



TRACKING # 23391

PFS Corporation

Assurance you can build on®

An Employee-Owned Company

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310.559.7287

Midwest
Cottage Grove, WI
608.839.1013

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Raleigh, NC
919.845.8450

Sales Office
Mentone, AL
256.634.4071

January 15, 2008

Mr. Mike Ashworth
Planning Manager, State of Florida
Manufactured Buildings Program
Building Codes and Standards
Florida Dept. of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

RE: Nationwide Homes
Arabi, GA
Approvals: Model Hickory II 91670

Dear Mr. Ashworth:

Enclosed please find one set of documents for the above-noted models.

PFS Corporation hereby certifies that it has examined the building plan and other documents submitted by the manufacturer for certification and found them to be in compliance with the following codes:

Rule 9B-72 FAC for Product Approval
2004 FBC, Residential w/2005 & 2006 & 2007 Supplements
2004 Florida Mechanical Code w/2005 & 2006 & 2007 Supplements
2004 Florida Plumbing Code w/2005 & 2006 & 2007 Supplements
2005 National Electric Code

If you have any questions concerning this submission, please feel free to contact this office at any time. Additionally, a hard copy of these plans with the required engineer's raised seal is on file at PFS.

Approved By:

Virgil (James) Shrock, SMP #31
Staff Engineer

FL-pb

Enclosures: As Stated

cc: John Self (Nationwide)



26562

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

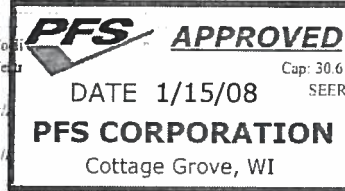
Florida Department of Community Affairs
Residential Whole Building Performance Method A

Project Name: HICKORY II #91670
Address:
City, State: , FL 32025-
Owner: KENT HARRISS CONSTRUCTION
Climate Zone: North

Builder: KENT HARRISS CONSTRUCT
Permitting Office:
Permit Number:
Jurisdiction Number: 221000

1. New construction or existing New
2. Single family or multi-family Single family
3. Number of units, if multi-family 1
4. Number of Bedrooms 3
5. Is this a worst case? No
6. Conditioned floor area (ft²) 1518 ft²
7. Glass type¹ and area: (Label reqd. by 13-104.4.5 if not default)
a. U-factor: Description Area
(or Single or Double DEFAULT) 7a. (Dble. U=0.4) 55.2 ft²
b. SHGC
(or Clear or Tint DEFAULT) 7b. (SHGC=0.33) 123.7 ft²
8. Floor types
a. Raised Wood, Post or Pier R=19.0, 1518.0 ft²
b. N/A
c. N/A
9. Wall types
a. Frame, Wood, Exterior R=13.0, 1416.0 ft²
b. N/A
c. N/A
d. N/A
e. N/A
10. Ceiling types
a. Under Attic R=30.0, 1233.0 ft²
b. Under Attic R=19.0, 395.0 ft²
c. N/A
11. Ducts
a. Sup. Unc. Ret. Con. AH: Interior Sup. R=6.0, 83.0 ft
b. N/A

12. Cooling system
a. Central Air Conditioning Cap: 30.6 kBtu/hr SEER: 13.00
b. N/A
c. N/A
13. Heating systems
a. Electric Heat Pump Cap: 30.6 kBtu/hr HSPF: 9.70
b. N/A
c. N/A
14. Hot water systems
a. Electric Resistance Cap: 50.0 gallons EF: 0.90
b. N/A
c. Conservation credits
(HR-Heat recovery, Solar
DHP-Dedicated heat pump)
15. HVAC credits
(CF-Ceiling fan, CV-Cross ventilation,
HF-Whole house fan,
PT-Programmable Thermostat,
MZ-C-Multizone cooling,
MZ-H-Multizone heating)



Glass/Floor Area: 0.10

Total as-built points: 19434

Total base points: 22593

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: [Signature]DATE: 12/21/07

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: [Signature]DATE: 12/21/07

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____



¹ Predominant glass type. For actual glass type and areas, see Summer & Winter Glass output on pages 2&4.
EnergyGauge® (Version: FLRCSB v4.5)

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1/15/08
APPLIES TO
P. 12-19

SUMMER CALCULATIONS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL, 32025-

PERMIT #.

BASE				AS-BUILT								
GLASS TYPES												
.18 X Conditioned X BSPM = Points				Overhang								
Floor Area				Type/SC	Ornt	Len	Hgt	Area	X	SPM	X	SOF = Points
.18	1518.0	18.59	5080.0	1 Double, U=0.38, SHGC= 3	N	1.0	10.8	6.4	9.13	0.99	57.0	
 DATE 1/15/08 PFS CORPORATION Cottage Grove, WI				2 Double, U=0.38, SHGC= 3	N	1.0	6.2	13.8	9.13	0.98	123.0	
				3 Double, U=0.38, SHGC= 3	N	1.0	4.6	5.5	9.13	0.95	47.0	
				4 Double, U=0.38, SHGC=0	W	1.0	8.3	6.4	18.70	0.99	118.0	
				5 Double, U=0.38, SHGC=0	E	1.0	7.8	3.2	20.44	0.99	65.0	
				6 Double, U=0.38, SHGC=0	S	1.0	6.2	27.6	17.37	0.95	455.0	
				7 Double, U=0.38, SHGC=0	S	5.0	6.2	13.8	17.37	0.55	132.0	
				8 Double, U=0.38, SHGC=0	S	1.0	14.2	55.2	17.37	0.99	953.0	
				9 Double, U=0.38, SHGC=0	S	1.0	6.3	17.4	17.37	0.95	267.0	
								As-Built Total: 149.3 2237.0				
WALL TYPES Area X BSPM = Points				Type R-Value Area X SPM = Points								
Adjacent	0.0	0.00	0.0	1. Frame, Wood, Exterior		13.0	1416.0	1.50	2124.0			
Exterior	1416.0	1.70	2407.2									
Base Total: 1416.0 2407.2				As-Built Total: 1416.0 2124.0								
DOOR TYPES Area X BSPM = Points				Type Area X SPM = Points								
Adjacent	0.0	0.00	0.0	1 Exterior Insulated		20.0	4.10	82.0				
Exterior	40.0	6.10	244.0	2 Exterior Insulated		20.0	4.10	82.0				
Base Total: 40.0 244.0				As-Built Total: 40.0 164.0								
CEILING TYPES Area X BSPM = Points				Type R-Value Area X SPM X SCM = Points								
Under Attic	1512.0	1.73	2615.8	1. Under Attic		30.0	1233.0	1.73 X 1.00	2133.1			
				2. Under Attic		19.0	395.0	2.34 X 1.00	924.3			
Base Total: 1512.0 2615.8				As-Built Total: 1628.0 3057.4								
FLOOR TYPES Area X BSPM = Points				Type R-Value Area X SPM = Points								
Slab	0.0(p)	0.0	0.0	1. Raised Wood, Post or Pier		19.0	1518.0	0.77	1162.8			
Raised	1518.0	-3.99	-6056.8									
Base Total: -6056.8				As-Built Total: 1518.0 1162.8								
INFILTRATION Area X BSPM = Points				Area X SPM = Points								
1518.0 10.21 15498.8				1518.0 10.21 15498.8								

#91670

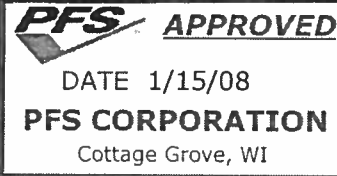
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SUMMER CALCULATIONS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL, 32025-	PERMIT #
-------------------------	----------

BASE			AS-BUILT						
Summer Base Points: 19788.9			Summer As-Built Points: 24244.0						
Total Summer Points	X System Multiplier	= Cooling Points	Total Component (System - Points)	X Cap Ratio	X Duct Multiplier (DM x DSM x AHU)	X System Multiplier	X Credit Multiplier	= Cooling Points	
19788.9	0.3250	6431.4	24244.0	1.00	1.128	0.260	1.000	7112.3	



#91670

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WINTER CALCULATIONS**Residential Whole Building Performance Method A - Details**

ADDRESS: , , FL, 32025-

PERMIT #.

BASE				AS-BUILT								
GLASS TYPES												
.18 X Conditioned X BWPM = Points				Overhang								
Floor Area				Type/SC	Ornt	Len	Hgt	Area	X	WPM	X	WOF = Points
.18	1518.0	20.17	5511.0	1. Double, U=0.38, SHGC=.3	N	1.0	10.8	6.4	12.24	1.00		77.0
				2. Double, U=0.38, SHGC=.3	N	1.0	6.2	13.8	12.24	1.00		169.0
				3. Double, U=0.38, SHGC=.3	N	1.0	4.6	5.5	12.24	1.00		57.0
				4. Double, U=0.38, SHGC=0.	W	1.0	8.3	6.4	10.31	1.00		55.0
				5. Double, U=0.38, SHGC=0.	E	1.0	7.8	3.2	9.40	1.01		30.0
				6. Double, U=0.38, SHGC=0.	S	1.0	5.2	27.6	6.58	1.02		185.0
				7. Double, U=0.38, SHGC=0.	S	5.0	6.2	13.8	6.58	2.40		218.0
				8. Double, U=0.38, SHGC=0.	S	1.0	14.2	55.2	6.58	1.00		352.0
				9. Double, U=0.38, SHGC=0.	S	1.0	6.3	17.4	6.58	1.02		116.0
				As-Built Total: 149.3 1289.0								
WALL TYPES												
Area X BWPM = Points				Type	R-Value			Area X WPM		= Points		
Adjacent	0.0	0.00	0.0	1. Frame, Wood, Exterior	13.0			1416.0	3.40	4814.4		
Exterior	1416.0	3.70	5239.2									
Base Total: 1416.0 5239.2				As-Built Total: 1416.0 4814.4								
DOOR TYPES												
Area X BWPM = Points				Type	R-Value			Area X WPM		= Points		
Adjacent	0.0	0.00	0.0	1. Exterior Insulated				20.0	8.40	168.0		
Exterior	40.0	12.30	492.0	2. Exterior Insulated				20.0	8.40	168.0		
Base Total: 40.0 492.0				As-Built Total: 40.0 336.0								
CEILING TYPES												
Area X BWPM = Points				Type	R-Value			Area X WPM X WCM		= Points		
Under Attic	1512.0	2.05	3099.6	1. Under Attic	30.0			1233.0	2.05 X 1.00	2527.6		
				2. Under Attic	19.0			395.0	2.70 X 1.00	1066.5		
Base Total: 1512.0 3099.6				As-Built Total: 1628.0 3594.1								
FLOOR TYPES												
Area X BWPM = Points				Type	R-Value			Area X WPM		= Points		
Slab	0.0(p)	0.0	0.0	1. Raised Wood, Post or Pier	19.0			1518.0	0.88	1329.8		
Raised	1518.0	0.96	1457.3									
Base Total: 1457.3				As-Built Total: 1518.0 1329.8								
INFILTRATION												
Area X BWPM = Points							Area X WPM		= Points			
1518.0 -0.59 -895.6							1518.0 -0.59		-895.6			

WINTER CALCULATIONS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL, 32025-

PERMIT #:

BASE			AS-BUILT					
Winter Base Points: 14903.5			Winter As-Built Points: 10467.7					
Total Winter Points	X System Multiplier	= Heating Points	Total Component (System - Points)	X Cap Ratio	X Duct Multiplier (DM x DSM x AHU)	X System Multiplier	X Credit Multiplier	= Heating Points
14903.5	0.5540	8256.5	10467.7	1.00	1.152	0.352	1.000	4240.7

PFS APPROVED

DATE 1/15/08

PFS CORPORATION

Cottage Grove, WI

#91670

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WATER HEATING & CODE COMPLIANCE STATUS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL, 32025-

PERMIT #:

BASE				AS-BUILT					
WATER HEATING				Tank	EF	Number of	X	Tank X	Multiplier X Credit = Total
Number of	X	Multiplier	= Total	Volume		Bedrooms		Ratio	Multiplier
3		2635.00	7905.0	50.0	0.90	3		1.00	2693.56
									1.00
									8080.7
				As-Built Total:					8080.7

CODE COMPLIANCE STATUS									
BASE					AS-BUILT				
Cooling	+	Heating	+	Hot Water	=	Total	Cooling	+	Heating
Points		Points		Points		Points	Points		Points
6431		8257		7905	=	22593	7112		4241
									8081
									19434

PASS**PFS APPROVED**

DATE 1/15/08

PFS CORPORATION

Cottage Grove, WI



Code Compliance Checklist

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL, 32025-

PERMIT #:

6A-21 INFILTRATION REDUCTION COMPLIANCE CHECKLIST

COMPONENTS	SECTION	REQUIREMENTS FOR EACH PRACTICE	CHECK
Exterior Windows & Doors	606.1 ABC.1.1	Maximum: 3 cfm/sq.ft. window area; 5 cfm/sq ft. door area	
Exterior & Adjacent Walls	606.1 ABC.1.2.1	Caulk, gasket, weatherstrip or seal between windows/doors & frames surrounding wall, foundation & wall sole or sill plate; joints between exterior wall panels at corners, utility penetrations, between wall panels & top/bottom plates, between walls and floor. EXCEPTION: Frame walls where a continuous infiltration barrier is installed that extends from, and is sealed to, the foundation to the top plate	
Floors	606.1 ABC.1.2.2	Penetrations/openings >1/8" sealed unless backed by truss or joint members. EXCEPTION: Frame floors where a continuous infiltration barrier is installed that is sealed to the perimeter, penetrations and seams	
Ceilings	606.1 ABC.1.2.3	Between walls & ceilings; penetrations of ceiling plane of top floor, around shafts, chases, soffits, chimneys, cabinets sealed to continuous air barrier; gaps in gyp board & top plate, attic access. EXCEPTION: Frame ceilings where a continuous infiltration barrier is installed that is sealed at the perimeter, at penetrations and seams	
Recessed Lighting Fixtures	606.1 ABC.1.2.4	Type IC rated with no penetrations, sealed, or Type IC or non-IC rated, installed inside a sealed box with 1/2" clearance & 3" from insulation; or Type IC rated with < 2.0 cfm from conditioned space, tested.	
Multi-story Houses	606.1 ABC.1.2.5	Air barrier on perimeter of floor cavity between floors.	
Additional Infiltration reqts	606.1 ABC.1.3	Exhaust fans vented to outdoors, dampers; combustion space heaters comply with NFPA, have combustion air.	

6A-22 OTHER PRESCRIPTIVE MEASURES (must be met or exceeded by all residences.)

COMPONENTS	SECTION	REQUIREMENTS	CHECK
Water Heaters	612.1	Comply with efficiency requirements in Table 612.1 ABC.3.2. Switch or clearly marked circuit breaker (electric) or cutoff (gas) must be provided. External or built-in heat trap required.	
Swimming Pools & Spas	612.1	Spas & heated pools must have covers (except solar heated). Non-commercial pools must have a pump timer. Gas spa & pool heaters must have a minimum thermal efficiency of 78%.	
Shower heads	612.1	Water flow must be restricted to no more than 2.5 gallons per minute at 80 PSIG.	
Air Distribution Systems	610.1	All ducts, fittings, mechanical equipment and plenum chambers shall be mechanically attached, sealed, insulated, and installed in accordance with the criteria of Section 610. Ducts in unconditioned attics, R-6 min. insulation.	
HVAC Controls	607.1	Separate readily accessible manual or automatic thermostat for each system.	
Insulation	604.1, 602.1	Ceilings-Min R-19. Common walls-Frame R-11 or CBS R-3 both sides. Common ceiling & floors R-11.	

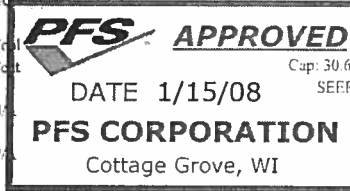
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ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE SCORE* = 87.2

The higher the score, the more efficient the home.

KENT HARRISS CONSTRUCTION, FL 32025



- | | | | |
|---|----------------------------|--|--------------------|
| 1. New construction or existing | New | 12. Cooling systems | |
| 2. Single family or multi-family | Single family | a. Central Air Conditioning | Cap: 30.6 Btu/hr |
| 3. Number of units, if multi-family | 1 | b. N/A | SEER: 13.00 |
| 4. Number of Bedrooms | 3 | c. N/A | |
| 5. Is this a worst case? | No | | |
| 6. Conditioned floor area (ft²) | 1518 ft² | 13. Heating systems | |
| 7. Glass type ¹ and area (Label req'd. by 13-104.4.5 if not default) | | a. Electric Heat Pump | Cap: 30.6 k Btu/hr |
| a. U-factor: Description Area | 7a. (Dble. U=0.4) 55.2 ft² | b. N/A | HSPF: 9.70 |
| b. SHGC: | 7b. (SHGC=0.33) 123.7 ft² | c. N/A | |
| 8. Floor types | | 14. Hot water systems | |
| a. Raised Wood, Post or Pier | R=19.0, 1518.0 ft² | a. Electric Resistance | Cap: 50.0 gallons |
| b. N/A | | b. N/A | EF: 0.90 |
| c. N/A | | c. Conservation credits | |
| 9. Wall types | | (HR-Heat recovery, Solar | |
| a. Frame, Wood, Exterior | R=13.0, 1416.0 ft² | DHP-Dedicated heat pump) | |
| b. N/A | | 15. HVAC credits | |
| c. N/A | | (CF-Ceiling fan, CV-Cross ventilation, | |
| d. N/A | | HF-Whole house fan, | |
| e. N/A | | PT-Programmable Thermostat, | |
| 10. Ceiling types | | MZ-C-Multizone cooling, | |
| a. Under Attic | R=30.0, 1233.0 ft² | MZ-H-Multizone heating) | |
| b. Under Attic | R=19.0, 395.0 ft² | | |
| c. N/A | | | |
| 11. Ducts | | | |
| a. Sup: Unc. Ret: Con. AH: Interior | Sup. R=6.0, 83.0 ft | | |
| b. N/A | | | |

I certify that this home has complied with the Florida Energy Efficiency Code For Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: [Signature]

Date: 12/21/07

Address of New Home: _____

City/FL Zip: _____



*NOTE: The home's estimated energy performance score is only available through the FLA/RES computer program. This is not a Building Energy Rating. If your score is 80 or greater (or 86 for a US EPA/DOE EnergyStarTM designation), your home may qualify for energy efficiency mortgage (EEM) incentives if you obtain a Florida Energy Gauge Rating. Contact the Energy Gauge Hotline at 321/638-1492 or see the Energy Gauge web site at www.fsec.ucf.edu for information and a list of certified Raters. For information about Florida's Energy Efficiency Code For Building Construction, contact the Department of Community Affairs at 850-487-1824.

¹ Predominant glass type. For actual glass type and areas, see Summer & Winter Glass Output on pages 2&4 EnergyGauge® (Version: FLRCSB v4.3)

#91670

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Nationwide Homes Inc.
1100 RIVES ROAD, MARTINSVILLE, VA 24115
(276) 652-7100
2005 National Electric Code

Electrical Load Calculations

Model = RICHMOND IT 291670

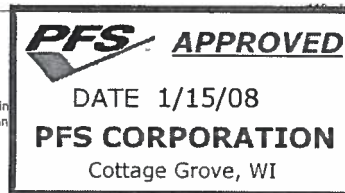
General Lighting Load	1,518 Sq Ft at 3 volt-amperes per sq ft	=	4,554 volt-amperes
Small Appliance Load		=	3,000 volt-amperes
Laundry		=	1,500 volt-amperes
Total General Lighting and Small Appliance		=	9,054 volt-amperes
3000 volt-amperes @ 100%		=	3,000 volt-amperes
9,054 - 3000 =	6,054 @ 35%	=	2,119 volt-amperes
Net General Lighting and Small Appliance Load		=	5,119 volt-amperes
Range Load		=	6,640 volt-amperes
Dryer Load		=	5,000 volt-amperes
Dishwasher		=	1,032 volt-amperes
Garbage Disposal		=	504 volt-amperes
Water Heater (4500 / 240 * 125%)		=	5,625 volt-amperes
		=	volt-amperes
Total Load		=	26,520 volt-amperes

200 Amp. Service Panel Installed

For 120/240-volt 3-Wire single-phase service or feeder
26,520 / 240 Volt =

#91670

General Notes:
1. Any Site installed circuits i.e. basement, heating/cooling Etc. Not to exceed service panel rating of 200 Amp. If additional loads exceed main panel rating, purchaser responsible for site installation of sub-panel and/or adequate service entry. All installation to meet 2005 NEC subject to inspection by local jurisdiction.



01/04/94

Engineering Department

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Handwritten signature and date:
1/13/8

WIND LOAD CALCULATIONS

NATIONWIDE HOMES

DESIGN INPUTS:

MODULE WIDTH:	40 ft	NO. OF STORIES:	1
STUD SPACING:	16 in	1st FLOOR WALL HEIGHT:	10 ft
TRUSS SPACING:	24 in	2nd FLOOR WALL HEIGHT:	0 ft
ROOF PITCH:	12 / 12	3rd FLOOR WALL HEIGHT:	0 ft
ROOF ANGLE (θ):	45.00 °	WIND SPEED:	130 mph
		WIND EXPOSURE CASE:	B1

z =	10 ft
hr =	20 000 ft
hr / 2 =	10 000 ft
h =	20 000 ft
EFFECTIVE WIND AREA = z x STUD SPACING =	13 333 ft ²
EFFECTIVE WIND AREA = h x STUD SPACING =	26 667 ft ²

DETERMINE WIND LOADS PER ASCE 7-02 FOR LOW RISE BUILDINGS:

COMPONENTS AND CLADDING :

CONSTANTS:	WIND VELOCITY (V):	130 mph	DIRECTIONALITY FACTOR (K _d):	0.85
	VEL. PRESS EXP. COEF. (K _z):	0.70	IMPORTANCE FACTOR (I):	1
	MULT. for TOPO. FACTOR (K ₁):	0.09	q _z = .00256 x K _z x K ₁ x K _d x V ² x I =	25.74
	MULT. for TOPO. FACTOR (K ₂):	0	q _s = q _h = q _e =	25.74
	MULT. for TOPO. FACTOR (K ₃):	0	GUST EFFECT FACTOR (G):	0.85
	K _z = (1 + K ₁ x K ₂ x K ₃) ² =	1	INTERNAL PRESS. COEF. (GC _{pi}):	-0.18

LATERAL LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

SIDE WALL: FIELD: GC_{pf} = -1.01
 EDGE: GC_{pe} = -1.10

LOAD CALCULATIONS:

$$P_{fi} = q_h \times (GC_{pi} - GC_{pe}) \times$$

P_{fi}

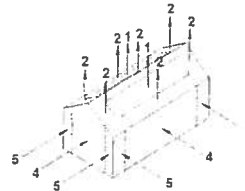
DATE 1/15/08

PFS CORPORATION
 Cottage Grove, WI

$$P_{fi} = q_h \times (GC_{pi} - GC_{pe}) \times$$

P_{fi}

psf



$$= (25.74) \times (-1.01) - (0.18)$$

$$= -30.66 \text{ psf}$$

$$P_{fi} = q_h \times (GC_{pi} - GC_{pe}) \times$$

P_{fi}

psf

$$= (25.74) \times (-1.01) - (0.18)$$

$$= -21.39 \text{ psf}$$

FIELD	P _{fi} =	-30.66 psf
FIELD	P _{fi} =	-21.39 psf
EDGE	P _{fi} =	-35.10 psf
EDGE	P _{fi} =	-25.83 psf

USE -30.66 psf WIND LOAD FOR FIELD.
 USE -35.10 psf WIND LOAD FOR EDGE.

THE MAXIMUM LATERAL LOAD FOR 130 mph WIND (COMPONENTS AND CLADDING) IS -35.10 psf

#91670

PAGE 21 OF 29

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 1/13/8

WIND LOAD CALCULATIONS

NATIONWIDE HOMES

UPLIFT LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS

ROOF	FIELD	GC_{pf1}	=	-0.86
	EDGE	GC_{pe}	=	-1.11
	OVERHANG	GC_{pf2}	=	-1.91
	DOWNWARD	GC_{rf1}	=	0.25

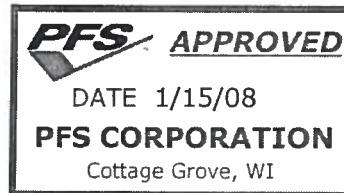
LOAD CALCULATIONS:

$$P_n = q_h \times (GC_{pfh} - GC_{pf1}) \times P_n \text{ psf}$$

EXAMPLE:

$$P_{n1} = q_h \times (GC_{pf1} - GC_{pe}) \times P_{n1} \text{ psf} = (25.74) \times (-0.86) - (0.18) = -26.80 \text{ psf}$$

$$P_{n2} = q_h \times (GC_{pf1} - GC_{pe}) \times P_{n2} \text{ psf} = (25.74) \times (-0.86) - (0.18) = -17.53 \text{ psf}$$



FIELD	P_{n1}	=	-26.80	psf
FIELD	P_{n2}	=	-17.53	psf
EDGE	P_{n3}	=	-33.24	psf
EDGE	P_{n4}	=	-23.97	psf
OVERHANG	P_{n5}	=	-53.83	psf
OVERHANG	P_{n6}	=	-44.56	psf
DOWNWARD	P_{n7}	=	1.72	psf
DOWNWARD	P_{n8}	=	10.98	psf

USE	-26.80	psf	WIND LOAD FOR FIELD
USE	-33.24	psf	WIND LOAD FOR EDGE
USE	-53.83	psf	WIND LOAD FOR OVERHANG
USE	10.98	psf	DOWNWARD WIND LOAD

THE MAXIMUM UPLIFT LOAD FOR 130 mph WIND (COMPONENTS AND CLADDING) IS -53.83 psf

LOAD SUMMARY:

FOR 12/12 PITCH, 130 mph WIND, EXPOSURE CASE B1

LATERAL LOADS:

	COMP. & CLADDING (psf)
FIELD	-30.66
EDGE	-35.10

UPLIFT LOADS:

	COMP. & CLADDING (psf)
FIELD	-26.80
EDGE	-33.24
OVERHANG	-53.83

#91670

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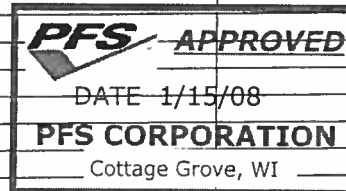
7/2/08
1/13/08

PRODUCT APPROVAL SCHEDULE

Manufacturer: NATIONWIDE CUSTOM HOMES **Plan #** HICKORY II #91670

As required by Florida Statute 553.842 and Florida Administrative Code 9B-72, please provide the information and the product approval number(s) on the building components listed below if they will be utilized on the manufactured building for which you are applying for PFS certification. We recommend that you contact your product supplier should you not know the product approval number for any of the applicable listed products. More information about statewide product approval can be obtained at www.floridabuilding.org.

Category	Manufacturer	Product Description	Approval #(s)
EXTERIOR DOORS			
Swinging	THERMATRU	3068 & 6068 DOORS	FL1170 R1
Swinging	PGT INDUSTRIES	3068 & 6069 DOORS(Impact)	FL253-R3/R-4
Sliding	WEST WINDOW	6068 SLIDING GLASS DOOR	FL 4933
Sliding	PGT INDUSTRIES	SLIDING GLASS DOOR(Impact)	FL251-R4
Sectional			
Roll-up			
Automatic			
Other			
WINDOWS			
Single Hung	WEST WINDOW	VINYL SINGLE HUNG	FL 5410
Single Hung	PGT INDUSTRIES	ALUMINUM S. H. (IMPACT)	FL 239.4/.5/.6
Horizontal Slider			
Casement	WEST WINDOW	VINYL CASEMENT	FL 4934
Double Hung	WEST WINDOW	VINYL DOUBLE HUNG	FL 5055 R1
	WEST WINDOW	VINYL DBL. HUNG (IMPACT)	FL5411
Fixed	WEST WINDOW	VINYL FIXED	FL 5064/FL5413
Fixed	PGT INDUSTRIES	ALUMINUM FIXED (IMPACT)	FL 243-R4
Awning			
Pass-through			
Projected			
Mullion			
Wind Breaker			
Dual Action			
Other			
PANEL WALL			
Siding	JAMES HARDIE	HARDI-PLANK SIDING	FL889-R2
Siding (Vinyl)	VARIFORM (GP)	VINYL SIDING	FL2224-R1
Soffits			
EIFS			
Storefronts			
Curtain Walls			
Wall Louver			
Glass Block			
Membrane			
Greenhouse			
Other			



#91670

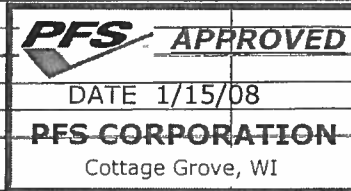
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PRODUCT APPROVAL SCHEDULE

Manufacturer: **NATIONWIDE CUSTOM HOMES**

Plan # **HICKORY II #91670**

Category	Manufacturer	Product Description	Approval #(s)
ROOFING PRODUCTS			
Asphalt Shingles	CERTAINTED	FIBERGLASS SHINGLES	FL 250-R1
Underlayments	WOODLAND IND.	30# FELT	FL 1814-R1
Roofing Fasteners	SENCO	NAILS & STAPLES	FL 5135
Non-structural Metal			
Built-up Roofing			
Modified Bitumen			
Single Ply Roofing Sys.			
Roofing Tiles			
Roofing Insulation	OWENS CORNING	INSULATION	F 6242-R1
Waterproofing			
Wood Shingles / Shakes			
Roofing Slate			
Liquid Applied Roof Sys.			
Cements - Adhesives - Coatings			
Roof Tile Adhesive			
Spray Applied			
Polyurethane Roof			
Other			
SHUTTERS	N/A		
Accordion			
Bahama			
Storm Panels			
Colonial			
Roll-up			
Equipment			
Others			
SKYLIGHTS			
Skylight			
Other			
STRUCTURAL COMPONENTS			
Wood Connector/Anchor	SIMPSON	CS22 GA. STRAP LSTA 9 STRAP LSTA12 STRAP LSTA15 STRAP LSTA18 STRAP LSTA21 STRAP LSTA 24 STRAP	FL1901-R3 Ref. 1901.7 Ref. 1901.37 Ref. 1901.30 Ref. 1901.31 Ref. 1901.32 Ref. 1901.33 Ref. 1901.34
Truss Plates			



#91670

PAGE 24 OF 29

Engineered Lumber	GA. PACIFIC	LAMINATED BEAM	FL 1008 R1
Railing			
Coolers & Freezers			
Concrete Admixtures			
Material			

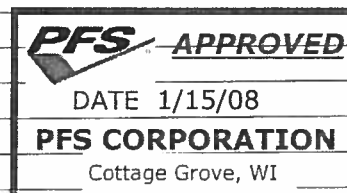
PRODUCT APPROVAL SCHEDULE

Manufacturer: NATIONWIDE CUSTOM HOMES Plan # HICKORY II #91670

Category	Manufacturer	Product Description	Approval #(s)
STRUCTURAL COMPONENTS (cont.)			
Insulation Forms			
Plastics			
Deck & Roof			
Wall			
Sheds			
Others			
NEW EXTERIOR ENVELOPE PRODUCTS			

The products listed below did not demonstrate product approval at plan review. I understand that at the time of inspection of these products, the following information must be available to the inspector at the manufacturing plant: (1) Copy of the product approval from the Local or State Building Commission, or supply all of the information listed on Form No. 9B-72.130(5). (2) Copy of the applicable manufacturers' installation requirements.

I understand these products may have to be removed if approval cannot be demonstrated during inspection.



[Signature]
Manufacturer's Authorized Agent Signature

EDWARD WILLIAMS
Printed Name

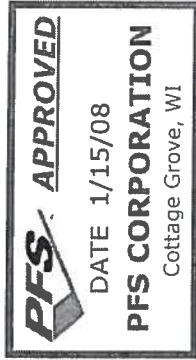
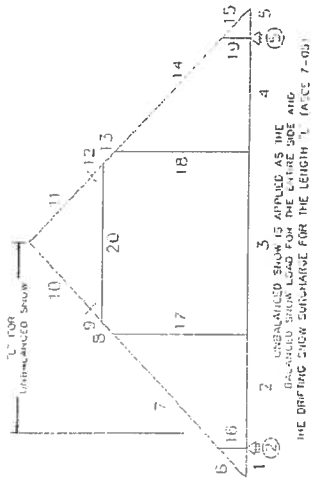
12/19/07
Date

#91670

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STRUCTURAL LUMBER
INTERACTION CALCULATIONS

NATIONWIDE CUSTOM HOMES



TRUSS NO.: F1212150
JOB NO.: 070432
PITCH: 12/12
SPAN: 15'-0"
HEEL TO KNEEWALL: 5'-1"

MEMBER	SPECIES
1-6	2 x 8 SFF #2
7-10	2 x 6 SFF #2
11-12	2 x 4 SFF #2
13-14	2 x 6 SFF #2
15-16	2 x 4 SFF #2
17-18	2 x 6 SFF #2
19-20	2 x 4 SFF #2

MEMBER INFORMATION

MEMBER	SPECIES
1-6	2 x 8 SFF #2
7-10	2 x 6 SFF #2
11-12	2 x 4 SFF #2
13-14	2 x 6 SFF #2
15-16	2 x 4 SFF #2
17-18	2 x 6 SFF #2
19-20	2 x 4 SFF #2

THE DRIFTING SNOW SURCHARGE FOR THE LENGTH 'L' (AS PER 7-02)
UNBALANCED TO LL (PER ASCE 7-02)
UNBALANCED SURCHARGE TO LL (PER ASCE 7-02)
DRIFTING UNBALANCED SURCHARGE TO LL (PER ASCE 7-02)
OPPOSITE SIDE UNBALANCED TO LL (PER ASCE 7-02)
DISTANCE 'L' FOR SURCHARGE (PER ASCE 7-02)
TC CL: 10 ft
BC CL: 10 ft
* 20 psf MINIMUM USED
** 20 psf WHERE W < 4"

UPWIND	DOWNWIND
80 mph	22.8
110 mph	34.12
130 mph	47.0

MAXIMUM SUPPORT REACTIONS (kips)

REACTION	DL + LL	DL + LL + SNOW	DL + LL + UPWIND	DL + LL + DOWNWIND
REAR	2025 kips	3035 kips	80 mph	135 mph
LOAD	438	1053.5	UPWIND	UPWIND
SUPPORT (1)	438	1021.7	-1113	-287.9
SUPPORT (2)	438	1192.5	-287.9	-320.4

- NOTES: 1. WIND PER ASCE 7-02, 10 TO 130 MPH, E.P. S. CALC. PRESSURES
2. SHOW PER ASCE 7-02 & 7-05, 20 psf GSE, CL = 11.25 ft GSE, CL = 10
30 psf GSE, CL = 11.35 psf GSE, CL = 10
3. BOTH CURVES ANALYZED AND HIGHEST REACTION USED
4. WIND UPWIND REACTIONS ARE BASED ON 0.4 C.P. PRESSURES
WIND LATERAL AND UPWIND REACTIONS AT SUPPORTS ARE DESIGNED
IN WIND PRESSURES
5. HEEL TO KNEEWALL DIMENSIONS ARE FROM OUTSIDE OF HEEL TO INSIDE OF
KNEEWALL WITH A MARGIN OF 4"

MAXIMUM DEFLECTION & DEFLECTION

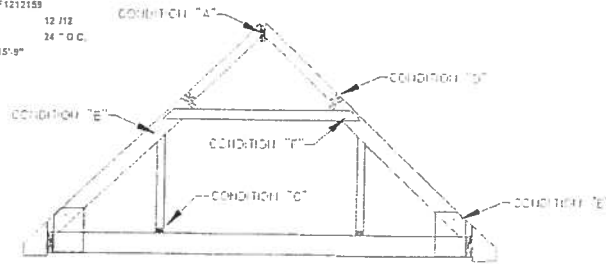
MAXIMUM DEFLECTION (in)	MAXIMUM DEFLECTION (in)
DOWNWIND	DOWNWIND
UPWIND	UPWIND
DOWNWIND	DOWNWIND
UPWIND	UPWIND

5/2 Lead
1/13/08
Applies
to 1/26/09

CONNECTIONS
TRUSS FRAMING

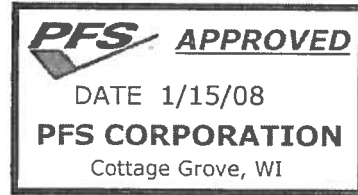
NATIONWIDE CUSTOM HOMES

PROJECT NUMBER: 870832
TRUSS NUMBER: F1212153
TRUSS PITCH: 12:12
TRUSS SPACING: 24" O.C.
TRUSS SPAN: 15'-9"



DESIGN LOADS:

	20CS PSF	30CS PSF
CSL	CSL	CSL
BALANCED TC LL	13.48	18.84
UNBALANCED TC LL (PER ASCE 7-02)	20.18	28.26
DRIFTING (UNBALANCED SURCHARGE) TC LL (PER ASCE 7-05)	28.88	32.58
OPPOSITE SIDE UNBALANCED TC LL (PER ASCE 7-05)	4.84	5.65
DISTANCE "L" FOR SURCHARGE (PER ASCE 7-05)	4.18	4.68
TC DL	10	10
BC LL	10	10
BC DL	10	10
UPLIFT	47.88	47.88
* 20 psf MINIMUM USED		
** 20 psf USED WHERE H > 42"		



CONNECTION SUMMARY 130 MPH WIND		
CONDITION	LOAD (lbs)	FASTENER(S)
"A" RIDGE BEAM	TC TO RIDGE (V)	147.8
	RIDGE TO RIDGE (V)	147.8
	TC TO RIDGE (T)	145.8
	ALT FASTENER TC TO RIDGE (T)	145.8
	WITH	145.8
"B" KNEE WALL TO TOP CHORD	419.3	(4) 16 d NAILS TOE NAILED INTO RAFTER
	ALT FASTENER	(1) SIMPSON H8 TWIST STRAP w/ (10) 10 d NAILS
	WITH	(0) 16 d NAILS TOE NAILED IN ADDITION TO STRAPS
"C" KNEE WALL TO BOTTOM CHORD	414.1	(4) 16 d NAILS TOE NAILED EACH STUD
	ALT FASTENER	(1) SIMPSON H8 TWIST STRAP w/ (10) 10 d NAILS
	WITH	(0) 16 d NAILS TOE NAILED IN ADDITION TO STRAPS
"D" FLIP TO TOP CHORD	TOP CHORD TO PLATE (V)	147.8
	PLATE TO PLATE (V)	147.8
	TOP CHORD TO PLATE (T)	115.8
	ALT FASTENER TOP CHORD TO PLATE (T)	115.8
	WITH	115.8
"E" HEEL	GUSSET TO TC	776.3
	GUSSET TO BC	654.9
	COLLAR TIE TO TOP CHORD (T)	595

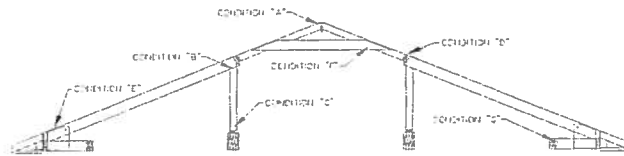
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CONNECTIONS
TRUSS FRAMING

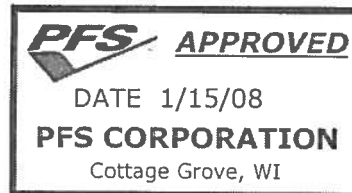
NATIONWIDE CUSTOM HOMES

PROJECT NUMBER 678831
TRUSS NUMBER L51228
TRUSS PITCH 5 /12
TRUSS SPACING 24' O.C.
TRUSS SPAN 28'-0"



DESIGN LOADS:

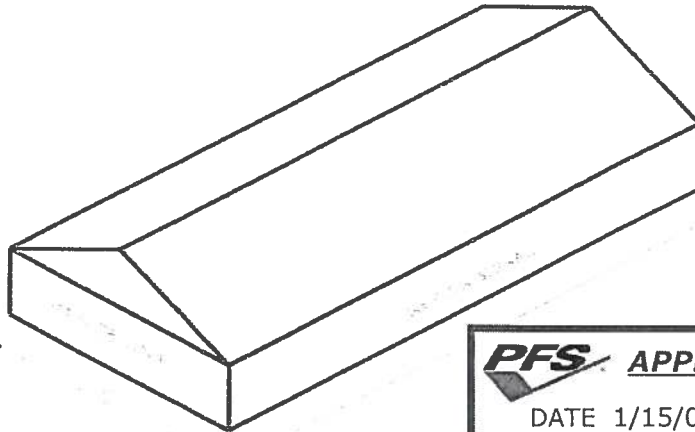
	2025 PSF	2035 PSF
GSL	GSL	GSL
BALANCED TC LL	17.5	24.3
UNBALANCED TC LL (PER ASCE 7-02)	20.24	28.60
DRIFTING UNBALANCED SURCHARGE TC LL (PER ASCE 7-05)	17.25	24.89
OPPOSITE SIDE UNBALANCED TC LL (PER ASCE 7-05)	5.25	7.35
DISTANCE "L" FOR SURCHARGE (PER ASCE 7-05)	6.44	6.13
TC DL	10	psf
BC LL	10/20	psf
BC DL	10	psf
UPLIFT	57.13	psf FOR 130 mph
	20 psf MINIMUM USED	
	20 psf USED WHERE H ≥ 42"	



CONNECTION SUMMARY 130 MPH WIND			
CONDITION	LOAD (lbs)	FASTENER(S)	
"A" - RIDGE BEAM	TC TO RIDGE (N)	171.9	(3) 10 d NAILS INTO END GRAIN OF EACH RAFTER
	RIDGE TO RIDGE (N)	171.9	10d AT 15" O.C. THROUGH RIDGE BEAM
	TC TO RIDGE (T)	193.2	(2) 10 d NAILS TOE NAILED EACH END
	ALT FASTENER TC TO RIDGE (T)	193.2	OR (1) SIMPSON LSTAS STRAP w/ (8) 10 d NAILS
"B" - KNEE WALL TO TOP CHORD		530.8	(4) 16 d NAILS TOE NAILED INTO RAFTER
	ALT FASTENER WITH	530.8	OR (1) SIMPSON H3 TWIST STRAP w/ (10) 10 d NAILS (0) 15 d NAILS TOE NAILED IN ADDITION TO STRAPS
"C" - KNEE WALL TO BOTTOM CHORD		528.5	(4) 16 d NAILS TOE NAILED EACH STUD
	ALT FASTENER WITH	528.5	OR (1) SIMPSON H3 TWIST STRAP w/ (10) 10 d NAILS (0) 16 d NAILS TOE NAILED IN ADDITION TO STRAPS
"D" - FLIP TO TOP CHORD	TOP CHORD TO PLATE (N)	153.2	(2) 16 d NAILS THROUGH PLATES INTO TOP CHORDS
	PLATE TO PLATE (N)	153.2	16d AT 21" O.C. THROUGH PLATES
	TOP CHORD TO PLATE (T)	1007.4	(11) 8 d NAILS EA. SIDE THROUGH SHEATHING
	ALT FASTENER TOP CHORD TO PLATE (T) WITH	1007.4	OR (1) SIMPSON LSTAS STRAP w/ (22) 10 d NAILS (0) 8 d NAILS EACH SIDE IN ADDITION TO STRAP
"E" - HEEL	GUSSET TO TC	399	(1) 1/2" BOLT (DOUBLE SHEAR 3/8" SIDE PLATES)
	GUSSET TO BC	436.5	(0) 16 d NAILS EACH SIDE
"F" - COLLAR TIE		591.5	(4) 16 d NAILS EACH SIDE
	COLLAR TIE TO TOP CHORD (T)	591.5	(5) 16 d NAILS EACH END
"G" - BOTTOM CHORD TO CENTER GIRDER	BC TO CENTER GIRDER (T)	426.5	(3) 16 d NAILS TOE NAILED IN ADDITION TO HANGERS
	ALT FASTENER BC TO CG (T)	436.5	OR (1) SIMPSON LSTAS STRAP w/ (8) 10 d NAILS
	ALT FASTENER BC TO CG (SHEATHING) (T)	435.5	OR (4) 16 d NAILS EA. SIDE OF CENTER GIRDER

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES



#91670



BUILDING INFORMATION:

JOB NUMBER = 071343
PLAN NAME = HICKORY II
CONTRACT NUMBER = 91670
FIRST FLOOR LENGTH (W₁) = 47.5 ft
FIRST FLOOR LENGTH (L₁) = 40 ft
TRUSS SPACING (TOC) = 24 in
STUD SPACING (SOC) = 16 in
MAX UNPESTRAINED OPENING HEIGHT = 6.75 ft
WIND SPEED (V_{3S}) = 130 mph
WIND EXPOSURE = B
MEAN ROOF HEIGHT ADJUSTMENT FACTOR (C_{MRH}) = 1
WALL HEIGHT ADJUSTMENT FACTOR (C_{WH}) = H / B = 1

SHEARWALL SUMMARY:

FIRST FLOOR ENDWALL: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
WITH 8d COMMON NAILS SPACED AT 6" EDGE

FIRST FLOOR SIDEWALL: 7/16" OSB EXTERIOR (UNBLOCKED) w/ 1/2" GWB INTERIOR
WITH 8d COMMON NAILS SPACED AT 6" EDGE

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1/7/2008

ALL HIGH WIND ZONE
STRAPS TO BE FLORIDA

2/13/08
APPLIES TO
29.1-29.1

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

CONNECTION SUMMARY:

CONNECTIONS TO BE AS SPECIFIED OR EQUIVALENT

UPLIFT CONNECTIONS

REQUIRED TRUSS TIE DOWN USE A SIMPSON H10 EACH TRUSS

1ST FLOOR STUD TO TOP PLATE USE A 1 5" x 26 ga STRAP w/ (12) 16 ga STAPLES EACH END, EACH STUD

1st FLOOR STUD TO FLOOR BAND USE A 1 5" x 26 ga STRAP w/ (12) 16 ga STAPLES EACH END, EACH STUD

FLOOR BAND TO SILL PLATE CONNECTION USE A 1 5" x 26 ga STRAP w/ (12) 16 ga STAPLES EACH END OR EQUAL
WRAPPED AROUND THE SILL PLATE AT EACH ANCHOR BOLT LOCATION

LATERAL CONNECTIONS

TRUSS TO TOP PLATE CONNECTION USE (5) 0 131" x 2 5" COMMON NAIL (TOENAILED) PER TRUSS

PLATE TO PLATE CONNECTION ATTACH WITH 0 131" x 2 5" COMMON NAIL (FACE NAILED) AT 6" ON CENTER

PLATE TO STUD CONNECTION USE (4) 0 131" x 2 5" COMMON NAIL (ENDNAILED) PER STUD

BOTTOM PLATE TO FLOOR CONNECTION ATTACH WITH 0 131" x 2 5" COMMON NAIL (FACE NAILED) AT 6" ON CENTER

HORIZONTAL FLOOR DIAPHRAGM CONTINUITY

FIRST FLOOR

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND (ALONG MIT
USE A MIN. OF (6) 1/2" DIA THRU BOLTS

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND (AT END WALLS)
USE A 1 5" x 20 ga STRAP w/ (23) 16 ga STAPLES EACH END

SHEAR CONNECTIONS

FIRST FLOOR ENDWALL

RIMBAND TO SILL PLATE CONNECTION USE 0 162" x 3 5" COMMON NAIL (TOENAILED) @ 10" ON CENTER

SILL PLATE TO FOUNDATION CONNECTION USE 1/2" ANCHOR BOLTS @ 68" O C
OR USE 5/8" ANCHOR BOLTS @ 72" O C

FIRST FLOOR SIDEWALL

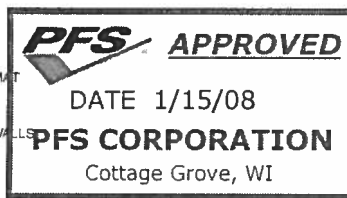
RIMBAND TO SILL PLATE CONNECTION USE 0 162" x 3 5" COMMON NAIL (TOENAILED) @ 7" ON CENTER

SILL PLATE TO FOUNDATION CONNECTION USE 1/2" ANCHOR BOLTS @ 45" O C
OR USE 5/8" ANCHOR BOLTS @ 72" O C

HOLDDOWN CONNECTIONS

FIRST FLOOR CORNER HOLDDOWN: NO PHYSICAL HOLDDOWN REQUIRED

FIRST FLOOR CORNER STUD CONNECTION: FASTEN CORNER STUDS 2 ROWS OF 16d COMMON NAILS @ 37" ON CENTER
OR USE (3) 1/4" DIA. LAG SCREWS



#01670

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1/7/2008

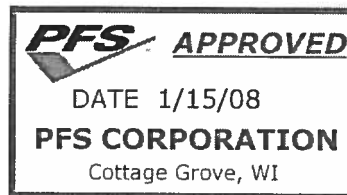
ALL HIGH WIND ZONE
STRAPS TO BE FLORIDA

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

APPLICABILITY LIMITATIONS:

MEAN ROOF HEIGHT (MRH) =	28.6 ft
NUMBER OF STORIES =	1
FIRST FLOOR WIDTH (W ₁) =	47.5 ft
FIRST FLOOR LENGTH (L ₁) =	40 ft
BUILDING ASPECT RATIO (L/W) =	0.84
FLOOR JOIST DEPTH =	9.25 in
MAX. VERTICAL FLOOR OFFSET =	0 in
FLOOR ASPECT RATIO (L/W) =	0.84
MAX. FLOOR DIAPHRAGM OPENING WIDTH =	3 ft
MAX. FLOOR DIAPHRAGM OPENING LENGTH =	2 ft
FIRST FLOOR HEIGHT (H ₁) =	8 ft
CEILING ASPECT RATIO (L/W) =	0.84
MIN. SHEARWALL SEGMENT (H / 3.5) =	2.29 ft
ROOF PITCH =	12 / 12



DESIGN MEETS LIMITATIONS OF THE WFCM METHODOLOGY

CONNECTION INFORMATION:

TRUSS TO PLATE CONNECTORS		
SIMPSON H2.5	Z =	365 lbs
SIMPSON H10	Z =	850 lbs
FLAT STRAPS		
1 5" x 26 ga. STRAP w/ (12) 16 ga STAPLES EACH END	Z =	631 lbs
1 5" x 22 ga. STRAP w/ (20) 16 ga STAPLES EACH END	Z =	1055 lbs
1 5" x 20 ga. STRAP w/ (23) 16 ga STAPLES EACH END	Z =	1266 lbs
(2) 1 5" x 22 ga. STRAP w/ (39) 16 ga STAPLES EACH END	Z =	2165 lbs
(2) 1 5" x 20 ga. STRAP w/ (46) 16 ga STAPLES EACH END	Z =	2600 lbs

PAGE 29.3 OF 29

ALL HIGH WIND ZONE
STRAPS TO BE FLORIDA
APPROVED OR EQUAL

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

HOLDDOWNS w/ 1 1/2" EDGE DISTANCE	
MINIMUM 8" STEM WALL	
ASSUME 3000 psi Fc CONCRETE	
SIMPSON LSTHD8RJ	Z = 1950 lbs
SIMPSON STHD10RJ	Z = 3230 lbs
SIMPSON STHD14RJ	Z = 4430 lbs
(2) SIMPSON STHD14RJ	Z = 8860 lbs
1/2" DIA. THRU BOLT	
1/2" ANCHOR BOLT	Z = 725 lbs
5/8" ANCHOR BOLT	Z = 1056 lbs
1/4" DIA. LAG SCREW	Z = 1482 lbs
0 131" x 2 5" COMMON NAIL (FACE NAILED)	Z = 320 lbs
0 131" x 2 5" COMMON NAIL (TOENAILED)	Z = 90 lbs
0 131" x 2 5" COMMON NAIL (ENDNAILED)	Z = 74 lbs
0 162" x 3 5" COMMON NAIL (TOENAILED)	Z = 60 lbs
0 162" x 3 5" COMMON NAIL (ENDNAILED)	Z = 159 lbs

NOTE SIMPSON CONNECTORS & FASTEN VALUES ASSUME SPF FRAMING MATERIAL
ANCHOR BOLT VALUES ASSUME DF/SP VALUES

DESIGN UPLIFT LOADS

ROOF & CEILING ASSEMBLY DEAD LOAD =	15 psf
WALL DEAD LOAD (WDL) =	12 psf
FLOOR DEAD LOAD (FDL) =	10 psf
ROOF SPAN =	15.75 ft
TRUSS SPACING (TOC) =	24 in
STUD SPACING (SOC) =	16 in
FIRST FLOOR HEIGHT (H ₁) =	8 ft

UPLIFT CONNECTION LOAD: (FROM TABLE 2.2A, 2001 WFCM)

AT 24' =	323 plf
AT 36' =	459 plf

AT 15.75' (wup) =	230 plf
-------------------	---------

$$w_{up} = w_{dl} \cdot C_{u/RH} \cdot C_{u/H} =$$

$$w_{up} = 230 \text{ plf} \cdot 1 =$$

$$w_{up} = 230 \text{ plf}$$

REQUIRED TRUSS TIE DOWN:

$$P_{up} = w_{up} \cdot TOC =$$

$$P_{up} = 230 \text{ plf} \cdot 24 \text{ in} / 12 =$$

$$P_{up} = 459 \text{ lbs}$$

USE A SIMPSON H10 EACH TRUSS
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 459 lbs



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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

REQUIRED SIDEWALL STUD TIE DOWN LOADING:

1ST FLOOR STUD TO TOP PLATE $P_{1p} = w_{1p} \cdot \text{SOC} = 230 \cdot 16 / 12 = 306 \text{ lbs}$

1st FLOOR STUD TO FLOOR BAND $P_{1b} = P_{1p} - 0.6 \cdot \text{WDL} \cdot H_1 \cdot \text{SOC} =$
 $P_{1b} = 306 \text{ lbs} - 0.6 \cdot 12 \text{ psf} \cdot 8 \text{ ft} \cdot 16 \text{ in} / 12 = 229 \text{ lbs}$

USE A 1.5" x 26 ga. STRAP w/ (12) 16 ga STAPLES EACH END, EACH STUD
OR EQUAL OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 306 lbs

SIDEWALL 1st FLOOR BAND TO SILL PLATE CONNECTION:

SIDEWALL UPLIFT AT SILL PLATE $w_{1p} = P_{1b} / \text{SGC} - 0.6 \cdot \text{FCL} \cdot W_1 / 4 =$
 $w_{1p} = 229 \text{ lbs} \cdot 12 / 16 \text{ in} - 0.6 \cdot 10 \text{ psf} \cdot 47.5 \text{ ft} / 4 =$
 $w_{1p} = 101 \text{ plf}$

CHECK STRAP AT ANCHOR BOLT LOCATIONS:

1/2" ANCHOR BOLT SPACING (BOC) = 45 in

$P_{1p} = w_{1p} \cdot \text{BOC} = 101 \text{ plf} \cdot 45 = 377 \text{ plf}$

USE A 1.5" x 26 ga. STRAP w/ (12) 16 ga STAPLES EACH END OR EQUAL
WRAPPED AROUND THE SILL PLATE AT EACH ANCHOR BOLT LOCATION
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 377 lbs

CHECK BENDING IN RIMBAND:

DBL 2x10 SPF #2 RIMBAND DESIGN VALUES

SECTION MODULUS (S) = 42.66 in³
 ALLOWABLE BENDING (fb) = 875 psi

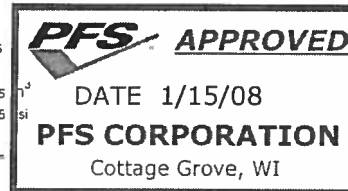
$M_{MAX} = \frac{w_{1p} \cdot \text{BOC}^2}{8} =$

$M_{MAX} = \frac{101 \text{ plf} \cdot (45 / 12)^2}{8} = 2123 \text{ in-lbs}$

APPLIED fb = $\frac{M_{MAX}}{S} = \frac{2123 \text{ in-lbs}}{42.66 \text{ in}^3} = 50 \text{ psi}$

ALLOWABLE BENDING (fb) = 875 psi > APPLIED fb = 50 psi

DBL 2x10 SPF #2 RIMBAND IS OK



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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

LATERAL LOAD AT ROOF/CEILING DIAPHRAGM

ROOF SPAN = 15.75 ft
ROOF PITCH = 12 /12

WIND PERPENDICULAR TO RIDGE: (TABLE 2.5A, 2001 WFCM)

AT 24' = 321 plf
AT 36' = 424 plf

AT 15.75' (wt-per') = 250 plf

$$w_{l,per} = w_{l,per}' \cdot C_{UPRH} \cdot C_{VPE} =$$

$$w_{l,per} = 250 \text{ plf} \cdot 1 \cdot 1 =$$

$$w_{l,per} = 250 \text{ plf}$$

WIND PARALLEL TO RIDGE: (TABLE 2.5B, 2001 WFCM)

AT 24' = 194 plf
AT 36' = 256 plf

AT 15.75' (wt-para') = 156 plf

$$w_{l,para} = w_{l,para}' \cdot C_{UPRH} \cdot C_{VPE} =$$

$$w_{l,para} = 156 \text{ plf} \cdot 1 \cdot 1 =$$

$$w_{l,para} = 156 \text{ plf}$$

LATERAL LOAD AT FLOOR DIAPHRAGM

WIND PERPENDICULAR TO RIDGE: (TABLE 2.5A, 2001 WFCM)

$FL_{l,per}' = 257 \text{ plf}$

$$FL_{l,per} = FL_{l,per}' \cdot C_{UPRH} \cdot C_{VPE} =$$

$$FL_{l,per} = 257 \text{ plf} \cdot 1 \cdot 1 =$$

$$FL_{l,per} = 257 \text{ plf}$$

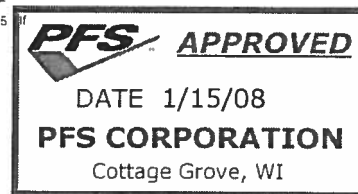
WIND PARALLEL TO RIDGE: (TABLE 2.5B, 2001 WFCM)

$FL_{l,para}' = 175 \text{ plf}$

$$FL_{l,para} = FL_{l,para}' \cdot C_{UPRH} \cdot C_{VPE} =$$

$$FL_{l,para} = 175 \text{ plf} \cdot 1 \cdot 1 =$$

$$FL_{l,para} = 175 \text{ plf}$$



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ALL HIGH WIND ZONE
STRAPS TO BE FLORIDA
APPROVED OR EOTIAL.

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LATERAL FRAMING CONNECTION LOADS FROM WIND: (TABLE 2.1, 2001 WFCM)
(FOR ROOF-TO-PLATE, PLATE-TO-PLATE, PLATE-TO-STUD, AND PLATE-TO-FLOOR)

$$\begin{aligned} W_{\text{roof}} &= 155 \text{ plf} \\ W_{\text{roof}} &= W_{\text{roof}} \cdot C_{\text{upH}} = 155 \text{ plf} \cdot 1 = 155 \text{ plf} \\ \text{MULTIPLIER @ 24" O C (M}_{24}\text{)} &= 2 \\ \text{MULTIPLIER @ 16" O C (M}_{16}\text{)} &= 1.33 \end{aligned}$$

TRUSS TO TOP PLATE CONNECTION:

$$P_c = W_{\text{roof}} \cdot M_{24} = 155 \text{ plf} \cdot 2 = 310 \text{ lbs}$$

$$\# \text{ OF } 0.131" \times 2.5" \text{ COMMON NAIL (TOENAILED) REQUIRED} = \frac{P_c}{Z} = \frac{310 \text{ lbs}}{74 \text{ lbs}} = 5 \text{ NAILS}$$

USE (5) 0.131" x 2.5" COMMON NAIL (TOENAILED) PER TRUSS

PLATE TO PLATE CONNECTION:

$$\text{SPACING OF } 0.131" \times 2.5" \text{ COMMON NAIL (FACE NAILED)} = \frac{Z \cdot 12}{W_{\text{roof}}} = \frac{90 \text{ lbs} \cdot 12}{155 \text{ plf}} = 6 \text{ in O C}$$

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 6" ON CENTER

PLATE TO STUD CONNECTION:

$$P_c = W_{\text{roof}} \cdot M_{16} = 155 \text{ plf} \cdot 1.33 = 206 \text{ lbs}$$

$$\# \text{ OF } 0.131" \times 2.5" \text{ COMMON NAIL (ENDNAILED) REQUIRED} = \frac{P_c}{Z} = \frac{206 \text{ lbs}}{50 \text{ lbs}} = 4 \text{ NAILS}$$

USE (4) 0.131" x 2.5" COMMON NAIL (ENDNAILED) PER STUD

BOTTOM PLATE TO FLOOR CONNECTION:

$$\text{SPACING OF } 0.131" \times 2.5" \text{ COMMON NAIL (FACE NAILED)} = \frac{Z \cdot 12}{W_{\text{roof}}} = \frac{90 \text{ lbs} \cdot 12}{155 \text{ plf}} = 6 \text{ in O C}$$

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 6" ON CENTER



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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

FIRST FLOOR ENDWALL SHEATHING LENGTH REQUIREMENTS

FIRST FLOOR WIDTH (W_1) = 47.5 ft
 FIRST FLOOR LENGTH (L_1) = 40 ft
 SHEARWALL TYPE 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWS INTERIOR
 SHEATHING EDGE 8d NAIL SPACING = 6 in O.C. (8d NAILS OR EQUIVALENT)
 SHEARWALL STRENGTH (V_f) = 436 plf (TABLE 3.17D, 2001 WFCM)
 MIN. SHEARWALL SEGMENT LENGTH = 2.3 ft
 FULL HEIGHT SHEATHING PROVIDED = 18.95 ft
 1st FL. PERCENT FULL HEIGHT SHEATHING = 40 %
 1st FL. MAX. UNRESTRAINED OPENING HEIGHT = 6.75 ft
 1st FL. PERFORATED ADJUSTMENT FACTOR (C_p) = 1.56 (TABLE 3.17E, 2001 WFCM)
 1st FL. NUMBER OF SHEARWALLS (N_{end}) = 2

$$SHEARWALL REACTION (R_{end}) = L_1 \cdot W_{1,per} / N_{end} =$$

$$R_{end} = 40 \text{ ft} \cdot 257 \text{ plf} / 2 = 5004 \text{ lbs}$$

$$MIN. LENGTH SEGMENTED SHEARWALLS (L_{seg}) = R_{end} / V_f = 5004 \text{ lbs} / 436 \text{ plf} = 11.5 \text{ ft}$$

$$PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = C_p \cdot L_{seg} = 1.56 \cdot 11.5 \text{ ft} = 17.90 \text{ ft}$$

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 17.9 ft < PERFORATED FULL HEIGHT SHEATHING PROVIDED = 18.95 ft

ENDWALL SHEARWALLS OK
 ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR HORIZONTAL FLOOR DIAPHRAGM CONTINUITY:

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
 (DEEP BEAM HORIZONTAL SHEAR)

$$V_1 = \frac{(3 \cdot F_{1,per} / 4) \cdot L}{2} = \frac{3 / 4 \cdot 257 \text{ plf} \cdot 40 \text{ ft}}{2} = 3855 \text{ lbs}$$

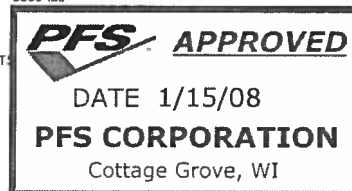
$$\# 1/2" \text{ DIA. THRU BOLT} = \frac{V_1}{Z_{1/2 \text{ BOLT}}} = \frac{3855 \text{ lbs}}{725 \text{ lbs}} = 5 \text{ BOLTS}$$

USE A MIN. OF (6) 1/2" DIA. THRU BOLTS
 TO ATTACH MODULE TO MODULE ALONG MATE LINE

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
 (CHORD FORCE CONTINUITY)

$$T = \frac{(3 \cdot F_{1,per} / 4) \cdot (L / 2)}{4} = \frac{3 / 4 \cdot 257 \text{ plf} \cdot 40 \text{ ft} / 2}{4} = 964 \text{ lbs}$$

USE A 1.5" x 20 ga. STRAP w/ (23) 16 ga. STAPLES EACH END
 TO ATTACH MODULE TO MODULE AT EACH ENDWALL
 OR CONNECTION TO WITHSTAND AN TENSILE FORCE OF 964 lbs



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FIRST FLOOR ENDWALL: UPLIFT DUE TO OVERTURNING

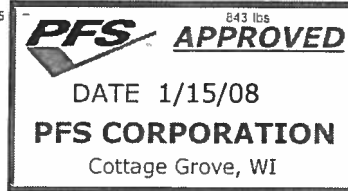
FIRST FLOOR WIDTH (W_1) = 47.5 ft
SHEARWALL REACTION (R_{end1}) = 5004 lbs
WALL HEIGHT (H) = 8 ft

UPLIFT FORCE (U_{E1}) = $R_{end1} \cdot H / W_1$ =
 $U_{E1} = 5004 \text{ lbs} \cdot 8 \text{ ft} / 47.5$

SEE PAGE 12 FOR CONNECTION DESIGN

FIRST FLOOR ENDWALL: SHEAR CONNECTIONS

FIRST FLOOR WIDTH (W_1) = 47.5 ft
FIRST FLOOR LENGTH (L_1) = 40 ft
 $FL_{per} = 257 \text{ plf}$
 $W_{per} = 250 \text{ plf}$
1/2" ANCHOR BOLT Z = 1056 lbs
5/8" ANCHOR BOLT Z = 1488 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED) Z = 159 lbs



RIMBAND TO SILL PLATE CONNECTION:

$LAT = (W_{per} + 3 \cdot FL_{per} / 4) =$
 $LAT = 250 \text{ plf} + 3 \cdot 257 \text{ plf} / 4 = 443 \text{ plf}$

$V = LAT \cdot L / 2 = 443 \text{ plf} \cdot 40 \text{ ft} / 2 = 8859 \text{ lbs}$

TOENAILS PER FOOT = $V / Z / W = 8859 \text{ lbs} / 159 \text{ lbs} / 47.5 \text{ ft} = 1.2 \text{ NAILS / ft}$

TOENAIL SPACING = $12 / \# = 12 / 1.2 = 10" \text{ O.C.}$

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 10" ON CENTER

SILL PLATE TO FOUNDATION CONNECTION:

1/2" ANCHOR BOLTS = $V / Z = 8859 \text{ lbs} / 1056 \text{ lbs} = 9 \text{ BOLTS}$

BOLT SPACING = $(W - 2) / (N - 1) = (47.5 \text{ ft} - 2) / (9 - 1) = 6.8 \text{ ft}$

USE 1/2" ANCHOR BOLTS @ 68" O.C.
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS

5/8" ANCHOR BOLTS = $V / Z = 8859 \text{ lbs} / 1488 \text{ lbs} = 6 \text{ BOLTS}$

BOLT SPACING = $(W - 2) / (N - 1) = (47.5 \text{ ft} - 2) / (6 - 1) = 7.2 \text{ ft}$

USE 5/8" ANCHOR BOLTS @ 72" O.C.
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

FIRST FLOOR SIDEWALL SHEATHING LENGTH REQUIREMENTS

FIRST FLOOR WIDTH (W_1) = 47.5 ft
 FIRST FLOOR LENGTH (L_1) = 40 ft
 SHEARWALL TYPE: 7/16" OSB EXTERIOR (UNBLOCKED) w/ 1/2" GWB INTERIOR
 SHEATHING EDGE 8d NAIL SPACING = 6 in O.C. (8d NAILS OR EQUIVALENT)
 SHEARWALL STRENGTH (V) = 330 plf (TABLE 3.17D, 2001 WFCM)
 MIN. SHEARWALL SEGMENT LENGTH = 2.3 ft
 FULL HEIGHT SHEATHING PROVIDED = 24 ft
 1st FL. PERCENT FULL HEIGHT SHEATHING = 60 %
 1st FL. MAX. UNRESTRAINED OPENING HEIGHT = 2.3 ft
 1st FL. PERFORATED ADJUSTMENT FACTOR (C_p) = 1.54 (TABLE 3.17E, 2001 WFCM)
 1st FL. NUMBER OF SHEARWALLS (N_{sw}) = 2

SHEARWALL REACTION (R_{sw1}) = $W_1 \cdot W_1 / (L_1 \cdot N_{sw}) =$
 $R_{sw1} = 47.5 \text{ ft} \cdot 156 \text{ plf} / 2 = 3693 \text{ lbs}$

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = $R_{sw1} / V = 3693 \text{ lbs} / 330 \text{ plf} = 11.2 \text{ ft}$

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = $C_p \cdot L_{sw} = 1.54 \cdot 11.2 \text{ ft} = 17.2 \text{ ft}$

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 17.23 ft < PERFORATED FULL HEIGHT SHEATHING PROVIDED = 24 ft

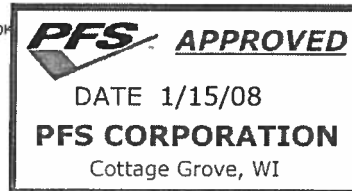
SIDEWALL SHEARWALLS OK

FIRST FLOOR SIDEWALL: UPLIFT DUE TO OVERTURNING

FIRST FLOOR WIDTH (W_1) = 47.5 ft
 FIRST FLOOR LENGTH (L_1) = 40 ft
 SHEARWALL REACTION (R_{sw1}) = 3693 lbs
 WALL HEIGHT (H) = 8 ft

UPLIFT FORCE (U_{E1}) = $R_{sw1} \cdot H / L_1 =$
 $U_{E1} = 3693 \text{ lbs} \cdot 8 \text{ ft} / 40 \text{ ft} = 739 \text{ lbs}$

SEE PAGE 12 FOR CONNECTION DESIGN

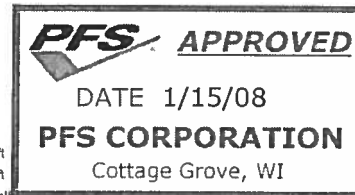


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FIRST FLOOR SIDEWALL: SHEAR CONNECTIONS

FIRST FLOOR WIDTH (W_1) =	47.5 ft
FIRST FLOOR LENGTH (L_1) =	40 ft
$FL_{para} =$	257 plf
$W_{para} =$	250 plf
1/2" ANCHOR BOLT	Z = 1055 lbs
5/8" ANCHOR BOLT	Z = 1488 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z = 159 lbs



RIMBAND TO SILL PLATE CONNECTION:

$$LAT = (W_{para} + 3 \cdot FL_{para} / 4) =$$

$$LAT = 250 \text{ plf} + 3 \cdot 257 \text{ plf} / 4 = 450 \text{ plf}$$

$$V = LAT \cdot W_1 / 2 = 450 \text{ plf} \cdot 47.5 \text{ ft} / 2 = 10682 \text{ lbs}$$

$$\# \text{ TOENAILS PER FOOT} = V / Z / L_1 = 10682 \text{ lbs} / 159 \text{ lbs} / 40 \text{ ft} = 1.7 \text{ NAILS / ft}$$

$$\text{TOENAIL SPACING} = 12 / \# = 12 / 1.7 = 7 \text{ " O.C.}$$

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 7" ON CENTER

SILL PLATE TO FOUNDATION CONNECTION:

$$\# 1/2" \text{ ANCHOR BOLTS} = V / Z = 10682 \text{ lbs} / 1055 \text{ lbs} = 11 \text{ BOLTS}$$

$$\text{BOLT SPACING} = (L - 2) / (N - 1) = (40 \text{ ft} - 2) / (11 - 1) = 45 \text{ in}$$

USE 1/2" ANCHOR BOLTS @ 45" O.C.
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS

$$\# 5/8" \text{ ANCHOR BOLTS} = V / Z = 10682 \text{ lbs} / 1488 \text{ lbs} = 8 \text{ BOLTS}$$

$$\text{BOLT SPACING} = (L - 2) / (N - 1) = (40 \text{ ft} - 2) / (8 - 1) = 72 \text{ in}$$

USE 5/8" ANCHOR BOLTS @ 72" O.C.
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE CUSTOM HOMES

COMBINED CORNER HOLDDOWN REQUIREMENTS

UPLIFT FORCES: (SEE ABOVE FOR CALCULATIONS)

1st FLOOR ENDWALL UPLIFT FORCE (U_{E1}) = 843 lbs
1st FLOOR SIDEWALL UPLIFT FORCE (U_{S1}) = 739 lbs

DEAD LOADS:

FIRST FLOOR WIDTH (W_1) = 47.5 ft
FIRST FLOOR LENGTH (L_1) = 40 ft
FIRST FLOOR HEIGHT (H_1) = 8 ft
ROOF & CEILING ASSEMBLY DEAD LOAD (RDL) = 15 psf
WALL DEAD LOAD (WDL) = 12 psf
FLOOR DEAD LOAD (FDL) = 10 psf

SIDEWALL FIRST FLOOR CORNER:

ROOF DEAD LOAD = $0.6 \cdot RDL \cdot W_1 \cdot L_1 / 8 = 2138$ lbs
ROOF DEAD LOAD = $0.5 \cdot 15 \text{ psf} \cdot 47.5 \text{ ft} \cdot 40 \text{ ft} / 8 = 2138$ lbs
WALL DEAD LOAD = $0.6 \cdot (WDL \cdot H_1 \cdot L_1 / 2) = 1152$ lbs
WALL DEAD LOAD = $0.6 \cdot 12 \text{ psf} \cdot 8 \text{ ft} \cdot 40 \text{ ft} / 2 = 1152$ lbs
TOTAL DEAD LOAD = $1152 + 2138 = 3290$ lbs

ENDWALL FIRST FLOOR CORNER:

WALL DEAD LOAD = $0.6 \cdot (WDL \cdot H_1 \cdot W_1 / 2) = 1358$ lbs
WALL DEAD LOAD = $0.6 \cdot 12 \text{ psf} \cdot 8 \text{ ft} \cdot 47.5 \text{ ft} / 2 = 1358$ lbs

FIRST FLOOR HOLDDOWNS

UPLIFT FORCE = 843 lbs (MAX. OF FIRST FLOOR UPLIFT FORCES)

FIRST FLOOR DEAD LOAD (DL_1) = $3290 \text{ lbs} + 1358 \text{ lbs} = 4658$ lbs

HOLDDOWN FORCE = $843 \text{ lbs} - 4658 \text{ lbs} = -3815$ lbs

NO PHYSICAL HOLDDOWN REQUIRED

FIRST FLOOR CORNER STUD CONNECTION

16d COMMON NAIL ALLOWABLE SHEAR (Z) = 159 lbs

UPLIFT FORCE = 843 lbs (MAX. OF FIRST FLOOR UPLIFT FORCES)

NAIL SPACING (2 ROWS) = $\frac{2 \cdot H \cdot Z}{U} = \frac{2 \cdot 8 \text{ ft} \cdot 159 \text{ lbs}}{843 \text{ lbs}} = 37$ in O.C.

OF 1/4" DIA. LAG SCREW REQUIRED = $\frac{U}{Z} = \frac{843 \text{ lbs}}{320 \text{ lbs}} = 3$ LAG SCREWS

FASTEN CORNER STUDS 2 ROWS OF 16d COMMON NAILS @ 37" ON CENTER
OR USE (3) 1/4" DIA. LAG SCREWS

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ALL HIGH WIND ZONE
STRAPS TO BE FLORIDA
APPROVED OR FOR IAI

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HORIZONTAL DIAPHRAM CALCULATION

BUILDING INFORMATION:

JOB NUMBER = 071343
PLAN NAME = HICKORY II
CONTRACT NUMBER = 91670
DIAPHRAM LOCATION = KITCHEN
DIAPHRAM WIDTH (W_f) = 15.75 ft
DIAPHRAM OFFSET (L) = 7 ft
WALL HEIGHT (H) = 8 ft
TRUSS SPAN (W_t) = 15.75 ft
ROOF PITCH = 12 /12

WIND SPEED (V_{3S}) = 130 mph
EXPOSURE CATEGORY = B
MEAN ROOF HEIGHT ADJUSTMENT FACTOR (C_{MRH}) = 1
WALL HEIGHT ADJUSTMENT FACTOR (C_{VWH}) = 1

LATERAL LOAD AT ROOF/CEILING DIAPHRAGM

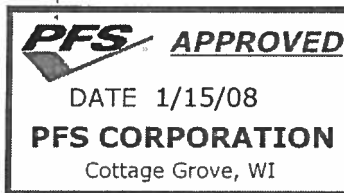
TRUSS SPAN (W_t) = 15.75 ft
ROOF PITCH = 12 /12

WIND : (TABLE 2.5B, 2001 WFCM)

AT 24' = 321 plf
AT 36' = 424 plf

AT 15.75' (w) = 250 plf

$w = w \cdot C_{DAPH} \cdot C_{VWH} =$
 $w = 250 \text{ plf} \cdot 1 \cdot 1 =$
 $w = 250 \text{ plf}$



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CHECK FIRST FLOOR CEILING DIAPHRAM

DIAPHRAM ASSEMBLY = 1/2" GWB (UNBLOCKED) w/ 7" EDGE SPACING

DIAPHRAM SHEAR CAPACITY (V)= 70 plf

$$w_{2nd} = \frac{w \cdot L}{2 \cdot W} = \frac{250 \text{ plf} \cdot 7 \text{ ft}}{15.75 \text{ ft} \cdot 2}$$

$$w_{2nd} = 56 \text{ plf}$$

$$w_{2nd} = 56 \text{ plf} < V = 70 \text{ plf}$$

DIAPHRAM OK

INSTALL A DOUBLE BOTTOM CHORD IN LINE WITH EXTERIOR WALL OFFSET

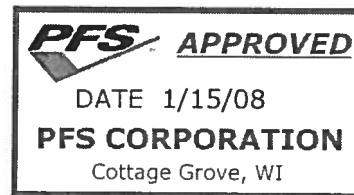
CHECK FIRST FLOOR CEILING MATE WALL CONNECTION

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)

$$V_1 = \frac{w_{2nd} \cdot W}{2} = \frac{56 \text{ plf} \cdot 15.75 \text{ ft}}{2} = 438 \text{ lbs}$$

$$\# \text{ 1/4" DIA. LAG BOLT} = \frac{V_1}{Z_{1/4 \text{ BOLT}}} = \frac{438 \text{ lbs}}{320 \text{ lbs}} = 2 \text{ BOLTS}$$

USE A MIN. OF (2) 1/4" DIA. LAG BOLTS
TO ATTACH MODULE TO MODULE ALONG MATE LINE AT KITCHEN
OR A CONNECTION TO WITHSTAND 438 lbs OF SHEAR



MODULAR HOME
CALCULATIONS

BARLOW ENGINEERING, P.C.

COLLECTOR - LIVING ROOM
MEMBER LENGTH 15.75 ft
EXPOSED BEAM

COLLECTOR: 2 x 8 SPF #2
COLLECTOR QUANTITY: 2 per (NO SPLICE ALLOWED)

DESIGN LOADS:

MAXIMUM COLLECTOR LOAD (P) 5004 lbs

DETERMINE HEADER SPAN:	AREA (A)=	21.75 in ²	SECTION MODULUS (S)=	25.282 in ³
	THICKNESS (b)=	3 in	ALLOW BENDING (F _b)=	875 psi
	DEPTH (d)=	7.25 in	ALLOW SHEAR (F _v)=	70 psi
	REPETITION FACTOR (C _r)=	1.15	MOMENT OF INERTIA (I)=	95.27 in ⁴
	SIZE FACTOR (C _s)=	1.05	COL BUCK COEF (K _c E)=	0.3
	MODULUS OF ELASTICITY (E)=	1.40E+06 psi	BEAM BUCK COEF (K _b E)=	0.438
	BUCK/CRUSH INTERACTION FACTOR (C)=	0.8 in	BUCK LGTH COEF (K _e)=	1
	ALLOW COMP PARALLEL (F _c)=	1150 psi	ALLOW COMP-PERP (F _c p)=	425 psi
	DURATION FACTOR (C _d)=	1.15		

DETERMINE THE NUMBER OF COLLECTORS (LATERALLY SUPPORTED) REQUIRED

COLLECTOR LENGTH (L) 189 in

MINIMUM NUMBER OF COLLECTORS: (K_e x L)/d = 26.069 in F_c* = F_c x C_d x C_r = 1388.625 psi

$$F_{cE} = \frac{K_c E \times E}{(K_e L/D)^2} = 618.019 \text{ psi} \quad F_c' = F_{cE} \times C_p = 546.9376 \text{ psi}$$

$$\text{COLUMN STABILITY FACTOR } C_p = 1 + \frac{(F_{cE}/F_c') - \left[\frac{1 + (F_{cE}/F_c')^2}{2C} \right] (F_{cE}/F_c')}{2C} = 0.394$$

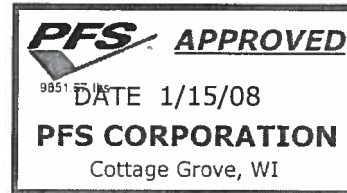
MINIMUM NUMBER OF COLLECTORS:

$$F_c' = F_c \times C_p = 452.950 \text{ psi}$$

$$P_{allow} = F_c' \times A = 9851.671 \text{ lbs / COLLECTOR}$$

$$\text{ACT COLLECTOR LOAD (P)} = 5004.000 \text{ lbs / COLLECTOR}$$

$$\text{CHECK LOADING (P vs } P_{allow}) = 5004.000 \text{ lbs} < \text{OK}$$



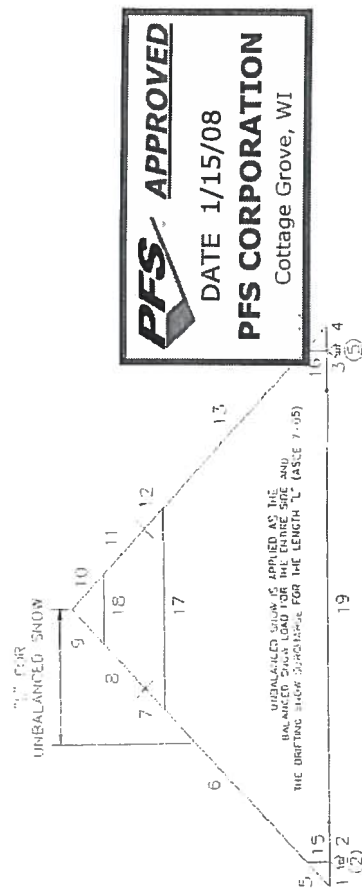
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CRAGSTRUT AXIAL k1b

1 OF 1
1/7/2008
ALL HIGH WIND ZONE
STRAPS TO BE FLORIDA
APPROVED OR EQUAL

Handwritten signature and date 1/13/08



TRUSS NO. CF-121118 QWIDEN
JOB NO. 522235
PITCH 12/12
SPAN: 15'-0"

TABLE CONTINUED:

THIS MESSAGE MUST BE USED IN COMBINATION WITH F.127.129 AI 24 US

NUMBER INFORMATION	LENDER	SIZE A	SPECIES
	1-4		11111112 + 8 51P 82
	5-7		2 110 51P 82
	8-11		2 110 51P 82
	12-14		2 110 51P 82
	15-18		2 110 51P 82
	17-18		2 110 51P 82

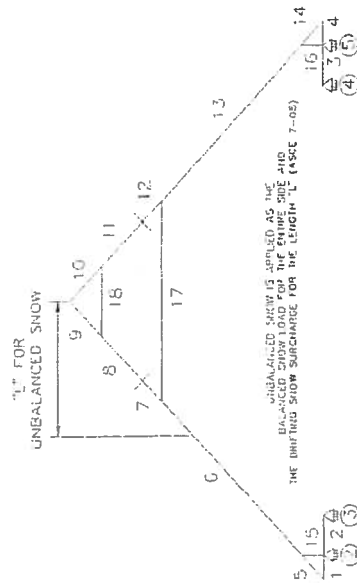
10. **Відомості про автора**

	DEAD LOAD	DL + LL 25% PL	DL + WIND	UL + WIND UPLIFT	UL + 112 mph UPLIFT	UL + 150 mph UPLIFT
1	-776.7	989.2	218.7	-631.0	-801.2	

[illegible]

	MAXIMUM DEFLECTION	MAXIMUM CH	MAXIMUM DEFLECTION	L ₁
25°C-20°C-20°C	3.87138	0.78613	3.87138	7626
10°C-20°C-10°C	0.44752	0.17741	0.44752	37
10°C-10°C-10°C	0.00000	0.00000	0.00000	0.00000

✓ Read
1/13/9



20/19 P/F
QSL
-13.4d P/F
20.19 P/F
20.88 P/F
4.64 P/F
4.16 R
10 P/F
10 P/F
22.18 P/F CH 20 mg
33.21 P/F CH 10 mg
40.4 P/F CH 20 mg

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BALANCED TC LL
UNBALANCED TC LL PER ABC 7407
DISPATCH UNBALANCED BURCHARD TC LL PER ABC 7407
DISPATCH BUB UNBALANCED TC LL PER ABC 7407
DISTANCE "L" FOR BURCHARD PER ABC 7407
TC DL:
BC DL:
UNPUT:

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TRUSS NO.: C4-V12150
JOB NO.: 060335
PITCH: 12/12
SPAN: 15'-0"

TRUSS CHORDS:
TOPS 2x8 S.S.74
BOYS 1x2x10 M195 N112

MEMBER	SIZE & SPECIES
1-6	2 x 8 DHP #2
8-7	2 x 10 SPP #1
8-11	2 x 4 SFP #1
12-14	2 x 10 SPP #2
15-16	2 x 4 SFP #1
17-18	2 x 6 SFP #1

MANUALLY SUPPORTED BRACKENSHILL		OK	SL	LT	LT	LT	LT
		DEAF	LOW	KNOW	KNOW	KNOW	KNOW
1	Support 1 (15.5)	315.0	119.4	128.5	128.5	128.5	128.5
2	Support 1 (15.5)	18.4	57.4	50.0	50.0	50.0	50.0
3	Support 1 (15.5)	148.1	41.1	-8.2	-8.2	-8.2	-8.2
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PFS **APPROVED**
DATE 1/15/08
PFS CORPORATION
Cottage Grove, WI

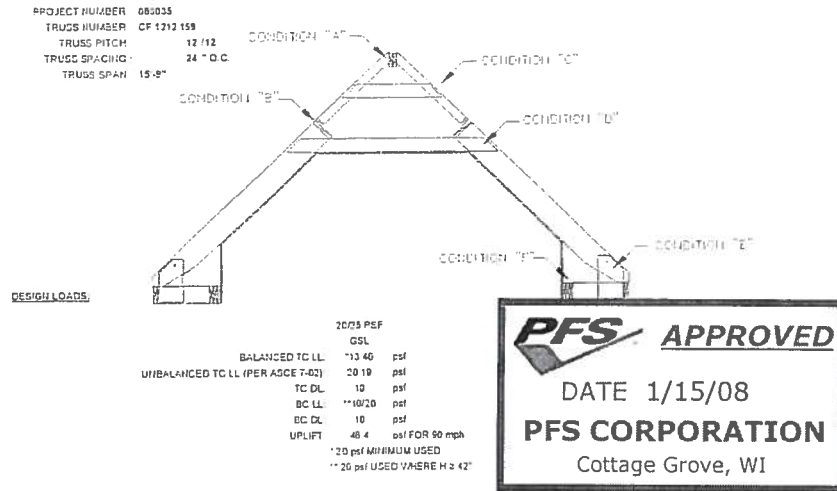
	MAXIMUM DEFLECTION (mm)	MAXIMUM DEFLECTION (in)	L / D
ROTTENBERG	0.54559	0.02149	4148
TIGER-CHESTER	0.58163	0.02313	2875
WCB	0.22713	0.009	2000

[illegible]

✓ Read
1/13/13

CONNECTIONS
TRUSS FRAMING

NATIONWIDE CUSTOM HOMES



CONNECTION SUMMARY DL + 130 mph WIND (LOAD14)			
CONDITION	LOAD (lbs)	FASTENER(S)	
"A" : RIDGE BEAM TC TO RIDGE (V) AND RIDGE TO RIDGE (V) TC TO RIDGE (T) AND RIDGE TO RIDGE (T) OR ALT FASTENER RIDGE TO RIDGE (T)	43.7	(1)	10 d NAIL TOENAILED EACH CHORD INTO RIDGE
	43.7	16d AT 24"	O C THROUGH RIDGE BEAM
	43.7	(2)	10 d NAIL TOENAILED EACH CHORD INTO RIDGE
	43.7	(2)	16 d NAIL THRU RIDGE MEMBERS AT 24" O C
	43.7	(1)	SIMPSON LSTAS STRAP w/ (8) 10 d NAILS
"B" : TOP CHORDS TO FLIP TOP CHORD TO FLIP (T) OR ALT FASTENER TOP CHORD TO FLIP (T) TOP CHORD TO PLATE (V) AND PLATE TO PLATE (V)	247.7	(4)	8 d NAIL EACH SIDE THROUGH SHEATHING
	247.7	(1)	SIMPSON LSTAS STRAP w/ (8) 10 d NAILS
	65.4	(1)	16 d NAIL THROUGH PLATES INTO TOP CHORDS
	65.4	16d AT 24"	O C THROUGH PLATES
"C" : COLLAR TIE UPPER COLLAR TIE TO TOP CHORD (T)	227.4	(2)	16 d NAIL EACH END
"D" : COLLAR TIE LOWER COLLAR TIE TO TOP CHORD (T)	539.8	(3)	16 d NAIL EACH END
"E" : HEEL GUSSET TO TC GUSSET TO BC	751.7	(1)	3/4" BOLT (DOUBLE SHEAR, 3/8" SIDE PLATES)
	411.1	(0)	16 d NAIL EACH SIDE
"F" : BOTTOM CHORD TO THRUST BEAM BC TO THRUST BEAM (T) OR ALTERNATE BC TO THRUST BEAM (T) BC TO THRUST BEAM (V)	411.1	(1)	SIMPSON LSTAS STRAP w/ (8) 10 d NAILS
	411.1	(3)	16 d NAIL EA. SIDE OF CONNECTION THRU SHEATHING
	500.8	(1)	SIMPSON L70 ANGLE w/ (8) 10 d NAILS EA. SIDE OF JOIST

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1/13/08