

CEDAR SHUTTERS 3-2 X 6 VERT WITH 2-2 X 4 HORZ. WITH SMART TRIM BACKING

TOP TAPERED PORTION OF COL.  
SMART TRIM 12" BASE 10" TOP

FRONT EL.  
STUCCO  
FINISH

REAR EL.  
1/8 = 1-0

RIGHT EL.  
1/8 = 1-0

LEFT EL.  
1/8 = 1-0

BUILD IN ACCORDANCE WITH  
2018 INTERNATIONAL  
RESIDENTIAL CODE AND  
LOCAL CODES.

NICK ZVACEL CONSTRUCTION  
LOT 110 MONTICELLO  
4709 NE FREEHOLD DR  
LEE SUMMIT MO

SCALE  
1/4" = 1-0

DATE  
5-13-21

PLAN NO.

3532

SHEET NO.

1 OF 6

JOSEPH A. TOWNS P.E.  
MO. LIC E 22017  
PROFESSIONAL SEAL  
APPLIES TO STRUCTURAL  
ELEMENTS ONLY

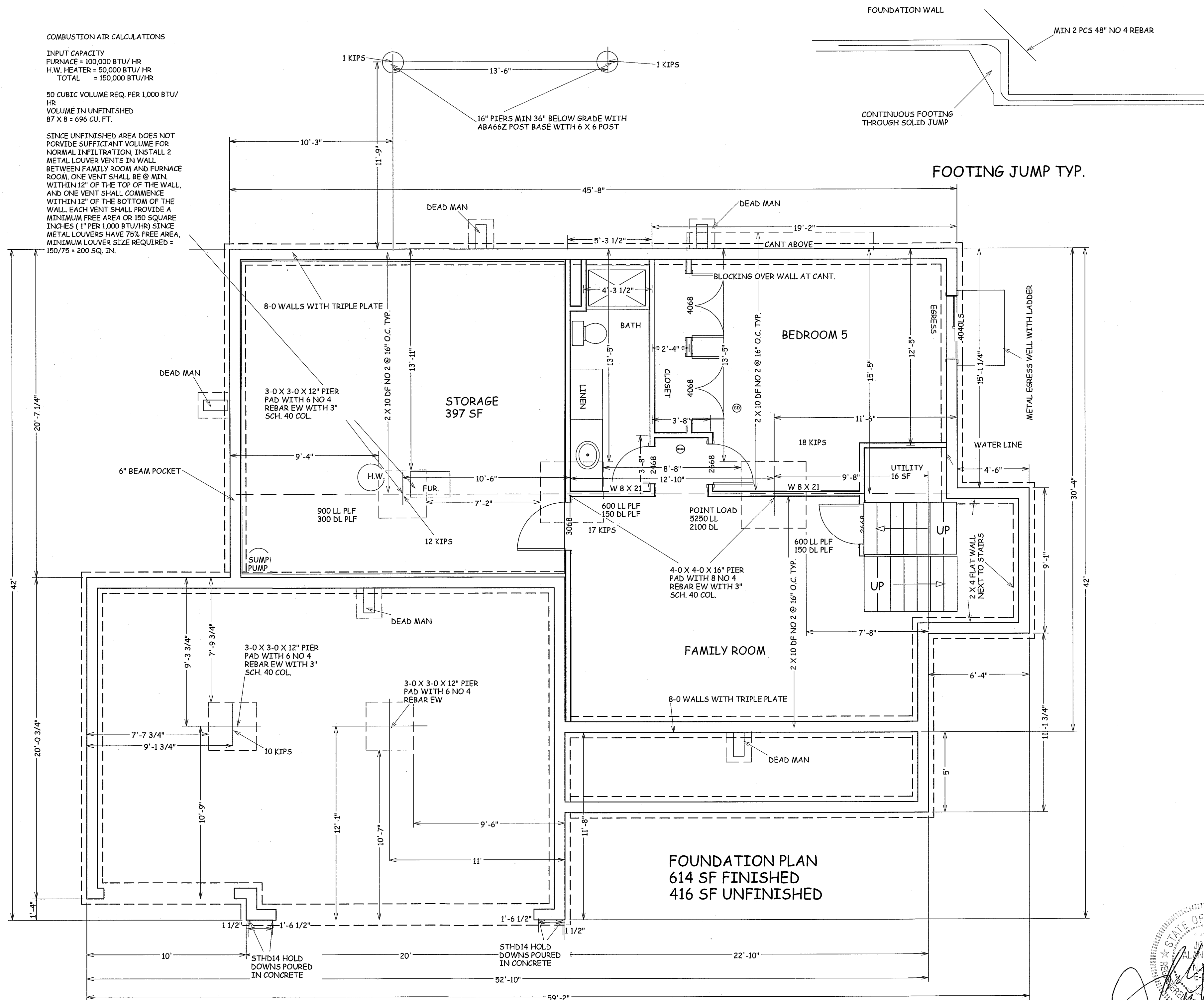
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05/27/2021

INPUT CAPACITY  
FURNACE = 100,000 BTU/ HR  
H.W. HEATER = 50,000 BTU/ HR  
TOTAL = 150,000 BTU/HR

50 CUBIC VOLUME REQ. PER 1,000 BTU/  
HR  
VOLUME IN UNFINISHED  
87 X 8 = 696 CU. FT.

SINCE UNFINISHED AREA DOES NOT PROVIDE SUFFICIENT VOLUME FOR NORMAL INFILTRATION, INSTALL 2 METAL LOUVER VENTS IN WALL BETWEEN FAMILY ROOM AND FURNACE ROOM. ONE VENT SHALL BE @ MTN. WITHIN 12" OF THE TOP OF THE WALL, AND ONE VENT SHALL COMMENCE WITHIN 12" OF THE BOTTOM OF THE WALL. EACH VENT SHALL PROVIDE A MINIMUM FREE AREA OR 150 SQUARE INCHES (1" PER 1,000 BTU/HR) SINCE METAL LOUVERS HAVE 75% FREE AREA, MINIMUM LOUVER SIZE REQUIRED =  $\frac{150/75}{1} = 200$  SQ. IN.



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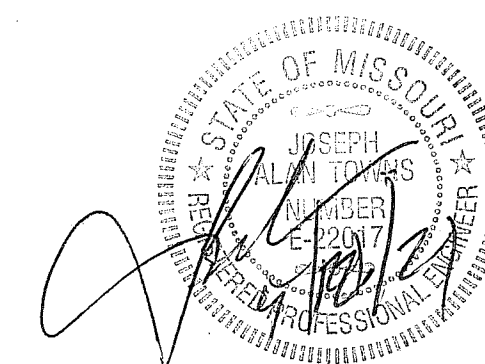
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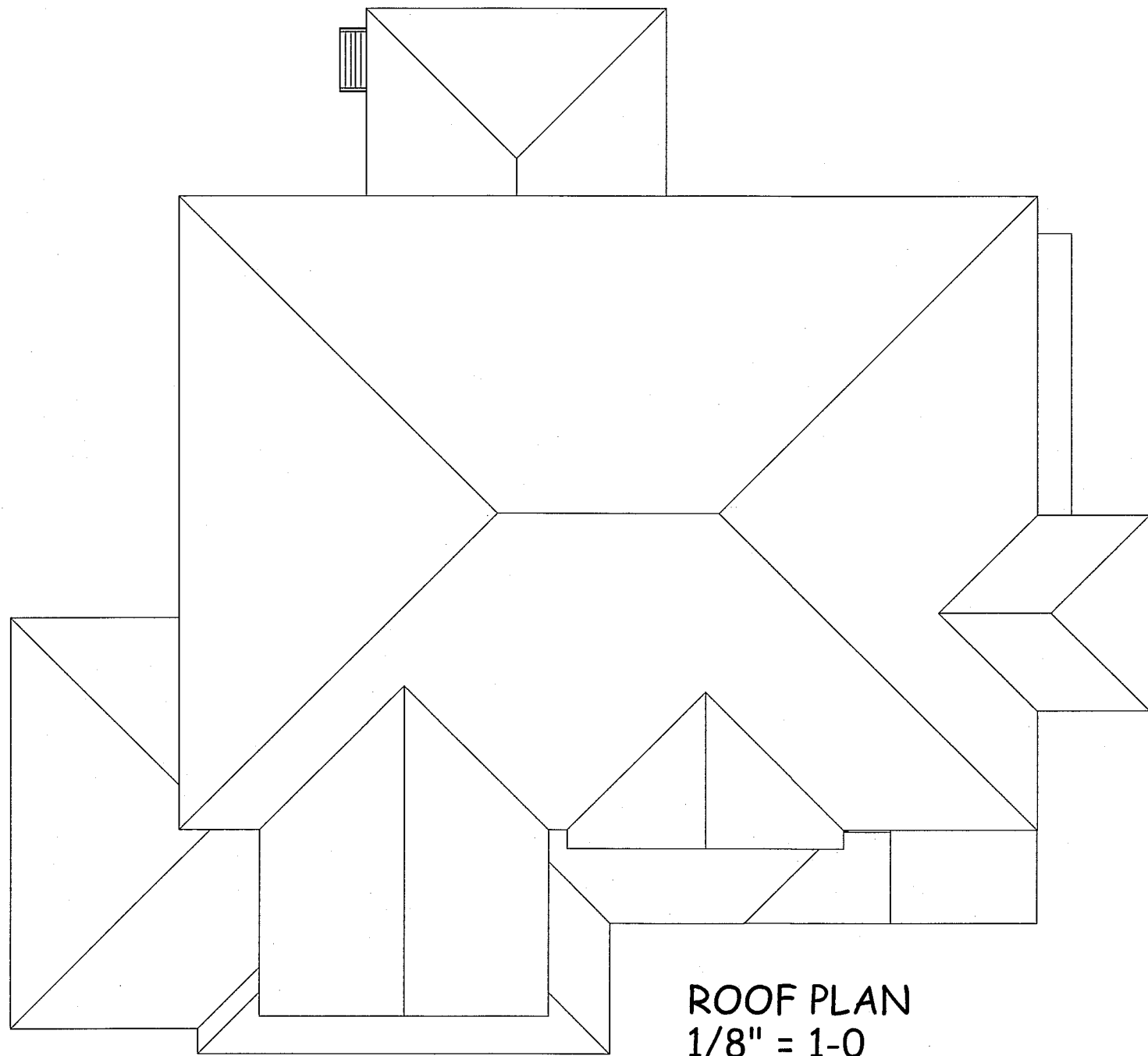




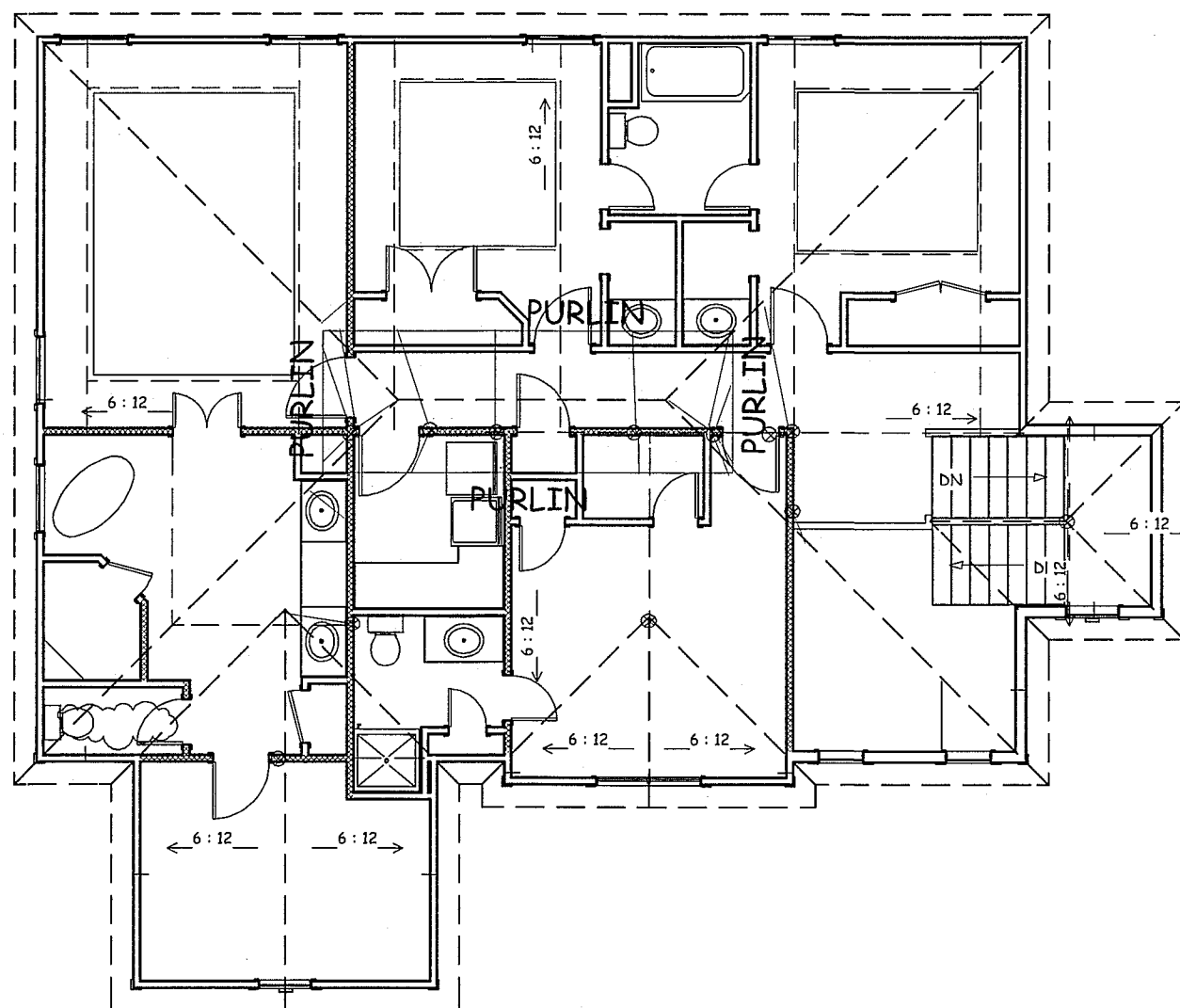


ALL RAFTERS 2 X 6 DF NO 2 @ 16" O.C UNLESS NOTED OTHERWISE

ALL HIPs 2 X 8 DF NO 2 UNLESS NOTED OTHER WISE



ROOF PLAN  
1/8" = 1-0  
ROOF PITCHES 6/12



PURLIN PLAN  
SECOND FLOOR  
1/8 = 1-0

NO PURLINS NEEDED ON FIRST FLOOR

ENERGY CONSERVATION CODE  
THE FOLLOWING VALUES ARE NEEDED.

R-15 IN WALLS

R-49 IN ATTICS

R-38 IN VAULTS  
R-30 REDUCTION FOR VAULTS IS ONLY FOR 500 SF  
PF AREA

R-19 IN FLOORS OVER UNCONDITIONED SPACES

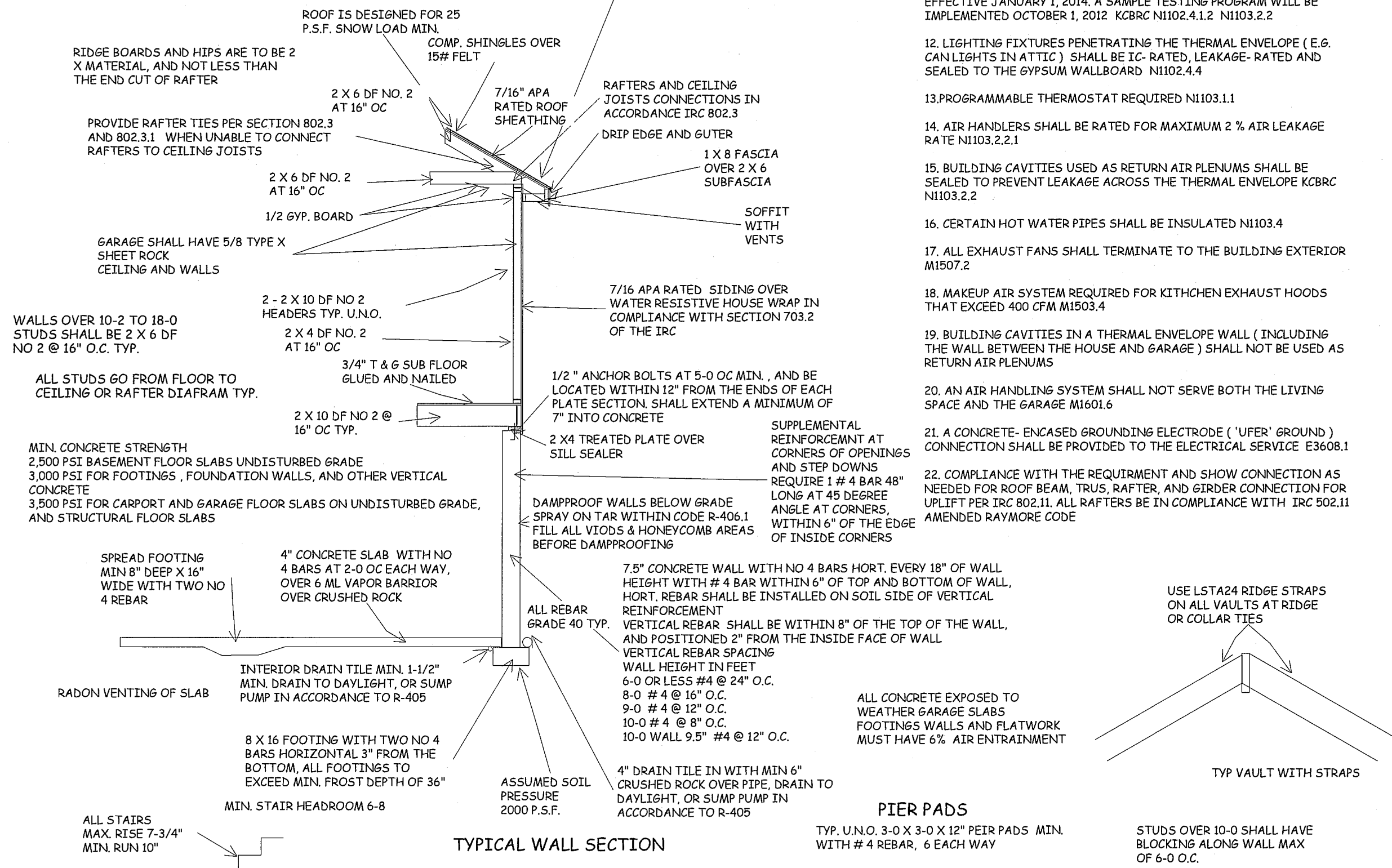
R-10 IN CRAWL SPACE WALLS

BASEMENT WALLS R-13 CAVITY OR R-10 CONTINUOUS

SLABS SHALL BE R-10 FOR A DEPTH OF 2 FOOT

A WINDOW U FACTOR OF .35 OR BETTER

DUCTWORK NEEDS TO HAVE AN R-8 VALUE



TYPICAL WALL SECTION

WINDOW SAFETY GLAZING PER 308

SAFETY GLAZING REQUIRED ALONG WALKING SURFACES AND STAIRS LOCATED WITHIN 36 INCHES HORIZONTALLY OF THE STEPS. SAFETY GLAZING REQUIRED IF EXPOSED SINGLE PANEL IS IN EXCESS OF 9 SQUARE FEET OR THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FINISHED FLOOR.

SAFETY GLAZING REQUIRED WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN 24 INCHES OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE A WALKING SURFACE, SAFETY OR TEMPERED GLAZING IS REQUIRED.

WINDOWS ARE TO HAVE FALL PROTECTION PER IRC 312.2

WINDOW EGRESS REQUIREMENTS

BEDROOM WINDOW EGRESS MINIMUM FOR A DOUBLE HUNG WINDOW IS 34 INCH CLEAR WIDTH MIN. AND 24 INCH CLEAR HEIGHT MIN. WITH A CLEAR OPENABLE AREA OF 5.7 SQUARE FEET MIN. A CASEMENT OR SLIDER WINDOW MINIMUMS ARE 20 INCH CLEAR WIDTH MINIMUM AND 41 INCH CLEAR HEIGHT MINIMUM. WITH A MINIMUM 5.7 SQUARE FOOT OF OPENABLE AREA. OPENING OF EGRESS WINDOW NOT MORE THAN 42" FROM THE FLOOR

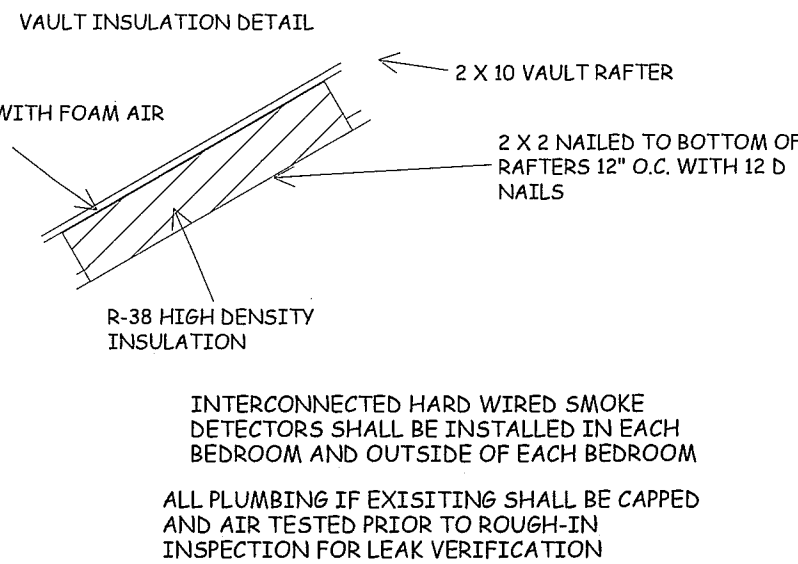
PIER PADS

TYP. U.N.O. 3-0 X 3-0 X 12" PEIR PADS MIN. WITH # 4 REBAR, 6 EACH WAY

STUDS OVER 10-0 SHALL HAVE BLOCKING ALONG WALL MAX OF 6-0 O.C.

OVERHEAD GARAGE DOORS MUST MEET DASHA 115 MPH OR IRC 2018 REQUIREMENTS

EGRESS WINDOW WELL AS NEEDED PER SECTION 308 MIN 3-0 X 3-0 WITH LADDER



INTERCONNECTED HARD WIRED SMOKE DETECTORS SHALL BE INSTALLED IN EACH BEDROOM AND OUTSIDE OF EACH BEDROOM  
ALL PLUMBING IF EXISTING SHALL BE CAPPED AND AIR TESTED PRIOR TO ROUGH-IN INSPECTION FOR LEAK VERIFICATION

1. DWELLING / GARAGE OPENINGS BETWEEN GARAGE AND SLEEPING PURPOSES SHALL NOT BE PERMITTED. OTHER OPENINGS SHALL BE EQUIPPED WITH SOLID WOOD OR STEEL DOORS NOT LESS THAN 1-3/8" THICK OR 20 MINUTE RATED DOORS, WITH SELF CLOSING DEVICES REQUIRED FOR GARAGE / DWELLING SEPERATION DOORS R302.5.1
2. WHOLE HOUSE MECHANICAL VENTILATION SYSTEM IS REQUIRED FOR ANY DWELLING IN COMPLIANCE WITH IRC M 1505
3. CARBON MONOXIDE DETECTORS REQUIRED IRC R 315
4. STEEL COLUMNS SHALL BE MINIMUM SCHEDULE 40 R407.3
5. DECK SHALL BE BUILT PER TABLES 507.2 , 507.2.1, 507.3, 507.6, 507.5.1(1)&(2), 507.5, AND 507.6
6. STUDS SHALL BE CONTINUOUS BETWEEN FLOOR, CEILING AND OR ROOF DIAPHRAGMS R602.3
7. ADDED REQUIREMENTS FOR WINDOW FALL PROTECTION R312.2
8. NEW PROVISIONS FOR ATTACHMENT OF RAFTERS, TRUSSES AND ROOF BEAMS R802.3.1, R802.11
9. INSULATION REQUIRED FOR ALL BASEMENT WALLS ( INCLUDING UNFINISHED BASEMENTS ) N1102.1
10. EXTERIOR WINDOWS/DOORS SHALL HAVE U-FACTOR 0.35 AND GLAZING SHALL HAVE SOLAR HEIGHT GAIN FACTOR OF 0.40 N1102.1
11. HOUSE LEAKAGE AND DUCT LEAKAGE PERFORMANCE STANDARDS EFFECTIVE JANUARY 1, 2014. A SAMPLE TESTING PROGRAM WILL BE IMPLEMENTED OCTOBER 1, 2012 KCBRC N1102.4.1.2 N1103.2.2
12. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE ( E.G. CANLIGHTS IN ATTIC ) SHALL BE IC- RATED, LEAKAGE- RATED AND SEALED TO THE GYPSUM WALLBOARD N1102.4.4
13. PROGRAMMABLE THERMOSTAT REQUIRED N1103.1.1
14. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2 % AIR LEAKAGE RATE N1103.2.2.1
15. BUILDING CAVITIES USED AS RETURN AIR PLENUMS SHALL BE SEALED TO PREVENT LEAKAGE ACROSS THE THERMAL ENVELOPE KCBRC N1103.2.2
16. CERTAIN HOT WATER PIPES SHALL BE INSULATED N1103.4
17. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR M1507.2
18. MAKEUP AIR SYSTEM REQUIRED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM M1503.4
19. BUILDING CAVITIES IN A THERMAL ENVELOPE WALL ( INCLUDING THE WALL BETWEEN THE HOUSE AND GARAGE ) SHALL NOT BE USED AS RETURN AIR PLENUMS
20. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE M1601.6
21. A CONCRETE- ENCASED GROUNDING ELECTRODE ( 'UFER' GROUND ) CONNECTION SHALL BE PROVIDED TO THE ELECTRICAL SERVICE E3608.1
22. COMPLIANCE WITH THE REQUIREMENT AND SHOW CONNECTION AS NEEDED FOR ROOF BEAM, TRUS, RAFTER, AND GIRDER CONNECTION FOR UPLIFT PER IRC 802.11. ALL RAFTERS BE IN COMPLIANCE WITH IRC 502.11 AMENDED RAYMORE CODE

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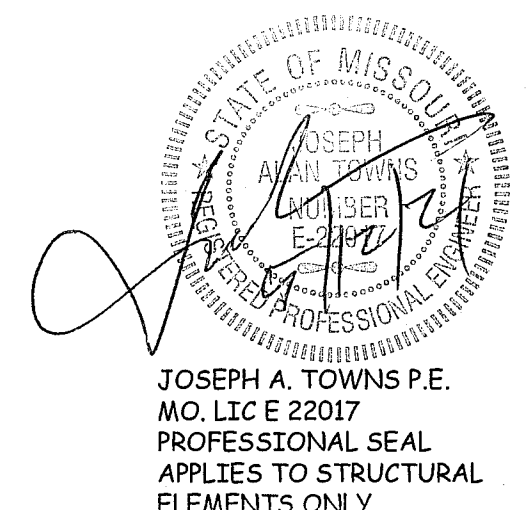
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EXPOSURE CATEGORY B 30-FOOT MEAN ROOF HEIGHT 10-FOOT WALL HEIGHT 2 BRACED WALL LINES		MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE*				
Ultimate Design Wind Speed (mph)	Story Location	Braced Wall Line Spacing* (feet)	Method LIB*	Method GB	Methods DWB, WSP, SFB, PFB, FCF, HPS, BV-WSP, ABW, PFH, PFC, CS-SFB	Methods CS-WSP, CS-G, CS-PF
≤ 115		10	3.5	3.5	2.0	2.0
		20	6.5	6.5	3.5	3.5
		30	9.5	9.5	5.5	4.5
		40	12.5	12.5	7.0	6.0
		50	15.0	15.0	9.0	7.5
		60	18.0	18.0	10.5	9.0
		10	7.0	7.0	4.0	3.5
		20	12.5	12.5	7.5	6.5
		30	18.0	18.0	10.5	9.0
		40	23.5	23.5	13.5	11.5
		50	29.0	29.0	16.5	14.0
		60	34.5	34.5	20.0	17.0
		10	NP	10.0	6.0	5.0
		20	NP	18.5	11.0	9.0
		30	NP	27.0	15.5	13.0
		40	NP	35.0	20.0	17.0
		50	NP	43.0	24.5	21.0
		60	NP	51.0	29.0	25.0

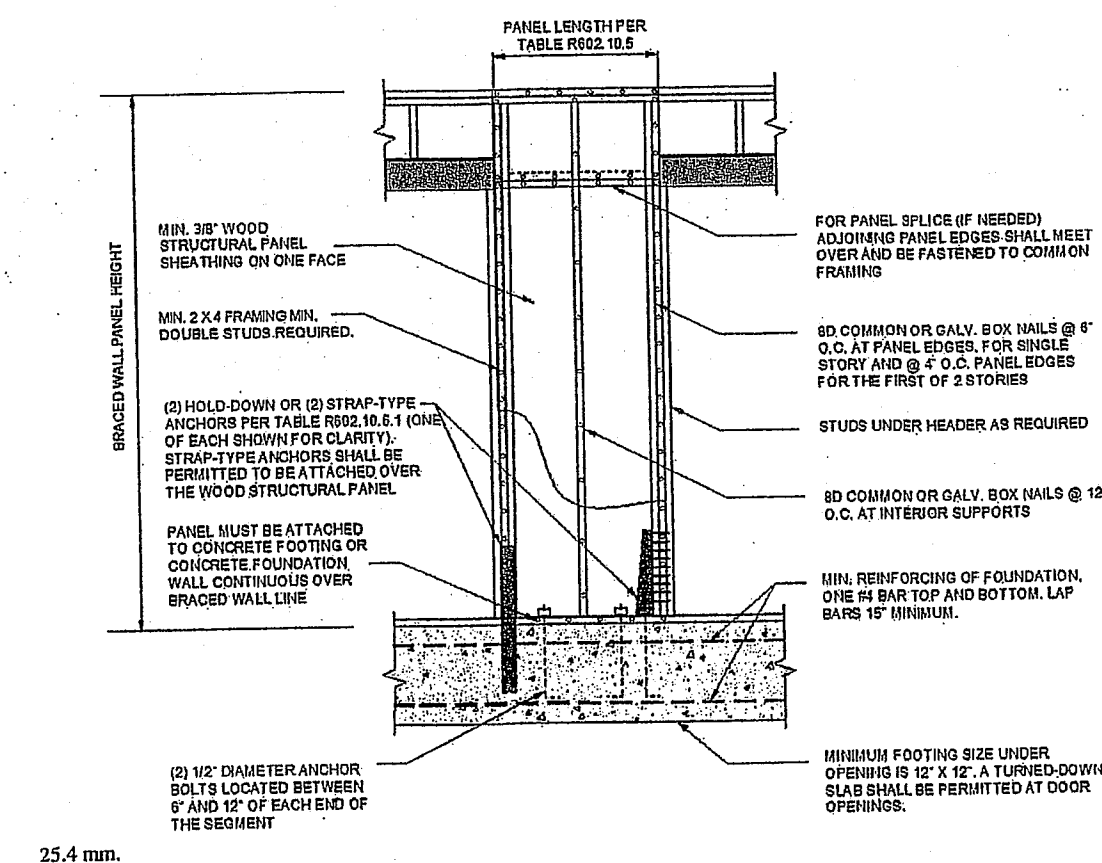


FIGURE R602.10.6.1  
METHOD ABW—ALTERNATE BRACED WALL PANEL

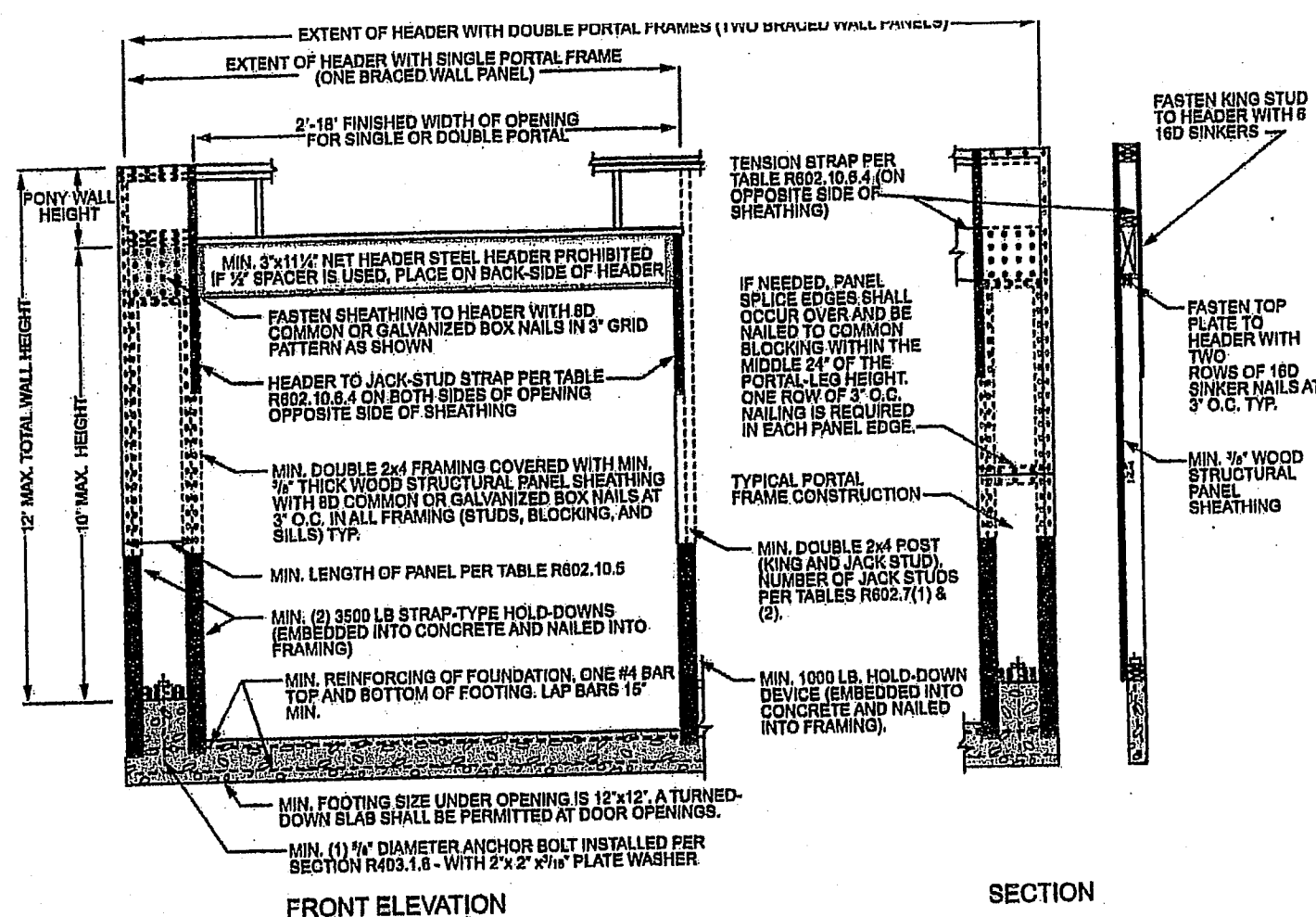


FIGURE R602.10.6.2  
METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA*	
			Fasteners	Spacing
LIB Let-in-bracing	1 x 4 wood or approved metal straps at 45° to 60° angles for maximum 16\" stud spacing		Wood: 2-8d common nails or 3-8d (2 1/2\" long x 0.113\" dia.) nails Metal strap: per manufacturer	Wood: per stud and top and bottom plates Metal: per manufacturer
DWB Diagonal wood boards	3/4\" (1\" nominal) for maximum 24\" stud spacing		2-8d (2 1/2\" long x 0.113\" dia.) nails or 2 - 1 1/4\" long staples	Per stud
WSP Wood structural panel (See Section R604)	3/8\"		Exterior sheathing per Table R602.3(3) Interior sheathing per Table R602.3(1) or R602.3(2)	6\" edges 12\" field Varies by fastener
BV-WSP* Wood structural panels with stone or masonry veneer (See Section R602.10.6.5)	7/16\"	See Figure R602.10.6.5	8d common (2 1/2\" x 0.131\") nails	4\" at panel edges 12\" at intermediate supports 4\" at braced wall panel end posts
SFB Structural fiberboard sheathing	1/2\" or 3/4\" for maximum 16\" stud spacing		1 1/2\" long x 0.12\" dia. (for 1/2\" thick sheathing) 1 1/4\" long x 0.12\" dia. (for 3/4\" thick sheathing) galvanized roofing nails	3\" edges 6\" field
GB Gypsum board	1/2\"		Nails or screws per Table R602.3(1) for exterior locations Nails or screws per Table R702.3.5 for interior locations	For all braced wall panel locations: 7\" edges (including top and bottom plates) 7\" field
PBS Particleboard sheathing (See Section R605)	1/8\" or 1/4\" for maximum 16\" stud spacing		For 3/8\", 6d common (2\" long x 0.131\" dia.) nails For 1/2\", 8d common (2 1/2\" long x 0.131\" dia.) nails	3\" edges 6\" field
PCP Portland cement plaster	See Section R703.7 for maximum 16\" stud spacing		1 1/2\" long, 11 gage, 7/16\" dia. head nails or 7/8\" long, 16 gage staples	6\" o.c. on all framing members
HPS Hardboard panel siding	7/16\" for maximum 16\" stud spacing		0.092\" dia., 0.225\" dia. head nails with length to accommodate 1/2\" penetration into studs	4\" edges 8\" field
ABW Alternate braced wall	3/8\"		See Section R602.10.6.1	See Section R602.10.6.1

METHOD (See Table R602.10.4)	MINIMUM LENGTH* (Inches)					CONTRIBUTING LENGTH (Inches)
	8 feet	9 feet	10 feet	11 feet	12 feet	
DWB, WSP, SFB, PBS, FCF, HPS, BV-WSP	48	48	48	53	58	Actual <sup>b</sup>
GB	48	48	48	53	58	Double sided = Actual Single sided = 0.5 x Actual
LIB	55	62	69	NP	NP	Actual <sup>b</sup>
ABW	SDC A, B and C, ultimate design wind speed < 140 mph	28	32	34	38	42
	SDC D <sub>1</sub> , D <sub>2</sub> and D <sub>3</sub> , ultimate design wind speed < 140 mph	32	32	34	NP	NP
CS-G	Adjacent clear opening height (Inches)	24	27	30	33	36
CS-WSP, CS-SFB	≤ 64	24	27	30	33	36
	68	26	27	30	33	36
	72	27	27	30	33	36
	76	30	29	30	33	36
	80	32	30	30	33	36
	84	35	32	32	33	36
	88	38	35	33	33	36
	92	43	37	35	35	36
	96	48	41	38	36	36
	100	—	44	40	38	38
	104	—	49	43	40	39
	108	—	54	46	43	41
	112	—	—	50	45	43
	116	—	—	55	48	45
	120	—	—	60	52	48
	124	—	—	—	56	51
	128	—	—	—	61	54
	132	—	—	—	66	58
	136	—	—	—	—	62
	140	—	—	—	—	66
	144	—	—	—	—	72
METHOD (See Table R602.10.4)	Portal header height					48
	8 feet	9 feet	10 feet	11 feet	12 feet	
PFH	Supporting roof only	16	16	16	Note c	Note c
	Supporting one story and roof	24	24	24	Note c	Note c
PFB	SDC A, B and C	24	27	30	Note d	Note d
	SDC D <sub>1</sub> , D <sub>2</sub> and D <sub>3</sub>	16	18	20	Note e	Note e
CS-PF	SDC A, B and C	16	18	20	Note e	Note e
	SDC D <sub>1</sub> , D <sub>2</sub> and D <sub>3</sub>	16	18	20	Note e	Note e

For SFI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s.  
NP = Not Permitted.  
a. Linear interpolation shall be permitted.  
b. Use the actual length where it is greater than or equal to the minimum length.  
c. Maximum header height for PFH is 10 feet in accordance with Figure R602.10.6.2, but wall height shall be permitted to be increased to 12 feet with pony wall.  
d. Maximum header height for PFB is 10 feet in accordance with Figure R602.10.6.3, but wall height shall be permitted to be increased to 12 feet with pony wall.  
e. Maximum header height for CS-PF is 10 feet in accordance with Figure R602.10.6.4, but wall height shall be permitted to be increased to 12 feet with pony wall.

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA*	
			Fasteners	Spacing
PFH Portal frame with hold-downs	1/8\"		See Section R602.10.6.2	See Section R602.10.6.2
PFB Portal frame at garage	7/16\"		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	CS-WSP Continuously sheathed wood structural panel		Exterior sheathing per Table R602.3(3) Interior sheathing per Table R602.3(1) or R602.3(2)	6\" edges 12\" field Varies by fastener
	CS-G* Continuously sheathed wood structural panel adjacent to garage openings		See Method CS-WSP	See Method CS-WSP
	CS-PF Continuously sheathed portal frame		See Section R602.10.6.4	See Section R602.10.6.4
	CS-SFB Continuously sheathed structural fiberboard		1 1/2\" long x 0.12\" dia. (for 1/2\" thick sheathing) 1 1/4\" long x 0.12\" dia. (for 3/4\" thick sheathing) galvanized roofing nails	3\" edges 6\" field

For SFI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad, 1 pound per square foot = 47.8 N/m<sup>2</sup>, 1 mile per hour = 0.447 m/s.  
a. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D<sub>1</sub>, D<sub>2</sub>, and D<sub>3</sub>.  
b. Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of the garage. In Seismic Design Categories D<sub>1</sub>, D<sub>2</sub>, and D<sub>3</sub> roof covering dead load shall not exceed 3 psf.  
c. Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.7(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.  
d. Method CS-SFB does not apply in Seismic Design Categories D<sub>1</sub>, D<sub>2</sub>, and D<sub>3</sub>.  
e. Method applies to detached one- and two-family dwellings in Seismic Design Categories D<sub>1</sub> through D<sub>3</sub> only.

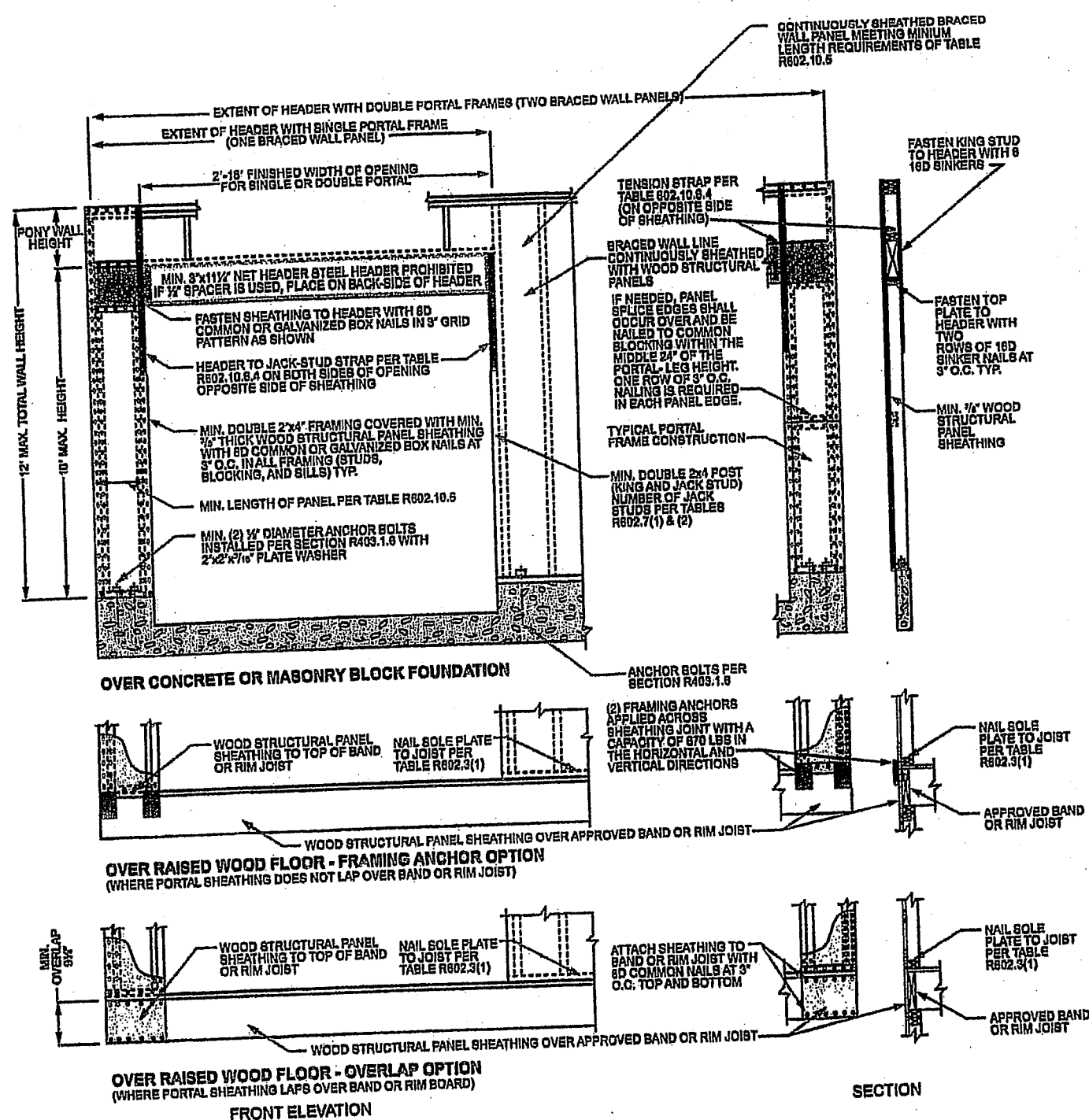


FIGURE R602.10.6.4  
METHOD CS-PF—CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION

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