ENGINEERING BY
TRENCO
A MiTek Affiliate

**Trenco**
818 Soundside Rd
Edenton, NC 27932

Re: DO210810
BLACK CREEK

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

Pages or sheets covered by this seal: I55245746 thru I55245747

My license renewal date for the state of North Carolina is December 31, 2022.

North Carolina COA: C-0844


November 15,2022

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 | BLACK CREEK | I55245746 |
|---|---|---|---|---|---|---|
| DO210810 | CT5 | Piggyback Base | 1 | 1 | Job Reference (optional) | |

Truss Builders, Inc., Morrisville, NC - 27560, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Nov 14 08:08:30 2022 Page 1
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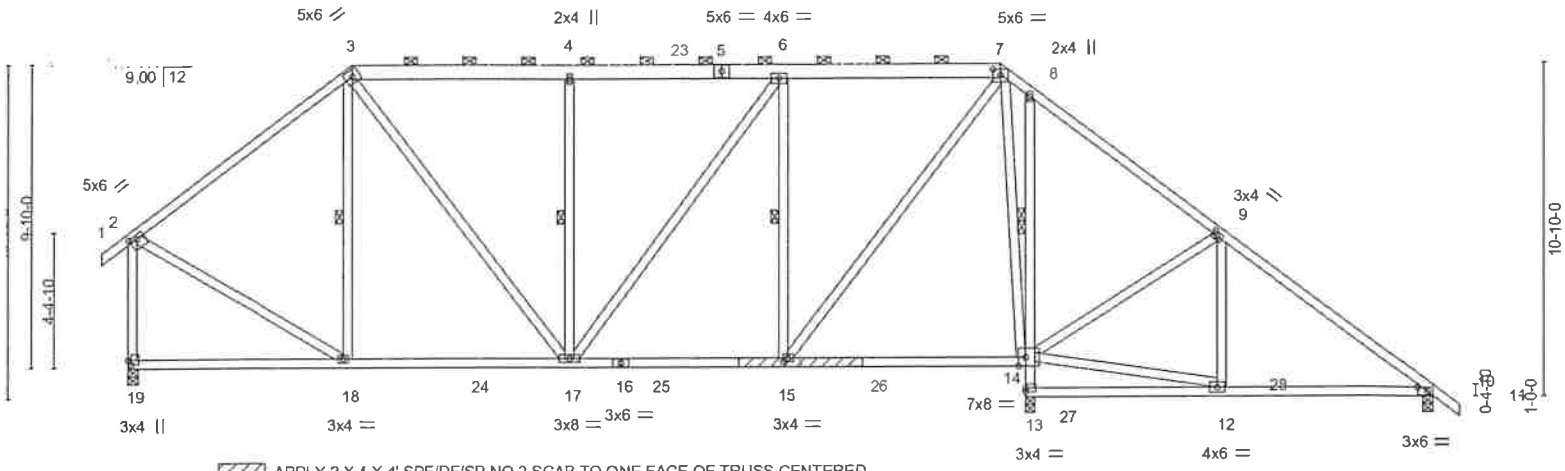
| -0-10-8 | 7-3-3 | 14-4-0 | 21-3-0 | 28-3-13 | 29-1-8 | 35-6-1 | 42-3-0 | 43-1-8 |
|---|---|---|---|---|---|---|---|---|
| 0-10-8 | 7-3-3 | 7-0-13 | 6-11-1 | 7-0-13 | 0-9-11 | 6-4-9 | 6-8-15 | 0-10-8 |

REPAIR: BOTTOM CHORD IS CRACKED 0-5-1 TO THE RIGHT OF JOINT 15.

Scale = 1:74.9




APPLY 2 X 4 X 4' SPF/DF/SP NO.2 SCAB TO ONE FACE OF TRUSS CENTERED ON DAMAGE/SPLICE OR AS SHOWN. ATTACH WITH (0.131" X 3") NAILS PER THE FOLLOWING NAIL SCHEDULE: 2 x 3'S - 1 ROW, 2 x 4'S - 2 ROWS, 2 x 6'S AND LARGER - 3 ROWS: SPACED @ 2" O.C. USE 2" MEMBER END DISTANCE.

PLATES AT JOINT 15 MUST BE FULLY EMBEDDED AND UNDISTURBED.

| 7-3-3 | 14-4-0 | 21-3-0 | 29-1-8 | 35-6-1 | 42-3-0 |
|---|---|---|---|---|---|
| 7-3-3 | 7-0-13 | 6-11-1 | 7-10-8 | 6-4-9 | 6-8-15 |

Plate Offsets (X,Y)-- [2:0-3-0,0-1-8], [7:0-3-0,0-2-2], [9:0-1-12,0-1-8], [10:0-3-13,0-1-8], [14:0-2-12,Edge], [15:0-1-12,0-1-8], [19:0-1-12,0-1-4]

| 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 | 0.91 | Vert(LL) | -0.10 | 17-18 | >999 | 240 | MT20 | 244/190 |
| Snow (Pf) | 15.0 | Lumber DOL | 1.15 | BC | 0.77 | Vert(CT) | -0.17 | 14-15 | >999 | 180 | | |
| TCDL | 10.0 | Rep Stress Incr | YES | WB | 0.52 | Horz(CT) | 0.02 | 13 | n/a | n/a | | |
| BCLL | 0.0 * | Code | IBC2015/TPI2014 | Matrix-MR | | | | | | | Weight: 319 lb | FT = 6% |
| BCDL | 10.0 | | | | | | | | | | | |

**LUMBER-**

| | |
|---|---|
| TOP CHORD | 2x4 SP No.2 *Except* 5-7,3-5: 2x6 SP No.2 |
| BOT CHORD | 2x4 SP No.2 *Except* 8-13: 2x4 SP No.3 |
| WEBS | 2x4 SP No.3 |

**BRACING-**

| | |
|---|---|
| TOP CHORD | Structural wood sheathing directly applied or 5-2-8 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 3-7. |
| BOT CHORD | Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 2-11-1 oc bracing: 13-14<br>6-0-0 oc bracing: 12-13. |
| | 1 Row at midpt 8-14 |
| WEBS | 1 Row at midpt 4-17, 6-15, 7-14, 3-18 |

**REACTIONS.** (size) 13=0-3-8, 10=0-4-0, 19=0-4-0
Max Horz 19=-248(LC 8)
Max Uplift 13=-31(LC 11), 10=-61(LC 11), 19=-71(LC 10)
Max Grav 13=1835(LC 3), 10=519(LC 27), 19=1219(LC 26)

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

| | |
|---|---|
| TOP CHORD | 2-3=-976/106, 3-4=-933/132, 4-6=-932/131, 6-7=-757/132, 9-10=-505/94, 2-19=-1149/104 |
| BOT CHORD | 17-18=-121/762, 15-17=-126/756, 13-14=-1789/70, 8-14=-332/119, 10-12=0/325 |
| WEBS | 4-17=-440/152, 6-17=-56/328, 6-15=-721/157, 7-15=-81/1150, 7-14=-1061/137, 12-14=0/448, 9-14=-506/153, 3-17=-139/431, 2-18=-46/765 |

**NOTES-**

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33
3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.15); Pf=15.0 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.15); Category II; Exp B; Fully Exp.; Ct=1.10
4) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.0 psf on overhangs non-concurrent with other live loads.
5) Provide adequate drainage to prevent water ponding.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 1-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 31 lb uplift at joint 13, 61 lb uplift at joint 10 and 71 lb uplift at joint 19.
9) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.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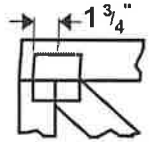
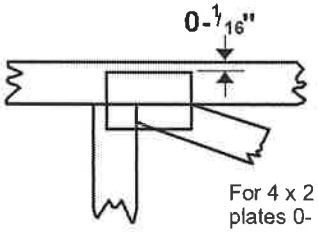
# Symbols

## PLATE LOCATION AND ORIENTATION




Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.




For 4 x 2 orientation, locate plates 0- 1/16" from outside edge of truss.

This symbol indicates the required direction of slots in connector plates.

*** Plate location details available in MiTek 20/20 software or upon request.**

## PLATE SIZE

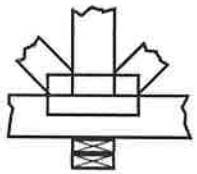
4 x 4

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

## LATERAL BRACING LOCATION

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

## BEARING

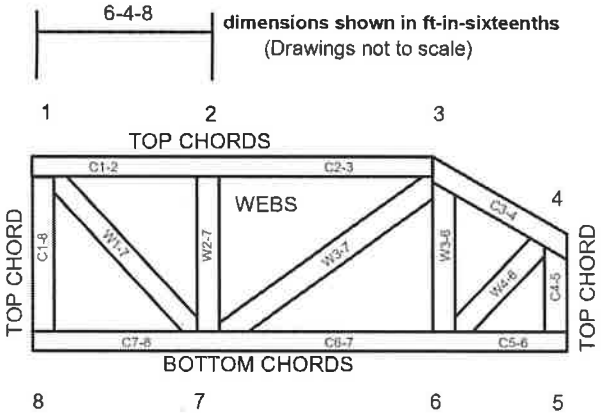


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

**Industry Standards:**

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System




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

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

## PRODUCT CODE APPROVALS

ICC-ES Reports:

ESR-1311, ESR-1352, ESR1988
ER-3907, ESR-2362, ESR-1397, ESR-3282

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

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



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# General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

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