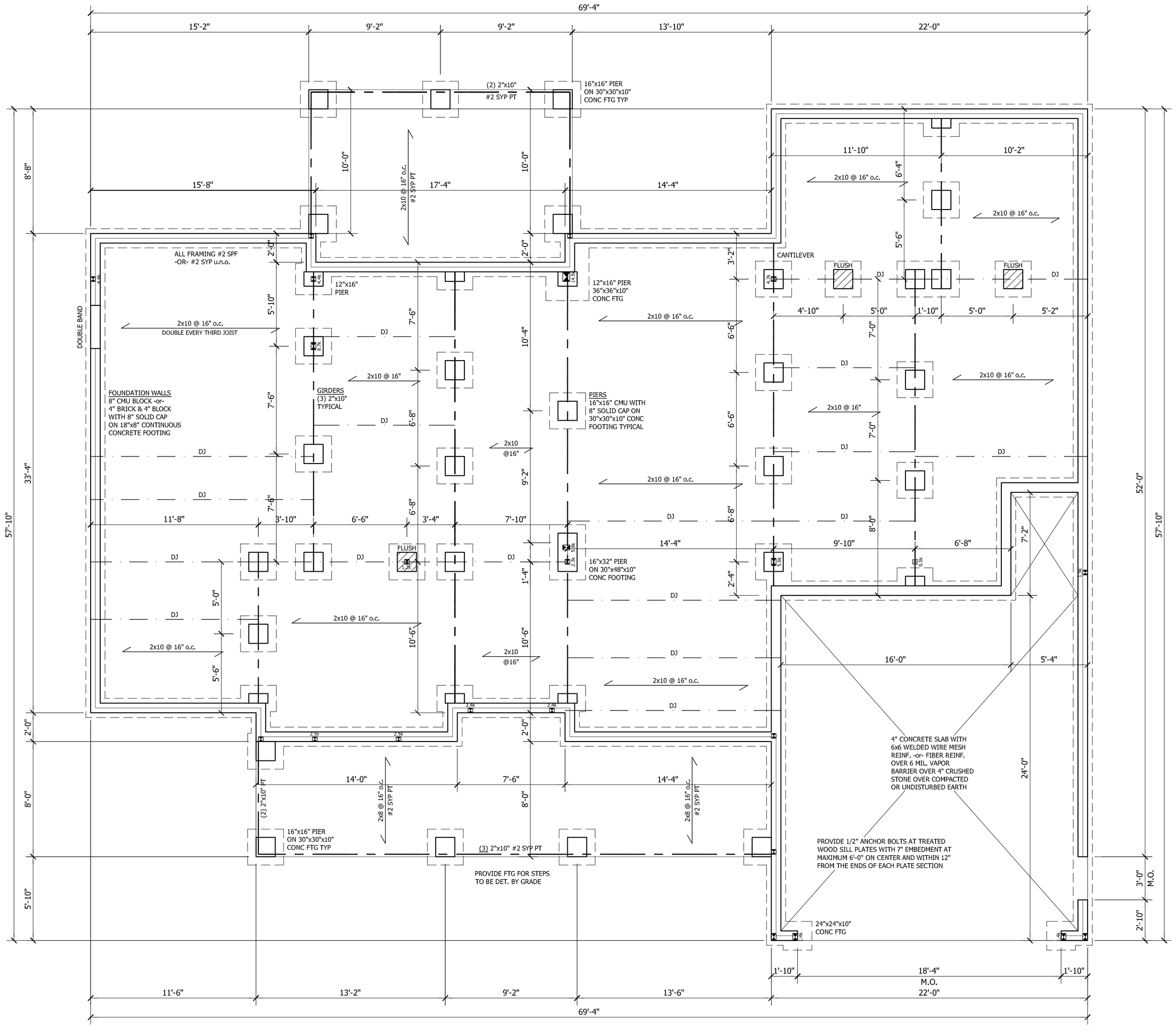

FOUNDATION & FIRST FLOOR FRAMING

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

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STEPHENSON BUILDERS
LOT 1 MORGAN FARM

PROJECT NO.
R210101

DESIGN BY LLR
25 JAN 21

REVISION	DATE
180301	12 MAR 18
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FOUNDATION & FIRST FLOOR

SHEET NO.
S1
OF S5

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WALL BRACING NOTES:

WALL BRACING SHALL BE IN ACCORDANCE WITH SECTION R602.10.3 CONTINUOUS SHEATHING. BRACING METHOD CS-WSP SHALL BE USED IN ACCORDANCE WITH TABLE R602.10.1.

THE REQUIRED LENGTH OF BRACING FOR EACH SIDE OF A RECTANGLE CIRCUMSCRIBED AROUND THE PLAN OR A PORTION OF THE PLAN AT EACH STORY LEVEL SHALL BE IN ACCORDANCE WITH TABLE R602.10.3 AND FIGURE R60.10.3(1). UNLESS NOTED OTHERWISE, THE ENTIRE STRUCTURE IS ASSUMED TO CIRCUMSCRIBED WITHIN A SINGLE RECTANGLE.

MINIMUM PANEL WIDTH IS 24". SEE SECTION R602.10.3 FOR ADDITIONAL INFORMATION. CONNECTION CRITERIA SHALL BE IN ACCORDANCE WITH TABLE R602.10.1. PORTAL FRAME CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE R602.10.1

HOLD DOWN DEVICE SHALL BE AS FOLLOWS:
SIMPSON LSTA24 STRAP (OR EQUIVALENT) BETWEEN FLOORS EXTENDING FROM BOTTOM OF FLOOR BAND UP STUDS WHERE SHOWN.
SIMPSON HD3B HOLDOWN (OR EQUIVALENT) WHERE REQUIRED TO CONNECT DIRECTLY TO FOUNDATION.

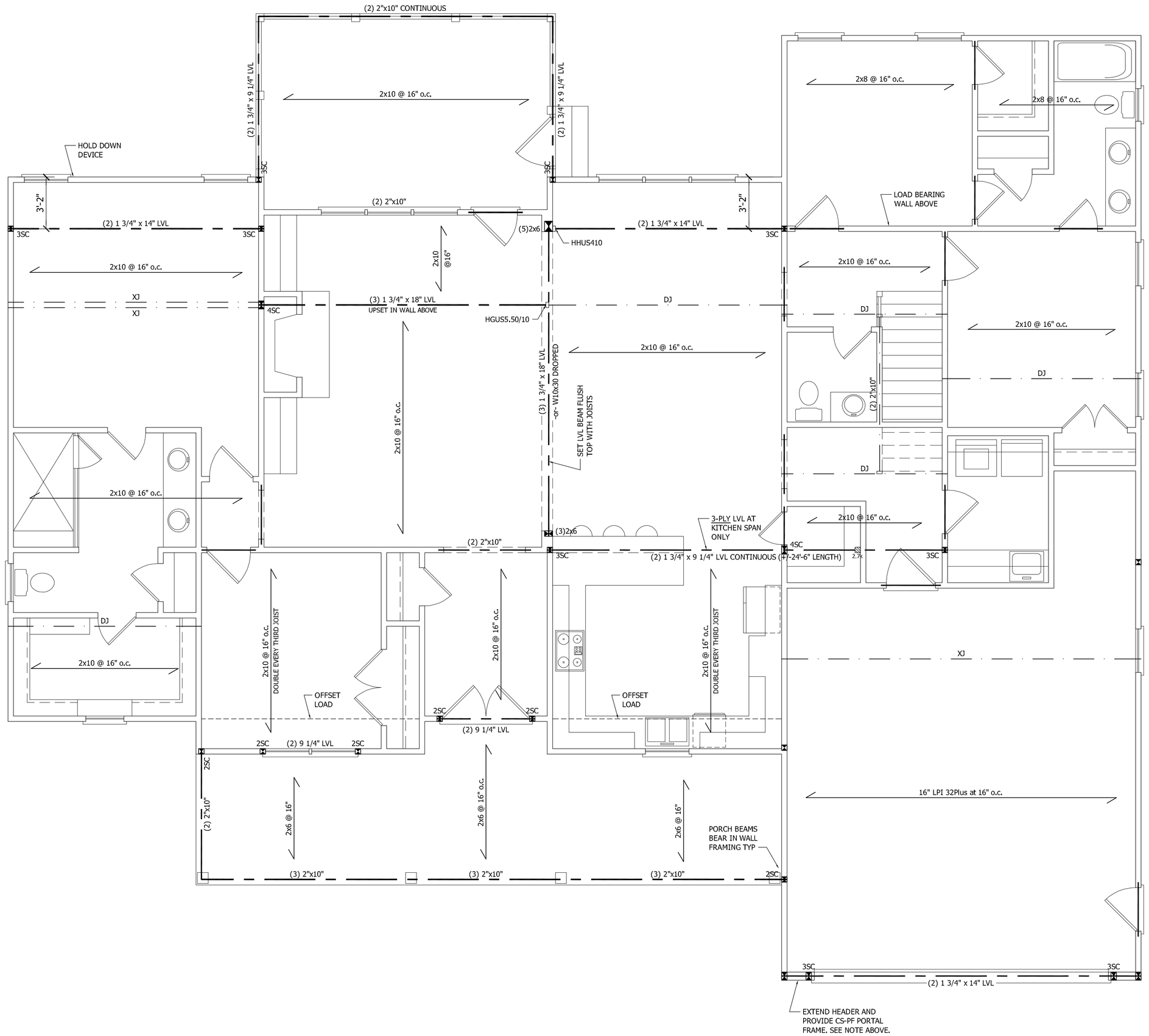
WIND SPEED: 115 mph

EAVE TO RIDGE HEIGHT: 14.67 ft

FIRST FLOOR:

SHORT SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 57.83 ft
REQUIRED LENGTH OF BRACING = 7.5 ft
PROVIDED LENGTH OF BRACING = 33.5 ft

LONG SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 69.33 ft
REQUIRED LENGTH OF BRACING = 9.0 ft
PROVIDED LENGTH OF BRACING = 31.0 ft



FIRST CEILING FRAMING
SCALE: 1/4" = 1'-0"

FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.
2. FRAMING SHALL BE #2 SPF OR #2 SYP u.n.o.
3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.
4. ⊠ DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.

FRAMING SYSTEM
JOIST LAYOUT AND PLACEMENT BY MANUFACTURER TO COINCIDE WITH THE SUPPORT LOCATIONS SHOWN. JOISTS SHALL BE DESIGNED FOR MAXIMUM L/480 LIVE LOAD DEFLECTION. JOIST LAYOUT SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD.
INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

EXTEND HEADER AND PROVIDE CS-PF PORTAL FRAME PANEL PER FIG. R602.10.1. PROVIDE LSTA24 STRAP (OR EQUIVALENT) EACH SIDE AS SHOWN. FASTEN SHEATHING TO HEADER AND WALL FRAMING (EACH STUD) WITH 8d NAILS AT 3" o.c. AS SHOWN. SEE FIG. R602.10.1 FOR ADDITIONAL REQUIREMENTS. SEE SHEET S5 FOR DETAIL.

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FIRST CEILING FRAMING

SHEET NO.
S2
OF S5

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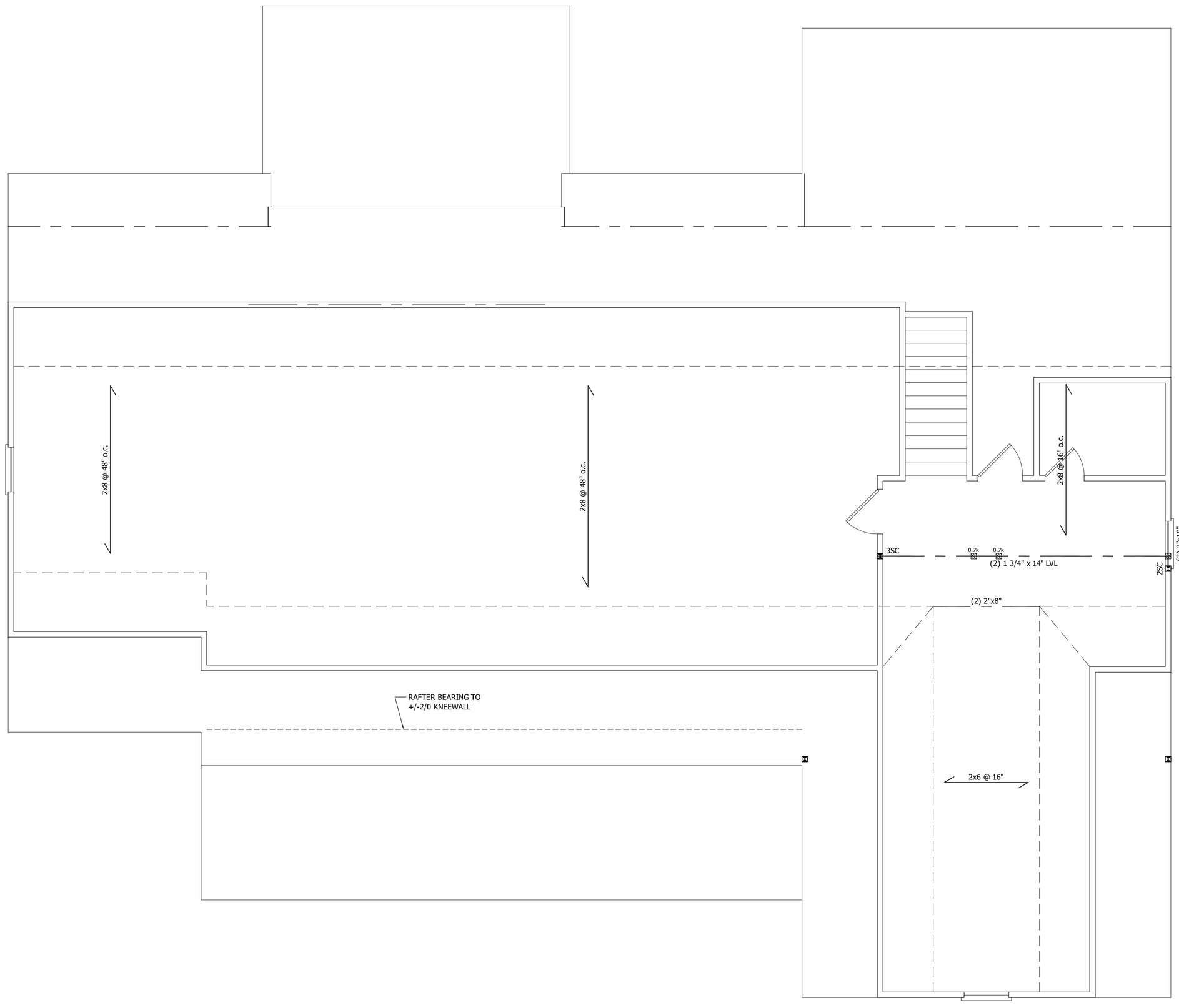
NOTE:
PER SECTION R602.10.3.2, THE AMOUNT OF BRACING PROVIDED ON THE SECOND STORY EQUALS OR EXCEEDS THE AMOUNT OF BRACING FOR THE FIRST STORY BELOW, THEREFORE A SEPARATE ANALYSIS OF SECOND STORY BRACING IS NOT REQUIRED.

FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.
2. FRAMING SHALL BE #2 SPF OR #2 SYP u.n.o.
3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.
4. ⊠ DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.



SECOND CEILING FRAMING
SCALE: 1/4" = 1'-0"

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SECOND CEILING FRAMING

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ROOF FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.

2. FRAMING SHALL BE #2 SPF OR #2 SYP u.n.o.

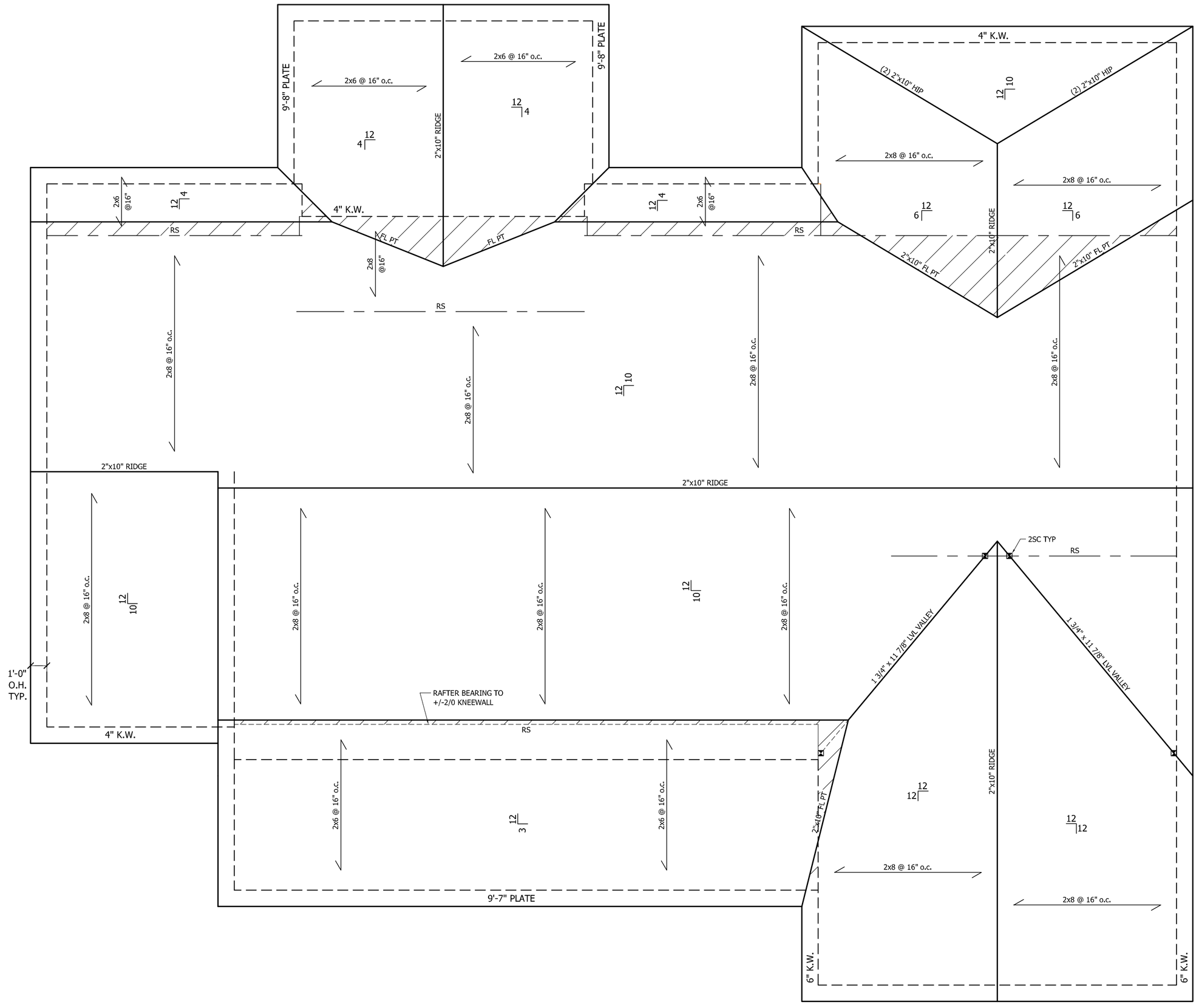
3. PROVIDE 2x4 COLLAR TIES AT 48" o.c. AT UPPER THIRD OF RAFTERS u.n.o. ON PLAN.

4. FUR RIDGES FOR FULL RAFTER CONTACT

5. ▣ DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.

6. ▨ DENOTES OVERFRAMED AREA

PROVIDE 2x4 RAFTER TIES AT 16" o.c. AT 45° BETWEEN RAFTERS AND CEILING JOISTS. USE (4) 16d NAILS AT EACH CONNECTION. RAFTER TIES MAY BE SPACED AT 48" o.c. AT LOCATIONS WHERE NO KNEE WALLS ARE INSTALLED.



ROOF PLAN FRAMING
SCALE: 1/4" = 1'-0"

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ROOF PLAN FRAMING

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S4
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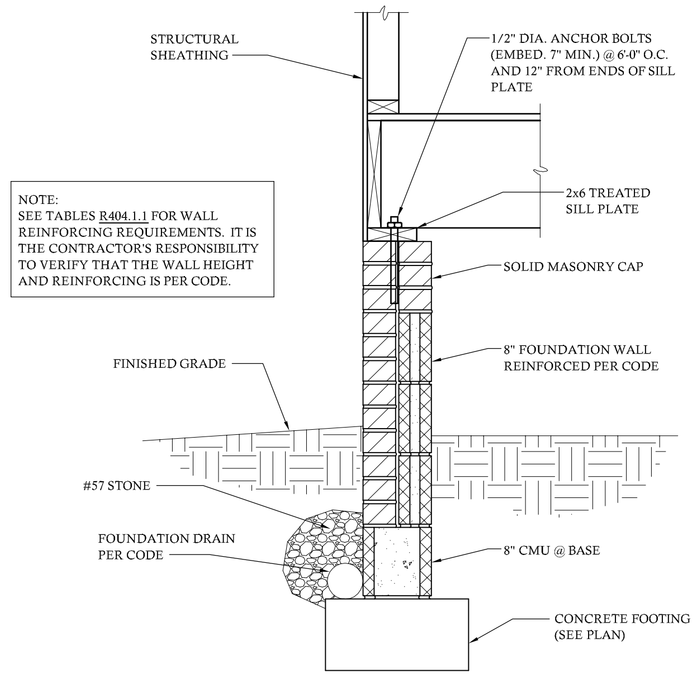
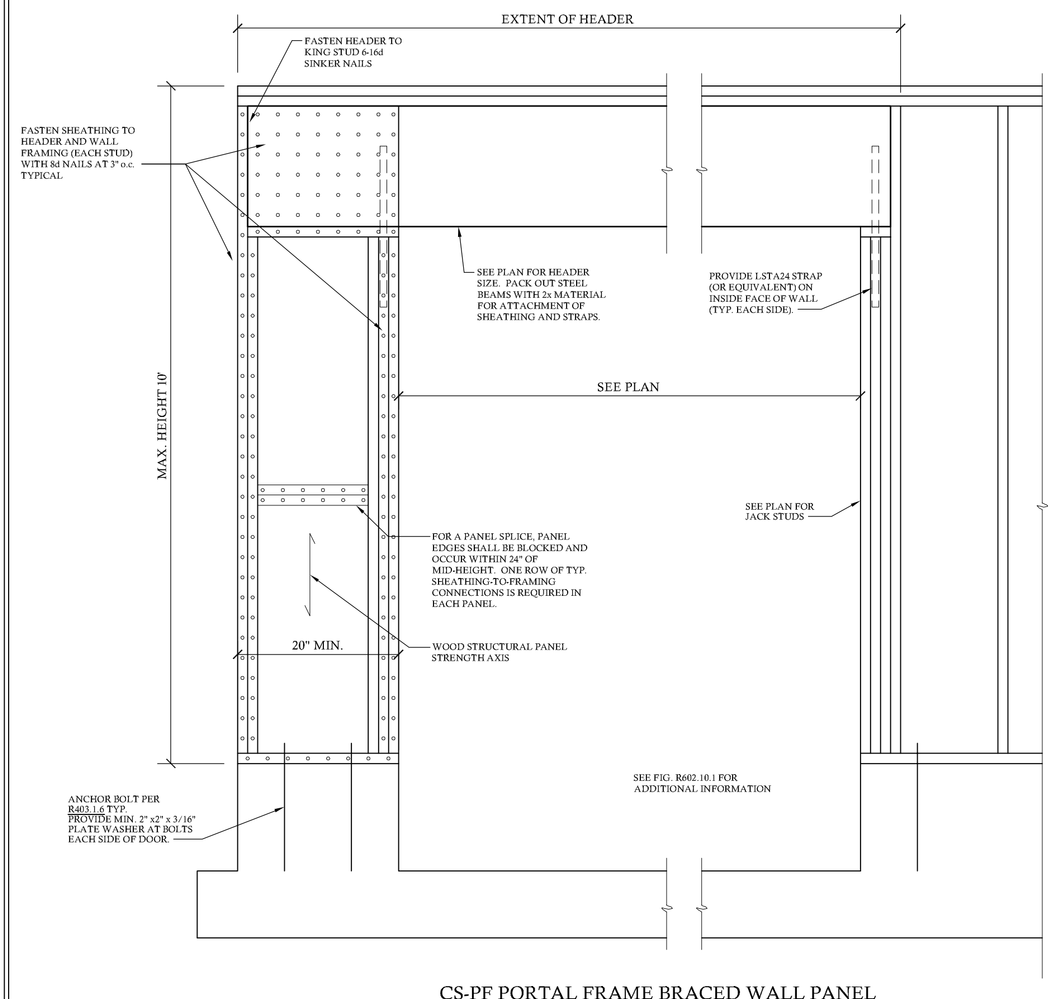


8" FOUNDATION WALL

SCALE: 1" = 1'-0"



CS-PF PORTAL FRAME BRACED WALL PANEL

NO SCALE BASED ON FIG. R602.10.1

STRUCTURAL NOTES

GENERAL

1. ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. ROSS LINDEN ENGINEERS PC ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE PLANS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THE PLANS.

2. ALL CONSTRUCTION, WORKMANSHIP, MATERIAL QUALITY AND SELECTION SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE - RESIDENTIAL CODE 2018 EDITION FROM THE INTERNATIONAL RESIDENTIAL CODE 2015 (IRC), AND LOCAL CODES AND REGULATIONS. DIMENSIONS SHALL GOVERN OVER SCALE AND CODE SHALL GOVERN OVER DIMENSIONS.

3. CONTACT THE ENGINEER PRIOR TO CONSTRUCTION IF ANY DISCREPANCIES ARE NOTED ON THE PLANS.

4. ONLY CURRENT SEALED DRAWINGS ARE TO BE USED FOR CONSTRUCTION.

DESIGN LOADS

TABLE R301.4	LIVE LOAD (PSF)	DEAD LOAD (PSF)
DWELLING UNITS	40	10
SLEEPING ROOMS	30	10
ATTICS WITH STORAGE	20	10
ATTICS WITHOUT STORAGE	10	10
ROOF SNOW	20	10
STAIRS	40	10
DECKS	40	10
EXTERIOR BALCONIES	60	10
PASSENGER VEHICLE GARAGES	50	--
FIRE ESCAPES	40	10
GUARDRAILS AND HANDRAILS	200	--

ADDITIONAL LOADS

TABLE R301.2(4) - BASIC DESIGN WIND SPEED 115 MPH

TABLE R301.2(7) - SEISMIC DESIGN CATEGORY B

TABLE R301.2(6) - DESIGN POSITIVE AND NEGATIVE PRESSURE FOR DOORS AND WINDOW FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF

TABLE R301.2(2) - COMPONENT AND CLADDING LOADS FOR A BUILDING LOCATED IN EXPOSURE B

ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE DESIGNED BASED ON ROOF PITCHES AND MEAN ROOF HEIGHT AS FOLLOWS:

	MEAN ROOF HEIGHT		
ROOF PITCH	0-30 FT	35 FT	40 FT
0:12 TO 2.25:12	45.4 PSF	47.7 PSF	49.5 PSF
2.25:12 TO 7:12	34.8 PSF	36.5 PSF	37.9 PSF
7:12 TO 12:12	21.0 PSF	22.1 PSF	22.9 PSF

WALL CLADDING SHALL BE DESIGNED FOR A 24.1 PSF POSITIVE AND NEGATIVE PRESSURE

MATERIALS

1. FRAMING LUMBER SHALL BE #2 SPRUCE PINE FIR (SPF) WITH THE FOLLOWING DESIGN PROPERTIES:
Fb = 875 PSI Fv = 70 PSI E = 1.4E6 PSI

2. FRAMING LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE #2 SOUTHERN YELLOW PINE (SYP) TREATED IN ACCORDANCE WITH AWPA C22 WITH THE FOLLOWING DESIGN PROPERTIES:
Fb = 1050 PSI Fv = 95 PSI E = 1.6E6 PSI

3. ENGINEERED WOOD BEAMS SHALL BE LAMINATED VENEER LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL) WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:
Fb = 2600 PSI Fv = 285 PSI E = 1.9E6 PSI
THE FOLLOWING PRODUCTS MEET OR EXCEED THE ABOVE SPECIFICATIONS AND MAY BE USED AT THE LOCATION INDICATED ON THE PLANS:
BROADSPAN 1.9E-2750Fb LVL BY GEORGIA PACIFIC
iLEVEL TRUS JOIST 1.9E MICROLLAM LVL BY WEYERHAUSER

4. STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL CONFORM TO ASTM A992 OR A572, GRADE 50. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.

5. BOLTS SHALL CONFORM TO A325 MINIMUM GRADE.

6. REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60.

7. SEE TABLE R602.3(1) FOR STRUCTURAL MEMBER FASTENING REQUIREMENTS.

8. POURED CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. MATERIALS USED TO PRODUCE CONCRETE SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN ACI 318 OR ASTM C 1157.

9. CONCRETE LOCATED PER TABLE R402.2 SHALL BE AIR ENTRAINED WITH THE TOTAL AIR CONTENT NOT LESS THAN 5 PERCENT OR MORE THAN 7 PERCENT.

10. MASONRY UNITS SHALL CONFORM TO ACI 530/ASCE 5/TMS 402 AND MORTAR SHALL COMPLY WITH ASTM C 270.

CONSTRUCTION

1. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH. BEAMS MUST BE ANCHORED AT EACH END WITH A MINIMUM OF FOUR 16d NAILS OR TWO 1/2" x 4" LAG SCREWS.

2. ENGINEERED WOOD BEAMS SHALL BE INSTALLED WITH ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.

3. ALL BEAMS SHALL BE CONTINUOUSLY SUPPORTED LATERALLY AND SHALL BEAR FULL WIDTH ON THE SUPPORTING WALLS OR COLUMNS INDICATED WITH A MINIMUM OF THREE STUDS.

4. SOLID BLOCKING SHALL BE PROVIDED AT ALL POINT LOADS TO TRANSFER LOADS THROUGH FLOOR LEVELS. COLUMNS SHALL BE CONTINUOUS TO THE FOUNDATION OR TO OTHER STRUCTURAL ELEMENTS.

5. ENGINEERED WOOD FLOOR SYSTEMS AND ROOF TRUSS SYSTEMS SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ROOF TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER AND REVIEWED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

6. WALL BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL CODE.
   A. EXTERIOR WALLS ARE ASSUMED TO BE BRACED WALL LINES. ADDITIONAL INTERIOR WALLS MAY ALSO BE USED AS BRACED WALL LINES WHERE APPLICABLE. SEE PLAN FOR LOCATIONS.
   B. THE EXTERIOR OF THE STRUCTURE SHALL BE CONTINUOUSLY SHEATHED WITH 1/2" WOOD STRUCTURAL SHEATHING (PLYWOOD OR OSB) PER CODE SECTION R602.10.4. EXTERIOR BRACED WALL LINES ARE ASSUMED TO BE BRACED WITH CS-WSP (WOOD STRUCTURAL PANEL) BRACED WALL PANELS. ALTERNATE BRACING METHODS, IF USED, MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CODE AND MUST BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.
   C. INTERIOR BRACED WALL LINES ARE CONSIDERED TO BE BRACED WITH 1/2" GB (GYPSUM BOARD) BRACED WALL PANELS. SEE TABLE R602.10.2 FOR CONNECTION CRITERIA.
   D. SEE PLANS FOR SPECIAL WALL BRACING REQUIREMENTS FOR GARAGE WALLS AND OTHER WALLS WITH MULTIPLE OR LARGE OPENINGS.

7. STEEL FLITCH BEAMS SHALL BE FASTENED TOGETHER WITH 1/2" DIAMETER BOLTS WITH WASHERS PLACED UNDER THE THREADED END OF THE BOLT. BOLTS SHALL BE SPACED AT MAXIMUM 24" o.c. STAGGERED TOP AND BOTTOM OF BEAM WITH A MINIMUM 2" EDGE DISTANCE. TWO BOLTS SHALL BE LOCATED AT 6" FROM EACH END OF FLITCH BEAM.

8. BRICK LINTELS SHALL BE 3 1/2 x 3 1/2 x 1/4 STEEL ANGLE FOR UP TO 6'-0" MAXIMUM SPAN AND 6 x 4 x 5/16 FOR SPANS GREATER THAN 6'-0".

9. BRICK LINTELS AT SLOPED AREAS SHALL BE 4 x 3 1/2 x 1/4 STEEL ANGLE WITH 16d NAILS IN 3/16" HOLES IN 4" ANGLE LEG AT 12" o.c. TO TRIPLE RAFTER. WHEN THE SLOPE EXCEEDS 4:12 A MINIMUM OF 3 x 3 x 1/4 PLATES SHALL BE WELDED AT 24" o.c. ALONG THE STEEL ANGLE.

FOUNDATION

1. MINIMUM ALLOWABLE SOIL BEARING CAPACITY IS ASSUMED TO BE 2000 PSF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SOIL BEARING CAPACITY.

2. CONCRETE AND MASONRY FOUNDATION WALLS SHALL BE SELECTED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OR IN ACCORDANCE WITH ACI 318, NCMA TR68-A, OR ACI 530/ASCE 5/TMS 402.

3. MASONRY AND POURED CONCRETE WALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH TABLES R404.1.1 (1 THROUGH 4) OF THE NORTH CAROLINA RESIDENTIAL CODE.
   A. PER R404.1.3, TABLES ASSUME THAT WALLS HAVE PERMANENT LATERAL SUPPORT AT THE TOP AND BOTTOM.
   B. WALL REINFORCING SHALL BE PLACED ACCORDING TO FOOTNOTE (c) OF THE TABLES (REINFORCING IS NOT CENTERED IN WALL).
   C. FOUNDATION DRAINS ARE ASSUMED AT ALL WALLS PER R405.

4. WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2" ANCHOR BOLTS WITH MINIMUM 7" EMBEDMENT SPACED A MAXIMUM OF 6'-0" o.c. AND WITHIN 12" FROM THE ENDS OF EACH PLATE SECTION.

5. THE UNSUPPORTED HEIGHT OF SOLID MASONRY PIERS SHALL NOT EXCEED TEN TIMES THEIR LEAST DIMENSION. UNFILLED HOLLOW PIERS MAY BE USED IF THE UNSUPPORTED HEIGHT IS NOT MORE THAN FOUR TIMES THEIR LEAST DIMENSION.

6. CENTERS OF PIERS SHALL BEAR IN THE MIDDLE THIRD OF THE FOOTINGS, AND GIRDERS SHALL CENTER IN THE MIDDLE THIRD OF THE PIERS.

7. ALL FOOTINGS SHALL HAVE MINIMUM 2" PROJECTION ON EACH SIDE OF FOUNDATION WALLS.

ABBREVIATIONS

CONC	CONCRETE
CONT	CONTINUOUS
DBL	DOUBLE
DJ	DOUBLE JOIST
DSP	DOUBLE STUD POCKET
EA	EACH
FL PT	FLAT PLATE
FTG	FOOTING
HGR	HANGER
LVL	LAMINATED VENEER LUMBER
NTS	NOT TO SCALE
OC	ON CENTER
PT	PRESSURE TREATED
RS	RAFTER SUPPORT
SC	STUD COLUMN
SP	STUD POCKET
TJ	TRIPLE JOIST
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
XJ	EXTRA JOIST

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