

PLANS DESIGNED TO THE **2018 NORTH CAROLINA STATE** RESIDENTIAL BUILDING CODE

MEAN ROOF HEIGHT 25'-8	"	HEIGHT TO	RIDGE 30'-0"
CLIMATE ZONE	ZONE 3A	ZONE 4A	ZONE 5A
FENESTRATION U-FACTOR	0.35	0.35	0.35
SKYLIGHT U-FACTOR	0.55	0.55	0.55
GLAZED FENESTRATION SHGC	0.30	0.30	0.30
CEILING R-VALUE	38 or 30ci	38 or 30ci	38 or 30ci
WALL R-VALUE	15	15	19
FLOOR R-VALUE	19	19	30
* BASEMENT WALL R-VALUE	5/13	10/15	10/15
** SLAB R-VALUE	0	10	10
* CRAWL SPACE WALL R-VALUE	5/13	10/15	10/19

"10/13" MEANS R-10 SHEATHING INSULATION OR R-13 CAVITY INSULATION ** INSULATION DEPTH WITH MONOLITHIC SLAB 24' OR FROM INSPECTION GAP TO BOTTOM OF FOOTING; INSULATION DEPTH WITH STEM WALL SLAB 24" OR TO BOTTOM OF FOUNDATION WALL DESIGNED FOR WIND SPEED OF 120 MPH. 3 SECOND GUST (93 FASTEST MILE) EXPOSURE "B"

DESIGNED FOR WILL								
COMPONENT								
MEAN ROOF								
ZONE 1								-16.8
ZONE 2								-20.2
ZONE 3								-20.2
ZONE 4								-17.9
ZONE 5	15.5	-20.0	16.3	-21.0	16.9	-21.8	17.4	-22.4
DESIGNED FOR WIND SPEED OF 130 MPH, 3 SECOND GUST (101 FASTEST MILE) EXPOSURE "B"								
COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS								
MEAN ROOF								
ZONE 1								-20.2
ZONE 2								23.5
ZONE 3	16.7	-21 0	17.5	-22 1	18.7	-22.9	18.7	-23.5

AIR LEAKAGE

N1102.4.1 Building thermal envelope. The building thermal envelope shall be durably sealed with an air barrier system to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. For all homes, where present, the following shall be caulked, gasketed, weathe stripped or otherwise sealed with an air barrier material or solid

- material consistent with Appendix E-2.4 of this code:

 1. Blocking and sealing floor/ceiling systems and under knee walls
- open to unconditioned or exterior space.

 2. Capping and sealing shafts or chases, including flue shafts.

 3. Capping and sealing soffit or dropped ceilling areas.

HVAC: MAINSTREAM MECHANICAL ELECTRICAL: PIONEER PLUMBING: DOUBLE J

ROOF VENTILATION

R806.1 Ventilation required. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant vire cloth screening, hardware cloth, or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7.

R806.2 Minimum area. The total net free ventilating area shall not be less

RAIL AS NEEDED

PER CODE

than 1/150 of the area of the space ventilated except that reduction of the total area to 1/300 is permitted provided that at least 50 percent and not more than 80 percent of the required ventilating area is provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above the eave or comice vents with the balance of the required ventilation provided by eave or cornice vents. As an alternative, the net free cross-ventilation area may be reduced to 1/300 when a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling. Exceptions:

 Enclosed attic/rafter spaces requiring less than 1 square foot (0.0929 m2) of ventilation may be vented with continuous soffit ventilation only. 2. Enclosed attic/rafter spaces over unconditioned space may be vented with continuous soffit vent only.

SQUARE FOOTAGE OF ROOF TO BE VENTED = 1558 SQ FT.

NET FREE CROSS VENTILATION NEEDED: WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 10.39 SQ.FT. WITH 50% TO 80% OF VENTING 3'-0" ABOVE EAVE; OR WITH CLASS I OR II VAPOR RETARDER ON WARM-IN-WINTER SIDE OF CEILING = 5.16 SQ.FT.

GUARD RAIL NOTES

R312.1 Where required. Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a *guard*.

R312.2 Height, Required *guards* at open-sided walking surfaces, including

stairs, porches, balconies or landings, shall be not less than 36 inches (914 mm) high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads. Exceptions:

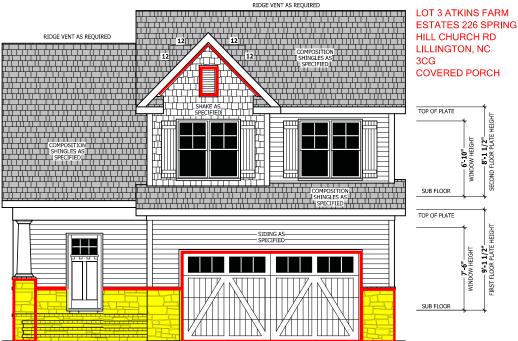
1. Guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the

2. Where the top of the quard also serves as a handrail on the open sides of stairs, the top of the *guard* shall not be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads R312,3 Opening limitations, Required guards shall not have openings from the

walking surface to the required *guard* height which allow passage of a sphere 4 inches (102 mm)in diameter. Exceptions:

 The triangular openings at the open side of a stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches (153 mm) in diameter

2. Guards on the open sides of stairs shall not have openings which allow passage of a sphere 4 3/8 inches (111 mm) in diameter.



FRONT ELEVATION SCALE 1/4" = 1'-0"

RIDGE VENT AS REQUIRED SOUARE FOOTAGE HEATED COMPOSITION

SHINGLES AS

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SPECIFIED

SPECIFIED FIRST FLOOR SECOND FLOOR PLAYROOM UNHEATED FRONT PORCH REAR PORCH TOTAL TOP OF PLATE 12 SUB FLOOR SPECIFIED SIDING AS SPECIFIED TOP OF PLATE COVERED SIDING AS PORCH SPECIFIE SUB FLOOR

REAR ELEVATION

SCALE 1/4" = 1'-0"

URCHASER MUST VERIFY ALL IMENSIONS AND CONDITIONS FORE CONSTRUCTION BEGINS HAYNES HOME PLANS, INC.
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ELEVATIONS GASTON REAR 뽀 જ

FRONT

764 SQ FT 280 SQ FT 1820 SQ FT

101 SQ.FT. 466 SQ.FT. 152 SQ.FT. 719 SQ.FT.

8' 1 1/2" -6'-10" WINDOW HEIGHT

OND F

FIRST FLOOR PLATE

WINDO

SQUARE FOOTAGE UNHEATED ARAGE EAR PORCH OTAL

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RIGHT ELEVATIONS **GASTON** 里

LEFT.

SQUARE FOOTAGE
HEATED
FIRST FLOOR 776 SQ.FT
SECOND FLOOR 269 SQ.FT
PLAYROOM 280 SQ.FT TOTAL UNHEATED FRONT PORCH

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PLAN Ħ SLAB MONOLITHIC

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SQUARE FOOTAGE

UNHEATED

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ATTIC ACCESS

SECTION R807

R807.1 Attic access. An attic access opening shall be provided to attic areas that exceed 400 square feet (37.16 m2) and have a vertical height of 60 inches (1524 mm) or greater. The net dear opening shall not be less than 20 inches by 30 inches (508 mm by 762 mm) and shall be located in a hallway or other readily accessible location. A 30 inch (762 mm) minimum unobstructed headroom in the attic space shall be provided at some point above the access opening. See Section M1305.1.3 for access requirements where mechanical equipment is located in attics.

Exceptions:

 Concealed areas not located over the main structure including. porches, areas behind knee walls, dormers, bay windows, etc. are not required to have access.

Pull down stair treads, stringers, handrails, and hardware may protrude into the net clear opening.

WALL THICKNESSES

Exterior walls and walls adjacent to a garage area are drawn as 4" or as noted 2 X 6 are drawn as 6" to include 1/2" sheathing or gypsum. Subtract 1/2" for stud face.

Interior walls are drawn as 3 1/2" or as noted 2 X 6

are drawn as 5 1/2", and do not include gypsum.

DWELLING / GARAGE SEPARATION

REFER TO SECTIONS R302.5, R302.6, AND R302.7

WALLS. A minimum 1/2* gypsum board must be installed on all walls supporting floor/ceiling assemblies used for separation required by this section.

noor/ceuing assembles used for separation required by this section.

STAIRS, A minimum of 1/2" gypsum board must be installed on the underside and exposed sides of all stairways.

CEILINGS. A minimum of 1/2" gypsum must be installed on the garage ceiling if there

are no habitable room above the garage. If there are habitable room above the garage a minimum of 5/8" type X gypsum board must be installed on the garage ceiling.

OPENING PENETRATIONS. Openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors. **DUCT PENETRATIONS.** Ducts in the garage and ducts penetrating the walls or

ceilings separating the dweiling from the garage shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other approved material and shall have no openings

26 gage (u. no min) into the garage.

OTHER PENETRATIONS, Penetrations through the separation required in Section

EXTERIOR WINDOWS AND DOORS

R612.1 General. This section prescribes performance and construction requirements for KO12.1 General, This second prescribes performance and construction requirements for exterior windows and doors installed in walls. Windows and doors shall be installed and flashed in accordance with the fenestration manufacturer's written installation instructions. Window and door openings shall be flashed in accordance with Section R703.8. Written installation instructions shall be provided by the fenestration manufacturer for each window

R612.2 Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (510 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit opening beth at allow passes of a 4 inch (102 mm) diameter sphere where such openings are located within 24 inches (610 mm) of the finished floor.

Exceptions:

Windows whose openings will not allow a 4-inch diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened opsition.
 Openings that are provided with window fall prevention devices that comply with Section.

R612.3.

3. Openings that are provided with fall prevention devices that comply with ASTM F 2090.

4. Windows that are provided with opening limiting devices that comply with Section R612.4.

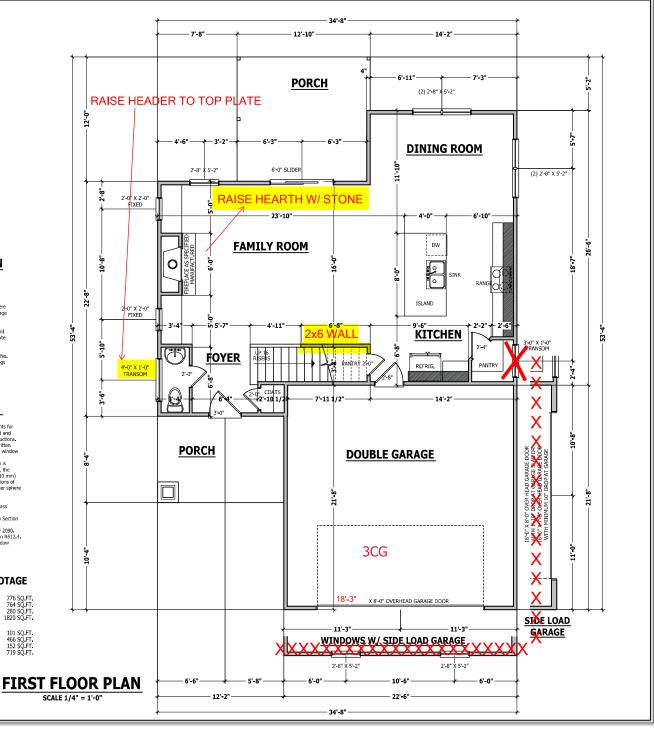
R612.3 Window fall prevention devices. Window fall prevention devices and window guards, where provided, shall comply with the requirements of ASTM F 2090.

SQUARE FOOTAGE HEATED

FIRST FLOOR SECOND FLOOR PLAYROOM UNHEATED 101 SQ.FT. FRONT PORCH GARAGE REAR PORCH

719 SO.FT.

TOTAL



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PLAN FLOOR

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SQUARE FOOTAGE

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STRUCTURAL NOTES

All construction shall conform to the latest requirements of the 2018 North Carolina Residential Building Code, plus all local codes and regulations. This document in no way shall be construed to supersede the code.

JOB SITE PRACTICES AND SAFETY: Haynes Home Plans, Inc. assumes no

liability for contractors practices and procedures or safety program. Haynes Home Plans, Inc. takes no responsibility for the contractor's failure to carry out the construction work in accordance with the contract documents. All members shall be framed, anchored, and braced in accordance with good construction practice and the building code.

DESIGN LOADS	LIVE LOAD	DEAD LOAD	DEFLECTION
USE	(PSF)	(PSF)	(LL)
Attics without storage	10		L/240
Attics with limited storage	20	10	L/360
Attics with fixed stairs	40	10	L/360
Balconies and decks	40	10	L/360
Fire escapes	40	10	L/360
Guardrails and handrails	200	-	-
Guardrail in-fill components	50	-	-
Passenger vehicle garages	50	10	L/360
Rooms other than sleeping	40	10	L/360
Sleeping rooms	30	10	L/360
Stairs	40	-	L/360
Coour	20		

FRAMING LUMBER: All non treated framing lumber shall be SPF #2 (Fb = 875 PSI) or SYP #2 (Fb = 750 PSI) and all treated jumber shall be SYP #2 (Fb = 750 PSI) unless noted other wise,

ENGINEERED WOOD BEAMS:

Laminated veneer lumber (LVL) = Fb=2600 PSI, Fv=285 PSI, E=1.9x106 PSI Parallel strand lumber (PSL) = Fb=2900 PSL Ev=290 PSL E=2.0x106 PSL Laminated strand lumber (LSL) Fb=2250 PSI, Fv=400 PSI, E=1.55x106 PSI Install all connections per manufacturers instructions.

TRUSS AND I-JOIST MEMBERS: All roof truss and I-joist layouts shall be

prepared in accordance with this document. Trusses and I-joists shall be installed according to the manufacture's specifications. Any change in truss or I-joist layout shall be coordinated with Haynes Homes Blans, Inc. LINTELS: Brick lintels shall be 3 1/2" x 3 1/2" x 1/4" steel angle for up to 6° -0" span. 6° x 4" x 5/16" steel angle with 6" leg vertical for spans up to 9-0" unless noted otherwise. 3 1/2" x 3 1/2" x 1/4" steel angle with 1/2" bolts at 2-0" on center for spans up to 18° -0" unless noted otherwise. FLOOR SHEATHING: OSB or CDX floor sheathing minimum 1/2" thick for 16" on center joist spacing, minimum 5/8" thick for 19.2" on center joist spacing, and minimum 3/4" thick for 24" on center joist spacing. ROOF SHEATHING: OSB or CDX roof sheathing minimum 3/8" thick. CONCRETE AND SOTI S: See foundation notes

ROOF TRUSS REQUIREMENTS

TRUSS DESIGN. Trusses to be designed and engineered in accordance with these drawings. Any variation with these drawings must be brought. to Havnes Home Plan. Inc. attention before construction begins KNEE WALL AND CEILING HEIGHTS. All finished knee wall heights and ceiling heights are shown furred down 10" from roof decking for insulation. If for any reason the truss manufacturer fails to meet or institution. If for any reason the owns manufacture rais to meet or exceed designated heel heights, finished knee wall heights, or finished celling heights shown on these drawings the finished square footage may vary. Any discrepancy must be brought to Haynes Home Plans, Inc. attention, so a suitable solution can be reached before construction begins. Any variation due to these conditions not being met is the reasonability of the truss manufacturer.

ANCHORAGE. All required anchors for trusses due to uplift or bearing

shall meet the requirements as specified on the truss schematics. BEARING. All trusses shall be designed for bearing on SPF #2 plates or ledgers unless noted otherwise.

Plate Heights & Floor Systems. See elevation page(s) for plate heights

and floor system thicknesses.

EXTERIOR HEADERS

- (2) 2 X 6 WITH 1 JACK STUD EACH END UNLESS NOTED OTHERWISE - KING STUDS EACH END PER TABLE BELOW HEADER SPAN < 3' 3'-4' 4'-8' 8'-12' 12'-16' KING STUD(S) 1 2 3 5 6

INTERIOR HEADERS

- LOAD BEARING HEADERS (2) 2 X 6 WITH 1 JACK STUD AND 1 KING STUD EACH END UNLESS NOTED OTHERWISE

- NON LOAD BEARING HEADERS TO BE LADDER FRAMED

BRACE WALL PANEL NOTES

EXTERIOR WALLS: All exterior walls to be sheathed with CS-WSP or CS-SFB in accordance with section R602.10.3 unless noted otherwise.

GYPSUM: All interior sides of exterior walls and both sides interior walls to have 1/2" gypsum installed. When not using method GB gypsum to be fastened per table R702.3.5. Method GB to be fastened per table R602.10.1. REQUIRED LENGTH OF BRACING: Required brace wall length

for each side of the circumscribed rectangle are interpolated per table R602.10.3. Methods CS-WSP and CS-SFB contribute their actual length. Method GB contributes 0.5 it's actual length. Method PF contributes 1.5 times its actual length.

HD: 800 lbs hold down hold down device fastened to the edge

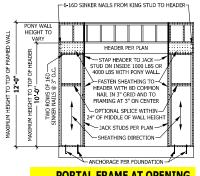
of the brace wall panel closets to the corner.

Methods Per Table R602.10.1

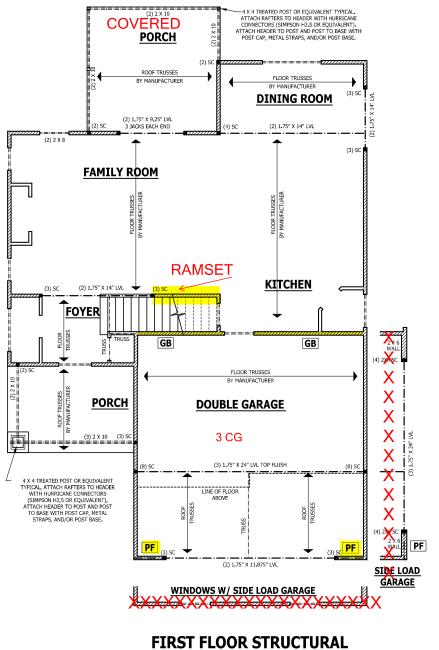
CS-WSP: Shall be minimum 3/8" OSB or CDX nailed at 6" on center at edges and 12" on center at intermediate supports with 6d common nails or 8d(2 1/2" long x 0.113" diameter).

CS-SFB: Shall be minimum 1/2" structural fiber board nailed at 3" on center at edges and 3" on center at intermediate supports with 1 1/2" long x 0.12" diameter galvanized roofing

GB: Interior walls show as GB are to have minimum 1/2" gypsum board on both sides of the wall fastened at 7" on center at edges and 7" on center at intermediate supports with minimum 5d cooler nails or #6 screws. **PF**: Portal fame per figure R602.10.1







SCALE 1/4" = 1'-0"

DESIGNER, ARCHITECT OF ENGINEER SHOULD BE CONSU BEFORE CONSTRUCTION. THESE DRAWING ARE INSTRUMENTS OF SERVICE. AS SUCH SHALL REMAIN PROPERTY OF THE DESIGN

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SQUARE FOOTAGE

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STRUCTURAL NOTES

All construction shall conform to the latest requirements of the 2018 North Carolina Residential Building Code, plus all local codes and regulations. This document in no way shall

JOB SITE PRACTICES AND SAFETY: Havnes Home Plans. HEADER SPAN < 3' 3'-4' 4'-8' 8'-12' 12'-16'

Inc. assumes no liability for contractors practices and procedures or safety program. Haynes Home Plans, Inc. takes no responsibility for the contractor's failure to carry out the construction work in accordance with the contract documents. All members shall be framed, anchored, and praced in accordance with good construction practice and the building code.

ECT	ON I	04	no

LIVE LOAD	DEAD LOAD	DEFLECTION
(PSF)	(PSF)	(LL)
10	10	L/240
20	10	L/360
40	10	L/360
40	10	L/360
40	10	L/360
200	-	
50	-	
50	10	L/360
40	10	L/360
30	10	L/360
40	-	L/360
20	-	
	(PSF) 10 20 40 40 40 200 50 50 40 30 40	10 10 20 10 40 10 40 10 40 10 200 - 50 - 50 10 40 10 30 10

FRAMING LUMBER: All non treated framing lumber shall he SPE #2 (Fb = 875 PSI) or SYP #2 (Fb = 750 PSI) and all treated lumber shall be SYP #2 (Fb = 750 PSI) unless

ENGINEERED WOOD BEAMS:

Endintexed WOOD BARS: Laminated veneer lumber (LVL) = Fb=2600 PSI, Fv=285 PSI, E=1.9x106 PSI Parallel strand lumber (PSL) = Fb=2900 PSI, Fv=290 PSI, Fe=2.0x106 PSI Laminated strand lumber (LSL) Fb=2250 PSI, Fv=400 PSI, E=1.55x106 PSI Install all connections per manufacturers instructions.

TRUSS AND I-JOIST MEMBERS: All roof truss and I-joist layouts shall be prepared in accordance with this document. Trusses and I-joists shall be installed according to the manufacture's specifications. Any change in truss or I-joist avout shall be coordinated with Havnes Homes Plans. Inc. LINTELS: Brick lintels shall be 3 1/2" x 3 1/2" x 1/4" steel angle for up to 6'-0" span. 6" x 4" x 5/16" steel angle with 6" leg vertical for spans up to 9'-0" unless noted otherwise. 3 1/2" x 3 1/2" x 1/4" steel angle with 1/2" bolts at 2'-0" on center for spans up to 18'-0" unless noted otherwise. FLOOR SHEATHING: OSB or CDX floor sheathing minimum 1/2" thick for 16" on center joist spacing, minimum

hinimum 1/2 thick for 16 on center joist spacing, minimum 5/8" thick for 19-2" on center joist spacing, and minimum 3/4" thick for 24" on center joist spacing.

ROOF SHEATHING: OSB or CDX roof sheathing minimum

CONCRETE AND SOILS: See foundation notes.

ATTIC ACCESS

SECTION R807

R807.1 Attic access. An attic access opening shall be provided to attic areas that exceed 400 square feet (37.16 m2) and have to attic areas that exceed 400 square feet (37.16 mz) and nave a vertical height of 60 inches (1524 mm) or greater. The net clear opening shall not be less than 20 inches by 30 inches (508 mm by 762 mm) and shall be located in a hallway or other readily accessible location. A 30-inch (762 mm) minimum unobstructed headroom in the attic space shall be provided at some point above the access opening. See Section M1305.1.3 for access requirements where mechanical equipment is located Exceptions:

 Concealed areas not located over the main structure including porches, areas behind knee walls, dormers, bay windows, etc. are not required to have access.

Pull down stair treads, stringers, handrails, and hardware may protrude into the net clear opening.

EXTERIOR HEADERS

- (2) 2 X 6 WITH 1 JACK STUD EACH END UNLESS NOTED OTHERWISE

- KING STUDS EACH END PER TABLE BELOW

INTERIOR HEADERS

- LOAD BEARING HEADERS (2) 2 X 6 WITH 1 JACK STUD AND 1 KING STUD EACH END LINLESS NOTED OTHERWISE - NON LOAD BEARING HEADERS TO BE LADDER FRAMED

ROOF TRUSS REQUIREMENTS

TRUSS DESIGN. Trusses to be designed and engineered in accordance with these drawings. Any variation with these drawings must be brought to Haynes Home Plan. Inc. attention before construction begins. to naymes notine and, inc. attention before construction begins to the KNEE WALL AND CELLING HEIGHTS. All finished knee wall heights and ceiling heights are shown furred down 10° from roof decking for insulation. If for any reason the truss manufacturer fails to meet or exceed designated heel heights, finished knee wall heights, or finished ceiling heights shown on these drawings the finished square footage may vary. Any discrepancy must be brought to Haynes Home Plans, Inc. attention, so a suitable solution can be reached before construction begins. Any variation due to these conditions not being met is the reasonability of the truss manufacturer.

ANCHORAGE. All required anchors for trusses due to uplift or bearing shall meet the requirements as specified on the truss schematics. BEARING. All trusses shall be designed for bearing on SPF #2 plates or

Plate Heights & Floor Systems. See elevation page(s) for plate heights

WALL THICKNESSES

Exterior walls and walls adjacent to a garage area are drawn as 4" or as noted 2 X 6 are drawn as 6" t include 1/2" sheathing or gypsum. Subtract 1/2" for Interior walls are drawn as 3 1/2" or as noted 2 X 6

are drawn as 5 1/2", and do not include gypsum.

20'-2" 2'-8" X 5'-2" TWIN RAISE HEADER TO TOP PLATE ROOF TRUSSE BY MANUFACTUR MASTER BEDROOM 2'-8" X 5'-2" TWIN TRANSOM (2) 2 X 10 (2) 2 X 10 2 JACKS EACH END GIRDER TRUSS BY MANUFACTURER 2 JACKS EACH END 14'-2"-14'-2' **PLAY ROOM** W.I.C. LINE **1ASTER** SET AT 7'-5" BATH HEADER HEIGHT 2'-6" 2'-6' 10'-10' INF SET AT 7'-5 **BATH** STORAGE HATCHED WALLS — INDICATED LOAD BEARING AND EXTERIOR WALLS WHERE HEADERS 6'-6 1/2" MUST BE INSTALLED. BEDROOM #2 BEDROOM #3 10'-10" GIRDER TRUSS (3) SC 4 BY MANUFACTURE - ROOF TRUSSES 2'-8" X 5'-2" TWIN (2) 2 X 12 2 JACKS EACH END **BRACING NOT SHOWN** ON UPPER STORY PER R602.10.3.2 (5) & (6) - 12'-2" 22'-6"

SECOND FLOOR PLAN

SCALE 1/4" = 1'-0"

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PLAN

FLOOR

SECOND |

SQUARE FOOTAGE HEATED

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EXTERIOR WINDOWS AND DOORS

SECTION R612

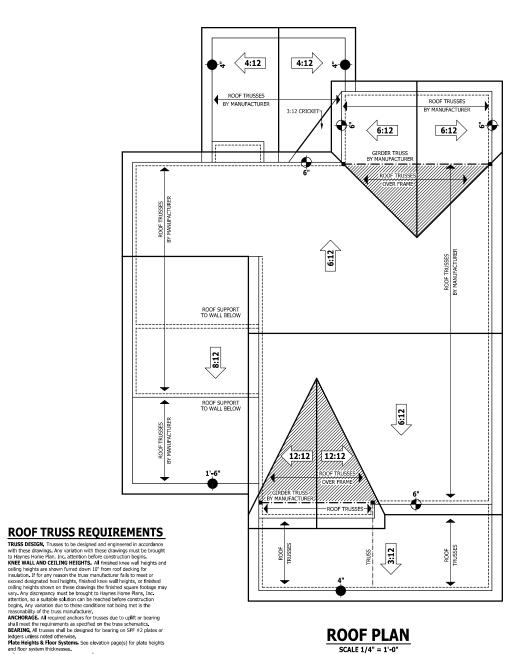
R612.1 General. This section prescribes performance and construction requirements for exterior windows and doors installed in walls. Windows and doors shall be installed and flashed in accordance with the fenestration manufacturer's written installation instructions. Window and door openings shall be flashed in accordance with Section R703.8. Written installation instructions shall be provided by the fenestration manufacturer for each window

R612,2 Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4 inch (102 mm) diameter sphere where such openings are located within 24 inches (610 mm) of the finished floor.

1. Windows whose openings will not allow a 4-inch diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened oposition.

2. Openings that are provided with window fall prevention devices that comply with Section

 Openings that are provided with fall prevention devices that comply with ASTM F 2090.
 Windows that are provided with opening limiting devices that comply with Section R612.4.
 R612.3 Window fall prevention devices. Window fall prevention devices and window quards, where provided, shall comply with the requirements of ASTM F 2090.



and floor system thicknesses.

HEEL HEIGHT ABOVE FIRST FLOOR PLATE

HEEL HEIGHT ABOVE SECOND FLOOR PLATE

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITION BEFORE CONSTRUCTION BEGI HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.

PROCEDURES,
CODES AND CONDITIONS MAY
WARY WITH LOCATION, A LOCAL
DESIGNER, ARCHITECT OR
INSIGNER SHOULD BE CONSULTE
BEFORE CONSULTE
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PROPERTY OF THE DESIGNER.

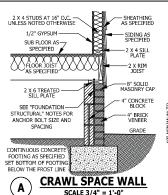
ROOF PLAN

GASTON

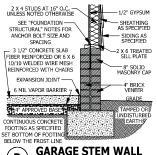
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ROOF PLAN
SCALE 1/4" = 1'-0"







D SCALE 3/4" = 1'-0"

DECK STAIR NOTES

SECTION AM110

AM110.1 Stairs shall be constructed per Figure AM110. Stringer spans shall be no greater than 7 foot span between supports. Spacing between stringers shall be based upon decking material used per AM107.1. Each Stringer shall have minimum 3 1/2 inches between step out and back of stringer. If used, suspended headers shall shall be attached with 3/8 inch galvanized bolts with nuts and washers to securely support stringers at the top.

DECK BRACING

SECTION AM109

AM109,1 Deck bracing, Decks shall be braced to provide lateral stability. The following are acceptable means to provide lateral stability.

AM109.1.1, When the deck floor height is less than 4'-0"

above finished grade per Figure AM109 and the deck is attached to the structure in accordance with Section

AM104, lateral bracing is not required.

AM109.1.2. 4 x 4 wood knee braces may be provided on

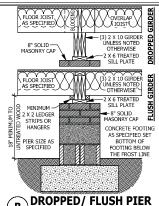
each column in both directions. The knee braces shall attach to each post at a point not less than 1/3 of the post length from the top of the post, and the braces shall be angled between 45 degrees and 60 degrees from the horizontal. Knee braces shall be bolted to the post and the girder/double band with one 5/8 inch hot dipped

AM109.1.3. For freestanding decks without knee braces or AS SPECIFIED diagonal bracing, lateral stability may be provided by embedding the post in accordance with Figure AM109.2 and the following:

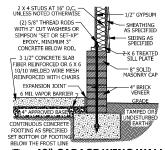
POST SIZE	TRIBUTARY AREA	MAX. POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER		
4 X 4	48 SF	4'-0"	2'-6"	1'-0"		
6 X 6	120 SF	6'-0"	3'-6"	1'-8"		

AM109.1.4. 2 x 6 diagonal vertical cross bracing may he provided in two perpendicular directions for he provided in two perpendicular directions for freestanding decks or parallel to the structure at the exterior column line for attached decks. The 2 x 6's shall be attached to the posts with one 5/8 inch hot dipped galvanized bolt with nut and washer at each end of each bracing member per Figure AM109.3.

AM109.1.5. For embedment of piles in Coastal Regions see Chapter 45.



В SCALE 3/4" = 1'-0"



<48" GARAGE WING WALL Ε SCALE 3/4" = 1'-0"

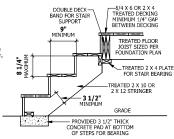


FIGURE AM110 TYPICAL DECK STAIR DETAIL

SCALE 3/4" = 1'-0"

WEEP SCREEDS



GRADE

WEEP SCREED SCALE 3/4" = 1'-0"

FOR FOUNDATION

All weep screeds and stone veneer to be installed per manufactures instructions and per the 2012 North Carolina Residential

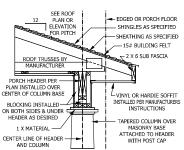
mm) (No. 26 galvanized sheet gage). corrosion-resistant weep screed or plastic weep screed, with a minimum vertical attachment flange of 31/2 inches (89 mm) foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and shall be of a type that will allow trapped water to drain to the exterior of the building. The weather-resistant barrier shall lap the attachment flange. The exterior lath

shall cover and terminate on the attachment flange of the weep screed

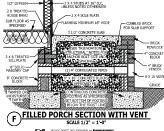
the bedrooms.

3. On each additional story of the dwelling, including basements R703.6.2.1 - A minimum 0.019-inch (0.5 unimotivative (unimosted) actics and unimotivative (unimosted) attle-stories. In diveilings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story. below the upper level.

receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be interconnected.



PORCH HEADER WITH CRAWL SPACE AT GARAGE **TAPERED COLUMN** SCALE 3/4" = 1'-0"



SCALE 3/4" = 1'-0"

-1/2" GYPSUM

2 X RIM

" CONCRETE BLOCK

-4" BRICK VENEER

- EXPANSION JOINT

-6 MIL VAPOR BARRIER

3 1/2" SLAB

TAMPED OF

2 X 4 STUDS AT 16" O.C. -

SUB FLOOR AS-

SPECIFIED

AS SPECIFIED

2 X 6 TREATED SILL PLATE

SEE "FOUNDATION-

STRUCTURAL" NOTES FOR

ANCHOR BOLT SIZE AND

CONTINUOUS CONCRETÉ

SET BOTTOM OF FOOTIN

C

BELOW THE EROST LINE

FLOOR JOIST X



SMOKE ALARMS

SECTION R314

listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning ipment provisions of NFPA 72.

R314.2 Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same permitted. The rouseling like a system is also provide the same level of smoke detection and alarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an approved supervising station and be maintained in accordance with

Exception: Where smoke alarms are provided meeting the

requirements of Section R314.4.

R314.3 Location. Smoke alarms shall be installed in the following

1. In each sleening room

Outside each separate sleeping area in the immediate vicinity of

and habitable attics (finished) but not including crawl spaces, uninhabitable (unfinished) attics and uninhabitable (unfinished)

When more than one smoke alarm is required to be installed within when more than the since admin is required up to elisation with an inclividual diveiling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. R314.4 Power source. Smoke alarms shall receive their primary

power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall

CARBON MONOXIDE ALARMS

SECTION R315

R315.1 Carbon monoxide alarms. In new construction, dwelling units shall be provided with an approved carbon monoxide alarm installed outside of each separate sleeping area in the immediate vicinity of the bedroom(s) as directed the alarm manufacturer.

R315,2 Where required in existing dwellings, In existing dwellings, where interior alterations, repairs, fuel-fired appliance replacements, or additions requiring a permit occurs, or where one or more sleeping rooms are added or created, carbon monoxide alarms shall be provided in accordance with Section

R315.3 Alarm requirements. The required carbon monoxide alarms shall be audible in all bedrooms over background noise levels with all intervening doors closed. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

STAIRWAY NOTES

R311.7

R311,7,2 Headroom, The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway

landing or platform on that portion or the stailway.

8311.7.4 Stair treads and risers. Stair treads and risers shall meet the requirements of this section. For the purposes of this section all dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners. R311.7.4.1 Riser height. The maximum riser height shall be 8 1/4 inches (210 mm). The riser shall be measured vertically between leading edges of the adjacent treads

R311.7.4.2 Tread depth. The minimum tread depth shall be 9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shall have a minimum tread depth of 9 inches (229 mm) measured as above at a point 12 inches (305 mm) from the side where the treads are narrower. Winder treads shall have a minimum tread depth of 4 inches (102 mm) at any point.

minimum used uspin of 4 inches (10z mm) at any point.

8311.7.43 Profile. The radius of curvature at the nosing shall be no greater than 9/16 inch (14 mm). A nosing not less than 3/4 inch (19 mm) but not more than 1 1/4 inches (32 mm) shall be provided on stairways with solid

R311.7.7 Handrails. Handrails shall be provided on at least one side of each

R311,7,7 handrais, handrais shall be provided on at least one side or ear continuous run of treads or flight with four or more risers. R311,7,1 Height, Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm)and not more than 38 inches (965 mm).

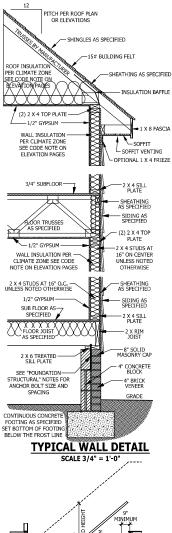
. The use of a volute, turnout or starting easing shall be allowed over the

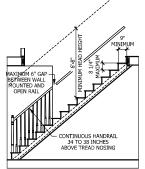
 When handrail fittings or bendings are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrall height at the fittings or bendings shall be permitted to exceed the maximum height. R311.7.7.2 Continuity. Handralls for stairways shall be continuous for the

full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrall ends shall be returned or shall terminate in newel posts or safety terminals. Handralls adjacent to a wall shall have a space of not less than 11/2 inch (38 mm) between the wall and the handrails. Exceptions:

Handrails shall be permitted to be interrupted by a newel post.
 The use of a volute, turnout, starting easing or starting newel shall be

allowed over the lowest tread. Two or more separate rails shall be considered continuous if the 3. Two or more separate rains snall one considered continuous in time termination of the rails occurs within 6 inches (152 mm) of each other. If transitioning between a wall-mounted handrail and a guardrail/handrail, the wal-mounted rail must return into the wall.





TYPICAL STAIR DETAIL SCALE 1/4" = 1'-0'

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MENSIONS AND CONDITIO ORE CONSTRUCTION BEGI

HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR ONTRACTORS PRACTICES AND PROCEDURES.

CODES AND CONDITIONS MAY VARY WITH LOCATION, A LOCA DESIGNER, ARCHITECT OR

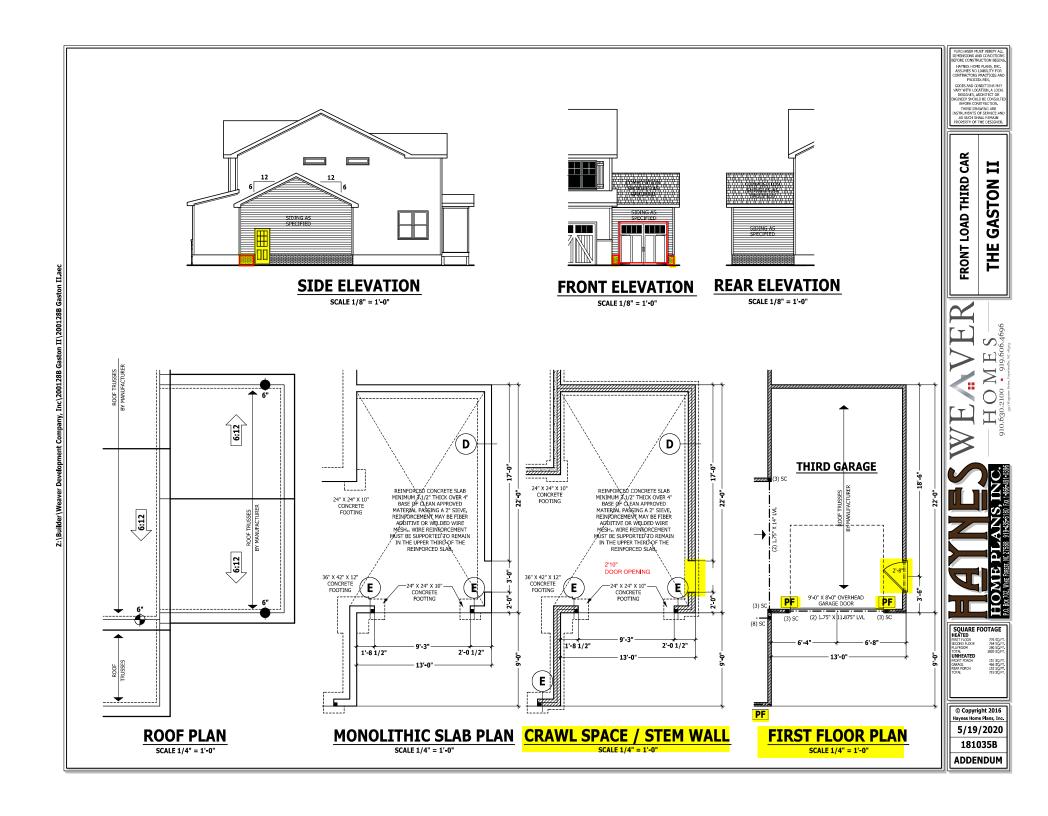
DESIGNER, ARCHITECT OR NGINEER SHOULD BE CONSUL BEFORE CONSTRUCTION. THESE DRAWING ARE INSTRUMENTS OF SERVICE A

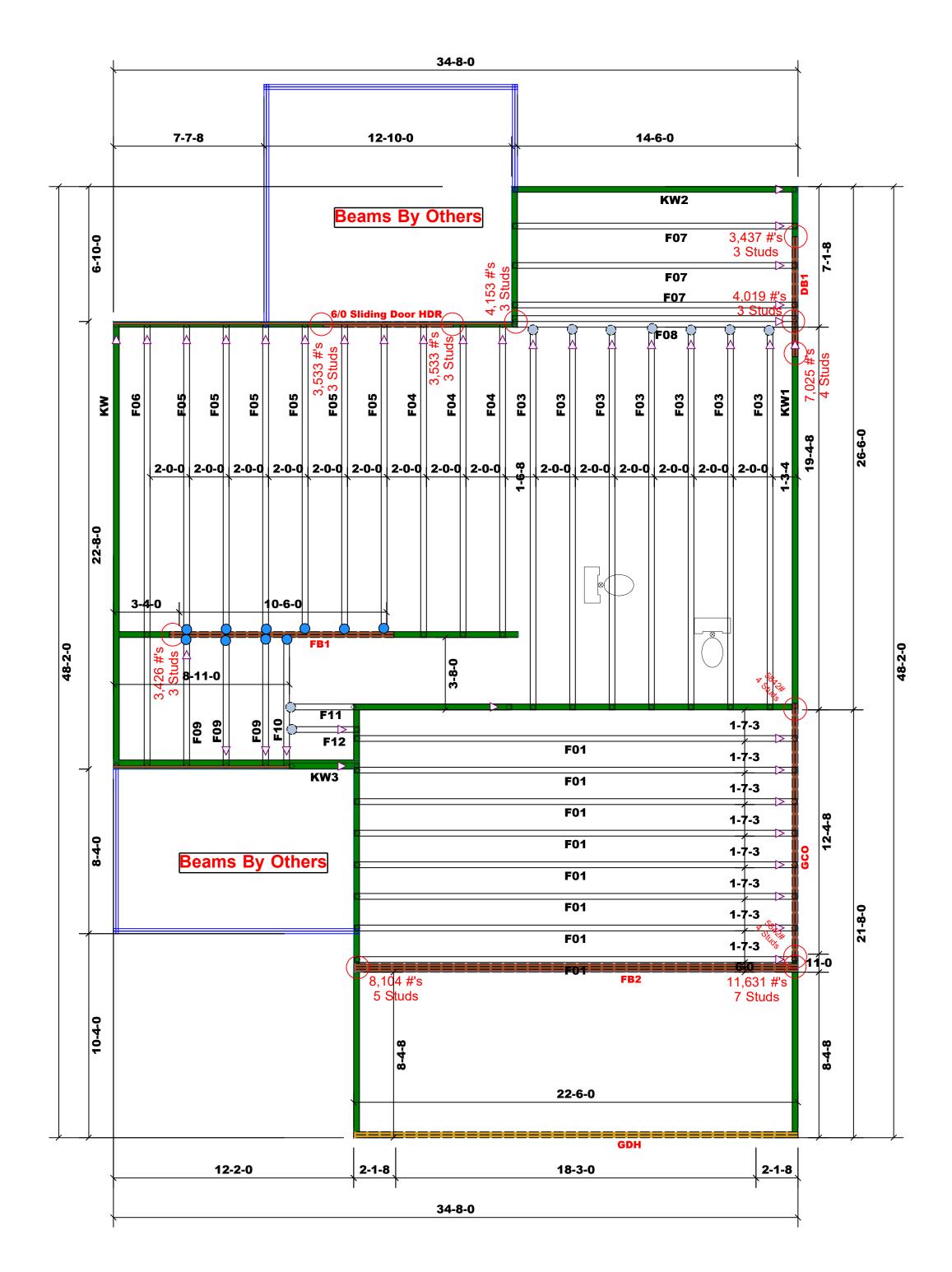
S

SQUARE FOOTAGE HEATED UNHEATED

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All Truss Reactions are Less than 3,000 lbs. Unless Noted Otherwise.

-- Denotes Reaction Greater than 3,000 lbs.

Reaction / # of Studs

HUS410	USP	10	NA	16d/3-1/2"	16d/3-1/2"
MSH422	USP	9	Varies	10d/3"	10d/3"

		Products		
PlotID	Length	Product	Plies	Net Qty
6/0 Sliding Door HDR	7-0-0	1-3/4"x 9-1/4" LVL Kerto-S	2	2
GDH	23-0-0	1-3/4"x 14" LVL Kerto-S	2	2
GCO	14-0-0	1-3/4"x 14" LVL Kerto-S	2	2
FB1	12-0-0	1-3/4"x 14" LVL Kerto-S	2	2
DB1	7-0-0	1-3/4"x 14" LVL Kerto-S	2	2
FB2	23-0-0	1-3/4"x 23-7/8" LVL Kerto-S	3	3

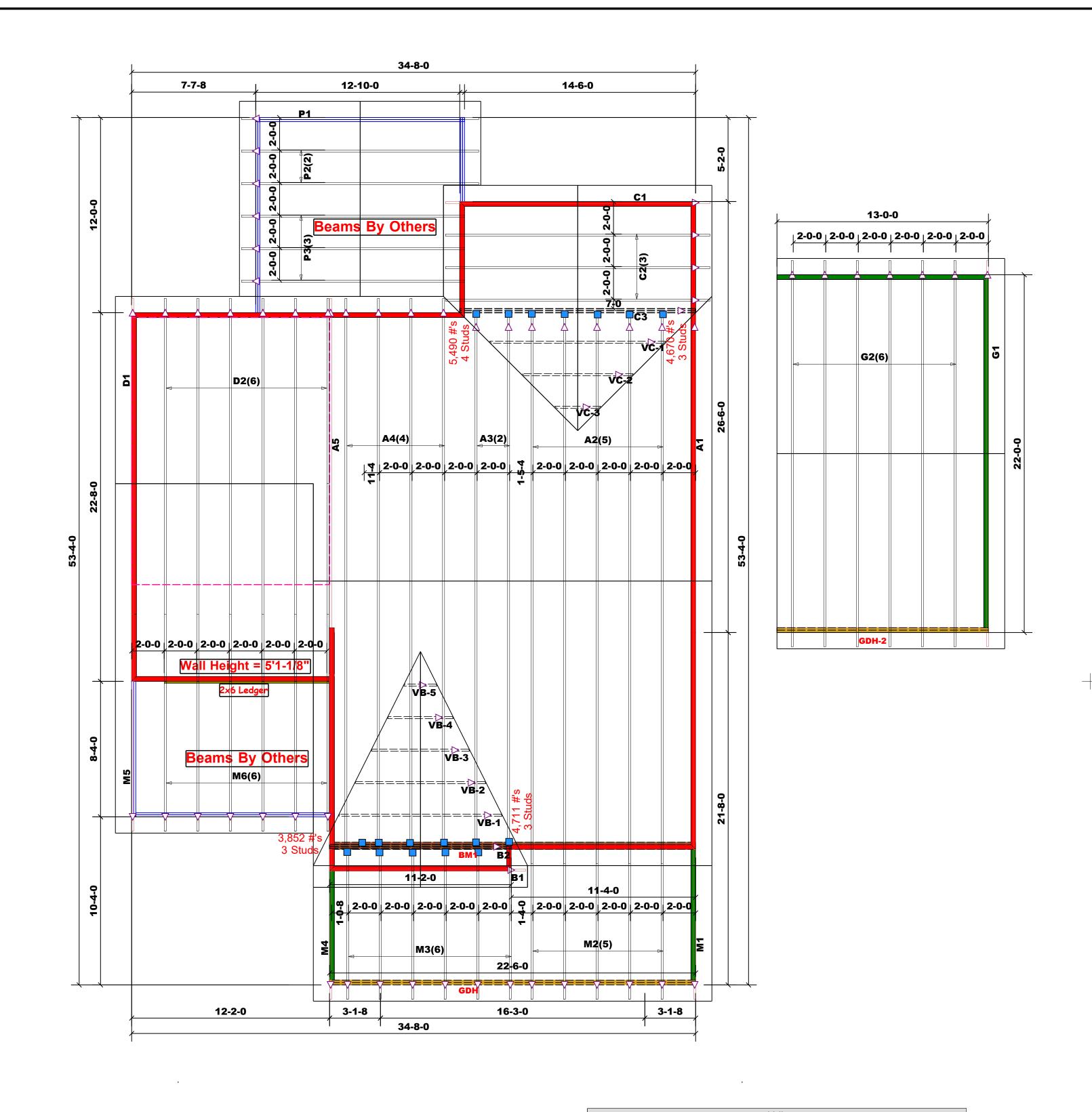
Truss Placement Plan SCALE: 1/4"=1'

= Indicates Left End of Truss
(Reference Engineered Truss Drawing)
Do NOT Erect Truss Backwards

(BAS	HART FOR JAC SED ON TABLES R502.5(1) JACK STUDS REQUIRED (& (b))	BUILDER	Weaver Development Co. Inc.	COUNTY	Harnett	THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer
ON FOR	HEADER/GIRDER	O) O) DS FOR EADER	JOB NAME	Lot 3 Atkins Farm Estates	ADDRESS	Lot 3 Atkins Farm Estates	is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the truss support structure including headers, beams, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult BCSI-B1 and BCSI-B3 provided with the truss delivery package
END REACTI (UP TO) REQ D STUDS (2) PLY HEAI	END REACTION (UP TO) REQ'D STUDS F (3) PLY HEADIN	END REAC (UP T REQ'D STU	PLAN	Gaston II (181035B) w/ 3rd Car	MODEL	Floor	or online @ sbcindustry.com Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables
1700 1 3400 2 5100 3	2550 1 5100 2 7650 3	3400 1 6800 2 10200 3	SEAL DATE	N/A	DATE REV.	/ /	(derived from the prescriptive Code requirements) to determine the minimum foundation size and number of wood studs required to support reactions greater than 3000# but not greater than 15000#. A registered design professional shall be retained to design the support system for any reaction that exceeds those
6800 4 8500 5 10200 6	10200 4 12750 5 15300 6	13600 4 17000 5	QUOTE#	Quote #	DRAWN BY	Marshall Naylor	specified in the attached Tables. A registered design professional shall be retained to design the support system for all reactions that exceed 15000#.
11900 7 13600 8 15300 9			JOB#	J0421-2521	SALESMAN	Lenny Norris	Marshall Naylor



Reilly Road Industrial Park Fayetteville, N.C. 28309 Phone: (910) 864-8787 Fax: (910) 864-4444



16d/3-1/2" 16d/3-1/2" HUS26 USP 18

= 1st Level Wall

= 2nd Level Wall

LVL PlotID Length Product Plies Net Qty 13-0-0 1-3/4"x 11-7/8" LVL Kerto-S GDH-2

> All Truss Reactions are Less than 3,000 lbs. Unless Noted Otherwise.

-- Denotes Reaction Greater than 3,000 lbs. Reaction / # of Studs

Truss Placement Plan SCALE: 1/4"=1'

= Indicates Left End of Truss (Reference Engineered Truss Drawing) Do NOT Erect Truss Backwards

					_		
(BASE	IART FOR JACK ED ON TABLES R502.5(1) TACK STUDS REQUIRED &	& (b))	BUILDER	Weaver Development Co. Inc.	COUNTY	Harnett	THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components the building design at the specification of the building designer sheets for each truss design identified on the placement drawing the state of the second of the seco
ON S FOR	REACTION (UP TO) D STUDS FOR BLANCH PLY HEADER DEATH PLY HEADER	CTION TO) UDS FOR HEADER	JOB NAME	Lot 3 Atkins Farm Estates	ADDRESS	Lot 3 Atkins Farm Estates	is responsible for temporary and permanent bracing of the roof the overall structure. The design of the truss support structure is walls, and columns is the responsibility of the building designer regarding bracing, consult BCSI-B1 and BCSI-B3 provided with t
END RE/ (UP REQ D ST	END (3)	END REA (UP) REQ'D ST	PLAN	Gaston II (181035B) w/ 3rd Car	MODEL	Roof	or online @ sbcindustry.com Bearing reactions less than or equal to 3000# are deemed prescriptive Code requirements. The contractor shall refe
1700 1 3400 2 5100 3	2550 1 5100 2 7650 3	3400 1 6800 2 10200 3	SEAL DATE	N/A	DATE REV.	//	(derived from the prescriptive Code requirements) to defoundation size and number of wood studs required to su than 3000# but not greater than 15000#. A registered desibe retained to design the support system for any reaction
6800 4 8500 5 10200 6	10200 4 12750 5 15300 6	13600 4 17000 5	QUOTE#		DRAWN BY	Marshall Naylor	specified in the attached Tables. A registered design prof retained to design the support system for all reactions the
11900 7 13600 8 15300 9			JOB#	J0421-2520	SALESMAN	Lenny Norris	signature Marshall No

These trusses are designed as individual building components to be incorporated into be building design at the specification of the building designer. See individual design neets for each truss design identified on the placement drawing. The building designer responsible for temporary and permanent bracing of the roof and floor system and for se overall structure. The design of the truss support structure including headers, beams, alls, and columns is the responsibility of the building designer. For general guidance grarding bracing, consult BCSI-B1 and BCSI-B3 provided with the truss delivery package r online @ sbcindustry.com
earing reactions less than or equal to 3000# are deemed to comply with the

Marshall Naylor



Reilly Road Industrial Park Fayetteville, N.C. 28309 Phone: (910) 864-8787 Fax: (910) 864-4444



Weaver Homes

Project: Address:

Gaston II (181035B)

Date: 6/2/2020

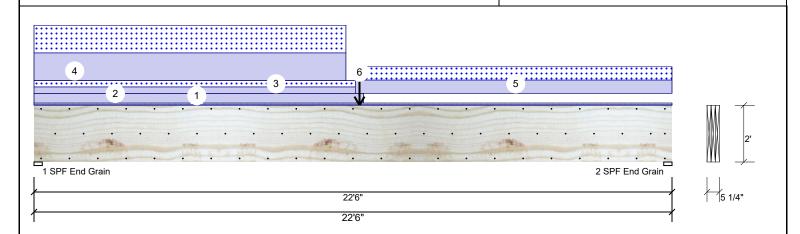
Input by: Marshall Naylor Gaston II (181035B) Job Name:

Page 1 of 8

Project #:

Kerto-S LVL 3-Ply - PASSED 1.750" X 24.000" FB2

evel: Level



Member Information Type: Plies: 3 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal Temperature: Temp <= 100°F

Application: Floor Design Method: ASD **Building Code:** IBC 2012 Load Sharing: Yes Deck: Not Checked

Brg Live Dead Snow Wind Co	nst
1 225 6536 5095 0	0
2 225 4429 3676 0	0

Analysis Results Analysis Actual Location Allowed Comb. Case Capacity Moment 11'5 3/4" 131295 ft-lb 65477 ft-lb 0.499 (50%) D+S L Unbraced 65477 ft-lb 11'5 3/4" 65903 ft-lb 0.994 (99%) D+S L Shear 10093 lb 0.327 (33%) D+S 2'2 5/8" 30912 lb L LL Defl inch 0.226 (L/1171) 11'1 11/16" 0.552 (L/480) 0.410 (41%) S L 11' 7/8" 0.735 (L/360) 0.680 (68%) D+S TL Defl inch 0.501 (L/528) L

Bearings Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" 6536 / 5095 11631 L D+S End

Grain 4429 / 3676 2 - SPF 3.500" 8104 L End Grain

Design Notes

- 1 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 3'11 5/8" o.c.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

, Eatorar (biolidolilioco idalo bacca	on onigio pry mann									
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Tie-In	0-0-0 to 22-6-0	0-6-0	Far Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	1' Floor	
2	Part. Uniform	0-0-0 to 11-7-8		Тор	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
3	Part. Uniform	0-0-0 to 11-4-0		Near Face	79 PLF	0 PLF	79 PLF	0 PLF	0 PLF	M2	
4	Part. Uniform	0-0-0 to 11-0-0		Тор	341 PLF	0 PLF	341 PLF	0 PLF	0 PLF	A2	
5	Part. Uniform	11-4-0 to 22-6-0		Near Face	164 PLF	0 PLF	164 PLF	0 PLF	0 PLF	M3	
6	Point	11-5-12		Тор	2293 lb	0 lb	2293 lb	0 lb	0 lb	B2	
	Self Weight				28 PLF						

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.

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
 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 1/8/2023

Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Manufacturer Info

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS



D+S





FB₂

Kerto-S LVL

Client:

Weaver Homes

1.750" X 24.000"

Project: Address:

Gaston II (181035B)

Date: 6/2/2020

Input by: Marshall Naylor Job Name: Gaston II (181035B) Page 2 of 8

Project #:

Level: Level 3-Ply - PASSED

1 SPF End Grain 2 SPF End Grain 22'6" 22'6'

Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed

Capacity 77.4 % 218.7 PLF Load Yield Limit per Foot 282.4 PLF Yield Limit per Fastener 94.1 lb. Yield Mode IV Edge Distance 1 1/2" Min. End Distance 3" Load Combination D+S Duration Factor 1.15

Notes

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.

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive

Handling & Installation

- LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
 2 Damaged Beams must not be used

- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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CSD DESIGN



Weaver Homes

Project:

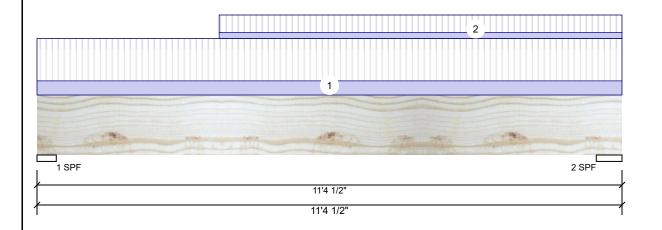
Address: Gaston II (181035B) Date: 6/2/2020

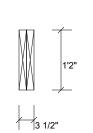
Input by: Marshall Naylor Job Name: Gaston II (181035B)

Project #:

FB₁ **Kerto-S LVL** 1.750" X 14.000" 2-Ply - PASSED

evel: Level





Page 3 of 8

	M	em	ber	Info	rma	tion
--	---	----	-----	------	-----	------

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal
Temperature:	Temp <= 100°F

Application: Floor Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No Deck: Not Checked Reactions UNPATTERNED Ib (Uplift) Brg Dead Snow Wind Const Live 2129 771 0 0 0 1 0 2 2523 904 0 0

Bearings

Bearing	Length	Cap. R	eact D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.500"	43%	771 / 2129	2899	L	D+L
2 - SPF	6 000"	38%	904 / 2523	3426	1	D+I

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8168 ft-lb	5'9 3/16"	26999 ft-lb	0.303 (30%)	D+L	L
Unbraced	8168 ft-lb	5'9 3/16"	10258 ft-lb	0.796 (80%)	D+L	L
Shear	2446 lb	9'9 1/4"	10453 lb	0.234 (23%)	D+L	L
LL Defl inch	0.090 (L/1419)	5'8 3/16"	0.266 (L/480)	0.340 (34%)	L	L
TL Defl inch	0.122 (L/1044)	5'8 3/16"	0.354 (L/360)	0.340 (34%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top braced at bearings.
- 5 Bottom braced at bearings.
- 6 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			Тор	106 PLF	318 PLF	0 PLF	0 PLF	0 PLF	F5	
2	Part. Uniform	3-6-8 to 11-4-8		Тор	44 PLF	132 PLF	0 PLF	0 PLF	0 PLF	F9	
	Self Weight				11 PLF						

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.

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive

Handling & Installation

- IARIGUING & INSTALLATION

 LVL beams must not be cut or drilled

 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beams trength values, and code approvals

 Damaged Beams must not be used

 Design assumes top edge is laterally restrained.

 Provide lateral support at bearing points to avoid lateral displacement and rotation
- For flat roofs provide proper drainage to prevent ponding

Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Manufacturer Info

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS



This design is valid until 1/8/2023



Project: Address:

Weaver Homes

Gaston II (181035B)

Date: 6/2/2020

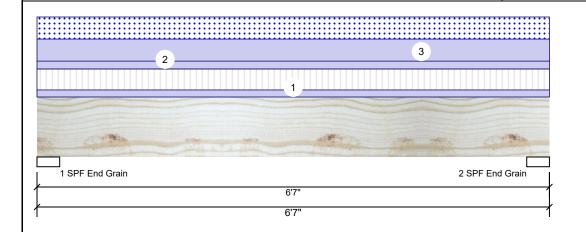
Input by: Marshall Naylor Job Name: Gaston II (181035B)

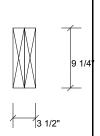
Project #:

Kerto-S LVL 1.750" X 9.250" 6/0 SLIDER

2-Ply - PASSED

Level: Level





Page 4 of 8

Member Information

Type: Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal Temperature: Temp <= 100°F

Application: Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No

Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	1060	1887	1113	0	0
2	1060	1887	1113	0	0

Analysis Results

Analysis Actual Location Allowed Comb. Case Capacity 3'3 1/2" 14423 ft-lb Moment 5009 ft-lb 0.347 (35%) D+0.75(L+S) L Unbraced 5009 ft-lb 3'3 1/2" 10451 ft-lb 0.479 (48%) D+0.75(L+S) L 0.308 (31%) D+0.75(L+S) L Shear 2448 lb 1' 7943 lb LL Defl inch 0.042 (L/1741) 3'3 1/2" 0.153 (L/480) 0.280 (28%) 0.75(L+S) L TL Defl inch 0.091 (L/807) 3'3 1/2" 0.204 (L/360) 0.450 (45%) D+0.75(L+S) L

Bearings

Grain

0 PLF

338 PLF

Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 3516 L 1-SPF 3.500" 1887 / 1629 D+0.75(L+S) End Grain 2 - SPF 3.500" 1887 / 1629 3516 L D+0.75(L+S) End

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top braced at bearings.
- 5 Bottom braced at bearings.

6 Latera	l slenderness ratio based on									
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	
1	Uniform			Тор	108 PLF	322 PLF	0 PLF	0 PLF	0 PLF	
2	Uniform			Тор	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	

3 Uniform Top 338 PLF Self Weight 7 PLF

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

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0 PLF

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Comments

WALL

_F F4

0 PLF A4



This design is valid until 1/8/2023

Manufacturer Info

isDesign

Client:

Weaver Homes

Project: Address:

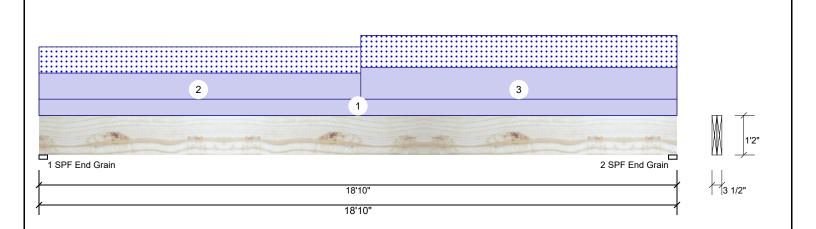
Gaston II (181035B)

Date: 6/2/2020

Input by: Marshall Naylor Job Name: Gaston II (181035B) Page 5 of 8

Project #:

Kerto-S LVL 1.750" X 14.000" Front GDH 2-Ply - PASSED Level: Level



Member Information Type: Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal Temperature: Temp <= 100°F

Application: Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No Deck: Not Checked

Reactio	Reactions UNPATTERNED Ib (Uplift)											
Brg	Live	Dead	Snow	Wind	Const							
1	0	1619	952	0	0							
2	0	1720	1052	0	0							

Analysis Results Comb. Case Analysis Actual Location Allowed Capacity Moment 9'8 7/8" 31049 ft-lb 12090 ft-lb 0.389 (39%) D+S L Unbraced 12090 ft-lb 9'8 7/8" 12111 ft-lb 0.998 L (100%)17'5 3/4" 12021 lb Shear 2360 lb 0.196 (20%) D+S L LL Defl inch 0.184 (L/1202) 9'6 3/16" 0.461 (L/480) 0.400 (40%) S ı 9'5 13/16" 0.615 (L/360) 0.800 (80%) D+S

Bearings Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.000" 1619 / 952 2571 L End Grain

1720 / 1052

2772 L

TL Defl inch 0.491 (L/451) **Design Notes**

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top must be laterally braced at a maximum of 8'7 7/8" o.c.
- 5 Bottom braced at bearings.
- 6 Lateral slenderness ratio based on single ply width.

	-		3 1 7									
	ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
	1	Uniform			Тор	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	wall	
	2	Part. Uniform	0-0-0 to 9-6-0		Тор	96 PLF	0 PLF	96 PLF	0 PLF	0 PLF	M2	
;	3	Part. Uniform	9-6-0 to 18-10-0		Тор	117 PLF	0 PLF	117 PLF	0 PLF	0 PLF	M3	
		Self Weight				11 PI F						

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals Damaged Beams must not be used
- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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D+S

This design is valid until 1/8/2023

2 - SPF 3.000"

End

Grain



Project: Address:

Weaver Homes

Gaston II (181035B)

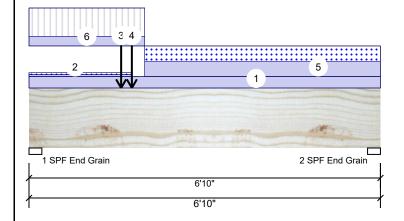
Date: 6/2/2020

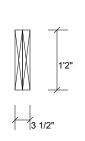
Input by: Marshall Naylor Job Name: Gaston II (181035B)

Project #:

1.750" X 14.000" DB₁ Kerto-S LVL 2-Ply - PASSED

Level: Level





Page 6 of 8

Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal
Temperature:	Temp <= 100°F

Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No

Floor

Application:

Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	2861	3387	1990	0	0
2	873	1906	1168	0	0

Bearings

Grain

Bearing Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF 3.000" End Grain	77% 3387 / 3638	7025 L	D+0.75(L+S)
2 - SPF 3.000" End	38% 1906 / 1531	3437 L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11172 ft-lb	2'	31049 ft-lb	0.360 (36%)	D+0.75(L+S)	L
Unbraced	11172 ft-lb	2'	15735 ft-lb	0.710 (71%)	D+0.75(L+S)	L
Shear	6425 lb	1'4 1/4"	12021 lb	0.534 (53%)	D+0.75(L+S)	L
LL Defl inch	0.033 (L/2343)	2'7 5/8"	0.161 (L/480)	0.200 (20%)	0.75(L+S)	L
TL Defl inch	0.067 (L/1165)	2'8 7/8"	0.215 (L/360)	0.310 (31%)	D+0.75(L+S)	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top braced at bearings.
- 5 Bottom braced at bearings.

3		
6 Lateral slenderness ratio based on singl	e ply width.	
D Load Type	Location	Trib

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
2	Tie-In	0-0-0 to 2-0-0	1-0-0	Тор	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	2' ROOF
3	Point	1-9-8		Тор	1040 lb	3115 lb	0 lb	0 lb	0 lb	F08
4	Point	2-0-0		Тор	2385 lb	0 lb	2385 lb	0 lb	0 lb	C3
5	Part. Uniform	2-3-0 to 6-10-0		Тор	160 PLF	0 PLF	160 PLF	0 PLF	0 PLF	C2
6	Part. Uniform	2-3-0 to 0-0-0		Тор	97 PLF	300 PLF	0 PLF	0 PLF	0 PLF	F07
	Self Weight				11 PLF					

Notes

NOtes

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive

Handling & Installation

- Informing & Installation

 I. VIL beams must not be cut or drilled

 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

 Damaged Beams must not be used

 Design assumes top edge is laterally restrained

 Design assumes top edge is laterally restrained is provide lateral support at bearing points to avoid lateral displacement and rotation
- For flat roofs provide proper drainage to prevent ponding

Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Manufacturer Info

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS



This design is valid until 1/8/2023



Client: Project: Address:

Weaver Homes

Date: 6/2/2020

Marshall Naylor

Project #:

Input by:

1.750" X 11.875" Kerto-S LVL 2-Ply - PASSED GDH-2

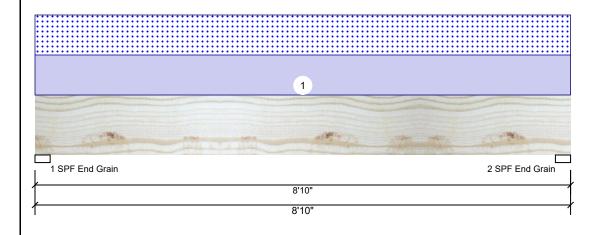
Building Code:

Load Sharing:

Deck:

Level: Level

Job Name: Gaston II (181035B)

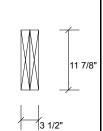


IBC 2012

Not Checked

No

Gaston II (181035B)



Page 7 of 8

Member	Information
Tuna	Cindon

Type: Girder Plies: Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal Temperature: Temp <= 100°F

Reactions UNPATTERNED Ib (Uplift) Application: Floor Design Method: ASD

Bearings

Brg	Live	Dead	Snow	Wind	Const	
1	0	1145	1104	0	0	
2	0	1145	1104	0	0	

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4554 ft-lb	4'5"	22897 ft-lb	0.199 (20%)	D+S	L
Unbraced	4554 ft-lb	4'5"	10675 ft-lb	0.427 (43%)	D+S	L
Shear	1650 lb	1'2 1/8"	10197 lb	0.162 (16%)	D+S	L
LL Defl inch	0.036 (L/2845)	4'5 1/16"	0.211 (L/480)	0.170 (17%)	S	L
TL Defl inch	0.073 (L/1397)	4'5 1/16"	0.282 (L/360)	0.260 (26%)	D+S	L

Arialysis	Actual	Location	Allowed	Capacity	COIIID.	Case
Moment	4554 ft-lb	4'5"	22897 ft-lb	0.199 (20%)	D+S	L
Unbraced	4554 ft-lb	4'5"	10675 ft-lb	0.427 (43%)	D+S	L
Shear	1650 lb	1'2 1/8"	10197 lb	0.162 (16%)	D+S	L
LL Defl inch	0.036 (L/2845)	4'5 1/16"	0.211 (L/480)	0.170 (17%)	S	L
TL Defl inch	0.073 (L/1397)	4'5 1/16"	0.282 (L/360)	0.260 (26%)	D+S	L

Design Notes

Analysis Results

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top braced at bearings.
- 5 Bottom braced at bearings.
- 6 Lateral slenderness ratio based on single ply width

Bearing Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF 3.000" End Grain	25% 1145 / 1104	2249 L	D+S
2 - SPF 3.000" End Grain	25% 1145 / 1104	2249 L	D+S

ID Load Type Location Trib Width Side Dead 0.9 Snow 1.15 Wind 1.6 Const. 1.25 Comments 0 PLF Uniform Top 250 PLF 250 PLF 0 PLF 0 PLF G2

> Self Weight 9 PI F

1

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive

Handling & Installation

- LVL beams must not be cut or drilled Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals Damaged Beams must not be used
- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rotation
- This design is valid until 1/8/2023

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

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Weaver Homes

Project:

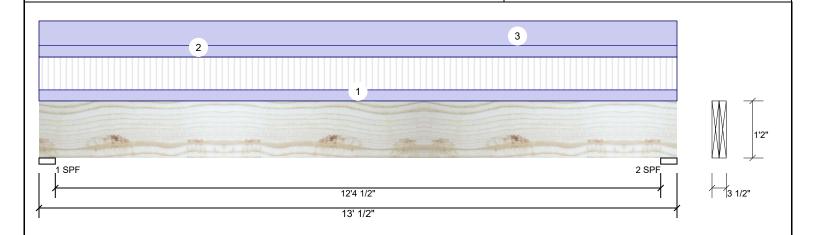
Address: Gaston II (181035B) Date: 6/2/2020

Input by: Marshall Naylor Job Name: Gaston II (181035B) Page 8 of 8

Project #:

1.750" X 14.000" 2-Ply - PASSED **GCO Kerto-S LVL**

Level: Level



Member Infor	mation	Reactio	Reactions UNPATTERNED Ib (Uplift)							
Type:	Girder	Application:	Floor	Brg	Live	Dead	Snow	V	/ind	Const
Plies:	2	Design Method:	ASD	1	2374	3468	0		0	0
Moisture Condition	n: Dry	Building Code:	IBC 2012	2	2374	3468	0		0	0
Deflection LL:	480	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal									
Temperature:	Temp <= 100°F									
				Bearing	gs					
				Bearing	g Length	Cap. Rea	ct D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF	4.000"	98% 34	68 / 2374	5842	L	D+L
				2 900	4 000"	08% 3/1	68 / 2374	58/12	ı	D±I

Analysis Results

,						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	17498 ft-lb	6'6 1/4"	26999 ft-lb	0.648 (65%)	D+L	L
Unbraced	17498 ft-lb	6'6 1/4"	17570 ft-lb	0.996 (100%)	D+L	L
Shear	4554 lb	1'5 1/4"	10453 lb	0.436 (44%)	D+L	L
LL Defl inch	0.142 (L/1059)	6'6 1/4"	0.312 (L/480)	0.450 (45%)	L	L
TL Defl inch	0.349 (L/430)	6'6 1/4"	0.625 (L/240)	0.560 (56%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top must be laterally braced at a maximum of 5'6 3/4" o.c.
- 5 Bottom braced at bearings.
- 6 Lateral slenderness ratio based on single ply width.

0 201010	o Eater ar elemantineer ratio based on enigle ply matrix										
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Тор	122 PLF	364 PLF	0 PLF	0 PLF	0 PLF	F01	
2	Uniform			Тор	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
3	Uniform			Тор	274 PLF	0 PLF	0 PLF	0 PLF	0 PLF	A1	
	Self Weight				11 PI F						

NOtes

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive

Handling & Installation

- Informing & Installation

 I. VIL beams must not be cut or drilled

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This design is valid until 1/8/2023