Plan Notes:

1. **This Plan is designed to the 2018 North Carolina Residential Code.**
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

All overhangs 18"

Front Elevation

Stucco or stone per owner

Rear Elevation

Stucco or stone per owner

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

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PROJECT:
Gremillion Residence
909 Raynor McLamb Rd
Bunnlevel, NC. 28323
Harnett County
North Carolina

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

DATE: 1/31/2023

SCALE: 1/4'=1'0"

SHEET: 1

Designed by

Drawn by VGB

NORTH CAROLINA PROFESSIONAL SEAL 16941 ENGINEER SAMIR W. BAHHO

February 02, 2023

Plan Notes:

1. **This Plan is designed to the 2018 North Carolina Residential Code.**
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
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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

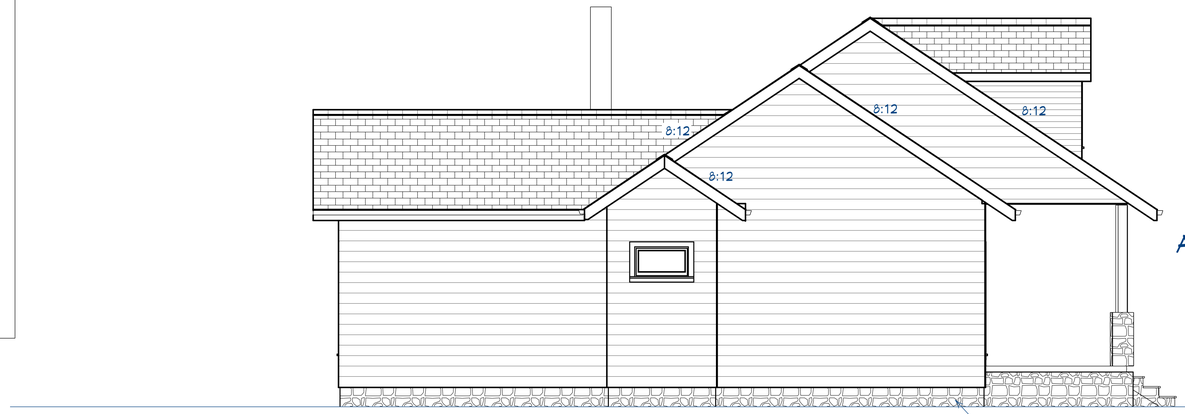
Insulation for ceiling: R38 or R-30 (See Table N1102.1, 2)

Insulation for Walls: R-15 (See Table N1102.1, 2)

Insulation for floor: R-19

Roof pitch is listed: rise:run

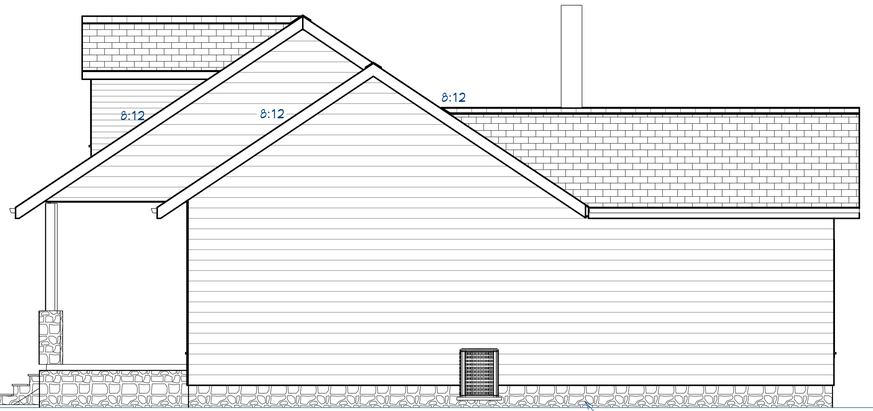
All roof planes shingles



All overhangs 18"

Stucco or stone per owner

Left Elevation



Stucco or stone per owner

Right Elevation

Scale: 1/4"= 1'0"

February 02, 2023

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Harnett County North Carolina

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

DATE:1/31/2023

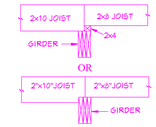
SCALE: 1/4'=1'0"

SHEET: 2

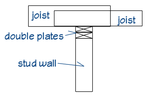
Designed by

Drawn by VGB

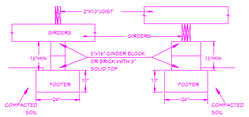
NORTH CAROLINA PROFESSIONAL SEAL 16941 ENGINEER SAMIR W. BAHHO



DETAIL TO INSTALL ADJACENT FLOOR JOISTS

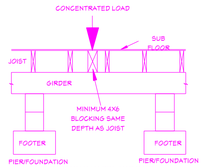


DETAIL TO INSTALL ADJACENT FLOOR JOISTS



DROPPED PIER & FOOTER
NOT TO SCALE

DROPPED PIER & FOOTER
NOT TO SCALE



BLOCKING TO GIRDER
UNDER CONCENTRATED LOAD
NOT TO SCALE

CONTINUOUS FOOTERS AND FOUNDATION WALLS:

1. Foundation footers shall be 20"x10". Footers for foundation walls with brick veneer shall be 24"x10"
2. Masonry foundation wall shall be 8" wide cinder block to 6' ht. Masonry foundation walls over 6' up to 12' high shall be 12" wide cinder block. Masonry foundation walls over 8' high shall be of solid 12"x16" concrete block. fill the top layer of cinder block with concrete mortar.
3. Install anchor bolts per Code Section R403.1.6
4. Foundation walls with unbalanced fill shall be installed per code R404 and tables R404.1.1(2) and table R404.1.(4)

Piers Construction:

1. All pier footers shall be 24"x24"x10" unless otherwise specifically shown on the plans.
2. Piers shall be cinder block 8"x16" up to 6' pier height. Piers over 8' height shall be solid block or otherwise filled with concrete mortar.
3. Top 8"; of pier shall be solid block or cinder block filled with concrete mortar.
4. Piers over 6' high shall be 16"x16" cinder block

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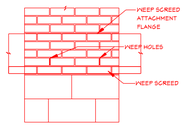
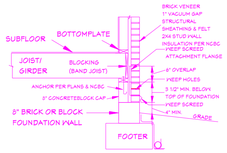
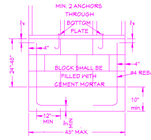


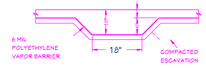
WEEP SCREED DETAIL DESIGN
NOT TO SCALE



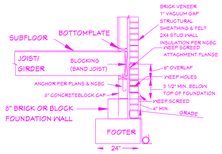
SECTION "A"
WEEP HOLE
NOT TO SCALE



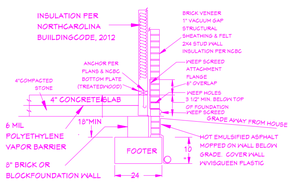
STEM WALL BRACING
& ANCHORING DETAIL
NOT TO SCALE



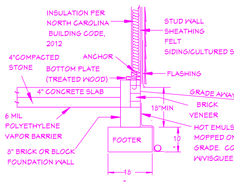
SECTION "CC"
INSIDE
FOOTERS
NOT TO SCALE



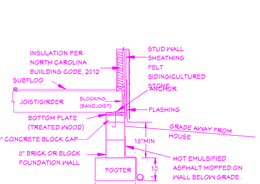
SECTION "A-A"
JOIST/GIRDER CONNECTION W/BRICK VENEER
CONTINOUS FOUNDATION WALL & FOOTER
NOT TO SCALE



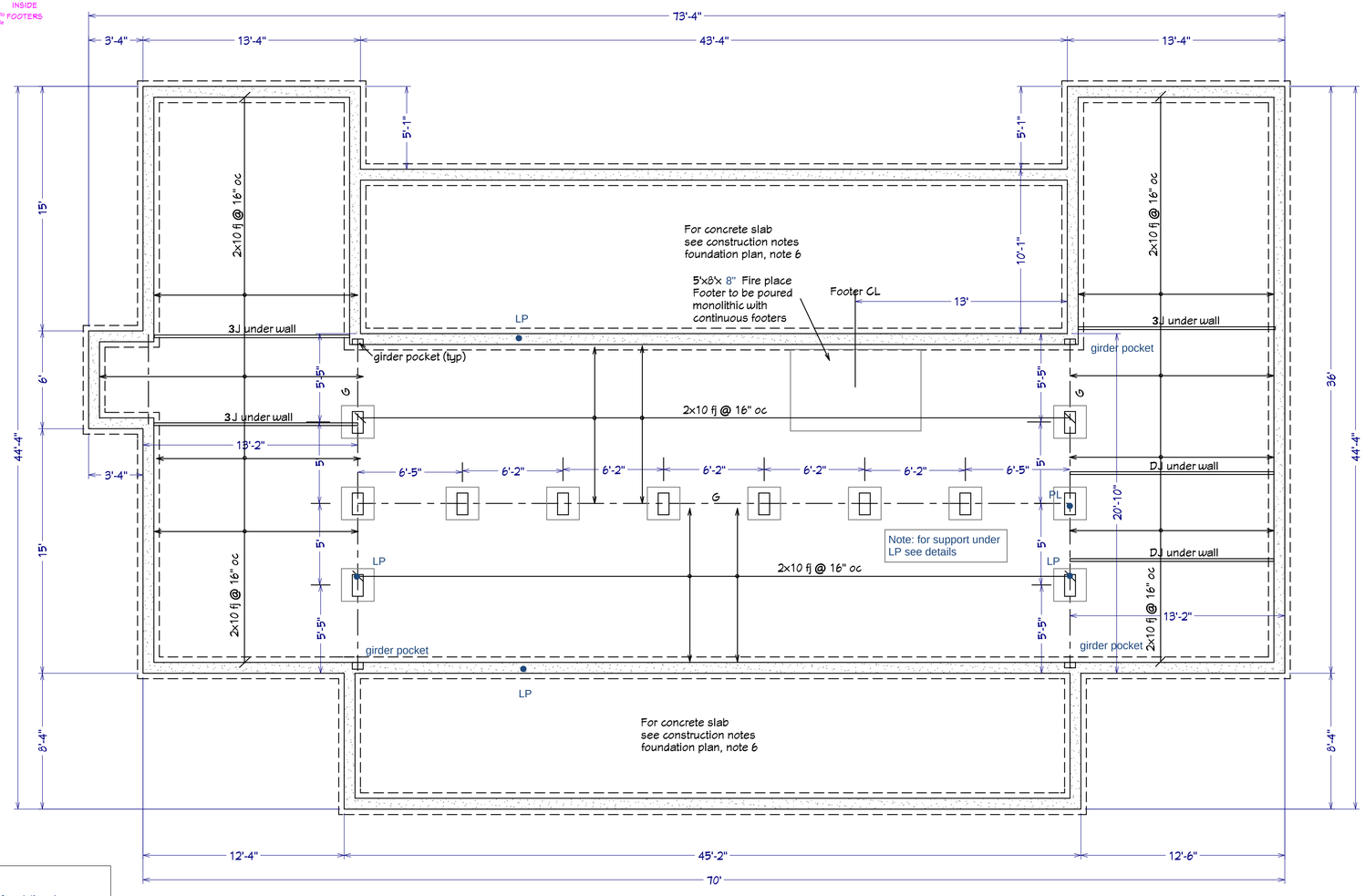
SECTION "B-B"
CONTINUOUS GARAGE FOUNDATION
WALL W/BRICK VENEER & FOOTER
NOT TO SCALE



SECTION "C-C"
CONTINUOUS GARAGE FOUNDATION
WALL W/SIDING/CULTURED STONE &
FOOTER
NOT TO SCALE



SECTION "D-D"
JOIST/GIRDER CONNECTION W/SIDING/STONE
CONTINUOUS FOUNDATION WALL & FOOTER
NOT TO SCALE



Design Loads

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

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 18" x 10" in siding finish and 24" x10" in brick veneer finish. See details
3. **In slab foundation design,** 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" x24" x12" 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'-8' 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 8' shall be designed by Structural Engineer.
6. Garage , and front porch slabs shall be 4" concrete slab reinforced with 6x6, #10 W.W.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' x10'
7. **In slab foundation design,** 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 mill 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 NCBC 2018, R602.10.3, Continuous Sheathing, WSP 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

NOTES:

1. For Load points see construction note #1 on foundation plan notes
2. For pier, foundation & footer see note #4.
3. For continuous foundation wall & footer see notes #2 & #5
4. For garage, front porch slab see not #8
5. For masonry porches see note #8
6. Anchors are represented with "X" symbol.
7. Unless noted otherwise, all girders are (3) 2 x 10 as represented with (_ _ G _ _)

CRAWL SPACE VENTILATION CALCULATIONS
Per Section R408 of the 2018 NC Building Code-Residential
Note 1: Provide 6 Mil Poly Vapor Barrier to cover 100% of Crawl Space Area per R408.2
Note 2: Provide a vent 3' from each corner as per R408.1.2
Note 3 : Provide Foundation vents opening as per R408.1

CLOSED CRAWL SPACE:
Closed crawl space option shall conform to Section R409, NCBC, Residential, 2018 and R408 Subsections

Note: Crawl access door "per NCBC"

Foundation & First floor structural plan
9' clg ht
Scale: 1/4"=1'0"

February 02, 2023

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PROJECT:
Gremillion Residence
909 Raynor McLamb Rd
Bunnlevel, NC. 28323
Harnett County
North Carolina

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

DATE:1/31/2023

SCALE: 1/4"=1'0"

SHEET: 3

Designed by

Drawn by VGB

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
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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

Area Chart:

1. Heated Area	1900 SF
2. Covered front porch	432 SF
3. Covered back porch	360 SF

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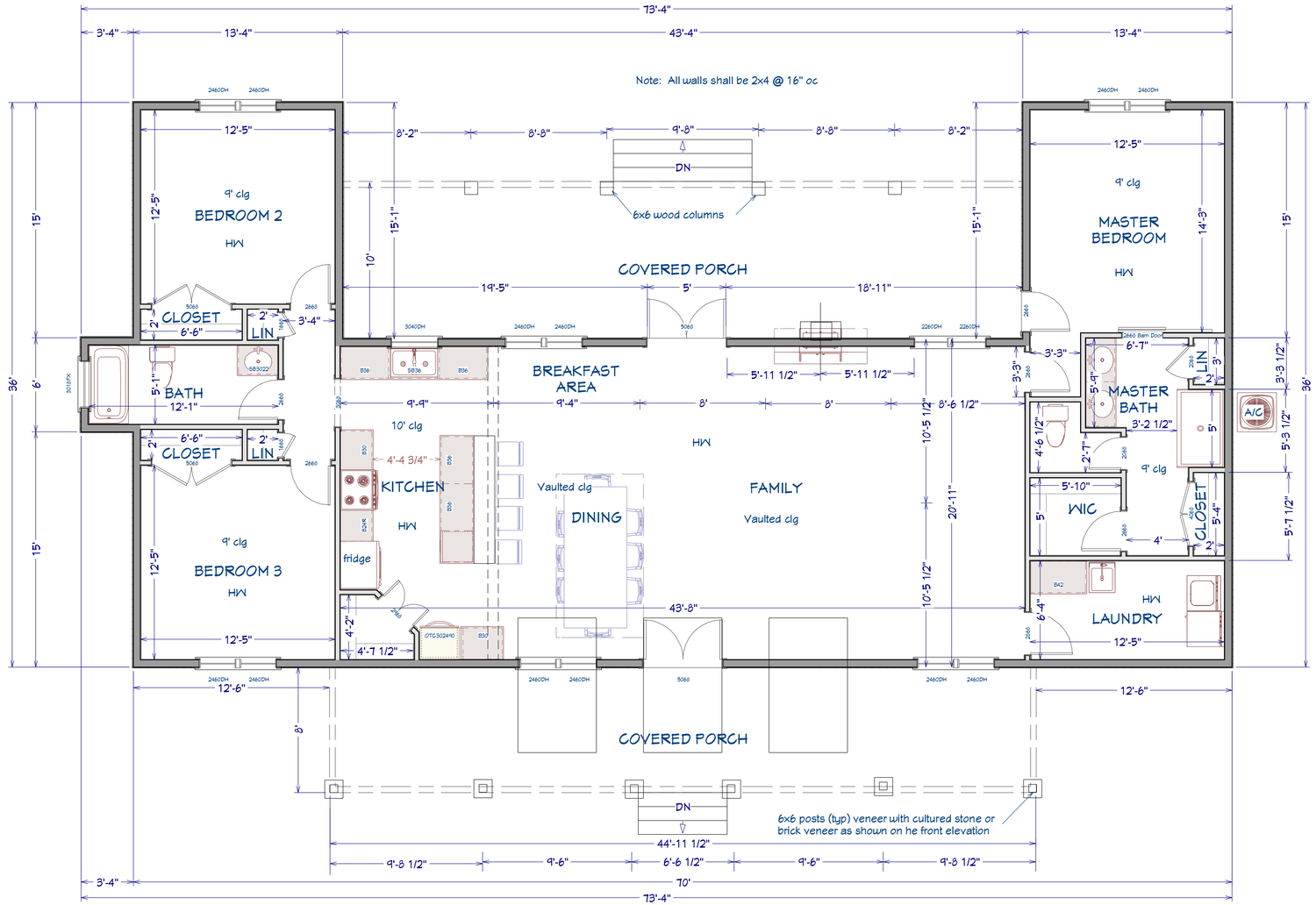

Floor ceiling ht 9' unless otherwise shown on plan

First Floor Architectural Plan

Scale: 1/4"=1'0"

February 02, 2023

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North Carolina

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

DATE:1/31/2023

SCALE: 1/4"=1'0"

SHEET: 4

Designed by

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

Construction Notes, First Floor Framing

1. All ceiling joists are 2x-, #2 SPF @ 16" O.C. unless otherwise indicate on the first floor plans
2. Install double joists under walls running parallel to floor joists (Typical).
3. For headers over windows, doors and other openings see Headers over windows and Doors and Openings Notes
4. Install beams in size as shown on first floor plan
5. All walls shall be 2x4 stud walls at 16" O.C. unless otherwise shown on plan
6. Install beam supports as specified on floor plan with a ● symbol. If not indicated on plan on, install min. 2- 2 x 4 Studs.
7. 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

BRACING NOTES:

1. See foundation plan for additional anchoring.
2. 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.
3. Interior sheathing nailing pattern shall be specified in table R602.10.1 unless otherwise shown on plan.
4. Exterior sheathing nailing pattern shall be specified in table R60210.1.
5. All interior walls shall have gypsom board, 1/2" thick, installed on both sides of walls.
6. 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;

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

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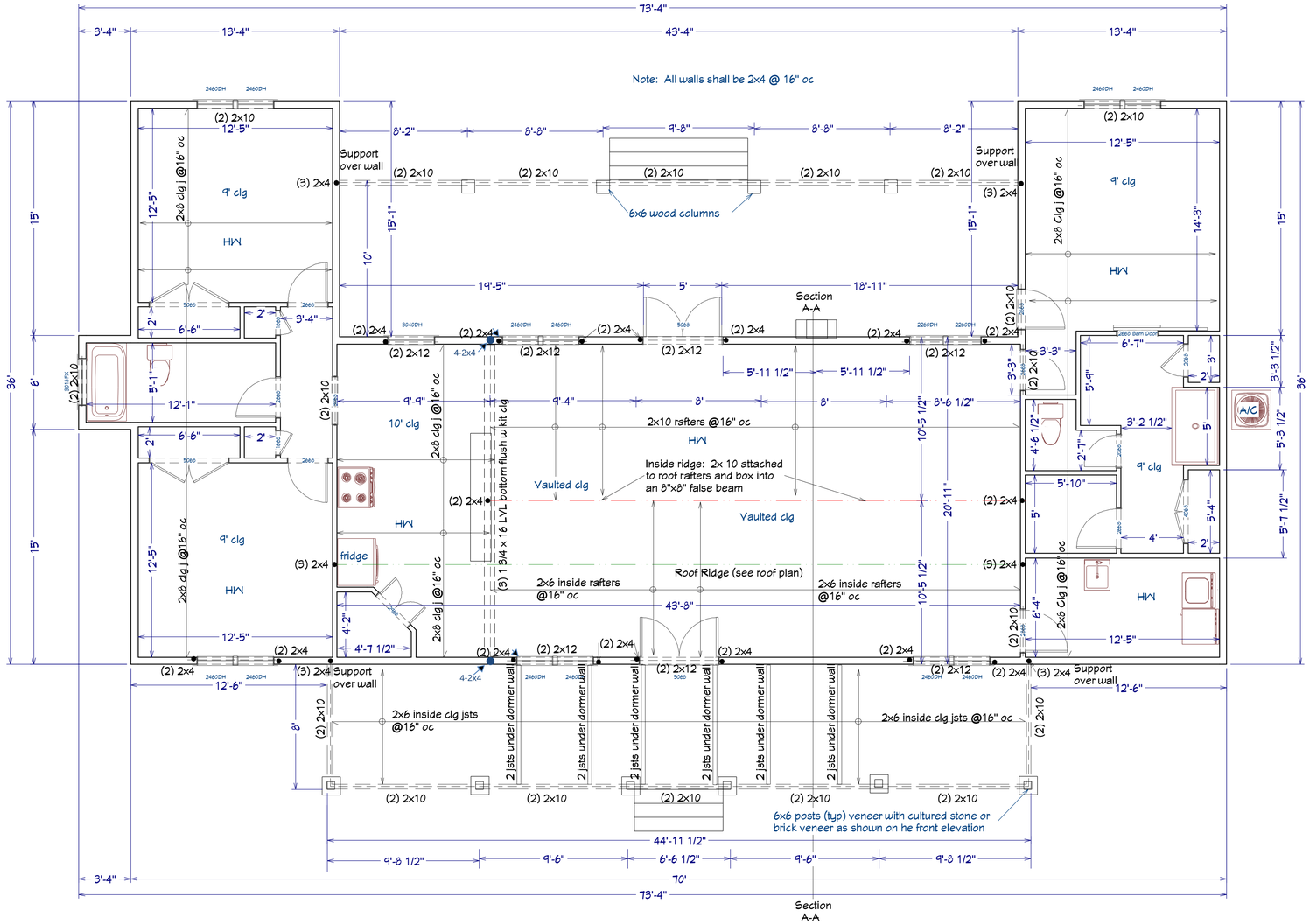


Design Loads

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

Construction Notes, Second Floor Framing Plan

1. All beams are #2 SPF or LVL(Laminated Veneer Lumber) as indicated on plans.
2. All floor and ceiling joists are #2 SPF at 16" O.C. as indicate on plans
3. For headers over windows, doors and other openings see Headers over windows and door opening Notes on plan.
4. For Brick lintels see brick lintels notes on2nd floor plan
5. Install beams in size as shown on 2nd floor plan
6. All walls shall be 2x4 stud walls at 16" O.C. unless otherwise shown on plan
7. 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 joists2x4 continuous runner and install 2x4 kick back @ 32" between runner and rafter
8. Install beam supports as specified on the plan. If not indicated on plan Install min.2-2 x 4 Studs
9. Dimensions are as shown on the plan. (Do not scale dimensions)

Headers over windows, doors and opening

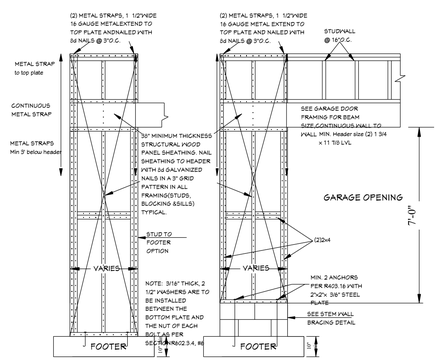
- For headers over windows, doors and other openings up to 6'-0"use 2-2x8 unless otherwise as shown on plan.
- Headers between 6'-1" and 10'-0" use 2-2x10
- From 10'-15' use 2- 1 3/4" x 9 1/4" LVL
- Over 15' shall be designed and specified on plans

Brick Lintels:

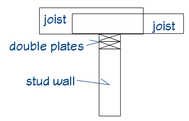
- Up to 6' opening use 3 1/2" x 3 1/2" x 1/4"
- From 6'-1" to 10'-0" opening use 5" x 3 1/2" x 1/2"
- Over 10' shall be designed and specified on plans

Bracing and sheathing of walls

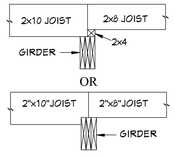
1. All braced walls shall be constructed using NCBC 2018, R602.10.3, Continuous Sheathing, WSP Method unless otherwise shown on plans
2. All braced wall panels on continuous foundation shall be anchored as per Section R403.1.6, North Carolina Building Code, Edition 2018 unless otherwise shown on plans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



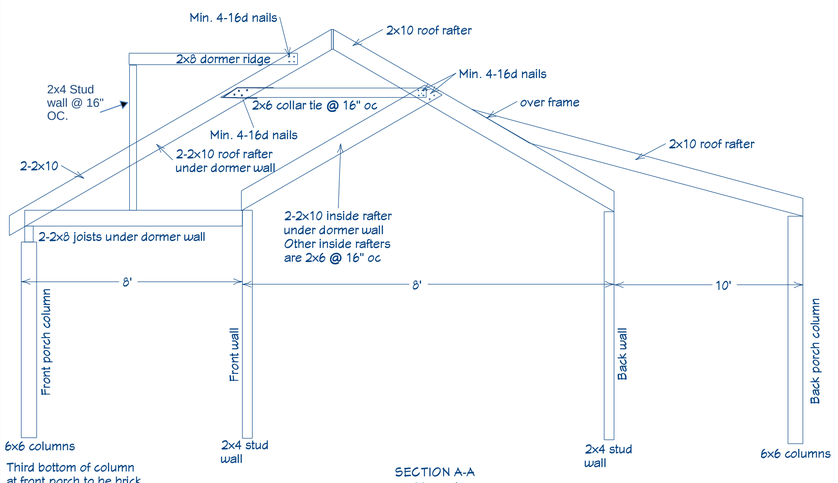
GARAGE DOOR PORTAL FRAME (TYP. BOTH SIDES)



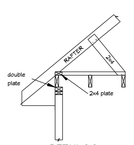
DETAIL TO INSTALL ADJACENT FLOOR JOISTS



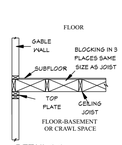
DETAIL TO INSTALL ADJACENT FLOOR JOISTS



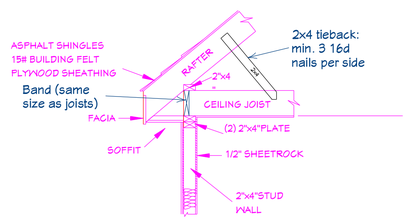
SECTION A-A not to scale



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



DETAIL 1-1
BRACING/BLOCKING JOISTS PARALLEL TO WALL



DETAIL 3-3
BRACINGING/ BLOCKING JOISTS PARALLEL TO RAFTERS

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

Main Floor Structural Ceiling And Bracing Plan

Scale: 1/4"=1'0" 9' clg ht

Note: For number of Jack and King studs for windows and doors openings See Table notes this sheet

February 02, 2023

Note: (Complies to exterior walls only)
Full height studs (king studs) on each side of doors and windows openings shall be as per the following table:
1. 0-3' header span: 1 full height stud on each side of opening
2. 3'-1" - 4' header span: 2 full height studs on each side of opening.
3. 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

NORTH CAROLINA PROFESSIONAL SEAL 16941 ENGINEER SAMIR W. BAHHO

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PROJECT:
Gremillion Residence
909 Raynor McLamb Rd
Bunnlevel, NC. 28323
Harnett County
North Carolina

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

DATE:1/31/2023

SCALE: 1/4"=1'0"

SHEET: 5

Designed by

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

Construction Notes Roof Framing Plan

1. All ridges, Hips and Valleys are #2 SPF 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 SPF 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 shall be provided as per Section R807Of NCBC, Edition 2018.
8. Dimensions are as shown on the plan. (**Do not scale dimensions**)

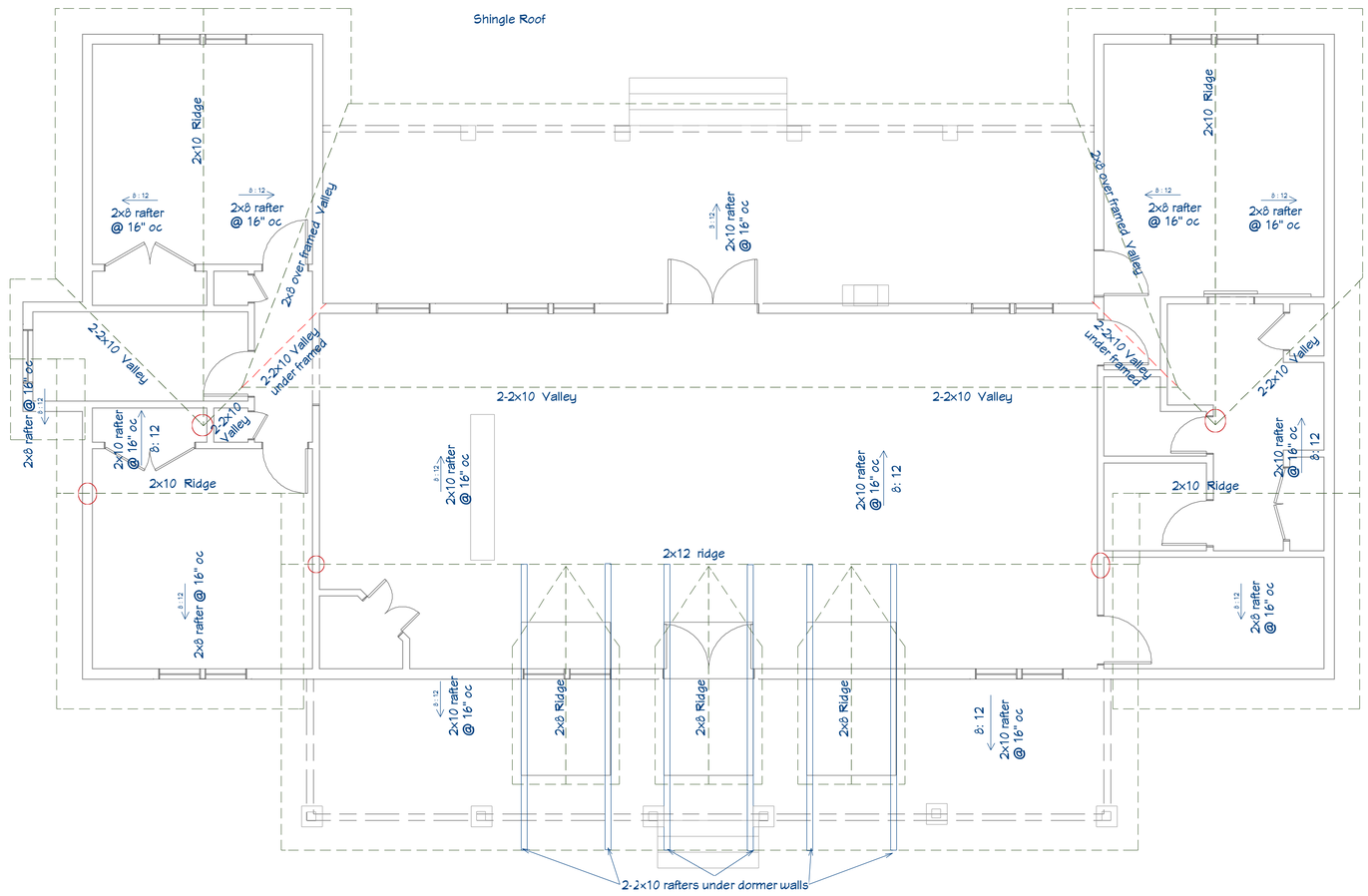
Attic Ventilation (See table on roof plan):

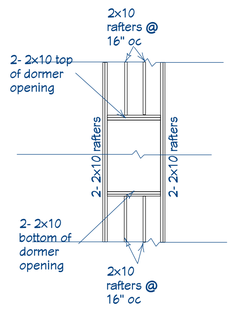
Attics shall be vented as specified in North Carolina Building Code, Residential, Edition 2018 - Section R806 (Roof Ventilation). See attic ventilation table on roof plan.

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

Roof pitch is listed: rise:run

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





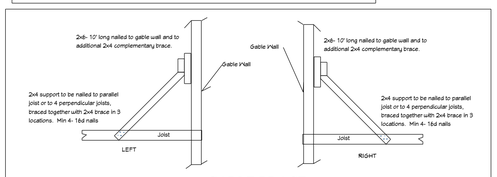
FRAMING DETAIL
Dormer opening through rafters

(2) 2 x 4 support perpendicular to member

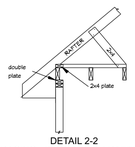
(2) 2 x 4 support @ an angle to member

Notes for point load roof support:

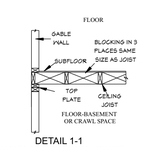
1. Point loads to be min 2-2x4, supported over wall or beam
2. Point load can be supported over ceiling joists, provided that load shall be distributed over span of min. 5 joists by 2-2x4 laid and nailed to joists



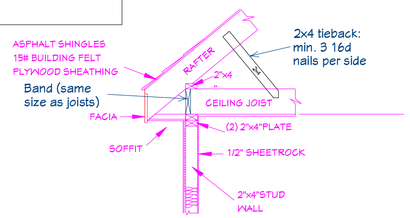
GABLE BRACE
DETAIL B



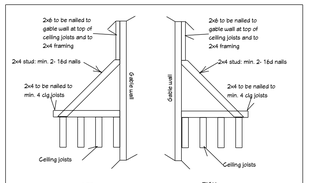
DETAIL 2-2
BRACING / BLOCK WITH RAFTERS
PERPENDICULAR TO JOISTS



DETAIL 1-1
BRACING/BLOCKING JOISTS
PARALLEL TO WALL



DETAIL 3-3
BRACINGING/ BLOCKING JOISTS
PARALLEL TO RAFTERS



GABLE SUPPORT
DETAIL A

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

Roof Plan
Scale: 1/4"=1'0"

February 02, 2023

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North Carolina

REVISION TABLE			
NUMBER	DATE	REVISED BY	DESCRIPTION

DATE:1/31/2023

SCALE: 1/4'=1'0"

SHEET: 6

Designed by

Drawn by VGB

NORTH CAROLINA PROFESSIONAL SEAL 16941 ENGINEER SAMIR W. BAHHO