

Plan Notes:

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2. House is designed for 115 MPH, Exposure B.
3. Anchor bolts shall be minimum ½" diameter and shall extend a minimum 7" into masonry or concrete. Anchor bolts are to be no more 6' O.C. and not more than 12" from the corners.
4. Mean Roof Height less than 35'.
5. Components and Claddings are designed for the following loads:

Mean roof Height	Up to 30'	30'-1"-35'	35'-1"-40'
Zone 1	16.5-18.00	17.3-18.9	18.0-19.6
Zone 2	16.5-21.0	17.3-22.1	18.0-22.9
Zone 3	16.5-21.0	17.3-22.1	18.0-22.9
Zone 4	18.0-19.5	18.9-20.5	19.6-21.3
Zone 5	18.0-24.1	18.9-25.3	19.6-26.3

6. Minimum value for energy compliance:

Zone 4A:	Windows U-Factor is 0.35
Insulation for ceiling:	R38 or R-30 (See Table N1102.1, 2)
Insulation for Walls:	R-15 (See Table N1102.1, 2)
Insulation for floor:	R-19

Roof pitch is listed: rise:run

All roof planes  
shingles UNO



Front Elevation



Rear Elevation

Architectural Layout plans were prepared by others. Civil and Structural Engineering Services, PLLC, provided drafting and structural design services. the professional seal and signature affixed below certify that plans as marked/noted meet load requirements of North Carolina Building Code, Residential 2018

SAMIR W. BAHHO, PE  
CIVIL AND STRUCTURAL ENGINEERING SERVICES, PLLC

4612 Kaplan Drive  
Raleigh, NC, 27606  
tel. (919) 851-1642  
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PROJECT:

LOT 2 LEAFLET CHURCH ROAD  
BRPADWAY, NC 27505

HARNETT

North Carolina

Brad Woodrow 919-612-1377  
John Frink 919-669-4519

RED ROCK BUILDERS  
Design Create Construct

DATE:5/6/2024

SCALE: 1/4"= 1'0"

SHEET: 1

TL 9.5 hrs

Drawn by VGB



Samir W. Bahho

July 16, 2024

Scale: 1/4"= 1'0"

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4. Mean Roof Height less than 35'.
5. Components and Claddings are designed for the following loads:

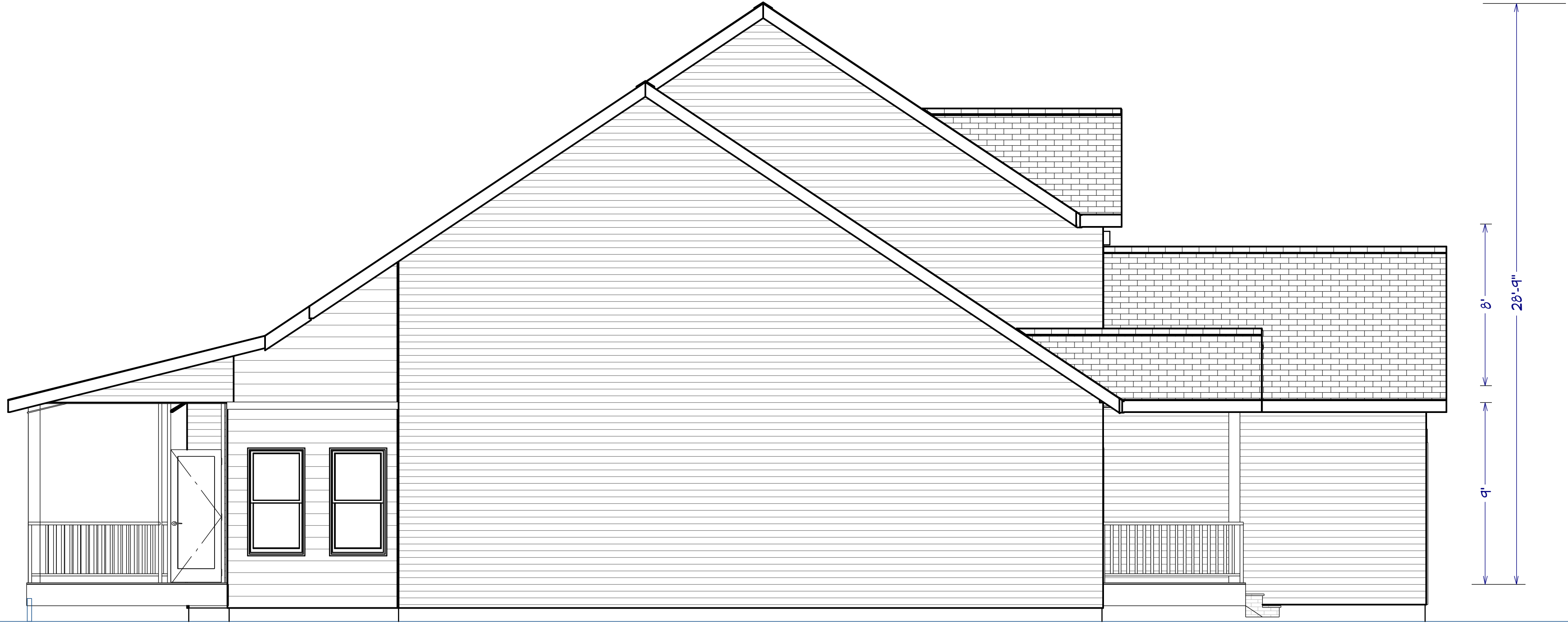
Mean roof Height	Up to 30'	30'-1"-35'	35'-1"- 40'
Zone 1	16.5-18.00	17.3-18.9	18.0-19.6
Zone 2	16.5-21.0	17.3-22.1	18.0-22.9
Zone 3	16.5-21.0	17.3-22.1	18.0-22.9
Zone 4	18.0-19.5	18.9-20.5	19.6-21.3
Zone 5	18.0-24.1	18.9-25.3	19.6-26.3

6. Minimum value for energy compliance:

Zone 4A:	Windows U-Factor is 0.35
Insulation for ceiling:	R30 or R-30 (See Table N1102.1, 2)
Insulation for Walls:	R-15 (See Table N1102.1, 2)
Insulation for floor:	R-19

Roof pitch is listed: rise:run

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Left Elevation



Right Elevation

Scale: 1/4"= 1'0"

July 16, 2024



*Samir W. Bahho*

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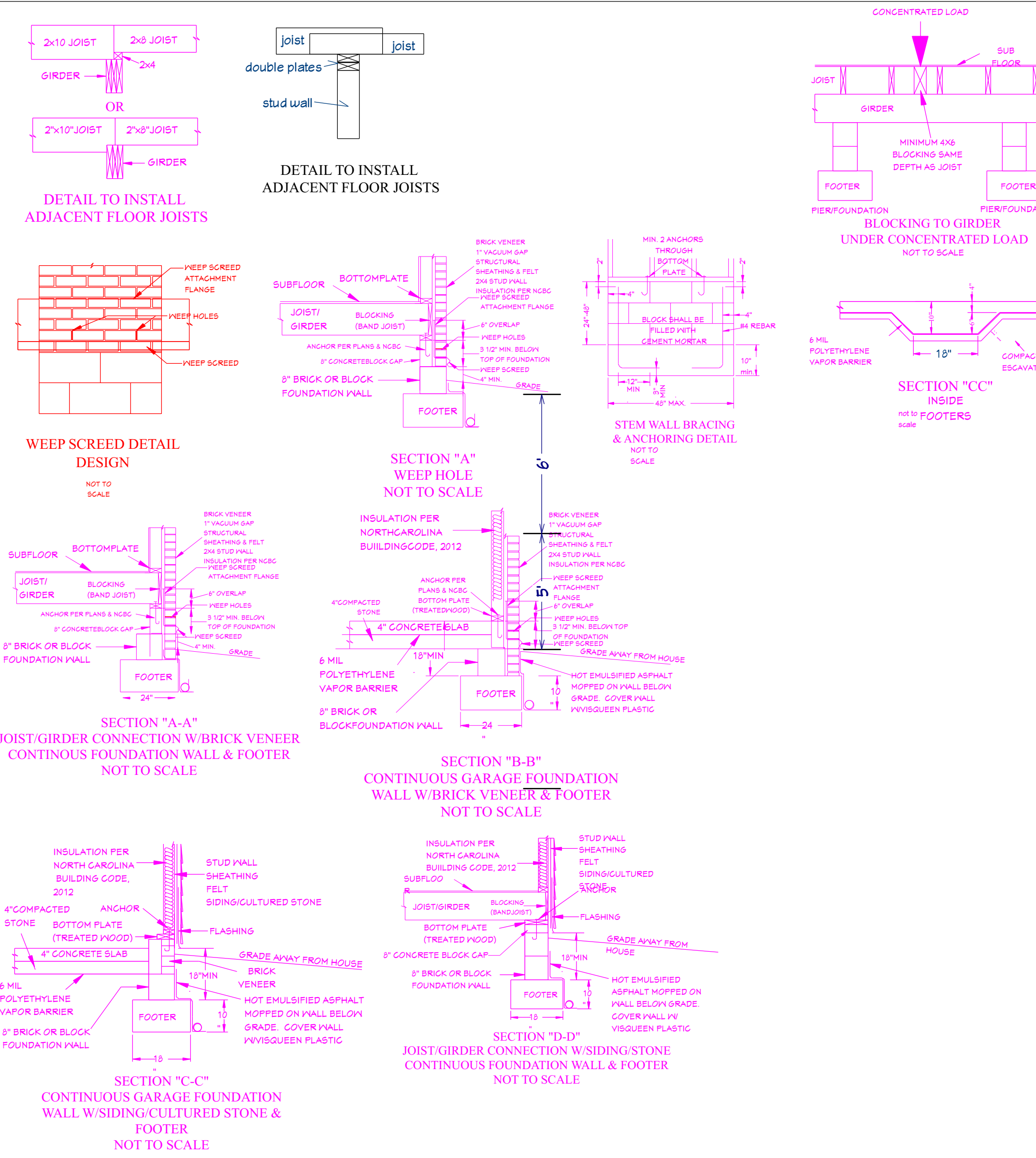
DATE:5/6/2024

SCALE: 1/4"= 1'0"

SHEET: 2

TL 9.5 hrs

Drawn by VGB



Design Loads		
Floor:	40 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Bedroom	30 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Celling:	20 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Roof	20 lbs/sf	Live Load
	1 lbs/sf	Dead Load

Construction Notes Foundation Plan		
1.	Points of concentrated loads as shown on foundation plan shall be transferred to foundation wall/pier or girder. To Transfer point of concentrated load to dropped girder, use minimum 4"x6" wood blocking. See details.	
2.	Continuous foundation shall be of 8" cinder block or brick with the top 8" solid block/brick over 16" x 10" in siding finish and 24" x 10" in brick veneer finish. See details.	
3.	<b>In slab foundation design,</b> footers and log footers shall be as shown on plan.	
4.	Piers shall be 16"x16" or 8" x 16" cinder block with top 8" solid block over 24" x 12" concrete footer unless otherwise shown on plans. Minimum concrete strength shall be 3,000 PSI. See details on foundation plan.	
5.	Foundation walls with fill imbalance of 5'-0" shall be 8" wide reinforced with #4 Rebar @ 16" O.C. vertical for the length of wall and 1-#4 horizontal at 24" O.C. Foundation walls of fill imbalance over 5' shall be designed by Structural Engineer.	
6.	Garage, and front porch slabs shall be 4" concrete slab reinforced with 6x6, #10 W.P.M. placed over 6 mil of vapor barrier placed over min. 4" gravel. Earth below gravel level shall be properly compacted. Fiber mesh reinforcement could be used in slab as substitute to steel wire mesh. Concrete joints shall be 10' x 10'.	
7.	<b>In slab foundation design,</b> floor slabs shall be 4" concrete slab reinforced with Fiber Mesh placed over 6 mil of vapor barrier placed over min. 4" gravel. Earth below gravel level shall be properly compacted. Slab control joints shall be installed at 25' x 25' Max.	
8.	For masonry construction, Fill enclosure in the front and rear porches with compacted stone. Tamp fill properly. Install 4" of stone and 6 mil vapor barrier before pouring 4" concrete slab. Use 3000 PSI mix. Provide 10'x10' control joints.	
9.	In Crawl Space Design, girders, floor joists and beams shall be in size and spacing as shown on foundation plan.	
10.	In Crawl Space Design, place double joists under walls running the same direction of joists.	
11.	Dimensions are as shown on the plan. (Do not scale dimensions)	
12.	Points of concentrated loads are shown with "●" symbols	

Bracing and sheathing of walls		
1.	All braced walls shall be constructed using NGB 2018, R602.10.3, Continuous Sheathing, K&P Method unless otherwise shown on plans.	
2.	All braced wall panels on continuous foundation shall be anchored as per Section R403.1.6, North Carolina Building Code, Edition 2018 unless otherwise shown on plans.	
3.	See details on plans for special wall bracing, sheathing and anchoring	

**Piers Construction:**

- All pier footers shall be 24"x24"x10" unless otherwise specifically shown on the plans.
- Piers shall be cinder block 8"x16" up to 6' pier height. Piers over 6' height shall be solid block or otherwise filled with concrete mortar.
- Top 8" of pier shall be solid block or cinder block filled with concrete mortar.

**CONTINUOUS FOOTERS AND FOUNDATION WALL:**

- 20" x 10" continuous concrete footers. Walls with Brick Veneer shall be 24" x 10"
- 8" x 16" Cinder Block to max. height of 6'. 12" x 16" cinder block for walls over 6' to 12' height. of 6'. 12" x 16" Cinder block over 6' to 12' height. Fill top block with concrete mortar. Walls over 6' in height shall be solid 12"x16" block.
- Install Anchor bolts per Code Section R403.1.6
- Foundation walls with unbalanced fill shall be installed per Code R404 and tables R404.1.1 (2) and table R404.1.4 (4)

**Note:**  
Provide continuous load transfer to girder/pier/joist under load points 6x6 blocking or equivalent. See blocking to girder detail.

**WALL VENTED CRAWL SPACE:**

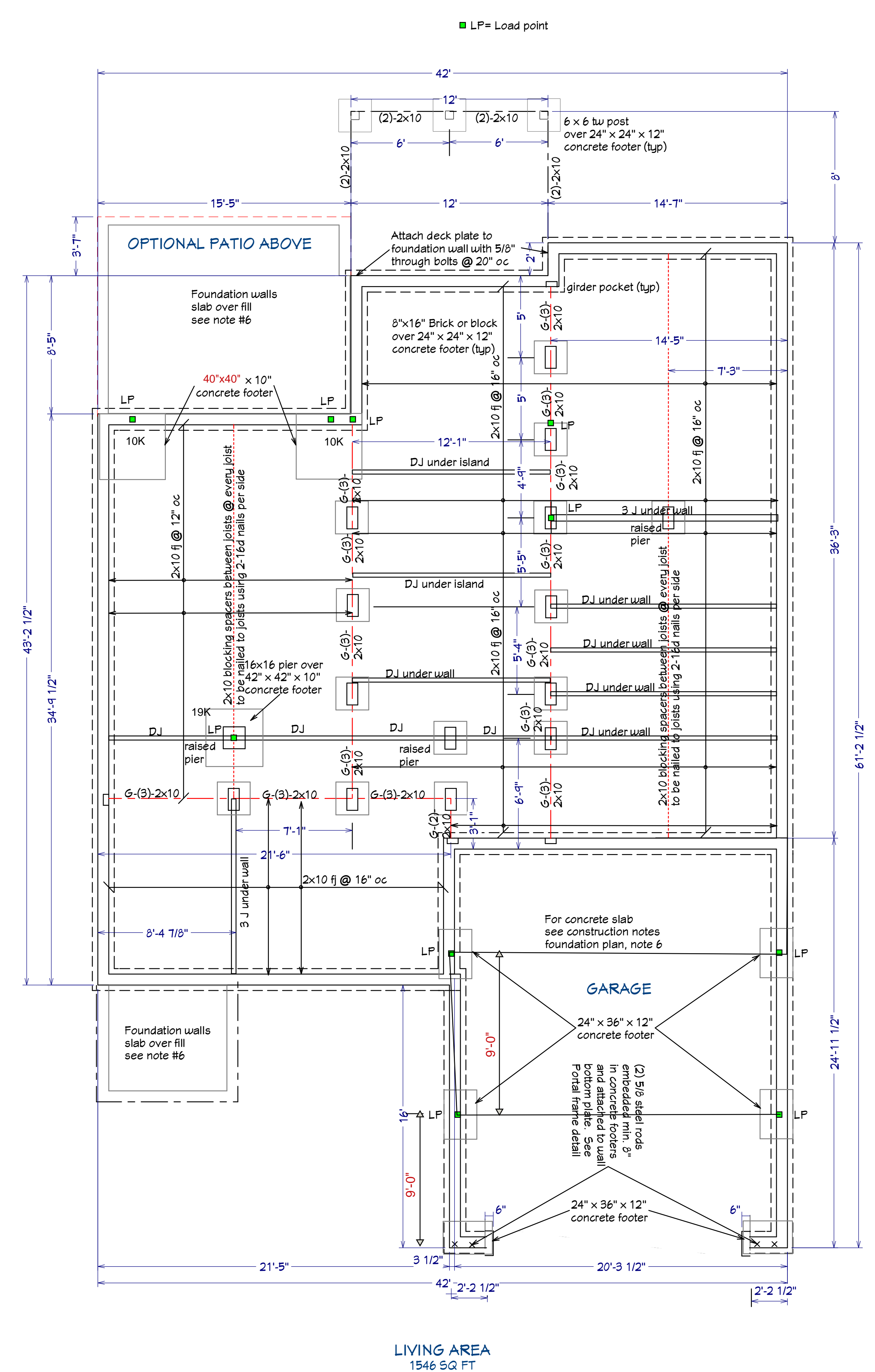
- Wall vented crawl space shall conform to Section R408 subsections.

**CLOSED CRAWL SPACE:**

- Closed crawl space option shall conform to section R409. NCBC subsections.

**NOTES:**

- For Load points see construction note #1 on foundation plan notes
- For pier, foundation & footer see note #4.
- For continuous foundation wall & footer see notes #2 & #5
- For garage, front porch slab see note #8
- For masonry porches see note #8
- Anchor are represented with "X" symbol.
- Unless noted otherwise, all girders are (3) 2 x 10 as represented with ( \_ G \_ )



Foundation & Garage floor structural plan-Crawl Space  
Scale: 1/4"=1'0"

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**PROJECT:**  
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**HARNETT**

**North Carolina**

**RED ROCK BUILDERS**  
Design Create Construct

Brad Woodrow 919-612-1377  
John Frink 919-669-4519

**DATE:** 5/6/2024

**SCALE:** 1/4"=1'0"

**SHEET:** 3

**TL** 9.5 hrs  
**Drawn by** VGB

July 16, 2024

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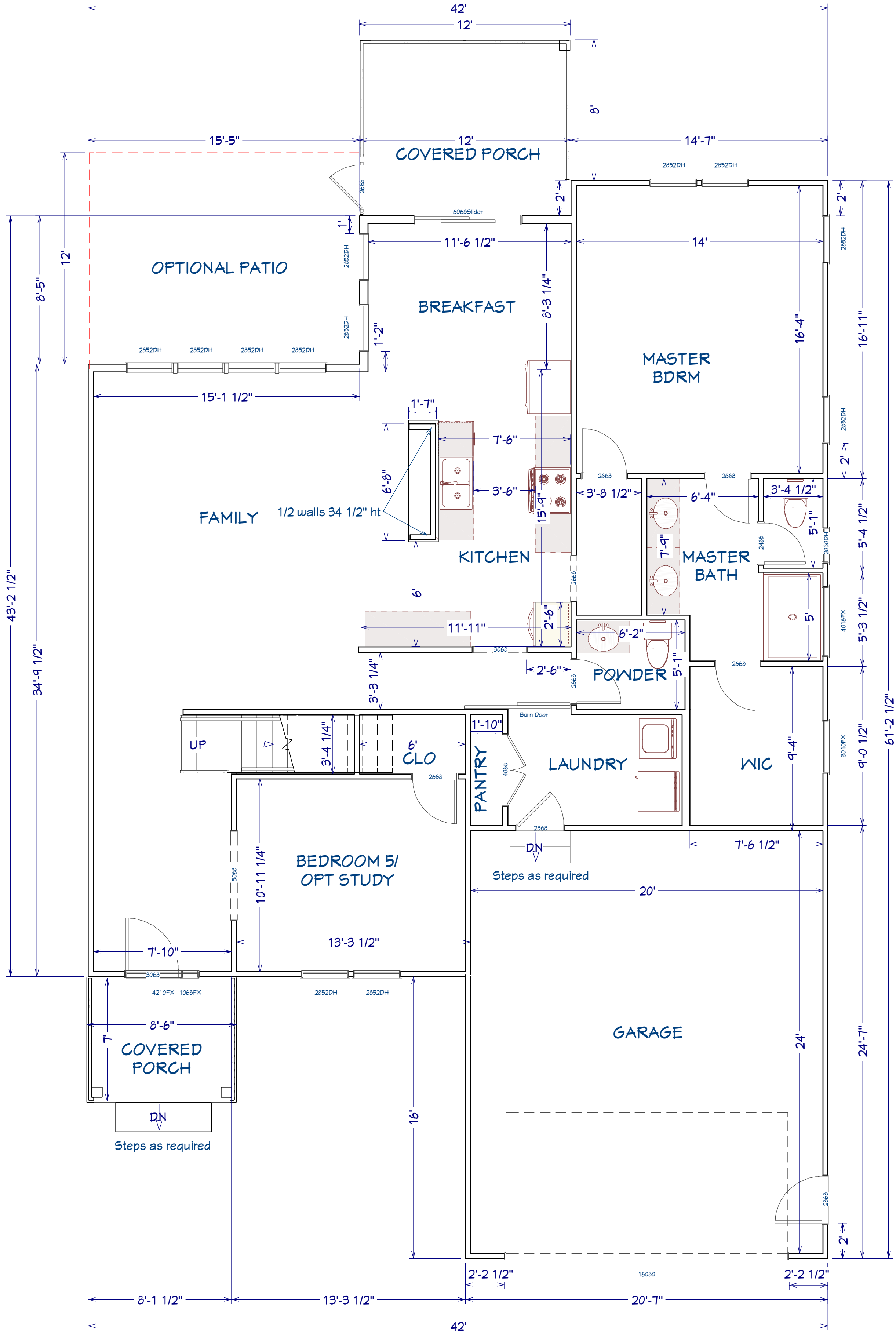
6. Minimum value for energy compliance:

Zone 4A:	Windows U-Factor is 0.35
Insulation for ceiling:	R38 or R-30 (See Table N1102.1, 2)
Insulation for Walls:	R-15 (See Table N1102.1, 2)
Insulation for floor:	R-19

Note Dimensions are to framing.  
Walls are displayed @ 3-1/2"

Area Chart:

1. Main Floor Heated Area	1546SF
2. Second Floor	676 SF
3. Total htd	2222 SF
4. opt. conditioned Storage Area	137 SF
5. Covered front porch	61 SF
6. Covered back porch	121 SF
7. Garage	498 SF
8. Optional Patio	180 SF
9. optional Mechanical room	73 sf



LIVING AREA  
1546 SQ FT

Main Floor Architectural Plan  
Floor ceiling ht 9' unless otherwise shown on plan

Scale: 1/4"=1'0"

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SCALE: 1/4"=1'0"

SHEET: 4

TL 9.5 hrs  
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Zone 5	18.0-24.1	18.9-25.3	19.6-26.3

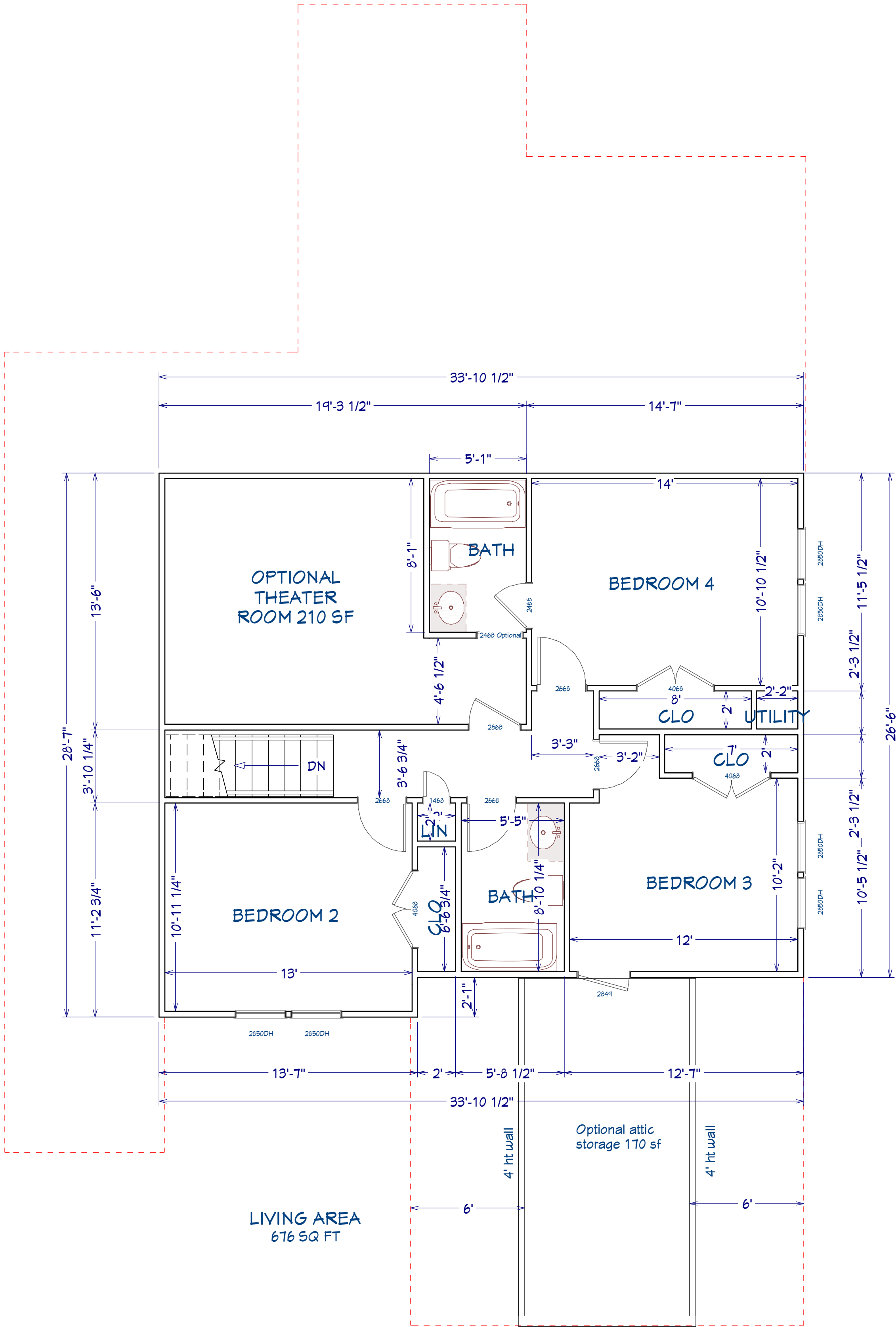
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2. Second Floor676 SF
3. Total htd2222 SF
4. opt. conditioned Storage Area137 SF
5. Covered front porch61 SF
6. Covered back porch121 SF
7. Garage498 SF
8. Optional Patio180 SF
9. optional Mechanical room73 sf

Note Dimensions are to framing.  
Walls are displayed @ 3-1/2"



Second floor Architectural plan  
Floor ceiling ht 8' unless otherwise shown on plan

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North Carolina

HARNETT

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John Frink 919-669-4519



DATE:5/6/2024

SCALE: 1/4"=1'0"

SHEET: 5

TL 9.5 hrs


Drawn by VGB



Samir W. Bahho

July 16, 2024

Design Loads	
Floor:	40 lbs/sf
Bedroom	30 lbs/sf
Ceiling:	20 lbs/sf
Roof	20 lbs/sf
	7 lbs/sf
Live Load	
Dead Load	
Live Load	
Dead Load	
Live Load	
Dead Load	

- Construction Notes, First Floor Framing
- All ceiling joists are 2x-, #2 SPF @ 16" O.C. unless otherwise indicate on the first floor plans
  - Install double joists under walls running parallel to floor joists (Typical).
  - For headers over windows, doors and other openings see Headers over windows and Doors and Openings Notes
  - Install beams in size as shown on first floor plan
  - All walls shall be 2x4 stud walls at 16" O.C. unless otherwise shown on plan
  - Install beam supports as specified on floor plan with a  symbol. If not indicated on plan on, install min. 2- 2 x 4 Studs.
  - Dimensions are as shown on the plan. (Do not scale dimensions)

- Headers over windows, doors and opening
- For headers over windows, doors and other openings up to 6'-0" use 2-2x8 unless otherwise as shown on plan.
  - Headers between 6'-1" and 10'-0" use 2-2x10
  - Over 10' to 15' use 2- 1 3/4" x 9 1/4" LVL
  - Over 15' shall be designed and specified on the plan

Brick Lintels:

- Up to 6' opening use 3 1/2" x 3 1/2" x 1/4"
- From 6'-1" to 10'-0" opening use 5" x 3 1/2" x 1/2"
- Over 10' shall be designed and specified on plans with db at 6" spacing

Design Loads	
Floor:	40 lbs/sf
Bedroom	30 lbs/sf
Ceiling:	20 lbs/sf
Roof	20 lbs/sf
	7 lbs/sf
Live Load	
Dead Load	
Live Load	
Dead Load	

Construction Notes, Second Floor Framing Plan

- All beams are #2 SPF or LVL(Laminated Veneer Lumber) as indicated on plans.
- All floor and ceiling joists are #2 SPF @ 16" O.C. as indicate on plans
- For headers over windows, doors and other openings see Headers over windows and door opening Notes on plan.
- For Brick lintels see brick lintels notes on 2nd floor plan
- Install beams in size as shown on 2nd floor plan
- All walls shall be 2x4 stud walls at 16" O.C. unless otherwise shown on plan
- Install kick back, 2x4 to tie rafters to ceiling joists @ 32" O.C. where rafters and joists are running in the same direction. when roof rafters are running perpendicular to ceiling joists, connect minimum of 3 joists 2x4 continuous runner and install 2x4 kick back @ 32" between runner and rafter
- Install beam supports as specified on the plan. If not indicated on plan install min. 2-2 x 4 Studs

Dimensions are as shown on the plan. (Do not scale dimensions)

Headers over windows, doors and opening

- For headers over windows, doors and other openings up to 6'-0" use 2-2x8 unless otherwise as shown on plan.
- Headers between 6'-1" and 10'-0" use 2-2x10
- From 10' -15' use 2- 1 3/4" x 9 1/4" LVL
- Over 15' shall be designed and specified on plans

Brick Lintels:

- Up to 6' opening use 3 1/2" x 3 1/2" x 1/4"
- From 6'-1" to 10'-0" opening use 5" x 3 1/2" x 1/2"
- Over 10' shall be designed and specified on plans

- All braced walls shall be constructed using NCBC 2018, R602.10.3, Continuous Sheathing, WSP Method unless otherwise shown on plans
- All braced wall panels on continuous foundation shall be anchored as per Section R403.1.6, North Carolina Building Code, Edition 2018 unless otherwise shown on plans
- See details on plans for special wall bracing, sheathing and anchoring

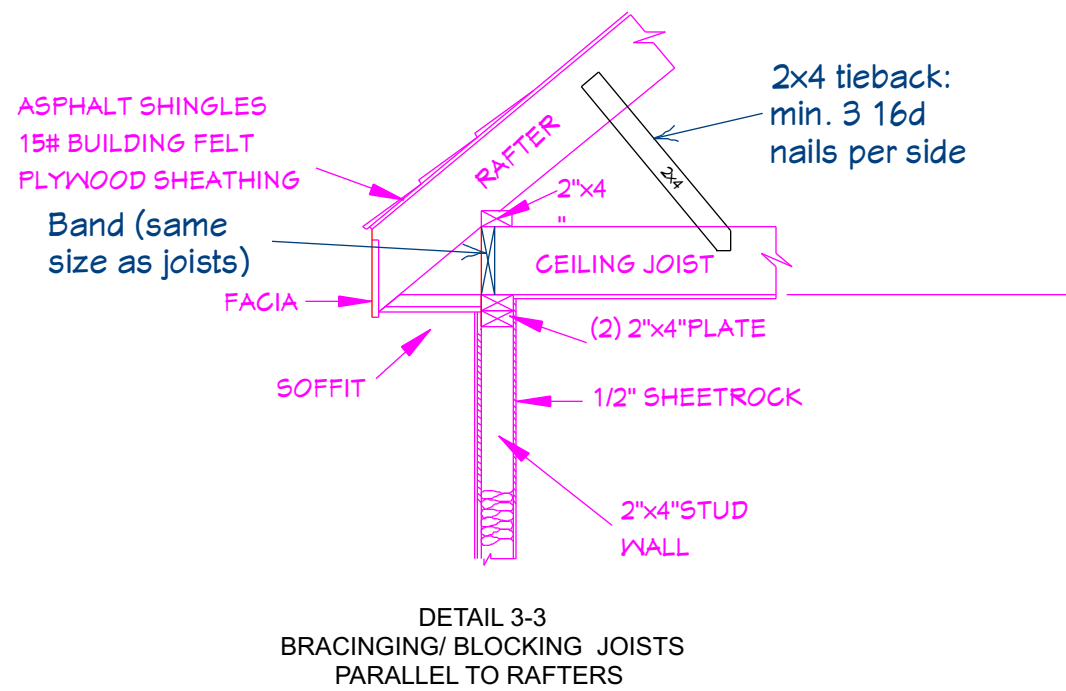
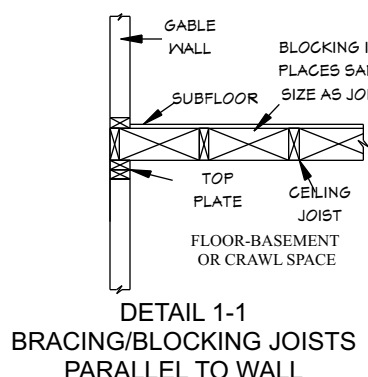
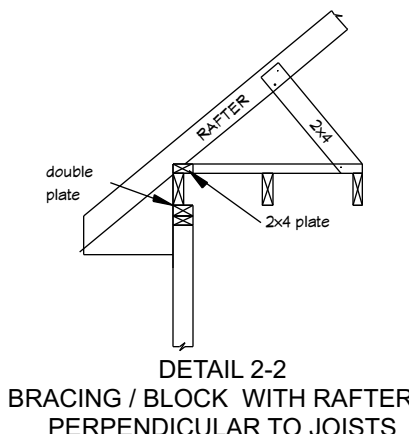
Note: Jack studs (Headers Load Support) on each side of doors and windows openings shall be as shown on the plan. Window and door openings, with no jack studs shown on the plans, shall receive one jack stud on each side

refer to NCBC R602.1.1

Note: Unless shown on the plans; Full height studs (king studs) on each side of doors and windows openings shall be as per the following table:

- 0'-3" header span: 1 full height stud on each side of opening
- 3'-1" - 4' header span: 2 full height studs on each side of opening.
- 4'-1" - 8' header span: 3 full height studs on each side of opening.

refer to Table R602.7.5



BRACING NOTES:

- See foundation plan for additional anchoring.
- Bracing of interior & exterior walls shall be continuous using wsp method as per section R602.10.3 NCBC, Residential, Edition 2018 & it's amendments unless otherwise shown on plan.
- Interior sheathing nailing pattern shall be specified in table R602.10.1 unless otherwise shown on plan.
- Exterior sheathing nailing pattern shall be specified in table R60210.1.
- All interior walls shall have gypsum board, 1/2" thick, installed on both sides of walls.
- Masonry stem walls of 48" or less supporting braced walls shall be constructed in accordance with figure R602.10.4.3

Note: For joists in a flush connection use joist hangers;

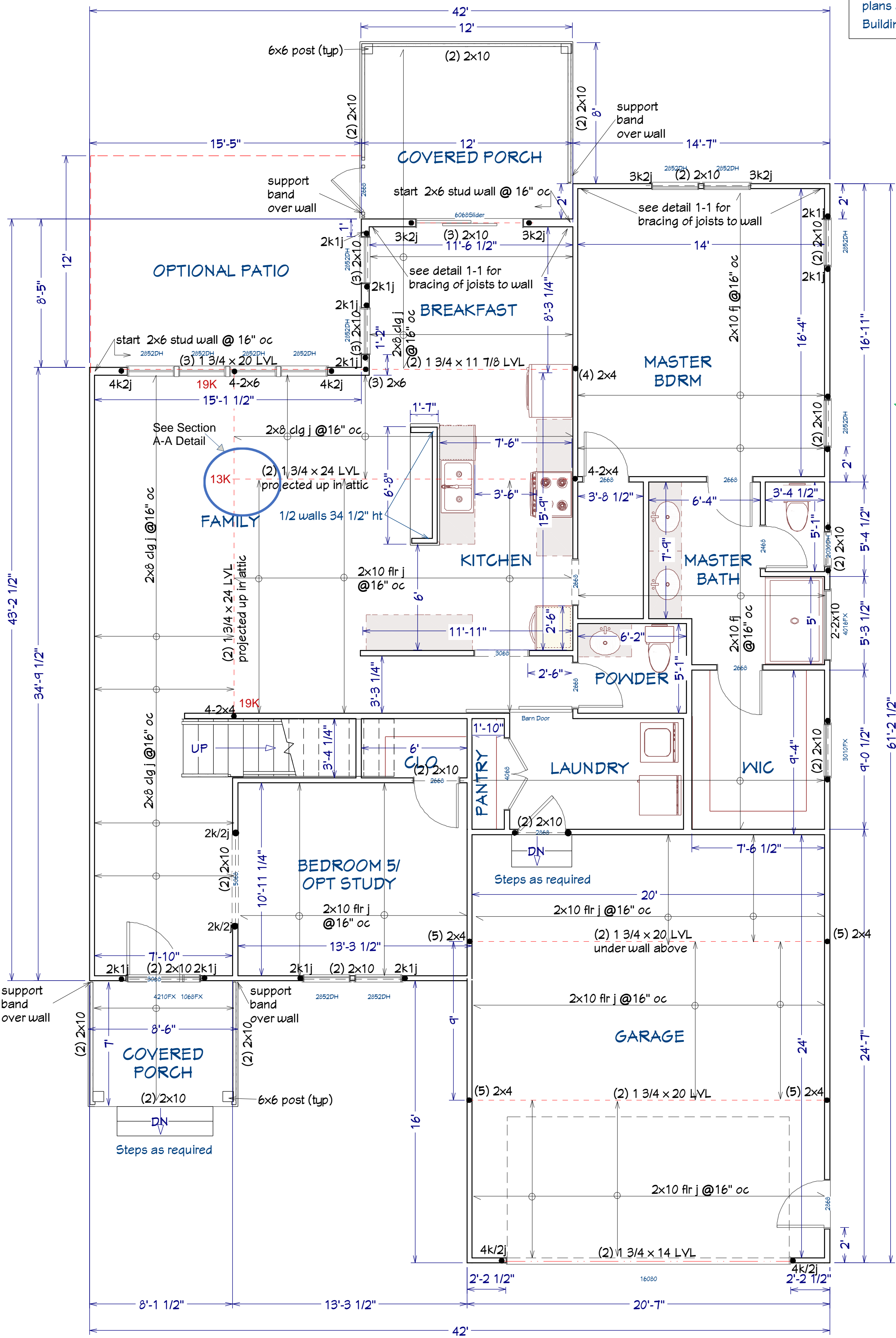
- For 2x10 & 2x12 joists use U210 Simpson
- For double 2x10 & 2x12 joists use U410 Simpson
- For 2x8 & 2x6 joists use U26 Simpson
- Hangers Nailing pattern: (U210) 10- 16d header and 6- 10d joist
- Hangers Nailing pattern: (U410) 14- 16d header and 6- 10d joist
- Hangers Nailing pattern: (U26) 6- 16d header and 4- 10d joist

Notes: For headers over windows, doors and openings

- Size of headers over windows, door and openings are as shown on the plans.
- When size of headers are not shown on the plan, refer to construction notes "headers over windows, doors and openings"

Legend: RLS= Roof Load Point

Note Dimensions are to framing. Walls are displayed @ 3-1/2"

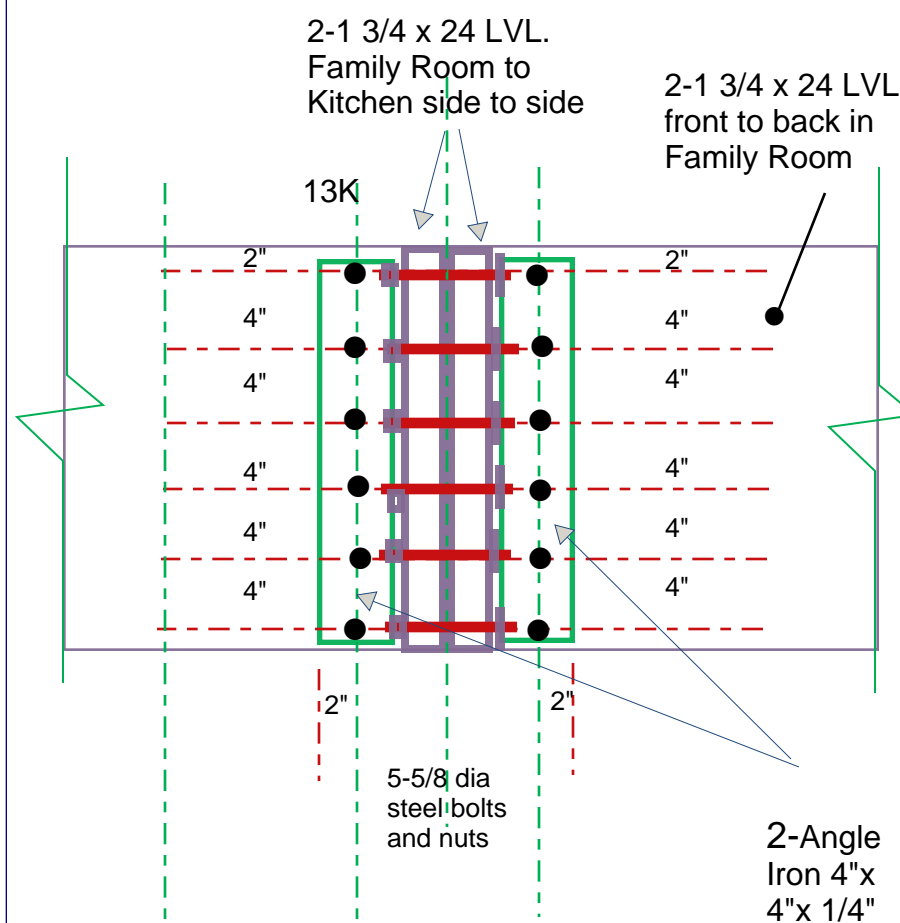


## Main Floor Structural Ceiling And Bracing Plan

Scale: 1/4"=1'0"

9' clg ht

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	10 lbs/sf	Dead Load
Bedroom	30 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Ceiling:	20 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Roof	20 lbs/sf	Live Load
	7 lbs/sf	Dead Load

#### Construction Notes, Upper Level Floor Framing

- All ceiling joists are 2x-, #2 SPF @ 16" O.C. unless otherwise indicate on the first floor plans
- Install double joists under walls running parallel to floor joists (Typical).
- For headers over windows, doors and other openings see Headers over windows, and Doors and Openings Notes
- Install beams in size as shown on first floor plan
- All walls shall be 2x4 stud walls at 16" O.C. unless otherwise shown on plan
- Install beam supports as specified on floor plan with a  symbol. If not indicated on plan, install min. 2- 2 x 4 Studs.
- Dimensions are as shown on the plan. (Do not scale dimensions)

#### Headers over windows, doors and opening

- For headers over windows, doors and other openings up to 6'-0" use 2-2x8 unless otherwise as shown on plan.
- Headers between 6'-1" and 10'-0" use 2-2x10
- Over 10' to 15' use 2- 1 3/4" x 9 1/4" LVL
- Over 15' shall be designed and specified on the plan

#### Brick Lintels:

- Up to 6' opening use 3 1/2" x 3 1/2" x 1/4"
- From 6'-1" to 10'-0" opening use 5" x 3 1/2" x 1/2"
- Over 10' shall be designed and specified on plans with d8 at 6" spacing

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- All interior walls shall have gypsum board, 1/2" thick, installed on both sides of walls.
- Masonry stem walls of 48" or less supporting braced walls shall be constructed in accordance with figure R602.10.4.3

Notes: For headers over windows, doors and openings

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- When size of headers are not shown on the plan, refer to construction notes "headers over windows, doors and openings"

Note: For joists in a flush connection use joist hangers;

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- For double 2x10 & 2x12 joists use U410 Simpson
- For 2x8 & 2x6 joists use U26 Simpson
- Hangers Nailing pattern: (U210) 10- 16d header and 6- 10d joist
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- Hangers Nailing pattern: (U26) 6- 16d header and 4- 10d joist

Note: Unless shown on the plans;

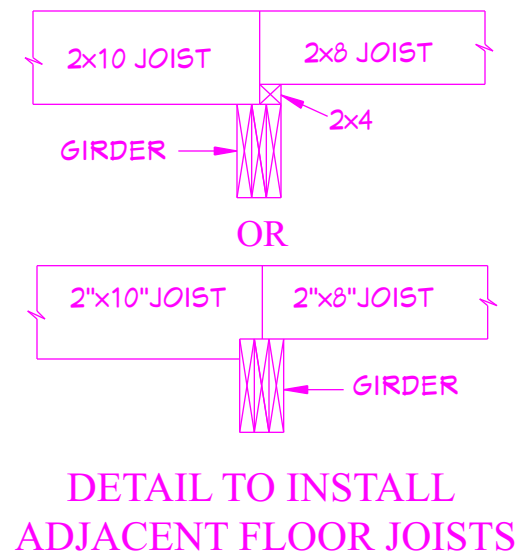
Full height studs (king studs) on each side of doors and windows openings shall be as per the following table:

- 0'-3" header span: 1 full height stud on each side of opening
- 3'-1" - 4' header span: 2 full height studs on each side of opening.
- 4'-1" - 8' header span: 3 full height studs on each side of opening.

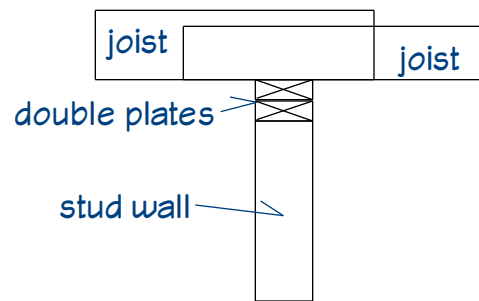
refer to Table R602.7.5

Note: Jack studs (Headers Load Support) on each side of doors and windows openings shall be as shown on the plan. Window and door openings, with no jack studs shown on the plans, shall receive one jack stud on each side

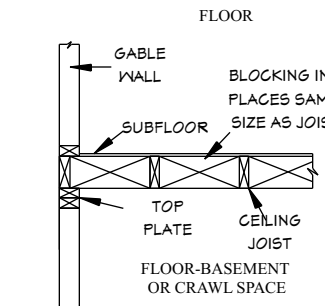
refer to NCBC R602.7.1



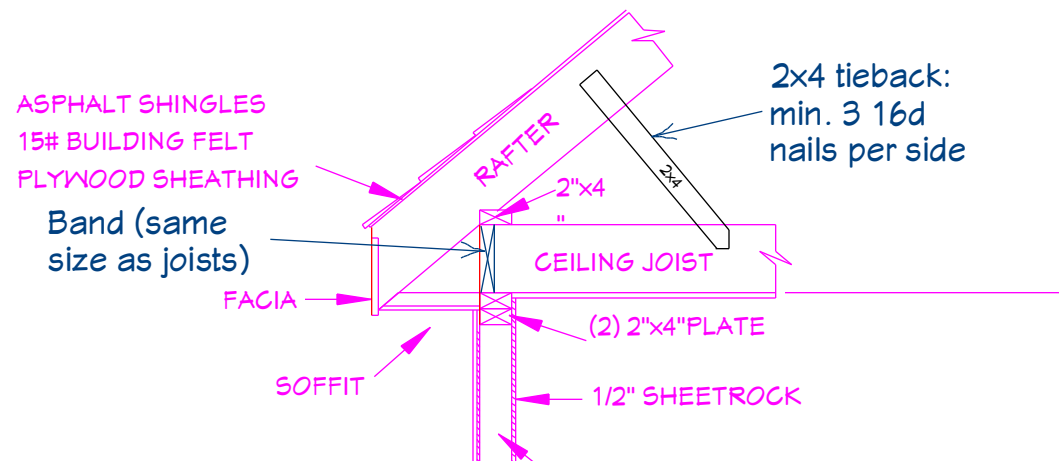
DETAIL 2-2  
BRACING / BLOCK WITH RAFTERS  
PERPENDICULAR TO JOISTS



DETAIL TO INSTALL  
ADJACENT FLOOR JOISTS

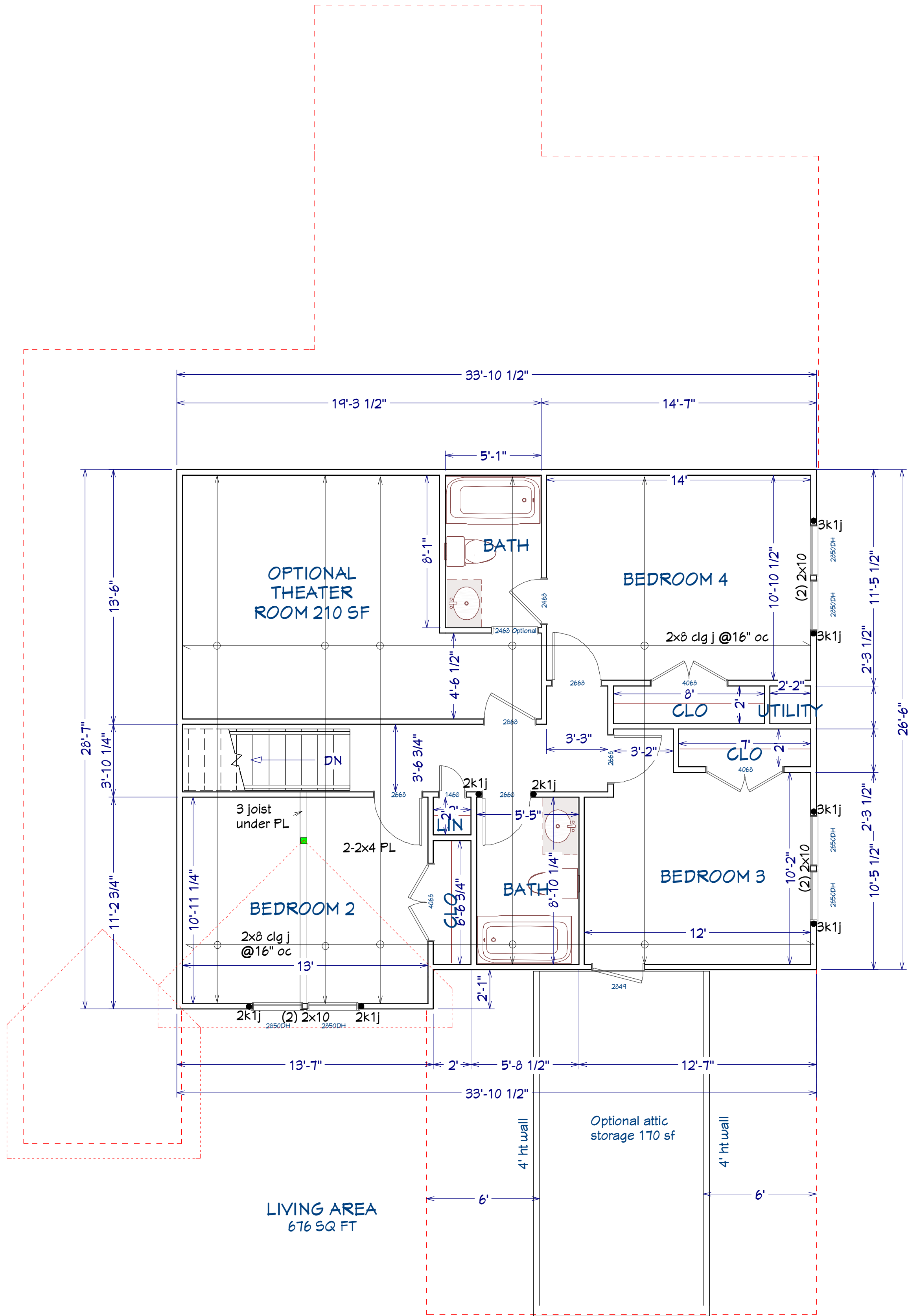


DETAIL 1-1  
BRACING/BLOCKING JOISTS  
PARALLEL TO WALL



DETAIL 3-3  
BRACING/BLOCKING JOISTS  
PARALLEL TO RAFTERS

NOTE:  
1. USE APPLICABLE DETAIL FROM THE COLLECTION ABOVE.  
2. SHEATHING TO BE NAIL TO WEDGE OF BAND



## Second Floor Ceiling Framing & Bracing Plan

Floor ceiling ht 8' unless otherwise shown on plan

Scale: 1/4"=1'0"



July 16, 2024

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LOT 2 LEAFLET CHURCH ROAD  
BRPADWAY, NC 27505

PROJECT:  
HARNETT

North Carolina

Brad Woodrow 919-612-1377  
John Frink 919-664-4519

RED ROCK  
BUILDERS  
Design Create Construct

DATE: 5/6/2024

SCALE: 1/4"=1'0"

SHEET: 7

TL 9.5 hrs

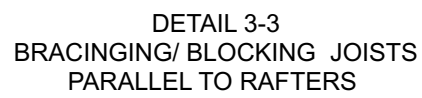
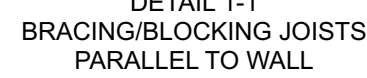
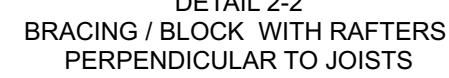
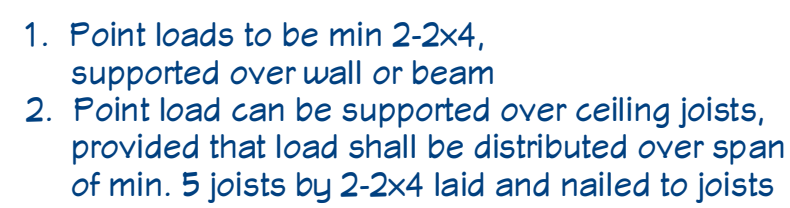
Drawn by VGB

Floor:	40 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Bedroom	30 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Ceiling:	20 lbs/sf	Live Load
	10 lbs/sf	Dead Load
Roof	20 lbs/sf	Live Load
	7 lbs/sf	Dead Load

1. All ridges, Hips and Valleys are #2 SFF or LV L as indicated on roof plan.
2. Areas of concentrated load indicated on roof plan shall be supported by minimum 2-2x4 studs unless otherwise shown on plan.
3. All rafters on roof plan are 2x8, #2 SFF unless otherwise shown on roof plan.
4. Install kick back, 2x4 to tie rafters to ceiling joists @ 32" O.C. where rafters and joists are running in the same direction. when roof rafters are running perpendicular to ceiling joists, connect minimum of 3 joists together with 2x4 continuous runners and install 2x4 kick back @ 32" between runner and rafter.
5. Install 2x8 bracing tie rafter to rafter at the ridge @ 32" O.C.
6. All inside roof supports shall be min. 2-2x4 and shall transfer support to bearing walls. Roof support load symbol is (  ).
7. Attic Access should be provided as per Section R807 of NBC, Edition 2018.
8. Dimensions are as shown on the plan. **(Do not scale dimensions)**

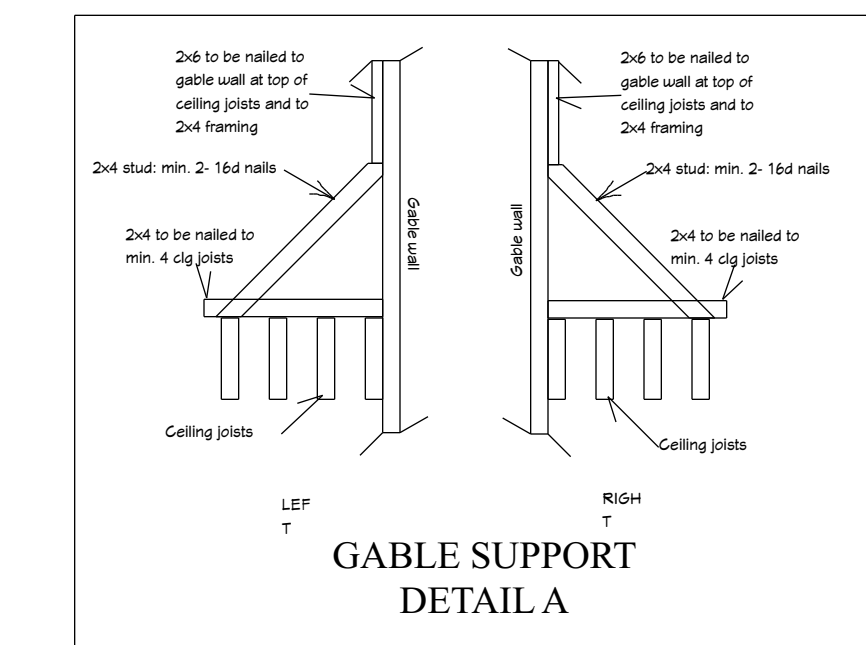
Un-vented attic and enclosed rafter assemblies shall comply to R806.5. Attic access shall comply to R807.1

1. Roof load points marked with a square dot shall be supported with 2-2x4
2. Roof supporting posts shall rest on a wall or beam
3. Supporting posts may be supported over ceiling joists, provided that load shall be distributed over span of min. 5 joists using 2-2x6 with longer side laid over the joists and nailed to joists unless otherwise shown on the plans.



NOTE:  
1. USE APPLICABLE DETAIL FROM THE COLLECTION ABOVE.  
2. SHEATHING TO BE NAILED TO MIDDLE OF BAND.

## Shingle Roof



July 16, 2024

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