

A RESIDENCE FOR JOHN & BRENNA FRENCH

HAUGE STREET ROBERTSDALE, AL 36567



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DRAWINGS PROVIDED BY:

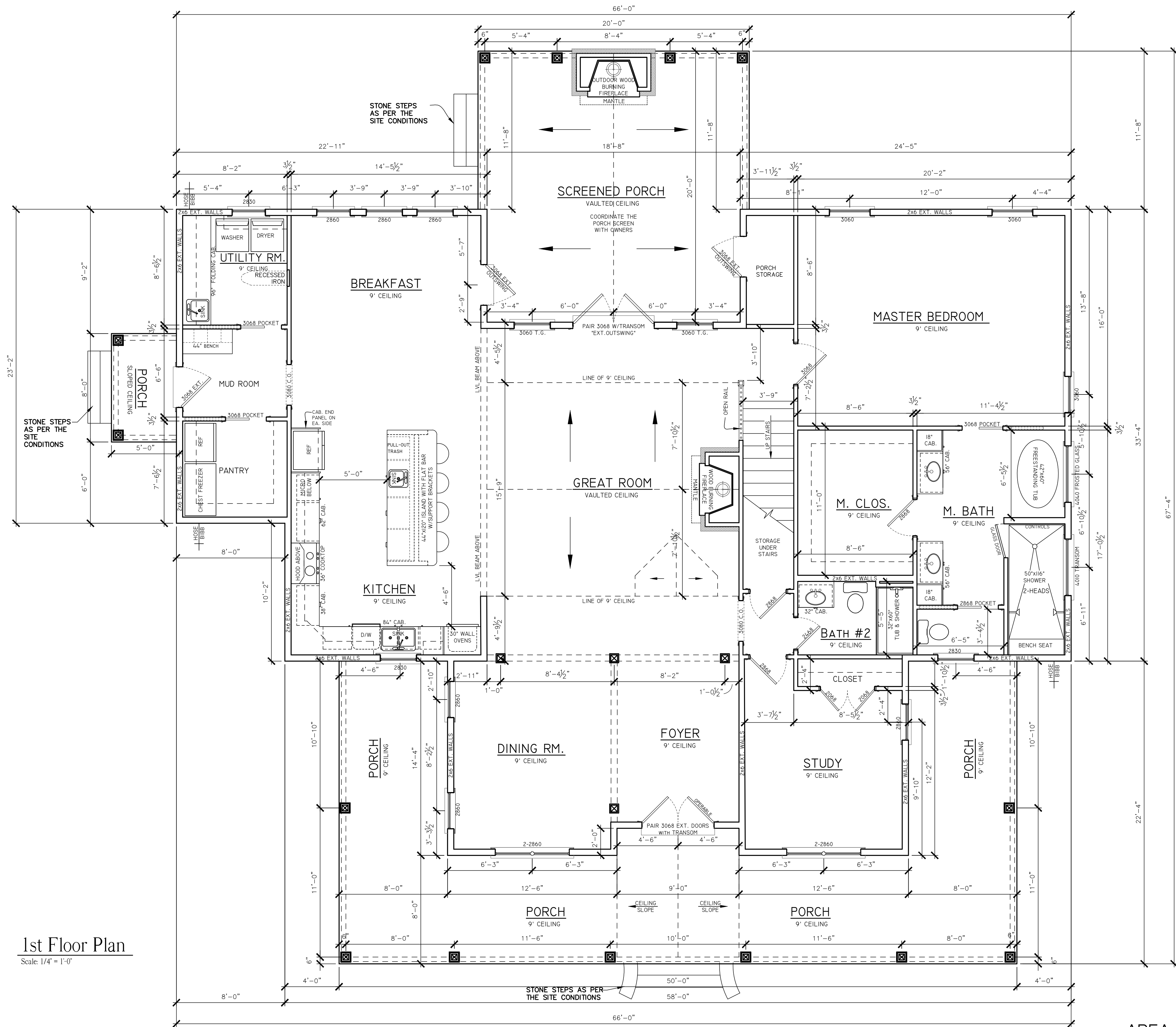
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Project FRENCH

Date 8/2/17

Sheet

T-1



1st Floor Plan
Scale: 1/4" = 1'-0"

AREA CALCULATIONS	
1ST FLOOR LIVING AREA:	2,432 SQ.FT.
2ND FLOOR LIVING AREA:	1,061 SQ.FT.
TOTAL LIVING AREA:	3,493 SQ.FT.
SIDE PORCH:	40 SQ.FT.
FRONT PORCH:	647 SQ.FT.
REAR PORCH:	388 SQ.FT.
TOTAL SQUARE FOOTAGE:	4,568 SQ.FT.

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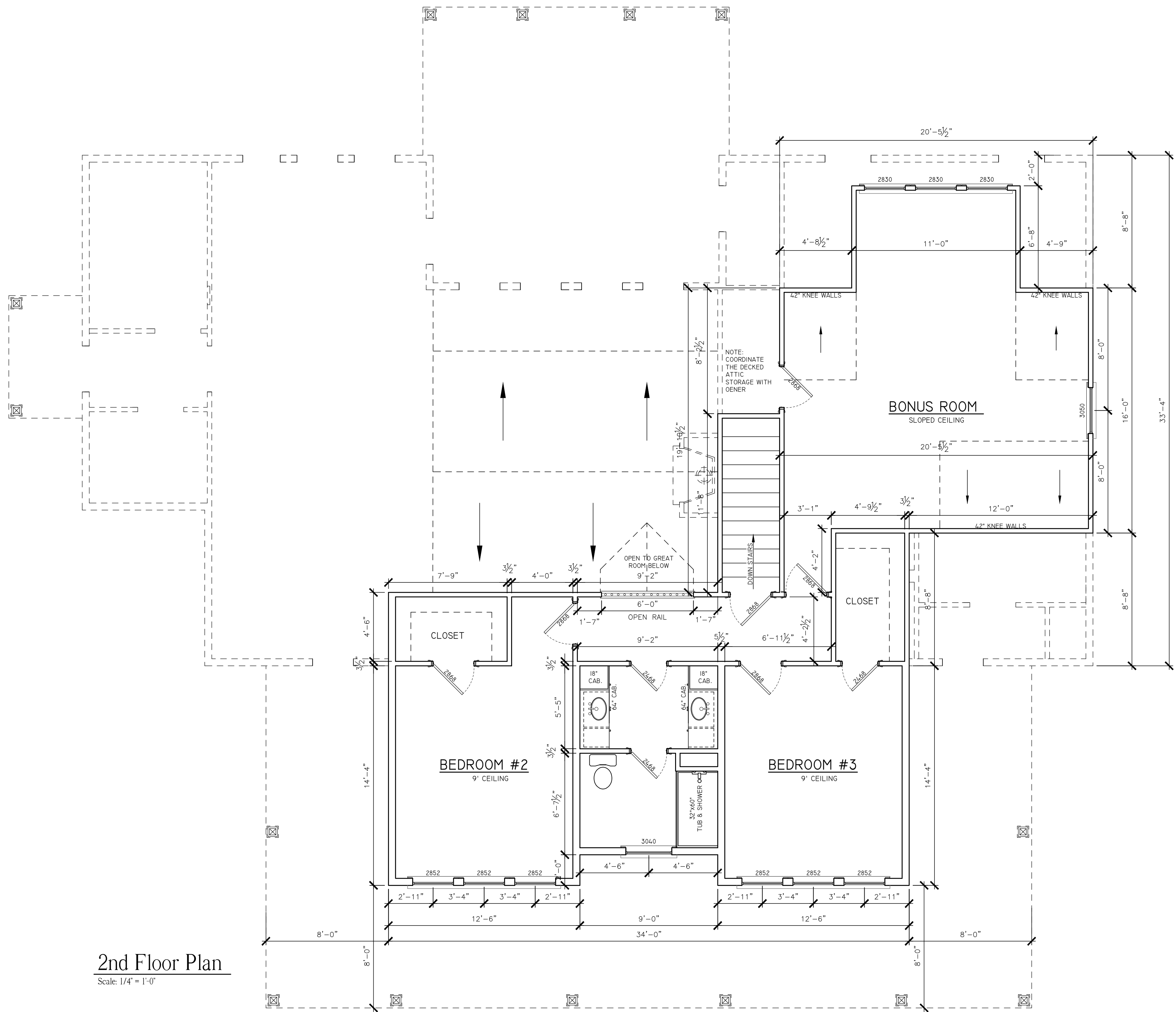
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FLOOR PLAN

2nd Floor Plan

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



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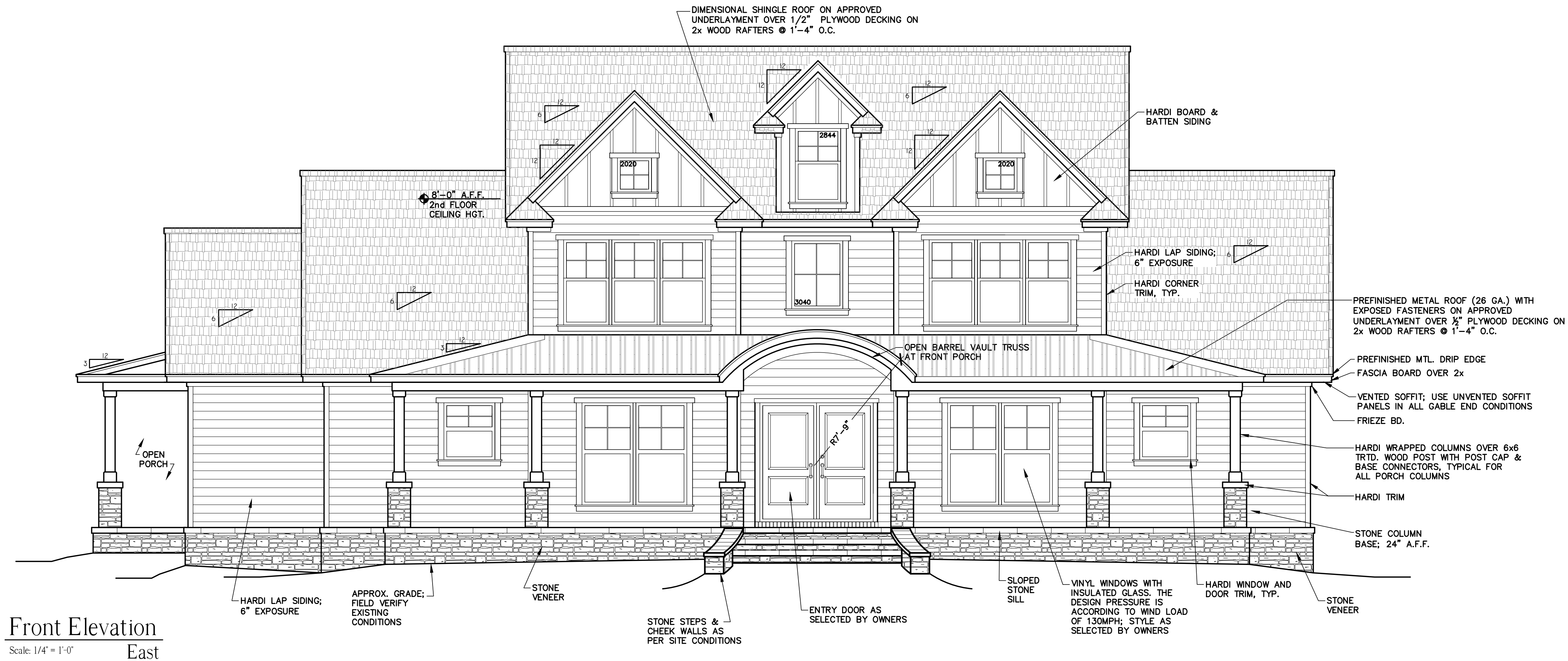
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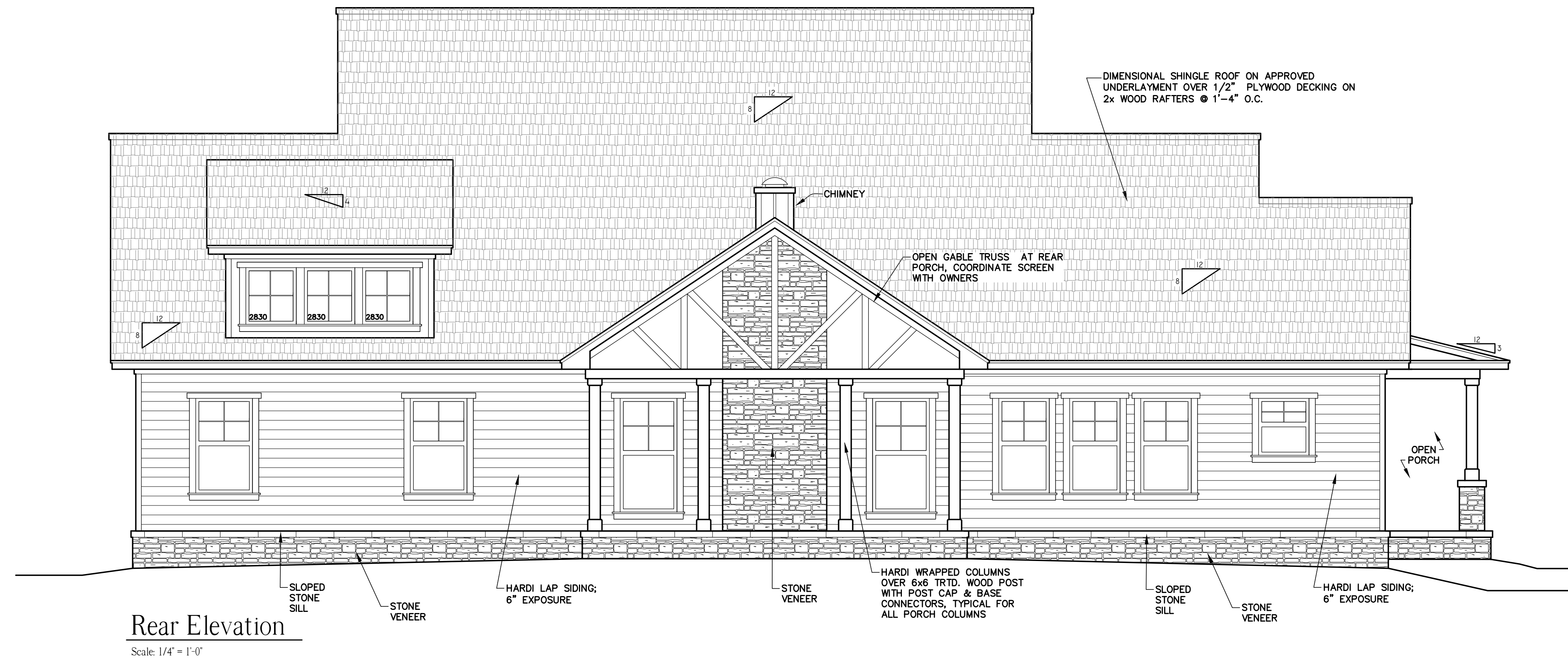
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Sheet
A-3
FLOOR PLAN



Front Elevation
Scale: 1/4" = 1'-0" East



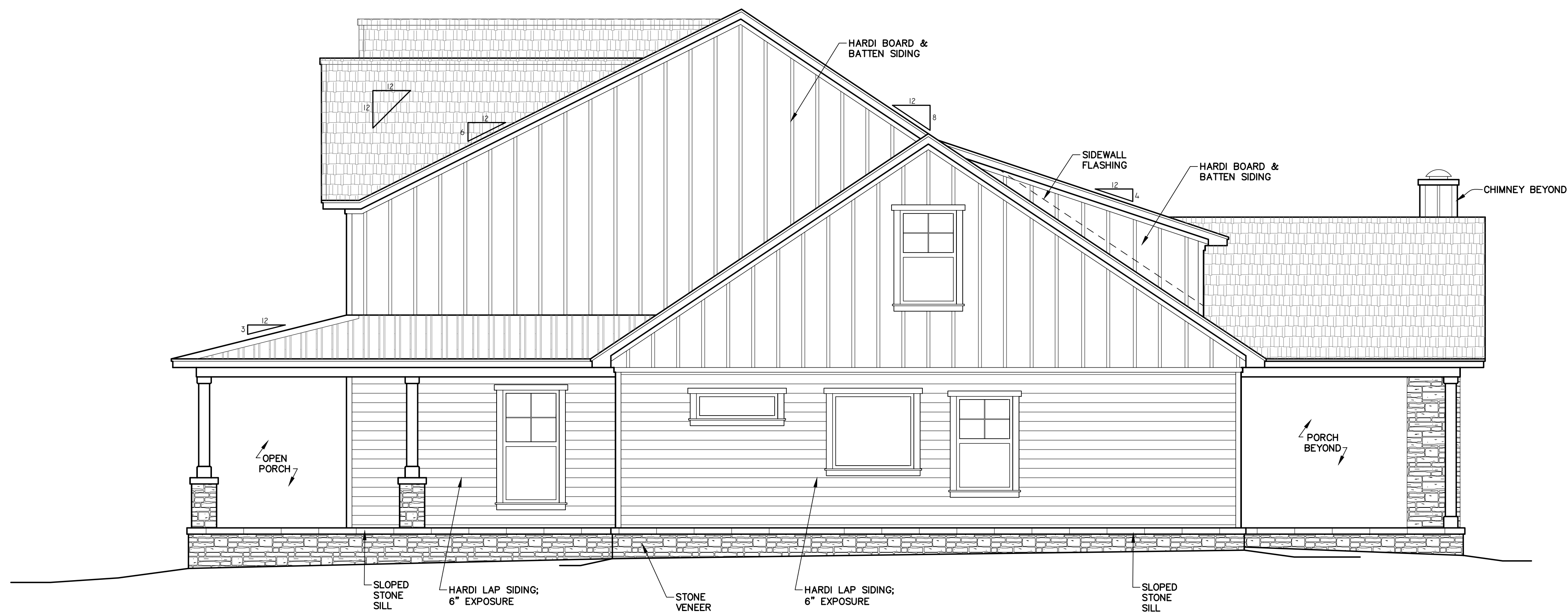
Rear Elevation
Scale: 1/4" = 1'-0"

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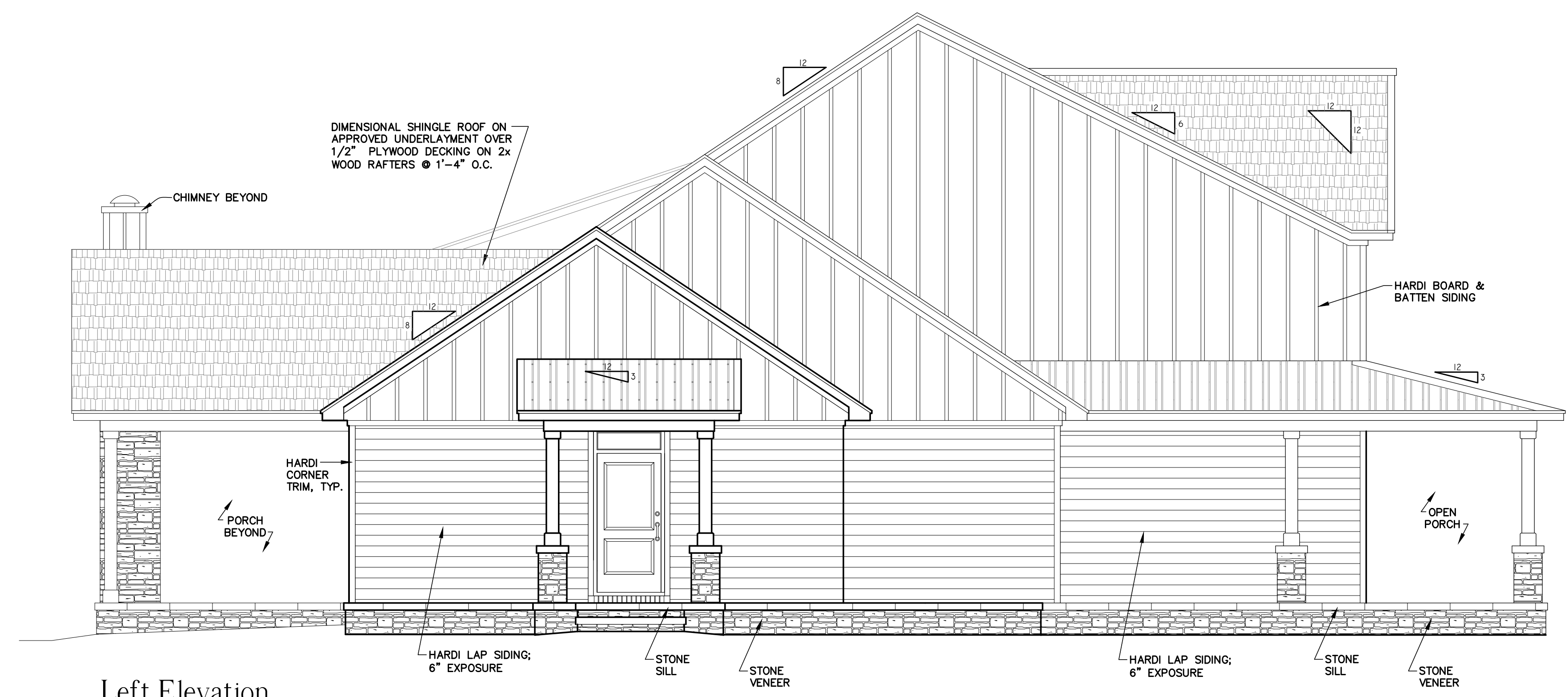
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Sheet
A-4
EXT. ELEVATIONS



Right Elevation
Scale: 1/4" = 1'-0"



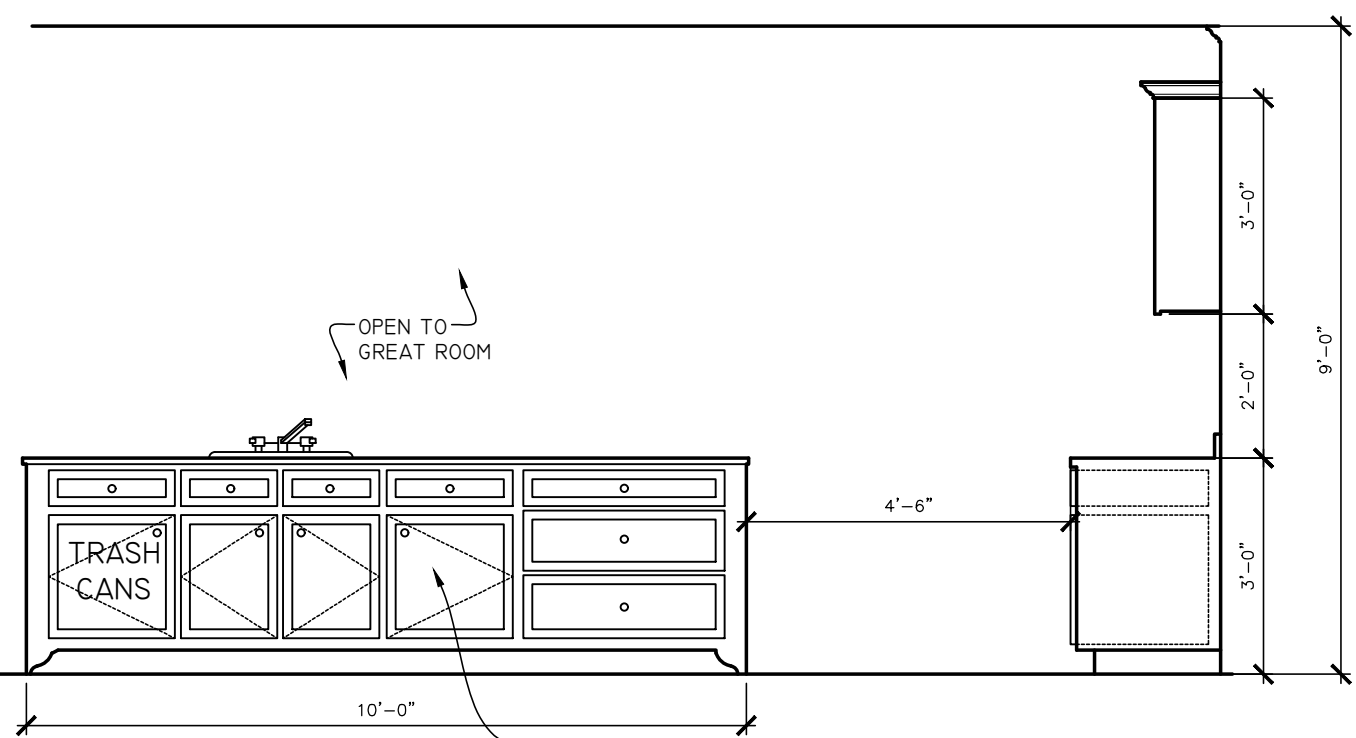
Left Elevation
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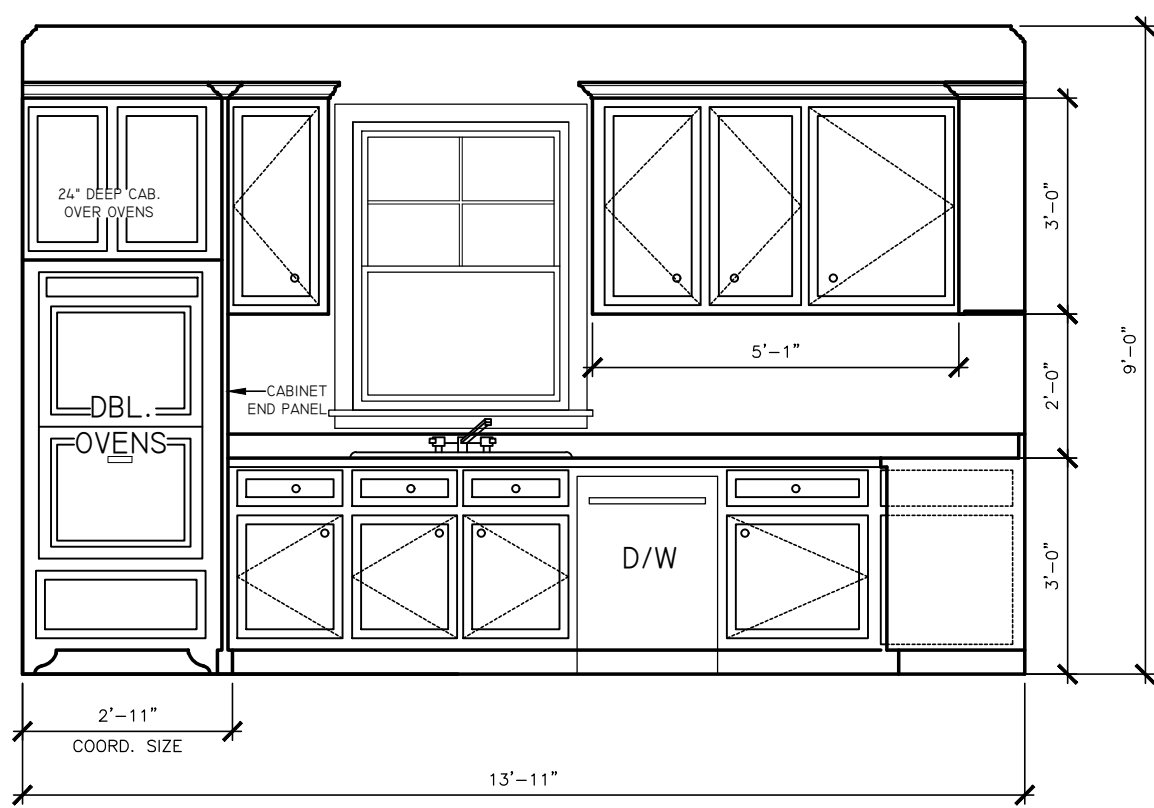
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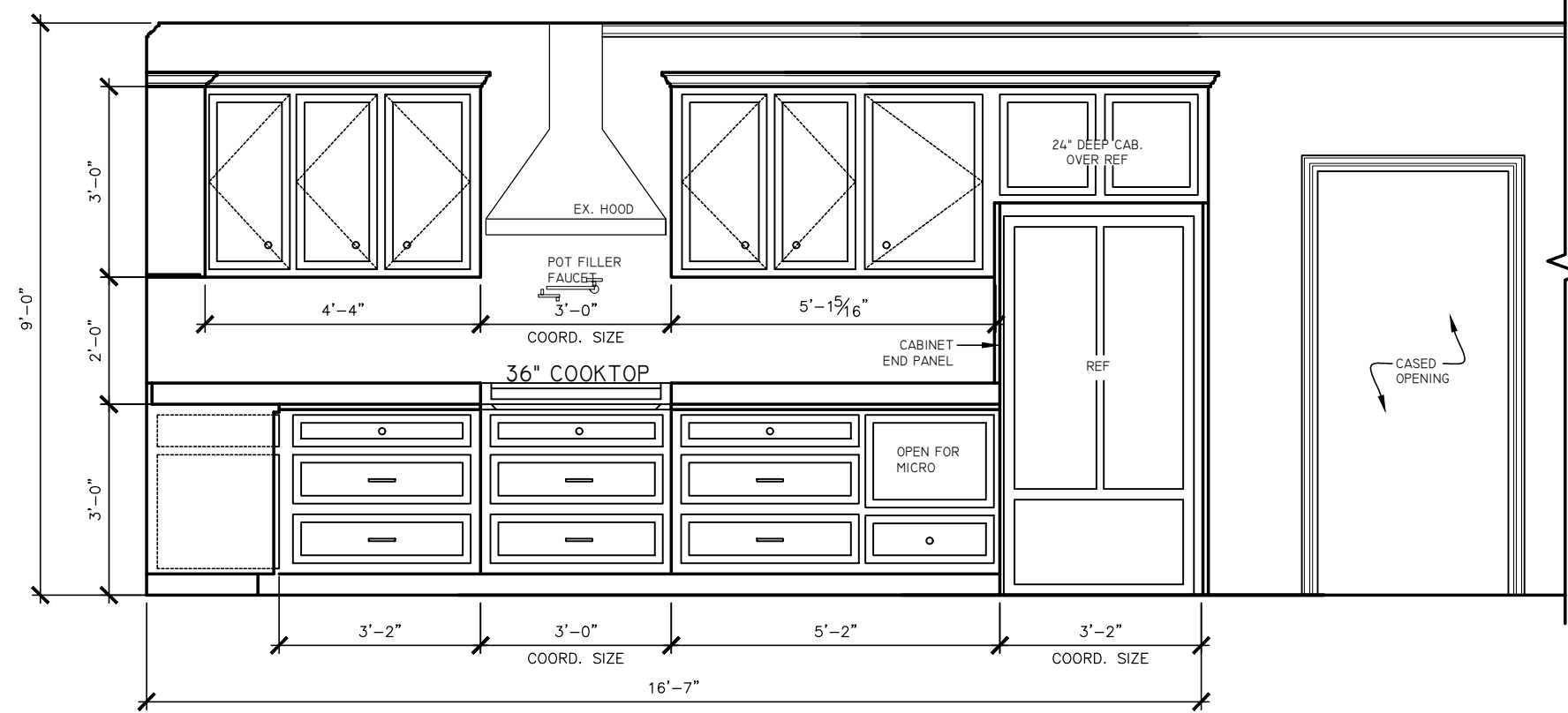
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EXT. ELEVATIONS



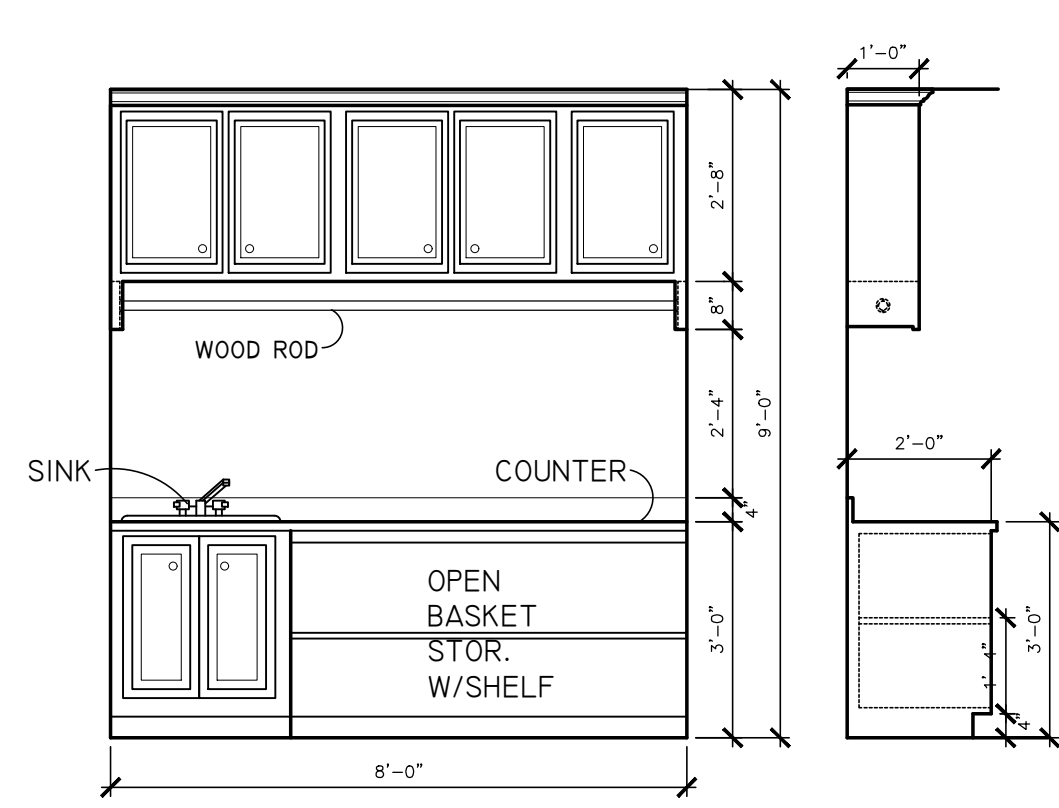
KITCHEN #1



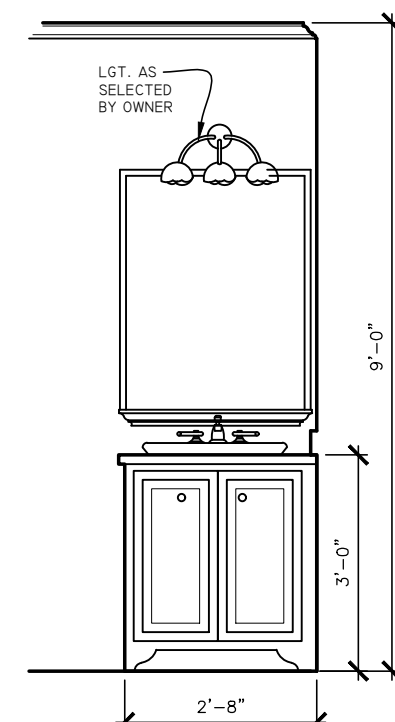
KITCHEN #2



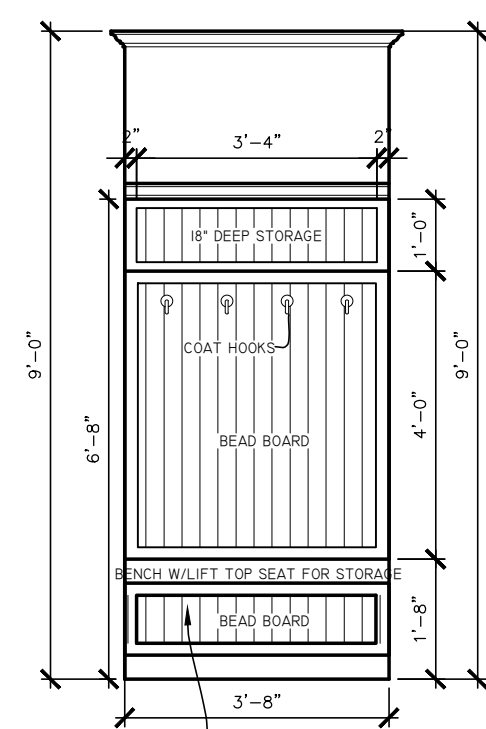
KITCHEN #3



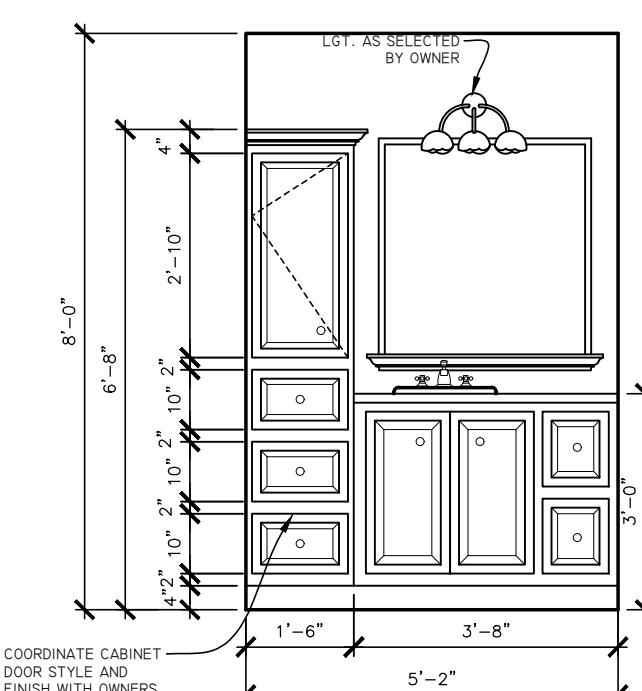
UTILITY #1



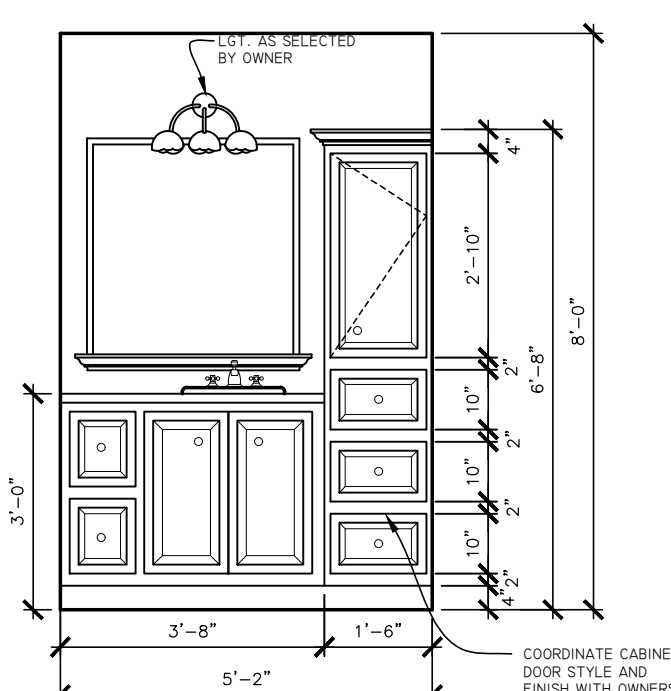
BATH #2



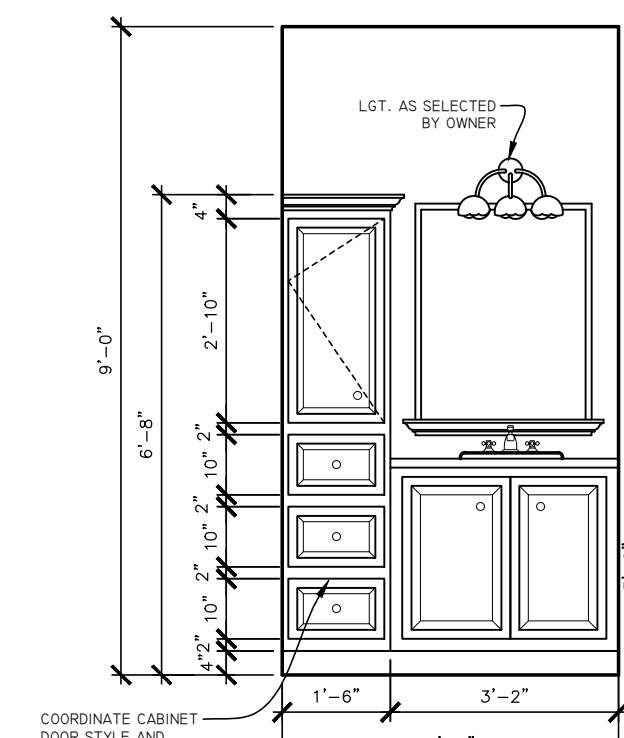
BENCH STORAGE



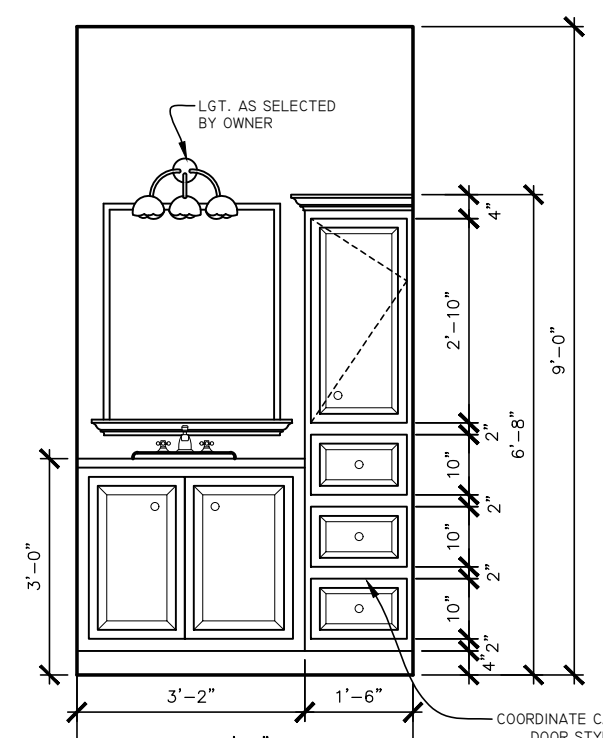
BATH #3



RIGHT



LEFT



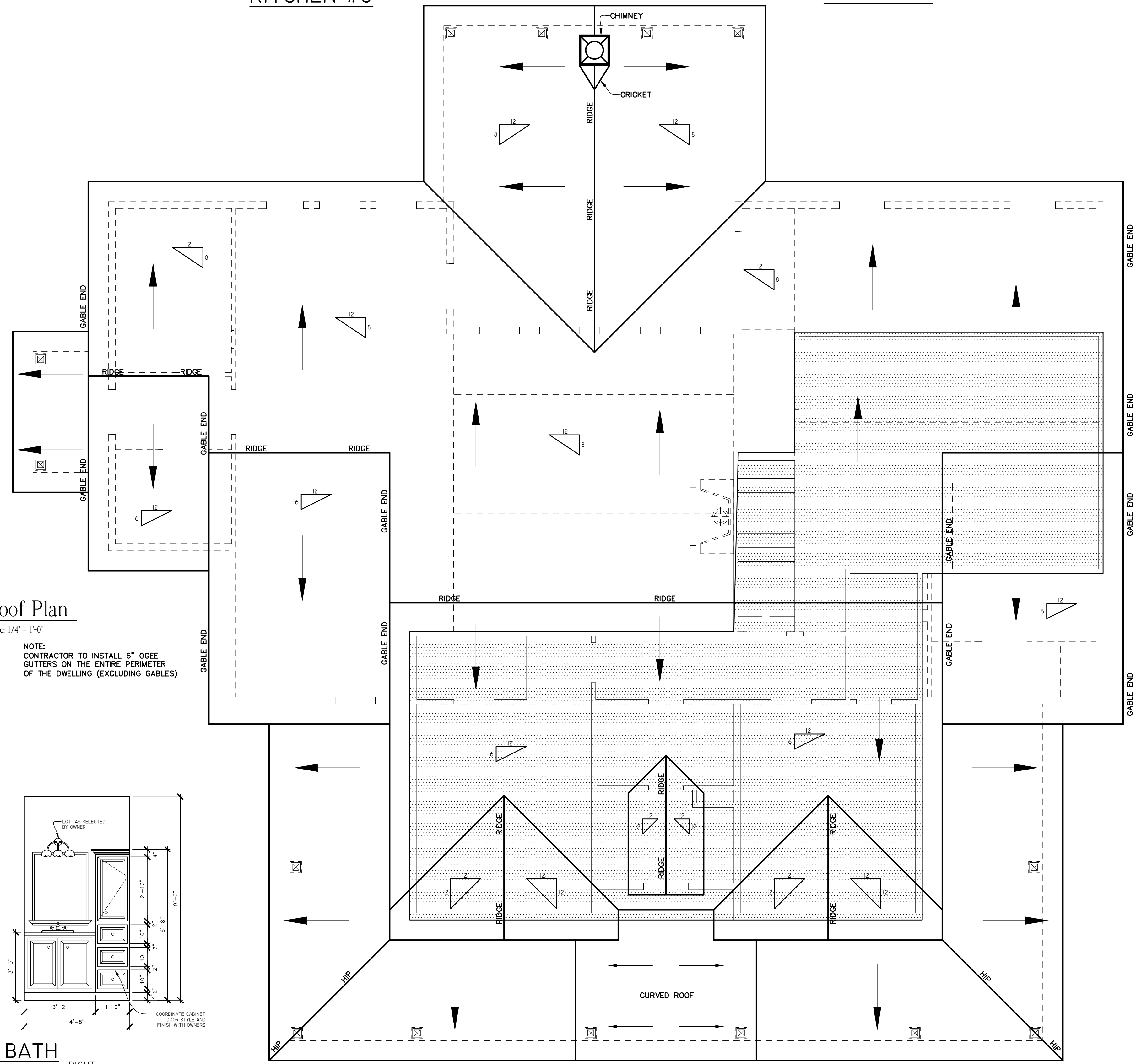
RIGHT

MASTER BATH

Roof Plan

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

NOTE:
CONTRACTOR TO INSTALL 6" OCCE
GUTTERS ON THE ENTIRE PERIMETER
OF THE DWELLING (EXCLUDING GABLES)



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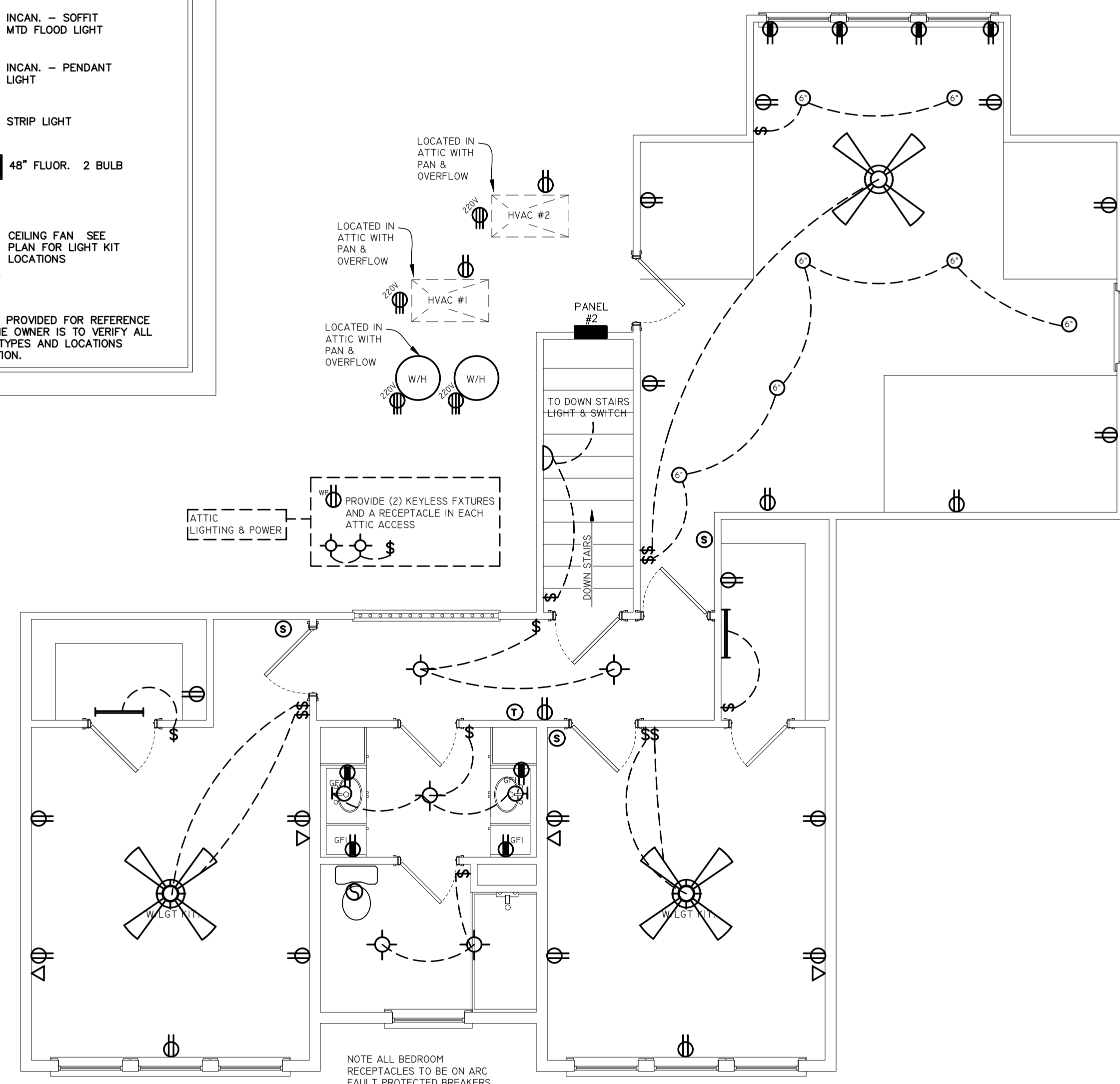
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Project FRENCH
Date 8/2/17

Sheet
A-6
ROOF PLAN

	ELECTRICAL PANEL
	SWITCH
	SWITCH - FAN SPEED CONTROL
	SWITCH - GARBAGE DISPOSAL
	DUPLEX RECEPTACLE MTD @ 16" AFF (UNO)
	DUPLEX RECEPTACLE MTD @ 44" AFF (UNO)
	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE
	WATER PROOF DUPLEX RECEPTACLE
	240 V RECEPTACLE
	GARBAGE DISPOSAL
	THERMOSTAT
	SMOKE DETECTOR
	EXHAUST FAN
	EXHAUST FAN W/LIGHT
	CHANDELIER
	WALL MTD. SCONCE
	RECESSED INCANDESCENT WATER VAPOR SHOWER LIGHT
	PHONE/CABLE COMBINATION OUTLET
	INCAN. - RECESSED DOWN LIGHT
	SURFACE MTD. INCANDESCENT
	UNDER CABINET LIGHT
	INCAN. - WALL MTD LIGHT
	INCAN. - PENDANT MTD. FIXTURE
	INCAN. - SOFFIT MTD FLOOD LIGHT
	INCAN. - PENDANT LIGHT
	STRIP LIGHT
	48" FLUOR. 2 BULB
	CEILING FAN SEE PLAN FOR LIGHT KIT LOCATIONS

NOTE
ELECTRICAL PLAN IS PROVIDED FOR REFERENCE PURPOSES ONLY. THE OWNER IS TO VERIFY ALL OUTLET & FIXTURE TYPES AND LOCATIONS PRIOR TO INSTALLATION.



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Sheet
A-7
ELECTRICAL PLAN

ARTICLE IV SUPPLEMENTAL RESIDENTIAL CODE IN ADDITION TO THE ADOPTED RESIDENTIAL CODE

Sec. 5-109

The requirements specified in this Code Supplement apply to detached One and Two family dwellings not more than three stories above grade plane in height. The provisions of this supplement are intended to complement the locally adopted codes. The elements of design not addressed by the provisions of this supplement shall be in accordance with the locally adopted code. In the event a conflict between this document and the adopted code, the more stringent shall apply.

STRUCTURAL

- Unless balloon framed, gable ends over 4 foot high shall be braced with a minimum 2 x 6 horizontal strong back installed at midpoint of the vertical height of the gable end wall. Minimum 2 x 4 diagonal bracing not to exceed 45 degrees or 4 feet OC shall be installed on top of strong back and face nailed with 4-10d nails into side of gable wall framing studs. In addition, when ceiling joists run parallel to the gable end wall, a minimum 2 x 4 x 8 brace shall be installed at maximum 6 feet OC on top of ceiling joists and gable top plate nailed with 2-10d nails at each support. Metal 20 gauge straps shall be installed on top of 2 x 4 lateral brace and over gable top plate into stud below using 10-8d nails top and bottom. Install minimum 2 x 4 bracing under lateral braces adjacent to gable wall.
- Wood structural panels with a minimum thickness of 7/16 inch (11 mm) and a maximum span of 8 feet (2438 mm) shall be permitted for opening protection in one and two-story buildings. Panels shall be precut and attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be predrilled as required for the anchorage method and shall be secured with the attachment hardware provided. Attachments shall be designed to resist the component and cladding loads determined in accordance with either Table R301.2(2) (See International Residential Code 2012) or ASCE 7, with the permanent corrosion-resistant attachment hardware provided and anchors permanently installed on the building. Attachment in accordance with Table R301.2.1.2 is permitted for building with a mean roof height of 33 feet (10 058 mm) or less where in Wind Zones 1 and 2 in accordance with figure R301.2(4)C. (**Ptyox clips are not allowed**)

TABLE R301.2.1.2
WINDBORNE DEBRIS PROTECTION FASTENING
SCHEDULE FOR WOOD STRUCTURAL PANELS a,b,c,d

FASTENER TYPE	Panel span ≤ 4 feet	4 feet < panel span ≤ 6 feet	6 feet < panel span ≤ 8 feet
No. 8 wood screw based anchor with 2-inch embedment length	16	10	8
No. 10 wood screw based anchor with 2-inch embedment length	16	12	9
¼ inch lag screw based anchor with 2-inch embedment length	16	16	16

- Sor SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.448N, 1 mile per hur = 0.447 m/s.
- This table is based on 130 mph wind speeds and a 33 foot mean roof height.
 - Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located a minimum of 1 inch from the edge of the panel.
 - Anchors shall penetrate through exterior wall covering with an embedment length of 2 inches minimum into the building frame. Fasteners shall be located a minimum of 2-1/2 inches from the edge of concrete block or concrete.
 - Where panels are attached to masonry or masonry/stucco, they shall be attached using vibration-resistant anchors having a minimum ultimate withdrawal capacity of 1500 pounds.
- Garage doors shall be rated to or above the applicable wind design load.
 - Wood frame chimney chases shall be structurally connected to rafters and/or ceiling joists. The attachment must be detailed in the plans or must meet the following minimum requirements:

Each corner of the chimney structure must have a tension strap fastened to the corner stud and continues downward to the roof and/or ceiling support members below. The tension strap must have a minimum tension capacity of 700 lbs. at each end.

Chimney framing shall be sheathed with minimum 7/16 inch structural panel on exterior four sides.

The base perimeters of chimney framing must be continuously supported by minimum 2 x 4 blocking fastened to roof framing members with joist hangers.
 - Exterior and Interior Shear walls and/or braced wall panel locations shall be indicated on the plans and shall be nailed in accordance with the engineered drawings but no less than 6 inches OC maximum intermediate and edge using 8d irregular shank (i.e., ring shank or spiral) nails with full round heads. All exterior walls and gable ends shall be fully sheathed with structural sheathing.

Sec. 5-110 ROOF COVERINGS

ASPHALT SHINGLES – REQUIREMENTS

Wind Speed	Shingle Testing Standard/Classification
110 mph	ASTM D3161 (Class F) or ASTM D7158 Class F, G or H
120 mph	ASTM D7158 Class G or H
130 mph	ASTM D7158 Class H

- Asphalt shingles shall be installed according to the manufacturer recommended listed installation instructions for High Wind areas with minimum 6 nails.
- All Asphalt shingle roof covering underlayment shall be of a synthetic tear resistant Polypropylene, polyester or fiberglass fabric certified by an approved testing agency or ICC-ES report. The Building Official may approve an equal or higher performing product. Asphalt felt roofing underlayment shall not be installed as a roof covering underlayment.
 - Roof underlayment shall be installed and fastened in accordance with the Manufacturer's installation instructions. NOTE – Most Manufacturer's do not allow staples as an approved fastener or staple button caps
- All Aluminum/Vinyl Soffit covering shall be attached to minimum 7/16 OSB or plywood or minimum 2 x 2 wood supports 12 inches OC maximum.
- Roof deck sheathing seams shall be taped with minimum 4" Peel and Stick tape meeting ASTM D-1970, or sheathing seams and each side of roof support shall be sealed with closed cell foam meeting ASTM D-1622, other equal or greater methods may be approved by the Building Official.
- Metal roof covering shall be fastened to roof assembly with a maximum 2 foot OC spacing of fasteners in the length dimensions of the panels. The minimum number of fasteners in width dimension of the panel shall be no less than 4.
- 2x4 wood purlins for attachment of metal roof coverings shall be a maximum 2 feet OC. Wood purlins shall be nailed with a maximum two deformed (spiral, ring shank) #16D nails at maximum of 24 inches OC. 1x4 wood purlins may be used on existing plywood roofs.
- Roof decks shall be nailed in accordance with the engineered drawings but no less than 6 inches OC maximum intermediate and edge, with minimum 8d irregular shank (i.e., ring shank or spiral) nails with full round heads. Staples are not permitted for fastening of the roof decking.
- Replacement of roof covering and underlayment of existing One and Two Family dwellings shall require a re-roofing permit from the City of Robertsdale Building Department. When 1 roof covering exists then you can cover with another asphalt covering or a metal roof using minimum of 1x4 wood purlins. When 2 or more roof coverings exist then all roof coverings and underlayment shall be removed and any roof decking attached with staples or nailing pattern less than 6" O.C. edge and 6" O.C. intermediate shall be railed with #8 ring shank nails to meet 6" O.C. edge and intermediate. Roof deck seams should be taped with a minimum 4" Peel and Stick tape or completely cover with peel and stick meeting ASTM D-1970 to achieve a sealed roof deck or closed cell foam meeting ASTM D-1622 may be applied underneath to each side of framing member and sheathing seams.

Sec. 5-111 ENERGY

- Attic: minimum insulation R-38 Wall: minimum insulation R-13 Floor: minimum insulation R-13.
- Batt insulation shall be cut neatly to fit around pipes and wires or be placed behind piping & wiring.
 - Staple insulation to face of stud.
- Air permeable insulation shall not be used as a sealing material.
- Space between windows & door jams to be sealed.
- Corners, headers & sill plates shall be sealed.
- Rim joists are to be insulated.
- A continuous air barrier shall be installed in the building envelope.
- Break or joints in the air barrier shall be sealed (taped).
- Access openings to un-air-conditioned spaces shall be sealed (weather stripping).
- Building cavities shall not be used as ducts or plenums.
- Programmable thermostat shall be used.
- A minimum of 75% of lights used shall be of high efficiency.
- Recessed light fixtures shall be sealed to be airtight.
- U factor of 40 must be used and also SHGC of .25 for windows.
- At the time of rough-in inspection Peel and Stick aluminum backed tape or other approved material shall be applied to all edges of all windows to prevent air exchange.
- All holes interior and exterior wall top plates shall be sealed with caulking or expandable foam.
- Space around plumbing pipes penetrating interior or exterior wall top plates shall be sealed with caulking or expandable foam.

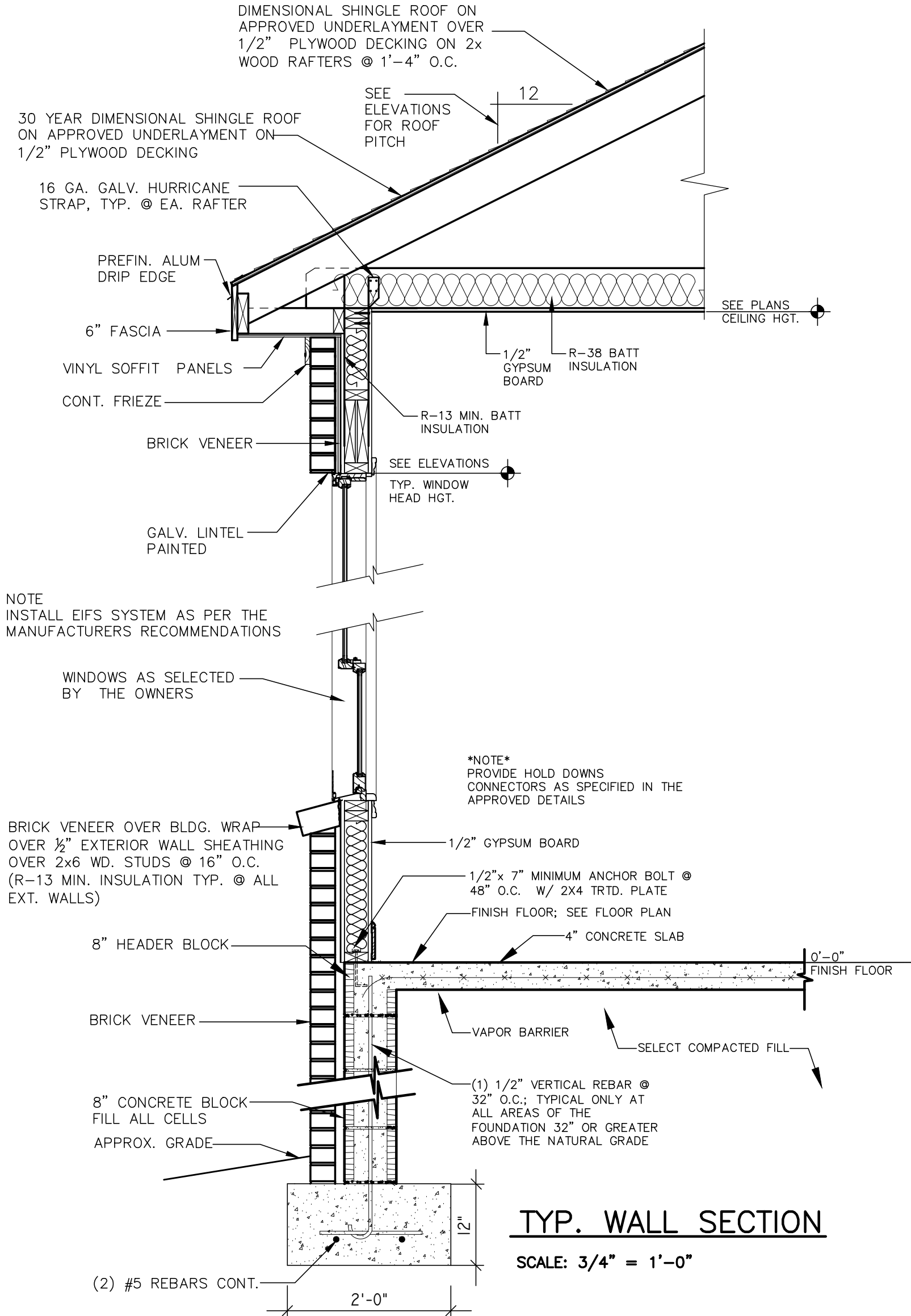
The City of Robertsdale Building Department may at any time inspect for compliance for items above.

Sec. 5-112 PLUMBING

- Supply piping shall be inspected at minimum Pressure of 100 lbs.
- Top out plumbing inspection shall be performed with Electrical, HVAC and Framing inspection.
- The Contractor responsible for construction shall call in for all 4-way inspections.
- All Bathtubs and showers shall be connected to the drain waste and vent system at the time of top out inspection. **Exception: Whirlpool and Garden tubs may be installed after top out inspection. The trap servicing the whirlpool and garden tub shall be installed at the time of inspection.**

Sec. 5-113 HVAC

- Air Handler's return air filters shall have a minimum one square inch of filter for every 2 CFM of air the HVAC moves. This equals 400 CFM per ton of AC capacity. **Example: A 3 ton system will require a minimum of 600 square inch of return air filter area.**
- Contractor shall provide number of AC units and tonnage of each unit to this department before the rough in inspection.
- The maximum length of flexible duct allowable in any application shall be limited to 12 feet. Any duct run longer that 12 feet shall be same size snap lock pipe or equal. **Exception: Flexible duct may exceed the 12 feet maximum length provided a Manuel D and Manuel J depicting supply air CFM, duct size length and layout of system are provided to this Department before rough in inspection is scheduled.**
- All 90 degree turns, elbows, tees or taps in rectangular duct construction with the exception of transfer duct shall have turn vanes or 2-piece 45 degree or 3-piece 90 degree elbow, 90 degree turns shall be of a long sweep design.
- Each branch shall have a balancing damper with locking quadrant. Locations that are not accessible do not require a balancing damper.
- All insulation shall have a continuous vapor barrier by means of same material "glass fabric tape".
- All duct seams, joints and connections shall be sealed with sealer/mastic to prevent air leakage.
- All duct board seams and joints shall be stapled a *maximum 2 inches OC* in addition to tape and sealer.
- On all new construction rough ins, refrigerant tubing must be soldered closed to an air tight seal.
- Excess plenums above the Air Handler shall not be allowed, unless Manuel D documentation of compliance is provided to this Department.
- Secondary plenums shall not be allowed, unless Manual D documentation of compliance is provided to this Department.
- Primary contractors are responsible to insure the design of the house will accommodate compliance with the adopted codes.
- Each Register boot/box shall be fastened to ceiling joist and have a minimum of one header. Metal rails are acceptable in lieu of 2x4's.
- Flex duct shall be installed fully extended and strapped or secured with a device at the ceiling boot/box to prevent sagging.



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Date 8/21/17

Sheet

A-8
DETAIL SHEET

Table 2. General Nailing Schedule

Joint Description	Number of Common Nails	Number of Box Nails	Nail Spacing
Roof Framing			
Blocking to Rafter (Toe-nailed)	2- 8d	2-10d	each end
Rim Board to Rafter (End-nailed)	2-16d	3-16d	each end
Wall Framing			
Top Plates at Intersections (Face-nailed)	4-16d	5-16d	at joints
Stud to Stud (Face-nailed)	2-16d	2-16d	24" o.c.
Header to Header (Face-nailed)	16d	16d	16" o.c. along edges
Floor Framing			
Joist to Sill, Top Plate or Girder (Toe-nailed) (Fig. 14)	4- 8d	4-10d	per joist
Blocking to Joist (Toe-nailed)	2- 8d	2-10d	each end
Blocking to Sill or Top Plate (Toe-nailed)	3-16d	4-16d	each block
Ledger Strip to Beam or Girder (Face-nailed)	3-16d	4-16d	each joist
Joist on Ledger to Beam (Toe-nailed)	3- 8d	3-10d	per joist
Band Joist to Joist (End-nailed) (Fig. 14)	3-16d	4-16d	per joist
Band Joist to Sill or Top Plate (Toe-nailed) (Fig. 14)	2-16d	3-16d	per foot
Roof Sheathing			
Wood Structural Panels			
rafters or trusses spaced up to 16" o.c.	8d	10d	6" edge / 6" field
rafters or trusses spaced over 16" o.c.	8d	10d	4" edge / 4" field
gable endwall rake or rake truss w/o gable overhang	8d	10d	4" edge / 4" field
gable endwall rake or rake truss w/ structural	8d	10d	4" edge / 4" field
outlookers			
gable endwall rake or rake truss w/ lookout blocks	8d	10d	3" edge / 3" field
Ceiling Sheathing			
Gypsum Wallboard	5d coolers	-	7" edge / 10" field
Wall Sheathing			
Wood Structural Panels			
studs spaced up to 16" o.c.	8d	10d	6" edge / 12" field
studs spaced over 16" o.c.	8d	10d	6" edge / 6" field
25/32" Fiberboard Panels	8d ¹	-	3" edge / 6" field
1/2" Gypsum Wallboard	5d coolers	-	7" edge / 10" field
Floor Sheathing			
Wood Structural Panels			
1" or less	8d	10d	6" edge / 12" field
greater than 1"	10d	16d	6" edge / 8" field

¹ Corrosion resistant 11 gage roofing nails and 16 gage staples are permitted, check IBC for additional requirements.

Nails. Unless otherwise stated, sizes given for nails are common wire sizes. Box and pneumatic nails of equivalent diameter and equal or greater length to the specified common nails may be substituted unless otherwise prohibited.

AMERICAN FOREST & PAPER ASSOCIATION

2 Foundation Anchorage

2.1 GENERAL LOADS

The house shall be anchored to the foundation system to resist the loads in Table 3 and the hold down requirement in Section 4.3. For pile and girder foundation systems or pier and beam foundation systems that support the floor joists on top of the girder or beam, the Stemwall Foundation loads in Table 3 shall be used. When the floor joists are hung on the sides of the girder or beam with proprietary joist hangers, the Slab-on-Grade loads in Table 3 shall be used. Ledgers are not permitted.

Table 3. Foundation Anchorage Loads

			Stemwall Foundations ²						Slab-on-Grade Foundations ³
			Building Aspect Ratio (L/W)						
			1.00	1.25	1.50	1.75	2.00	2.25	
Raised-Floor Foundation Supporting:	Uplift ¹ (plf)	Lateral (plf)	Shear (plf)						
Roof, Ceiling, and One Floor	399	185	280	350	420	490	560	630	730
Roof, Ceiling, and Two Floors	339	185	441	552	662	772	883	993	730

¹ For non-loadbearing walls, uplift connections need not exceed 60 plf.

² Shear connection requirements in the maximum building dimension (L) need not exceed the tabulated values for L/W=1.00.

³ Shear connection requirements are based on a required sheathing nail spacing of 3" o.c. in Tables 10-11. For reduced wood structural panel sheathing nailing requirements of 4" and 6" o.c. and for fiberboard sheathing, the shear loads can be reduced.

2.2 ANCHOR BOLTS

Where 5/8" anchor bolts are used to resist uplift, lateral, and shear loads provided in Table 3, the anchor bolts shall be installed per Table 4 using 3" x 3" x 1/4" plate washers (See Figure 5).

Table 4. Anchor Bolt Spacings

	Stemwall Foundations ¹						Slab-on-Grade Foundations
	Building Aspect ratio (L/W)						
	1.00	1.25	1.50	1.75	2.00	2.25	
Raised-Floor Foundation Supporting:	5/8" Anchor Bolt Spacing (in.)						
Roof, Ceiling, and One Floor	58	51	43	36	32	28	24
Roof, Ceiling, and Two Floors	40	32	27	23	20	18	24

¹ The anchor bolt spacing in the maximum building dimension (L) need not be less than the tabulated spacing for L/W=1.00.

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- Cantilevered Floor Joists that Support Loadbearing or Shear Wall.** Overhang lengths of cantilevered floor joists supporting a loadbearing or shear wall at the end of the cantilever shall be limited to the depth, d, of the joists (See Figure 8).

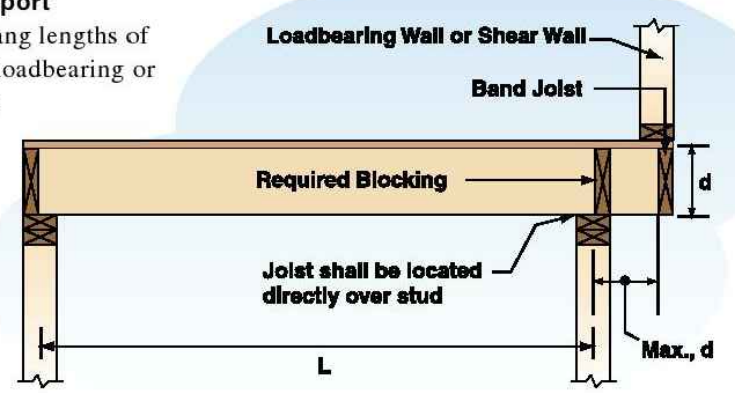


Figure 8. Cantilever with Loadbearing Wall or Shear Wall

3.3 WOOD I-JOIST FLOOR SYSTEMS

Wood I-joist floor systems shall comply with requirements set forth in the manufacturer's code evaluation report.

3.4 WOOD FLOOR TRUSS SYSTEMS

Wood floor truss systems shall be manufactured and installed in accordance with *ANSI/TPI 1 National Design Standard for Metal Plate Connected Wood Truss Construction*, the truss design drawings, and/or the manufacturer's code evaluation report.

3.5 FLOOR SHEATHING

Floors shall be sheathed in accordance with the governing building code.

3.6 FLOOR BRACING

Blocking and connections shall be provided at panel edges perpendicular to floor framing members in the first two truss or joist spaces and shall be spaced at a maximum of 4 feet on center (See Figure 9). Nailing requirements are given in Table 2 (See page 7).

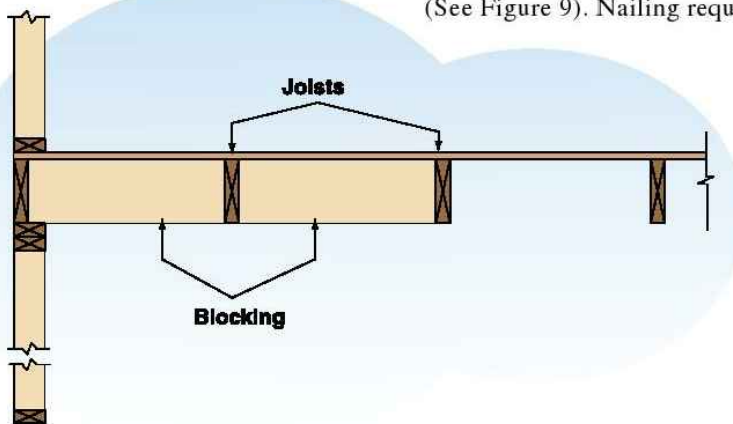


Figure 9. Floor Bracing

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4 Walls

4.1 GENERAL

- Wall Heights.** Loadbearing walls shall not exceed 10 feet in height. Non-loadbearing walls shall not exceed 20 feet in height (See Figure 10).
- Wall Stud Spacing.** Wall stud spacing shall not exceed 24 inches on center (See Figure 10).
- Wall Story Offsets.** Upper story wall segments shall not be offset from lower story wall segments by more than the depth, d, of the floor framing members (See Figures 7 and 8).

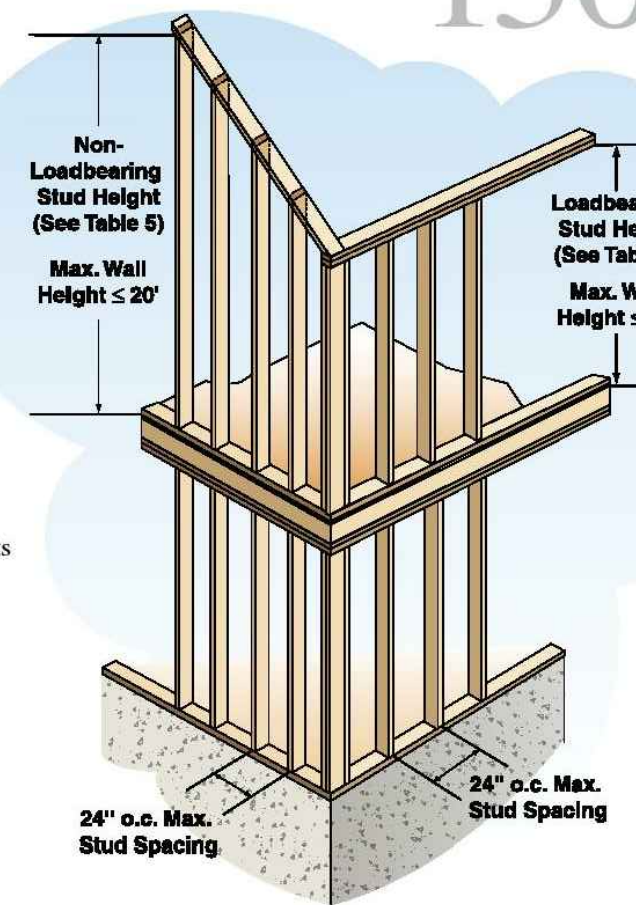


Figure 10. Maximum Wall and Stud Height and Stud Spacing

Table 5. Exterior Wall - Wood Studs

Exterior Studs	Stud Spacing	Maximum Stud Length					
		2x4	2x6	2x8	2x10	2x12	2x14
Non-Loadbearing Studs	12" o.c.	11' - 3"	9' - 5"	18' - 1"	14' - 2"	19' - 9"	18' - 3"
	16" o.c.	10' - 2"	8' - 1"	16' - 2"	12' - 2"	19' - 9"	15' - 8"
	24" o.c.	8' - 8"	NP	13' - 0"	9' - 9"	16' - 9"	12' - 7"
	16" o.c.	9' - 9"	8' - 1"				
Loadbearing Studs Supporting Roof and Ceiling Only	12" o.c.	9' - 9"	9' - 5"			9' - 9"	
	16" o.c.	9' - 9"	8' - 1"				
	24" o.c.	8' - 8"	NP				
Loadbearing Studs Supporting Roof, Ceiling, and 1 Floor Only	12" o.c.	9' - 9"	9' - 5"			9' - 9"	
	16" o.c.	9' - 9"	8' - 1"				
	24" o.c.	NP					

NP= Not Permitted

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2 Foundation Anchorage

2.1 GENERAL LOADS

The house shall be anchored to the foundation system to resist the loads in Table 3 and the hold down requirement in Section 4.3. For pile and girder foundation systems or pier and beam foundation systems that support the floor joists on top of the girder or beam, the Stemwall Foundation loads in Table 3 shall be used. When the floor joists are hung on the sides of the girder or beam with proprietary joist hangers, the Slab-on-Grade loads in Table 3 shall be used. Ledgers are not permitted.

Table 3. Foundation Anchorage Loads

The diagram illustrates a cross-section of a concrete masonry unit (CMU) basement or stemwall foundation. Key components and forces shown include:

- Foundation Wall:** The main vertical structure made of CMU.
- 6"-12" from End of Plates:** A dimension indicating the distance from the end of the plates to the wall.
- Anchor Bolt and 3" x 3" x 1/4" Plate Washer:** Hardware used to secure the foundation to the floor joist.
- Bottom Plate:** The horizontal plate at the base of the wall.
- Uplift:** A vertical force acting upwards on the foundation.
- Shear:** A horizontal force acting parallel to the base of the wall.
- Lateral:** A horizontal force acting perpendicular to the wall.
- See Table 4:** A reference to a table providing design values.
- 18" min.:** A minimum dimension for the foundation wall.
- Wall Stud:** A vertical stud within the wall.
- Bottom Plate:** The horizontal plate at the base of the wall.
- Anchor Bolt:** Hardware used to secure the foundation to the floor joist.
- Floor Joist:** The horizontal structural member supporting the floor.

¹ For non-loadbearing walls, uplift connections need not exceed 60 plf.

² Shear connection requirements in the maximum building dimension (L) need not exceed the tabulated values for L/W=1.00.

³ Shear connection requirements are based on a required sheathing nail spacing of 3" o.c. in Tables 10-11. For reduced wood structural panel sheathing nailing requirements of 4" and 6" o.c. and for fiberboard sheathing, the shear loads can be reduced.

2.2 ANCHOR BOLTS

Where 5/8" anchor bolts are used to resist uplift, lateral, and shear loads provided in Table 3, the anchor bolts shall be installed per Table 4 using 3" x 3" x 1/4" plate washers (See Figure 5).

Table 4. Anchor Bolt Spacings

Figure 5. Anchor Bolts Resisting Uplift, Lateral, and Shear Loads.

2.3 ANCHORAGE AT OPENINGS

¹ The anchor bolt spacing in the maximum building dimension (L) need not be less than the tabulated spacing for L/W=1.00.

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3 Floors

3.1 GENERAL

- Framing Member Span.** Single spans of floor framing members shall not exceed 26 feet.
- Floor Openings.** Floor openings shall not exceed the lesser of 12 feet or 50% of the building dimension (See Figure 6).

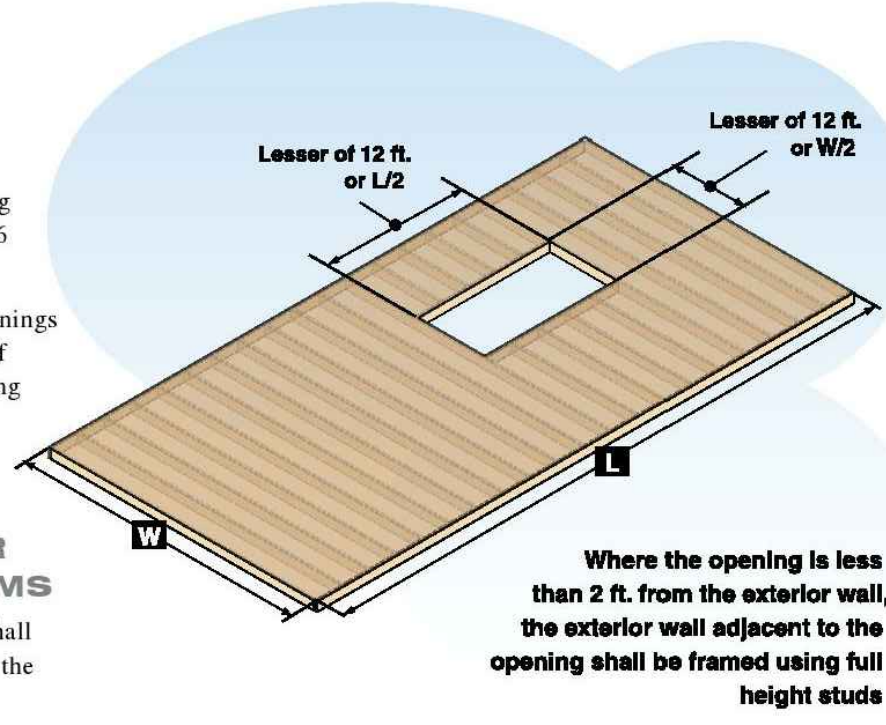


Figure 6. Floor Diaphragm Opening Limits

3.2 WOOD FLOOR JOIST SYSTEMS

- Floor Joists.** Floor joists shall be sized in accordance with the governing building code.
- Floor Joists That Support Loadbearing Walls.** Loadbearing walls parallel to joists shall be directly supported by beams, girders, or other loadbearing walls. Loadbearing walls perpendicular to joists shall not be offset from supporting girders, beams, or other loadbearing walls by more than the depth of the joists (See Figure 7).
- Cantilevered Floor Joists.** Lumber joists shall be located directly over studs except at beams and headers.

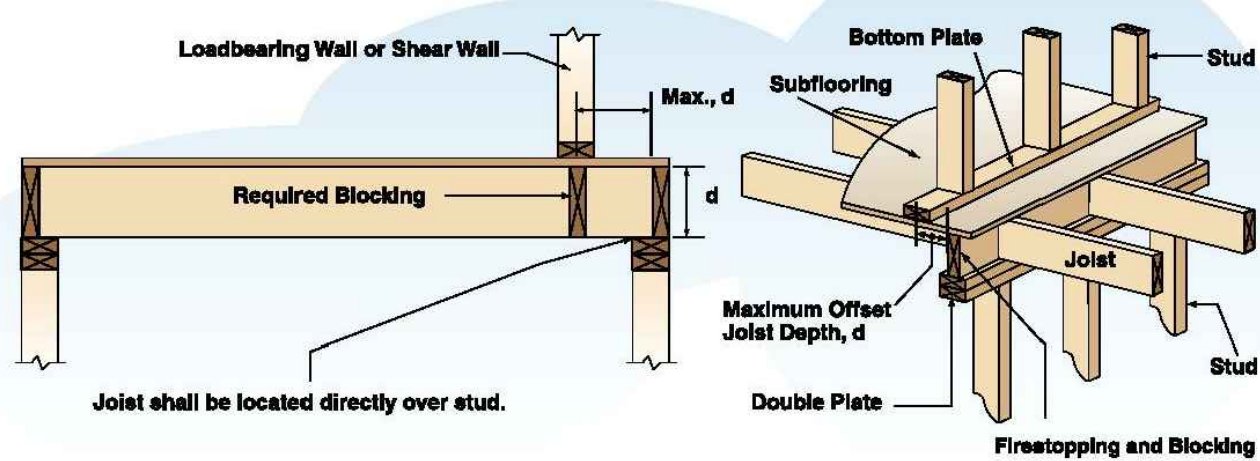


Figure 7. Setback Limits for Loadbearing Wall or Shear Wall and Limit on Loadbearing Wall Offset from Support

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- Stud Continuity.** Studs shall be continuous between horizontal supports, including but not limited to: headers, girders, floor diaphragm assemblies, ceiling diaphragm assemblies, and roof diaphragm assemblies. Studs in gable endwalls adjacent to cathedral ceilings shall be continuous from the uppermost floor to the ceiling diaphragm or to the roof diaphragm.

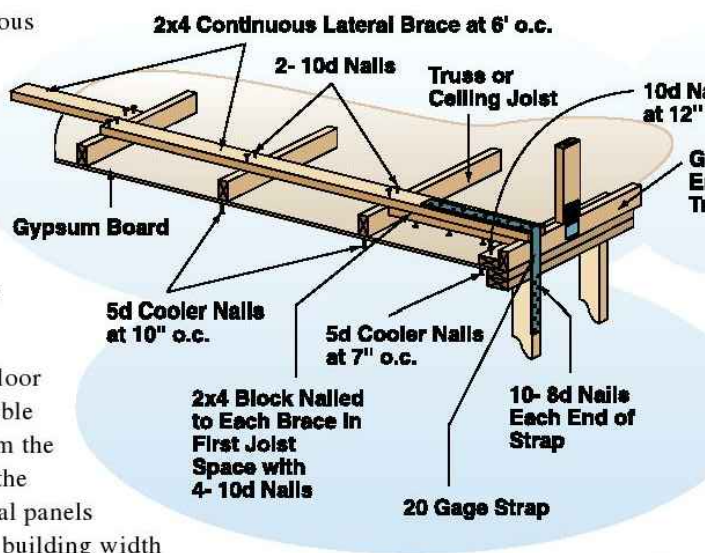


Figure 11. Ceiling Bracing Gable Endwall

- Bracing Gable End Walls.** When attic floor or ceiling assemblies are used to brace gable endwalls, the assemblies shall extend from the endwall for a distance of at least 40% of the building width when using wood structural panels and for a distance of at least 125% of the building width when using gypsum wallboard ceilings. Sheathing and fasteners shall be as specified in Table 2 (See page 7) and Figure 11.

- Top Plates.** Double top plates shall be provided at the top of all exterior stud walls. The double plates shall overlap at corners and at intersections with other exterior or interior loadbearing walls (See Figure 12). Double top plates shall be lap-spliced with end joints offset in accordance with the minimum requirements given in Table 6 (See Figure 13).

Figure 12. Top Plate Intersection Detail

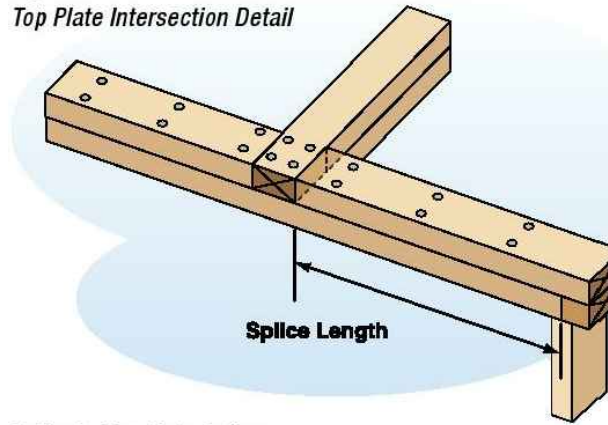


Figure 13. Top Plate Splice Length

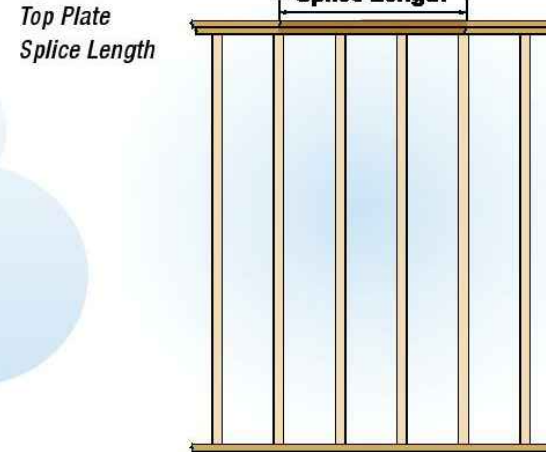


Table 6. Top Plate Splice

Splice Length (ft.)	Building Dimension of Wall Containing Top Plate Splice (ft.)															
	12	16	20	24	28	32	36	40	50	60	70	80	Number of 16d Common Nails per Each Side of Splice			
2	4	6	8	8	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
4	4	6	7	8	10	12	14	16	NP	NP	NP	NP	NP	NP	NP	NP
6	4	6	7	8	10	12	14	16	20	24	NP	NP	NP	NP	NP	NP
8	4	6	7	8	10	12	14	16	20	24	28	32	NP	NP	NP	NP

NP= Not Permitted

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- Wall Assembly to Wall Assembly Connections.** Story-to-story connections from upper story wall studs to lower story wall studs shall be in accordance with the requirements of Table 7 (See Figure 14). When upper story wall studs are not located directly above lower story wall studs, the studs shall be attached to a common member in the floor assembly with connections in accordance with Table 7.

Table 7. Wall Connections at Loadbearing Walls

	Roof Framing Span (ft.)						Lateral
Stud Spacing	12	16	20	24	28	32	36
	Uplift (lb)						No. of 16d Common Nails (Embedded)
12" o.c.	147	188	230	272	314	356	399
16" o.c.	195	251	306	362	419	475	531
24" o.c.	293	376	460	544	628	713	797

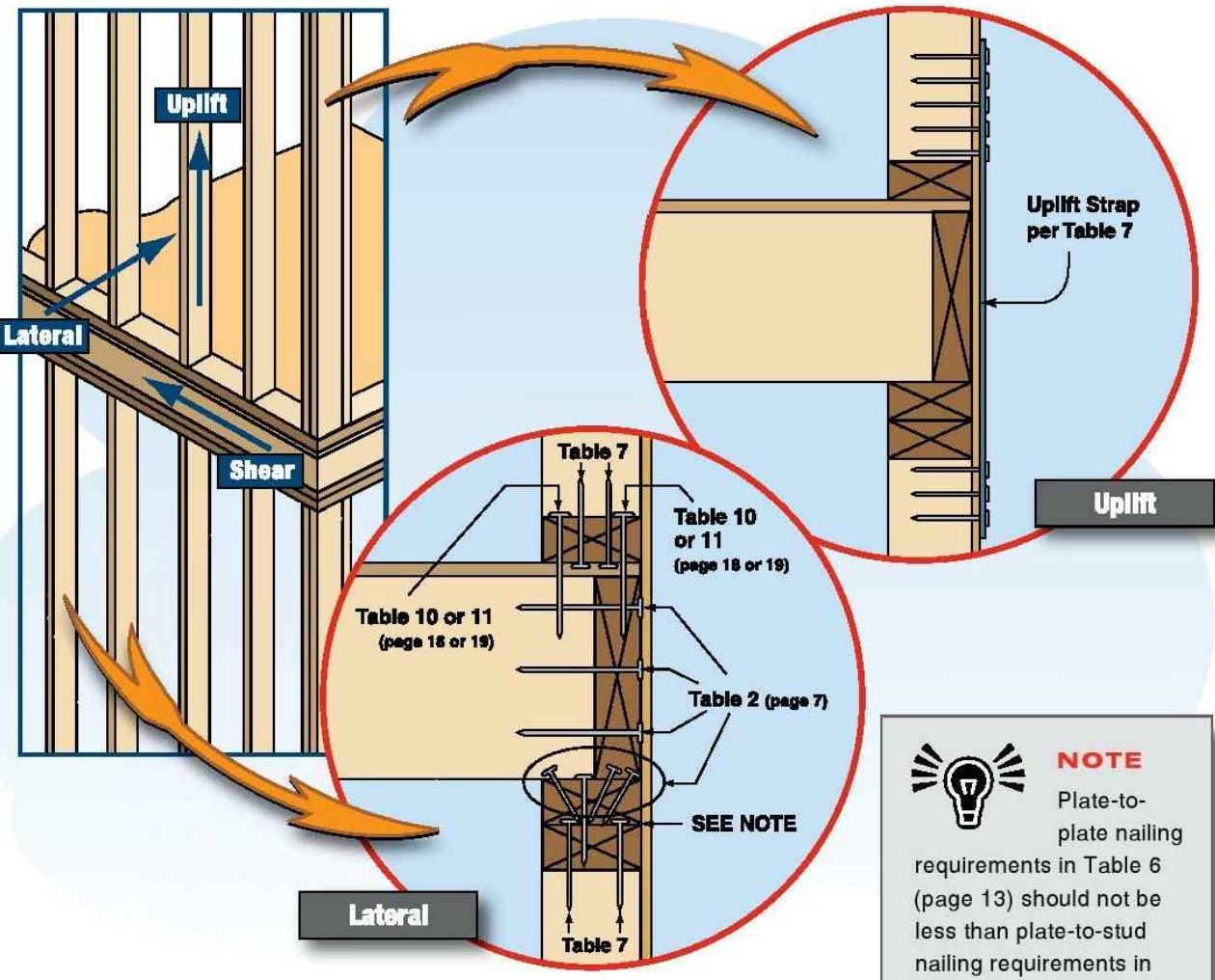


Figure 14. Story-to-Story Uplift and Lateral Connections

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A RESIDENCE FOR JOHN & BRENNA FRENCH
HAUGE STREET ROBERTSDALE, AL 36567

DRAWING INDEX:

- A-1 TITLE SHEET
- A-1 FOUNDATION PLAN
- A-2 1ST FLOOR PLAN
- A-3 2ND FLOOR PLAN
- A-4 EXTERIOR ELEVATIONS
- A-5 EXTERIOR ELEVATIONS
- A-6 ROOF PLAN & MILLWORK
- A-7 ELECTRICAL PLAN
- A-8 DETAIL SHEET
- A-9 WFCM 130 MPH
- A-10 WFCM 130 MPH

DRAWINGS PROVIDED BY:

JASON SHIPP
251.269.7740 PH
jason_shipp@yahoo.com

Project FRENCH

■ **Endwall Assemblies.** Rake overhang-to-wall, wall-to-wall, and wall-to-foundation connections shall be in accordance with the requirements given in Table 8 (See Figures 15 and 16). Walls which do not support the roof assembly and are attached in accordance with Table 2 (page 7) need no additional uplift connections. Where gable end rake trusses are used, rake truss-to-stud connections shall resist the uplift and lateral loads provided by the truss designer.

Table 8. Wall Connections for Endwall Assemblies

		Wall Height (ft.)						
Stud Spacing	Uplift (lb)	8	10	12	14	16	18	20
		Plate-to-Stud - No. of 16d Common Nails - (Endnailed)						
12" o.c.	177	2	2	2	2	2	2	3
16" o.c.	236	2	2	2	3	3	3	3
24" o.c.	354	3	3	3	4	4	5	5

4 WALLS

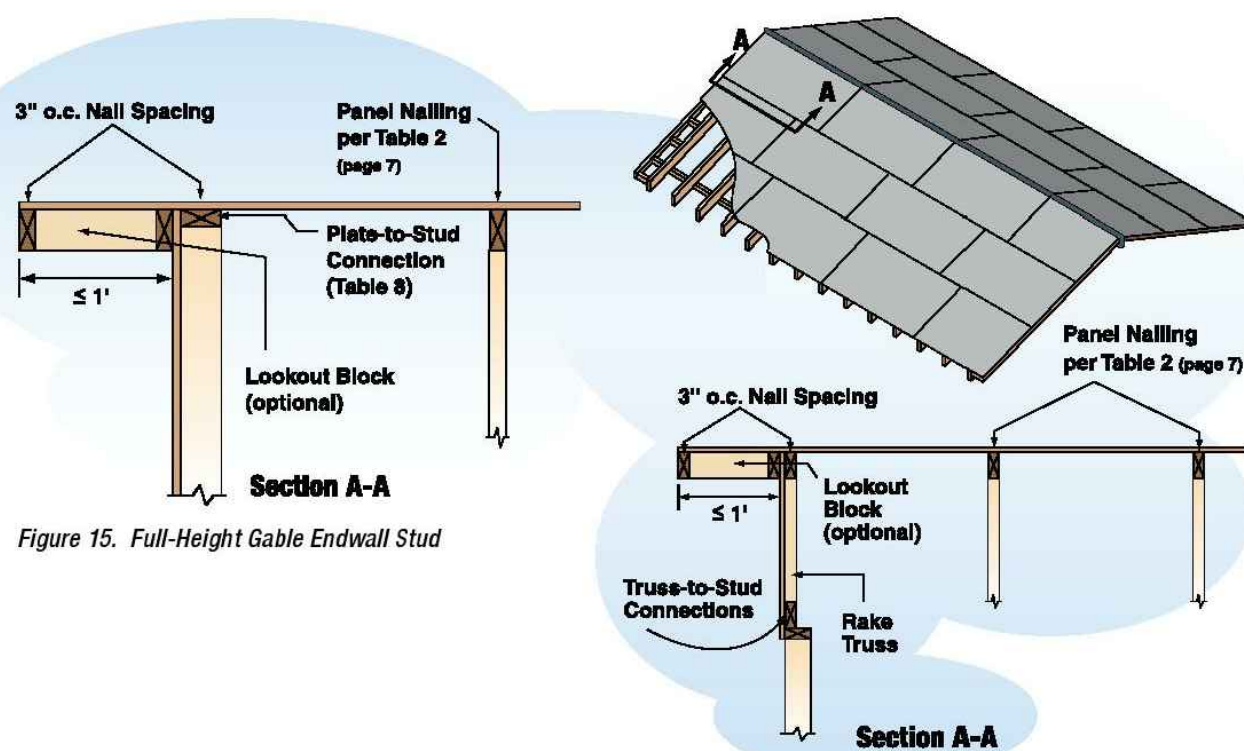


Figure 15. Full-Height Gable Endwall Stud

Figure 16. Rake Truss

■ **Wall Openings.** Headers shall be provided over all exterior wall openings. Headers shall be supported by wall studs, jack studs, hangers, or framing anchors (See Figure 17).

■ **Headers.** Headers shall be sized for gravity loads in accordance with the governing building code. Exterior wall header spans for #2 grade lumber (including Douglas-Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir) shall not exceed the limits in Table 9 (See page 16).

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■ **Full Height Studs.** Full height studs shall meet the same requirements as exterior wall studs selected in Table 5 (See page 12). The minimum number of full height studs at each end of the header shall not be less than half the number of studs replaced by the opening, in accordance with Table 9. Full height studs shall be permitted to replace an equivalent number of jack studs, when adequate gravity connections are provided.

■ **Window Sill Plates.** Maximum spans for window sill plates used in exterior walls shall not exceed the spans given in Table 9.

■ **Connections around Wall Openings.**

- **Header and/or Girder to Stud Connections.** Headers and/or girder to stud connections shall be in accordance with the requirements given in Table 9. Window sill plate to stud connections shall be in accordance with the requirements given in Table 9.
- **Top and Bottom Plate to Full Height Studs.** Each full height stud shall be connected in accordance with the requirements given in Table 9.

Table 9. Wall Openings - Headers in Loadbearing Walls

Header Span (ft.)	Minimum Header Size	Requirements at Each End of Header		
		Number of Full-Height Studs	Uplift (lb)	Lateral (lb)
Headers in Loadbearing Walls				
2	2 - 2x4	1	459	185
3	2 - 2x4	2	689	278
4	2 - 2x4	2	918	370
5	2 - 2x6	3	1148	463
6	2 - 2x8	3	1377	555
7	2 - 2x12	3	1607	648
8	3 - 2x10	3	1836	740
9	4 - 2x10	3	2066	833
10	4 - 2x12	4	2295	925

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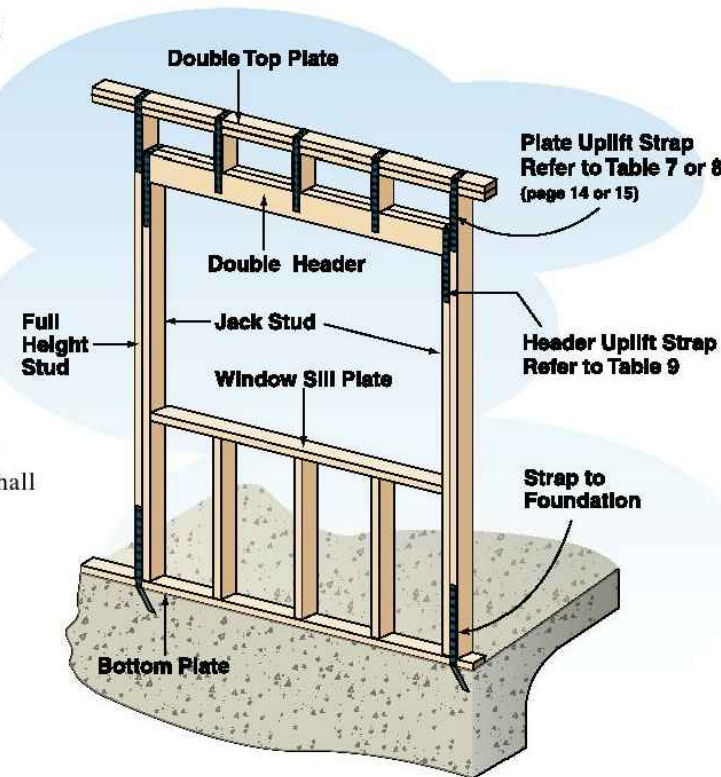


Figure 17. Studs and Headers Around Wall Openings

Table 9. Wall Openings - Headers in Non-Loadbearing Walls (continued)

Header Span (ft.)	Minimum Header Size	Requirements at Each End of Header		
		Number of Full-Height Studs	Uplift (lb)	Lateral (lb)
Headers in Non-Loadbearing Walls and Window Sill Plates¹				
2	1 - 2x4 (flat)	1	60	185
3	1 - 2x4 (flat)	2	90	278
4	1 - 2x4 (flat)	2	120	370
5	1 - 2x6 (flat)	3	150	463
6	1 - 2x6 (flat)	3	180	555
7	2 - 2x4 (flat)	3	210	648
8	2 - 2x6 (flat)	3	240	740
9	2 - 2x6 (flat)	3	270	833
10	2 - 2x6 (flat)	4	300	925

¹ For non-loading bearing walls and window sill plates, 2 - 2x4 (flat) can be substituted for 1 - 2x6 (flat)

4.3 EXTERIOR WALL SHEATHING

■ **Exterior Wall Sheathing.** Exterior walls shall be sheathed with a minimum of 7/16" wood structural panel sheathing or 25/32" cellulosic fiberboard sheathing and attached per Table 2 (page 7) when studs are spaced 16" o.c. or less. When studs are spaced greater than 16" o.c., 19/32" or greater wood structural panel sheathing shall be used. The minimum required percentage of full-height sheathing in the wall lines is provided in Tables 10 and 11 (pages 18 and 19). To meet the requirements for percentage full-height sheathing, a full-height wall segment shall not be less than 27-1/2" in an 8' wall, 31" in a 9' wall, or 34" in a 10' wall (aspect ratio ≤ 3-1/2:1). Exterior sheathing shall be continuous from the bottom plate to the upper top plate, with all panel edges over framing.

■ **Hold Downs.** Hold downs with a capacity in accordance with Table 10 or 11 (page 18 or 19) are required in the full-height segment at each end of a wall line. When full height segments meet at a corner, a single hold down shall be permitted to be used to resist the overturning forces in both directions when sized to resist the larger load and the corner framing in the adjoining walls is fastened together to transfer the uplift load (See Figures 18a and 18b). A continuous load path must be maintained to the foundation. Where hold downs on a top floor align with hold downs on a lower floor, the combined capacity of the two hold downs must be resisted by anchorage to the foundation.

■ **Exterior Wall Cladding.** Exterior wall cladding shall be rated for a 130 mph Exposure B 3-second gust wind speed and be installed per the manufacturer's instructions.

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Table 10. Percentage of Full-Height Sheathing in Minimum Building Dimension (W)

Exterior Sheathing Type	Nail Type	7/16" Wood Structural Panel Sheathing			25/32" Fiberboard Sheathing
		8d Common	8d Common	8d Common	8d Roofing
Edge Nail Spacing	6" o.c.	4" o.c.	3" o.c.	3" o.c.	3" o.c.
Field Nail Spacing	6" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.
Bottom Plate-to-Frame Shear Connection (16d Common Nails)		436 plf (3 / ft.)	590 plf (3 / ft.)	730 plf (4 / ft.)	275 plf (2 / ft.)
Hold Down Capacity		4360 lb.	5900 lb.	7300 lb.	2750 lb.

Building Aspect Ratio (L/W)	Percent Full-Height Sheathing on Each Exterior Wall Line			
	Roof and Ceiling	Roof, Ceiling, and One Floor	Roof, Ceiling, and One Floor	Roof, Ceiling, and One Floor
1.00	43%	34%	28%	61%
1.25	51%	41%	34%	71%
1.50	58%	47%	40%	79%
1.75	65%	53%	45%	87%
2.00	71%	58%	50%	93%
2.25	76%	63%	54%	99%
1.00	78%	65%	56%	NP
1.25	89%	75%	65%	NP
1.50	98%	83%	73%	NP
1.75	NP	91%	81%	NP
2.00	NP	98%	87%	NP
2.25	NP	NP	93%	NP

NP= Not Permitted

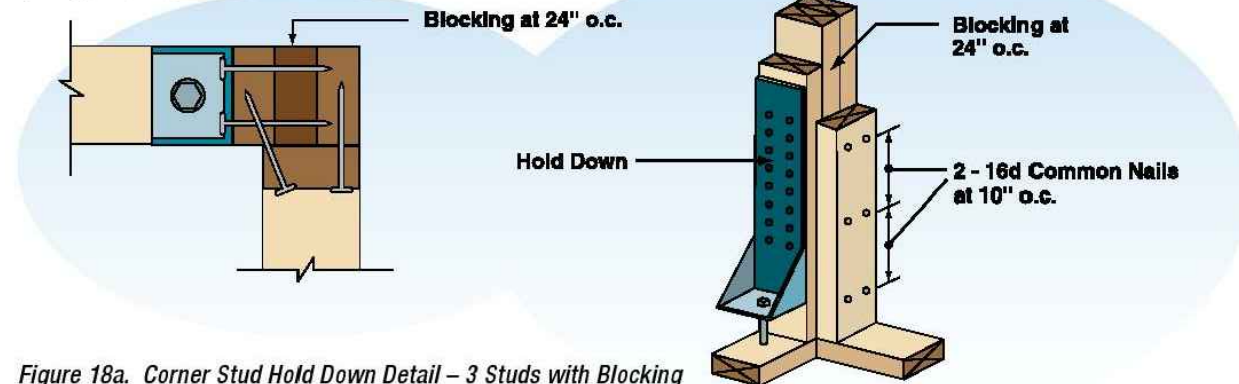


Figure 18a. Corner Stud Hold Down Detail - 3 Studs with Blocking

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Table 11. Percentage of Full-Height Sheathing in Maximum Building Dimension (L)

Exterior Sheathing Type	Nail Type	7/16" Wood Structural Panel Sheathing			25/32" Fiberboard Sheathing
		8d Common	8d Common	8d Common	8d Roofing
Edge Nail Spacing	6" o.c.	4" o.c.	3" o.c.	3" o.c.	3" o.c.
Field Nail Spacing	6" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.
Bottom Plate-to-Floor Shear Connection (16d Common Nails)		436 plf (3 / ft.)	590 plf (3 / ft.)	730 plf (4 / ft.)	275 plf (2 / ft.)
Hold Down Capacity		4360 lb.	5900 lb.	7300 lb.	2750 lb.

Building Aspect Ratio (L/W)	Percent Full-Height Sheathing on Each Exterior Wall Line			
	Roof and Ceiling	Roof, Ceiling, and One Floor	Roof, Ceiling, and One Floor	Roof, Ceiling, and One Floor
1.00	43%	34%	28%	61%
1.25	36%	28%	23%	52%
1.50	31%	24%	20%	45%
1.75	27%	21%	17%	40%
2.00	24%	18%	15%	36%
2.25	22%	17%	14%	33%
1.00	78%	65%	56%	NP
1.25	68%	55%	47%	90%
1.50	60%	48%	41%	81%
1.75	54%	43%	36%	74%
2.00	49%	38%	32%	68%
2.25	44%	35%	29%	63%

NP= Not Permitted

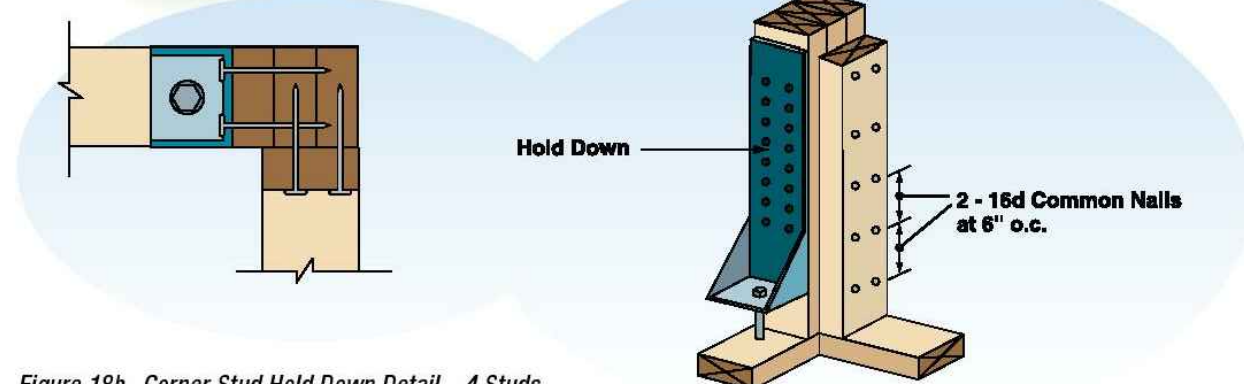


Figure 18b. Corner Stud Hold Down Detail - 4 Studs

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5 Roofs

5.1 GENERAL

■ **Framing Member Span.** Roof framing spans shall not exceed 36 feet (See Figure 19).

■ **Roof Openings.** Roof openings shall not exceed the lesser of 12 feet or 50% of the building dimension (See Figure 6).

■ **Roof Slope.** The roof slope shall not be greater than 12 in 12.

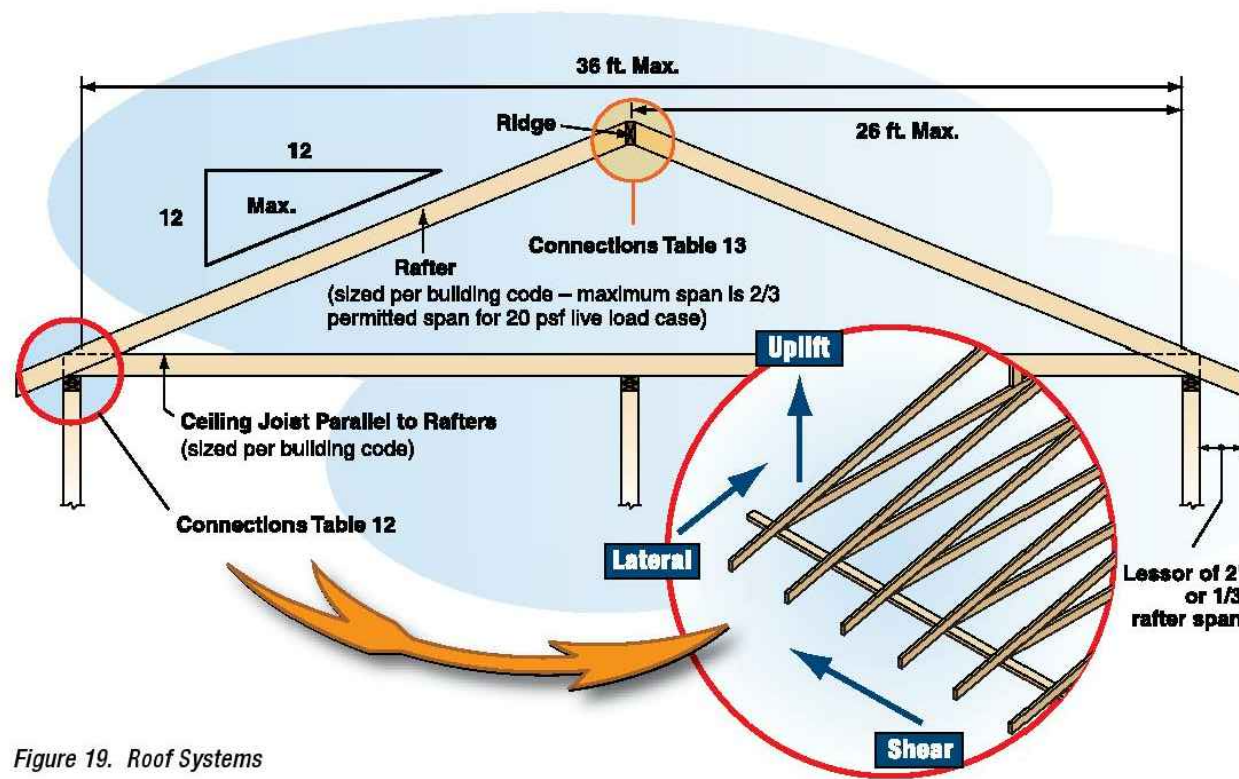


Figure 19. Roof Systems

5.2 WOOD RAFTER SYSTEMS

■ **Rafters.** Rafters shall be sized in accordance with the governing building code. The maximum rafter span shall be limited to 2/3 of the span permitted for the 20 psf roof live load case, not to exceed 26 feet. Rafters shall be connected to exterior walls in accordance with Table 12 (see page 21).

■ **Rafter Overhangs.** Rafter overhangs shall not exceed the lesser of one-third of the rafter span or 2 feet (See Figure 19).

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Rake Overhangs.

□ **Outlookers.** Where structural outlookers are used, the outlookers shall be constructed using 2x4 purlins connected in accordance with Table 14. Rake overhangs shall not be spaced more than 24" or exceed the lesser of one-half of the purlin length or 2 feet (See Figure 20).

□ **Lookout Blocks.** Where non-structural lookout blocks are used, the rake overhang shall not exceed 1 foot (See Figures 15 and 16).

Ridge Construction.

□ **Ridge Beam.** A ridge beam shall be installed at the roof peak. The ridge beam shall be in accordance with the governing building code. Rafters shall bear directly on the ridge beam or be supported by hangers or framing anchors. Each rafter shall be connected to the ridge beam or to an opposing rafter (See Figure 20) with a ridge strap in accordance with the requirements of Table 13 (page 22). Ceiling joists or rafter ties shall not be required where a ridge beam is provided.

□ **Ridge Board.** A ridge board shall be permitted to be substituted for a ridge beam when roof slopes equal or exceed 3 in 12. The ridge board shall be at least 1 inch nominal in thickness and not less than the depth of the cut end of the rafter. The rafters shall be placed directly opposite each other. Ceiling joists or rafter ties shall be used to provide a continuous tie between exterior walls. Ceiling joist or rafter tie to rafter connections shall be in accordance with the governing building code. Opposing rafters shall be connected at the ridge with ridge straps in accordance with the requirements in Table 13 (See page 22).

□ **Collar Ties.** Ridge straps are not required when collar ties of nominal 1x6 or 2x4 lumber are located in the upper third of the attic space and attached to rafters using 7-10d nails at each end. For reduced requirements, see the WFCM.

■ **Ceiling Joists.** Ceiling joists shall be sized in accordance with the governing building code.

□ **Open (Cathedral) Ceilings.** When ceiling joists and rafter ties are omitted and the rafters are used to create an open (cathedral) ceiling, rafter ends shall be supported on bearing walls, headers, or ridge beams. Rafters shall be attached to the wall assembly in accordance with Table 12 and attached to the ridge beam in accordance with Table 13 (page 22).

Table 12. Truss, I-Joist, or Rafter Connections at Loadbearing Walls

Truss, I-Joist or Rafter Spacing	Roof Framing Span (ft.)							Lateral (lb)	Shear (lb)
	12	16	20	24	28	32	36		
12" o.c.	207	248	290	332	374	416	459	185	82
16" o.c.	275	331	386	442	499	555	611	247	109
19.2" o.c.	330	397	464	531	598	666	734	296	131
24" o.c.	413	496	580	664	748	833	917	370	164

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Table 13. Ridge Strap Connections

Roof Span (ft.)	Ridge Strap Connection Requirement (plf)				
	3:12	4:12	5:12	6:12	7:12-12:12
12	275	224	176	159	148
16	387	299	235	211	197
20	458	373	293	264	247
24	550	448	352	317	296
28	642	523	411	370	345
32	733	597	469	423	395
36	825	672	528	476	444

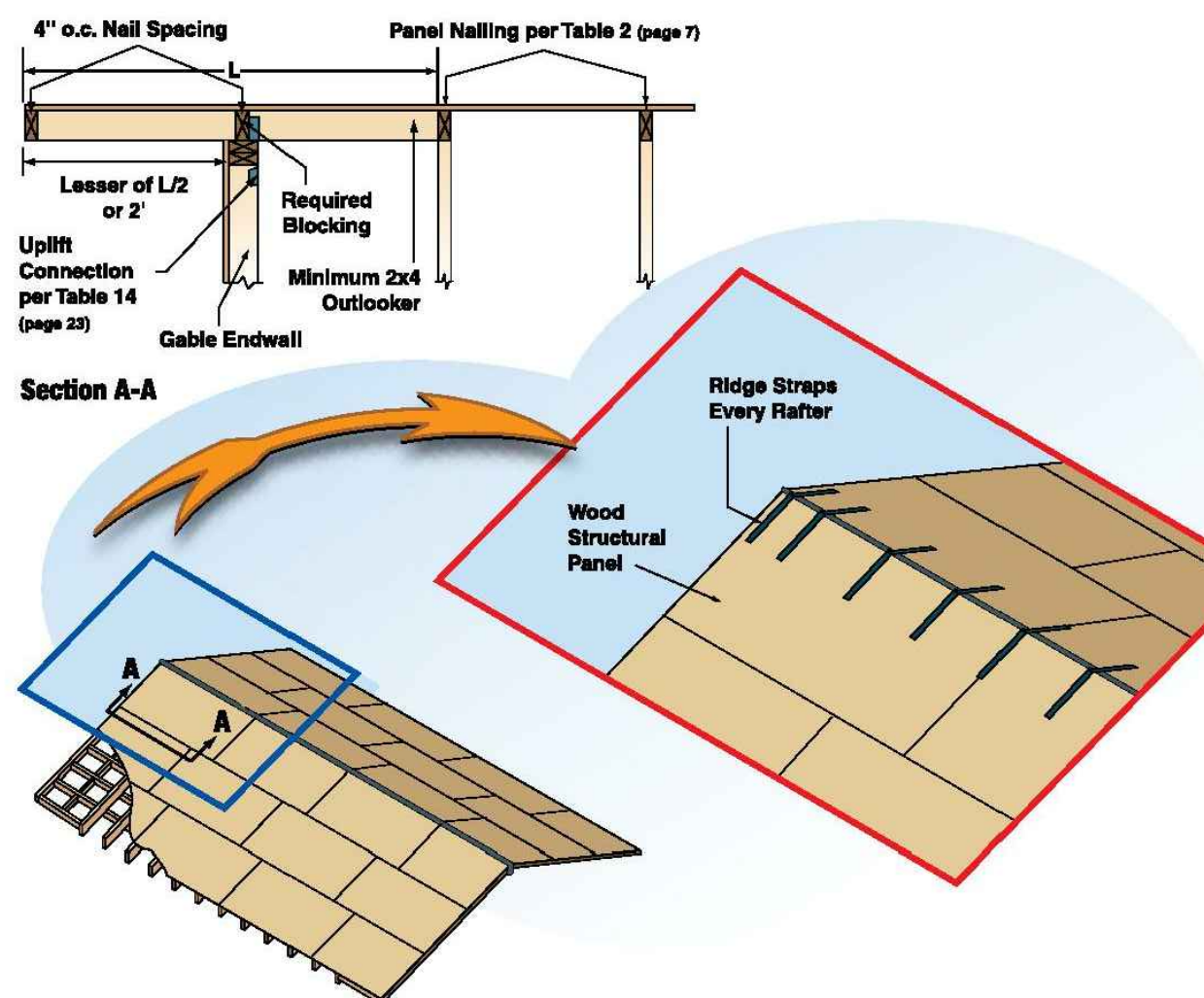


Figure 20. Rafter Outlooker Details

AMERICAN WOOD COUNCIL

Table 14. Outlooker Connections at Gravity Non-Loadbearing Walls

Outlooker Spacing	Outlooker Uplift (lb)	Stud Height (ft)						
		8	10	12	14	16	18	20
		Lateral (lb)						
12" o.c.	436	155	185	213	239	265	290	313
16" o.c.	582	207	247	284	319	353	387	417
24" o.c.	873	310	370	426	478	530	580	626

DRAWING INDEX:

- T-1 TITLE SHEET
- A-1 FOUNDATION PLAN
- A-2 1ST FLOOR PLAN
- A-3 2ND FLOOR PLAN
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- A-8 DETAIL SHEET
- A-9 WFCM 130 MPH
- A-10 WFCM 130 MPH

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Project FRENCH

Date 8/21/17

Sheet

A-10

WFCM 130 MPH