

Columbia County Building Permit Application

Revised 9-23-04

ck1092

For Office Use Only	Application # <u>0603-46</u>	Date Received <u>3/15/06</u>	By <u>[Signature]</u>	Permit # <u>24274</u>
Application Approved by - Zoning Official <u>BLK</u>		Date <u>3-15-06</u>	Plans Examiner <u>AKH</u>	Date <u>3-15-06</u>
Flood Zone <u>X</u>	Development Permit <u>N/A</u>	Zoning <u>A-3</u>	Land Use Plan Map Category <u>A-3</u>	
Comments <u>911 needed</u>				

Applicants Name KENT HARRISS CONST. INC Phone (386) 758-0022
Address BOS S.W. ALAMO DR, L.C. 32025
Owners Name SAME Phone _____
911 Address 438 SW King, Lake City, FL 32024
Contractors Name KENT HARRISS CONST. INC Phone 758-0022
Address BOS S.W. ALAMO DR L.C
Fee Simple Owner Name & Address SAME
Bonding Co. Name & Address _____
Architect/Engineer Name & Address _____
Mortgage Lenders Name & Address _____
Circle the correct power company - FL Power & Light - Clay Elec. - Suwannee Valley Elec. - Progressive Energy
Property ID Number 36-45-16-03300-000 Estimated Cost of Construction \$205,000.00
Subdivision Name NONE Lot _____ Block _____ Unit _____ Phase _____
Driving Directions KING Rd off Hwy 47, 2/10 mile on left

Type of Construction modular Number of Existing Dwellings on Property 0
Total Acreage 5.05 Lot Size 5.05 Do you need a - Culvert Permit or Culvert Waiver or Have an Existing Drive
Actual Distance of Structure from Property Lines - Front 120' Side 140' Side 160' Rear 418'
Total Building Height 34' Number of Stories 2 Heated Floor Area 2500 Roof Pitch 12/12
GARAGE 864 TOTAL 3,364

Application is hereby made to obtain a permit to do work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work be performed to meet the standards of all laws regulating construction in this jurisdiction.

OWNERS AFFIDAVIT: I hereby certify that all the foregoing information is accurate and all work will be done in compliance with all applicable laws and regulating construction and zoning.

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

[Signature]
Owner Builder or Agent (Including Contractor)

STATE OF FLORIDA
COUNTY OF COLUMBIA

Sworn to (or affirmed) and subscribed before me
this 15th day of February 2006.
Personally known ✓ or Produced Identification _____

[Signature]
Contractor Signature
Contractors License Number C6C-028003
Competency Card Number _____
NOTARY STAMP/SEAL

[Signature]
Notary Signature



SHIELE DARLENE KAEMMER
MY COMMISSION # DD 322429
EXPIRES: June 24, 2008
Bonded Thru Budget Notary Services

COLUMBIA COUNTY 9-1-1 ADDRESSING

P. O. Box 1787, Lake City, FL 32056-1787

PHONE: (386) 758-1125 * FAX: (386) 758-1365 * Email: ron_croft@columbiacountyfla.com

Addressing Maintenance

To maintain the Countywide Addressing Policy you must make application for a 9-1-1 Address at the time you apply for a building permit. The established standards for assigning and posting numbers to all principal buildings, dwellings, businesses and industries are contained in Columbia County Ordinance 2001-9. The addressing system is to enable Emergency Service Agencies to locate you in an emergency, and to assist the United States Postal Service and the public in the timely and efficient provision of services to residents and businesses of Columbia County.

DATE REQUESTED: 3/14/2006 DATE ISSUED: 3/21/2006

ENHANCED 9-1-1 ADDRESS:

438 SW KING ST

LAKE CITY FL 32024

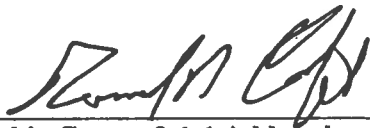
PROPERTY APPRAISER PARCEL NUMBER:

36-4S-16-03300-008

Remarks:

1ST LOCATION ON PARCEL

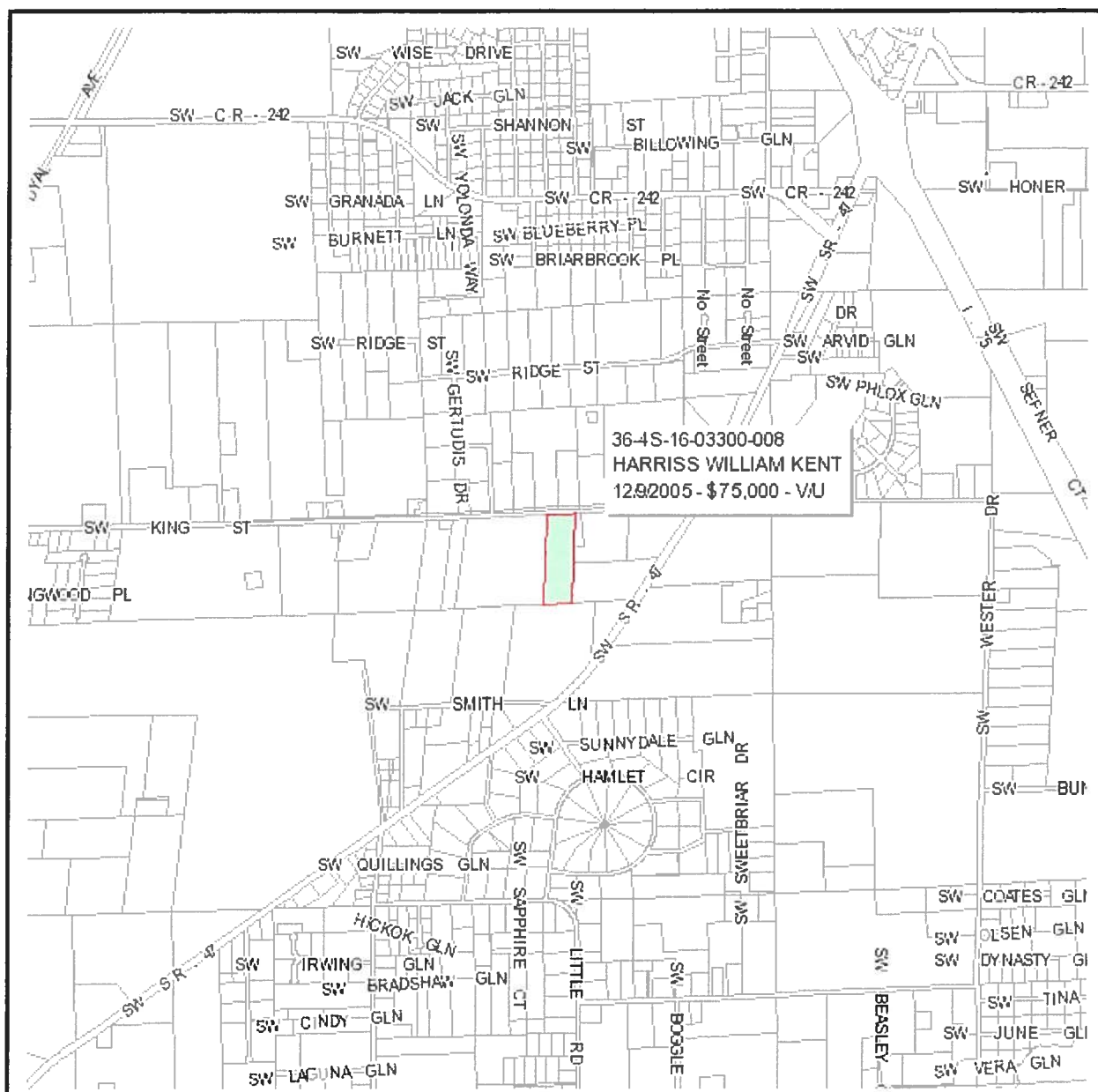
Address Issued By: _____


Columbia County 9-1-1 Addressing / GIS Department

NOTICE: THIS ADDRESS WAS ISSUED BASED ON LOCATION INFORMATION RECEIVED FROM THE REQUESTER. SHOULD, AT A LATER DATE, THE LOCATION INFORMATION BE FOUND TO BE IN ERROR, THIS ADDRESS IS SUBJECT TO CHANGE.

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COLUMBIA COUNTY
9-1-1 ADDRESSING
APPROVED



Columbia County Property Appraiser

J. Doyle Crews, CFA - Lake City, Florida - 386-758-1083

PARCEL: 36-4S-16-03300-008 - NO AG ACRE (009900)

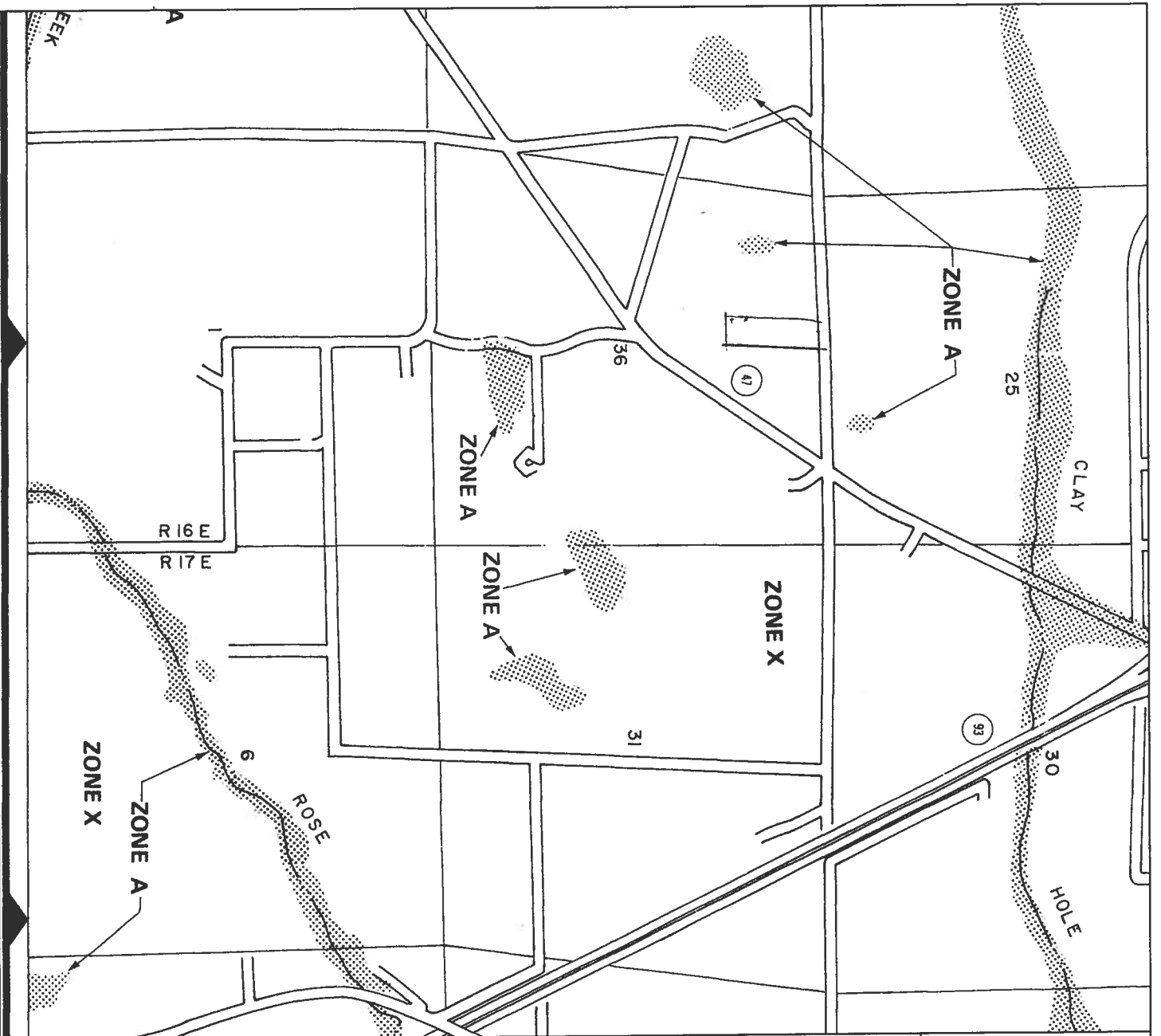
COMM NW COR, RUN E 1976.33 FT, S 92.11 FT FOR POB, RUN S 1210.25 FT, W 365.55 FT, N

Name:	HARRISS WILLIAM KENT	LandVal	\$126,422.00
Site:	—	BldgVal	\$0.00
Mail:	805 SW ALAMO DR LAKE CITY, FL 32025	ApprVal	\$126,422.00
		JustVal	\$126,422.00
Sales	12/9/2005 \$100.00V / U	Assd	\$126,422.00
Info	12/9/2005 \$75,000.00V / U	Exmpt	\$0.00
	10/26/2000 \$100.00V / U	Taxable	\$126,422.00

0 0.1 0.2 0.3 mi



This information, GIS Map Updated: 2/7/2006, was derived from data which was compiled by the Columbia County Property Appraiser Office solely for the governmental purpose of property assessment. This information should not be relied upon by anyone as a determination of the ownership of property or market value. No warranties, expressed or implied, are provided for the accuracy of the data herein, its use, or its interpretation. Although it is periodically updated, this information may not reflect the data currently on file in the Property Appraiser's office. The assessed values are NOT certified values and therefore are subject to change before being finalized for ad valorem assessment purposes.



APPROXIMATE SCALE IN FEET
 2000 0 2000

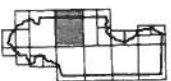
NATIONAL FLOOD INSURANCE PROGRAM

FIRM
 FLOOD INSURANCE RATE MAP

COLUMBIA
 COUNTY,
 FLORIDA
 (UNINCORPORATED AREAS)

PANEL 175 OF 290

PANEL LOCATION



COMMUNITY-PANEL NUMBER
 120070 0175 B

EFFECTIVE DATE:
 JANUARY 6, 1988



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT Version 1.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at www.fema.gov/nifis.

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Columbia County Property

Appraiser

DB Last Updated: 2/10/2006

Parcel: 36-4S-16-03300-008

2006 Proposed Values

Tax Record

Property Card

Interactive GIS Map

Print

Owner & Property Info

<< Prev Search Result: 3 of 5 Next >>

Owner's Name HARRISS WILLIAM KENT

Use Desc. (code) NO AG ACRE (009900)

Site Address ---

Neighborhood 36416.00

Mailing Address 805 SW ALAMO DR
LAKE CITY, FL 32025

Tax District 3

Brief Legal COMM NW COR, RUN E 1976.33 FT, S 92.11
FT FOR POB, RUN S 1210.25 FT, W 365.55
FT, N

UD Codes MKTA01

Market Area 01

Total Land Area 10.130 ACRES

Property & Assessment Values

Mkt Land Value	cnt: (1)	\$126,422.00	Just Value	\$126,422.00
Ag Land Value	cnt: (0)	\$0.00	Class Value	\$0.00
Building Value	cnt: (0)	\$0.00	Assessed Value	\$126,422.00
XFOB Value	cnt: (0)	\$0.00	Exempt Value	\$0.00
Total Appraised Value		\$126,422.00	Total Taxable Value	\$126,422.00

Sales History

Sale Date	Book/Page	Inst. Type	Sale VImp	Sale Qual	Sale RCode	Sale Price
12/9/2005	1068/419	WD	V	U	01	\$100.00
12/9/2005	1068/417	WD	V	U	07	\$75,000.00
10/26/2000	913/1222	WD	V	U	01	\$100.00

Building Characteristics

Bldg Item	Bldg Desc	Year Blt	Ext. Walls	Heated S.F.	Actual S.F.	Bldg Value
			NONE			

Extra Features & Out Buildings

Code	Desc	Year Blt	Value	Units	Dims	Condition (% Good)
				NONE		

Land Breakdown

Lnd Code	Desc	Units	Adjustments	Eff Rate	Lnd Value
009900	AC NON-AG (MKT)	10.130 AC	1.00/1.00/1.00/1.00	\$12,480.00	\$126,422.00

Columbia County Property Appraiser

DB Last Updated: 2/10/2006

<< Prev

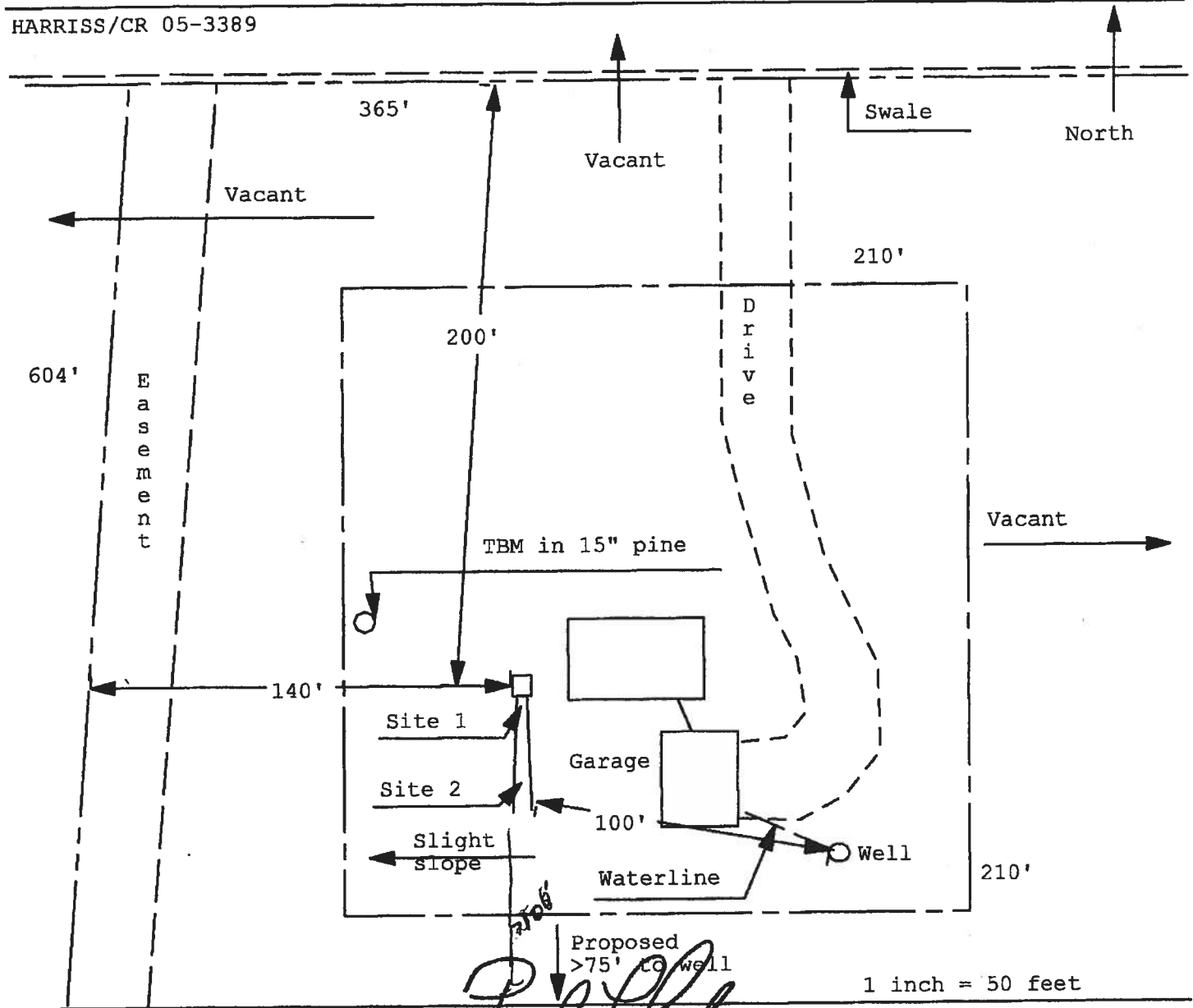
3 of 5

Next >>

**Application for Onsite Sewage Disposal System
Construction Permit. Part II Site Plan**
Permit Application Number: DL-0209N

ALL CHANGES MUST BE APPROVED BY THE COUNTY HEALTH UNIT

HARRISS/CR 05-3389



Site Plan Submitted By _____ Date 2/12/06
Plan Approved ☒ Not Approved _____ Date 3/13/06
By Mr. S. [unclear] Column 5 CPHU

Notes: _____

NOTICE OF COMMENCEMENT FORM
COLUMBIA COUNTY, FLORIDA

*****THIS DOCUMENT MUST BE RECORDED AT THE COUNTY
CLERKS OFFICE BEFORE YOUR FIRST INSPECTION.*****

THE UNDERSIGNED hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

Tax Parcel ID Number 36-45-16-03300-008

1. Description of property: (legal description of the property and street address or 911 address)

KING RD

comm NW COR, RUN E 1976.33 FT, 592.11 FT For POB,
RUN S 1210.25 FT, W 365.55 FT N

2. General description of Improvement: RESIDENTIAL HOME

3. Owner Name & Address KENT HARRISS Construction INC
805 S.W. ALAMO DR LC. 32025 Interest in Property 100%

4. Name & Address of Fee Simple Owner (if other than owner): NONE

5. Contractor Name KENT HARRISS CONST INC Phone Number 758-0022
Address 805 SW ALAMO DR LAKE CITY 32025

6. Surety Holders Name NONE Phone Number _____
Address _____
Amount of Bond _____

7. Lender Name NONE Phone Number _____
Address _____

8. Persons within the State of Florida designated by the Owner upon whom notices or other documents may be served as provided by section 718.13 (1)(a) 7; Florida Statutes:

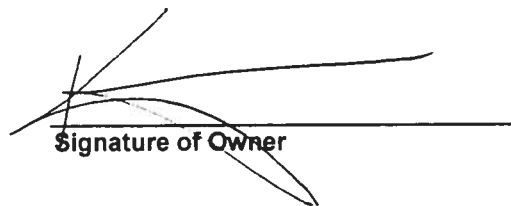
Name KENT HARRISS Phone Number 758-0022
Address 805 S.W. ALAMO DR LAKE CITY 32025

9. In addition to himself/herself the owner designates _____ of
_____ to receive a copy of the Lienor's Notice as provided in Section 713.13 (1) -
(a) 7. Phone Number of the designee _____

10. Expiration date of the Notice of Commencement (the expiration date is 1 (one) year from the date of recording,
(Unless a different date is specified) _____

NOTICE AS PER CHAPTER 713, Florida Statutes:

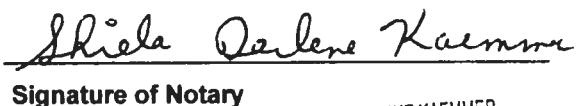
The owner must sign the notice of commencement and no one else may be permitted to sign in his/her stead.


Signature of Owner

Sworn to (or affirmed) and subscribed before
day of February 15, 2005

NOTARY STAMP/SEAL

Inst: 2006005926 Date: 03/10/2006 Time: 11:40
S. P. DC, P. DeWitt Cason, Columbia County B: 1076 P: 2192


Signature of Notary



SHIELKA DARLENE KAEMMER
MY COMMISSION # DD 322429
EXPIRES: June 24, 2008
Bonded Thru Budget Notary Services

HALL'S PUMP & WELL SERVICE, INC.

SPECIALIZING IN 4"-6" WELLS



DONALD AND MARY HALL
OWNERS

PHONE (904) 752-1854
FAX (904) 755-7022
~~XXXXXXXXXXXXXXXXXXXX~~
LAKE CITY, FLORIDA 32055
904 NW Main Blvd.

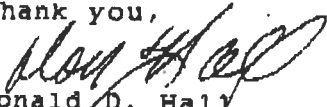
June 12, 2002

NOTICE TO ALL CONTRACTORS

Please be advised that due to the new building codes we will use a large capacity diaphragm tank on all new wells. This will insure a minimum of one (1) minute draw down or one (1) minute refill. If a smaller diaphragm tank is used then we will install a cycle stop valve which will produce the same results.

If you have any questions please feel free to call our office anytime.

Thank you,


Donald D. Hall
DDH/jk

FORM 600A-2004

EnergyGauge® 4.0

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Community Affairs
Residential Whole Building Performance Method A

Project Name:	KHsugarhill	Builder:	Kent Harris
Address:		Permitting Office:	Columbia Co.
City, State:	, FL	Permit Number:	24274
Owner:	The Sugarhill Model	Jurisdiction Number:	22000
Climate Zone:	North		

1. New construction or existing	New	12. Cooling systems	
2. Single family or multi-family	Single family	a. Central Unit	Cap: 24.0 kBtu/hr
3. Number of units, if multi-family	1		SEER: 14.00
4. Number of Bedrooms	3	b. Central Unit	Cap: 24.0 kBtu/hr
5. Is this a worst case?	No		SEER: 14.00
6. Conditioned floor area (ft ²)	2544 ft ²	c. N/A	
7. Glass type ¹ and area: (Label reqd. by 13-104.4.5 if not default)		13. Heating systems	
a. U-factor:	Description Area	a. Electric Heat Pump	Cap: 24.0 kBtu/hr
(or Single or Double DEFAULT) 7a. (Dble Default) 284.4 ft ²			HSPF: 8.00
b. SHGC:		b. Electric Heat Pump	Cap: 24.0 kBtu/hr
(or Clear or Tint DEFAULT) 7b. (SHGC=0.35) 278.9 ft ²			HSPF: 8.00
8. Floor types		c. N/A	
a. Stem Wall	R=3.0, 1272.2 ft ²	14. Hot water systems	
b. N/A		a. Electric Resistance	Cap: 50.0 gallons
c. N/A			EF: 0.90
9. Wall types		b. N/A	
a. Frame, Wood, Exterior	R=16.0, 2204.9 ft ²	c. Conservation credits	
b. N/A		(HR-Heat recovery, Solar	
c. N/A		DHP-Dedicated heat pump)	
d. N/A		15. HVAC credits	PT,
e. N/A		(CF-Ceiling fan, CV-Cross ventilation,	
10. Ceiling types		HF-Whole house fan,	
a. Single Assembly	R=19.0, 1621.3 ft ²	PT-Programmable Thermostat,	
b. N/A		MZ-C-Multizone cooling,	
c. N/A		MZ-H-Multizone heating)	
11. Ducts			
a. Sup: Con. Ret: Con. AII: Interior	Sup. R=6.0, 122.0 ft		
b. Sup: Con. Ret: Con. AH: Interior	Sup. R=6.0, 167.0 ft		

Glass/Floor Area: 0.12

Total as-built points: 26079

Total base points: 33718

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: 3/13/06

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

OWNER/AGENT: [Signature]

DATE: 3-14-06

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.

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE SCORE* = 87.8

The higher the score, the more efficient the home.

The Sugarhill Model, , , FL.

1. New construction or existing	New	12. Cooling systems	
2. Single family or multi-family	Single family	a. Central Unit	Cap: 24.0 kBtu/hr
3. Number of units, if multi-family	1		SEER: 14.00
4. Number of Bedrooms	3	b. Central Unit	Cap: 24.0 kBtu/hr
5. Is this a worst case?	No		SEER: 14.00
6. Conditioned floor area (ft ²)	2544 ft ²	c. N/A	
7. Glass type ¹ and area: (Label reqd. by 13-104.4.5 if not default)		13. Heating systems	
a. U-factor:	Description Area	a. Electric Heat Pump	Cap: 24.0 kBtu/hr
(or Single or Double DEFAULT) 7a. (Ublc Default) 284.4 ft ²			HSPF: 8.00
b. SHGC:		b. Electric Heat Pump	Cap: 24.0 kBtu/hr
(or Clear or Tint DEFAULT) 7b. (SHGC=0.35) 278.9 ft ²			HSPF: 8.00
8. Floor types		c. N/A	
a. Stem Wall	R=3.0, 1272.2ft ²	14. Hot water systems	
b. N/A		a. Electric Resistance	Cap: 50.0 gallons
c. N/A			EP: 0.90
9. Wall types		b. N/A	
a. Frame, Wood, Exterior	R=16.0, 2204.9 ft ²	c. Conservation credits	
b. N/A		(HR-Heat recovery, Solar	
c. N/A		DHP-Dedicated heat pump)	
d. N/A		15. HVAC credits	PT,
e. N/A		(CF-Ceiling fan, CV-Cross ventilation,	
10. Ceiling types		HF-Whole house fan,	
a. Single Assembly	R=19.0, 1621.3 ft ²	PT-Programmable Thermostat,	
b. N/A		MZ-C-Multizone cooling,	
c. N/A		MZ-H-Multizone heating)	
11. Ducts			
a. Sup: Con. Ret: Con. AH: Interior	Sup. R=6.0, 122.0 ft		
b. Sup: Con. Ret: Con. AH: Interior	Sup. R=6.0, 167.0 ft		

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: 3-14-06

Address of New Home: KING Rd

City/FL Zip: LAKE CITY, FL 32025



*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: FLR1SB v4.0)

Code Compliance Checklist

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL.

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.	

FORM 600A-2004

EnergyGauge® 4.0

WATER HEATING & CODE COMPLIANCE STATUS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL,

PERMIT #:

BASE				AS-BUILT					
WATER HEATING									
Number of Bedrooms	X	Multiplier	= Total	Tank Volume	FF	Number of Bedrooms	X Ratio	Tank X Multiplier X Credit	= Total Multiplier
3		2635.00	7905.0	50.0	0.90	3	1.00	2893.56	1.00 8080.7
				As-Built Total:					8080.7

CODE COMPLIANCE STATUS							
BASE				AS-BUILT			
Cooling Points	+	Heating Points	+ Hot Water Points	= Total Points	Cooling Points	+	Heating Points + Hot Water Points = Total Points
15420		10393	7905	33718	8474		9525 8081 26079

PASS

FORM 600A-2004

EnergyGauge® 4.0

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

ADDRESS: , , FL,

PERMIT #:

BASE				AS-BUILT			
CEILING TYPES Area X BWPM = Points				Type	R-Value	Area X WPM X WCM =	Points
Under Attic	1271.8	2.05	2607.2	Single Assembly	19.0	1621.3 1.85 X 1.00	3015.6
Base Total:	1271.8		2607.2	As-Built Total:		1621.3	3015.6
FLOOR TYPES Area X BWPM = Points				Type	R-Value	Area X WPM =	Points
Slab	0.0(p)	0.0	0.0	Stem Wall	3.0	1272.2 2.73	3471.3
Raised	1272.2	0.96	1221.3				
Base Total:			1221.3	As-Built Total:		1272.2	3471.3
INFILTRATION Area X BWPM = Points				Area X WPM = Points			
	2544.0	-0.59	-1501.0		2544.0	-0.59	-1501.0
Winter Base Points:		16565.7		Winter As-Built Points:		21635.2	
Total Winter Points	X System Multiplier	= Heating Points		Total Component (System - Points)	X Cap Ratio (DM x DSM x AHU)	X Duct Multiplier	X System Multiplier X Credit Multiplier = Heating Points
				(sys 1: Electric Heat Pump 24000 btuh ,EFF(8.0) Ducts:Con(S),Con(R),Int(AH),R6.0 21635.2 0.500 (1.000 x 1.169 x 0.93) 0.426 0.950 4762.3 (sys 2: Electric Heat Pump 24000 btuh ,EFF(8.0) Ducts:Con(S),Con(R),Int(AH),R6.0 21635.2 0.500 (1.000 x 1.169 x 0.93) 0.426 0.950 4762.3			
16565.7	0.6274	10393.3		21635.2	1.00	1.087	0.426 0.950 9524.6

FORM 600A-2004

EnergyGauge® 4.0

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

ADDRESS: , , FL,

PERMIT #:

BASE				AS-BUILT							
GLASS TYPES											
.18 X Conditioned X BWPM = Points Floor Area				Type/SC	Overhang Ornt Len Hgt		Area X WPM X WOF = Points				
.18	2544.0	12.74	5833.9	Double, SHGC=0.35	S	7.0	7.0	29.4	20.60	2.73	1654.9
				Double, SHGC=0.35	S	7.0	1.5	5.3	20.60	3.66	399.7
				Single, SHGC=0.35	N	1.0	15.5	12.3	36.25	1.00	445.8
				Double, SHGC=0.35	N	1.0	15.0	7.0	26.80	1.00	187.6
				Double, SHGC=0.35	N	7.0	17.5	14.7	26.80	1.01	396.6
				Double, SHGC=0.35	N	7.0	12.0	5.3	26.80	1.01	143.7
				Double, Clear	N	7.0	18.7	17.8	24.58	1.01	440.0
				Double, SHGC=0.35	W	7.0	5.0	7.0	24.73	1.20	207.6
				Double, SHGC=0.35	W	7.0	5.0	6.0	24.73	1.20	177.9
				Double, SHGC=0.35	W	7.0	2.3	3.9	24.73	1.24	119.4
				Double, SHGC=0.35	S	7.0	7.5	29.4	20.60	2.62	1585.8
				Double, SHGC=0.35	S	7.0	2.0	5.3	20.60	3.66	399.7
				Double, SHGC=0.35	S	7.0	9.0	13.3	20.60	2.33	638.3
				Double, SHGC=0.35	S	7.0	2.0	5.0	20.60	3.66	377.1
				Double, SHGC=0.35	S	1.0	6.0	26.7	20.60	1.03	564.2
				Double, SHGC=0.35	E	1.0	6.0	13.4	23.62	1.02	321.7
				Double, SHGC=0.35	N	1.0	2.0	4.0	26.80	1.01	108.2
				Double, SHGC=0.35	N	1.0	6.0	26.7	26.80	1.00	716.0
				Double, SHGC=0.35	W	1.0	6.0	13.4	24.73	1.01	334.2
				Double, SHGC=0.35	S	1.0	6.0	26.7	20.60	1.03	564.2
				Double, SHGC=0.35	S	1.0	5.0	10.7	20.60	1.06	232.9
				Double, SHGC=0.35	E	1.0	5.0	13.4	20.60	1.06	291.7
				As-Built Total:				296.7	10307.5		
WALL TYPES											
Area X BWPM = Points				Type	R-Value		Area X WPM = Points				
Adjacent	0.0	0.00	0.0	Frame, Wood, Exterior	16.0		2204.9	2.80		6173.7	
Exterior	2204.9	3.70	8158.1								
Base Total:	2204.9		8158.1	As-Built Total:		2204.9		6173.7			
DOOR TYPES											
Area X BWPM = Points				Type			Area X WPM = Points				
Adjacent	0.0	0.00	0.0	Exterior Insulated			20.0	8.40		168.1	
Exterior	20.0	12.30	246.1								
Base Total:	20.0		246.1	As-Built Total:		20.0		168.1			

FORM 600A-2004

EnergyGauge® 4.0

SUMMER CALCULATIONS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL,

PERMIT #:

BASE				AS-BUILT			
CEILING TYPES Area X BSPM = Points				Type	R-Value	Area X SPM X SCM =	Points
Under Attic	12/1.8	1.73	2200.2	Single Assembly	19.0	1621.3 5.64 X 1.00	9144.1
Base Total:	1271.8		2200.2	As-Built Total:		1621.3	9144.1
FLOOR TYPES Area X BSPM = Points				Type	R-Value	Area X SPM =	Points
Slab	0.0(p)	0.0	0.0	Stem Wall	3.0	1272.2	-4.70
Raised	1272.2	-3.99	-5076.1				
Base Total:			-5076.1	As-Built Total:		1272.2	-5979.3
INFILTRATION Area X BSPM = Points				Area X SPM = Points			
	2544.0	10.21	25974.2			2544.0 10.21	25974.2
Summer Base Points: 36145.5				Summer As-Built Points: 35055.2			
Total Summer X System = Cooling Points Multiplier Points				Total X Cap X Duct X System X Credit = Cooling Component Ratio Multiplier Multiplier Multiplier Points (System - Points) (DM x DSM x AHU)			
				(sys 1: Central Unit 24000 btuh ,SEER/EFF(14.0) Ducts:Con(S),Con(R),Int(AH),R6.0(INS)			
				35055	0.50	(1.00 x 1.147 x 0.91)	0.244 0.950 4237.0
				(sys 2: Central Unit 24000 btuh ,SEER/EFF(14.0) Ducts:Con(S),Con(R),Int(AH),R6.0(INS)			
				35055	0.50	(1.00 x 1.147 x 0.91)	0.244 0.950 4237.0
36145.5	0.4266	15419.7		35055.2	1.00	1.044	0.244 0.950 8474.0

FORM 600A-2004

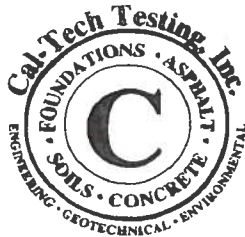
EnergyGauge® 4.0

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

ADDRESS: , , FL,

PERMIT #:

BASE				AS-BUILT											
GLASS TYPES															
.18 X Conditioned X BSPM = Points Floor Area				Type/SC	Overhang		Ornt Len Hgt Area X SPM X SOF = Points								
.18	2544.0	20.04	9176.7	Double, SHGC=0.35	S	7.0	7.0	29.4	15.79	0.52	241.6				
				Double, SHGC=0.35	S	7.0	1.5	5.3	15.79	0.43	36.1				
				Single, SHGC=0.35	N	1.0	16.6	12.3	5.62	1.00	68.8				
				Double, SHGC=0.35	N	1.0	15.0	7.0	6.93	1.00	46.3				
				Double, SHGC=0.35	N	7.0	17.5	14.7	6.93	0.87	88.7				
				Double, SHGC=0.35	N	7.0	12.0	5.3	6.93	0.80	29.5				
				Double, Clear	N	7.0	18.7	17.8	19.20	0.88	301.3				
				Double, SHGC=0.35	W	7.0	5.0	7.0	17.16	0.46	55.3				
				Double, SHGC=0.35	W	7.0	5.0	6.0	17.16	0.46	47.4				
				Double, SHGC=0.35	W	7.0	2.3	3.9	17.16	0.37	25.1				
				Double, SHGC=0.35	S	7.0	7.5	29.4	15.79	0.53	246.2				
				Double, SHGC=0.35	S	7.0	2.0	5.3	15.79	0.43	36.1				
				Double, SHGC=0.35	S	7.0	9.0	13.3	15.79	0.56	117.3				
				Double, SHGC=0.35	S	7.0	2.0	5.0	15.79	0.43	34.1				
				Double, SHGC=0.35	S	1.0	6.0	26.7	15.79	0.94	396.6				
				Double, SHGC=0.35	E	1.0	6.0	13.4	19.05	0.97	247.1				
				Double, SHGC=0.35	N	1.0	2.0	4.0	6.93	0.83	23.0				
				Double, SHGC=0.35	N	1.0	6.0	26.7	6.93	0.97	180.3				
				Double, SHGC=0.35	W	1.0	6.0	13.4	17.16	0.97	222.7				
				Double, SHGC=0.35	S	1.0	6.0	26.7	15.79	0.94	396.6				
				Double, SHGC=0.35	S	1.0	5.0	10.7	15.79	0.91	153.7				
				Double, SHGC=0.35	S	1.0	5.0	13.4	15.79	0.91	192.5				
								As-Built Total:				296.7	3188.2		
				WALL TYPES				Area X BSPM = Points		Type	R-Value	Area X SPM = Points			
				Adjacent Exterior	0.0	0.00	0.0	2204.9	1.70	3748.3	Frame, Wood, Exterior	16.0	2204.9	1.20	2645.9
Base Total:	2204.9		3748.3	As-Built Total:				2204.9	2645.9						
DOOR TYPES				Area X BSPM = Points		Type	Area X SPM = Points								
Adjacent Exterior	0.0	0.00	0.0	20.0	6.10	122.1	Exterior Insulated		20.0	4.10	82.0				
Base Total:	20.0		122.1	As-Built Total:				20.0	82.0						



Cal-Tech Testing, Inc.

• Engineering
• Geotechnical
• Environmental
Laboratories

P.O. Box 1625 • Lake City, FL 32056-1625 • Tel(386)755-3633 • Fax(386)752-5456

6919 Distribution Ave S., Unit #5, Jacksonville, FL 32257 • Tel(904)262-4046 • Fax(904)262-4047

2230 Greensboro Hwy • Quincy, FL 32351 • Tel(850)442-3495 • Fax(850)442-4008

24274

REPORT OF IN-PLACE DENSITY TEST

JOB NO.: 06-274
DATE TESTED: 5/2/06
DATE REPORTED: 5/4/06

PROJECT:	Sugar Hill, King Road, Lake City
CLIENT:	Kent Harris Construction, Inc., 805 SW Alamo Dr., Lake City, FL 32025
GENERAL CONTRACTOR:	Kent Harris Construction, Inc.
EARTHWORK CONTRACTOR:	Kent Harris Construction, Inc.
INSPECTOR:	Pam Geiger
ASTM METHOD	SOIL USE
(D-2922) Nuclear	BUILDING FILL
SPECIFICATION REQUIREMENTS: 95%	

TEST NO.	TEST LOCATION	TEST DEPTH	WET DENSITY (lb/ft ³)	MOISTURE PERCENT	DRY DENSITY (lb/ft ³)	PROCTOR TEST NO.	PROCTOR VALUE	% MAXIMUM DENSITY
1	8'E X 6'N OF SW CORNER GARAGE PAD	0-12"	114.8	7.2	107.1	1	111.1	96.4%
2	CENTER OF GARAGE PAD	0-12"	111.7	5.0	106.4	1	111.1	95.8%
3	6'W X 8'S OF NE CORNER GARAGE PAD	0-12"	111.0	5.1	105.6	1	111.1	95.1%

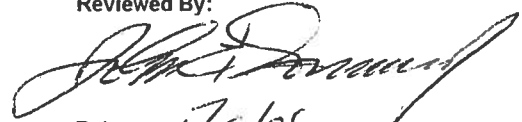
REMARKS: The Above Tests Meet Specification Requirements.

PROCTORS				
PROCTOR NO.	SOIL DESCRIPTION	MAXIMUM DRY UNIT WEIGHT (lb/ft ³)	OPT. MOIST.	TYPE
1	Light Tan Silty Fine Sand w/Trace of Clay	111.1	11.0	MODIFIED (ASTM D-1557)

Respectfully Submitted,
CAL-TECH TESTING, INC.

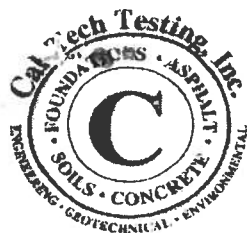

Linda M. Creamer
President - CEO

Reviewed By:


Date: 5/9/06
Florida Registration No: 52612

SW

The test results presented in this report are specific only to the samples tested at the time of testing. The tests were performed in accordance with generally accepted methods and standards. Since material conditions can vary between test locations and change with time, sound judgement should be exercised with regard to the use and interpretation of the data.



Cal-Tech Testing, Inc.

• Engineering

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• Geotechnical

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• Environmental

2230 Greensboro Hwy • Quincy, FL 32351 • Tel(850)442-3495 • Fax(850)442-4008

Laboratories

REPORT OF LABORATORY COMPACTION TEST

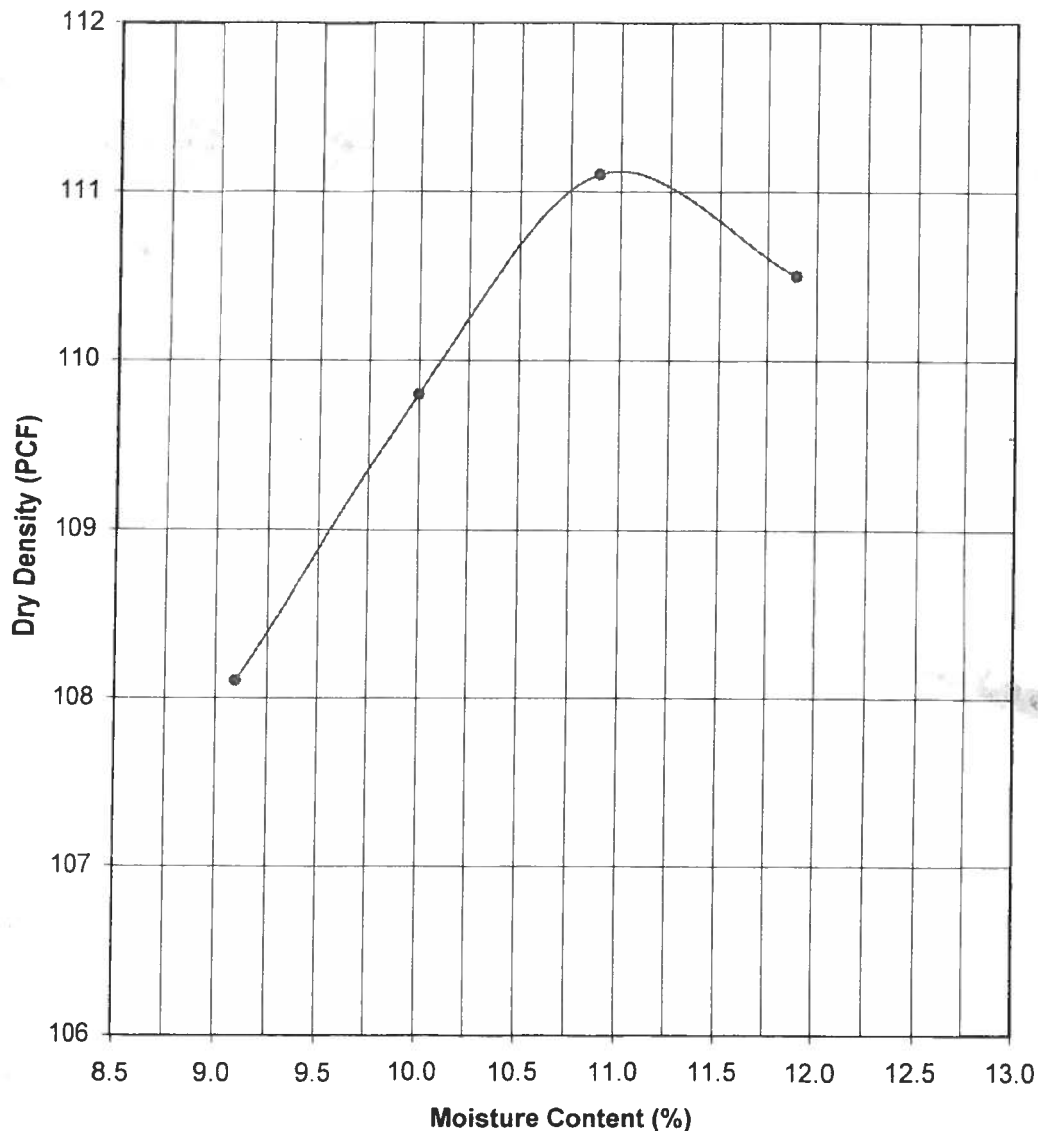
Client:
Project Name:
Project Location:
Contractor:

Kent Harris Construction, Inc., 805 SW Alamo Drive, Lake City, FL 32025
Sugar Hill, King Road, Lake City, FL
Lake City, Florida
Kent Harris Construction, Inc.

File No: 06-274

Date: 5/4/2006

Lab No: 8634



PROCTOR DATA

Proctor No.: 1

Modified Proctor ☒
(ASTM D-1557)

Standard Proctor ☐
(ASTM D-698)

Maximum Dry
Dens. Pcf: 111.1

Optimum Moisture
Percent: 11.0

The test results presented in this report are specific only to the samples tested at the time of testing. The tests were performed in accordance with generally accepted methods and standards. Since material conditions can vary between test locations and change with time, sound judgement should be exercised with regard to the use and interpretation of the data.

Sample Description:
Sample Location:
Proposed Use:
Sampled By:
Tested By:
Remarks:

Light Tan Silty Fine Sand w/Trace of Clay

Stockpile of Garage Pad

Building Fill

Pam Geiger

Date: 5/2/2006

Josh Reed

Date: 5/4/2006

1cc: Client

1cc: File

Linda M. Creamer
Linda M. Creamer
President - CEO
Reviewed By: *[Signature]*
Date: 5/4/2006
FL Registration No:



FL TRACKING #19409

PFS Corporation

Assurance you can build on®

An Employee-Owned Company

April 7, 2006

Midwest Region

2402 Daniels Street
Madison, WI 53718

Phone: 608.221.3361
Fax: 608.221.2084

Website
www.pfscorporation.com

Ron Reindl, AIA
Vice President
Midwest Region
rreindl@pfscorporation.com

Headquarters

Madison, WI
608.221.3361

Regional Offices

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570.784.8396

South Central
Dallas, TX
214.221.5585

Western
Los Angeles, CA
310.559.7287

Midwest
Madison, WI
608.221.3361

Southeast
Raleigh, NC
919.845.8450

Sales Office
Mentone, AL
256.634.4071

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: Sugarhill #91340

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:

Florida Manufactured Building Act and Rules
Rule 9B-72 FAC for Product Approval
2004 FRBC w/2005 Amendments
ASCE 7-98
2002 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:

Michael A. Frey
Engineering Manager
Midwest Region

FL-pb

Enclosures: As Stated

cc: John Self (Nationwide)



Accredited by the National
Voluntary Laboratory
Accreditation Program
for the specific scope of
accreditation under
Lab Code 100421-0

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Community Affairs
Residential Whole Building Performance Method A

Project Name: SUGARHILL #91340
Address:
City, State: FL 32025-
Owner: KENT HARRISS CONST.
Climate Zone: North

Builder: KENT HARRISS CONST.
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) 3350 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) 21.5 ft²
b. SHGC:
(or Clear or Tint DEFAULT) 7b. (Clear) 249.3 ft²
8. Floor types R=19.0, 1270.0 ft²
a. Raised Wood, Post or Pier
b. N/A
c. N/A
9. Wall types R=13.0, 874.0 ft²
a. Frame, Wood, Exterior R=13.0, 744.0 ft²
b. Frame, Wood, Exterior R=13.0, 524.4 ft²
c. Frame, Wood, Exterior R=13.0, 446.8 ft²
d. Frame, Wood, Exterior 873.8 ft²
e. 3 Others
10. Ceiling types R=30.0, 920.0 ft²
a. Under Attic R=30.0, 506.0 ft²
b. Under Attic
c. N/A
11. Ducts
a. Sup: Con. Ret: Con. AH: Interior Sup. R=6.0, 80.0 ft
b. Sup: Unc. Ret: Con. AH: Attic Sup. R=6.0, 74.0 ft

12. Cooling systems

- a. Central Unit Cap. 18.5 kBtu/hr
SEER: 12.00
b. Central Unit Cap: 28.0 kBtu/hr
SEER: 12.00
c. N/A

13. Heating systems

- a. N/A
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)

APPROVED

**PFS Corporation
Madison, WI**

Date: Apr 7, 2006

Glass/Floor Area: 0.10

Total as-built points: 36478

Total base points: 43281

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: 3/28/06

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

OWNER/AGENT: [Signature]

DATE: 3/28/06

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 v4.0)

SUMMER CALCULATIONS

Residential Whole Building Performance Method A - Details

ADDRESS: , , FL, 32025-

PERMIT #:

BASE				AS-BUILT							
GLASS TYPES											
.18 X Conditioned X BSPM = Points Floor Area											
				Type/SC	Overhang Omt Len Hgt			Area X SPM X SOF = Points			
.18	3350.0	20.04	12084.1	Double, Clear	N	1.0	15.8	12.3	19.20	1.00	235.3
				Double, U=0.36, Clear	N	1.0	15.8	5.7	22.08	1.00	125.4
				Double, U=0.36, Clear	N	1.0	2.3	9.4	22.08	0.85	177.0
				Double, U=0.36, Clear	N	1.0	6.5	21.5	22.08	0.98	465.5
				Double, U=0.36, Clear	N	1.0	18.3	18.0	22.08	1.00	396.3
				Double, U=0.40, Clear	N	1.0	18.8	16.1	21.80	1.00	349.8
				Double, U=0.36, Clear	N	0.5	6.5	10.7	22.08	1.00	235.2
				Double, U=0.36, Clear	E	1.0	18.8	10.7	44.68	1.00	476.7
				Double, U=0.36, Clear	E	1.0	8.8	21.5	44.68	0.99	954.8
				Double, U=0.36, Clear	W	6.0	4.7	18.0	41.20	0.47	351.3
				Double, U=0.36, Clear	W	1.0	12.4	10.7	41.20	1.00	439.2
				Double, U=0.36, Clear	W	1.0	8.8	21.5	41.20	0.99	881.2
				Double, U=0.36, Clear	S	6.0	7.0	72.0	38.49	0.54	1499.3
				Double, U=0.36, Clear	S	6.0	4.8	15.8	38.49	0.49	298.0
				Double, U=0.36, Clear	S	1.0	6.6	42.8	38.49	0.96	1578.7
				Double, U=0.36, Clear	S	1.0	10.1	18.0	38.49	0.99	686.5
				Double, U=0.36, Clear	S	0.5	6.5	21.4	38.49	0.99	817.8
				As-Built Total: 346.1 9968.2							
WALL TYPES											
Area X BSPM = Points											
				Type		R-Value		Area X SPM = Points			
Adjacent	0.0	0.00	0.0	Frame, Wood, Exterior		13.0	524.4	1.50	786.6		
Exterior	3463.0	1.70	5887.2	Frame, Wood, Exterior		13.0	446.8	1.50	670.2		
				Frame, Wood, Exterior		13.0	874.0	1.50	1311.0		
				Frame, Wood, Exterior		13.0	744.0	1.50	1116.0		
				Frame, Wood, Exterior		19.0	215.0	0.90	193.5		
				Frame, Wood, Exterior		13.0	270.8	1.50	406.3		
				Frame, Wood, Exterior			388.0	0.90	349.2		
Base Total: 3463.0 5887.2				As-Built Total:		3463.0		4832.8			
DOOR TYPES											
Area X BSPM = Points											
				Type		R-Value		Area X SPM = Points			
Adjacent	0.0	0.00	0.0	Exterior Insulated			20.0	4.10	82.0		
Exterior	40.0	6.10	244.0	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	1227.0	1.73	2122.7	Under Attic		30.0	920.0	1.73 X 1.00	1591.6		
				Under Attic		30.0	506.0	1.73 X 1.00	875.4		
Base Total: 1227.0 2122.7				As-Built Total:		1426.0		2467.0			

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

ADDRESS: , , FL, 32025-

PERMIT #:

BASE				AS-BUILT			
FLOOR TYPES	Area	X	BSPM = Points	Type	R-Value	Area	X SPM = Points
Slab	0 0(p)		0 0	Raised Wood, Post or Pier	19.0	1270.0	0 77
Raised	1270.0		-3 99				
Base Total:			-5067.3	As-Built Total:			972.8
INFILTRATION Area X BSPM = Points				Area X SPM = Points			
			3350.0				34203.5
Summer Base Points: 49474.2				Summer As-Built Points: 52608.3			
Total Summer Points	X	System Multiplier	= Cooling Points	Total Component (System - Points)	X Cap Ratio (DM x DSM x AHU)	X Duct Multiplier	X System Multiplier
				Credit Multiplier = Cooling Points			
				(sys 1: Central Unit 18500 btuh, SEER/EFF(12.0) Ducts Con(S), Con(R), Int(AH), R6.0(INS)			
				52608 0.40 (1.00 x 1.147 x 0.91) 0 284 1.000 7164.6			
				(sys 2: Central Unit 28000 btuh, SEER/EFF(12.0) Ducts Unc(S), Con(R), Att(AH), R6.0(INS)			
				52608 0.60 (1.08 x 1.147 x 1.11) 0 284 1.000 10843.8			
49474.2	0.4266		21105.7	52608.3	1.00	1.204	0.284
							1.000
							18008.4

9/340

APPROVED
PFS Corporation
Madison, WI

Date: Apr 7, 2006

23 of 51

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

ADDRESS: , , FL, 32025-

PERMIT #:

BASE				AS-BUILT						
GLASS TYPES .18 X Conditioned X BWPM = Points Floor Area				Type/SC	Overhang Ornt Len Hgt		Area X WPM X WOF = Points			
.18	3350.0	12.74	7682.2	Double, Clear	N	1.0 15.8	12.3 24.58	1.00	302.3	
				Double,U=0.36,Clear	N	1.0 15.8	5.7 9.33	1.00	53.2	
				Double,U=0.36,Clear	N	1.0 2.3	9.4 9.33	1.01	88.4	
				Double,U=0.36,Clear	N	1.0 6.5	21.5 9.33	1.00	200.6	
				Double,U=0.36,Clear	N	1.0 18.3	18.0 9.33	1.00	167.9	
				Double,U=0.40,Clear	N	1.0 18.8	16.1 10.69	1.00	172.0	
				Double,U=0.36,Clear	N	0.5 6.5	10.7 9.33	1.00	99.8	
				Double,U=0.36,Clear	E	1.0 18.8	10.7 3.76	1.00	40.4	
				Double,U=0.36,Clear	E	1.0 8.8	21.5 3.76	1.01	81.5	
				Double,U=0.36,Clear	W	6.0 4.7	18.0 5.53	1.19	118.8	
				Double,U=0.36,Clear	W	1.0 12.4	10.7 5.53	1.00	59.3	
				Double,U=0.36,Clear	W	1.0 8.8	21.5 5.53	1.00	119.2	
				Double,U=0.36,Clear	S	6.0 7.0	72.0 -1.62	2.50	-291.8	
				Double,U=0.36,Clear	S	6.0 4.8	15.8 -1.62	3.08	-78.9	
				Double,U=0.36,Clear	S	1.0 6.6	42.8 -1.62	1.01	-70.4	
				Double,U=0.36,Clear	S	1.0 10.1	18.0 -1.62	0.99	-29.0	
				Double,U=0.36,Clear	S	0.5 6.5	21.4 -1.62	1.00	-34.6	
				As-Built Total:		346.1		998.6		
WALL TYPES Area X BWPM = Points				Type	R-Value		Area X WPM = Points			
Adjacent	0.0	0.00	0.0	Frame, Wood, Exterior	13.0		524.4	3.40	1783.0	
Exterior	3463.0	3.70	12813.2	Frame, Wood, Exterior	13.0		446.8	3.40	1519.1	
				Frame, Wood, Exterior	13.0		874.0	3.40	2971.6	
				Frame, Wood, Exterior	13.0		744.0	3.40	2529.6	
				Frame, Wood, Exterior	19.0		215.0	2.20	473.0	
				Frame, Wood, Exterior	19.0		270.8	3.40	920.9	
				Frame, Wood, Exterior	19.0		388.0	2.20	853.6	
Base Total:				3463.0		12813.2				
				As-Built Total:		463.0		11050.7		
DOOR TYPES Area X BWPM = Points				Type	R-Value		Area X WPM = Points			
Adjacent	0.0	0.00	0.0	Exterior Insulated	20.0		8.40		168.0	
Exterior	40.0	12.30	492.0	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	1227.0	2.05	2515.4	Under Attic	30.0		920.0	2.05 X 1.00	1886.0	
				Under Attic	30.0		506.0	2.05 X 1.00	1037.3	
Base Total:				1227.0		2515.4				
				As-Built Total:		1426.0		2923.3		

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

ADDRESS: , , FL, 32025-

PERMIT #:

BASE				AS-BUILT				
FLOOR TYPES Area X BWPM = Points				Type	R-Value	Area X WPM = Points		
Slab	0.0(p)	0.0	0.0	Raised Wood, Post or Pier	19.0	1270.0	0.88	1112.5
Raised	1270.0	0.96	1219.2					
Base Total:		1219.2		As-Built Total:		1270.0		1112.5
INFILTRATION Area X BWPM = Points				Area X WPM = Points				
3350.0 -0.59 -1976.5				3350.0 -0.59 -1976.5				
Winter Base Points:		22745.5		Winter As-Built Points:			14444.7	
Total Winter Points	X System Multiplier	= Heating Points		Total Component (System - Points)	X Cap Ratio (DM x DSM x AHU)	X Duct Multiplier	X System Multiplier	X Credit Multiplier = Heating Points
22745.5	0.6274	14270.5		14444.7	1.00	1.220	0.590	1.000 10389.1

9/3/06

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Date: Apr 7, 2006

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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
Number of	X	Multiplier	=	Total	Volume		Bedrooms		Ratio	Credit = Total
Bedrooms										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	+
Points		Points		Points		Points	Points	
21106		14271		7905		43281	18008	10389
								8081
								36478

PASS

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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 joist 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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Madison, WI

Date: Apr 7, 2006

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE SCORE* = 86.0

The higher the score, the more efficient the home.

KENT HARRISS CONST., FL, 32025-

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) 3350 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. (Dblc, U=0.4)	21.5 ft ²
b. SLIGC:		
(or Clear or Tint DEFAULT)	7b. (Clear)	249.3 ft ²
8. Floor types

a. Raised Wood, Post or Pier	R=19.0, 1270.0ft ²
b. N/A	
c. N/A	
9. Wall types

a. Frame, Wood, Exterior	R=13.0, 874.0 ft ²
b. Frame, Wood, Exterior	R=13.0, 744.0 ft ²
c. Frame, Wood, Exterior	R=13.0, 524.4 ft ²
d. Frame, Wood, Exterior	R=13.0, 446.8 ft ²
e. 3 Others	873.8 ft ²
10. Ceiling types

a. Under Attic	R=30.0, 920.0 ft ²
b. Under Attic	R=30.0, 506.0 ft ²
c. N/A	
11. Ducts

a. Sup: Con. Ret: Con. AH: Interior	Sup. R=6.0, 80.0 ft
b. Sup: Unc. Ret: Con. AH: Attic	Sup. R=6.0, 74.0 ft

12. Cooling systems

a. Central Unit	Cap: 18.5 kBtu/hr
	SEER: 12.00
b. Central Unit	Cap: 28.0 kBtu/hr
	SEER: 12.00
c. N/A	
13. Heating systems

a. N/A	
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)	

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**PFS Corporation
Madison, WI**

Date: Apr 7, 2006

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: 7/28/06

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&3. EnergyGauge® (Version: FLRCSB v4.0)

9/2/06

28 of 51

Nationwide Homes Inc.
1100 RIVES ROAD, MARTINSVILLE, VA. 24115
(276) 632-7100

2002

National Electric Code

Electrical Load Calculations

Model = SUGARHILL #91340

General Lighting Load: 3,350 Sq. Ft. at 3 volt-amperes per sq ft = 10,050 volt-amperes
Small Appliance Load _____ = 3,000 volt-amperes
Laundry _____ = 1,500 volt-amperes

Total General Lighting and Small Appliance _____ = 14,550 volt-amperes

3000 volt-amperes @ 100% _____ = 3,000 volt-amperes
14,550 - 3000 = 11,550 @ 35% _____ = 4,043 volt-amperes

Net General Lighting and Small Appliance Load _____ = 7,043 volt-amperes

Range Load: _____ = 8,640 volt-amperes
Dryer Load: _____ = 5,600 volt-amperes
Dishwasher: _____ = 1,032 volt-amperes
Garbage Disposal: _____ = 504 volt-amperes
Water Heater: (4500 / 240 * 125%) _____ = 5,625 volt-amperes
_____ = _____ volt-amperes
_____ = _____ volt-amperes

Total Load: _____ = 28,444 volt-amperes

200 Amp. Service Panel Installed
100 AMP. SUB PANEL

For 120/240-volt 3-Wire single-phase service or feeder
28,444 / 240 Volt = _____

= 119 Amperes

03/16

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 2002 NEC subject to inspection by local jurisdiction.

APPROVED
PFS Corporation
Madison, WI

01/04/94

Date: Apr 7, 2006

Engineering Department

15 f062

L&T ENGINEERING GROUP, INC
FL CERT AUTH NO 26013
12450 S TAMiami TRAIL, SUITE F
NORTH PORT, FL 34287
(941) 426-6336


APR 13 2006

LARRY A. LACKEY, JR, PE
FL PE NO 59504

WIND LOAD CALCULATIONS

NATIONWIDE HOMES

DESIGN INPUTS:

MODULE WIDTH:	28 ft	NO. OF STORIES:	3
STUD SPACING:	16 in	1st FLOOR WALL HEIGHT:	10 ft
TRUSS SPACING:	19.2 in	2nd FLOOR WALL HEIGHT:	10 ft
ROOF PITCH:	12 / 12	3rd FLOOR WALL HEIGHT:	10 ft
ROOF ANGLE (θ):	45.00 °	WIND SPEED:	110 mph
		WIND EXPOSURE CASE:	C

(WIND BORNE DEBRIS PROTECTION
IS REQUIRED FOR
HURRICANE PRONE REGIONS)

z = 30 ft
hr = 14 000 ft
hr / 2 = 7 000 ft
h = 37 000 ft
EFFECTIVE WIND AREA = z x STUD SPACING = 13 333 ft²
EFFECTIVE WIND AREA = h x STUD SPACING = 49 333 ft²

DETERMINE WIND LOADS PER ASCE 7-98 FOR LOW RISE BUILDINGS:

COMPONENTS AND CLADDING:

CONSTANTS:

WIND VELOCITY (V):	110 mph	DIRECTIONALITY FACTOR (K _d):	0.85
VEL. PRESS. EXP. COEF (K _z):	1.02	IMPORTANCE FACTOR (I):	1
MULT. for TOPO. FACTOR (K ₁):	0.09	q _s = .00256 x K _z x K ₁ x K _d x V ² x I =	26.91
MULT. for TOPO. FACTOR (K ₂):	0	q _h = q _s = q _e =	26.91
MULT. for TOPO. FACTOR (K ₃):	0	GUST EFFECT FACTOR (G):	0.85
		INTERNAL PRESS. COEF (GC _{pi}):	0.18
			-0.18

LATERAL LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

SIDE WALL: FIELD GC_{pf4} = -1.05
EDGE GC_{pe5} = -1.30

LOAD CALCULATIONS:

$$P_{fi} = q_h \times (GC_{pi4} - GC_{pi1}) \times P_{fi} \text{ psf}$$

EXAMPLE:

$$P_{fi} = q_h \times (GC_{pi4} - GC_{pi1}) \times P_{fi} \text{ psf} = (26.91) \times (-1.05) - (0.18) = -33.07 \text{ psf}$$

$$P_{fi} = q_h \times (GC_{pi4} - GC_{pi1}) \times P_{fi} \text{ psf} = (26.91) \times (-1.05) - (-0.18) = -23.38 \text{ psf}$$

FIELD	P _{fi} =	-33.07 psf
FIELD	P _{fi} =	-23.38 psf
EDGE	P _{fi} =	-39.74 psf
EDGE	P _{fi} =	-30.05 psf

USE -33.07 psf WIND LOAD FOR FIELD.
USE -39.74 psf WIND LOAD FOR EDGE.

THE MAXIMUM LATERAL LOAD FOR 110 mph WIND (COMPONENTS AND CLADDING) IS -39.74 psf

WIND 98-COMP-CLAD.xls

1 OF 2
3/27/2006

L&T ENGINEERING GROUP, INC
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MIRIAM, FL 34287
(941) 426-6336

LARRY A. LACKEY, JR, PE

PI OF NO. 1004

WIND LOAD CALCULATIONS

NATIONWIDE HOMES

UPLIFT LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

ROOF: FIELD: $GC_{pf1} = -0.90$
 EDGE: $GC_{pe2} = -1.15$
 OVERHANG: $GC_{pe3} = -1.95$
 DOWNWARD: $GC_{pi1-3} = 0.27$

LOAD CALCULATIONS:

$$P_u = q_h \times (GC_{pe1} - GC_{pi1}) \times P_u \text{ psf}$$

EXAMPLE:

$$P_{u1} = q_h \times (GC_{pe1} - GC_{pi1}) \times P_{u1} \text{ psf} = (26.91) \times (-0.90) - (0.18) = -29.03 \text{ psf}$$

$$P_{u2} = q_h \times (GC_{pe2} - GC_{pi1}) \times P_{u2} \text{ psf} = (26.91) \times (-0.90) - (-0.18) = -19.34 \text{ psf}$$

FIELD	$P_{u1} = -29.03 \text{ psf}$
FIELD	$P_{u2} = -19.34 \text{ psf}$
EDGE	$P_{u3} = -35.76 \text{ psf}$
EDGE	$P_{u4} = -28.07 \text{ psf}$
OVERHANG	$P_{u5} = -57.29 \text{ psf}$
OVERHANG	$P_{u6} = -47.60 \text{ psf}$
DOWNWARD	$P_{u7-9} = 2.40 \text{ psf}$
DOWNWARD	$P_{u10-12} = 12.09 \text{ psf}$

USE -29.03 psf WIND LOAD FOR FIELD
 USE -35.76 psf WIND LOAD FOR EDGE
 USE -57.29 psf WIND LOAD FOR OVERHANG
 USE 12.09 psf DOWNWARD WIND LOAD

THE MAXIMUM UPLIFT LOAD FOR 110 mph WIND (COMPONENTS AND CLADDING) IS -57.29 psf.

LOAD SUMMARY:
 FOR 12/12 PITCH, 110 mph WIND, EXPOSURE CASE C

LATERAL LOADS:

	COMP. & CLADDING (psf)
FIELD	-33.07
EDGE	-39.74

UPLIFT LOADS:

	COMP. & CLADDING (psf)
FIELD	-29.03
EDGE	-35.76
OVERHANG	-57.29

APPROVED
PFS Corporation
Madison, WI

Date: **Apr 7, 2006**

PRODUCT APPROVAL SCHEDULE

Manufacturer: NATIONWIDE CUSTOM HOMES

Plan # SUGARHILL #91340

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
Sliding	WEST WINDOW	6068 SLIDING GLASS DOOR	FL 4933
Sectional			
Roll-up			
Automatic			
Other			
WINDOWS			
Single Hung	WEST WINDOW	VINYL SINGLE HUNG	NI 004788
Horizontal Slider			
Casement	WEST WINDOW	VINYL CASEMENT	FL 4934
Double Hung	WEST WINDOW	VINYL DOUBLE HUNG	FL 5055
	WEST WINDOW	VINYL DBL. HUNG IMPACT	NI 004916
Fixed	WEST WINDOW	VINYL FIXED	FL 5063
Awning			
Pass-through			
Projected			
Mullion			
Wind Breaker			
Dual Action			
Other			
PANEL WALL			
Siding	JAMES HARDIE	HARDI-PLANK SIDING	99-0223.07
Soffits			
EIFS			
Storefronts			
Curtain Walls			
Wall Louver			
Glass Block			
Membrane			
Greenhouse			
Other			

91340

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PRODUCT APPROVAL SCHEDULE

Manufacturer: **NATIONWIDE CUSTOM HOMES**

Plan # **SUGARHILL #91340**

Category	Manufacturer	Product Description	Approval #(s)
ROOFING PRODUCTS			
Asphalt Shingles	CERTAINTED	ASPHALT SHINGLES	FL 250
Underlayments	CERTAINTED	30# FELT	FL 3455
Roofing Fasteners	SENCO	NAILS & STAPLES	FL 2271
Non-structural Metal			
Built-up Roofing			
Modified Bitumen			
Single Ply Roofing Sys.			
Roofing Tiles			
Roofing Insulation	CERTAINTED	INSULATION BATTS	F L491
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	HIGH WIND STRAPPING	FL 3750 R2
Truss Plates			
Engineered Lumber	GA. PACIFIC	LAMINATED BEAM	FL 1008 R1
Railing			
Coolers & Freezers			
Concrete Admixtures			
Material			

9/340

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PRODUCT APPROVAL SCHEDULE

Manufacturer: NATIONWIDE CUSTOM HOMES Plan # SUGARHILL #91340

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.

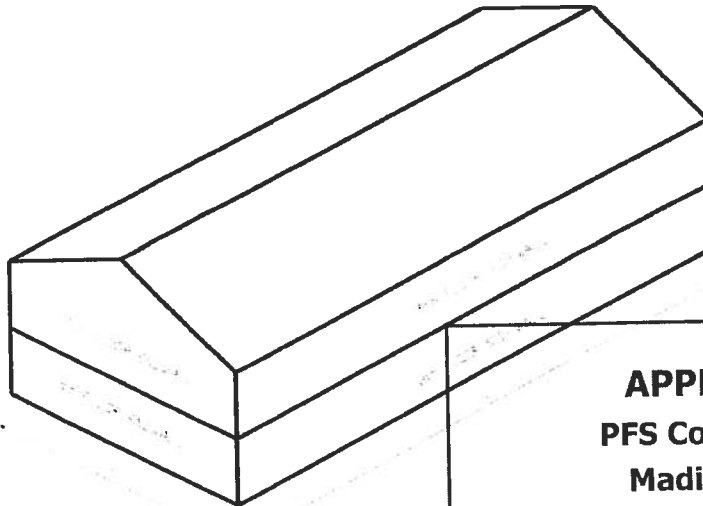
I understand these products may have to be removed if approval cannot be demonstrated during inspection.

Manufacturer's Authorized Agent Signature

EDWARD W. WILLIAMS 3/27/06
Printed Name Date

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES



APPROVED
PFS Corporation
Madison, WI

Date: Apr 7, 2006

BUILDING INFORMATION:

JOB NUMBER = 060218
DATABASE NUMBER = SUGARHILL
PLAN NUMBER = 91340
FIRST FLOOR LENGTH (W_1) = 27.6 ft
SECOND FLOOR LENGTH (W_2) = 27.6 ft
FIRST FLOOR LENGTH (L_1) = 46 ft
SECOND FLOOR LENGTH (L_2) = 46 ft
TRUSS SPACING (TOC) = 19.2 in
STUD SPACING (SOC) = 16 in
MAX. UNRESTRAINED OPENING HEIGHT = 5 ft
WIND SPEED (V3S) = 110 mph
MEAN ROOF HEIGHT ADJUSTMENT FACTOR (C_{MH}) = 1.31
WALL HEIGHT ADJUSTMENT FACTOR (C_{WH}) = H / B = 1.1875

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3/16/2006

L&T ENGINEERING GROUP, INC
FL CERT AUTH NO 26013
12450 S TAMiami TRAIL, SUITE F
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APR 13 2006
LARRY A. LACKEY, JR, PE
FL PE NO 59904

LARRY A. LACKEY, JR, PE

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

SHEARWALL SUMMARY:

FIRST FLOOR ENDWALL: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
WITH 10d COMMON NAILS SPACED AT 2" EDGE

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

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

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

CONNECTION SUMMARY:

CONNECTIONS TO BE AS SPECIFIED OR EQUIVALENT

UPLIFT CONNECTIONS

REQUIRED TRUSS TIE DOWN: USE A SIMPSON H10 EACH TRUSS

2nd FLOOR STUD TO TOP PLATE: USE A 1.5" x 26 ga. STRAP w/ (12) 16 ga STAPLES EACH END, EACH STUD

2nd FLOOR STUD TO FLOOR BAND: USE A 1.5" x 26 ga. STRAP w/ (12) 16 ga STAPLES EACH END, EACH STUD

2nd FLOOR BAND TO 1st CEILING BAND: USE A 1.5" x 26 ga. STRAP w/ (12) 16 ga STAPLES EACH END, EACH STUD

1st FLOOR STUD TO CEILING BAND: 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 (8) 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 4" ON CENTER

PLATE TO STUD CONNECTION: USE (5) 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 4" ON CENTER

HORIZONTAL FLOOR DIAPHRAGM CONTINUITY

SECOND FLOOR
MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
USE A MIN. OF (10) 1/2" DIA. THRU BOLTS

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
USE A (2) 1.5" x 22 ga. STRAP w/ (39) 16 ga. STAPLES EACH END

FIRST FLOOR
MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
USE A MIN. OF (7) 1/2" DIA. THRU BOLTS

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
USE A 1.5" x 20 ga. STRAP w/ (23) 16 ga. STAPLES EACH END

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

SHEAR CONNECTIONS

SECOND FLOOR ENDWALL

RIMBAND TO BOTTOM/TOP PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 3" ON CENTER

SECOND FLOOR SIDEWALL

RIMBAND TO BOTTOM/TOP PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 14" ON CENTER

FIRST FLOOR ENDWALL

RIMBAND TO SILL PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 2" ON CENTER

SILL PLATE TO FOUNDATION CONNECTION: USE 1/2" ANCHOR BOLTS @ 16" O.C.
OR USE 5/8" ANCHOR BOLTS @ 23" O.C.

FIRST FLOOR SIDEWALL

RIMBAND TO SILL PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 11" ON CENTER

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

HOLDDOWN CONNECTIONS

SECOND FLOOR CORNER HOLDDOWN: NO PHYSICAL HOLDDOWN REQUIRED

SECOND FLOOR CORNER STUD CONNECTION: FASTEN CORNER STUDS 2 ROWS OF 16d COMMON NAILS @ 14" ON CENTER
OR USE (9) 1/4" DIA. LAG SCREWS

FIRST FLOOR CORNER HOLDDOWN: USE A SIMPSON LSTHD8RJ AT EACH BUILDING CORNER OR EQUAL

FIRST FLOOR CORNER STUD CONNECTION: FASTEN CORNER STUDS 2 ROWS OF 16d COMMON NAILS @ 6" ON CENTER
OR USE (25) 1/4" DIA. LAG SCREWS

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

APPLICABILITY LIMITATIONS:

MEAN ROOF HEIGHT (MRH) =	28.4 ft
NUMBER OF STORIES =	2
FIRST FLOOR WIDTH (W ₁) =	27.6 ft
SECOND FLOOR WIDTH (W ₂) =	27.6 ft
FIRST FLOOR LENGTH (L ₁) =	46 ft
SECOND FLOOR LENGTH (L ₂) =	46 ft
BUILDING ASPECT RATIO (L/W) =	1.67
FLOOR JOIST DEPTH =	9.25 in
MAX. VERTICAL FLOOR OFFSET =	0 in
FLOOR ASPECT RATIO (L/W) =	1.67
MAX. FLOOR DIAPHRAGM OPENING WIDTH =	9 ft
MAX. FLOOR DIAPHRAGM OPENING LENGTH =	9 ft
FIRST FLOOR HEIGHT (H ₁) =	9.5 ft
SECOND FLOOR HEIGHT (H ₂) =	8 ft
CEILING ASPECT RATIO (L/W) =	1.67
MIN. SHEARWALL SEGMENT (H / 3.5) =	2.29 ft
ROOF PITCH =	12 / 12

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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

HOLDDOWNS w/ 1 1/2" EDGE DISTANCE
MINIMUM 8" STEM WALL

ASSUME 3000 psi Fc CONCRETE

SIMPSON LSTD8RJ	Z =	1950 lbs
SIMPSON STHD10RJ	Z =	3230 lbs
SIMPSON STHD14RJ	Z =	4430 lbs
(2) SIMPSON STHD14RJ	Z =	8860 lbs
1/2" DIA. THRU BOLT	Z =	725 lbs
1/2" ANCHOR BOLT	Z =	1056 lbs
5/8" ANCHOR BOLT	Z =	1488 lbs
1/4" DIA. LAG SCREW	Z =	320 lbs
0.131" x 2.5" COMMON NAIL (FACE NAILED)	Z =	90 lbs
0.131" x 2.5" COMMON NAIL (TOENAILED)	Z =	74 lbs
0.131" x 2.5" COMMON NAIL (ENDNAILED)	Z =	60 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	159 lbs

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

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

DESIGN UPLIFT LOADS

ROOF & CEILING ASSEMBLY DEAD LOAD =	15 psf
WALL DEAD LOAD (WDL) =	12 psf
FLOOR DEAD LOAD (FDL) =	10 psf
ROOF SPAN =	27.6 ft
TRUSS SPACING (TOC) =	19.2 in
STUD SPACING (SOC) =	16 in
FIRST FLOOR HEIGHT (H ₁) =	9.5 ft
SECOND FLOOR HEIGHT (H ₂) =	8 ft

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

AT 24'	202 plf
AT 36'	277 plf

AT 27.5' (wup) = 225 plf

REQUIRED TRUSS TIE DOWN:

$$P_{up} = w_{up} \cdot TOC \cdot C_{UPRH} =$$
$$P_{up} = 225 \text{ plf} \cdot 19.2 \text{ in} \cdot 1.31 / 12 =$$
$$P_{up} = 471 \text{ lbs}$$

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USE A SIMPSON H10 EACH TRUSS
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 471 lbs

REQUIRED SIDEWALL STUD TIE DOWN LOADING:

2nd FLOOR STUD TO TOP PLATE:	$P_{2tp} = w_{up} \cdot SOC =$	$225 \cdot 16 / 12 =$	299 lbs
2nd FLOOR STUD TO FLOOR BAND:	$P_{2fb} = P_{2tp} - 0.6 \cdot WDL \cdot H_2 \cdot SOC =$		
	$P_{2fb} = 299 \text{ lbs} - 0.6 \cdot 12 \text{ psf} \cdot 8 \text{ ft} \cdot 16 \text{ in} / 12 =$		223 lbs
2nd FLOOR BAND TO 1st CEILING BAND:	$P_{21c} =$	$P_{2fb} =$	223 lbs
1st FLOOR STUD TO CEILING BAND:	$P_{1cb} = P_{2fb} - 0.6 \cdot FDL \cdot W_2 / 4 \cdot SOC =$		
	$P_{1cb} = 223 \text{ lbs} - 0.6 \cdot 10 \text{ psf} \cdot 27.6 \text{ ft} / 4 \cdot 16 \text{ in} / 12 =$		
	$P_{1cb} =$	167 lbs	
1st FLOOR STUD TO FLOOR BAND:	$P_{1fb} = P_{1cb} - 0.6 \cdot WDL \cdot H_1 \cdot SOC =$		
	$P_{1fb} = 167 \text{ lbs} - 0.6 \cdot 12 \text{ psf} \cdot 9.5 \text{ ft} \cdot 16 \text{ in} / 12 =$		75 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 299 lbs

SIDEWALL 1st FLOOR BAND TO SILL PLATE CONNECTION:

SIDEWALL UPLIFT AT SILL PLATE:

$$w_{sp} = P_{1fb} / SOC - 0.6 \cdot FDL \cdot W_1 / 4 =$$
$$w_{sp} = 75 \text{ lbs} \cdot 12 / 16 \text{ in} - 0.6 \cdot 10 \text{ psf} \cdot 27.6 \text{ ft} / 4 =$$
$$w_{sp} = 18 \text{ plf}$$

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

CHECK STRAP AT ANCHOR BOLT LOCATIONS:

1/2" ANCHOR BOLT SPACING (BOC) = 72 in

$P_{sp} = w_{sp} \cdot BOC = 16 \text{ plf} \cdot 72 = 94 \text{ plf}$

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 94 lbs

CHECK BENDING IN RIMBAND:

DBL 2x10 SPF #2 RIMBAND DESIGN VALUES:

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

$M_{MAX} = \frac{w_{sp} \cdot BOC^2}{8}$

$M_{MAX} = \frac{16 \text{ plf} \cdot (72 / 12)^2}{8} = 848 \text{ in-lbs}$

APPLIED fb = $\frac{M_{MAX}}{S} = \frac{848 \text{ in-lbs}}{42.66 \text{ in}^3} = 20 \text{ psi}$

ALLOWABLE BENDING (fb) = 875 psi > APPLIED fb = 20 psi

DBL 2x10 SPF #2 RIMBAND IS OK

LATERAL LOAD AT ROOF/CEILING DIAPHRAGM

ROOF SPAN = 7.6 ft
ROOF PITCH = 12 / 12

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

AT 24' = 230 plf
AT 36' = 303 plf

AT 27.6' (wl-per)' = 252 plf

$w_{l-per} = w_{l-per}' \cdot C_{UR} \cdot C_{WH} =$
 $w_{l-per} = 252 \text{ plf} \cdot 1.31 \cdot 1.1875 =$
 $w_{l-per} = 392 \text{ plf}$

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

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

AT 24' = 139 plf
AT 36' = 179 plf

AT 27.6' (w_l-para) = 151 plf

$$\begin{aligned} w_{l\text{-para}} &= w_{l\text{-para}} \cdot C_{MRH} \cdot C_{WH} = \\ w_{l\text{-para}} &= 151 \text{ plf} \cdot 1.31 \cdot 1.1875 = \\ w_{l\text{-para}} &= 235 \text{ plf} \end{aligned}$$

LATERAL LOAD AT FLOOR DIAPHRAGM

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

$$\begin{aligned} F_{L\text{-per}} &= 184 \text{ plf} \\ F_{L\text{-per}} &= F_{L\text{-per}} \cdot C_{MRH} \cdot C_{WH} = \\ F_{L\text{-per}} &= 184 \text{ plf} \cdot 1.31 \cdot 1.1875 = \\ F_{L\text{-per}} &= 286 \text{ plf} \end{aligned}$$

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

$$\begin{aligned} F_{L\text{-para}} &= 125 \text{ plf} \\ F_{L\text{-para}} &= F_{L\text{-para}} \cdot C_{MRH} \cdot C_{WH} = \\ F_{L\text{-para}} &= 125 \text{ plf} \cdot 1.31 \cdot 1.1875 = \\ F_{L\text{-para}} &= 194 \text{ plf} \end{aligned}$$

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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)

$$\begin{aligned} w_{l\text{-wat}} &= 167.25 \text{ plf} \\ w_{l\text{-wat}} &= w_{l\text{-wat}} \cdot C_{MRH} = 167.25 \text{ plf} \cdot 1.31 = 219.0975 \text{ plf} \\ \text{MULTIPLIER @ 24" O.C. (M}_{24}\text{)} &= 2 \\ \text{MULTIPLIER @ 16" O.C. (M}_{16}\text{)} &= 1.33 \end{aligned}$$

TRUSS TO TOP PLATE CONNECTION:

$$P_C = w_{l\text{-wat}} \cdot M_{24} = 219 \text{ plf} \cdot 2 = 438.195 \text{ lbs}$$

$$\# \text{ OF } 0.131" \times 2.5" \text{ COMMON NAIL (TOENAILED) REQUIRED} = \frac{P_C}{Z} = \frac{438 \text{ lbs}}{74 \text{ lbs}} = 6 \text{ NAILS}$$

USE (6) 0.131" x 2.5" COMMON NAIL (TOENAILED) PER TRUSS

PLATE TO PLATE CONNECTION:

$$\text{SPACING OF } 0.131" \times 2.5" \text{ COMMON NAIL (FACE NAILED)} = \frac{Z \cdot 12}{w_{l\text{-wat}}} = \frac{90 \text{ lbs} \cdot 12}{219 \text{ plf}} = 4 \text{ in O.C.}$$

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 4" ON CENTER

06/16

41 fo 1h

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

PLATE TO STUD CONNECTION:

$$P_c = w_{\text{wall}} \cdot M_{16} = 167 \text{ plf} \cdot 1.33 = 291 \text{ lbs}$$

$$\# \text{ OF } 0.131" \times 2.5" \text{ COMMON NAIL (ENDNAILED) REQUIRED} = \frac{P_c}{Z} = \frac{291 \text{ lbs}}{60 \text{ lbs}} = 5 \text{ NAILS}$$

USE (5) 0.131" x 2.5" COMMON NAIL (ENDNAILED) PER STUD

BOTTOM PLATE TO FLOOR CONNECTION:

$$\text{SPACING OF } 0.131" \times 2.5" \text{ COMMON NAIL (FACE NAILED)} = \frac{Z \cdot 12}{w_{\text{wall}}} = \frac{90 \text{ lbs} \cdot 12}{219 \text{ plf}} = 4 \text{ in O.C.}$$

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 4" ON CENTER

SECOND FLOOR ENDWALL SHEATHING LENGTH REQUIREMENTS

$$\begin{aligned} \text{FIRST FLOOR LENGTH (W}_1\text{)} &= 27.6 \text{ ft} \\ \text{SECOND FLOOR LENGTH (W}_2\text{)} &= 27.6 \text{ ft} \\ \text{FIRST FLOOR LENGTH (L}_1\text{)} &= 46 \text{ ft} \\ \text{SECOND FLOOR LENGTH (L}_2\text{)} &= 46 \text{ ft} \end{aligned}$$

SHEARWALL TYPE: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR

SHEATHING EDGE 8d NAIL SPACING = 6 in O.C. (8d NAILS OR EQUIVALENT)

SHEARWALL STRENGTH (V) = 436 plf (TABLE 3.17D, 2001 WFCM)

MIN. SHEARWALL SEGMENT LENGTH = 2.7 ft

FULL HEIGHT SHEATHING PROVIDED = 24.94 ft

2nd FL. PERCENT FULL HEIGHT SHEATHING = 90 %

2nd FL. MAX. UNRESTRAINED OPENING HEIGHT = 5 ft

2nd FL. PERFORATED ADJUSTMENT FACTOR (Cp) = 1.05 (TABLE 3.17E, 2001 WFCM)

2nd FL. NUMBER OF SHEARWALLS (N_{end}) = 2

$$\text{SHEARWALL REACTION (R}_{\text{end2}}\text{)} = L_2 \cdot w_{\text{top}} / N_{\text{end}} =$$

$$R_{\text{end2}} = 46 \text{ ft} \cdot 392 \text{ plf} / 2 = 9013 \text{ lbs}$$

$$\text{MIN. LENGTH SEGMENTED SHEARWALLS (L}_{\text{sw}}\text{)} = R_{\text{end2}} / V = 9013 \text{ lbs} / 436 = 20.7 \text{ ft}$$

$$\text{PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL)} = C_p \cdot L_{\text{sw}} = 20.67 \cdot 1.05 = 21.71 \text{ ft}$$

$$\begin{array}{ccc} \text{PERFORATED FULL HEIGHT SHEATHING} & & \text{PERFORATED FULL HEIGHT SHEATHING} \\ \text{REQUIRED} = 21.71 \text{ ft} & < & \text{PROVIDED} = 24.94 \text{ ft} \end{array}$$

ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

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9/13/06

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

SECOND FLOOR HORIZONTAL FLOOR DIAPHRAGM CONTINUITY:

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

$$V_f = \frac{F_{shear} \cdot L}{2} = \frac{286 \text{ plf} \cdot 46 \text{ ft}}{2} = 6583.405 \text{ lbs}$$

$$\# \text{ 1/2" DIA. THRU BOLT} = \frac{V_f}{Z_{1/2 \text{ BOLT}}} = \frac{6583 \text{ lbs}}{725 \text{ lbs}} = 10 \text{ BOLTS}$$

USE A MIN. OF (10) 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)

$$T = \frac{F_{shear} \cdot (L / 2)}{4} = \frac{286 \text{ plf} \cdot 46 \text{ ft} / 2}{4} = 1645.8513 \text{ lbs}$$

USE A (2) 1.5" x 22 ga. STRAP w/ (39) 16 ga. STAPLES EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND AN TENSILE FORCE OF 1646 lbs

SECOND FLOOR ENDWALL: UPLIFT DUE TO OVERTURNING

SECOND FLOOR WIDTH (W₂) =
SHEARWALL REACTION (R_{end2}) =
WALL HEIGHT (H) =

$$\text{UPLIFT FORCE (U}_{E2}) = R_{end2} \cdot H / W_2 = 9013 \text{ lbs} \cdot 8 \text{ ft} / 27.6 \text{ ft} = 2612 \text{ lbs}$$

SEE PAGE 17 FOR CONNECTION DESIGN

SECOND FLOOR ENDWALL: SHEAR CONNECTIONS

SECOND FLOOR WIDTH (W₂) =
SECOND FLOOR LENGTH (L₂) =

FL _{shear} =	386 plf
W _{shear} =	392 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

27.6 ft
9013 lbs
8 ft

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

RIMBAND TO BOTTOM/TOP PLATE CONNECTION:

$$\begin{aligned} \text{LAT} &= (F_{L_{\text{per}}} + W_{L_{\text{per}}}) = 286 \text{ plf} + 392 \text{ plf} = 678 \text{ plf} \\ V &= \text{LAT} \cdot L / 2 = 678 \text{ plf} \cdot 46 \text{ ft} / 2 = 15596 \text{ lbs} \\ \# \text{ TOENAILS PER FOOT} &= V / Z / W = 15596 \text{ lbs} / 159 \text{ lbs} / 27.6 \text{ ft} = 3.6 \text{ NAILS / ft} \\ \# \text{ TOENAILS PER FOOT} &= 3.6 \text{ NAILS / ft} \\ \text{TOENAIL SPACING} &= 12 / \# = 12 / 3.6 = 3" \text{ O.C.} \end{aligned}$$

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 3" ON CENTER

FIRST FLOOR ENDWALL SHEATHING LENGTH REQUIREMENTS

$$\begin{aligned} \text{FIRST FLOOR WIDTH (W}_1\text{)} &= 27.6 \text{ ft} \\ \text{SECOND FLOOR WIDTH (W}_2\text{)} &= 27.6 \text{ ft} \\ \text{FIRST FLOOR LENGTH (L}_1\text{)} &= 46 \text{ ft} \\ \text{SECOND FLOOR LENGTH (L}_2\text{)} &= 46 \text{ ft} \\ \text{SHEARWALL TYPE} &= 7/16" \text{ OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR} \\ \text{SHEATHING EDGE 8d NAIL SPACING} &= 2 \text{ in O.C. (10d NAILS OR EQUIVALENT)} \\ \text{SHEARWALL STRENGTH (V)} &= 940 \text{ plf (TABLE 3.17D, 2001 WFCM)} \\ \text{MIN. SHEARWALL SEGMENT LENGTH} &= 2.7 \text{ ft} \\ \text{FULL HEIGHT SHEATHING PROVIDED} &= 19.6 \text{ ft} \\ \text{1st FL. PERCENT FULL HEIGHT SHEATHING} &= 71 \% \\ \text{1st FL. MAX. UNRESTRAINED OPENING HEIGHT} &= 5 \text{ ft} \\ \text{1st FL. PERFORATED ADJUSTMENT FACTOR (Cp)} &= 1.17 \text{ (TABLE 3.17E, 2001 WFCM)} \\ \text{1st FL. NUMBER OF SHEARWALLS (N}_{\text{end}}\text{)} &= 2 \end{aligned}$$

$$\begin{aligned} \text{SHEARWALL REACTION (R}_{\text{end1}}\text{)} &= L_1 \cdot F_{L_{\text{per}}} / N_{\text{end}} + R_{\text{end2}} = 15596 \text{ lbs} \\ R_{\text{end1}} &= 46 \text{ ft} \cdot 286 \text{ plf} / 2 + 9013 \text{ lbs} = 15596 \text{ lbs} \end{aligned}$$

$$\begin{aligned} \text{MIN LENGTH SEGMENTED SHEARWALLS (L}_{\text{sw}}\text{)} &= R_{\text{end1}} / V = 15596 \text{ lbs} / 940 \text{ plf} = 16.6 \text{ ft} \end{aligned}$$

$$\text{PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL)} = C_p \cdot L_{\text{sw}} = 1.17 \cdot 16.6 \text{ ft} = 19.41 \text{ ft}$$

PERFORATED FULL HEIGHT SHEATHING
REQUIRED = 19.41 ft

<

PERFORATED FULL HEIGHT SHEATHING
PROVIDED = 19.6 ft

ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

FIRST FLOOR HORIZONTAL FLOOR DIAPHRAGM CONTINUITY:

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

$$V_i = \frac{(3 \cdot F_{\text{beam}} / 4) \cdot L}{2} = \frac{3 / 4 \cdot 286 \text{ plf} \cdot 46 \text{ ft}}{2} = 4937.5538 \text{ lbs}$$

$$\# \text{ 1/2" DIA. THRU BOLT} = \frac{V_i}{Z_{1/2 \text{ BOLT}}} = \frac{4938 \text{ lbs}}{725 \text{ lbs}} = 7 \text{ BOLTS}$$

USE A MIN. OF (7) 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)

$$T = \frac{(3 \cdot F_{\text{beam}} / 4) \cdot (L / 2)}{4} = \frac{3 / 4 \cdot 286 \text{ plf} \cdot 46 \text{ ft} / 2}{4} = 1234 \text{ lbs}$$

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 1234 lbs

FIRST FLOOR ENDWALL: UPLIFT DUE TO OVERTURNING

$$\begin{aligned} \text{FIRST FLOOR WIDTH (W}_1\text{)} &= 27.6 \text{ ft} \\ \text{SHEARWALL REACTION (R}_{\text{end1}}\text{)} &= 15596 \text{ lbs} \\ \text{WALL HEIGHT (H)} &= 9.5 \text{ ft} \end{aligned}$$

$$\begin{aligned} \text{UPLIFT FORCE (U}_{\text{E1}}\text{)} &= R_{\text{end1}} \cdot H / W_1 + U_{\text{E2}} = 15596 \text{ lbs} \cdot 9.5 \text{ ft} / 27.6 \text{ ft} + 2612 \text{ lbs} = 7981 \text{ lbs} \end{aligned}$$

SEE PAGE 17 FOR CONNECTION DESIGN

FIRST FLOOR ENDWALL: SHEAR CONNECTIONS

$$\begin{aligned} \text{FIRST FLOOR WIDTH (W}_1\text{)} &= 27.6 \text{ ft} \\ \text{FIRST FLOOR LENGTH (L}_1\text{)} &= 46 \text{ ft} \\ F_{L1 \text{ per}} &= 286 \text{ plf} \\ W_{L1 \text{ per}} &= 392 \text{ plf} \\ 1/2" \text{ ANCHOR BOLT } Z &= 1056 \text{ lbs} \\ 5/8" \text{ ANCHOR BOLT } Z &= 1488 \text{ lbs} \\ 0.162" \times 3.5" \text{ COMMON NAIL (TOENAILED)} &Z = 159 \text{ lbs} \end{aligned}$$

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

RIMBAND TO SILL PLATE CONNECTION:

$$\begin{aligned}LAT &= (FL_{per} + W_{per} + 3 \cdot FL_{per} / 4) = 893 \text{ plf} \\LAT &= 286 \text{ plf} + 392 \text{ plf} + 3 \cdot 286 \text{ plf} / 4 = 893 \text{ plf} \\V &= LAT \cdot L / 2 = 893 \text{ plf} \cdot 46 \text{ ft} / 2 = 20534 \text{ lbs} \\\# \text{ TOENAILS PER FOOT} &= V / Z / W = 20534 \text{ lbs} / 159 \text{ lbs} / 27.6 \text{ ft} = 4.7 \text{ NAILS / ft} \\TOENAIL SPACING &= 12 / \# = 12 / 4.7 = 2" \text{ O.C.} \\USE 0.162" \times 3.5" \text{ COMMON NAIL (TOENAILED) @ } 2" \text{ ON CENTER}\end{aligned}$$

SILL PLATE TO FOUNDATION CONNECTION:

$$\begin{aligned}\# 1/2" \text{ ANCHOR BOLTS} &= V / Z = 20534 \text{ lbs} / 1056 \text{ lbs} = 20 \text{ BOLTS} \\BOLT SPACING &= (W - 2) / (N - 1) = (27.6 \text{ ft} - 2) / (20 - 1) = 16 \text{ in} \\USE 1/2" \text{ ANCHOR BOLTS @ } 16" \text{ O.C.} \\ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS \\\# 5/8" \text{ ANCHOR BOLTS} &= V / Z = 20534 \text{ lbs} / 1488 \text{ lbs} = 14 \text{ BOLTS} \\BOLT SPACING &= (W - 2) / (N - 1) = (27.6 \text{ ft} - 2) / (14 - 1) = 23 \text{ in} \\USE 5/8" \text{ ANCHOR BOLTS @ } 23" \text{ O.C.} \\ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS\end{aligned}$$

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SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

SECOND FLOOR SIDEWALL SHEATHING LENGTH REQUIREMENTS

FIRST FLOOR WIDTH (W_1) = 27.6 ft
 SECOND FLOOR WIDTH (W_2) = 27.6 ft
 FIRST FLOOR LENGTH (L_1) = 46 ft
 SECOND FLOOR LENGTH (L_2) = 46 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 = 2.7 ft
 FULL HEIGHT SHEATHING PROVIDED = 29.33 ft
 2nd FL. PERCENT FULL HEIGHT SHEATHING = 64 %
 2nd FL. MAX. UNRESTRAINED OPENING HEIGHT = 4.333 ft
 2nd FL. PERFORATED ADJUSTMENT FACTOR (C_p) = 1.222 (TABLE 3.17E, 2001 WFCM)
 2nd FL. NUMBER OF SHEARWALLS (N_{sid}) = 2

SHEARWALL REACTION (R_{sid2}) = $W_2 \cdot W_{1para} / N_{sid}$ = 3242 lbs
 $R_{sid2} = 27.6 \text{ ft} \cdot 235 \text{ plf} / 2 = 3242 \text{ lbs}$

MIN. LENGTH SEGMENTED SHEARWALLS (L_{se}) = $R_{sid2} / V = 3242 \text{ lbs} / 330 \text{ plf} = 9.8 \text{ ft}$

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = $C_p \cdot L_{se} = 9.8 \cdot 1.222 = 12.0 \text{ ft}$

PERFORATED FULL HEIGHT SHEATHING
REQUIRED = 12 ft

PERFORATED FULL HEIGHT SHEATHING
PROVIDED = 29.33 ft

SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

SECOND FLOOR SIDEWALL: UPLIFT DUE TO OVERTURNING

SECOND FLOOR WIDTH (W_2) = 27.6 ft
 SECOND FLOOR LENGTH (L_2) = 46 ft
 SHEARWALL REACTION (R_{sid2}) = 3242 lbs
 WALL HEIGHT (H) = 8 ft

UPLIFT FORCE (U_{s2}) = $R_{sid2} \cdot H / L_2 = 3242 \text{ lbs} \cdot 8 \text{ ft} / 46 \text{ ft} = 564 \text{ lbs}$

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564 lbs

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

SECOND FLOOR SIDEWALL: SHEAR CONNECTIONS

SECOND FLOOR WIDTH (W_2) = 27.6 ft
SECOND FLOOR LENGTH (L_2) = 46 ft
 FL_{para} = 194 plf
 WL_{para} = 235 plf
1/2" ANCHOR BOLT
5/8" ANCHOR BOLT
0.162" x 3.5" COMMON NAIL (TOENAILED)

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1056 lbs
1488 lbs
159 lbs

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RIMBAND TO BOTTOM/TOP PLATE CONNECTION:

$$LAT = (FL_{para} + WL_{para}) = 194 \text{ plf} + 235 \text{ plf} = 429 \text{ plf}$$

$$V = LAT \cdot W / 2 = 429 \text{ plf} \cdot 27.6 \text{ ft} / 2 = 5925 \text{ lbs}$$

$$\# \text{ TOENAILS PER FOOT} = V / Z / L = 5925 \text{ lbs} / 159 \text{ lbs} / 46 \text{ ft} = 0.8 \text{ NAILS / ft}$$

$$\text{TOENAIL SPACING} = 12 / \# = 12 / 0.8 = 14" \text{ O.C.}$$

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 14" ON CENTER

FIRST FLOOR SIDEWALL SHEATHING LENGTH REQUIREMENTS

FIRST FLOOR WIDTH (W_1) = 27.6 ft
SECOND FLOOR WIDTH (W_2) = 27.6 ft
FIRST FLOOR LENGTH (L_1) = 46 ft
SECOND FLOOR LENGTH (L_2) = 46 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 = 2.7 ft
FULL HEIGHT SHEATHING PROVIDED = 30 ft
1st FL. PERCENT FULL HEIGHT SHEATHING = 55 %
1st FL. MAX. UNRESTRAINED OPENING HEIGHT = 4.333 ft
1st FL. PERFORATED ADJUSTMENT FACTOR (C_p) = 1.27 (TABLE 3.17E, 2001 WFCM)
1st FL. NUMBER OF SHEARWALLS (N_{shear}) = 2

$$\text{SHEARWALL REACTION } (R_{shear1}) = W_1 \cdot FL_{para} / N_{shear} + R_{shear2} = 5925 \text{ lbs}$$

$$R_{shear1} = 27.6 \text{ ft} \cdot 194 \text{ plf} / 2 + 3242 \text{ lbs} =$$

$$\text{MIN. LENGTH SEGMENTED SHEARWALLS } (L_{seg}) = R_{shear1} / V = 5925 \text{ lbs} / 330 \text{ plf} = 18.0 \text{ ft}$$

$$\text{PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL)} = C_p \cdot L_{seg} = 1.27 \cdot 18.0 = 22.8 \text{ ft}$$

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 22.8 ft < PERFORATED FULL HEIGHT SHEATHING PROVIDED = 30 ft

SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

FIRST FLOOR SIDEWALL: UPLIFT DUE TO OVERTURNING

FIRST FLOOR WIDTH (W_1) = 27.6 ft
FIRST FLOOR LENGTH (L_1) = 46 ft
SHEARWALL REACTION (R_{end1}) = 5925 lbs
WALL HEIGHT (H) = 9.5 ft

$$\text{UPLIFT FORCE } (U_{E1}) = R_{\text{end1}} \cdot H / L_1 + U_{B2} = 1788 \text{ lbs}$$

$$U_{E1} = 5925 \text{ lbs} \cdot 9.5 \text{ ft} / 46 \text{ ft} + 564 \text{ lbs} =$$

SEE PAGE 17 FOR CONNECTION DESIGN

FIRST FLOOR SIDEWALL: SHEAR CONNECTIONS

FIRST FLOOR WIDTH (W_1) = 27.6 ft
FIRST FLOOR LENGTH (L_1) = 46 ft
 $FL_{\text{para}} = 194 \text{ plf}$
 $W_{\text{para}} = 235 \text{ plf}$
1/2" ANCHOR BOLT $Z = 1056 \text{ lbs}$
5/8" ANCHOR BOLT $Z = 1488 \text{ lbs}$
0.162" x 3.5" COMMON NAIL (TOENAILED) $Z = 159 \text{ lbs}$

RIMBAND TO SILL PLATE CONNECTION:

$$\text{LAT} = (FL_{\text{para}} + W_{\text{para}}) \cdot 3 \cdot FL_{\text{para}} / 4 = 575 \text{ plf}$$

$$\text{LAT} = 194 \text{ plf} + 235 \text{ plf} + 3 \cdot 194 \text{ plf} / 4 =$$

$$V = \text{LAT} \cdot W_1 / 2 = 575 \text{ plf} \cdot 27.6 \text{ ft} / 2 = 7938 \text{ lbs}$$

$$\# \text{ TOENAILS PER FOOT} = V / Z / L_1 = 7938 \text{ lbs} / 159 \text{ lbs} / 46 \text{ ft} = 1.1 \text{ NAILS / ft}$$

$$\text{TOENAIL SPACING} = 12 / \# = 12 / 1.1 = 11" \text{ O.C.}$$

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 11" ON CENTER

SILL PLATE TO FOUNDATION CONNECTION:

$$\# 1/2" \text{ ANCHOR BOLTS} = V / Z = 7938 \text{ lbs} / 1056 \text{ lbs} = 8 \text{ BOLTS}$$

$$\text{BOLT SPACING} = (L - 2) / (N - 1) = (46 \text{ ft} - 2) / (8 - 1) = 72 \text{ in}$$

USE 1/2" ANCHOR BOLTS @ 72" O.C.
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS

$$\# 5/8" \text{ ANCHOR BOLTS} = V / Z = 7938 \text{ lbs} / 1488 \text{ lbs} = 6 \text{ BOLTS}$$

$$\text{BOLT SPACING} = (L - 2) / (N - 1) = (46 \text{ ft} - 2) / (6 - 1) = 72 \text{ in}$$

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
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NATIONWIDE HOMES

COMBINED CORNER HOLDDOWN REQUIREMENTS

UPLIFT FORCES: (SEE ABOVE FOR CALCULATIONS)

2nd FLOOR ENDWALL UPLIFT FORCE (U_{E2}) =	2612 lbs
2nd FLOOR SIDEWALL UPLIFT FORCE (U_{S2}) =	564 lbs
1st FLOOR ENDWALL UPLIFT FORCE (U_{E1}) =	7981 lbs
1st FLOOR SIDEWALL UPLIFT FORCE (U_{S1}) =	1788 lbs

DEAD LOADS:

FIRST FLOOR WIDTH (W_1) =	27.6 ft
SECOND FLOOR WIDTH (W_2) =	27.6 ft
FIRST FLOOR LENGTH (L_1) =	46 ft
SECOND FLOOR LENGTH (L_2) =	46 ft
FIRST FLOOR HEIGHT (H_1) =	9.5 ft
SECOND FLOOR HEIGHT (H_2) =	8 ft
ROOF & CEILING ASSEMBLY DEAD LOAD (RDL) =	15 psf
WALL DEAD LOAD (WDL) =	12 psf
FLOOR DEAD LOAD (FDL) =	10 psf

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SIDEWALL SECOND FLOOR CORNER:

ROOF DEAD LOAD = $0.6 \cdot \text{RDL} \cdot W_2 \cdot L_2 / 8 =$	1428 lbs
ROOF DEAD LOAD = $0.6 \cdot 15 \text{ psf} \cdot 27.6 \text{ ft} \cdot 46 \text{ ft} / 8 =$	
WALL DEAD LOAD = $0.6 \cdot (\text{WDL} \cdot H_2 \cdot L_2 / 2) =$	1325 lbs
$0.6 \cdot 12 \text{ psf} \cdot 8 \text{ ft} \cdot 46 \text{ ft} / 2 =$	
TOTAL DEAD LOAD = $1428 + 1325 =$	2754 lbs

SIDEWALL FIRST FLOOR CORNER:

WALL DEAD LOAD = $0.6 \cdot (\text{WDL} \cdot H_1 \cdot L_1 / 2) =$	1573 lbs
WALL DEAD LOAD = $0.6 \cdot 12 \text{ psf} \cdot 9.5 \text{ ft} \cdot 46 \text{ ft} / 2 =$	
2nd FLOOR DEAD LOAD = $0.6 \cdot \text{FDL} \cdot W_2 \cdot L_2 / 8 =$	952 lbs
2nd FLOOR DEAD LOAD = $0.6 \cdot 10 \text{ psf} \cdot 27.6 \text{ ft} \cdot 46 \text{ ft} / 8 =$	
TOTAL DEAD LOAD = $1573 + 952 =$	2525 lbs

ENDWALL SECOND FLOOR CORNER:

WALL DEAD LOAD = $0.6 \cdot (\text{WDL} \cdot H_2 \cdot W_2 / 2) =$	795 lbs
WALL DEAD LOAD = $0.6 \cdot 12 \text{ psf} \cdot 8 \text{ ft} \cdot 27.6 \text{ ft} / 2 =$	

ENDWALL FIRST FLOOR CORNER:

WALL DEAD LOAD = $0.6 \cdot (\text{WDL} \cdot H_1 \cdot W_1 / 2) =$	944 lbs
WALL DEAD LOAD = $0.6 \cdot 12 \text{ psf} \cdot 9.5 \text{ ft} \cdot 27.6 \text{ ft} / 2 =$	

SHEARWALL DESIGN
(per 2001 WFCM)

NATIONWIDE HOMES

SECOND FLOOR CORNER HOLDDOWNS

UPLIFT FORCE = 2613 lbs (MAX. OF SECOND FLOOR UPLIFT FORCES)
SECOND FLOOR DEAD LOAD (DL₂) = 2754 lbs - 795 lbs =
HOLDDOWN FORCE = 3549 lbs - 2613 lbs =
NO PHYSICAL HOLDDOWN REQUIRED

SECOND FLOOR CORNER STUD CONNECTION

16d COMMON NAIL ALLOWABLE SHEAR (Z) = 184 lbs
UPLIFT FORCE (U) = 2613 lbs (MAX. OF SECOND FLOOR UPLIFT FORCES)
NAIL SPACING (2 ROWS) = $\frac{2 \cdot H \cdot Z}{U} = \frac{2 \cdot 8 \text{ ft} \cdot 184 \text{ lbs}}{2613 \text{ lbs}} = 14 \text{ in O.C.}$

OF 1/4" DIA. LAG SCREW REQUIRED = $\frac{U}{Z} = \frac{2613 \text{ lbs}}{320 \text{ lbs}} = 9 \text{ LAG SCREWS}$

FASTEN CORNER STUDS 2 ROWS OF 16d COMMON NAILS @ 14" ON CENTER
OR USE (9) 1/4" DIA. LAG SCREWS

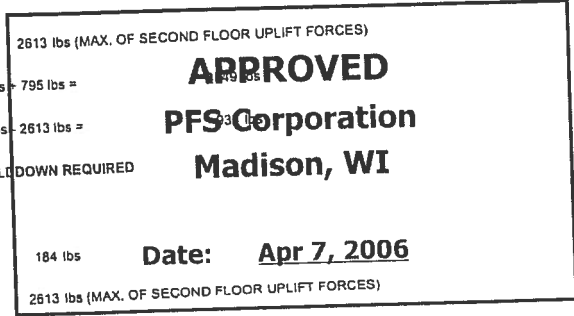
FIRST FLOOR HOLDDOWNS

UPLIFT FORCE = 7981 lbs (MAX. OF FIRST FLOOR UPLIFT FORCES)
FIRST FLOOR DEAD LOAD (DL₁) = 2526 lbs + 2754 lbs + 795 lbs + 944 lbs = 7019 lbs
HOLDDOWN FORCE = 7981 lbs - 7019 lbs = 962 lbs
USE A SIMPSON LSTHD8RJ AT EACH BUILDING CORNER OR EQUAL
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 962 lbs

FIRST FLOOR CORNER STUD CONNECTION

16d COMMON NAIL ALLOWABLE SHEAR (Z) = 184 lbs
UPLIFT FORCE = 7981 lbs (MAX. OF FIRST FLOOR UPLIFT FORCES)
NAIL SPACING (2 ROWS) = $\frac{2 \cdot H \cdot Z}{U} = \frac{2 \cdot 9.5 \text{ ft} \cdot 184 \text{ lbs}}{7981 \text{ lbs}} = 6 \text{ in O.C.}$
OF 1/4" DIA. LAG SCREW REQUIRED = $\frac{U}{Z} = \frac{7981 \text{ lbs}}{320 \text{ lbs}} = 25 \text{ LAG SCREWS}$

FASTEN CORNER STUDS 2 ROWS OF 16d COMMON NAILS @ 6" ON CENTER
OR USE (25) 1/4" DIA. LAG SCREWS



ohg/b

15 f 15

*The Sugarhill Model
HVAC Load Calculations*

for

Kent Harris Construction, Inc.
805 SW Alamo Drive
Lake City, FL 32025

Prepared By:

Ken Fonorow
Florida H.E.R.O. Inc.
15220 NW 5th Ave
Newberry, FL 32669
(352)-472-5661
Tuesday, March 14, 2006

Project Report

General Project Information

Project Filename: C:\Elite\Rhvacw\Projects\KHSugarhill.rhv
Project Title: The Sugarhill Model
Designed By: Ken Fonorow
Project Date: 2/28/06
Client Name: Kent Harris Construction, Inc.
Client Address: 805 SW Alamo Drive
Client City: Lake City, FL 32025
Client Phone: (386) 365-7086
Client Fax: (386) 758-0022
Client E-Mail Address: kharris@se.rr.com
Company Name: Florida H.E.R.O. Inc.
Company Representative: Ken Fonorow
Company Address: 15220 NW 5th Ave
Company City: Newberry, FL 32669
Company Phone: (352)-472-5661
Company Fax: (352)-472-2291
Company E-Mail Address: ken@floridahero.com
Company Website: www.floridahero.com
Company Comment: Front facing south

Design Data

Reference City: Gainesville, Florida
Daily Temperature Range: Medium
Latitude: 29 Degrees
Elevation: 152 ft.
Altitude Factor: 0.995
Elevation Sensible Adj. Factor: 1.000
Elevation Total Adj. Factor: 1.000
Elevation Heating Adj. Factor: 1.000
Elevation Heating Adj. Factor: 1.000

	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	31	0	50	70	35
Summer:	93	77	50	75	50

Check Figures

Total Building Supply CFM:	1,600	CFM Per Square ft.:	0.629
Square ft. of Room Area:	2,544	Square ft. Per Ton:	864
Volume (ft³) of Cond. Space:	26,711	Air Turnover Rate (per hour):	3.6

Building Loads

Total Heating Required With Outside Air:	29,103 Btuh	29.103 MBH
Total Sensible Gain:	21,368 Btuh	71 %
Total Latent Gain:	8,837 Btuh	29 %
Total Cooling Required With Outside Air:	30,205 Btuh	2.52 Tons (Based On Sensible + Latent)
		2.95 Tons (Based On 75% Sensible Capacity)

Notes

Calculations are based on 8th edition of ACCA Manual J.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads.

Miscellaneous Report

System 1 First Floor Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	31	0	50	70	34.51
Summer:	93	77	50	75	50.06
System 2 Second Floor Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	31	0	50	70	34.51
Summer:	93	77	50	75	50.06

Duct Sizing Inputs

	Main Trunk	Runouts
Calculate:	Yes	Yes
Use Schedule:	Yes	Yes
Roughness Factor:	0.15000	0.15000
Pressure Drop:	0.1000 in.wg./100 ft.	0.1000 in.wg./100 ft.
Minimum Velocity:	550 ft./min	450 ft./min
Maximum Velocity:	600 ft./min	700 ft./min
Minimum Height:	0 in.	0 in.
Maximum Height:	0 in.	0 in.

Outside Air Data

	Winter	Summer
Infiltration:	0.310 AC/hr	0.160 AC/hr
Above Grade Volume:	X 26,711 Cu.ft.	X 26,711 Cu.ft.
	8,280 Cu.ft./hr	4,274 Cu.ft./hr
	X 0.0167	X 0.0167
Total Building Infiltration:	138 CFM	71 CFM
Total Building Ventilation:	116 CFM	116 CFM

—System 1—

Infiltration & Ventilation Sensible Gain Multiplier:	19.69	= (1.10 X 0.995 X 18.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier:	33.85	= (0.68 X 0.995 X 50.06 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier:	42.66	= (1.10 X 0.995 X 39.00 Winter Temp. Difference)

—System 2—

Infiltration & Ventilation Sensible Gain Multiplier:	19.69	= (1.10 X 0.995 X 18.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier:	33.85	= (0.68 X 0.995 X 50.06 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier:	42.66	= (1.10 X 0.995 X 39.00 Winter Temp. Difference)

System 2 Room Load Summary

Room No Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Air Sys CFM
---Zone 1---									
9 Bedroom 2	236	2,532	33	1-8	490	1,967	291	90	171
10 BR 2 WIC	38	92	1	1-4	113	113	0	5	10
11 Dressing Room	33	341	4	1-4	184	185	56	8	16
12 Bath 3	88	1,139	15	1-4	628	631	433	29	55
13 Bedroom 3	266	1,808	24	1-6	547	1,235	178	56	107
14 BR 3 WIC	30	338	4	1-4	181	182	56	8	16
15 Computer Room	100	1,347	18	1-7	482	1,484	187	68	129
16 Media Room	448	4,710	62	2-7	542	3,336	626	152	290
17 Bath 4	33	60	1	1-4	74	74	200	3	6
Ventilation		2,048				945	1,625		
System 2 total	1,272	14,415	161			10,152	3,652	421	800

System 2 Main Trunk Size: 16 in.
 Velocity: 573 ft./min
 Loss per 100 ft.: 0.171 in.wg

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.15	74% / 26%	10,152	3,652	13,804
Recommended:	1.22	75% / 25%	10,956	3,652	14,608

System 1 Room Load Summary

Room No Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Air Sys CFM
---Zone 1---									
1 Bedroom 1	236	2,255	29	1-7	454	1,404	414	68	121
2 BR 1 WIC	48	407	5	1-4	168	170	55	8	15
3 Bath 1	140	1,272	17	1-5	449	709	485	35	61
4 Laundry	39	455	6	1-4	522	527	195	26	46
5 Dining	182	2,103	27	1-6	518	1,177	90	57	102
6 Kitchen	203	1,788	23	2-6	585	2,658	747	130	230
7 Great Room	294	2,460	32	2-5	618	1,950	835	95	168
8 Foyer	130	1,047	14	1-4	659	666	62	32	58
Ventilation		2,901				1,339	2,302		
AED Excursion						616			
System 1 total	1,272	14,688	154			11,216	5,185	451	800

System 1 Main Trunk Size: 16 in.
 Velocity: 573 ft./min
 Loss per 100 ft.: 0.171 in.wg

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.37	68% / 32%	11,216	5,185	16,401
Recommended:	1.73	75% / 25%	15,555	5,185	20,740

Total Building Summary Loads (cont'd)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
Infiltration: Winter CFM: 138, Summer CFM: 71		5,886	2,410	1,403	3,813
Ventilation: Winter CFM: 116, Summer CFM: 116		4,949	3,927	2,284	6,211
AED Excursion:		0	0	616	616
Total Building Load Totals:		29,103	8,837	21,368	30,205

Check Figures

Total Building Supply CFM:	1,600	CFM Per Square ft.:	0.629
Square ft. of Room Area:	2,544	Square ft. Per Ton:	864
Volume (ft³) of Cond. Space:	26,711	Air Turnover Rate (per hour):	3.6

Building Loads

Total Heating Required With Outside Air:	29,103 Btuh	29.103 MBH
Total Sensible Gain:	21,368 Btuh	71 %
Total Latent Gain:	8,837 Btuh	29 %
Total Cooling Required With Outside Air:	30,205 Btuh	2.52 Tons (Based On Sensible + Latent)
		2.95 Tons (Based On 75% Sensible Capacity)

Notes

Calculations are based on 8th edition of ACCA Manual J.
 All computed results are estimates as building use and weather may vary.
 Be sure to select a unit that meets both sensible and latent loads.

Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.32, outdoor insect screen with 50% coverage, light color drapes with medium weave with 50% coverage, u-value 0.53	29.4	608	0	418	418
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.32, u-value 0.53	14.6	300	0	323	323
7A-1: Glazing-Glass or plastic block, smooth or wide ribs or flutes, no screen, no coating, ground reflectance = 0.23, u-value 0.6	12.2	287	0	299	299
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.23, outdoor insect screen with 50% coverage, light color drapes with medium weave with 50% coverage, u-value 0.53	155.2	3,209	0	3,076	3,076
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.23, u-value 0.53	9.3	193	0	207	207
10B-m: Glazing-French door, double pane clear glass, metal frame no break, ground reflectance = 0.23, light color drapes with medium weave with 25% coverage, u-value 1.45	17.8	1,007	0	570	570
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.32, outdoor insect screen with 50% coverage, u-value 0.53	7	144	0	140	140
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.32, light color drapes with medium weave with 25% coverage, u-value 0.53	6	124	0	100	100
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.32, light color drapes with medium weave with 50% coverage, u-value 0.53	13.3	276	0	210	210
3A-v-o: Glazing-Double pane low-e (e = 0.40), operable window, vinyl frame, ground reflectance = 0.32, u-value 0.53	5	103	0	111	111
10B-m: Glazing-French door, double pane clear glass, metal frame no break, ground reflectance = 0.23, outdoor insect screen with 50% coverage, light color drapes with medium weave with 50% coverage, u-value 1.45	26.7	1,510	0	770	770
11P: Door-Polyurethane Core	20	226	0	168	168
12C-3sw: Wall-Frame, R-13 insulation in 2 x 4 stud cavity, R-3 board insulation, siding finish, wood studs	2204.9	6,452	0	3,373	3,373
R-19 Icynene-mI: Roof/Ceiling-	1621.2	2,212	0	2,724	2,724
19B-0sp-c: Floor-Over enclosed unconditioned crawl space, R-4 insulation on exposed walls, sealed crawl space, passive, no floor insulation, carpet or hardwood, carpet covering	1272.2	1,617	0	746	746
Subtotals for structure:		18,268	0	13,235	13,235
People:	6		1,200	1,380	2,580
Equipment:			1,300	2,450	3,750
Lighting:	0			0	0
Ductwork:		0	0	0	0

Notice of Treatment

Applicator: Florida Pest Control & Chemical Co. (www.flapest.com)

Address: 536 SW Baya

City Lake City Phone 752-1703

Site Location: Subdivision _____

Lot # _____ Block# _____ Permit # 29274

Address 805 SW Alamo Dr. Lake City

<u>Product used</u>	<u>Active Ingredient</u>	<u>% Concentration</u>
☒ Premise	Imidacloprid	0.1%
☐ Termidor	Fipronil	0.12%
☐ Bora-Care	Disodium Octaborate Tetrahydrate	23.0%

Type treatment:

☒ Soil

☐ Wood

<u>Area Treated</u>	<u>Square feet</u>	<u>Linear feet</u>	<u>Gallons Applied</u>
<u>Basement</u>	<u>852</u>	<u>134</u>	<u>45</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

As per Florida Building Code 104.2.6 – If soil chemical barrier method for termite prevention is used, final exterior treatment shall be completed prior to final building approval.

If this notice is for the final exterior treatment, initial this line _____.

5-2-06

Date

Time

Bob B

Print Technician's Name

Remarks: _____

Applicator - White

Permit File - Canary

Permit Holder - Pink

10/05

©

COLUMBIA COUNTY DEPARTMENT OF BUILDING AND ZONING

OCCUPANCY

COLUMBIA COUNTY, FLORIDA

Department of Building and Zoning Inspection

This Certificate of Occupancy is issued to the below named permit holder for the building and premises at the below named location, and certifies that the work has been completed in accordance with the Columbia County Building Code.

Parcel Number 36-4S-16-03300-008

Building permit No. 000024274

Use Classification MODULAR, UTILITY

Fire: 44.64

Permit Holder OWNER BUILDER

Waste: 134.00

Owner of Building KENT HARRISS

Total: 178.64

Location: 438 SW KING STREET

Date: 02/21/2007

Thony Dicks

Building Inspector



POST IN A CONSPICUOUS PLACE
(Business Places Only)