

JB HOME DESIGN, LLC

446 CONCORD COURT
BALTIMORE, MARYLAND 21234
OFFICE (410) 594-4581
FAX (410) 663-4004
EMAIL: JDBHOMEDSIGN.COM



SECTIONS A-C			
CONTENTS	SCALE: 1/4" = 1'-0"	DATE:	PRJ. NO.
CROSEN ADDITION			
PROJECT TITLE			

ISSUE	DATE	DESCRIPTION

SHEET NO.
A-5

METHOD	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 1/3 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 1/3 dia.) nails or 2-1 3/4" long staples	Per stud
NSP	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-HEP (a)	Wood structural panels with stone or masonry veneer (See section R602.10.6.5)	7/16"	See Figure R602.10.6.5	8d (2 1/2" long x 1/3 dia.) common nails	4" at panel edges 12" at intermediate supports 4" at braced wall panel end posts
SFP	Structural fiberboard sheathing	1/2" or 25/32" for maximum 16" stud spacing		1 1/2" long x 12" dia. (for 1/2" thick sheathing) 1 3/4" long x 12" dia. (for 25/32" sheathing) galvanized roofing nails or 8d common (2 1/2" long x 1/3" dia.) 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 R102.3.5 for interior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
PBS	Particleboard sheathing (See Section R605)	3/8" or 1/2" for maximum 16" stud spacing		For 3/8" 6d common (2" long x 1/3 dia.) nails For 1/2" 8d common (2 1/2" long x 1/3 dia.) nails	3" edges 6" field
PCP	Portland cement plaster	See Section R103.6 For maximum 16" stud spacing		1 1/2" long, 11 gauge, 7/16" dia. head nails or 7/8" long 16-gauge staples	6" o.c. on all framing members
HPS	Hardboard panel siding	7/16" For maximum 16" stud spacing		Ø42" dia., 225" dia. nails with length to accommodate 1 1/2" penetration into studs	4" edges 8" field
AHB	Alternate braced wall	See Section R602.10.3.2		See section R602.10.6.1	See section R602.10.6.1
PFH	Intermittent portal frame	See Section R602.10.3.3		See section R602.10.6.2	See section R602.10.6.2
PPG	Intermittent portal frame at garage	See Section R602.10.3.4		See section R602.10.6.3	See section R602.10.6.3

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA	
				Fasteners	Spacing
CS-HEP	Wood structural panel	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
CS-G (a,c)	Wood structural panel adjacent to garage openings and supporting roof load only	3/8"		See method CS-HEP	See method CS-HEP
CS-PF	portal frame	7/16"		See Section R602.10.6.4	See Section R602.10.6.4
CS-SFP (a)	Structural fiberboard	1/2" or 25/32" for maximum 16" stud spacing		1 1/2" long x 12" dia. (for 1/2" thick sheathing) 1 3/4" long x 12" dia. (for 25/32" sheathing) galvanized roofing nails or 8d common (2 1/2" long x 1/3" dia.) nails	3" edges 6" field

- a. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D0, D1 and D2.
b. Applies to panels next to garage door opening when supporting gable end wall or roof load only. May only be used on one wall of the garage. In Seismic Design Categories D0, D1 and D2, roof covering dead load may not exceed 3 psf.
c. Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R502.5(1). A full height clear opening shall not be permitted adjacent to a Method CS-G panel.
d. Method CS-SFP does not apply in Seismic Design Categories D0, D1 and D2 and in areas where the wind speed exceeds 100 mph.
e. Method applies to detached one- and two-family dwellings in Seismic Design Categories D0 through D2 only.

R602.10.1 Braced wall lines. For the purpose of determining the amount and location of bracing required in each story level of a building, braced wall lines shall be designated as straight lines in the building plan placed in accordance with this section.

R602.10.1.1 Length of a braced wall line. The length of a braced wall line shall be the distance between its ends. The end of a braced wall line shall be the intersection with a perpendicular braced wall line, an angled braced wall line as permitted in Section R602.10.1.4 or an exterior wall as shown in Figure R602.10.1.1.

R602.10.1.2 Offsets along a braced wall line. All exterior walls parallel to a braced wall line shall be offset not more than 4 feet (1219 mm) from the designated braced wall line location as shown Figure R602.10.1.1. Interior walls used as bracing shall be offset not more than 4 feet (1219 mm) from a braced wall line through the interior of the building as shown in Figure R602.10.1.1.

R602.10.1.3 Spacing of braced wall lines. The spacing between parallel braced wall lines shall be in accordance with Table R602.10.1.3. Intermediate braced wall lines through the interior of the building shall be permitted.

R602.10.1.4 Angled walls. Any portion of a wall along a braced wall line shall be permitted to angle out of plane for a maximum diagonal length of 8 feet (2438 mm), where the angled wall occurs at a corner, the length of the braced wall line shall be measured from the projected corner as shown in Figure R602.10.1.4. Where the diagonal length is greater than 8 feet (2438 mm), it shall be considered a separate braced wall line and shall be braced in accordance with Section R602.10.1.

R602.10.2 Braced wall panels. Braced wall panels shall be full-height sections of wall that shall have no vertical or horizontal offsets. Braced wall panels shall be constructed and placed along a braced wall line in accordance with this section and the bracing methods specified in Section R602.10.4.

R602.10.2.1 Braced wall panel uplift load path. The bracing lengths in Table R602.10.3(1) apply only when uplift loads are resisted in accordance with Section R602.3.5.

R602.10.2.2 Locations of braced wall panels. A braced wall panel shall begin within 10 feet (3048 mm) from each end of a braced wall line as determined in Section R602.10.1.1. The distance between adjacent edges of braced wall panels along a braced wall line shall be no greater than 20 feet (6096 mm) as shown in Figure R602.10.2.2.

R602.10.2.3 Minimum number of braced wall panels. Braced wall lines with a length of 16 feet (4877 mm) or less shall have a minimum of two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have a minimum of two braced wall panels.

R602.10.3 Required length of bracing. The required length of bracing along each braced wall line shall be determined as follows:

- All buildings in Seismic Design Categories A and B shall use Table R602.10.3(1) and the applicable adjustment factors in Table R602.10.3(2).
- Detached buildings in Seismic Design Category C shall use Table R602.10.3(1) and the applicable adjustment factors in Table R602.10.3(2).
- Townhouses in Seismic Design Category C shall use the greater value determined from Table R602.10.3(1) or R602.10.3(3) and the applicable adjustment factors in Table R602.10.3(2) or R602.10.3(4) respectively.
- All buildings in Seismic Design Categories D0, D1 and D2 shall use the greater value determined from Table R602.10.3(1) or R602.10.3(3) and the applicable adjustment factors in Table R602.10.3(2) or R602.10.3(4) respectively. Only braced wall panels parallel to the braced wall line shall contribute toward the required length of bracing of that braced wall line. Braced wall panels along an angled wall meeting the minimum length requirements of Tables R602.10.5 and R602.10.5.2 shall be permitted to contribute its projected length toward the minimum required length of bracing for the braced wall line as shown in Figure R602.10.1.4. Any braced wall panel on an angled wall at the end of a braced wall line shall contribute its projected length for only one of the braced wall lines at the projected corner. Exception: The length of wall bracing for dwellings in Seismic Design Categories D0, D1 and D2 with stone or masonry veneer installed per Section R103.1 and exceeding the first-story height shall be in accordance with Section R602.10.6.5.

R602.10.4 Construction methods for braced wall panels. Intermittent and continuously sheathed braced wall panels shall be constructed in accordance with this section and the methods listed in Table R602.10.4.

R602.10.4.1 Mixing methods. Mixing of bracing methods shall be permitted as follows:

- Mixing intermittent bracing and continuous sheathing methods from story to story shall be permitted.
- Mixing intermittent bracing methods from braced wall line to braced wall line within a story shall be permitted. Within Seismic Design Categories A, B and C or in regions where the basic wind speed is less than or equal to 100 mph (45 m/s), mixing of intermittent bracing and continuous sheathing methods from braced wall line to braced wall line within a story shall be permitted.
- Mixing intermittent bracing methods along a braced wall line shall be permitted in Seismic Design Categories A and B, and detached dwellings in Seismic Design Category C provided the length of required bracing in accordance with Table R602.10.3(1) or R602.10.3(3) is the highest value of all intermittent bracing methods used.
- Mixing of continuous sheathing methods CS-HEP, CS-G and CS-PF along a braced wall line shall be permitted.
- In Seismic Design Categories A and B, and for detached one- and two-family dwellings in Seismic Design Category C, mixing of intermittent bracing methods along the interior portion of a braced wall line with continuous sheathing methods CS-HEP, CS-G and CS-PF along the exterior portion of the same braced wall line shall be permitted. The length of required bracing shall be the highest value of all intermittent bracing methods used in accordance with Table R602.10.3(1) or R602.10.3(3) as adjusted by Tables R602.10.3(2) and R602.10.3(4), respectively. The requirements of Section R602.10.7 shall apply to each end of the continuously sheathed portion of the braced wall line.

R602.10.4.2 Continuous sheathing methods. Continuous sheathing methods require structural panel sheathing to be used on all sheathable surfaces on one side of a braced wall line including areas above and below openings and gable end walls and shall meet the requirements of Section R602.10.7.

R602.10.6.4 Method CS-PF: Continuously sheathed portal frame. Continuously sheathed portal frame braced wall panels shall be constructed in accordance with Figure R602.10.6.4 and Table R602.10.6.4. The number of continuously sheathed portal frame panels in a single braced wall line shall not exceed four.

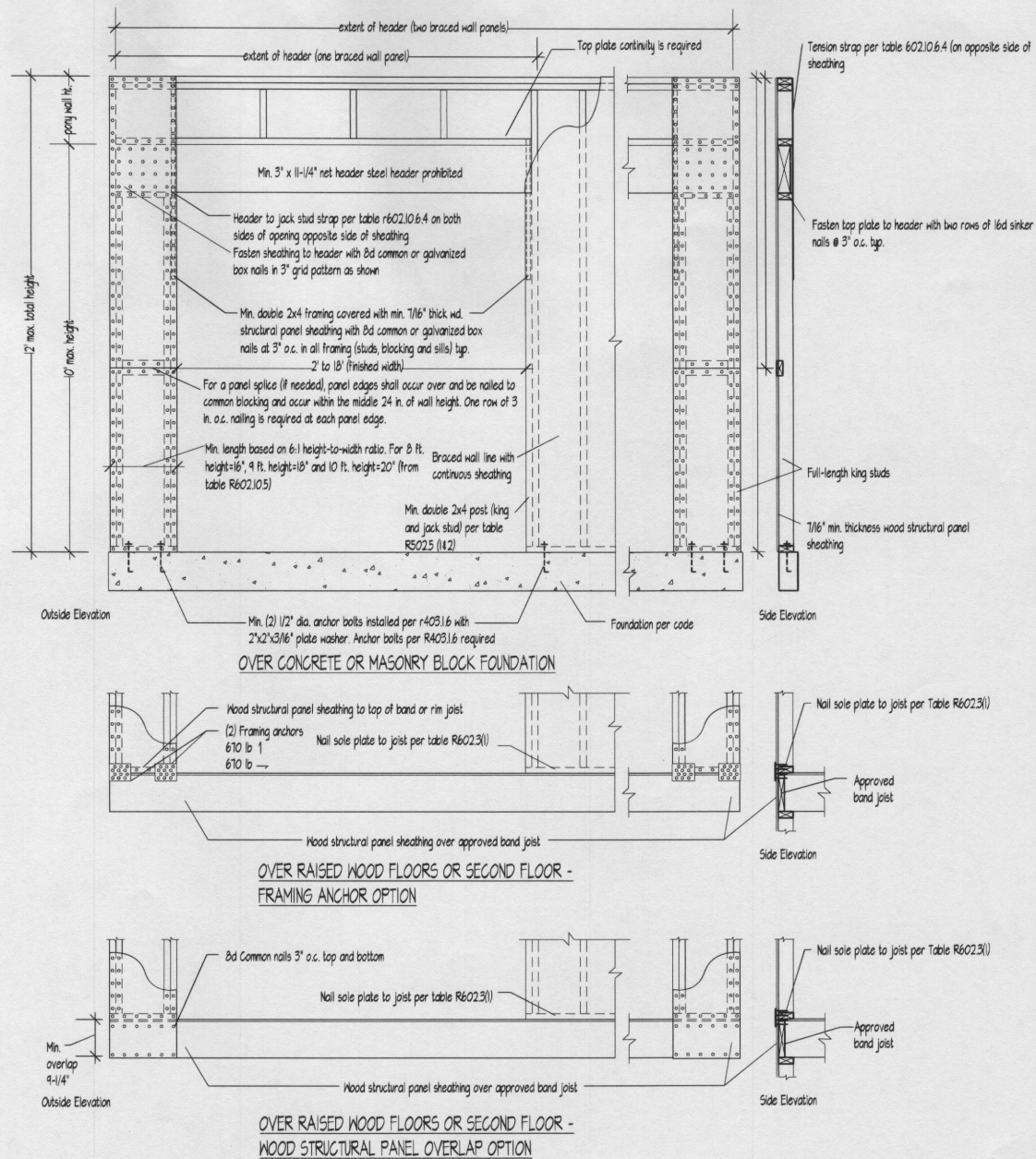
R602.10.7 Ends of braced wall lines with continuous sheathing. Each end of a braced wall line with continuous sheathing shall have one of the conditions shown in Figure R602.10.7.

R602.10.8 Braced wall panel connections. Braced wall panels shall be connected to floor framing or foundations as follows:

- Where joists are perpendicular to a braced wall panel above or below, a rim joist, band joist or blocking shall be provided along the entire length of the braced wall panel in accordance with Figure R602.10.8(1). Fastening of top and bottom wall plates to framing rim joist, band joist and/or blocking shall be in accordance with Table R602.3(1).

- Where joists are parallel to a braced wall panel above or below, a rim joist, end joist or (either parallel) framing member shall be provided directly above and below the braced wall panel in accordance with Figure R602.10.8(2). Where a parallel framing member cannot be located directly above and below the panel, full-depth blocking at 16-inch (406 mm) spacing shall be provided between the parallel framing members to each side of the braced wall panel in accordance with Figure R602.10.8(2). Fastening of blocking and wall plates shall be in accordance with Table R602.3(1) and Figure R602.10.8(2).

- Connections of braced wall panels to concrete or masonry shall be in accordance with Section R403.1.6.



1 METHOD CS-PF:CONT. PORTAL FRAME PANEL CONSTRUCTION PER IRC 2012 figure R602.10.6.4.

JB HOME DESIGN, LLC
946 CONCORD COURT
BALTIMORE, MARYLAND 21234
OFFICE (410) 594-4581
FAX (410) 663-4064
EMAIL: JON@JBHOMEDSIGN.COM

JB
home design

APA NARROW WALL DETAILS

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

CROSEN ADDITION

PROJECT TITLE

ISSUE	DATE	DESCRIPTION

SHEET NO.

A=8A

TABLE R602.10.5
LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CONTINUOUS SHEATHING

METHOD	ADJACENT CLEAR OPENING HEIGHT	WALL HEIGHT				
		8'	9'	10'	11'	12'
CS-WSP CS-SFB	64"	24"	27"	30"	33"	36"
	68"	26"	27"	30"	33"	36"
	72"	28"	27"	30"	33"	36"
	76"	29"	30"	30"	33"	36"
	80"	31"	33"	30"	33"	36"
	84"	35"	36"	33"	33"	36"
	88"	39"	39"	36"	33"	36"
	92"	44"	42"	39"	35"	36"
	96"	48"	45"	42"	36"	36"
	100"		48"	45"	38"	38"
	104"		51"	48"	40"	39"
	108"		54"	51"	43"	41"
	112"			54"	45"	43"
	116"			57"	48"	45"
	120"			60"	52"	48"
	124"				56"	51"
	128"				61"	54"
	132"				66"	58"
CS-G CS-PF	<120"	24"	27"	30"	33"	36"
	<120"	16"	18"	20"	22"	24"

TABLE R602.10.3 (1)
BRACING REQUIREMENTS BASED ON WIND SPEED

EXPOSURE CATEGORY B, 30 FT MEAN ROOF HEIGHT, 10 FT EAVE TO RIDGE HEIGHT 10 FT WALL HEIGHT 2 BRACED WALL LINES			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINES			
BASIC WIND SPEED (mph)	STORY LOCATION	BRACED WALL LINE SPACING (feet)	METHOD LIB	METHOD GB (double sided)	METHODS DMB, WSP SFB, PCP, PHPS, DMB PBS, CS-SFB	CONTINUOUS SHEATHING
< 90 MPH		10	35	35	20	20
		20	10	10	40	35
		30	45	45	55	50
		40	125	125	15	60
		50	155	155	90	15
		60	185	185	105	90
		10	10	10	40	35
		20	130	130	15	65
		30	185	185	105	90
		40	240	340	140	120
		50	245	245	110	145
		60	350	350	200	110
		10	NP	105	60	50
		20	NP	190	110	95
		30	NP	215	155	135
		40	NP	355	205	175
		50	NP	440	250	215
		60	NP	520	300	255

RESIDENTIAL ENERGY EFFICIENCY 2012 IECC SECTION 402 BUILDING THERMAL ENVELOPE

R402.1 General (Prescriptive). The building thermal envelope shall meet the requirements of Sections R402.1.1 through R402.1.4.

R402.2 Specific insulation requirements (Prescriptive). In addition to the requirements of Section R402.1, insulation shall meet the specific requirements of Sections R402.2.1 through R402.2.12.

R402.3 Fenestration (Prescriptive). In addition to the requirements of Section R402, fenestration shall comply with Sections R402.3.1 through R402.3.6.

R402.4 Air leakage (Mandatory). The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.

R402.4.1 Building thermal envelope. The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

R402.4.1.1 Installation. The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.

R402.4.1.2 Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures;
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

R402.4.2 Fireplaces. New wood-burning fireplaces shall have tight-fitting flue dampers and outdoor combustion air.

R402.4.3 Fenestration air leakage. Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (15 L/s/m²), and swinging doors no more than 0.5 cfm per square foot (26 L/s/m²), when tested according to NFRC 400 or AAMA/WDMA/CSA 1011.5.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer. Exception: Site-built windows, skylights and doors.

R402.4.4 Recessed lighting. Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 151 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

R402.5 Maximum fenestration U-factor and SHGC (Mandatory). The area-weighted average maximum fenestration U-factor permitted using tradeoffs from Section R402.1.4 or R405 shall be 0.48 in Climate Zones 4 and 5 and 0.40 in Climate Zones 6 through 8 for vertical fenestration, and 0.75 in Climate Zones 4 through 8 for skylights. The area-weighted average maximum fenestration SHGC permitted using tradeoffs from Section R405 in Climate Zones 1 through 3 shall be 0.50.

RESIDENTIAL ENERGY EFFICIENCY 2012 IECC SECTION 403

SEE SECTION 403 FOR SYSTEM REQUIREMENTS INCLUDING:

1. Programmable thermostat.
2. Duct insulation and sealing.
3. Verification of duct tightness.
4. Air handler sealing.
5. Mechanical system piping insulation and protection.

6. Hot water systems
7. Hot water pipe insulation.
8. Mechanical ventilation.
9. Equipment sizing.
10. Snow melt system controls

11. In ground pools and spas.

RESIDENTIAL ENERGY EFFICIENCY 2012 IECC SECTION 404

SEE SECTION 404 FOR ELECTRICAL POWER AND LIGHTING REQUIREMENTS

RESIDENTIAL ENERGY EFFICIENCY 2012 IECC SECTION 405

SEE SECTION 405 FOR SIMULATED PERFORMANCE ALTERNATIVES (PERFORMANCE) INCLUDING:

1. Mandatory requirements.
2. Performance-based compliance.
3. Documentation.
4. Calculation procedure.
5. Calculation software, approved software and input values.

TABLE R402.1.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

CLIMATE ZONE	FENESTRATION U-FACTOR (b)	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC (d,e)	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE (f)	FLOOR R-VALUE	BASEMENT WALL R-VALUE (g)	SLAB R-VALUE & DEPTH (d)	CRAWL SPACE WALL R-VALUE (c)
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 OR 13-5 (h)	8/13	19	5/13 (h)	0	5/13
4 EXCEPT MARINE	0.35	0.55	0.40	44	20 OR 13-5 (h)	8/13	19	10/13	10, 2 FT.	10/13
5 AND MARINE 4	0.32	0.55	NR	44	20 OR 13-5 (h)	13/11	30 (g)	15/19	10, 2 FT.	15/19
6	0.32	0.55	NR	44	20-5 OR 13-10 (h)	15/20	30 (g)	15/19	10, 4 FT.	15/19
7 & 8	0.32	0.55	NR	44	20-5 OR 13-10 (h)	19/21	30 (g)	15/19	10, 4 FT.	15/19

For 5/1: 1 foot = 304.8 mm.

a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.

b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration. Exception: Skylights may be excluded from glazed fenestration SHGC requirements in Climate Zones 1 through 3 where the SHGC for such skylights does not exceed 0.30.

c. 8/15/19 means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. 8/15/19 shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the home. 8/10/13 means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Climate Zones 1 through 3 for heated slabs.

e. There are no SHGC requirements in the Marine Zone.

f. Basement wall insulation is not required in warm-humid locations as defined by Figure R301.1 and Table R301.1.

g. Or insulation sufficient to fill the framing cavity, R-19 minimum.

h. First value is cavity insulation, second is continuous insulation or insulated siding, so 8/13-5 means R-13 cavity insulation plus R-5 continuous insulation or insulated siding. If structural sheathing covers 40 percent or less of the exterior, continuous insulation R-value shall be permitted to be reduced by no more than R-3 in the locations where structural sheathing is used - to maintain a consistent total sheathing thickness.

i. The second R-value applies when more than half the insulation is on the interior of the mass wall.

TABLE R402.1.3 EQUIVALENT U-FACTORS

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR (b)	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL R-VALUE (c)
1	0.50	0.75	0.035	0.082	0.191	0.064	0.360	0.471
2	0.40	0.65	0.030	0.082	0.165	0.064	0.360	0.471
3	0.35	0.55	0.030	0.051	0.098	0.041	0.091 (c)	0.136
4 EXCEPT MARINE	0.35	0.55	0.026	0.051	0.098	0.041	0.059	0.065
5 AND MARINE 4	0.32	0.55	0.026	0.051	0.082	0.033	0.050	0.055
6	0.32	0.55	0.026	0.048	0.060	0.033	0.050	0.055
7 & 8	0.32	0.55	0.026	0.048	0.051	0.028	0.050	0.055

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.

b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.11 in Climate Zone 1, 0.14 in Climate Zone 2, 0.12 in Climate Zone 3, 0.081 in Climate Zone 4 except Marine, 0.065 in Climate Zone 5 and Marine 4, and 0.051 in Climate Zones 6 through 8.

c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1.

WALL BRACING/IECC NOTES AND CHARTS

CROSEN ADDITION

ISSUE	DATE	DESCRIPTION
07/28/18		FOR FRAMING SET

SHEET NO.

A=8B

JB HOME DESIGN, LLC

9416 CONCORD COURT

BALTIMORE, MARYLAND 21234

OFFICE (410) 594-4631

FAX (410) 665-4064

EMAIL: JON.BROOKES@JBD.COM



home design

