

## FRONT ELEVATION WITH SIDE LOAD GARAGE

SCALE 1/8" = 1'-0"

### 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"

COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS

MEAN ROOF	UP TO 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 WIND SPEED OF 130 MPH, 3 SECOND GUST (101 FASTEST MILE) EXPOSURE "B"

COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS

MEAN ROOF	UP TO 30'	30'-1" TO 35'	35'-1" TO 40'	40'-1" TO 45'
ZONE 1	16.7 -18.0	17.5 -18.9	18.2 -19.6	18.7 -20.2
ZONE 2	16.7 -21.0	17.5 -22.1	18.2 -22.9	18.7 -23.5
ZONE 3	16.7 -21.0	17.5 -22.1	18.2 -22.9	18.7 -23.5
ZONE 4	18.2 -19.0	19.1 -20.0	19.8 -20.7	20.4 -21.3
ZONE 5	18.2 -24.0	19.1 -25.2	19.8 -26.2	20.4 -26.9

### 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:

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 ceiling areas.

### ROOF VENTILATION

#### SECTION R806

**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 wire 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 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 cornice 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:

1. 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

#### SECTION R312

**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 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.

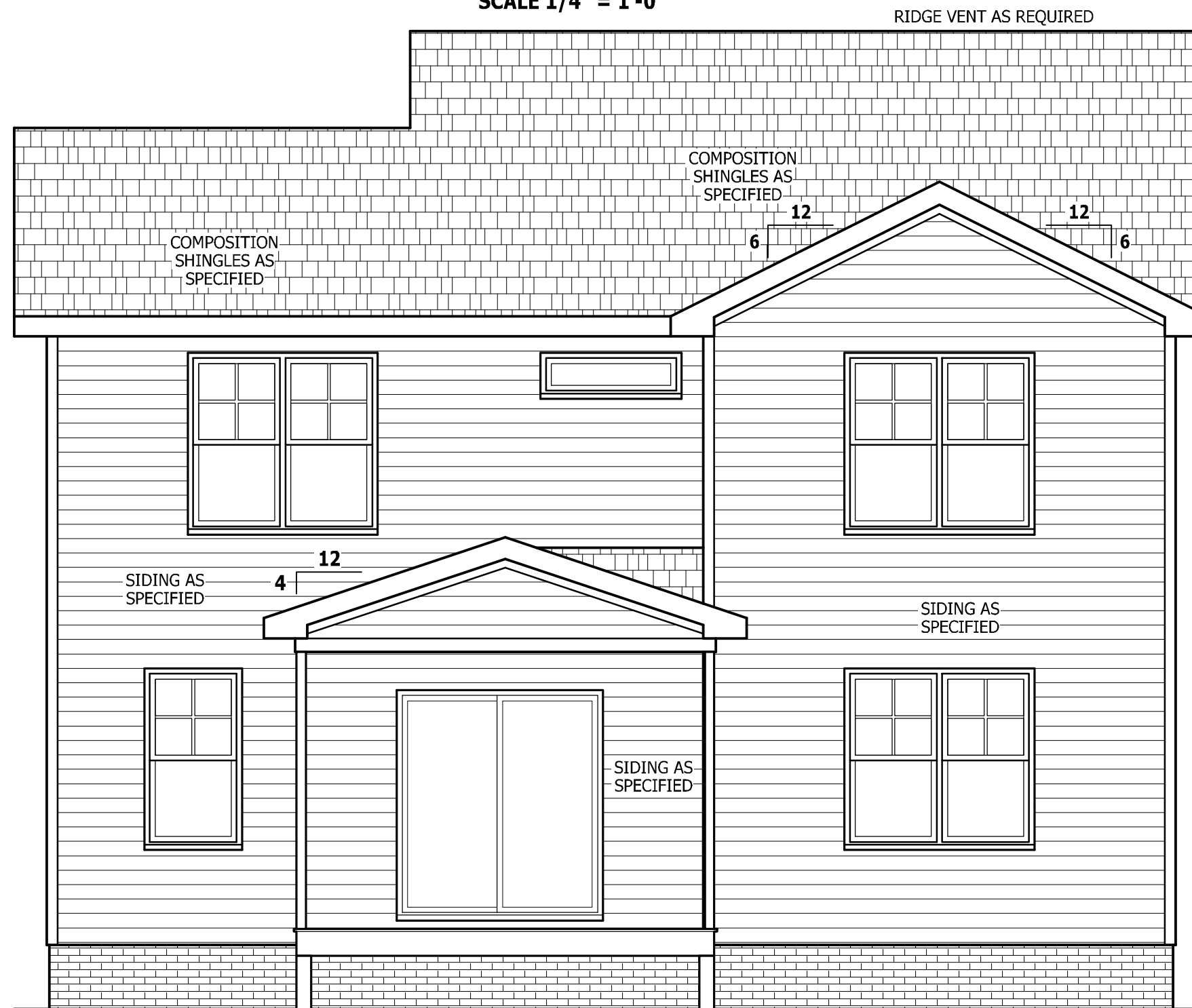
#### Exceptions:

1. 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.



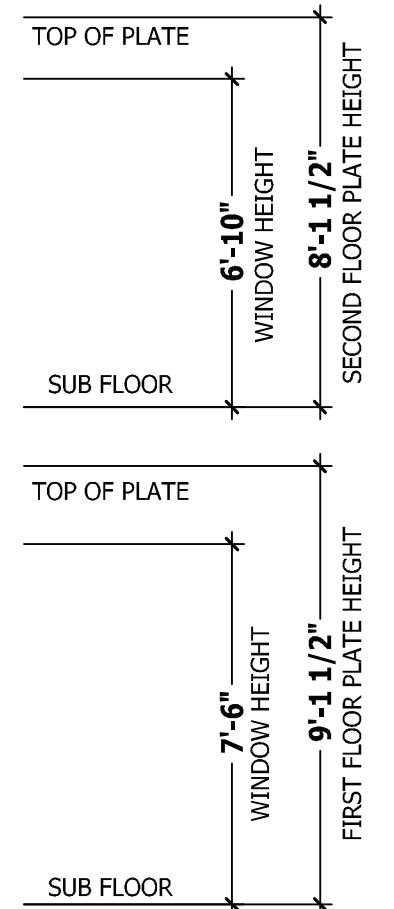
## FRONT ELEVATION

SCALE 1/4" = 1'-0"



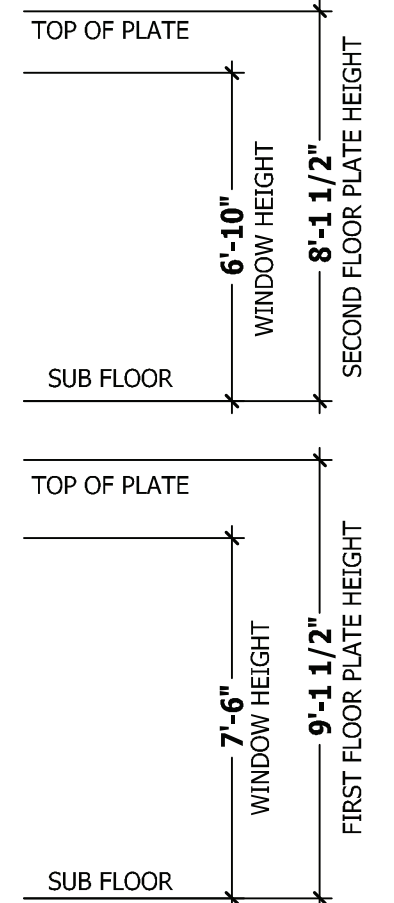
## REAR ELEVATION

SCALE 1/4" = 1'-0"



### SQUARE FOOTAGE

HEATED	
FIRST FLOOR	776 SQ.FT.
SECOND FLOOR	764 SQ.FT.
PLAYROOM	280 SQ.FT.
TOTAL	1820 SQ.FT.
UNHEATED	
FRONT PORCH	101 SQ.FT.
GARAGE	466 SQ.FT.
REAR PORCH	152 SQ.FT.
TOTAL	719 SQ.FT.



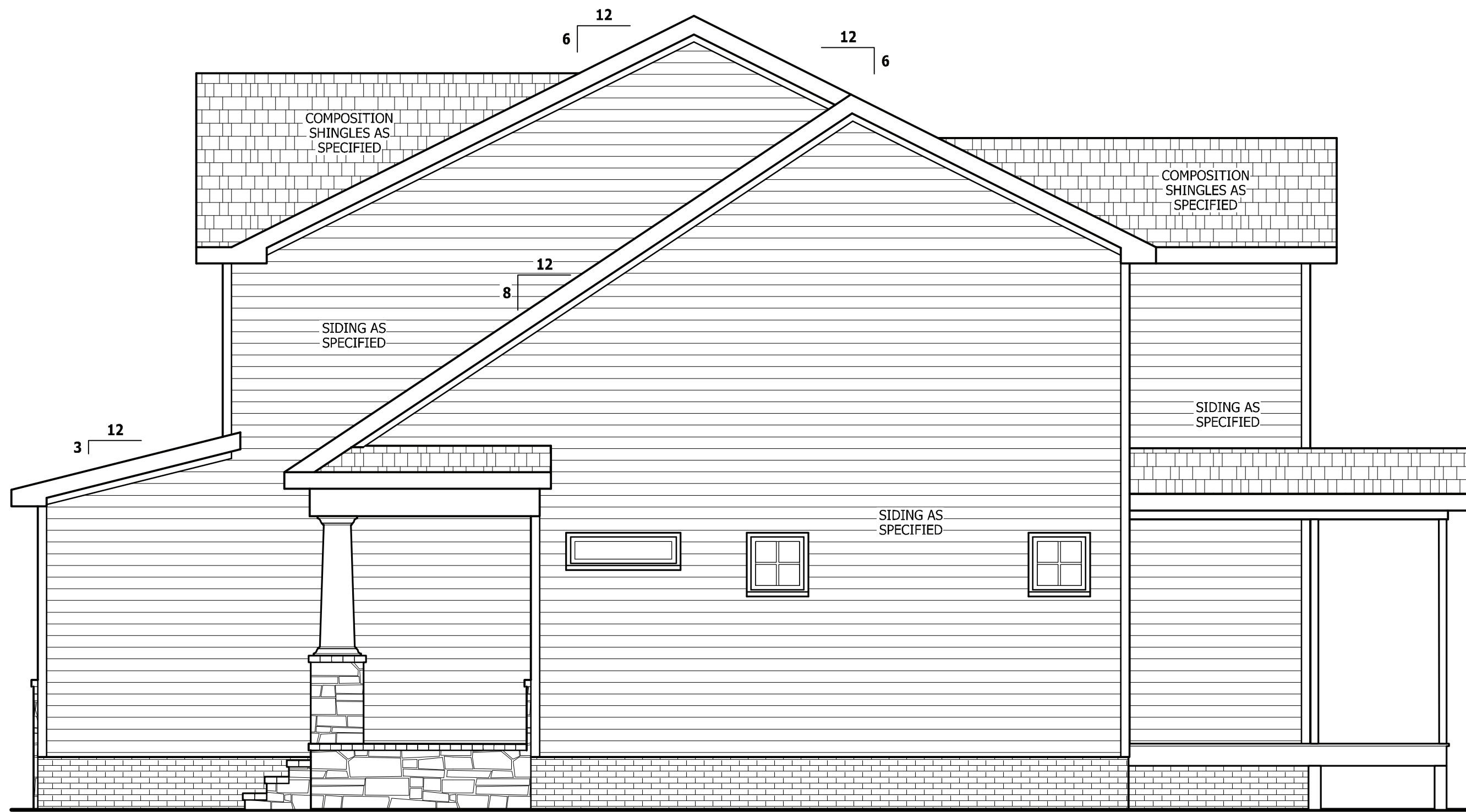
NOTICE TO CONTRACTOR  
 All construction must comply with current NC Building Codes and is subject to field inspection and verification.  
 APPROVED  
 12/21/2020  
 HARNETT COUNTY  
 NORTH CAROLINA

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.  
 HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.  
 CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION.  
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FRONT & REAR ELEVATIONS  
 THE GASTON II

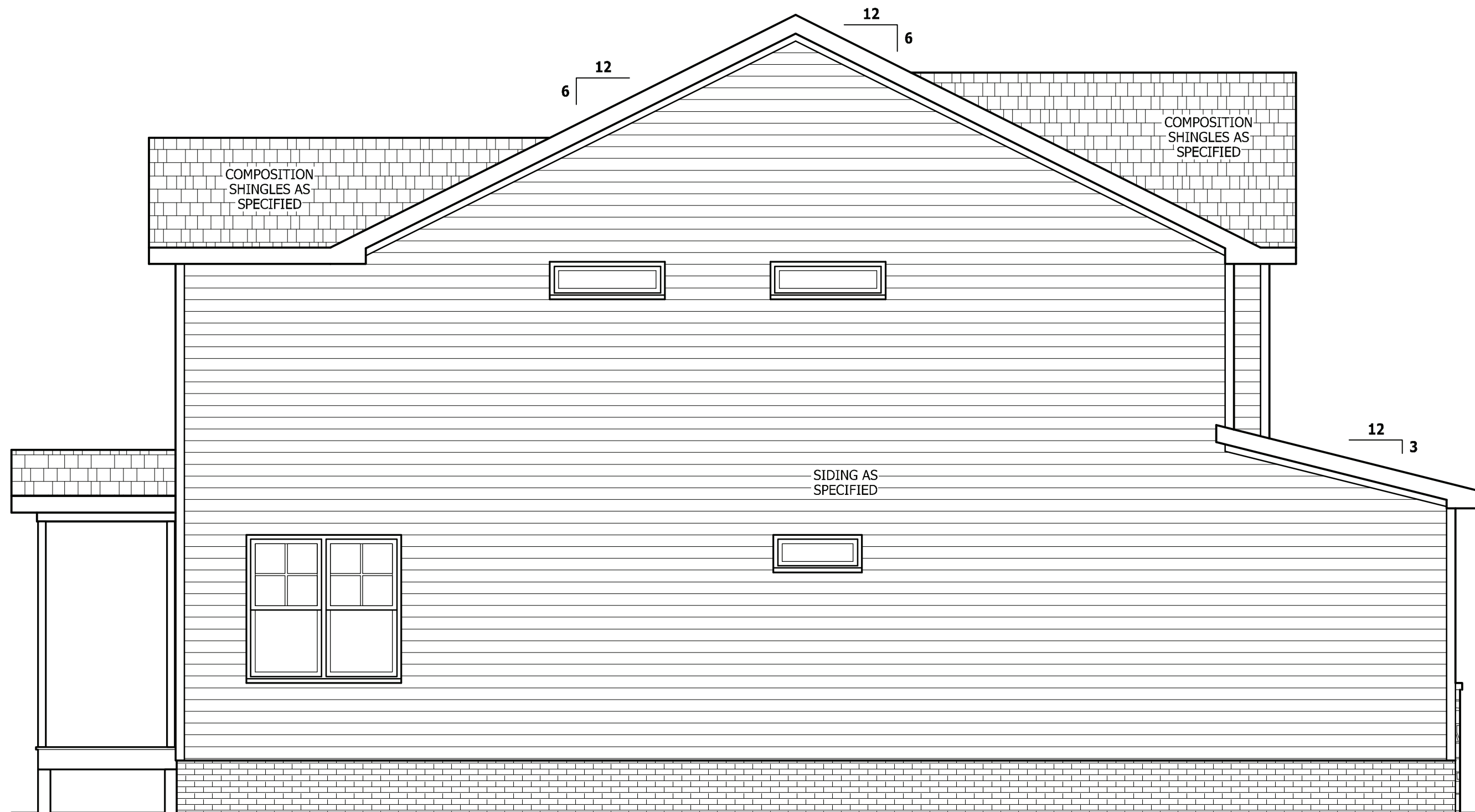
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 P.O. Box 702, Wake Forest, NC 27788 919.485.6180 FAX 1-866-491-0396

SQUARE FOOTAGE	
HEATED	
FIRST FLOOR	776 SQ.FT.
SECOND FLOOR	764 SQ.FT.
PLAYROOM	280 SQ.FT.
TOTAL	1820 SQ.FT.
UNHEATED	
FRONT PORCH	101 SQ.FT.
GARAGE	466 SQ.FT.
REAR PORCH	152 SQ.FT.
TOTAL	719 SQ.FT.



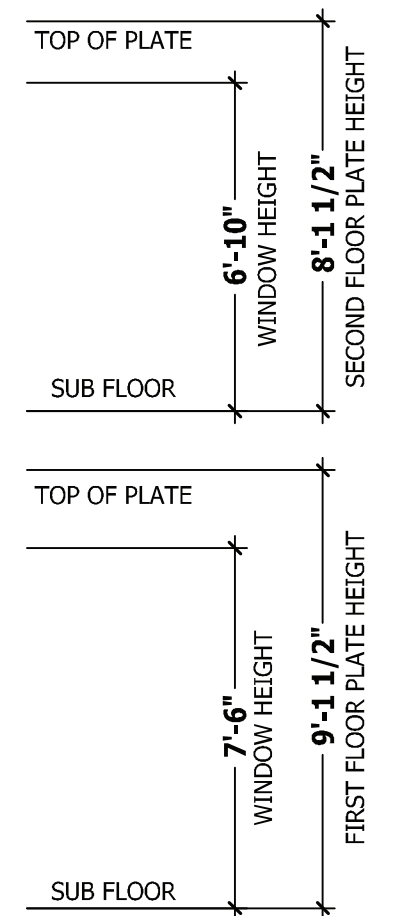
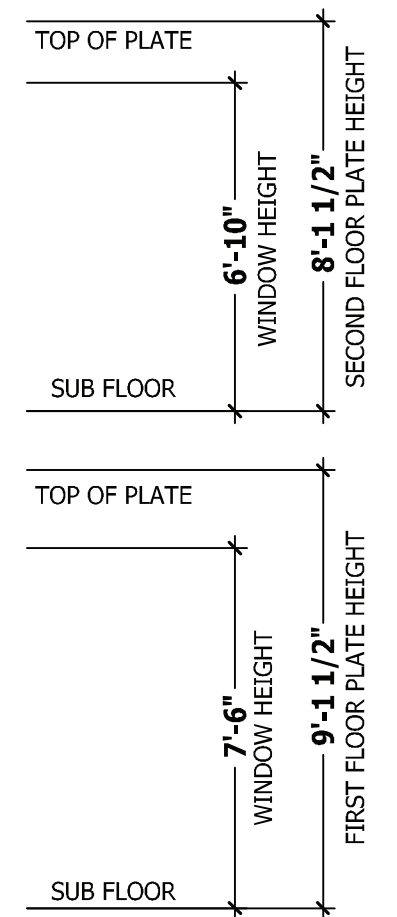
**RIGHT SIDE ELEVATION**

SCALE 1/4" = 1'-0"



**LEFT SIDE ELEVATION**

SCALE 1/4" = 1'-0"



**LEFT & RIGHT ELEVATIONS**  
**THE GASTON II**

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SQUARE FOOTAGE	
<b>HEATED</b>	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAYROOM	288 SQ. FT.
TOTAL	1828 SQ. FT.
<b>UNHEATED</b>	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.

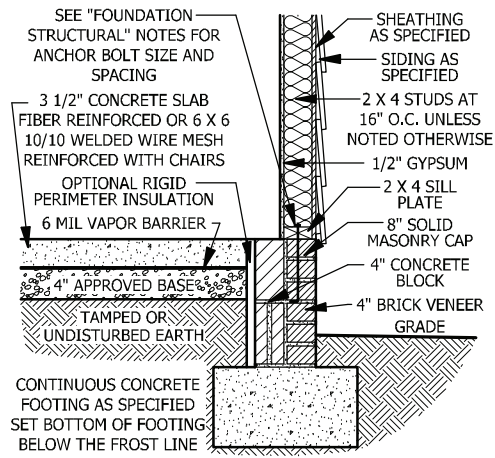
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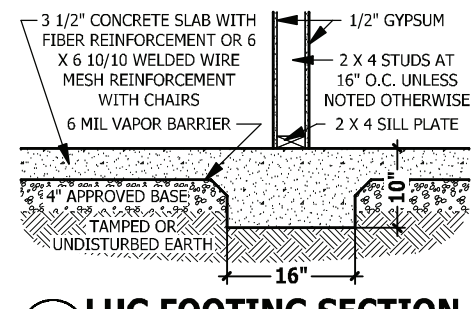
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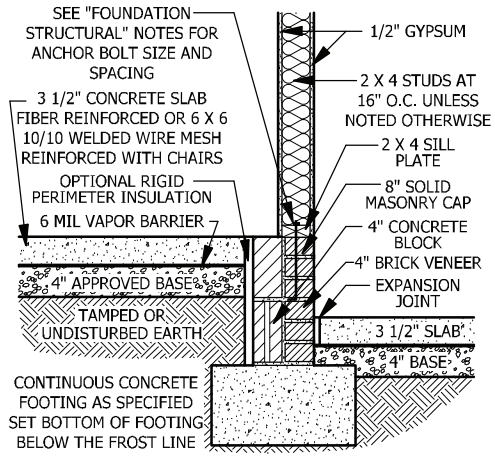
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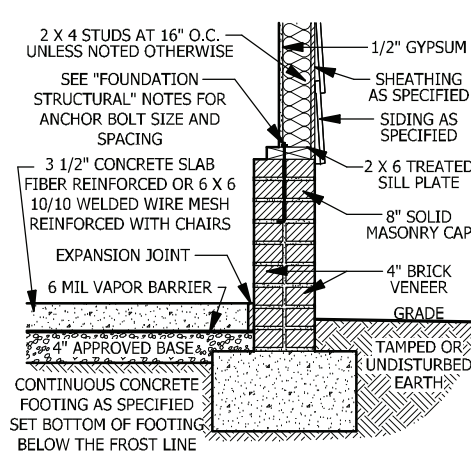
**A STEM WALL SECTION**  
SCALE 1/2" = 1'-0"



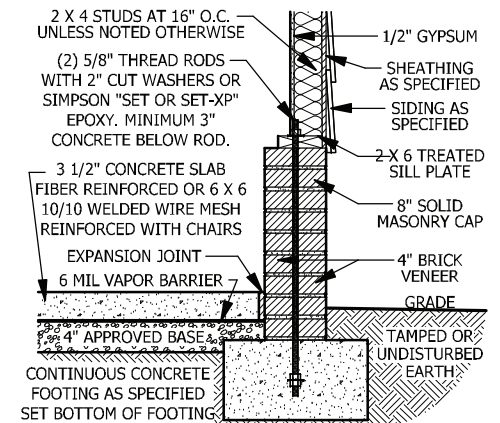
**B LUG FOOTING SECTION**  
SCALE 1/2" = 1'-0"



**C STEM WALL AT GARAGE**  
SCALE 1/2" = 1'-0"



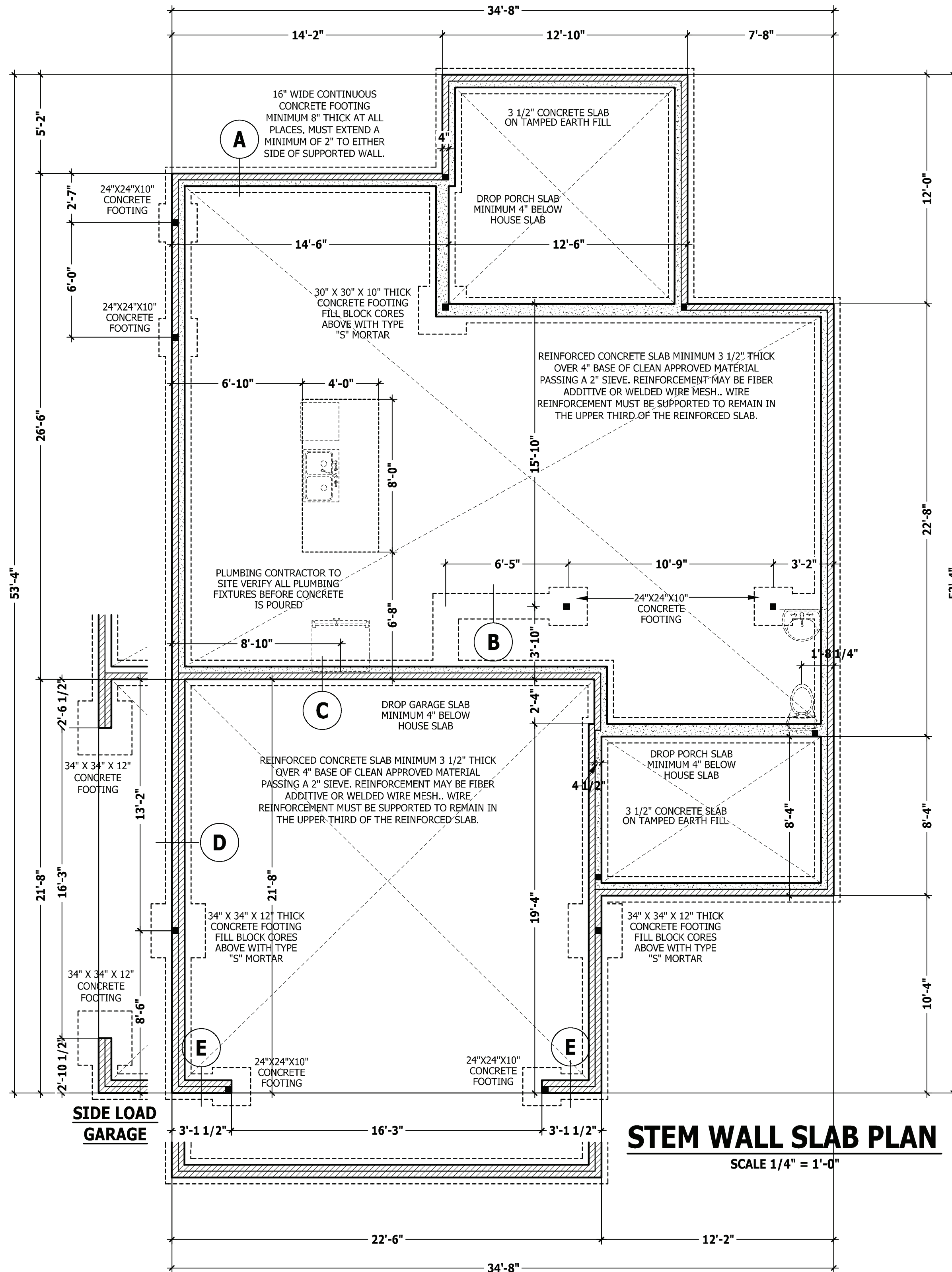
**D GARAGE STEM WALL**  
SCALE 1/2" = 1'-0"



**E <48" GARAGE WING WALL**  
SCALE 1/2" = 1'-0"

**FOUNDATION STRUCTURAL**

115 to 130 mph wind zone (1 1/2 to 2 1/2 story)  
**CONTINUOUS FOOTING:** 16" wide and 8" thick minimum. 20" wide minimum at brick veneer. Must extend 2" to either side of supported wall.  
**GIRDERS:** (3) 2 X 10 girder unless noted otherwise.  
**PIERS:** 16" X 16" piers with 8" solid masonry cap on 30" X 30" X 10" concrete footing with maximum pier height of 64" with hollow masonry and 160" with solid masonry.  
**POINT LOADS:** ■ designates significant point load and should have solid blocking to pier, girder or foundation wall.  
**115 and 120 MPH ANCHORS BOLTS:** 1/2" diameter anchor bolts embedded minimum 7", maximum 6'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.  
**130 MPH ANCHORS BOLTS:** 1/2" diameter anchor bolts embedded minimum 15", maximum 4'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.  
**CONCRETE:** Concrete shall have a minimum 28 day strength of 3000 psi and a maximum 5" slump. Air entrained per table 402.2. All concrete shall be in accordance with ACI standards. All samples for pumping shall be taken from the exit end of the pump.  
**SOILS:** Allowable soil bearing pressure assumed to be 2000 PSF. The contractor must contact a geotechnical engineer and a structural engineer if unsatisfactory subsurface conditions are encountered. The surface area adjacent to the foundation wall shall be provided with adequate drainage, and shall be graded so as to drain surface water away from foundation walls.



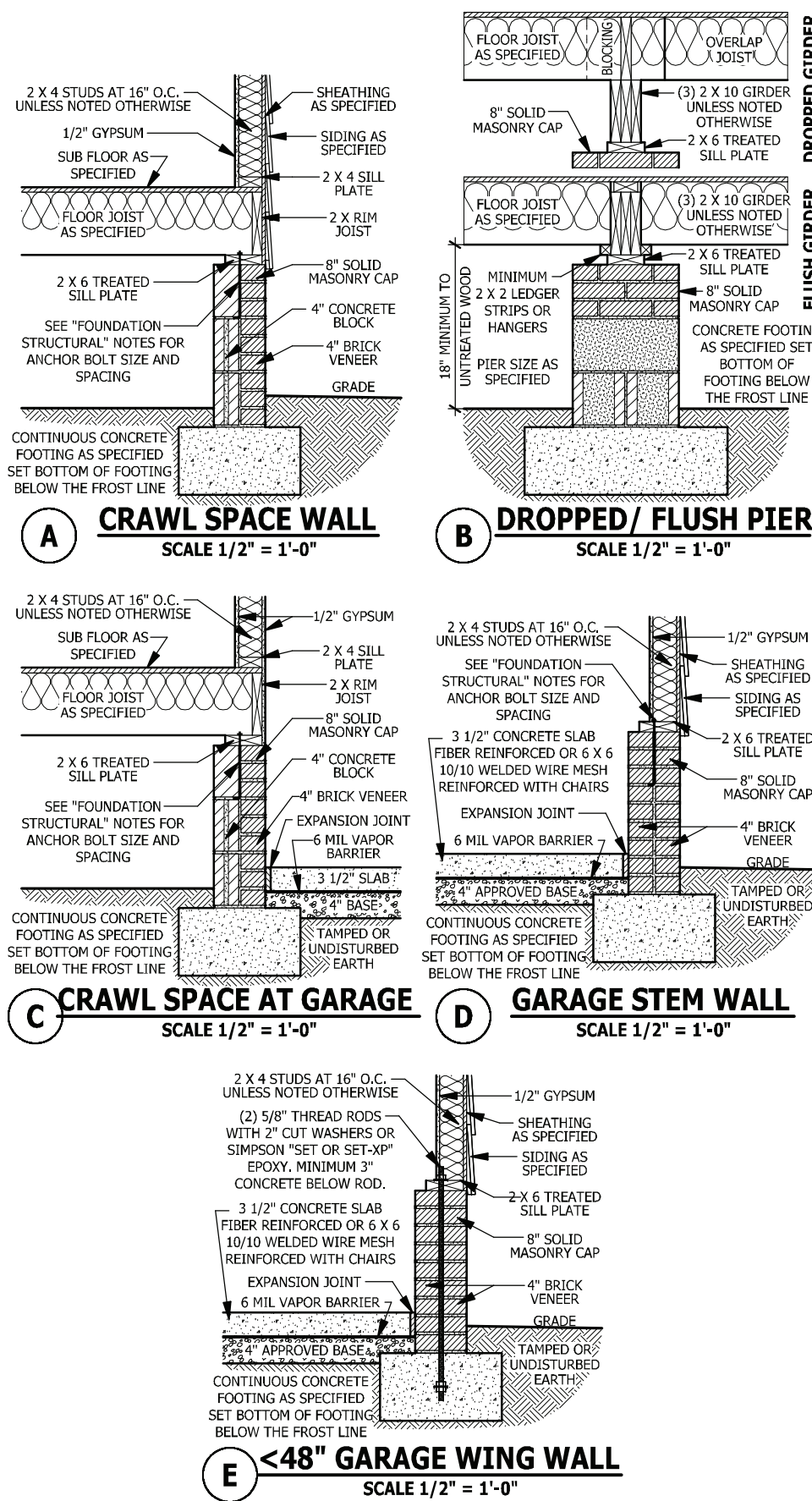
**STEM WALL SLAB PLAN**  
SCALE 1/4" = 1'-0"

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**FOUNDATION PLAN**  
**THE GASTON II**

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SQUARE FOOTAGE HEATED	
FIRST FLOOR	776 SQ. FT.
PLAYROOM	764 SQ. FT.
TOTAL	1540 SQ. FT.
UNHEATED	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.

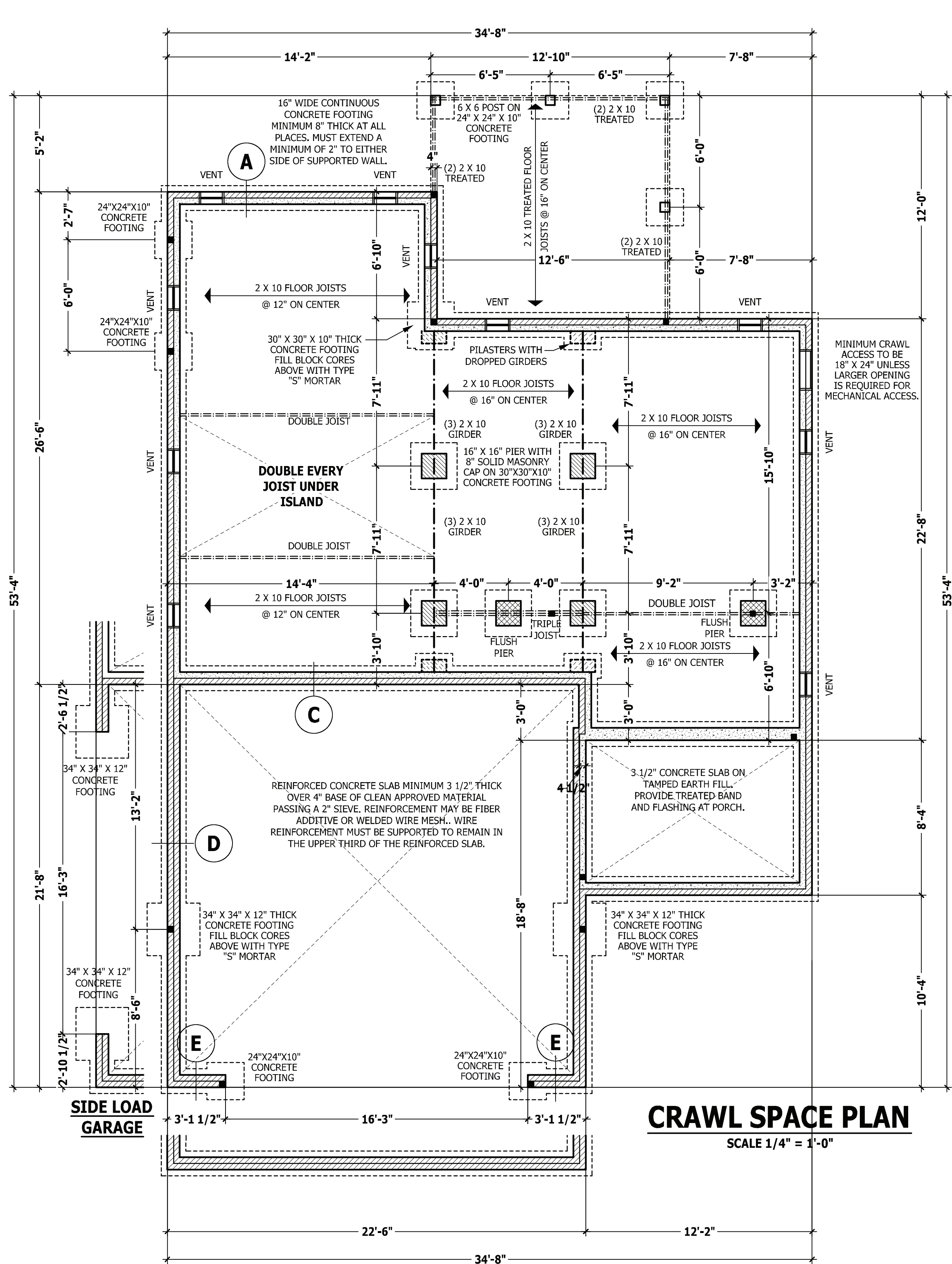


### FOUNDATION STRUCTURAL

115 to 130 mph wind zone (1 1/2 to 2 1/2 story)  
**CONTINUOUS FOOTING:** 16" wide and 8" thick minimum, 20" wide minimum at brick veneer. Must extend 2" to either side of supported wall.  
**GIRDERS:** (3) 2 X 10 girder unless noted otherwise.  
**PIERS:** 16" X 16" piers with 8" solid masonry cap on 30" X 30" X 10" concrete footing with maximum pier height of 64" with hollow masonry and 160" with solid masonry.  
**POINT LOADS:** ■ designates significant point load and should have solid blocking to pier, girder or foundation wall.  
**115 and 120 MPH ANCHORS BOLTS:** 1/2" diameter anchor bolts embedded minimum 7", maximum 6'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.  
**130 MPH ANCHORS BOLTS:** 1/2" diameter anchor bolts embedded minimum 15", maximum 4'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.  
**CONCRETE:** Concrete shall have a minimum 28 day strength of 3000 psi and a maximum 5" slump. Air entrained per table 402.2. All concrete shall be in accordance with ACI standards. All samples for pumping shall be taken from the exit end of the pump.  
**SOILS:** Allowable soil bearing pressure assumed to be 2000 PSF. The contractor must contact a geotechnical engineer and a structural engineer if unsatisfactory subsurface conditions are encountered. The surface area adjacent to the foundation wall shall be provided with adequate drainage, and shall be graded so as to drain surface water away from foundation walls.

### CLOSED CRAWL PER R409 OR WALL VENTED CRAWL SPACE

**UNDER-FLOOR SPACE (SECTION R408)**  
 SQUARE FOOTAGE OF FOUNDATION TO BE VENTED = 735 SQ.FT.  
 WITHOUT CROSS VENTILATION AREA OF VENTING NEEDED = 4.9 SQ.FT.  
 WITH CROSS VENTILATION AREA OF VENTING NEEDED = 0.49 SQ.FT.  
 NOTE: NUMBER OF VENTS NEED WILL VARY DEPENDING ON VENTS USED AND CROSS VENTILATION.



### CRAWL SPACE PLAN

SCALE 1/4" = 1'-0"

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FOUNDATION PLAN  
 THE GASTON II

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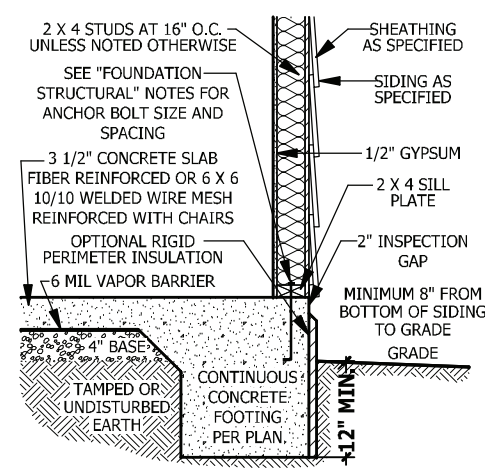
SQUARE FOOTAGE HEATED	
FIRST FLOOR	776 SQ.FT.
SECOND FLOOR	764 SQ.FT.
PLAYROOM	280 SQ.FT.
TOTAL	1820 SQ.FT.
UNHEATED	
FRONT PORCH	101 SQ.FT.
GARAGE	466 SQ.FT.
REAR PORCH	132 SQ.FT.
TOTAL	719 SQ.FT.

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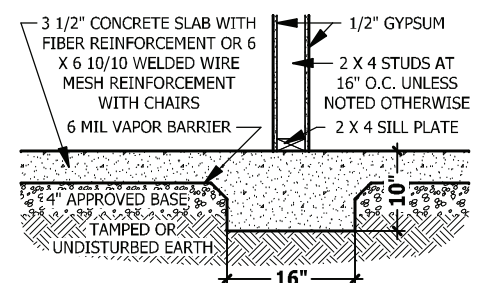
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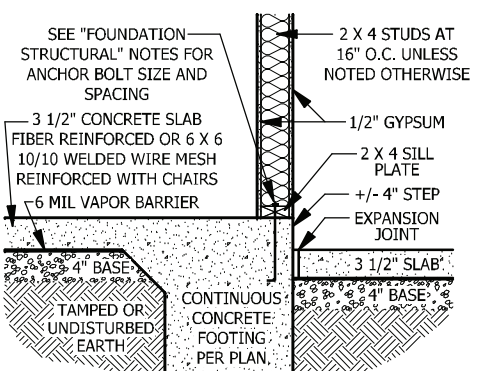
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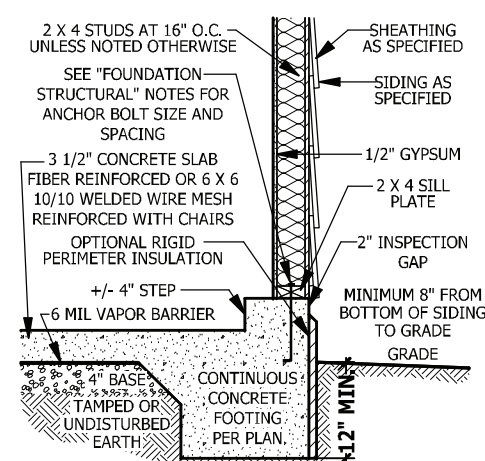
**A MONOLITHIC SECTION**  
SCALE 1/2" = 1'-0"



**B LUG FOOTING SECTION**  
SCALE 1/2" = 1'-0"



**C MONOLITHIC AT STEP**  
SCALE 1/2" = 1'-0"



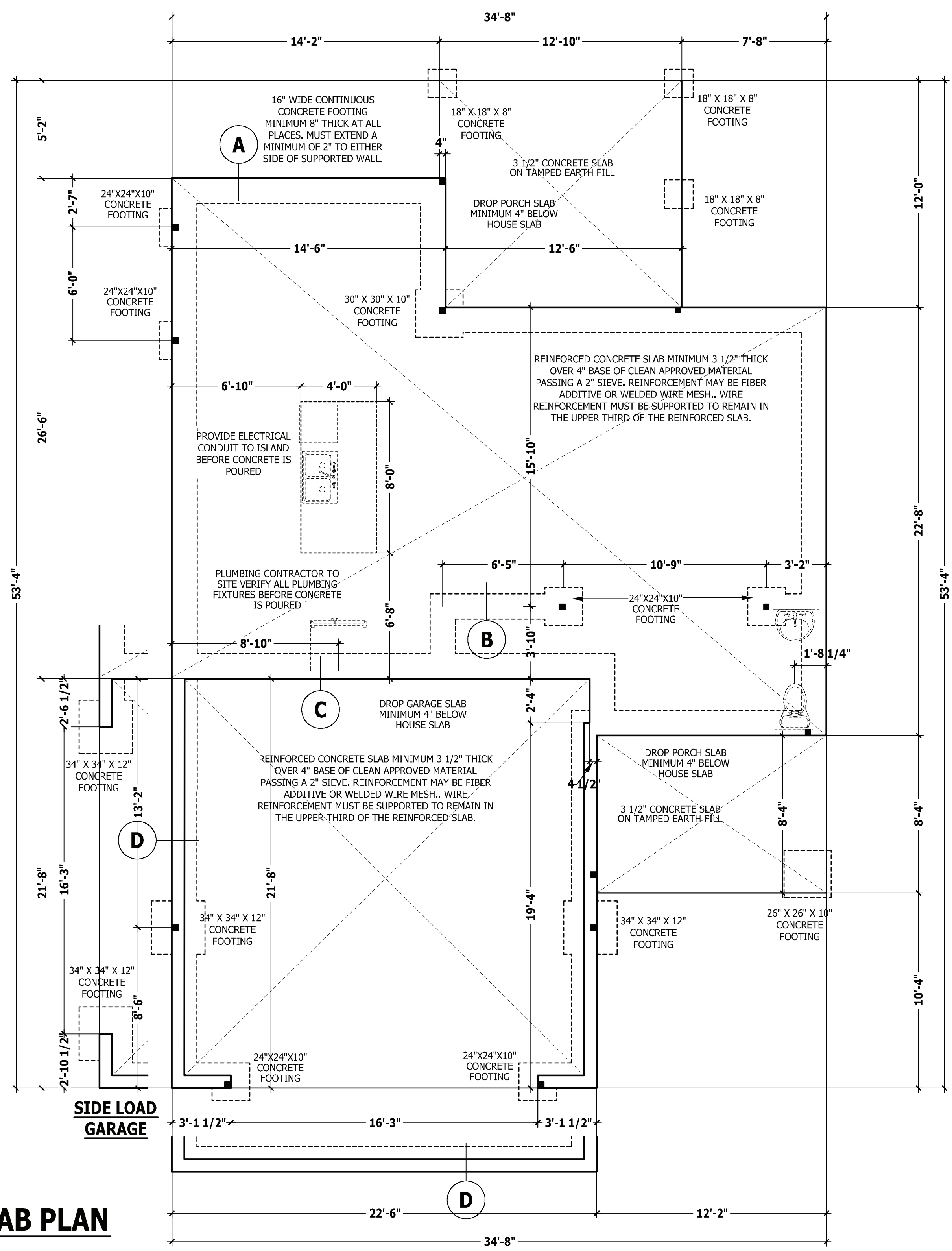
**D MONOLITHIC AT GARAGE**  
SCALE 1/2" = 1'-0"

**FOUNDATION STRUCTURAL**

115 to 130 mph wind zone (1 1/2 to 2 1/2 story)  
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**GIRDERS:** (3) 2 X 10 girder unless noted otherwise.  
**PIERS:** 16" X 16" piers with 8" solid masonry cap on 30" X 30" X 10" concrete footing with maximum pier height of 64" with hollow masonry and 160" with solid masonry.  
**POINT LOADS:** ■ designates significant point load and should have solid blocking to pier, girder or foundation wall.  
**115 and 120 MPH ANCHORS BOLTS:** 1/2" diameter anchor bolts embedded minimum 7", maximum 6'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.  
**130 MPH ANCHORS BOLTS:** 1/2" diameter anchor bolts embedded minimum 15", maximum 4'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.  
**CONCRETE:** Concrete shall have a minimum 28 day strength of 3000 psi and a maximum 5" slump. Air entrained per table 402.2. All concrete shall be in accordance with ACI standards. All samples for pumping shall be taken from the exit end of the pump.  
**SOILS:** Allowable soil bearing pressure assumed to be 2000 PSF. The contractor must contact a geotechnical engineer and a structural engineer if unsatisfactory subsurface conditions are encountered. The surface area adjacent to the foundation wall shall be provided with adequate drainage, and shall be graded so as to drain surface water away from foundation walls.

**MONOLITHIC SLAB PLAN**

SCALE 1/4" = 1'-0"



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**MONOLITHIC SLAB PLAN**  
**THE GASTON II**

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SQUARE FOOTAGE HEATED	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAYROOM	280 SQ. FT.
TOTAL	1820 SQ. FT.
UNHEATED	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.

### 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 m<sup>2</sup>) and have 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 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 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.

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

**CEILING.** 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 dwelling 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 into the garage.

**OTHER PENETRATIONS.** Penetrations through the separation required in Section R302.6 shall be protected as required by Section R302.11, Item 4.

### 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 or door.

**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.

#### Exceptions:

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 position.
2. 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

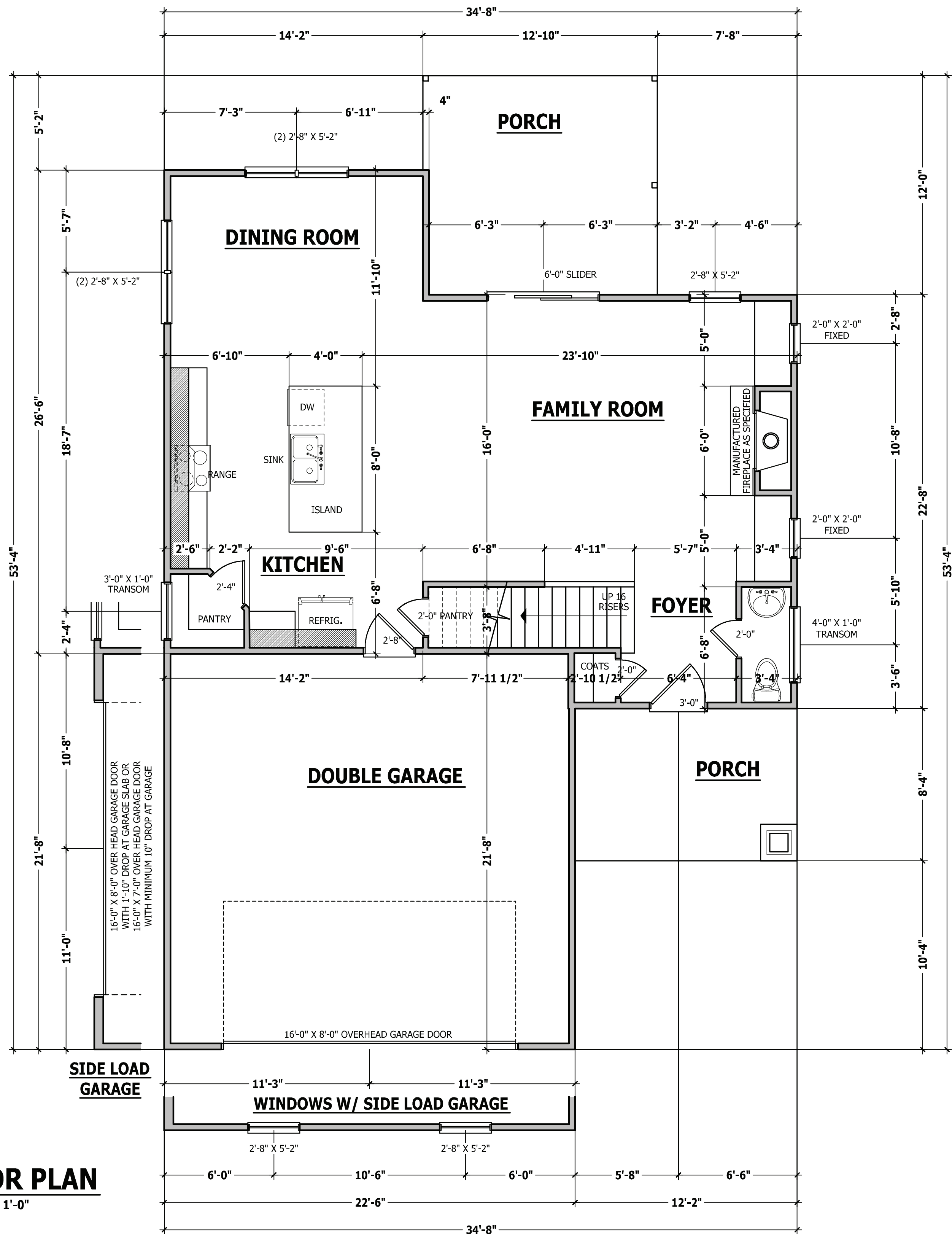
FIRST FLOOR	776 SQ.FT.
SECOND FLOOR	764 SQ.FT.
PLAYROOM	280 SQ.FT.
TOTAL	1820 SQ.FT.

#### UNHEATED

FRONT PORCH	101 SQ.FT.
GARAGE	466 SQ.FT.
REAR PORCH	152 SQ.FT.
TOTAL	719 SQ.FT.

## FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"



PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.  
 HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.  
 CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION.  
 THESE DRAWING ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.

FIRST FLOOR PLAN  
**THE GASTON II**

**HAYNES WEAVER**  
 HOMES  
 910.630.2100 • 919.606.4696  
350 Weaver Drive, Fayetteville, NC 28403

**HAYNES HOME PLANS, INC.**  
 P.O. BOX 702, WAIVE FOREST, NC 27588 919-485-6180 FAX 1-866-491-0396

SQUARE FOOTAGE	
HEATED	
FIRST FLOOR	776 SQ.FT.
SECOND FLOOR	764 SQ.FT.
PLAYROOM	280 SQ.FT.
TOTAL	1820 SQ.FT.
UNHEATED	
FRONT PORCH	101 SQ.FT.
GARAGE	466 SQ.FT.
REAR PORCH	152 SQ.FT.
TOTAL	719 SQ.FT.

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PAGE 4 OF 8

# 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 contractor 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.

USE	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (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 = 875 PSI) or SYP #2 (Fb = 750 PSI) and all treated lumber shall be SYP #2 (Fb = 750 PSI) unless noted otherwise.

**ENGINEERED WOOD BEAMS:**  
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) Fb=2250 PSI, Fv=400 PSI, E=1.55x10<sup>6</sup> 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 manufacturer's specifications. Any change in truss or I-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 3/8" thick.  
**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 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 nails.

**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 frame per figure R602.10.1

## 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 responsibility 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.

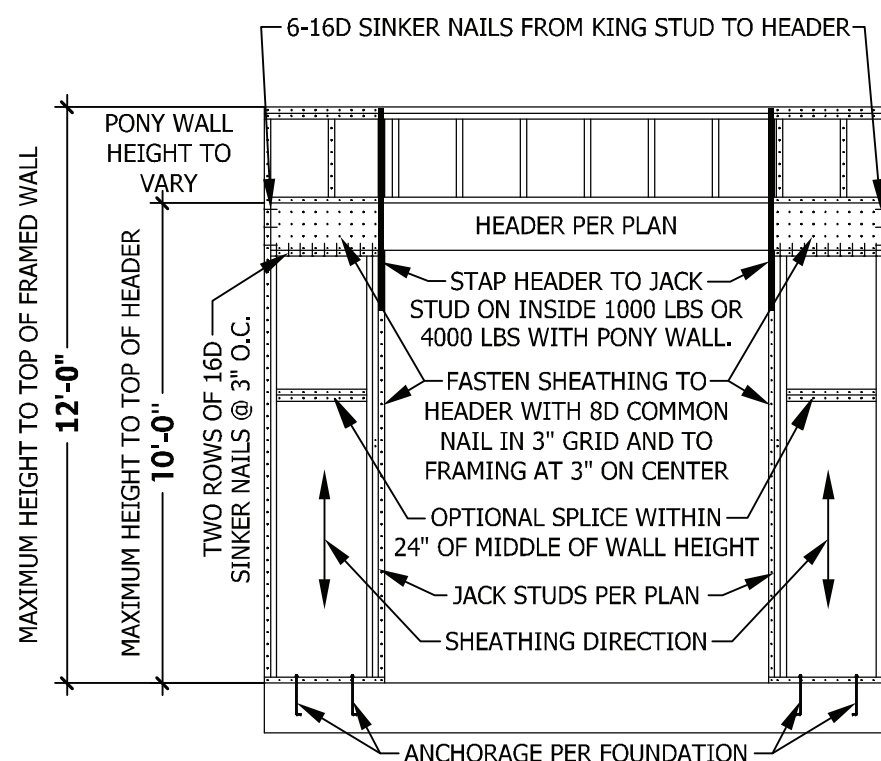
## EXTERIOR HEADERS

- (2) 2 X 6 WITH 1 JACK STUD EACH END UNLESS NOTED OTHERWISE  
- KING STUDS EACH END PER TABLE BELOW

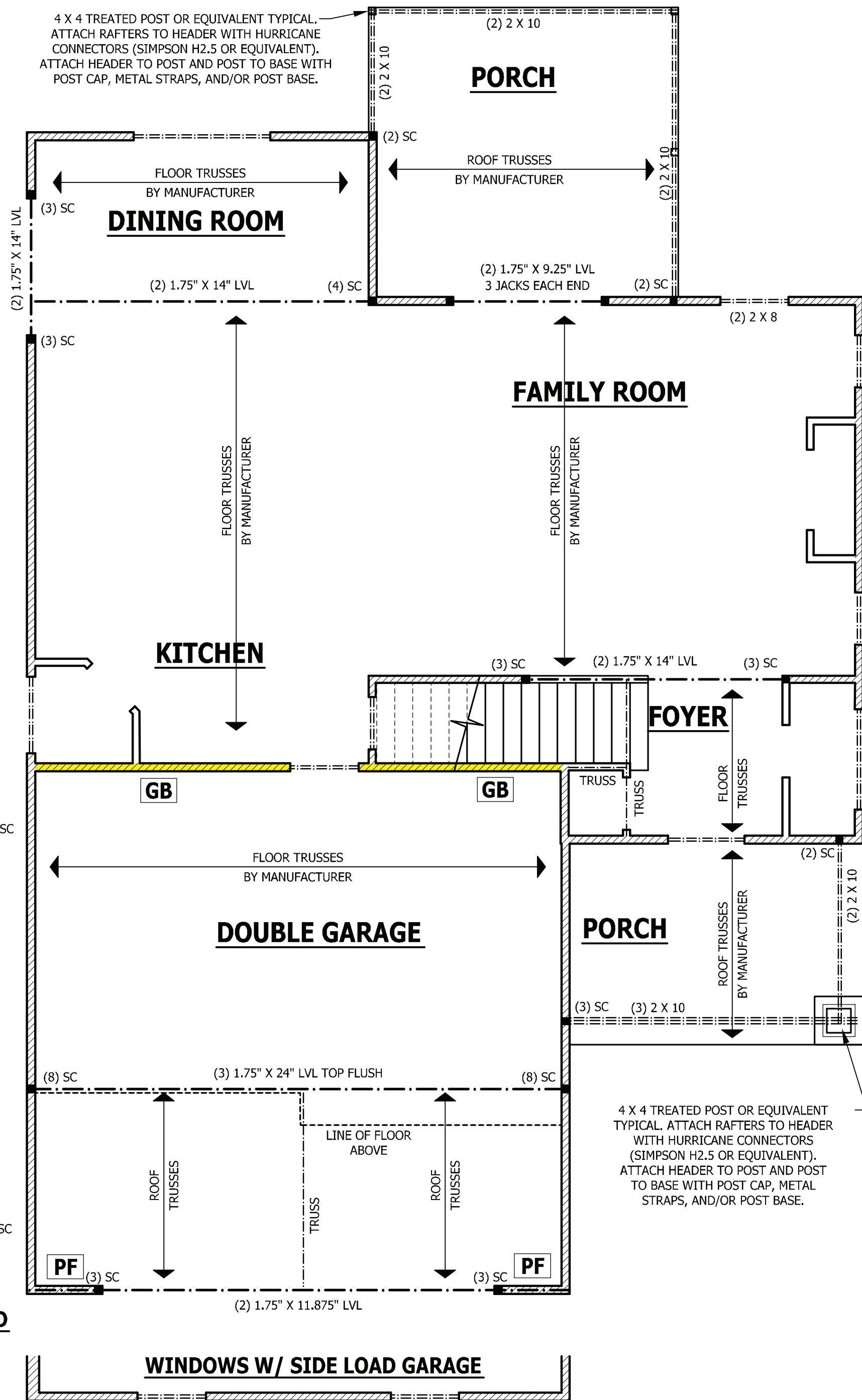
HEADER SPAN	< 3'	3'-4'	4'-8'	8'-12'	12'-16'
KING STUD(S)	1	2	3	5	6

## 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



**PF PORTAL FRAME AT OPENING**  
(METHOD PF PER FIGURE AND SECTION R602.10.1)  
SCALE 1/4" = 1'-0"



**FIRST FLOOR STRUCTURAL**  
SCALE 1/4" = 1'-0"

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**FIRST FLOOR STRUCTURAL**  
**THE GASTON II**

**HAYNES WEAVER HOMES**  
350 Waggoner Drive, Fayetteville, NC 28403  
910.630.2100 • 919.606.4696

**HAYNES HOME PLANS, INC.**  
P.O. Box 702, Wake Forest, NC 27588 919-485-6180 Fax: +866-491-0396

SQUARE FOOTAGE HEATED	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAYROOM	288 SQ. FT.
TOTAL	1828 SQ. FT.
UNHEATED	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.

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## STRUCTURAL NOTES

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DESIGN LOADS	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (LL)
Attics without storage	10	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 = 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:**  
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) = Fb=2250 PSI, Fv=400 PSI, E=1.55x10<sup>6</sup> PSI  
Install all connections per manufacturer's 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 manufacturer's specifications. Any change in truss or I-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 3/8" thick.

**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 m<sup>2</sup>) and have 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 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 opening.

## 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 or door.

**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.

### Exceptions:

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 position.
  2. 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.

## 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

## 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 responsibility 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.

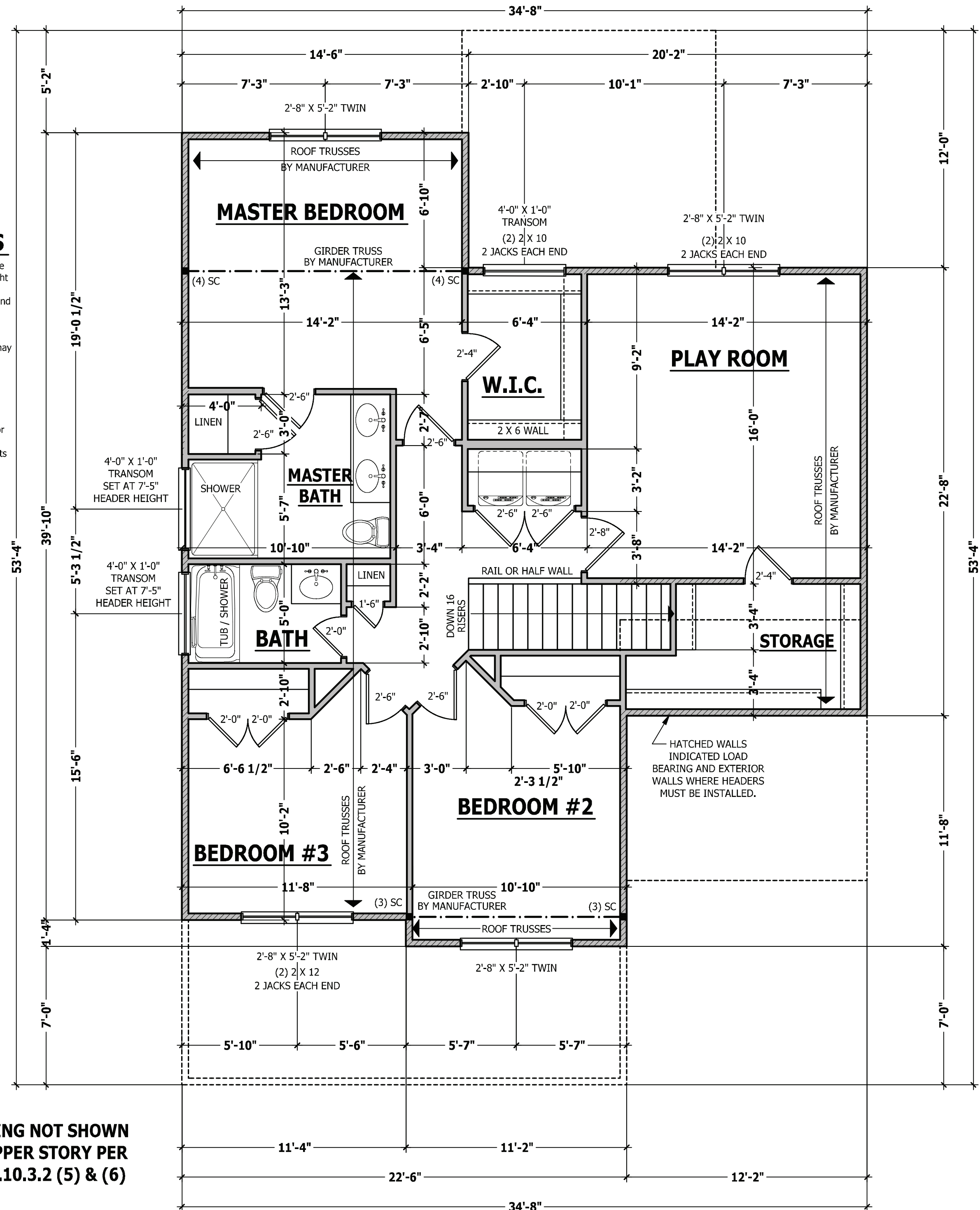
**BEARING.** All trusses shall be designed for bearing on SPF #2 plates or ledgers unless noted otherwise.

**Plate Heights & Floor Systems.** See elevation page(s) for plate heights and floor system thicknesses.

## 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.



**BRACING NOT SHOWN ON UPPER STORY PER R602.10.3.2 (5) & (6)**

## SECOND FLOOR PLAN

SCALE 1/4" = 1'-0"

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SECOND FLOOR PLAN  
THE GASTON II

**HAYNES** WE AVER HOMES  
HOME PLANS, INC.  
P.O. BOX 702, WAKE FOREST, NC 27788 919-495-6180 FAX 1-866-491-0396  
350 Waggoner Drive, Fayetteville, NC 28303  
910.630.2100 • 919.606.4696

SQUARE FOOTAGE	
<b>HEATED</b>	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAY ROOM	238 SQ. FT.
TOTAL	1820 SQ. FT.
<b>UNHEATED</b>	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.

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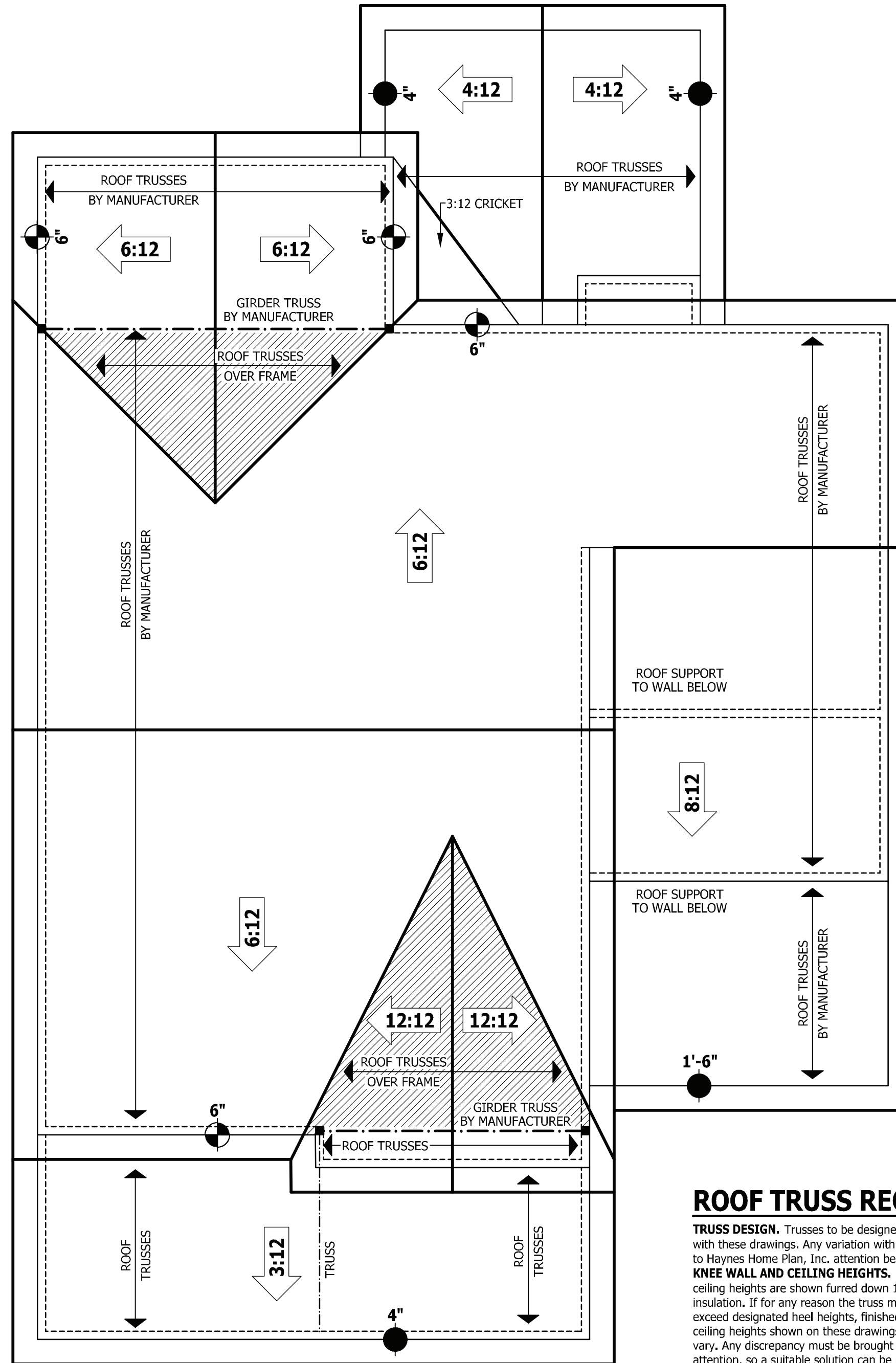
2/4/2020

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PAGE 6 OF 8



PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.  
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**ROOF PLAN**  
 SCALE 1/4" = 1'-0"

**ROOF TRUSS REQUIREMENTS**

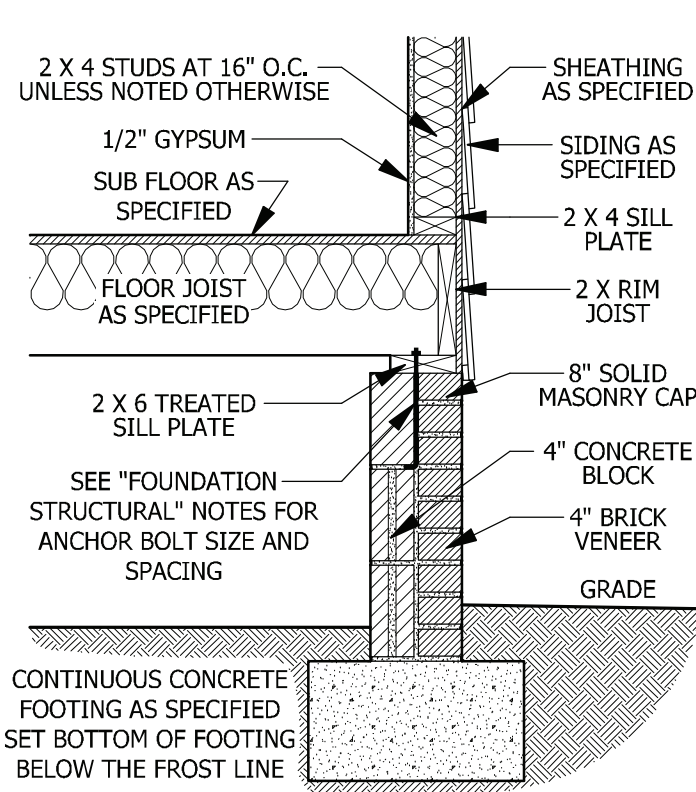
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**KNEE WALL AND CEILING HEIGHTS.** All finished knee wall heights and ceiling heights are shown furred down 10" from roof decking for insulation. If for any reason the truss manufacturer fails to meet or exceed designated heel heights, finished knee 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 responsibility 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.

● HEEL HEIGHT ABOVE FIRST FLOOR PLATE      ● HEEL HEIGHT ABOVE SECOND FLOOR PLATE

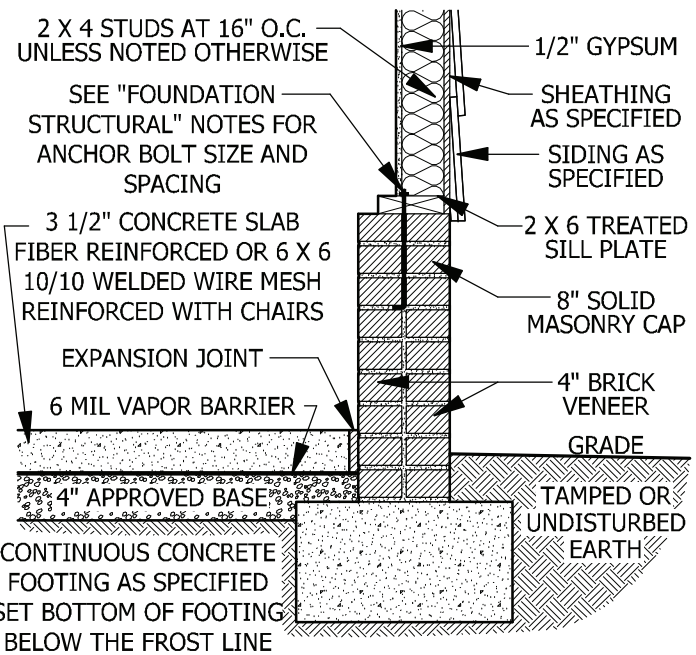
**ROOF PLAN**  
**THE GASTON II**

**HAYNES WEAVER HOMES**  
 HOME PLANS, INC.  
 910.630.2100 • 919.606.4696  
 350 Waggoner Drive, Fayetteville, NC 28403  
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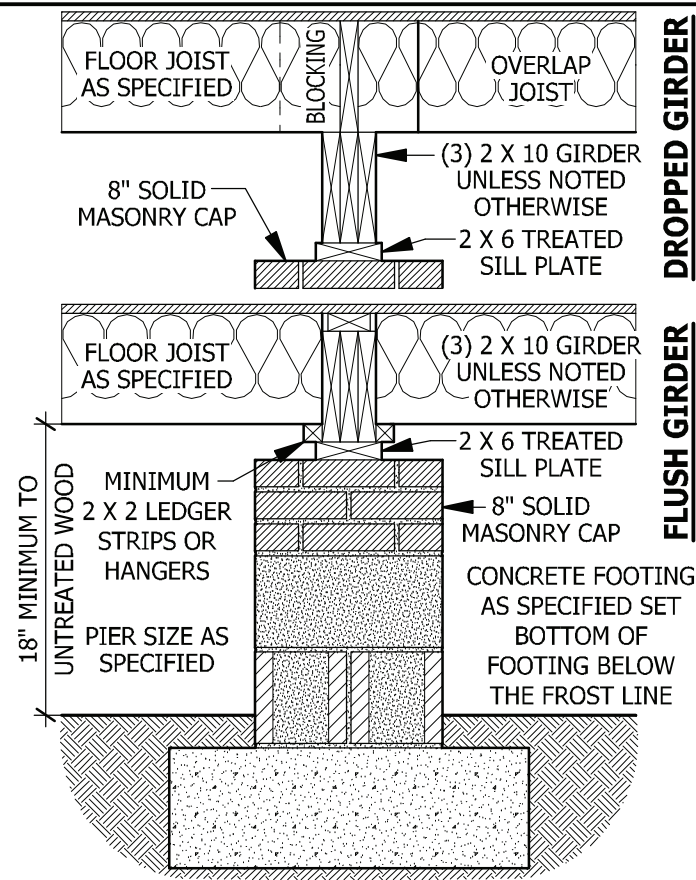
SQUARE FOOTAGE	
<b>HEATED</b>	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAYROOM	288 SQ. FT.
TOTAL	1828 SQ. FT.
<b>UNHEATED</b>	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.



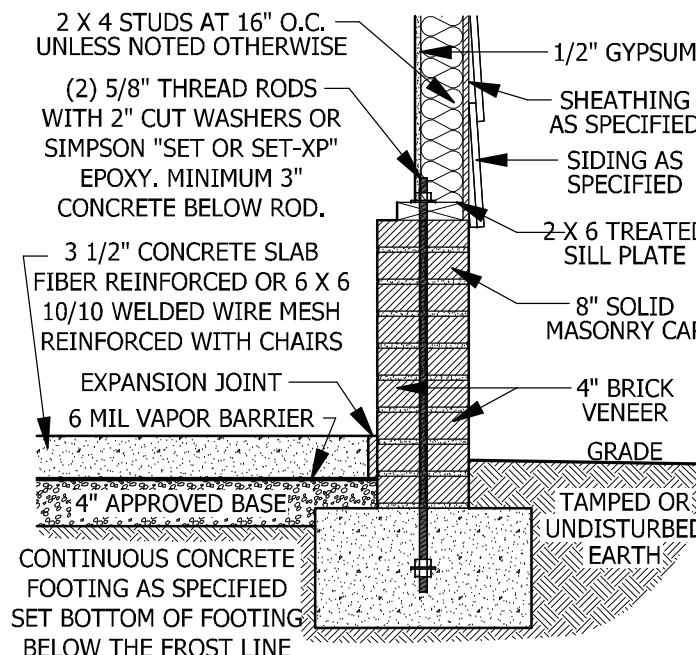
**A CRAWL SPACE WALL**  
SCALE 3/4" = 1'-0"



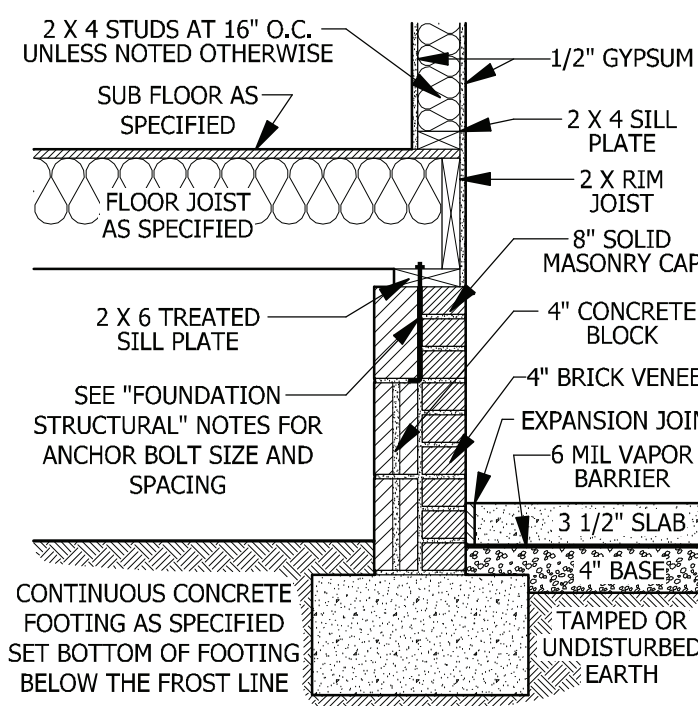
**D GARAGE STEM WALL**  
SCALE 3/4" = 1'-0"



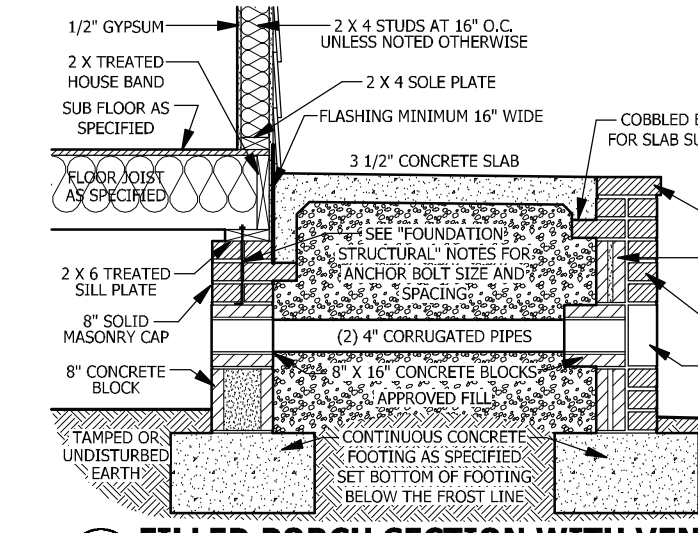
**B DROPPED/ FLUSH PIER**  
SCALE 3/4" = 1'-0"



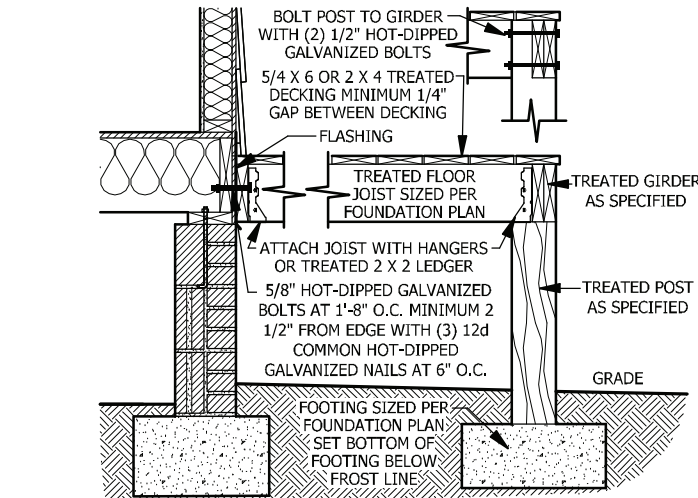
**E <48\"/>**



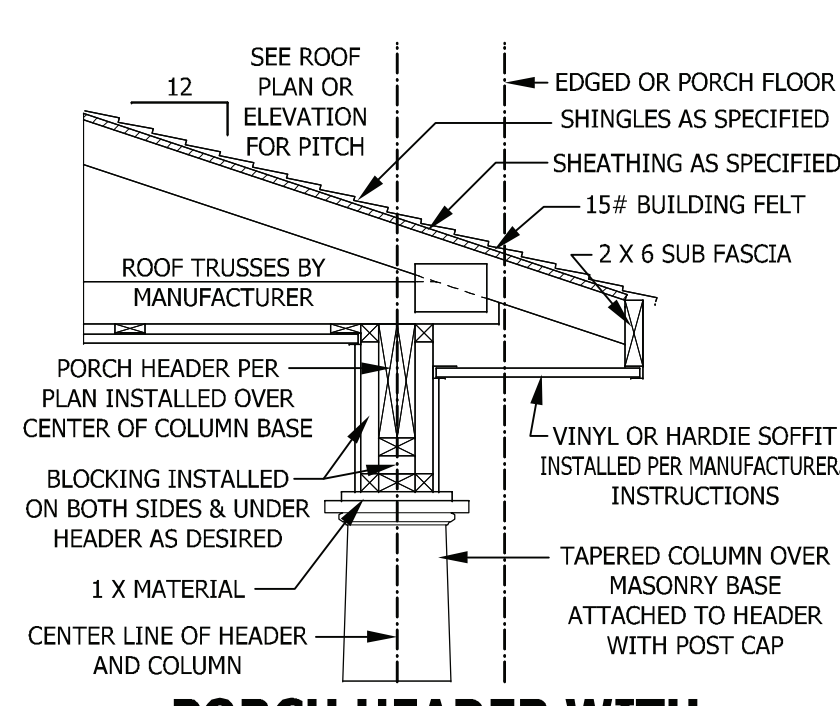
**C CRAWL SPACE AT GARAGE**  
SCALE 3/4" = 1'-0"



**F FILLED PORCH SECTION WITH VENT**  
SCALE 1/2" = 1'-0"



**G DECK ATTACHMENT**  
SCALE 1/2" = 1'-0"



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

**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 by the alarm manufacturer.  
**R315.2 Where required 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 315.1.  
**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.  
**R311.7.4 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.  
**R311.7.4.3 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 risers.  
**R311.7.7 Handrails.** Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers.  
**R311.7.7.1 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).  
**Exceptions:**  
 1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.  
 2. 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 handrail height at the fittings or bendings shall be permitted to exceed the maximum height.  
**R311.7.7.2 Continuity.** Handrails 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. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1 1/2 inch (38 mm) between the wall and the handrails.  
**Exceptions:**  
 1. Handrails shall be permitted to be interrupted by a newel post.  
 2. The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.  
 3. Two or more separate rails shall be considered continuous if the 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 wall-mounted rail must return into the wall.

**DECK STAIR NOTES**

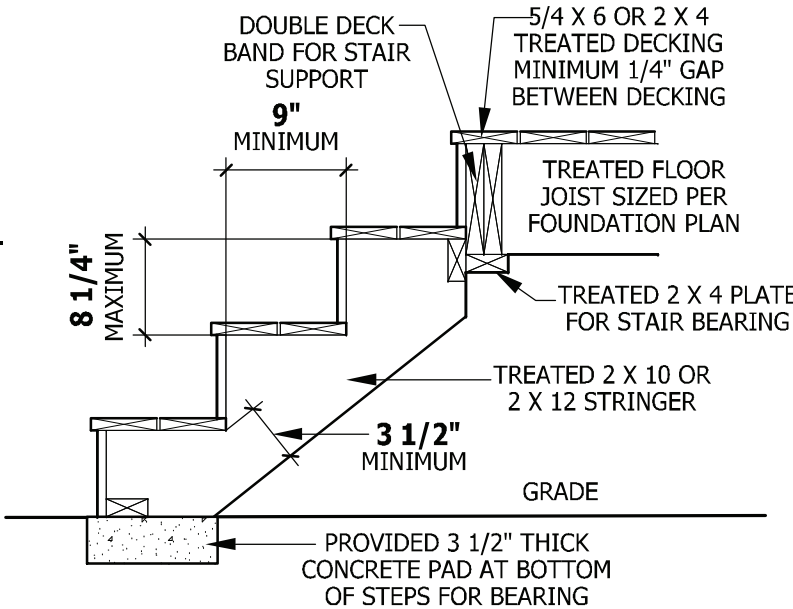
**SECTION AM110**  
**AM110.1 Stairs shall be constructed per Figure AM110.** Stringer spans shall be no greater than 7 foot span between supports. Spacing between stringers shall be based upon decking material used per AM107.1. Each Stringer shall have minimum 3 1/2 inches between step cut and back of stringer. If used, suspended headers 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 galvanized bolt with nut and washer at both ends of the brace per Figure AM109.1  
**AM109.1.3.** For freestanding decks without knee braces or diagonal bracing, lateral stability may be provided by embedding the post in accordance with Figure AM109.2 and the following:  

POST SIZE	MAX. 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"

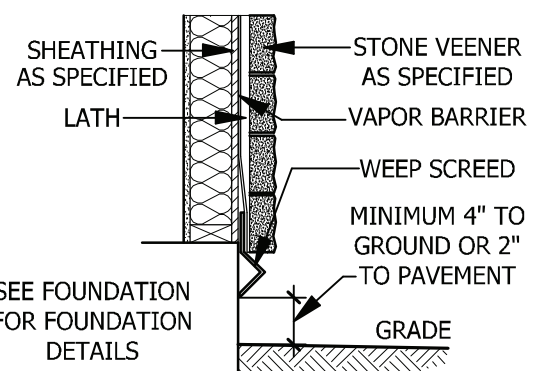
**AM109.1.4.** 2 x 6 diagonal vertical cross bracing may be provided in two perpendicular directions for freestanding decks or parallel to the structure at the exterior column line for attached decks. The 2 x 6's shall be attached to the posts with one 5/8 inch hot dipped galvanized bolt with nut and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



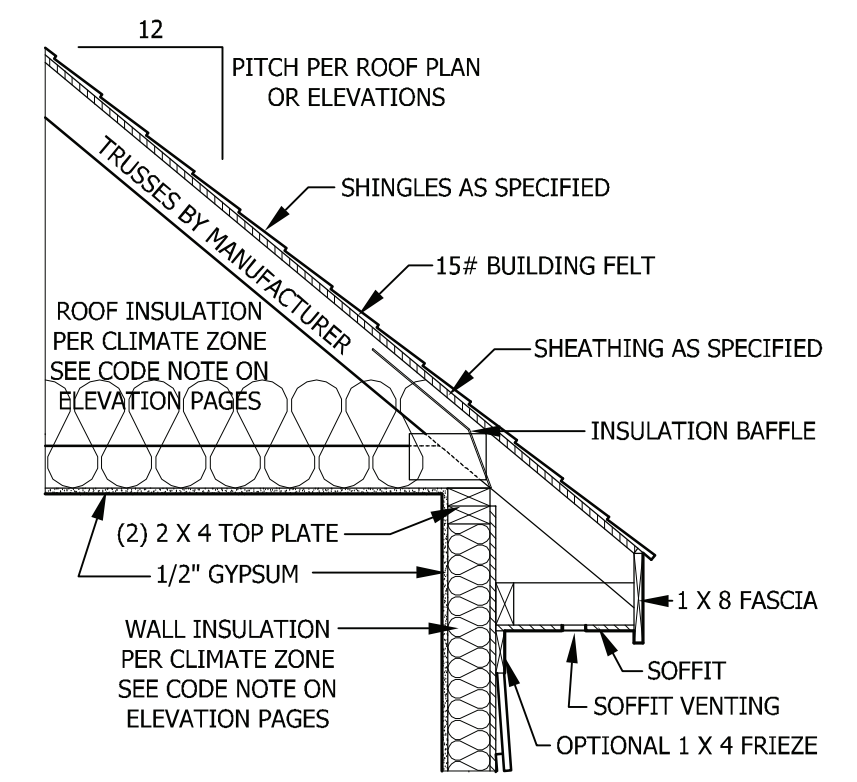
**FIGURE AM110**  
**TYPICAL DECK STAIR DETAIL**  
SCALE 3/4" = 1'-0"

**WEEP SCREEDS**

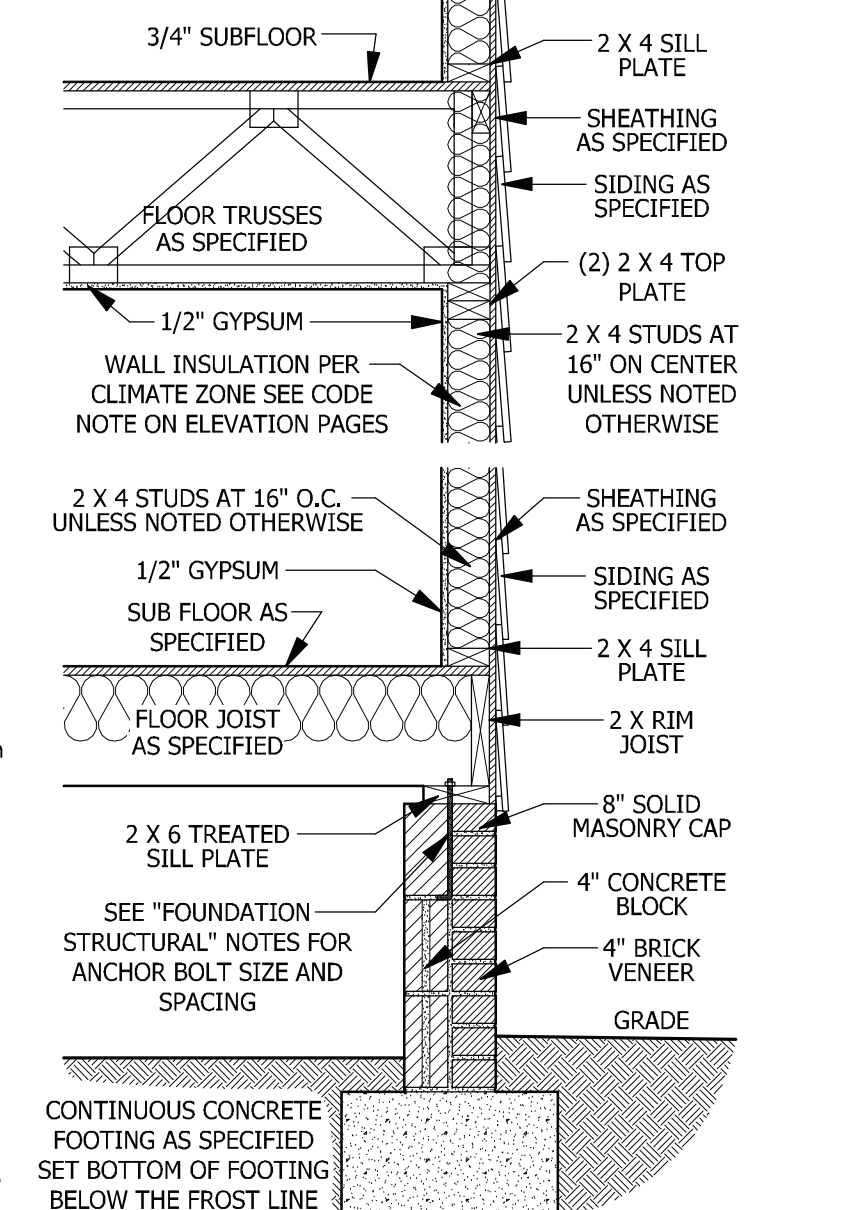
All weep screeds and stone veneer to be installed per manufacturers instructions and per the 2012 North Carolina Residential Building code.  
**R703.6.2.1 - A** - A minimum 0.019-inch (0.5 mm) (No. 26 galvanized sheet gage), corrosion-resistant weep screed or plastic weep screed, with a minimum vertical attachment flange of 3 1/2 inches (89 mm) shall be provided at or below the 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.



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



**TYPICAL WALL DETAIL**  
SCALE 3/4" = 1'-0"



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

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS. HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES. CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION. THESE DRAWING ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.

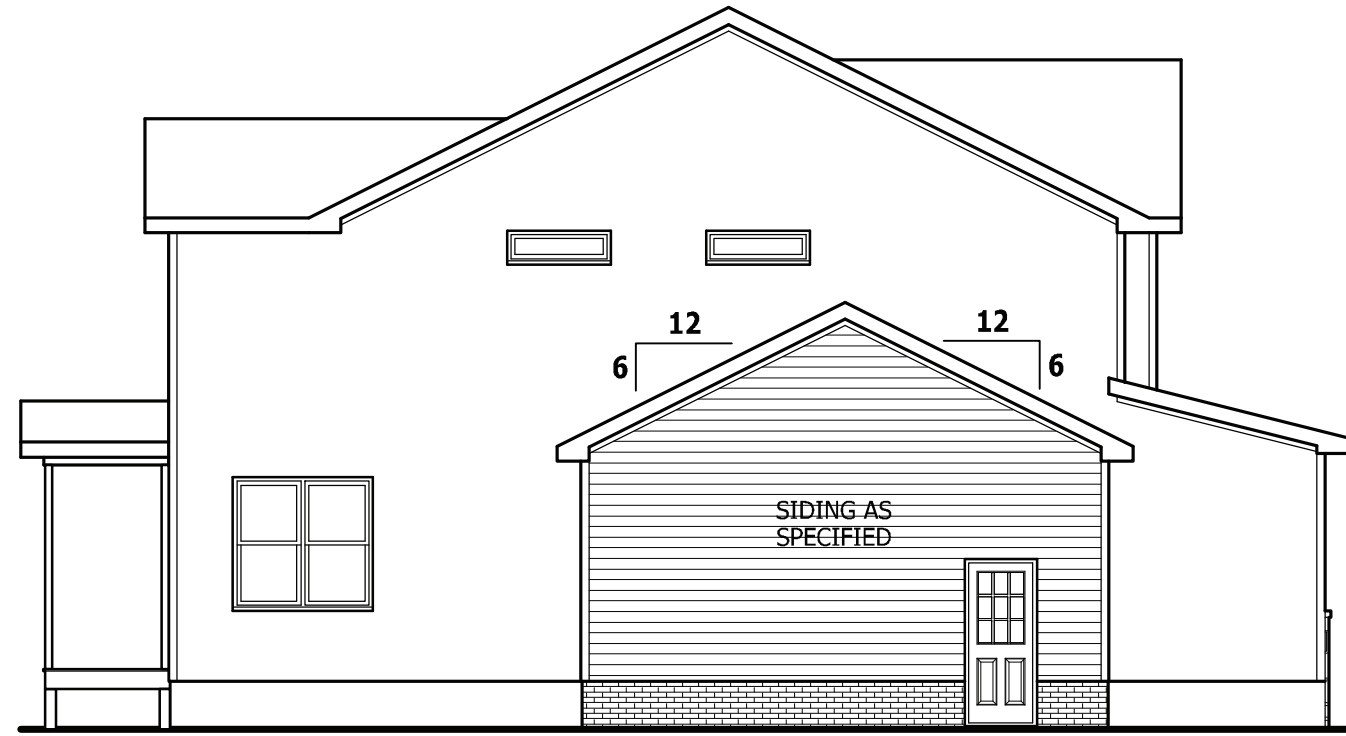
**TYPICAL DETAILS**  
**THE GASTON II**

**HAYNES WEAVER HOMES**  
910.630.2100 • 919.606.4696  
3500 Weaverville Drive, Fayetteville, NC 28405

**HAYNES HOME PLANS, INC.**  
P.O. Box 702, Wake Forest, NC 27888 919-485-6180 Fax: 919-485-4911

SQUARE FOOTAGE HEATED	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAUNROOM	238 SQ. FT.
TOTAL	1820 SQ. FT.
UNHEATED	
FRONT PORCH	101 SQ. FT.
GARAGE	456 SQ. FT.
REAR PORCH	152 SQ. FT.
TOTAL	719 SQ. FT.

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.  
 HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.  
 CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION.  
 THESE DRAWING ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.



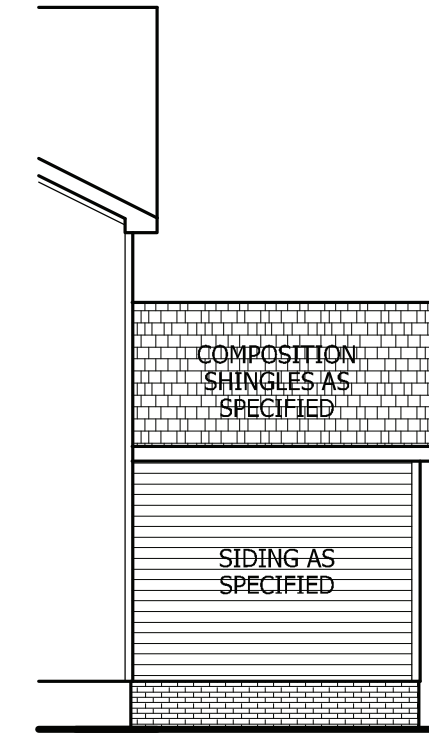
**SIDE ELEVATION**

SCALE 1/8" = 1'-0"



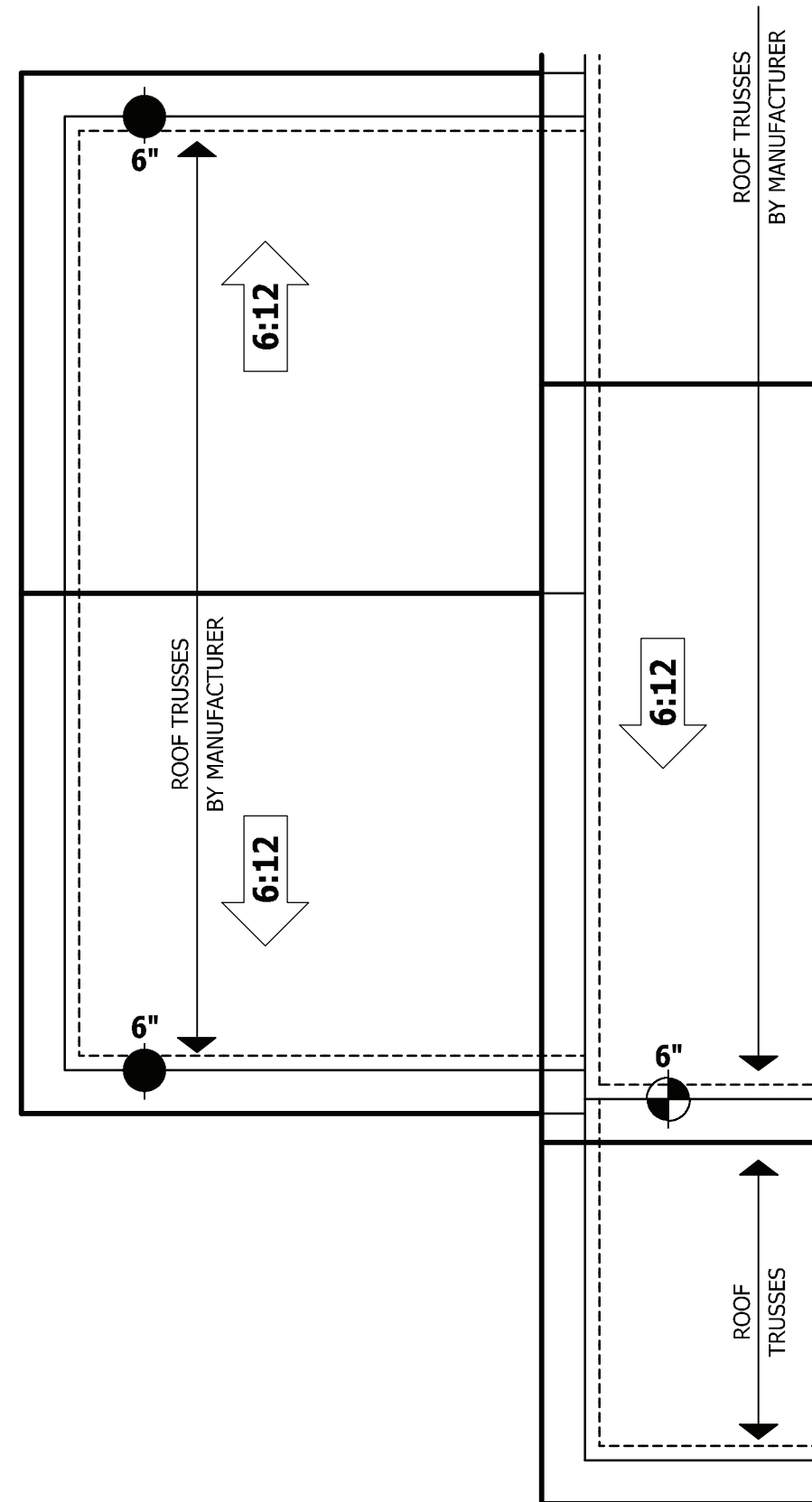
**FRONT ELEVATION**

SCALE 1/8" = 1'-0"



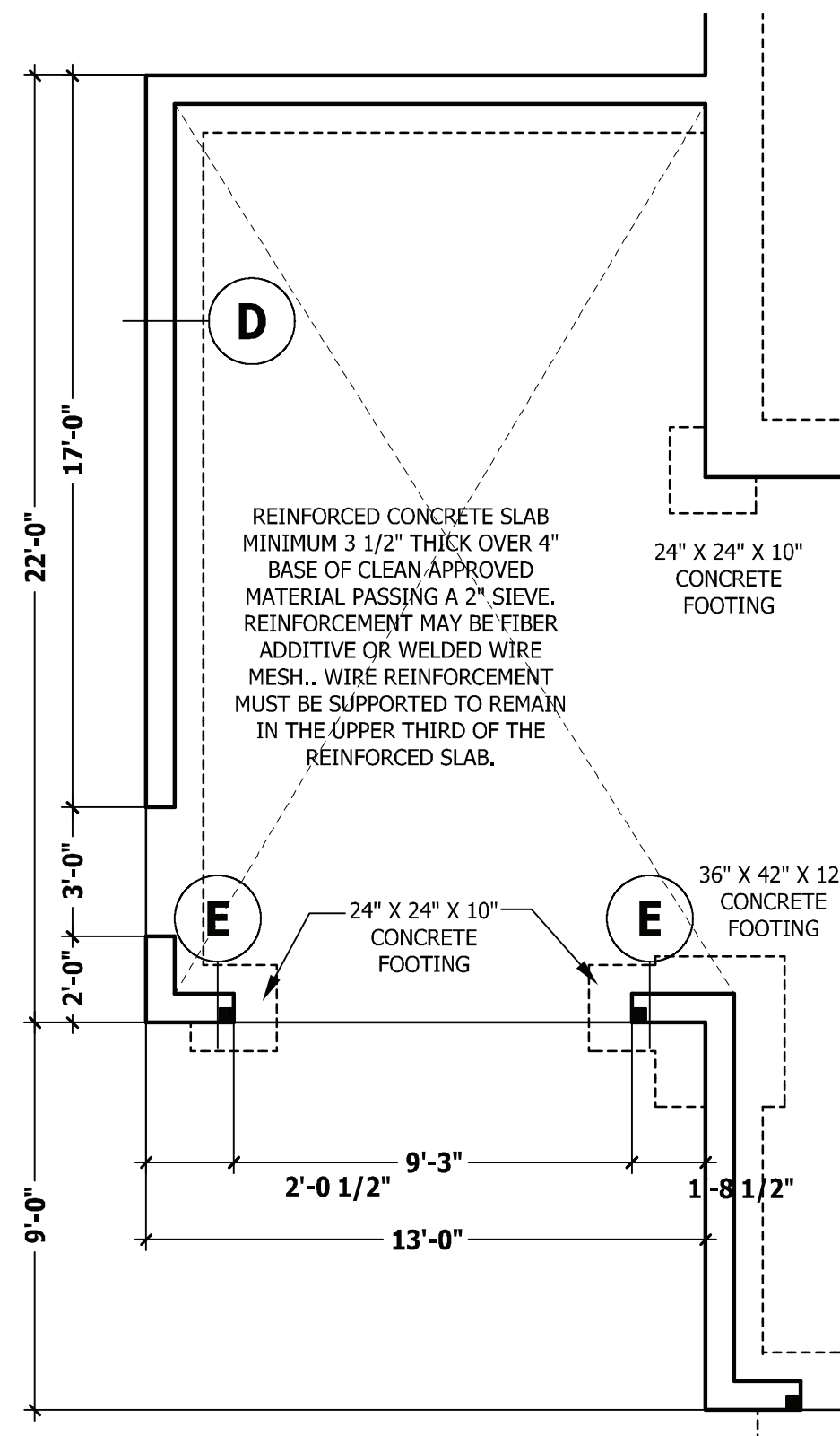
**REAR ELEVATION**

SCALE 1/8" = 1'-0"



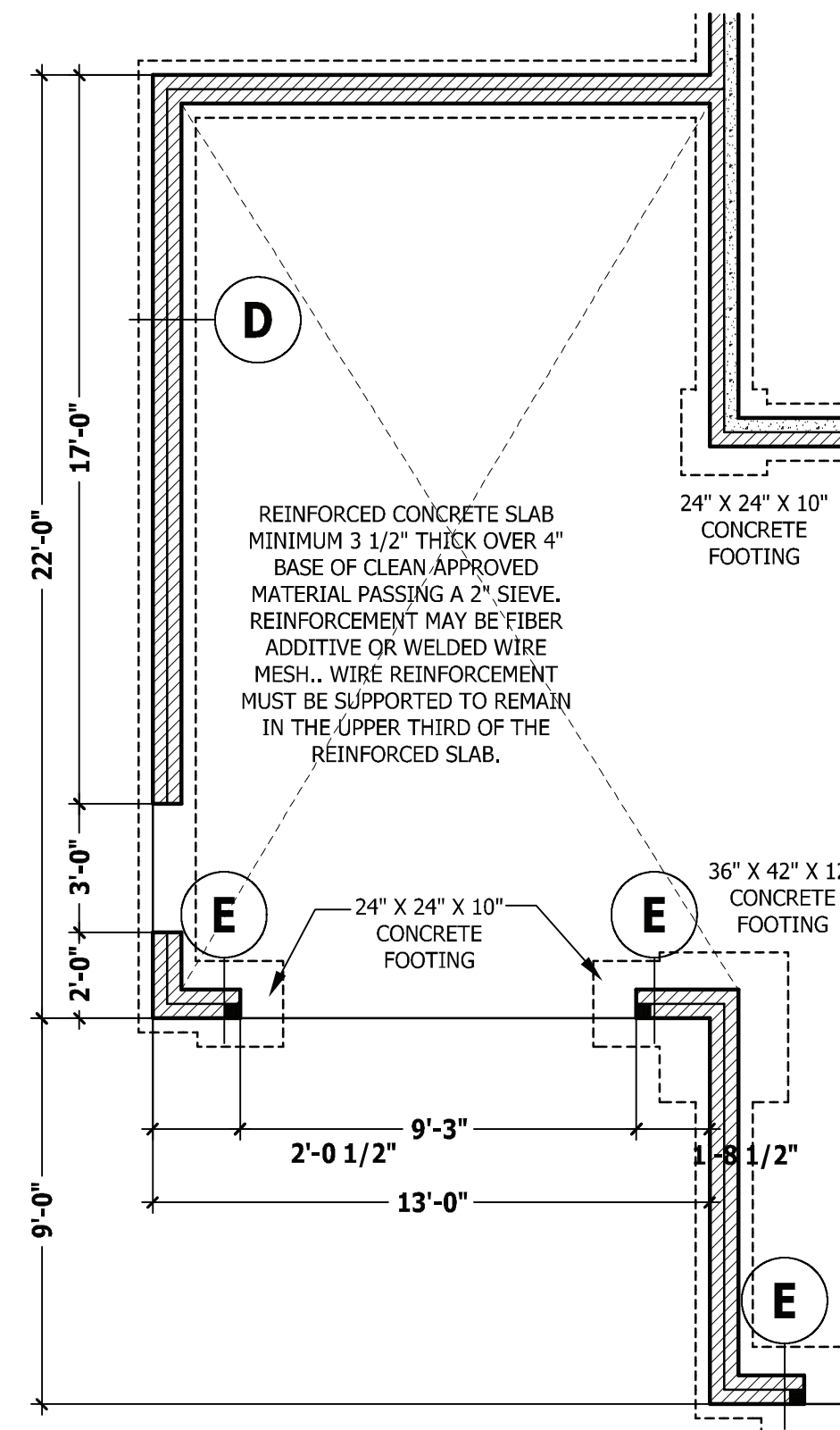
**ROOF PLAN**

SCALE 1/4" = 1'-0"



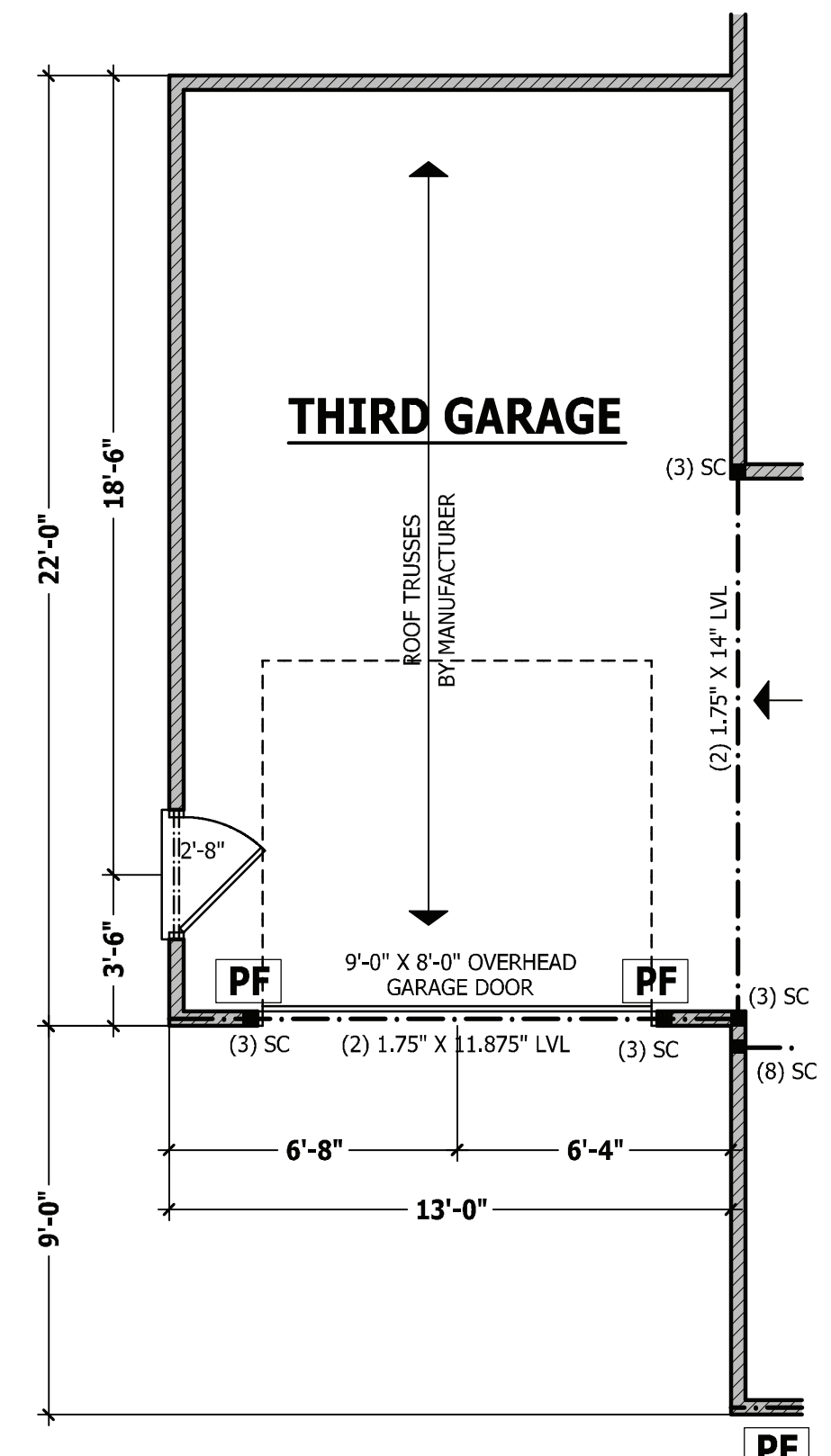
**MONOLITHIC SLAB PLAN**

SCALE 1/4" = 1'-0"



**CRAWL SPACE / STEM WALL**

SCALE 1/4" = 1'-0"



**FIRST FLOOR PLAN**

SCALE 1/4" = 1'-0"

**SIDE LOAD THIRD CAR**

**THE GASTON II**

**HAYNES WEAVER HOMES**  
 HOME PLANS, INC.  
 P.O. BOX 702, WAIVE FOREST, NC 27588 919-485-6180 FAX 1-866-491-0396  
 910.630.2100 • 919.606.4696  
 350 Waggoner Drive, Fayetteville, NC 28403

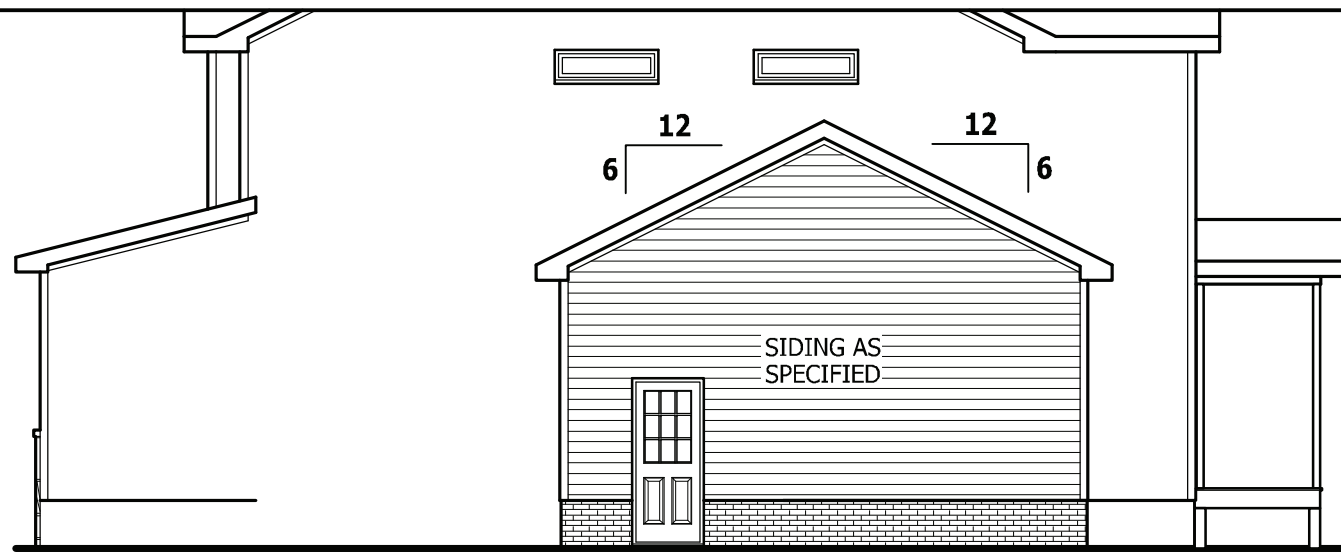
SQUARE FOOTAGE	
<b>HEATED</b>	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAN ROOM	288 SQ. FT.
TOTAL	1828 SQ. FT.
<b>UNHEATED</b>	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	132 SQ. FT.
TOTAL	719 SQ. FT.

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2/4/2020

181035B

**ADDENDUM**



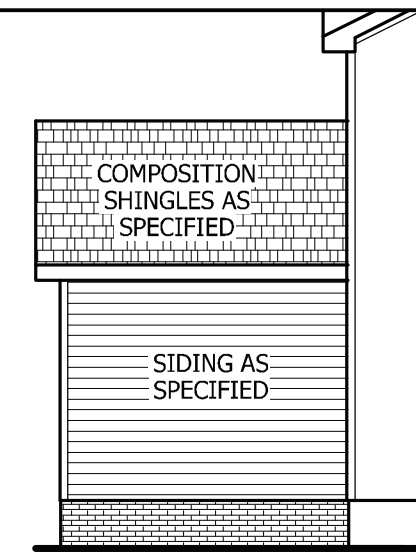
**SIDE ELEVATION**

SCALE 1/8" = 1'-0"



**FRONT ELEVATION**

SCALE 1/8" = 1'-0"



**REAR ELEVATION**

SCALE 1/8" = 1'-0"

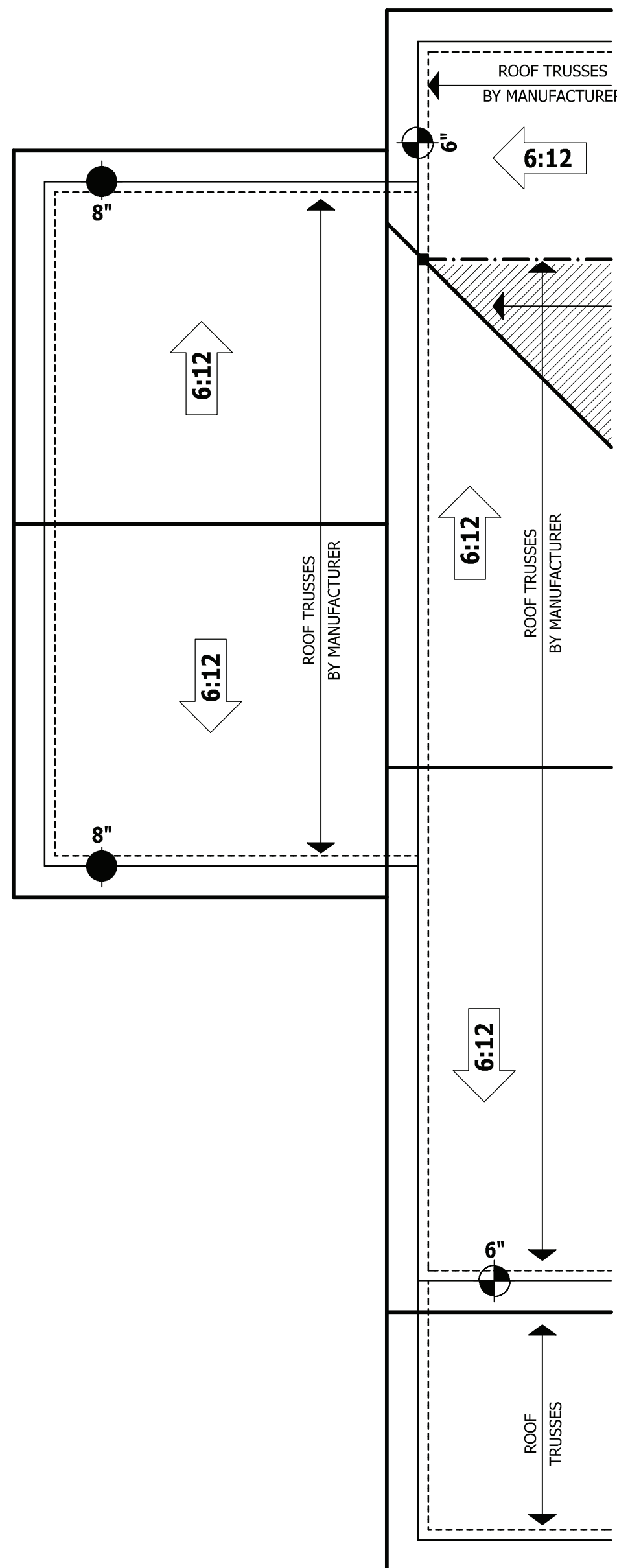
PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS. HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES. CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION. THESE DRAWING ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.

**FRONT LOAD THIRD CAR  
THE GASTON II**

**HAYNES WEAVER HOMES**  
HOME PLANS, INC.  
P.O. BOX 702, WAKE FOREST, NC 27588 919-485-6180 FAX 1-866-491-4396  
350 Weaver Drive, Fayetteville, NC 28403  
910.630.2100 • 919.606.4696

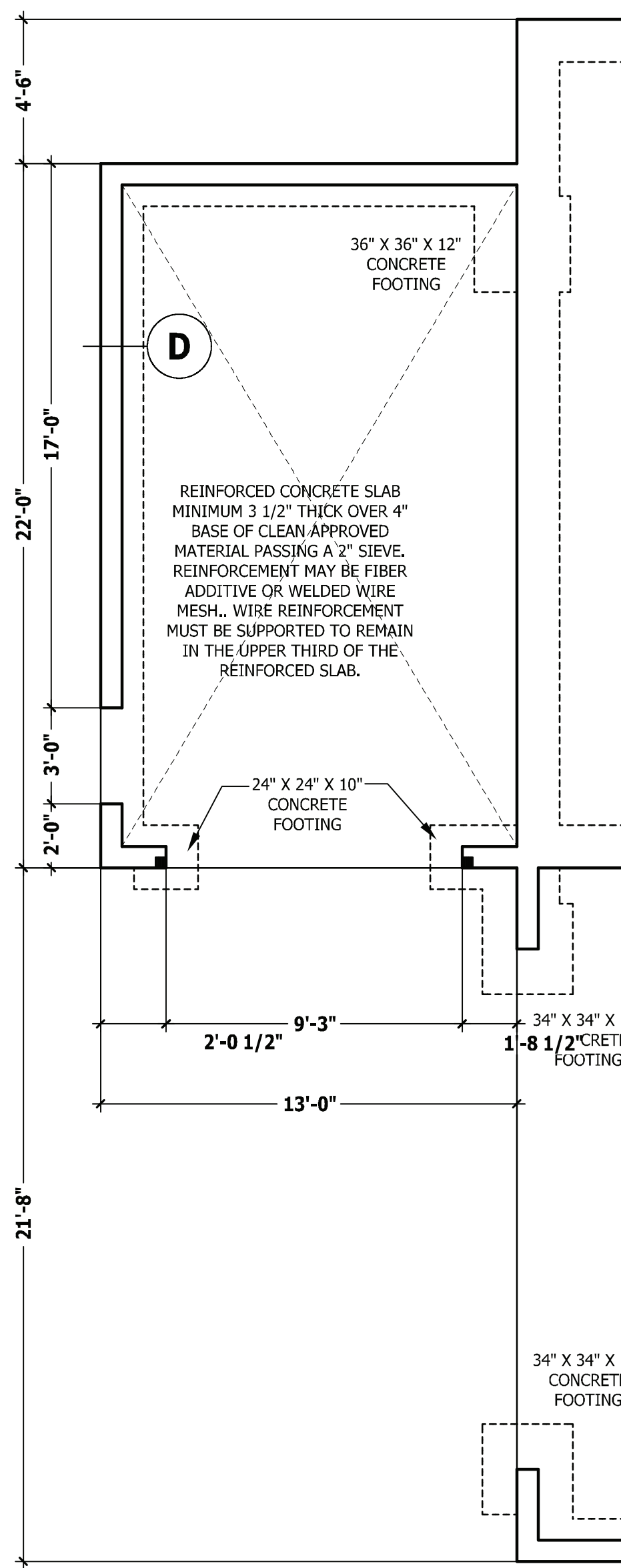
SQUARE FOOTAGE	
<b>HEATED</b>	
FIRST FLOOR	776 SQ. FT.
SECOND FLOOR	764 SQ. FT.
PLAYROOM	288 SQ. FT.
TOTAL	1828 SQ. FT.
<b>UNHEATED</b>	
FRONT PORCH	101 SQ. FT.
GARAGE	466 SQ. FT.
REAR PORCH	152 SQ. FT.
TOTAL	719 SQ. FT.

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2/4/2020  
181035B  
ADDENDUM



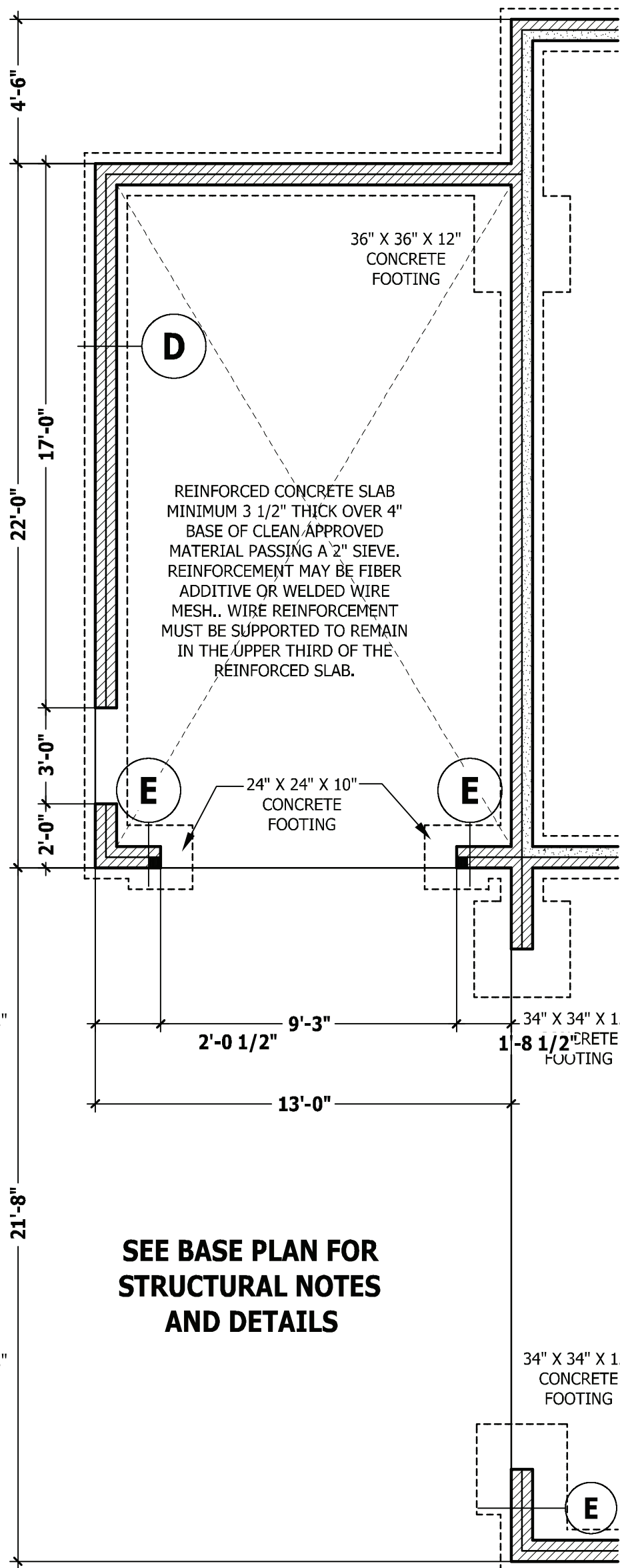
**ROOF PLAN**

SCALE 1/4" = 1'-0"



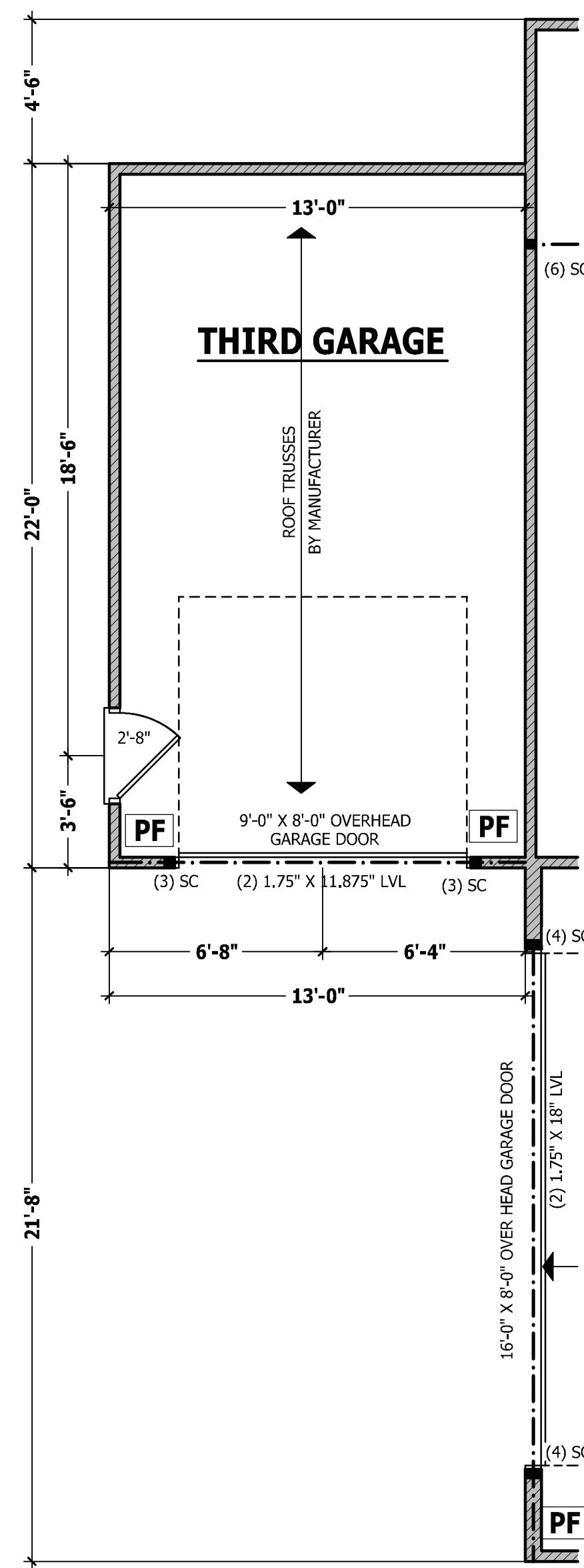
**MONOLITHIC SLAB PLAN**

SCALE 1/4" = 1'-0"



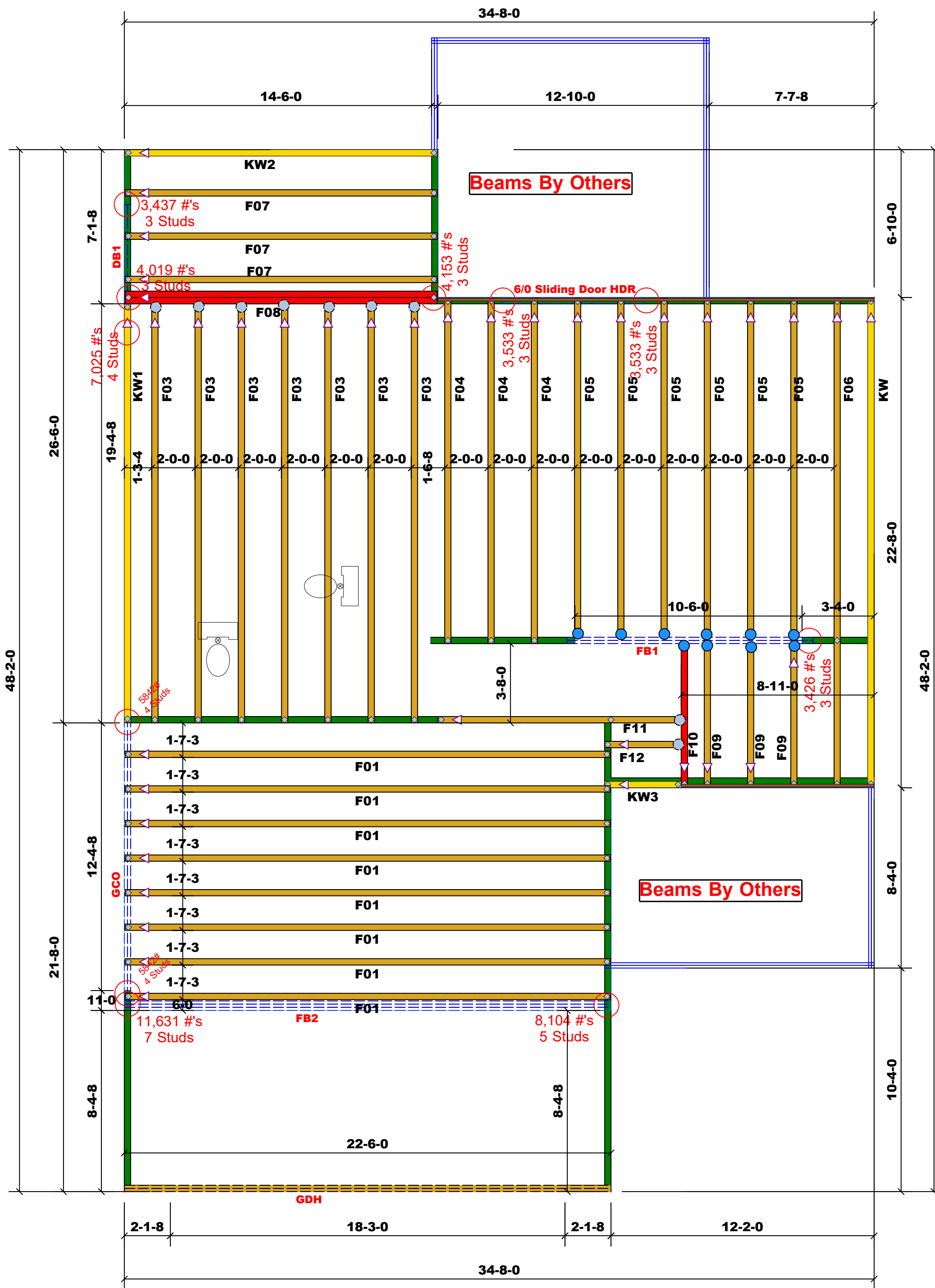
**CRAWL SPACE / STEM WALL**

SCALE 1/4" = 1'-0"



**FIRST FLOOR PLAN**

SCALE 1/4" = 1'-0"



●	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

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

LOAD CHART FOR JACK STUDS		
(BASED ON TABLES R502.5(1) & (2))		
END REACTION (UP TO) NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADERS/JOIST	END REACTION (UP TO) NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADERS/JOIST	END REACTION (UP TO) NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADERS/JOIST
1700	2550	3400
3400	5100	6800
5100	7650	10200
6800	10200	13600
8500	12750	17000
10200	15300	
11900		
13600		
15300		

<b>BUILDER</b>	Weaver Development	<b>COUNTY</b>	Harnett
<b>JOB NAME</b>	Lot 24 Mitchell Manor	<b>ADDRESS</b>	Lot 24 Mitchell Manor
<b>PLAN</b>	Gaston II (181035B) w/ 3rd Car	<b>MODEL</b>	Floor
<b>SEAL DATE</b>	N/A	<b>DATE REV.</b>	05/29/20
<b>QUOTE #</b>	Quote #	<b>DRAWN BY</b>	Marshall Naylor
<b>JOB #</b>	J0520-2107	<b>SALESMAN</b>	Lenny Norris

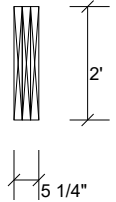
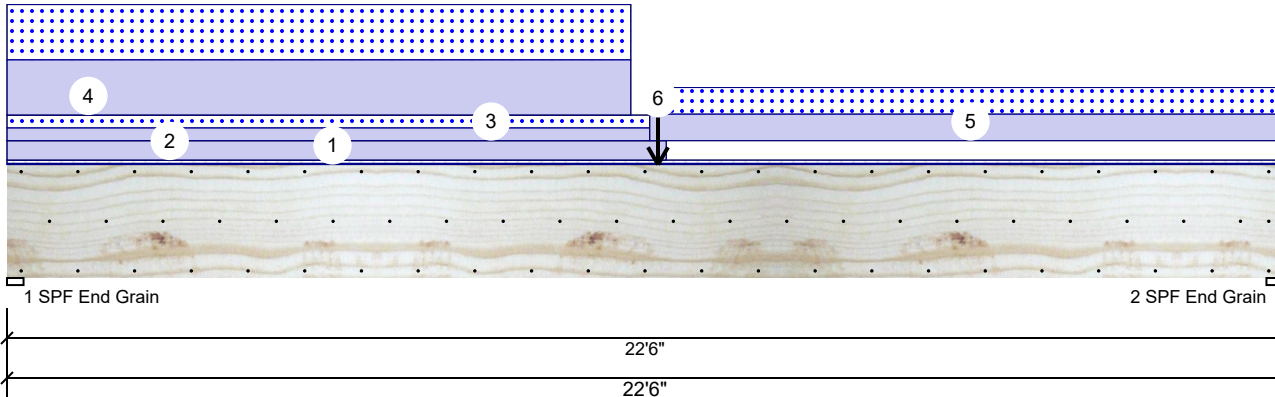
<b>THIS IS A TRUSS PLACEMENT DIAGRAM ONLY.</b>	
These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer 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 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 (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 specified in the attached Tables. A registered design professional shall be retained to design the support system for all reactions that exceed 15000#.	
Signature	Marshall Naylor

<b>comTECH</b>
<b>ROOF &amp; FLOOR TRUSSES &amp; BEAMS</b>
Reilly Road Industrial Park Fayetteville, N.C. 28309 Phone: (910) 864-8787 Fax: (910) 864-4444



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

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

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

**Bearings**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	73%	6536 / 5095	11631	L	D+S
2 - SPF End Grain	3.500"	51%	4429 / 3676	8104	L	D+S

**Analysis Results**

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

**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.

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		Top	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		Top	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		Top	2293 lb	0 lb	2293 lb	0 lb	0 lb	B2
	Self Weight				28 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 1/8/2023

**Manufacturer Info**

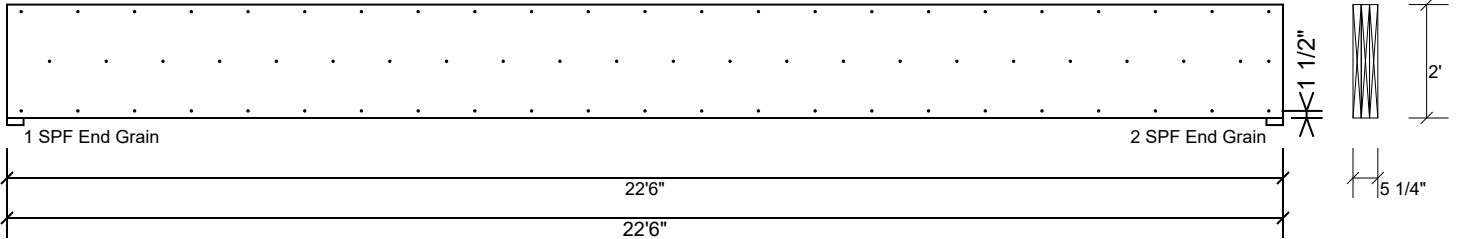
Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
 Norwalk, CT 06851  
 (800) 622-5850  
 www.metsawood.com/us  
 ICC-ES: ESR-3633

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



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

Level: Level



**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 6"

Capacity	77.4 %
Load	218.7 PLF
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**

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 1/8/2023

**Manufacturer Info**

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

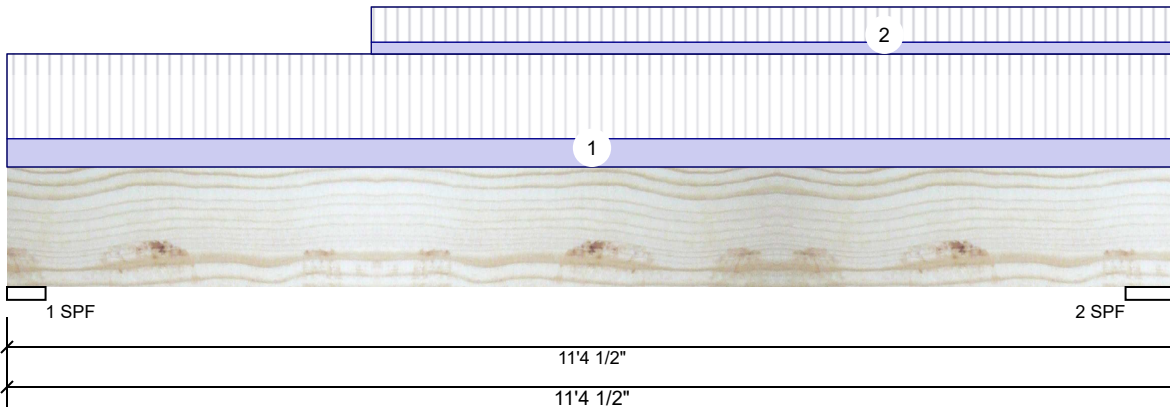
Comtech, Inc.  
 1001 S. Reilly Road, Suite #639  
 Fayetteville, NC  
 USA  
 28314  
 910-864-TRUS





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

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind	Const
1	2129	771	0	0	0
2	2523	904	0	0	0

**Bearings**

Bearing	Length	Cap. React 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 L	D+L

**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**

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

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

**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

This design is valid until 1/8/2023

**Manufacturer Info**

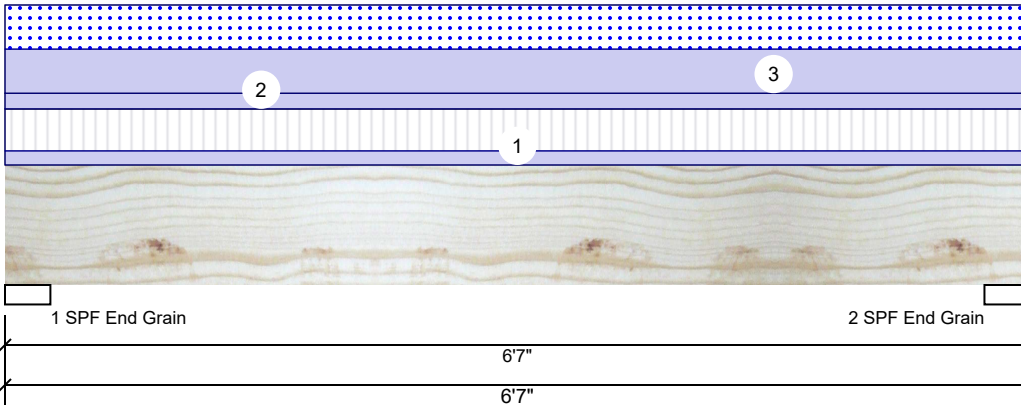
Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
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[www.metsawood.com/us](http://www.metsawood.com/us)  
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 910-864-TRUS



**6/0 SLIDER Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

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

**Bearings**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	33%	1887 / 1629	3516	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	33%	1887 / 1629	3516	L	D+0.75(L+S)

**Analysis Results**

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

**Design Notes**

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at bearings.
- 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	108 PLF	322 PLF	0 PLF	0 PLF	0 PLF	F4
2	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
3	Uniform			Top	338 PLF	0 PLF	338 PLF	0 PLF	0 PLF	A4
	Self Weight				7 PLF					

**Notes**

Calculated Structural 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**

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

**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

This design is valid until 1/8/2023

**Manufacturer Info**

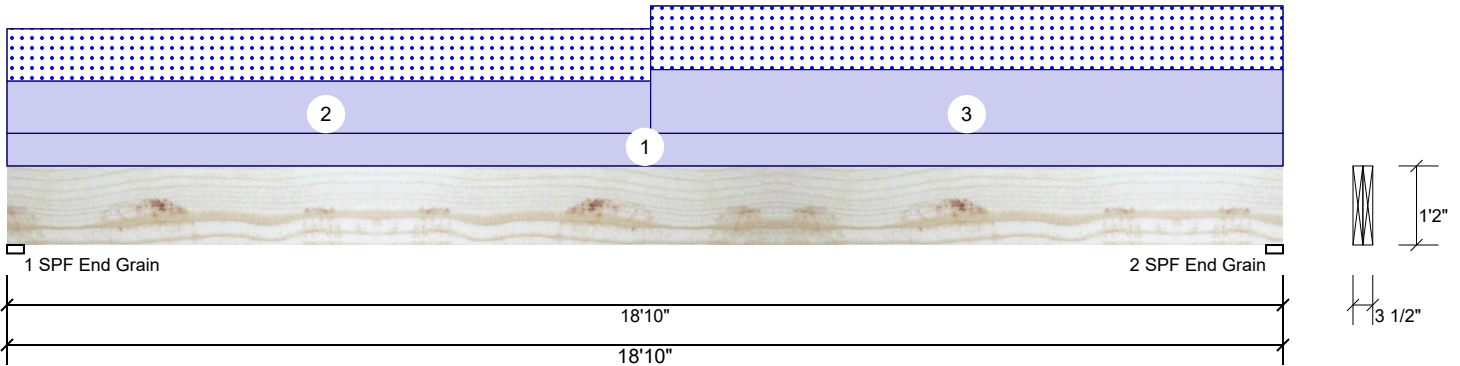
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**Front GDH Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind	Const
1	0	1619	952	0	0
2	0	1720	1052	0	0

**Bearings**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	28%	1619 / 952	2571	L	D+S
2 - SPF End Grain	3.000"	30%	1720 / 1052	2772	L	D+S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	12090 ft-lb	9'8 7/8"	31049 ft-lb	0.389 (39%)	D+S	L
Unbraced	12090 ft-lb	9'8 7/8"	12111 ft-lb	0.998 (100%)	D+S	L
Shear	2360 lb	17'5 3/4"	12021 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	L
TL Defl inch	0.491 (L/451)	9'5 13/16"	0.615 (L/360)	0.800 (80%)	D+S	L

**Design Notes**

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 8'7 7/8" o.c.
- Bottom braced at bearings.
- 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	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	wall
2	Part. Uniform	0-0-0 to 9-6-0		Top	96 PLF	0 PLF	96 PLF	0 PLF	0 PLF	M2
3	Part. Uniform	9-6-0 to 18-10-0		Top	117 PLF	0 PLF	117 PLF	0 PLF	0 PLF	M3
	Self Weight				11 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**

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

**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

This design is valid until 1/8/2023

**Manufacturer Info**

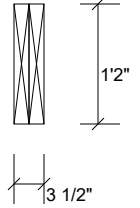
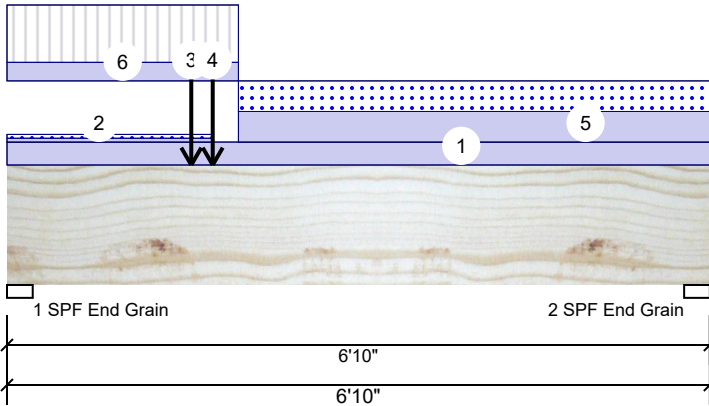
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**DB1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

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

**Bearings**

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

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at bearings.
- 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	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
2	Tie-In	0-0-0 to 2-0-0	1-0-0	Top	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	2' ROOF
3	Point	1-9-8		Top	1040 lb	3115 lb	0 lb	0 lb	0 lb	F08
4	Point	2-0-0		Top	2385 lb	0 lb	2385 lb	0 lb	0 lb	C3
5	Part. Uniform	2-3-0 to 6-10-0		Top	160 PLF	0 PLF	160 PLF	0 PLF	0 PLF	C2
6	Part. Uniform	2-3-0 to 0-0-0		Top	97 PLF	300 PLF	0 PLF	0 PLF	0 PLF	F07
	Self Weight				11 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**

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

**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

**Manufacturer Info**

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 301 Merritt 7 Building, 2nd Floor  
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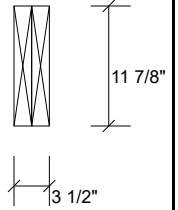
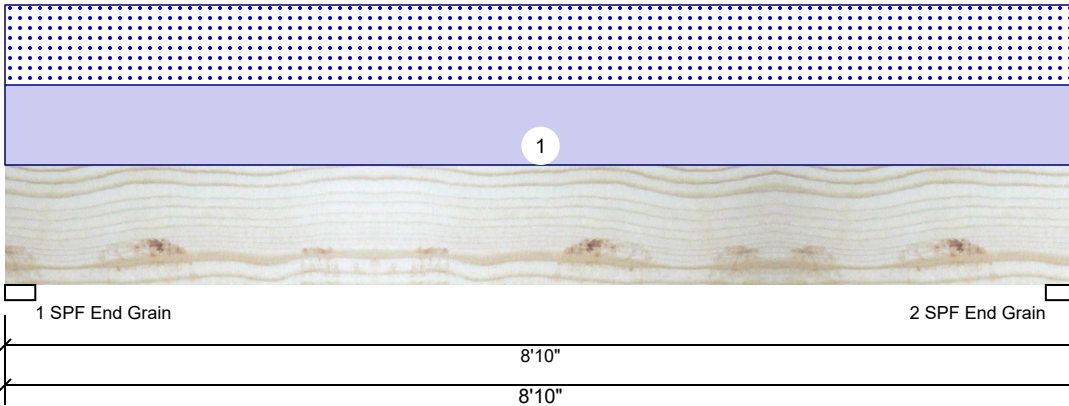
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 USA  
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 910-864-TRUS



This design is valid until 1/8/2023

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

Level: Level



**Member Information**

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 lb (Uplift)**

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

**Bearings**

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

**Analysis Results**

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

**Design Notes**

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at bearings.
- 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	250 PLF	0 PLF	250 PLF	0 PLF	0 PLF	G2
	Self Weight				9 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**

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

**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

This design is valid until 1/8/2023

**Manufacturer Info**

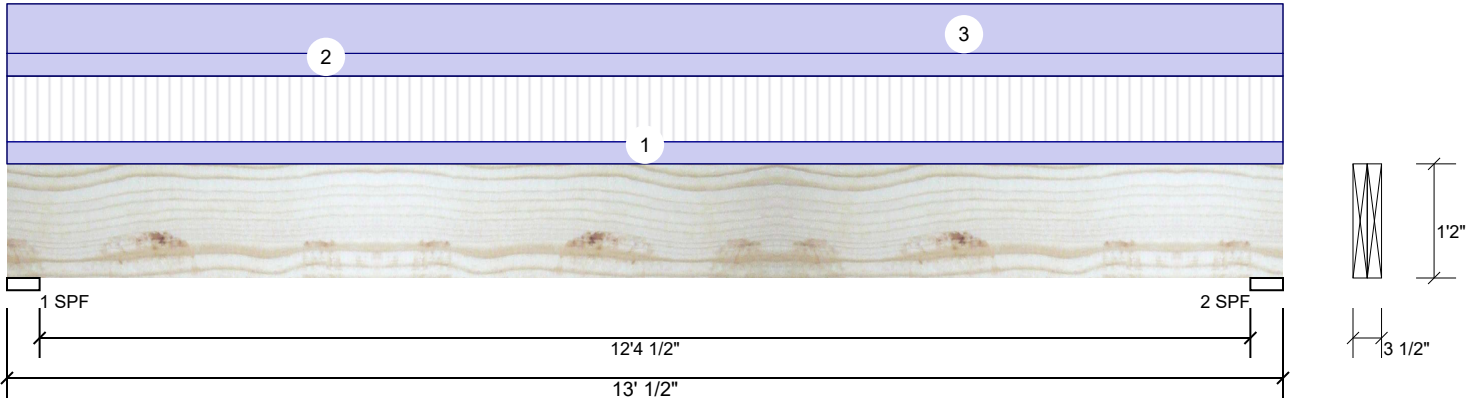
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**GCO Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal
Temperature:	Temp <= 100°F

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

**Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind	Const
1	2374	3468	0	0	0
2	2374	3468	0	0	0

**Bearings**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.000"	98%	3468 / 2374	5842	L	D+L
2 - SPF	4.000"	98%	3468 / 2374	5842	L	D+L

**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**

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 5'6 3/4" o.c.
- Bottom braced at bearings.
- 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	122 PLF	364 PLF	0 PLF	0 PLF	0 PLF	F01
2	Uniform			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
3	Uniform			Top	274 PLF	0 PLF	0 PLF	0 PLF	0 PLF	A1
	Self Weight				11 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**

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

**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

**Manufacturer Info**

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