



RESIDENTIAL CONSTRUCTION GUIDE

FOR DETACHED SINGLE STORY BUILDINGS AND ADDITIONS LESS THAN 800 SQ. FT

APPLICANT MUST PROVIDE 2 COPIES OF Application submittals with floor plan and elevation.

(Additions must show existing rooms adjoining new construction)

DESCRIBE USE OF BUILDING OR ADDITION

FLOOR PLANS MUST BE DRAWN TO $\frac{1}{4}'' = 1'$ – SCALE

If adding on to an existing home, please show existing rooms adjoining the addition. Label use of each room and show all doors, windows etc.

SELECT CONSTRUCTION DETAILS USED FROM PAGES 3 THROUGH 10 AND FILL IN INFORMATION ON SHEET 2.

SHEETS 11, 12 & 13 ARE DRAWING SAMPLES ONLY.

ADDITIONAL INFORMATION AND / OR REQUIREMENTS MAY APPLY – please contact a Permit Technician.

THIS GUIDE DESCRIBES THE PRESCRIPTIVE CONSTRUCTION REQUIREMENTS OF THE IRC AND IS NOT INTENDED TO RELIEVE OTHER REQUIREMENTS OF THE CODE.

ADDITIONAL INFORMATION MAY BE REQUIRED.

The State of Washington adopted the 2015 International Building and Residential Code on July 1st, 2016. Please note below additional requirements based on the 2015 IRC:

Winds Speed: 135 MPH, 3 second gust Ultimate

Exposure: B

Seismic: Zone D1

Snow: Minimum roof snow load 25 psf... NO Reduction permitted, 30 psf Ground

Allowable bearing pressure: 1500 psf without a geotechnical report.

RESIDENTIAL CONSTRUCTION GUIDE

BUILDING DESCRIPTION

Owners Name: _____

Permit number: _____

Address: _____

Phone: _____

Business Phone: _____

1) Please describe building use(s) _____

2) Check one:

Detached _____

attached _____

Total Sq. Ft. of project _____

3) Footing Type: (see sheet 3)

Monolithic _____

Slab _____

Check one:

Other: _____

foundation _____

(If other, please provide detail)

4) Floor Type: (see sheet 4 & 5)

Slab _____

Post & beam _____

Check one:

Floor Joist _____

(If other, Please provide detail – see example on sheet 11)

5) Wall Type: (See sheet 6)

Check one:

_____ Detail 1 – 2 x 6 insulated with exterior sheathing (wall)

_____ Detail 2 – 2 x 6 insulated with siding and sheathing (double wall)

_____ Detail 3 – 2 x 4 or 2 x 6 unheated garage or shop

6) Roof Type (see sheets 7, 8, 9 & 10) Check one:

_____ Conventional Roof framing (see detail 3, sheet 7 & 13)

_____ Vaulted ceiling (see sheet 8)

_____ Engineered trusses (see page 9)

_____ Shed roof (see page 10)



Clark County Building Safety Division

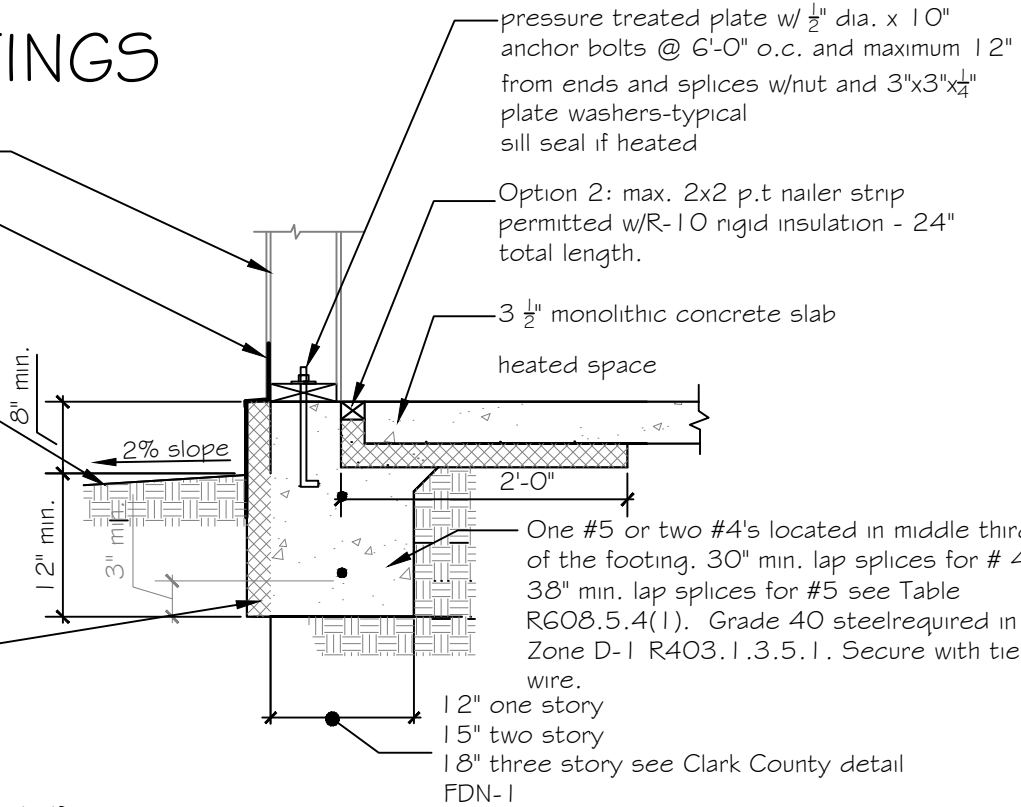
FOOTINGS

2x wall (see details on page 6)

26 gauge galvanized iron flashing or approved equal

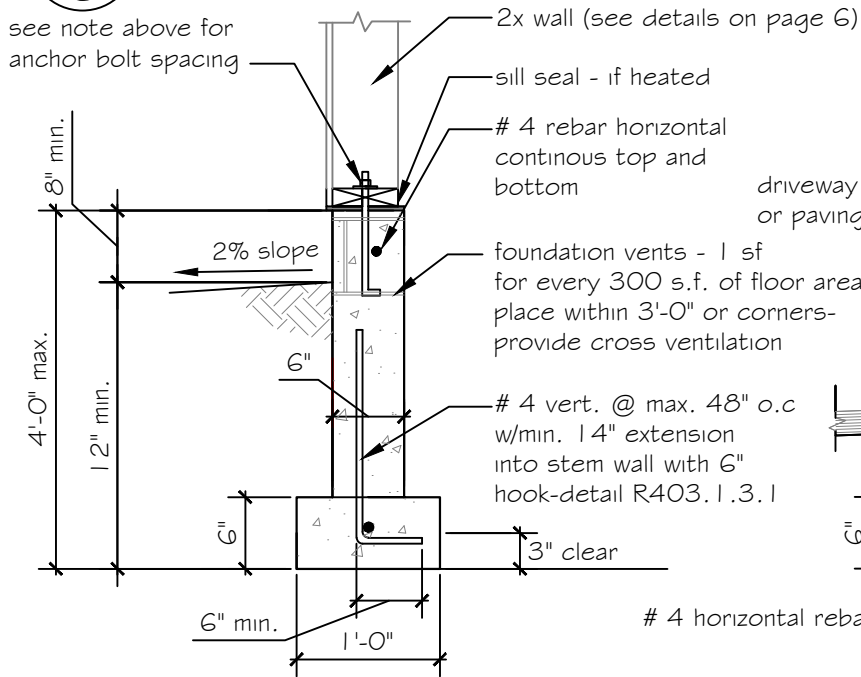
grade surface water away from foundation a min. 6" within the first 10'-0" or slope to drain or swale R401.3

Option 1: R-10 perimeter insulation for heated structures w/flashing and protection board or coating

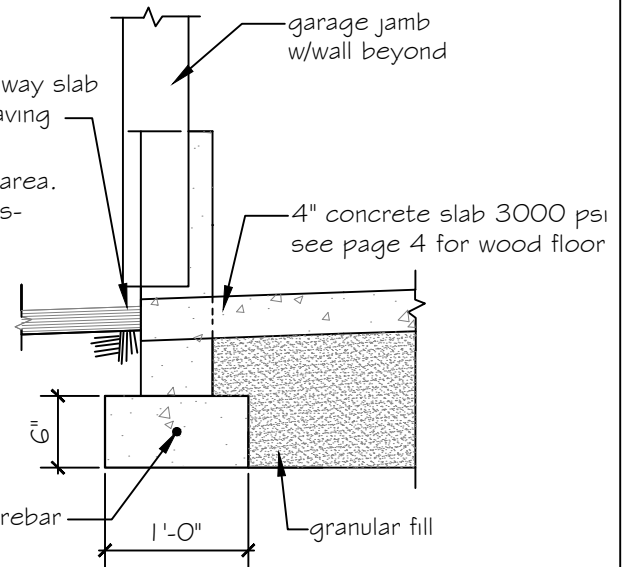


1 3 Monolithic slab/footing

see note above for anchor bolt spacing



note: 2'-0" wide shear walls and portal frame will require larger continuous footings at garage opening



2 3 Footing with stem wall

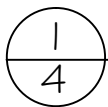
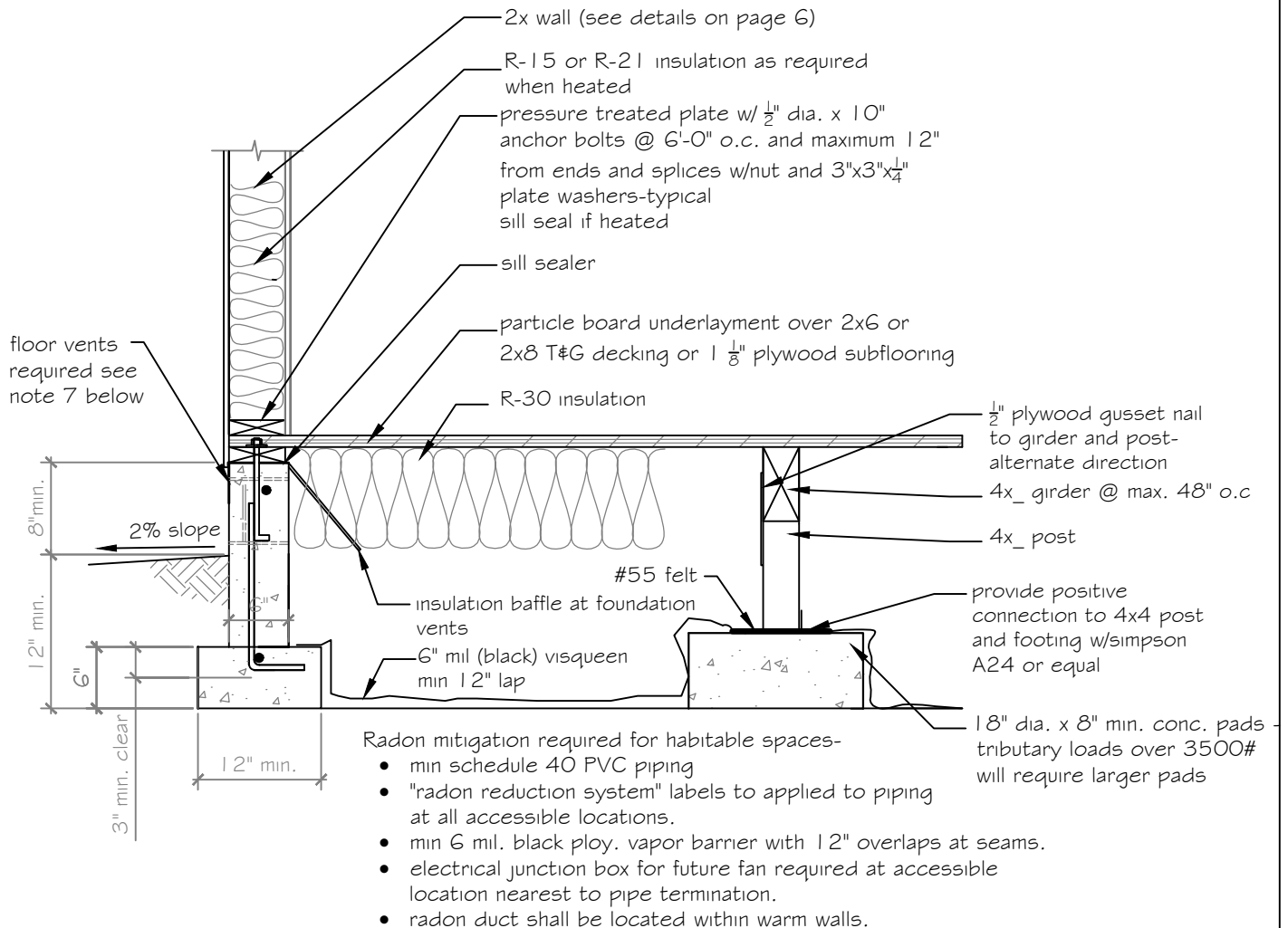
3 3 Footing at door opening

NOTE: * Footings over 4'-0" high are required to be designed as retaining walls
* Minimum concrete strength 2500 p.s.i. Lap rebar min. 30" diameters at splices-secure with tie wire



Clark County Building Safety Division

POST & BEAM FOOTING



POST & BEAM

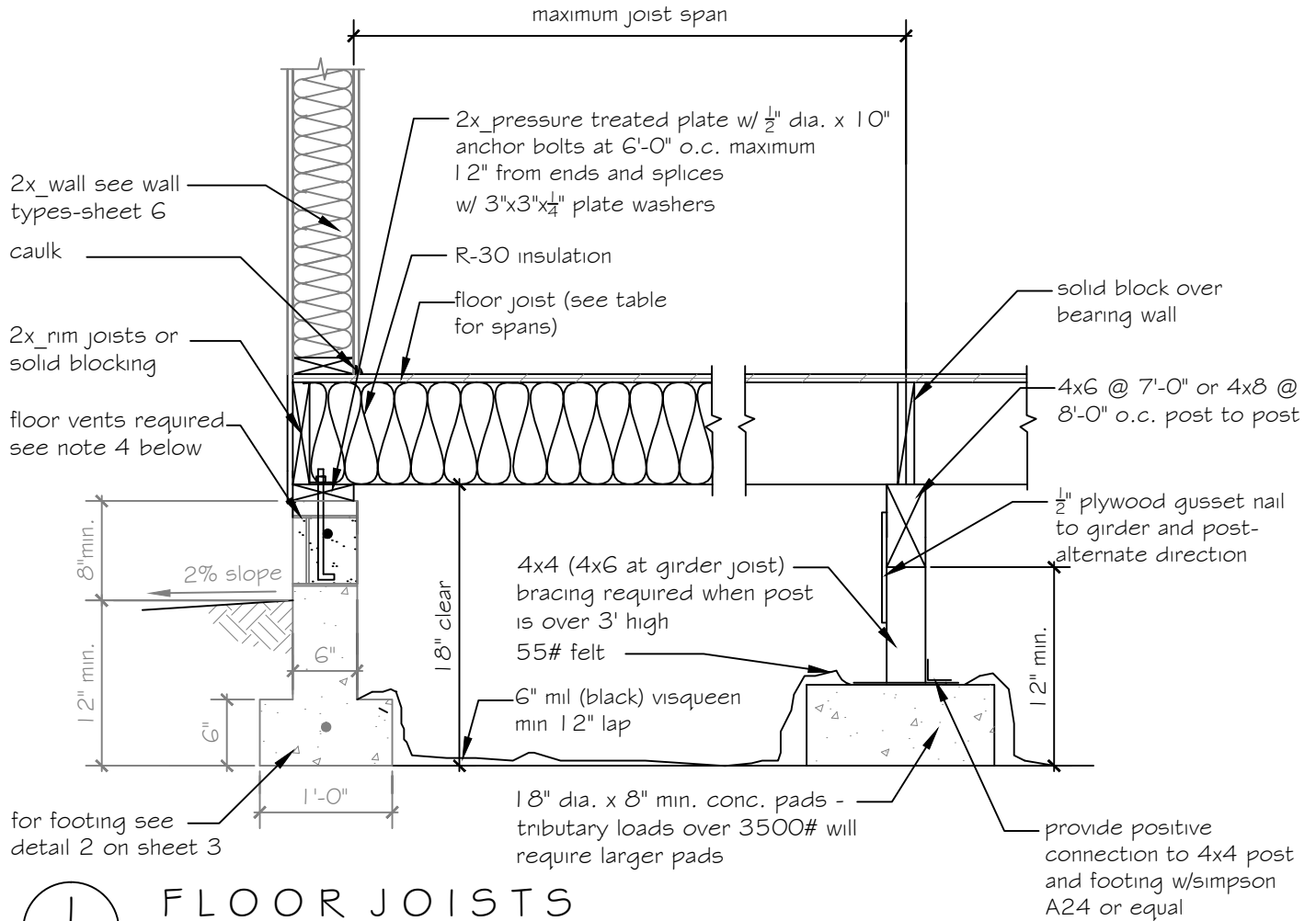
NOTES:

1. 4x6 D.F. # 2 girders - maximum 7'-0" span. 4x8 maximum 8'-0" span.
2. 4x4 D.F. #2 post. 4x6 required at girder splices.
3. 2x decking must be covered with $\frac{3}{8}$ " plywood or approved underlayment.
4. 4x post over 3'-0" high must be braced.
5. See page 6 for rebar requirement in footing.
6. Support insulation at 24" o.c. to hold tight to underside of floor deck - do not compress -WSEC R402.2.7.
7. Foundation vents required 1 sf for each 300 s.f. of under-floor area-distribute approximately equally on at least two sides. Recommend starting placement within 3' of corners. R408.
8. Minimum concrete strength 2500 p.s.i. 38" lap rebar min. 30" diameters #5 bars at splices-secure with tie wire. See IRC Table R608.5.4(1).
9. See Detail FDN-1 for multi-story footings.



Clark County Building Safety Division

FLOOR JOIST



1 FLOOR JOISTS

5 Not to scale

Floor joist	12" o.c.	16" o.c.	24" o.c.
2x6	10'-9"	9'-9"	8'-3"
2x8	14'-2"	12'-9"	10'-5"
2x10	18'-0"	15'-7"	12'-9"
2x12	20'-11"	18'-1"	14'-9"

	16" o.c.	20" o.c.	24" o.c.
grade 1	1/2"	5/8"	3/4"

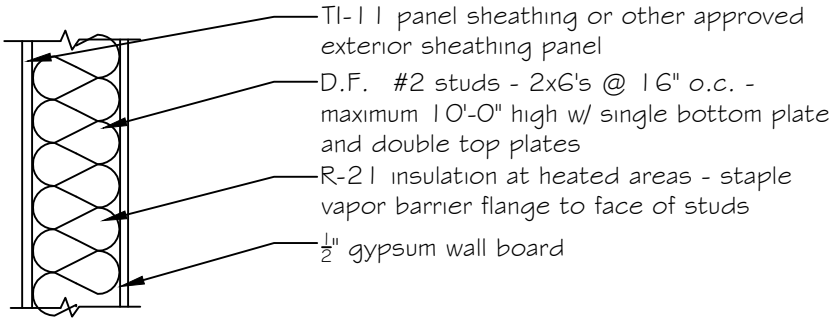
NOTES:

1. Floor joist to be minimum Douglas Fir #2. Code loading requirements- 40# live and 10# dead. Not for exterior deck see IRC R507 and the deck detail package.
2. Minimum spans for subfloor-underlayment see subfloor span table this sheet.
3. Minimum concrete strength 2500 psi, lap rebar min. 30" diam. at slices-secure with tie wire.
4. Foundation vents required 1sf for each 300 s.f. of under-floor area-distribute approximately equally on at least two sides. Recommend starting placement within 3' of corners. R408.



Clark County Building Safety Division

EXTERIOR WALL TYPES



TI-11 panel sheathing or other approved exterior sheathing panel

D.F. #2 studs - 2x6's @ 16" o.c. - maximum 10'-0" high w/ single bottom plate and double top plates

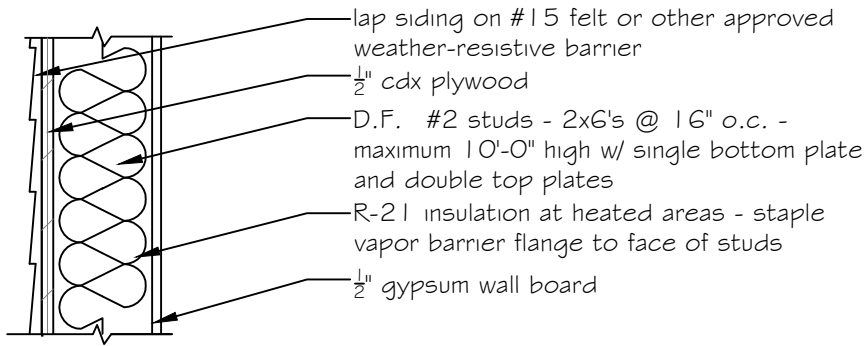
R-21 insulation at heated areas - staple vapor barrier flange to face of studs

1/2" gypsum wall board

1
6

2 X 6 WALL WITH EXTERIOR SHEATHING

scale- 1" = 1'-0"



lap siding on #15 felt or other approved weather-resistive barrier

1/2" cdx plywood

D.F. #2 studs - 2x6's @ 16" o.c. - maximum 10'-0" high w/ single bottom plate and double top plates

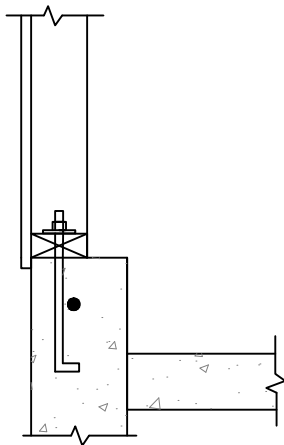
R-21 insulation at heated areas - staple vapor barrier flange to face of studs

1/2" gypsum wall board

2
6

2 X 6 WALL WITH SIDING AND SHEATHING

scale- 1" = 1'-0"



Douglas Fir #2 studs at 16" o.c.
 2x6 maximum 10'-0" high
 2x4's maximum 10'-0" high
 single bottom and double top plates
 plates on concrete to be pressure treated
 no insulation required at unheated areas
 unfinished heated areas must have exposed
 insulation with flame spread 25 vapor barrier

Glazing U-value at heated space
U-.30 unlimited glazing percentage

3
6

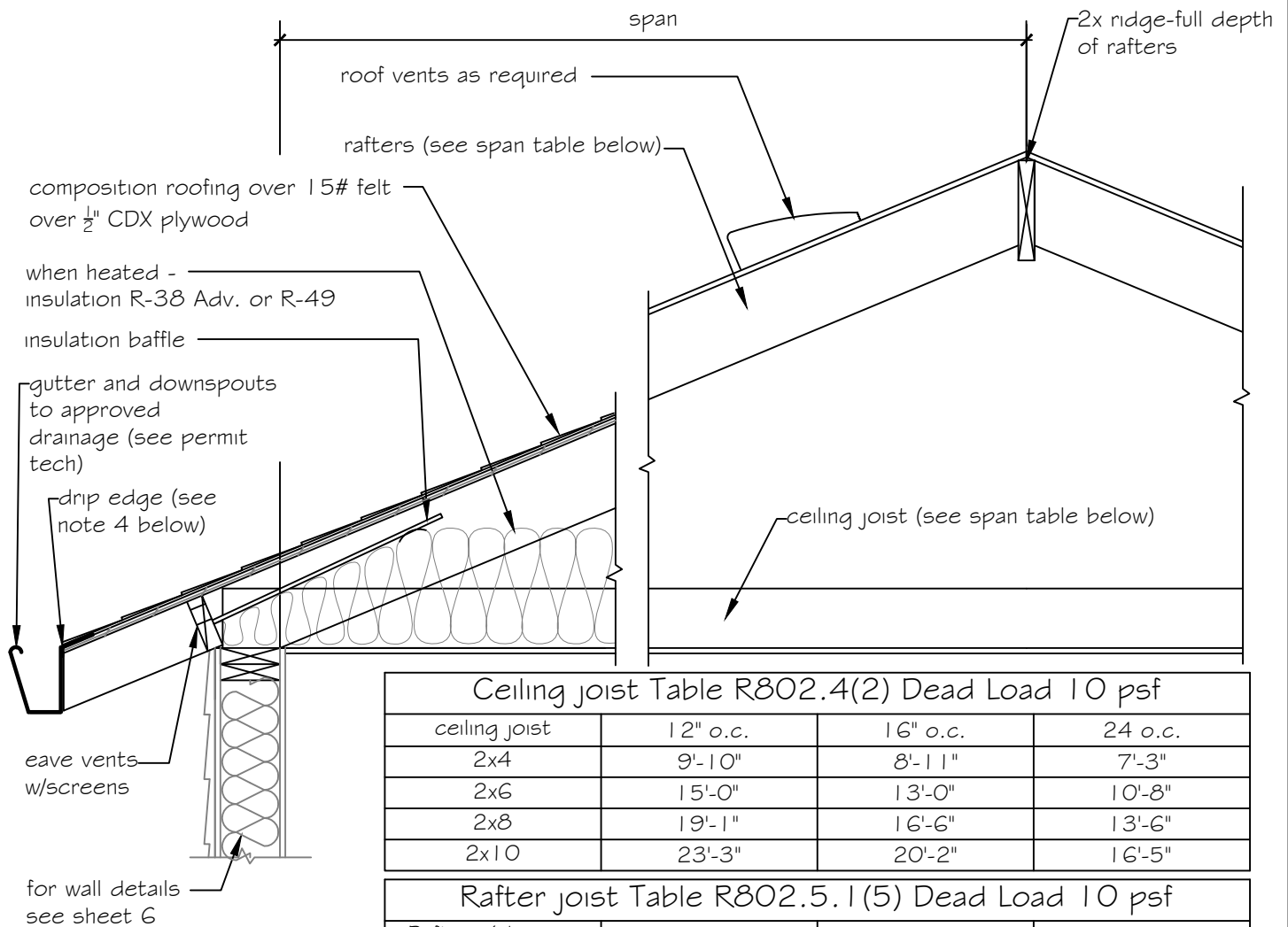
2 x 4 or 2 x 6 WALL - UNHEATED

scale- 1" = 1'-0"



Clark County Building Safety Division

ROOF TYPES (Rafters w/Ceiling Joists)

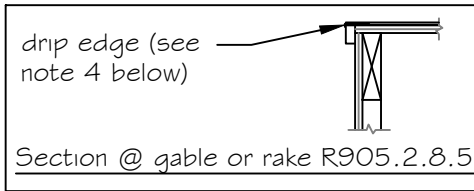


Ceiling joist Table R802.4(2) Dead Load 10 psf

ceiling joist	12" o.c.	16" o.c.	24" o.c.
2x4	9'-10"	8'-11"	7'-3"
2x6	15'-0"	13'-0"	10'-8"
2x8	19'-1"	16'-6"	13'-6"
2x10	23'-3"	20'-2"	16'-5"

Rafter joist Table R802.5.1(5) Dead Load 10 psf

Rafters (slope > 3:12)	12" o.c.	16" o.c.	24" o.c.
2x4	8'-7"	7'-10"	6'-9"
2x6	13'-6"	12'-1"	9'-10"
2x8	17'-8"	15'-4"	12'-6"
2x10	21'-7"	18'-9"	15'-3"
2x12	25'-1"	21'-8"	17'-9"



1 7 CONVENTIONAL FRAMING

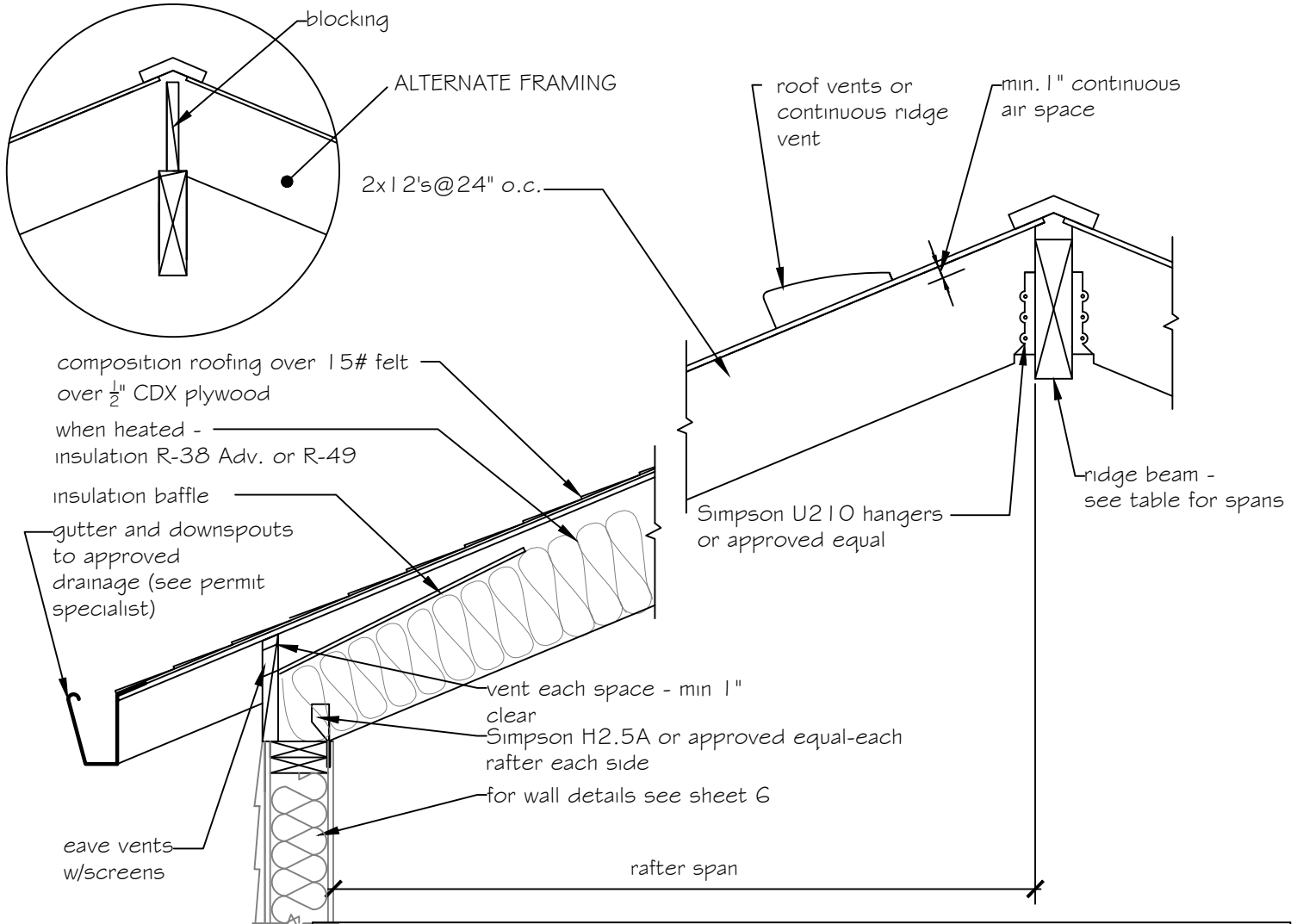
scale- 1" = 1'-0"

- NOTES:
- Ceiling joists to be Douglas Fir #2 or better. Unhabitable attics with 20 PSF.
 - Rafters to be Douglas Fir or better. Roof slopes greater than 3:12. (see sheet 10 for slopes less than 3:12). Rafters are for light roof coverings only - 30# ground snow - 10# dead load.
 - Roof vent total net area to be 1/300 of roof area if half of required vents are 3'-0" above eave, otherwise 1/150 of roof area is required in roof vents R806.2.
 - Provide a drip edge that overlaps a min. of 2" and extends a 1/4" below roof sheathing. Fastened to roof deck 12" o.c. Install underlayment over the drip edge along the eaves and under the drip edge on gables. Unless specified by manufacturer. Shingles are permitted to be flush with the edge.



Clark County Building Safety Division

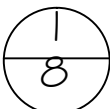
ROOF TYPES (Rafters w/ridge beam)



NOTES:

1. 3/8", 3/2", 5/8", 5/2" and 6 3/4" glu-lam beams
Fb = 2400 1.7 EWS
2. 2x, 4x and 6x Douglas Fir #2 unless otherwise noted.
3. Ridge beam to be supported by vertical wall or post to footings.

		Beam Span							
		10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"
Rafter Span	10'-0"	4 x 10	6 x 12	6 x 12 #1 3/8 x 12	3/8 x 14	3/8 x 18	3/2 x 21	5/2 x 15	5/2 x 18
	12'-0"	6 x 10 4 x 12	6 x 12	6 x 14 3/8 x 12	3/8 x 18	3/8 x 18	5/2 x 14	5/2 x 16	5/8 x 19 1/2 6 3/4 x 18
	14'-0"	4 x 12 #1 6 x 12	3/8 x 10 1/4 6 x 14	3/8 x 13 1/2 6 x 14 #1	3/8 x 16	5/8 x 14	5/2 x 15	5/2 x 16 1/2	5/2 x 18 6 3/4 x 16 1/2
	16'-0"	6 x 12	3/8 x 11 1/4 6 x 14	3/8 x 15 5/8 x 11 1/2	3/8 x 18	5/2 x 15	6 3/4 x 15	5/8 x 18	5/2 x 19 1/2 6 3/4 x 18
	18'-0"	6 x 12	6 x 16 3/8 x 12	3/8 x 18 5/8 x 17 1/8	3/2 x 19 1/2 5/8 x 13 1/2	3/2 x 27	6 3/4 x 15	5/2 x 18	5/2 x 19 1/2 6 3/4 x 18
	20'-0"								



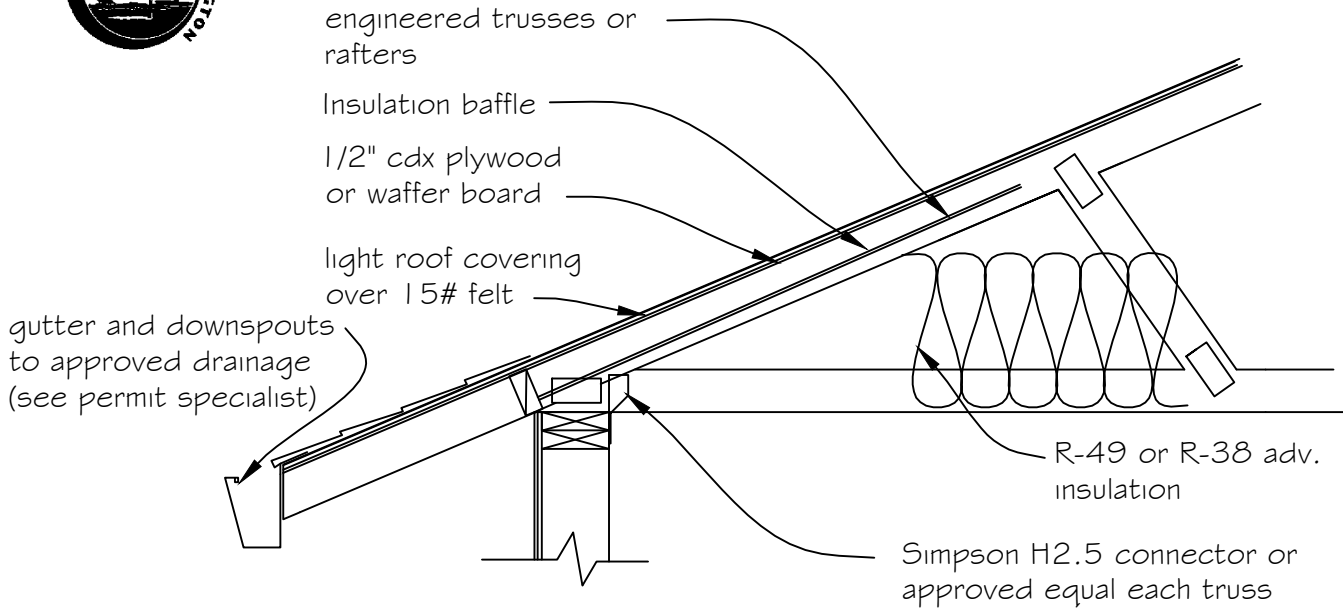
ROOF FRAMING (VAULTED)

scale- 3/4" = 1'-0"

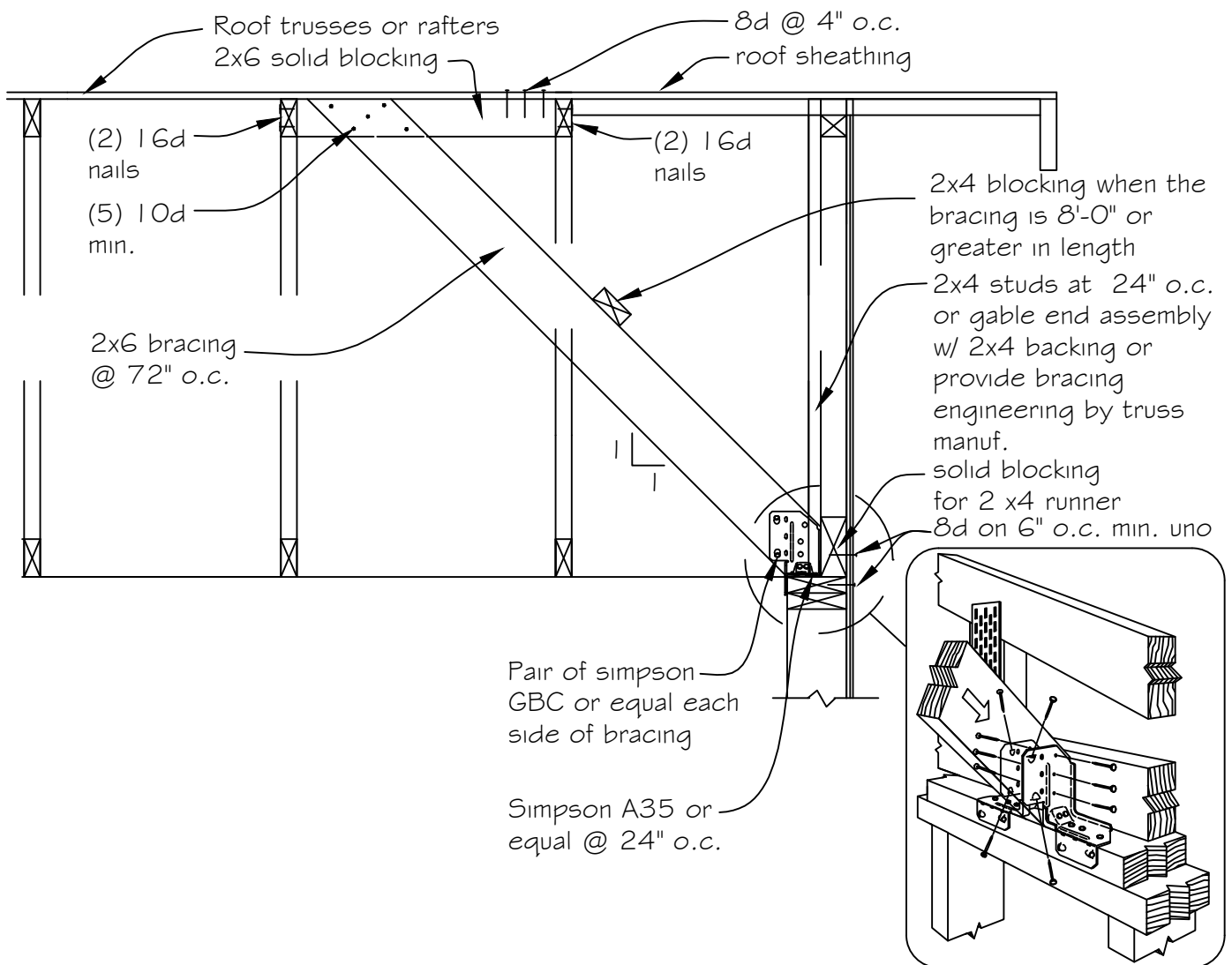


Clark County Building Safety Division

ROOF TYPES (engineered trusses)



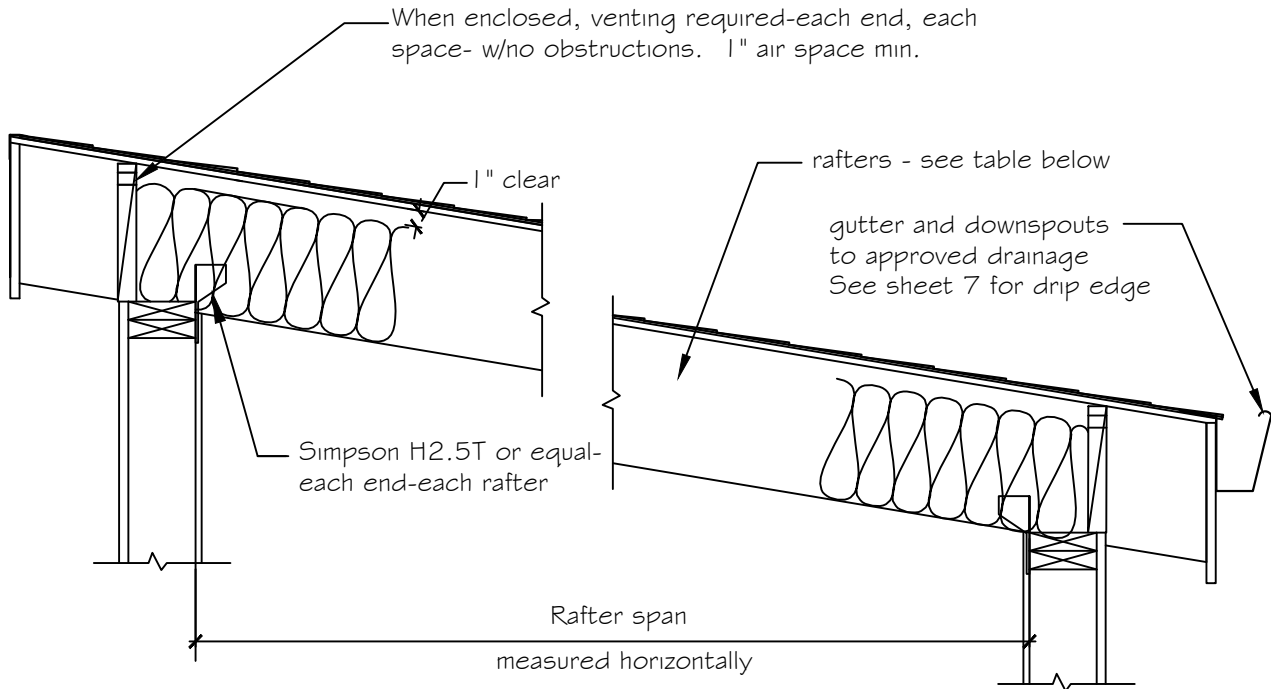
Roof Truss or Rafter Connector





Clark County Building Safety Division

ROOF TYPES (shed)



1
10

ROOF FRAMING (shed)

scale- 3/4" = 1'-0"

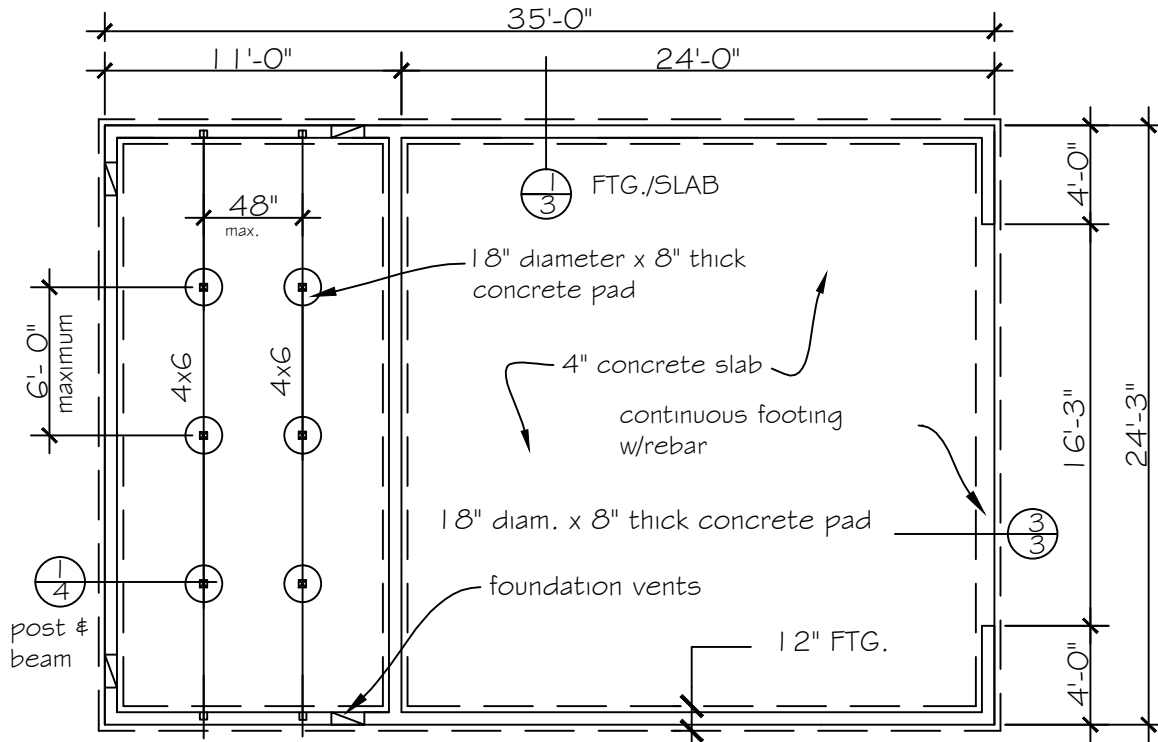
Rafter Span			
snow load = 25 psf $L = \Delta 240$, dead load = 10psf			
	12" o.c.	16" o.c.	24" o.c.
2x4	8'-0"	7'-3"	6'-4"
2x6	12'-6"	11'-4"	9'-9"
2x8	16'-4"	13'-3"	12'-3"
2x10	20'-9"	18'-2"	15'-0"
2x12	23'-11"	20'-11"	17'-3"

NOTES:

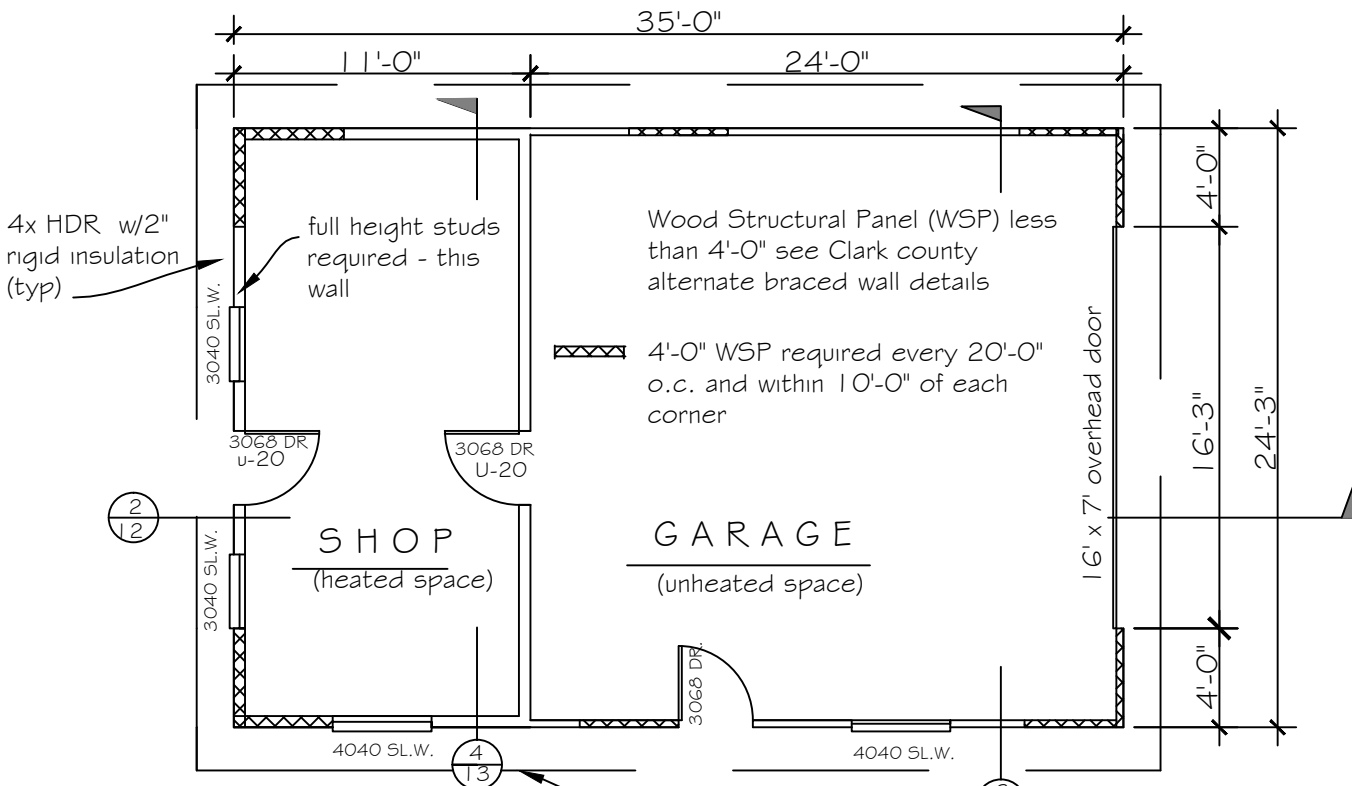
- 2:12 slope min. for 3 tab composition roofing - for slopes 2:12 to 3:12, two layers of 15# felt required, applied shingle fashion. R905.1.1. See page 7 for slopes over 3 in 12 slopes.
- Pitches less than 2:12 are to be hot mop, metal, sheet metal, rolled roofing or other approved material, applied as directed in approved manufacture's instructions.
- When ceiling is applied, vent each rafter space continuously through top and bottom blocking. When heated, insulate with R-38 (compressed 10 1/4") insulation, using 2x12 rafters to allow one inch vent space R806.3
- When attaching to existing building show ledger, size and method of fastening joist and ledger. Show required flashing.
- Douglas Fir #2. For slopes 2:12 to 3:12.



Clark County Building Safety Division



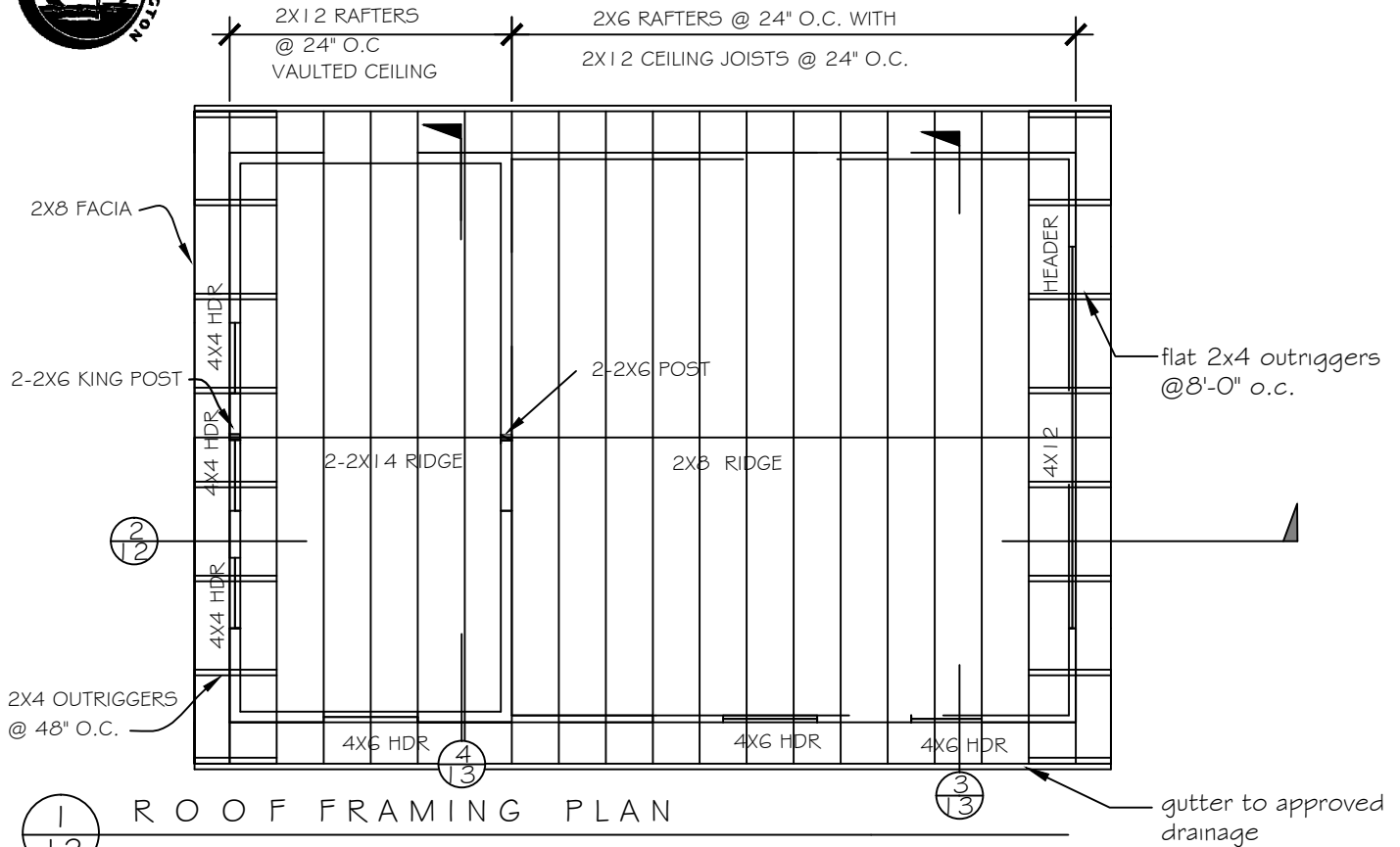
1 FOUNDATION/FLOOR FRAMING PLAN *note: if attaching addition to an existing residence, show adjoining rooms of existing home*
 scale- 1/4" = 1'-0" (REDUCED SCALE EXAMPLE)



2 FLOOR PLAN **EXAMPLE**
 scale- 1/4" = 1'-0" (REDUCED EXAMPLE)

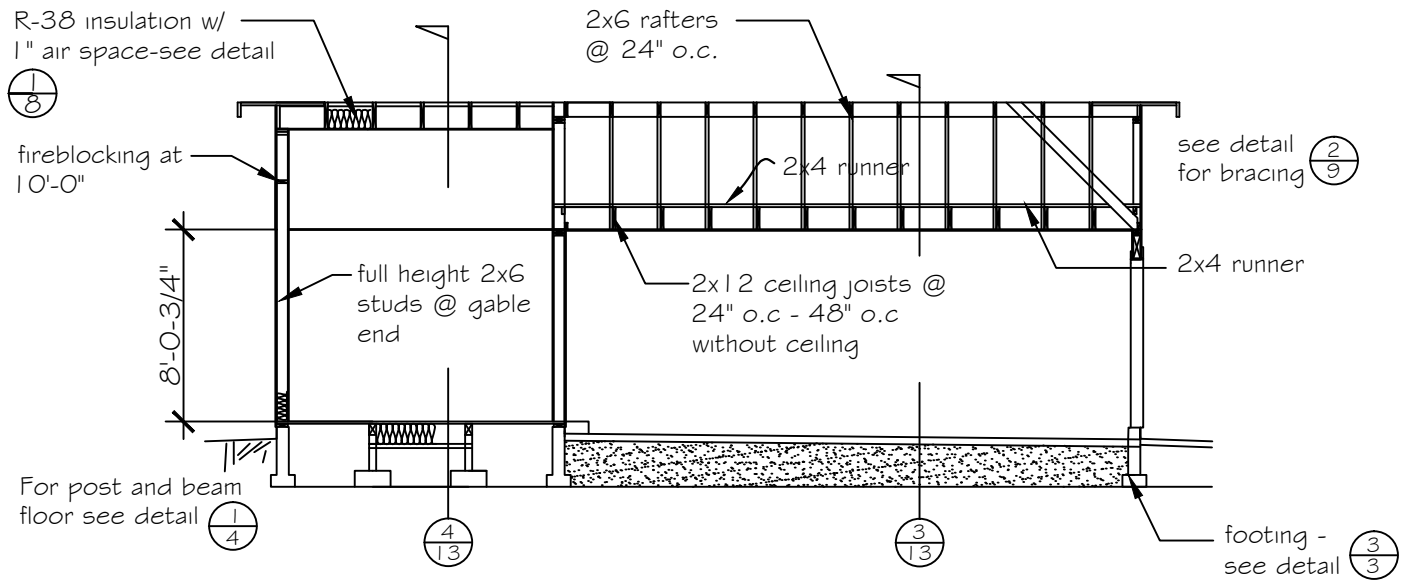


Clark County Building Safety Division



1 ROOF FRAMING PLAN
 scale- 1/4" = 1'-0" (REDUCED EXAMPLE)

NOTE: If attaching to existing home- show attachment to existing and all structural modifications

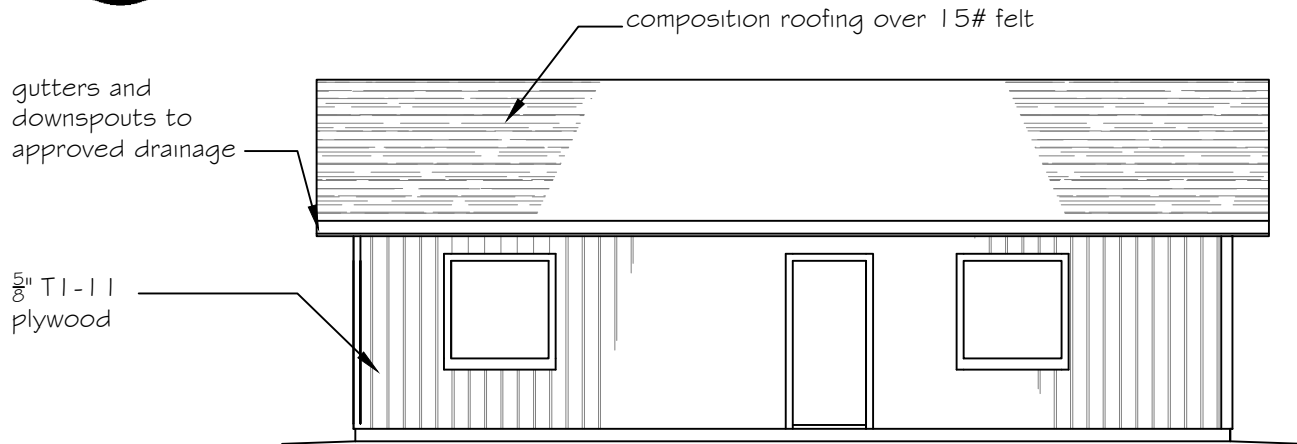


2 LONGITUDINAL CROSS SECTION
 scale- 1/4" = 1'-0" (REDUCED EXAMPLE)

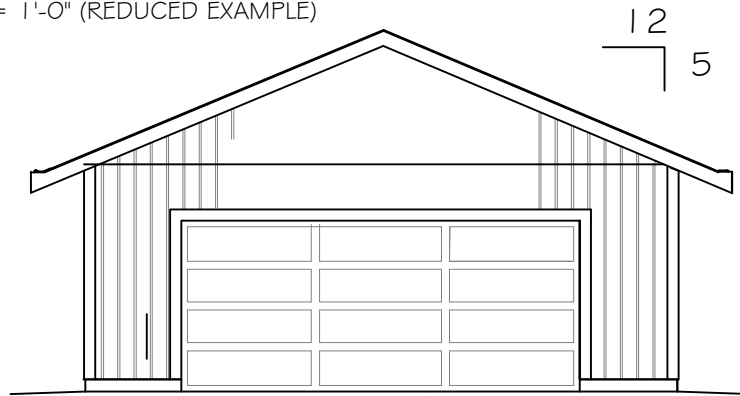
EXAMPLE



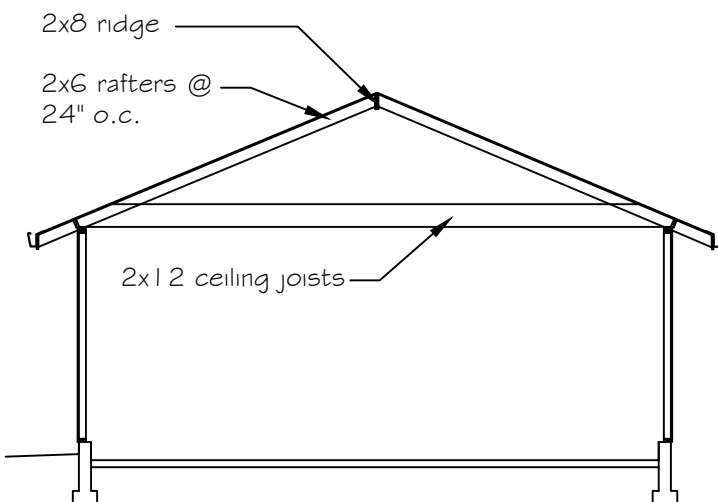
Clark County Building Safety Division



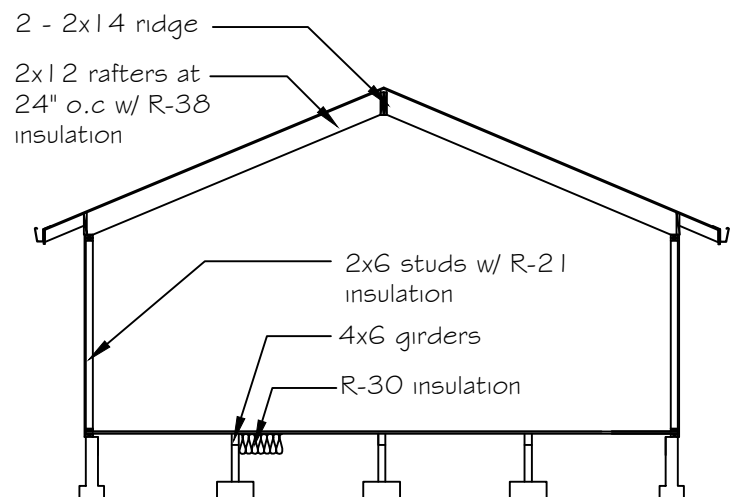
1
13 SIDE ELEVATION
scale- 1/4" = 1'-0" (REDUCED EXAMPLE)



2
13 FRONT ELEVATION
scale- 1/4" = 1'-0" (REDUCED EXAMPLE)



3
13 SECTION (thru garage)
scale- 1/4" = 1'-0" (REDUCED EXAMPLE)



4
13 SECTION (thru shop)
scale- 1/4" = 1'-0" (REDUCED EXAMPLE)