By:

Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	I49478250
220286	B1D	MONOPITCH	2	1	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:08 2021 Page 1
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-p3Bake7L5zWy82OHmG5dTxk6G7PhNiCZmTh8M3y42lU

5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Scale = 1:50.9



5-0-5	9-10-5	14-7-13	20-5-8	25-1-1	29-11-12
5-0-5	4-10-1	4-9-8	5-9-11	4-7-9	4-10-11

Plate Offsets (X,Y)-- [L:0-3-8,0-2-0], [P:0-3-8,0-2-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plate Grip DOL	1.15	TC	0.97	Vert(LL)	-0.42	M	>846	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.71	M	>500	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.95	Horz(CT)	0.08	I	n/a	n/a		
BCLL	0.0	Code IRC2018/TPI2014		Matrix-MS							Weight: 193 lb	FT = 20%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SP 1650F 1.5E
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.3 *Except*
I-R: 2x6 SP No.1, A-P,H-J: 2x4 SP No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied, except end verticals.
BOT CHORD Rigid ceiling directly applied or 5-7-15 oc bracing.

REACTIONS. (size) I=0-5-8, Q=0-2-8
Max Horz Q=282(LC 11)
Max Uplift I=-277(LC 14), Q=-368(LC 10)
Max Grav I=1948(LC 20), Q=2196(LC 20)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-Q=-2107/765, A-B=-3628/1239, B-C=-5290/1837, C-D=-5730/2026, D-F=-5732/2032, F-G=-4748/1793, G-H=-2816/1219, H-I=-1870/724
BOT CHORD P-Q=-440/276, N-P=-1494/3619, M-N=-1930/5284, L-M=-1556/4741, J-L=-945/2810
WEBS A-P=-1331/3857, B-P=-1566/646, B-N=-659/1852, C-N=-691/330, C-M=-206/495, D-M=-611/292, F-M=-460/1082, F-L=-1025/483, G-L=-821/2250, G-J=-1625/655, H-J=-1147/3204

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-1-12 to 12-1-12, Exterior(2) 12-1-12 to 17-9-0, Corner(3) 17-9-0 to 29-9-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
2) TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) Provide adequate drainage to prevent water ponding.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) Bearing at joint(s) Q considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) Q.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) I=277, Q=368.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (plf)
Vert: A-B=-170, B-S=-70, H-T=-100, I-Q=-20

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER
PE-2001018807
PROFESSIONAL ENGINEER

December 31,2021

Continued on page 2

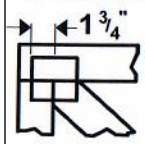
Job	Truss	Truss Type	Qty	Ply	Buildforce/Douglas Rd. Center	I49478250
220286	B1D	MONOPITCH	2	1	Job Reference (optional)	

Heartland Truss, Inc, Plattsburg, MO - 64477, 8.430 s Aug 16 2021 MiTek Industries, Inc. Wed Dec 29 16:20:05 2021 Page 2
ID:ZVxrBG6bbPx3_CXThc60Rqyl0H8-p3Bake7L5zWy82OHmG5dTxk6G7PhNiCZmTh8M3y42lU

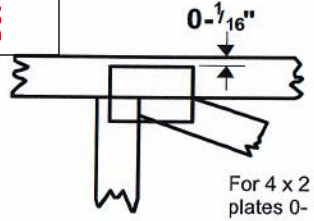
LOAD CASE(S) Standard
Trapezoidal Loads (plf)
Vert: S=-70-to-T=-100

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 20/20 software or upon request.**

PLATE SIZE

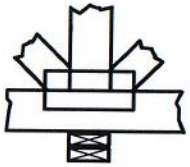
4 x 4

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

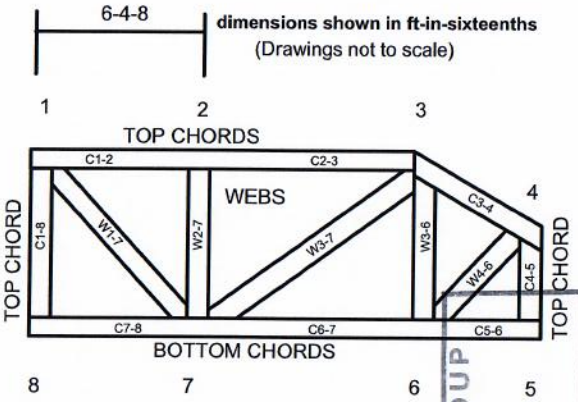


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & 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-1311, ESR-1352, ESR1988
ER-3907, ESR-2362, ESR-1397, ESR-3282

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

MiTek Engineering Reference Sheet: MII-7473 rev. 5/19/2020

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.