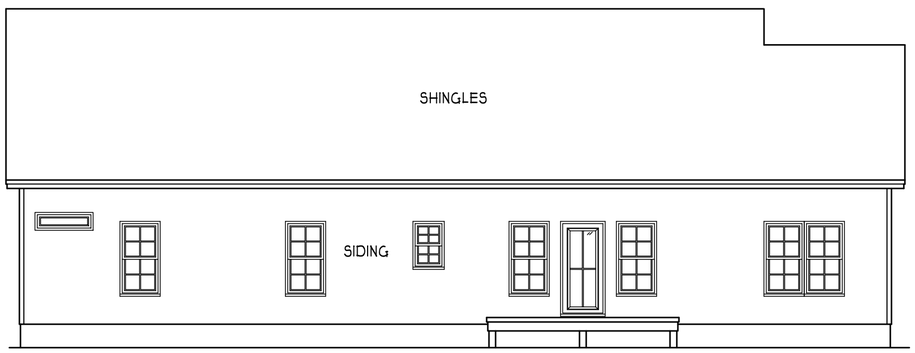
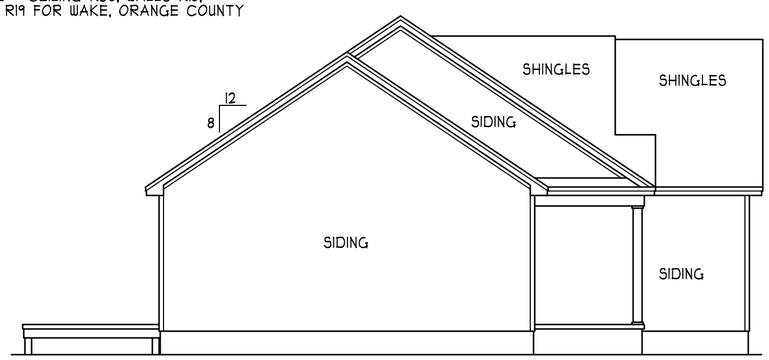
FRONT ELEVATION

SCALE 1/4" = 1'-0"



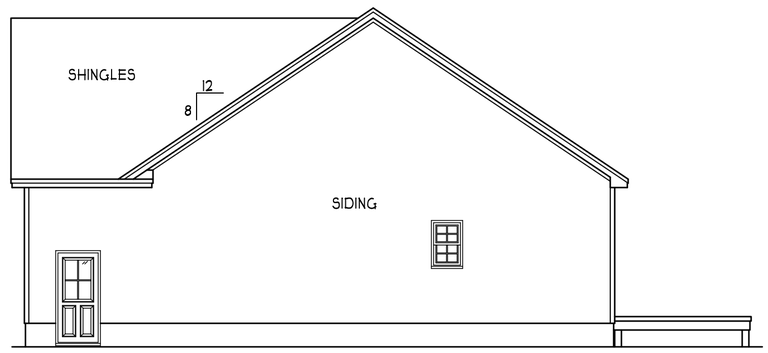
REAR ELEVATION

SCALE 1/8" = 1'-0"



LEFT ELEVATION

SCALE 1/8" = 1'-0"



RIGHT ELEVATION

SCALE 1/8" = 1'-0"

ENERGY COMPLIANCE

ZONE 3 = MAX. GLAZING U-FACTOR .35
R-VALUE = CEILING R38, WALLS R15,
FLOORS R19 FOR JOHNSTON, WAYNE COUNTY

ZONE 4 = MAX. GLAZING U-FACTOR .35
R-VALUE = CEILING R38, WALLS R15,
FLOORS R19 FOR WAKE, ORANGE COUNTY

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 EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.

GROSS ATTIC AREA TO BE VENTILATED 2448 SQ.FT.

2448/150 = 16.32 SQ.FT. NET FREE AREA

THE GARRETT
GARAGE RIGHT

PROBUILT GENERAL CONTRACTORS, INC.

HEATED FOOTAGE: #1678

SQUARE FOOTAGE:

FIRST FLOOR	= 1678
UNF REC ROOM	= 249
FRONT PORCH	= 244
GARAGE	= 526

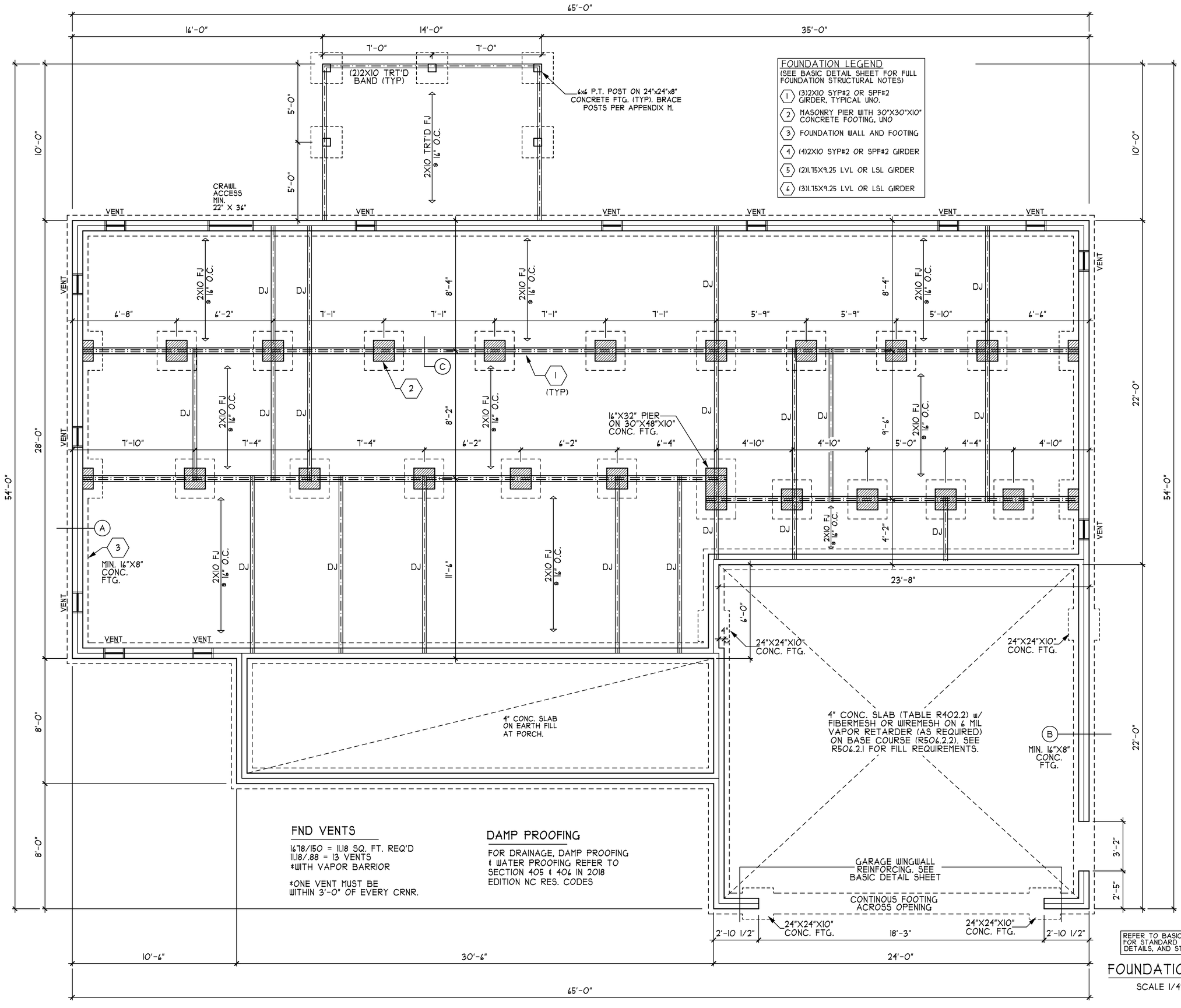
HEATHER HALL
165 HEATHERSTONE CT
BENSON NC 27504
(919) 207-1403

H SQUARED HOME DESIGN, INC.

DATE: 01/28/2025

1 STORY

FILE: 010825



FOUNDATION LEGEND

(SEE BASIC DETAIL SHEET FOR FULL FOUNDATION STRUCTURAL NOTES)

1. (3)2X10 SYP#2 OR SPF#2 GIRDER, TYPICAL UNO.
2. MASONRY PIER WITH 30"X30"X10" CONCRETE FOOTING, UNO
3. FOUNDATION WALL AND FOOTING
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

FND VENTS

1678/150 = 11.18 SQ. FT. REQ'D
11.18/.88 = 13 VENTS
*WITH VAPOR BARRIOR

*ONE VENT MUST BE WITHIN 3'-0" OF EVERY CRNR.

DAMP PROOFING

FOR DRAINAGE, DAMP PROOFING & WATER PROOFING REFER TO SECTION 405 & 406 IN 2018 EDITION NC RES. CODES

REFER TO BASIC DETAIL SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

FOUNDATION PLAN

SCALE 1/4" = 1'-0"

THE GARRETT
GARAGE RIGHT

PROBUILT GENERAL CONRACTORS, INC.

HEATED FOOTAGE: #1678

SQUARE FOOTAGE:

FIRST FLOOR	= 1678
UNF REC ROOM	= 249
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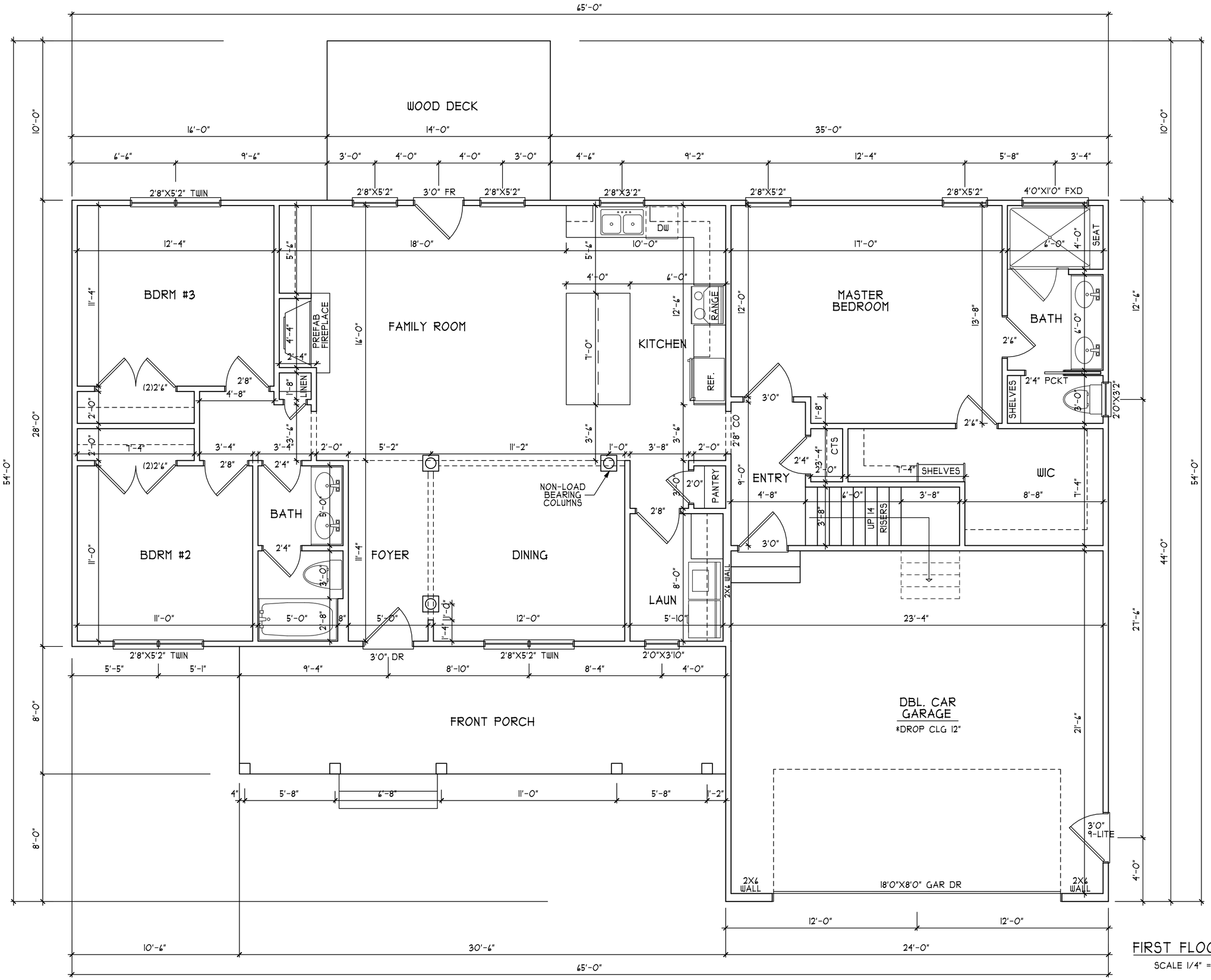

FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

THE GARRETT

GARAGE RIGHT

PROBUILT GENERAL CONTRACTORS, INC.

HEATED FOOTAGE: #1678

SQUARE FOOTAGE:

FIRST FLOOR	= 1678
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DATE: 01/28/2025

1 STORY

FILE: 010825

TRUSS SYSTEM REQUIREMENTS

NC (2018 NCRC)

1. TRUSS SYSTEM LAYOUTS (PLACEMENT PLANS) SHALL BE DESIGNED IN ACCORDANCE WITH ROOF TRUSS LAYOUTS AND SEALED PROFILES PROVIDED BY THE ROOF TRUSS MANUFACTURER. ANY NEED TO CHANGE TRUSSES SHALL BE COORDINATED WITH THE ROOF TRUSS MANUFACTURER

2. TRUSS SCHEMATICS (PROFILES) SHALL BE PREPARED AND SEALED BY TRUSS MANUFACTURER.

3. ALL TRUSSES SHALL BE DESIGNED FOR BEARING ON SPF #2 OR #3 PLATES OR LEDGERS (UNO).

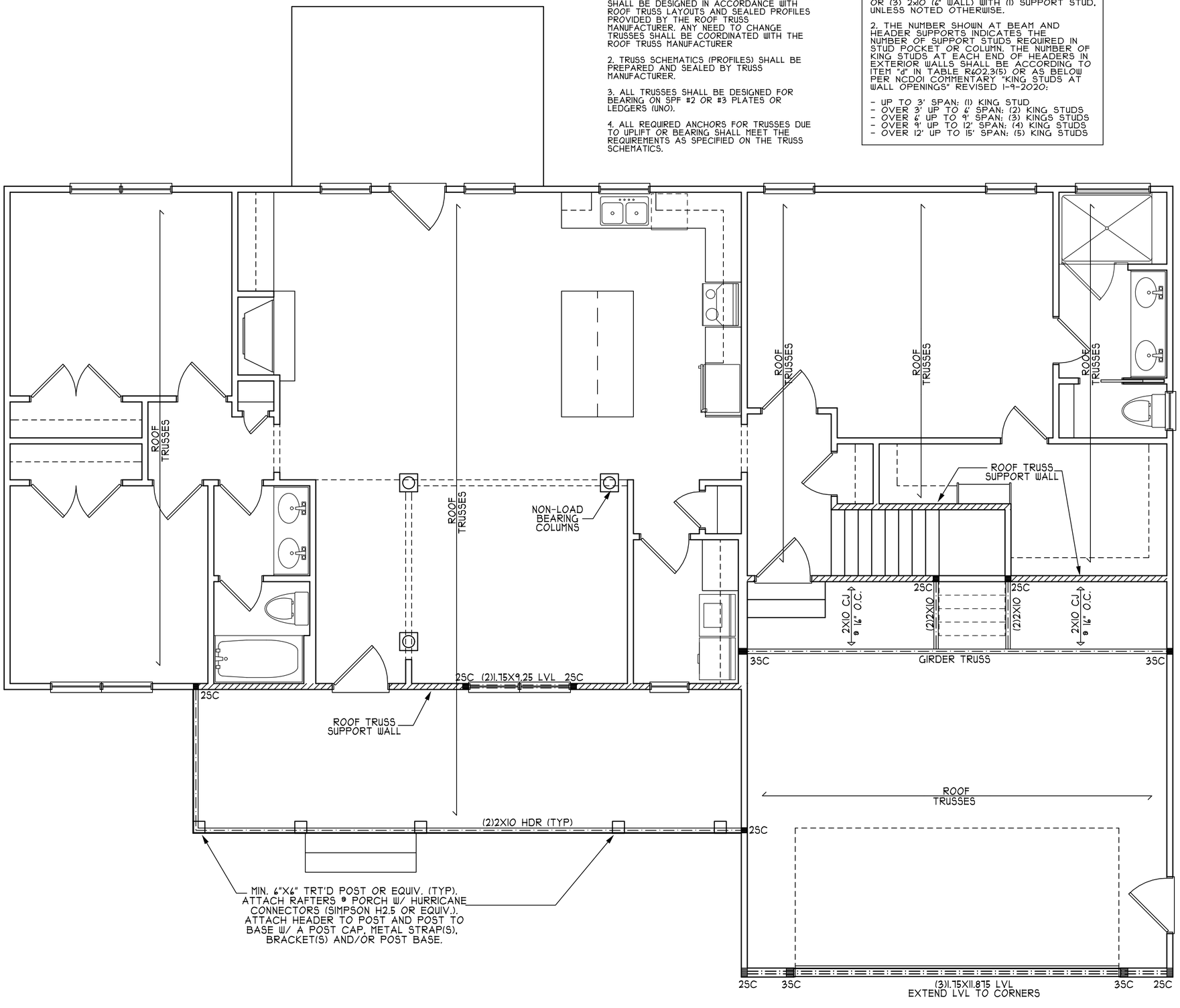
4. ALL REQUIRED ANCHORS FOR TRUSSES DUE TO UPLIFT OR BEARING SHALL MEET THE REQUIREMENTS AS SPECIFIED ON THE TRUSS SCHEMATICS.

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



REFER TO BASIC DETAIL SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

FIRST FLOOR STRUCTURAL PLAN

SCALE 1/4" = 1'-0"

PROBUILT GENERAL CONTRACTORS, INC.

THE GARRETT
GARAGE RIGHT

HEATED FOOTAGE: #1678

SQUARE FOOTAGE:

FIRST FLOOR	= 1678
UNF REC ROOM	= 249
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DATE: 01/28/2025

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TRUSS SYSTEM REQUIREMENTS

NC (2018 NCRC)

1. TRUSS SYSTEM LAYOUTS (PLACEMENT PLANS) SHALL BE DESIGNED IN ACCORDANCE WITH ROOF TRUSS LAYOUTS AND SEALED PROFILES PROVIDED BY THE ROOF TRUSS MANUFACTURER. ANY NEED TO CHANGE TRUSSES SHALL BE COORDINATED WITH THE ROOF TRUSS MANUFACTURER

2. TRUSS SCHEMATICS (PROFILES) SHALL BE PREPARED AND SEALED BY TRUSS MANUFACTURER.

3. ALL TRUSSES SHALL BE DESIGNED FOR BEARING ON SPF #2 OR #3 PLATES OR LEDGERS (UNO).

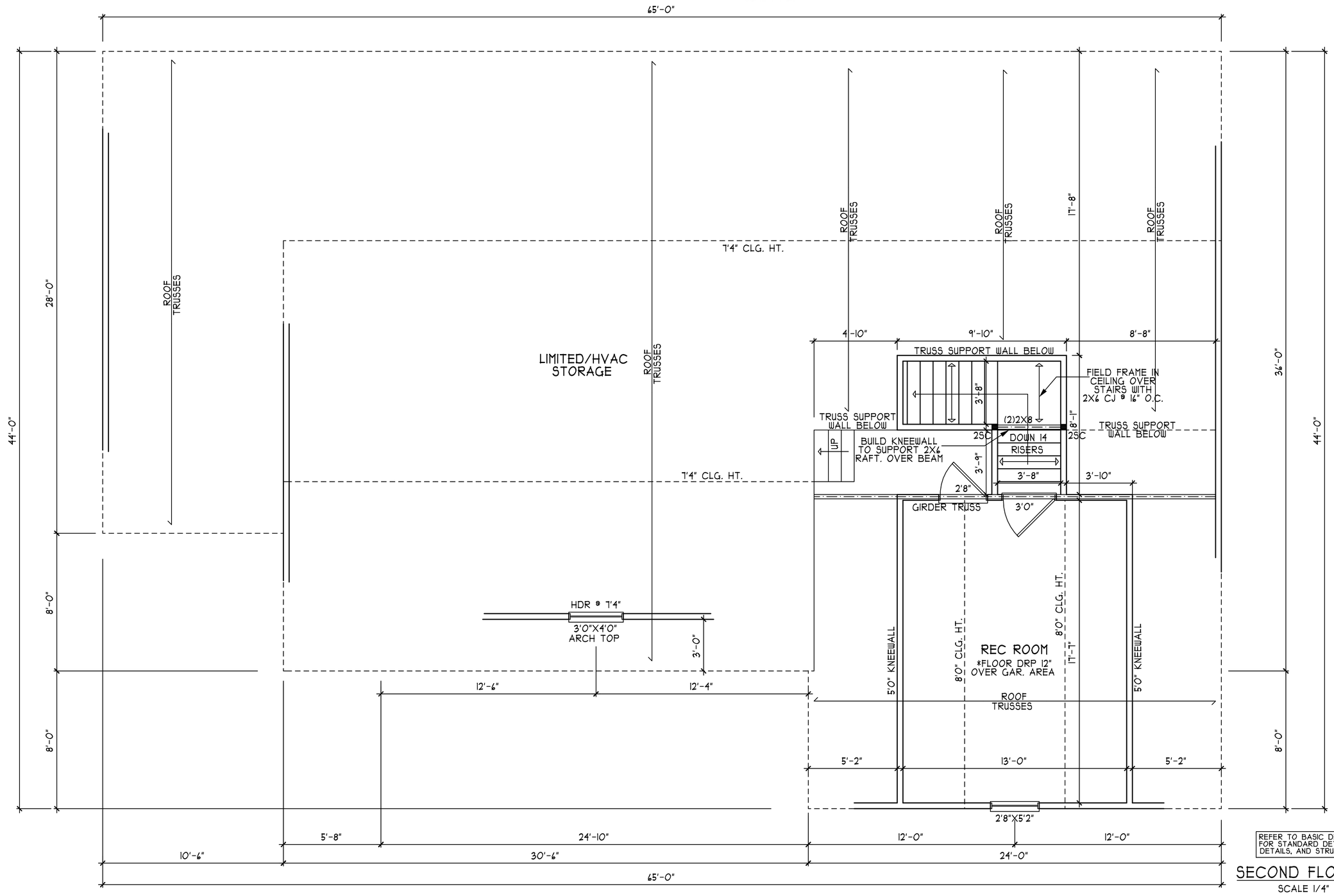
4. ALL REQUIRED ANCHORS FOR TRUSSES DUE TO UPLIFT OR BEARING SHALL MEET THE REQUIREMENTS AS SPECIFIED ON THE TRUSS SCHEMATICS.

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



REFER TO BASIC DETAIL SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

SECOND FLOOR PLAN

SCALE 1/4" = 1'-0"

PROBUILT GENERAL CONTRACTORS, INC.

THE GARRETT

GARAGE RIGHT

HEATED FOOTAGE: #1678

SQUARE FOOTAGE:

FIRST FLOOR	= 1678
UNF REC ROOM	= 249
FRONT PORCH	= 244
GARAGE	= 526

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165 HEATHERSTONE CT
BENSON NC 27504
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H SQUARED HOME DESIGN, INC.

DATE: 01/28/2025

1 STORY

FILE: 010825

TRUSS SYSTEM REQUIREMENTS

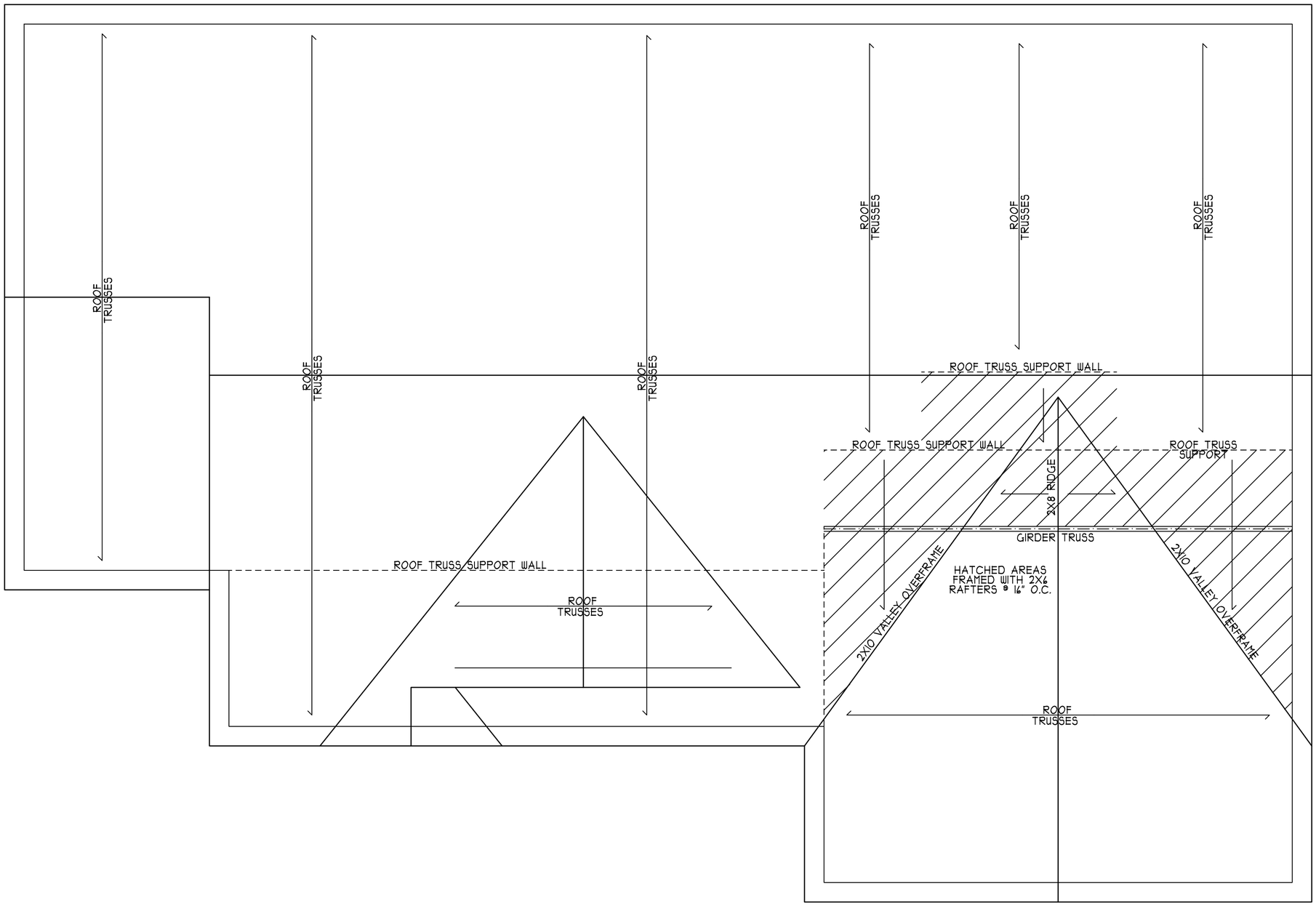
NC (2018 NCRC)

1. TRUSS SYSTEM LAYOUTS (PLACEMENT PLANS) SHALL BE DESIGNED IN ACCORDANCE WITH ROOF TRUSS LAYOUTS AND SEALED PROFILES PROVIDED BY THE ROOF TRUSS MANUFACTURER. ANY NEED TO CHANGE TRUSSES SHALL BE COORDINATED WITH THE ROOF TRUSS MANUFACTURER

2. TRUSS SCHEMATICS (PROFILES) SHALL BE PREPARED AND SEALED BY TRUSS MANUFACTURER.

3. ALL TRUSSES SHALL BE DESIGNED FOR BEARING ON SPF #2 OR #3 PLATES OR LEDGERS (UNO).

4. ALL REQUIRED ANCHORS FOR TRUSSES DUE TO UPLIFT OR BEARING SHALL MEET THE REQUIREMENTS AS SPECIFIED ON THE TRUSS SCHEMATICS.



REFER TO BASIC DETAIL SHEET(S) FOR STANDARD DETAILS, BRACING DETAILS, AND STRUCTURAL NOTES

ROOF PLAN

SCALE 1/4" = 1'-0"

PROBUILT GENERAL CONRACTORS, INC.

THE GARRETT

GARAGE RIGHT

HEATED FOOTAGE:

#1678

SQUARE FOOTAGE:

FIRST FLOOR	= 1678
UNF REC ROOM	= 249
FRONT PORCH	= 244
GARAGE	= 526

HEATHER HALL
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BENSON NC 27504
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H SQUARED HOME DESIGN, INC.

ANY DEVIATION OF THE SPECIFIED MEASUREMENTS OR DIMENSIONS VOIDS H SQUARED HOME DESIGN, INC.'S LIABILITY.

THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2018 EDITION.

THIS PLAN IS TO ONLY BE BUILT BY THE ABOVE CITED BUILDER OR HOMEOWNER. NOT FOR MULTIPLE BUILDS UNLESS APPROVED BY H SQUARED.

DATE:
01/28/2025

1 STORY

FILE:
010825

STRUCTURAL NOTES

1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER OR DESIGNER 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 OR DESIGNER 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.

2) DESIGN LOADS (R301.4)

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (LL)
ROOMS OTHER THAN SLEEPING ROOMS	40	10	L/360
SLEEPING ROOMS	30	10	L/360
ATTIC WITH PERMANENT STAIR	40	10	L/360
ATTIC WITH OUT PERMANENT STAIR	20	10	L/360
ATTIC WITH OUT STORAGE	10	10	L/240
STAIRS	40	--	L/360
EXTERIOR BALCONIES	60	10	L/360
DECKS	40	10	L/360
GUARDRAILS AND HANDRAILS	200	--	----
PASSENGER VEHICLE GARAGES	50	10	L/360
FIRE ESCAPES	40	10	L/360
SNOW	20	--	----

WIND LOAD (BASED ON 115/120 MPH WIND VELOCITY & EXPOSURE B)

3) WALL BRACING: BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO SECTION R602.10.3.
THE AMOUNT AND LOCATION OF BRACING SHALL COMPLY WITH TABLE R602.10.1.
THE LENGTH OF BRACED PANELS SHALL BE DETERMINED BY SECTION R602.10.4.
LATERAL BRACING SHALL BE SATISFIED PER METHOD 3 BY CONTINUOUSLY SHEATHING WALLS WITH STRUCTURAL SHEATHING PER SECTION R602.10.3.
NOTE THAT ANY SPECIFIC BRACED WALL DETAIL SHALL BE INSTALLED AS SPECIFIED.

4) 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.

5) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTUAL 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 DRAINSURFACE 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=1.9x10^6 PSI.
P.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2900 PSI, Fv=290 PSI, E=2.0x10^6 PSI.
L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1.55x10^6 PSI.
INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

9) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH ANY 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 DESIGNER OR ENGINEER.

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 SUPPORT 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". SEE PLANS FOR SPANS OVER 9'-0".

14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF.

15) THE POSITIVE AND NEGATIVE DESIGN PRESSURES REQUIRED FOR ANY ROOF OR WALL CLADDING APPLICATION NOT SPECIFICALLY ADDRESSED IN THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION SHALL BE AS FOLLOWS:

ROOF:
45.4 PSF - 2.25:12 PITCH OR LESS
34.8 PSF - 2.25:12 TO 7:12 PITCH
21 PSF - 7:12 TO 12:12 PITCH

WALLS:
24.1 PSF - WALLS
SEE ALSO SECTION R703.7.3 LINTELS

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.

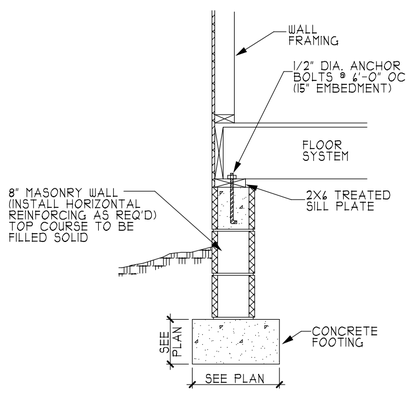
4. (4) 2x10 SYP#2 OR SPF#2 GIRDER.

5. (2) 1.75X9.25 LVL OR LSL GIRDER

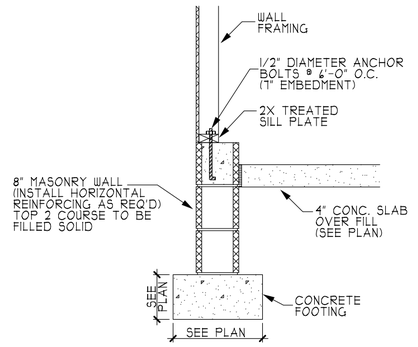
6. (3) 1.75X9.25 LVL OR LSL GIRDER

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.

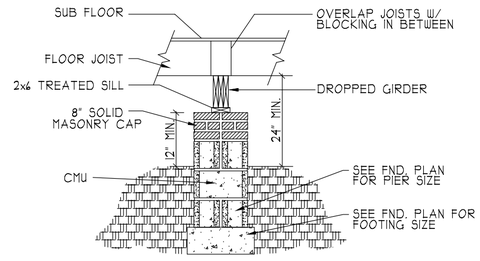
8. ABBREVIATIONS:
"SJ" = SINGLE JOIST
"DJ" = DOUBLE JOIST
"TJ" = TRIPLE JOIST



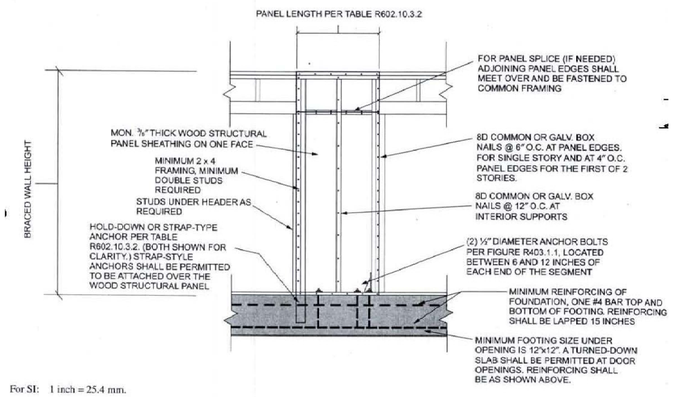
A CRAWL SPACE FOOTING
(SIDING)



B GARAGE WALL FOOTING

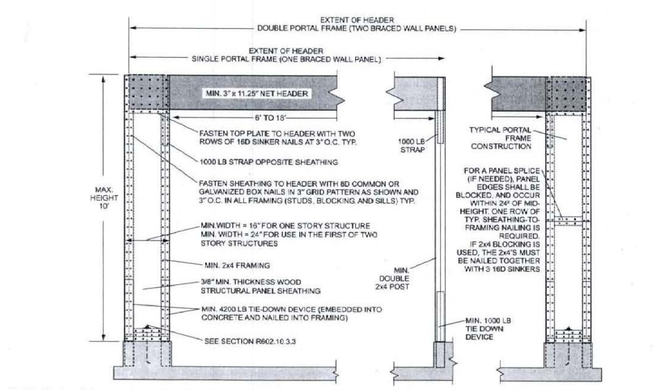


C DROPPED GIRDER



For SI: 1 inch = 25.4 mm.

FIGURE R602.10.3.2
ALTERNATE BRACED WALL PANEL



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.3.3
METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS

TRUSS SYSTEM REQUIREMENTS

NC (2018 NCRC):

1. TRUSS SYSTEM LAYOUTS (PLACEMENT PLANS) SHALL BE DESIGNED IN ACCORDANCE WITH SEALED STRUCTURAL PLANS. ANY NEED TO CHANGE TRUSSES SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.

2. TRUSS SCHEMATICS (PROFILES) SHALL BE PREPARED AND SEALED BY TRUSS MANUFACTURER.

3. ALL TRUSSES SHALL BE DESIGNED FOR BEARING ON SPF #2 OR #3 PLATES OR LEDGERS (UNO).

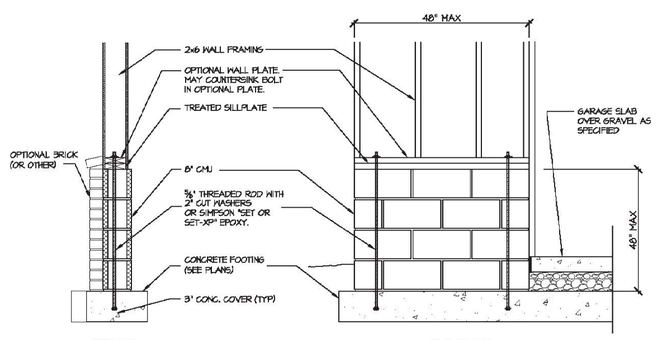
4. ALL REQUIRED ANCHORS FOR TRUSSES DUE TO UPLIFT OR BEARING SHALL MEET THE REQUIREMENTS AS SPECIFIED ON THE TRUSS SCHEMATICS.

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 TABLE R602.7.5 OR AS BELOW:

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



GARAGE 'WING WALL' REINFORCING
PER IRC FIGURE R602.10.4.3

BASIC BUILDING
DETAIL SHEET
(115/120 MPH)

*PLEASE NOTE THAT NOT ALL DETAILS APPLY TO EVERY PLAN.

HEATHER HALL
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BENSON NC 27504
(919) 207-1403

H SQUARED HOME DESIGN, INC.

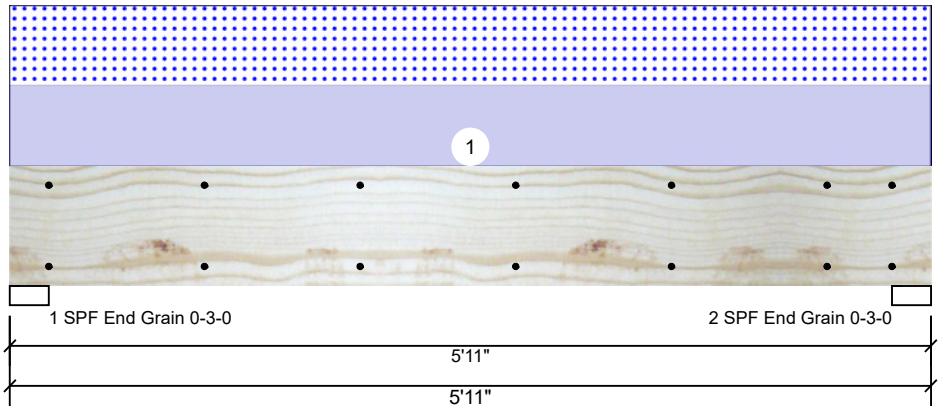
DATE:

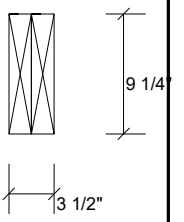
FILE:

Client:	PROBUILT	Date:	1/26/2025
Project:		Input by:	LENNY NORRIS
Address:		Job Name:	GARRETT
		Project #:	

2852 TWIN Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level





Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IRC 2018
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1645	1624	0	0
2	Vertical	0	1645	1624	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	37%	1645 / 1624	3270	L	D+S
2 - SPF End Grain	3.000"	Vert	37%	1645 / 1624	3270	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4243 ft-lb	2'11 1/2"	14423 ft-lb	0.294 (29%)	D+S	L
Unbraced	4243 ft-lb	2'11 1/2"	11027 ft-lb	0.385 (38%)	D+S	L
Shear	2147 lb	4'10 3/4"	7943 lb	0.270 (27%)	D+S	L
LL Defl inch	0.033 (L/2032)	2'11 1/2"	0.139 (L/480)	0.236 (24%)	S	L
TL Defl inch	0.066 (L/1009)	2'11 1/2"	0.185 (L/360)	0.357 (36%)	D+S	L

Design Notes

1. Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2. Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3. Refer to last page of calculations for fasteners required for specified loads.
4. Girders are designed to be supported on the bottom edge only.
5. Top loads must be supported equally by all plies.
6. Top must be laterally braced at end bearings.
7. Bottom must be laterally braced at end bearings.
8. Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	549 PLF	0 PLF	549 PLF	0 PLF	0 PLF	A1 TRUSS
	Self Weight				7 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/29/2026

Manufacturer Info

Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

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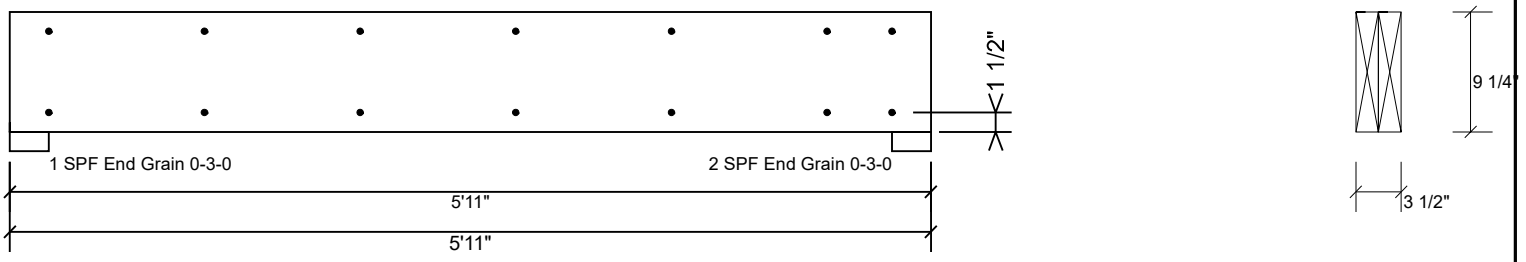
2852 TWIN Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
C_M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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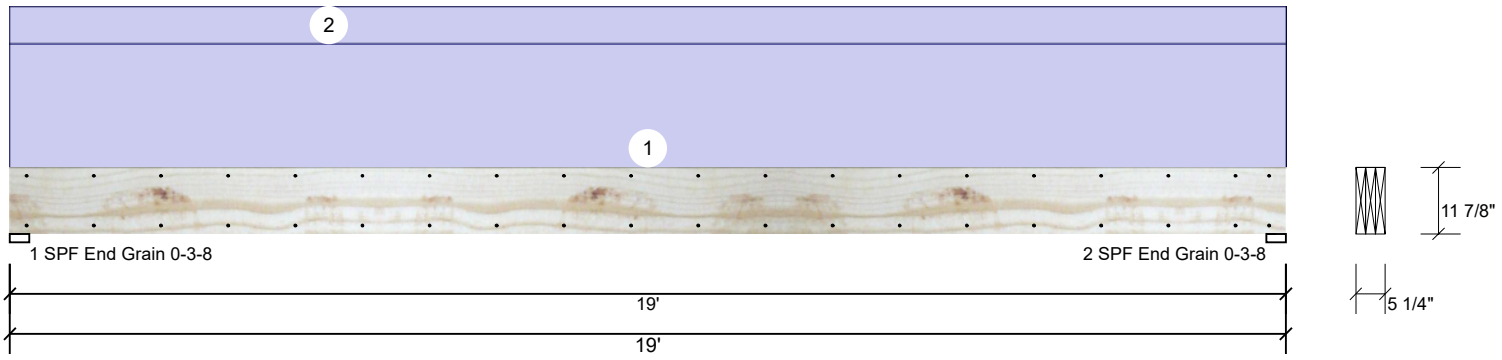
GDH 18' FL Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IRC 2018
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	2602	0	0	0
2	Vertical	0	2602	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	17%	2602 / 0	2602	Uniform	D
2 - SPF End Grain	3.500"	Vert	17%	2602 / 0	2602	Uniform	D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11769 ft-lb	9'6"	27954 ft-lb	0.421 (42%)	D	Uniform
Unbraced	11769 ft-lb	9'6"	11788 ft-lb	0.998 (100%)	D	Uniform
Shear	2264 lb	1'3 3/8"	11970 lb	0.189 (19%)	D	Uniform
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.519 (L/429)	9'6 1/16"	0.618 (L/360)	0.839 (84%)	D	Uniform

Design Notes

1. Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2. Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6". Nail from both sides.
3. Refer to last page of calculations for fasteners required for specified loads.
4. Girders are designed to be supported on the bottom edge only.
5. Top loads must be supported equally by all plies.
6. Top must be laterally braced at a maximum of 12'2 7/8" o.c.
7. Bottom must be laterally braced at end bearings.
8. Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	200 PLF	0 PLF	0 PLF	0 PLF	0 PLF	GABLE END
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	DEAD WALL
	Self Weight				14 PLF					

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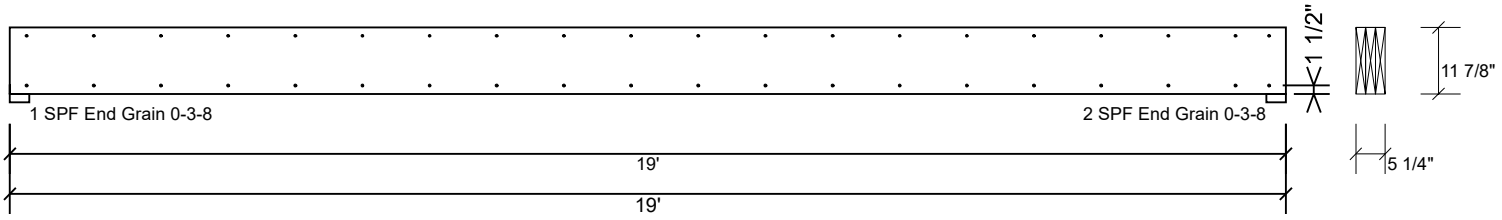

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