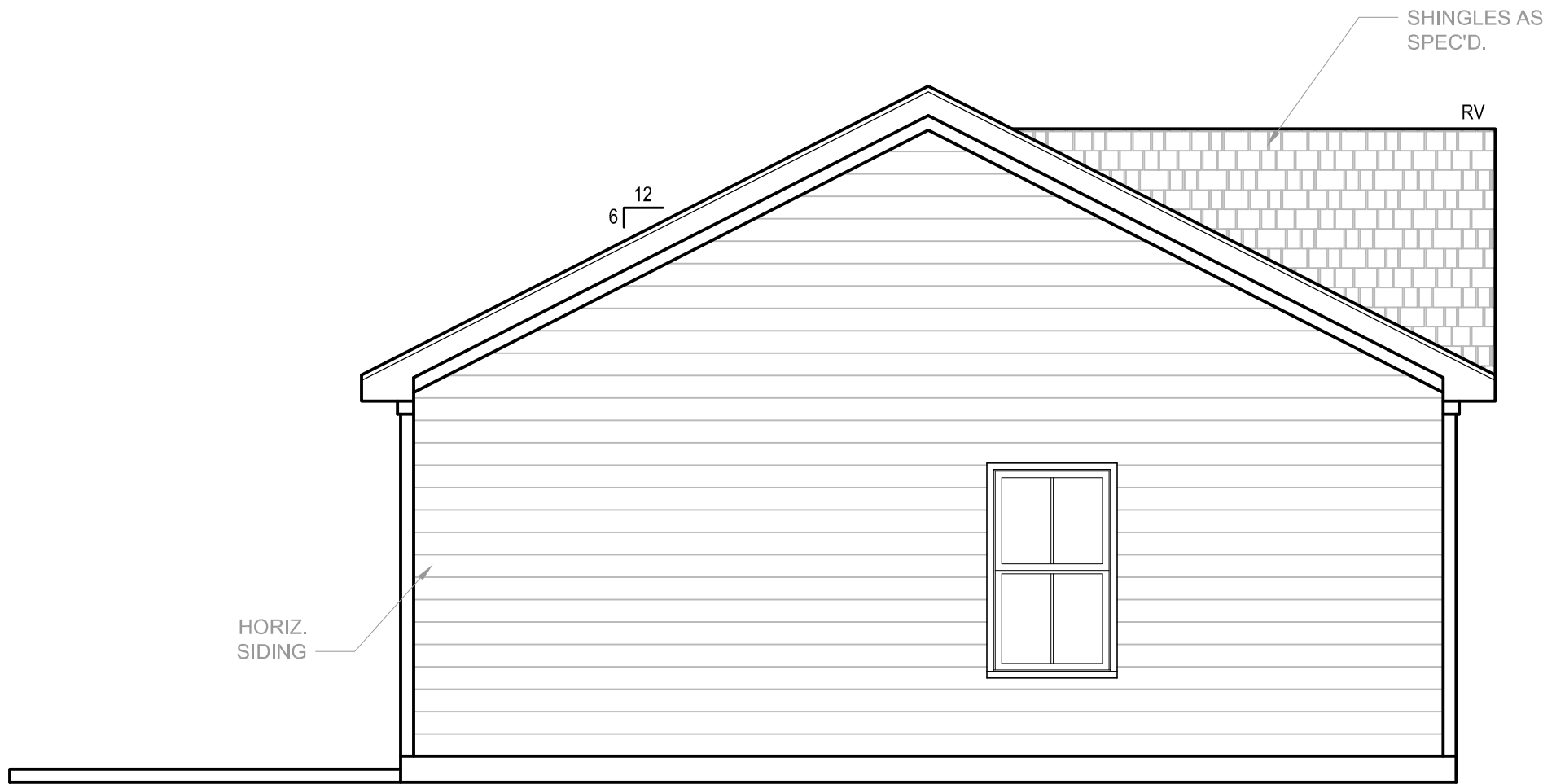




**FRONT ELEVATION**

1/4" = 1'-0"



**LEFT ELEVATION**

1/4" = 1'-0"

PLAN 1215

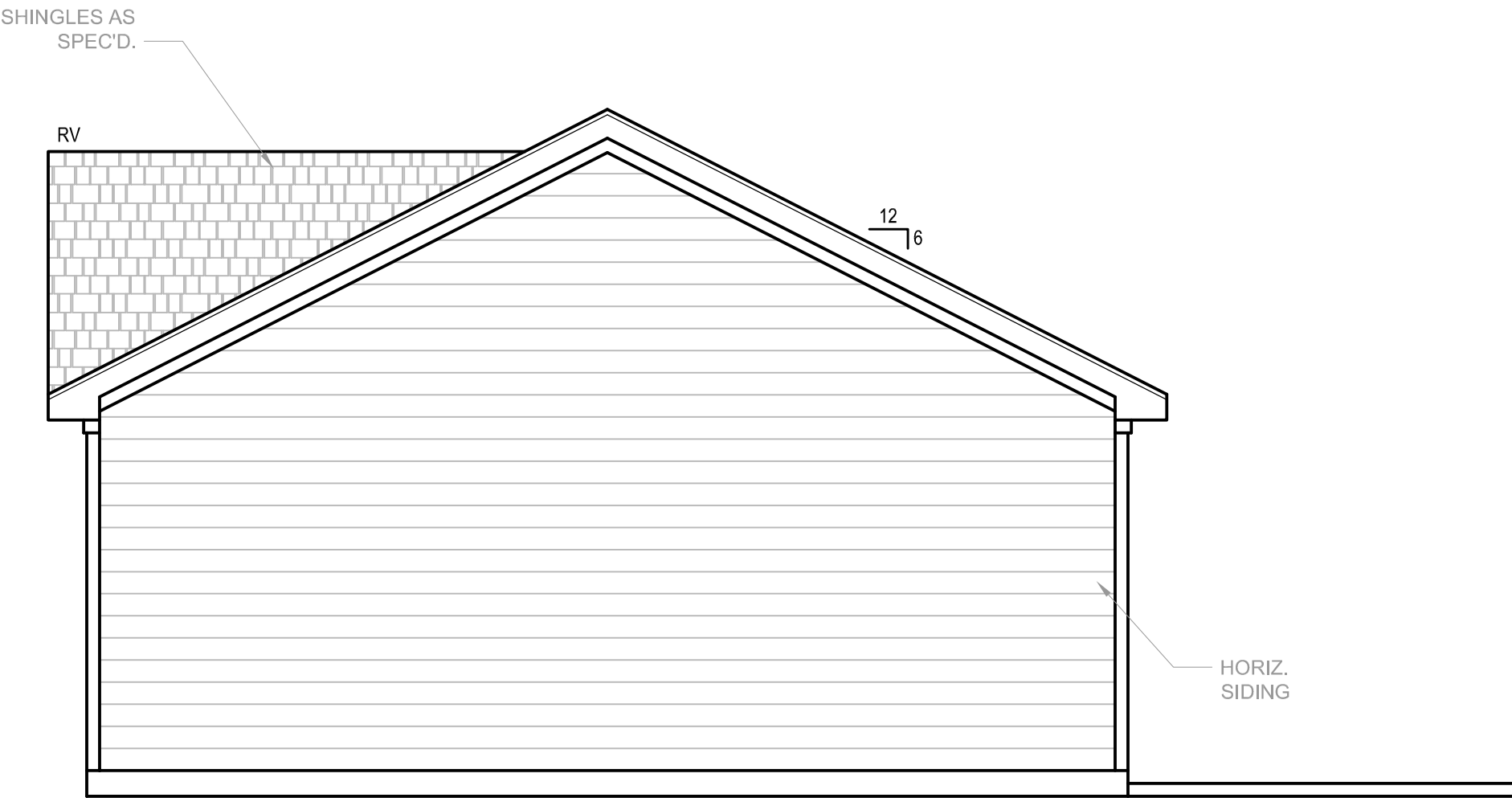
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424 E. MAIN ST.  
CLAYTON, NC 27520  
919 624,4776

FAMILY BUILDING CO.



**REAR ELEVATION**

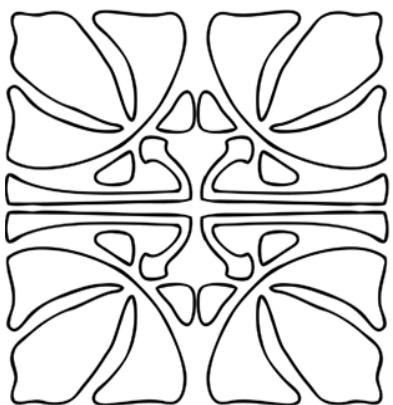
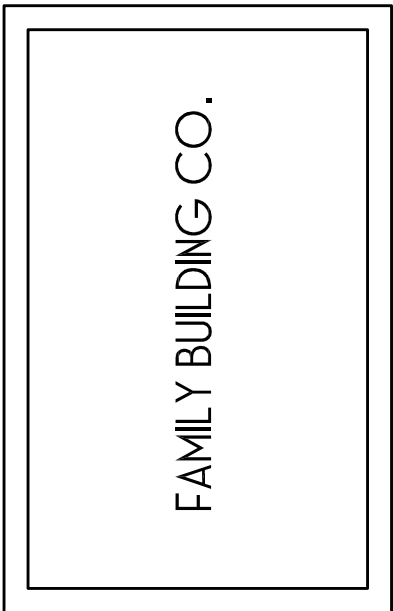
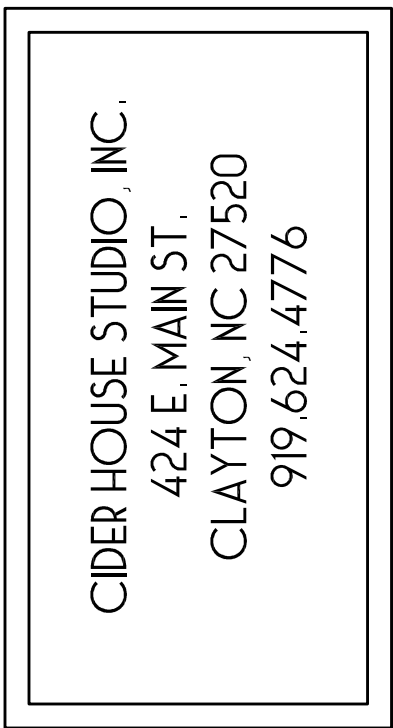
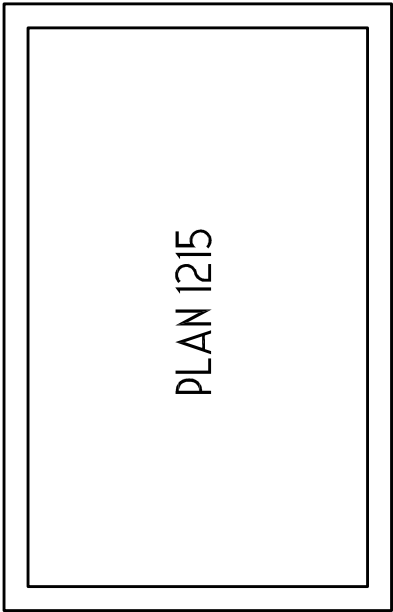
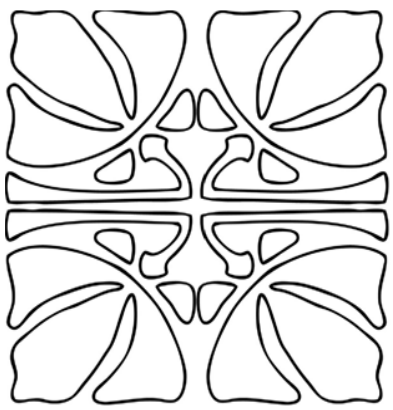
1/4" = 1'-0"



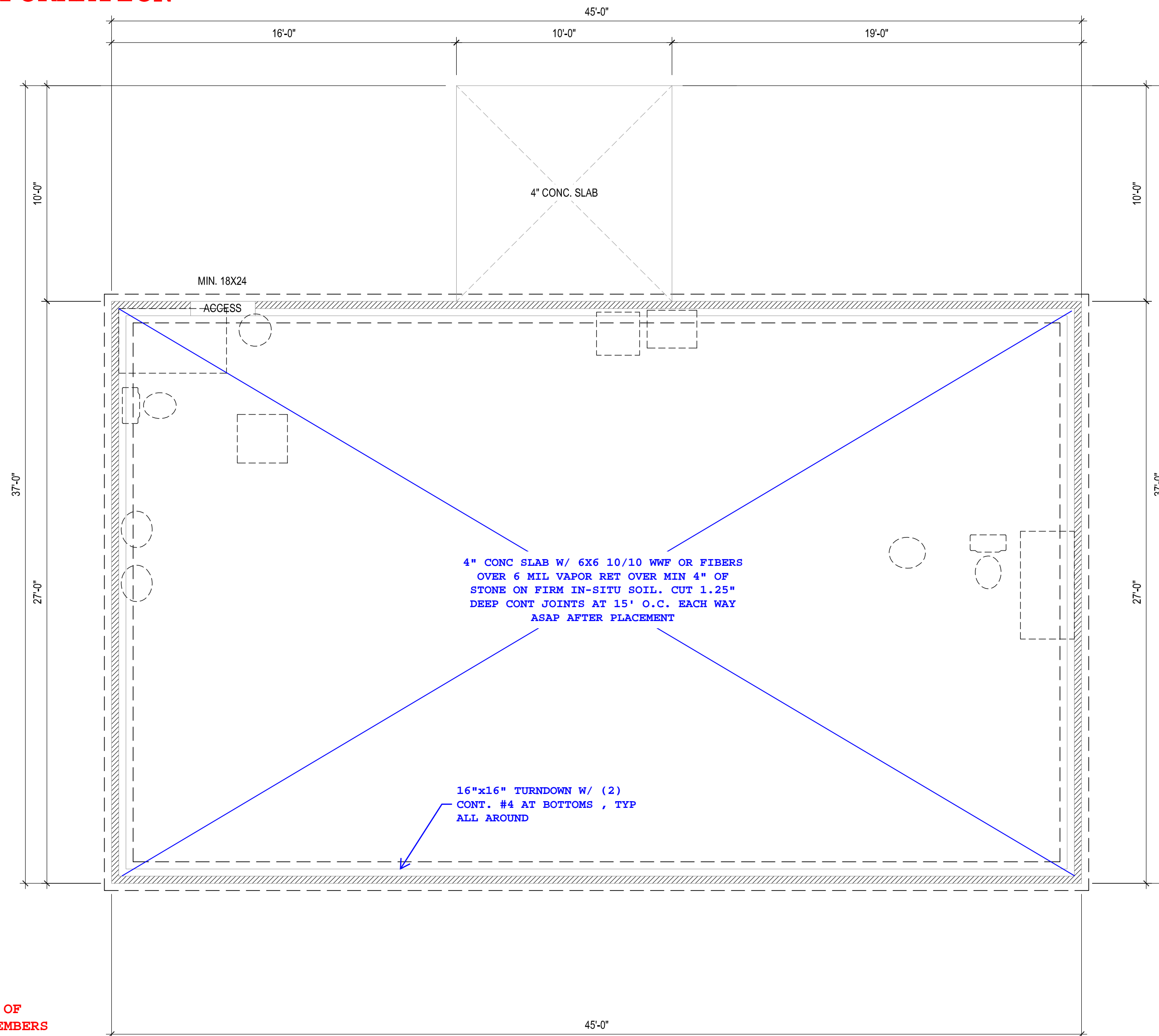
**RIGHT ELEVATION**


1/4" = 1'-0"


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**CODE REFERENCE: NCRC 2018;  
ALL WORK TO CONFORM. SEE  
STRUCTURAL NOTES PAGE FOR  
ADDITIONAL INFORMATION**






DENOTES ORIENTATION OF REPETITIVE FRAMING MEMBERS


DENOTES EXTENT OF REPETITIVE FRAMING MEMBERS


DENOTES LOAD BEARING WALLS


DENOTES OFFSET LOAD BEARING WALLS ABOVE


DENOTES OFFSET NON-LOAD BEARING WALLS ABOVE


DENOTES SPECIAL SHEAR WALL (INT SHEAR WALL, PORTAL FRAME WALL OR GB2 WALLS)

**Footings Schedule:**

A = 16"x16"x8"  
B = 20"x20"x8"  
C = 24"x24"x10"  
D = 30"x30"x12"  
E = 36"x36"x12"  
F = 40"x40"x12" w/ (3) #4 EW  
G = 48"x48"x12" w/ (4) #4 EW

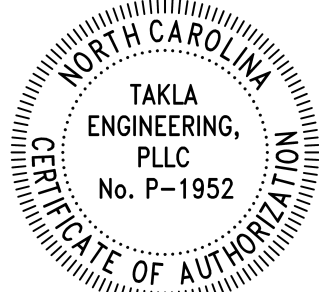

\*All rebar in footings to have 3" cover from sides, bottoms and other parallel rebar.

**FOUNDATION AND SLAB PLAN**  
SCALE 1/4" : 1'

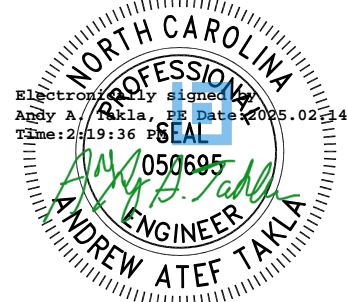
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# Takla Engineering, PLLC

NC Firm License # P-1952  
Consulting  
Design  
Efficiency



**Andy A. Takla, PE**  
AndyTakla@TaklaEngr.com  
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PO Box 71298 Durham, NC 27722



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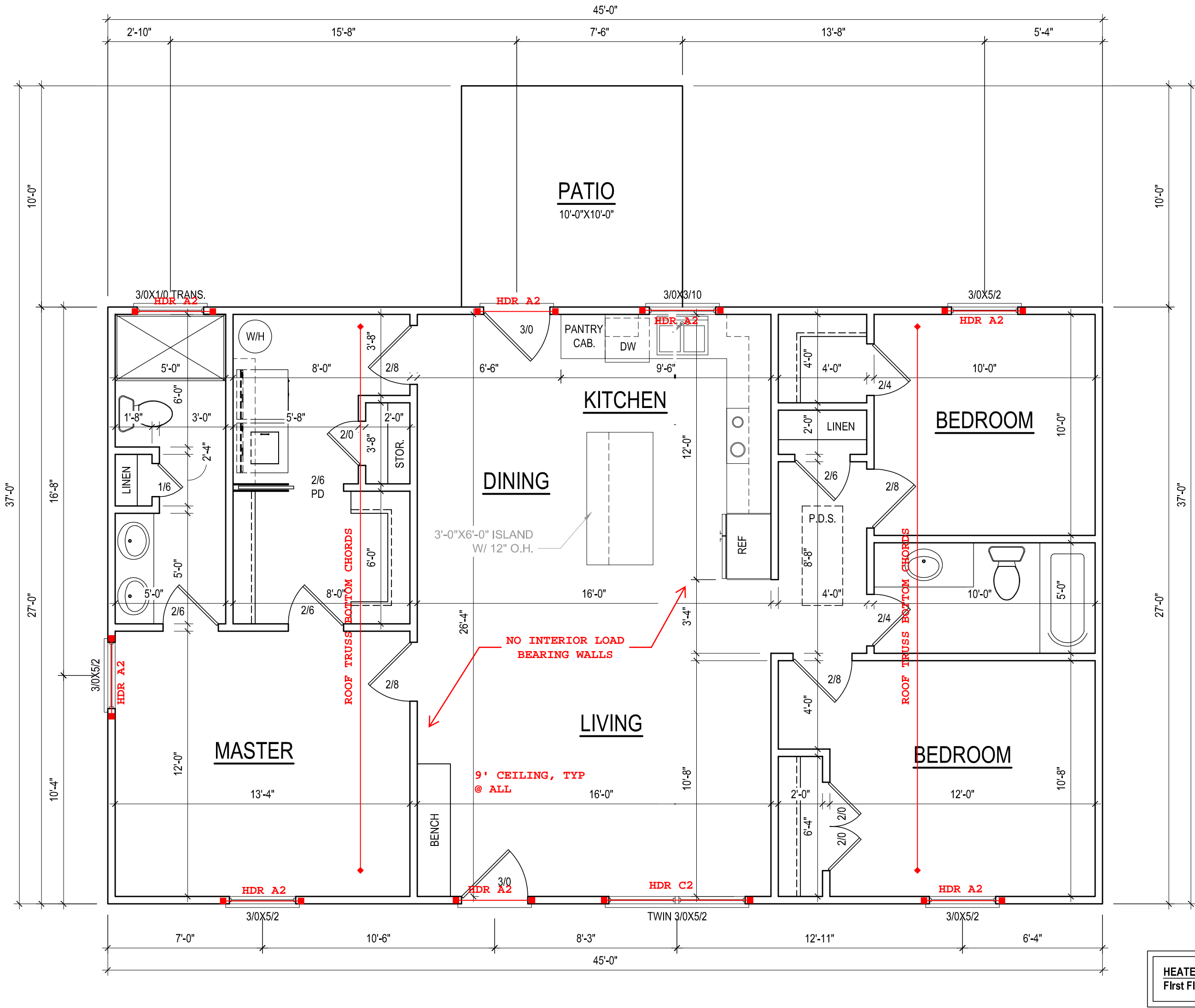
CIDER HOUSE STUDIO, INC.,  
424 E. MAIN ST.,  
CLAYTON, NC 27520  
919.624.4776

**New Construction**  
**1655 Bunnlevel Erwin Rd**  
**Bunnlevel, NC**  
**Family Building Company**

Job Number:  
2-1046-25

# \$1

CODE REFERENCE: NCRC 2018;  
ALL WORK TO CONFORM. SEE  
STRUCTURAL NOTES PAGE FOR  
ADDITIONAL INFORMATION



HEATED SF  
First Floor 1215

- DENOTES ORIENTATION OF REPETITIVE FRAMING MEMBERS
- DENOTES EXTENT OF REPETITIVE FRAMING MEMBERS
- DENOTES LOAD BEARING WALLS
- DENOTES OFFSET LOAD BEARING WALLS ABOVE
- DENOTES OFFSET NON-LOAD BEARING WALLS ABOVE
- DENOTES SPECIAL SHEAR WALL (INT SHEAR WALL, PORTAL FRAME WALL OR GB2 WALLS}

1ST STORY WALL AND  
CEILING FRAMING PLAN  
SCALE 1/4" : 1'

Header Schedule:  
A = 2x6 w/ (1) Jack @ EE UON  
B = 2x8 w/ (2) Jack @ EE UON  
C = 2x10 w/ (2) Jack @ EE UON  
D = 2x12 w/ (3) Jack @ EE UON  
E = 9 1/4" LVL (3) Js @ EE UON  
F = 11 7/8" LVL (3) Js @ EE UON

Jack studs should be same thickness of studs in wall.

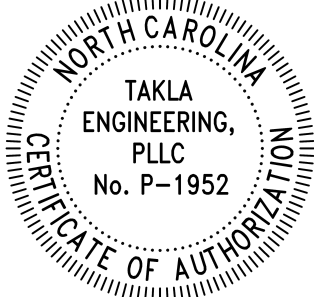
Number following letter refers to number of plys of header. (IE C2 = (2)2X10 with (2) jack studs at each end).

Header E1 (single ply 9 1/4" LVL) may replace Headers A2,B2, and C2.

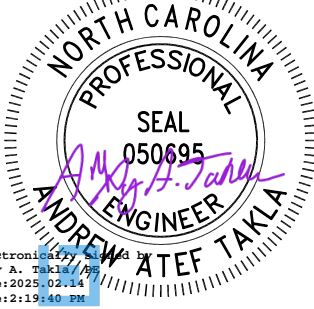
King Stud Schedule (R602.7.5):  
0'-3' wide = 1 @ EE UON  
3'-6' wide = 2 @ EE UON  
6'-9' wide = 3 @ EE UON  
9'-12' wide = 4 @ EE UON  
12'-15' wide = 5 @ EE UON  
\*Stud size shall match width of wall.

It is the sole responsibility of the contractor and/or builder to determine whether these plans conform to all standards, provisions, requirements, methods of construction, and structures provided by applicable building codes, and any other local agencies, and in accordance with good engineering and construction practice. Cider House Studio does not assume liability for any deviation or discrepancy in these plans. If a discrepancy is discovered, please contact Cider House Studio before continuing work.

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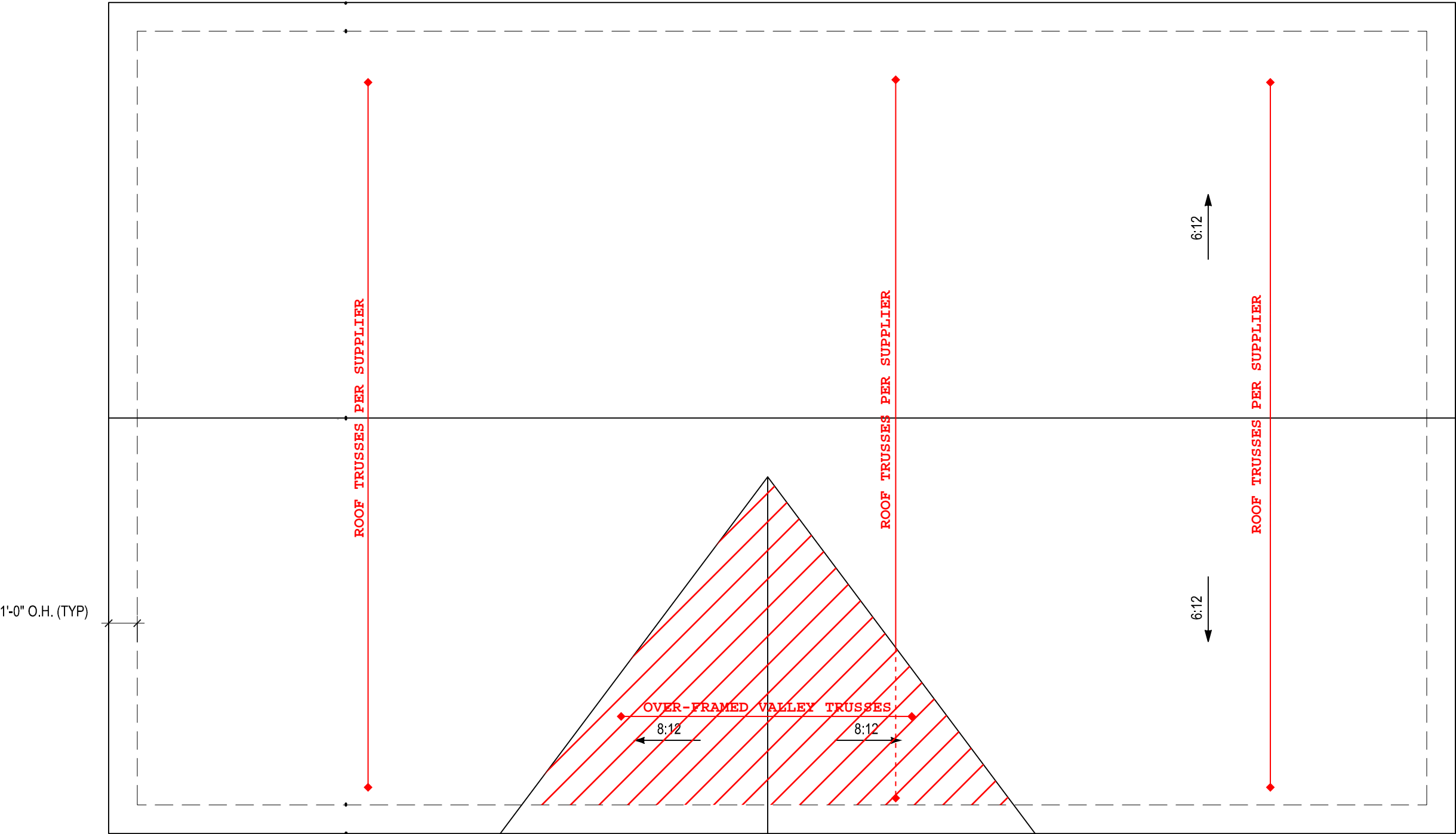
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New Construction  
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Family Building Company

Job Number:  
2-1046-25

S2

CODE REFERENCE: NCRC 2018;  
ALL WORK TO CONFORM. SEE  
STRUCTURAL NOTES PAGE FOR  
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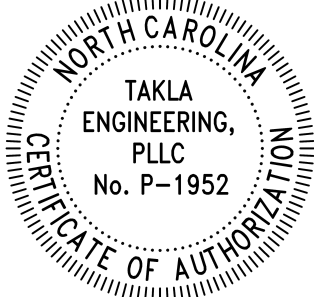


- DENOTES ORIENTATION OF REPETITIVE FRAMING MEMBERS
- DENOTES EXTENT OF REPETITIVE FRAMING MEMBERS
- DENOTES LOAD BEARING WALLS
- DENOTES OFFSET LOAD BEARING WALLS ABOVE
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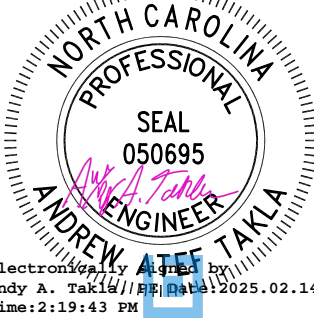
ROOF FRAMING PLAN  
SCALE 1/4" : 1'

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- General Plan Reading Notes:

1.

Engineer's notes are in red, blue or green font for clarity and are in Courier type font. Please print plans in color

2.

With regards to structural information, these notes shall take precedence over any other structural information.

3.

Red check marks(☑),if present, indicate structural information which as been reviewed and approved by engineer.

4.

Noted dimensions shall take precedence.

General Construction Notes:

1.

All temporary shoring, means and methods are the responsibility of the contractor.

2.

All dimensions to be verified by the contractor in the field.

3.

Engineer assumes no responsibility for safety of project delivery.

4.

Any questions pertaining to structural components should be immediately brought to the attention of engineer.

5.

Limitations: Services provided are in accordance with the standard of practice for structural engineering and within the limits imposed by scope, schedule and budget.

6.

Sequencing, shoring, means and methods of construction are considered beyond the scope of this design.

Design Loads			
Meet/exceeds minimum per NCRC 2018			
	Live	Dead	Deflection
All Indoor Floors	40	10	L/360
Attic Platforms	25	10	L/360
Construction Live	20		L/360
Decks/Porches	50	10	L/240
Roof	20	10	L/240
Windload	115(MPH)		L/240

- Foundation Notes:

1.

Assumed soil load bearing capacity = 2000 PSF

2.

Minimum 28 day f'c of concrete = 3000 PSI

3.

Foundations to be built in accordance with NCRC 2018, CH 4

4.

"Tie-In"s shall be (2) 16" long #4 epoxy bonded dowels half embedded mid-depth into existing footings. If no footing exists, omit Tie-in

5.

Install anchor bolts per R403.1.6.

6.

All slabs shall be minimum 4" thick, 3000 psi concrete slab on 4" of #57 sub-base. If slab is used in an interior or garage application, install 6 mil vapor retarder and 10/10 6x6 welded wire fabric.

7.

All slabs shall be on compacted fill or full depth self consolidated structural fill (stone) (at porches, garages and stem wall slabs).

8.

Max unreinforced, unbalanced condition of any CMU wall shall be 36" UNO. CMU walls with unbalanced conditions of 2' or more shall be filled solid with concrete.

9.

Top course of all foundation walls and piers shall have solid caps. Any slab stem walls shall be filled solid.

10.

All piers shall be in the middle 1/3rd of the footing. Min 2" footing projection at each side. Max projection shall be the depth of the footing.

- Foototing Schedule:

A = 16"x16"x8"

B = 20"x20"x8"

C = 24"x24"x10"

D = 30"x30"x12"

E = 36"x36"x12"

F = 40"x40"x12" w/ (3) #4 EW

G = 48"x48"x12" w/ (4) #4 EW

\*All rebar in footings to have 3" cover from sides, bottoms and other parallel rebar.

Header Schedule:

A = 2x6 w/ (1) Jack @ EE UON

B = 2x8 w/ (2) Jack @ EE UON

C = 2x10 w/ (2) Jack @ EE UON

D = 2x12 w/ (3) Jack @ EE UON

E = 9 1/4" LVL (3) Js @ EE UON

F = 11 7/8" LVL (3) Js @ EE UON
- Jack studs should be same thickness of studs in wall.
- Number following letter refers to number of plys of header. (IE C2 = (2)2X10 with (2) jack studs at each end).

King Stud Schedule (R602.7.5):

0'-3' wide = 1 @ EE UON

3'-6' wide = 2 @ EE UON

6'-9' wide = 3 @ EE UON

9'-12' wide = 4 @ EE UON

12'-15' wide = 5 @ EE UON

\*Stud size shall match width of wall.
- Roof Framing Notes:

1.

All roof framing shall comply with NCRC 2018 CH 8.

2.

All dimensional lumber to be SYP No.2 or better.

3.

Sheath with 7/16" OSB w/ 8d nails at 6" o.c. edge and 12" o.c. field.

4.

All rafter ties to be installed no higher than 1/3rd height eave to ridge up from eave nailed with (5) 10d nails at each end, UON.

5.

Roof trusses per others; installation per supplier guidelines.

6.

When structural ridge is used, collar ties may be omitted with 24" long ridge strapping (CS22) is applied at 32" O.C

7.

Where dormers are applicable, build dormer walls atop double/triple rafters.

8.

Areas noted as "Post Down" shall be supported by minimum (2)2x4 to the next load bearing component downward. studs may be skewed as required not to exceed 15 degrees.
- Lateral Bracing:

1.

Unless otherwise noted, lateral bracing is found sufficient and compliant with minimum requirements set forth in NCRC 2018 R602.10 provided all exterior walls are sheathed at the exterior per CS-WSP, R602.10.3 which includes 2x4 (min) studs at 16" o.c. sheathed with 7/16" OSB w/ (1)8d nail at 6" o.c. edge and (1)8d nail at 12" o.c. field. Any additional requirements will be specifically dictated on the plans by indicating required length of CS-WSP at each designated braced wall lines.

2.

All noted Portal Frame (P-F) shall be compliant with R602.10.1. Code reference can be found on this page.

3.

All locations noted with "800# HD" shall be 800 lbs min capacity. Many specific holdddowns are available, builder may select a model that fits the geometry of the application. Builder may also install CS16 straps fully populated with 10d nails extending no less than 12" above and below the interface intended to hold down; Most commonly this be at the bottom of studs; strap should be centered on the bottom plate and extend to the band below; Builder may install straps on either exterior or interior face of wall.

4.

Walls noted as GB shall be framed in accordance with R602.10.2
- Framing Notes:

1.

Floor joists, ceiling joists and rafters sized for SYP #2 or better except exterior wood deck joists. Wall framing maybe SPF #2 or SYP #2.

2.

Strap all stud columns of 4 or more with (3) horz. CS22 straps.

3.

■ = Point loads from above to be transfered, match stud column count above to story(s) below , down to foundation.

4.

LVL Beams shall be 1.75" wide per ply; (Fb)= 2600 psi.

5.

All floor framing per NCRC 2018 CH 5.

6.

All wall framing per NCRC 2018 CH6.

7.

If applicable I-joists and floor truss framing per supplier's specifications and layout.

8.

If applicable, all structural steel shall be ASTM A-36;

9.

Fy= 36 KSI. All weld material shall be 70 KSI material.

10.

All welds to be installed by a certified AWS welder.

11.

All side loaded steel beams should be packed out with dbl 2x material and bolted thru to web with ½" dia thru bolts at 24" o.c. staggered. Detail shown below.

12.

Install double joist under all walls parallel with joists.

13.

Typically, interior load bearing walls (LBW) are shown hatched in red. Nearby girders and beams should be assumed to be directly supporting these LBWs. All exterior walls are assumed to be load bearing.

14.

Beams of 3 ply or more with any side loaded members shall be fastened with ½" dia bolts at 16" o.c. staggered w/ 2" min edge distance from top/bottom edge UON. 2 ply LVLs shall be fastened with 10d nails at 16" o.c driven from both faces; rows shall be spaced at 4 inches on center along depth of beam.

15.

All beam bearings shall be no less than 3". All other bearing to be 2" min.

16.

All hangers shall be standard, appropriately sized face mounted UON. High capacity hangers will be load rated on plans; Consult Simpson catalog or local supplier. Install hardware per manufacturer guidelines.
- Abbreviations:

CONC

Concrete

CONT.

Continuous

C.J

Ceiling Joists

CMU

Conc Masonry Unit

CS-WSP

Sheathing per R602.10.3

DIA

Diameter

DBL

Double

DJ / DR

Double Joist / Rafter

EQ

Equal

EE

Each End

FJ

Floor Joist

FND

Foundation

FT

Floor Truss

FTG

Footing

GB

Gypsum Board (shear wall)

GRT

Girder Roof Truss

HGR

Hanger

HD

Holdddowns

LBW

Load Bearing Wall

MANUF

Manufacturer

NTS

Not To Scale

O.C.

On Center

O.F.

Over-framed (roof)

PF

Portal Frame

PL

Point Load

P.T.

Pressure Treated

R.T.

Roof Truss

SC

Stud Column

SIM

Similar

STGR

Staggered

SUP

Supplier

TYP

Typical

UON

Unless Otherwise Noted
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Engineering,
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STRUCTURAL

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