

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 25060035-01  
899 Serenity-Roof-328 B CP GLH

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

Pages or sheets covered by this seal: I74202883 thru I74202916

My license renewal date for the state of North Carolina is December 31, 2025.

North Carolina COA: C-0844



June 16, 2025

Gilbert, Eric

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

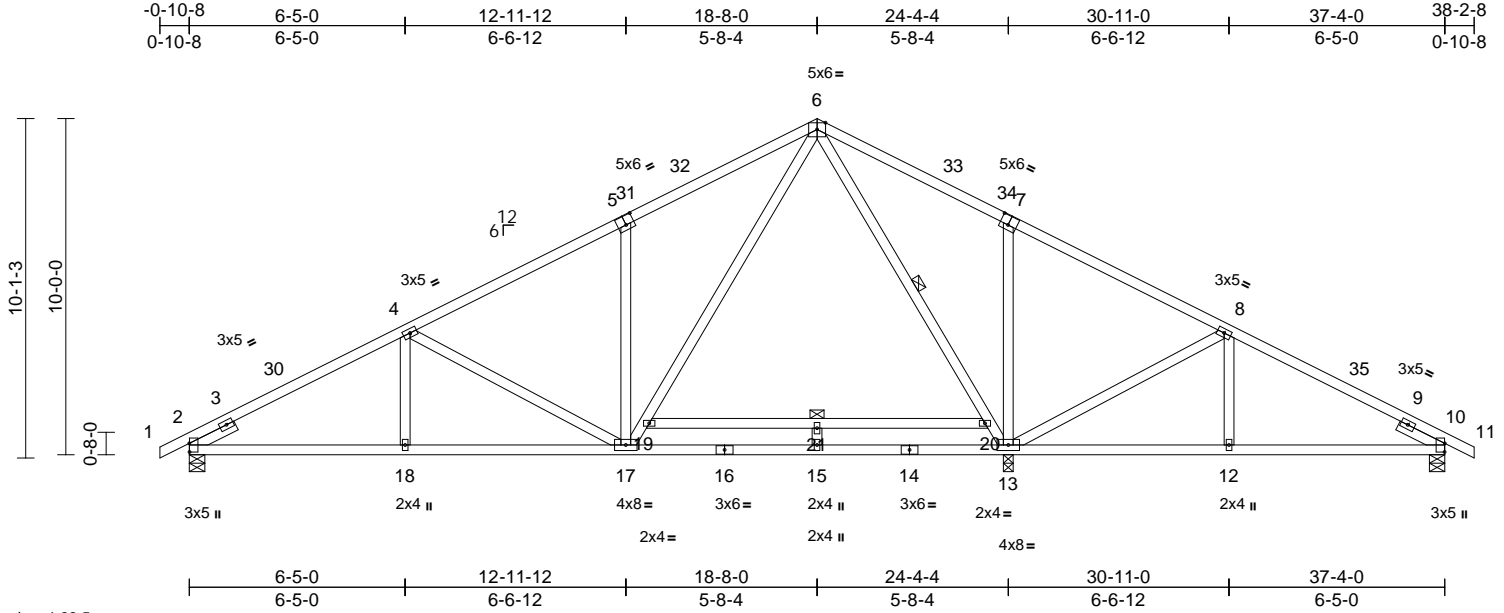
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202883 |
| 25060035-01 | A01   | Common     | 9   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:56

Page: 1

ID:dgmhY1PX1Yzy0ub5iMD7H3yY0Su-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrcD0i7J4zJC?f



Scale = 1:68.5

Plate Offsets (X, Y): [2:0-3-1,0-0-1], [5:0-3-0,0-3-4], [7:0-3-0,0-3-4], [10:0-3-1,0-0-1]

| 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         | 0.64 | Vert(LL) | -0.22 | 15-17 | >999   | 240 | MT20           | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.97 | Vert(CT) | -0.70 | 15-17 | >415   | 180 |                |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.91 | Horz(CT) | 0.03  | 13    | n/a    | n/a |                |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |       |        |     |                |          |
| BCDL        | 10.0  |                 |                 |            |      |          |       |       |        |     |                |          |
|             |       |                 |                 |            |      |          |       |       |        |     | Weight: 224 lb | FT = 20% |

#### LUMBER

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3 \*Except\* 13-6,17-6,19-20:2x4 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 4-2-13 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:  
 2-2-0 oc bracing: 17-18.  
 WEBS 1 Row at midpt 6-13, 19-20

#### REACTIONS

(size) 2=0-5-8, 10=0-5-8, 13=0-3-8  
 Max Horiz 2=155 (LC 15)  
 Max Uplift 2=84 (LC 14), 10=101 (LC 15)  
 Max Grav 2=1032 (LC 21), 10=454 (LC 37), 13=1913 (LC 1)

#### FORCES

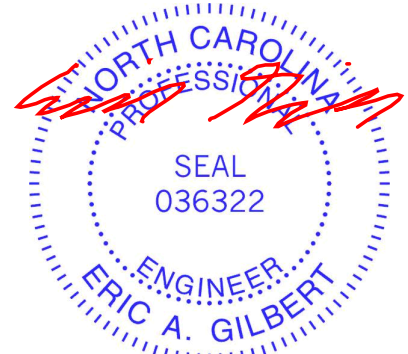
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=1559/116, 4-6=1185/174, 6-8=0/382, 8-10=418/150, 10-11=0/23  
 BOT CHORD 2-18=228/1332, 17-18=170/1332, 15-17=0/359, 13-15=0/359, 12-13=45/329, 10-12=116/329  
 WEBS 7-13=496/222, 8-13=590/205, 8-12=0/213, 6-20=1191/61, 13-20=1237/19, 4-18=0/179, 4-17=491/207, 5-17=505/223, 17-19=135/1148, 6-19=94/1197, 19-21=31/0, 20-21=31/0, 15-21=0/126

#### NOTES

1) Unbalanced roof live loads have been considered for this design.

- 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 2-10-5, Interior (1) 2-10-5 to 14-11-3, Exterior(2R) 14-11-3 to 22-4-13, Interior (1) 22-4-13 to 34-5-11, Exterior(2E) 34-5-11 to 38-2-8 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
- 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
- Unbalanced snow loads have been considered for this design.
- 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.
- 200.0lb AC unit load placed on the bottom chord, 18-8-0 from left end, supported at two points, 5-0-0 apart.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 10. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

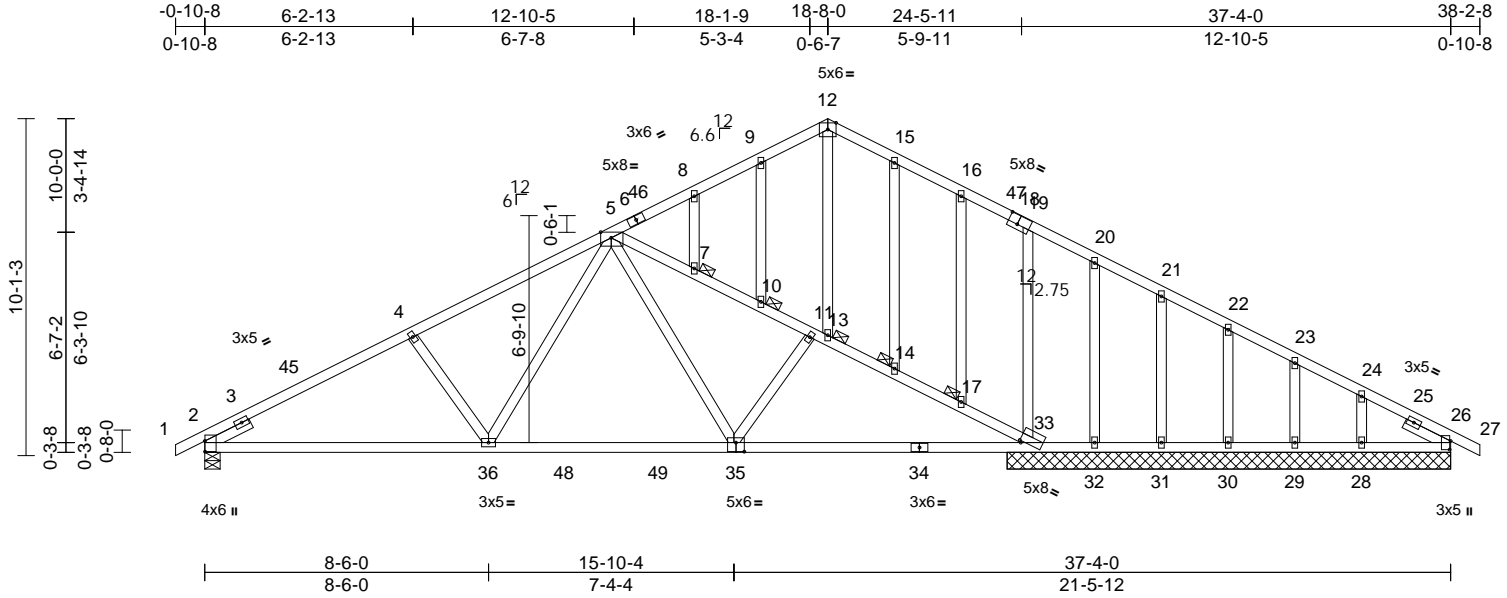
818 Soundside Road  
 Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202884 |
| 25060035-01 | A02   | Common     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:57  
ID:1jPz2R14L03Lo7k0MAssWWyY0TN-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:69

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [5:0-3-12,Edge], [18:0-3-8,0-3-4], [26:0-3-1,0-0-5], [33:0-0-12,0-0-12], [35:0-3-0,0-3-4]

| 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         | 0.59 | Vert(LL) | -0.15 | 35-36 | >999   | 240 | MT20           | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.86 | Vert(CT) | -0.24 | 33-35 | >999   | 180 |                |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.26 | Horz(CT) | 0.06  | 26    | n/a    | n/a |                |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |       |        |     |                |          |
| BCDL        | 10.0  |                 |                 |            |      |          |       |       |        |     |                |          |
|             |       |                 |                 |            |      |          |       |       |        |     | Weight: 253 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   |
| 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 3-9-0 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing.            |
| JOINTS    | 1 Brace at Jt(s): 13, 10, 7, 14, 17                             |

#### REACTIONS

|            |  |
|------------|--|
| (size)     | 2=0-5-8, 26=13-3-8, 28=13-3-8, 29=13-3-8, 30=13-3-8, 31=13-3-8, 32=13-3-8, 33=13-3-8                                     |
| Max Horiz  | 2=155 (LC 19)  |
| Max Uplift | 2=127 (LC 14), 28=99 (LC 15), 29=26 (LC 15), 30=48 (LC 15), 31=44 (LC 15), 32=114 (LC 6), 33=58 (LC 14)                  |
| Max Grav   | 2=1190 (LC 5), 26=286 (LC 22), 28=187 (LC 40), 29=171 (LC 6), 30=158 (LC 3), 31=237 (LC 6), 32=6 (LC 21), 33=1208 (LC 6) |

#### FORCES

|  |  |
|--|--|
| (lb) - Maximum Compression/Maximum Tension |  |
|--|--|

|           |   |
|-----------|---|
| TOP CHORD | 1-2=0/23, 2-4=-1982/375, 4-5=-1828/379, 5-8=-323/161, 8-9=-272/182, 9-12=-272/218, 12-15=-276/219, 15-16=-283/186, 16-19=-312/151, 19-20=-235/87, 20-21=-262/50, 21-22=-254/3, 22-23=-255/0, 23-24=-272/0, 24-26=-291/0, 26-27=0/23, 5-7=-1442/205, 7-10=-1450/217, 10-11=-1495/241, 11-13=-1509/243, 13-14=-1494/207, 14-17=-1530/226, 17-33=-1563/254 |
| BOT CHORD | 2-36=-255/1706, 33-36=-116/1517, 32-33=0/271, 31-32=0/271, 30-31=0/271, 29-30=0/271, 28-29=0/271, 26-28=0/271   |
| WEBS      | 12-13=-85/62, 9-10=-158/55, 7-8=-40/24, 14-15=-113/46, 16-17=-101/56, 19-33=-323/117, 20-32=-62/59, 21-31=-141/80, 22-30=-125/80, 23-29=-123/62, 24-28=-139/141, 4-36=-303/212, 5-36=-102/616, 5-35=0/494, 11-35=-229/37  |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 2-10-5, Exterior(2N) 2-10-5 to 14-8-0, Corner(3R) 14-8-0 to 22-8-0, Exterior (2N) 22-8-0 to 34-5-11, Corner(3E) 34-5-11 to 38-2-8 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
- 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.

- 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
- Unbalanced snow loads have been considered for this design.
- 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 any other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 33, 32, 31, 30, 29, and 28. This connection is for uplift only and does not consider lateral forces.



June 16,2025

Continued on page 2

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | I74202884 |
| 25060035-01 | A02   | Common     | 1   | 1   | Job Reference (optional)       |           |

12) 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



June 16,2025

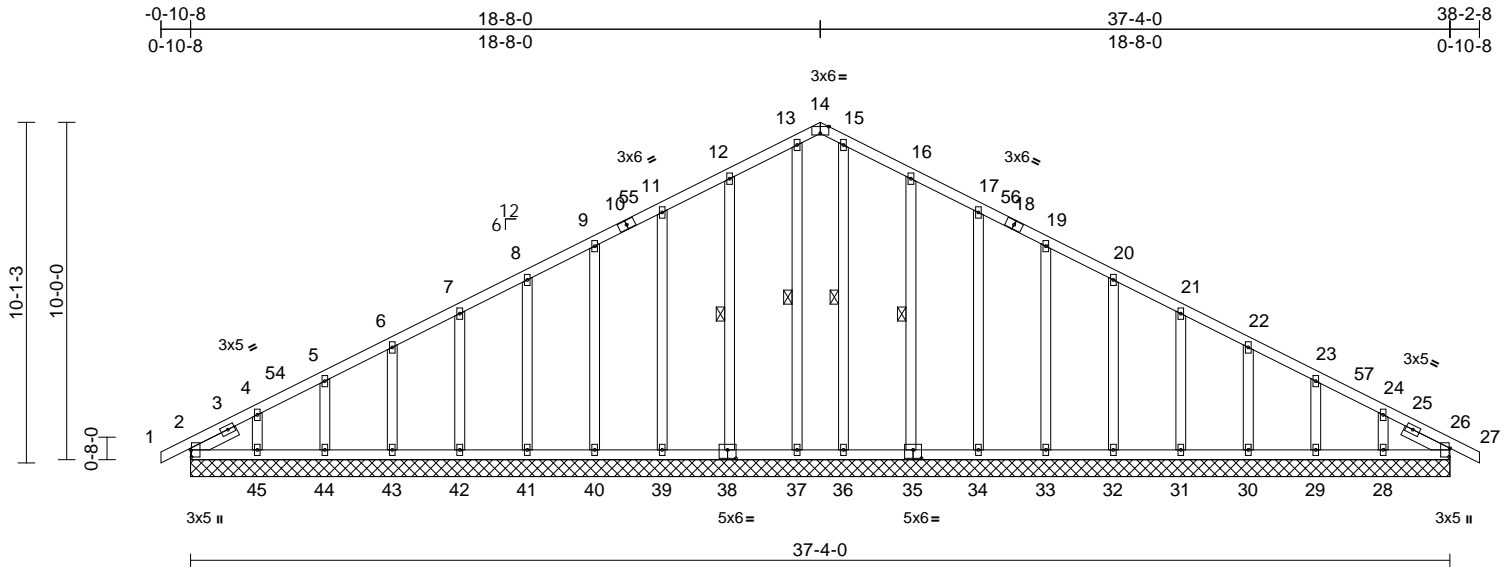
|             |       |                        |     |     |                                |           |
|-------------|-------|------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type             | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | I74202885 |
| 25060035-01 | A03   | Common Supported Gable | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58

Page: 1

ID:YACS\_1\_8bbEYUv9bMldh1OyY0Uj-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrcDOi7J4zJC?f



|  |       |                 |                 |            |      |             |      |       |        |                |               |             |
|--|-------|-----------------|-----------------|------------|------|-------------|------|-------|--------|----------------|---------------|-------------|
| Scale = 1:68.3   |       |                 |                 |            |      |             |      |       |        |                |               |             |
| Plate Offsets (X, Y): [2:0-2-8,0-0-5], [14:0-3-0,Edge], [26:0-3-1,0-0-5], [35:0-3-0,0-3-0], [38:0-3-0,0-3-0] |       |                 |                 |            |      |             |      |       |        |                |               |             |
| <b>Loading</b>   | (psf) | <b>Spacing</b>  | 1-11-4          | <b>CSI</b> |      | <b>DEFL</b> | in   | (loc) | l/defl | L/d            | <b>PLATES</b> | <b>GRIP</b> |
| TCLL (roof)  | 20.0  | Plate Grip DOL  | 1.15            | TC         | 0.13 | Vert(LL)    | n/a  | -     | n/a    | 999            | MT20          | 244/190     |
| Snow (Pf)  | 20.0  | Lumber DOL      | 1.15            | BC         | 0.05 | Vert(CT)    | n/a  | -     | n/a    | 999            |               |             |
| TCDL   | 10.0  | Rep Stress Incr | YES             | WB         | 0.18 | Horz(CT)    | 0.01 | 26    | n/a    | n/a            |               |             |
| BCLL   | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |             |      |       |        |                |               |             |
| BCDL   | 10.0  |                 |                 |            |      |             |      |       |        |                |               |             |
|  |       |                 |                 |            |      |             |      |       |        | Weight: 262 lb | FT = 20%      |             |

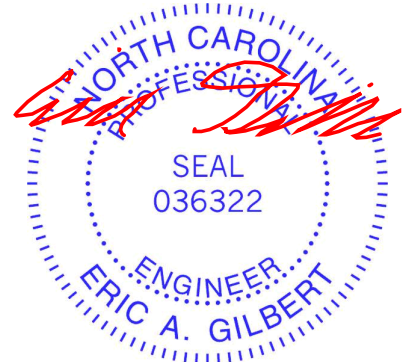
**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3  
SLIDER Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

**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.  
WEBS 1 Row at midpt 13-37, 15-36, 12-38, 16-35

**REACTIONS** (size)  
2=37-4-0, 26=37-4-0, 28=37-4-0, 29=37-4-0, 30=37-4-0, 31=37-4-0, 32=37-4-0, 33=37-4-0, 34=37-4-0, 35=37-4-0, 36=37-4-0, 37=37-4-0, 38=37-4-0, 39=37-4-0, 40=37-4-0, 41=37-4-0, 42=37-4-0, 43=37-4-0, 44=37-4-0, 45=37-4-0  
Max Horiz 2=-150 (LC 15)  
Max Uplift 2=-15 (LC 10), 28=-78 (LC 15), 29=-35 (LC 15), 30=-44 (LC 15), 31=-42 (LC 15), 32=-43 (LC 15), 33=-42 (LC 15), 34=-42 (LC 15), 35=-56 (LC 15), 38=-53 (LC 14), 39=-42 (LC 14), 40=-42 (LC 14), 41=-43 (LC 14), 42=-42 (LC 14), 43=-45 (LC 14), 44=-33 (LC 14), 45=-91 (LC 14)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-203/69, 4-5=-156/68, 5-6=-119/80, 6-7=-86/91, 7-8=-64/114, 8-9=-55/137, 9-11=-66/164, 11-12=-79/207, 12-13=-101/259, 13-14=-89/228, 14-15=-89/228, 15-16=-101/259, 16-17=-79/207, 17-19=-66/164, 19-20=-55/120, 20-21=-43/77, 21-22=-41/33, 22-23=-63/26, 23-24=-98/36, 24-26=-141/60, 26-27=0/23  
BOT CHORD 2-45=-45/165, 44-45=-45/165, 43-44=-45/165, 42-43=-45/165, 41-42=-45/165, 40-41=-45/165, 39-40=-45/165, 37-39=-45/165, 36-37=-45/165, 34-36=-45/165, 33-34=-45/165, 32-33=-45/165, 31-32=-45/165, 30-31=-45/165, 29-30=-45/165, 28-29=-45/165, 26-28=-45/165  
WEBS 13-37=-138/2, 15-36=-138/2, 12-38=-197/93, 11-39=-169/73, 9-40=-123/75, 8-41=-122/75, 7-42=-122/75, 6-43=-123/75, 5-44=-122/74, 4-45=-127/128, 16-35=-197/93, 17-34=-169/73, 19-33=-123/75, 20-32=-122/75, 21-31=-122/75, 22-30=-123/75, 23-29=-122/74, 24-28=-127/128

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - 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 2-10-5, Exterior(2N) 2-10-5 to 14-11-3, Corner(3R) 14-11-3 to 22-4-13, Exterior(2N) 22-4-13 to 34-5-11, Corner(3E) 34-5-11 to 38-2-8 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
  - 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.
  - 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



June 16, 2025

Continued on page 2

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

|             |       |                        |     |     |                                |           |
|-------------|-------|------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type             | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | I74202885 |
| 25060035-01 | A03   | Common Supported Gable | 1   | 1   | Job Reference (optional)       |           |

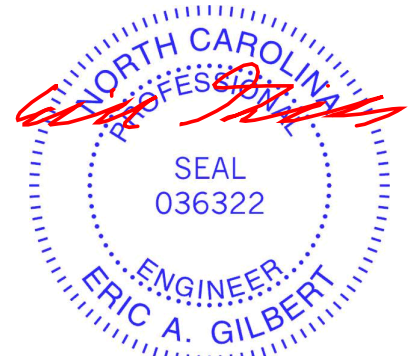
Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58  
ID:YACS\_1\_8bbEYUv9bMdh1OyY0Uj-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f

Page: 2

- 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" 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'-0" tall by 2'-0" 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 15 lb uplift at joint 2, 53 lb uplift at joint 38, 42 lb uplift at joint 39, 42 lb uplift at joint 40, 43 lb uplift at joint 41, 42 lb uplift at joint 42, 45 lb uplift at joint 43, 33 lb uplift at joint 44, 91 lb uplift at joint 45, 56 lb uplift at joint 35, 42 lb uplift at joint 34, 42 lb uplift at joint 33, 43 lb uplift at joint 32, 42 lb uplift at joint 31, 44 lb uplift at joint 30, 35 lb uplift at joint 29, 78 lb uplift at joint 28 and 15 lb uplift at joint 2.

**LOAD CASE(S)** Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932



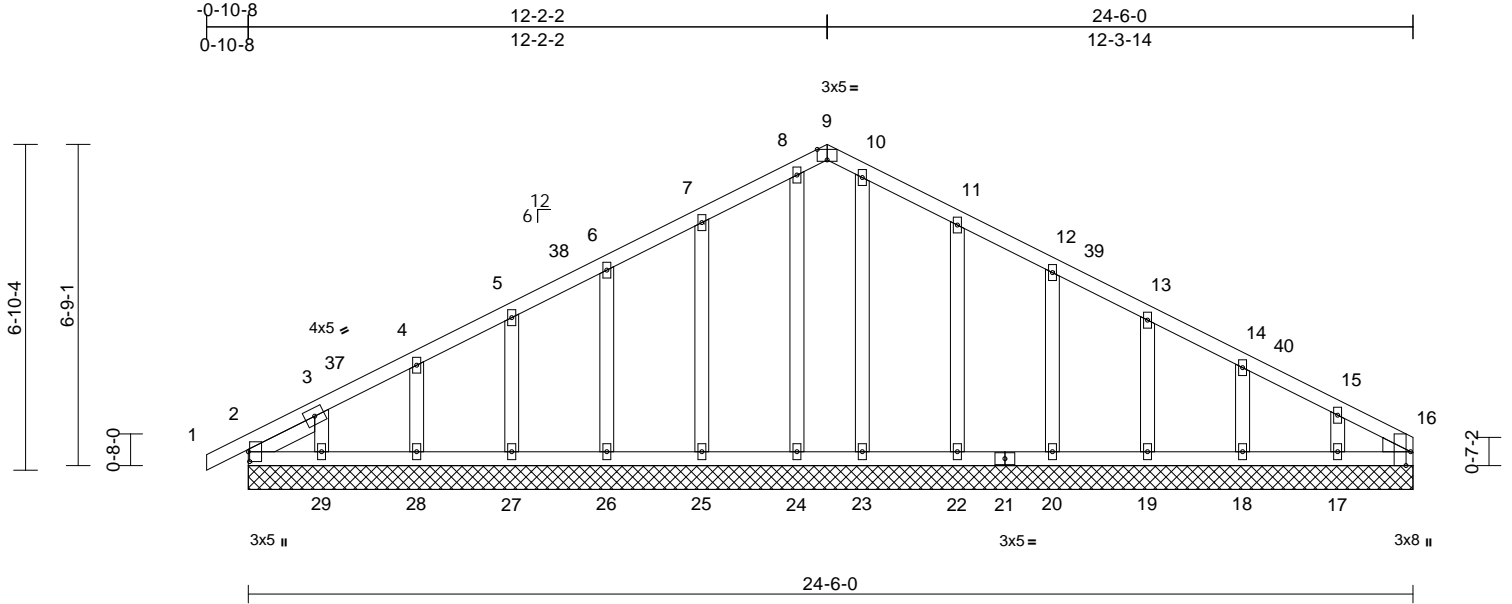
|             |       |                        |     |     |                                |           |
|-------------|-------|------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type             | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202886 |
| 25060035-01 | B01   | Common Supported Gable | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58

Page: 1

ID: \_6rcLElwa7tnlXY?wa67GkyzB5f-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?r



Scale = 1:48.5

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [9:0-2-8,Edge], [16:0-3-8,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         | 0.08 | Vert(LL) | n/a   | -      | n/a | 999    | 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         | 0.11 | Horz(CT) | 0.00  | 16     | n/a | n/a    |         |
| BCLL                    | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |        |     |        |         |
| BCDL                    | 10.0  |                 |                 |            |      |          |       |        |     |        |         |
| Weight: 142 lb FT = 20% |       |                 |                 |            |      |          |       |        |     |        |         |

#### LUMBER

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 OTHERS 2x4 SP No.3  
 WEDGE Right: 2x4 SP No.3  
 SLIDER Left 2x4 SP No.3 -- 1-7-0

#### 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) 2=24-6-0, 16=24-6-0, 17=24-6-0, 18=24-6-0, 19=24-6-0, 20=24-6-0, 22=24-6-0, 23=24-6-0, 24=24-6-0, 25=24-6-0, 26=24-6-0, 27=24-6-0, 28=24-6-0, 29=24-6-0

Max Horiz 2=109 (LC 18)  
 Max Uplift 2=11 (LC 10), 17=67 (LC 15), 18=40 (LC 15), 19=45 (LC 15), 20=42 (LC 15), 22=54 (LC 15), 25=52 (LC 14), 26=42 (LC 14), 27=44 (LC 14), 28=43 (LC 14), 29=71 (LC 14)  
 Max Grav 2=123 (LC 32), 16=72 (LC 28), 17=157 (LC 37), 18=162 (LC 1), 19=160 (LC 37), 20=213 (LC 22), 22=244 (LC 22), 23=180 (LC 22), 24=176 (LC 21), 25=244 (LC 21), 26=216 (LC 21), 27=160 (LC 21), 28=164 (LC 1), 29=136 (LC 36)

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

**TOP CHORD** 1-2=0/23, 2-3=-61/30, 3-4=-103/47, 4-5=-71/58, 5-6=-49/79, 6-7=-53/104, 7-8=-68/154, 8-9=-60/143, 9-10=-61/147, 10-11=-68/152, 11-12=-53/101, 12-13=-41/57, 13-14=-43/24, 14-15=-66/28, 15-16=-107/41  
**BOT CHORD** 2-29=-37/114, 28-29=-37/114, 27-28=-37/114, 26-27=-37/114, 25-26=-37/114, 24-25=-37/114, 23-24=-37/114, 22-23=-37/114, 20-22=-37/114, 19-20=-37/114, 18-19=-37/114, 17-18=-37/114, 16-17=-37/114  
**WEBS** 8-24=-143/0, 10-23=-147/0, 7-25=-202/92, 6-26=-176/75, 5-27=-126/77, 4-28=-130/80, 3-29=-113/110, 11-22=-202/91, 12-20=-173/75, 13-19=-126/76, 14-18=-129/88, 15-17=-118/120

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 9-2-2, Corner(3R) 9-2-2 to 14-11-0, Exterior(2N) 14-11-0 to 21-6-0, Corner(3E) 21-6-0 to 24-6-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.
- 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

- Unbalanced snow loads have been considered for this design.
- 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.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 11 lb uplift at joint 2, 52 lb uplift at joint 25, 42 lb uplift at joint 26, 44 lb uplift at joint 27, 43 lb uplift at joint 28, 71 lb uplift at joint 29, 54 lb uplift at joint 22, 42 lb uplift at joint 20, 45 lb uplift at joint 19, 40 lb uplift at joint 18, 67 lb uplift at joint 17 and 11 lb uplift at joint 2.

**LOAD CASE(S)** Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

818 Soundside Road  
 Edenton, NC 27932

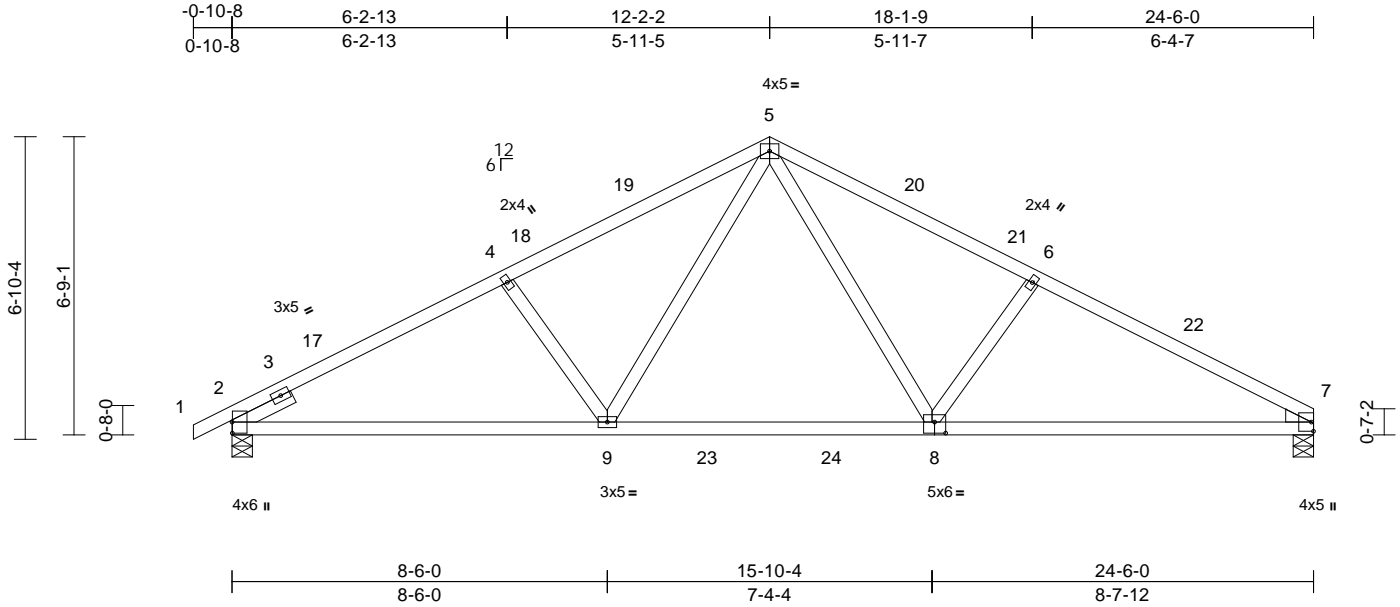
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202887 |
| 25060035-01 | B02   | Common     | 5   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58

Page: 1

ID:1N5k5UiLgOv7p9PHKp3jFOyzB70-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f



Scale = 1:52.2

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

| 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         | 0.91 | Vert(LL) | -0.15 | 8-9    | >999 | 240    | 244/190 |
| Snow (Pf)               | 20.0  | Lumber DOL      | 1.15            | BC         | 0.79 | Vert(CT) | -0.23 | 8-9    | >999 | 180    |         |
| TCDL                    | 10.0  | Rep Stress Incr | YES             | WB         | 0.28 | Horz(CT) | 0.04  | 7      | n/a  | n/a    |         |
| BCLL                    | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |        |      |        |         |
| BCDL                    | 10.0  |                 |                 |            |      |          |       |        |      |        |         |
| Weight: 115 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  
 SLIDER Left 2x4 SP No.3 -- 1-6-0

#### BRACING

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

**REACTIONS** (size) 2=0-5-8, 7=0-5-8  
 Max Horiz 2=109 (LC 18)  
 Max Uplift 2=110 (LC 14), 7=94 (LC 15)  
 Max Grav 2=1129 (LC 5), 7=1084 (LC 6)

#### FORCES

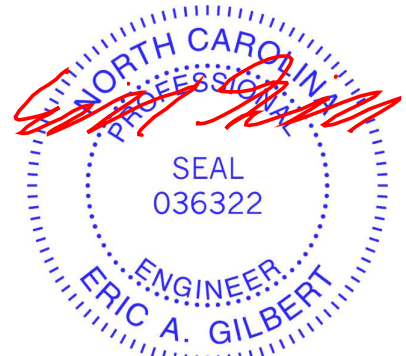
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-1890/257, 4-5=-1733/268,  
 5-6=-1763/275, 6-7=-1935/263  
 BOT CHORD 2-9=-203/1625, 7-9=-164/1662  
 WEBS 4-9=-409/194, 5-9=-81/646, 5-8=-87/689,  
 6-8=-432/198

#### 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 9-2-2, Exterior(2R) 9-2-2 to 15-2-2, Interior (1) 15-2-2 to 21-6-0, Exterior(2E) 21-6-0 to 24-6-0 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) 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 and 7. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

818 Soundside Road  
 Edenton, NC 27932

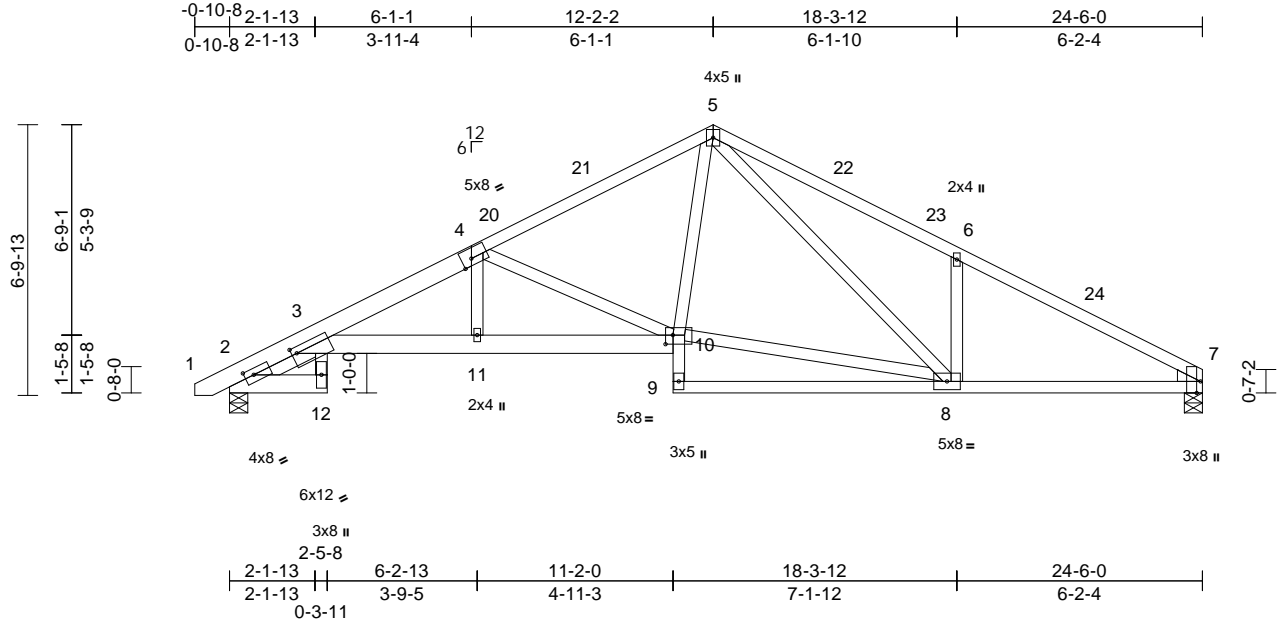


|                    |              |                            |          |          |  |           |
|--------------------|--------------|----------------------------|----------|----------|--|-----------|
| Job<br>25060035-01 | Truss<br>B03 | Truss Type<br>Roof Special | Qty<br>8 | Ply<br>1 | 899 Serenity-Roof-328 B CP GLH<br>Job Reference (optional) | 174202888 |
|--------------------|--------------|----------------------------|----------|----------|--|-----------|

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58  
ID:sL1H2zO6Ev519wGE9Ha53QyzB67-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:58

Plate Offsets (X, Y): [2:0-2-12,0-1-14], [3:0-1-8,0-1-14], [4:0-3-0,Edge], [7:0-3-8,Edge], [10:0-2-4,0-2-12]

| 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         | 0.84 | Vert(LL) | -0.12 | 3-11  | >999   | 240 | MT20           | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.57 | Vert(CT) | -0.24 | 3-11  | >999   | 180 |                |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.66 | Horz(CT) | 0.15  | 7     | n/a    | n/a |                |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |       |        |     |                |          |
| BCDL        | 10.0  |                 |                 |            |      |          |       |       |        |     |                |          |
|             |       |                 |                 |            |      |          |       |       |        |     | Weight: 149 lb | FT = 20% |

#### LUMBER

TOP CHORD 2x4 SP No.2 \*Except\* 5-7:2x4 SP No.1, 4-1:2x6 SP No.2  
BOT CHORD 2x6 SP No.2 \*Except\* 3-10:2x6 SP 2400F 2.0E, 10-9:2x4 SP No.3, 9-7:2x4 SP No.2  
WEBS 2x4 SP No.3  
WEDGE Right: 2x4 SP No.3  
SLIDER Left 2x4 SP No.2 -- 1-7-10

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 3-1-4 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 2-12.

#### REACTIONS

(size) 2=0-5-8, 7=0-5-8  
Max Horiz 2=109 (LC 18)  
Max Uplift 2=-106 (LC 14), 7=-94 (LC 15)  
Max Grav 2=1058 (LC 21), 7=1002 (LC 22)

#### FORCES

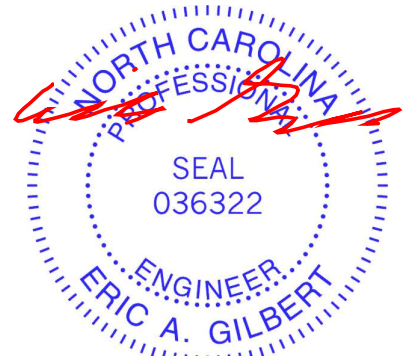
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/24, 2-3=-300/117, 3-5=-2383/312, 5-6=-1725/343, 6-7=-1704/242  
BOT CHORD 2-12=-81/11, 3-11=-244/2134, 10-11=-242/2162, 9-10=0/126, 8-9=0/111, 7-8=-149/1464  
WEBS 4-10=-1105/227, 8-10=-66/977, 5-10=-34/684, 5-8=-202/557, 6-8=-455/218, 4-11=0/440, 3-12=-54/406

#### NOTES

1) Unbalanced roof live loads have been considered for this design.

- 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) -0-7-14 to 2-1-2, Interior (1) 2-1-2 to 9-2-2, Exterior(2R) 9-2-2 to 15-2-2, Interior (1) 15-2-2 to 21-6-0, Exterior(2E) 21-6-0 to 24-6-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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
- Unbalanced snow loads have been considered for this design.
- 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.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 7. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

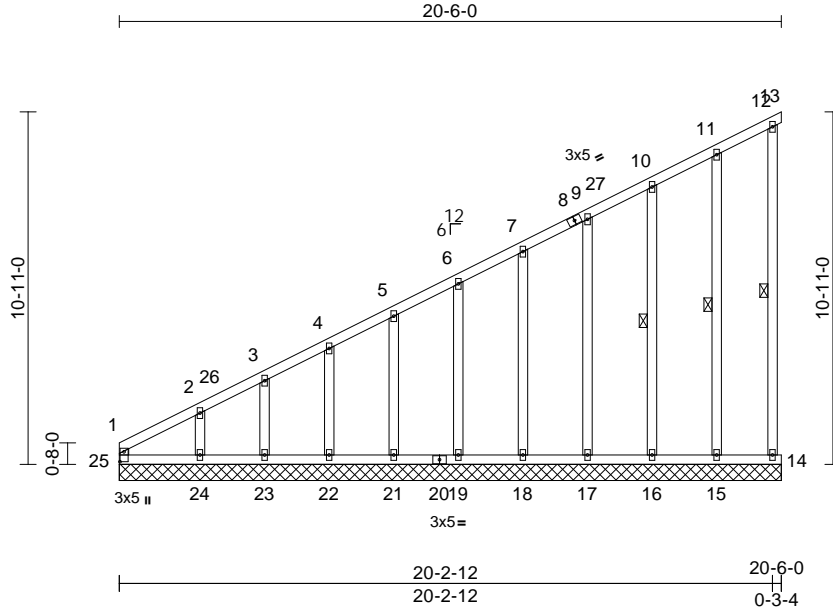
818 Soundside Road  
Edenton, NC 27932

|             |       |                           |     |     |                                |           |
|-------------|-------|---------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type                | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202889 |
| 25060035-01 | C01   | Monopitch Supported Gable | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58  
ID:pRYBE4gu7lwX\_7UFLiIXlyzBJR-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:71.4

Plate Offsets (X, Y): [25:0-3-11,0-1-8]

| 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        | 0.29 | Vert(LL)  | n/a   | -      | 999 | MT20                    | 244/190 |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.19 | Vert(TL)  | n/a   | -      | 999 |                         |         |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.15 | Horiz(TL) | -0.02 | 13     | n/a |                         |         |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MR |      |           |       |        |     |                         |         |
| BCDL        | 10.0  |                 |                 |           |      |           |       |        |     |                         |         |
|             |       |                 |                 |           |      |           |       |        |     | Weight: 152 lb FT = 20% |         |

#### LUMBER

|           |  |
|-----------|--|
| TOP CHORD | 2x4 SP No.2                            |
| BOT CHORD | 2x4 SP No.2                            |
| WEBS      | 2x4 SP No.3 *Except* 12-14:2x4 SP No.2 |
| OTHERS    | 2x4 SP No.3                            |

#### BRACING

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

|      |                |                     |
|------|----------------|---------------------|
| WEBS | 1 Row at midpt | 12-14, 11-15, 10-16 |
|------|----------------|---------------------|

|           |            |   |
|-----------|------------|---|
| REACTIONS | (size)     | 13=20-6-0, 14=20-6-0, 15=20-6-0, 16=20-6-0, 17=20-6-0, 18=20-6-0, 19=20-6-0, 21=20-6-0, 22=20-6-0, 23=20-6-0, 24=20-6-0, 25=20-6-0  |
|           | Max Horiz  | 25=373 (LC 14)  |
|           | Max Uplift | 13=11 (LC 14), 14=16 (LC 14), 15=41 (LC 14), 16=45 (LC 14), 17=43 (LC 14), 18=44 (LC 14), 19=44 (LC 14), 21=41 (LC 14), 22=53 (LC 14), 23=5 (LC 14), 24=171 (LC 14)                       |
|           | Max Grav   | 13=23 (LC 20), 14=83 (LC 20), 15=235 (LC 20), 16=233 (LC 20), 17=177 (LC 20), 18=160 (LC 1), 19=161 (LC 20), 21=159 (LC 1), 22=163 (LC 20), 23=147 (LC 20), 24=202 (LC 1), 25=253 (LC 14) |

#### FORCES

|           |  |
|-----------|--|
|           | (lb) - Maximum Compression/Maximum Tension   |
| TOP CHORD | 1-25=-209/69, 1-2=-492/192, 2-3=-389/156, 3-4=-355/143, 4-5=-306/123, 5-6=-260/105, 6-7=-213/87, 7-9=-167/69, 9-10=-121/52, 10-11=-74/42, 11-12=-45/22, 12-13=-7/9, 12-14=-69/26 |

|           |   |
|-----------|---|
| BOT CHORD | 24-25=-1/0, 23-24=-1/0, 22-23=-1/0, 21-22=-1/0, 19-21=-1/0, 18-19=-1/0, 17-18=-1/0, 16-17=-1/0, 15-16=-1/0, 14-15=-1/0          |
| WEBS      | 11-15=-194/79, 10-16=-193/81, 9-17=-137/79, 7-18=-126/80, 6-19=-127/80, 5-21=-126/78, 4-22=-129/86, 3-23=-113/53, 2-24=-172/204 |

#### NOTES

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-1-12 to 3-1-12, Exterior(2N) 3-1-12 to 20-6-0 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.

- Bearing at joint(s) 13 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 11 lb uplift at joint 13, 16 lb uplift at joint 14, 41 lb uplift at joint 15, 45 lb uplift at joint 16, 43 lb uplift at joint 17, 44 lb uplift at joint 18, 44 lb uplift at joint 19, 41 lb uplift at joint 21, 53 lb uplift at joint 22, 5 lb uplift at joint 23 and 171 lb uplift at joint 24.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

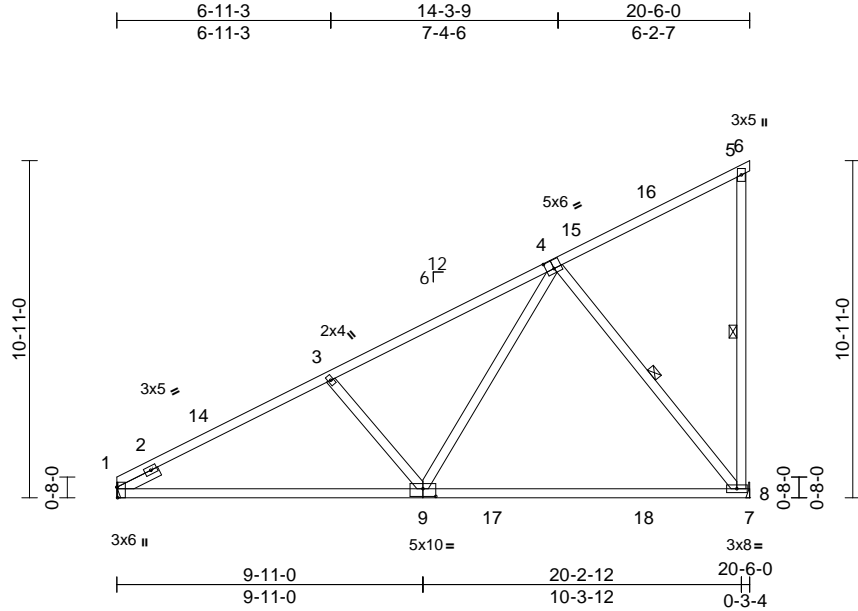
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202890 |
| 25060035-01 | C02   | Monopitch  | 9   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58

Page: 1

ID:DTBTk2iEBBrKjDFXxKE1mCyzBJw-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?i



Scale = 1:74.6

Plate Offsets (X, Y): [1:0-4-1,Edge], [4:0-3-0,0-3-4], [9:0-5-0,0-3-0]

| 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         | 0.72 | Vert(LL) | -0.48 | 8-9   | >504   | 240 | MT20           | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.91 | Vert(CT) | -0.73 | 8-9   | >331   | 180 |                |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.43 | Horz(CT) | 0.02  | 8     | n/a    | n/a |                |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |       |        |     |                |          |
| BCDL        | 10.0  |                 |                 |            |      |          |       |       |        |     |                |          |
|             |       |                 |                 |            |      |          |       |       |        |     | Weight: 115 lb | FT = 20% |

#### LUMBER

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\* 5-8:2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 ~ 1-6-0

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 4-8-11 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 8-3-12 oc bracing.  
 WEBS 1 Row at midpt 5-8, 4-8

**REACTIONS** (size) 1= Mechanical, 8= Mechanical  
 Max Horiz 1=375 (LC 14)  
 Max Uplift 1=-27 (LC 14), 8=-232 (LC 14)  
 Max Grav 1=898 (LC 5), 8=1065 (LC 5)

#### FORCES

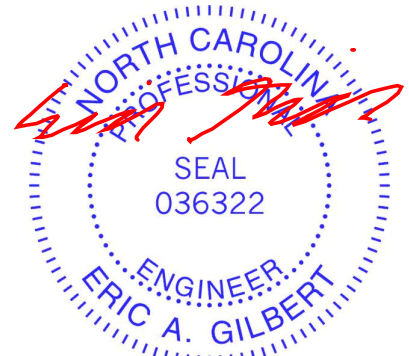
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-3=-1402/34, 3-5=-1185/96, 5-6=-12/0, 5-8=-271/90  
 BOT CHORD 1-8=-408/1298, 7-8=0/0  
 WEBS 4-8=-923/258, 4-9=-51/875, 3-9=-408/222

#### NOTES

- 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 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- \* 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.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 232 lb uplift at joint 8 and 27 lb uplift at joint 1.

**LOAD CASE(S)** Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

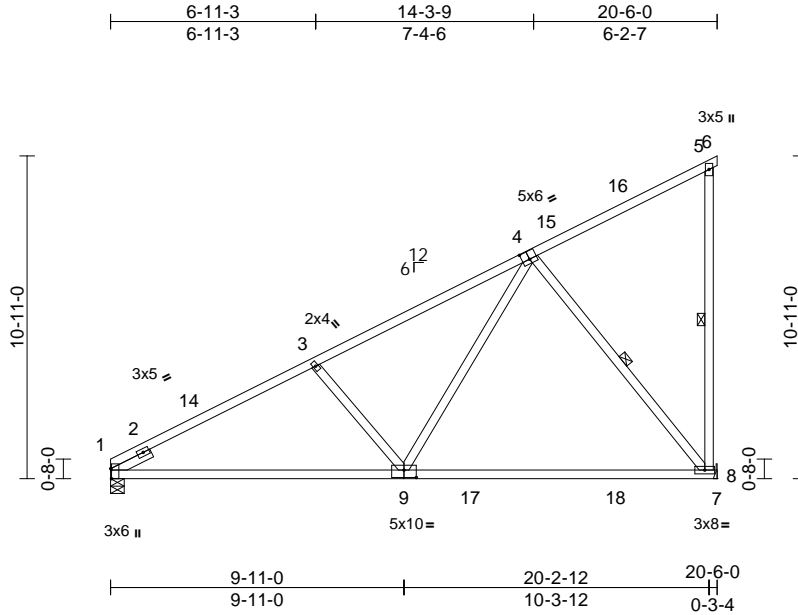
818 Soundside Road  
 Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202891 |
| 25060035-01 | C03   | Monopitch  | 2   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58  
ID:KLlp2cdP9FdyXYyQD889fRyzBLJ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC7f

Page: 1



Scale = 1:77.9

Plate Offsets (X, Y): [1:0-4-1,Edge], [4:0-3-0,0-3-4], [9:0-5-0,0-3-0]

| 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         | 0.72 | Vert(LL) | -0.48 | 8-9    | >504 | 240    | MT20     | 244/190 |
| Snow (Pf)      | 20.0  | Lumber DOL      | 1.15            | BC         | 0.91 | Vert(CT) | -0.73 | 8-9    | >331 | 180    |          |         |
| TCDL           | 10.0  | Rep Stress Incr | YES             | WB         | 0.43 | Horz(CT) | 0.02  | 8      | n/a  | n/a    |          |         |
| BCLL           | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |        |      |        |          |         |
| BCDL           | 10.0  |                 |                 |            |      |          |       |        |      |        |          |         |
| Weight: 115 lb |       |                 |                 |            |      |          |       |        |      |        | FT = 20% |         |

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.1  
WEBS 2x4 SP No.3 \*Except\* 5-8:2x4 SP No.2  
SLIDER Left 2x4 SP No.3 ~ 1-6-0

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 4-8-11 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 8-3-12 oc bracing.

WEBS 1 Row at midpt 5-8, 4-8

#### REACTIONS

(size) 1=0-5-8, 8= Mechanical  
Max Horiz 1=375 (LC 14)  
Max Uplift 1=-27 (LC 14), 8=-232 (LC 14)  
Max Grav 1=898 (LC 5), 8=1065 (LC 5)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-3=-1402/34, 3-5=-1185/96, 5-6=-12/0, 5-8=-271/90

BOT CHORD 1-8=-408/1298, 7-8=0/0

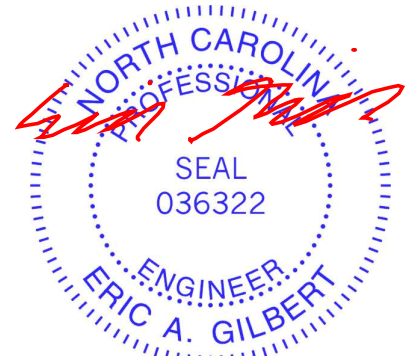
WEBS 4-8=-923/258, 4-9=-51/875, 3-9=-408/222

#### NOTES

- 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 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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
- Unbalanced snow loads have been considered for this design.

- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 232 lb uplift at joint 8.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

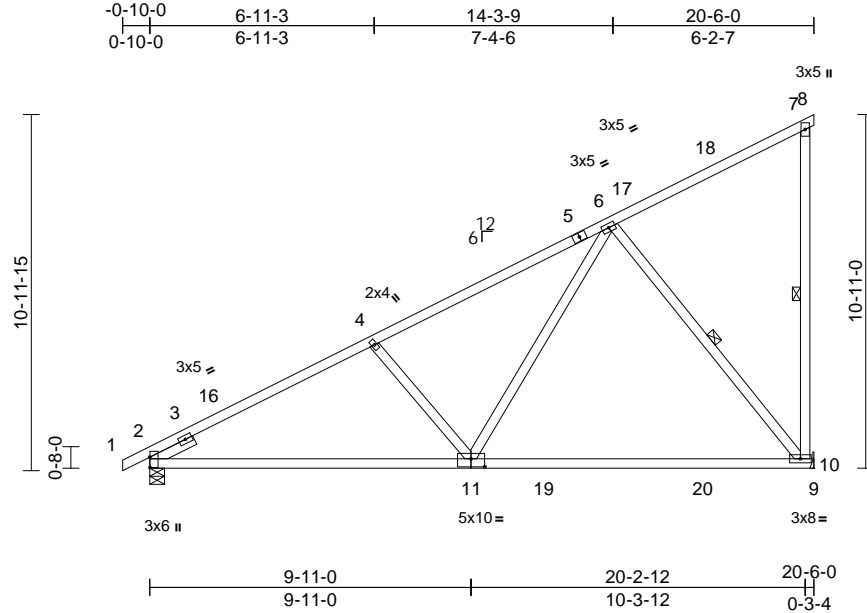
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202892 |
| 25060035-01 | C04   | Monopitch  | 3   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:58

Page: 1

ID:uKtrJGkYuK\_5qa1S4NLaLYzBNiRfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:71.1

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [11:0-5-0,0-3-0]

| 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         | 0.72 | Vert(LL) | -0.48 | 10-11 | >504   | 240 | MT20     | 244/190 |
| Snow (Pf)      | 20.0  | Lumber DOL      | 1.15            | BC         | 0.91 | Vert(CT) | -0.73 | 10-11 | >330   | 180 |          |         |
| TCDL           | 10.0  | Rep Stress Incr | YES             | WB         | 0.43 | Horz(CT) | 0.02  | 10    | n/a    | n/a |          |         |
| BCLL           | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |       |        |     |          |         |
| BCDL           | 10.0  |                 |                 |            |      |          |       |       |        |     |          |         |
| Weight: 117 lb |       |                 |                 |            |      |          |       |       |        |     | FT = 20% |         |

#### LUMBER

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\* 7-10:2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 ~ 1-6-0

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 4-10-6 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 8-3-12 oc bracing.

WEBS 1 Row at midpt 7-10, 6-10

**REACTIONS** (size) 2=0-5-8, 10= Mechanical  
 Max Horiz 2=388 (LC 14)  
 Max Uplift 2=-43 (LC 14), 10=-232 (LC 14)  
 Max Grav 2=942 (LC 5), 10=1071 (LC 5)

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

TOP CHORD 1-2=0/22, 2-4=-1400/34, 4-6=-1183/25,  
 6-7=-155/95, 7-8=-12/0, 7-10=-269/88

BOT CHORD 2-10=-399/1296, 9-10=0/0

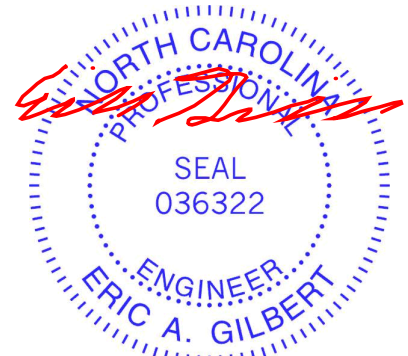
WEBS 6-10=-919/258, 6-11=-52/880, 4-11=-411/224

#### 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) -0-10-0 to 2-2-0, Interior (1) 2-2-0 to 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 232 lb uplift at joint 10.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

818 Soundside Road  
 Edenton, NC 27932

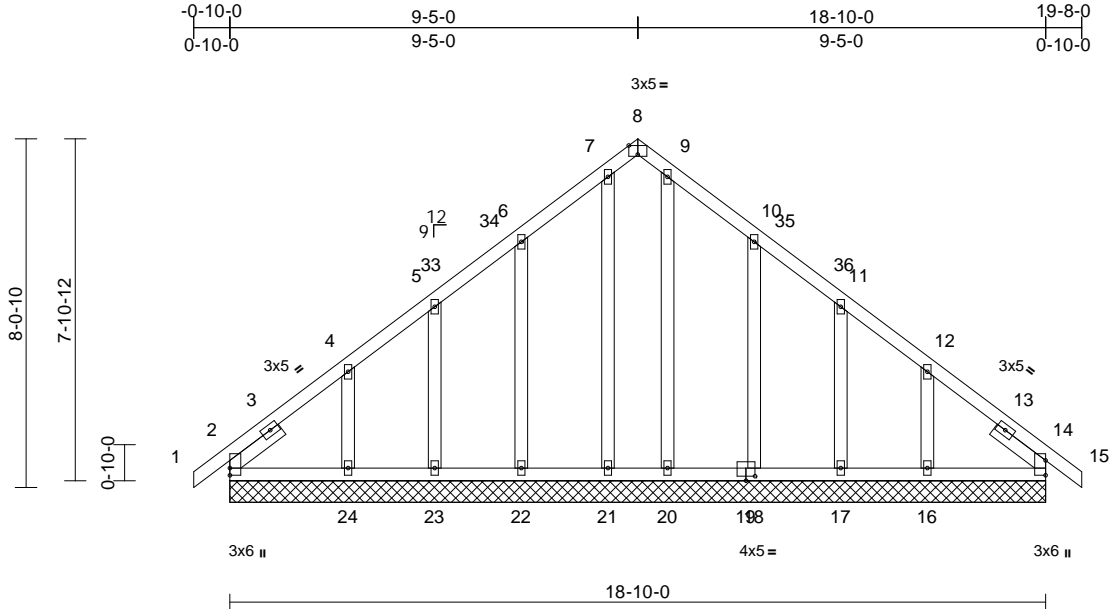


|             |       |                        |     |     |                                |           |
|-------------|-------|------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type             | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202893 |
| 25060035-01 | D01   | Common Supported Gable | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59  
ID:x0ypEL3Up0yR9Rp3VsfHJqyzBIA-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:53.2

Plate Offsets (X, Y): [8:0-2-8,Edge], [19:0-2-8,0-1-4]

| 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         | 0.09 | Vert(LL) | n/a   | -      | 999 | MT20                    | 244/190 |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.09 | Vert(CT) | n/a   | -      | 999 |                         |         |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.14 | Horz(CT) | 0.01  | 14     | n/a |                         |         |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |        |     |                         |         |
| BCDL        | 10.0  |                 |                 |            |      |          |       |        |     |                         |         |
|             |       |                 |                 |            |      |          |       |        |     | Weight: 126 lb FT = 20% |         |

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3  
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) 2=18-10-0, 14=18-10-0, 16=18-10-0, 17=18-10-0, 18=18-10-0, 20=18-10-0, 21=18-10-0, 22=18-10-0, 23=18-10-0, 24=18-10-0  
Max Horiz 2=180 (LC 13)  
Max Uplift 2=-33 (LC 10), 14=-3 (LC 11), 16=-132 (LC 15), 17=-42 (LC 15), 18=-90 (LC 15), 22=-88 (LC 14), 23=-40 (LC 14), 24=-139 (LC 14)  
Max Grav 2=201 (LC 26), 14=180 (LC 1), 16=239 (LC 26), 17=173 (LC 22), 18=268 (LC 22), 20=169 (LC 22), 21=169 (LC 21), 22=268 (LC 21), 23=173 (LC 21), 24=247 (LC 25)

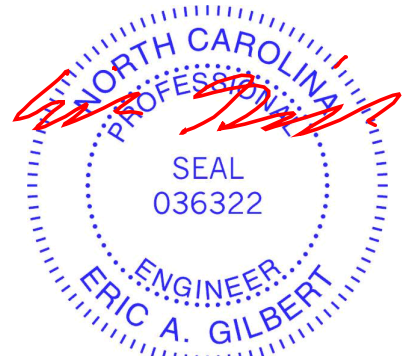
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/30, 2-4=-146/119, 4-5=-127/80, 5-6=-112/106, 6-7=-137/153, 7-8=-97/111, 8-9=-97/110, 9-10=-137/132, 10-11=-98/79, 11-12=-98/43, 12-14=-116/76, 14-15=0/30  
BOT CHORD 2-24=-61/141, 23-24=-61/141, 22-23=-61/141, 21-22=-61/141, 20-21=-61/141, 18-20=-61/141, 17-18=-61/141, 16-17=-61/141, 14-16=-61/141

**WEBS** 7-21=-137/21, 9-20=-137/11, 6-22=-224/110, 5-23=-141/73, 4-24=-187/137, 10-18=-224/112, 11-17=-141/74, 12-16=-187/133

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - 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) -0-10-0 to 2-2-0, Interior (1) 2-2-0 to 6-5-0, Exterior(2R) 6-5-0 to 12-5-0, Interior (1) 12-5-0 to 16-8-0, Exterior(2E) 16-8-0 to 19-8-0 zone; 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
  - 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.
  - 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
  - Unbalanced snow loads have been considered for this design.
  - 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.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 2-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* 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 33 lb uplift at joint 2, 3 lb uplift at joint 14, 88 lb uplift at joint 22, 40 lb uplift at joint 23, 139 lb uplift at joint 24, 90 lb uplift at joint 18, 42 lb uplift at joint 17, 132 lb uplift at joint 16, 33 lb uplift at joint 2 and 3 lb uplift at joint 14.

**LOAD CASE(S)** Standard



June 16, 2025

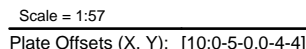
**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59 Page: 1  
ID:xqX4xnqTohNCmGDs 3fFtavzBHN-RfC?PsB70Hq3NSqPqnL8w3ulTXbGKWrCDoi7J4zJC?F



**LUMBER**  
 TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x6 SP No.2  
 WEBS 2x4 SP No.3  
 SLIDER Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3  
 -- 1-6-0

|                |   |
|----------------|---|
| <b>BRACING</b> |   |
| TOP CHORD      | Structural wood sheathing directly applied or 4-9-4 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=-166 (LC 8)  
 Max Uplift 1=-243 (LC 12), 7=-222 (LC 13)  
 Max Grav 1=4897 (LC 5), 7=4408 (LC 6)

| <b>FORCES</b> | (lb) - Maximum Compression/Maximum Tension  |
|---------------|---|
| TOP CHORD     | 1-3=-5607/305, 3-4=-4024/291,<br>4-5=-4023/291, 5-7=-5565/304                     |
| BOT CHORD     | 1-11=-273/4480, 10-11=-273/4480,<br>8-10=-182/4384, 7-8=-182/4384                 |
| WEBS          | 3-11=-48/1868, 3-10=-1708/221,<br>4-10=-245/4442, 5-10=-1656/219,<br>5-8=-47/1818 |

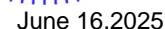
## NOTES

- 1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
- 2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.

- 3) 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;  
Minimum DOL=1.60 plate grip DOL=1.60
- 5) TCELL: 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.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 7. This connection is for uplift only and does not consider lateral forces.
- 10) Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss) or equivalent spaced at 2-0-0 oc max. starting at 0-10-0 from the left end to 16-10-0 to connect truss(es) to back face of bottom chord.
- 11) Fill all nail holes where hanger is in contact with lumber.

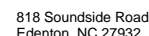
## LOAD CASE(S) Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-4=-60, 4-7=-60, 12-16=-20  
Concentrated Loads (lb)  
Vert: 11=-813 (B), 20=-814 (B), 21=-813 (B), 22=-813 (B), 23=-813 (B), 24=-813 (B), 25=-813 (B), 26=-813 (B), 27=-813 (B)



WARNING – Verify design parameters and READ NOTES ON THIS AND INCLUDED MITTEL REFERENCE PAGE MIT-TP1-19-169: 1/2/2023 BEFORE USE.

Design valid for use only with MiTeK® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Components Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

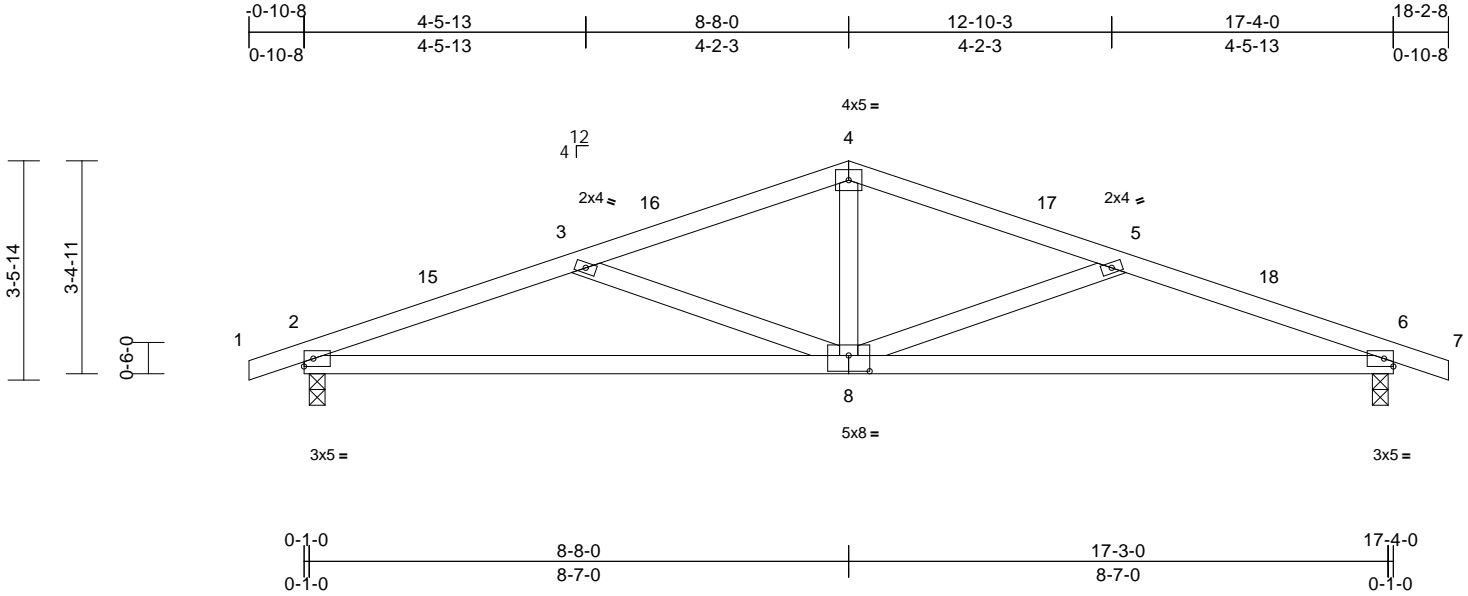


|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202895 |
| 25060035-01 | E01   | Common     | 4   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59  
ID:qaiA6xbzzlROKF1mhdVcwyzBUO-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?i

Page: 1



Scale = 1:36.7

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

| 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         | 0.39 | Vert(LL) | 0.10  | 8-11  | >999   | 240 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.70 | Vert(CT) | -0.19 | 8-11  | >999   | 180 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.24 | Horz(CT) | 0.03  | 6     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |          |       |       |        |     |               |          |
|             |       |                 |                 |            |      |          |       |       |        |     | Weight: 73 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 4-4-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 7-0-4 oc bracing.

#### REACTIONS

(size) 2=0-3-0, 6=0-3-0  
Max Horiz 2=-50 (LC 19)  
Max Uplift 2=-266 (LC 10), 6=-266 (LC 11)  
Max Grav 2=816 (LC 21), 6=816 (LC 22)

#### FORCES

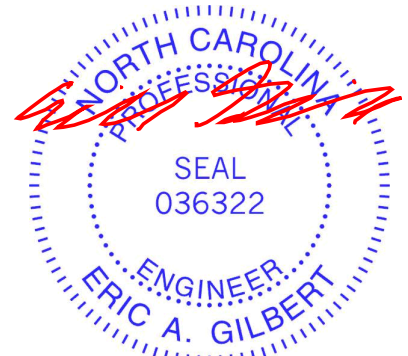
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-1656/800, 3-4=-1134/656,  
4-5=-1134/656, 5-6=-1656/800, 6-7=0/17  
BOT CHORD 2-6=-692/1528  
WEBS 4-8=-243/461, 5-8=-547/206, 3-8=-547/206

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 5-8-0, Exterior(2R) 5-8-0 to 11-8-0, Interior (1) 11-8-0 to 15-2-8, Exterior(2E) 15-2-8 to 18-2-8 zone; cantilever left and right exposed; end vertical left and right 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
- 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

- Unbalanced snow loads have been considered for this design.
- 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.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 6. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

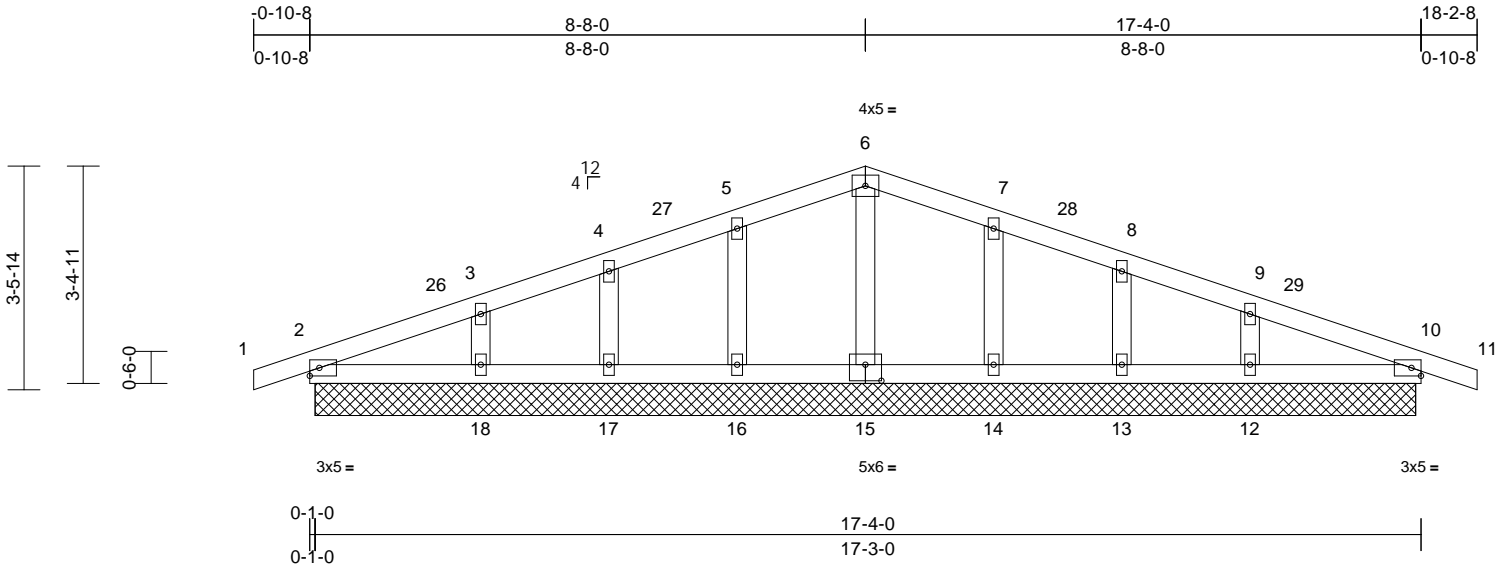
818 Soundside Road  
Edenton, NC 27932

|             |       |                        |     |     |                                |           |
|-------------|-------|------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type             | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202896 |
| 25060035-01 | E02   | Common Supported Gable | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59  
ID:blbw4E4\_5X0UgfFVg5xqNryzBV3-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWRCDoi7J4zJC?f

Page: 1



Scale = 1:35.9

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

| 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         | 0.08 | Vert(LL) | n/a   | -      | 999 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.05 | Vert(CT) | n/a   | -      | 999 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.04 | Horz(CT) | 0.00  | 10     | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |          |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |          |       |        |     |               |          |
|             |       |                 |                 |            |      |          |       |        |     | Weight: 74 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=17-2-0, 10=17-2-0, 12=17-2-0, 13=17-2-0, 14=17-2-0, 15=17-2-0, 16=17-2-0, 17=17-2-0, 18=17-2-0  
Max Horiz 2=-50 (LC 19)  
Max Uplift 2=-38 (LC 10), 10=-45 (LC 11), 12=-46 (LC 15), 13=-31 (LC 11), 14=-38 (LC 15), 16=-38 (LC 14), 17=-30 (LC 10), 18=-49 (LC 14)  
Max Grav 2=160 (LC 1), 10=160 (LC 1), 12=249 (LC 22), 13=203 (LC 22), 14=235 (LC 22), 15=135 (LC 22), 16=235 (LC 21), 17=203 (LC 21), 18=249 (LC 21)

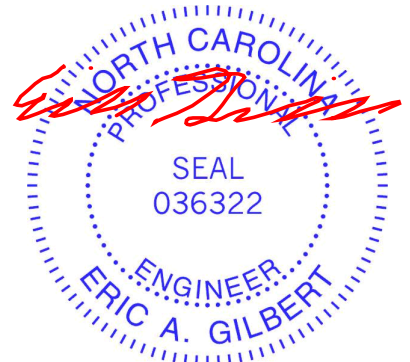
#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-60/34, 3-4=-51/47, 4-5=-54/78, 5-6=-64/121, 6-7=-64/121, 7-8=-54/78, 8-9=-51/43, 9-10=-48/34, 10-11=0/17  
BOT CHORD 2-18=-22/45, 17-18=0/45, 16-17=0/45, 14-16=0/45, 13-14=0/45, 12-13=0/45, 10-12=-18/45  
WEBS 6-15=-96/12, 5-16=-193/109, 4-17=-170/86, 3-18=-190/104, 7-14=-193/109, 8-13=-170/86, 9-12=-190/104

#### NOTES

1) Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 5-8-0, Corner(3R) 5-8-0 to 11-8-0, Exterior(2N) 11-8-0 to 15-2-8, Corner(3E) 15-2-8 to 18-2-8 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
- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- 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.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

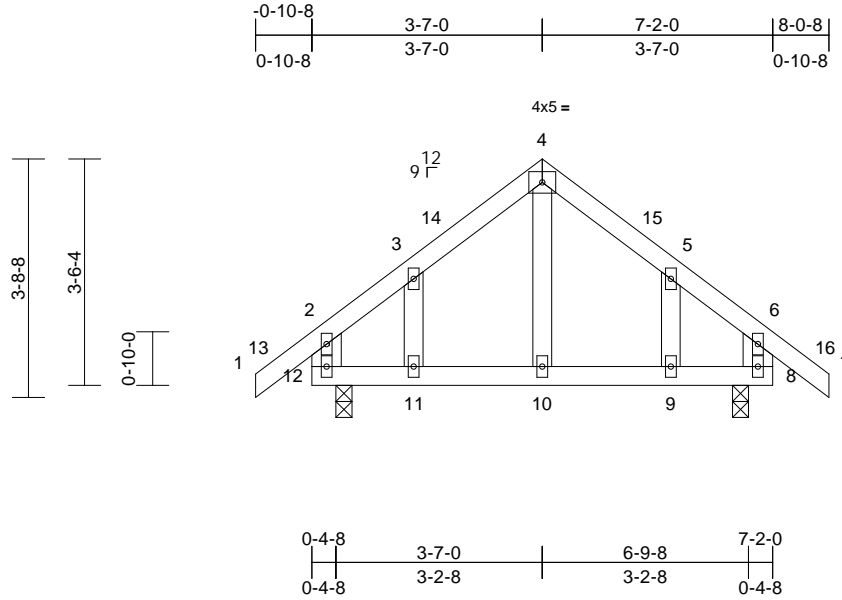
818 Soundside Road  
Edenton, NC 27932

|             |       |                         |     |     |                                |           |
|-------------|-------|-------------------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type              | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202897 |
| 25060035-01 | G01   | Common Structural Gable | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59  
ID:DP\_INHM2klcG82JXPRIrjVyzBPX-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:35.8

| 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        | 0.20 | Vert(LL) | -0.01 | 10-11  | 240  | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.16 | Vert(CT) | -0.01 | 10-11  | >999 | 180           |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.04 | Horz(CT) | 0.00  | 8      | n/a  | n/a           |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MR |      |          |       |        |      |               |          |
| BCDL        | 10.0  |                 |                 |           |      |          |       |        |      |               |          |
|             |       |                 |                 |           |      |          |       |        |      | Weight: 39 lb | FT = 20% |

#### LUMBER

|           |                                       |
|-----------|---------------------------------------|
| TOP CHORD | 2x4 SP No.2                           |
| BOT CHORD | 2x4 SP No.2                           |
| WEBS      | 2x6 SP No.2 *Except* 10-4:2x4 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.                                  |

|           |  |
|-----------|--|
| REACTIONS | (size) 8=0-3-0, 12=0-3-0               |
|           | Max Horiz 12=102 (LC 13)               |
|           | Max Uplift 8=41 (LC 15), 12=41 (LC 14) |
|           | Max Grav 8=452 (LC 22), 12=452 (LC 21) |

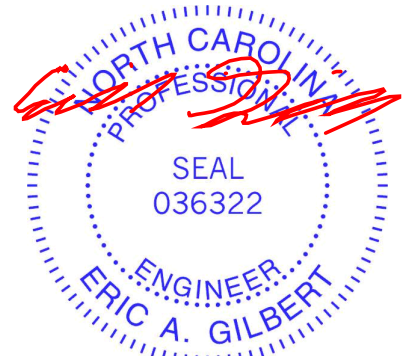
#### FORCES

|           |   |
|-----------|---|
| TOP CHORD | (lb) - Maximum Compression/Maximum Tension  |
|           | 1-2=0/59, 2-3=-278/89, 3-4=-248/167, 4-5=-249/166, 5-6=-278/87, 6-7=0/59, 2-12=-361/197, 6-8=-361/194 |
| BOT CHORD | 11-12=0/184, 10-11=0/184, 9-10=0/184, 8-9=0/184   |
| WEBS      | 4-10=-65/107, 3-11=-72/103, 5-9=-72/105   |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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, Corner(3R) 2-1-8 to 5-0-8, Corner(3E) 5-0-8 to 8-0-8 zone; 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
- 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.

- 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
  - Unbalanced snow loads have been considered for this design.
  - 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.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
  - Gable studs spaced at 2-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* 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.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 41 lb uplift at joint 12 and 41 lb uplift at joint 8.
- LOAD CASE(S)** Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

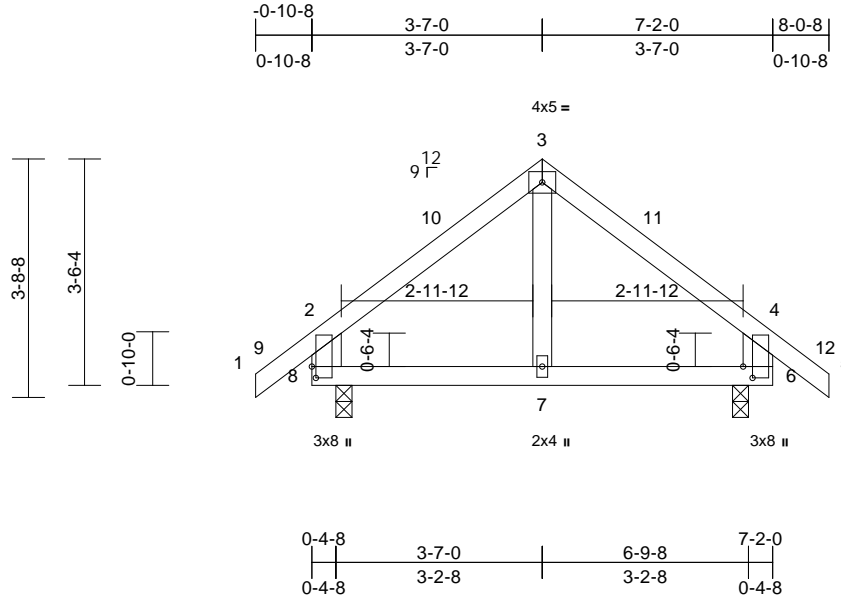


|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202898 |
| 25060035-01 | G02   | Common     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59  
ID:DP\_INHM2klcG82JXPRlqVyzBPX-RfC?PsB70Hq3NSgPqnL8w3uITxbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:35.8

Plate Offsets (X, Y): [6:0-2-2,0-1-12], [8:0-2-2,0-0-12]

| 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        | 0.27 | Vert(LL) | 0.01  | 7-8    | >999 | 240    | 244/190 |
| Snow (Pf)              | 20.0  | Lumber DOL      | 1.15            | BC        | 0.13 | Vert(CT) | -0.01 | 7-8    | >999 | 180    |         |
| TCDL                   | 10.0  | Rep Stress Incr | YES             | WB        | 0.05 | Horz(CT) | 0.00  | 6      | n/a  | n/a    |         |
| BCLL                   | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MR |      |          |       |        |      |        |         |
| BCDL                   | 10.0  |                 |                 |           |      |          |       |        |      |        |         |
| Weight: 35 lb FT = 20% |       |                 |                 |           |      |          |       |        |      |        |         |

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2 \*Except\* 7-3:2x4 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) 6=0-3-0, 8=0-3-0  
Max Horiz 8=102 (LC 13)  
Max Uplift 6=-41 (LC 15), 8=-41 (LC 14)  
Max Grav 6=452 (LC 22), 8=452 (LC 21)

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

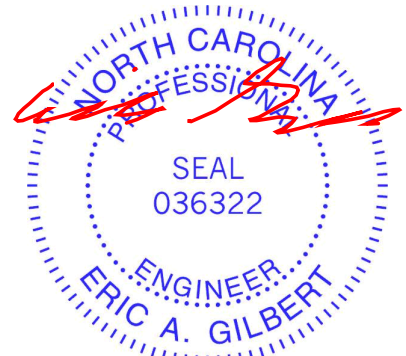
TOP CHORD 1-2=0/59, 2-3=-308/177, 3-4=-308/175,  
4-5=0/59, 2-8=-414/234, 4-6=-414/232  
BOT CHORD 7-8=-32/149, 6-7=-32/149  
WEBS 3-7=-72/128

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 5-0-8, Exterior(2E) 5-0-8 to 8-0-8 zone; end vertical left and right 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
- 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
- Unbalanced snow loads have been considered for this design.

- 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.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 41 lb uplift at joint 8 and 41 lb uplift at joint 6.

**LOAD CASE(S)** Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

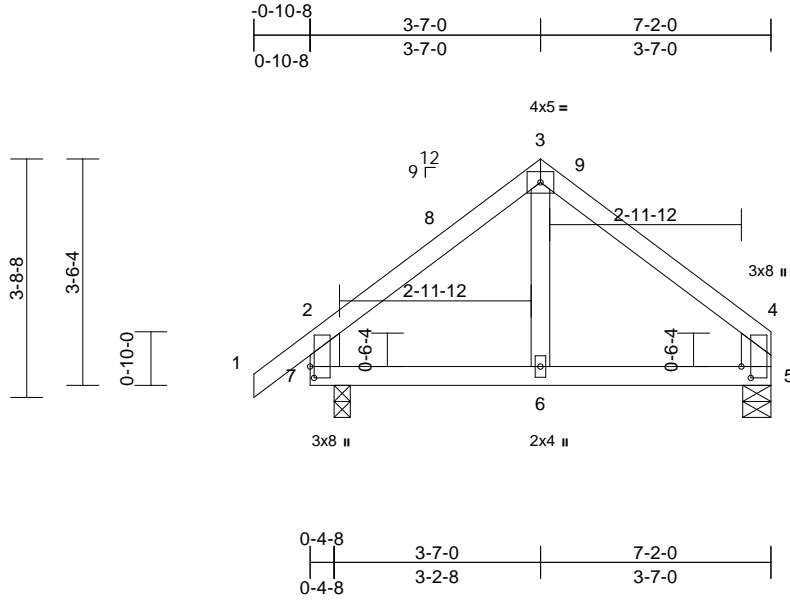
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202899 |
| 25060035-01 | G03   | Common     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59

Page: 1

ID:?D?Cdqfjr\_mjeuJLNBFiEnyzBP8-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrcDoi7J4zJC?fi



Scale = 1:35.8

Plate Offsets (X, Y): [4:0-2-2,0-1-12], [7:0-2-2,0-0-12]

| 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        | 0.25 | Vert(LL) | 0.01  | 6-7   | >999   | 240 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.15 | Vert(CT) | -0.01 | 5-6   | >999   | 180 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.05 | Horz(CT) | 0.00  | 5     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MR |      |          |       |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |          |       |       |        |     |               |          |
|             |       |                 |                 |           |      |          |       |       |        |     | Weight: 33 lb | FT = 20% |

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2 \*Except\* 6-3:2x4 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) 5=0-5-4, 7=0-3-0  
Max Horiz 7=85 (LC 11)  
Max Uplift 5=-19 (LC 15), 7=-40 (LC 14)  
Max Grav 5=346 (LC 22), 7=407 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/40, 2-3=-300/176, 3-4=-308/172, 2-7=-368/233, 4-5=-303/161  
BOT CHORD 6-7=-64/157, 5-6=-64/157  
WEBS 3-6=-66/124

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 3-11-4, Exterior(2E) 3-11-4 to 6-11-4 zone; end vertical 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
- 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
- Unbalanced snow loads have been considered for this design.

- 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.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 40 lb uplift at joint 7.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 5. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16,2025

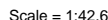
**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:39:59 Page: 1  
ID:mlX4RCA3vu3hLxPq??YxdyzBOU-RfC?PsB70Hq3NSqPanL8w3uITXbGKWrCDOI7J4zJC?f

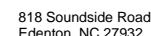
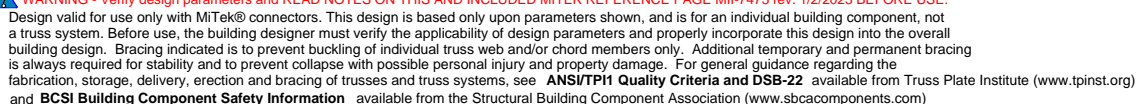


|  |   |
|--|---|
| <b>LUMBER</b>  |   |
| TOP CHORD  | 2x4 SP No.2   |
| BOT CHORD  | 2x6 SP No.2   |
| WEBS   | 2x4 SP No.3 *Except* 5-4:2x6 SP No.2  |
| <b>BRACING</b>   |   |
| TOP CHORD  | Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals. |
| BOT CHORD  | Rigid ceiling directly applied or 10-0-0 oc bracing.                                  |
| <b>REACTIONS</b> (size) 5=0-5-8, 7=0-3-0                 |   |
|  | Max Horiz 7=61 (LC 11)  |
|  | Max Uplift 5=-160 (LC 13), 7=-175 (LC 12)   |
|  | Max Grav 5=775 (LC 19), 7=868 (LC 18)   |
| <b>FORCES</b> (lb) - Maximum Compression/Maximum Tension |   |
| TOP CHORD  | 1-2=0/28, 2-3=-627/158, 3-4=-633/158, 4-5=-595/128                                    |
| BOT CHORD  | 7-8=0/0, 6-7=-61/58, 5-6=0/0  |
| WEBS   | 3-6=-145/475, 4-6=-110/460, 2-6=-107/462, 2-7=-645/137                                |

- 1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
- 2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
- 3) Unbalanced roof live loads have been considered for this design.

- 4) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDDL=6.0psf; BCDL=6.0psf; h=25ft; Cat.  
II; Exp B; Enclosed; MWFRS (envelope) exterior zone;  
end vertical left exposed; porch 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.
- 9) One H2.5A Simpson Strong-Tie connectors  
recommended to connect truss to bearing walls due to  
UPLIFT at jt(s) 5 and 7. This connection is for uplift only  
and does not consider lateral forces.
- 10) Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d  
Truss, Single Ply Girder) or equivalent spaced at 2-0-0  
oc max. starting at 1-5-4 from the left end to 5-5-4 to  
connect truss(es) to back face of bottom chord.
- 11) Fill all nail holes where hanger is in contact with lumber.

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-4=-60, 5-8=-20  
Concentrated Loads (lb)  
Vert: 6=-320 (B), 9=-320 (B), 10=-320 (B)

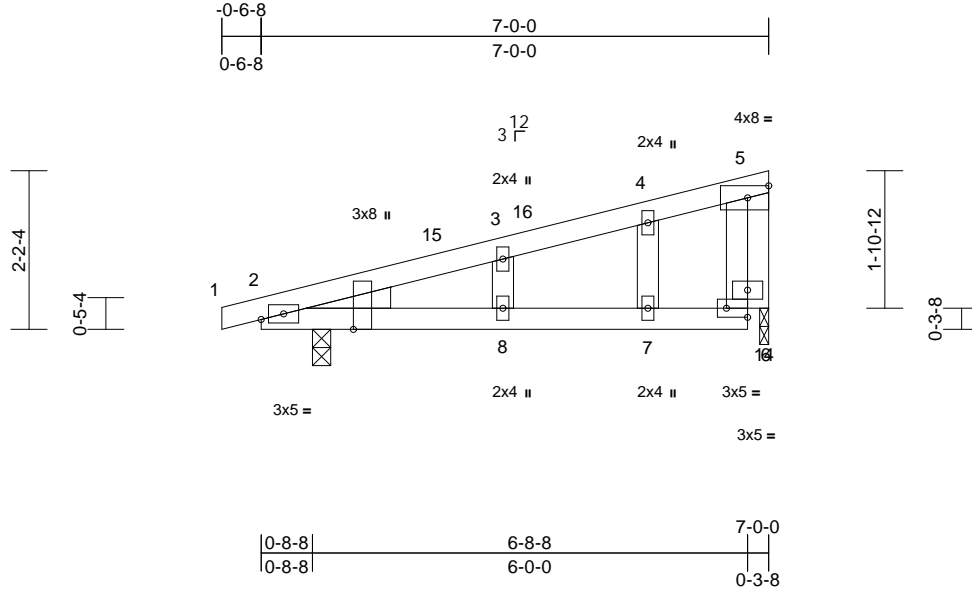


|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202901 |
| 25060035-01 | H01   | Monopitch  | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00  
ID:1aYKOOAVMhpxxEzllwYOTkYzBSM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrcDdJ4zJC?f

Page: 1



Scale = 1:31.8

Plate Offsets (X, Y): [2:0-1-3,0-0-9], [2:0-1-10,Edge], [6:Edge,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        | 0.53 | Vert(LL) | 0.05  | 8     | >999   | 240 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.45 | Vert(CT) | -0.07 | 7-8   | >999   | 180 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.01 | Horz(CT) | 0.00  | 2     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MR |      |          |       |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |          |       |       |        |     |               |          |
|             |       |                 |                 |           |      |          |       |       |        |     | Weight: 31 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       |
| WEDGE     | Left: 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)

|   |
|---|
| 2=0-3-0, 14=0-1-8                         |
| Max Horiz 2=68 (LC 10)                    |
| Max Uplift 2=-130 (LC 10), 14=-93 (LC 10) |
| Max Grav 2=459 (LC 21), 14=292 (LC 21)    |

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

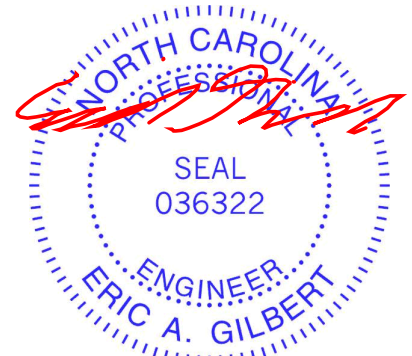
|           |  |
|-----------|--|
| TOP CHORD | 1-2=0/11, 2-3=-274/135, 3-4=-257/152, 4-5=-230/167, 5-6=-125/153 |
| BOT CHORD | 2-8=-200/245, 7-8=-200/245, 6-7=-200/245                         |
| WEBS      | 4-7=-53/42, 3-8=-65/46, 5-14=-304/247                            |

#### NOTES

- 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) 0-6-8 to 2-5-8, Interior (1) 2-5-8 to 3-8-8, Exterior(2E) 3-8-8 to 6-8-8 zone; cantilever left exposed; end vertical 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
- 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.

- 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
- Unbalanced snow loads have been considered for this design.
- 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.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Bearing at joint(s) 14 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate at joint(s) 14.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 14. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

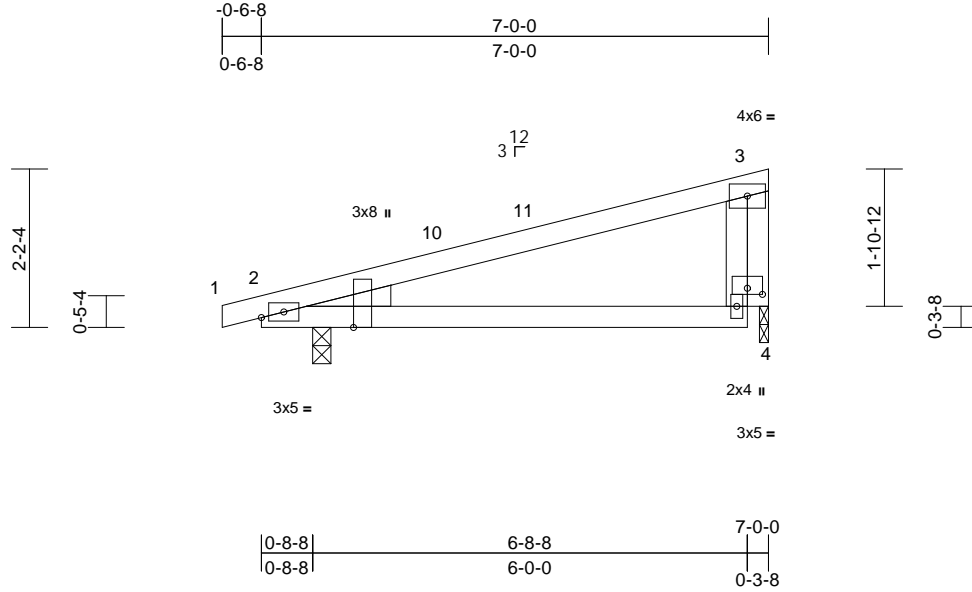
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202902 |
| 25060035-01 | H02   | Monopitch  | 5   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00

Page: 1

ID:KTXq?QfDiHz7LXcdC1n?2\_yzBRj-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:31.8

Plate Offsets (X, Y): [2:0-1-3,0-0-9], [2:0-1-10,Edge], [4:0-2-8,0-1-0]

| 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        | 0.69 | Vert(LL) | 0.12  | 4-9   | >645   | 240 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.56 | Vert(CT) | -0.16 | 4-9   | >490   | 180 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.00 | Horz(CT) | 0.01  | 2     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MP |      |          |       |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |          |       |       |        |     |               |          |
|             |       |                 |                 |           |      |          |       |       |        |     | Weight: 28 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  
 WEDGE Left: 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) 2=0-3-0, 4=0-1-8  
 Max Horiz 2=68 (LC 10)  
 Max Uplift 2=-126 (LC 10), 4=-96 (LC 10)  
 Max Grav 2=448 (LC 21), 4=303 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/11, 2-3=-90/111, 3-4=-212/170  
 BOT CHORD 2-4=-124/109

#### NOTES

- 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) -0-6-8 to 2-5-8, Interior (1) 2-5-8 to 3-8-8, Exterior(2E) 3-8-8 to 6-8-8 zone; cantilever left exposed; end vertical 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
- 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
- Unbalanced snow loads have been considered for this design.

- 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.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Bearing at joint(s) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 4. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



June 16,2025

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

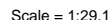
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

818 Soundside Road  
 Edenton, NC 27932

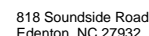
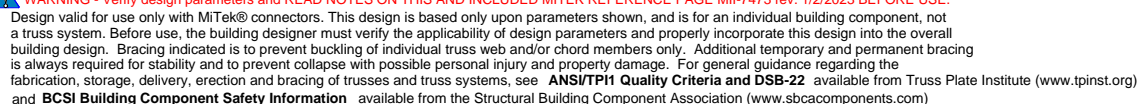
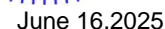


Carter Components (Sanford, NC), Sanford, NC - 27332, Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00 Page: 1  
ID:asbcfelXa5E8GwWww0z5 xykdBf-RfC?PsB70Hq3NSaPanL8w3uITxhGKWRcDoi7J4ZJC?f

[illegible]

- 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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 3-4-8, Exterior(2E) 3-4-8 to 6-4-8 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 a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- LOAD CASE(S) Standard

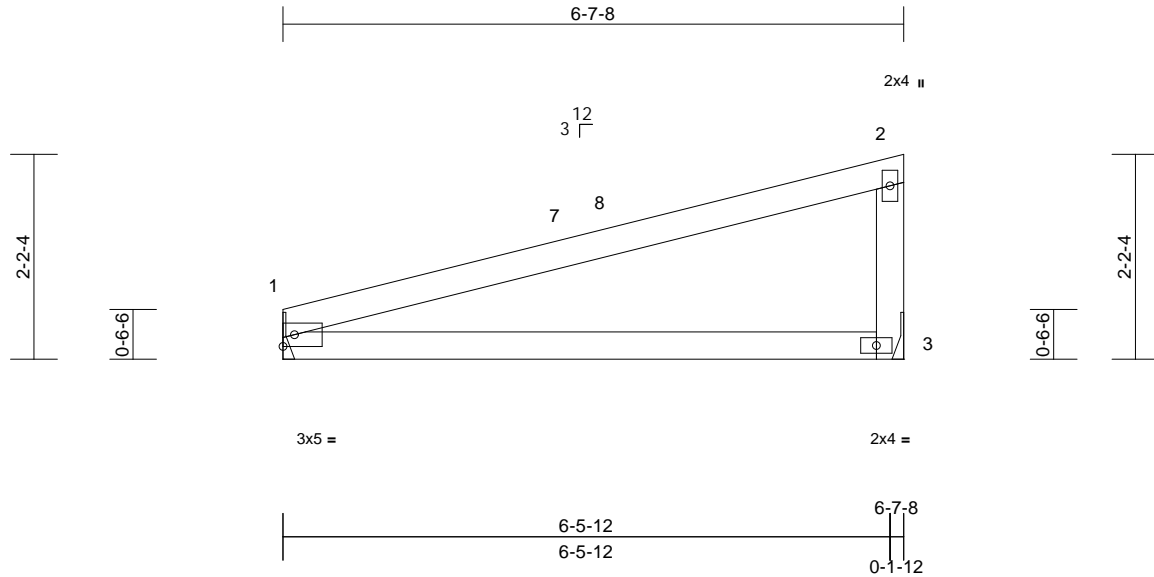


|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202904 |
| 25060035-01 | H04   | Monopitch  | 3   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00  
ID:9RTNzvL\_Ho91hITa2VJNs?yzBQq-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:24.6

| 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        | 0.96 | Vert(LL) | 0.18  | 3-6   | >439   | 240 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.62 | Vert(CT) | -0.22 | 3-6   | >350   | 180 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.00 | Horz(CT) | 0.03  | 1     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MP |      |          |       |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |          |       |       |        |     | Weight: 22 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, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1= Mechanical, 3= Mechanical  
Max Horiz 1=59 (LC 10)  
Max Uplift 1=-88 (LC 10), 3=-107 (LC 10)  
Max Grav 1=340 (LC 20), 3=340 (LC 20)

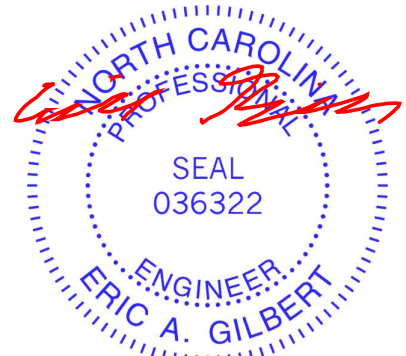
**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-115/137, 2-3=-246/202  
BOT CHORD 1-3=-228/198

#### 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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 3-5-12, Exterior(2E) 3-5-12 to 6-5-12 zone; 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 a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 5) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

- 6) Refer to girder(s) for truss to truss connections.
  - 7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 88 lb uplift at joint 1 and 107 lb uplift at joint 3.
- LOAD CASE(S)** Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

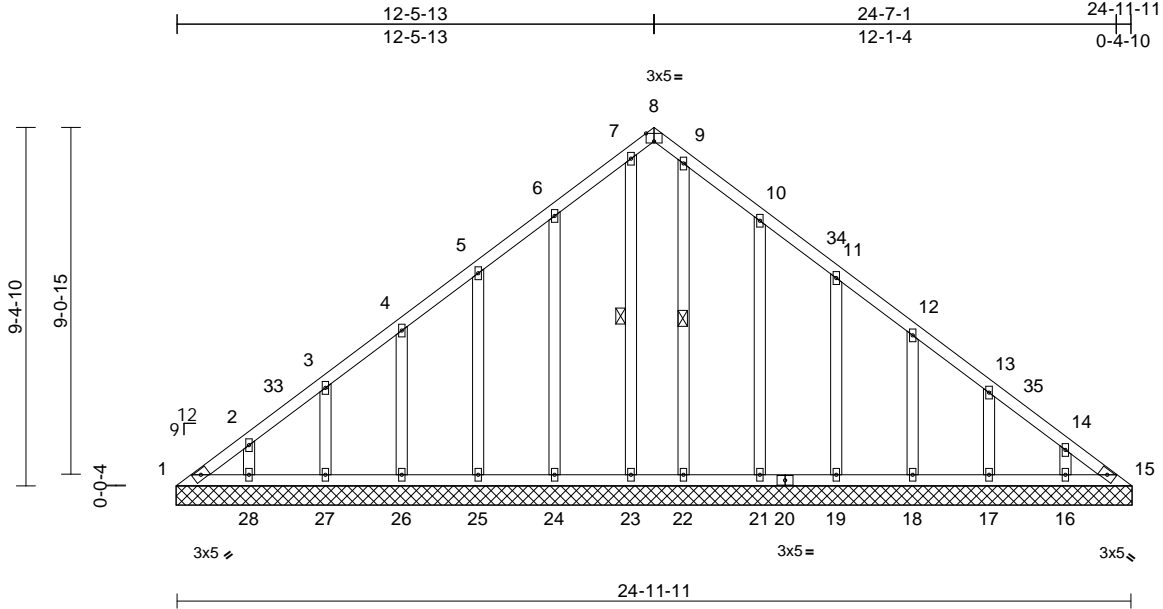
818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202905 |
| 25060035-01 | V1    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00  
ID:ApfFEOGJGreUOoCAhhlC05yYM3s-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:60.3

Plate Offsets (X, Y): [8:0-2-8,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         | 0.11 | Vert(LL)  | n/a   | -      | n/a | 999    | MT20    |
| Snow (Pf)               | 20.0  | Lumber DOL      | 1.15            | BC         | 0.05 | Vert(TL)  | n/a   | -      | n/a | 999    | 244/190 |
| TCDL                    | 10.0  | Rep Stress Incr | YES             | WB         | 0.22 | Horiz(TL) | 0.01  | 15     | n/a | n/a    |         |
| BCLL                    | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |        |         |
| BCDL                    | 10.0  |                 |                 |            |      |           |       |        |     |        |         |
| Weight: 164 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 7-23, 9-22

**REACTIONS** (size) 1=25-0-5, 15=25-0-5, 16=25-0-5, 17=25-0-5, 18=25-0-5, 19=25-0-5, 21=25-0-5, 22=25-0-5, 23=25-0-5, 24=25-0-5, 25=25-0-5, 26=25-0-5, 27=25-0-5, 28=25-0-5

Max Horiz 1=-216 (LC 10)

Max Uplift 1=-51 (LC 12), 15=-6 (LC 13), 16=-17 (LC 15), 17=-77 (LC 15), 18=-65 (LC 15), 19=-65 (LC 15), 21=-84 (LC 15), 24=-81 (LC 14), 25=-65 (LC 14), 26=-65 (LC 14), 27=-75 (LC 14), 28=-31 (LC 14)

Max Grav 1=116 (LC 26), 15=87 (LC 27), 16=168 (LC 21), 17=174 (LC 25), 18=171 (LC 25), 19=185 (LC 21), 21=260 (LC 21), 22=190 (LC 21), 23=182 (LC 20), 24=263 (LC 20), 25=202 (LC 20), 26=172 (LC 24), 27=169 (LC 24), 28=179 (LC 24)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-245/175, 2-3=-200/154, 3-4=-138/128, 4-5=-109/104, 5-6=-94/121, 6-7=-106/167, 7-8=-79/121, 8-9=-86/135, 9-10=-104/157, 10-11=-69/83, 11-12=-61/46, 12-13=-89/65, 13-14=-162/91, 14-15=-202/108

**BOT CHORD** 1-28=-91/190, 27-28=-91/190, 26-27=-91/190, 25-26=-91/190, 24-25=-91/190, 23-24=-91/190, 22-23=-91/190, 21-22=-91/190, 19-21=-91/190, 18-19=-91/190, 17-18=-91/190, 16-17=-91/190, 15-16=-91/190  
**WEBS** 7-23=-149/20, 9-22=-158/0, 6-24=-222/106, 5-25=-162/89, 4-26=-146/90, 3-27=-149/96, 2-28=-135/70, 10-21=-219/109, 11-19=-146/88, 12-18=-146/90, 13-17=-150/97, 14-16=-129/67

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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) 0-0-0 to 3-0-0, Exterior(2N) 3-0-0 to 9-6-3, Corner(3R) 9-6-3 to 15-3-7, Exterior(2N) 15-3-7 to 22-0-5, Corner(3E) 22-0-5 to 25-0-5 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.

- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 51 lb uplift at joint 1, 6 lb uplift at joint 15, 81 lb uplift at joint 24, 65 lb uplift at joint 25, 65 lb uplift at joint 26, 75 lb uplift at joint 27, 31 lb uplift at joint 28, 84 lb uplift at joint 21, 65 lb uplift at joint 19, 65 lb uplift at joint 18, 77 lb uplift at joint 17 and 17 lb uplift at joint 16.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 15.

**LOAD CASE(S)** Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

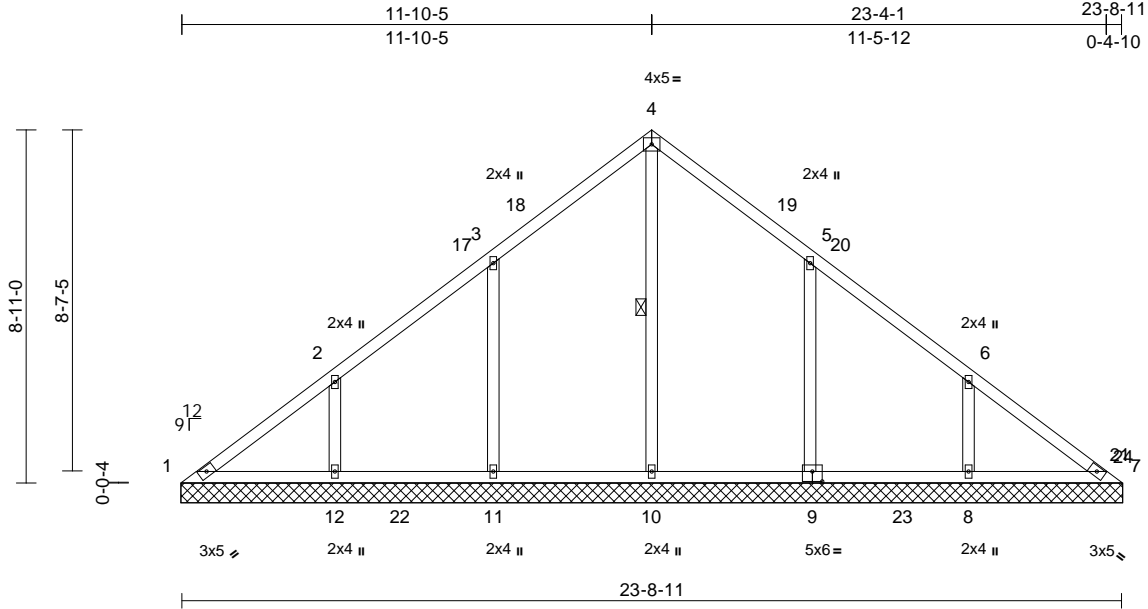
818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202906 |
| 25060035-01 | V2    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00  
ID:9vzGGipglHfNcWclDBfli?yYM5j-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrcDoi7J4zJC?f

Page: 1



Scale = 1:58.2

Plate Offsets (X, Y): [9:0-3-0,0-3-0]

| 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         | 0.30 | Vert(LL)  | n/a   | -      | n/a | 999            | 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         | 0.23 | Horiz(TL) | 0.01  | 7      | n/a | n/a            |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |                |          |
| BCDL        | 10.0  |                 |                 |            |      |           |       |        |     |                |          |
|             |       |                 |                 |            |      |           |       |        |     | Weight: 113 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.  
WEBS 1 Row at midpt 4-10

**REACTIONS** (size) 1=23-9-5, 7=23-9-5, 8=23-9-5, 9=23-9-5, 10=23-9-5, 11=23-9-5, 12=23-9-5  
Max Horiz 1=204 (LC 11)  
Max Uplift 1=-33 (LC 10), 8=-124 (LC 15), 9=-149 (LC 15), 11=-147 (LC 14), 12=-128 (LC 14)  
Max Grav 1=152 (LC 25), 7=105 (LC 27), 8=432 (LC 25), 9=498 (LC 6), 10=464 (LC 27), 11=495 (LC 5), 12=439 (LC 24)

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

TOP CHORD 1-2=-207/207, 2-3=-109/169, 3-4=-127/181, 4-5=-129/157, 5-6=-50/119, 6-7=-155/155  
BOT CHORD 1-12=-92/173, 11-12=-92/148, 10-11=-92/148, 8-10=-93/150, 7-8=-93/150  
WEBS 4-10=-265/0, 3-11=-378/198, 2-12=-294/165, 5-9=-381/199, 6-8=-293/163

#### NOTES

1) Unbalanced roof live loads have been considered for this design.

- 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 8-10-11, Exterior(2R) 8-10-11 to 14-10-11, Interior (1) 14-10-11 to 20-4-1, Exterior(2E) 20-4-1 to 23-4-1 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
- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 1, 147 lb uplift at joint 11, 128 lb uplift at joint 12, 149 lb uplift at joint 9 and 124 lb uplift at joint 8.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 7.

**LOAD CASE(S)** Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

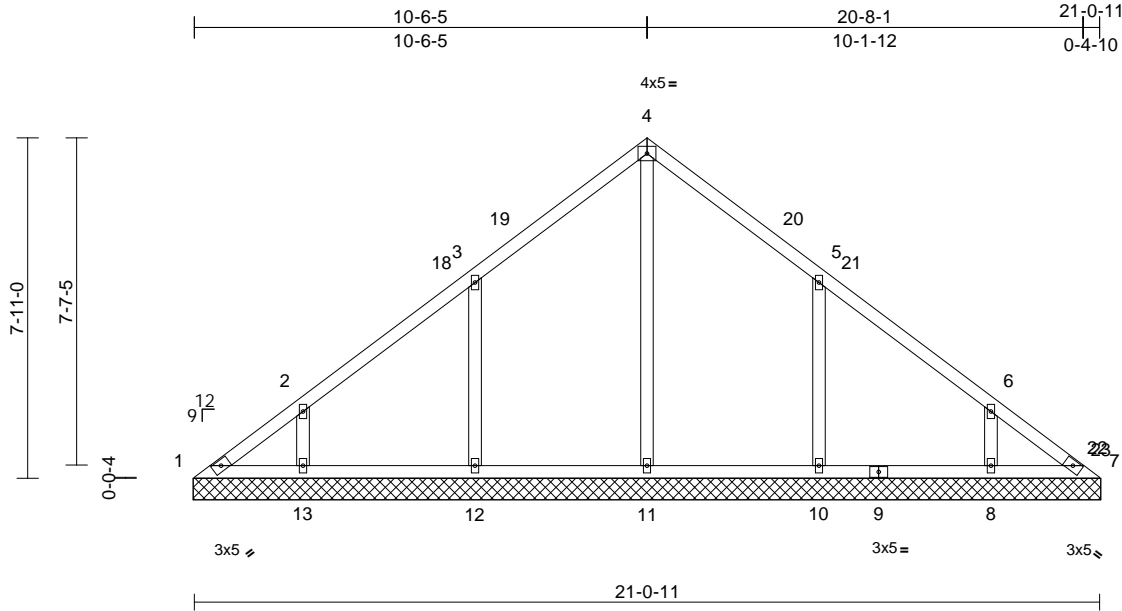
818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202907 |
| 25060035-01 | V3    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00  
ID:DXrWr0oPmgPfMCSw5mdqdayYM5I-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:53.6

| 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         | 0.30 | n/a       | -     | n/a    | 999 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.17 | n/a       | -     | n/a    | 999 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.23 | Horiz(TL) | 0.00  | 7      | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |           |       |        |     |               |          |
|             |       |                 |                 |            |      |           |       |        |     | Weight: 97 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=21-1-5, 7=21-1-5, 8=21-1-5, 10=21-1-5, 11=21-1-5, 12=21-1-5, 13=21-1-5                                 |
| Max Horiz  | 1=181 (LC 11)  |
| Max Uplift | 1=-38 (LC 10), 7=-3 (LC 11), 8=-93 (LC 15), 10=-153 (LC 15), 12=-153 (LC 14), 13=-98 (LC 14)             |
| Max Grav   | 1=124 (LC 30), 7=83 (LC 27), 8=344 (LC 25), 10=483 (LC 6), 11=397 (LC 27), 12=483 (LC 5), 13=351 (LC 24) |

#### FORCES

|  |  |
|--|--|
| (lb) - Maximum Compression/Maximum Tension |  |
| TOP CHORD                                  | 1-2=-176/149, 2-3=-154/116, 3-4=-174/165, 4-5=-175/142, 5-6=-108/69, 6-7=-134/87     |
| BOT CHORD                                  | 1-13=-61/128, 12-13=-61/124, 11-12=-61/124, 10-11=-61/124, 8-10=-61/124, 7-8=-61/124 |
| WEBS                                       | 4-11=-207/0, 3-12=-386/201, 2-13=-252/145, 5-10=-387/201, 6-8=-251/143               |

#### 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 7-6-11, Exterior(2R) 7-6-11 to 13-6-11, Interior (1) 13-6-11 to 17-8-1, Exterior(2E) 17-8-1 to 20-8-1 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 38 lb uplift at joint 1, 3 lb uplift at joint 7, 153 lb uplift at joint 12, 98 lb uplift at joint 13, 153 lb uplift at joint 10 and 93 lb uplift at joint 8.
- 12) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 7.

LOAD CASE(S) Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

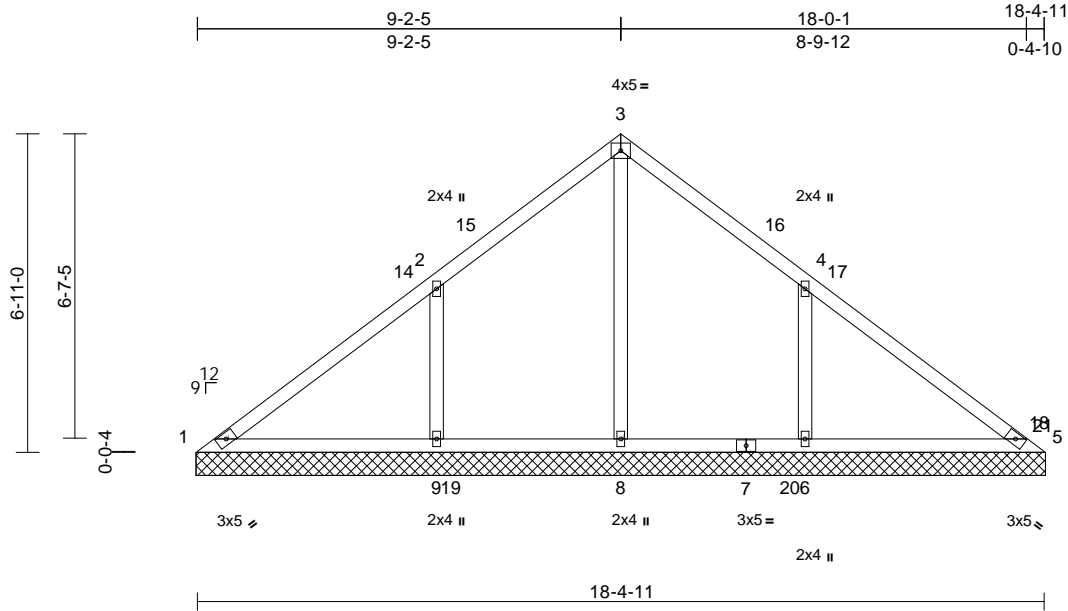


|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202908 |
| 25060035-01 | V4    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00  
ID:oy9ND?IXT14VkkLQe47?xyYM5o-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrcDoi7J4zJC?f

Page: 1



Scale = 1:50

| 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         | 0.41 | n/a       | -     | n/a    | 999 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.23 | n/a       | -     | n/a    | 999 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.34 | Horiz(TL) | 0.00  | 5      | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |           |       |        |     | Weight: 79 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=18-5-5, 5=18-5-5, 6=18-5-5, 8=18-5-5, 9=18-5-5                      |
| Max Horiz  | 1=157 (LC 11)   |
| Max Uplift | 1=-13 (LC 10), 6=-177 (LC 15), 9=-180 (LC 14)                         |
| Max Grav   | 1=97 (LC 20), 5=73 (LC 36), 6=573 (LC 6), 8=569 (LC 24), 9=575 (LC 5) |

#### FORCES

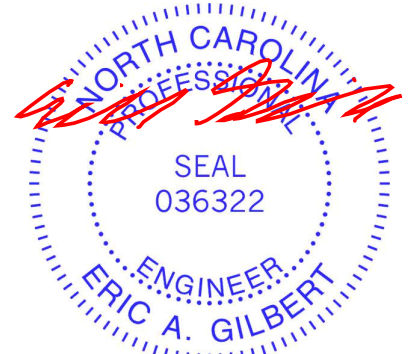
|  |  |
|--|--|
| (lb) - Maximum Compression/Maximum Tension |  |
| TOP CHORD                                  | 1-2=-143/344, 2-3=-24/259, 3-4=-25/238, 4-5=-103/324   |
| BOT CHORD                                  | 1-9=-217/134, 8-9=-217/134, 6-8=-217/134, 5-6=-217/134 |
| WEBS                                       | 3-8=-412/3, 2-9=-428/216, 4-6=-427/215                 |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 6-2-11, Exterior(2R) 6-2-11 to 12-2-11, Interior (1) 12-2-11 to 15-0-1, Exterior(2E) 15-0-1 to 18-0-1 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

- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 13 lb uplift at joint 1, 180 lb uplift at joint 9 and 177 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

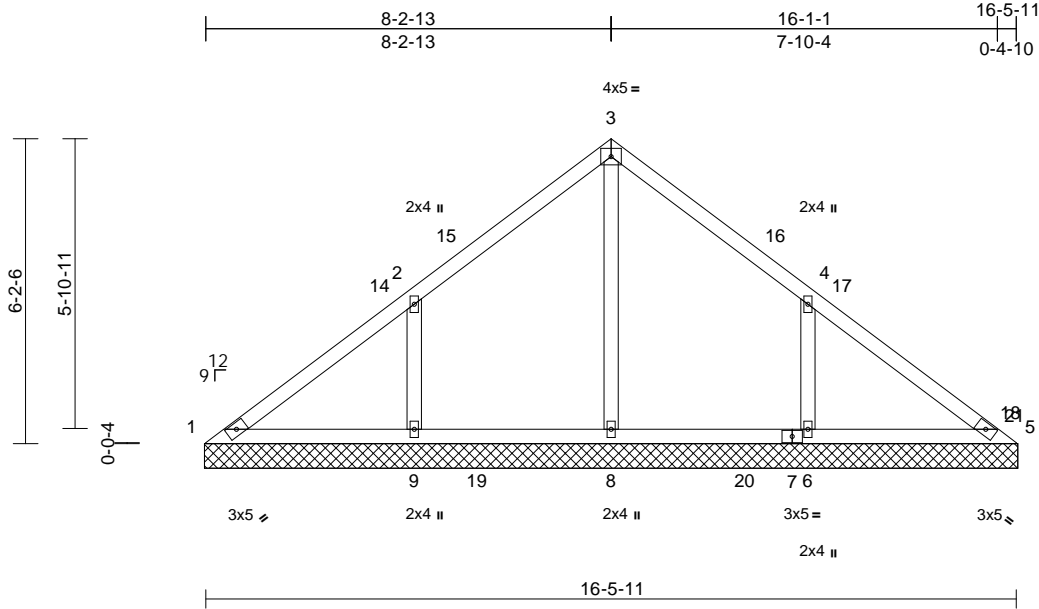
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202909 |
| 25060035-01 | V5    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:00

Page: 1

ID: \_oo6yxhmtvGxnpGB4OzjlgYm5u-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWwCDoi7J4zJC?f



Scale = 1:46.8

| 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         | 0.34 | n/a       | -     | n/a    | 999 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.16 | n/a       | -     | n/a    | 999 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.20 | Horiz(TL) | 0.00  | 5      | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |           |       |        |     | Weight: 70 lb | FT = 20% |

#### LUMBER

|           |             |
|-----------|-------------|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.2 |
| OTHERS    | 2x4 SP No.3 |

#### BRACING

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

#### REACTIONS

|            |  |
|------------|--|
| (size)     | 1=16-6-5, 5=16-6-5, 6=16-6-5, 8=16-6-5, 9=16-6-5                         |
| Max Horiz  | 1=141 (LC 11)  |
| Max Uplift | 1=-13 (LC 10), 6=-155 (LC 15), 9=-158 (LC 14)                            |
| Max Grav   | 1=112 (LC 25), 5=78 (LC 21), 6=505 (LC 21), 8=485 (LC 24), 9=507 (LC 20) |

#### FORCES

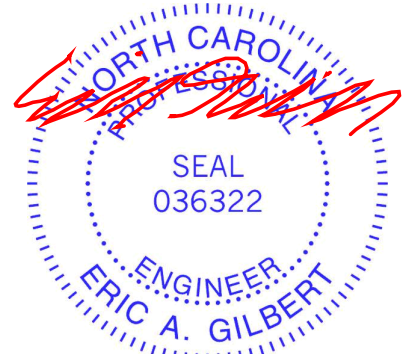
|  |  |
|--|--|
| (lb) - Maximum Compression/Maximum Tension |  |
| TOP CHORD                                  | 1-2=-140/230, 2-3=-95/179, 3-4=-96/162, 4-5=-102/196   |
| BOT CHORD                                  | 1-9=-120/130, 8-9=-120/104, 6-8=-120/104, 5-6=-120/104 |
| WEBS                                       | 3-8=-304/0, 2-9=-400/194, 4-6=-399/192                 |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 5-3-3, Exterior(2R) 5-3-3 to 11-3-3, Interior (1) 11-3-3 to 13-1-1, Exterior(2E) 13-1-1 to 16-1-1 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

- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 13 lb uplift at joint 1, 158 lb uplift at joint 9 and 155 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

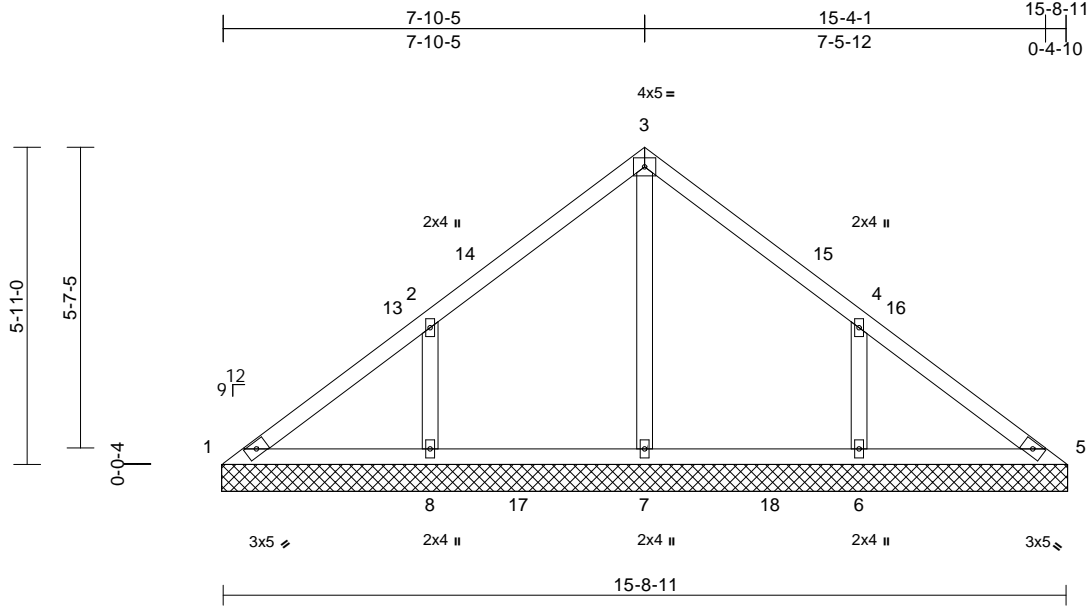
818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202910 |
| 25060035-01 | V6    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:01  
ID: C\_nfiON4mD7UH\_sN6d0rEPyYM6H-RfC?PsB70Hq3NSgPqnL8w3uITxBGKWrcDoi7J4zJC?f

Page: 1



Scale = 1:43

| 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         | 0.32 | Vert(LL)  | n/a   | -      | n/a | 999           | MT20     |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.15 | Vert(TL)  | n/a   | -      | n/a | 999           | 244/190  |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.17 | Horiz(TL) | 0.00  | 5      | n/a | n/a           |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |           |       |        |     |               |          |
|             |       |                 |                 |            |      |           |       |        |     | Weight: 66 lb | FT = 20% |

#### LUMBER

|           |             |
|-----------|-------------|
| TOP CHORD | 2x4 SP No.2 |
| BOT CHORD | 2x4 SP No.2 |
| 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=15-9-5, 5=15-9-5, 6=15-9-5, 7=15-9-5, 8=15-9-5                         |
| Max Horiz  | 1=-135 (LC 10)   |
| Max Uplift | 1=-14 (LC 10), 6=-148 (LC 15), 8=-150 (LC 14)                            |
| Max Grav   | 1=114 (LC 25), 5=99 (LC 21), 6=489 (LC 21), 7=456 (LC 24), 8=489 (LC 20) |

#### FORCES

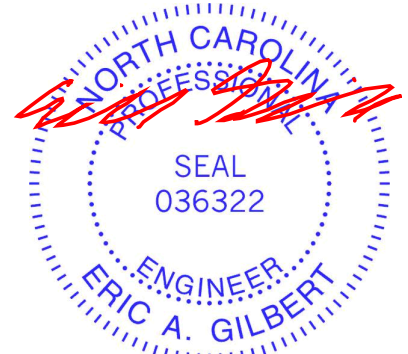
|  |  |
|--|--|
| (lb) - Maximum Compression/Maximum Tension |  |
| TOP CHORD                                  | 1-2=-146/194, 2-3=-117/157, 3-4=-117/139, 4-5=-119/157 |
| BOT CHORD                                  | 1-8=-92/131, 7-8=-92/100, 6-7=-92/100, 5-6=-92/100     |
| WEBS                                       | 3-7=-275/0, 2-8=-392/187, 4-6=-392/186                 |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 4-10-11, Exterior(2R) 4-10-11 to 10-10-11, Interior (1) 10-10-11 to 12-9-5, Exterior(2E) 12-9-5 to 15-9-5 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 14 lb uplift at joint 1, 150 lb uplift at joint 8 and 148 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

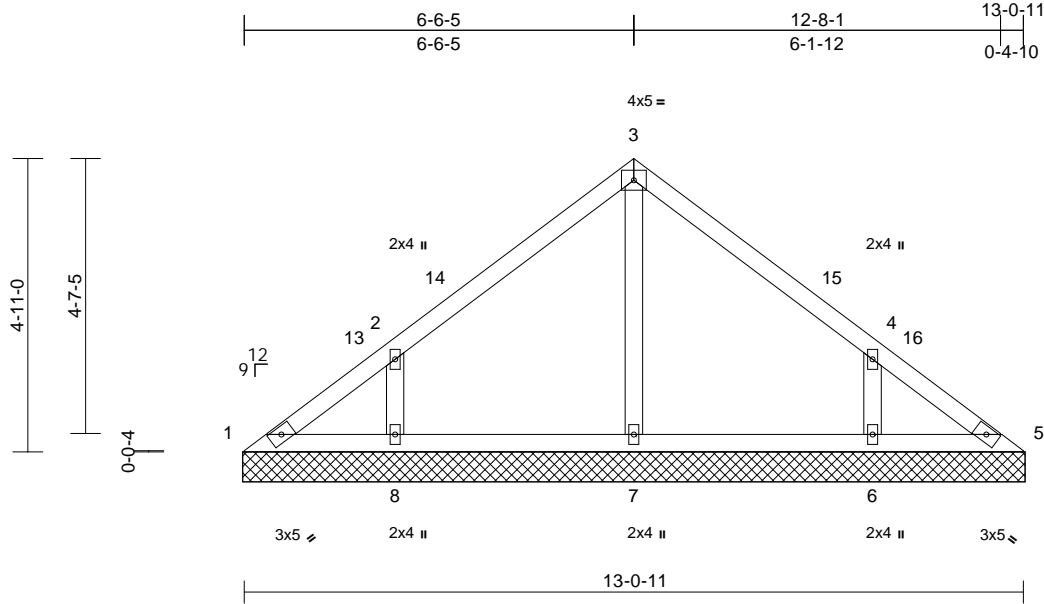
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202911 |
| 25060035-01 | V7    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:01

Page: 1

ID:Sjq3bTUKf\_FCM2680gz6lyYM68-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:38.6

| 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         | 0.30 | 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         | 0.09 | Horiz(TL) | 0.00 | 5     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |      |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |           |      |       |        |     |               |          |
|             |       |                 |                 |            |      |           |      |       |        |     | Weight: 53 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=13-1-5, 5=13-1-5, 6=13-1-5, 7=13-1-5, 8=13-1-5                       |
| Max Horiz  | 1=-111 (LC 12)   |
| Max Uplift | 1=-20 (LC 10), 6=-125 (LC 15), 8=-128 (LC 14)                          |
| Max Grav   | 1=97 (LC 25), 5=78 (LC 1), 6=446 (LC 21), 7=285 (LC 20), 8=446 (LC 20) |

#### FORCES

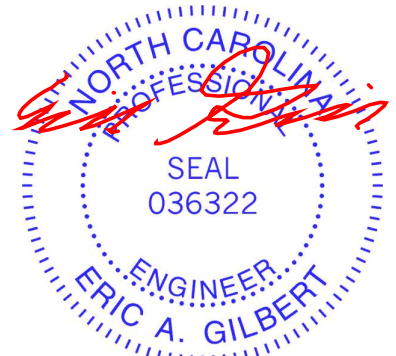
|  |  |
|--|--|
| (lb) - Maximum Compression/Maximum Tension |  |
| TOP CHORD                                  | 1-2=-128/100, 2-3=-183/105, 3-4=-183/105, 4-5=-99/64 |
| BOT CHORD                                  | 1-8=-36/97, 7-8=-36/69, 6-7=-36/69, 5-6=-36/78       |
| WEBS                                       | 3-7=-200/0, 2-8=-388/177, 4-6=-388/177               |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 3-6-11, Exterior(2R) 3-6-11 to 9-6-11, Interior (1) 9-6-11 to 10-1-5, Exterior(2E) 10-1-5 to 13-1-5 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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.
- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 20 lb uplift at joint 1, 128 lb uplift at joint 8 and 125 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.

LOAD CASE(S) Standard



June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

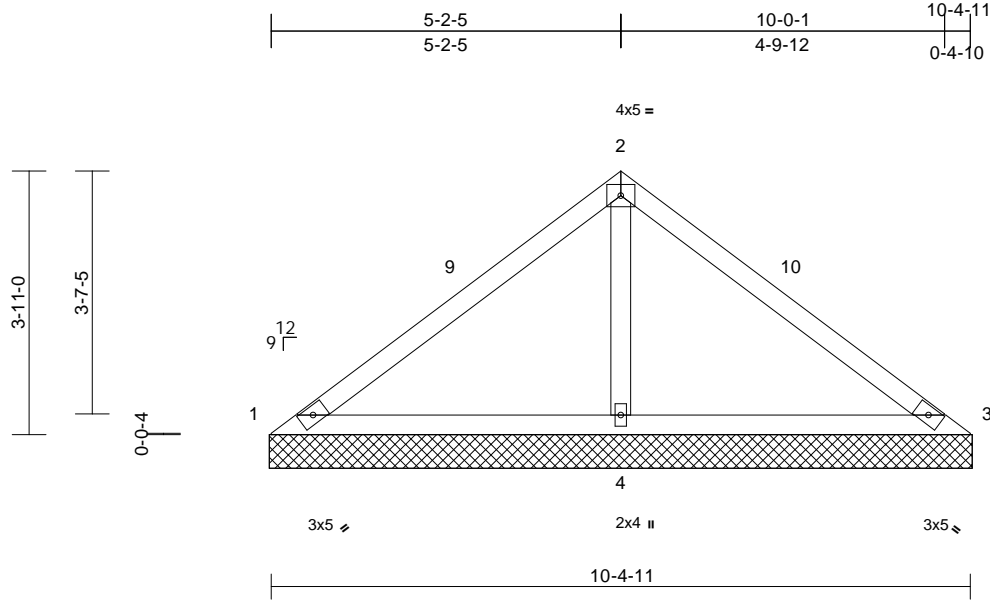
818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202912 |
| 25060035-01 | V8    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:01  
ID:dlxMmcDI3wMTcqhHhmZgSyYM6V-RfC?PsB70Hq3NSgPqnL8w3uITxbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:34.2

| 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         | 0.52 | n/a       | -     | n/a    | 999 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC         | 0.47 | n/a       | -     | n/a    | 999 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB         | 0.20 | Horiz(TL) | 0.01  | 4      | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MSH |      |           |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |            |      |           |       |        |     | Weight: 38 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=10-5-5, 3=10-5-5, 4=10-5-5                 |
| Max Horiz  | 1=-88 (LC 10)                                |
| Max Uplift | 1=-71 (LC 21), 3=-71 (LC 20), 4=-110 (LC 14) |
| Max Grav   | 1=81 (LC 20), 3=81 (LC 21), 4=869 (LC 20)    |

#### FORCES

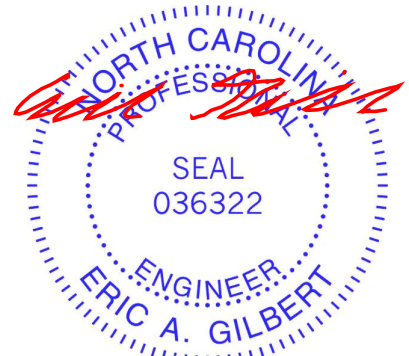
|  |                            |
|--|----------------------------|
| (lb) - Maximum Compression/Maximum Tension |                            |
| TOP CHORD                                  | 1-2=-126/446, 2-3=-126/446 |
| BOT CHORD                                  | 1-4=-311/177, 3-4=-311/177 |
| WEBS                                       | 2-4=-729/272               |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 7-5-5, Exterior(2E) 7-5-5 to 10-5-5 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.

- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 71 lb uplift at joint 1, 71 lb uplift at joint 3 and 110 lb uplift at joint 4.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.

**LOAD CASE(S)** Standard



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacompnents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932



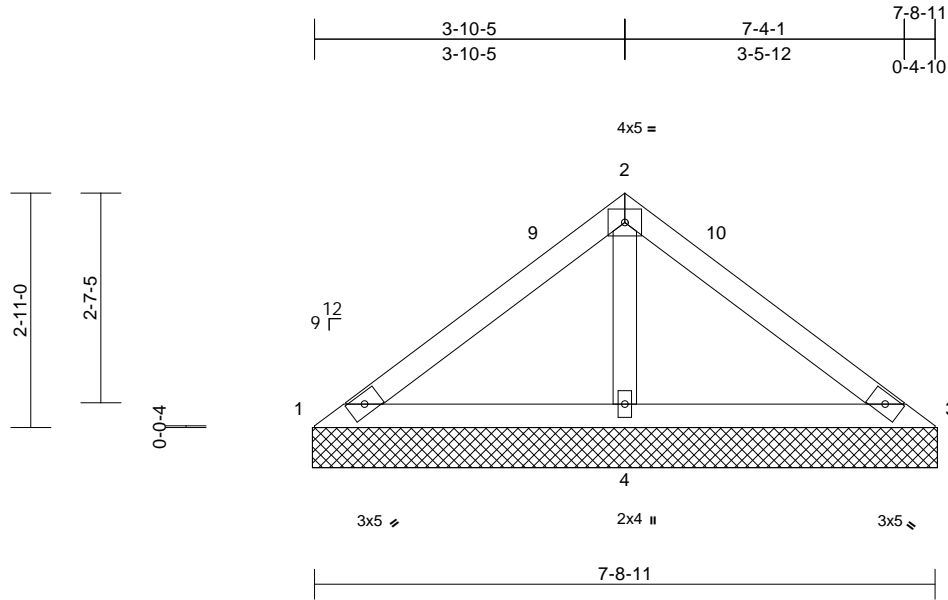
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202913 |
| 25060035-01 | V9    | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:01

Page: 1

ID:gvpcLwB2XJ6iNWeJAGk5b1yYM6X-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:28.7

| 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        | 0.30 | n/a       | -     | n/a    | 999 | MT20          | 244/190  |
| Snow (Pf)   | 20.0  | Lumber DOL      | 1.15            | BC        | 0.29 | n/a       | -     | n/a    | 999 |               |          |
| TCDL        | 10.0  | Rep Stress Incr | YES             | WB        | 0.10 | Horiz(TL) | 0.00  | 4      | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MP |      |           |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |           |       |        |     | Weight: 28 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 7-8-11 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 6-0-0 oc bracing.              |

#### REACTIONS

|            |   |
|------------|---|
| (size)     | 1=7-9-5, 3=7-9-5, 4=7-9-5                   |
| Max Horiz  | 1=-64 (LC 10)                               |
| Max Uplift | 1=-29 (LC 21), 3=-29 (LC 20), 4=-73 (LC 14) |
| Max Grav   | 1=101 (LC 20), 3=101 (LC 21), 4=591 (LC 20) |

#### FORCES

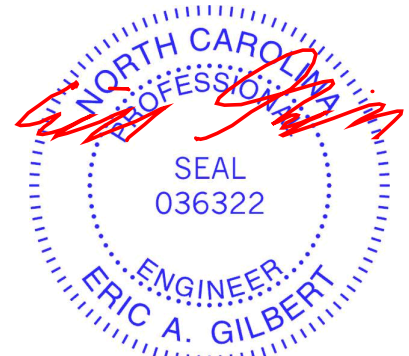
|  |                            |
|--|----------------------------|
| (lb) - Maximum Compression/Maximum Tension |                            |
| TOP CHORD                                  | 1-2=-99/274, 2-3=-99/274   |
| BOT CHORD                                  | 1-4=-221/156, 3-4=-221/156 |
| WEBS                                       | 2-4=-475/205               |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 4-9-5, Exterior(2E) 4-9-5 to 7-9-5 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.

- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 29 lb uplift at joint 1, 29 lb uplift at joint 3 and 73 lb uplift at joint 4.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.

**LOAD CASE(S)** Standard



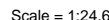
June 16, 2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

Page: 1LOAD CASE(S) Standard

June 16.2025

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Components Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))

818 Soundside Road  
Edenton, NC 27932

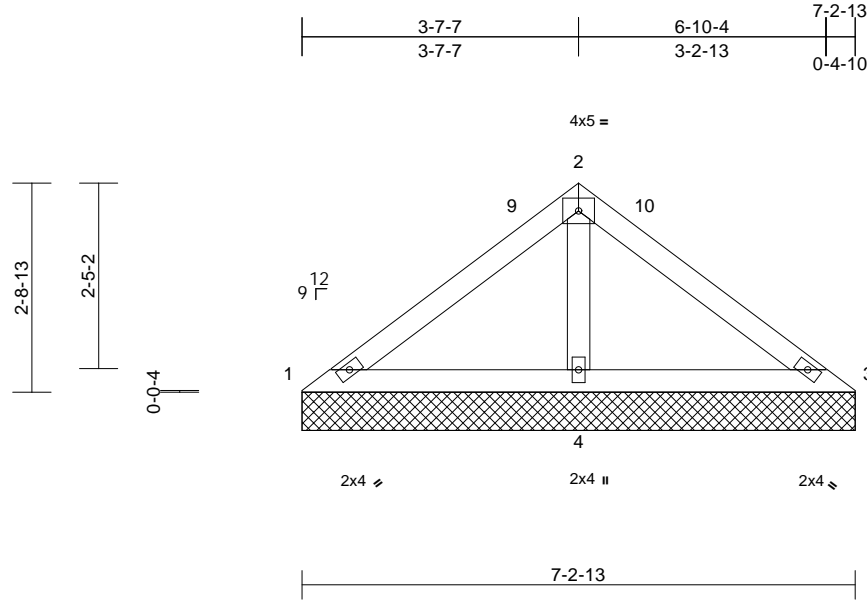
|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202915 |
| 25060035-01 | V11   | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:01

Page: 1

ID:aURQiS0qpwnaEzI3\_tgZTjNsg-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:30.1

| 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        | 0.25 | 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        | 0.08 | Horiz(TL) | 0.00 | 4     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MP |      |           |      |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |           |      |       |        |     | Weight: 26 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 6-11-13 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 6-0-0 oc bracing.               |

#### REACTIONS

|            |   |
|------------|---|
| (size)     | 1=7-2-13, 3=7-2-13, 4=7-2-13                |
| Max Horiz  | 1=-60 (LC 12)                               |
| Max Uplift | 1=-15 (LC 21), 3=-15 (LC 20), 4=-62 (LC 14) |
| Max Grav   | 1=103 (LC 20), 3=103 (LC 21), 4=524 (LC 20) |

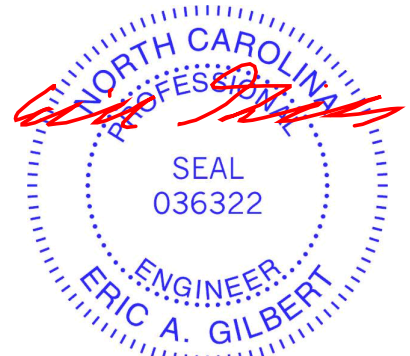
#### FORCES

|  |                            |
|--|----------------------------|
| (lb) - Maximum Compression/Maximum Tension |                            |
| TOP CHORD                                  | 1-2=-90/232, 2-3=-90/232   |
| BOT CHORD                                  | 1-4=-188/144, 3-4=-188/144 |
| WEBS                                       | 2-4=-415/186               |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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 4-3-3, Exterior(2E) 4-3-3 to 7-3-3 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.

- 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 15 lb uplift at joint 1 and 15 lb uplift at joint 3.



June 16,2025

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

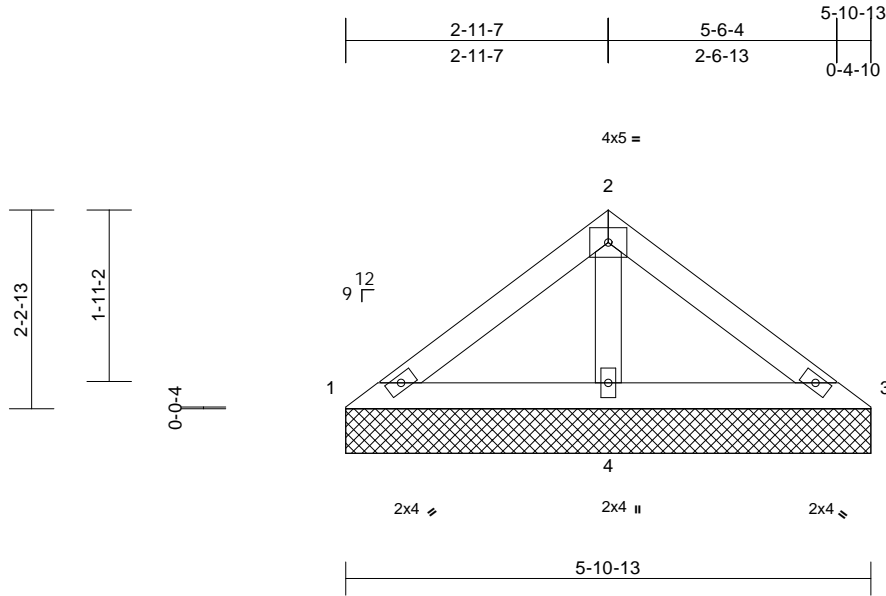
818 Soundside Road  
Edenton, NC 27932

|             |       |            |     |     |                                |           |
|-------------|-------|------------|-----|-----|--------------------------------|-----------|
| Job         | Truss | Truss Type | Qty | Ply | 899 Serenity-Roof-328 B CP GLH | 174202916 |
| 25060035-01 | V12   | Valley     | 1   | 1   | Job Reference (optional)       |           |

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

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 13 11:40:01  
ID:?Kf\_vIGN638x\_JV8EBEMMhyjNsM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:25.9

| 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        | 0.14 | 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        | 0.05 | Horiz(TL) | 0.00 | 4     | n/a    | n/a |               |          |
| BCLL        | 0.0*  | Code            | IRC2021/TPI2014 | Matrix-MP |      |           |      |       |        |     |               |          |
| BCDL        | 10.0  |                 |                 |           |      |           |      |       |        |     |               |          |
|             |       |                 |                 |           |      |           |      |       |        |     | Weight: 21 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 5-10-13 oc purlins. |
| BOT CHORD | Rigid ceiling directly applied or 6-0-0 oc bracing.               |

#### REACTIONS

|            |   |
|------------|---|
| (size)     | 1=5-10-13, 3=5-10-13, 4=5-10-13           |
| Max Horiz  | 1=48 (LC 11)                              |
| Max Uplift | 3=-8 (LC 15), 4=-42 (LC 14)               |
| Max Grav   | 1=97 (LC 20), 3=97 (LC 21), 4=386 (LC 20) |

#### FORCES

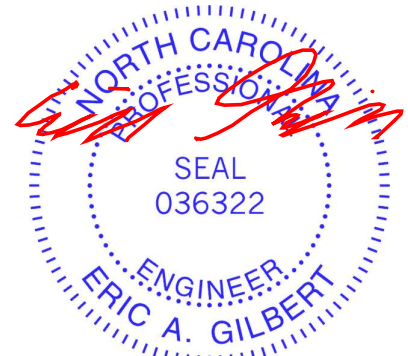
|  |                            |
|--|----------------------------|
| (lb) - Maximum Compression/Maximum Tension |                            |
| TOP CHORD                                  | 1-2=-90/154, 2-3=-90/154   |
| BOT CHORD                                  | 1-4=-128/109, 3-4=-128/109 |
| WEBS                                       | 2-4=-293/135               |

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- 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
- 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.
- 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

- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 8 lb uplift at joint 3 and 42 lb uplift at joint 4.

LOAD CASE(S) Standard



June 16,2025

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

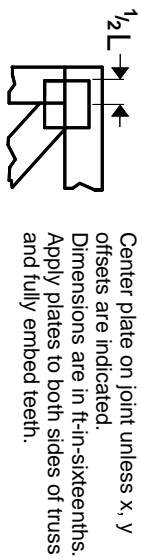
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

# Symbols

## PLATE LOCATION AND ORIENTATION



\* Plate location details available in MITek software or upon request.

## PLATE SIZE

**4 X 4**

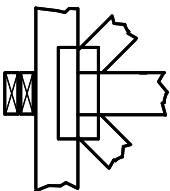
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

## BEARING

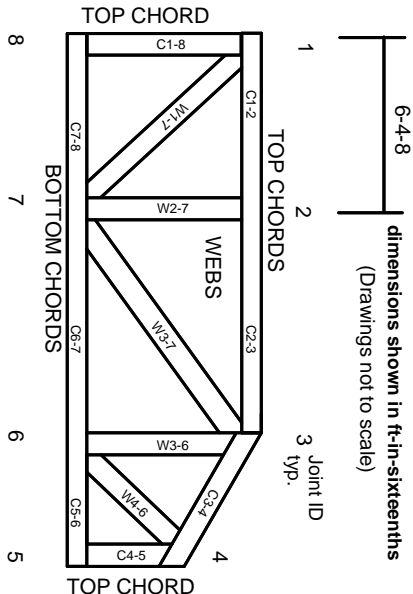


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## Industry Standards:

ANSI/TP1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
DSB-22: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System



**JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.**

**CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.**

# Product Code Approvals

ICC-ES Reports:

ESR-1988, ESR-2362, ESR-2685, ESR-3282  
ESR-4722, ESL-1388

# Design General Notes

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TP1 1 section 6.3. These truss designs rely on lumber values established by others.

© 2023 MITek® All Rights Reserved

# General Safety Notes

**Failure to Follow Could Cause Property Damage or Personal Injury**

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TP1 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TP1 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.

**MITek**

ENGINEERING BY  
**TRENCO**  
A MITek Affiliate

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