

P-15-0102
Bldg.

CITY OF NAPOLEON GENERAL PERMIT APPLICATION

THIS APPLICATION IS FOR RESIDENTAL CONSTRUCTION INCLUDING BUILDING, ELECTRICAL, PLUMBING, MECHANICAL & REMODELING

DATE 3-30-15 JOB LOCATION 815 LYNNE AVE.
 OWNER Jeff and Lynda DeTray TELEPHONE # 419-599-0334
 OWNER ADDRESS 815 LYNNE AVE.
 CONTRACTOR WESSON BUILDERS CELL PHONE # 419-460-4040
 DESCRIPTION OF WORK TO BE PERFORMED Addition w/Ext. of BATH + Bedroom
 ESTIMATED COMPLETION DATE 12-30-15 ESTIMATED COST \$108K

Affected Floor Area (AFA): In existing structures, it is the area affected by the improvement, i.e. a new wall dividing a room (the AFA would be only the room and not all the rooms).

DESCRIPTION	FEE	TOTAL COST
BUILDING:		
<i>Decks</i>	\$25.00	\$
<i>Addition & Alterations</i> Square foot in (AFA) <u>345</u> x \$0.05 = \$ <u>17.25</u> +	\$25.00 =	\$ <u>42.25</u>
<i>Garage and Shed over 200 SF (Detached)</i>	\$25.00	\$
<i>Siding and/or Roofing</i>	\$25.00	\$
<i>Windows/Doors</i>	\$25.00	\$
ELECTRICAL:		
<i>Electrical</i> Circuits in (AFA) _____ x \$3.00/Circuit = \$ _____ +	\$25.00 =	\$
<i>Electrical Service Upgrade</i>	\$25.00	\$
MECHANICAL:		
<i>Water Heater</i>	\$25.00	\$
<i>Furnace and/or AC Replacement</i>	\$25.00	\$
PLUMBING:		
<i>Plumbing</i> Traps in (AFA) _____ x \$3.00/Trap = \$ _____ +	\$25.00 =	\$
TOTAL plus Ohio Board of Building Standards Fee 1%		\$ <u>.42</u>

TOTAL FEE: \$ 42.67

I FULLY UNDERSTAND THAT NO EXCAVATION, CONSTRUCTION OR STRUCTURAL ALTERATION, ELECTRICAL OR MECHANICAL INSTALLATION OR ALTERATION OF ANY BUILDING STRUCTURE, SIGN, OR PART THEREOF AND NO USE OF THE ABOVE SHALL BE UNDERTAKEN OR PERFORMED UNTIL THE PERMIT APPLIED FOR HEREIN HAS BEEN APPROVED AND ISSUED BY THE CITY OF NAPOLEON BUILDING/ZONING DEPARTMENT.

I hereby certify that I am the Owner of the named property, or that the proposed work is authorized by the Owner of record and that I have been authorized by the Owner to make this application as his/her authorized agent and I agree to conform to all applicable laws of the jurisdiction. In addition, if a permit for Work described in this application is issued, I certify that the code official or the code official's authorized representative shall have the authority to enter areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit.

I HEREBY ACKNOWLEDGE THAT I HAVE READ AND FULLY UNDERSTAND THE ABOVE LISTED INSTRUCTIONS.

SIGNATURE OF APPLICANT: [Signature] DATE: 3-31-15

PRINT NAME: DAN NEUBERT

PERMIT #	BATCH # <u>31946</u>	CHECK # <u>3789</u>	DATE <u>3/31/15</u>
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REScheck Software Version 4.6.0 Compliance Certificate

Project DE-TRAY

Energy Code: **2009 IECC**
 Location: **Napoleon, Ohio**
 Construction Type: **Single-family**
 Project Type: **Addition**
 Climate Zone: **5 (6515 HDD)**
 Permit Date:
 Permit Number:

Construction Site:
 815 LYNNE
 NAPOLEON, OH 43545

Owner/Agent:

Designer/Contractor:
 BARRY HORNBACHER
 WESSON BUILDERS
 1630 LASKEY RD
 TOLEDO, OH 43612
 419-476-2259
 dan@wessonbuilders.com

Compliance: Passes using UA trade-off

Compliance: **4.4% Better Than Code** Maximum UA: **68** Your UA: **65**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules. It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Glazing or Door U-Factor	UA
Wall 1: Wood Frame, 16" o.c.	304	15.0	3.0	0.061	16
Window 1: Vinyl Frame:Double Pane with Low-E	15			0.290	4
Window 2: Vinyl Frame:Double Pane with Low-E	6			0.270	2
Window 3: Vinyl Frame:Double Pane with Low-E	6			0.270	2
Window 4: Vinyl Frame:Double Pane with Low-E	6			0.270	2
Door 1: Glass	8			0.270	2
Ceiling 1: Flat Ceiling or Scissor Truss	345	38.0	0.0	0.030	10
Floor 1: Slab-On-Grade:Unheated Insulation depth: 2.8'	38		10.0	0.711	27

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2009 IECC requirements in REScheck Version 4.6.0 and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

Project Manager: Dan Neubert Signature: [Signature] Date: 3/26/15
 Name - Title: _____ Signature: _____ Date: _____

Project Notes:
 CONTACT: DAN NEUBERT 419-460-4040

SCANNED






REScheck Software Version 4.6.0 Inspection Checklist

Energy Code: 2009 IECC






Requirements: 0.0% were addressed directly in the REScheck software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.2 [PR1] ¹ 	Construction drawings and documentation demonstrate energy code compliance for the building envelope.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
103.2, 403.7 [PR3] ¹ 	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the commercial code.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.6 [PR2] ² 	Heating and cooling equipment is sized per ACCA Manual S based on loads per ACCA Manual J or other approved methods.	Heating: Btu/hr _____ Cooling: Btu/hr _____	Heating: Btu/hr _____ Cooling: Btu/hr _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1 [FO1] ¹ 	Slab edge insulation R-value.	R-____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	R-____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<i>See the Envelope Assemblies table for values.</i>
303.2, 402.2.8 [FO2] ¹ 	Slab edge insulation installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.1.1 [FO3] ¹ 	Slab edge insulation depth/length.	____ ft	____ ft	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<i>See the Envelope Assemblies table for values.</i>
303.2.1 [FO11] ² 	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.8 [FO12] ² 	Snow- and ice-melting system controls installed.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	




Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.1, 402.3.3, 402.5 [FR2] ¹ ☺	Glazing U-factor (area-weighted average).	U-____	U-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.3 [FR4] ¹ ☺	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.4 [FR20] ¹ ☺	Fenestration that is not site built is listed and labeled as meeting AAMA/WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.5 [FR16] ² ☺	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.2.1 [FR12] ¹ ☺	Supply ducts in attics are insulated to ≥R-8. All other ducts in unconditioned spaces or outside the building envelope are insulated to ≥R-6.	R-____ R-____	R-____ R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.2.2 [FR13] ¹ ☺	All joints and seams of air ducts, air handlers, filter boxes, and building cavities used as return ducts are sealed.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.2.3 [FR15] ³ ☺	Building cavities are not used for supply ducts.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3 [FR17] ² ☺	HVAC piping conveying fluids above 105 °F or chilled fluids below 55 °F are insulated to ≥R-3.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.4 [FR18] ² ☺	Circulating service hot water pipes are insulated to R-2.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.5 [FR19] ² ☺	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	












Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13] ² 	All installed insulation is labeled or the installed R-values provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.1.1, 402.2.4, 402.2.5 [IN3] ¹ 	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies.	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Mass <input type="checkbox"/> Steel	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Mass <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<i>See the Envelope Assemblies table for values.</i>
303.2 [IN4] ¹ 	Wall insulation is installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2 [FI1] ¹ 	Ceiling insulation R-value. Where > R-30 is required, R-30 can be used if insulation is not compressed at eaves. R-30 may be used for 500 ft ² or 20% (whichever is less) where sufficient space is not available.	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.1.1, 303.2 [FI2] ¹ 	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft ² .			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.2.3 [FI3] ¹ 	Attic access hatch and door insulation ≥ R-value of the adjacent assembly.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.2, 402.4.2.1 [FI17] ¹ 	Building envelope tightness verified by blower door test result of <7 ACH at 50 Pa. This requirement may instead be met via visual inspection, in which case verification may need to occur during Insulation Inspection.	ACH 50 = ____	ACH 50 = ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.2.2 [FI4] ¹ 	Post construction duct tightness test result of ≤8 cfm to outdoors, or ≤12 cfm across systems. Or, rough-in test result of ≤6 cfm across systems or ≤4 cfm without air handler. Rough-in test verification may need to occur during Framing Inspection.	____ cfm	____ cfm	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.1.1 [FI9] ² 	Programmable thermostats installed on forced air furnaces.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.1.2 [FI10] ² 	Heat pump thermostat installed on heat pumps.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.4 [FI11] ² 	Circulating service hot water systems have automatic or accessible manual controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
404.1 [FI6] ¹ 	50% of lamps in permanent fixtures are high efficacy lamps.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
401.3 [FI7] ² 	Compliance certificate posted.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
303.3 [FI18] ³ 	Manufacturer manuals for mechanical and water heating equipment have been provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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2009 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
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Above-Grade Wall	18.00
Below-Grade Wall	0.00
Floor	10.00
Ceiling / Roof	38.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
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Window	0.29	
Door	0.27	

Heating & Cooling Equipment	Efficiency
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Heating System: _____	_____
Cooling System: _____	_____
Water Heater: _____	_____

Name: _____ **Date:** _____

Comments



Double 1-3/4" x 11-1/4" VERSA-LAM® 2.0 3100 SP

Roof Beam\RB01

Dry | 2 spans | No cantilevers | 0/12 slope

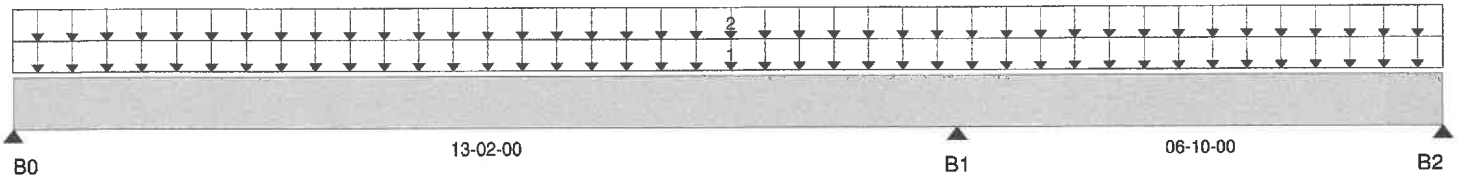
Friday, February 20, 2015

BC CALC® Design Report



Build 3272
 Job Name:
 Address:
 City, State, Zip: ,
 Customer:
 Code reports: ESR-1040

File Name: BC CALC Project
 Description: Designs\RB01
 Specifier:
 Designer:
 Company:
 Misc:



Total of Horizontal Design Spans = 20-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0		1,612 / 0	1,966 / 0		
B1		4,103 / 0	4,935 / 0		
B2		313 / 0	754 / 190		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	100%	90%	115%	160%	125%	Trib.
1	Standard Load	Unf. Area (lb/ft ²)	L	00-00-00	20-00-00		20	25			07-03-00
2	Standard Load	Unf. Area (lb/ft ²)	L	00-00-00	20-00-00		20	25			07-03-00

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	9,641 ft-lbs	43.6%	115%	7	05-03-13
Neg. Moment	-10,795 ft-lbs	48.9%	115%	9	13-02-00
End Shear	2,907 lbs	33.8%	115%	7	01-00-02
Cont. Shear	4,471 lbs	52%	115%	9	12-01-00
Total Load Defl.	L/511 (0.309")	35.2%	n/a	7	05-11-03
Live Load Defl.	L/917 (0.172")	26.2%	n/a	10	05-11-03
Total Neg. Defl.	L/999 (-0.038")	n/a	n/a	7	15-08-02
Max Defl.	0.309"	30.9%	n/a	7	05-11-03
Span / Depth	14	n/a	n/a	0	00-00-00

Cautions

For roof members with slope (1/4)/12 or less final design must ensure that ponding instability will not occur.

For roof members with slope (1/2)/12 or less final design must account for Rain-on-Snow surcharge load.

Notes

- Design meets Code minimum (L/180) Total load deflection criteria.
- Design meets Code minimum (L/240) Live load deflection criteria.
- Design meets arbitrary (1") Maximum total load deflection criteria.
- Minimum bearing length for B0 is 1-1/2".
- Minimum bearing length for B1 is 3-7/16".
- Minimum bearing length for B2 is 1-1/2".
- Entered/Displayed Horizontal Span Length(s) = Clear Span + 1/2 min. end bearing + 1/2 intermediate bearing
- Calculations assume Member is Fully Braced.
- Design based on Dry Service Condition.
- Deflections less than 1/8" were ignored in the results.

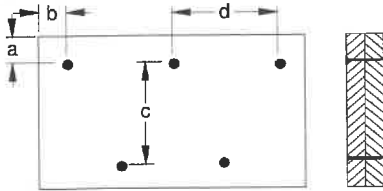
BC CALC® Design Report



Build 3272
 Job Name:
 Address:
 City, State, Zip: ,
 Customer:
 Code reports: ESR-1040

File Name: BC CALC Project
 Description: Designs\RB01
 Specifier:
 Designer:
 Company:
 Misc:

Connection Diagram



a minimum = 2" c = 7-1/4"
 b minimum = 3" d = 24"

Member has no side loads.
 Connectors are: 16d Sinker Nails

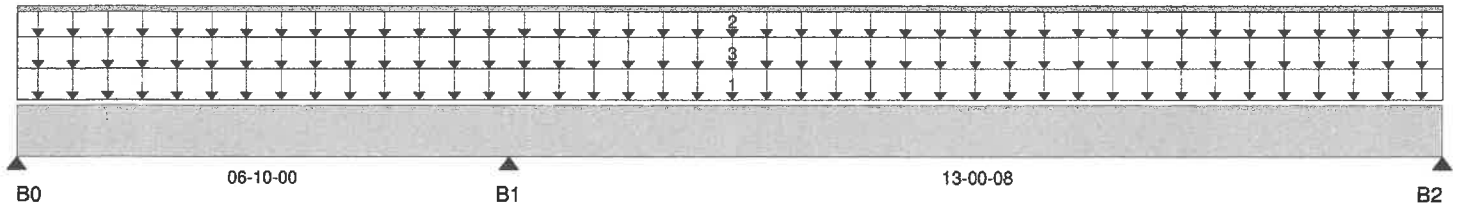
Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation. \n\nBC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

BC CALC® Design Report 

Build 4064
 Job Name: Wesson - Detray
 Address:
 City, State, Zip: ,
 Customer:
 Code reports: ESR-1040

File Name: BC CALC Project
 Description: Designs\RB07
 Specifier:
 Designer:
 Company:
 Misc:



Total of Horizontal Design Spans = 19-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0		470 / 0	1,077 / 246		
B1		5,862 / 0	6,917 / 0		
B2		2,301 / 0	2,754 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	100%	90%	115%	160%	125%	Trib.
1	Standard Load	Unf. Area (lb/ft ²)	L	00-00-00	19-10-08		10	20			07-06-00
2		Unf. Lin. (lb/ft)	L	00-00-00	19-10-08		60				n/a
3		Unf. Area (lb/ft ²)	L	00-00-00	19-10-08		20	25			14-06-00

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	13,492 ft-lbs	88.4%	115%	8	14-05-09
Neg. Moment	-15,110 ft-lbs	99%	115%	9	06-10-00
End Shear	4,256 lbs	60.2%	115%	8	07-09-00
Cont. Shear	6,465 lbs	91.4%	115%	9	07-09-00
Total Load Defl.	L/205 (0.763")	87.8%	n/a	8	14-00-01
Live Load Defl.	L/371 (0.422")	64.7%	n/a	11	14-00-01
Total Neg. Defl.	L/999 (-0.094")	n/a	n/a	8	04-03-14
Max Defl.	0.763"	76.3%	n/a	8	14-00-01
Span / Depth	16.9	n/a	n/a	0	00-00-00

Cautions

For roof members with slope (1/4)/12 or less final design must ensure that ponding instability will not occur.
 For roof members with slope (1/2)/12 or less final design must account for Rain-on-Snow surcharge load.

Notes

BC CALC® Design Report



Build 4064
 Job Name: Wesson - Detray
 Address:
 City, State, Zip: ,
 Customer:
 Code reports: ESR-1040

File Name: BC CALC Project
 Description: Designs\RB07
 Specifier:
 Designer:
 Company:
 Misc:

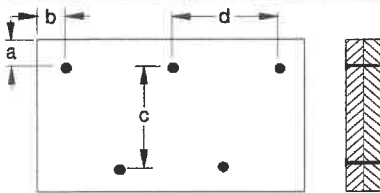
Design meets Code minimum (L/180) Total load deflection criteria.
 Design meets Code minimum (L/240) Live load deflection criteria.
 Design meets arbitrary (1") Maximum total load deflection criteria.
 Minimum bearing length for B0 is 1-1/2".
 Minimum bearing length for B1 is 4-7/8".
 Minimum bearing length for B2 is 1-15/16".
 Entered/Displayed Horizontal Span Length(s) = Clear Span + 1/2 min. end bearing + 1/2 intermediate bearing
 Calculations assume Member is Fully Braced.
 Design based on Dry Service Condition.
 Deflections less than 1/8" were ignored in the results.

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCi®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Connection Diagram



a minimum = 2" c = 5-1/4"
 b minimum = 3" d = 24"

Member has no side loads.
 Connectors are: 16d Sinker Nails

LUS/HUS/HHUS/HGUS Double Shear Joist Hangers



This product is preferable to similar connectors regardless of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

See Hanger tables on pages 77-82. See Hanger Options on pages 233-243 for hanger modifications, which may result in reduced loads.

All hangers in this series have double shear nailing. This innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation, and the use of standard nails for all connections. (Do not bend or remove tabs.)

MATERIAL: See tables, pages 77-82.

FINISH: Galvanized. Some products available in stainless steel or ZMAX[®] coating; see Corrosion Information, pages 13-15.

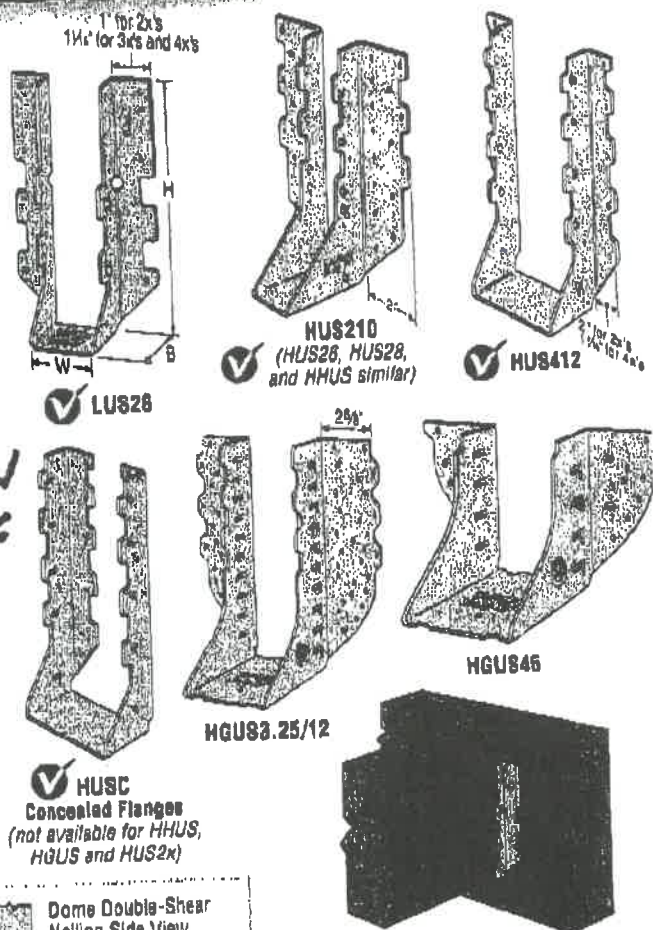
INSTALLATION: Use all specified fasteners. See General Notes.

- Nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.
- 16d sinkers (0.148" dia. x 3 1/4" long) may be used where 10d commons are specified with no reduction in load. Where 16d commons are specified, 10d commons or 16d sinkers (0.148" dia. x 3 1/4" long) may be used at 0.85 of the table load.
- With 3x carrying members, use 16d x 2 1/2" nails into the header and 16d commons into the joist with no load reduction.
- With 2x carrying members, use 10d x 1 1/2" nails into the header and 10d commons into the joist, reduce the load to 0.64 of the table value.
- Use stainless-steel (SS) nails with stainless-steel (SS) hangers.

OPTIONS: • LUS hangers cannot be modified.

- HUS hangers available with the header flanges turned in for 2-2x (3 1/4") and 4x only, with no load reduction. See the HUSC Concealed Flange illustration.

Solid Sawn Joist Hangers



AH DAN

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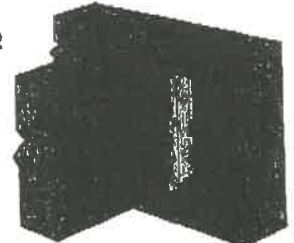
Double-Shear Nailing Top View



Double-Shear Nailing Side View Do not bend tab



Dome Double-Shear Nailing Side View (available on some models) U.S. Patent 5,809,980



Typical LUS26 installation use 0.148x3" (10d common) or 0.148x3 1/4" (16d sinker) nail

FACE MOUNT HANGERS — SOLID SAWN LUMBER (DF/SP)

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

These products are approved for installation with the Strong-Drive[®] SD Connector screw. See page 27 for more information.

Joist Size	Model No.	Dimensions (in.)				Min/Max	Fasteners		DF/SP Allowable Loads				Installed Cost Index (ICI)	Code Ref.
		G ₁	W	H	B		Header	Joist	Value (180)	Value (100)	Value (145)	Value (125)		
SAWN LUMBER SIZES														
2x4	LUS24	20	1 1/2	3 3/8	1 1/2	—	4-16d	2-10d x 1 1/2	265	355	635	685	Lowest	17, 127, F6, L5, L17
	HUS24	18	1 1/2	3 3/8	1 1/2	—	4-10d	2-10d	285	375	655	705	+3%	17, F6, L17
	HU24	16	1 1/2	3 3/8	1 1/2	—	4-16d	2-10d x 1 1/2	295	385	670	720	+295%	
	HUS24	14	1 1/2	3 3/8	2 1/4	—	4-16d	2-16d	440	600	910	985	Lowest	17, 127, F6, L5, L17
DBL 2x4	LUS24-2	18	3 1/2	3 3/8	2	—	4-16d	2-10d	370	575	655	705	+33%	17, F6, L17
	HU24-2	16	3 1/2	3	2	—	4-16d	2-10d	380	380	595	720	+240%	
	HUS24-2/HUSC24-2	14	3 1/2	3 3/8	2 1/4	—	4-16d	2-10d	385	385	590	1070	Lowest	17, 127, F6, L5, L17
2x6	LUS26	20	1 1/2	4 1/8	1 1/2	—	4-10d	4-10d x 1 1/2	365	485	950	1000	+8%	
	HUS26	18	1 1/2	4 1/8	1 1/2	—	8-16d	4-10d x 1 1/2	255	365	680	1065	+3%	17, F6, L17
	HU26	16	1 1/2	4 1/8	1 1/2	—	6-16d	4-10d x 1 1/2	235	345	605	1040	+60%	
	HUS26	14	1 1/2	4 1/8	2 1/4	—	4-16d	2-10d x 1 1/2	335	335	595	780	+27%	17, 127, F6, L5, L17
DBL 2x6	LUS26-2	18	3 1/2	4 1/8	2	—	4-16d	4-16d	1165	1030	1180	1280	Lowest	17, 127, F6, L5, L17
	HUS26-2	16	3 1/2	5	2	—	8-16d	4-10d	740	1150	1305	1410	+65%	17, F6, L17
	HU26-2	14	3 1/2	5	2	—	8-16d	4-10d	1235	1065	1210	1305	+172%	
	HUS26-2/HUSC26-2	14	3 1/2	5 3/8	2 1/4	—	4-16d	4-16d	1235	1180	1345	1445	+233%	17, 127, F6, L5, L17
	HUS26-2/HUSC26-2	14	3 1/2	5 3/8	2 1/4	Min	8-16d	4-10d	780	1190	1345	2165	+254%	17, F6, L17
	HUS26-2/HUSC26-2	14	3 1/2	5 3/8	2 1/4	Max	12-16d	6-10d	1135	1785	2015	2165		

CODES: See page xx for Code Reference Key, etc.