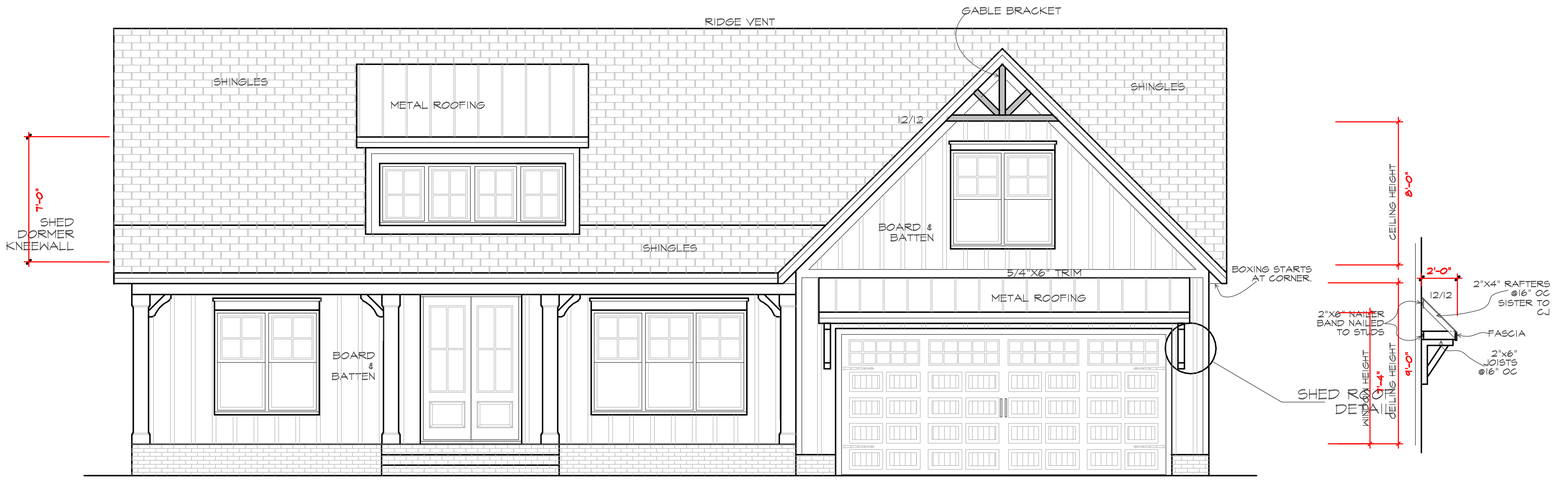
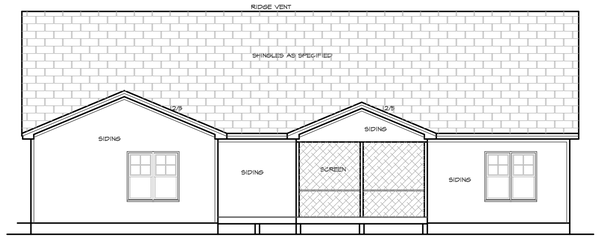



# FRONT ELEVATION A

SCALE 1/4" = 1'-0"

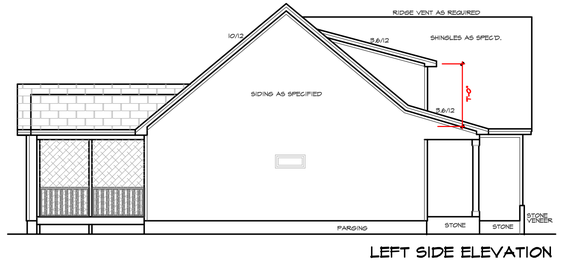
## ATTIC VENTILATION

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 300, PROVIDED AT LEAST 50 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 ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.



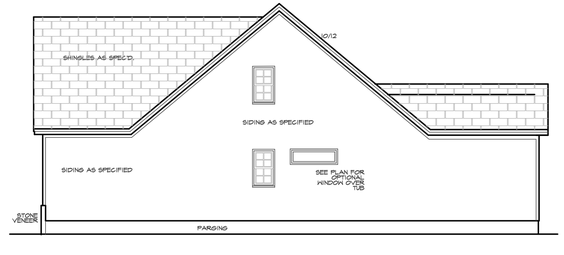

## REAR ELEVATION

SCALE 1/8" = 1'0"




## LEFT SIDE ELEVATION

SCALE 1/8" = 1'0"




## RIGHT SIDE ELEVATION

SCALE 1/8" = 1'0"

MIDTOWN DESIGNS

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THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

NC (2018 NCRC) , Wind : 115 - 120 mph

The Front Porch GARAGE RIGHT

GEMSTONE HOMES

MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

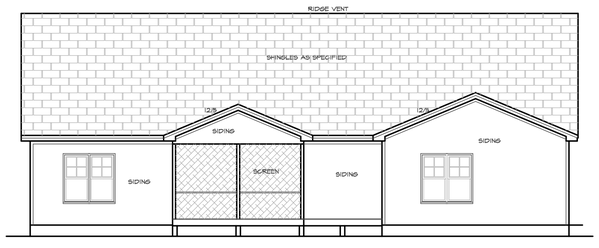
PROJECT # 210604


FRONT ELEVATION "B"

SCALE 1/4" = 1'0"

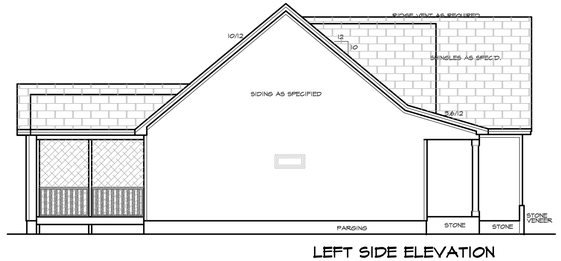
## ATTIC VENTILATION

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 300, PROVIDED AT LEAST 50 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 ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.



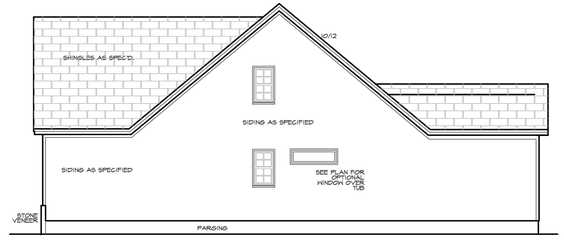

REAR ELEVATION

SCALE 1/8" = 1'0"




LEFT SIDE ELEVATION

SCALE 1/8" = 1'0"




RIGHT SIDE ELEVATION

SCALE 1/8" = 1'0"

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NC (2018 NCRC) , Wind : 115 - 120 mph

# The Front Porch

GARAGE RIGHT

GEMSTONE HOMES

MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

PROJECT # 210604

## FOUNDATION VENTING

SECTION R408 UNDER FLOOR SPACE

R408.1 Ventilation. The under-floor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement or cellar) shall be provided with ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet (0.67 m squared for each 100 m squared) of under-floor space area. One such ventilating opening shall be within 3 feet (914 mm) of each corner of said building.

CRAWL AREA TO BE VENTED: 1422 SQ.FT.
1422/1500 = .948 NET FREE VENTING AREA REQUIRED

R408.2 Ground Vapor Retarder
A minimum 6 mil. polyethyne vapor retarder shall be installed to cover all earth in the crawl space with joints lapped not less than 12"

## FOUNDATION STRUCTURAL NOTES:

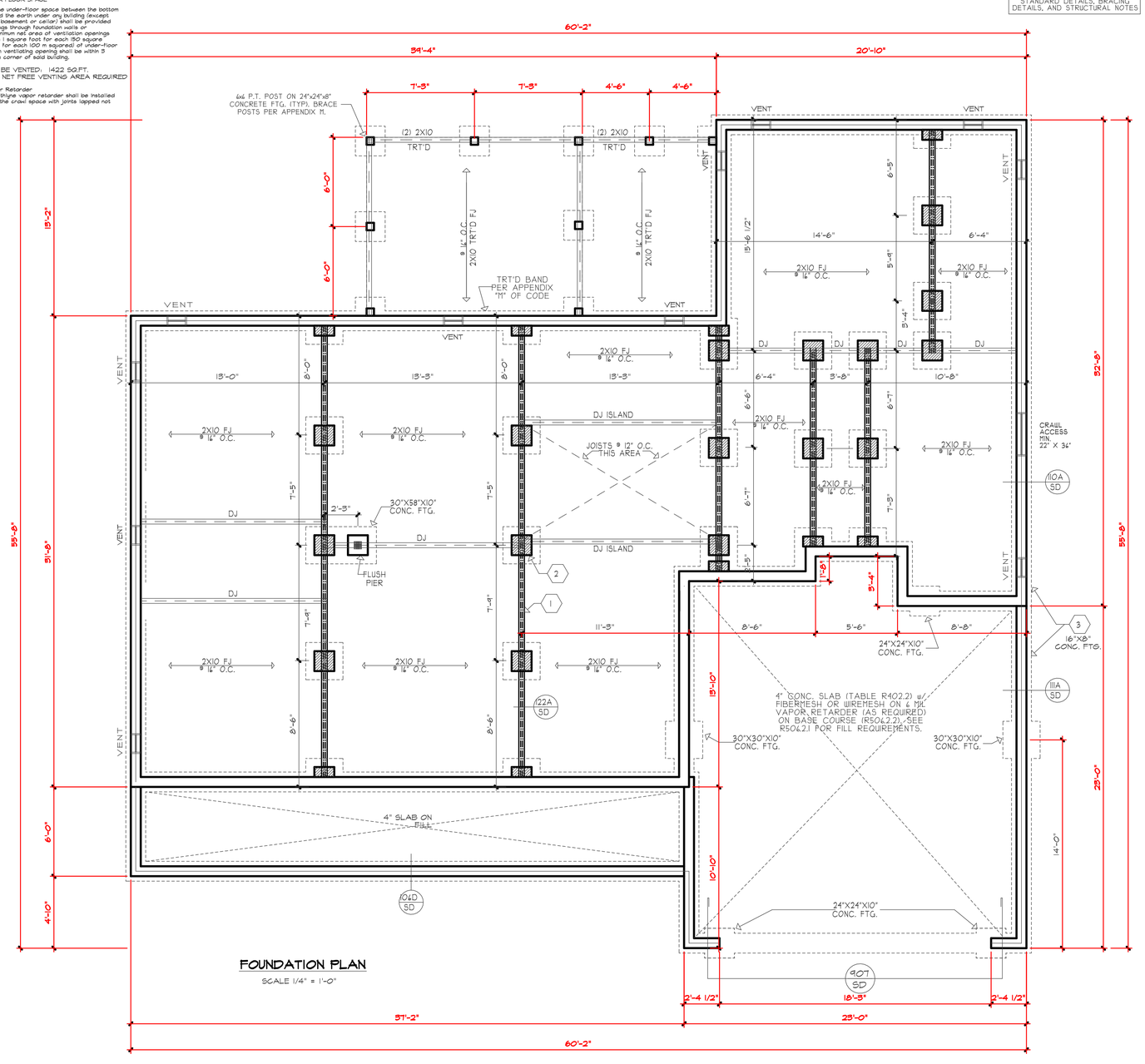
NC (2018 NCRC): Wind: 115-120 MPH

1. (3) 2x10 SYP #2 OR SPF#2 GIRDER, TYPICAL UNO.
2. CONCRETE BLOCK PIER SIZE SHALL BE:

| SIZE | HOLLOW MASONRY | SOLID MASONRY |
|---|---|---|
| 8 x 16 | UP TO 32" HIGH | UP TO 5'-0" HIGH |
| 12 x 16 | UP TO 48" HIGH | UP TO 9'-0" HIGH |
| 16 x 16 | UP TO 64" HIGH | UP TO 12'-0" HIGH |
| 24 x 24 | UP TO 96" HIGH | |

   WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.
3. WALL FOOTING AS FOLLOWS:
   DEPTH: 8" - UP TO 2-1/2 STORY
   10" - 3 STORY
   WIDTH: SIDING (OR EQUAL)
   - 16" - UP TO 2-1/2 STORY
   - 20" - 3 STORY
   BRICK VENEER
   - 16" - 1 STORY
   - 20" - 2 STORY
   - 24" - 3 STORY

   FOR FOUNDATION WALL HEIGHT AND BACKFILL REQUIREMENTS, REFER TO NORTH CAROLINA RESIDENTIAL CODE TABLE R404.1.1 (1 THRU 4)
   NOTE: ASSUMED SOIL BEARING CAPACITY = 2000 PSF. CONTRACTOR MUST VERIFY SITE CONDITIONS AND CONTACT SOILS ENGINEER IF MARGINAL OR UNSTABLE SOILS ARE ENCOUNTERED.
4. (4) 2x10 SYP#2 OR SPF#2 GIRDER.
5. (2) 1.75X9.25 LVL OR LSL GIRDER
6. (3) 1.75X9.25 LVL OR LSL GIRDER
7. "■" DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER. SOLID BLOCK ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO FND, TYPICAL.
8. ABBREVIATIONS:
   "SJ" = SINGLE JOIST
   "DJ" = DOUBLE JOIST
   "TJ" = TRIPLE JOIST




## FOUNDATION PLAN

SCALE 1/4" = 1'-0"

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3716 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4112 PHONE: 919-878-1471
PROJECT #: 22-1638

- Engineers seal applies only to structural components on this document. Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.
- Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability
- Seal is valid for a project permitted one year from date of seal.
- Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JONATHAN H. SOUTHERN

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

MIDTOWN DESIGNS

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THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

NC (2018 NCRC) ; Wind : 115 - 120 mph

The Front Porch GARAGE RIGHT

GEMSTONE HOMES

MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

PROJECT # 210604

## FOUNDATION STRUCTURAL NOTES:

1. (3) 2 x 10 SPF #2 GIRDER DROPPED, TYPICAL UNO.
2. CONCRETE BLOCK PIER SIZE SHALL BE:

| SIZE | HALLOW MASONRY | SOLID MASONRY |
|---|---|---|
| 8 x 16 | UP TO 32" HIGH | UP TO 5'-0" HIGH |
| 12 x 16 | UP TO 48" HIGH | UP TO 9'-0" HIGH |
| 16 x 16 | UP TO 64" HIGH | UP TO 12'-0" HIGH |
| 24 x 24 | UP TO 96" HIGH | |

WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.

3. WALL FOOTING AS FOLLOWS:

DEPTH: 8" - UP TO 2-1/2 STORY
10" - 3 STORY

WIDTH: SIDING (OR EQUAL)
- 16" - UP TO 2-1/2 STORY
- 18" - 3 STORY

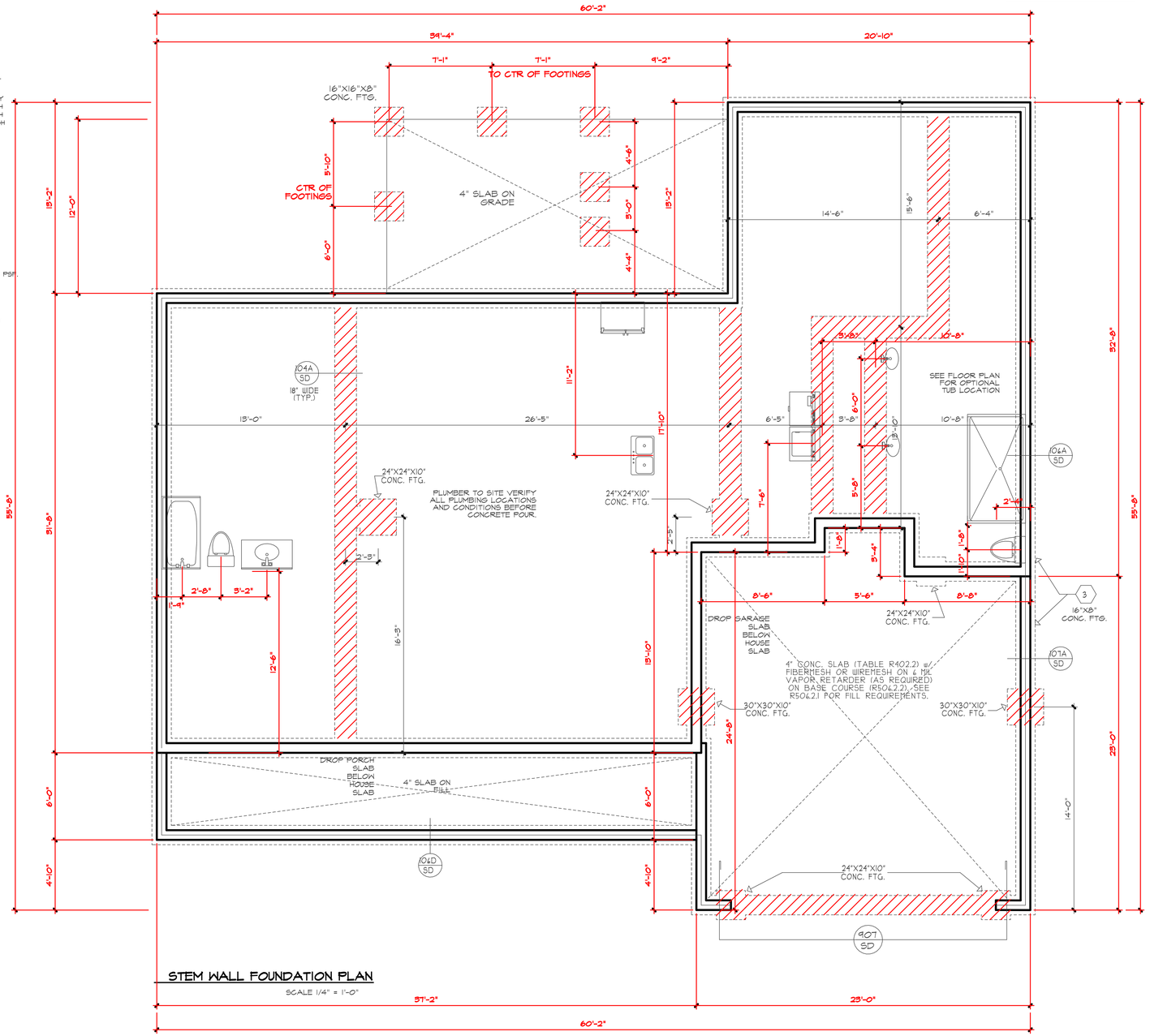
BRICK VENEER
- 16" - 1 STORY
- 20" - 2 STORY
- 24" - 3 STORY

FOR FOUNDATION WALL HEIGHT AND BACKFILL REQUIREMENTS, REFER TO NORTH CAROLINA RESIDENTIAL CODE TABLE R404.1.1 (1 THRU 4) NOTE: ASSUMED SOIL BEARING CAPACITY = 2000 PSF. CONTRACTOR MUST VERIFY SITE CONDITIONS AND CONTACT SOILS ENGINEER IF MARGINAL OR UNSTABLE SOILS ARE ENCOUNTERED.

ATTACH SILL PLATE WITH 1/2"dia. ANCHOR BOLTS AT 6'-0" CENTERS ( 7" EMBEDMENT) AND 12" FROM EACH PLATE END. (SECTION R 403.1.6)

4. "■" DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER. SOLID BLOCK ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO FND, TYPICAL.
5. ABBREVIATIONS:

"SJ" = SINGLE JOIST
"DJ" = DOUBLE JOIST
"TJ" = TRIPLE JOIST




## STEM WALL FOUNDATION PLAN

SCALE 1/4" = 1'-0"

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3114 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4112, PHONE: 919-878-1671
PROJECT #: 22-1638

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- Seal is valid for a project permitted one year from date of seal.
- Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES M. SOUTHERN

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

MIDTOWN DESIGNS

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NC (2018 NCRC) , Wind - 115 - 120 mph

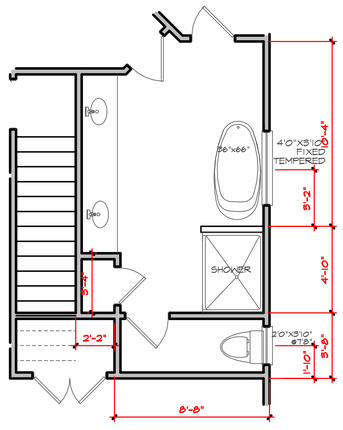
The Front Porch GARAGE RIGHT

GEMSTONE HOMES

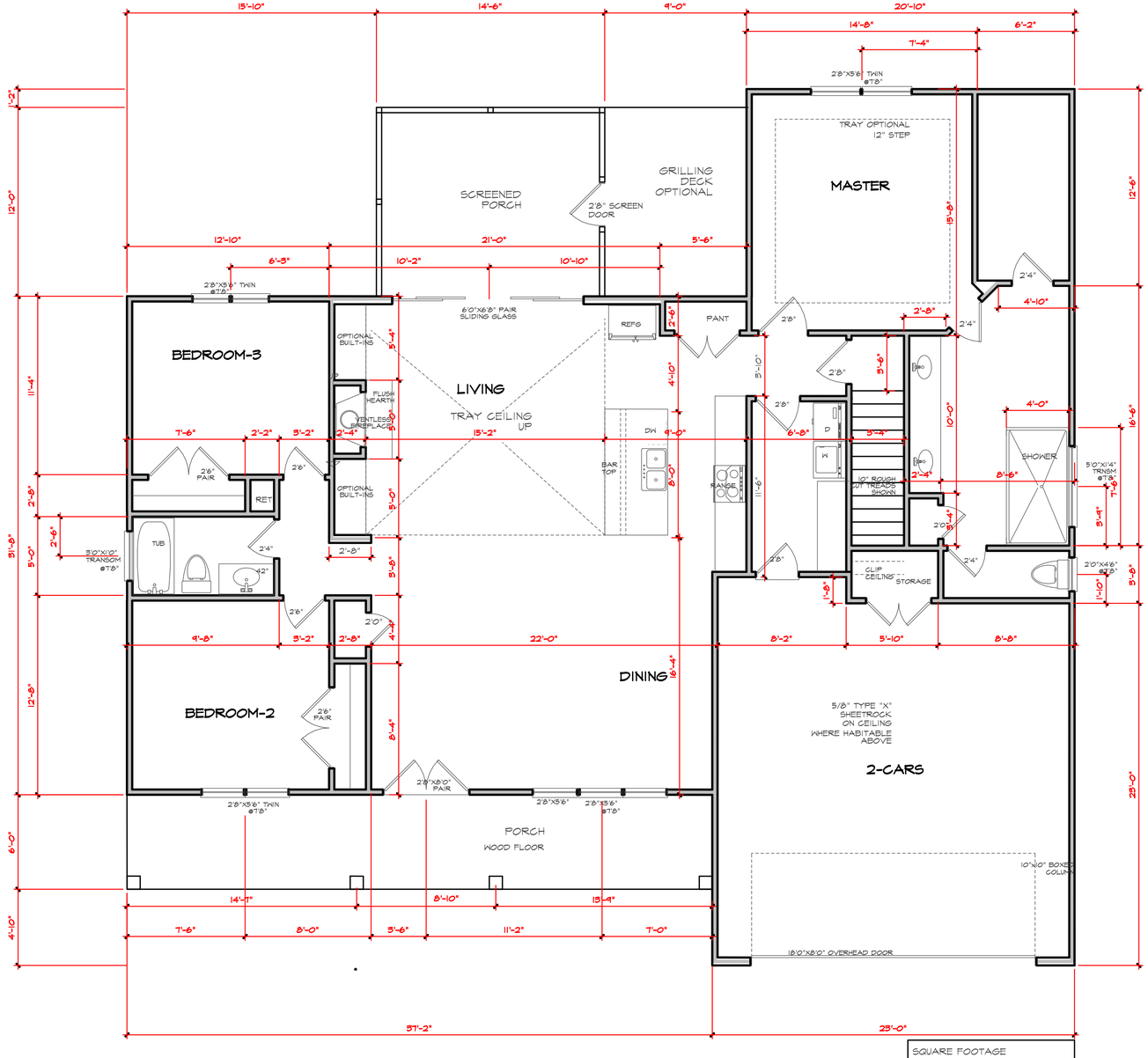
MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

PROJECT # 210604




OPTIONAL BATH




FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

| SQUARE FOOTAGE | |
|---|---|
| FIRST FLOOR | 1,871 SQ.FT. |
| OPTIONAL PLYROOM | = 473 SQ.FT. |
| TOTAL W/PLAYROOM | = 2344 SQ.FT. |
| FRONT PORCH = | 223 SQ.FT. |
| REAR PORCH = | 174 SQ.FT. |
| DECK = | 108 SQ.FT. |
| GARAGE = | 551 SQ.FT. |

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3714 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4112, PHONE: 919-818-1471
PROJECT #: 22-1638

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NORTH CAROLINA PROFESSIONAL SEAL 16073 7.8.22 ENGINEER JAMES H. SOUTHERN

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The Front Porch GARAGE RIGHT

GEMSTONE HOMES

DATE 7/1/2022

PROJECT # 210604

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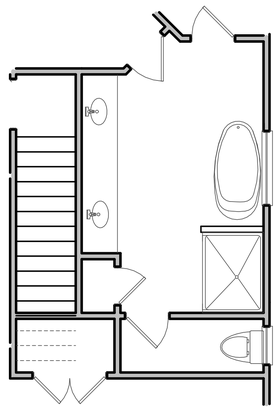
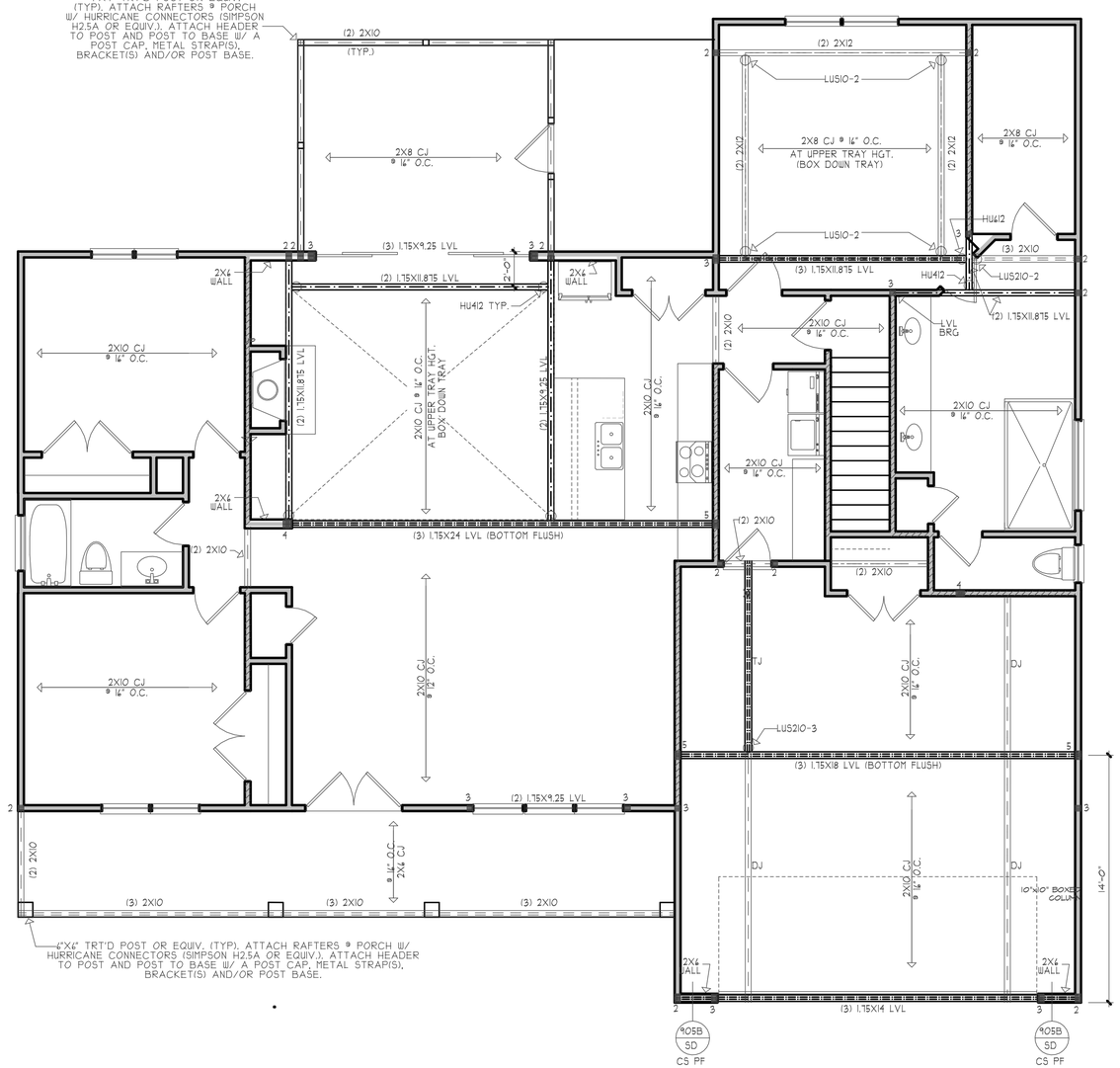



OPTIONAL BATH




FIRST FLOOR STRUCTURAL PLAN

SCALE 1/4" = 1'-0"

| SQUARE FOOTAGE | |
|---|---|
| FIRST FLOOR | 1,871 SQ.FT. |
| OPTIONAL PLYROOM = 473 SQ.FT. | |
| TOTAL W/PLAYROOM = 2344 SQ.FT. | |
| FRONT PORCH = 223 SQ.FT. | |
| REAR PORCH = 174 SQ.FT. | |
| DECK = 108 SQ.FT. | |
| GARAGE = 557 SQ.FT. | |

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3114 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4112, PHONE: 919-878-1471
PROJECT #: 22-1638

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NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES H. SOUTHERN

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MIDTOWN DESIGNS

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NC (2018 NCRC) ; Wind : 115 - 120 mph

The Front Porch GARAGE RIGHT

GEMSTONE HOMES

MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

PROJECT # 210604

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
314 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4112, PHONE: 919-878-1671
PROJECT #: 22-1638

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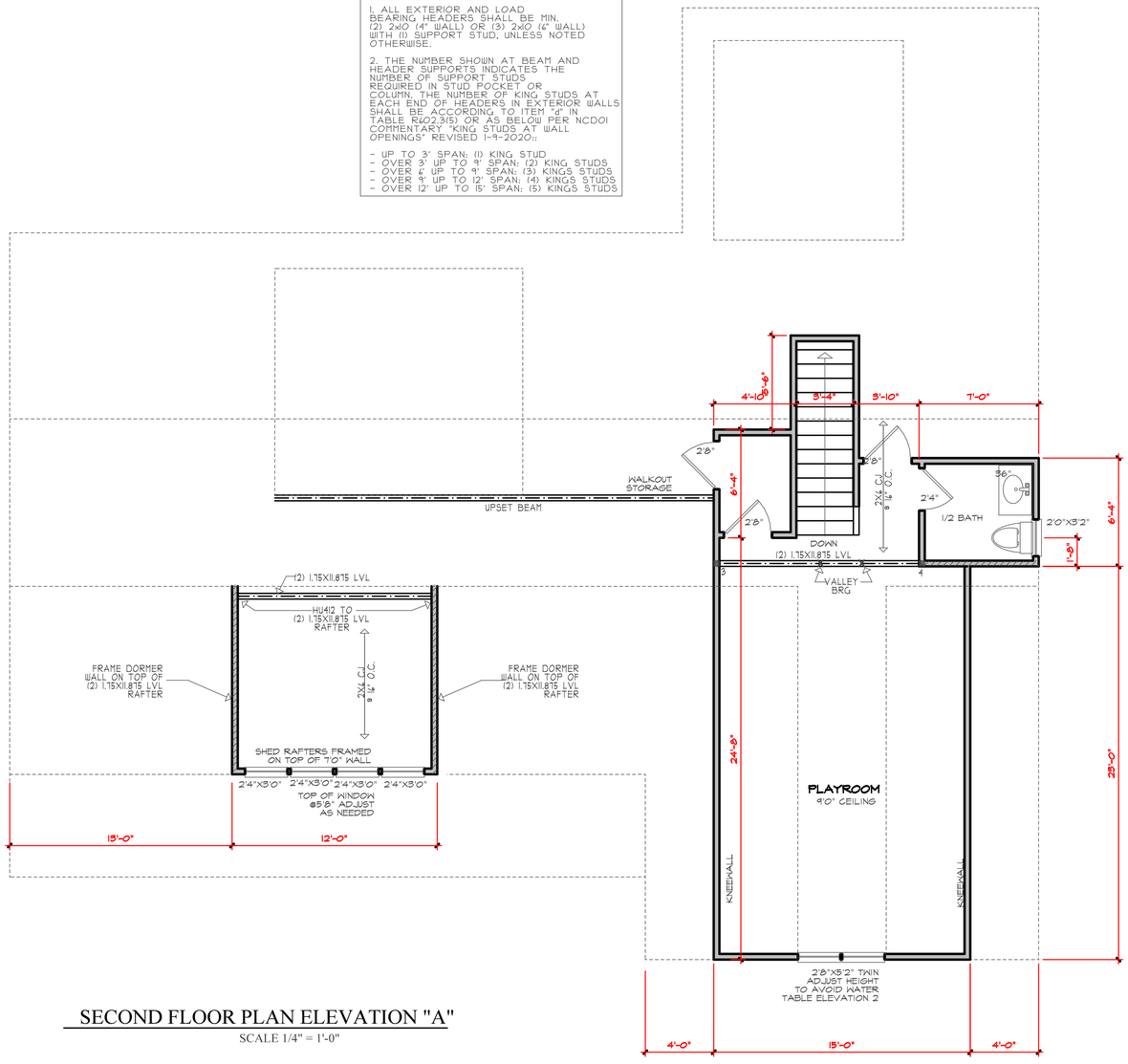
REFER TO "SD" SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

## HEADER/BEAM & COLUMN NOTES

1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2) 2x10 (4" WALL) OR (3) 2x10 (6" WALL) WITH (1) SUPPORT STUD, UNLESS NOTED OTHERWISE.

2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN. THE NUMBER OF KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS SHALL BE ACCORDING TO ITEM "d" IN TABLE R602.3(5) OR AS BELOW PER NCDOI COMMENTARY "KING STUDS AT WALL OPENINGS" REVISED 1-9-2020::

- UP TO 3' SPAN: (1) KING STUD
- OVER 3' UP TO 9' SPAN: (2) KING STUDS
- OVER 6' UP TO 9' SPAN: (3) KINGS STUDS
- OVER 9' UP TO 12' SPAN: (4) KINGS STUDS
- OVER 12' UP TO 15' SPAN: (5) KINGS STUDS




## SECOND FLOOR PLAN ELEVATION "A"

SCALE 1/4" = 1'-0"

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NC (2018 NCRC) , Wind : 115 - 120 mph

# The Front Porch

GARAGE RIGHT

GEMSTONE HOMES

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DATE 7/1/2022

PROJECT # 210604

## HEADER/BEAM & COLUMN NOTES

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2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN. THE NUMBER OF KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS SHALL BE ACCORDING TO ITEM "d" IN TABLE R602.3(5) OR AS BELOW PER NCDOI COMMENTARY "KING STUDS AT WALL OPENINGS" REVISED 1-9-2020:

- UP TO 3' SPAN: (1) KING STUD
- OVER 3' UP TO 9' SPAN: (2) KING STUDS
- OVER 6' UP TO 9' SPAN: (3) KINGS STUDS
- OVER 9' UP TO 12' SPAN: (4) KINGS STUDS
- OVER 12' UP TO 15' SPAN: (5) KINGS STUDS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16073 7822 ENGINEERING

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3714 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4712, PHONE: 919-878-1411
PROJECT #: 22-1638

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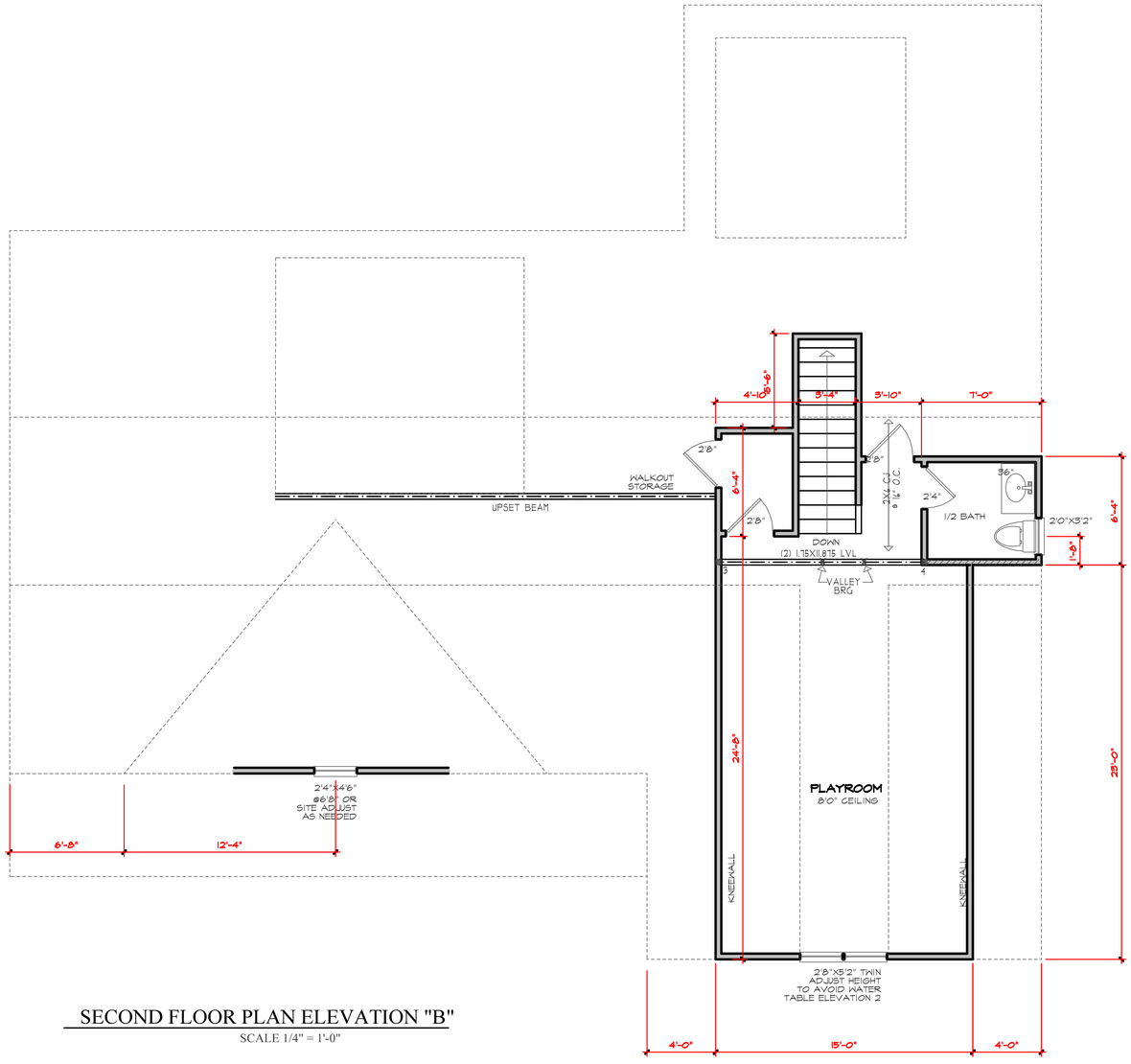


SECOND FLOOR PLAN ELEVATION "B"
SCALE 1/4" = 1'-0"

MIDTOWN DESIGNS

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The Front Porch GARAGE RIGHT

GEMSTONE HOMES

MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

PROJECT # 210604

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
314 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4112, PHONE: 919-818-1471

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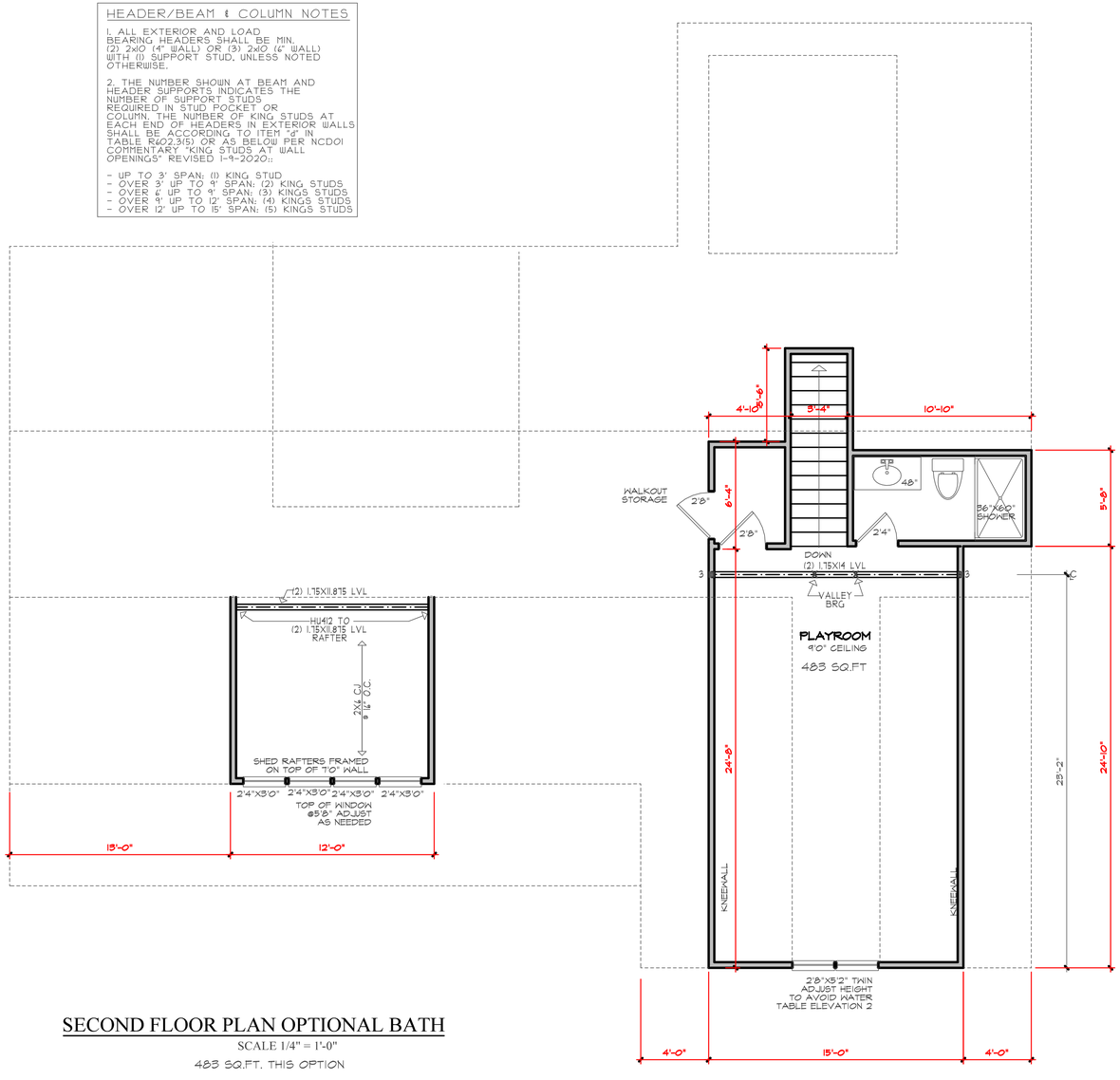
REFER TO "SD" SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

## HEADER/BEAM & COLUMN NOTES

1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2) 2x10 (4" WALL) OR (3) 2x10 (6" WALL) WITH (1) SUPPORT STUD, UNLESS NOTED OTHERWISE.

2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN. THE NUMBER OF KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS SHALL BE ACCORDING TO ITEM "d" IN TABLE R602.3(5) OR AS BELOW PER NCDOI COMMENTARY "KING STUDS AT WALL OPENINGS" REVISED 1-9-2020::

- UP TO 3' SPAN: (1) KING STUD
- OVER 3' UP TO 9' SPAN: (2) KING STUDS
- OVER 6' UP TO 9' SPAN: (3) KINGS STUDS
- OVER 9' UP TO 12' SPAN: (4) KINGS STUDS
- OVER 12' UP TO 15' SPAN: (5) KINGS STUDS




## SECOND FLOOR PLAN OPTIONAL BATH

SCALE 1/4" = 1'-0"

483 SQ.FT. THIS OPTION

MIDTOWN DESIGNS

Purchaser must verify all dimensions and conditions before beginning construction.

MidTown Designs Inc. assumes no liability for contractors practices and procedures

These drawings are instruments of service and as such shall remain property of the designer



THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

NC (2018 NCRC) ; Wind - 115 - 120 mph

# The Front Porch

GARAGE RIGHT

GEMSTONE HOMES

MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

DATE 7/1/2022

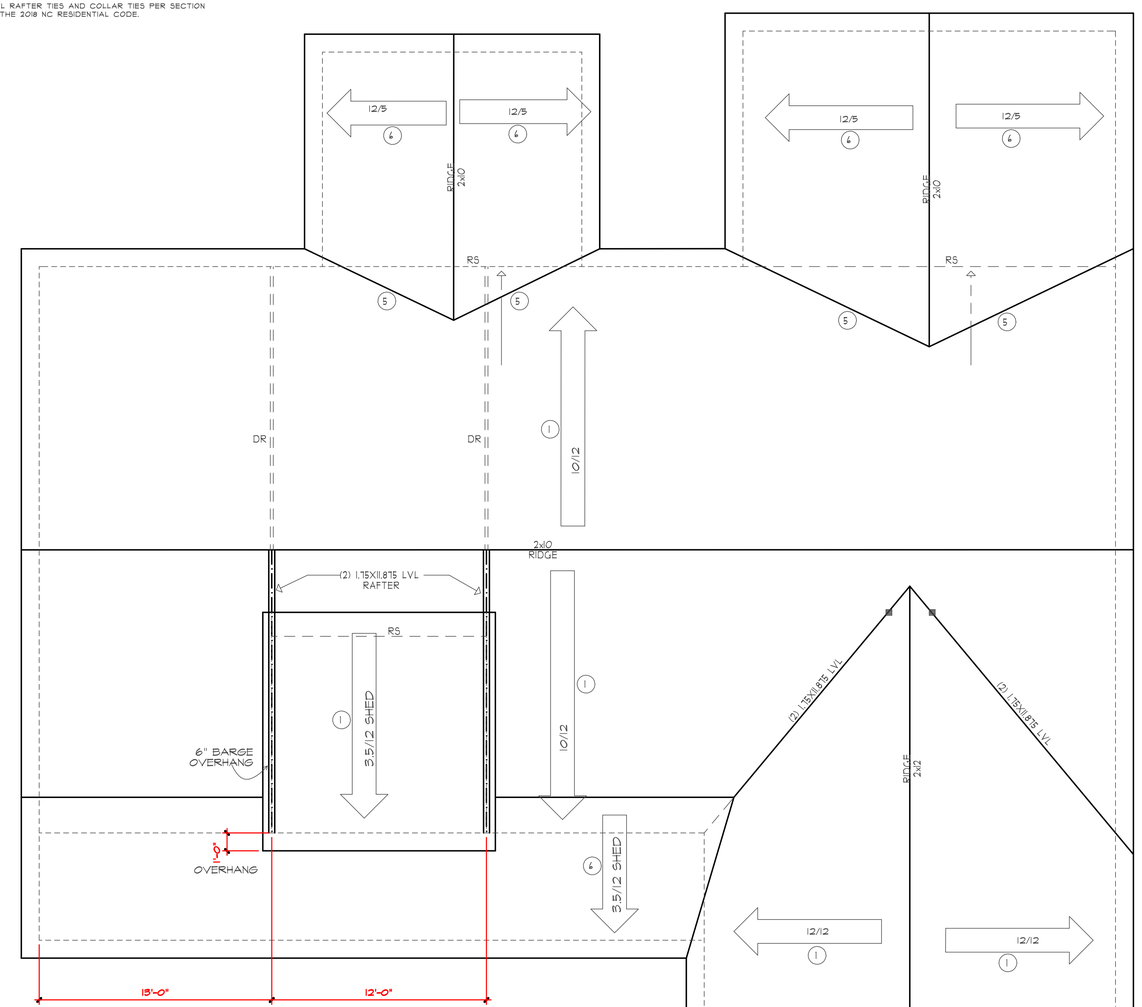
PROJECT # 210604

## ROOF FRAMING NOTES:

NC (2018 NCRC): Wind: 115-120 mph

1. 2x8 RAFTERS @ 16" O.C. WITH 2x10 RIDGE, UNO.
2. (2) 2x10 OR 1.75x11.875 LVL HIP. (2) 2x10 HIPS MAY BE SPLICED WITH A MIN. 2'-0" OVERLAP AT CENTER
3. (2) 2x10 OR 1.75x9.25 LVL VALLEY. DO NOT SPLICE VALLEYS
4. 1.75x11.875 LVL OR (2)1.75x9.25 LVL VALLEY
5. FALSE FRAME VALLEY ON 2x10 FLAT PLATE
6. 2x6 RAFTERS @ 16" O.C. W/ 2x8 RIDGE, UNO.
7. 2x10 RAFTERS @ 16" O.C. W/ 2x12 RIDGE, UNO.
8. EXTEND RIDGE 12" BEYOND INTERSECTION

- 'SR' = SINGLE RAFTER
- 'DR' = DOUBLE RAFTER
- 'TR' = TRIPLE RAFTER
- 'RS' = ROOF SUPPORT
- '■' = (3) STUD OR 4x4 POST FOR ROOF SUPPORT (USE 2X4 STUDS OR 4X4 POST FOR SUPPORT OVER 10'-0" IN HEIGHT)
- ATTACH VAULTED RAFTERS WITH HURRICANE CLIPS; SIMPSON "H-2.5A" OR EQUIVALENT. TIES TO BE INSTALLED ON THE OUTSIDE FACE OF FRAMING.
- INSTALL RAFTER TIES AND COLLAR TIES PER SECTION R802.3.1 OF THE 2018 NC RESIDENTIAL CODE.




## ROOF PLAN "A"

SCALE 1/4" = 1'-0"


STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3716 BENSON DR., RALEIGH, NC 27609
LICENSE: C-4712, PHONE: 919-818-1411


PROJECT #: 22-1638

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JOSEPH E. HERMAN

- Engineers seal applies only to structural components on this document. Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.
- Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability
- Seal is valid for a project permitted one year from date of seal.
- Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

MIDTOWN DESIGNS

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NC (2018 NCRC) ; Wind : 115 - 120 mph

The Front Porch GARAGE RIGHT

GEMSTONE HOMES


MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com


DATE 7/1/2022

PROJECT # 210604

## ROOF FRAMING NOTES:

NC (2018 NCRC): Wind: 115-120 mph

1. 2x8 RAFTERS @ 16" O.C. WITH 2x10 RIDGE, UNO.
2. (2) 2x10 OR 1.75x11.875 LVL HIP. (2) 2x10 HIPS MAY BE SPLICED WITH A MIN. 6'-0" OVERLAP AT CENTER
3. (2) 2x10 OR 1.75x9.25 LVL VALLEY. DO NOT SPLICE VALLEYS
4. 1.75x11.875 LVL OR (2)1.75x9.25 LVL VALLEY
5. FALSE FRAME VALLEY ON 2x10 FLAT PLATE
6. 2x6 RAFTERS @ 16" O.C. W/ 2x8 RIDGE, UNO.
7. 2x10 RAFTERS @ 16" O.C. W/ 2x12 RIDGE, UNO.
8. EXTEND RIDGE 12" BEYOND INTERSECTION

- "SR" = SINGLE RAFTER
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- "TR" = TRIPLE RAFTER
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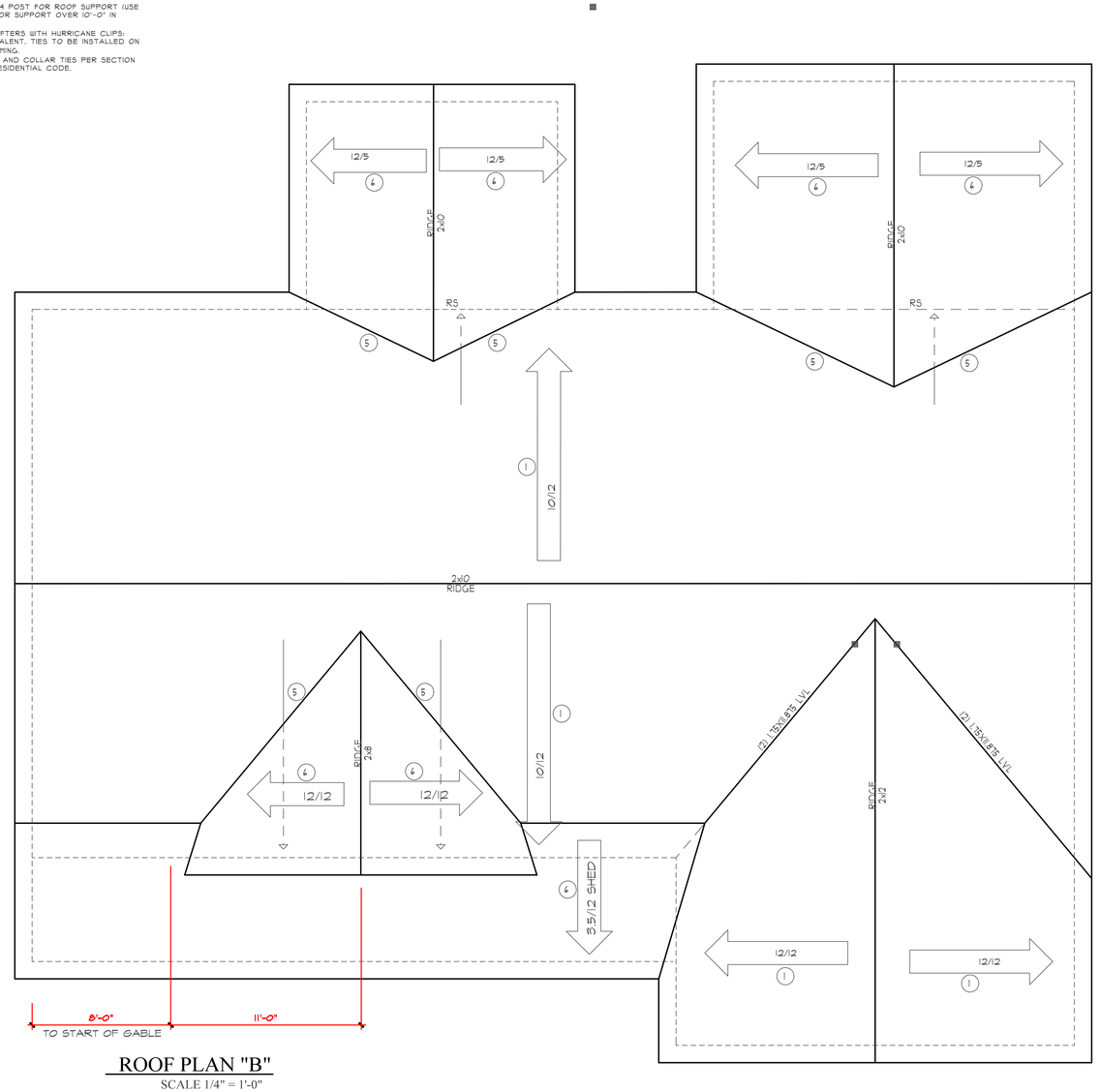
- INSTALL RAFTER TIES AND COLLAR TIES PER SECTION R802.3.1 OF THE 2018 NC RESIDENTIAL CODE.




## ROOF PLAN "B"

SCALE 1/4" = 1'-0"

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
376 BENSON DR., RALEIGH, NC 27409
LICENSE: C-4172, PHONE: 919-878-1471
PROJECT #: 22-1638

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- Seal is valid for a project permitted one year from date of seal.
- Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

NORTH CAROLINA PROFESSIONAL SEAL 16073 7.8.22 ENGINEER JAMES M. HERMAN

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS, BRACING, DETAILS, AND STRUCTURAL NOTES

MIDTOWN DESIGNS



THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

NC (2018 NCRC) ; Wind : 115 - 120 mph

# The Front Porch

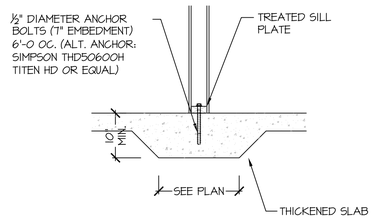
GARAGE RIGHT

GEMSTONE HOMES


MidTown Designs Inc. 1529 Big Falls Dr. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

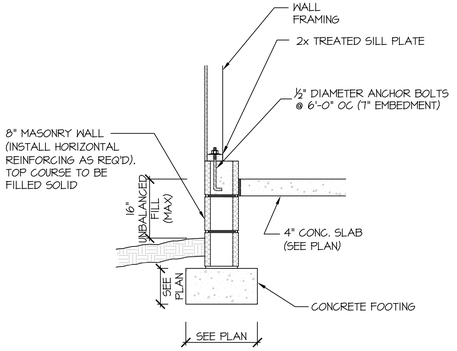

DATE 7/1/2022

PROJECT # 210604



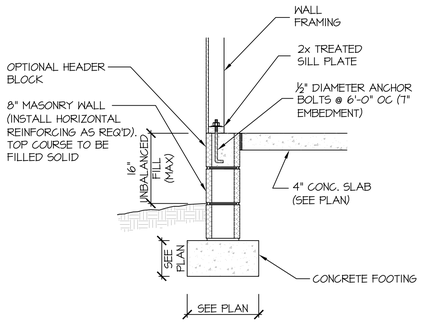

115-120 MPH | 104A SD — THICKENED SLAB

(INTERIOR BEARING WALL)



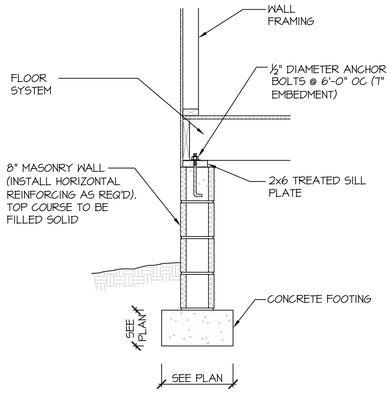

115-120 MPH | 107A SD — STEM WALL SLAB @ GARAGE

(SIDING OR EQUAL)



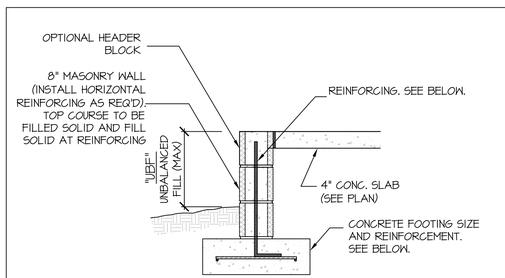

115-120 MPH | 106A SD — STEM WALL SLAB FOOTING

(SIDING OR EQUAL)



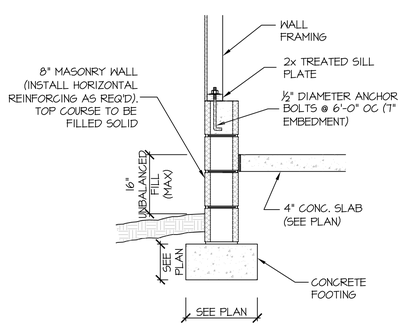

115-120 MPH | 110A SD — CRAWL SPACE FOOTING

(SIDING OR EQUAL)



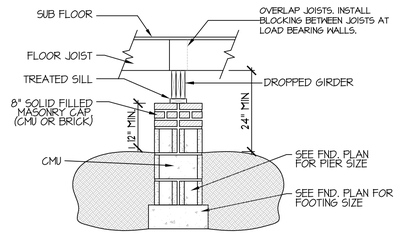

| | |
|---|---|
| "UBF" = UP TO 16" | 8" MASONRY (UN-REINFORCED) ON 16" WIDE BY 8" DEEP (MIN) CONC. FTG. |
| "UBF" = 16" UP TO 24" | REINFORCE WALL W/ #4 BAR @ 32" O.C. BEND 6" INTO FTG. 24" WIDE BY 10" DEEP CONC FTG REINFORCED W/ (3) #4 BAR OR (2) #5 BAR CONTINUOUS WITH #4 TIES @ 48" O.C. |
| "UBF" = 24" UP TO 48" | REINFORCE WALL W/ #5 BAR @ 32" O.C. BEND 12" IN TO FTG. 32" WIDE BY 10" DEEP CONC FTG REINFORCED W/ (4) #4 BAR OR (3) #5 BAR CONTINUOUS WITH #4 TIES @ 32" O.C. |

115-120 MPH | 106D SD — FILLED PORCH WALL



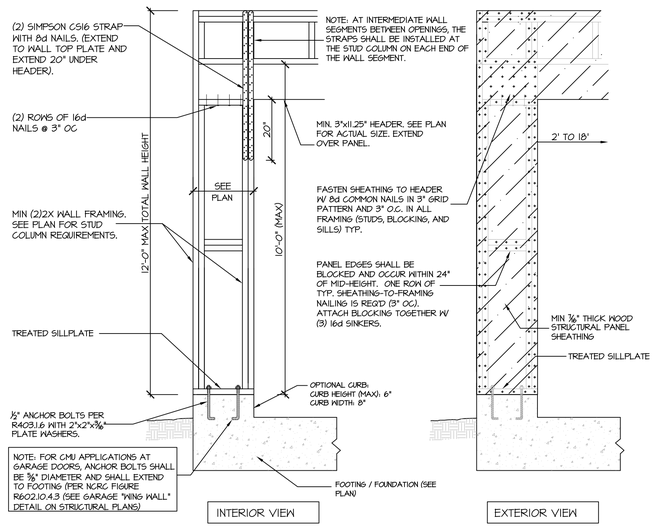

115-120 MPH | 111A SD — GARAGE WALL FOOTING

(SIDING OR EQUAL)



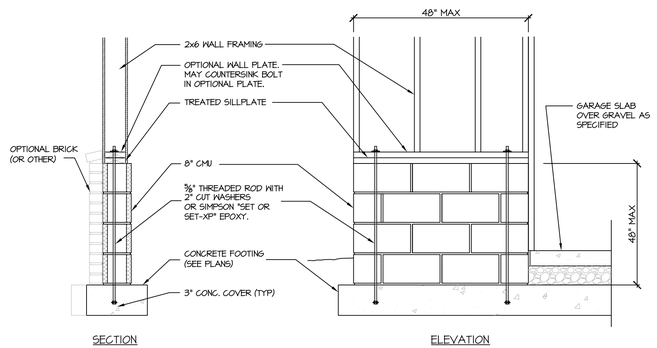

122A SD — DROPPED GIRDER

NTS




905B SD — CS-PF: CONTINUOUS PORTAL FRAME CONSTRUCTION

DETAIL AND APPLICATION BASED ON NCRC FIGURE R602.10.1 - PORTAL FRAME CONSTRUCTION




907 SD — GARAGE 'WING WALL' REINFORCING

PER IRC FIGURE R602.10.4.3

## STRUCTURAL NOTES

NC (2018 NCRC): Wind: 115-120 mph

1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPS, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM, FOOTING, AND PILING SYSTEM. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM. ALL REQUIREMENTS FOR PROFESSIONAL CERTIFICATION SHALL BE PROVIDED BY THE APPROPRIATE PROFESSIONAL. SOUTHERN ENGINEERS, P.A. CERTIFIES ONLY THE STRUCTURAL COMPONENTS AS SPECIFICALLY STATED.

2. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE 2018 NC RESIDENTIAL CODE, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK, NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. "CONSTRUCTION REVIEW" SERVICES ARE NOT PART OF OUR CONTRACT. ALL MEMBERS SHALL BE FRAMED ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

3. DESIGN LOADS (LISTED AS: LIVE LOAD, DEAD LOAD, DEFLECTION)
   - ROOMS OTHER THAN SLEEPING ROOMS: (40 PSF, 10 PSF, L/360)
   - SLEEPING ROOMS: (30 PSF, 10 PSF, L/360)
   - ATTIC WITH PERMANENT STAIR: (40 PSF, 10 PSF, L/360)
   - ATTIC WITHOUT PERMANENT STAIR: (20 PSF, 10 PSF, L/360)
   - ATTIC WITHOUT STORAGE: (10 PSF, 10 PSF, L/240)
   - STAIRS: (40 PSF, 10 PSF, L/360)
   - EXTERIOR BALCONIES: (60 PSF, 10 PSF, L/360)
   - DECKS: (40 PSF, 10 PSF, L/360)
   - GUARDRAILS AND HANDRAILS: (200 LBS)
   - PASSENGER VEHICLE GARAGES: (50 PSF, 10 PSF, L/360)
   - FIRE ESCAPES: (40 PSF, 10 PSF, L/360)
   - SNOW: (20 PSF)

4. WALLS SHALL BE BRACED BY SHEATHING WALLS ON ALL STORIES WITH WOOD STRUCTURAL PANELS. SEE FRAMING NOTES FOR THICKNESS AND NAILING REQUIREMENTS.

5. SEE APPENDIX M (DCA6) FOR EXTERIOR DECK REQUIREMENTS INCLUDING ATTACHMENTS FOR LATERAL LOADS.

6. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIR ENTRAINED PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP. CONTROL JOINTS IN SLABS SHALL BE SPACED ON A GRID OF +-30 TIMES THE DEPTH (D). CONTROL JOINTS SHALL BE SAWCUT TO A DEPTH OF 1/D. (I.E. 4" CONCRETE SLABS SHALL HAVE ¼" DEEP CONTROL JOINTS SAWCUT IN SLAB ON A +-10'-0" x +-10'-0" GRID).

7. ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE 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.

8. ALL FRAMING LUMBER SHALL BE SPF #2 (Fb = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP # 2. PLATE MATERIAL MAY BE SPF # 3 OR SYP #3 (Fc(perp) = 425 PSI - MIN).

9. L.V.L. SHALL BE LAMINATED VENEER LUMBER: Fb=2600 PSI, Fv=285 PSI, E=1.9x10 PSI.
   - 9.1. P.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2900 PSI, Fv=290 PSI, E=2.0x10 PSI.
   - 9.2. L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1.55x10 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

10. ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURE'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.

11. ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.

12. REBAR SHALL BE DEFORMED STEEL, ASTM615, GRADE 60. LAP ALL REBAR SPLICES 30 BAR DIAMETERS.

13. FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A325) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX), AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.

14. BRICK LINTELS (WHEN REQUIRED) SHALL BE 3 1/2"x3 1/2"x1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"x4"x5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 9'-0". SEE PLANS FOR SPANS OVER 9'-0". SEE ALSO SECTION R703.8.3 LINTELS.

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES N. HERMAN

PROJECT # 22-1638

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Southern Engineers, P.A.
3716 Benson Drive, Raleigh, NC 27609
Phone: (919) 878-1617
License: C-4772
www.southernengineers.com

MIDTOWN DESIGNS

The Front Porch

SD

## STRUCTURAL NOTES

1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION (2018 IRC), PLUS ALL LOCAL CODES AND REGULATIONS.
ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

2) DESIGN LOADS SEE TABLE R301.5

WIND SPEED: (REFER TO TABLE R301.2.4)
VERIFY ZONE BEFORE CONSTRUCTION.

3) WALL BRACING: WALLS SHALL BE BRACED ALONG BRACED WALL LINES ACCORDING TO SECTION R602.10. THE AMOUNT, LOCATION, AND CONSTRUCTION OF BRACING SHALL COMPLY WITH R602.10. NOTE THAT THE BRACING SHOWN ON THE PLANS IS BASED ON THE PRESCRIPTIVE BRACING REQUIREMENTS OF THE CODE AND SHALL BE VERIFIED AND/ORAPPROVED BY THE CODE OFFICIAL.

4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIT ENTRAINED PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP.

5) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE 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.

6) ALL FRAMING LUMBER SHALL BE SPF #2(FB = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP #2 (FB=975 PSI). PLATE MATERIAL MAY BE SPF #3 OR SYP #3 (FC/PERP) = 425 PSI - MIN).

7) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS: (1) 2X4 STUD COLUMN FOR 6'-0" MAX. BEAM SPAN (UNO), (2)2X4 STUDS FOR BEAM SPAN GREATER THAN 6'-0" (UNO).

8) L.V.L SHALL BE LAMINATED VENEER LUMBER: FB=2600 PSI, FV=285 PSI, E=1,900,000 PSI. P.S.L SHALL BE PARALLEL STRAND LUMBER: FB=2900 PSI, FV=290 PSI, E=2,000,000 PSI. L.S.L SHALL BE LAMINATED STRAND LUMBER: FB=2250 PSI, FV=400 PSI, E=1,550,000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.

9) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

10) ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER X 4" LONG). LATERAL SUPORT IS CONSIDERED ADEQUATE PROVIDED THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.

11) REBAR SHALL BE DEFORMED STEEL. ASTM615, GRADE 60.

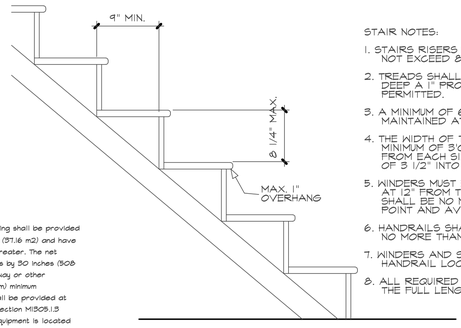
12) FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX). AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.

13) BRICK LINTELS SHALL BE 3 1/2"X3 1/2"X1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"X4"X5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 9'-0" (UNO).

14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS SEE R301.2(6)

## 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.
CEILINGS. 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.



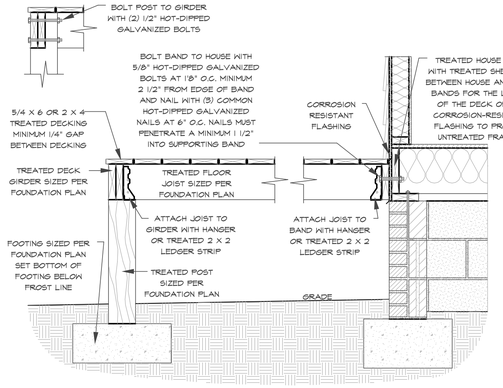

## STAIR DETAIL

NO SCALE

STAIR NOTES:
1. STAIRS RISERS MUST BE UNIFORM AND NOT EXCEED 8 1/4".
2. TREADS SHALL NOT BE LESS THAN 10" DEEP A 1" PROJECTION OVER RISER IS PERMITTED.
3. A MINIMUM OF 6'8" HEADROOM MUST BE MAINTAINED AT ALL PLACES ON STAIR.
4. THE WIDTH OF THE STAIR SHALL BE A MINIMUM OF 30", HANDRAIL MAY PROJECT FROM EACH SIDE OF STAIR A DISTANCE OF 3 1/2" INTO THE REQUIRED WIDTH.
5. WINDERS MUST BE A MINIMUM OF 9" IN WIDTH AT 12" FROM THE NARROWEST SIDE. TREAD SHALL BE NO NARROWER THAN 6" AT ANY POINT AND AVERAGE NO LESS THAN 9 INCHES.
6. HANDRAILS SHALL BE NO LESS THAN 34" AND NO MORE THAN 38" ABOVE TREAD NOSING.
7. WINDERS AND SPIRAL STAIRS SHALL HAVE THE HANDRAIL LOCATED ON THE OUTSIDE RADIUS.
8. ALL REQUIRED HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS.

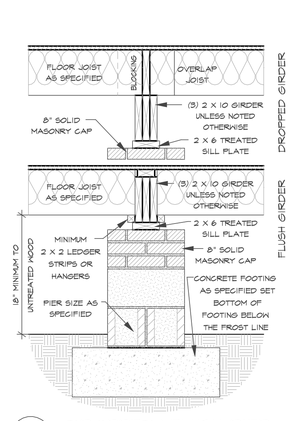
## ATTIC ACCESS

SECTION R807
R807.1 Attic access. An attic access opening shall be provided to attic areas that exceed 400 square feet (37.16 m2) 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.



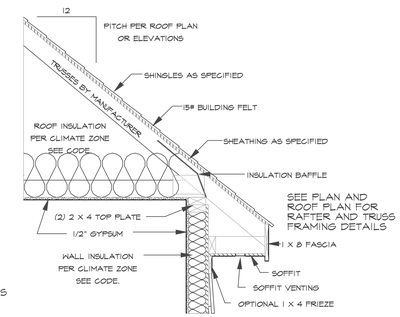

## DECK ATTACHMENT DETAIL TO FRAMED WALL

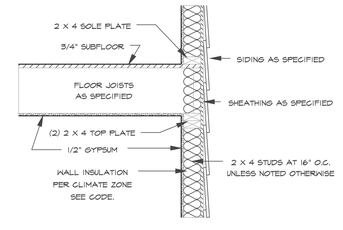
SCALE 3/4" TO 1'-0"

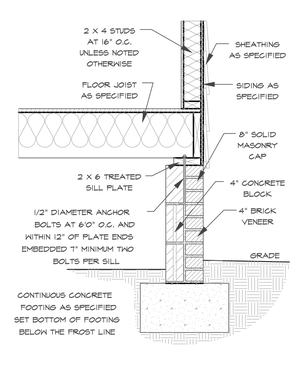



C DROPPED/ FLUSH PIER

SCALE 3/4" = 1'-0"




## TYPICAL WALL SECTION

SCALE 3/4" = 1'-0"

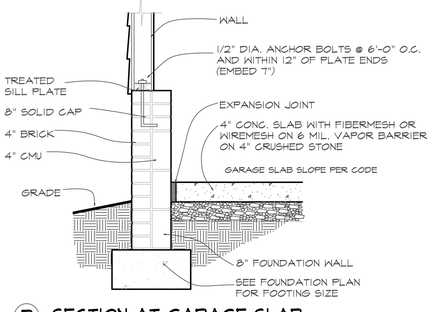
**TABLE R402.1.2**
**INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT***

| CLIMATE ZONE | FENESTRATION U-FACTOR[b] | SKYLIGHT[b] U-FACTOR | GLAZED FENESTRATION SHGC[b,c] | CEILING R-VALUE[h] | WOOD FRAME WALL R-VALUE | MASS WALL R-VALUE[i] | FLOOR R-VALUE | BASEMENT[c] WALL R-VALUE | SLAB[d] R-VALUE & DEPTH | CRAWL SPACE[c] WALL R-VALUE |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 0.35 | 0.55 | 0.30 | 38 or, 30u[f] | 13 or 13+2.5[f] | 5/13 or 5/10ci | 19 | 5/13[f] | 0 | 5/13 |
| 4 | 0.35 | 0.55 | 0.30 | 38 or, 30u[f] | 13 or 13+2.5[f] | 5/13 or 5/10ci | 19 | 10/15 | 10 | 10/15 |
| 5 | 0.35 | 0.55 | NR | 38 or, 30u[f] | 19[f] or 13+5[f] or 15+3[f] | 13/17 or 15/12.5ci | 30[f] | 10/15 | 10 | 10/19 |

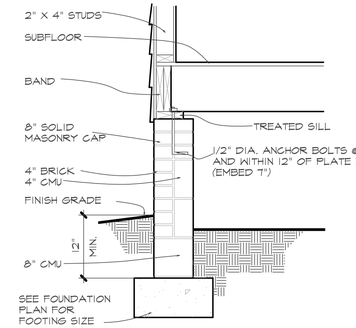
**TABLE R402.1.4**
**EQUIVALENT U-FACTORS***

| CLIMATE ZONE | FENESTRATION U-FACTOR[b] | SKYLIGHT U-FACTOR | CEILING U-FACTOR | FRAME WALL U-FACTOR | MASS WALL U-FACTOR[i] | FLOOR U-FACTOR | BASEMENT WALL U-FACTOR | CRAWL SPACE WALL U-FACTOR |
|---|---|---|---|---|---|---|---|---|
| 3 | 0.35 | 0.55 | 0.030 | 0.072 | 0.141 | 0.047 | 0.091[f] | 0.136 |
| 4 | 0.35 | 0.55 | 0.030 | 0.072 | 0.141 | 0.047 | 0.059 | 0.065 |
| 5 | 0.35 | 0.55 | 0.030 | 0.061 | 0.082 | 0.033 | 0.055 | 0.065 |

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.
b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.07 in Climate Zone 3, 0.06 in Climate Zone 4 and 3.054 in Climate Zone 5.
c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1
d. A maximum of 90 glazed fenestration product assemblies having a U-factor no greater than 0.51 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the IRES-Inch "ALA Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the U-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products actual U-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable projects. Compliance for these substitute products shall be verified compared to the allowed substituted maximum U-value requirement and maximum SHGC requirement, as applicable.




B SECTION AT GARAGE SLAB




D SECTION AT CRAWL

HOUSE DESIGNED UNDER
**RESIDENTIAL CODE 2018 IRC**

DETAIL PAGE

DATE