



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



RIGHT ELEVATION
1/4" = 1'-0"



REAR ELEVATION
1/4" = 1'-0"

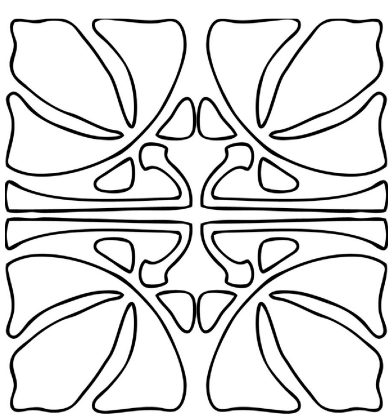
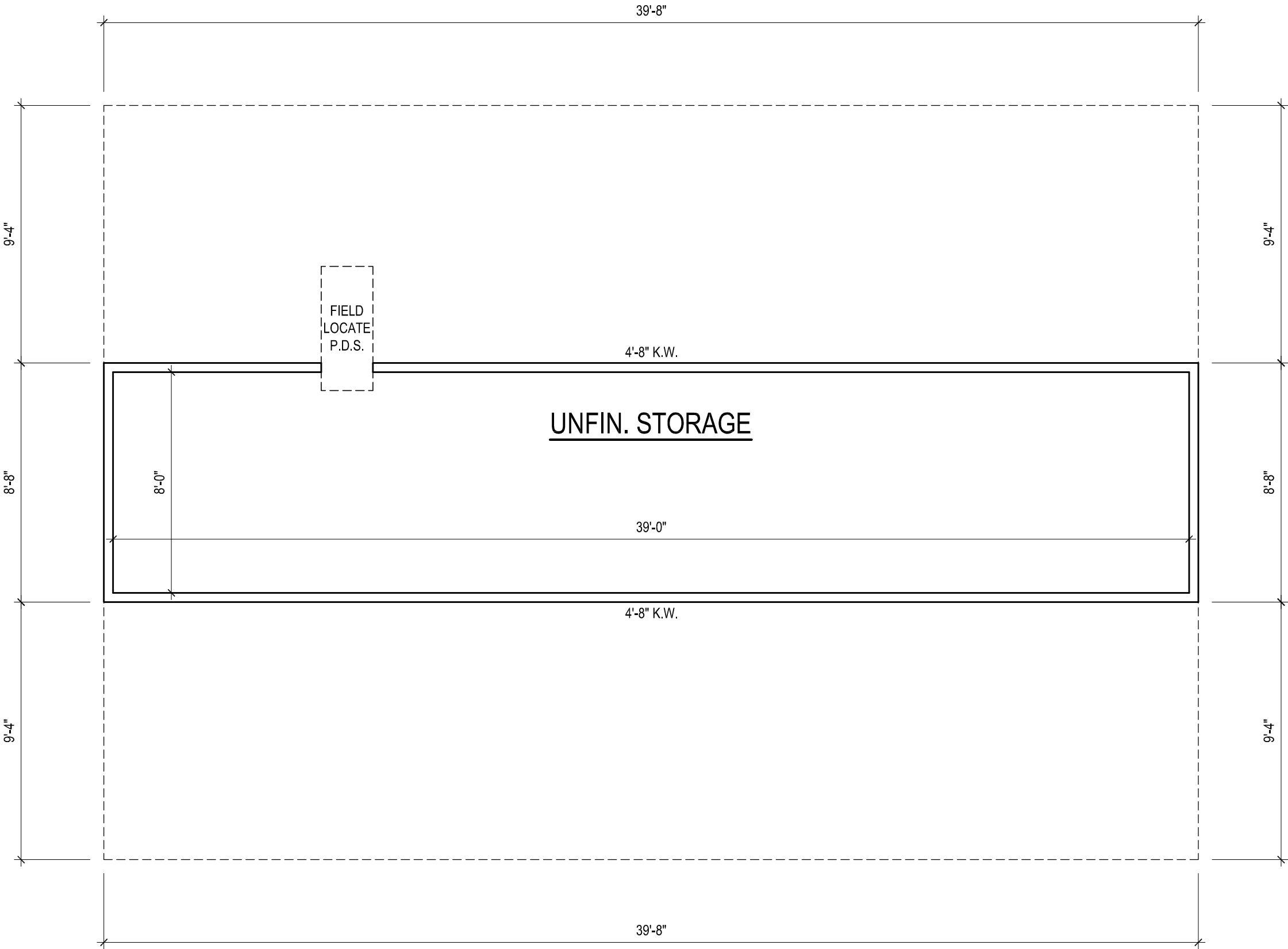
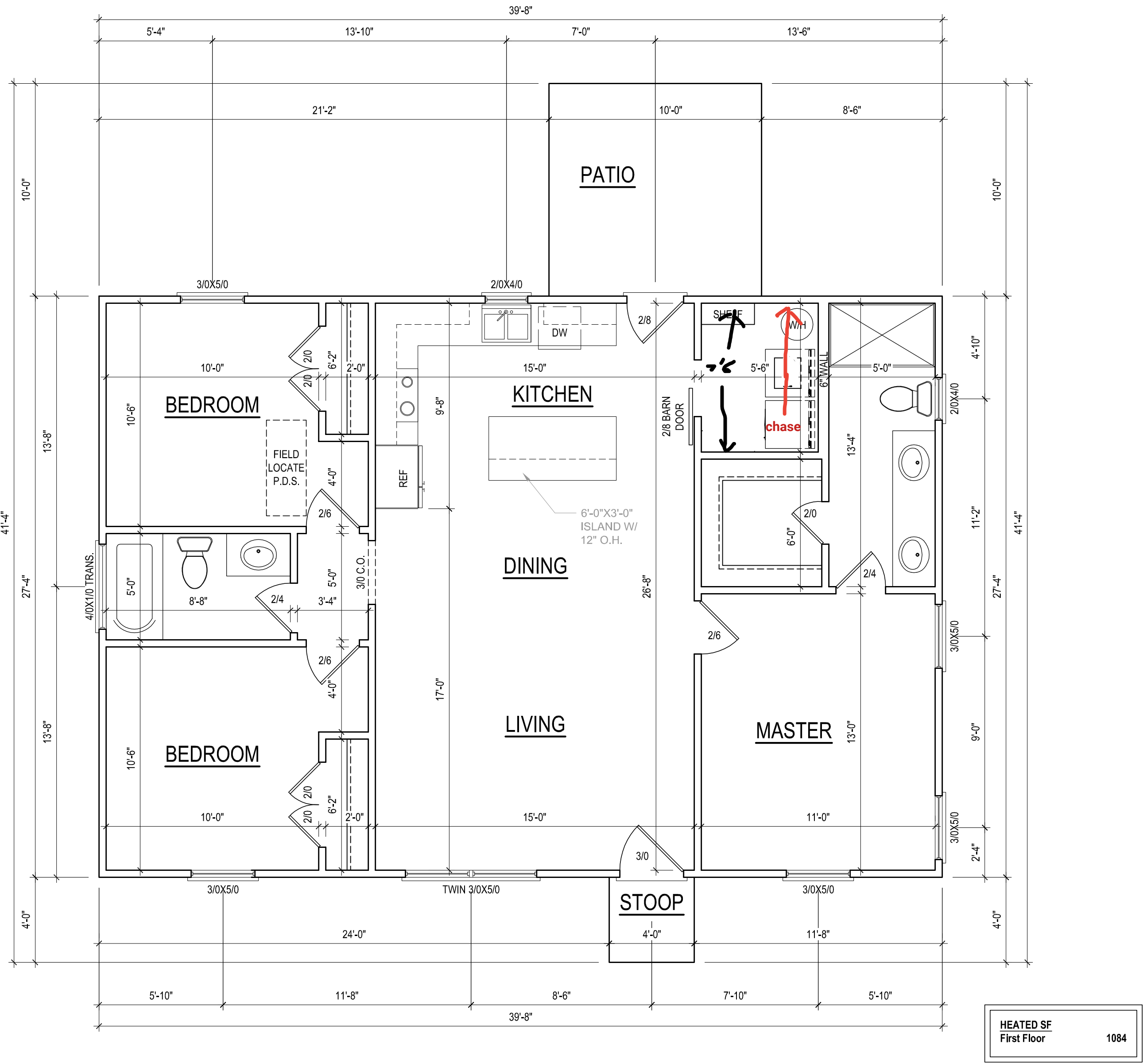


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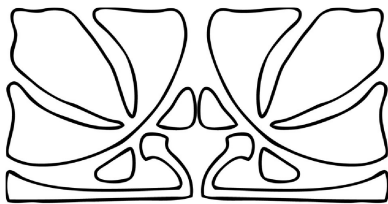
THE EFFICIENT RANCH

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424 E. MAIN ST.
CLAYTON, NC 27520
919.624.4776

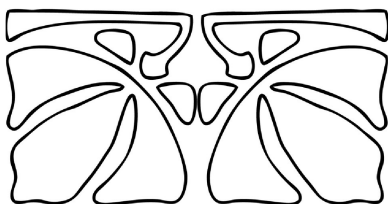
FAMILY BUILDING CO.



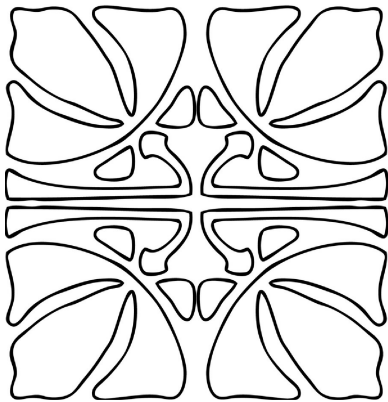
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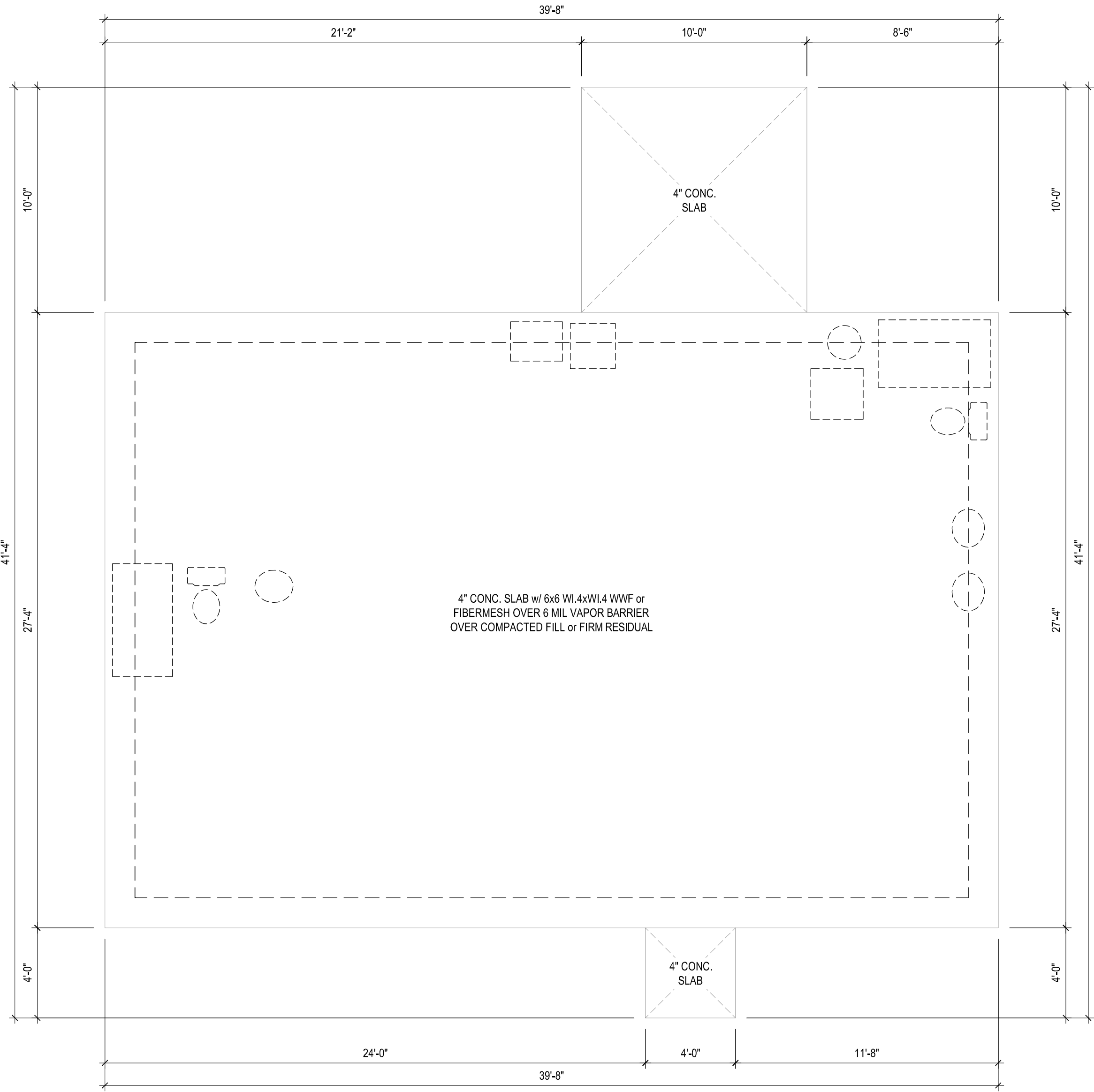


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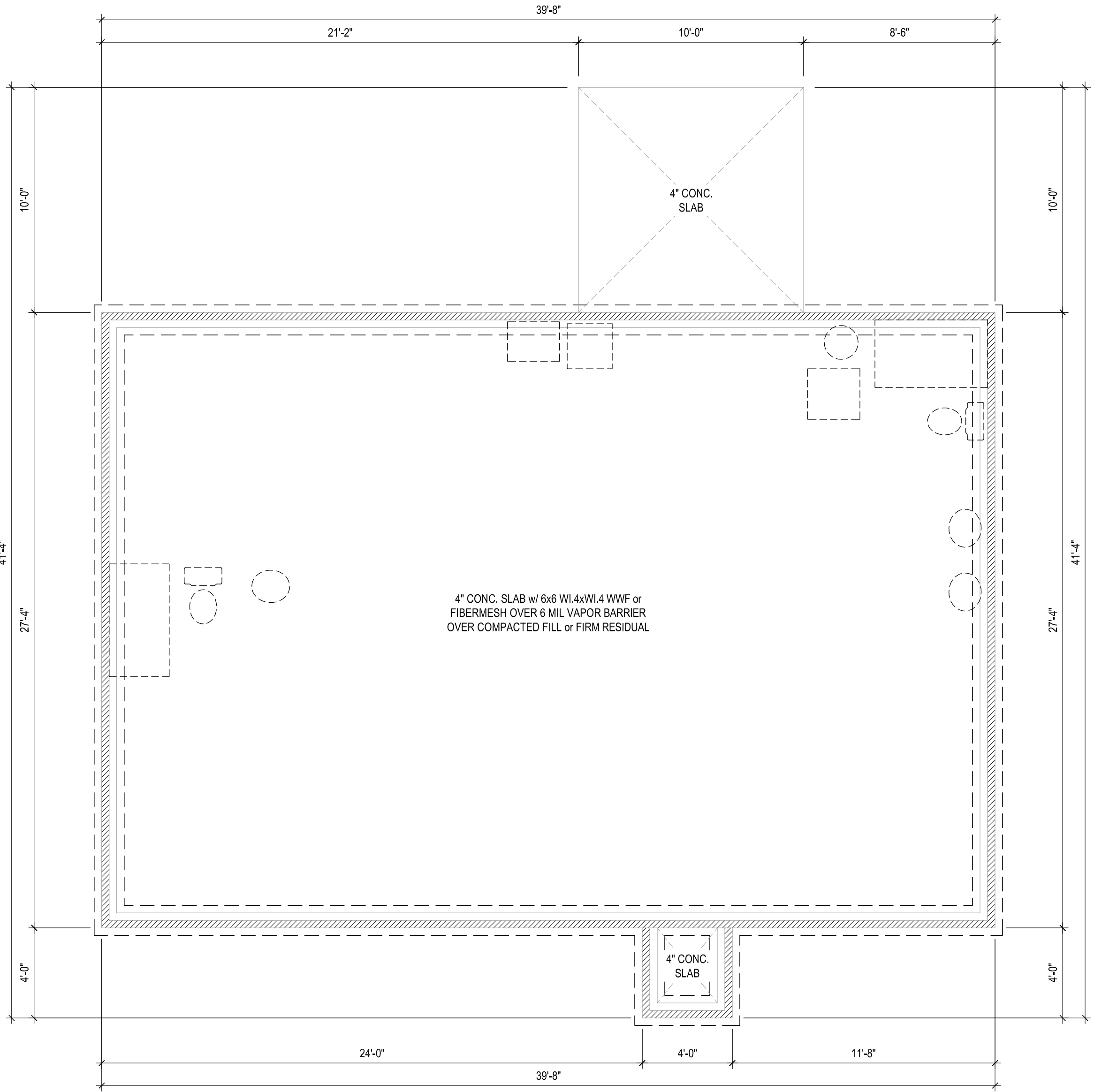


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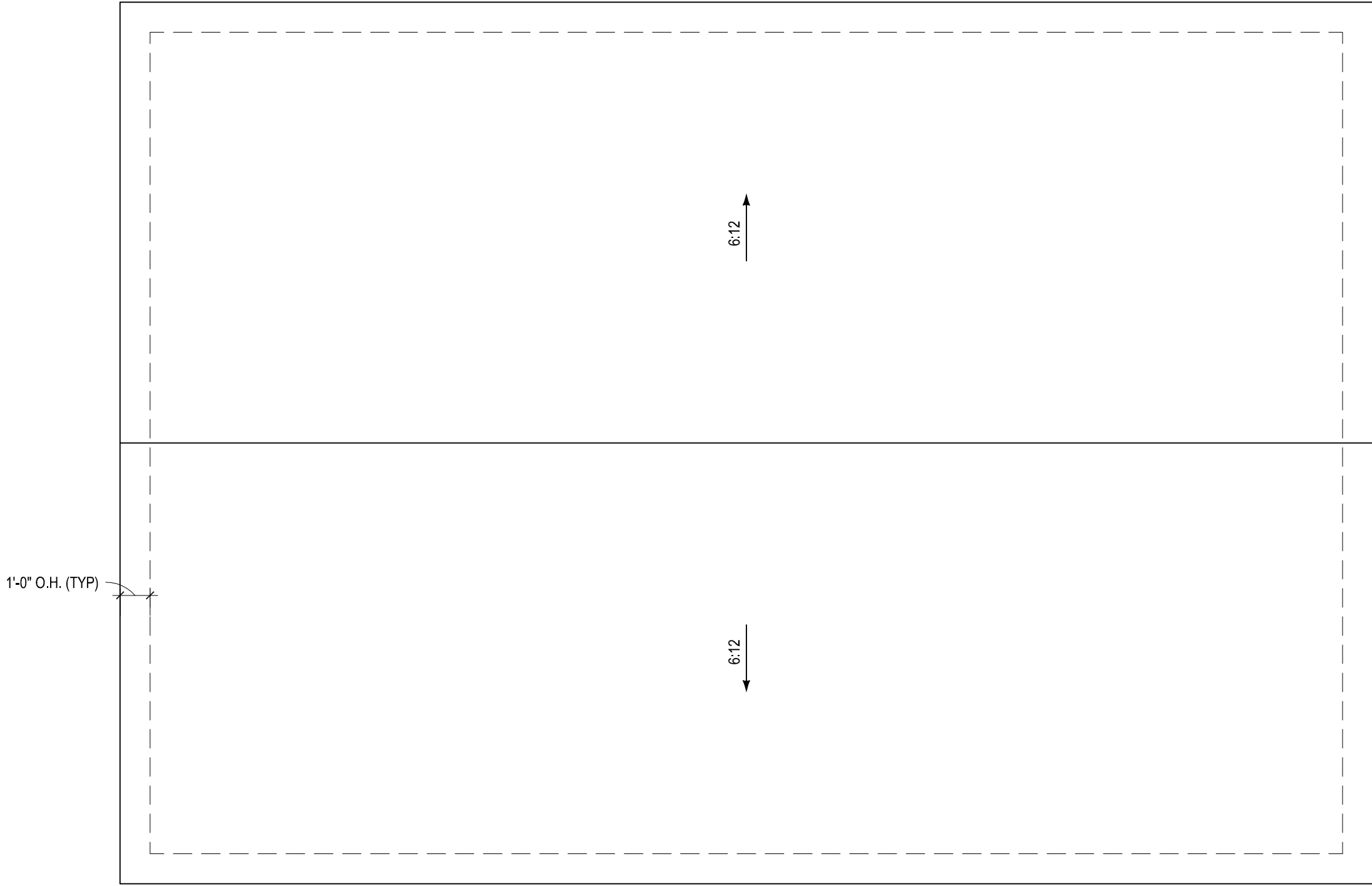




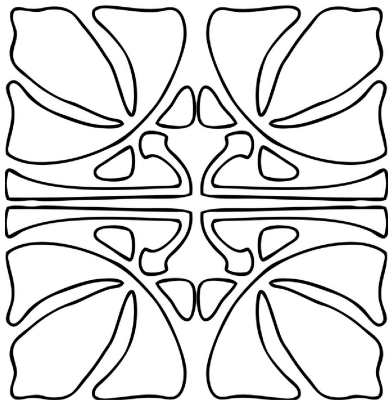
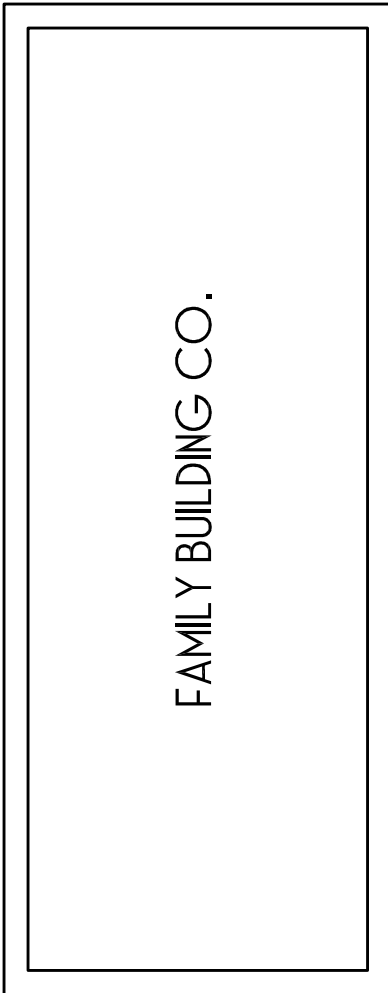
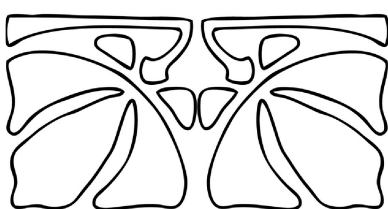
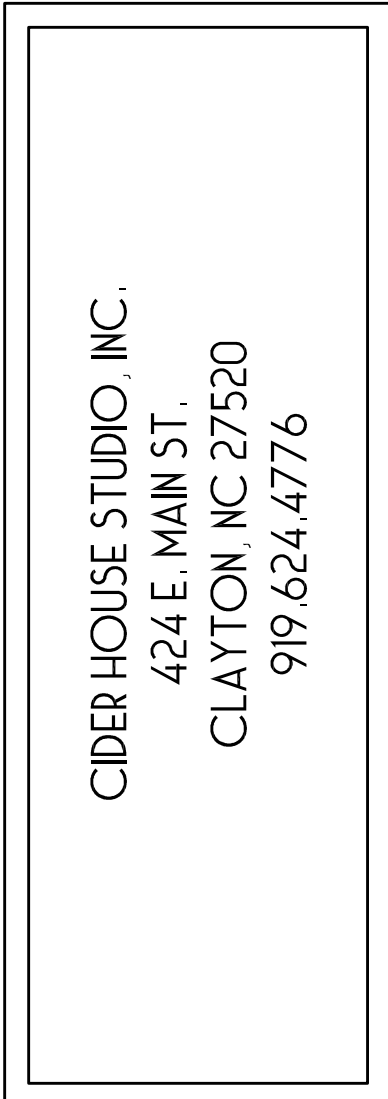
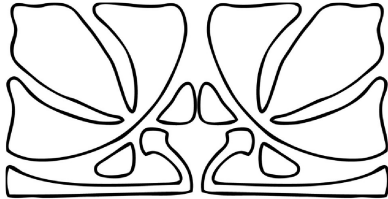
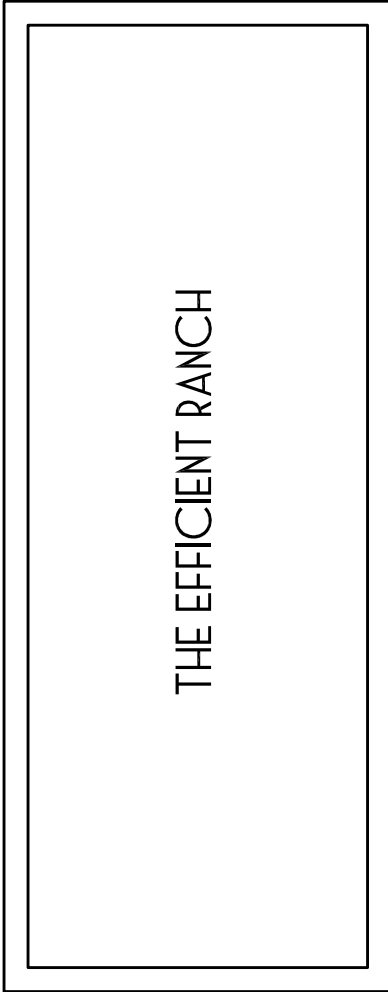
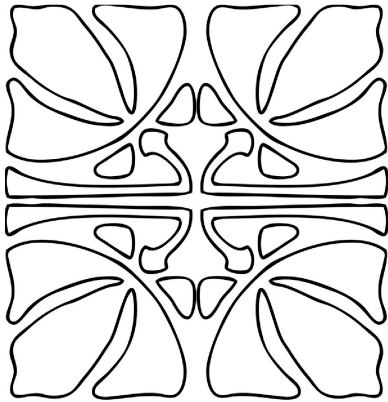
FOUNDATION PLAN
1/4" = 1'-0"
MONOSLAB OPT.



FOUNDATION PLAN
1/4" = 1'-0"
STEMWALL OPT.

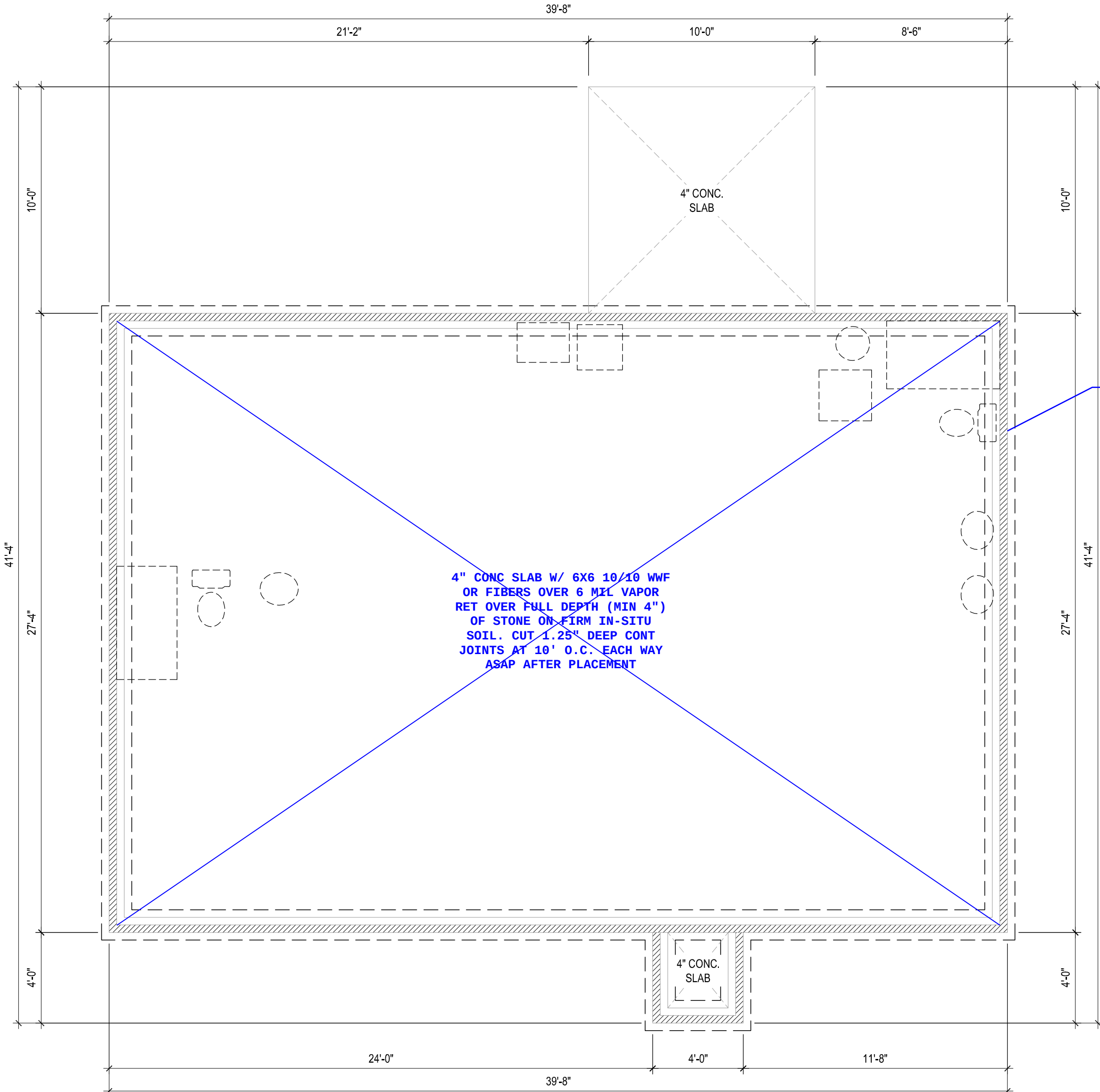
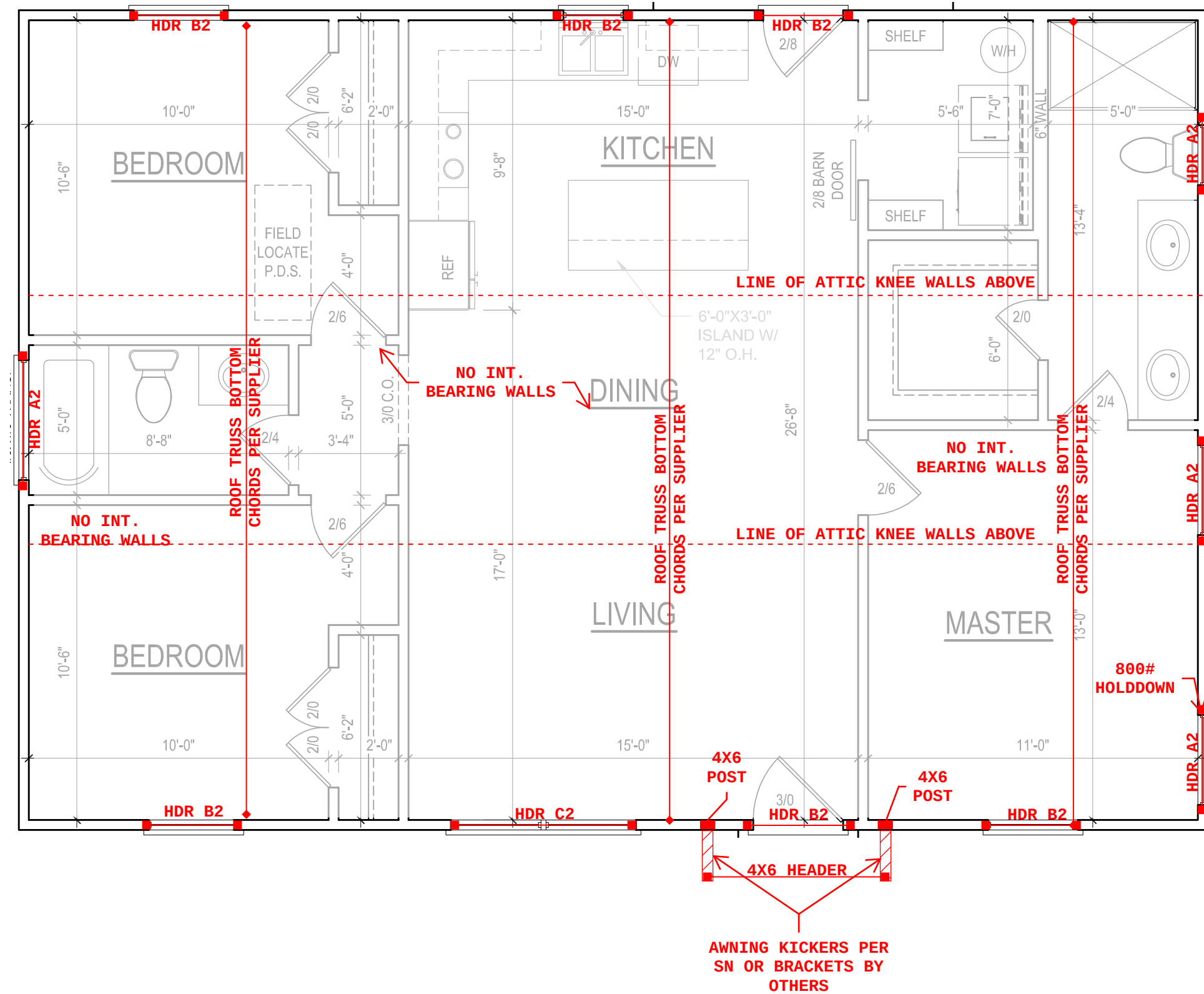


ROOF PLAN
1/4" = 1'-0"
BUILDER MAY USE ROOF TRUSSES, TRUSS DESIGN, LAYOUT, AND
ENGINEERING TO BE PROVIDED BY TRUSS MANUFACTURER



1ST STORY WALL AND
CEILING FRAMING PLAN

SCALE 1/4" : 1'

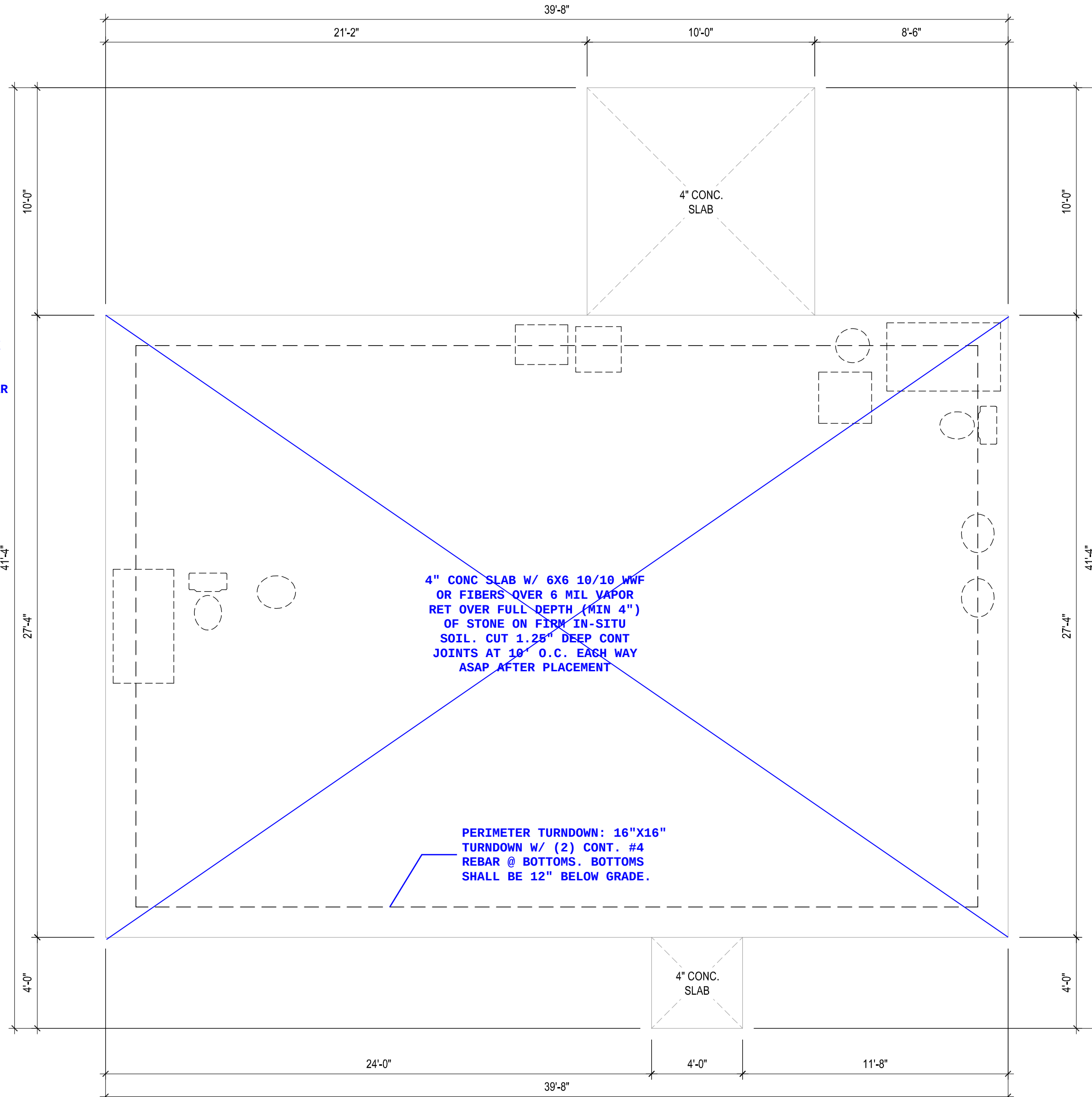
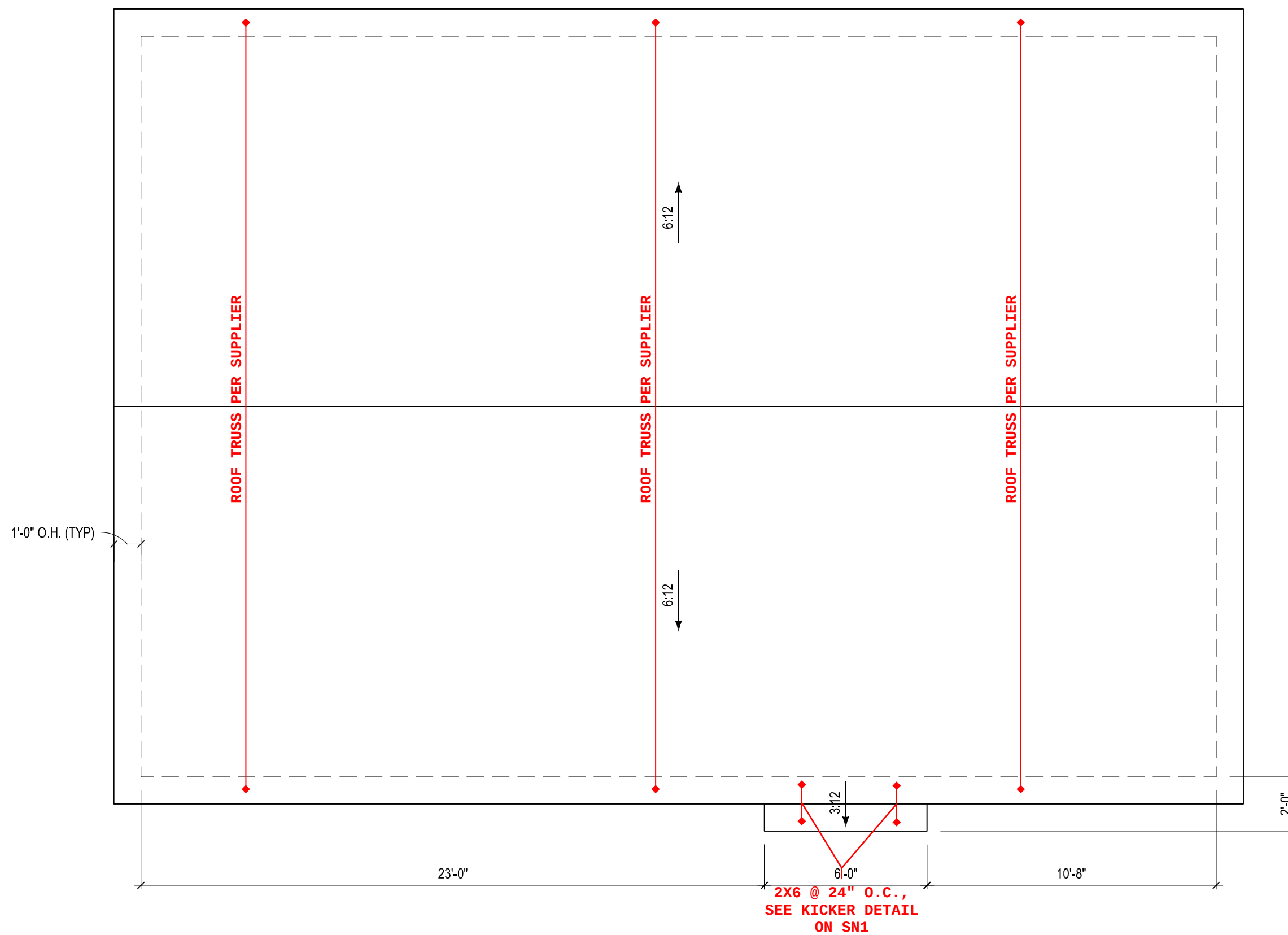


FOUNDATION PLAN: STEM WALL & SLAB OPTION

SCALE 1/4" : 1'

ROOF FRAMING PLAN

SCALE 1/4" : 1'

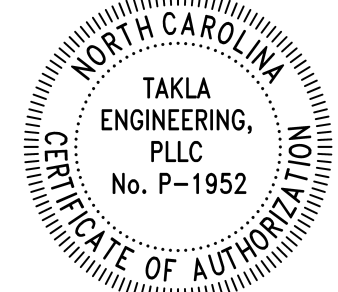
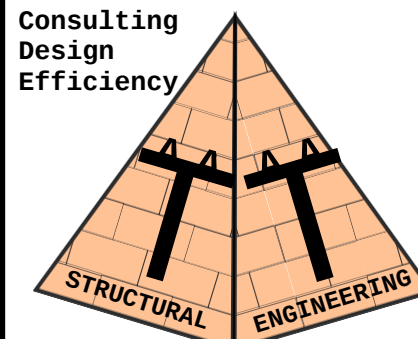


FOUNDATION PLAN: MONOSLAB OPTION

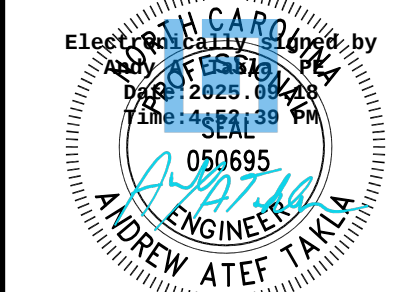
SCALE 1/4" : 1'

Takla
Engineering,
PLLC

Consulting
Design
Efficiency



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SEALS APPLIES TO
STRUCTURAL NOTES ONLY

DRAFTING/ DESIGN BY:

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424 E. MAIN ST.
CLAYTON NC 27520
919.624.4776

New Single Family Spec
213 N Bickett Blvd
Louisburg, NC
Family Building Company

Job Number :
2-6136-25

S1
OF 1

THIS LINE IS EXACTLY 1 INCH LONG
AT THIS SHEET'S ORIGINAL PAGE SIZE

General Notes

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 if possible.
2. With regards to structural information, these notes shall take precedence over any other structural information in black.
3. Red check marks, if present, indicate structural information which as been reviewed and approved by engineer.
4. Shown dimension lines shall take precedence.
5. All dimensions shall be verified by the contractor in the field.
6. Global dimensions for foundation (if applicable) shall defer to architectural sheets and/or survey. Dimensions for interior foundational elements need be accurate to 1 inch.
7. All sheets with Takla Engineering title blocks feature a 1 inch reference line under the sheet number (bottom right hand corner); This indicates the size page the sheet should be printed on to maintain listed scale accurately.

General Construction Notes:

1. All temporary shoring and means & methods of construction are the responsibility of the contractor.
2. All dimensions to be verified by the contractor in the field.
3. Engineer assumes no responsibility for site safety of project delivery.
4. Any questions pertaining to structural components should be brought to the attention of the engineer prior to proceeding with any work. Engineer is not liable for any potential rework or costs incurred by failure to present such questions. Lastly, Engineer shall be given first opportunity but shall not be required to amend any discovered discrepancies.

Design Loads:			
Meet or exceeds minimum per NCRC 2024			
	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)		

Abbreviations:

CONC	Concrete
CONT.	Continuous
C.J	Ceiling Joists
CMU	Conc Masonry Unit
CS-WSP	Sheathing per R602.10.3
DIA	Diameter
DBL	Double
EQ	Equal
EA END	Each End
FJ	Floor Joist
FND	Foundation
FT	Floor Truss
FTG	Footing
HGR	Hanger
HD	Holddowns
LEW	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
SUP	Supplier
TYP	Typical
UON	Unless Otherwise Noted
UNBAL	Unbalanced (Fill)

Limitations of Liability: Engineering services in this report follow standard structural engineering practice and the North Carolina Residential Code (2024 Edition). Conclusions and recommendations are based solely on site conditions observed at the time of evaluation and are limited by the agreed scope, schedule, and budget. This report excludes any responsibility for construction sequencing, shoring, or means and methods. Evaluations are limited to visible and accessible elements; no destructive testing or inspection of concealed components was performed. No guarantees or warranties, express or implied, are provided in connection with these services. Takla Engineering relies on the accuracy of information provided by others and assumes no liability for conclusions based on incomplete, inaccurate, or misleading input. Reasonable efforts were made to ensure accuracy. However, the potential for human error and the limitations of non-invasive inspection must be acknowledged. Takla Engineering's maximum liability—whether from contract, tort, or otherwise—is limited to the total fees paid for services under this agreement, barring gross negligence. By accepting, referencing, or using this report, the recipient agrees to all terms, limitations, and conditions set forth herein, barring gross negligence by Takla Engineering.

Standard Schedules

Footing 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 although thickness of header may be less than header of wall; Single ply headers are only permitted in 2x4 thick walls.

Number following letter refers to number of plys of header. (1E C2 = (2)2x10 with (2) jack studs at each end).

King Stud Schedule: - (R602.7.5): Minimum # of kings at each end based on width of header. (R602.7.5):
115 MPH Windzone
0'-8" = 1
8'-18" = 2
>140 MPH Windzone
0'-4" = 1 8'-14" = 3
4'-8" = 2 14'-18"= 4

Minimum Exterior and Bearing Wall Stud Schedule:

Height	Studs Supporting		
	Roof	1 Story	2 Stories
10'	2x4 @ 24"	2x4 @ 16"	2x4 @ 12" 2x6 @ 16"
11'	2x4 @ 16"	2x4 @ 12" 2x6 @ 16"	2x6 @ 12"
12'	2x4 @ 12" 2x6 @ 16"	2x6 @ 12"	(2)2x6 @ 16"

See Table R602.3(5)&(6) for additional options, windzones, and non-bearing walls.

Lintel Schedule for Brick/Natural Stone Veneer:

Lenth (ft)	Size
Up to 4	L 3.5 x 3.5 x 5/16
4-8	L 5 x 3.5 x 5/16 LLV
Over 8	L 6 x 4x 5/16 LLV

Notes:

1. Provide at least 3" bearing on brick at each end.
2. Headers 8' or longer, attach to header w/ 1/2" dia thru bolts or 3" long lag bolts @ 12" o.c. staggered (for up to 16' of brick above) or 24" o.c. (for 4' or less above)
3. For all brick support @ roof lines, fasten (2)2x10 blocking between studs supported with 2x4 blocking at each end. Fasten 6"x4"x5/16" angle to (2)2x10 blocking w/ (2) 1/2" lag screws per stud bay. See Section R703.8.2.1 (NCRC 2018) for additional reference.

Foundation Notes:

1. For any reference not specifically included here-in, foundation requirements set forth in Chapter 4 of the NCRC 2024 shall apply.
2. Assumed and minimum soil load bearing capacity is 2000 PSF.
3. Minimum 28 day f'c of concrete is 3000 PSI.
4. "Tie-In"s shall be (2) 16" long #4 epoxy bonded dowels embedded 6" into existing footings at mid-depth. If no footing exists, Tie-in to the lowest course of foundation wall.
5. Install anchor bolts per R403.1.6.
6. Unless otherwise noted, all slabs shall be a minimum 4" thick, 3000 psi concrete slab on minimum 4" of aggregate 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 raised slabs shall be on over full depth self consolidating structural fill (stone) (typically at porches, garages and stem wall slabs).
8. The max unreinforced, unbalanced condition of any CMU wall shall be in accordance with table R404.1.1(1).
9. Any masonry wall subjected to over 4' unbalanced shall be reinforced, laterally braced at top, or both. If site conditions will present such conditions contact engineer prior to placing footings.
10. Top course of all foundation walls and piers shall have solid caps.
11. All piers shall be in the middle 1/3rd of the footing. Min 2' footing projection at each side. The maximum projection shall be the depth of the footing.
12. The maximum above grade height of any pier shall be limited to 10x its least horizontal dimension.

Floor Framing Notes:

1. For any reference not specifically included here-in, floor framing requirements set forth in Chapter 5 of the NCRC 2024 shall apply.
2. Floor joist size and spacing are based on SYP #2 or SPF #2 or better except exterior wood deck joists which shall be P.T. SYP No.2.
3. LVL beams, girders or joists shall be 1.75" wide per ply;(Fb)= 2600 psi, E = 2,000,000 PSI
4. Any I-Joists, floor trusses or EWP floor framing, if applicable in these plans shall be designed, specified and provided by others, and installed per the manufacturer's guidelines.
5. Any Structural steel noted in these plans shall be ASTM A-36; Fy= 36 KSI; with any welds material shall being 70 KSI material. All welds shall be installed by an experience and certified welder.
6. All side loaded steel beams should be packed out with double 2x material and bolted thru webs with ½" diameter bolts at 24" o.c. staggered. Detail will be provided on this page.
7. Typically, interior load bearing walls (LBW) are shown hatched in red. All exterior walls are assumed load bearing and may not be hatched.
8. Beams of 3 ply or more with any side loaded members shall be fastened with ½" diameter bolts at 24" o.c. staggered w/ 2" min edge distance from top/bottom edge. Lag type / structural screw fasteners may be permitted provided length, spacing and row are suitable for the number of ply and loading on the beam. 2 ply LVLS shall be fastened with 10d nails at 12" on center driven from both faces; Rows shall be evenly spaced at 4 inches on center along depth of beam.
9. All beam bearings shall be no less than 3". All other bearing to be 2" min.
10. Recommend doubling all joists under parallel walls above; Engineer has made every attempt to specifically show these on plans.
11. All hangers shall be standard, appropriately sized face mounted UON. High capacity hangers will be designated or load rated on plans; Consult Simpson catalog or local supplier for additional information and options. Install all hardware per manufacturer guidelines.

Lateral Bracing:

1. Unless otherwise noted, lateral bracing is found sufficient and compliant with minimum requirements set forth in NCRC 2024 Table R602.10.3(1) provided all exterior walls are sheathed at all sheathable exterior surfaces per CS-WSP, R602.10.4 which includes 7/16" OSB w/ (1)8d nail at 6" o.c. edge and 12" o.c. field with 1/2" gypsum on interior faces. Any additional requirements will be specifically dictated on the plans.
2. Any noted portal frame methods including PF-H, PF-G, or CS-PF, shall be compliant with R602.10.6.2, R602.10.6.3, or R602.10.6.4 respectively. Code referenced details can be found on this page.
3. All locations noted with "800# HD" shall be 800 lbs min capacity. Many specific holddowns are available, builder may select a model that fits the geometry of the application. See detailed labeled "800# holdddown with strapping" on this page for reference.
4. Interior shear walls noted as GB shall be fastened in accordance with R702.3.5

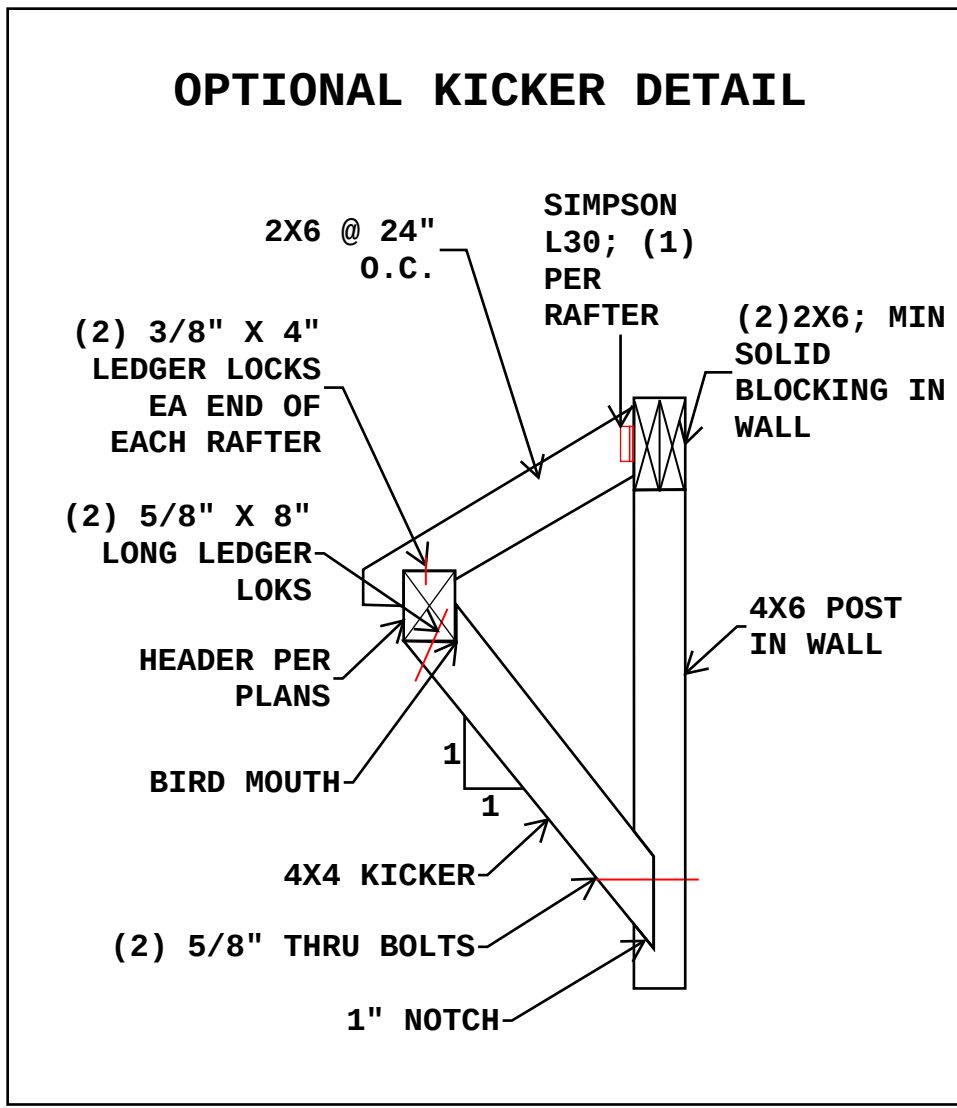
Notes by Structural System

Wall Framing Notes:

1. For any reference not specifically included here-in, floor framing requirements set forth in Chapter 6 of the NCRC 2024 shall apply.
2. All dimensional lumber to be SYP or SPF No.2 or better.
3. Studs schedule shall be compliant with the table labeled : "Min Exterior and Bearing Wall Stud Schedule" found on this page.
4. King and jack studs shall be complaint with either header schedule or king stud schedule found on this page.
5. All exterior and interior bearing walls shall have double top plates per R602.2.3.2. Single top plates at non-bearing interior walls may be permitted per the same section.
6. Balloon frame all gable end walls at vaulted ceilings with studs spaced at 12" on center. Also, add one additional king stud above the king stud schedule found on this page, at each end to any opening in these walls.
7. If single member headers are installed, a flat 2x plate shall be installed directly above and below header.
8. Point loads from above (shown as blue squares) will shown on walls; no additional stud columns in the wall are required under point load unless specifically denoted on the plans.

Roof Framing Notes:

1. For any reference not specifically included here-in, roof requirements set forth in Chapter 8 of the NCRC 2024 shall apply.
2. All dimensional lumber to be SYP or SPF No.2 or better.
3. Sheath with 7/16" OSB w/ 8d nails at 6" o.c. edge and 12" o.c. field.
4. Maximum height of rafter ties without requirement of a structural ridge is 1/3rd height of rafter measured from the eave up.
5. Secure rafter ties or ceiling joists per table NCRC 2024 Table R802.5.2(1).
6. Roof trusses, if applicable in these plans, shall be designed, specified and provided by others, and installed per the manufacturer's guidelines.
7. Structural ridges must be installed for stick framed roofs with a pitch of 3/12 or less, or where ceiling joists or rafters ties are not lapped to rafters. When structural ridges are specified, builder shall install either 2x4 collar ties per R802.4.6, 24" long CS16 ridge strapping, (2)H2.5a, or (2)L30 (or similar) clips to every other set of opposing rafters to ridge.
8. Where dormers are applicable in these plans, build dormer walls atop double/triple rafters and extend sheathing to bottom of rafters.
9. Areas noted as "Post Down" shall be supported by minimum (2)2x4 to the next load bearing component downward UNO. Post down studs may be skewed as required not to exceed 15 degrees.
10. At shed roofs supported at an exterior house wall, provide a 2x band of one nominal size greater than the rafters and fasten to each wall stud with at least (3) 10d nails. Hanger, ledger, or clip rafters to band.
11. "2x Sleepers" noted at over-framed areas should be of adequate width to provide bearing to 75% of the over-framed rafter's beveled cut edge.



PORCH AND DECK SPECIFIC

Foundation Notes:

1. For any reference not specifically included here-in, deck and porch foundation requirements set forth in Chapter 47 and/or Chapter 4 of the NCRC 2024 shall apply.
2. Assumed soil load bearing capacity = 2000 PSF
3. Minimum 28 day f'c of concrete = 3000 PSI
4. Foundations to be built in accordance with NCRC 2024 R4704

Wood Deck Notes:

1. For any reference not specifically included here-in, deck framing requirements set forth in Chapter 47 of the NCRC 2024 shall apply.
2. All lumber to be pressure treated SYP No.2 or better.
3. Band attachments to be installed per NCRC 2024, R4707.(1) or structural screws in accordance with manufacturers guidelines.
4. Install lateral bracing or embed posts per R4711.
5. Install handrails per R4713
6. The maximum post Heights per R4705
7. Stair and stringers per R4712
8. Footings that do not directly support roof posts may be solid-precast concrete or CMU block in grade provided size complies with plans and is embedded at least 12" below grade in suitable soil. Posts supporting roof structures shall be cast in place concrete and feature a holddown device or post base.

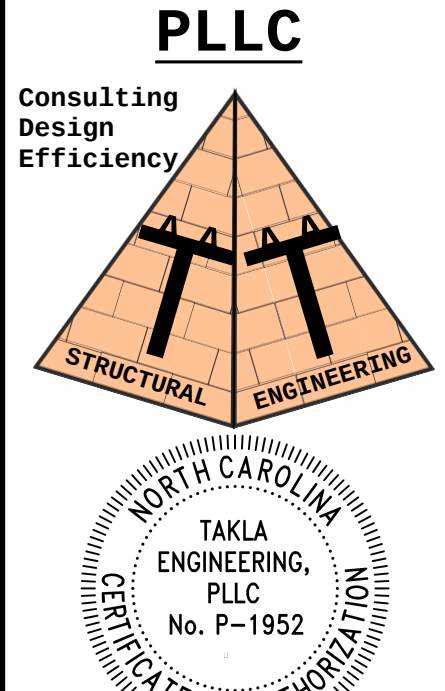
Screened-In/Covered Porch Notes:

1. Attach posts which is, or directly aligns with a post supporting a roof, to either a footing, slab or CMU pier using either ABU44 or ABU66 post base (or applicable size), (2) Simpson GA2 clips OR Simpson MAB15.
2. Attach all rafters to supporting headers with Simpson H2.5a clips.
3. Uplift for posts where being supported by wood bands/girders, or supporting wood bands/headers, both above and below the walkable level, may be either (2) Simpson LCE4, (2)Simpson GA2 clips or (2) ½" diameter, 5" long LedgerLoks driven at a 45° degree angle, with no more than 1 at any one side of the post. Omit additional connection where band, header, or girder is let-in or side mounted per R4708.1(2) or R4708.1(3).

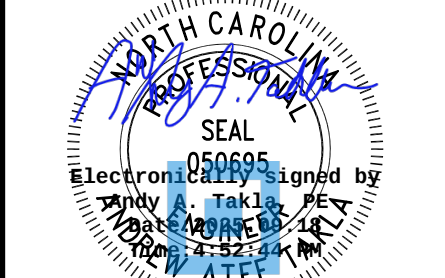
Roof Framing Notes:

1. For any reference not specifically included here-in, roof requirements set forth in Chapter 8 of the NCRC 2024 shall apply.
2. All dimensional lumber to be SYP or SPF No.2 or better.
3. Apply roof sheathing/decking with 7/16" OSB w/ 8d nails at 6" o.c. edge and 12" o.c. field.
4. Structural ridges must be installed for stick framed roofs with a pitch of 3/12 or less, or where ceiling joists or rafters ties are not lapped to rafters. When structural ridges are specified, builder shall install either 2x4 collar ties per R802.4.6, 24" long CS16 ridge strapping, (2)H2.5a, or (2)L30 (or similar) clips to every other set of opposing rafters to ridge.

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