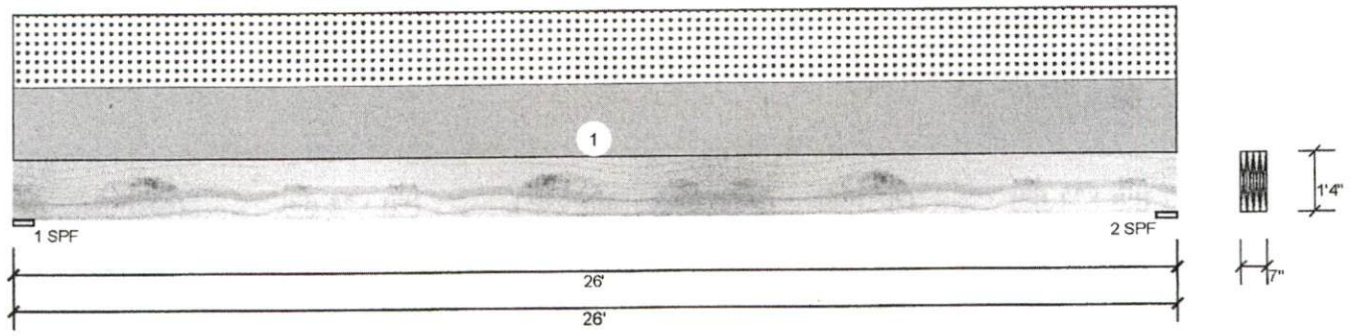
isDesign

| | | | |
|---|---|---|---|
| Client: | Horizon Building Soutions | Date: | 5/24/2023 |
| Project: | LVL Beams | Input by: | Joe Ciferni |
| Address: | 589 Iris Bryant Road<br>Dunn, NC | Job Name: | Porter's Chapel Car-Port |
| | | Project #: | 5-24-2023 |

NOTICE TO CONTRACTOR
All construction shall comply with the North Carolina Building Codes and is subject to field inspection and verification.
Reviewed for Code Compliance
06/01/2023
Harnett COUNTY NORTH CAROLINA

## CP-BM1 onCENTER 2.1E LVL 1.750" X 16.000" 4-Ply - PASSED

Level: Level




### Member Information

| | | | |
|---|---|---|---|
| Type: | Girder | Application: | Floor |
| Plies: | 4 | Design Method: | ASD |
| Moisture Condition: | Dry | Building Code: | IBC 2018 |
| Deflection LL: | 360 | Load Sharing: | Yes |
| Deflection TL: | 240 | Deck: | Not Checked |
| Importance: | Normal - II | | |
| Temperature: | Temp <= 100°F | | |
| General Load | | | |
| Floor Live: | 40 PSF | | |
| Dead: | 12 PSF | | |

### Reactions UNPATTERNED lb (Uplift)

| Brg | Direction | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|---|
| 1 | Vertical | 0 | 3933 | 3510 | 0 | 0 |
| 2 | Vertical | 0 | 3933 | 3510 | 0 | 0 |

### Bearings

| Bearing | Length | Dir. | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|---|
| 1 - SPF | 5.500" | Vert | 45% | 3933 / 3510 | 7443 | L | D+S |
| 2 - SPF | 5.500" | Vert | 45% | 3933 / 3510 | 7443 | L | D+S |

### Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 45551 ft-lb | 13' | 87119 ft-lb | 0.523 (52%) | D+S | L |
| Unbraced | 45551 ft-lb | 13' | 45576 ft-lb | 0.999 (100%) | D+S | L |
| Shear | 6460 lb | 1'9 1/2" | 24472 lb | 0.264 (26%) | D+S | L |
| LL Defl inch | 0.512 (L/592) | 13' 1/16" | 0.841 (L/360) | 0.608 (61%) | S | L |
| TL Defl inch | 1.085 (L/279) | 13' 1/16" | 1.261 (L/240) | 0.860 (86%) | D+S | L |

### Design Notes

1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2 Girders are designed to be supported on the bottom edge only.
3 Multiple plies must be fastened together as per manufacturer's details.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at a maximum of 5'3 7/8" o.c.
6 Bottom must be laterally braced at end bearings.
7 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Uniform | | | Top | 270 PLF | 0 PLF | 270 PLF | 0 PLF | 0 PLF | Roof Truss Load |
| | Self Weight | | | | 33 PLF | | | | | |

**Notes**

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

BlueLinx
1950 Spectrum Circle, Suite 300
Marietta, GA 30067
877-914-7770
www.buildoncenter.com
ICC-ES: ESR-2909, ESR-2913, ESR-1210

Professional Builders Supply
3941 US Hwy. 421 North, NC 28401
910-386-4300

Professional BUILDERS SUPPLY



CSD DESIGN BUILD

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| | | | |
|---|---|---|---|
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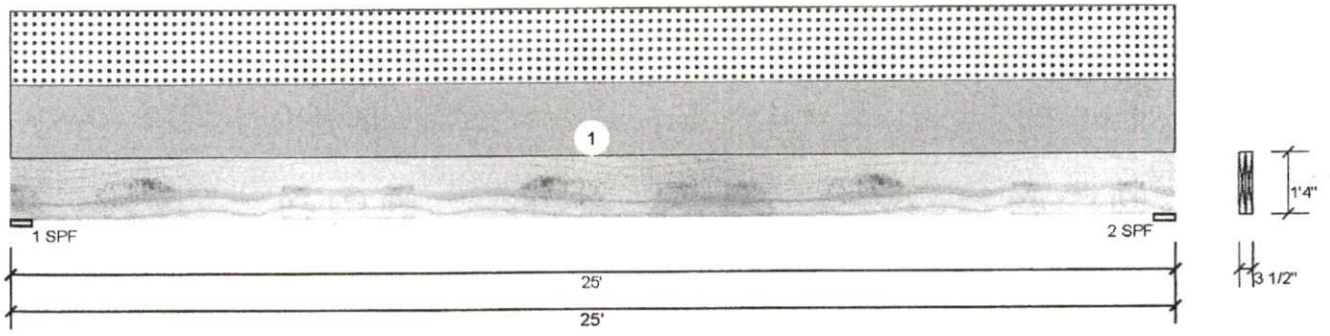
| Project: | LVL Beams | Input by: | Joe Ciferni |
| Address: | 589 Iris Bryant Road<br>Dunn, NC | Job Name: | Porter's Chapel Car-Port |
| | | Project #: | 5-24-2023 |

# CP-BM2 onCENTER 2.1E LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level




## Member Information

| | | | |
|---|---|---|---|
| Type: | Girder | Application: | Floor |
| Plies: | 2 | Design Method: | ASD |
| Moisture Condition: | Dry | Building Code: | IBC 2018 |
| Deflection LL: | 360 | Load Sharing: | No |
| Deflection TL: | 240 | Deck: | Not Checked |
| Importance: | Normal - II | | |
| Temperature: | Temp <= 100°F | | |
| General Load | | | |
| Floor Live: | 40 PSF | | |
| Dead: | 12 PSF | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Direction | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|---|
| 1 | Vertical | 0 | 1453 | 1250 | 0 | 0 |
| 2 | Vertical | 0 | 1453 | 1250 | 0 | 0 |

## Bearings

| Bearing | Length | Dir. | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|---|
| 1 - SPF | 5.500" | Vert | 33% | 1453 / 1250 | 2703 | L | D+S |
| 2 - SPF | 5.500" | Vert | 33% | 1453 / 1250 | 2703 | L | D+S |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 15869 ft-lb | 12'6" | 41884 ft-lb | 0.379 (38%) | D+S | L |
| Unbraced | 15869 ft-lb | 12'6" | 15895 ft-lb | 0.998 (100%) | D+S | L |
| Shear | 2337 lb | 1'9 1/2" | 12236 lb | 0.191 (19%) | D+S | L |
| LL Defl inch | 0.323 (L/899) | 12'6 1/16" | 0.808 (L/360) | 0.400 (40%) | S | L |
| TL Defl inch | 0.699 (L/416) | 12'6 1/16" | 1.211 (L/240) | 0.577 (58%) | D+S | L |

## Design Notes

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4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at a maximum of 7'9 7/16" o.c.
6 Bottom must be laterally braced at end bearings.
7 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Uniform | | | Top | 100 PLF | 0 PLF | 100 PLF | 0 PLF | 0 PLF | Gable Roof Truss Load |
| | Self Weight | | | | 16 PLF | | | | | |

### Notes

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### Lumber

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### Handling & Installation

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4. Design assumes top edge is laterally restrained
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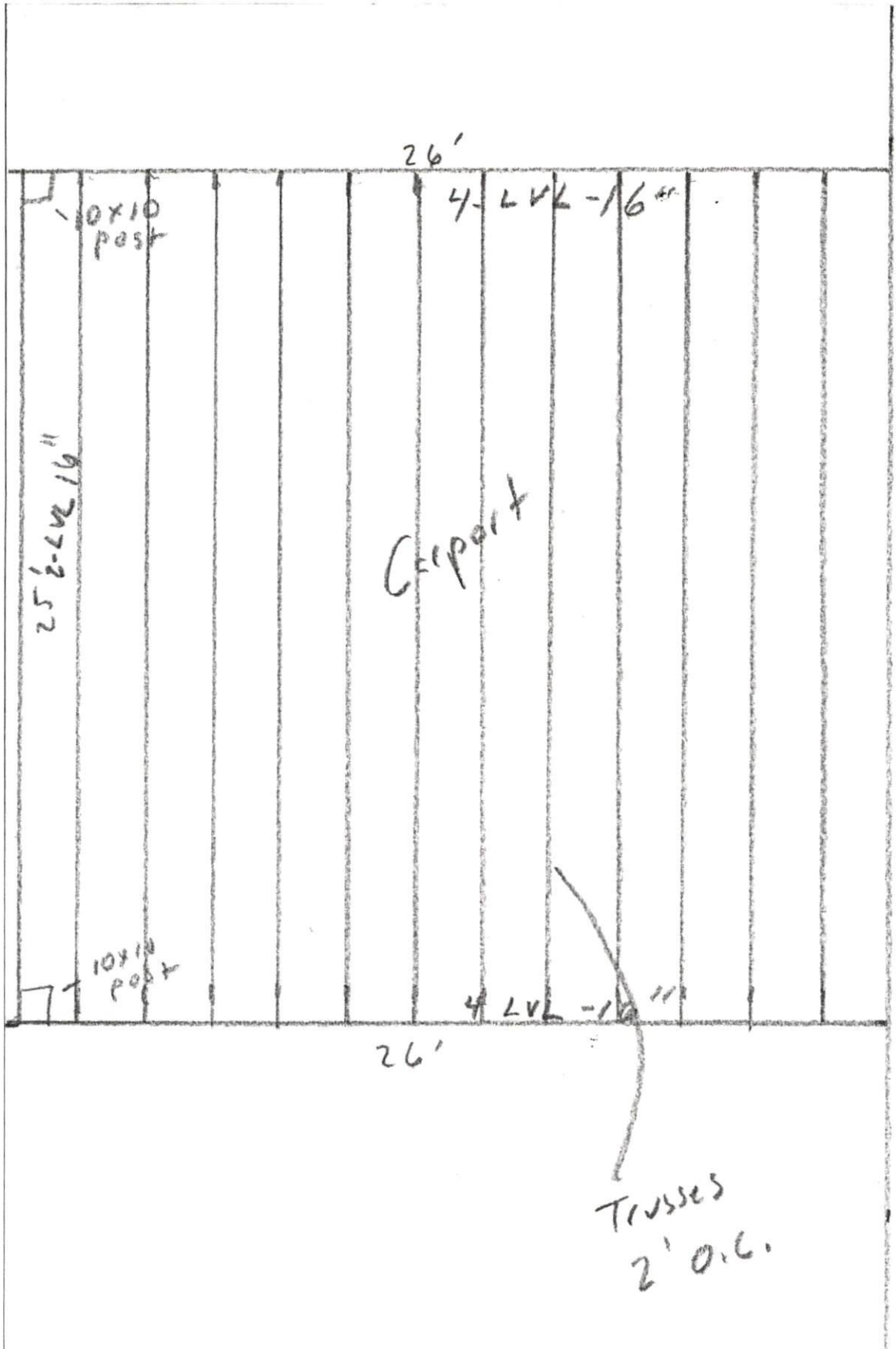
CSD


26'
10x10 post
4-LVL-16"
25'-2"
Carport
10x10 post
4 LVL -16"
26'
Trusses 2' O.C.
Existing Shed
1/4" = 1'