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

MEAN ROOF HEIGHT: 17-2	HEIGHT TO RIDGE: 25'-6		
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 30c
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 INSP	JUATION OR R-13 (	AVITY INSULATION	

1 INSULATION DEPTH WITH MONOLITHIC SLAB 24" OR FOR 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 "8"

COMPONENT	& CU4	DDING	DESIG	NED FC	OR THE	FOLLO	WING	LOADS
MEAN ROOF	UPT	O 30'	30'-1"	TO 35'	35'-1"	TO 40'	40'-1"	TO 45'
ZONE 1	14.2	-15.0	14.9	-15.8	15.5	-16.4	15.9	-16.8
ZONE 2	14.2	-18.0	14.9	-18.9	15.5	-19.6	15.9	-20.2
ZONE 3	14.2	-18.0	14.9	-18.9	15.5	-19.6	15.9	-20.2
ZONE 4	15.5	-16.0	16.3	-16.8	16.9	-17.4	17.4	-17.9
ZONE 5	15.5	-20.0	16.3	-21.0	16.9	-21.8	17.4	-22.4
DESIGNED FOR WIN								
COMPONENT								
COMPONENT	& CUA	DDING	DESIG		OR THE	FOLLO	WING	LOADS
COMPONENT	& CUA	DDING	DESIG	NED FC TO 35'	35'-1*	FOLLO TO 40'	WING 40'-1*	LOADS
COMPONENT MEAN ROOF	& CLA UP 1 16.7	DDING O 30' -18.0	DESIG 30'-1" 17.5	NED FC TO 35' -18.9	35'-1" 18.2	FOLLO TO 40' -19.6	WING 40'-1" 18.7	TO 45 -20.2
COMPONENT MEAN ROOF ZONE 1	& CLA UP 1 16.7	DDING O 30' -18.0	DESIG 30'-1" 17.5	NED FC TO 35' -18.9	OR THE 35'-1" 18.2 18.2	FOLLO TO 40' -19.6	WING 40'-1" 18.7 18.7	TO 45 -20.2 -23.5
COMPONENT MEAN ROOF ZONE 1 ZONE 2	& CLA UP 1 16.7 16.7	DDING O 30' -18.0 -21.0 -21.0	DESIG 30'-1" 17.5 17.5	NED FC TO 35' -18.9 -22.1	0R THE 35'-1" 18.2 18.2 18.2 18.2	FOLLO TO 40' -19.6 -22.9	WING 40'-1" 18.7 18.7 18.7	TO 45 -20.2 -23.5

## **ROOF VENTILATION**

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SQUARE FOOTAGE OF ROOF TO BE VENTED = 2,111 SQ.FT. NET FREE CROSS VENTILATION NEEDED:

WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 14.07 SO.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 = 7.04 SO FT.

## **GUARD RAIL NOTES**

#### SECTION R312

R312.1 Where required. Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located making 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 their or horizontally to the edge of the open side. Insect Rither and the structure of the struc

stairs, porches, balconies or landings, shall be not less than 36 linches (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 treads. 2. Where the top of the guard 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.

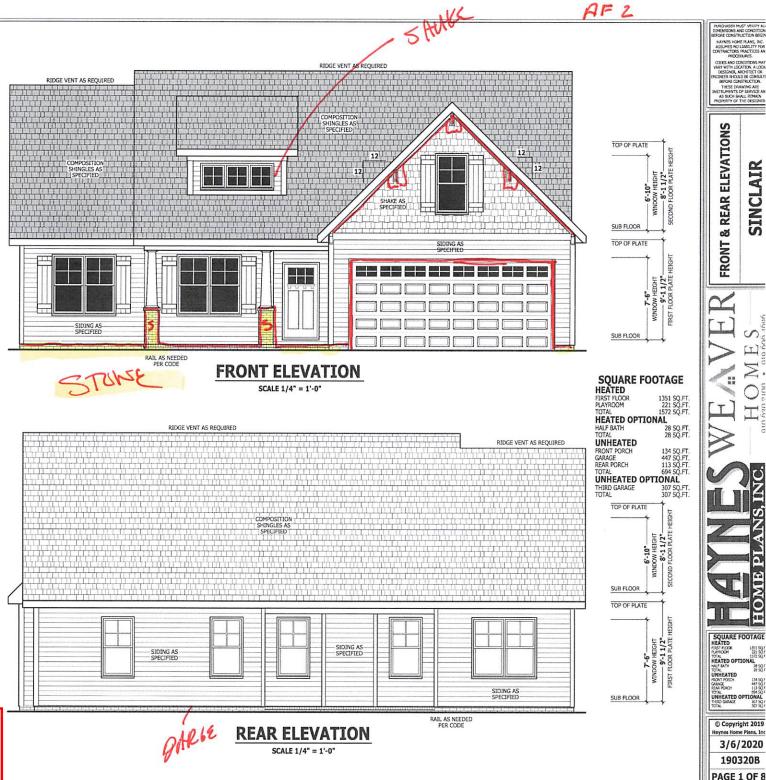
Guards on the open sides of stairs shall not have openings which allow passage of a sphere 43/8 inches (111 mm) in diameter.

#### **AIR LEAKAGE** Section N1102.4 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, weather stripped or otherwise sealed with an air barrier material or solid material consistent with Appendix E-2.4 of this code: 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 ceiling areas.

## NOTICE TO CONTRACTOR truction must comply with current NC Building Codes APPROVED





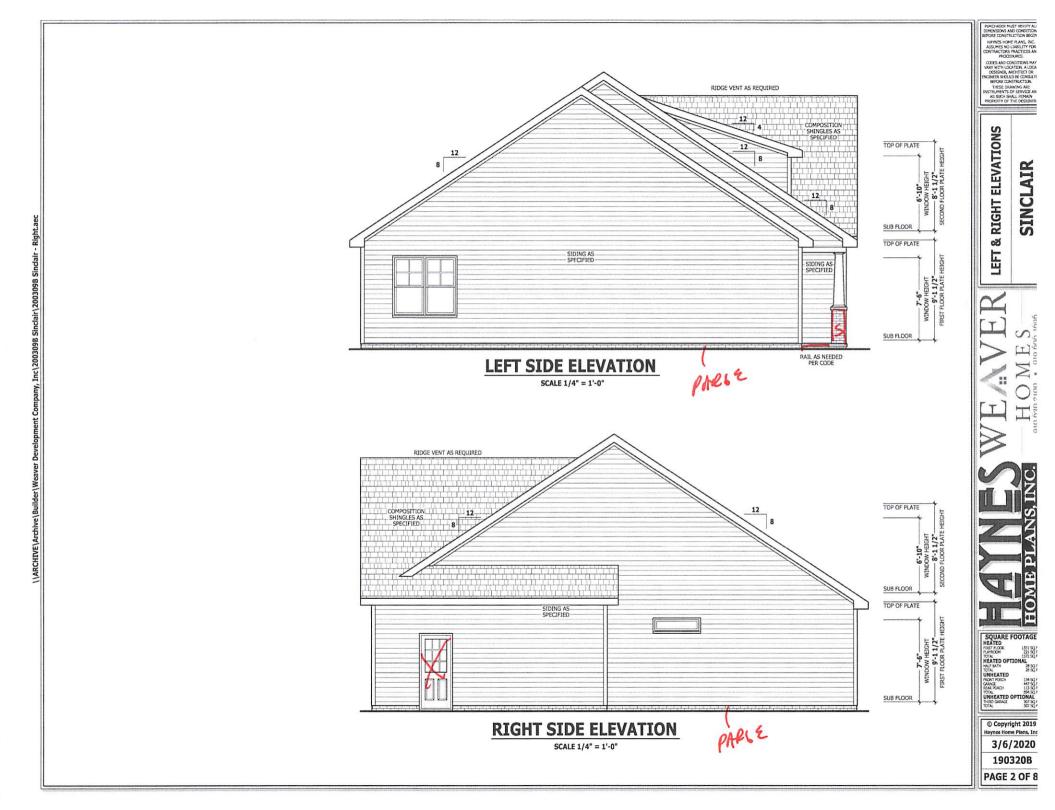
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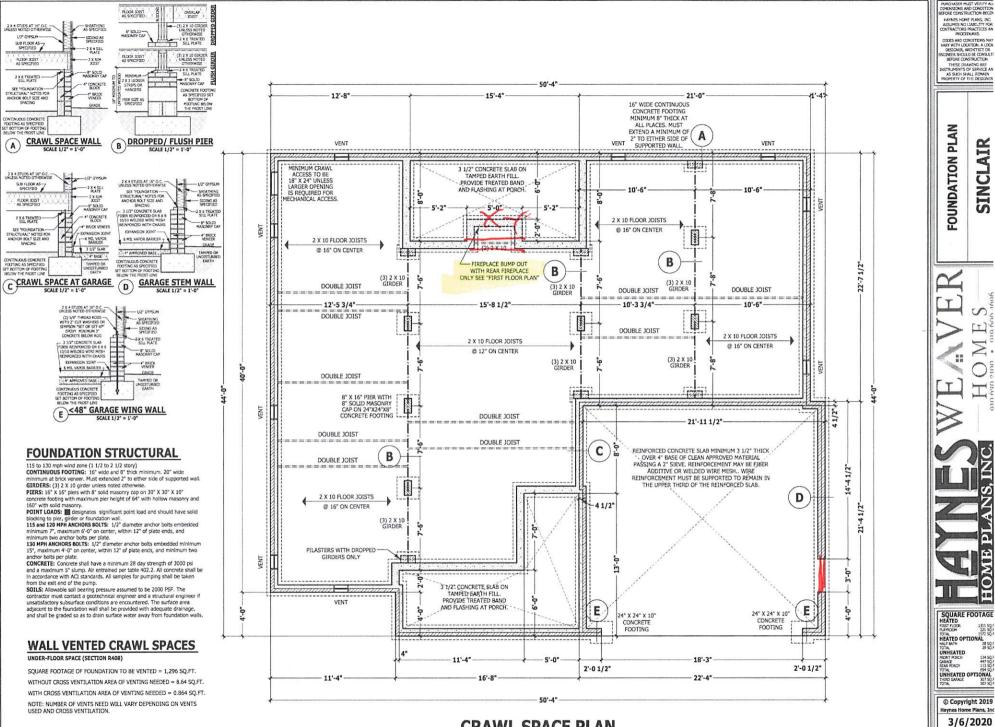
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**CRAWL SPACE PLAN** SCALE 1/4" = 1'-0"

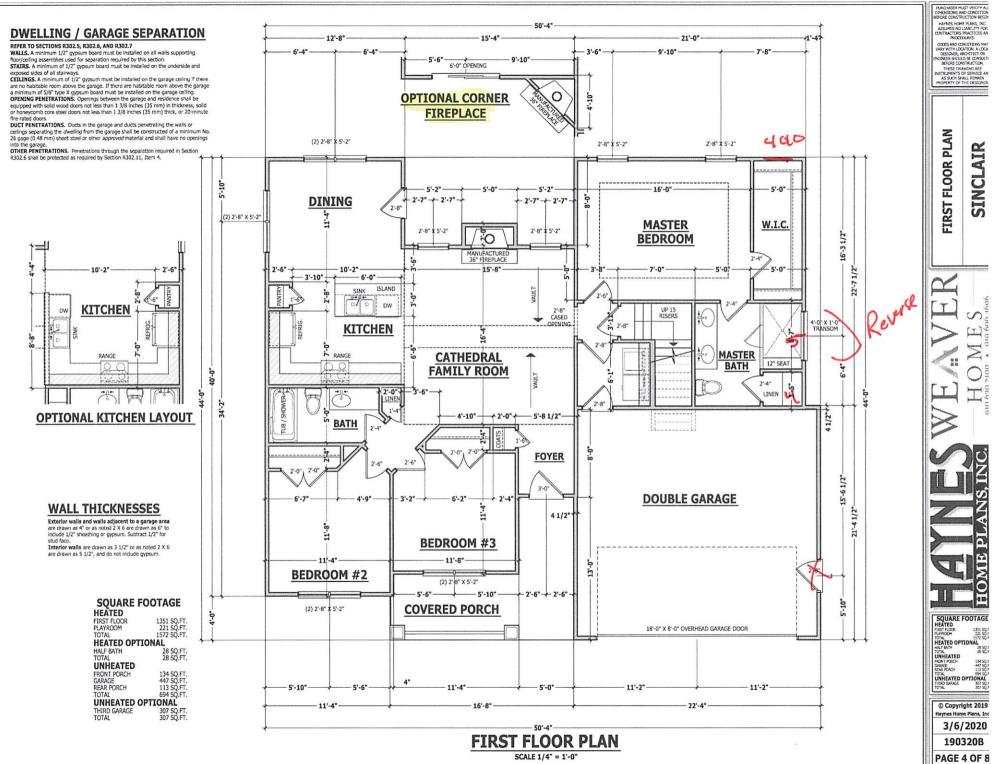
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#### STRUCTURAL NOTES

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, I.nc. 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

Snow 20 FRAMTING LUMBER: All non-treated framing lumber shall be SPE #2 (Fb = 875 PSI) or SYP #2 (Fb = 750 PSI) and all treated lumber shall be SYP #2 (Fb = 750 PSI) unless noted other wise.

#### ENGINEERED WOOD BEAMS

ENGINEERED WOOD BEAMS : Laminated veneer lumber (LVL) = Fb=2600 PSI, Fv=285 PSI, E=1.9x104 PSI Parallel strand lumber (PSL) = Fb=2500 PSI, Fv=230 PSI, E=2.0x104 PSI Laminated strand lumber (LSL) Fb=2250 PSI, Pv=400 PSI, E=1.55x104 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 Plans, Inc. LINTELS: Brick linteis shall be 3 1/2" x 3 1/2" x 1/4" steel angle for up to  $6^{1}$ - $6^{1}$ - $6^{1}$ - $8^{1}$ - $x^{4}$ - $x^{5}$ - $16^{1}$ - $x^{5}$ - $17^{2}$ 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 12." on center joist spacing, an imimum 5/8" thick for 12." on center joist spacing, an imimum 3/8" thick for 24" on center joist spading. ROOF SHEATHING: OSB or CDX roof sheathing minimum 3/8" thick for 16" on center rafters and 7/16" for 24" on center rafters. CONCRETE AND SOILS: See foundation notes.

### **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.

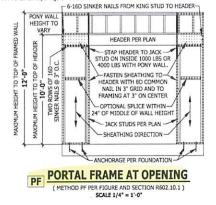
GYPSUM: All Interior sides of exterior walls and both sides GYPSUM: All interior sides of extenior waits and both sides interior walls to have 1/2" gypsum installed. When not using method GB gypsum to be fastened per table R702.3.5. Method GB to be fastened per table R602.10.1.

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 wail fastened at 7" or 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





KING STUDS EACH END PER TABLE BELOW HEADER SPAN < 3' 3'-4' 4'-8' 8'-12' 12'-16' KING STUD(5) 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

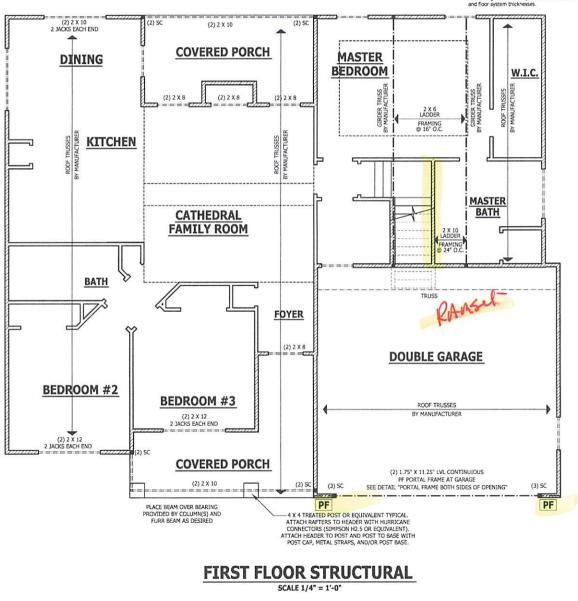
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TRUSS DESIGN. Trusses to be designed and engineered in accordance with these drawings. Any variation with these drawings must be brought to Havnes Home Plan. Inc. attention before construction begins. KNEE WALL AND CEILING HEIGHTS. All finished knee 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 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 attention, so a suitable solution can be reached bertier torismicular begins. Any variation due to these confidions not being met is the reasonability of the truss manufacturer. ARCHORAGE. All required anticotors for trusses due to uplift or bearing shall meet the requirements as specified on the truss schematics. BEARING, All russes 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





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## STRUCTURAL NOTES

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liability for contractors practices and procedures or safety program. Haynes Home Plans, Inc. takes no responsibility for the contractor's failure to carry nome Plans, the takes no responsibility for the contraction statute to can 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
Snow	20		

FRAMING LUMBER: All non treated framing lumber shall be SPF #2 (Fb = (Fb = 750 PSI) unless noted other wise.

#### ENGINEERED WOOD REAMS

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Laminated veneer lumber (LVL) = Fb=2600 PSI, Fv=285 PSI, E=1.9x10<sup>6</sup> PSI Parallel strand lumber (PSL) = Fb=2900 PSI, Fv=290 PSI, E=2.0x10<sup>6</sup> PSI Laminated strand lumber (LSL) PD=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 1-joist layout shall be coordinated with Haynes 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 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 3/6" thick for 16" on center rafters and 7/16" for 24" on center rafters. CONCRETE AND SOILS: 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 Haynes 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 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 anthons 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

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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

# 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.

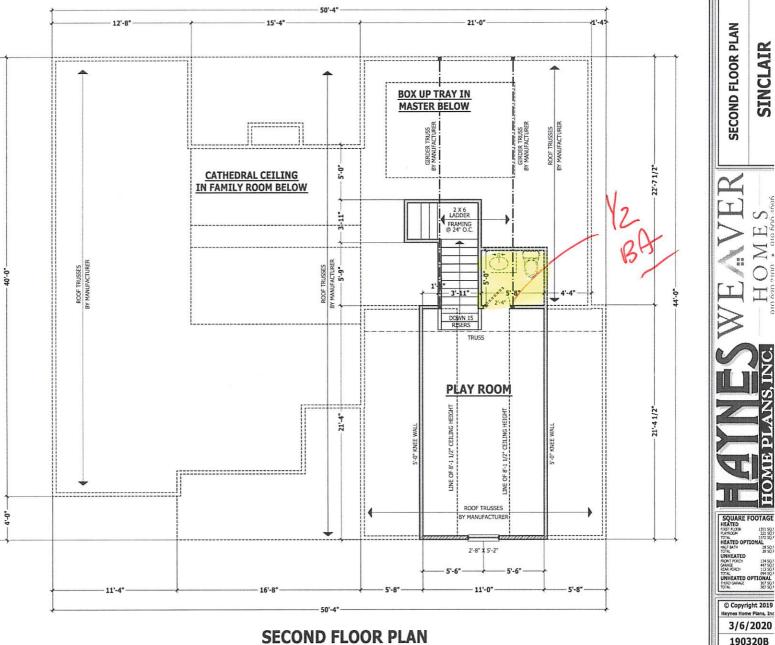
#### Exceptions

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

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



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.



SCALE 1/4" = 1'-0"

# CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCA DESIGNER, ARD-KTECT OR INGINEER SHOULD BE CONSULTI BEFORE CONSTRUCTION. THESE DRAWING ARE INSTRUMENTS OF SERVICE A AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNE PLAN SINCLAIR SECOND FLOOR 10 H 10 H

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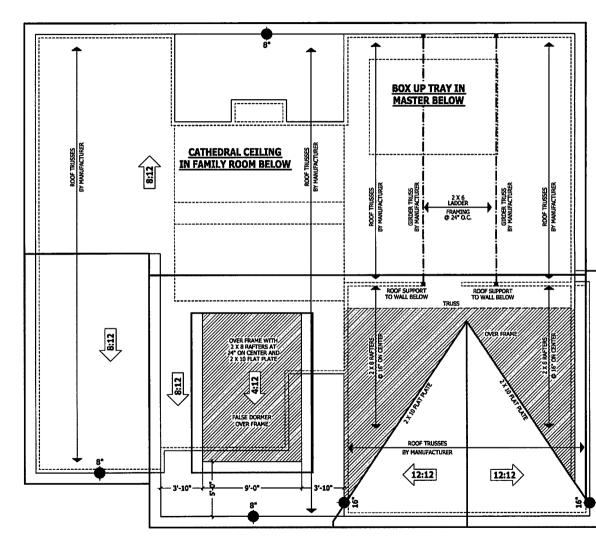
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# **ROOF TRUSS REQUIREMENTS**

TRUES DESIGN. Trusses to be designed and conjencered in accordance with these devices. Any variable with these devices much second to higher the second second second second second second registers. If the any second second second second second registers in the any second second second second second registers. If the any second se

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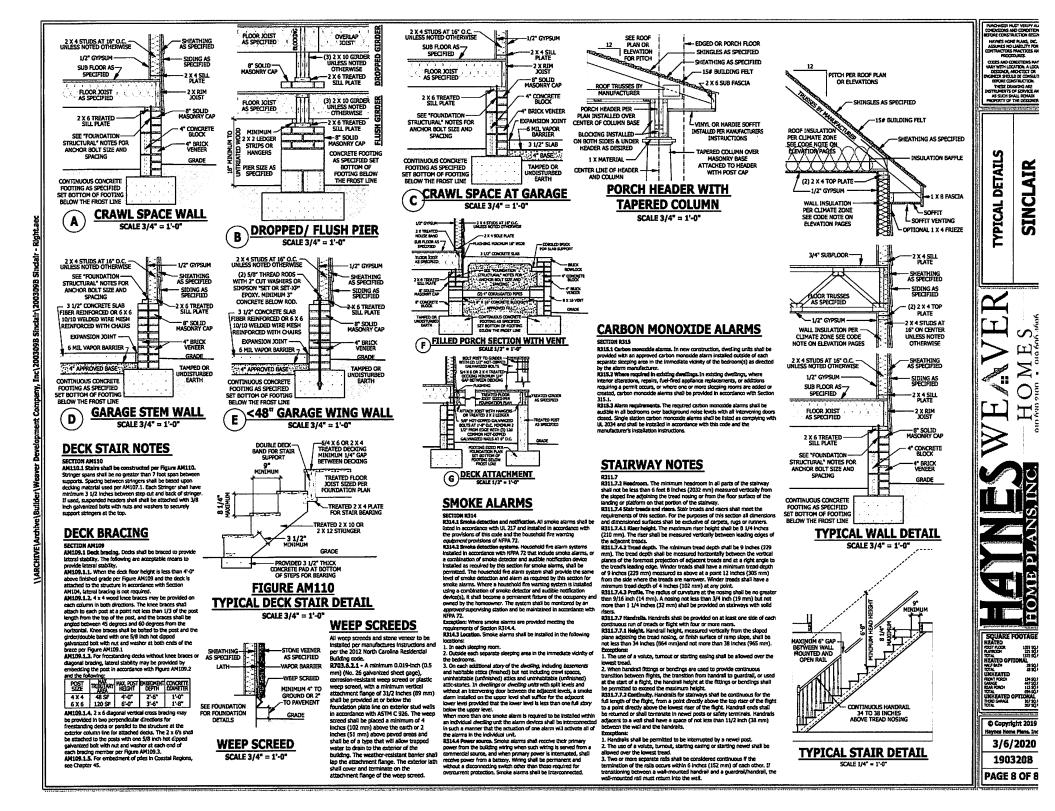


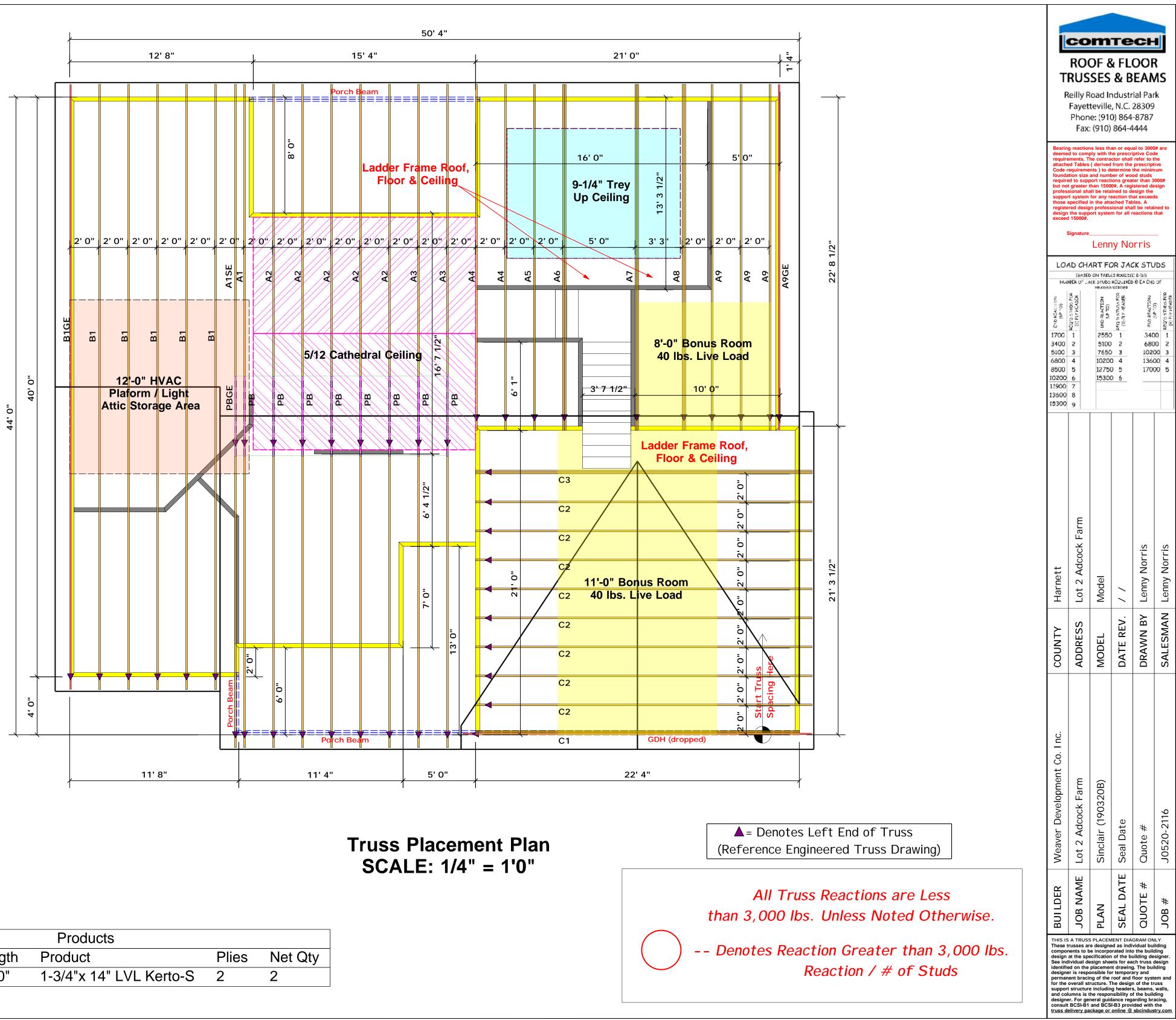
**ROOF PLAN** SCALE 1/4" = 1'-0"



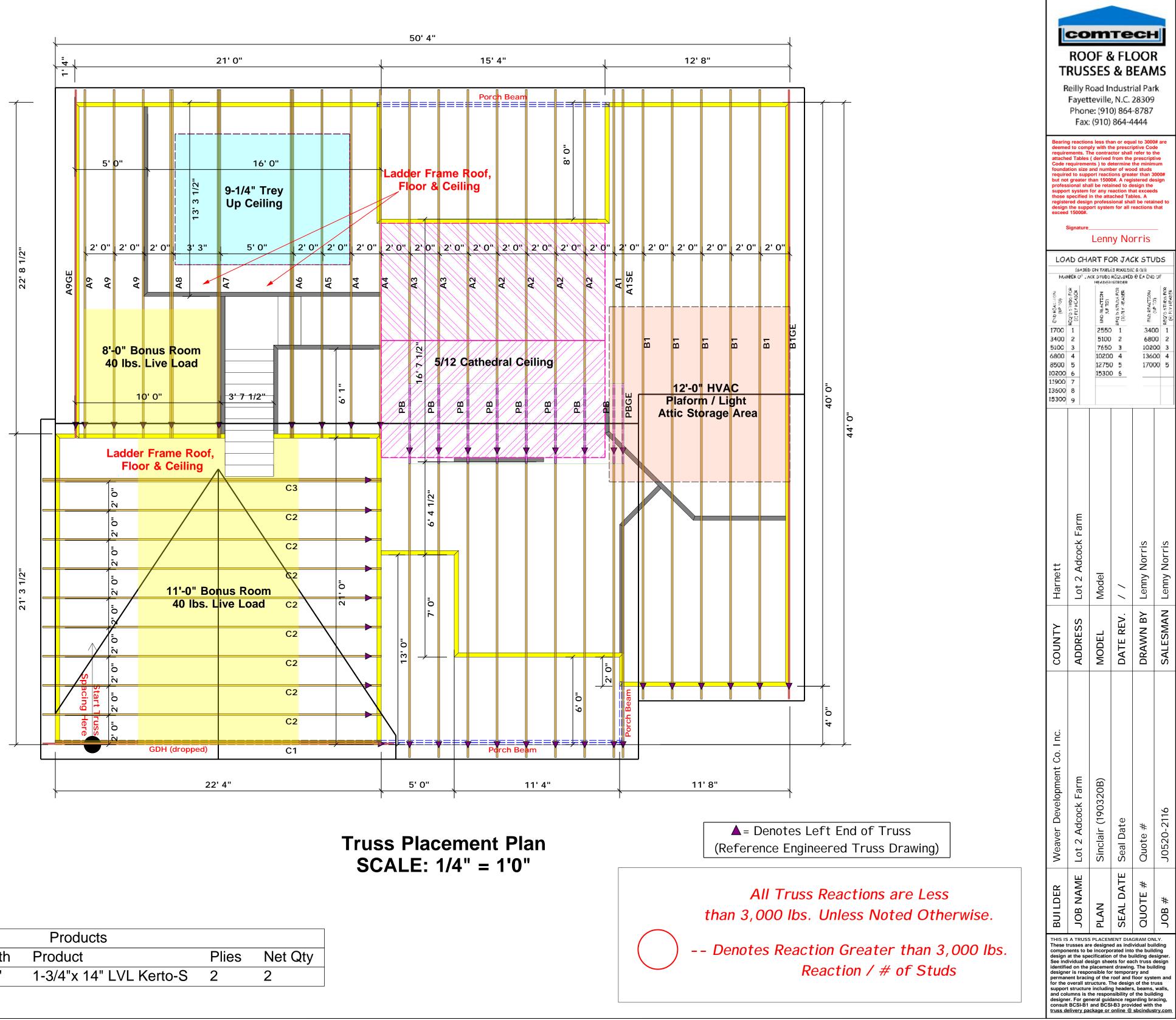
PURCHASER HUST VERIFY A COMENSIONS AND CONDITION PEORE CONSTRUCTION BROZ HAYNES HOME PLANS, DI CUES AND CONDITIONS IN HOL MOCTOT NOR SHOULD be CO REFORE CONSTRUCT THESE DRUNNING A UNSTRUMENTS OF SERV. AS SLOT SHALL REM PROPERTY OF THE ORTY OF THE OLS

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Products					
PlotID	Length	Product	Plies	Net Qty	
GDH (dropped)	23' 0"	1-3/4"x 14" LVL Kerto-S	2	2	



Products					
PlotID	Length	Product	Plies	Net Qty	
GDH (dropped)	23' 0"	1-3/4"x 14" LVL Kerto-S	2	2	