ENGINEERING BY
TRENCO
A MiTek Affiliate

Trenco
818 Soundside Rd
Edenton, NC 27932

Re: 24090032-01
187 Serenity-Roof-B326 A CP TRAY GRH

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

Pages or sheets covered by this seal: I68306398 thru I68306435

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

North Carolina COA: C-0844


September 20,2024

Gilbert, Eric

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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A01 | Piggyback Base Supported Gable | 1 | 1 | I68306398 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:24 Page: 1
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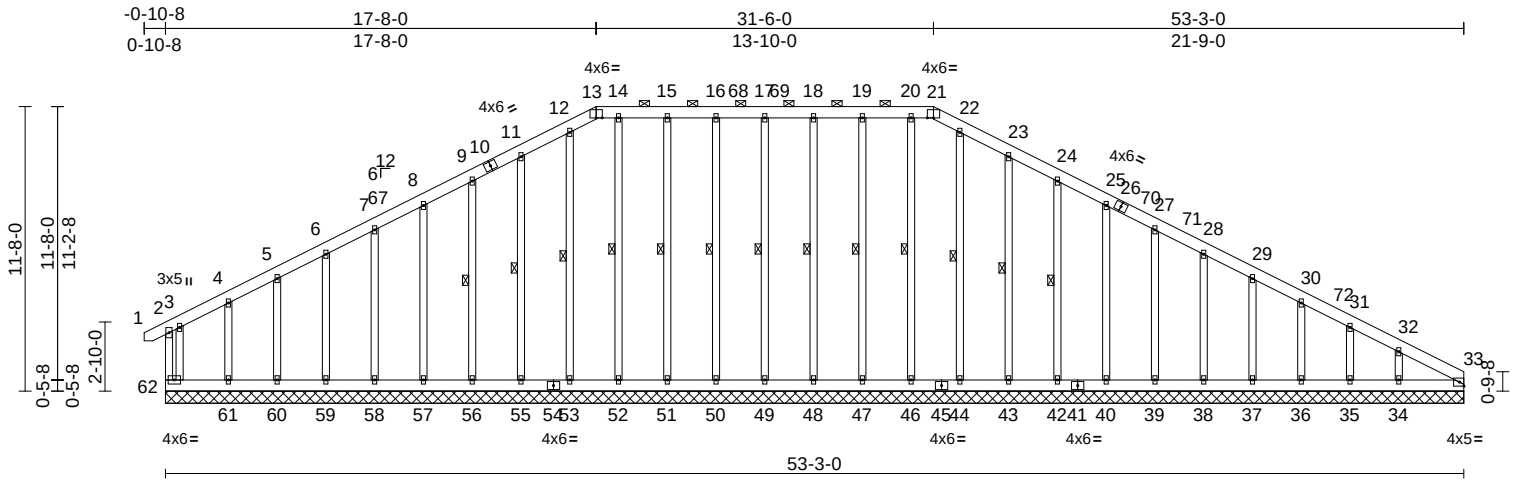


Scale = 1:94.5

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.13 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.12 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.21 | Horz(CT) | 0.01 | 33 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 546 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3
OTHERS 2x4 SP No.3 *Except* 49-17,48-18,47-19,46-20,44-22,50-16,51-15, 52-14,53-12:2x4 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (10-0-0 max.): 13-21.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
WEBS 1 Row at midpt 17-49, 18-48, 19-47, 20-46, 22-44, 23-43, 24-42, 16-50, 15-51, 14-52, 12-53, 11-55, 9-56

**REACTIONS** (size) 33=53-3-0, 34=53-3-0, 35=53-3-0, 36=53-3-0, 37=53-3-0, 38=53-3-0, 39=53-3-0, 40=53-3-0, 42=53-3-0, 43=53-3-0, 44=53-3-0, 46=53-3-0, 47=53-3-0, 48=53-3-0, 49=53-3-0, 50=53-3-0, 51=53-3-0, 52=53-3-0, 53=53-3-0, 55=53-3-0, 56=53-3-0, 57=53-3-0, 58=53-3-0, 59=53-3-0, 60=53-3-0, 61=53-3-0, 62=53-3-0, 66=53-3-0
Max Horiz 62=-186 (LC 12)
Max Uplift 34=-66 (LC 14), 35=-170 (LC 15), 36=-15 (LC 14), 37=-50 (LC 15), 38=-42 (LC 15), 39=-44 (LC 15), 40=-43 (LC 15), 42=-46 (LC 15), 43=-52 (LC 15), 47=-29 (LC 11), 48=-28 (LC 11), 49=-25 (LC 10), 50=-28 (LC 11), 51=-29 (LC 10), 55=-52 (LC 14), 56=-46 (LC 14), 57=-43 (LC 14), 58=-44 (LC 14), 59=-46 (LC 14), 60=-22 (LC 14), 61=-137 (LC 14), 62=-88 (LC 15)
Max Grav 34=419 (LC 1), 35=81 (LC 13), 36=197 (LC 41), 37=152 (LC 59), 38=174 (LC 45), 39=221 (LC 45), 40=230 (LC 45), 42=229 (LC 45), 43=230 (LC 45), 44=217 (LC 45), 46=199 (LC 40), 47=220 (LC 40), 48=217 (LC 40), 49=216 (LC 40), 50=217 (LC 40), 51=220 (LC 40), 52=199 (LC 40), 53=218 (LC 43), 55=234 (LC 43), 56=233 (LC 43), 57=233 (LC 43), 58=233 (LC 43), 59=199 (LC 43), 60=150 (LC 58), 61=257 (LC 51), 62=133 (LC 58)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 2-62=-245/191, 1-2=0/23, 2-3=-100/91, 3-4=-74/121, 4-5=-48/115, 5-6=-58/156, 6-7=-75/201, 7-8=-90/246, 8-9=-106/291, 9-11=-124/338, 11-12=-144/387, 12-13=-146/383, 13-14=-140/380, 14-15=-140/380, 15-16=-140/380, 16-17=-140/380, 17-18=-140/380, 18-19=-140/380, 19-20=-140/380, 20-21=-140/380, 21-22=-146/383, 22-23=-144/387, 23-24=-124/338, 24-25=-106/291, 25-27=-90/246, 27-28=-75/201, 28-29=-59/160, 29-30=-63/137, 30-31=-71/112, 31-32=-124/100, 32-33=-134/117
BOT CHORD 61-62=-81/150, 60-61=-81/150, 59-60=-81/150, 58-59=-81/150, 57-58=-81/150, 56-57=-81/150, 55-56=-81/150, 53-55=-81/150, 52-53=-81/150, 51-52=-81/150, 50-51=-81/150, 49-50=-81/150, 48-49=-81/150, 47-48=-81/150, 46-47=-81/150, 44-46=-81/150, 43-44=-81/150, 42-43=-81/150, 40-42=-81/150, 39-40=-81/150, 38-39=-81/150, 37-38=-81/150, 36-37=-81/150, 35-36=-81/150, 34-35=-81/150, 33-34=-81/150


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818 Soundside Road
Edenton, NC 27932

WEBS 17-49=-176/57, 18-48=-177/62, 19-47=-180/61, 20-46=-159/6, 22-44=-177/2, 23-43=-190/87, 24-42=-189/81, 25-40=-190/77, 27-39=-181/77, 28-38=-132/77, 29-37=-125/77, 30-36=-138/78, 31-35=-65/120, 32-34=-244/137, 16-50=-177/62, 15-51=-180/61, 14-52=-159/1, 12-53=-178/0, 11-55=-194/87, 9-56=-193/81, 8-57=-193/77, 7-58=-194/77, 6-59=-157/77, 5-60=-115/91, 4-61=-186/159, 3-62=-226/263

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-8-6 to 4-7-0, Exterior(2N) 4-7-0 to 12-4-2, Corner(3R) 12-4-2 to 22-11-14, Exterior(2N) 22-11-14 to 26-2-2, Corner(3R) 26-2-2 to 36-7-0, Exterior(2N) 36-7-0 to 47-11-2, Corner(3E) 47-11-2 to 53-3-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) Provide adequate drainage to prevent water ponding.
8) All plates are 2x4 MT20 unless otherwise indicated.
9) Gable requires continuous bottom chord bearing.
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) N/A
14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

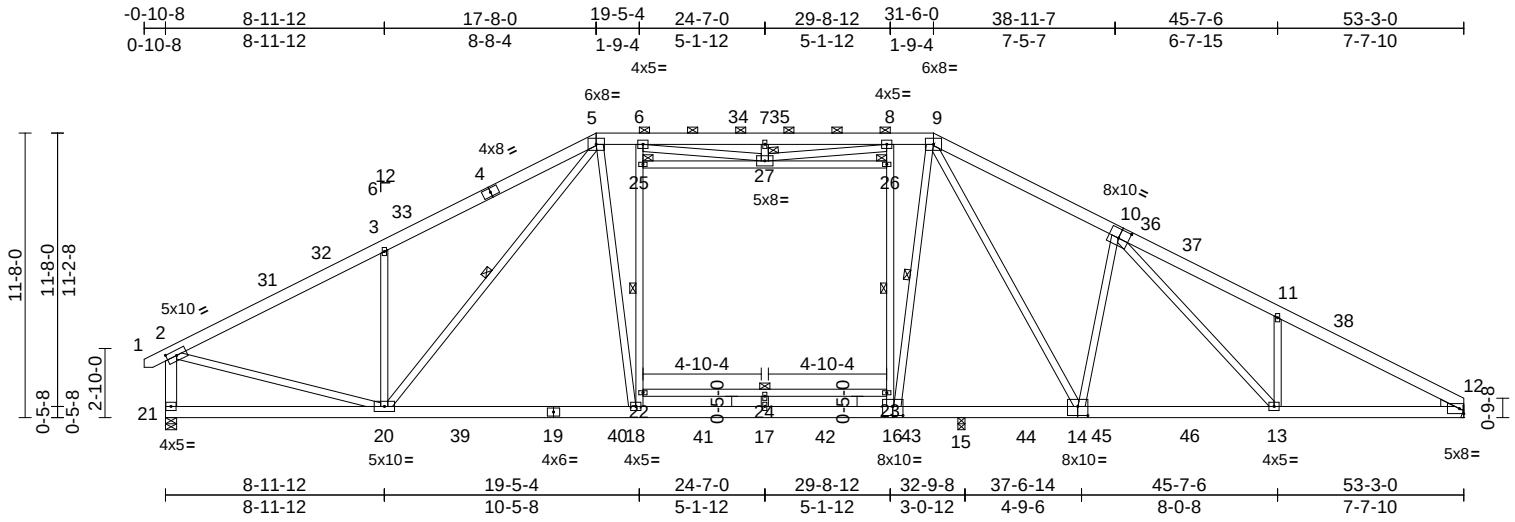
**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A03 | Piggyback Base | 5 | 1 | I68306399 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:26 ID:OFJFx3lDTxFbWWzrBXohbzzRCTM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






Scale = 1:94.5

Plate Offsets (X, Y): [2:0-4-14,0-2-8], [10:0-5-0,0-4-8], [14:0-5-0,0-4-8], [16:0-5-0,0-4-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.72 | Vert(LL) | -0.35 | 18-20 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.88 | Vert(CT) | -0.53 | 18-20 | >728 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.98 | Horz(CT) | 0.11 | 12 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 470 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2

BOT CHORD 2x6 SP No.2 *Except* 16-14:2x6 SP 2400F 2.0E

WEBS 2x4 SP No.3 *Except* 21-2:2x6 SP No.2, 20-2,6-18,8-16,20-5,18-5,16-9,14-9:2x4 SP No.2

WEDGE Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-1-4 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-7 max.): 5-9.

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

WEBS 1 Row at midpt 18-25, 16-26, 5-20, 9-16, 22-23

JOINTS 1 Brace at Jt(s): 25, 26, 27

**REACTIONS** (size) 12= Mechanical, 15=0-3-8, 21=0-5-8

Max Horiz 21=-187 (LC 12)

Max Uplift 12=-29 (LC 14), 15=-198 (LC 15), 21=-170 (LC 14)

Max Grav 12=2089 (LC 47), 15=852 (LC 39), 21=2368 (LC 37)

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

TOP CHORD 1-2=0/25, 2-3=-3226/217, 3-5=-3342/411, 5-6=-2713/224, 6-7=-3232/430, 7-8=-3232/430, 8-9=-2696/223, 9-11=-4171/305, 11-12=-4214/194, 2-21=-2411/219

BOT CHORD 20-21=-132/276, 18-20=-26/2497, 17-18=-2/2590, 15-17=-2/2590, 13-15=-46/3134, 12-13=-88/3645

WEBS 2-20=-63/2672, 18-22=-489/243, 22-25=-474/253, 6-25=-460/257, 16-23=-864/226, 23-26=-848/235, 8-26=-827/232, 3-20=-817/329, 5-20=-272/480, 5-18=0/904, 9-16=-92/938, 10-14=-918/319, 9-14=-189/969, 10-13=-222/799, 11-13=-330/236, 22-24=-38/54, 23-24=-38/54, 17-24=0/41, 25-27=-25/40, 26-27=-131/27, 7-27=-257/88, 6-27=-296/722, 8-27=-283/812

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-6 to 4-7-9, Interior (1) 4-7-9 to 10-1-10, Exterior(2R) 10-1-10 to 39-2-5, Interior (1) 39-2-5 to 47-11-2, Exterior(2E) 47-11-2 to 53-3-0 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) 200.0lb AC unit load placed on the bottom chord, 24-7-0 from left end, supported at two points, 5-0-0 apart.
7) Provide adequate drainage to prevent water ponding.
8) All plates are 2x4 MT20 unless otherwise indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Refer to girder(s) for truss to truss connections.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 29 lb uplift at joint 12.
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 21 and 15. This connection is for uplift only and does not consider lateral forces.
14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard


September 20,2024



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818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A03T | Piggyback Base | 3 | 1 | I68306400 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:26 Page: 1
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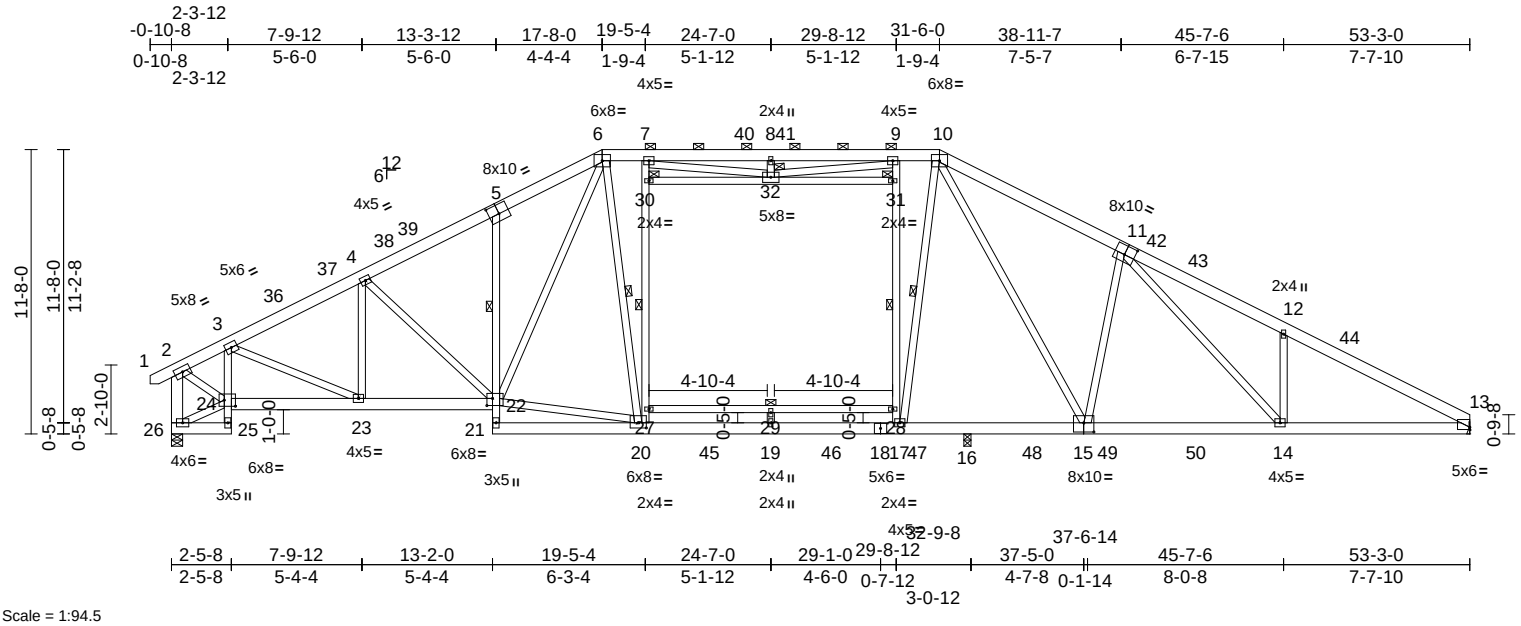


Scale = 1:94.5

Plate Offsets (X, Y): [5:0-5-0,0-4-8], [11:0-5-0,0-4-8], [13:Edge,0-1-3], [15:0-5-0,0-4-8], [20:0-4-0,0-2-8], [22:0-2-12,0-3-8], [24:0-5-8,0-3-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.59 | Vert(LL) | -0.24 | 20-21 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.88 | Vert(CT) | -0.55 | 19-20 | >711 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.98 | Horz(CT) | 0.16 | 13 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 500 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2 *Except* 25-3,5-21:2x4 SP No.3, 18-15:2x6 SP 2400F 2.0E
WEBS 2x4 SP No.3 *Except* 22-6,20-6,7-20,17-10,10-15,9-17:2x4 SP No.2, 26-2:2x6 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 3-4-2 oc purlins, except end verticals, and 2-0-0 oc purlins (3-10-0 max.): 6-10.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing. Except:
1 Row at midpt 5-22
WEBS 1 Row at midpt 6-20, 20-30, 10-17, 17-31, 27-28
JOINTS 1 Brace at Jt(s): 30, 31, 32

**REACTIONS** (size) 13= Mechanical, 16=0-3-8, 26=0-5-8
Max Horiz 26=-187 (LC 12)
Max Uplift 13=-25 (LC 14), 16=-196 (LC 15), 26=-168 (LC 14)
Max Grav 13=2019 (LC 47), 16=915 (LC 39), 26=2271 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/25, 2-3=-2253/192, 3-4=-3433/248, 4-6=-3373/359, 6-7=-2575/221, 7-8=-3092/426, 8-9=-3092/426, 9-10=-2560/220, 10-12=-4030/301, 12-13=-4071/191, 2-26=-2398/217
BOT CHORD 25-26=-20/37, 24-25=0/25, 3-24=-1152/125, 23-24=-254/1996, 22-23=-216/2976, 21-22=-22/81, 5-22=-489/170, 20-21=-56/218, 19-20=-5/2486, 17-19=-5/2486, 16-17=0/2353, 14-16=-39/2994, 13-14=-85/3518
WEBS 4-22=-192/133, 20-22=0/2236, 6-22=-269/1125, 6-20=-100/524, 20-27=-541/210, 27-30=-520/215, 7-30=-507/212, 10-17=-91/900, 10-15=-194/937, 11-15=-918/319, 11-14=-220/819, 12-14=-331/236, 17-28=-857/228, 28-31=-838/236, 9-31=-819/232, 4-23=-294/78, 3-23=-2/1077, 24-26=-110/203, 2-24=-192/2298, 27-29=-71/37, 28-29=-71/37, 19-29=0/48, 30-32=-21/40, 31-32=-122/27, 8-32=-252/89, 7-32=-298/701, 9-32=-285/802

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-6 to 4-7-9, Interior (1) 4-7-9 to 10-1-10, Exterior(2R) 10-1-10 to 39-2-5, Interior (1) 39-2-5 to 47-11-2, Exterior(2E) 47-11-2 to 53-3-0 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) 200.0lb AC unit load placed on the bottom chord, 24-7-0 from left end, supported at two points, 5-0-0 apart.
7) Provide adequate drainage to prevent water ponding.
8) All plates are 2x4 MT20 unless otherwise indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Refer to girder(s) for truss to truss connections.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 25 lb uplift at joint 13.
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 26 and 16. This connection is for uplift only and does not consider lateral forces.


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Continued on page 2



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Edenton, NC 27932

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

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A04 | Piggyback Base | 1 | 1 | I68306401 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

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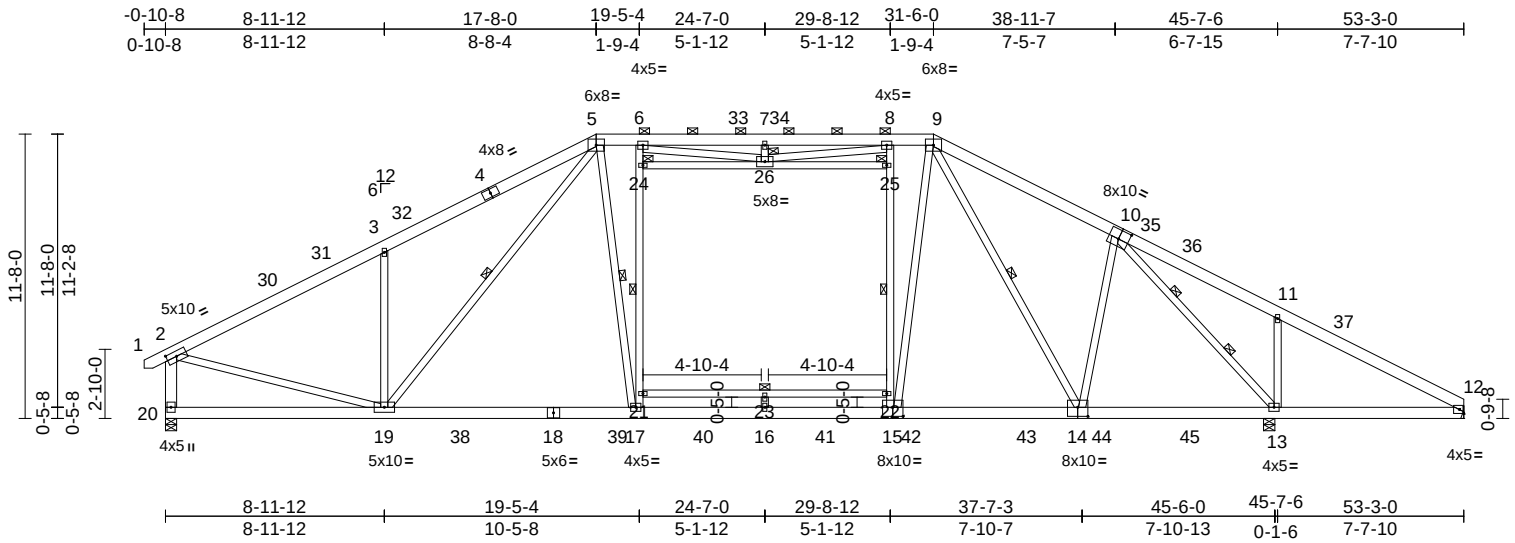
Page: 1




Scale = 1:94.5

Plate Offsets (X, Y): [2:0-4-14,0-2-8], [10:0-5-0,0-4-8], [14:0-5-0,0-4-8], [15:0-5-0,0-4-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.70 | Vert(LL) | -0.41 | 17-19 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.99 | Vert(CT) | -0.60 | 17-19 | >911 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.87 | Horz(CT) | 0.09 | 12 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 469 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3 *Except* 20-2:2x6 SP No.2, 19-2,6-17,15-8,15-9,14-9,19-5,17-5:2x4 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-2-8 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-11 max.): 5-9.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 17-24, 15-25, 9-14, 5-19, 5-17, 21-22
WEBS 2 Rows at 1/3 pts 10-13
JOINTS 1 Brace at Jt(s): 24, 25, 26

**REACTIONS** (size) 12= Mechanical, 13=0-5-8, 20=0-5-8
Max Horiz 20=-187 (LC 12)
Max Uplift 12=-211 (LC 14), 13=-386 (LC 15), 20=-154 (LC 14)
Max Grav 12=896 (LC 37), 13=2413 (LC 39), 20=2303 (LC 37)

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

TOP CHORD 1-2=0/25, 2-3=-3159/195, 3-5=-3275/389, 5-6=-2618/234, 6-7=-3185/440, 7-8=-3185/440, 8-9=-2599/234, 9-11=-2806/538, 11-12=-1552/470, 2-20=-2365/214
BOT CHORD 19-20=-131/273, 17-19=0/2415, 16-17=0/2503, 13-16=-101/2503, 12-13=-357/1335
WEBS 2-19=-55/2613, 17-21=-468/312, 21-24=-457/317, 6-24=-443/319, 15-22=-863/241, 22-25=-855/249, 8-25=-836/246, 9-15=-29/1395, 9-14=-352/52, 10-14=0/565, 10-13=-2213/265, 11-13=-455/258, 3-19=-817/329, 5-19=-283/531, 5-17=-66/856, 21-23=-37/56, 22-23=-37/56, 16-23=0/30, 24-26=-50/91, 25-26=-169/43, 7-26=-264/87, 8-26=-283/842, 6-26=-311/741

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-6 to 4-7-9, Interior (1) 4-7-9 to 10-1-10, Exterior(2R) 10-1-10 to 39-2-5, Interior (1) 39-2-5 to 47-11-2, Exterior(2E) 47-11-2 to 53-3-0 zone; cantilever left and right exposed ; end vertical left and right exposed; porch right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) 200.0lb AC unit load placed on the bottom chord, 24-7-0 from left end, supported at two points, 5-0-0 apart.
7) Provide adequate drainage to prevent water ponding.
8) All plates are 2x4 MT20 unless otherwise indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Refer to girder(s) for truss to truss connections.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 211 lb uplift at joint 12.
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 20 and 13. This connection is for uplift only and does not consider lateral forces.
14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard


September 20,2024



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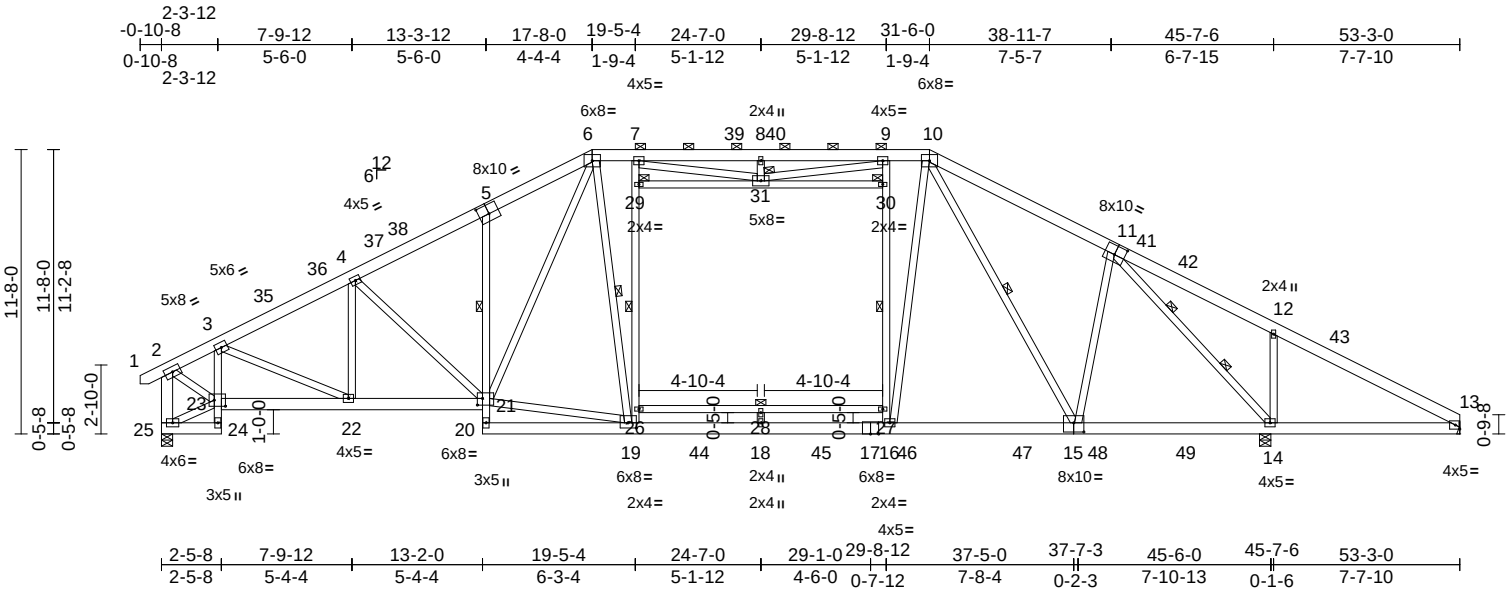
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A04T | Piggyback Base | 2 | 1 | I68306402 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:27 Page: 1
ID:DGN6a6f8caCKWpHw1clz1BzRCZx-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:94.5

Plate Offsets (X, Y): [5:0-5-0,0-4-8], [11:0-5-0,0-4-8], [15:0-5-0,0-4-8], [19:0-4-0,0-2-8], [21:0-2-8,0-3-4], [23:0-5-8,0-3-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.62 | Vert(LL) | -0.32 | 19-20 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.97 | Vert(CT) | -0.50 | 18-19 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.91 | Horz(CT) | 0.14 | 13 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 500 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2 *Except* 24-3,5-20:2x4 SP No.3
WEBS 2x4 SP No.3 *Except* 21-6,19-6,9-16,16-10,15-10,19-7:2x4 SP No.2, 25-2:2x6 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 3-11-11 oc purlins, except end verticals, and 2-0-0 oc purlins (3-10-10 max.): 6-10.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing. Except:
1 Row at midpt 5-21
WEBS 1 Row at midpt 6-19, 16-30, 10-15, 19-29, 26-27
WEBS 2 Rows at 1/3 pts 11-14
JOINTS 1 Brace at Jt(s): 29, 30, 31

**REACTIONS** (size) 13= Mechanical, 14=0-5-8, 25=0-5-8
Max Horiz 25=-187 (LC 12)
Max Uplift 13=-198 (LC 14), 14=-380 (LC 15), 25=-152 (LC 14)
Max Grav 13=859 (LC 43), 14=2516 (LC 39), 25=2216 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/25, 2-3=-2214/177, 3-4=-3368/222, 4-6=-3298/330, 6-7=-2497/230, 7-8=-3107/435, 8-9=-3107/435, 9-10=-2481/231, 10-12=-2653/513, 12-13=-1480/444, 2-25=-2357/201
BOT CHORD 24-25=-20/36, 23-24=0/26, 3-23=-1130/127, 22-23=-240/1962, 21-22=-193/2917, 20-21=-26/102, 5-21=-487/169, 19-20=-59/232, 18-19=0/2417, 16-18=0/2417, 14-16=-90/2202, 13-14=-333/1271
WEBS 4-21=-211/137, 19-21=0/2155, 6-21=-271/1137, 6-19=-292/537, 16-27=-832/233, 27-30=-821/241, 9-30=-804/238, 10-16=-21/1309, 11-15=0/612, 11-14=-2325/258, 12-14=-458/257, 10-15=-366/8, 19-26=-494/262, 26-29=-478/269, 7-29=-467/266, 4-22=-275/80, 3-22=-5/1051, 23-25=-110/203, 2-23=-176/2258, 26-28=-67/38, 27-28=-67/38, 18-28=0/35, 29-31=-44/87, 30-31=-151/38, 7-31=-299/750, 8-31=-305/98, 9-31=-274/850

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-6 to 4-7-9, Interior (1) 4-7-9 to 10-1-10, Exterior(2R) 10-1-10 to 39-2-5, Interior (1) 39-2-5 to 47-11-2, Exterior(2E) 47-11-2 to 53-3-0 zone; cantilever left and right exposed ; end vertical left and right exposed; porch right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) 200.0lb AC unit load placed on the bottom chord, 24-7-0 from left end, supported at two points, 5-0-0 apart.
7) Provide adequate drainage to prevent water ponding.
8) All plates are 2x4 MT20 unless otherwise indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Refer to girder(s) for truss to truss connections.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 198 lb uplift at joint 13.
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 14 and 25. This connection is for uplift only and does not consider lateral forces.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14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A05 | Attic Girder | 1 | 4 | I68306403 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 E Feb 6 2024 Print: 8.730 E Feb 6 2024 MiTek Industries, Inc. Thu Sep 19 11:01:40 Page: 1

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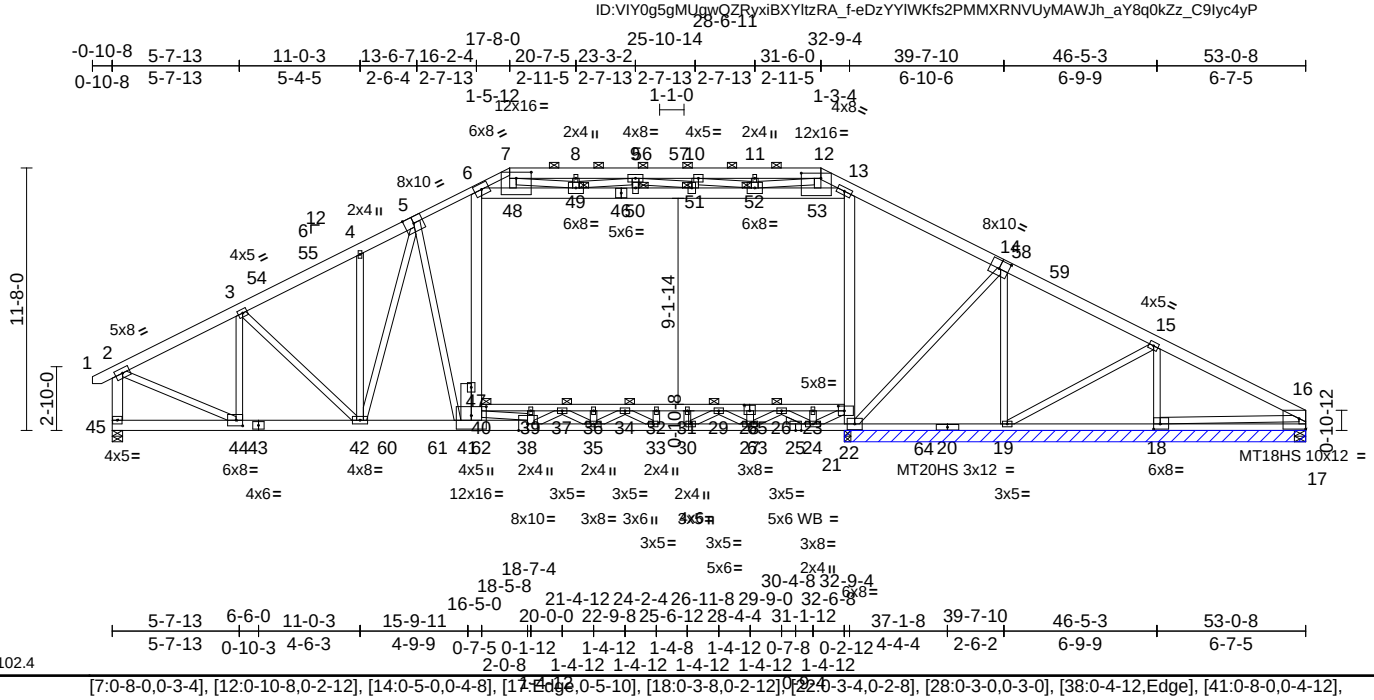





Scale = 1:102.4

Plate Offsets (X, Y): [7:0-8-0,0-3-4], [12:0-10-8,0-2-12], [14:0-5-0,0-4-8], [17:Edge,0-5-10], [18:0-3-8,0-2-12], [22:0-3-4,0-2-8], [28:0-3-0,0-3-0], [38:0-4-12,Edge], [41:0-8-0,0-4-12], [44:0-3-8,0-3-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.90 | Vert(LL) | -0.50 | 38-41 | >786 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.97 | Vert(CT) | -0.75 | 37-39 | >521 | 180 | MT20HS | 187/143 |
| TCDL | 10.0 | Rep Stress Incr | Yes | WB | 0.91 | Horz(CT) | 0.19 | 17 | n/a | n/a | MT18HS | 244/190 |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | Attic | -0.25 | 22-40 | >786 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 2038 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2 *Except* 5-7:2x4 SP No.1

BOT CHORD 2x4 SP No.1 *Except* 43-38,43-45:2x6 SP No.2, 28-22:2x4 SP No.2, 20-25:2x4 SP 2400F 2.0E

WEBS 2x4 SP No.3 *Except* 13-21:2x6 SP 2400F 2.0E, 6-46,45-2,41-47,41-6,46-13:2x6 SP No.2, 44-2,18-16:2x4 SP No.2

OTHERS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 7-12.

BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.

JOINTS 1 Brace at Jt(s): 49, 50, 51, 52, 40, 26, 37, 29, 34

**REACTIONS** (lb/size) 17=5719/0-6-0, 21=-2588/0-3-8, 45=7196/0-5-8

Max Horiz 45=-187 (LC 10)

Max Uplift 17=-453 (LC 12), 21=-5415 (LC 45), 45=-702 (LC 12)

Max Grav 17=9309 (LC 46), 21=791 (LC 12), 45=11962 (LC 46)

**FORCES** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 2-3=-13751/804, 3-54=-17677/1033, 54-55=-17636/1046, 4-55=-17611/1059, 4-5=-17868/1148, 5-6=-18993/1151, 6-7=-5812/482, 7-8=-3051/526, 8-9=-3048/525, 9-56=-3645/710, 56-57=-3645/710, 10-57=-3645/710, 10-11=-1646/1593, 11-12=-1646/1593, 12-13=-4645/432, 13-14=-18211/1130, 14-58=-18012/1038, 58-59=-18049/1035, 15-59=-18139/1018, 15-16=-17290/898, 2-45=-11768/721, 16-17=-9139/483

BOT CHORD 44-45=-127/443, 43-44=-756/12296, 42-43=-756/12296, 42-60=-869/16420, 60-61=-869/16420, 41-61=-869/16420, 41-62=-682/14217, 38-62=-683/14217, 35-38=-83/17024, 33-35=0/18309, 30-33=0/18934, 27-30=0/18071, 27-63=-269/15564, 25-63=-269/15564, 24-25=-269/15564, 21-24=-789/12209, 21-64=-811/16242, 20-64=-811/16242, 19-20=-811/16242, 18-19=-753/15342, 17-18=-111/2097, 39-40=-463/400, 37-39=-485/352, 36-37=-2839/0, 34-36=-2839/0, 32-34=-3460/0, 31-32=-3460/0, 29-31=-3460/0, 28-29=-2303/0, 28-65=-2285/11, 26-65=-2285/11, 23-26=-336/2811, 22-23=-336/2811


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WEBS 3-44=-5378/378, 3-42=-243/5005, 4-42=-738/165, 5-41=-142/1775, 21-22=-702/6461, 13-22=-533/7443, 6-48=-11398/733, 48-49=-10998/710, 46-49=-11217/674, 46-50=-11186/670, 50-51=-11256/676, 51-52=-16199/977, 52-53=-12725/800, 13-53=-13377/838, 2-44=-694/13017, 40-41=-669/7653, 40-47=-539/8502, 6-47=-545/8799, 7-48=-152/2424, 8-49=-517/66, 9-50=-135/2511, 11-52=-259/67, 12-53=-211/3528, 22-24=0/2232, 38-40=0/2717, 23-24=-618/0, 38-39=-599/0, 24-26=-2200/0, 37-38=-951/52, 26-27=0/2939, 35-37=0/1802, 27-28=-844/13, 35-36=-959/22, 27-29=-306/163, 34-35=-127/263, 29-30=0/1059, 33-34=-8/743, 30-31=-512/0, 32-33=-320/10, 7-49=-4545/252, 9-49=-4572/360, 9-51=-5105/312, 10-52=-2495/281, 12-52=-5632/326, 14-19=-485/150, 15-19=-142/1130, 14-21=-406/499, 5-42=-2504/138, 15-18=-969/148, 16-18=-662/13296

**NOTES**

1) 4-ply truss to be connected together with 10d (0.131"x3") nails as follows:
   Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.
   Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-7-0 oc.
   Web connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc, Except member 41-47 2x6 - 3 rows staggered at 0-4-0 oc, member 6-41 2x6 - 2 rows staggered at 0-4-0 oc.
   Attach BC w/ 1/2" diam. bolts (ASTM A-307) in the center of the member w/washers at 4-0-0 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) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
5) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
6) Unbalanced snow loads have been considered for this design.
7) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
8) Provide adequate drainage to prevent water ponding.
9) All plates are MT20 plates unless otherwise indicated.
10) All plates are 2x4 MT20 unless otherwise indicated.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
13) Ceiling dead load (5.0 psf) on member(s). 6-48, 48-49, 49-50, 50-51, 51-52, 52-53, 13-53; Wall dead load (5.0psf) on member(s).13-22, 6-40
14) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 39-40, 37-39, 36-37, 34-36, 32-34, 31-32, 29-31, 28-29, 26-28, 23-26, 22-23
15) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 5415 lb uplift at joint 21.
16) N/A
17) N/A
18) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
19) This truss has large uplift reaction(s) from gravity load case(s). Proper connection is required to secure truss against upward movement at the bearings. Building designer must provide for uplift reactions indicated.
20) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 608 lb down and 52 lb up at 28-8-4, and 9100 lb down and 774 lb up at 16-1-4 on bottom chord. The design/ selection of such connection device(s) is the responsibility of others.
21) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (lb/ft)
   Vert: 1-2=-60, 2-7=-60, 7-12=-60, 12-16=-60, 17-45=-20, 22-40=-30, 6-48=-10, 48-49=-10, 46-49=-10, 46-50=-10, 50-51=-10, 51-52=-10, 52-53=-10, 13-53=-10
   Drag: 13-22=-10, 40-47=-10, 6-47=-10
   Concentrated Loads (lb)
   Vert: 41=-4881 (F), 63=-326 (F)

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A06 | Attic Girder | 1 | 4 | I68306404 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:28 Page: 1

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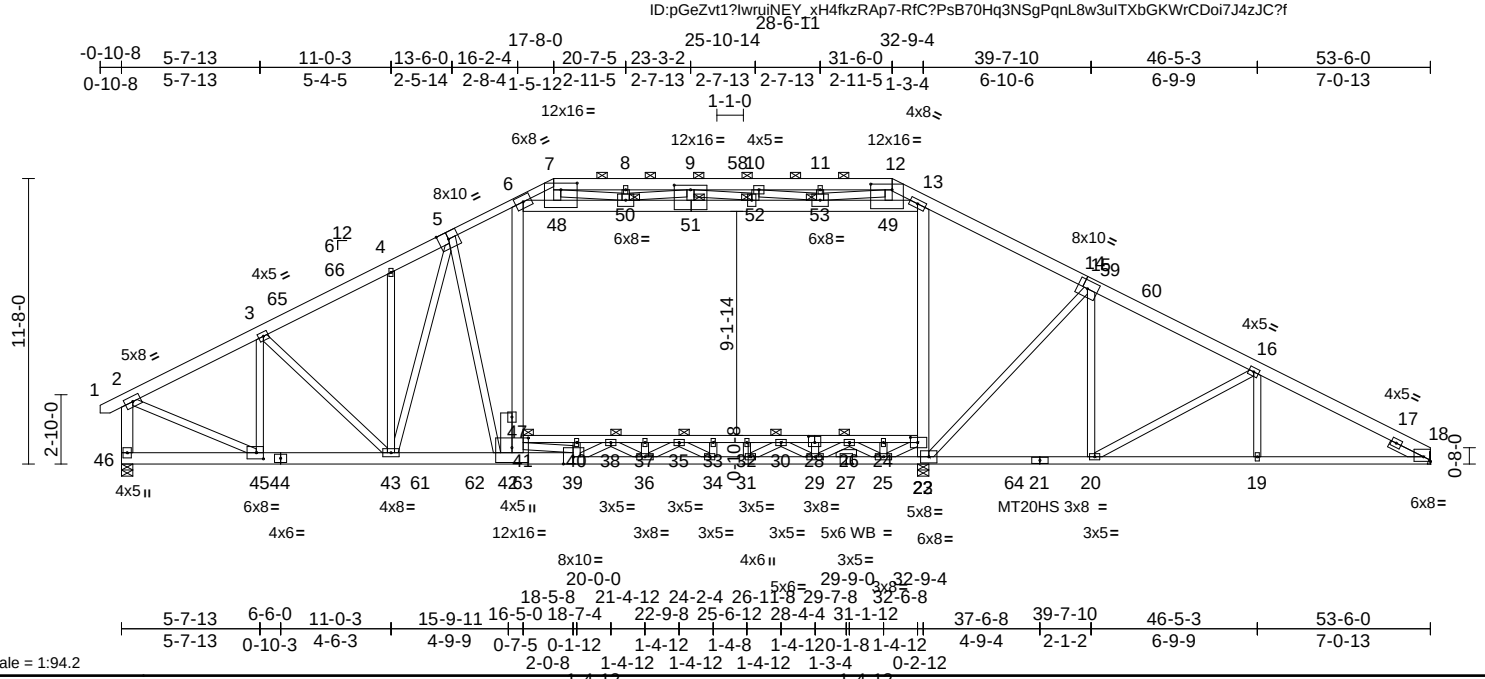


Scale = 1:94.2

Plate Offsets (X, Y): [7:0-8-0,0-3-4], [9:0-8-0,0-2-4], [12:0-10-8,0-2-12], [18:Edge,0-2-4], [23:0-3-8,0-2-8], [28:0-3-0,0-3-0], [39:0-4-12,Edge], [42:0-8-0,0-4-12], [45:0-3-8,0-3-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.93 | Vert(LL) | -0.49 | 39-42 | >803 | 240 | MT20HS | 187/143 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.72 | Vert(CT) | -0.73 | 39-42 | >532 | 180 | MT20 | 244/190 |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.87 | Horz(CT) | 0.21 | 18 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | Attic | -0.24 | 23-41 | >812 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 2017 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2 *Except* 7-5:2x4 SP 2400F 2.0E

BOT CHORD 2x4 SP 2400F 2.0E *Except* 28-23,28-41:2x4 SP No.2, 44-46:2x6 SP No.2, 44-39:2x6 SP 2400F 2.0E

WEBS 2x4 SP No.3 *Except* 46-2,42-47,6-42,6-51,51-13:2x6 SP No.2, 13-22:2x6 SP 2400F 2.0E, 45-2:2x4 SP No.2

OTHERS 2x4 SP No.3

SLIDER Right 2x4 SP No.3 -- 1-6-0

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 7-12.

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

JOINTS 1 Brace at Jt(s): 50, 51, 52, 53, 41, 38, 35, 30, 26

**REACTIONS** (size) 18= Mechanical, 22=0-5-8, 46=0-5-8

Max Horiz 46=-190 (LC 10)

Max Uplift 18=-420 (LC 12), 22=-5361 (LC 45), 46=-683 (LC 12)

Max Grav 18=8887 (LC 46), 22=792 (LC 12), 46=11746 (LC 46)

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

TOP CHORD 7-8=-3092/528, 8-9=-3089/526, 9-10=-3727/713, 10-11=-1715/1441, 11-12=-1715/1441, 12-13=-4561/424, 13-15=-17753/1087, 15-16=-17925/1006, 16-18=-17697/900, 2-46=-11550/702, 1-2=0/24, 2-3=-13497/782, 3-4=-17366/1032, 4-6=-18564/1120, 6-7=-5994/479

BOT CHORD 45-46=-123/440, 43-45=-731/12074, 42-43=-832/16073, 36-42=-684/17253, 34-36=0/17880, 31-34=0/17942, 29-31=0/16739, 25-29=-151/14334, 22-25=-772/12128, 20-22=-780/16089, 19-20=-741/15543, 18-19=-741/15543, 40-41=-1028/0, 38-40=-1102/0, 37-38=-2921/0, 35-37=-2921/0, 33-35=-3019/0, 32-33=-3019/0, 30-32=-3019/0, 26-30=-1178/736, 24-26=-370/3083, 23-24=-370/3083

WEBS 3-45=-5311/373, 4-43=-700/162, 41-42=-617/7143, 6-41=-530/8717, 22-23=-712/6595, 13-23=-513/7229, 6-48=-10655/685, 48-50=-10276/663, 50-52=-11090/661, 52-53=-15532/928, 49-53=-12360/771, 13-49=-12997/808, 2-45=-673/12777, 15-20=-220/184, 16-19=-11/162, 16-20=-132/757, 15-22=-640/213, 3-43=-237/4930, 7-48=-147/2364, 12-49=-204/3451, 8-50=-471/64, 9-51=-120/2271, 10-52=-109/92, 11-53=-268/67, 12-53=-5376/307, 10-53=-2531/278, 9-52=-4653/281, 9-50=-4233/347, 7-50=-4773/262, 39-40=-446/0, 39-41=0/2886, 38-39=-859/135, 36-38=0/1265, 36-37=-671/19, 35-36=-160/340, 34-35=-22/133, 33-34=-116/0, 31-32=-558/0, 30-31=0/1422, 29-30=-818/0, 28-29=-736/19, 26-29=0/2289, 25-26=-1725/0, 24-25=-569/0, 23-25=0/1636, 5-42=-124/1475, 5-43=-2258/111

**NOTES**

1) 4-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 3 rows staggered at 0-4-0 oc, Except member 6-42 2x6 - 2 rows staggered at 0-4-0 oc, member 13-22 2x6 - 2 rows staggered at 0-9-0 oc.
Attach BC w/ 1/2" diam. bolts (ASTM A-307) in the center of the member w/washers at 4-0-0 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) Unbalanced roof live loads have been considered for this design.


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4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60

5) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
6) Unbalanced snow loads have been considered for this design.
7) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
8) Provide adequate drainage to prevent water ponding.
9) All plates are MT20 plates unless otherwise indicated.
10) All plates are 2x4 MT20 unless otherwise indicated.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
13) Ceiling dead load (5.0 psf) on member(s). 6-48, 48-50, 50-51, 51-52, 52-53, 49-53, 13-49; Wall dead load (5.0psf) on member(s).6-41, 13-23
14) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 40-41, 38-40, 37-38, 35-37, 33-35, 32-33, 30-32, 28-30, 26-28, 24-26, 23-24
15) Refer to girder(s) for truss to truss connections.
16) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 420 lb uplift at joint 18 and 5361 lb uplift at joint 22.
17) LGT4-SDS3 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 46. This connection is for uplift only and does not consider lateral forces.
18) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
19) This truss has large uplift reaction(s) from gravity load case(s). Proper connection is required to secure truss against upward movement at the bearings. Building designer must provide for uplift reactions indicated.
20) LGT4 Hurricane ties must have four studs in line below the truss.
21) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 9100 lb down and 774 lb up at 16-1-4 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
22) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (lb/ft)
   Vert: 7-12=-60, 12-18=-60, 46-54=-20, 23-41=-30, 6-48=-10, 48-50=-10, 50-51=-10, 51-52=-10, 52-53=-10, 49-53=-10, 13-49=-10, 1-2=-60, 2-7=-60
   Drag: 41-47=-10, 6-47=-10, 13-23=-10
   Concentrated Loads (lb)
   Vert: 42=-4881 (F)

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A07 | Attic | 1 | 1 | I68306405 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:29 Page: 1

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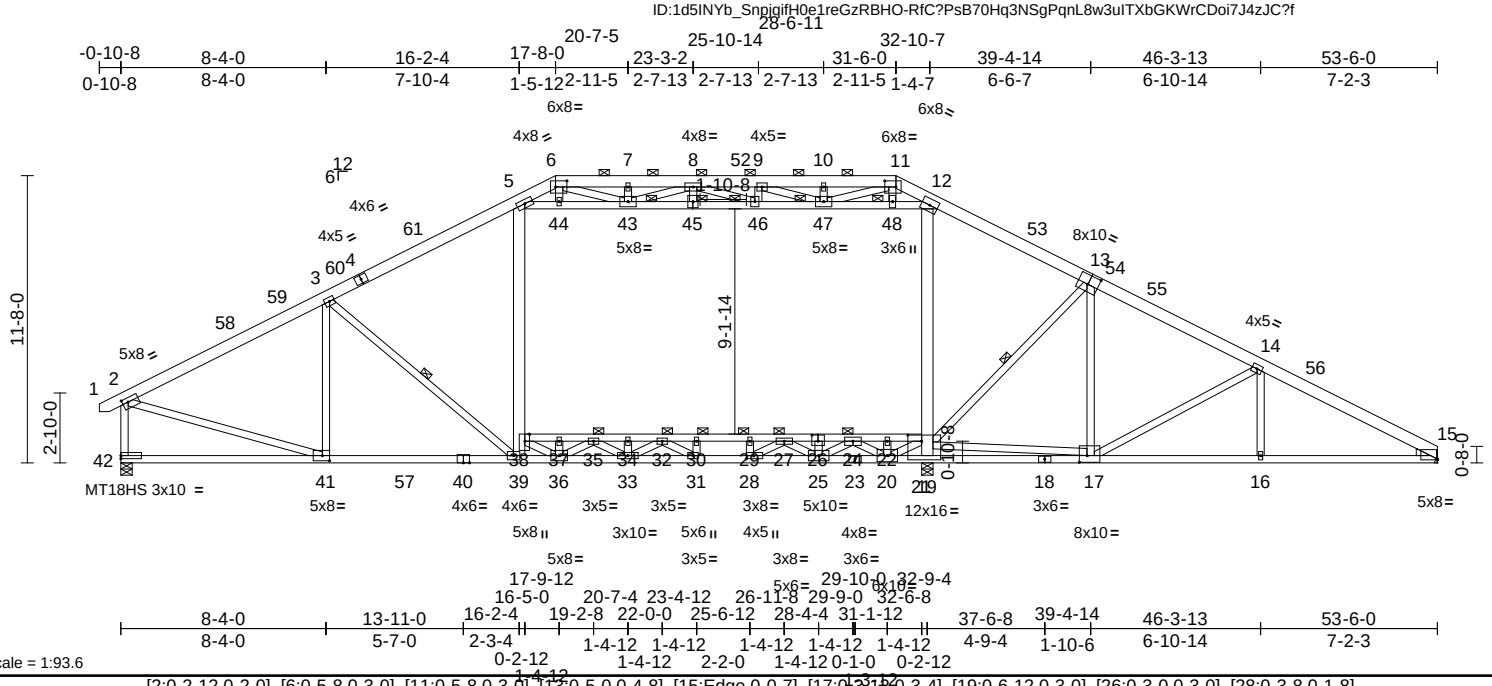





Plate Offsets (X, Y): [2:0-2-12,0-2-0], [6:0-5-8,0-3-0], [11:0-5-8,0-3-0], [13:0-5-0,0-4-8], [15:Edge,0-0-7], [17:0-3-12,0-3-4], [19:0-6-12,0-3-0], [26:0-3-0,0-3-0], [28:0-3-8,0-1-8], [38:Edge,0-2-4], [41:0-3-8,0-2-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.97 | Vert(LL) | -0.47 | 31-33 | >833 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.95 | Vert(CT) | -0.77 | 31-33 | >509 | 180 | MT18HS | 244/190 |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.94 | Horz(CT) | 0.15 | 15 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | Attic | -0.32 | 21-38 | >604 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 454 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2

BOT CHORD 2x4 SP 2400F 2.0E *Except* 26-21,40-42:2x4 SP No.1, 18-23,26-38:2x4 SP No.2

WEBS 2x4 SP No.3 *Except* 5-39,12-19:2x6 SP No.2, 41-2,45-12,20-21,36-38,45-5,36-35,35-33,33-32,32-31,28-27,27-25,25-24,24-20:2x4 SP No.2, 21-17:2x4 SP No.1

WEDGE Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-10-3 oc purlins, except end verticals, and 2-0-0 oc purlins (3-9-8 max.): 6-11.

BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.

WEBS 1 Row at midpt 12-47, 13-21, 3-39

JOINTS 1 Brace at Jt(s): 43, 45, 46, 47, 35, 32, 27, 24

**REACTIONS** (size) 15= Mechanical, 19=0-5-8, 42=0-5-8

Max Horiz 42=-190 (LC 12)

Max Grav 15=2298 (LC 48), 19=1793 (LC 40), 42=3002 (LC 38)

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

TOP CHORD 6-7=-2981/411, 7-8=-2981/411, 8-9=-3607/536, 9-10=-2740/425, 10-11=-2740/425, 11-12=-1776/184, 12-14=-4116/100, 14-15=-4686/98, 2-42=-2999/91, 1-2=0/22, 2-3=-3961/16, 3-5=-4084/38, 5-6=-2144/162

BOT CHORD 41-42=-107/220, 39-41=0/3431, 36-39=0/3347, 33-36=0/5184, 31-33=0/6303, 28-31=0/6100, 25-28=0/4804, 20-25=0/1822, 19-20=-2299/0, 17-19=-2104/0, 16-17=-11/4069, 15-16=-72/4069, 37-38=-1135/0, 35-37=-1135/0, 34-35=-3123/0, 32-34=-3123/0, 30-32=-3176/0, 29-30=-3176/0, 27-29=-3176/0, 24-27=-690/956, 22-24=0/3300, 21-22=0/3300

WEBS 3-41=-681/82, 13-17=-267/96, 14-17=-578/208, 14-16=0/247, 38-39=-47/336, 5-38=0/1190, 19-21=-1403/103, 12-21=-46/1140, 2-41=0/3476, 5-44=-2083/54, 43-44=-2008/54, 43-46=-1597/1328, 46-47=-1799/1221, 47-48=-2471/0, 12-48=-2567/0, 7-43=-138/122, 6-44=0/354, 8-45=0/62, 9-46=0/131, 10-47=-170/78, 11-48=0/450, 20-21=0/2699, 36-38=0/1559, 36-37=-230/0, 20-22=-352/0, 25-26=-320/0, 33-34=-185/0, 28-29=-533/0, 30-31=-2/95, 13-21=-579/324, 3-39=-149/379, 17-21=0/5329, 6-43=-342/1277, 8-43=-876/124, 8-46=-285/0, 11-47=-314/1438, 9-47=-923/118, 35-36=-1294/0, 33-35=0/1052, 32-33=-303/181, 31-32=-363/11, 27-28=0/1529, 25-27=-1405/0, 24-25=0/2106, 20-24=-2165/0

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-2 to 4-8-2, Interior (1) 4-8-2 to 12-3-13, Exterior(2R) 12-3-13 to 23-3-2, Interior (1) 23-3-2 to 25-10-14, Exterior(2R) 25-10-14 to 36-10-3, Interior (1) 36-10-3 to 48-1-13, Exterior(2E) 48-1-13 to 53-6-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) Provide adequate drainage to prevent water ponding.


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7) All plates are MT20 plates unless otherwise indicated.
8) All plates are 2x4 MT20 unless otherwise indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Ceiling dead load (5.0 psf) on member(s). 5-44, 43-44, 43-45, 45-46, 46-47, 47-48, 12-48; Wall dead load (5.0psf) on member(s).5-38, 12-21
12) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 37-38, 35-37, 34-35, 32-34, 30-32, 29-30, 27-29, 26-27, 24-26, 22-24, 21-22
13) Refer to girder(s) for truss to truss connections.
14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
15) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A08 | Attic | 6 | 1 | I68306406 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:30 Page: 1

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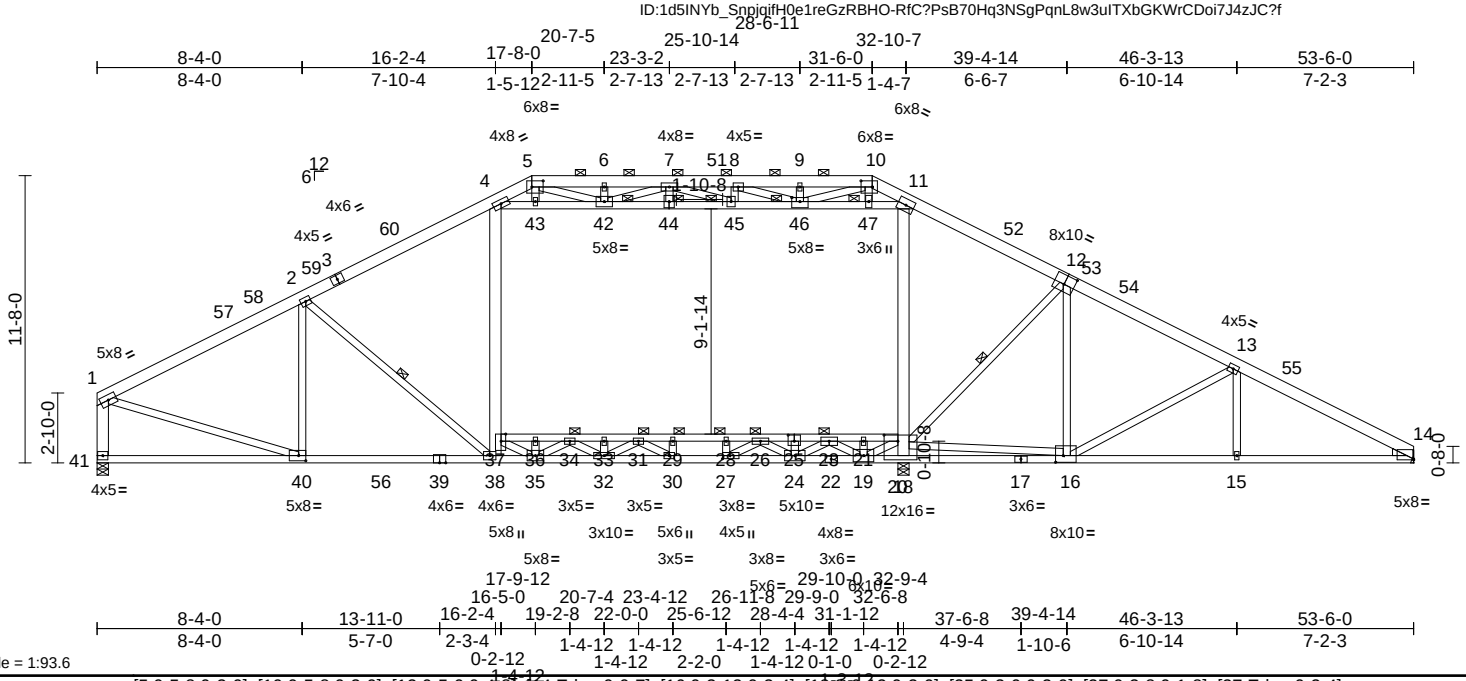


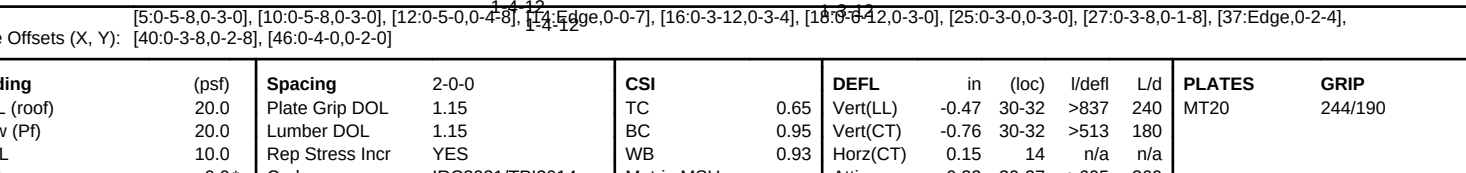


Plate Offsets (X, Y): [5:0-5-8,0-3-0], [10:0-5-8,0-3-0], [12:0-5-0,0-4-8], [14:Edge,0-0-7], [16:0-3-12,0-3-4], [18:0-3-12,0-3-0], [25:0-3-0,0-3-0], [27:0-3-8,0-1-8], [37:Edge,0-2-4], [40:0-3-8,0-2-8], [46:0-4-0,0-2-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.65 | Vert(LL) | -0.47 | 30-32 | >837 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.95 | Vert(CT) | -0.76 | 30-32 | >513 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.93 | Horz(CT) | 0.15 | 14 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | Attic | -0.32 | 20-37 | >605 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 454 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2

BOT CHORD 2x4 SP 2400F 2.0E *Except* 25-20,39-41:2x4 SP No.1, 17-22,25-37:2x4 SP No.2

WEBS 2x4 SP No.3 *Except* 41-1,4-38,11-18:2x6 SP No.2, 40-1,44-11,19-20,35-37,44-4,35-34,34-32,32-31,31-30,27-26,26-24,24-23,23-19:2x4 SP No.2, 20-16:2x4 SP No.1

WEDGE Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-10-2 oc purlins, except end verticals, and 2-0-0 oc purlins (3-9-9 max.): 5-10.

BOT CHORD Rigid ceiling directly applied or 2-6-0 oc bracing.

WEBS 1 Row at midpt 11-46, 12-20, 2-38

JOINTS 1 Brace at Jt(s): 42, 44, 45, 46, 34, 31, 26, 23

**REACTIONS** (size) 14= Mechanical, 18=0-5-8, 41=0-5-8

Max Horiz 41=-222 (LC 15)

Max Grav 14=2292 (LC 47), 18=1790 (LC 39), 41=2957 (LC 37)

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

TOP CHORD 5-6=-2972/412, 6-7=-2972/412, 7-8=-3601/537, 8-9=-2737/426, 9-10=-2737/426, 10-11=-1773/186, 11-13=-4095/106, 13-14=-4666/103, 1-41=-2958/58, 1-2=-3909/28, 2-4=-4057/44, 4-5=-2133/163

BOT CHORD 40-41=-106/246, 38-40=0/3385, 35-38=0/3319, 32-35=0/5160, 30-32=0/6294, 27-30=0/6096, 24-27=0/4806, 19-24=0/1830, 18-19=-2285/0, 16-18=-2093/0, 15-16=-16/4051, 14-15=-74/4051, 36-37=-1129/0, 34-36=-1129/0, 33-34=-3124/0, 31-33=-3124/0, 29-31=-3185/0, 28-29=-3185/0, 26-28=-3185/0, 23-26=-708/939, 21-23=0/3264, 20-21=0/3264

WEBS 2-40=-705/77, 12-16=-264/99, 13-16=-579/209, 13-15=0/247, 37-38=-45/325, 4-37=0/1182, 18-20=-1401/105, 11-20=-47/1134, 1-40=0/3451, 4-43=-2073/58, 42-43=-1999/58, 42-45=-1586/1333, 45-46=-1785/1228, 46-47=-2450/0, 11-47=-2546/0, 6-42=-139/121, 5-43=0/353, 7-44=0/62, 8-45=0/130, 9-46=-171/78, 10-47=0/447, 19-20=0/2695, 35-37=0/1556, 35-36=-230/0, 19-21=-351/0, 24-25=-319/0, 32-33=-185/0, 27-28=-531/0, 29-30=-3/94, 12-20=-573/324, 2-38=-131/398, 16-20=0/5298, 5-42=-342/1280, 7-42=-875/124, 7-45=-283/0, 10-46=-314/1437, 8-46=-920/118, 34-35=-1298/0, 32-34=0/1056, 31-32=-307/177, 30-31=-355/12, 26-27=0/1522, 24-26=-1401/0, 23-24=0/2101, 19-23=-2162/0

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-2-12 to 5-6-15, Interior (1) 5-6-15 to 12-3-13, Exterior(2R) 12-3-13 to 23-3-2, Interior (1) 23-3-2 to 25-10-14, Exterior(2R) 25-10-14 to 36-10-3, Interior (1) 36-10-3 to 48-1-13, Exterior(2E) 48-1-13 to 53-6-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) Provide adequate drainage to prevent water ponding.
6) All plates are 2x4 MT20 unless otherwise indicated.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.


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8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
9) Ceiling dead load (5.0 psf) on member(s). 4-43, 42-43, 42-44, 44-45, 45-46, 46-47, 11-47; Wall dead load (5.0psf) on member(s).4-37, 11-20
10) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 36-37, 34-36, 33-34, 31-33, 29-31, 28-29, 26-28, 25-26, 23-25, 21-23, 20-21
11) Refer to girder(s) for truss to truss connections.
12) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
13) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | A09 | Attic Supported Gable | 1 | 1 | I68306407 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 E Feb 6 2024 Print: 8.730 E Feb 6 2024 MiTek Industries, Inc. Thu Sep 19 11:08:30 Page: 1

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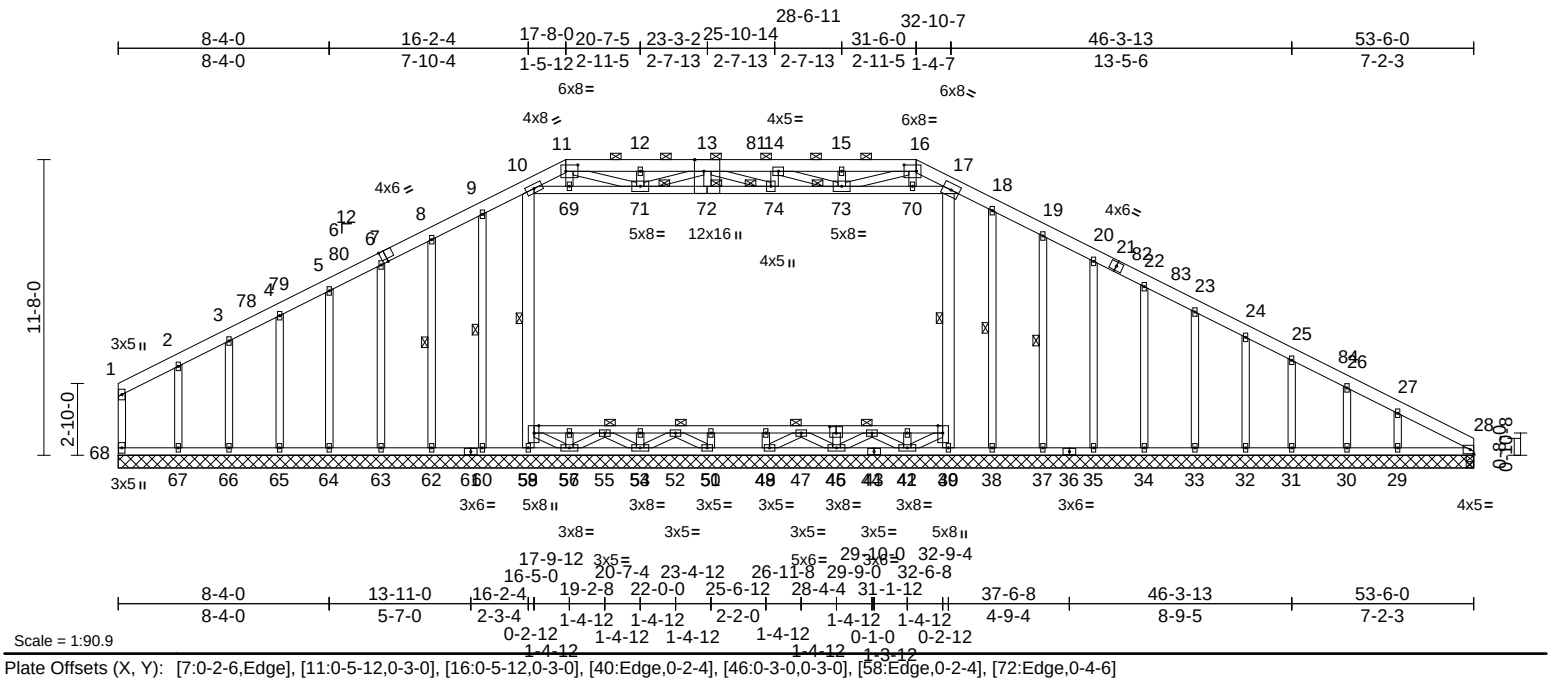





Plate Offsets (X, Y): [7:0-2-6,Edge], [11:0-5-12,0-3-0], [16:0-5-12,0-3-0], [40:Edge,0-2-4], [46:0-3-0,0-3-0], [58:Edge,0-2-4], [72:Edge,0-4-6]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.44 | Vert(LL) | -0.01 | 10 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.11 | Vert(CT) | -0.01 | 10 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.65 | Horz(CT) | 0.02 | 28 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 504 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 10-59,17-39:2x6 SP No.2, 72-17,72-10:2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (4-1-8 max.): 11-16.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing: 48-51.
WEBS 1 Row at midpt 10-58, 17-40, 18-38, 19-37, 9-60, 8-62
JOINTS 1 Brace at Jt(s): 71, 72, 73, 74, 55, 52, 47, 44

**REACTIONS** All bearings 53-6-0.
(lb) - Max Horiz 68=-221 (LC 15)
Max Uplift All uplift 100 (lb) or less at joint(s) 28, 29, 30, 31, 32, 33, 34, 35, 37, 39, 59, 62, 63, 64, 65, 66, 67, 68, 75 except 38=-133 (LC 40), 60=-128 (LC 40)
Max Grav All reactions 250 (lb) or less at joint (s) 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 60, 62, 63, 64, 65, 66, 67, 68, 75 except 39=1111 (LC 40), 42=334 (LC 20), 45=369 (LC 20), 48=320 (LC 20), 51=320 (LC 20), 53=368 (LC 20), 56=330 (LC 20), 59=1119 (LC 40)

**FORCES** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 5-80=-100/260, 6-80=-94/267, 6-7=-120/303, 7-8=-119/313, 8-9=-135/359, 9-10=-115/375, 10-11=-903/328, 11-12=-2147/593, 12-13=-2147/593, 13-81=-2804/764, 14-81=-2804/764, 14-15=-2132/593, 15-16=-2132/593, 16-17=-894/327, 17-18=-121/375, 18-19=-143/366, 19-20=-137/322, 20-21=-105/275, 21-82=-107/270, 22-82=-121/265
WEBS 58-59=-1090/31, 10-58=-1096/109, 39-40=-1083/62, 17-40=-1093/151, 10-69=-39/644, 69-71=-37/638, 71-72=-441/2725, 72-74=-441/2725, 73-74=-447/2775, 70-73=-42/627, 17-70=-44/635, 12-71=-256/67, 11-71=-325/1558, 13-71=-654/189, 14-73=-715/182, 16-73=-327/1553

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-1-12 to 5-5-15, Exterior(2N) 5-5-15 to 12-3-13, Corner(3R) 12-3-13 to 23-3-2, Exterior(2N) 23-3-2 to 25-10-14, Corner(3R) 25-10-14 to 36-10-3, Exterior(2N) 36-10-3 to 48-1-13, Corner(3E) 48-1-13 to 53-6-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; 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) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
11) Ceiling dead load (5.0 psf) on member(s). 10-69, 69-71, 71-72, 72-74, 73-74, 70-73, 17-70; Wall dead load (5.0psf) on member(s).10-58, 17-40
12) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 57-58, 55-57, 54-55, 52-54, 50-52, 49-50, 47-49, 46-47, 44-46, 41-44, 40-41


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Continued on page 2



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13) n/a

14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
15) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | B01 | Common | 1 | 1 | I68306408 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:31 Page: 1

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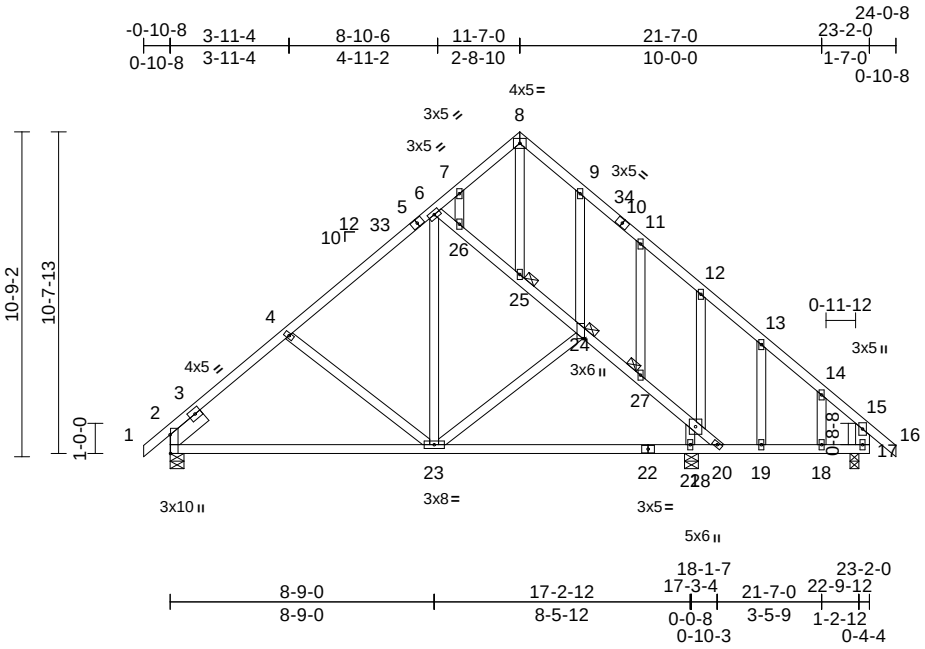


Scale = 1:76.3

Plate Offsets (X, Y): [2:0-7-7,Edge], [24:0-0-0,0-0-10]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.37 | Vert(LL) | 0.07 | 18-19 | >917 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.57 | Vert(CT) | -0.16 | 23-31 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.51 | Horz(CT) | 0.02 | 17 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 173 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.2 |
| WEBS | 2x4 SP No.3 *Except* 17-15:2x6 SP No.2, 6-20:2x4 SP No.2 |
| OTHERS | 2x4 SP No.3 |
| SLIDER | Left 2x6 SP No.2 -- 1-6-0 |

**BRACING**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 5-5-4 oc purlins, except end verticals. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |
| JOINTS | 1 Brace at Jt(s): 24, 25, 27 |

**REACTIONS** (size) 2=0-5-8, 17=0-3-8, 21=0-5-8
Max Horiz 2=265 (LC 13)
Max Uplift 2=-50 (LC 14), 21=-225 (LC 15)
Max Grav 2=853 (LC 21), 17=446 (LC 22), 21=753 (LC 22)

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

| | |
|---|---|
| TOP CHORD | 1-2=0/34, 2-4=-911/79, 4-6=-760/90, 6-7=-332/144, 7-8=-315/186, 8-9=-280/153, 9-11=-301/119, 11-12=-323/75, 12-13=-203/16, 13-14=-293/12, 14-15=-345/1, 15-16=0/42, 15-17=-343/0 |
| BOT CHORD | 2-23=-214/696, 21-23=-41/499, 20-21=-11/617, 19-20=-37/231, 18-19=-37/231, 17-18=-37/231 |
| WEBS | 4-23=-237/181, 21-28=-541/345, 6-26=-463/113, 25-26=-468/121, 24-25=-413/70, 24-27=-407/54, 27-28=-419/70, 20-28=-471/86, 23-24=-69/89, 6-23=0/345, 8-25=-128/164, 7-26=-31/42, 9-24=-184/31, 11-27=-81/63, 12-28=-382/221, 13-19=-20/49, 14-18=-65/82 |

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 8-7-0, Exterior(2R) 8-7-0 to 14-7-0, Interior (1) 14-7-0 to 21-0-8, Exterior(2E) 21-0-8 to 24-0-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 21. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard


September 20,2024



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| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | B02 | Common Girder | 1 | 2 | I68306409 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:31 Page: 1
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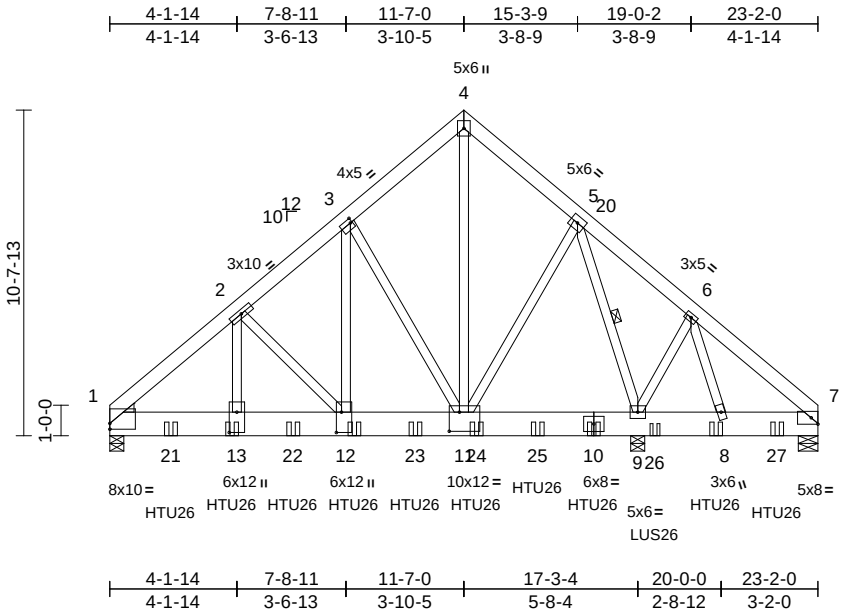


Scale = 1:75.4

Plate Offsets (X, Y): [1:Edge,0-2-5], [3:0-0-12,0-1-12], [11:0-4-0,0-7-8], [12:0-8-0,0-2-0], [13:0-8-0,0-3-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.29 | Vert(LL) | -0.08 | 12-13 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.34 | Vert(CT) | -0.16 | 12-13 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.95 | Horz(CT) | 0.02 | 9 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 479 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x10 SP 2400F 2.0E
WEBS 2x4 SP No.2
WEDGE Left: 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 4-9-7 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
WEBS 1 Row at midpt 5-9

**REACTIONS** (size) 1=0-5-8, 7=0-7-12, 9=0-5-8
Max Horiz 1=-227 (LC 35)
Max Uplift 1=-178 (LC 12), 7=-209 (LC 12), 9=-722 (LC 13)
Max Grav 1=8363 (LC 5), 7=679 (LC 19), 9=11648 (LC 6)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-9914/224, 2-3=-7502/211, 3-4=-4644/202, 4-5=-4588/219, 5-6=-66/182, 6-7=-154/503
BOT CHORD 1-13=-246/7510, 12-13=-246/7510, 11-12=-146/5754, 9-11=-24/1717, 8-9=-165/77, 7-8=-316/57
WEBS 2-13=-48/3318, 2-12=-2569/179, 3-12=-149/5505, 3-11=-4474/268, 4-11=-181/5497, 5-11=-101/3899, 5-9=-6639/232, 6-9=-278/313, 6-8=-548/17

**NOTES**

1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.
Bottom chords connected as follows: 2x10 - 2 rows staggered at 0-5-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc,
Except member 2-13 2x4 - 2 rows staggered at 0-7-0 oc, member 3-12 2x4 - 1 row at 0-7-0 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) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
5) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
6) Unbalanced snow loads have been considered for this design.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 7. This connection is for uplift only and does not consider lateral forces.
10) LGT2 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9. This connection is for uplift only and does not consider lateral forces.
11) Use Simpson Strong-Tie HTU26 (20-10d Girder, 14-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 2-0-0 from the left end to 15-10-0 to connect truss(es) to back face of bottom chord.
12) Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss, Single Ply Girder) or equivalent at 17-10-0 from the left end to connect truss(es) to back face of bottom chord.
13) Use Simpson Strong-Tie HTU26 (10-16d Girder, 14-10dx1 1/2 Truss) or equivalent spaced at 2-0-0 oc max. starting at 19-10-0 from the left end to 21-10-0 to connect truss(es) to back face of bottom chord.
14) Fill all nail holes where hanger is in contact with lumber.
15) LGT2 Hurricane ties must have two studs in line below the truss.

**LOAD CASE(S)** Standard


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Continued on page 2



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1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (lb/ft)
Vert: 1-4=-60, 4-7=-60, 14-17=-20
Concentrated Loads (lb)
Vert: 10=-1868 (B), 13=-1877 (B), 12=-1877 (B), 8=-839 (B), 21=-1877 (B), 22=-1877 (B), 23=-1877 (B), 24=-1868 (B), 25=-1868 (B), 26=-839 (B), 27=-875 (B)

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH I68306410 |
|---|---|---|---|---|---|
| 24090032-01 | C01 | Half Hip | 4 | 1 | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:31 Page: 1
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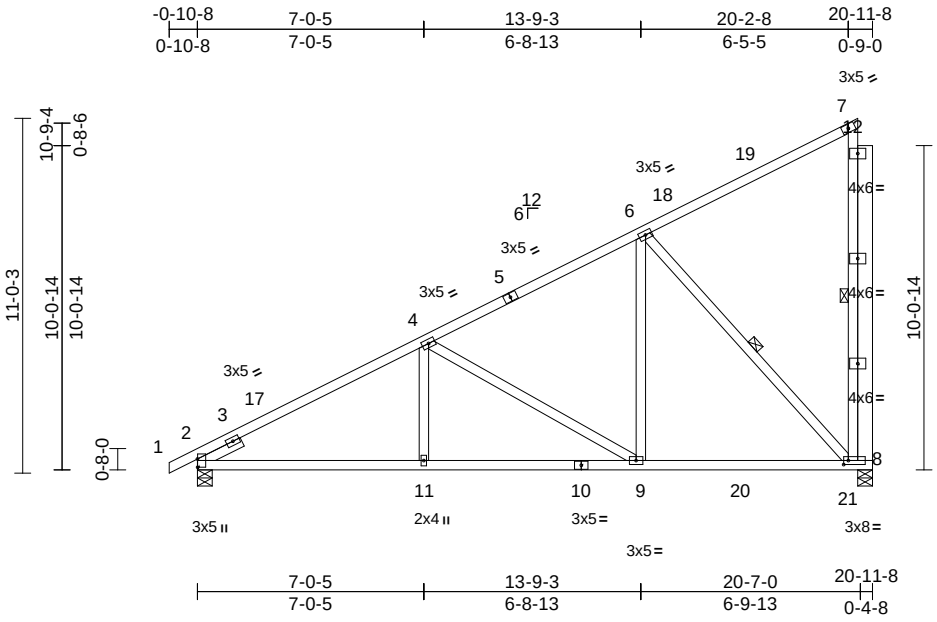


Scale = 1:71.5

Plate Offsets (X, Y): [2:0-3-1,0-0-1], [8:0-1-12,0-1-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.83 | Vert(LL) | -0.08 | 8-9 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.62 | Vert(CT) | -0.14 | 8-9 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.79 | Horz(CT) | 0.03 | 8 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 148 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 7-8:2x4 SP No.2
OTHERS 2x6 SP No.2
SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 4-8-11 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 7-8, 6-8

**REACTIONS** (size) 2=0-5-8, 8=0-5-8
Max Horiz 2=387 (LC 14)
Max Uplift 2=-49 (LC 14), 8=-342 (LC 14)
Max Grav 2=954 (LC 5), 8=1731 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/23, 2-4=-1437/30, 4-6=-824/0, 6-7=-166/102, 7-8=-270/93
BOT CHORD 2-11=-399/1321, 9-11=-320/1321, 8-9=-159/721
WEBS 4-11=0/263, 4-9=-691/185, 6-9=0/637, 6-8=-1026/227

**NOTES**
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 17-4-4, Exterior(2E) 17-4-4 to 20-4-4 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
5) All plates are 3x5 MT20 unless otherwise indicated.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 8 and 2. This connection is for uplift only and does not consider lateral forces.
9) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 752 lb down and 128 lb up at 20-7-0 on bottom 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 (lb/ft)
Vert: 1-7=-60, 8-13=-20
Concentrated Loads (lb)
Vert: 8=-747


September 20,2024



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Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | C02 | Half Hip | 1 | 1 | I68306411 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:31 Page: 1
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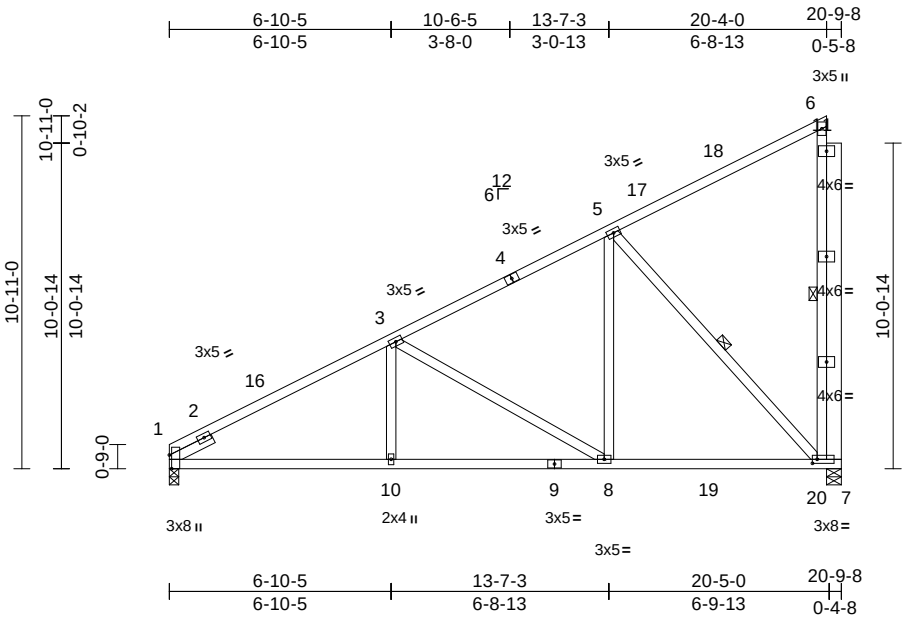


Scale = 1:71.3

Plate Offsets (X, Y): [1:0-5-1,Edge], [7:0-1-12,0-1-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.82 | Vert(LL) | -0.08 | 7-8 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.63 | Vert(CT) | -0.14 | 7-8 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.75 | Horz(CT) | 0.03 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 146 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.2 |
| WEBS | 2x4 SP No.3 *Except* 6-7:2x4 SP No.2 |
| OTHERS | 2x6 SP No.2 |
| SLIDER | Left 2x4 SP No.3 -- 1-6-0 |

**BRACING**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 4-7-1 oc purlins, except end verticals. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |
| WEBS | 1 Row at midpt 6-7, 5-7 |

**REACTIONS** (size) 1=0-3-8, 7=0-5-8
Max Horiz 1=370 (LC 14)
Max Uplift 1=-30 (LC 14), 7=-342 (LC 14)
Max Grav 1=900 (LC 5), 7=1714 (LC 20)

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

| | |
|---|---|
| TOP CHORD | 1-3=-1401/30, 3-5=-812/0, 5-6=-162/100, 6-7=-265/93 |
| BOT CHORD | 1-10=-405/1286, 8-10=-319/1286, 7-8=-159/716 |
| WEBS | 3-10=0/254, 3-8=-658/185, 5-8=0/624, 5-7=-1018/227 |

**NOTES**

1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-2-0 to 3-2-0, Interior (1) 3-2-0 to 17-4-4, Exterior(2E) 17-4-4 to 20-4-4 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 1. This connection is for uplift only and does not consider lateral forces.
7) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 752 lb down and 129 lb up at 20-7-0 on bottom 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 (lb/ft)
   Vert: 1-6=-60, 7-12=-20
   Concentrated Loads (lb)
   Vert: 7=-747


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | D01 | Common Supported Gable | 1 | 1 | I68306412 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:31 Page: 1
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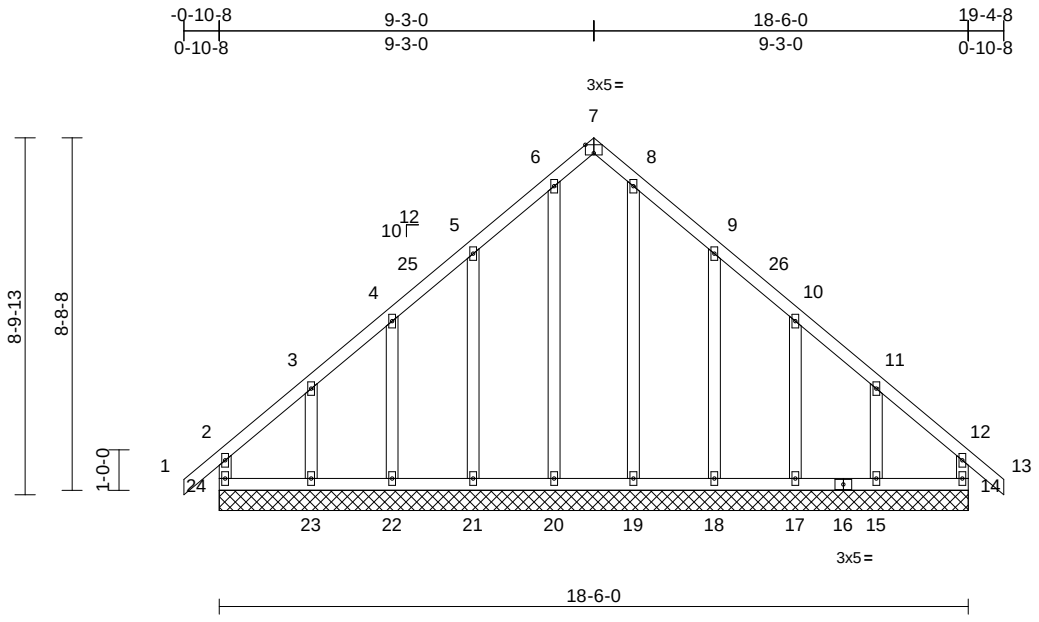


Scale = 1:56.9

Plate Offsets (X, Y): [7:0-2-8,Edge]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.21 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.12 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.20 | Horz(CT) | 0.00 | 14 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MR | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 127 lb | FT = 20% |

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

**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) 14=18-6-0, 15=18-6-0, 17=18-6-0, 18=18-6-0, 19=18-6-0, 20=18-6-0, 21=18-6-0, 22=18-6-0, 23=18-6-0, 24=18-6-0
Max Horiz 24=-225 (LC 12)
Max Uplift 14=-50 (LC 11), 15=-163 (LC 15), 17=-47 (LC 15), 18=-116 (LC 15), 21=-115 (LC 14), 22=-46 (LC 14), 23=-168 (LC 14), 24=-69 (LC 10)
Max Grav 14=190 (LC 25), 15=221 (LC 26), 17=172 (LC 22), 18=253 (LC 22), 19=224 (LC 22), 20=224 (LC 21), 21=253 (LC 21), 22=172 (LC 21), 23=228 (LC 25), 24=205 (LC 26)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 2-24=-168/63, 1-2=0/39, 2-3=-164/140, 3-4=-105/90, 4-5=-92/118, 5-6=-116/235, 6-7=-94/171, 7-8=-94/171, 8-9=-116/235, 9-10=-77/117, 10-11=-90/72, 11-12=-152/117, 12-13=0/39, 12-14=-155/47
BOT CHORD 23-24=-106/187, 22-23=-106/187, 21-22=-106/187, 20-21=-106/187, 19-20=-106/187, 18-19=-106/187, 17-18=-106/187, 15-17=-106/187, 14-15=-106/187
WEBS 6-20=-185/8, 8-19=-185/7, 5-21=-213/162, 4-22=-142/93, 3-23=-174/160, 9-18=-213/163, 10-17=-143/91, 11-15=-168/168

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-3-4, Exterior(2N) 2-3-4 to 6-3-0, Corner(3R) 6-3-0 to 12-2-12, Exterior(2N) 12-2-12 to 16-2-12, Corner(3E) 16-2-12 to 19-4-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 69 lb uplift at joint 24, 50 lb uplift at joint 14, 115 lb uplift at joint 21, 46 lb uplift at joint 22, 168 lb uplift at joint 23, 116 lb uplift at joint 18, 47 lb uplift at joint 17 and 163 lb uplift at joint 15.

**LOAD CASE(S)** Standard


September 20,2024



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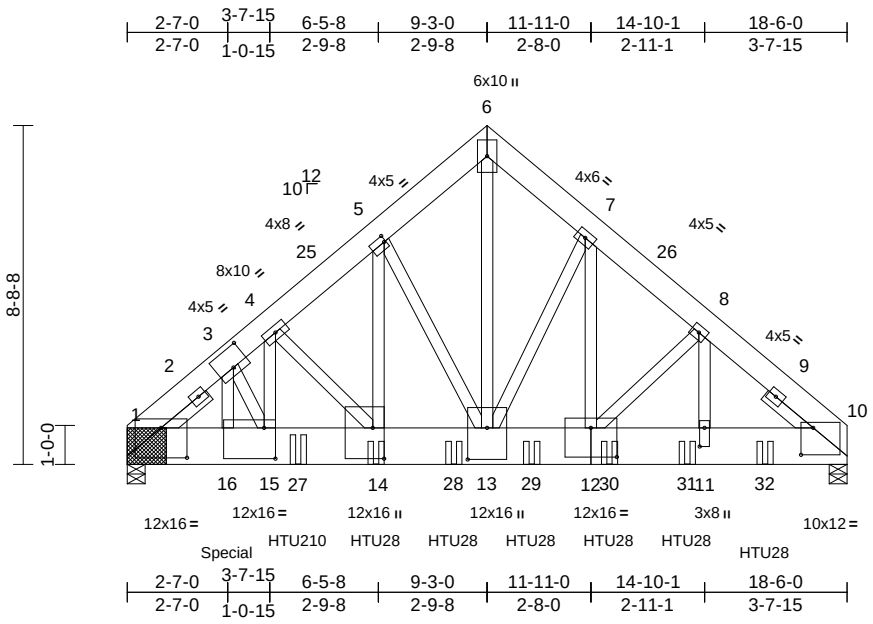
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | D02 | Common Girder | 1 | 2 | I68306413 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:31 ID:ahvaep5BsMWascBuTkn6buzRAib-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f Page: 1




Scale = 1:59.2

Plate Offsets (X, Y): [1:0-8-0,0-9-4], [3:0-5-0,0-5-12], [5:0-0-8,0-2-0], [10:0-3-12,0-8-5], [11:0-5-12,0-1-8], [12:0-8-0,0-9-0], [13:0-9-12,0-6-0], [14:0-9-8,0-3-8], [15:0-3-8,0-9-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.43 | Vert(LL) | -0.10 | 14-15 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.57 | Vert(CT) | -0.17 | 14-15 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.92 | Horz(CT) | 0.04 | 10 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 487 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x8 SP 2400F 2.0E |
| BOT CHORD | 2x12 SP 2400F 2.0E |
| WEBS | 2x4 SP No.3 *Except* 13-6:2x4 SP No.1, 5-14:2x4 SP No.2 |
| SLIDER | Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0 |

**BRACING**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 5-11-12 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |

**REACTIONS** (size) 1=(0-5-8 + bearing block), (req. 0-6-2), 10=0-5-8
Max Horiz 1=-176 (LC 10)
Max Grav 1=14865 (LC 21), 10=10712 (LC 6)

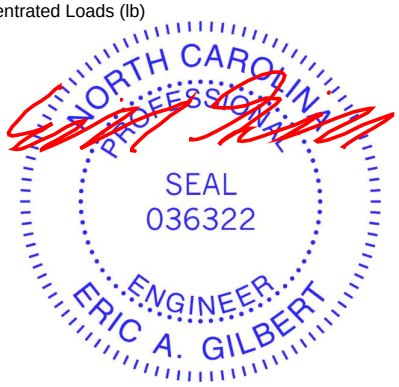
**FORCES** (lb) - Maximum Compression/Maximum Tension

| | |
|---|---|
| TOP CHORD | 1-3=-15578/0, 3-4=-14258/0, 4-5=-12125/0, 5-6=-9492/0, 6-7=-9463/0, 7-8=-11050/0, 8-10=-12158/0 |
| BOT CHORD | 1-16=0/10988, 15-16=0/10988, 14-15=0/11862, 13-14=0/9117, 11-13=0/9123, 10-11=0/9123 |
| WEBS | 6-13=0/10728, 7-13=-1571/0, 7-12=0/2918, 8-12=-1103/0, 8-11=0/1625, 4-14=-4425/101, 4-15=-208/3373, 5-14=0/5105, 5-13=-3189/0, 3-16=-421/1446, 3-15=0/2222 |

**NOTES**

1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x8 - 2 rows staggered at 0-9-0 oc.
Bottom chords connected as follows: 2x12 - 6 rows staggered at 0-5-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc, Except member 5-14 2x4 - 1 row at 0-5-0 oc, member 3-16 2x4 - 2 rows staggered at 0-2-0 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) 2x12 SP 2400F 2.0E bearing block 12" long at jt. 1 attached to each face with 6 rows of 10d (0.131"x3") nails spaced 3" o.c. 24 Total fasteners per block. Bearing is assumed to be SP 2400F 2.0E.
4) Unbalanced roof live loads have been considered for this design.
5) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
6) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
7) Unbalanced snow loads have been considered for this design.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Use Simpson Strong-Tie HTU210 (32-10dx1 1/2 Girder, 14-10dx1 1/2 Truss, Single Ply Girder) or equivalent at 4-4-12 from the left end to connect truss(es) to back face of bottom chord.
11) Use Simpson Strong-Tie HTU28 (20-16d Girder, 26-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 6-4-12 from the left end to 16-4-12 to connect truss(es) to back face of bottom chord.
12) Fill all nail holes where hanger is in contact with lumber.
13) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 8867 lb down and 535 lb up at 2-7-0 on bottom 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 (lb/ft)
Vert: 1-6=-60, 6-10=-60, 17-21=-20
Concentrated Loads (lb)




September 20,2024

Continued on page 2



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Vert: 14=-1893 (B), 16=-5499 (B), 27=-1897 (B), 28=-1893 (B), 29=-1893 (B), 30=-1893 (B), 31=-1893 (B), 32=-1893 (B)

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH I68306414 |
|---|---|---|---|---|---|
| 24090032-01 | E01 | Common Supported Gable | 1 | 1 | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:32 Page: 1
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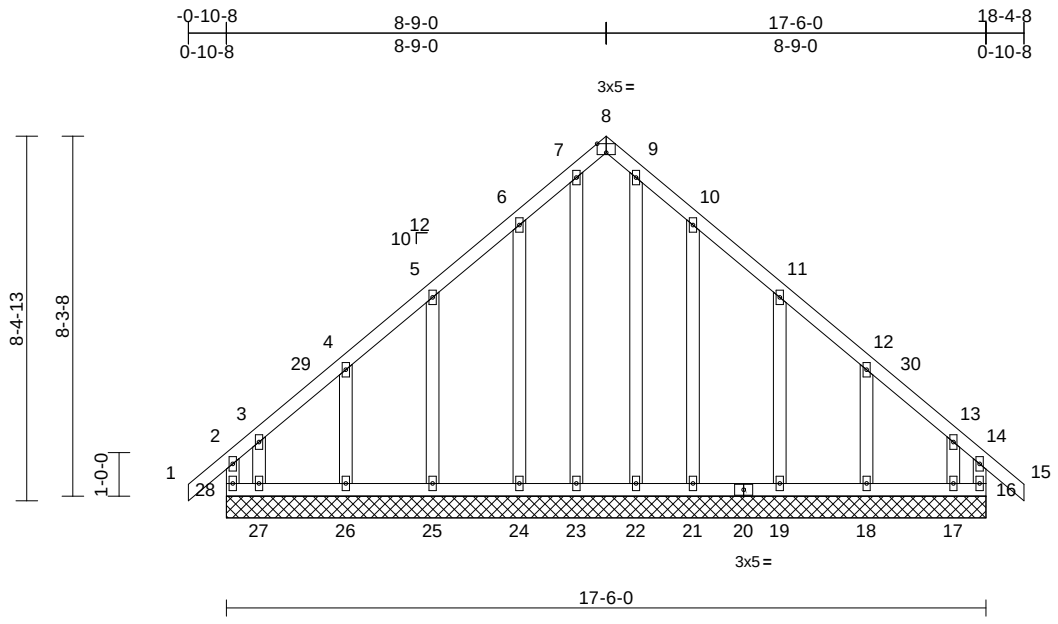



Scale = 1:53.1

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

| Loading | (psf) | Spacing | 1-11-4 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.18 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.11 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.15 | Horz(CT) | 0.00 | 16 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MR | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 130 lb | FT = 20% |

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

**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=17-6-0, 17=17-6-0, 18=17-6-0, 19=17-6-0, 21=17-6-0, 22=17-6-0, 23=17-6-0, 24=17-6-0, 25=17-6-0, 26=17-6-0, 27=17-6-0, 28=17-6-0
Max Horiz 28=209 (LC 13)
Max Uplift 16=-135 (LC 13), 17=-215 (LC 15), 18=-70 (LC 15), 19=-77 (LC 15), 21=-84 (LC 15), 24=-83 (LC 14), 25=-77 (LC 14), 26=-69 (LC 14), 27=-231 (LC 14), 28=-187 (LC 12)
Max Grav 16=226 (LC 15), 17=200 (LC 13), 18=170 (LC 31), 19=206 (LC 22), 21=214 (LC 22), 22=136 (LC 22), 23=136 (LC 21), 24=214 (LC 21), 25=206 (LC 21), 26=169 (LC 25), 27=233 (LC 12), 28=261 (LC 11)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 2-28=-168/112, 1-2=0/38, 2-3=-204/166, 3-4=-116/115, 4-5=-92/94, 5-6=-76/160, 6-7=-104/251, 7-8=-76/166, 8-9=-76/166, 9-10=-104/251, 10-11=-72/160, 11-12=-69/73, 12-13=-90/87, 13-14=-185/126, 14-15=0/38, 14-16=-142/80
BOT CHORD 27-28=-98/172, 26-27=-98/172, 25-26=-98/172, 24-25=-98/172, 23-24=-98/172, 22-23=-98/172, 21-22=-98/172, 19-21=-98/172, 18-19=-98/172, 17-18=-98/172, 16-17=-98/172
WEBS 7-23=-141/22, 9-22=-141/22, 6-24=-181/127, 5-25=-167/114, 4-26=-150/120, 3-27=-124/148, 10-21=-181/127, 11-19=-167/114, 12-18=-150/120, 13-17=-111/144

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 5-9-0, Corner(3R) 5-9-0 to 11-9-0, Exterior(2N) 11-9-0 to 15-4-8, Corner(3E) 15-4-8 to 18-4-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 187 lb uplift at joint 28, 135 lb uplift at joint 16, 83 lb uplift at joint 24, 77 lb uplift at joint 25, 69 lb uplift at joint 26, 231 lb uplift at joint 27, 84 lb uplift at joint 21, 77 lb uplift at joint 19, 70 lb uplift at joint 18 and 215 lb uplift at joint 17.

**LOAD CASE(S)** Standard

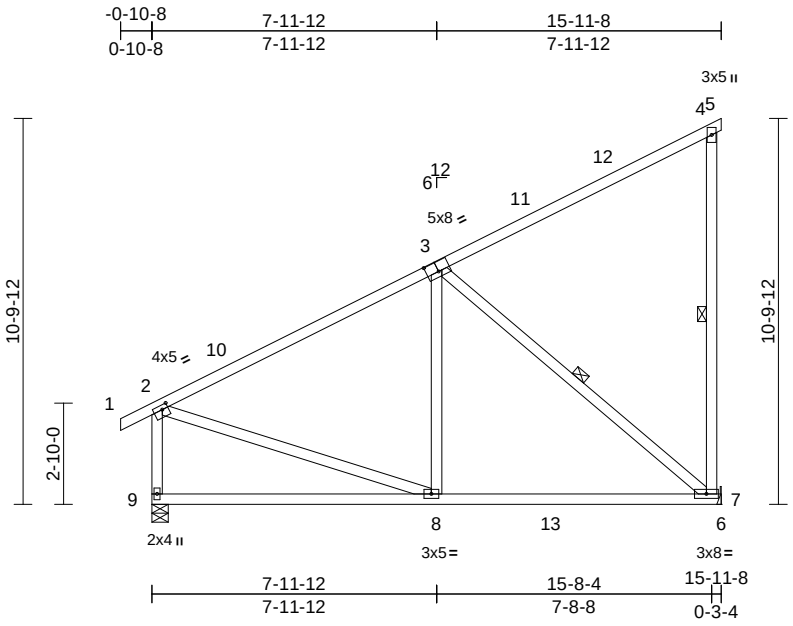

September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH I68306415 |
|---|---|---|---|---|---|
| 24090032-01 | G01 | Monopitch | 5 | 1 | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:32 Page: 1
ID:PdAAD85_ICJN?UaWrZNnF5zRQu2-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:64.6

Plate Offsets (X, Y): [2:0-2-0,0-1-8], [3:0-4-0,0-3-4]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.95 | Vert(LL) | -0.12 | 7-8 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.67 | Vert(CT) | -0.20 | 7-8 | >923 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.39 | Horz(CT) | -0.01 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 106 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.1 *Except* 1-3:2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 4-7:2x4 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 4-7, 3-7

**REACTIONS** (size) 7= Mechanical, 9=0-5-8
Max Horiz 9=273 (LC 14)
Max Uplift 7=-221 (LC 14)
Max Grav 7=831 (LC 5), 9=754 (LC 5)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/27, 2-4=-677/119, 4-5=-12/0, 4-7=-328/122, 2-9=-655/84
BOT CHORD 8-9=-334/218, 7-8=-195/603, 6-7=0/0
WEBS 3-8=0/313, 3-7=-768/250, 2-8=0/486

**NOTES**
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 12-11-8, Exterior(2E) 12-11-8 to 15-11-8 zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
7) Refer to girder(s) for truss to truss connections.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 221 lb uplift at joint 7.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | H01 | Monopitch Supported Gable | 2 | 1 | I68306416 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:32 Page: 1
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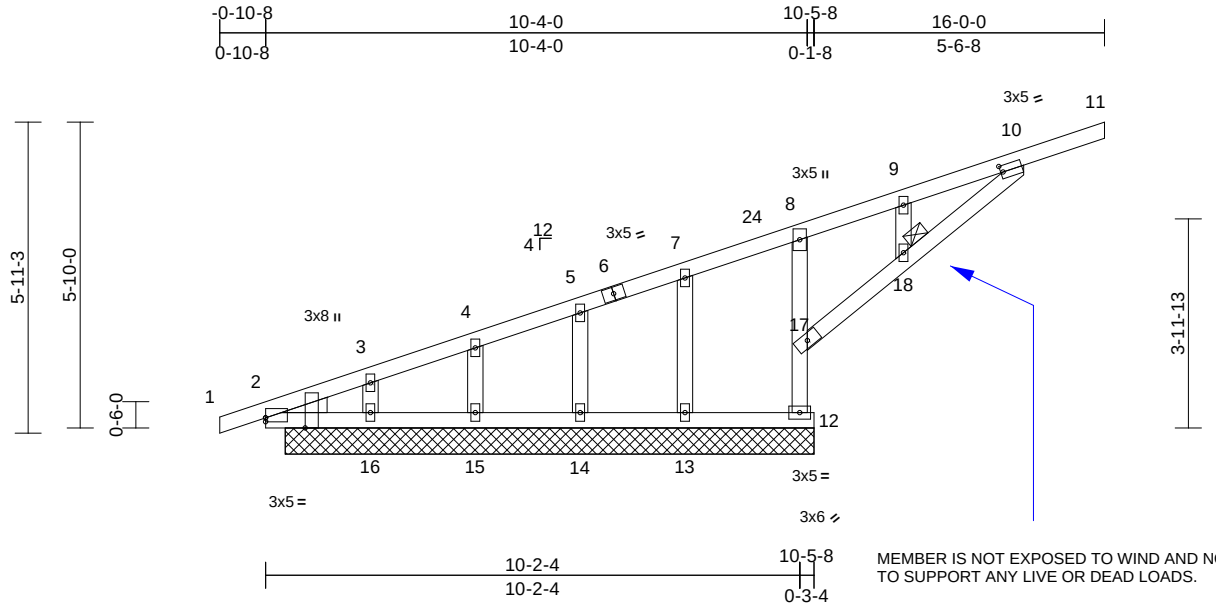


MEMBER IS NOT EXPOSED TO WIND AND NOT DESIGNED TO SUPPORT ANY LIVE OR DEAD LOADS.

Scale = 1:43.9

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [10:0-0-8,0-1-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.99 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.36 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.26 | Horz(CT) | -0.08 | 17 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 68 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 8-12:2x4 SP No.2
OTHERS 2x4 SP No.3
WEDGE Left: 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Except:
9-5-0 oc bracing: 12-17
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
JOINTS 1 Brace at Jt(s): 18

**REACTIONS** (size) 2=10-1-0, 12=10-1-0, 13=10-1-0, 14=10-1-0, 15=10-1-0, 16=10-1-0, 17=10-1-0, 21=10-1-0
Max Horiz 2=180 (LC 10), 21=180 (LC 10)
Max Uplift 2=-48 (LC 21), 12=-72 (LC 21), 13=-9 (LC 10), 14=-41 (LC 14), 15=-26 (LC 10), 16=-98 (LC 14), 17=-271 (LC 10), 21=-48 (LC 21)
Max Grav 2=123 (LC 14), 12=39 (LC 10), 13=129 (LC 1), 14=172 (LC 21), 15=158 (LC 1), 16=217 (LC 21), 17=875 (LC 21), 21=123 (LC 14)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-710/428, 3-4=-650/422, 4-5=-606/425, 5-7=-544/407, 7-8=-542/476, 8-9=-633/630, 9-10=-632/697, 10-11=-45/0, 12-17=0/0, 8-17=-364/285
BOT CHORD 2-16=-383/370, 15-16=-383/370, 14-15=-383/370, 13-14=-383/370, 12-13=-383/370
WEBS 3-16=-145/179, 4-15=-125/117, 5-14=-168/172, 7-13=-33/56, 17-18=-793/656, 10-18=-801/669, 9-18=-21/26

**NOTES**
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-0-0, Exterior(2N) 2-0-0 to 16-0-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) All plates are 2x4 MT20 unless otherwise indicated.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Bearing at joint(s) 17 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 72 lb uplift at joint 12.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | H02 | Monopitch | 6 | 1 | I68306417 Job Reference (optional) |

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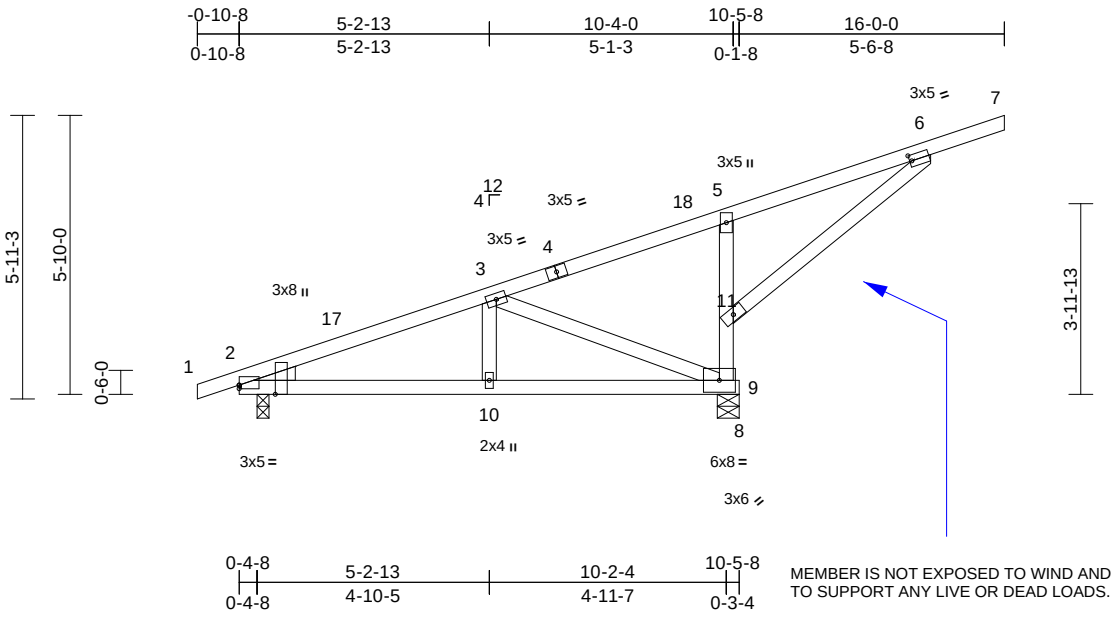





MEMBER IS NOT EXPOSED TO WIND AND NOT DESIGNED TO SUPPORT ANY LIVE OR DEAD LOADS.

Scale = 1:48.2

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [6:0-0-8,0-1-8]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.78 | Vert(LL) | 0.03 | 9-10 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.36 | Vert(CT) | -0.05 | 9-10 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.50 | Horz(CT) | 0.01 | 9 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 66 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 5-9:2x4 SP No.1
WEDGE Left: 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Except:
5-3-0 oc bracing: 9-11
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-3-0, 9=0-5-8
Max Horiz 2=207 (LC 10)
Max Uplift 2=-100 (LC 10), 9=-371 (LC 10)
Max Grav 2=377 (LC 1), 9=1084 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-368/82, 3-5=-393/465, 5-6=-456/707, 6-7=-45/0, 9-11=-847/467, 5-11=-321/163
BOT CHORD 2-10=-230/338, 9-10=-230/338, 8-9=0/0
WEBS 3-10=-124/211, 3-9=-614/478, 6-11=-811/468

**NOTES**
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 16-0-0 zone; cantilever left exposed ; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9 and 2. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | J01 | Common | 5 | 1 | I68306418 |
| | | | | | Job Reference (optional) |

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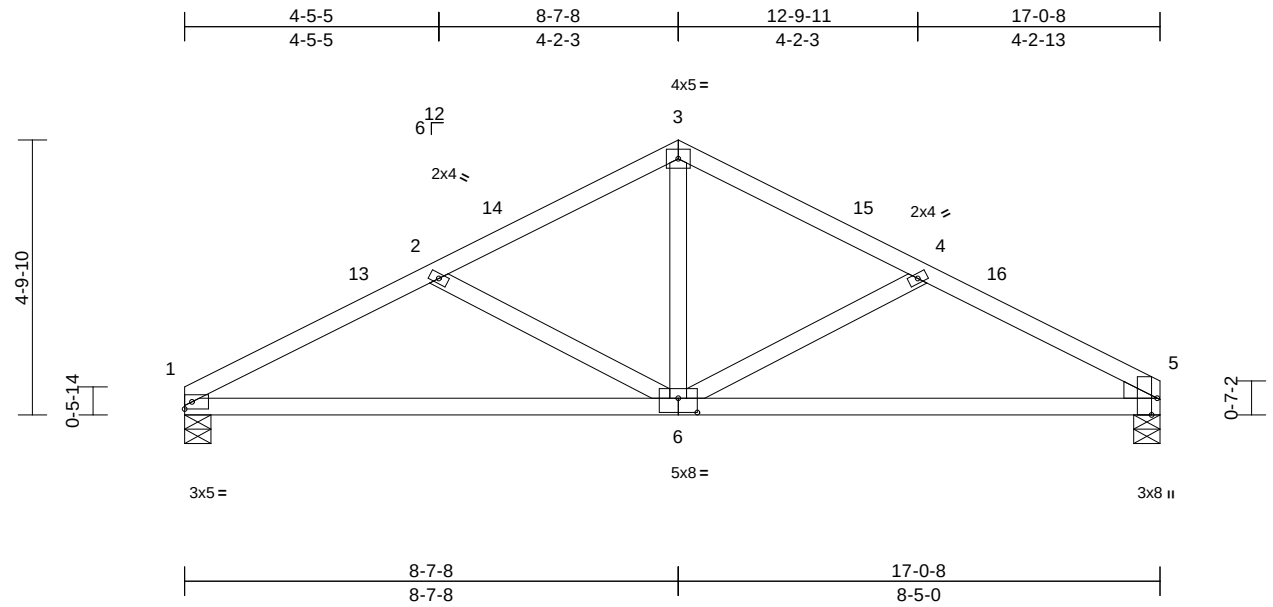


Scale = 1:40.3

Plate Offsets (X, Y): [5:0-3-8,Edge], [6:0-4-0,0-3-0]

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.38 | Vert(LL) | -0.09 | 6-9 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.64 | Vert(CT) | -0.19 | 6-9 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.21 | Horz(CT) | 0.02 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 75 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.2 |
| WEBS | 2x4 SP No.3 |
| WEDGE | Right: 2x4 SP No.3 |

**BRACING**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 5-1-15 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |

**REACTIONS** (size) 1=0-5-8, 5=0-5-8
Max Horiz 1=71 (LC 14)
Max Uplift 1=-66 (LC 14), 5=-64 (LC 15)
Max Grav 1=747 (LC 20), 5=746 (LC 21)

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

| | |
|---|---|
| TOP CHORD | 1-2=-1256/309, 2-3=-879/232, 3-4=-871/231, 4-5=-1211/300 |
| BOT CHORD | 1-5=-221/1083 |
| WEBS | 3-6=-51/474, 4-6=-401/159, 2-6=-439/174 |

**NOTES**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 5-7-8, Exterior(2R) 5-7-8 to 11-7-8, Interior (1) 11-7-8 to 14-0-8, Exterior(2E) 14-0-8 to 17-0-8 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) Bearings are assumed to be: , Joint 5 SP No.2 .
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 66 lb uplift at joint 1.
9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 5. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | PBA | Piggyback | 2 | 1 | I68306419 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:32 Page: 1
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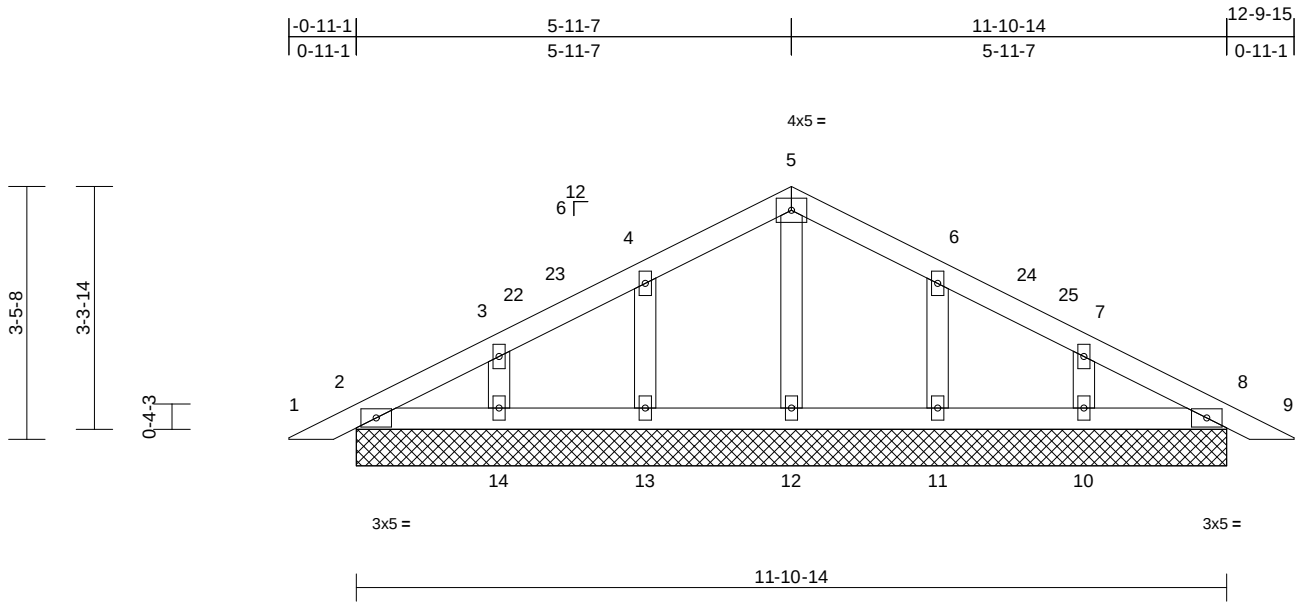



Scale = 1:31.5

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.08 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.04 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.04 | Horz(CT) | 0.00 | 8 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 52 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 2=11-10-14, 8=11-10-14, 10=11-10-14, 11=11-10-14, 12=11-10-14, 13=11-10-14, 14=11-10-14, 15=11-10-14, 19=11-10-14
Max Horiz 2=52 (LC 18), 15=52 (LC 18)
Max Uplift 2=-9 (LC 15), 8=-12 (LC 15), 10=-45 (LC 15), 11=-47 (LC 15), 13=-47 (LC 14), 14=-46 (LC 14), 15=-9 (LC 15), 19=-12 (LC 15)
Max Grav 2=125 (LC 21), 8=125 (LC 22), 10=240 (LC 22), 11=243 (LC 22), 12=143 (LC 22), 13=243 (LC 21), 14=240 (LC 21), 15=125 (LC 21), 19=125 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-46/33, 3-4=-56/49, 4-5=-64/107, 5-6=-64/107, 6-7=-56/42, 7-8=-30/26, 8-9=0/17
BOT CHORD 2-14=-9/58, 13-14=-9/58, 12-13=-9/58, 11-12=-9/58, 10-11=-9/58, 8-10=-9/58
WEBS 5-12=-102/0, 4-13=-207/121, 3-14=-183/88, 6-11=-207/121, 7-10=-183/88

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-4-3 to 3-4-3, Interior (1) 3-4-3 to 3-11-0, Exterior(2R) 3-11-0 to 9-11-0, Interior (1) 9-11-0 to 10-5-13, Exterior(2E) 10-5-13 to 13-5-13 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
12) N/A
13) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard

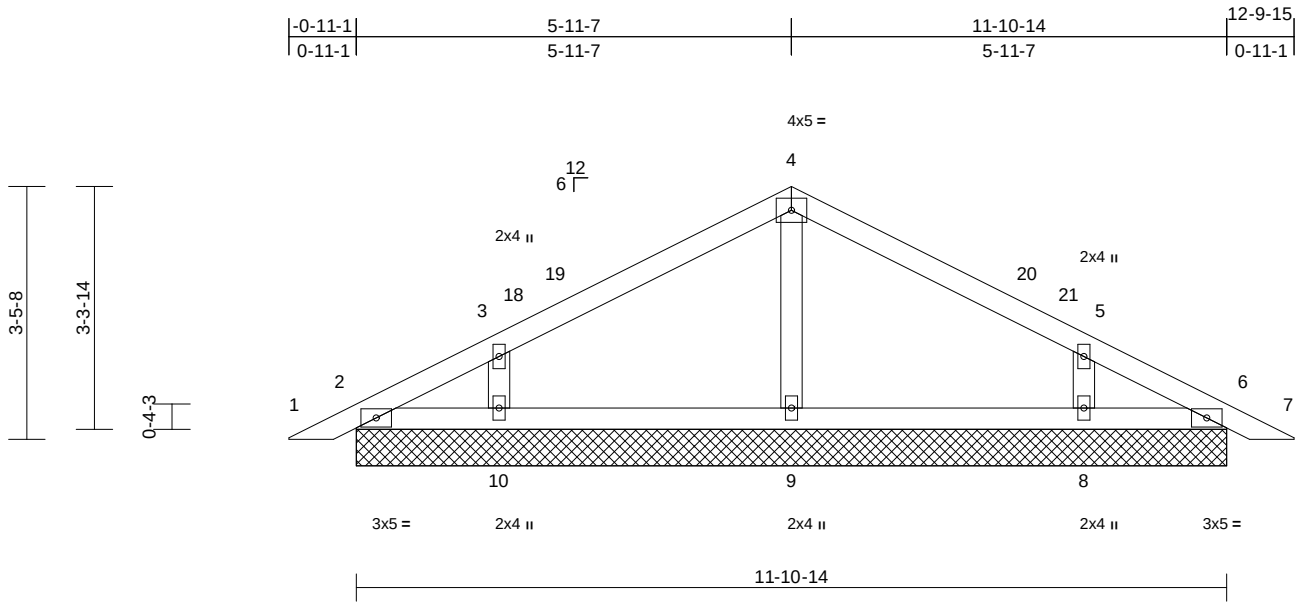

September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | PBA1 | Piggyback | 18 | 1 | I68306420 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:32 ID:Cx19sF4HMnJTVINoGDnTDzzRQqC-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f Page: 1




Scale = 1:31.5

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.28 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.12 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.07 | Horz(CT) | 0.00 | 15 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 47 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 2=11-10-14, 6=11-10-14, 8=11-10-14, 9=11-10-14, 10=11-10-14, 11=11-10-14, 15=11-10-14
Max Horiz 2=52 (LC 18), 11=52 (LC 18)
Max Uplift 2=-11 (LC 15), 6=-4 (LC 11), 8=-87 (LC 15), 10=-87 (LC 14), 11=-11 (LC 15), 15=-4 (LC 11)
Max Grav 2=87 (LC 1), 6=87 (LC 1), 8=423 (LC 22), 9=301 (LC 21), 10=423 (LC 21), 11=87 (LC 1), 15=87 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-54/45, 3-4=-124/96, 4-5=-124/96, 5-6=-34/45, 6-7=0/17
BOT CHORD 2-10=-7/46, 9-10=-2/46, 8-9=-2/46, 6-8=-7/46
WEBS 4-9=-214/91, 3-10=-377/199, 5-8=-377/199

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-4-3 to 3-4-3, Interior (1) 3-4-3 to 3-11-0, Exterior(2R) 3-11-0 to 9-11-0, Interior (1) 9-11-0 to 10-5-13, Exterior(2E) 10-5-13 to 13-5-13 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) Gable requires continuous bottom chord bearing.
8) Gable studs spaced at 4-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
11) N/A
12) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | PBA2 | Piggyback | 2 | 4 | I68306421 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:32 Page: 1
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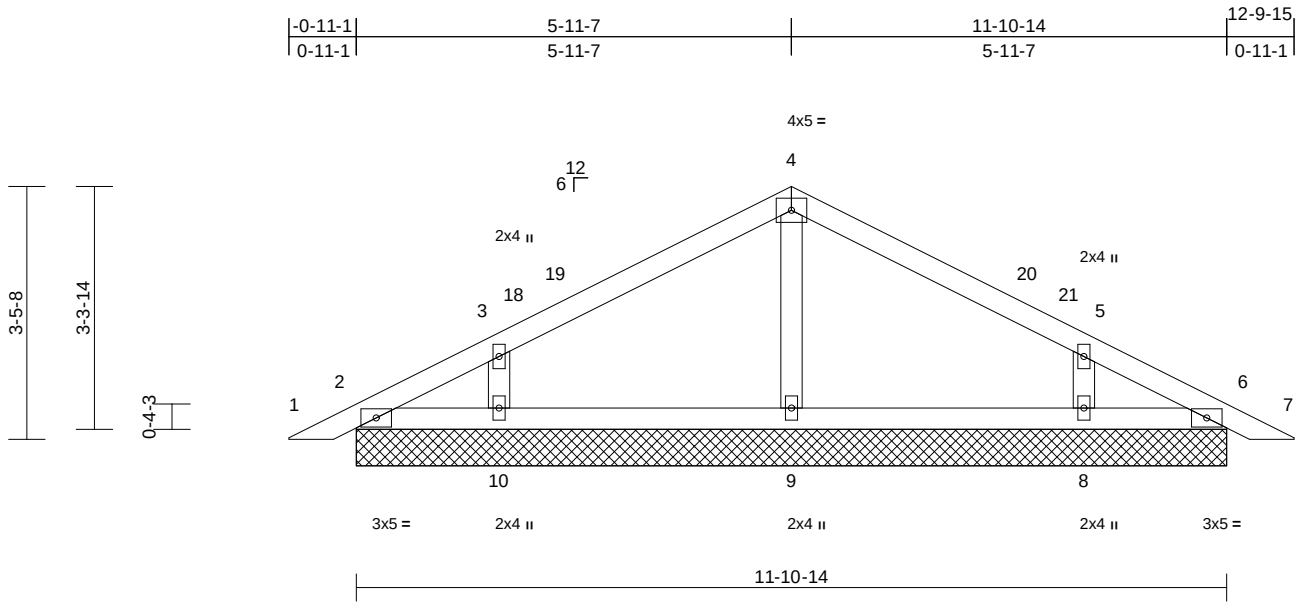


Scale = 1:31.5

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.07 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.03 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.02 | Horz(CT) | 0.00 | 15 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 188 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 2=11-10-14, 6=11-10-14, 8=11-10-14, 9=11-10-14, 10=11-10-14, 11=11-10-14, 15=11-10-14
Max Horiz 2=52 (LC 18), 11=52 (LC 18)
Max Uplift 2=-11 (LC 15), 6=-4 (LC 11), 8=-87 (LC 15), 10=-87 (LC 14), 11=-11 (LC 15), 15=-4 (LC 11)
Max Grav 2=86 (LC 1), 6=86 (LC 1), 8=423 (LC 22), 9=302 (LC 21), 10=423 (LC 21), 11=86 (LC 1), 15=86 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-53/45, 3-4=-123/96, 4-5=-123/96, 5-6=-33/45, 6-7=0/17
BOT CHORD 2-10=-8/47, 9-10=-2/46, 8-9=-2/46, 6-8=-8/47
WEBS 4-9=-215/91, 3-10=-375/198, 5-8=-375/198

**NOTES**
1) 4-ply truss to be connected together as follows:
Top chords connected with 10d (0.131"x3") nails as follows: 2x4 - 1 row at 0-9-0 oc.
Bottom chords connected with 10d (0.131"x3") nails 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) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-4-3 to 3-4-3, Interior (1) 3-4-3 to 3-11-0, Exterior(2R) 3-11-0 to 9-11-0, Interior (1) 9-11-0 to 10-5-13, Exterior(2E) 10-5-13 to 13-5-13 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
5) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
6) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
7) Unbalanced snow loads have been considered for this design.
8) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
9) Gable requires continuous bottom chord bearing.
10) Gable studs spaced at 4-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) N/A
14) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB1 | Valley | 1 | 1 | I68306422 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:33 Page: 1
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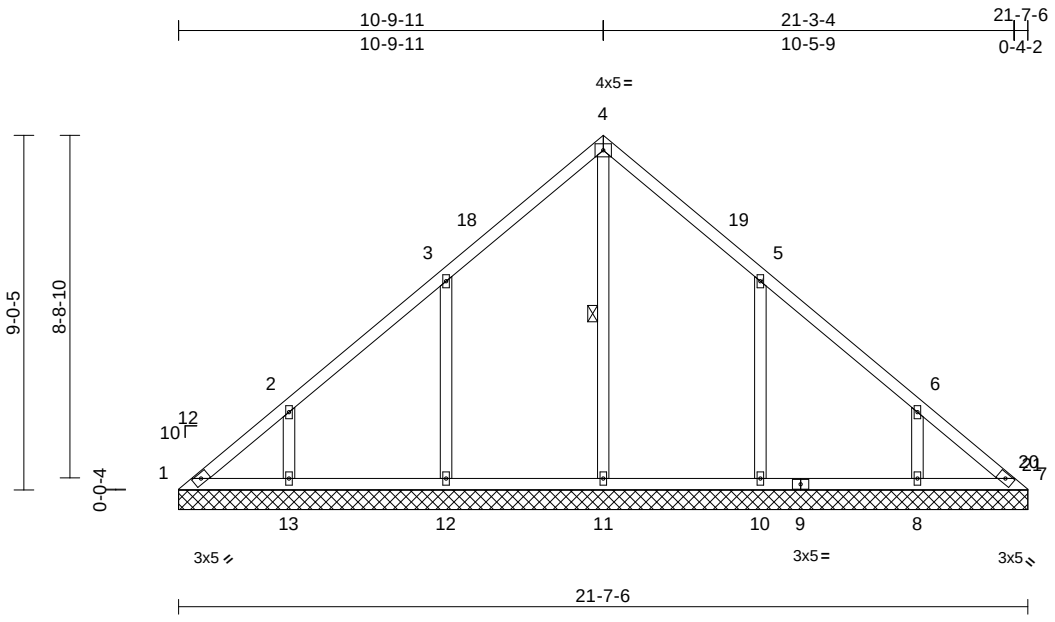


Scale = 1:58.7

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.31 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.17 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.21 | Horiz(TL) | 0.01 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 106 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 4-11

**REACTIONS** (size) 1=21-7-6, 7=21-7-6, 8=21-7-6, 10=21-7-6, 11=21-7-6, 12=21-7-6, 13=21-7-6
Max Horiz 1=207 (LC 11)
Max Uplift 1=-48 (LC 10), 7=-6 (LC 11), 8=-114 (LC 15), 10=-174 (LC 15), 12=-173 (LC 14), 13=-120 (LC 14)
Max Grav 1=149 (LC 25), 7=109 (LC 32), 8=362 (LC 25), 10=473 (LC 6), 11=414 (LC 27), 12=473 (LC 5), 13=370 (LC 24)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-213/174, 2-3=-164/132, 3-4=-188/181, 4-5=-188/154, 5-6=-116/82, 6-7=-168/107
BOT CHORD 1-13=-76/154, 12-13=-76/154, 11-12=-76/154, 10-11=-76/154, 8-10=-76/154, 7-8=-76/154
WEBS 4-11=-208/3, 3-12=-376/222, 2-13=-265/163, 5-10=-376/222, 6-8=-264/161

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 2-10-0, Interior (1) 2-10-0 to 7-10-0, Exterior(2R) 7-10-0 to 13-10-0, Interior (1) 13-10-0 to 18-3-3, Exterior(2E) 18-3-3 to 21-3-3 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) All plates are 2x4 MT20 unless otherwise indicated.
7) Gable requires continuous bottom chord bearing.
8) Gable studs spaced at 4-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 48 lb uplift at joint 1, 6 lb uplift at joint 7, 173 lb uplift at joint 12, 120 lb uplift at joint 13, 174 lb uplift at joint 10 and 114 lb uplift at joint 8.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB2 | Valley | 1 | 1 | I68306423 |
| | | | | | Job Reference (optional) |

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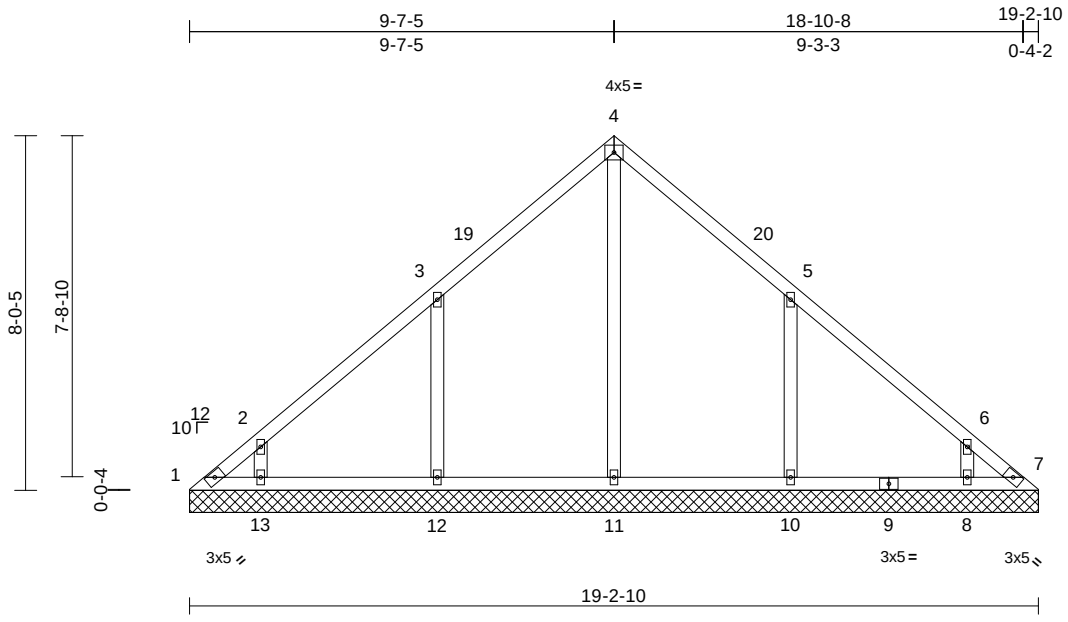
Page: 1




Scale = 1:52.2

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.31 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.17 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.29 | Horiz(TL) | 0.00 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 90 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=19-2-10, 7=19-2-10, 8=19-2-10, 10=19-2-10, 11=19-2-10, 12=19-2-10, 13=19-2-10, 18=19-2-10
Max Horiz 1=184 (LC 11)
Max Uplift 1=-96 (LC 10), 8=-53 (LC 15), 10=-193 (LC 15), 12=-174 (LC 14), 13=-102 (LC 14)
Max Grav 1=123 (LC 13), 7=0 (LC 13), 8=303 (LC 25), 10=477 (LC 25), 11=463 (LC 27), 12=480 (LC 5), 13=317 (LC 24), 18=0 (LC 13)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-218/205, 2-3=-217/187, 3-4=-207/267, 4-5=-207/241, 5-6=-124/66, 6-7=-72/42
BOT CHORD 1-13=-45/64, 12-13=-18/55, 11-12=-18/55, 10-11=-18/55, 8-10=-18/55, 7-8=-18/55
WEBS 4-11=-255/59, 3-12=-379/222, 2-13=-260/173, 5-10=-376/229, 6-8=-252/154

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 6-7-10, Exterior(2R) 6-7-10 to 12-7-10, Interior (1) 12-7-10 to 16-2-14, Exterior(2E) 16-2-14 to 19-2-14 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) All plates are 2x4 MT20 unless otherwise indicated.
7) Gable requires continuous bottom chord bearing.
8) Gable studs spaced at 4-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 96 lb uplift at joint 1, 174 lb uplift at joint 12, 102 lb uplift at joint 13, 193 lb uplift at joint 10 and 53 lb uplift at joint 8.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB3 | Valley | 1 | 1 | I68306424 |
| | | | | | Job Reference (optional) |

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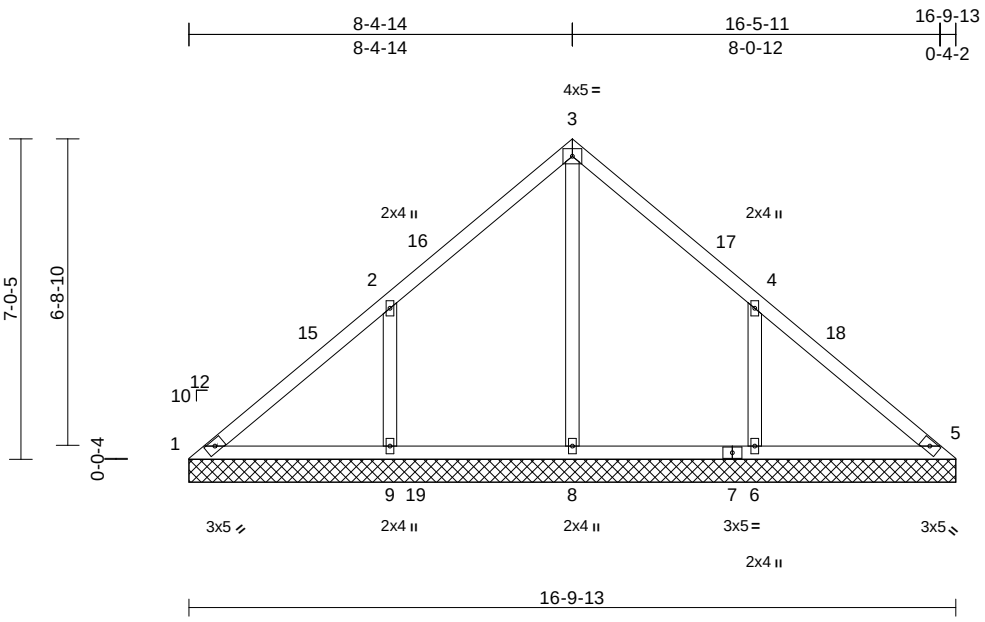


Scale = 1:50.5

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.38 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.18 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.41 | Horiz(TL) | 0.00 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 75 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=16-9-13, 5=16-9-13, 6=16-9-13, 8=16-9-13, 9=16-9-13, 14=16-9-13
Max Horiz 1=160 (LC 11)
Max Uplift 1=-58 (LC 10), 6=-183 (LC 15), 9=-188 (LC 14)
Max Grav 1=82 (LC 35), 5=1 (LC 25), 6=510 (LC 6), 8=654 (LC 24), 9=510 (LC 5), 14=1 (LC 25)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-105/370, 2-3=-25/319, 3-4=-2/298, 4-5=-139/301
BOT CHORD 1-9=-197/76, 8-9=-197/74, 6-8=-197/74, 5-6=-197/74
WEBS 3-8=-470/0, 2-9=-392/220, 4-6=-392/218

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 5-5-3, Exterior(2R) 5-5-3 to 11-5-3, Interior (1) 11-5-3 to 13-10-2, Exterior(2E) 13-10-2 to 16-10-2 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 58 lb uplift at joint 1, 188 lb uplift at joint 9 and 183 lb uplift at joint 6.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH I68306425 |
|---|---|---|---|---|---|
| 24090032-01 | VLB4 | Valley | 1 | 1 | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:33 Page: 1
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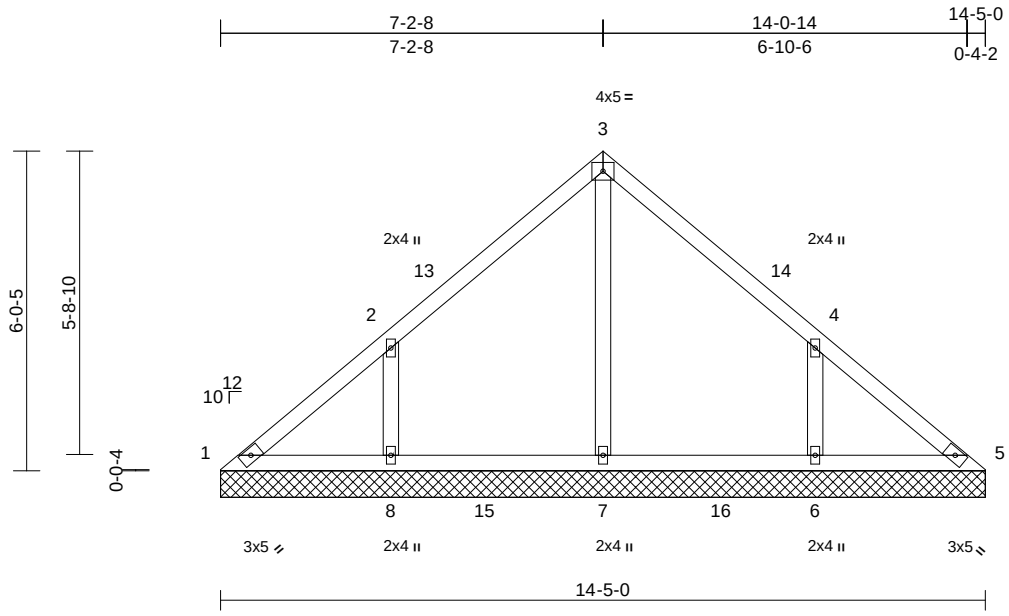



Scale = 1:43.4

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.31 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.16 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.14 | Horiz(TL) | 0.00 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 62 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=14-5-0, 5=14-5-0, 6=14-5-0, 7=14-5-0, 8=14-5-0
Max Horiz 1=-137 (LC 10)
Max Uplift 1=-24 (LC 10), 6=-154 (LC 15), 8=-157 (LC 14)
Max Grav 1=123 (LC 25), 5=99 (LC 24), 6=454 (LC 21), 7=403 (LC 24), 8=454 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-152/140, 2-3=-177/118, 3-4=-177/112, 4-5=-121/105
BOT CHORD 1-8=-59/126, 7-8=-59/100, 6-7=-59/100, 5-6=-59/100
WEBS 3-7=-223/0, 2-8=-374/196, 4-6=-374/195

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-2-13, Interior (1) 3-2-13 to 4-2-13, Exterior(2R) 4-2-13 to 10-2-13, Interior (1) 10-2-13 to 11-2-13, Exterior(2E) 11-2-13 to 14-5-5 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 24 lb uplift at joint 1, 157 lb uplift at joint 8 and 154 lb uplift at joint 6.

**LOAD CASE(S)** Standard

NORTH CAROLINA PROFESSIONAL SEAL 036322 ENGINEER ERIC A. GILBERT

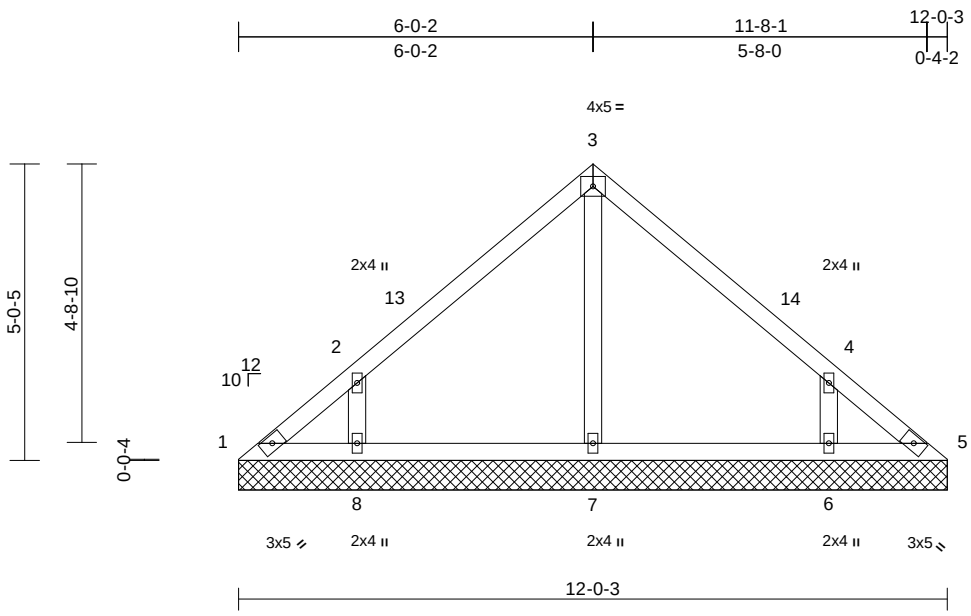
September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB5 | Valley | 1 | 1 | I68306426 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:33 Page: 1
ID:vFTOYoza1WjXT9L6tv8uVZzRQre-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:39.1

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.31 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.12 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.08 | Horiz(TL) | 0.00 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 50 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=12-0-3, 5=12-0-3, 6=12-0-3, 7=12-0-3, 8=12-0-3
Max Horiz 1=114 (LC 11)
Max Uplift 1=-34 (LC 10), 5=-6 (LC 11), 6=-136 (LC 15), 8=-139 (LC 14)
Max Grav 1=91 (LC 30), 5=70 (LC 24), 6=434 (LC 21), 7=259 (LC 20), 8=434 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-114/101, 2-3=-218/115, 3-4=-218/115, 4-5=-88/63
BOT CHORD 1-8=-32/75, 7-8=-31/73, 6-7=-31/73, 5-6=-31/73
WEBS 3-7=-172/0, 2-8=-401/220, 4-6=-401/220

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 9-0-8, Exterior(2E) 9-0-8 to 12-0-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 34 lb uplift at joint 1, 6 lb uplift at joint 5, 139 lb uplift at joint 8 and 136 lb uplift at joint 6.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB6 | Valley | 1 | 1 | I68306427 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:33 Page: 1
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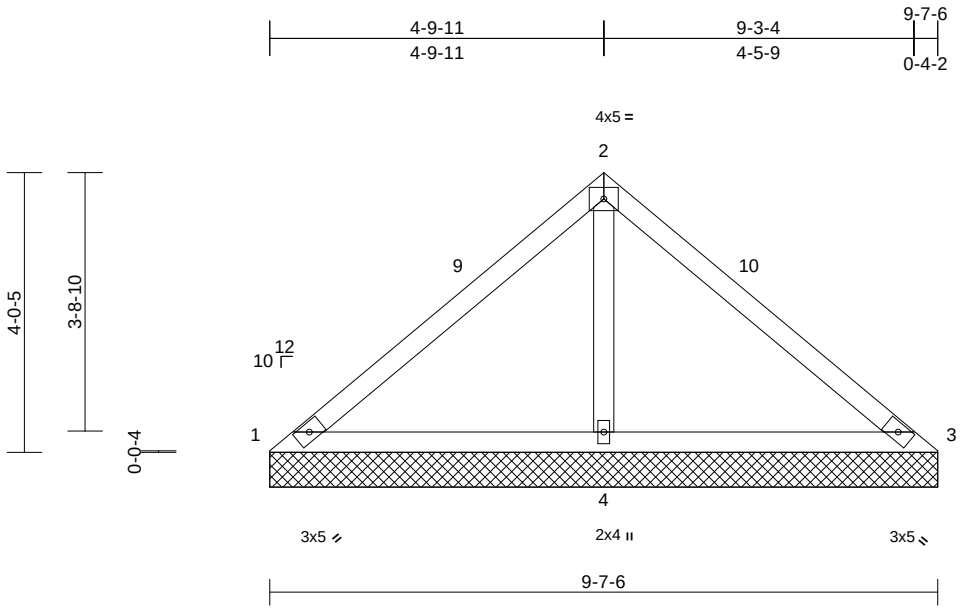


Scale = 1:33.2

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.45 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.42 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.18 | Horiz(TL) | 0.01 | 4 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 37 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 9-7-6 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-7-6, 3=9-7-6, 4=9-7-6
Max Horiz 1=90 (LC 11)
Max Uplift 1=-49 (LC 21), 3=-49 (LC 20), 4=-108 (LC 14)
Max Grav 1=95 (LC 20), 3=95 (LC 21), 4=771 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-114/372, 2-3=-114/372
BOT CHORD 1-4=-243/172, 3-4=-243/172
WEBS 2-4=-636/271

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 6-7-11, Exterior(2E) 6-7-11 to 9-7-11 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 49 lb uplift at joint 1, 49 lb uplift at joint 3 and 108 lb uplift at joint 4.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB7 | Valley | 1 | 1 | I68306428 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

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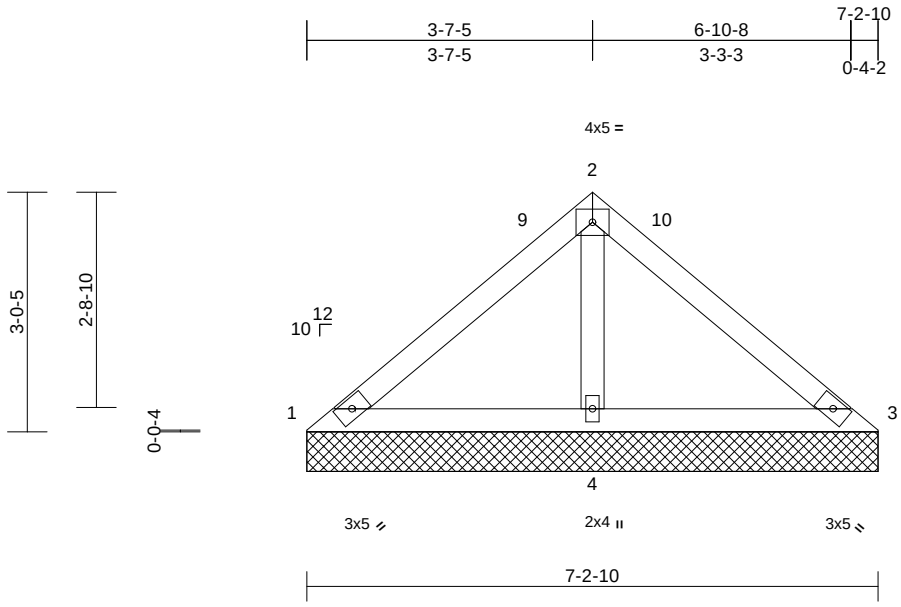


Scale = 1:29.1

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.26 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.26 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.09 | Horiz(TL) | 0.00 | 4 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MP | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 27 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 7-2-10 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-2-10, 3=7-2-10, 4=7-2-10
Max Horiz 1=-67 (LC 10)
Max Uplift 1=-17 (LC 21), 3=-17 (LC 20), 4=-73 (LC 14)
Max Grav 1=105 (LC 20), 3=105 (LC 21), 4=530 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-88/228, 2-3=-88/228
BOT CHORD 1-4=-178/151, 3-4=-178/151
WEBS 2-4=-419/199

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 4-2-14, Exterior(2E) 4-2-14 to 7-2-14 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 17 lb uplift at joint 1, 17 lb uplift at joint 3 and 73 lb uplift at joint 4.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLB8 | Valley | 1 | 1 | I68306429 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

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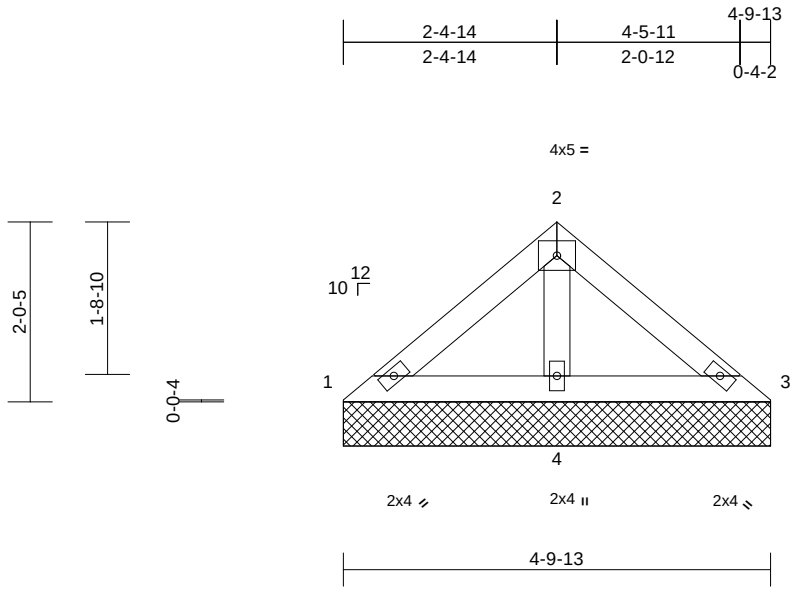


Scale = 1:26

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.09 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.11 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.04 | Horiz(TL) | 0.00 | 4 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MP | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 17 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 4-9-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-9-13, 3=4-9-13, 4=4-9-13
Max Horiz 1=-43 (LC 10)
Max Uplift 3=-7 (LC 15), 4=-33 (LC 14)
Max Grav 1=88 (LC 20), 3=88 (LC 21), 4=292 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-80/102, 2-3=-80/102
BOT CHORD 1-4=-82/87, 3-4=-82/87
WEBS 2-4=-207/95

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 3 and 33 lb uplift at joint 4.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH I68306430 |
|---|---|---|---|---|---|
| 24090032-01 | VLD1 | Valley | 1 | 1 | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:34 Page: 1
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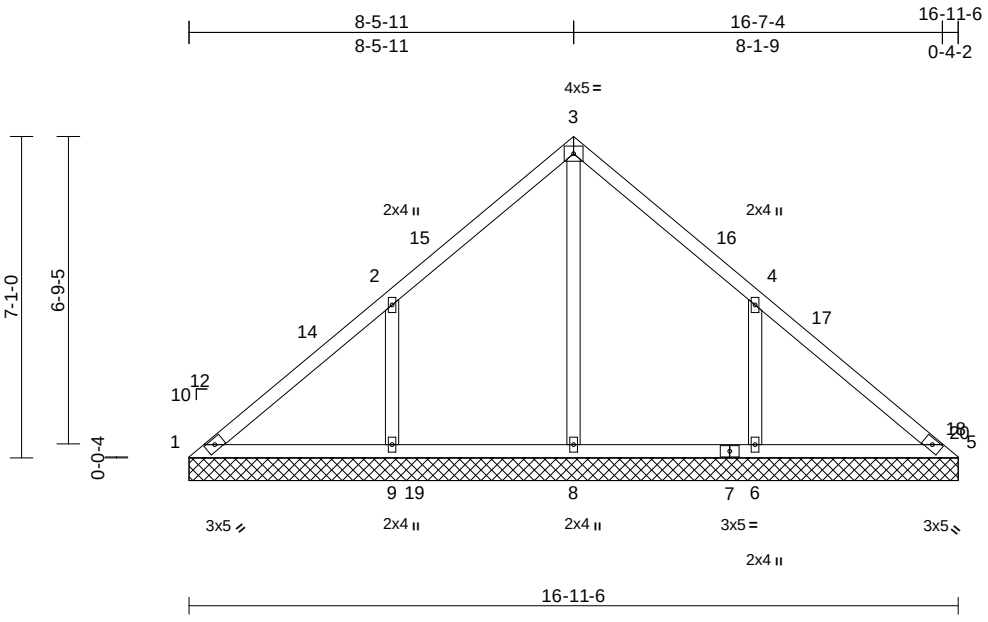



Scale = 1:50.8

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.35 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.18 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.27 | Horiz(TL) | 0.00 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 76 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=16-11-6, 5=16-11-6, 6=16-11-6, 8=16-11-6, 9=16-11-6
Max Horiz 1=161 (LC 11)
Max Uplift 1=-21 (LC 10), 6=-183 (LC 15), 9=-187 (LC 14)
Max Grav 1=123 (LC 25), 5=86 (LC 21), 6=520 (LC 25), 8=496 (LC 24), 9=526 (LC 24)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-145/253, 2-3=-108/190, 3-4=-109/170, 4-5=-111/218
BOT CHORD 1-9=-130/131, 8-9=-130/131, 6-8=-130/131, 5-6=-130/131
WEBS 3-8=-312/0, 2-9=-397/221, 4-6=-396/219

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 5-6-0, Exterior(2R) 5-6-0 to 11-6-0, Interior (1) 11-6-0 to 13-7-3, Exterior(2E) 13-7-3 to 16-7-3 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 21 lb uplift at joint 1, 187 lb uplift at joint 9 and 183 lb uplift at joint 6.

**LOAD CASE(S)** Standard


September 20,2024



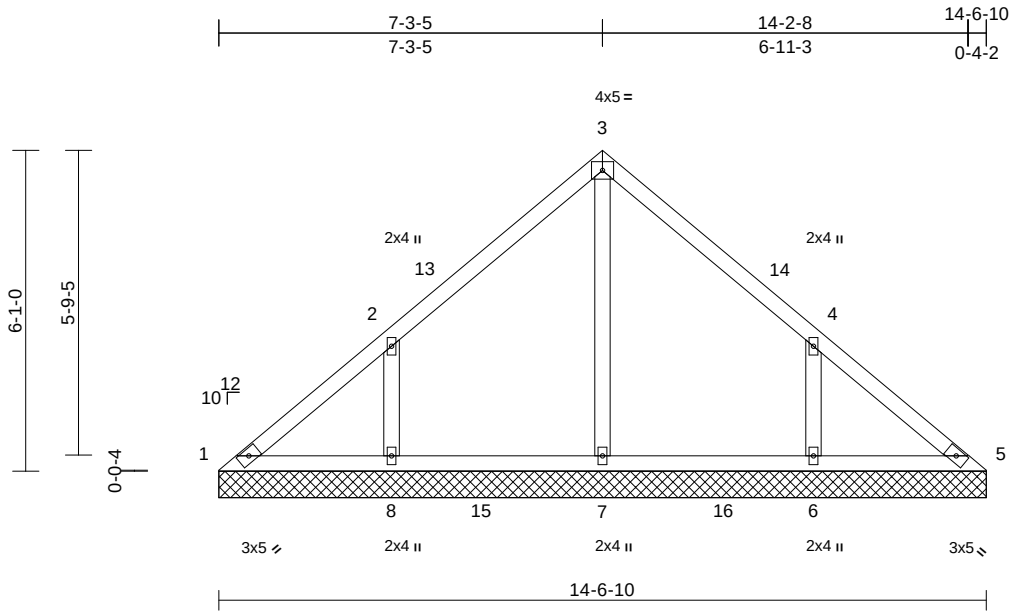
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLD2 | Valley | 1 | 1 | I68306431 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:34 ID:Th_ZgqfOm8nUgyqbk?jKoVzRQuc-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1




Scale = 1:43.7

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.31 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.16 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.15 | Horiz(TL) | 0.00 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 63 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=14-6-10, 5=14-6-10, 6=14-6-10, 7=14-6-10, 8=14-6-10
Max Horiz 1=138 (LC 11)
Max Uplift 1=-24 (LC 10), 6=-156 (LC 15), 8=-159 (LC 14)
Max Grav 1=124 (LC 25), 5=99 (LC 24), 6=456 (LC 21), 7=407 (LC 24), 8=456 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-153/145, 2-3=-173/121, 3-4=-173/111, 4-5=-121/110
BOT CHORD 1-8=-61/127, 7-8=-61/101, 6-7=-61/101, 5-6=-61/101
WEBS 3-7=-227/0, 2-8=-375/197, 4-6=-375/196

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-3-10, Interior (1) 3-3-10 to 4-3-10, Exterior(2R) 4-3-10 to 10-3-10, Interior (1) 10-3-10 to 11-3-10, Exterior(2E) 11-3-10 to 14-6-14 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 24 lb uplift at joint 1, 159 lb uplift at joint 8 and 156 lb uplift at joint 6.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLD3 | Valley | 1 | 1 | I68306432 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

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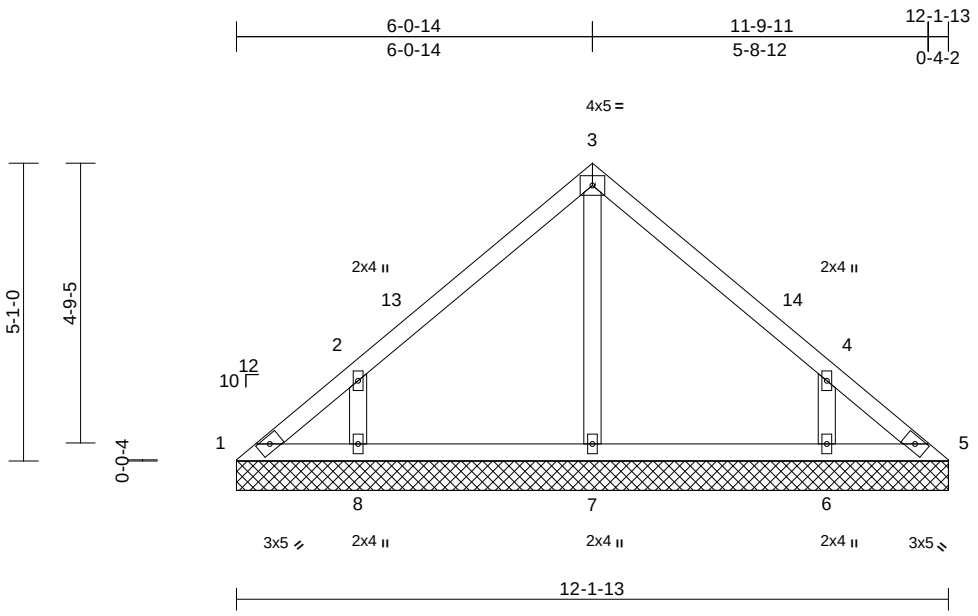


Scale = 1:39.3

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.31 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.12 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.08 | Horiz(TL) | 0.00 | 5 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 50 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

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

**REACTIONS** (size) 1=12-1-13, 5=12-1-13, 6=12-1-13, 7=12-1-13, 8=12-1-13
Max Horiz 1=-115 (LC 12)
Max Uplift 1=-33 (LC 10), 5=-5 (LC 11), 6=-136 (LC 15), 8=-140 (LC 14)
Max Grav 1=94 (LC 25), 5=73 (LC 24), 6=434 (LC 21), 7=261 (LC 21), 8=434 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-117/101, 2-3=-216/116, 3-4=-216/116, 4-5=-91/63
BOT CHORD 1-8=-32/79, 7-8=-32/74, 6-7=-32/74, 5-6=-32/74
WEBS 3-7=-174/0, 2-8=-397/217, 4-6=-397/217

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 9-2-2, Exterior(2E) 9-2-2 to 12-2-2 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 1, 5 lb uplift at joint 5, 140 lb uplift at joint 8 and 136 lb uplift at joint 6.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH | I68306433 |
|---|---|---|---|---|---|---|
| 24090032-01 | VLD4 | Valley | 1 | 1 | Job Reference (optional) | |

Carter Components (Sanford, NC), Sanford, NC - 27332,

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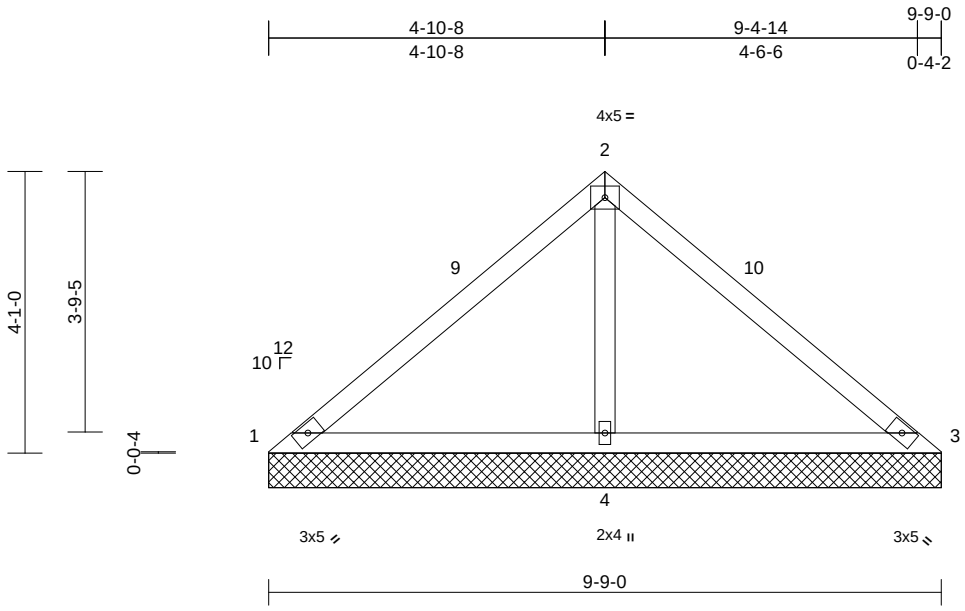


Scale = 1:33.4

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.46 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.44 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.19 | Horiz(TL) | 0.01 | 4 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 37 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 9-9-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-9-0, 3=9-9-0, 4=9-9-0
Max Horiz 1=-91 (LC 10)
Max Uplift 1=-52 (LC 21), 3=-52 (LC 20), 4=-111 (LC 14)
Max Grav 1=94 (LC 20), 3=94 (LC 21), 4=788 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-117/382, 2-3=-117/382
BOT CHORD 1-4=-249/175, 3-4=-249/175
WEBS 2-4=-650/275

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 6-9-5, Exterior(2E) 6-9-5 to 9-9-5 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 52 lb uplift at joint 1, 52 lb uplift at joint 3 and 111 lb uplift at joint 4.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLD5 | Valley | 1 | 1 | I68306434 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 18 10:04:34 Page: 1
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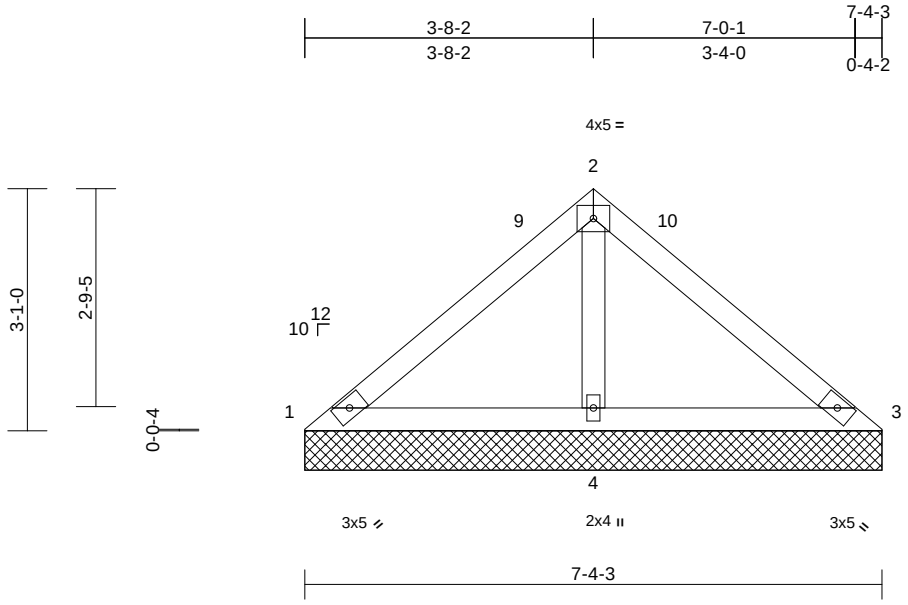


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| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.27 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.27 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.09 | Horiz(TL) | 0.00 | 4 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MP | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 27 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 7-4-3 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-4-3, 3=7-4-3, 4=7-4-3
Max Horiz 1=68 (LC 11)
Max Uplift 1=-19 (LC 21), 3=-19 (LC 20), 4=-76 (LC 14)
Max Grav 1=105 (LC 20), 3=105 (LC 21), 4=545 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-92/236, 2-3=-92/236
BOT CHORD 1-4=-184/155, 3-4=-184/155
WEBS 2-4=-432/204

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 4-4-8, Exterior(2E) 4-4-8 to 7-4-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 19 lb uplift at joint 1, 19 lb uplift at joint 3 and 76 lb uplift at joint 4.

**LOAD CASE(S)** Standard


September 20,2024



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

| Job | Truss | Truss Type | Qty | Ply | 187 Serenity-Roof-B326 A CP TRAY GRH |
|---|---|---|---|---|---|
| 24090032-01 | VLD6 | Valley | 1 | 1 | I68306435 |
| | | | | | Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332,

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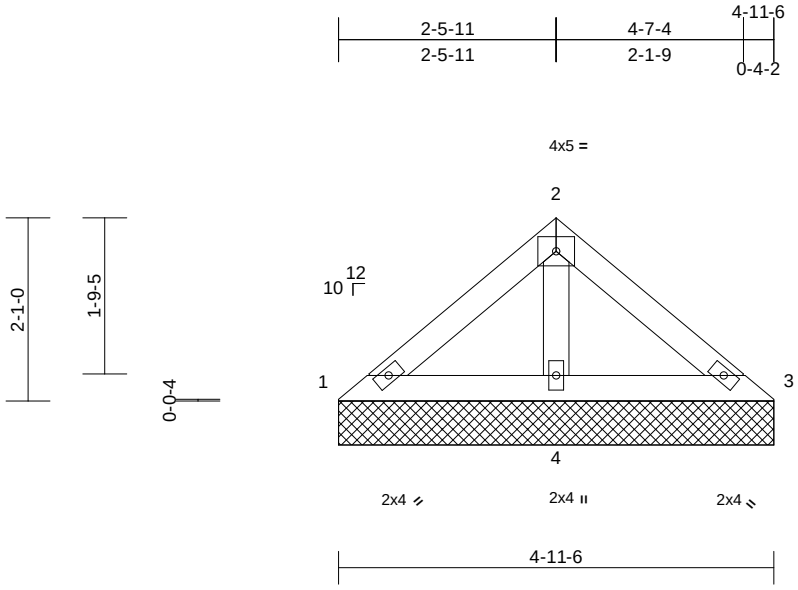



Scale = 1:26.2

| Loading | (psf) | Spacing | 2-0-0 | CSI | | DEFL | in | (loc) | l/defl | L/d | PLATES | GRIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCLL (roof) | 20.0 | Plate Grip DOL | 1.15 | TC | 0.09 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.11 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.04 | Horiz(TL) | 0.00 | 4 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2021/TPI2014 | Matrix-MP | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 18 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 4-11-6 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-11-6, 3=4-11-6, 4=4-11-6
Max Horiz 1=44 (LC 13)
Max Uplift 3=-7 (LC 15), 4=-35 (LC 14)
Max Grav 1=89 (LC 20), 3=89 (LC 21), 4=303 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-82/108, 2-3=-82/108
BOT CHORD 1-4=-87/91, 3-4=-87/91
WEBS 2-4=-218/101

**NOTES**
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 3 and 35 lb uplift at joint 4.

**LOAD CASE(S)** Standard

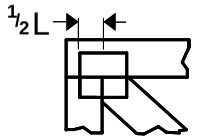

September 20,2024



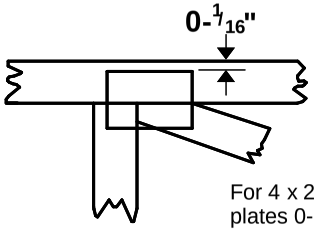
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

# 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.

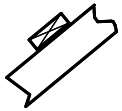
* Plate location details available in MiTek software or upon request.

### PLATE SIZE

4 x 4

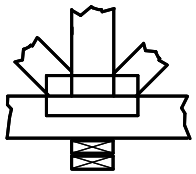
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

### 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

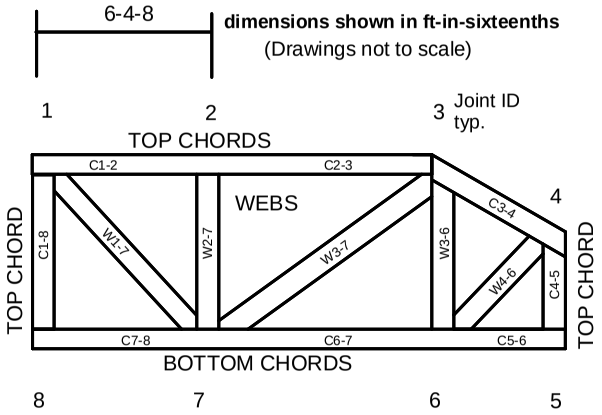


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

**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.