ENGINEERING BY TRENCO
A MiTek Affiliate

RE: 24030195
141 Serenity-Roof-326 B LH COP TMB

Trenco
818 Soundside Rd
Edenton, NC 27932

**Site Information:**

Customer: David Weekley Homes Project Name: 24030195
Lot/Block: 129 Model:
Address: 466 Serenity Walk Parkway Subdivision: Serenity
City: Fuquay-Varina State: NC

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

Design Code: IRC2018/TPI2014 Design Program: MiTek 20/20 8.7
Wind Code: ASCE 7-16 Wind Speed: 130 mph
Roof Load: 40.0 psf Floor Load: N/A psf

This package includes 40 individual, dated Truss Design Drawings and 0 Additional Drawings.

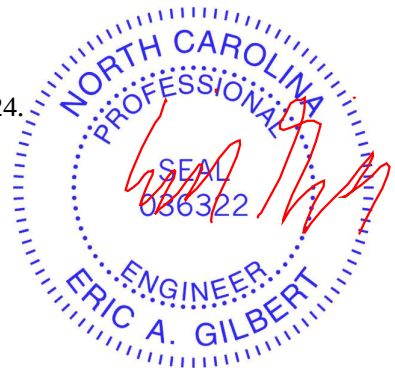
| No. | Seal# | Truss Name | Date | No. | Seal# | Truss Name | Date |
|---|---|---|---|---|---|---|---|
| 1 | I64561686 | D02 | 3/29/2024 | 21 | I64561706 | VLD4 | 3/29/2024 |
| 2 | I64561687 | B02 | 3/29/2024 | 22 | I64561707 | VLD5 | 3/29/2024 |
| 3 | I64561688 | D01 | 3/29/2024 | 23 | I64561708 | VLD6 | 3/29/2024 |
| 4 | I64561689 | A06 | 3/29/2024 | 24 | I64561709 | VLD7 | 3/29/2024 |
| 5 | I64561690 | A09 | 3/29/2024 | 25 | I64561710 | VLB1 | 3/29/2024 |
| 6 | I64561691 | A08 | 3/29/2024 | 26 | I64561711 | VLB2 | 3/29/2024 |
| 7 | I64561692 | A07 | 3/29/2024 | 27 | I64561712 | VLB3 | 3/29/2024 |
| 8 | I64561693 | A05 | 3/29/2024 | 28 | I64561713 | VLB4 | 3/29/2024 |
| 9 | I64561694 | G01 | 3/29/2024 | 29 | I64561714 | VLB5 | 3/29/2024 |
| 10 | I64561695 | A01 | 3/29/2024 | 30 | I64561715 | VLB6 | 3/29/2024 |
| 11 | I64561696 | A03 | 3/29/2024 | 31 | I64561716 | VLB7 | 3/29/2024 |
| 12 | I64561697 | A03T | 3/29/2024 | 32 | I64561717 | VLB8 | 3/29/2024 |
| 13 | I64561698 | A04T | 3/29/2024 | 33 | I64561718 | PBA2 | 3/29/2024 |
| 14 | I64561699 | A04 | 3/29/2024 | 34 | I64561719 | PBA | 3/29/2024 |
| 15 | I64561700 | H01 | 3/29/2024 | 35 | I64561720 | PBA1 | 3/29/2024 |
| 16 | I64561701 | H02 | 3/29/2024 | 36 | I64561721 | C01 | 3/29/2024 |
| 17 | I64561702 | J01 | 3/29/2024 | 37 | I64561722 | C02 | 3/29/2024 |
| 18 | I64561703 | VLD1 | 3/29/2024 | 38 | I64561723 | B03 | 3/29/2024 |
| 19 | I64561704 | VLD2 | 3/29/2024 | 39 | I64561724 | B01 | 3/29/2024 |
| 20 | I64561705 | VLD3 | 3/29/2024 | 40 | I64561725 | E01 | 3/29/2024 |

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

Truss Design Engineer's Name: Gilbert, Eric

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

North Carolina COA: C-0844




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 TRENCO. Any project specific information included is for TRENCO customers file reference purpose only, and was not taken into account in the preparation of these designs. 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.

March 29, 2024



Gilbert, Eric

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | D02 | Common Girder | 1 | 3 | I64561686 Job Reference (optional) |

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

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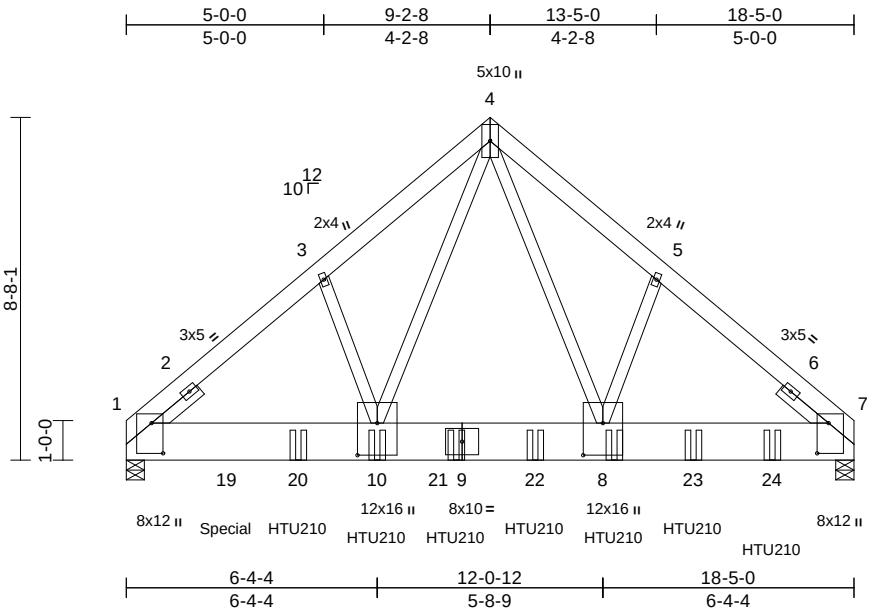


Scale = 1:58.3

Plate Offsets (X, Y): [1:0-9-3,0-3-8], [7:0-9-3,0-3-8], [8:0-9-12,0-6-0], [10:0-9-12,0-6-0]

| 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 | 0.36 | Vert(LL) | -0.09 | 8-10 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.47 | Vert(CT) | -0.16 | 8-10 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.80 | Horz(CT) | 0.03 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 554 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x6 SP No.2 |
| BOT CHORD | 2x12 SP 2400F 2.0E |
| WEBS | 2x4 SP No.3 *Except* 10-4,8-4:2x4 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 6-0-0 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |

**REACTIONS** (size) 1=0-5-8, 7=0-5-8
Max Horiz 1=-176 (LC 10)
Max Grav 1=14941 (LC 21), 7=10763 (LC 6)

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

| | |
|---|---|
| TOP CHORD | 4-5=-11620/0, 5-7=-11795/0, 1-3=-13203/0, 3-4=-13070/0 |
| BOT CHORD | 1-10=0/10024, 8-10=0/6737, 7-8=0/8879 |
| WEBS | 3-10=-53/312, 4-10=0/9733, 4-8=0/6473, 5-8=0/360 |

**NOTES**

1) 3-ply truss to be connected together as follows:
Top chords connected with 10d (0.131"x3") nails as follows: 2x6 - 2 rows staggered at 0-9-0 oc.
Bottom chords connected with Simpson SDS 1/4 x 4-1/2 screws as follows: 2x12 - 3 rows staggered at 0-4-0 oc.
Web 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; 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) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
10) Use Simpson Strong-Tie HTU210 (32-10d Girder, 14-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 4-4-4 from the left end to 16-4-4 to connect truss(es) to back face of bottom chord.
11) Fill all nail holes where hanger is in contact with lumber.
12) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 8833 lb down and 522 lb up at 2-6-8 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: 4-7=-60, 1-4=-60, 11-15=-20
Concentrated Loads (lb)
Vert: 9=-1900 (B), 10=-1900 (B), 8=-1900 (B), 19=-5487 (B), 20=-1904 (B), 22=-1900 (B), 23=-1900 (B), 24=-1900 (B)


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| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | B02 | Common Girder | 1 | **2** | I64561687 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:22 Page: 1

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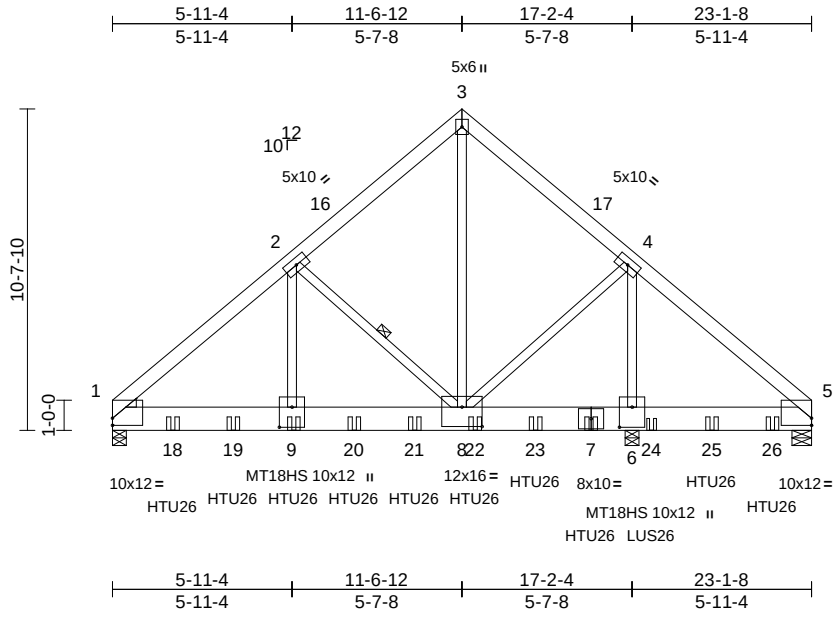



Scale = 1:76.2

Plate Offsets (X, Y): [1:Edge,0-2-13], [5:Edge,0-2-13], [6:0-8-0,0-5-0], [8:0-8-0,0-7-12], [9:0-8-0,0-5-0]

| **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 | 0.28 | Vert(LL) | -0.08 | 8-9 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.33 | Vert(CT) | -0.15 | 8-9 | >999 | 180 | MT18HS | 244/190 |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.74 | Horz(CT) | 0.02 | 6 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 425 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 5-0-10 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 6-0-0 oc bracing. |
| WEBS | 1 Row at midpt 2-8 |

**REACTIONS** (size) 1=0-5-8, 5=0-7-12, 6=0-5-8
Max Horiz 1=226 (LC 11)
Max Uplift 1=-225 (LC 12), 5=-223 (LC 13), 6=-770 (LC 13)
Max Grav 1=8206 (LC 5), 5=726 (LC 19), 6=11347 (LC 6)

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

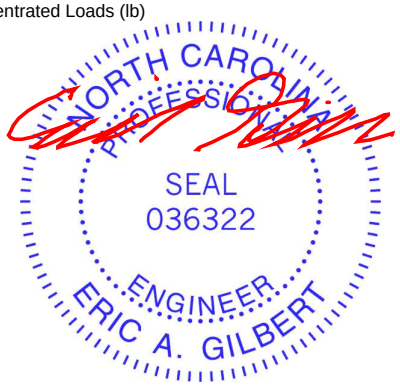
| | |
|---|---|
| TOP CHORD | 1-2=-9096/284, 2-3=-4508/260, 3-4=-4512/269, 4-5=-121/379 |
| BOT CHORD | 1-9=-261/6936, 8-9=-261/6936, 6-8=-270/79, 5-6=-270/79 |
| WEBS | 2-9=-86/5972, 2-8=-4856/307, 3-8=-211/5312, 4-8=-112/4955, 4-6=-6612/247 |

**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 0-5-0 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) All plates are MT20 plates unless otherwise indicated.
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) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 5. This connection is for uplift only and does not consider lateral forces.
11) LGT2 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 6. This connection is for uplift only and does not consider lateral forces.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
13) Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss) or equivalent spaced at 2-0-0 oc max. starting at 2-0-0 from the left end to 10-0-0 to connect truss(es) to back face of bottom chord.
14) Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 4-0-0 oc max. starting at 12-0-0 from the left end to 21-10-0 to connect truss(es) to back face of bottom chord.
15) Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss) or equivalent at 17-10-0 from the left end to connect truss(es) to back face of bottom chord.
16) Fill all nail holes where hanger is in contact with lumber.
17) LGT2 Hurricane ties must have two studs in line below the truss.

**LOAD CASE(S)** Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (lb/ft)
Vert: 1-3=-60, 3-5=-60, 10-13=-20
Concentrated Loads (lb)

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Continued on page 2



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818 Soundside Road
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Vert: 7=-1693 (B), 9=-1770 (B), 18=-1770 (B), 19=-1770 (B), 20=-1770 (B), 21=-1770 (B), 22=-1693 (B), 23=-1693 (B), 24=-874 (B), 25=-874 (B), 26=-886 (B)

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | D01 | Common Supported Gable | 1 | 1 | I64561688 Job Reference (optional) |

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

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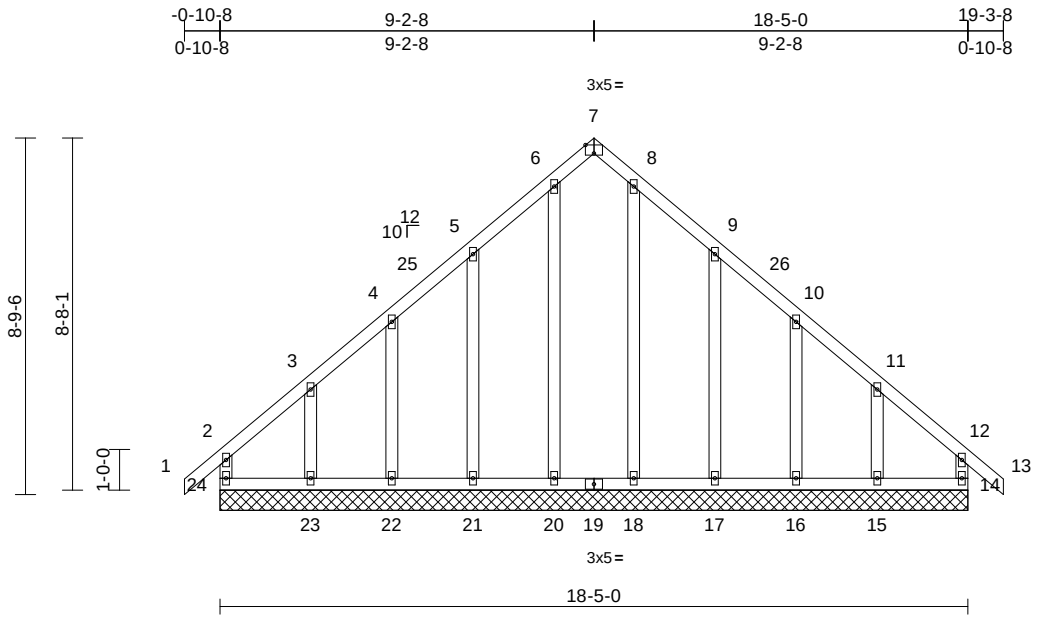


Scale = 1:56.8

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 | IRC2018/TPI2014 | Matrix-MR | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 126 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=18-5-0, 15=18-5-0, 16=18-5-0, 17=18-5-0, 18=18-5-0, 20=18-5-0, 21=18-5-0, 22=18-5-0, 23=18-5-0, 24=18-5-0

Max Horiz 24=224 (LC 13)

Max Uplift 14=-50 (LC 11), 15=-163 (LC 15), 16=-47 (LC 15), 17=-116 (LC 15), 21=-114 (LC 14), 22=-47 (LC 14), 23=-168 (LC 14), 24=-69 (LC 10)

Max Grav 14=189 (LC 28), 15=219 (LC 25), 16=173 (LC 22), 17=253 (LC 22), 18=225 (LC 22), 20=225 (LC 21), 21=253 (LC 21), 22=173 (LC 21), 23=226 (LC 24), 24=204 (LC 25)

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

TOP CHORD 2-24=-167/63, 1-2=0/39, 2-3=-165/140, 3-4=-104/90, 4-5=-92/115, 5-6=-114/233, 6-7=-91/169, 7-8=-91/169, 8-9=-114/233, 9-10=-77/115, 10-11=-89/71, 11-12=-153/116, 12-13=0/39, 12-14=-154/47

BOT CHORD 23-24=-106/187, 22-23=-106/187, 21-22=-106/187, 20-21=-106/187, 18-20=-106/187, 17-18=-106/187, 16-17=-106/187, 15-16=-106/187, 14-15=-106/187

WEBS 6-20=-185/8, 8-18=-185/6, 5-21=-213/162, 4-22=-133/94, 3-23=-159/159, 9-17=-213/162, 10-16=-133/92, 11-15=-155/167

**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 2-2-12, Exterior(2N) 2-2-12 to 6-2-8, Corner(3R) 6-2-8 to 12-2-4, Exterior(2N) 12-2-4 to 16-2-4, Corner(3E) 16-2-4 to 19-3-8 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, 114 lb uplift at joint 21, 47 lb uplift at joint 22, 168 lb uplift at joint 23, 116 lb uplift at joint 17, 47 lb uplift at joint 16 and 163 lb uplift at joint 15.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


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| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A06 | Attic Girder | 1 | 4 | I64561689 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:18 Page: 1
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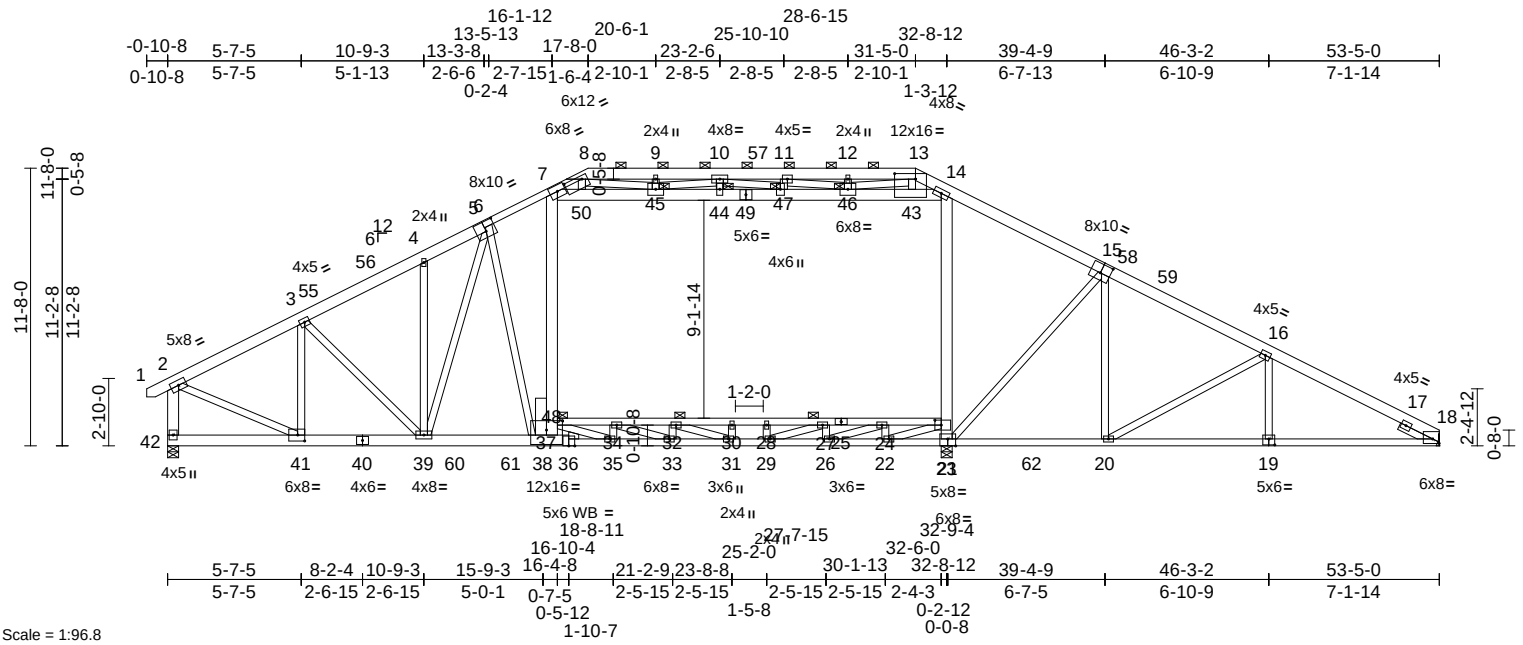



Scale = 1:96.8

Plate Offsets (X, Y): [5:0-5-0,0-5-0], [8:0-9-4,0-1-12], [13:0-10-8,0-2-12], [15:0-5-0,0-4-8], [18:Edge,0-2-4], [19:0-3-0,0-3-0], [21:0-4-0,Edge], [23:0-3-4,0-2-8], [37:0-8-0,0-4-12], [41:0-3-8,0-3-0]

| 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 | 0.94 | Vert(LL) | -0.49 | 35-38 | >804 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.71 | Vert(CT) | -0.73 | 35-38 | >532 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.87 | Horz(CT) | 0.21 | 18 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | Attic | -0.24 | 23-37 | >838 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 2009 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2 *Except* 5-8:2x4 SP 2400F 2.0E

BOT CHORD 2x4 SP 2400F 2.0E *Except* 25-23,25-37:2x4 SP No.2, 40-42:2x6 SP No.2, 40-36:2x6 SP 2400F 2.0E

WEBS 2x4 SP No.3 *Except* 42-2,7-38,48-38,49-7,49-14:2x6 SP No.2, 14-21:2x6 SP 2400F 2.0E, 41-2:2x4 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 5-10-15 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 8-13.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing:
34-37,32-34,30-32,28-30,27-28,24-27.

JOINTS 1 Brace at Jt(s): 37, 44, 45, 46, 47

**REACTIONS** (size) 18= Mechanical, 21=0-5-8, 42=0-5-8
Max Horiz 42=-185 (LC 10)
Max Uplift 18=-407 (LC 12), 21=-5346 (LC 45), 42=-668 (LC 12)
Max Grav 18=8868 (LC 46), 21=777 (LC 12), 42=11742 (LC 46)

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

TOP CHORD 1-2=0/25, 2-3=-13442/761, 3-4=-17246/1003, 4-6=-18787/1092, 6-7=-18557/1088, 7-8=-6795/521, 8-9=-3060/520, 9-10=-3052/521, 10-11=-3686/695, 11-12=-1498/1776, 12-13=-1498/1776, 13-14=-4279/403, 14-16=-17886/1059, 16-18=-17674/875, 2-42=-11546/687

BOT CHORD 41-42=-126/436, 39-41=-709/12020, 38-39=-805/16070, 35-38=-784/13850, 33-35=-337/16867, 31-33=0/17864, 29-31=0/18038, 26-29=0/16339, 22-26=-211/13856, 20-22=-756/16054, 18-20=-718/15526, 34-37=-1157/0, 32-34=-2709/0, 30-32=-3125/0, 28-30=-3125/0, 27-28=-3125/0, 24-27=-1457/723, 23-24=-590/2368

WEBS 37-38=-690/7934, 7-37=-533/8793, 21-23=-707/6501, 14-23=-503/7222, 15-20=-203/194, 16-19=-10/165, 30-31=-160/10, 28-29=-381/0, 34-35=-848/0, 35-37=0/3509, 32-33=-482/0, 33-34=0/1644, 31-32=-94/441, 22-24=-1354/0, 26-27=-821/0, 24-26=0/2910, 27-29=0/1803, 13-43=-192/3352, 10-44=-123/2381, 9-45=-491/57, 12-46=-351/67, 11-47=0/150, 16-20=-133/748, 22-23=0/2778, 15-21=-652/214, 7-50=-9712/621, 45-50=-9335/598, 44-45=-10702/622, 44-47=-10629/617, 46-47=-15316/892, 43-46=-12562/763, 14-43=-13142/795, 5-39=-2557/131, 4-39=-582/164, 3-39=-235/4940, 3-41=-5343/364, 2-41=-654/12740, 8-45=-5641/303, 10-45=-4582/341, 10-47=-4771/280, 13-46=-5478/305, 11-46=-2964/283, 8-50=-137/2046, 6-38=-129/1480

**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: 2x6 - 2 rows staggered at 0-4-0 oc, Except member 38-48 2x6 - 3 rows staggered at 0-4-0 oc, member 14-21 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row 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.


March 29,2024

Continued on page 2



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

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 3x5 MT20 unless otherwise indicated.
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, with BCDL = 10.0psf.
12) Ceiling dead load (5.0 psf) on member(s). 7-50, 45-50, 44-45, 44-47, 46-47, 43-46, 14-43; Wall dead load (5.0psf) on member(s).7-37, 14-23
13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 34-37, 32-34, 30-32, 28-30, 27-28, 24-27, 23-24
14) Refer to girder(s) for truss to truss connections.
15) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 407 lb uplift at joint 18 and 5346 lb uplift at joint 21.
16) LGT4-SDS3 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 42. This connection is for uplift only and does not consider lateral forces.
17) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
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 15-11-0 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

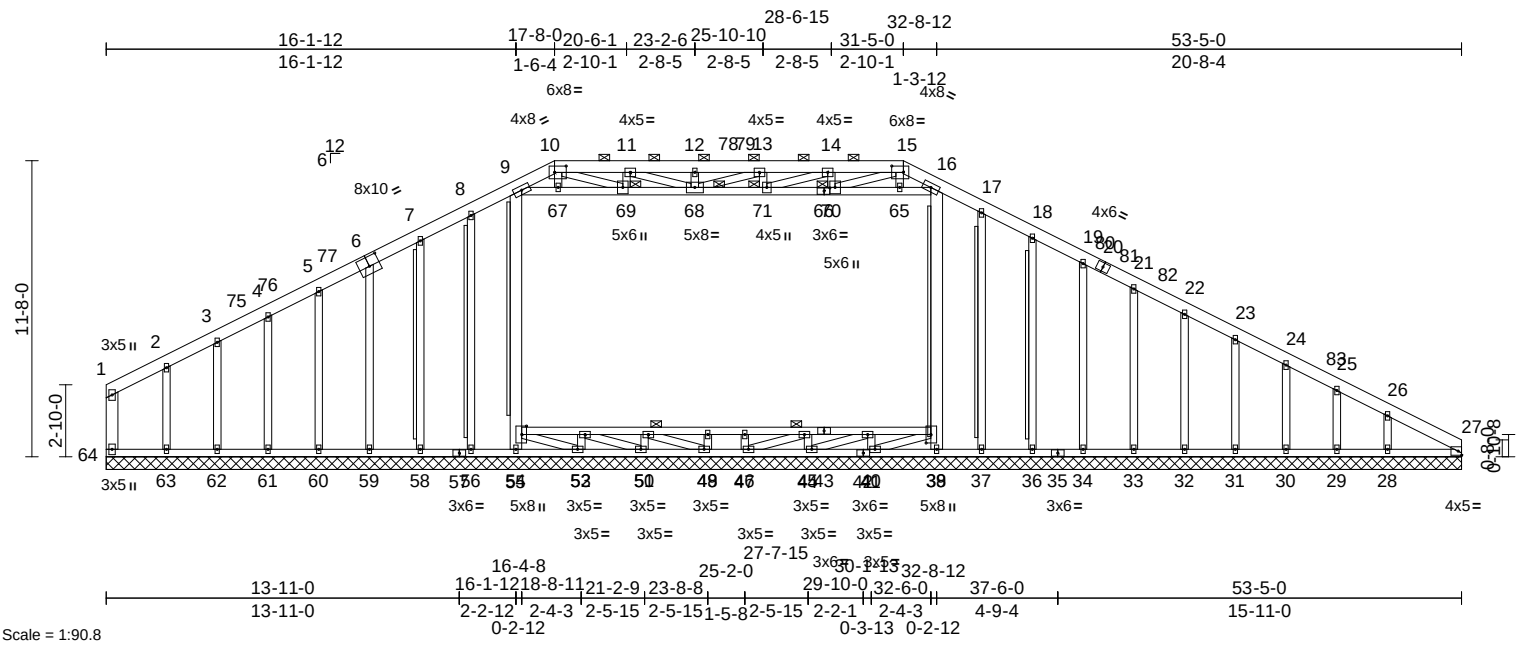
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (lb/ft)
   Vert: 1-2=-60, 2-8=-60, 8-13=-60, 13-18=-60, 42-51=-20, 23-37=-30, 7-50=-10, 45-50=-10, 44-45=-10, 44-49=-10, 47-49=-10, 46-47=-10, 43-46=-10, 14-43=-10
   Drag: 37-48=-10, 7-48=-10, 14-23=-10
   Concentrated Loads (lb)
   Vert: 38=-4881 (F)

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A09 | Attic Supported Gable | 1 | 1 | I64561690 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:21 ID:8kdnaNVfrXy7X5iJovJ26tzRBB2-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1




Scale = 1:90.8

Plate Offsets (X, Y): [6:0-5-0,0-4-8], [10:0-5-8,0-3-0], [15:0-5-8,0-3-0], [39:0-4-0,0-2-4], [54:0-4-0,0-2-4], [66:0-2-11,0-1-8]

| 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 | 0.43 | 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 | 0.62 | Horiz(TL) | 0.02 | 27 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 504 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2

BOT CHORD 2x4 SP No.2 *Except* 35-27,57-42:2x4 SP 2400F 2.0E, 57-64:2x4 SP No.1

WEBS 2x4 SP No.3 *Except* 9-55,16-38,64-1:2x6 SP No.2, 16-66,66-9:2x4 SP No.2

OTHERS 2x4 SP No.3 *Except* 0-0,0-0,0-0,0-0,0-0,0-0:2x4 SPF No.2(flat)

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (4-2-4 max.): 10-15.

BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing, Except:
10-0-0 oc bracing:
48-50,46-48,45-46,40-45,39-40.

WEBS T-Brace: 2x4 SPF No.2 - 9-54, 16-39, 17-37, 18-36, 8-56, 7-58
Fasten (2X) T and I braces to narrow edge of web with 10d (0.131"x3") nails, 6in o.c.,with 3in minimum end distance.
Brace must cover 90% of web length.

JOINTS 1 Brace at Jt(s): 68, 69, 70, 71

**REACTIONS** (size) 27=53-5-0, 28=53-5-0, 29=53-5-0, 30=53-5-0, 31=53-5-0, 32=53-5-0, 33=53-5-0, 34=53-5-0, 36=53-5-0, 37=53-5-0, 38=53-5-0, 41=53-5-0, 44=53-5-0, 47=53-5-0, 49=53-5-0, 51=53-5-0, 53=53-5-0, 55=53-5-0, 56=53-5-0, 58=53-5-0, 59=53-5-0, 60=53-5-0, 61=53-5-0, 62=53-5-0, 63=53-5-0, 64=53-5-0

Max Horiz 64=-222 (LC 15)

Max Uplift 28=-89 (LC 14), 29=-189 (LC 15), 30=-17 (LC 14), 31=-49 (LC 15), 32=-43 (LC 15), 33=-44 (LC 15), 34=-45 (LC 15), 36=-46 (LC 15), 37=-124 (LC 38), 38=-1 (LC 10), 56=-115 (LC 38), 58=-45 (LC 14), 59=-50 (LC 14), 60=-37 (LC 14), 61=-47 (LC 14), 62=-28 (LC 14), 63=-119 (LC 14), 64=-109 (LC 15)

Max Grav 28=538 (LC 24), 29=71 (LC 18), 30=215 (LC 6), 31=164 (LC 49), 32=177 (LC 37), 33=216 (LC 43), 34=234 (LC 43), 36=217 (LC 43), 37=142 (LC 49), 38=1161 (LC 38), 41=327 (LC 20), 44=301 (LC 20), 47=230 (LC 20), 49=231 (LC 20), 51=301 (LC 20), 53=330 (LC 20), 55=1134 (LC 38), 56=144 (LC 47), 58=228 (LC 41), 59=239 (LC 41), 60=223 (LC 41), 61=191 (LC 35), 62=164 (LC 56), 63=286 (LC 47), 64=100 (LC 50)

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

TOP CHORD 1-2=-53/118, 2-3=-37/99, 3-4=-52/127, 4-5=-70/149, 5-7=-107/211, 7-8=-122/250, 8-9=-105/267, 9-10=-926/239, 10-11=-2068/439, 11-12=-2800/569, 12-13=-2800/569, 13-14=-2724/564, 14-15=-1991/436, 15-16=-812/241, 16-17=-104/278, 17-18=-123/270, 18-19=-109/246, 19-21=-89/222, 21-22=-70/199, 22-23=-52/176, 23-24=-48/153, 24-25=-69/135, 25-26=-156/123, 26-27=-142/144, 1-64=-66/91

BOT CHORD 63-64=-79/168, 62-63=-79/168, 61-62=-79/168, 60-61=-79/168, 59-60=-79/168, 58-59=-79/168, 56-58=-79/168, 55-56=-79/168, 53-55=-85/183, 51-53=-63/129, 49-51=-57/117, 47-49=-68/129, 44-47=-58/112, 41-44=-64/115, 38-41=-80/140, 37-38=-78/164, 36-37=-78/164, 34-36=-78/164, 33-34=-78/164, 32-33=-78/164, 31-32=-78/164, 30-31=-78/164, 29-30=-78/164, 28-29=-78/164, 27-28=-78/164, 52-54=-16/38, 50-52=-21/50, 48-50=-14/38, 46-48=-14/38, 45-46=-14/38, 40-45=-22/54, 39-40=-19/51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ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

WEBS 54-55=-1090/1, 9-54=-1078/106, 38-39=-1116/28, 16-39=-1101/123, 48-49=-115/0, 46-47=-115/0, 52-53=-171/0, 53-54=-57/22, 50-51=-147/0, 51-52=-13/11, 49-50=-11/13, 40-41=-173/0, 44-45=-148/0, 40-44=-3/15, 45-47=-10/17, 15-65=-48/11, 9-67=-16/694, 67-69=-15/688, 68-69=-279/2058, 68-71=-412/2714, 70-71=-276/1982, 65-70=-11/565, 16-65=-13/579, 10-67=-15/15, 12-68=-256/65, 11-69=-470/113, 14-70=-483/114, 15-70=-281/1498, 13-71=-239/66, 14-71=-148/778, 13-68=-66/182, 39-41=-27/17, 10-69=-279/1447, 11-68=-145/779, 17-37=-86/159, 18-36=-176/71, 19-34=-194/69, 21-33=-177/67, 22-32=-128/68, 23-31=-118/69, 24-30=-144/52, 25-29=-31/163, 26-28=-346/91, 8-56=-87/150, 7-58=-187/70, 6-59=-199/74, 5-60=-183/61, 4-61=-145/69, 3-62=-120/62, 2-63=-168/118

**LOAD CASE(S)** Standard

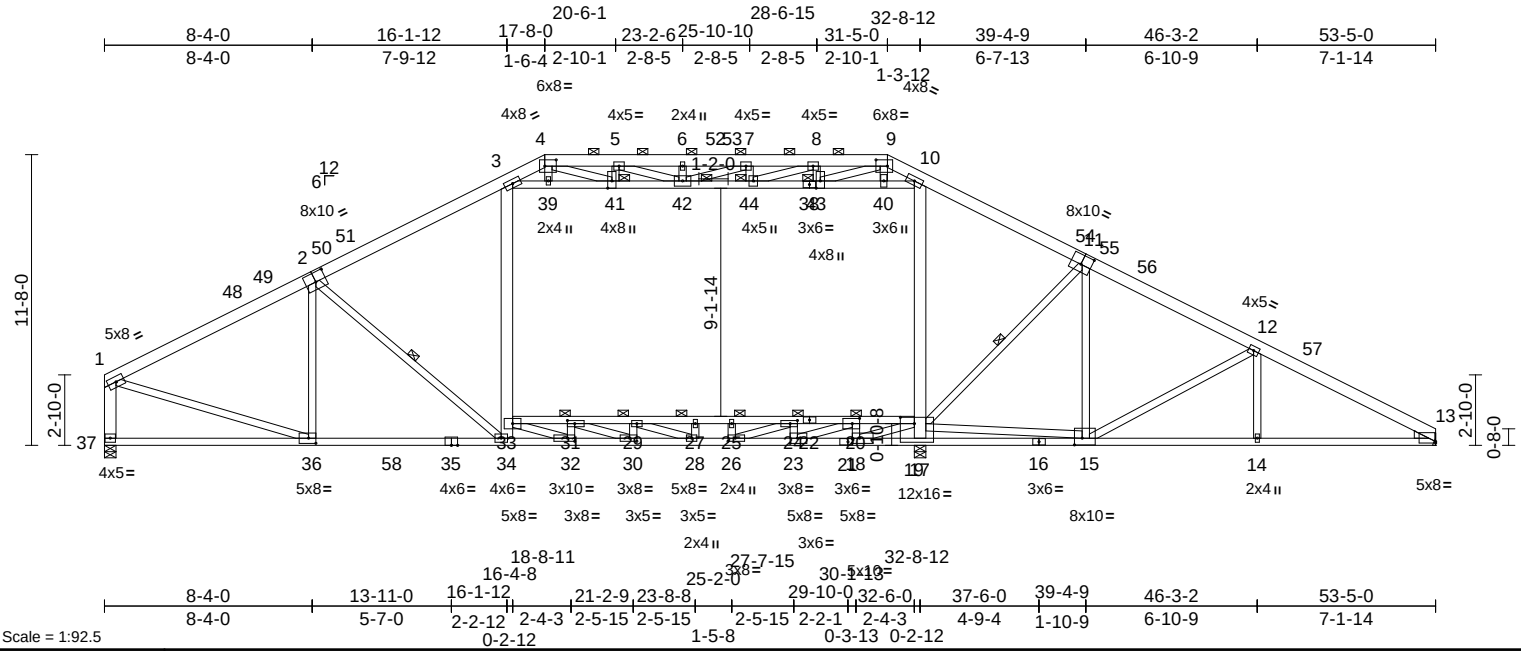
**NOTES**

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 5-6-14, Interior (1) 5-6-14 to 10-1-6, Exterior(2R) 10-1-6 to 38-11-10, Interior (1) 38-11-10 to 48-0-14, Exterior(2E) 48-0-14 to 53-5-0 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 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, with BCDL = 10.0psf.
12) Ceiling dead load (5.0 psf) on member(s). 9-67, 67-69, 68-69, 68-71, 70-71, 65-70, 16-65; Wall dead load (5.0psf) on member(s).9-54, 16-39
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 109 lb uplift at joint 64, 1 lb uplift at joint 38, 124 lb uplift at joint 37, 46 lb uplift at joint 36, 45 lb uplift at joint 34, 44 lb uplift at joint 33, 43 lb uplift at joint 32, 49 lb uplift at joint 31, 17 lb uplift at joint 30, 189 lb uplift at joint 29, 89 lb uplift at joint 28, 115 lb uplift at joint 56, 45 lb uplift at joint 58, 50 lb uplift at joint 59, 37 lb uplift at joint 60, 47 lb uplift at joint 61, 28 lb uplift at joint 62 and 119 lb uplift at joint 63.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
16) Warning: Additional permanent and stability bracing for truss system (not part of this component design) is always required.
17) Attic room checked for L/360 deflection.

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A08 | Attic | 6 | 1 | I64561691 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:20 Page: 1

ID:h5TFO2tlZyfWTvVspKto8_zRQij-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:92.5

[2:0-5-0,0-4-8], [4:0-5-8,0-3-0], [9:0-5-8,0-3-0], [11:0-5-0,0-4-8], [13:Edge,0-0-11], [15:0-3-12,0-3-4], [17:0-6-12,0-3-0], [18:0-3-8,0-2-8], [20:0-3-8,0-2-8], [21:0-2-2,0-1-8], [23:0-3-8,0-2-8], [24:0-3-8,0-1-8], [26:0-3-8,0-1-8], [30:0-3-8,0-1-8], [31:0-3-8,0-1-8], [32:0-3-8,0-1-8], [36:0-3-8,0-2-8], [41:0-3-8,0-2-0],

Plate Offsets (X, Y): [43:0-3-8,0-2-0]

| 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 | 0.62 | Vert(LL) | -0.47 | 27-29 | >822 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 1.00 | Vert(CT) | -0.77 | 27-29 | >509 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.93 | Horz(CT) | 0.14 | 13 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | Attic | -0.35 | 19-33 | >568 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 453 lb | FT = 20% |

**LUMBER**

TOP CHORD 2x6 SP No.2

BOT CHORD 2x4 SP No.2 *Except* 37-35:2x4 SP No.1, 16-13,35-21:2x4 SP 2400F 2.0E

WEBS 2x4 SP No.3 *Except* 3-34,10-17,37-1:2x6 SP No.2, 38-10,36-1,38-3:2x4 SP No.2, 33-32,31-30,29-28,19-18,20-23,24-26,15-19: 2x4 SP No.1

WEDGE Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-11-0 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-14 max.): 4-9.

BOT CHORD Rigid ceiling directly applied or 2-5-1 oc bracing.

WEBS 1 Row at midpt 2-34, 11-19

JOINTS 1 Brace at Jt(s): 41, 42, 43, 44

**REACTIONS** (size) 13= Mechanical, 17=0-5-8, 37=0-5-8

Max Horiz 37=-222 (LC 15)

Max Uplift 17=-64 (LC 15), 37=-11 (LC 14)

Max Grav 13=2293 (LC 47), 17=1772 (LC 39), 37=2946 (LC 37)

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

TOP CHORD 1-3=-4036/14, 3-4=-2078/107, 4-5=-3066/337, 5-6=-3578/492, 6-7=-3578/492, 7-8=-3636/482, 8-9=-2881/356, 9-10=-1879/124, 10-12=-4101/51, 12-13=-4669/39, 1-37=-2945/55

BOT CHORD 36-37=-107/246, 34-36=-17/3372, 32-34=0/3291, 30-32=0/4893, 28-30=0/6218, 26-28=0/6109, 23-26=0/4206, 18-23=0/1402, 17-18=-2240/0, 15-17=-2057/0, 14-15=0/4054, 13-14=-56/4054, 31-33=-1860/0, 29-31=-3333/0, 27-29=-3224/0, 25-27=-3224/0, 24-25=-3224/0, 20-24=-1321/723, 19-20=-42/2039

WEBS 2-36=-699/70, 2-34=-132/368, 33-34=-40/280, 3-33=0/1154, 17-19=-1413/169, 10-19=-33/1155, 11-15=-255/99, 12-15=-577/208, 12-14=0/244, 3-39=-2106/13, 39-41=-2044/13, 41-42=-1781/599, 42-44=-1691/1229, 43-44=-1896/449, 40-43=-2317/29, 10-40=-2457/29, 1-36=0/3431, 27-28=-104/36, 25-26=-393/0, 32-33=0/2241, 31-32=-836/0, 30-31=0/1561, 29-30=-322/34, 28-29=-400/61, 18-19=0/3886, 18-20=-1374/0, 20-23=0/2972, 23-24=-930/0, 24-26=0/2017, 4-39=0/305, 9-40=0/567, 4-41=-298/1341, 5-41=-433/119, 5-42=-167/660, 6-42=-200/79, 9-43=-292/1457, 8-43=-481/114, 8-44=-139/829, 7-44=-245/65, 7-42=-159/109, 15-19=0/5271, 11-19=-580/316

**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 5-6-14, Interior (1) 5-6-14 to 10-1-6, Exterior(2R) 10-1-6 to 38-11-10, Interior (1) 38-11-10 to 48-0-14, Exterior(2E) 48-0-14 to 53-5-0 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) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.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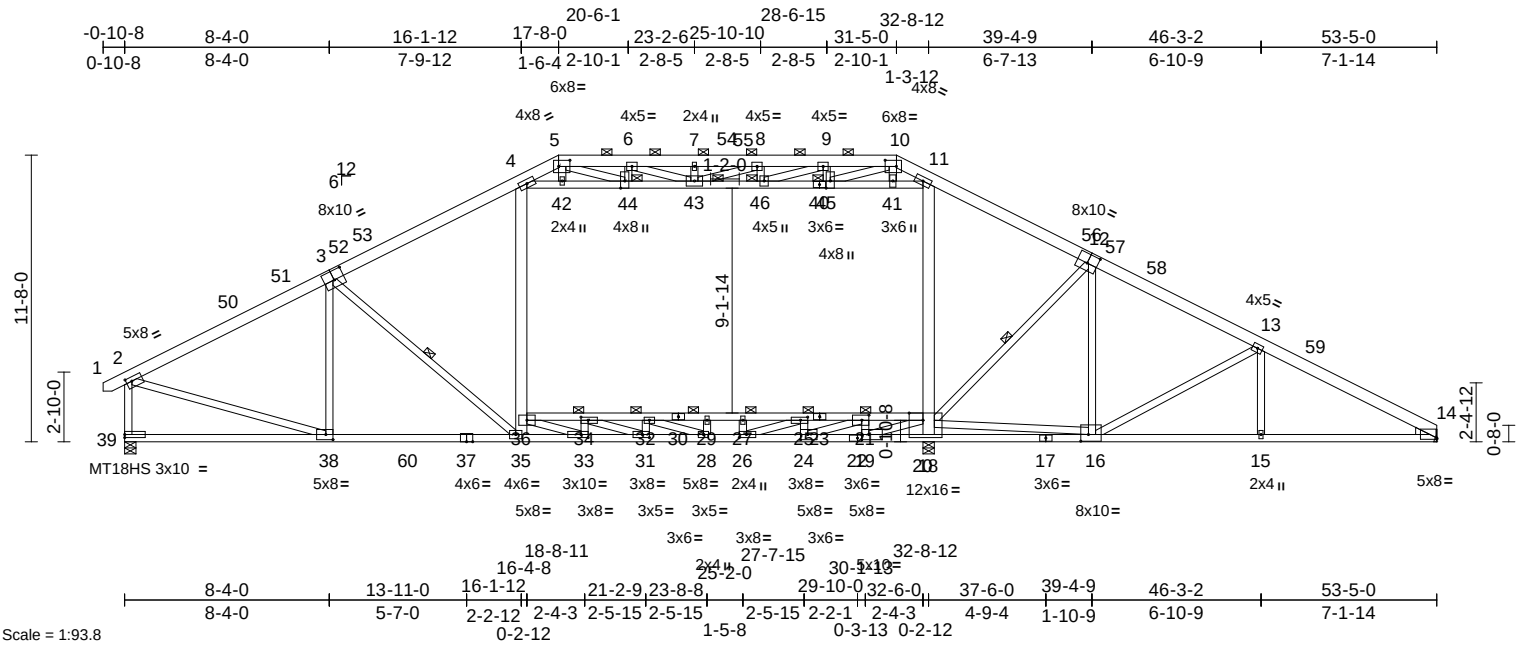
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Ceiling dead load (5.0 psf) on member(s). 3-39, 39-41, 41-42, 42-44, 43-44, 40-43, 10-40; Wall dead load (5.0psf) on member(s).3-33, 10-19
9) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 31-33, 29-31, 27-29, 25-27, 24-25, 20-24, 19-20
10) Refer to girder(s) for truss to truss connections.
11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 37 and 17. This connection is for uplift only and does not consider lateral forces.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
14) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A07 | Attic | 1 | 1 | I64561692 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:19 Page: 1

ID:1d5INYb_SnpjqifH0e1reGzRBHO-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:93.8

[2:0-2-12,0-2-0], [3:0-5-0,0-4-8], [5:0-5-8,0-3-0], [10:0-5-8,0-3-0], [12:0-5-0,0-4-8], [14:Edge,0-0-11], [16:0-3-12,0-3-4], [19:0-3-8,0-2-8], [20:0-6-12,Edge], [21:0-3-8,0-2-8], [22:0-2-2,0-1-8], [24:0-3-8,0-2-8], [25:0-3-8,0-1-8], [26:0-3-8,0-1-8], [31:0-3-8,0-1-8], [33:0-3-8,0-1-8], [34:0-3-8,0-1-8], [38:0-3-8,0-2-8],
Plate Offsets (X, Y): [44:0-3-8,0-2-0], [45:0-3-8,0-2-0]

| 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 | 0.98 | Vert(LL) | -0.48 | 29-32 | >819 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.99 | Vert(CT) | -0.77 | 29-32 | >506 | 180 | MT18HS | 244/190 |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.93 | Horz(CT) | 0.14 | 14 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | Attic | -0.35 | 20-36 | >568 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 453 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x4 SP No.2 *Except* 14-17,37-22:2x4 SP 2400F 2.0E, 37-39:2x4 SP No.1
WEBS 2x4 SP No.3 *Except* 4-35,11-18:2x6 SP No.2, 40-11,38-2,40-4:2x4 SP No.2, 36-33,34-31,32-28,21-24,25-26,20-19,16-20: 2x4 SP No.1
WEDGE Right: 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 2-10-14 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-13 max.): 5-10.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 3-35, 12-20
JOINTS 1 Brace at Jt(s): 43, 44, 45, 46

**REACTIONS** (size) 14= Mechanical, 18=0-5-8, 39=0-5-8
Max Horiz 39=-190 (LC 12)
Max Uplift 18=-62 (LC 15), 39=-28 (LC 14)
Max Grav 14=2299 (LC 48), 18=1775 (LC 40), 39=2992 (LC 38)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/23, 2-4=-4062/10, 4-5=-2092/107, 5-6=-3079/340, 6-7=-3587/495, 7-8=-3587/495, 8-9=-3645/485, 9-10=-2887/358, 10-11=-1884/127, 11-13=-4121/49, 13-14=-4688/32, 2-39=-2988/71
BOT CHORD 34-36=-1865/0, 32-34=-3331/0, 29-32=-3215/0, 27-29=-3215/0, 25-27=-3215/0, 21-25=-1305/738, 20-21=-41/2070, 38-39=-107/221, 35-38=-15/3420, 33-35=0/3318, 31-33=0/4918, 28-31=0/6229, 26-28=0/6113, 24-26=0/4202, 19-24=0/1393, 18-19=-2253/0, 16-18=-2068/0, 15-16=0/4071, 14-15=-55/4071
WEBS 3-38=-675/76, 35-36=-43/295, 4-36=0/1163, 18-20=-1416/167, 11-20=-32/1160, 12-16=-258/97, 13-15=0/244, 4-42=-2107/6, 42-44=-2045/6, 43-44=-1786/597, 43-46=-1701/1223, 45-46=-1909/442, 41-45=-2335/27, 11-41=-2476/28, 2-38=0/3452, 28-29=-102/37, 26-27=-394/0, 33-34=-833/0, 33-36=0/2241, 31-32=-320/36, 31-34=0/1554, 28-32=-406/60, 19-21=-1376/0, 24-25=-932/0, 21-24=0/2977, 25-26=0/2025, 10-41=0/571, 5-42=0/305, 7-43=-200/79, 6-44=-432/119, 9-45=-482/114, 10-45=-292/1458, 8-46=-246/65, 9-46=-139/831, 8-43=-157/110, 13-16=-576/208, 3-35=-154/347, 19-20=0/3892, 16-20=0/5301, 12-20=-586/316, 5-44=-297/1338, 6-43=-168/658

**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 4-7-12, Interior (1) 4-7-12 to 10-1-6, Exterior(2R) 10-1-6 to 38-11-10, Interior (1) 38-11-10 to 48-0-14, Exterior(2E) 48-0-14 to 53-5-0 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) 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) Ceiling dead load (5.0 psf) on member(s). 4-42, 42-44, 43-44, 43-46, 45-46, 41-45, 11-41; Wall dead load (5.0psf) on member(s).4-36, 11-20
11) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 34-36, 32-34, 29-32, 27-29, 25-27, 21-25, 20-21
12) Refer to girder(s) for truss to truss connections.
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 39 and 18. This connection is for uplift only and does not consider lateral forces.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
16) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

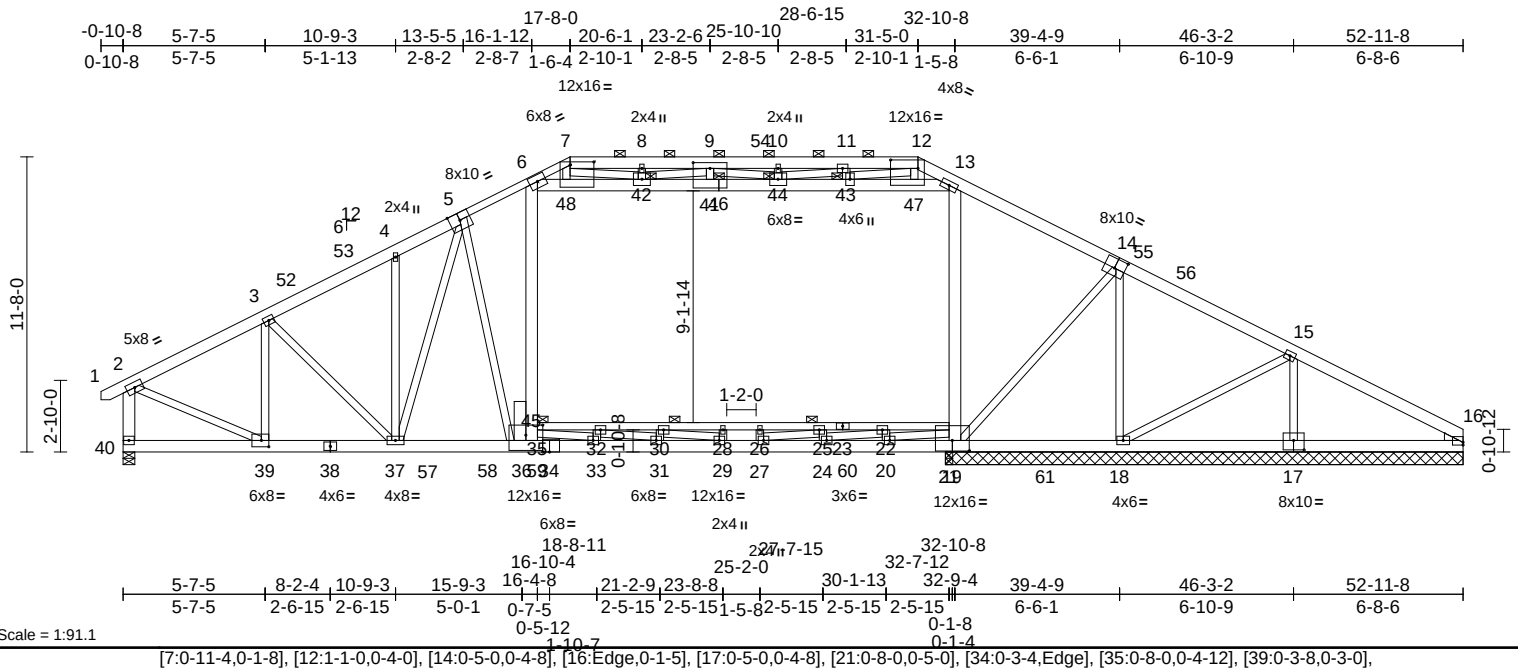
| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A05 | Attic Girder | 1 | 4 | I64561693 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:18

ID:VIY0g5gMUgwQZRyxiBXYltzRA_f-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1




Scale = 1:91.1

[7:0-11-4,0-1-8], [12:1-1-0,0-4-0], [14:0-5-0,0-4-8], [16:Edge,0-1-5], [17:0-5-0,0-4-8], [21:0-8-0,0-5-0], [34:0-3-4,Edge], [35:0-8-0,0-4-12], [39:0-3-8,0-3-0],

Plate Offsets (X, Y): [41:0-8-0,0-2-12]

| 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 | 0.89 | Vert(LL) | -0.37 | 33-36 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.60 | Vert(CT) | -0.56 | 33-36 | >701 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.97 | Horz(CT) | 0.11 | 16 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | Attic | -0.18 | 21-35 | >999 | 360 | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 2099 lb | FT = 20% |

**LUMBER**

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

BOT CHORD 2x6 SP 2400F 2.0E *Except* 23-21,23-35:2x4 SP No.2, 38-40,17-16:2x6 SP No.2

WEBS 2x4 SP No.3 *Except* 40-2,6-36,13-19,45-36,46-6,46-13:2x6 SP No.2, 39-2:2x4 SP No.2

WEDGE Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-2-3 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 7-12.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing:
32-35,30-32,28-30,26-28,25-26,22-25.

JOINTS 1 Brace at Jt(s): 35, 41, 42, 43, 44

**REACTIONS** (size) 16=20-5-8, 17=20-5-8, 18=20-5-8, 19=20-5-8, 40=0-5-8, 49=20-5-8

Max Horiz 40=-188 (LC 10)

Max Uplift 16=-151 (LC 13), 17=-324 (LC 12), 18=-240 (LC 13), 19=-10280 (LC 46), 40=-696 (LC 12), 49=-151 (LC 13)

Max Grav 16=3008 (LC 46), 17=7117 (LC 23), 18=4193 (LC 46), 19=1034 (LC 12), 40=11884 (LC 46), 49=3008 (LC 46)

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

TOP CHORD 1-2=0/25, 2-3=-13614/793, 3-4=-17432/1045, 4-6=-18822/1131, 6-7=-5629/475, 7-8=-2474/483, 8-9=-2470/481, 9-10=-2372/1819, 10-11=-2372/1819, 11-12=-2034/1029, 12-13=-3856/377, 13-15=-18232/1109, 15-16=-5597/332, 2-40=-11696/715

BOT CHORD 39-40=-126/439, 37-39=-745/12174, 36-37=-855/16269, 33-36=-697/14107, 31-33=-385/17288, 29-31=0/18638, 27-29=0/19395, 24-27=-46/18052, 20-24=-370/14799, 18-20=-727/13023, 16-18=-244/4892, 32-35=-1142/0, 30-32=-2949/0, 28-30=-3804/0, 26-28=-3804/0, 25-26=-3804/0, 22-25=-2416/0, 21-22=-473/1852

WEBS 35-36=-615/7361, 6-35=-533/8595, 19-21=-670/7250, 13-21=-529/7585, 14-18=-8012/472, 15-17=-6979/424, 32-33=-849/0, 33-35=0/3501, 30-31=-610/0, 31-32=0/1895, 29-30=0/897, 20-22=-1497/0, 24-25=-685/0, 22-24=0/3574, 25-27=0/1456, 9-41=-145/2707, 8-42=-627/67, 11-43=-634/113, 10-44=-158/31, 15-18=-386/7533, 20-21=0/2271, 14-19=-369/7033, 6-48=-11615/730, 42-48=-11971/751, 41-42=-12057/716, 41-44=-12055/716, 43-44=-17559/1070, 43-47=-13225/834, 13-47=-13611/855, 4-37=-732/159, 5-37=-2601/130, 3-39=-5353/377, 3-37=-241/4953, 2-39=-685/12906, 12-47=-149/2546, 9-42=-4841/361, 12-43=-4473/246, 28-29=-219/0, 26-27=-302/0, 5-36=-133/1948, 7-42=-4688/262, 11-44=-804/344, 9-44=-6472/401, 7-48=-155/2660

**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: 2x6 - 2 rows staggered at 0-4-0 oc, Except member 36-45 2x6 - 3 rows staggered at 0-4-0 oc, member 13-19 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row 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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Edenton, NC 27932

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 4x5 MT20 unless otherwise indicated.
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, with BCDL = 10.0psf.
12) Ceiling dead load (5.0 psf) on member(s). 6-48, 42-48, 41-42, 41-44, 43-44, 43-47, 13-47; Wall dead load (5.0psf) on member(s).6-35, 13-21
13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 32-35, 30-32, 28-30, 26-28, 25-26, 22-25, 21-22
14) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 10280 lb uplift at joint 19.
15) LGT4-SDS3 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 40. This connection is for uplift only and does not consider lateral forces.
16) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 16, 18, and 17. This connection is for uplift only and does not consider lateral forces.
17) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
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) 608 lb down and 52 lb up at 28-7-12, and 9100 lb down and 774 lb up at 16-0-12 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

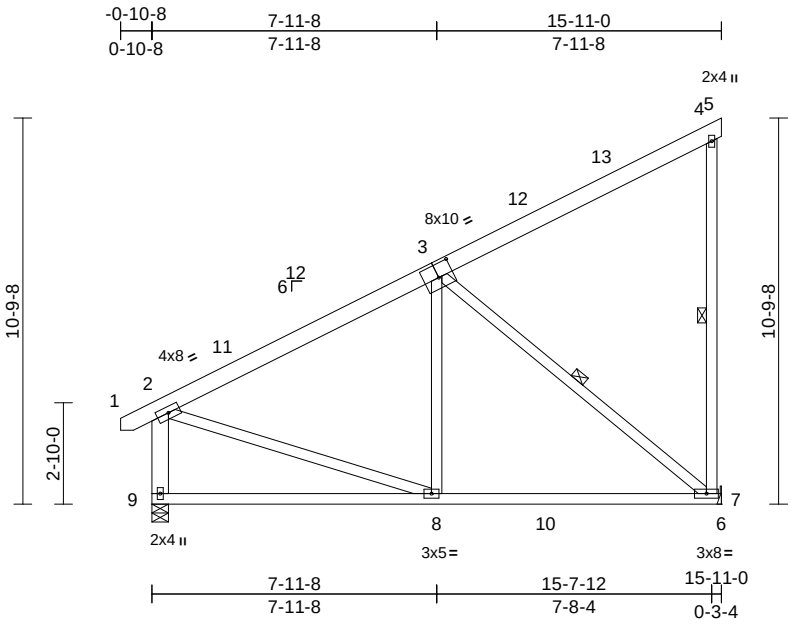
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (lb/ft)
   Vert: 1-2=-60, 2-7=-60, 7-12=-60, 12-16=-60, 40-49=-20, 21-35=-30, 6-48=-10, 42-48=-10, 41-42=-10, 41-46=-10, 44-46=-10, 43-44=-10, 43-47=-10, 13-47=-10
   Drag: 35-45=-10, 6-45=-10, 13-21=-10
   Concentrated Loads (lb)
   Vert: 36=-4881 (F), 60=-326 (F)

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | G01 | Monopitch | 5 | 1 | I64561694 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23 ID:PdAAD85_ICJN?UaWrZNnF5zRQu2-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






Scale = 1:64.4

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

| 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 | 0.49 | Vert(LL) | -0.12 | 7-8 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.66 | Vert(CT) | -0.20 | 7-8 | >909 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.39 | Horz(CT) | -0.01 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 123 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 9-2:2x6 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 4-7, 3-7

**REACTIONS** (size) 7= Mechanical, 9=0-5-8
Max Horiz 9=269 (LC 14)
Max Uplift 7=-219 (LC 14)
Max Grav 7=825 (LC 5), 9=743 (LC 5)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 4-7=-321/119, 2-9=-646/82, 1-2=0/25, 2-4=-678/91, 4-5=-12/0
BOT CHORD 8-9=-322/219, 7-8=-199/606, 6-7=0/0
WEBS 3-8=0/310, 3-7=-773/257, 2-8=0/485

**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) -0-8-6 to 2-3-10, Interior (1) 2-3-10 to 12-11-0, Exterior(2E) 12-11-0 to 15-11-0 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 219 lb uplift at joint 7.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A01 | Piggyback Base Supported Gable | 1 | 1 | I64561695 Job Reference (optional) |

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

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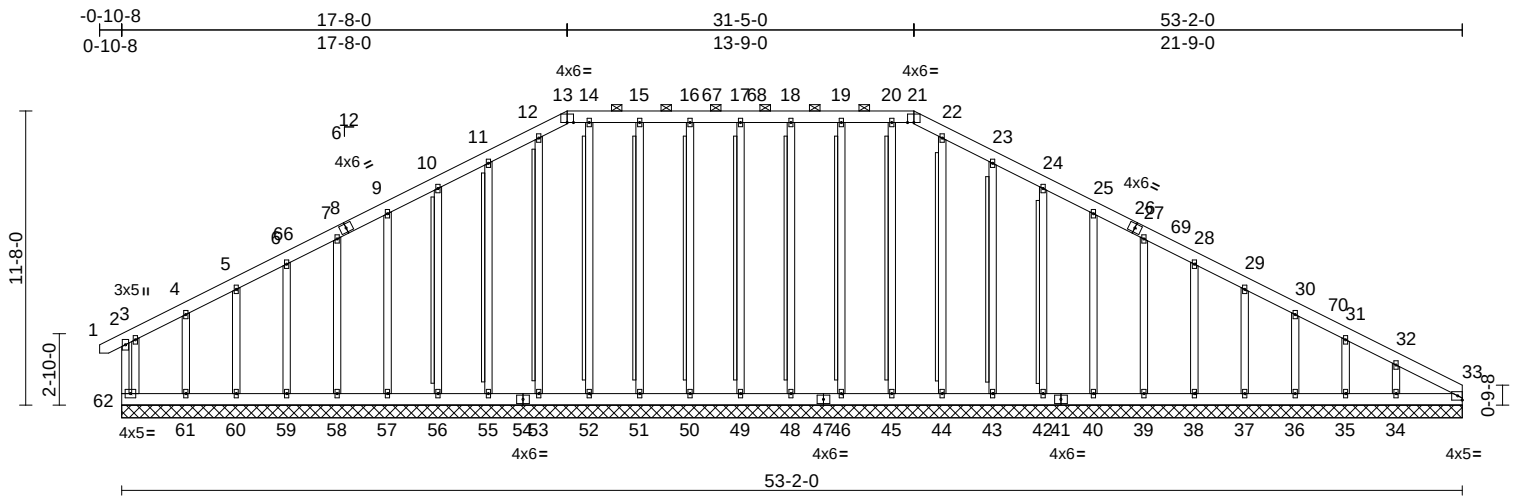


Scale = 1:91.4

| 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 | 0.12 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.05 | 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 | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 545 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.2 *Except* 43-23,42-24,40-25,39-27,38-28,37-29,36-30, 35-31,34-32,55-11,56-10,57-9,58-7,59-6,60-5 ,61-4,62-3:2x4 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 (6-0-0 max.): 13-21. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |
| WEBS | T-Brace: 2x4 SP No.2 - 17-49, 18-48, 19-46, 20-45, 22-44, 23-43, 24-42, 16-50, 15-51, 14-52, 12-53, 11-55, 10-56 |

Fasten (2X) T and I braces to narrow edge of web with 10d (0.131"x3") nails, 6in o.c.,with 3in minimum end distance.
Brace must cover 90% of web length.

**REACTIONS** (size) 33=53-2-0, 34=53-2-0, 35=53-2-0, 36=53-2-0, 37=53-2-0, 38=53-2-0, 39=53-2-0, 40=53-2-0, 42=53-2-0, 43=53-2-0, 44=53-2-0, 45=53-2-0, 46=53-2-0, 48=53-2-0, 49=53-2-0, 50=53-2-0, 51=53-2-0, 52=53-2-0, 53=53-2-0, 55=53-2-0, 56=53-2-0, 57=53-2-0, 58=53-2-0, 59=53-2-0, 60=53-2-0, 61=53-2-0, 62=53-2-0, 63=53-2-0
Max Horiz 62=-186 (LC 12)

Max Uplift 33=-35 (LC 14), 34=-96 (LC 15), 35=-28 (LC 15), 36=-47 (LC 15), 37=-43 (LC 15), 38=-44 (LC 15), 39=-44 (LC 15), 40=-43 (LC 15), 42=-46 (LC 15), 43=-51 (LC 15), 46=-29 (LC 11), 48=-28 (LC 11), 49=-25 (LC 10), 50=-28 (LC 11), 51=-28 (LC 10), 55=-53 (LC 14), 56=-46 (LC 14), 57=-43 (LC 14), 58=-44 (LC 14), 59=-45 (LC 14), 60=-27 (LC 14), 61=-116 (LC 14), 62=-33 (LC 15), 63=-35 (LC 14)

Max Grav 33=135 (LC 28), 34=217 (LC 59), 35=143 (LC 1), 36=164 (LC 45), 37=159 (LC 1), 38=171 (LC 45), 39=220 (LC 45), 40=230 (LC 45), 42=229 (LC 45), 43=230 (LC 45), 44=211 (LC 45), 45=192 (LC 40), 46=220 (LC 40), 48=218 (LC 40), 49=216 (LC 40), 50=218 (LC 40), 51=220 (LC 40), 52=192 (LC 40), 53=214 (LC 43), 55=235 (LC 43), 56=233 (LC 43), 57=233 (LC 43), 58=232 (LC 43), 59=188 (LC 43), 60=158 (LC 1), 61=182 (LC 51), 62=163 (LC 1), 63=135 (LC 28)

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

TOP CHORD 2-62=-123/160, 1-2=0/23, 2-3=-69/80, 3-4=-73/64, 4-5=-75/97, 5-6=-85/148, 6-7=-98/192, 7-9=-115/238, 9-10=-130/283, 10-11=-146/329, 11-12=-163/378, 12-13=-161/378, 13-14=-151/373, 14-15=-151/373, 15-16=-151/373, 16-17=-151/373, 17-18=-151/373, 18-19=-151/373, 19-20=-151/373, 20-21=-151/373, 21-22=-161/378, 22-23=-163/378, 23-24=-146/329, 24-25=-130/283, 25-27=-115/238, 27-28=-98/198, 28-29=-94/174, 29-30=-106/151, 30-31=-120/128, 31-32=-141/106, 32-33=-185/113


March 29,2024

Continued on page 2



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BOT CHORD 61-62=-86/182, 60-61=-86/182, 59-60=-86/182, 58-59=-86/182, 57-58=-86/182, 56-57=-86/182, 55-56=-86/182, 53-55=-86/182, 52-53=-86/182, 51-52=-86/182, 50-51=-86/182, 49-50=-86/182, 48-49=-86/182, 46-48=-86/182, 45-46=-86/182, 44-45=-86/182, 43-44=-86/182, 42-43=-86/182, 40-42=-86/182, 39-40=-86/182, 38-39=-86/182, 37-38=-86/182, 36-37=-86/182, 35-36=-86/182, 34-35=-86/182, 33-34=-86/182

WEBS 17-49=-176/57, 18-48=-178/62, 19-46=-180/60, 20-45=-152/14, 22-44=-171/10, 23-43=-190/88, 24-42=-189/81, 25-40=-190/77, 27-39=-180/77, 28-38=-131/77, 29-37=-126/77, 30-36=-128/80, 31-35=-119/103, 32-34=-156/155, 16-50=-178/62, 15-51=-180/60, 14-52=-152/8, 12-53=-174/0, 11-55=-195/88, 10-56=-193/81, 9-57=-193/77, 7-58=-192/77, 6-59=-148/77, 5-60=-123/90, 4-61=-143/165, 3-62=-174/99

**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 4-6-8, Exterior(2N) 4-6-8 to 12-4-3, Corner(3R) 12-4-3 to 22-11-13, Exterior(2N) 22-11-13 to 26-1-3, Corner(3R) 26-1-3 to 36-6-8, Exterior(2N) 36-6-8 to 47-10-3, Corner(3E) 47-10-3 to 53-2-0 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 62, 25 lb uplift at joint 49, 28 lb uplift at joint 48, 29 lb uplift at joint 46, 51 lb uplift at joint 43, 46 lb uplift at joint 42, 43 lb uplift at joint 40, 44 lb uplift at joint 39, 44 lb uplift at joint 38, 43 lb uplift at joint 37, 47 lb uplift at joint 36, 28 lb uplift at joint 35, 96 lb uplift at joint 34, 28 lb uplift at joint 50, 28 lb uplift at joint 51, 53 lb uplift at joint 55, 46 lb uplift at joint 56, 43 lb uplift at joint 57, 44 lb uplift at joint 58, 45 lb uplift at joint 59, 27 lb uplift at joint 60, 116 lb uplift at joint 61, 35 lb uplift at joint 33 and 35 lb uplift at joint 33.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
16) Warning: Additional permanent and stability bracing for truss system (not part of this component design) is always required.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A03 | Piggyback Base | 5 | 1 | I64561696 Job Reference (optional) |

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

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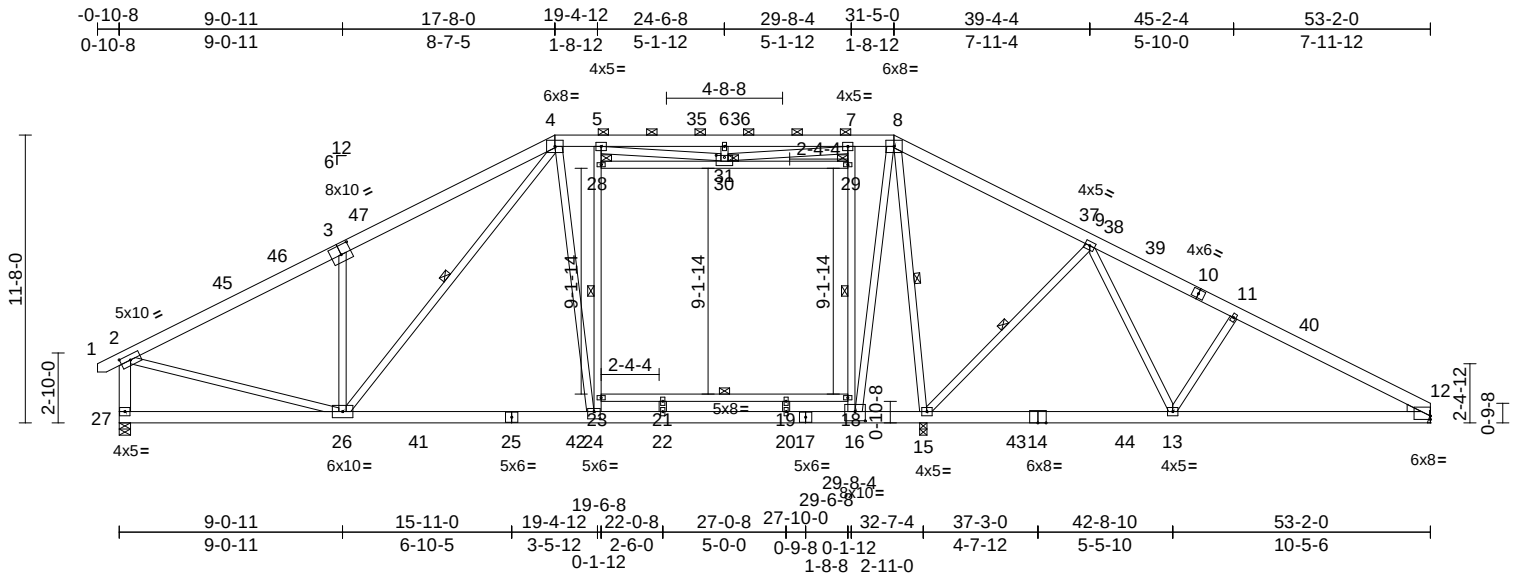


Scale = 1:93.4

Plate Offsets (X, Y): [2:0-4-14,0-2-8], [3:0-5-0,0-4-8], [12:Edge,0-1-11], [16:0-5-0,0-4-8], [24:0-3-0,0-3-8], [30:0-4-0,0-1-0]

| 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 | 0.77 | Vert(LL) | -0.35 | 24-26 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.90 | Vert(CT) | -0.62 | 21 | >624 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.78 | Horz(CT) | 0.12 | 12 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/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* 23-18:2x4 SP No.2, 17-25,14-17:2x6 SP 2400F 2.0E
WEBS 2x4 SP No.3 *Except* 27-2:2x6 SP No.2, 2-26,5-24,7-16,4-24,8-16,8-15,26-4:2x4 SP No.2
WEDGE Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-1-0 oc purlins, except end verticals, and 2-0-0 oc purlins (3-2-2 max.): 4-8.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing: 21-23,19-21,18-19.
WEBS 1 Row at midpt 24-28, 16-29, 8-15, 9-15, 4-26
JOINTS 1 Brace at Jt(s): 28, 29, 30

**REACTIONS** (size) 12= Mechanical, 15=0-3-8, 27=0-5-8
Max Horiz 27=-187 (LC 12)
Max Uplift 12=-32 (LC 14), 15=-199 (LC 15), 27=-141 (LC 14)
Max Grav 12=2111 (LC 47), 15=1305 (LC 39), 27=2591 (LC 37)

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

TOP CHORD 4-5=-2984/178, 5-6=-3435/346, 6-7=-3556/349, 7-8=-2950/176, 8-9=-3025/245, 9-11=-3972/160, 11-12=-4163/138, 2-27=-2579/190, 1-2=0/25, 2-4=-3578/363
BOT CHORD 26-27=-129/286, 24-26=0/2763, 22-24=0/2912, 20-22=0/2912, 16-20=0/2912, 15-16=0/2556, 13-15=-49/3177, 12-13=-73/3601, 21-23=-85/35, 19-21=-85/35, 18-19=-85/35
WEBS 19-20=-261/0, 21-22=-205/0, 2-26=-30/2899, 23-24=-430/334, 23-28=-381/410, 5-28=-366/417, 16-18=-1046/188, 18-29=-1000/205, 7-29=-984/202, 4-24=0/984, 28-30=-4/97, 29-30=-187/10, 30-31=-33/5, 6-31=-229/82, 5-31=-371/634, 7-31=-281/911, 8-16=0/2154, 8-15=-741/0, 9-15=-1011/274, 9-13=-68/686, 11-13=-311/210, 3-26=-805/326, 4-26=-281/459

**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 4-7-7, Interior (1) 4-7-7 to 10-1-12, Exterior(2R) 10-1-12 to 38-11-4, Interior (1) 38-11-4 to 47-10-3, Exterior(2E) 47-10-3 to 53-2-0 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, 24-6-8 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 32 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) 27 and 15. This connection is for uplift only and does not consider lateral forces.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.


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Continued on page 2



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**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A03T | Piggyback Base | 3 | 1 | I64561697 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:17 Page: 1
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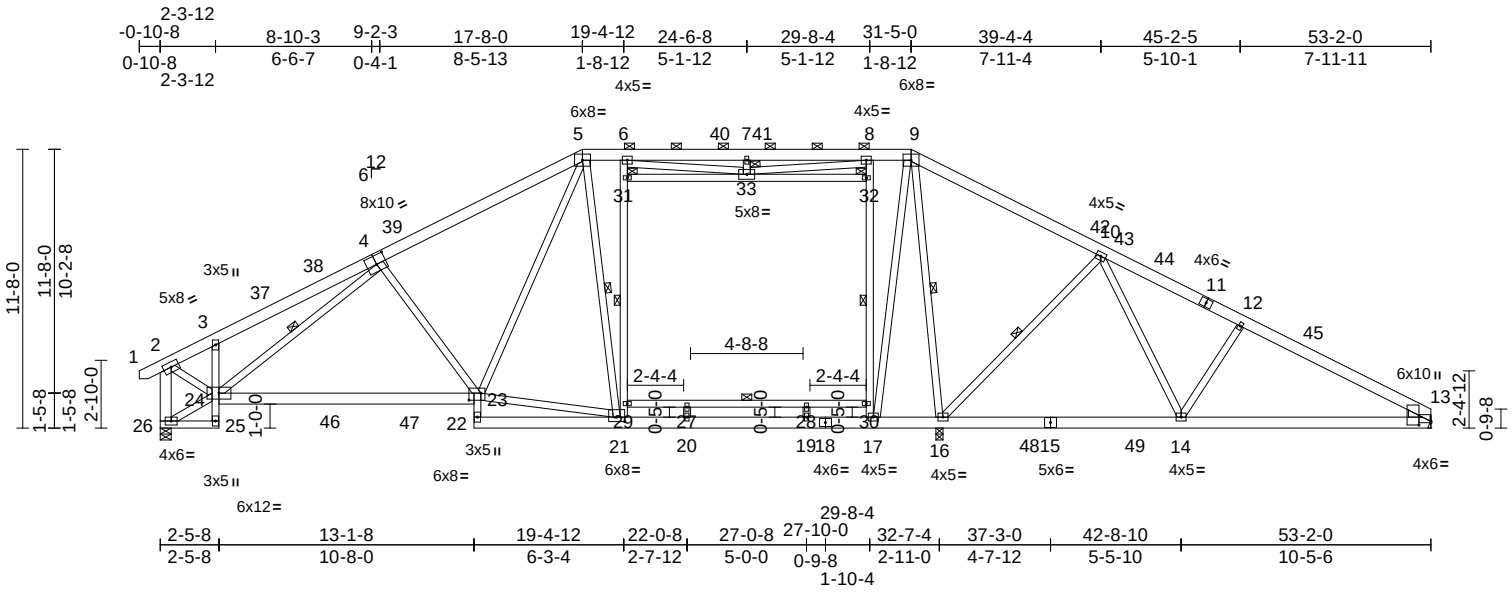


Scale = 1:96.4

Plate Offsets (X, Y): [4:0-5-0,0-4-8], [13:Edge,0-0-11], [13:0-1-14,0-5-15], [21:0-4-0,0-2-4], [23:0-6-0,0-3-8]

| 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 | 0.75 | Vert(LL) | -0.30 | 23-24 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 1.00 | Vert(CT) | -0.56 | 23-24 | >690 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.91 | Horz(CT) | 0.16 | 13 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 485 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2 *Except* 26-25:2x4 SP No.2, 25-3,23-22:2x4 SP No.3, 18-15:2x6 SP 2400F 2.0E
WEBS 2x4 SP No.3 *Except* 23-5,6-21,8-17,17-9,16-9,21-5:2x4 SP No.2, 26-2:2x6 SP No.2
WEDGE Right: 2x4 SP No.3

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 2-11-1 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-15 max.): 5-9.
BOT CHORD Rigid ceiling directly applied or 1-4-12 oc bracing.
WEBS 1 Row at midpt 21-31, 17-32, 9-16, 10-16, 5-21, 4-24, 29-30
JOINTS 1 Brace at Jt(s): 31, 32, 33

**REACTIONS** (size) 13= Mechanical, 16=0-3-8, 26=0-5-8
Max Horiz 26=-189 (LC 12)
Max Uplift 13=-72 (LC 14), 16=-220 (LC 15), 26=-197 (LC 14)
Max Grav 13=1838 (LC 47), 16=1210 (LC 39), 26=2234 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/25, 2-3=-2180/200, 3-5=-3201/345, 5-6=-2338/277, 6-7=-2880/434, 7-8=-2880/434, 8-9=-2308/274, 9-10=-2431/333, 10-12=-3408/244, 12-13=-3588/224, 2-26=-2387/228
BOT CHORD 25-26=-159/0, 24-25=0/27, 3-24=-270/145, 23-24=-289/2821, 22-23=-11/120, 21-22=-124/73, 20-21=-62/2258, 19-20=-62/2258, 17-19=-62/2258, 16-17=-62/1997, 14-16=-126/2655, 13-14=-129/3104
WEBS 5-23=-163/1042, 24-26=-62/311, 2-24=-210/2275, 21-29=-436/293, 29-31=-404/322, 6-31=-391/323, 17-30=-939/207, 30-32=-943/214, 8-32=-919/211, 9-17=0/1566, 9-16=-543/0, 10-16=-1025/274, 10-14=-63/718, 12-14=-314/201, 5-21=-346/291, 21-23=0/2277, 4-23=-406/258, 4-24=-1200/100, 20-27=0/57, 19-28=-26/12, 27-29=-70/44, 27-28=-70/44, 28-30=-70/44, 31-33=-3/74, 32-33=-182/19, 7-33=-237/82, 6-33=-305/680, 8-33=-281/864

**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 4-7-7, Interior (1) 4-7-7 to 10-1-12, Exterior(2R) 10-1-12 to 38-11-4, Interior (1) 38-11-4 to 47-10-3, Exterior(2E) 47-10-3 to 53-2-0 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, 24-6-8 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 72 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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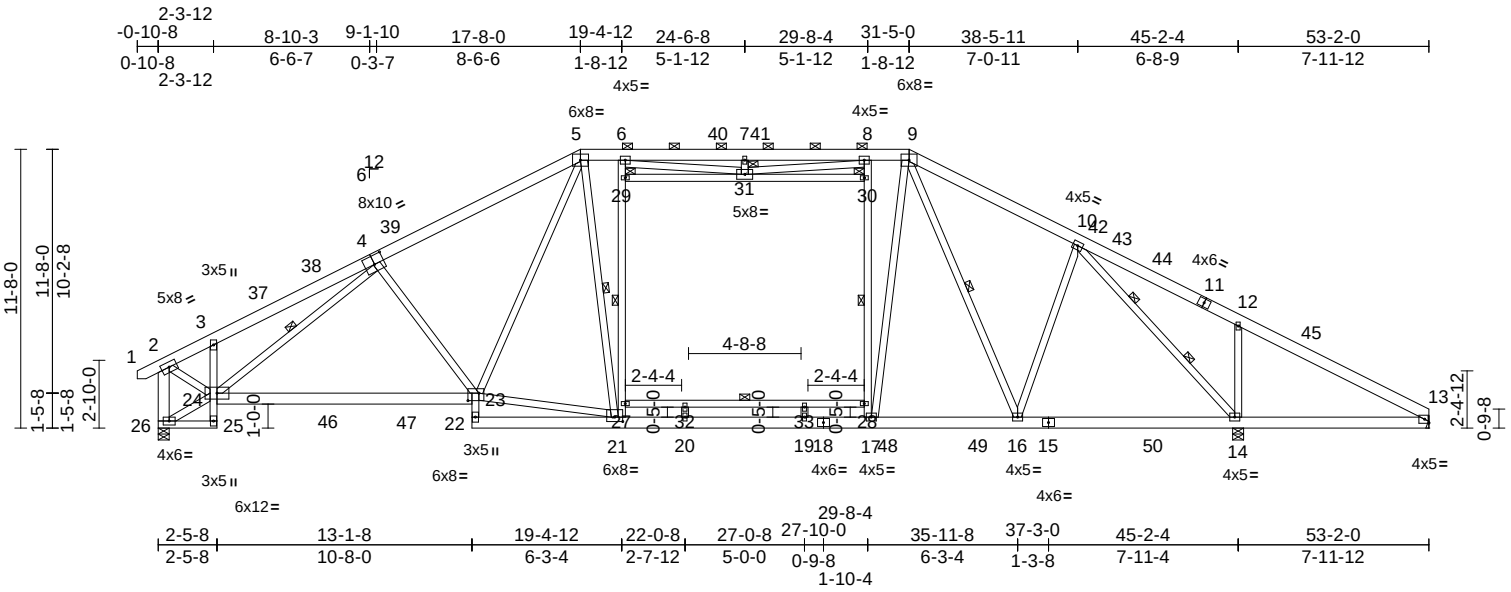
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A04T | Piggyback Base | 2 | 1 | I64561698 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:17 Page: 1
ID:DGN6a6f8caCKWpHw1clz1BzRCZx-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:96.4

Plate Offsets (X, Y): [4:0-5-0,0-4-8], [21:0-4-0,0-2-4], [23:0-5-8,0-3-12]

| 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 | 0.74 | Vert(LL) | -0.31 | 21-22 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.98 | Vert(CT) | -0.49 | 20-21 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.94 | Horz(CT) | 0.14 | 13 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 485 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2 *Except* 26-25:2x4 SP No.2, 25-3,23-22:2x4 SP No.3, 24-23:2x6 SP 2400F 2.0E
WEBS 2x4 SP No.3 *Except* 23-5,6-21,17-8,17-9,5-21,9-16:2x4 SP No.2, 26-2:2x6 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 3-0-1 oc purlins, except end verticals, and 2-0-0 oc purlins (3-10-0 max.): 5-9.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 21-29, 17-30, 27-28, 5-21, 4-24, 9-16
WEBS 2 Rows at 1/3 pts 10-14
JOINTS 1 Brace at Jt(s): 29, 30, 31

**REACTIONS** (size) 13= Mechanical, 14=0-5-8, 26=0-5-8
Max Horiz 26=-189 (LC 12)
Max Uplift 13=-194 (LC 14), 14=-368 (LC 15), 26=-153 (LC 14)
Max Grav 13=894 (LC 43), 14=2424 (LC 39), 26=2254 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/25, 2-3=-2256/160, 3-5=-3351/266, 5-6=-2512/228, 6-7=-3021/431, 7-8=-3021/431, 8-9=-2492/227, 9-10=-2691/264, 10-12=-1535/512, 12-13=-1549/438, 2-26=-2469/186
BOT CHORD 25-26=-150/0, 24-25=0/27, 3-24=-268/145, 23-24=-224/2945, 22-23=-27/105, 21-22=-100/104, 20-21=0/2431, 19-20=0/2431, 17-19=0/2431, 16-17=0/2209, 14-16=-85/2126, 13-14=-326/1331
WEBS 4-23=-411/268, 21-23=0/2404, 5-23=-175/1010, 21-27=-523/260, 27-29=-494/274, 6-29=-480/275, 17-28=-881/239, 28-30=-876/253, 8-30=-854/249, 27-32=-69/44, 32-33=-69/44, 28-33=-69/44, 9-17=-38/1372, 5-21=-419/509, 4-24=-1217/97, 24-26=-64/302, 2-24=-167/2356, 9-16=-313/42, 29-31=-49/98, 30-31=-186/46, 7-31=-231/81, 6-31=-318/686, 8-31=-289/809, 20-32=0/50, 19-33=-15/24, 10-14=-2125/236, 12-14=-497/274, 10-16=0/547

**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 4-7-7, Interior (1) 4-7-7 to 10-1-12, Exterior(2R) 10-1-12 to 38-11-4, Interior (1) 38-11-4 to 47-10-3, Exterior(2E) 47-10-3 to 53-2-0 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) 200.0lb AC unit load placed on the bottom chord, 24-6-8 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 194 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 14. This connection is for uplift only and does not consider lateral forces.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Continued on page 2



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14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) 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 | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | A04 | Piggyback Base | 1 | 1 | I64561699 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:17 Page: 1
ID:DGN6a6f8caCKWpHw1clz1BzRCZx-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

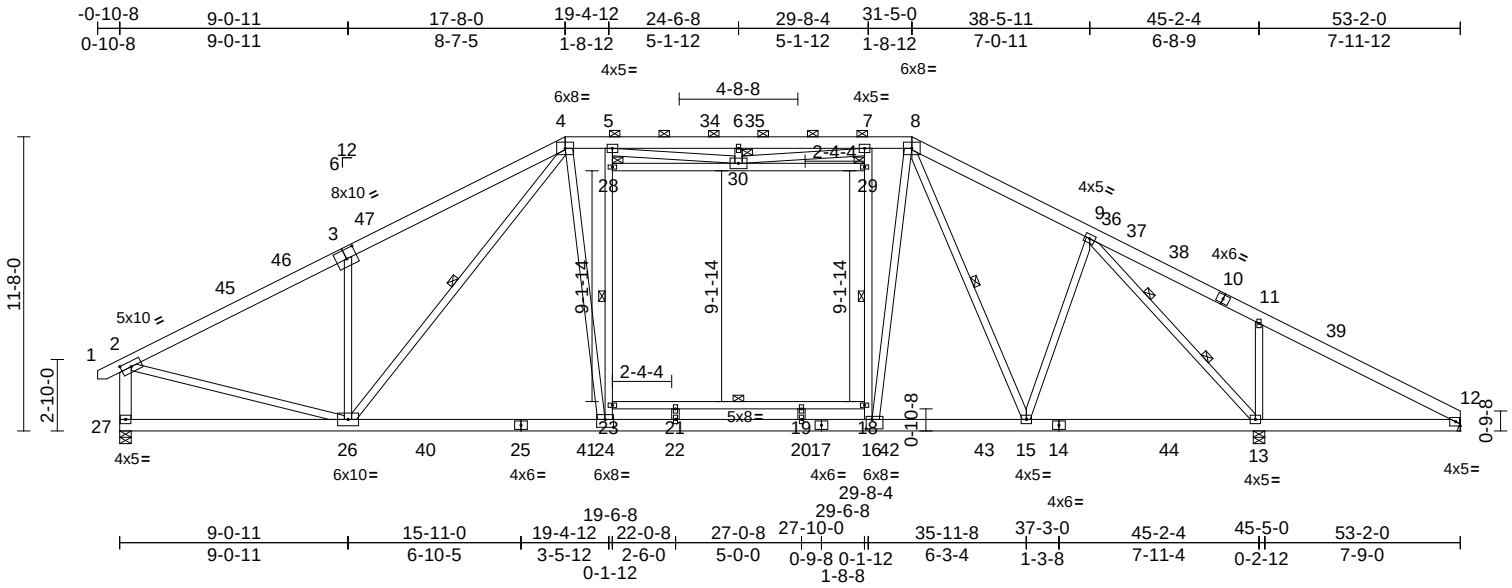


Plate Offsets (X, Y): [2:0-4-14,0-2-8], [3:0-5-0,0-4-8], [16:0-2-12,0-4-8], [24:0-4-0,0-3-12]

| 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 | 0.71 | Vert(LL) | -0.38 | 24-26 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.74 | Vert(CT) | -0.60 | 19-21 | >906 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 1.00 | Horz(CT) | 0.10 | 12 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/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* 14-17,17-25:2x6 SP 2400F 2.0E, 23-18:2x4 SP No.2
WEBS 2x4 SP No.3 *Except* 27-2:2x6 SP No.2, 2-26,8-15,5-24,7-16,4-24,8-16,26-4:2x4 SP No.2

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 3-0-14 oc purlins, except end verticals, and 2-0-0 oc purlins (3-4-13 max.): 4-8.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing: 21-23,19-21,18-19.
WEBS 1 Row at midpt 8-15, 24-28, 16-29, 4-26
WEBS 2 Rows at 1/3 pts 9-13
JOINTS 1 Brace at Jt(s): 28, 29, 30

**REACTIONS** (size) 12= Mechanical, 13=0-5-8, 27=0-5-8
Max Horiz 27=-187 (LC 12)
Max Uplift 12=-182 (LC 14), 13=-304 (LC 15), 27=-95 (LC 14)
Max Grav 12=960 (LC 37), 13=2644 (LC 39), 27=2609 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 4-5=-3160/126, 5-6=-3609/339, 6-7=-3609/339, 7-8=-3135/125, 8-9=-3241/182, 9-11=-1615/488, 11-12=-1625/413, 2-27=-2659/156, 1-2=0/25, 2-4=-3694/301
BOT CHORD 26-27=-125/289, 24-26=0/2910, 22-24=0/3076, 20-22=0/3076, 16-20=0/3076, 15-16=0/2784, 13-15=-16/2581, 12-13=-304/1405, 21-23=-70/40, 19-21=-70/40, 18-19=-70/40
WEBS 21-22=-217/0, 19-20=-238/0, 2-26=0/3001, 8-15=-482/0, 23-24=-525/261, 23-28=-482/333, 5-28=-467/337, 16-18=-940/227, 18-29=-881/249, 7-29=-855/246, 4-24=0/1197, 28-30=-46/93, 29-30=-194/41, 6-30=-230/82, 5-30=-324/677, 7-30=-297/804, 8-16=0/1858, 9-15=0/664, 9-13=-2426/152, 11-13=-495/274, 3-26=-805/326, 4-26=-317/473

**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 4-7-7, Interior (1) 4-7-7 to 10-1-12, Exterior(2R) 10-1-12 to 38-11-4, Interior (1) 38-11-4 to 47-10-3, Exterior(2E) 47-10-3 to 53-2-0 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) 200.0lb AC unit load placed on the bottom chord, 24-6-8 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 182 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) 27 and 13. This connection is for uplift only and does not consider lateral forces.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) 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


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | H01 | Monopitch Supported Gable | 2 | 1 | I64561700 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 E Nov 16 2023 Print: 8.730 E Nov 16 2023 MiTek Industries, Inc. Fri Mar 29 10:15:17 Page: 1
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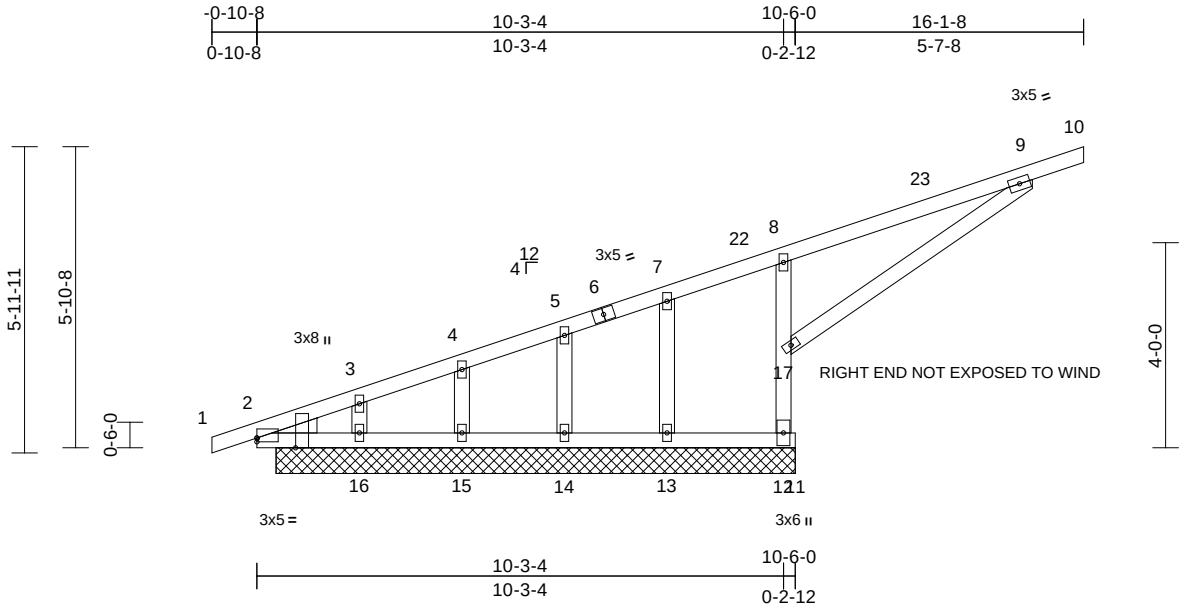


Scale = 1:44.9

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,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 | 0.75 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.21 | Vert(CT) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.69 | Horz(CT) | -0.01 | 2 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 67 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.2 |
| WEBS | 2x4 SP 2400F 2.0E *Except* 17-9:2x4 SP No.3 |
| 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. |
| BOT CHORD | Rigid ceiling directly applied or 6-0-0 oc bracing, Except: 10-0-0 oc bracing: 11-12. |

**REACTIONS** (lb/size) 2=-1/10-1-8, 12=616/10-1-8, 13=52/10-1-8, 14=200/10-1-8, 15=110/10-1-8, 16=253/10-1-8, 21=-1/10-1-8
Max Horiz 2=210 (LC 10), 21=210 (LC 10)
Max Uplift 2=-3 (LC 14), 12=-264 (LC 14), 13=-11 (LC 21), 14=-26 (LC 10), 15=-155 (LC 14), 21=-3 (LC 14)
Max Grav 2=1 (LC 21), 12=893 (LC 21), 13=98 (LC 7), 14=202 (LC 21), 15=171 (LC 21), 16=253 (LC 1), 21=1 (LC 21)

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

| | |
|---|---|
| TOP CHORD | 1-2=0/17, 2-3=-535/377, 3-4=-531/378, 4-5=-474/378, 5-6=-435/340, 6-7=-430/359, 7-22=-437/413, 8-22=-429/432, 8-23=-579/621, 9-23=-567/743, 9-10=-29/0 |
| BOT CHORD | 2-16=-339/244, 15-16=-339/244, 14-15=-339/244, 13-14=-339/244, 12-13=-339/244, 11-12=0/0 |
| WEBS | 12-17=-870/552, 8-17=-396/210, 9-17=-810/584, 3-16=-153/3, 4-15=-130/154, 5-14=-167/99, 7-13=-29/60 |

**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 2-0-0, Interior (1) 2-0-0 to 13-1-8, Exterior(2E) 13-1-8 to 16-1-8 zone; cantilever 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 3 lb uplift at joint 2, 264 lb uplift at joint 12, 155 lb uplift at joint 15, 26 lb uplift at joint 14, 11 lb uplift at joint 13 and 3 lb uplift at joint 2.
11) Non Standard bearing condition. Review required.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | H02 | Monopitch | 6 | 1 | I64561701 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23

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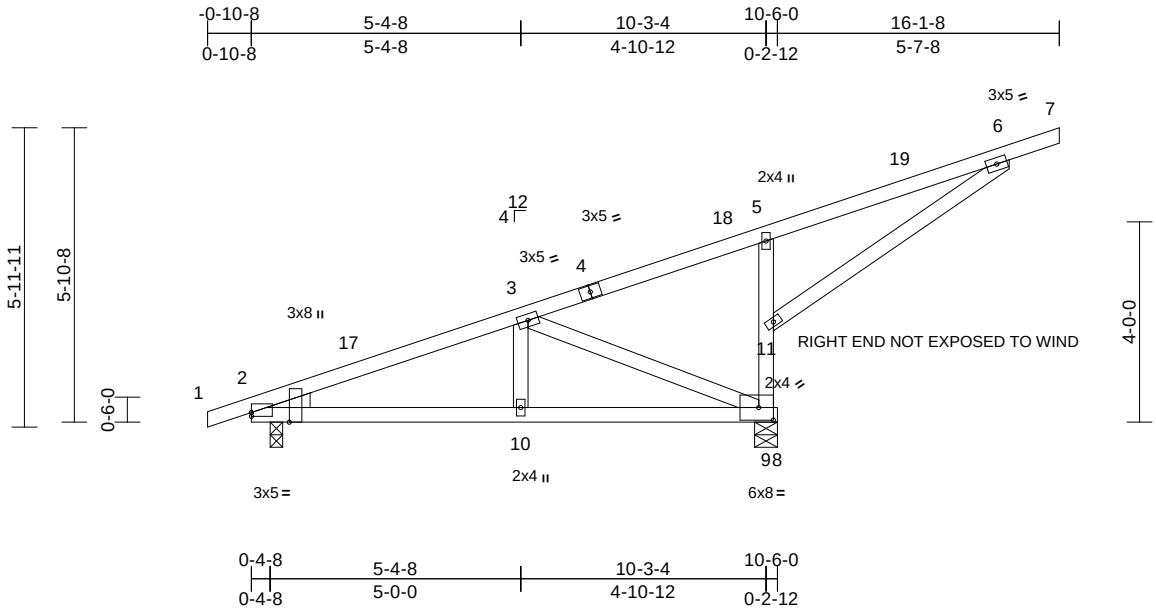
Page: 1




Scale = 1:46

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [9:0-3-8,0-3-0]

| 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 | 0.71 | Vert(LL) | 0.03 | 10-16 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.27 | Vert(CT) | -0.04 | 9-10 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.71 | Horz(CT) | 0.01 | 9 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 67 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 2400F 2.0E
WEDGE Left: 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=0-3-0, 9=0-5-8
Max Horiz 2=210 (LC 10)
Max Uplift 2=-99 (LC 10), 9=-379 (LC 10)
Max Grav 2=379 (LC 1), 9=1090 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-368/81, 3-5=-447/428, 5-6=-594/757, 6-7=-29/0
BOT CHORD 2-10=-166/338, 9-10=-166/338, 8-9=0/0
WEBS 9-11=-840/532, 5-11=-358/181, 3-10=-109/219, 3-9=-563/450, 6-11=-825/600

**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 13-1-8, Exterior(2E) 13-1-8 to 16-1-8 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.
8) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024

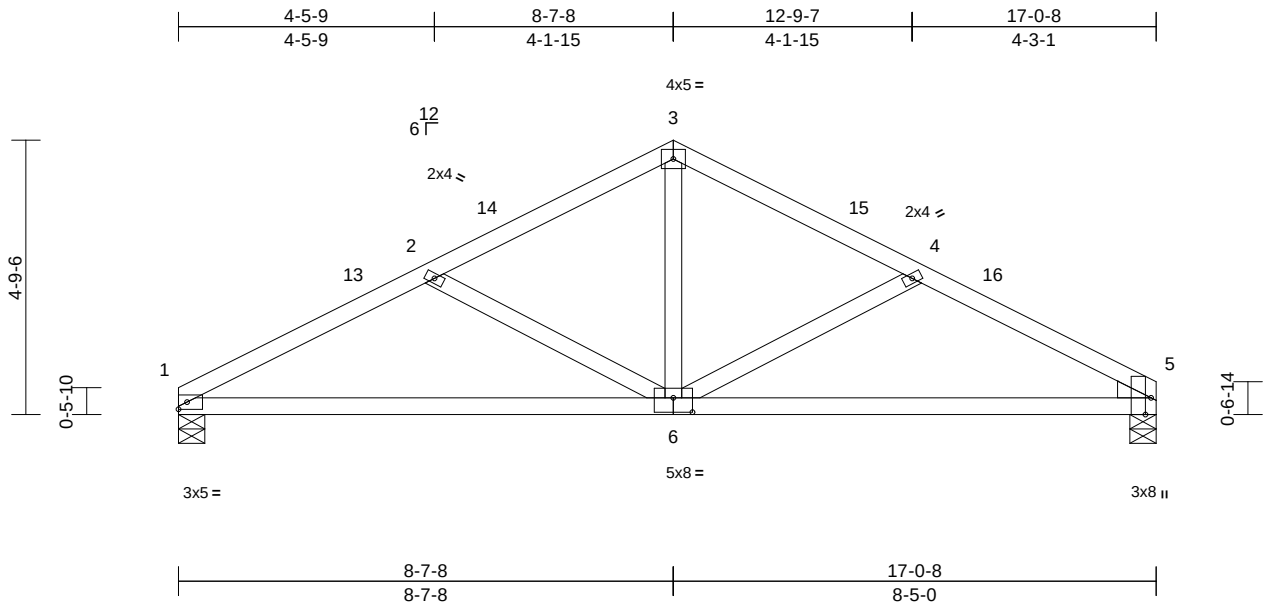


ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB | I64561702 |
|---|---|---|---|---|---|---|
| 24030195 | J01 | Common | 5 | 1 | Job Reference (optional) | |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23 Page: 1

ID:yPXMLbyKekkHSiWSlZLGINzRR58-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




Scale = 1:40.2

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 | 0.37 | Vert(LL) | -0.09 | 6-9 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.65 | 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 | IRC2018/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 5-1-6 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=-1263/310, 2-3=-883/233, 3-4=-875/232, 4-5=-1219/301 |
| BOT CHORD | 1-5=-223/1092 |
| WEBS | 3-6=-53/478, 4-6=-407/160, 2-6=-445/175 |

**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 User Defined .
8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 5. This connection is for uplift only and does not consider lateral forces.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



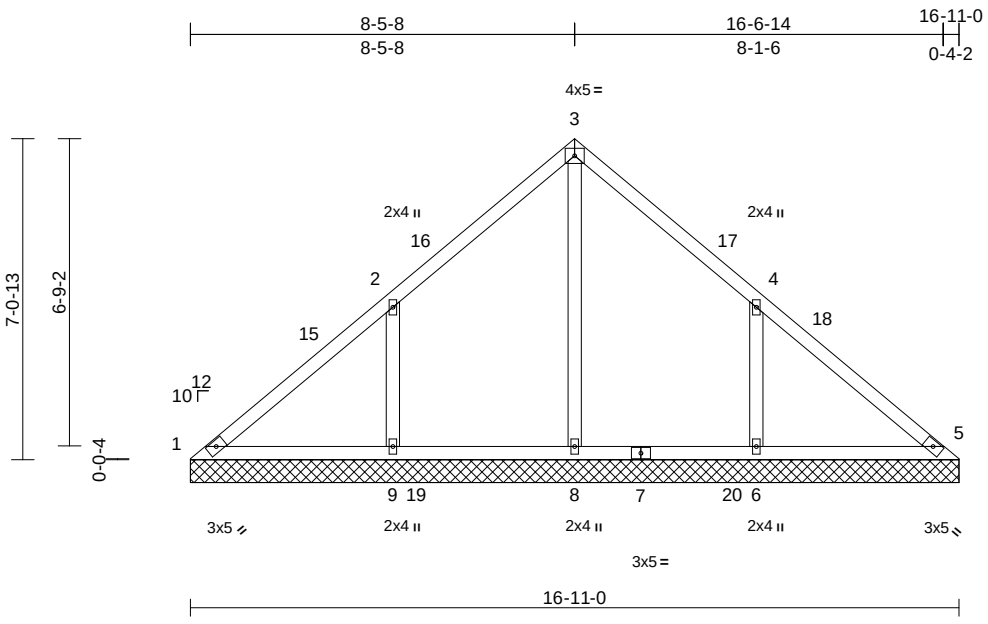
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD1 | Valley | 1 | 1 | I64561703 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 ID:?VRASUfm0qfd3oFPBHC5FHzRQud-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






Scale = 1:50.7

| 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 | 0.39 | 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 | IRC2018/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 10-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=16-11-0, 5=16-11-0, 6=16-11-0, 8=16-11-0, 9=16-11-0, 14=16-11-0
Max Horiz 1=161 (LC 11)
Max Uplift 1=-58 (LC 10), 6=-184 (LC 15), 9=-189 (LC 14)
Max Grav 1=83 (LC 35), 5=1 (LC 30), 6=513 (LC 6), 8=656 (LC 24), 9=514 (LC 24), 14=1 (LC 30)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-105/374, 2-3=-24/322, 3-4=-1/301, 4-5=-143/306
BOT CHORD 1-9=-200/77, 8-9=-200/75, 6-8=-200/75, 5-6=-200/75
WEBS 3-8=-474/0, 2-9=-394/222, 4-6=-393/220

**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, Interior (1) 3-0-5 to 5-5-13, Exterior(2R) 5-5-13 to 11-5-13, Interior (1) 11-5-13 to 13-6-12, Exterior(2E) 13-6-12 to 16-6-12 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, 189 lb uplift at joint 9 and 184 lb uplift at joint 6.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



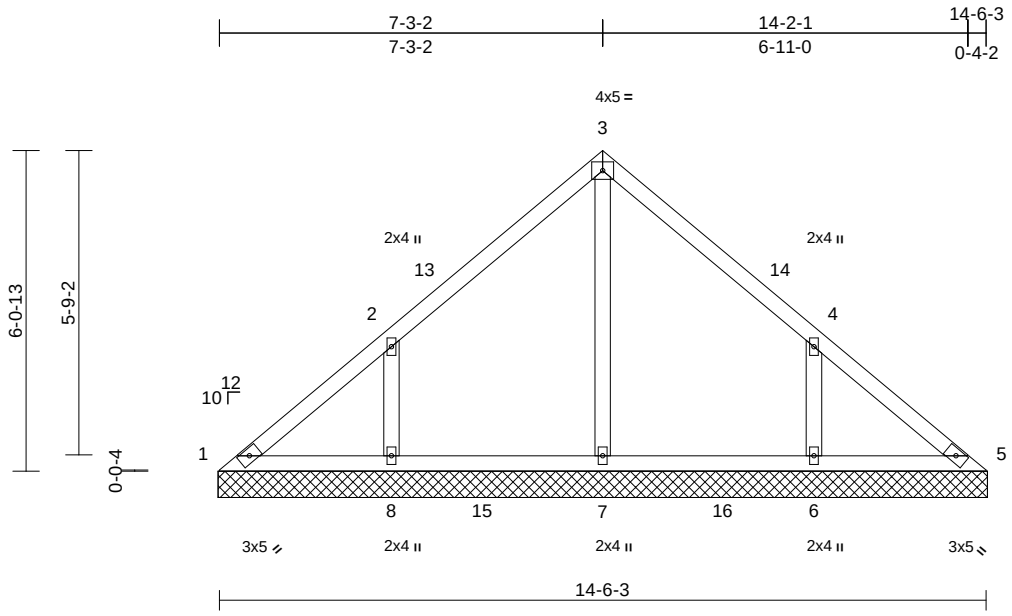
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD2 | Valley | 1 | 1 | I64561704 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:25 ID:Th_ZgqfOm8nUgyqbk?jKoVzRQuc-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






Scale = 1:43.6

| 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 | 0.31 | 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 | IRC2018/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=14-6-13, 5=14-6-13, 6=14-6-13, 7=14-6-13, 8=14-6-13
Max Horiz 1=138 (LC 13)
Max Uplift 1=-24 (LC 10), 6=-155 (LC 15), 8=-158 (LC 14)
Max Grav 1=123 (LC 25), 5=98 (LC 24), 6=457 (LC 21), 7=410 (LC 24), 8=457 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-154/148, 2-3=-172/123, 3-4=-172/112, 4-5=-122/112
BOT CHORD 1-8=-62/127, 7-8=-62/101, 6-7=-62/101, 5-6=-62/101
WEBS 3-7=-230/0, 2-8=-375/197, 4-6=-375/195

**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) 0-0-0 to 3-3-6, Interior (1) 3-3-6 to 4-3-6, Exterior(2R) 4-3-6 to 10-3-6, Interior (1) 10-3-6 to 11-3-6, Exterior(2E) 11-3-6 to 14-6-13 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) 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, 158 lb uplift at joint 8 and 155 lb uplift at joint 6.
11) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

NORTH CAROLINA PROFESSIONAL SEAL 036322 ENGINEER ERIC A. GILBERT

March 29,2024



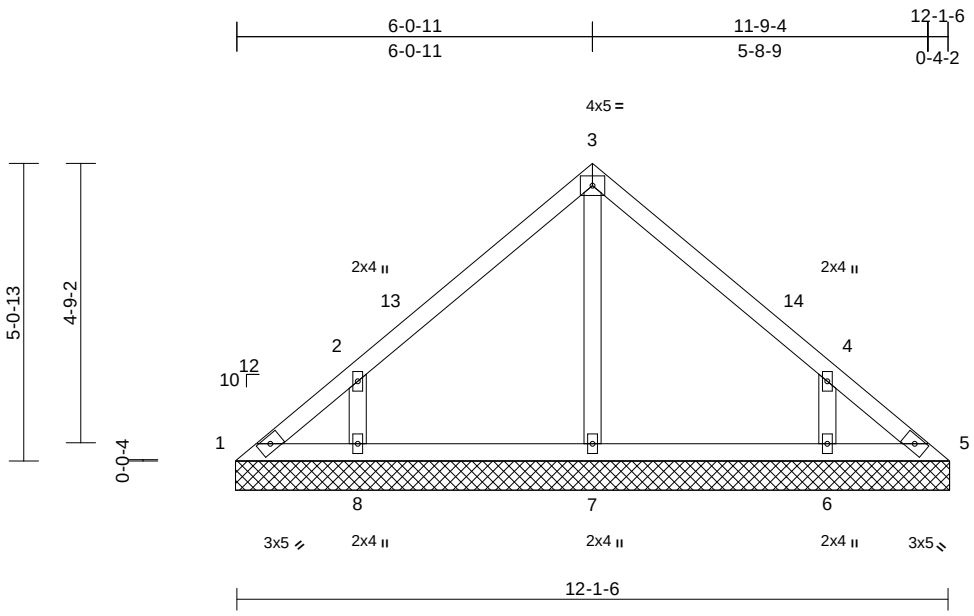
ENGINEERING BY TRENCO A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD3 | Valley | 1 | 1 | I64561705 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:25 ID:kUxM45s?bF21LX?KCRTFVAzRQqU-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f






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 | IRC2018/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=12-2-0, 5=12-2-0, 6=12-2-0, 7=12-2-0, 8=12-2-0
Max Horiz 1=-115 (LC 10)
Max Uplift 1=-32 (LC 10), 5=-4 (LC 11), 6=-136 (LC 15), 8=-139 (LC 14)
Max Grav 1=93 (LC 25), 5=72 (LC 24), 6=435 (LC 21), 7=261 (LC 21), 8=435 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-118/101, 2-3=-216/117, 3-4=-216/117, 4-5=-91/63
BOT CHORD 1-8=-32/78, 7-8=-32/73, 6-7=-32/73, 5-6=-32/73
WEBS 3-7=-174/0, 2-8=-398/218, 4-6=-398/218

**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) 0-0-0 to 3-0-0, Exterior(2R) 3-0-0 to 9-2-0, Exterior(2E) 9-2-0 to 12-2-0 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) 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 32 lb uplift at joint 1, 4 lb uplift at joint 5, 139 lb uplift at joint 8 and 136 lb uplift at joint 6.
11) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD4 | Valley | 1 | 1 | I64561706 |
| | | | | | Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:25 Page: 1
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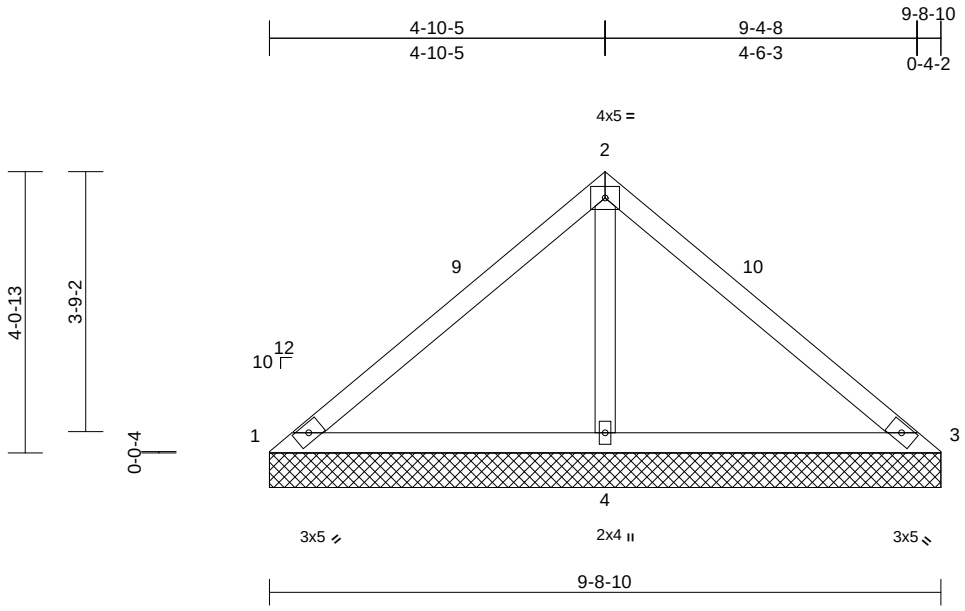


Scale = 1:33.3

| 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 | 0.46 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.43 | 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 | IRC2018/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 9-8-10 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-8-10, 3=9-8-10, 4=9-8-10
Max Horiz 1=-91 (LC 10)
Max Uplift 1=-51 (LC 21), 3=-51 (LC 20), 4=-110 (LC 14)
Max Grav 1=95 (LC 20), 3=95 (LC 21), 4=784 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-117/380, 2-3=-117/380
BOT CHORD 1-4=-248/174, 3-4=-248/174
WEBS 2-4=-646/274

**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 6-8-14, Exterior(2E) 6-8-14 to 9-8-14 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 51 lb uplift at joint 1, 51 lb uplift at joint 3 and 110 lb uplift at joint 4.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD5 | Valley | 1 | 1 | I64561707 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:25 Page: 1
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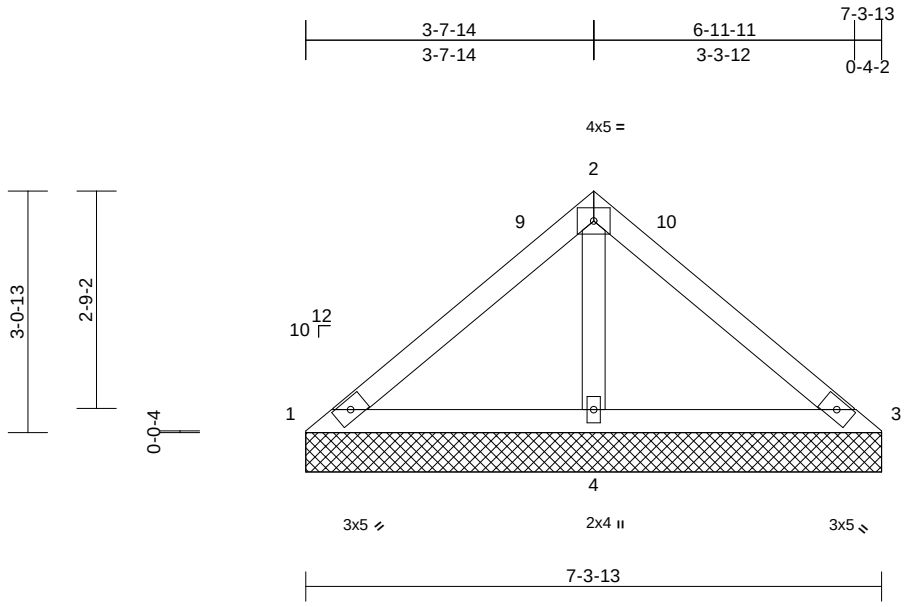



Scale = 1:29.3

| 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 | 0.26 | 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 | IRC2018/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 7-3-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-3-13, 3=7-3-13, 4=7-3-13
Max Horiz 1=-68 (LC 12)
Max Uplift 1=-19 (LC 21), 3=-19 (LC 20), 4=-75 (LC 14)
Max Grav 1=105 (LC 20), 3=105 (LC 21), 4=541 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-91/234, 2-3=-91/234
BOT CHORD 1-4=-183/154, 3-4=-183/154
WEBS 2-4=-429/203

**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 4-4-2, Exterior(2E) 4-4-2 to 7-4-2 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 19 lb uplift at joint 1, 19 lb uplift at joint 3 and 75 lb uplift at joint 4.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



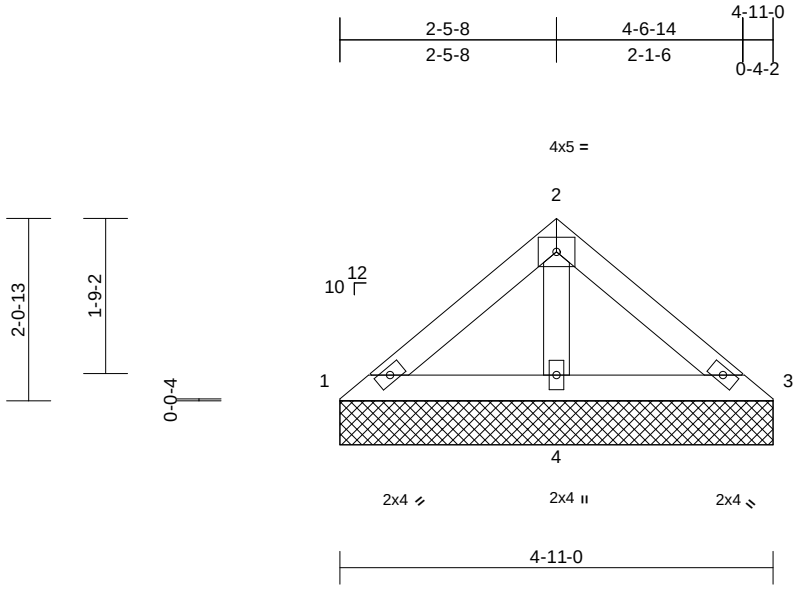
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD6 | Valley | 1 | 1 | I64561708 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:25 ID:CgVkHRtdMZAuzhaXm9_U1OzRQqT-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






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 | IRC2018/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 4-11-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-11-0, 3=4-11-0, 4=4-11-0
Max Horiz 1=-44 (LC 10)
Max Uplift 3=-7 (LC 15), 4=-34 (LC 14)
Max Grav 1=89 (LC 20), 3=89 (LC 21), 4=301 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-81/106, 2-3=-81/106
BOT CHORD 1-4=-86/90, 3-4=-86/90
WEBS 2-4=-215/100

**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 34 lb uplift at joint 4.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



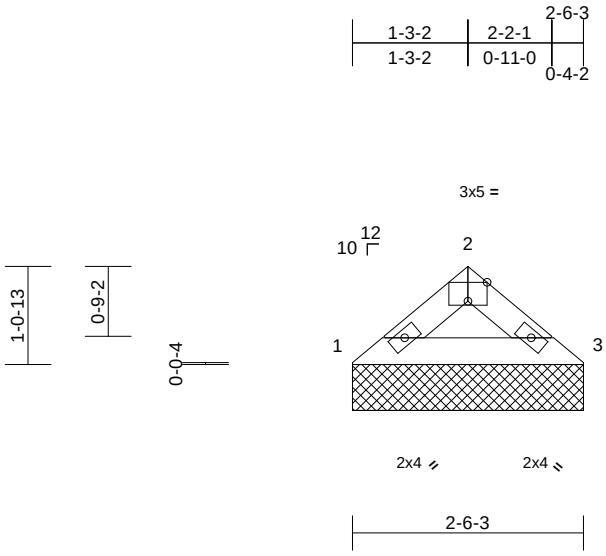
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLD7 | Valley | 1 | 1 | I64561709 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:25 ID:CgVkHRtdMZAuzhaXm9_U1OzRQqT-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






Scale = 1:25.1

Plate Offsets (X, Y): [2:0-2-8,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 | 0.05 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.05 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.00 | Horiz(TL) | 0.00 | 3 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MP | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 7 lb | FT = 20% |

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

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 2-6-3 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1=2-6-3, 3=2-6-3
Max Horiz 1=21 (LC 11)
Max Uplift 1=-9 (LC 14), 3=-9 (LC 15)
Max Grav 1=114 (LC 20), 3=114 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-144/62, 2-3=-144/62
BOT CHORD 1-3=-33/102

**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 9 lb uplift at joint 1 and 9 lb uplift at joint 3.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB1 | Valley | 1 | 1 | I64561710 Job Reference (optional) |

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

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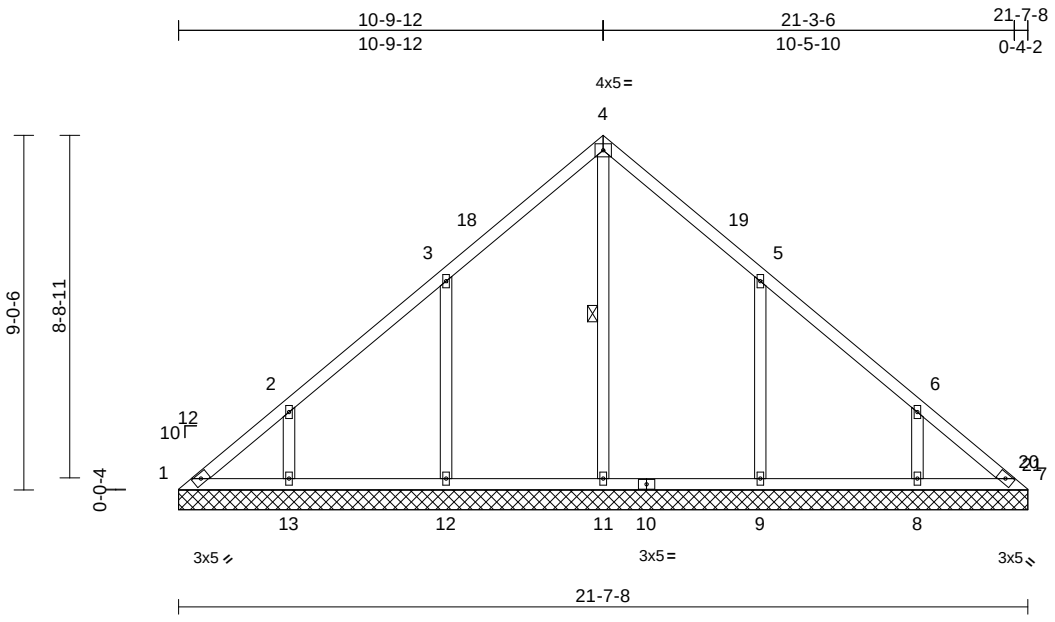


Scale = 1:58.7

| 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 | IRC2018/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=21-7-8, 7=21-7-8, 8=21-7-8, 9=21-7-8, 11=21-7-8, 12=21-7-8, 13=21-7-8
Max Horiz 1=207 (LC 11)
Max Uplift 1=-48 (LC 10), 7=-6 (LC 11), 8=-114 (LC 15), 9=-174 (LC 15), 12=-173 (LC 14), 13=-120 (LC 14)
Max Grav 1=149 (LC 25), 7=109 (LC 27), 8=363 (LC 25), 9=473 (LC 6), 11=415 (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=-187/181, 4-5=-188/154, 5-6=-116/83, 6-7=-168/108
BOT CHORD 1-13=-76/154, 12-13=-76/154, 11-12=-76/154, 9-11=-76/154, 8-9=-76/154, 7-8=-76/154
WEBS 4-11=-208/3, 3-12=-376/222, 2-13=-265/163, 5-9=-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 2-10-1, Interior (1) 2-10-1 to 7-10-1, Exterior(2R) 7-10-1 to 13-10-1, Interior (1) 13-10-1 to 18-3-4, Exterior(2E) 18-3-4 to 21-3-4 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 9 and 114 lb uplift at joint 8.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB2 | Valley | 1 | 1 | I64561711 |
| | | | | | Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 Page: 1
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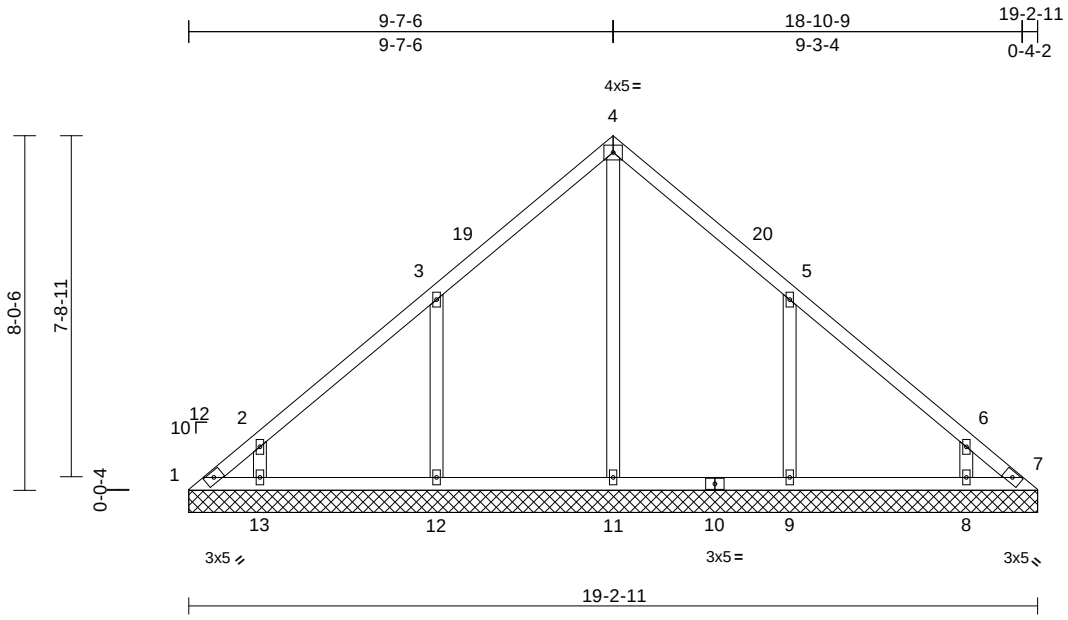



Scale = 1:52.2

| 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 | IRC2018/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=19-2-11, 7=19-2-11, 8=19-2-11, 9=19-2-11, 11=19-2-11, 12=19-2-11, 13=19-2-11, 18=19-2-11
Max Horiz 1=184 (LC 11)
Max Uplift 1=-96 (LC 10), 8=-53 (LC 15), 9=-193 (LC 15), 12=-174 (LC 14), 13=-102 (LC 14)
Max Grav 1=124 (LC 13), 7=0 (LC 13), 8=304 (LC 30), 9=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=-72/43
BOT CHORD 1-13=-45/64, 12-13=-18/55, 11-12=-18/55, 9-11=-18/55, 8-9=-18/55, 7-8=-18/55
WEBS 4-11=-256/59, 3-12=-379/222, 2-13=-260/173, 5-9=-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 15-10-7, Exterior(2E) 15-10-7 to 18-10-7 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 9 and 53 lb uplift at joint 8.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024

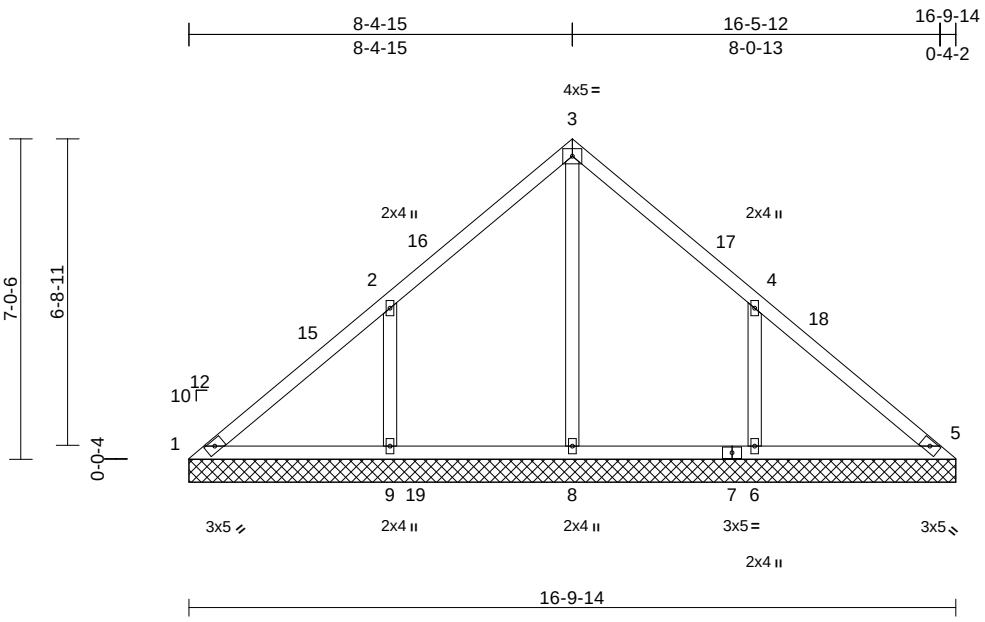


ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB3 | Valley | 1 | 1 | I64561712 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 Page: 1

ID:4pahjxh9RSqoCd5h0aDV3jzRQs?-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f




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 | IRC2018/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=16-9-14, 5=16-9-14, 6=16-9-14, 8=16-9-14, 9=16-9-14, 14=16-9-14
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=511 (LC 6), 8=654 (LC 24), 9=511 (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=-139/302
BOT CHORD 1-9=-197/76, 8-9=-197/74, 6-8=-197/74, 5-6=-197/74
WEBS 3-8=-471/0, 2-9=-392/221, 4-6=-392/219

**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 5-5-4, Exterior(2R) 5-5-4 to 11-5-4, Interior (1) 11-5-4 to 13-5-11, Exterior(2E) 13-5-11 to 16-5-11 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, 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.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



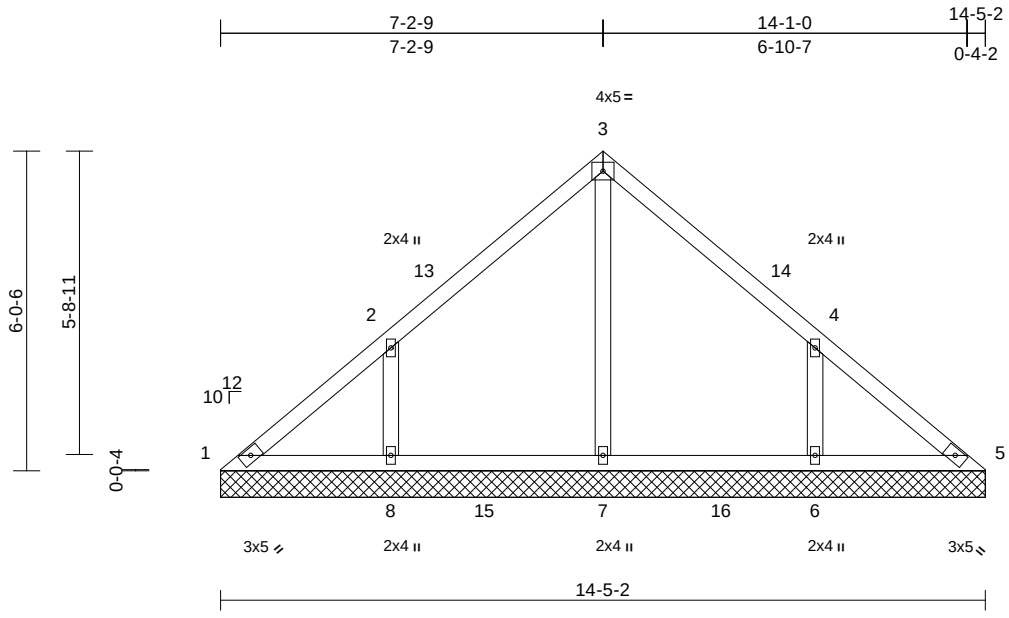
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB4 | Valley | 1 | 1 | I64561713 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 ID:CKtcSNrINSSyGdaBHoyY5SzRQro-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






Scale = 1:43.5

| 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 | 0.31 | 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 | IRC2018/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=14-5-2, 5=14-5-2, 6=14-5-2, 7=14-5-2, 8=14-5-2
Max Horiz 1=-137 (LC 10)
Max Uplift 1=-24 (LC 10), 6=-154 (LC 15), 8=-157 (LC 14)
Max Grav 1=124 (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=-152/141, 2-3=-176/118, 3-4=-176/112, 4-5=-121/106
BOT CHORD 1-8=-59/126, 7-8=-59/100, 6-7=-59/100, 5-6=-59/100
WEBS 3-7=-224/0, 2-8=-375/196, 4-6=-375/195

**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 3-2-14, Interior (1) 3-2-14 to 4-2-14, Exterior(2R) 4-2-14 to 10-2-14, Interior (1) 10-2-14 to 11-2-14, Exterior(2E) 11-2-14 to 14-5-6 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.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



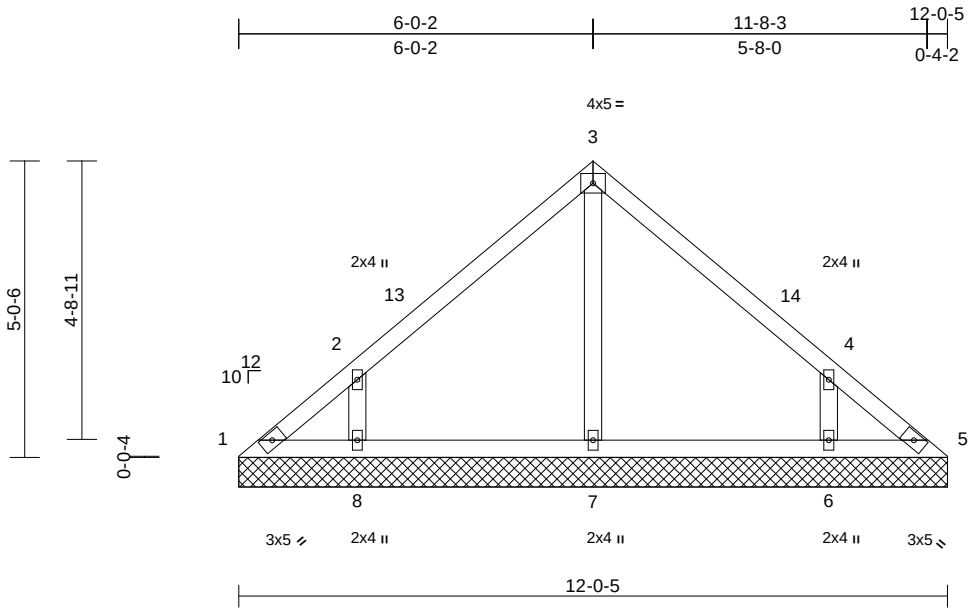
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB5 | Valley | 1 | 1 | I64561714 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 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 | IRC2018/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=12-0-5, 5=12-0-5, 6=12-0-5, 7=12-0-5, 8=12-0-5
Max Horiz 1=-114 (LC 10)
Max Uplift 1=-34 (LC 10), 5=-6 (LC 11), 6=-136 (LC 15), 8=-139 (LC 14)
Max Grav 1=91 (LC 25), 5=70 (LC 24), 6=434 (LC 21), 7=260 (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 9-0-10, Exterior(2E) 9-0-10 to 12-0-10 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.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



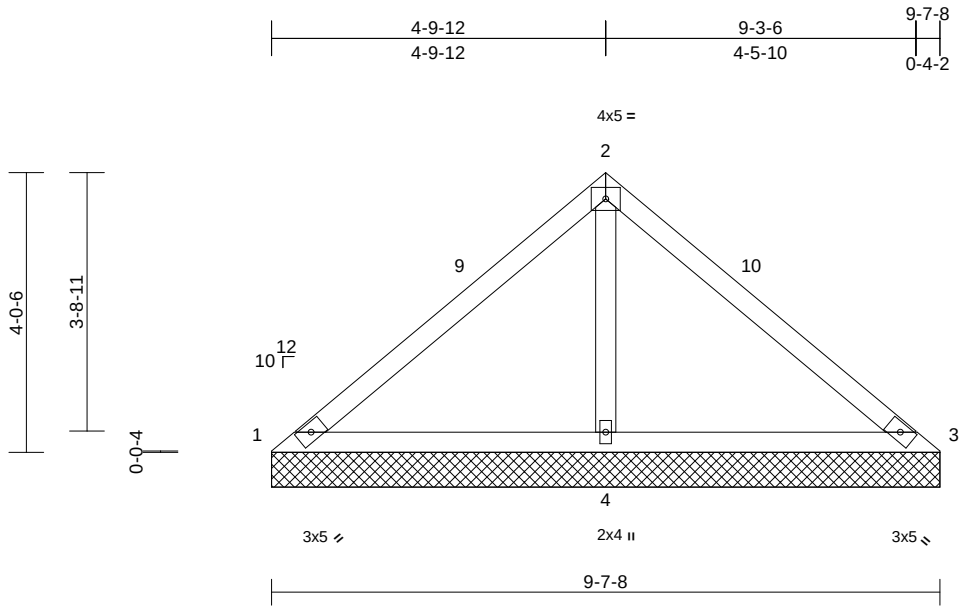
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB6 | Valley | 1 | 1 | I64561715 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 ID:vFTOYoza1WjXT9L6tv8uVZzRQre-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






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 | IRC2018/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 9-7-8 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-7-8, 3=9-7-8, 4=9-7-8
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=772 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-115/373, 2-3=-115/373
BOT CHORD 1-4=-243/172, 3-4=-243/172
WEBS 2-4=-637/271

**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 6-7-13, Exterior(2E) 6-7-13 to 9-7-13 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) 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.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



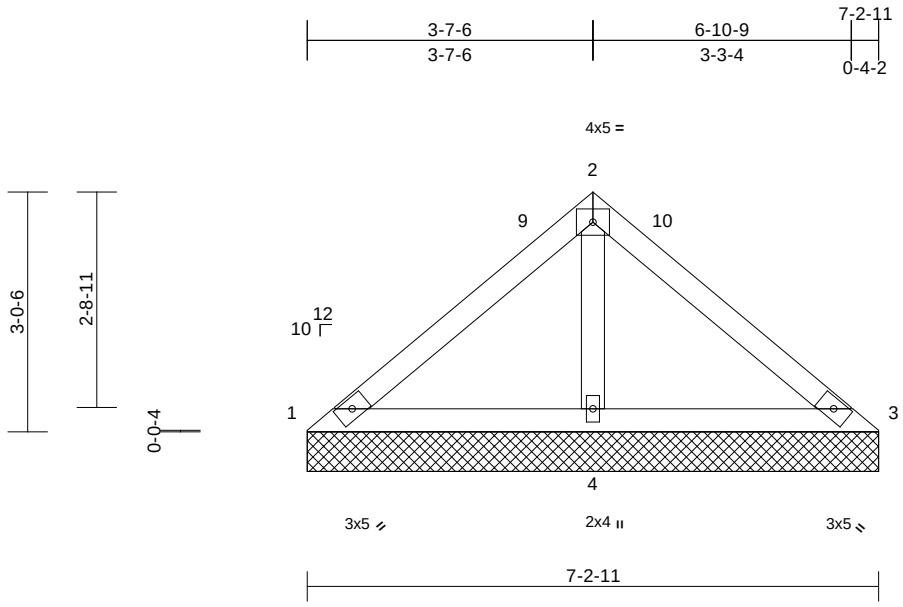
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB | I64561716 |
|---|---|---|---|---|---|---|
| 24030195 | VLB7 | Valley | 1 | 1 | Job Reference (optional) | |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 ID:vFTOYoza1WjXT9L6tv8uVZzRQre-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






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 | IRC2018/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 7-2-11 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-2-11, 3=7-2-11, 4=7-2-11
Max Horiz 1=67 (LC 11)
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=531 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-88/228, 2-3=-88/228
BOT CHORD 1-4=-179/151, 3-4=-179/151
WEBS 2-4=-420/199

**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 4-3-0, Exterior(2E) 4-3-0 to 7-3-0 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) 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.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



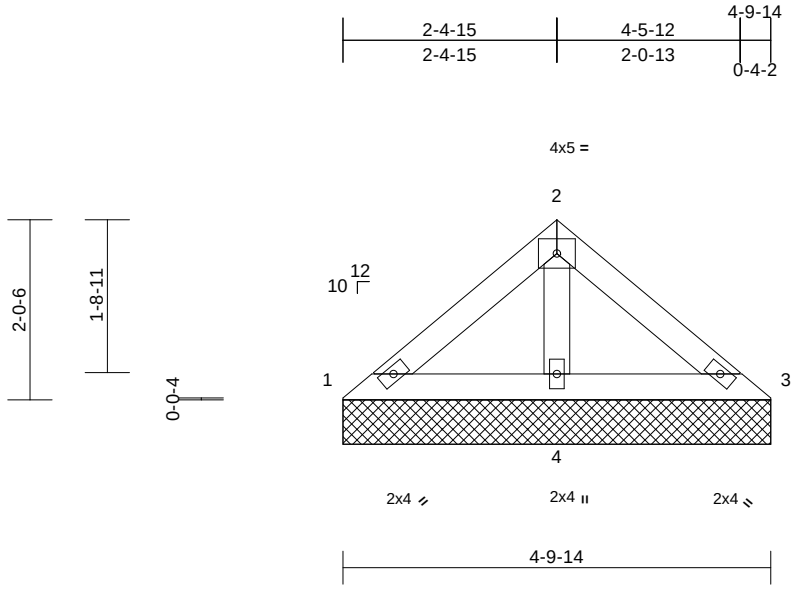
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | VLB8 | Valley | 1 | 1 | I64561717 Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:24 ID:vFTOYoza1WjXT9L6tv8uVZzRQre-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f






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 | IRC2018/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

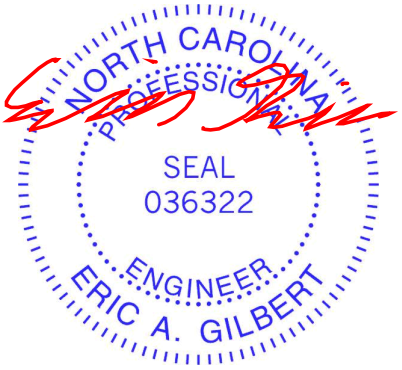
**BRACING**
TOP CHORD Structural wood sheathing directly applied or 4-9-14 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-9-14, 3=4-9-14, 4=4-9-14
Max Horiz 1=43 (LC 13)
Max Uplift 3=-7 (LC 15), 4=-33 (LC 14)
Max Grav 1=88 (LC 20), 3=88 (LC 21), 4=293 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-80/102, 2-3=-80/102
BOT CHORD 1-4=-83/87, 3-4=-83/87
WEBS 2-4=-208/95

**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.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard




March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | PBA2 | Piggyback | 2 | 4 | I64561718 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23 Page: 1
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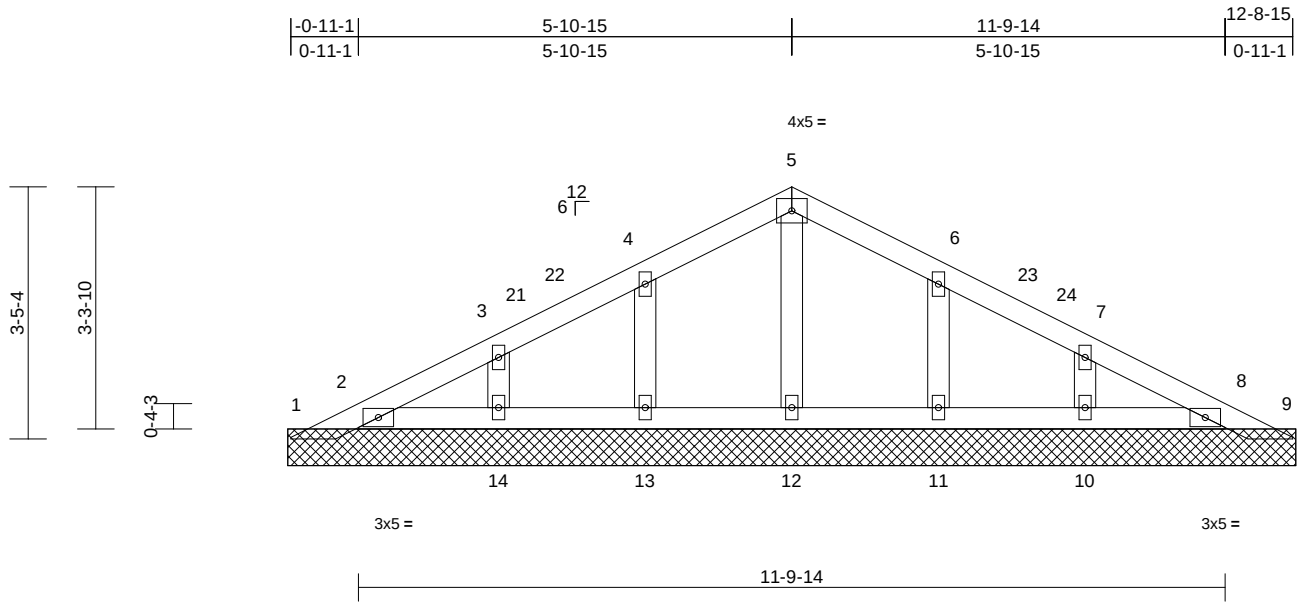


Scale = 1:31.4

| 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 | 0.02 | Vert(LL) | n/a | - | n/a | 999 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.01 | Vert(TL) | n/a | - | n/a | 999 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.01 | Horiz(TL) | 0.00 | 9 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 207 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=13-9-0, 2=13-9-0, 8=13-9-0, 9=13-9-0, 10=13-9-0, 11=13-9-0, 12=13-9-0, 13=13-9-0, 14=13-9-0, 15=13-9-0, 18=13-9-0
Max Horiz 1=52 (LC 14)
Max Uplift 1=-25 (LC 15), 2=-14 (LC 14), 8=-7 (LC 15), 9=-2 (LC 22), 10=-45 (LC 15), 11=-47 (LC 15), 13=-48 (LC 14), 14=-44 (LC 14), 15=-14 (LC 14), 18=-7 (LC 15)
Max Grav 1=24 (LC 18), 2=154 (LC 21), 8=142 (LC 22), 9=4 (LC 1), 10=233 (LC 22), 11=245 (LC 22), 12=144 (LC 21), 13=244 (LC 21), 14=234 (LC 21), 15=154 (LC 21), 18=142 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-56/69, 2-3=-48/32, 3-4=-55/50, 4-5=-62/105, 5-6=-62/105, 6-7=-55/40, 7-8=-29/26, 8-9=0/24
BOT CHORD 2-14=-15/54, 13-14=-15/54, 12-13=-15/54, 11-12=-15/54, 10-11=-15/54, 8-10=-15/54
WEBS 5-12=-103/0, 4-13=-208/121, 3-14=-181/90, 6-11=-208/121, 7-10=-180/91

**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 3-10-8, Exterior(2R) 3-10-8 to 9-10-8, Interior (1) 9-10-8 to 10-4-13, Exterior(2E) 10-4-13 to 13-4-13 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) 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 14 lb uplift at joint 2, 7 lb uplift at joint 8, 25 lb uplift at joint 1, 2 lb uplift at joint 9, 48 lb uplift at joint 13, 44 lb uplift at joint 14, 47 lb uplift at joint 11, 45 lb uplift at joint 10, 14 lb uplift at joint 2 and 7 lb uplift at joint 8.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
15) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard


March 29,2024



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A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | PBA | Piggyback | 2 | 1 | I64561719 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23 Page: 1
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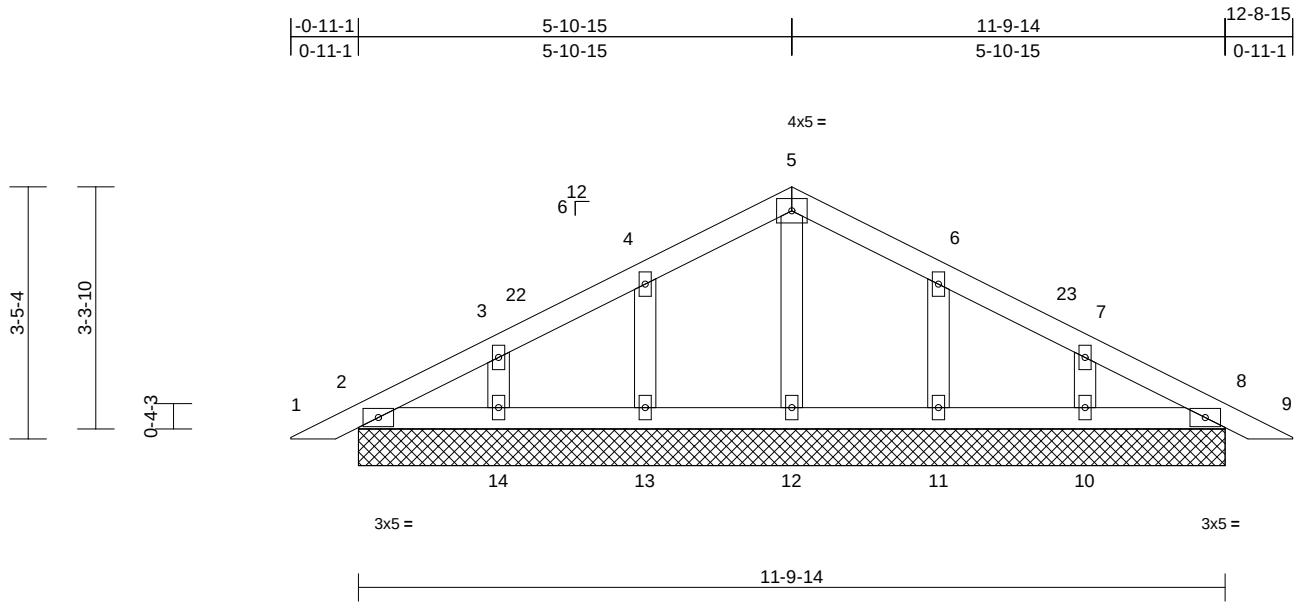



Scale = 1:31.4

| 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 | 0.08 | 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 | IRC2018/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

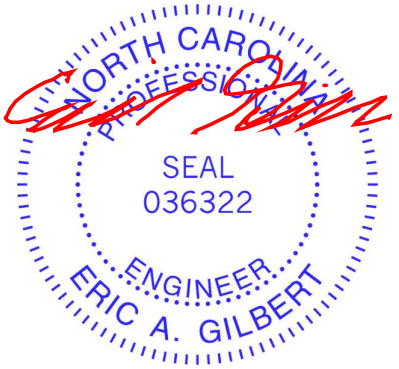
**BRACING**
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=11-9-14, 8=11-9-14, 10=11-9-14, 11=11-9-14, 12=11-9-14, 13=11-9-14, 14=11-9-14, 15=11-9-14, 19=11-9-14
Max Horiz 2=52 (LC 18), 15=52 (LC 18)
Max Uplift 2=-9 (LC 15), 8=-11 (LC 15), 10=-45 (LC 15), 11=-47 (LC 15), 13=-47 (LC 14), 14=-45 (LC 14), 15=-9 (LC 15), 19=-11 (LC 15)
Max Grav 2=123 (LC 21), 8=123 (LC 22), 10=237 (LC 22), 11=244 (LC 22), 12=143 (LC 21), 13=244 (LC 21), 14=237 (LC 21), 15=123 (LC 21), 19=123 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-46/33, 3-4=-56/49, 4-5=-63/116, 5-6=-63/116, 6-7=-56/49, 7-8=-29/25, 8-9=0/17
BOT CHORD 2-14=-9/67, 13-14=-9/67, 12-13=-9/67, 11-12=-9/67, 10-11=-9/67, 8-10=-9/67
WEBS 5-12=-102/0, 4-13=-208/125, 3-14=-181/113, 6-11=-208/125, 7-10=-181/113

**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) 0-4-3 to 3-4-3, Exterior(2N) 3-4-3 to 3-10-8, Corner(3R) 3-10-8 to 9-10-8, Exterior(2N) 9-10-8 to 10-4-13, Corner(3E) 10-4-13 to 13-4-13 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 9 lb uplift at joint 2, 11 lb uplift at joint 8, 47 lb uplift at joint 13, 45 lb uplift at joint 14, 47 lb uplift at joint 11, 45 lb uplift at joint 10, 9 lb uplift at joint 2 and 11 lb uplift at joint 8.
13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
14) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard




March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | PBA1 | Piggyback | 18 | 1 | I64561720 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23 Page: 1
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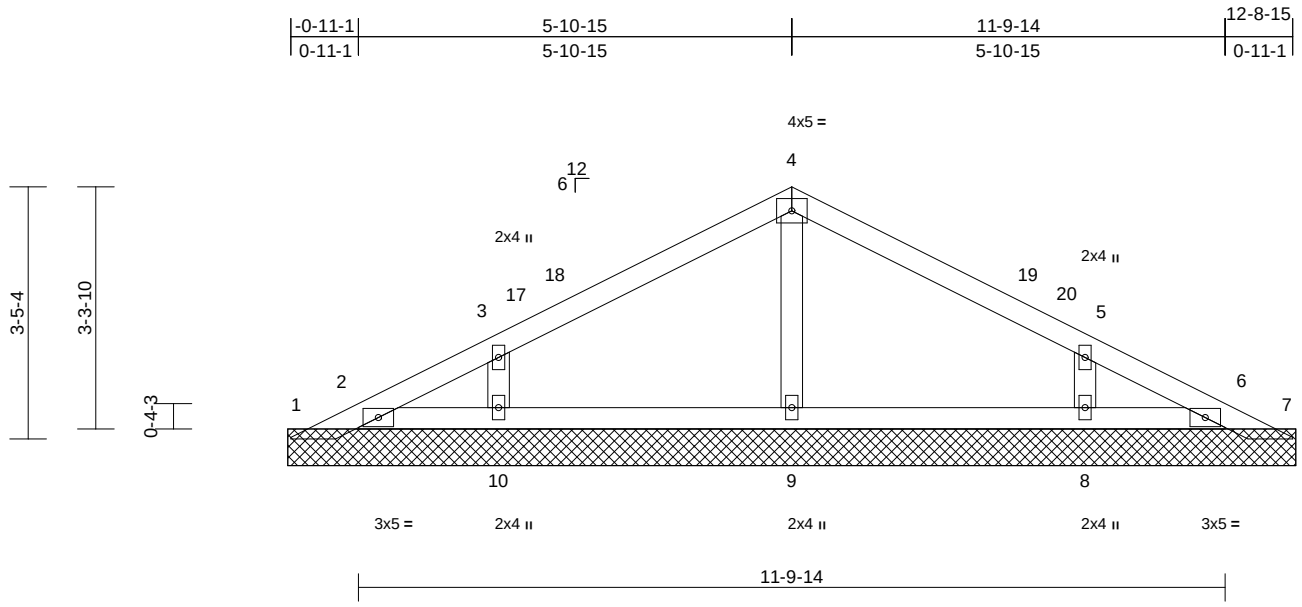


Scale = 1:31.4

| 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 | 0.29 | 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 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/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) 1=13-9-0, 2=13-9-0, 6=13-9-0, 7=13-9-0, 8=13-9-0, 9=13-9-0, 10=13-9-0, 11=13-9-0, 14=13-9-0
Max Horiz 1=52 (LC 14)
Max Uplift 1=-25 (LC 15), 7=-12 (LC 15), 8=-92 (LC 15), 10=-91 (LC 14)
Max Grav 1=47 (LC 21), 2=65 (LC 1), 6=52 (LC 1), 7=49 (LC 22), 8=439 (LC 22), 9=299 (LC 21), 10=440 (LC 21), 11=65 (LC 1), 14=52 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-56/65, 2-3=-54/49, 3-4=-124/93, 4-5=-124/93, 5-6=-35/49, 6-7=-20/16
BOT CHORD 2-10=-8/44, 9-10=-8/44, 8-9=-8/44, 6-8=-8/44
WEBS 4-9=-213/93, 3-10=-386/207, 5-8=-386/207

**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 3-10-8, Exterior(2R) 3-10-8 to 9-10-8, Interior (1) 9-10-8 to 10-4-13, Exterior(2E) 10-4-13 to 13-4-13 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) 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 25 lb uplift at joint 1, 12 lb uplift at joint 7, 91 lb uplift at joint 10 and 92 lb uplift at joint 8.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
12) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard


March 29,2024



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

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | C01 | Half Hip | 4 | 1 | I64561721 Job Reference (optional) |

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

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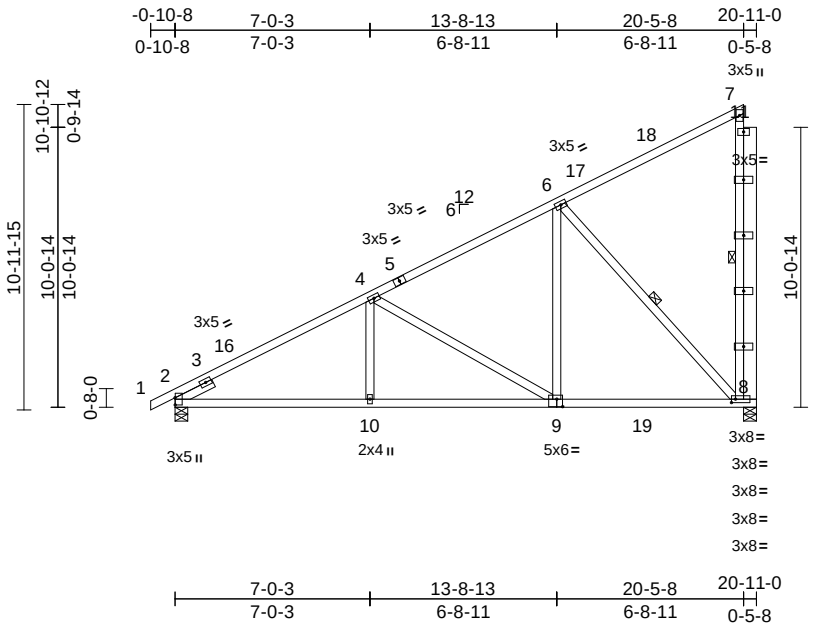


Scale = 1:82.9

Plate Offsets (X, Y): [2:0-3-1,0-0-1], [8:0-1-12,0-1-8], [9:0-2-8,0-3-4]

| 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) | -0.08 | 8-9 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.68 | Vert(CT) | -0.13 | 8-9 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | NO | WB | 0.67 | Horz(CT) | 0.03 | 8 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/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, 11-8:2x6 SP No.2 |
| SLIDER | Left 2x4 SP No.3 -- 1-6-0 |

**BRACING**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 4-9-0 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=386 (LC 14)
Max Uplift 2=-48 (LC 14), 8=-343 (LC 14)
Max Grav 2=948 (LC 5), 8=1731 (LC 21)

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

| | |
|---|---|
| TOP CHORD | 1-2=0/23, 2-4=-1361/28, 4-6=-813/0, 6-7=-164/105, 7-8=-271/93 |
| BOT CHORD | 2-10=-397/1163, 8-10=-317/1163 |
| WEBS | 4-10=0/264, 4-9=-588/185, 6-9=0/584, 6-8=-953/226 |

**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 17-3-12, Exterior(2E) 17-3-12 to 20-3-12 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) 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) 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.
8) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
9) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 747 lb down and 128 lb up at 20-5-8 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, 8-12=-20
   Concentrated Loads (lb)
   Vert: 8=-747


March 29,2024



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| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | C02 | Half Hip | 1 | 1 | I64561722 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:22 Page: 1
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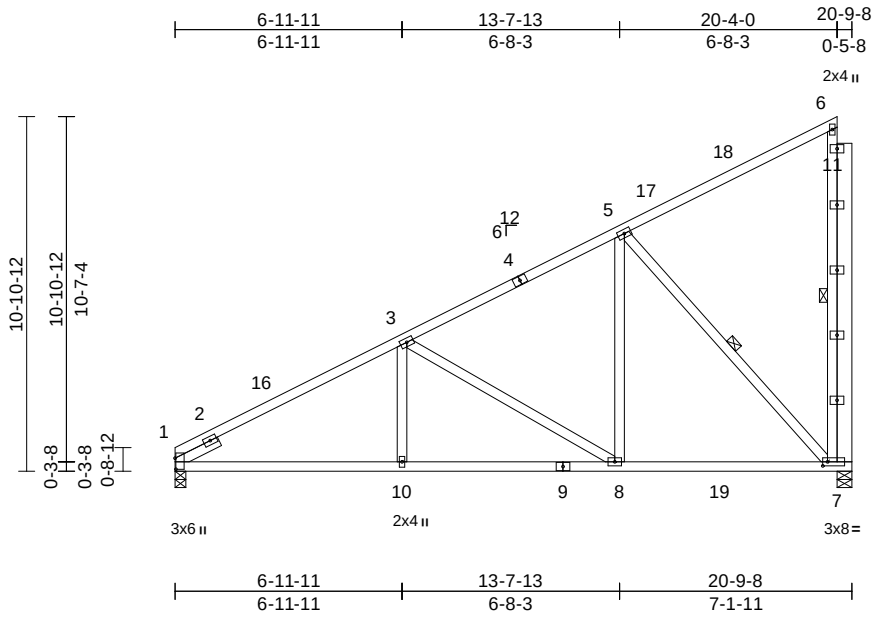


Scale = 1:70.8

Plate Offsets (X, Y): [1:0-4-1,0-0-5], [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 | 0.92 | Vert(LL) | -0.10 | 7-8 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.65 | Vert(CT) | -0.17 | 7-8 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.64 | Horz(CT) | 0.03 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/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* 11-7:2x6 SP No.2, 6-7:2x4 SP No.2
SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 6-7, 5-7

**REACTIONS** (size) 1=0-4-0, 7=0-5-8
Max Horiz 1=370 (LC 14)
Max Uplift 1=-29 (LC 14), 7=-343 (LC 14)
Max Grav 1=896 (LC 5), 7=1717 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-3=-1328/28, 3-5=-803/0, 5-6=-152/81
BOT CHORD 1-10=-409/1130, 8-10=-316/1130, 7-8=-157/661
WEBS 6-7=-251/89, 3-10=0/254, 5-8=0/593, 5-7=-972/229, 3-8=-562/184

**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) 0-1-8 to 3-1-8, Interior (1) 3-1-8 to 17-3-12, Exterior(2E) 17-3-12 to 20-3-12 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) Provide adequate drainage to prevent water ponding.
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) 7 and 1. This connection is for uplift only and does not consider lateral forces.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
10) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 747 lb down and 129 lb up at 20-9-12 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


March 29,2024



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| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | B03 | Common Structural Gable | 1 | 1 | I64561723 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:22 Page: 1
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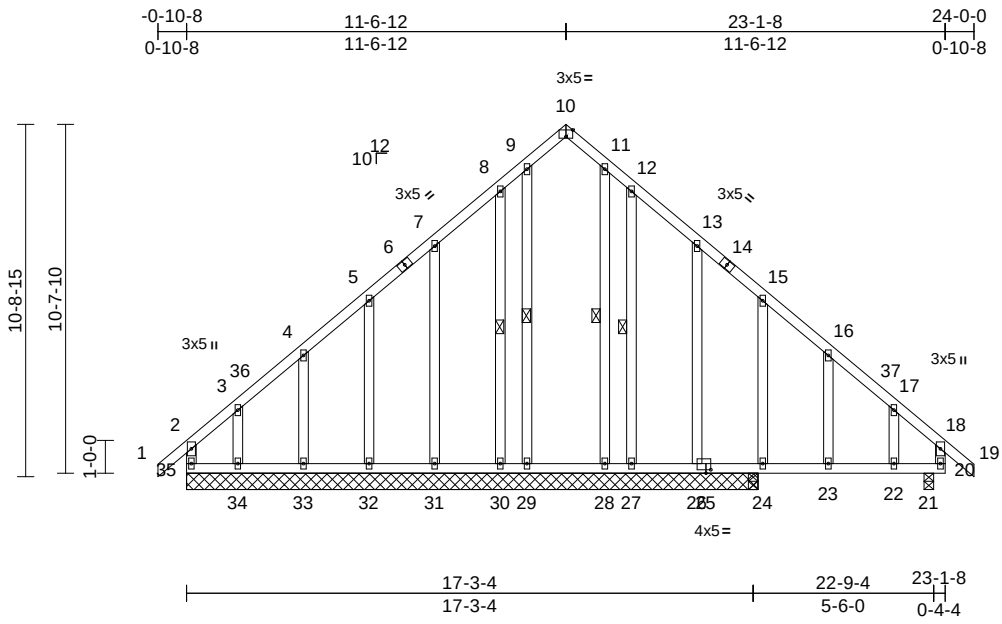


Scale = 1:70.2

Plate Offsets (X, Y): [10:0-2-8,Edge], [25:0-1-12,0-1-4]

| 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 | 0.24 | Vert(LL) | 0.05 | 22-23 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.22 | Vert(CT) | -0.04 | 22-23 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.16 | Horz(CT) | 0.00 | 21 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MR | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 188 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 10-0-0 oc bracing.
WEBS 1 Row at midpt 9-29, 11-28, 8-30, 12-27

**REACTIONS** (size) 21=0-3-8, 24=17-5-0, 26=17-5-0, 27=17-5-0, 28=17-5-0, 29=17-5-0, 30=17-5-0, 31=17-5-0, 32=17-5-0, 33=17-5-0, 34=17-5-0, 35=17-5-0
Max Horiz 35=-262 (LC 12)
Max Uplift 24=-248 (LC 15), 26=-2 (LC 14), 27=-168 (LC 15), 28=-35 (LC 13), 29=-55 (LC 13), 30=-113 (LC 14), 31=-84 (LC 14), 32=-76 (LC 14), 33=-54 (LC 14), 34=-201 (LC 14), 35=-178 (LC 10)
Max Grav 21=321 (LC 24), 24=497 (LC 29), 26=112 (LC 22), 27=211 (LC 22), 28=247 (LC 15), 29=258 (LC 15), 30=174 (LC 21), 31=211 (LC 5), 32=196 (LC 24), 33=195 (LC 24), 34=221 (LC 24), 35=349 (LC 29)

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

TOP CHORD 1-2=0/38, 2-3=-289/209, 3-4=-219/164, 4-5=-218/164, 5-7=-199/191, 7-8=-188/243, 8-9=-230/342, 9-10=-143/196, 10-11=-144/196, 11-12=-233/343, 12-13=-169/231, 13-15=-148/167, 15-16=-88/59, 16-17=-137/31, 17-18=-172/26, 18-19=0/38, 2-35=-272/142, 18-20=-187/35
BOT CHORD 34-35=-59/167, 33-34=-59/167, 32-33=-59/167, 31-32=-59/167, 30-31=-59/167, 29-30=-59/167, 28-29=-59/167, 27-28=-59/167, 26-27=-59/167, 24-26=-59/167, 23-24=-59/167, 22-23=-59/167, 21-22=-59/167
WEBS 9-29=-242/122, 11-28=-243/123, 8-30=-153/156, 7-31=-169/112, 5-32=-129/96, 4-33=-130/94, 3-34=-131/154, 12-27=-166/163, 13-26=-132/80, 15-24=-252/165, 16-23=-50/70, 17-22=-67/62

**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 8-6-12, Corner(3R) 8-6-12 to 14-6-12, Exterior(2N) 14-6-12 to 21-0-0, Corner(3E) 21-0-0 to 24-0-0 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
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) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
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, with BCDL = 10.0psf.


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Continued on page 2



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12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 35, 29, 28, 30, 31, 32, 33, 34, 27, 26, and 24. This connection is for uplift only and does not consider lateral forces.
13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | B01 | Common | 1 | 1 | I64561724 Job Reference (optional) |

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:21 Page: 1

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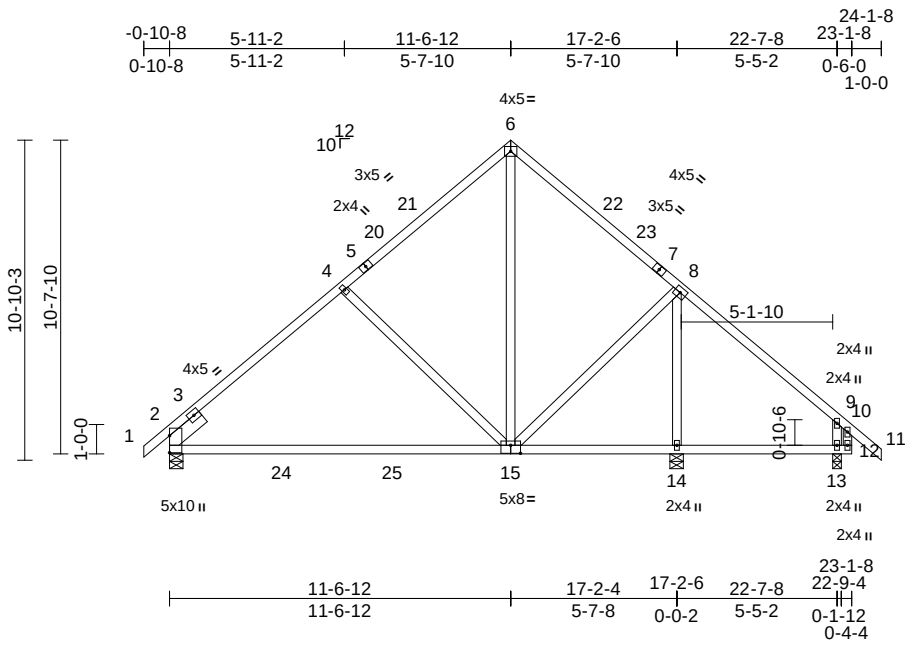


Scale = 1:78.1

Plate Offsets (X, Y): [15:0-4-0,0-3-4]

| 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 | 0.65 | Vert(LL) | -0.47 | 15-18 | >442 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.86 | Vert(CT) | -0.76 | 15-18 | >272 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.48 | Horz(CT) | 0.07 | 2 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MSH | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 134 lb | FT = 20% |

**LUMBER**

| | |
|---|---|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.1 |
| WEBS | 2x4 SP No.3 |
| SLIDER | Left 2x6 SP No.2 -- 1-6-0 |

**BRACING**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 5-6-10 oc purlins, except end verticals. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing. |

**REACTIONS** (size) 2=0-5-8, 13=0-3-8, 14=0-5-8
Max Horiz 2=264 (LC 13)
Max Uplift 2=-75 (LC 14), 13=-100 (LC 15), 14=-24 (LC 14)
Max Grav 2=892 (LC 5), 13=492 (LC 26), 14=901 (LC 22)

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

| | |
|---|---|
| TOP CHORD | 1-2=0/34, 2-4=-1144/150, 4-6=-723/184, 6-8=-716/176, 8-9=-345/117, 9-10=-247/0, 10-11=0/44, 10-12=-224/37 |
| BOT CHORD | 2-14=-251/721, 13-14=0/197, 12-13=0/197 |
| WEBS | 6-15=-97/462, 4-15=-397/237, 8-15=-45/421, 9-13=-317/293, 8-14=-827/74 |

**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 8-6-12, Exterior(2R) 8-6-12 to 14-6-12, Interior (1) 14-6-12 to 21-1-8, Exterior(2E) 21-1-8 to 24-1-8 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) 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) 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) 2, 13, and 14. This connection is for uplift only and does not consider lateral forces.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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| Job | Truss | Truss Type | Qty | Ply | 141 Serenity-Roof-326 B LH COP TMB |
|---|---|---|---|---|---|
| 24030195 | E01 | Common | 1 | 1 | I64561725<br>Job Reference (optional) |

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Thu Mar 28 16:10:23 Page: 1
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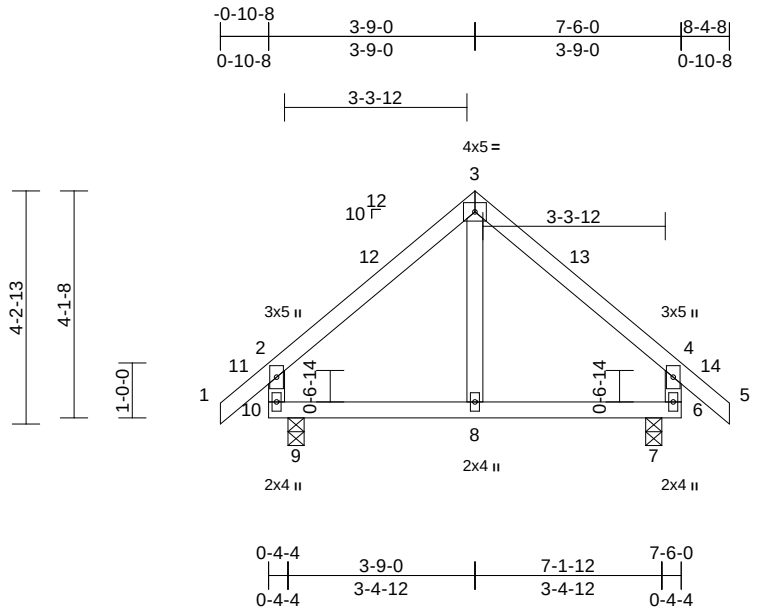


Scale = 1:41.9

| 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 | 0.40 | Vert(LL) | -0.01 | 8 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 20.0 | Lumber DOL | 1.15 | BC | 0.29 | Vert(CT) | -0.02 | 8 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.03 | Horz(CT) | 0.00 | 7 | n/a | n/a | | |
| BCLL | 0.0* | Code | IRC2018/TPI2014 | Matrix-MR | | | | | | | | |
| BCDL | 10.0 | | | | | | | | | | Weight: 37 lb | FT = 20% |

**LUMBER**
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 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 10-0-0 oc bracing.

**REACTIONS** (size) 7=0-3-8, 9=0-3-8
Max Horiz 9=-114 (LC 12)
Max Uplift 7=-38 (LC 15), 9=-38 (LC 14)
Max Grav 7=460 (LC 22), 9=460 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/49, 2-3=-269/94, 3-4=-269/92, 4-5=0/49, 2-10=-375/177, 4-6=-375/175
BOT CHORD 9-10=-11/120, 8-9=-11/122, 7-8=-11/122, 6-7=-11/122
WEBS 3-8=-26/84

**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, Exterior(2R) 2-1-8 to 5-4-8, Exterior(2E) 5-4-8 to 8-4-8 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) 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) 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.
8) H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9 and 7. This connection is for uplift only and does not consider lateral forces.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard


March 29,2024



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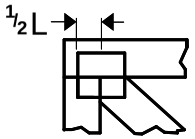
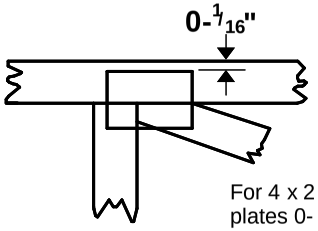
# Symbols

## 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.

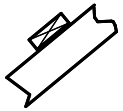
* Plate location details available in MiTek software or upon request.

## PLATE SIZE

4 x 4

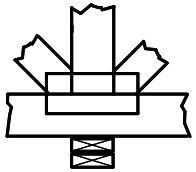
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## 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

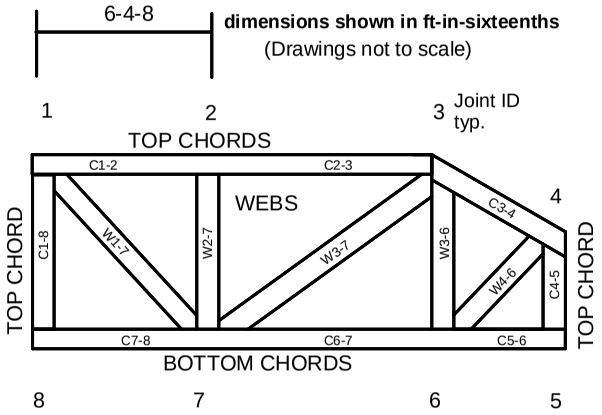


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

**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.