WINDLOAD ANALYSIS

PREPARED BY

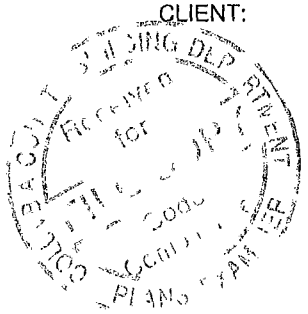
DRISCOLL ENGINEERING,INC.
CONSULTING ENGINEERS
PO BOX 357577
GAINESVILLE, FL. 32606
CA 8690
PH (352) 331-1513

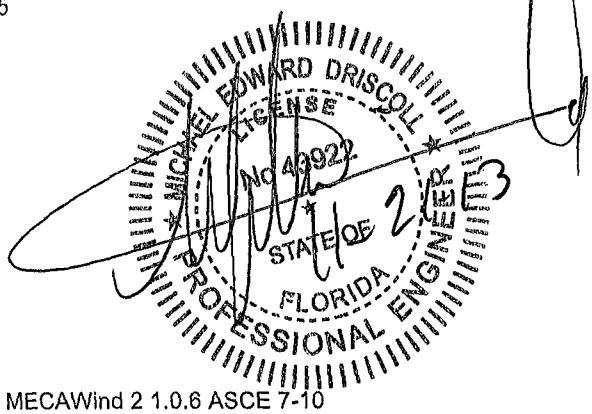
11-21-13

PREPARED FOR

CLIENT:

HOPKINS RESIDENCE
2116 JUNCTION RD
FT WHITE, FL
DW13-25





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WINDLOAD ANALYSIS HAVE BEEN PREPARED IN COMPLIANCE WITH THE 2010 FLORIDA BUILDING CODE

MICHAEL E. DRISCOLL P.E.
FL REG. #43922

FOR WINDLOAD ANALYSIS ONLY

WIND ANALYSIS SUMMARY

DRISCOLL ENGINEERING, Inc.
P.O. BOX 357577.
Gainesville, FL 32606
352-331-1513
C.A. 8690

Project No. DW13-25

Michael E. Driscoll, P.E.
FL Registration No. 43922

1. Name: Hopkins Residence
2. Address 2116 Junction Rd Ft White, Fl
3. Description: New Residence

Certification

I hereby certify that the accompanying wind load analysis for the New Residence as described above demonstrates compliance with the FBC 2010 Section 1609, to the best of my knowledge.

Project Wind load Information

1. Ultimate wind speed = 130 MPH
2. Nominal wind speed = 101 MPH
3. Risk Category = II
4. Wind exposure for this design is Exposure B
5. Interior Pressure Coefficient or Gcpi = +/- 0.18
6. For design of MWFRS: see attached MECAWind Version 2.1.0.6 per ASCE 7-10
7. Roof Design live load 20 psf.
8. Floor Design load 40 psf.

Drawings

See drawings for additional details. In case of conflict, the more restrictive requirements of the drawings or these calculations govern.

Roof Structure

1. Trusses: Pre-engineered wood trusses at 24" o.c. The Truss engineering for this project was not available prior to the preparation of these wind-load calculations. A Typical Connector Schedule is provided for the convenience of the owner/builder as a selection guide only. If the truss uplift from the truss engineering exceeds the capacity of the specified connector, contact the Engineer immediately. Signed & Sealed Truss engineering shall be provided to Driscoll Engineering for review and confirmation of connector selection prior to beginning construction.

2. Roof Sheathing: Sheathing to be or 7/16" Structural Sheathing min. to adequately resist exterior shear and uplift forces due to nailing. Panels to be facenailed w/ #8 ring shank (0.113 Dia.) @ 4" oc along edges and @ 8" oc along interior supports. Galv. metal edging to be nailed @ 4" oc.

3. Roofing : Asphalt Shingles shall be installed per mfg. specifications to meet 130 m.p.h. wind loading & in accord with the Florida Building Code 2010

Exterior Walls

1. Exterior Wall: 8" Concrete Masonry Units (ASTM C90 or C145, 1500 psi min) will adequately resist exterior shear forces. Mortar type M.
   a) Shearwalls: Transverse = 50 LF
      Longitudinal = 59 LF

2. Bond Beam to be (1) 8" min. Masonry with (1) #5 reinforcement with grout continuous. Note bond beam to remain continuous without breaks or interruptions to maintain shear transfer capacity. Minimum splice lap of #5 rebar is 25" at all locations. Install plated steel bearing plate at truss/masonry bearing points.

   Vertical spacing of grouted reinforced cells w/ (1) #5 rebar is to be 7'-0" o.c. typical. Install a minimum of 1 each vertical #5 bar in each cell on either side of each corner and on each side of any openings. Minimum splice lap of #5 rebar is 25".

Headers

1. Provide headers in accordance with Section 2308 of the *Florida Building Code, 2010.u.n.o.*
2. All wood header & beam connections to trusses shall be designed & engineered by the roof truss mfg.

Foundations (sizes based on wind load requirements only :

Footing: Stem wall footing: 20" wide x 10" deep w/ 3 #5 bars cont. 25"min bar lap.

Thickened edge @ rear slab & front porch 12"x 10" w/ 1 #5 bar cont.

Front porch Post footing: 30"x 30" x 10"deep w 3 #5 bars each way

M.E. Driscoll, P.E.
Effective 01-01-12

+GENERAL NOTES

Design Criteria

1 Structure to meet wind load requirements of FBC 2010 amendments to SEC 1609 for a design wind speed of 130 mph
2 Wood framing and fasteners to meet NDS-2005 requirements
3. Fastener requirements: (1) All nails are Common galvanized, (UNO) (2) all bolts are to be galvanized steel and include nuts and washers; and (3) all other hardware (Simpson, etc.) is to be installed according to manufacturer's specifications and recommendations Nailing (size and number) shall satisfy Tables 2306 3.1, 2306 3 2 and 2306.4.1 FBC unless otherwise indicated Note fasteners exposed to the weather are to be treated for weather resistance and compatible with the type of pressure treated wood used (connectors, nails, bolts, nuts and washers).
4 Fasteners shall be driven flush with surface of sheathing.

Concrete Construction Notes

1 Concrete work shall conform to "Building Code Requirements for Reinforced Concrete" (ACI-318) and "Specifications for Structural Concrete" (ACI-301), Latest Edition.
2 Concrete Mix "A" shall be used for foundation walls, footings and interior slabs on grade. Concrete mix "B" shall be used for exterior slabs, curbs and all other exterior concrete All concrete mixes shall contain a water-reducing admixture conforming to ASTM C-494 Air-entraining admixture shall conform to ASTM C-260

	Mix A	Mix B
Ultimate Compressive Strength @ 28 days	3000 psi	3000 psi
Slump Range	4"+/-1"	3"+/-1"
Maximum Aggregate Size	1"	1"
Entrained Air	None	5-7%
Dry Weight per Cubic Foot	150#	150#

3 All concrete shall be cured for a minimum of 28 days. If forms for vertical surfaces are removed prior to the end of the curing period, spray surfaces with liquid membrane curing compound
4. Reinforcing steel shall conform to ASTM A615, Grade 40 (Fy=40 ksi) Lap continuous bars for tension lap splice per ACI-318, unless otherwise noted. Provide corner bars of same size and spacing as horizontal wall reinforcement. Cover for concrete reinforcing steel shall be in accordance with ACI-318, Paragraph 7 7
5. Welded wire fabric (WWF) shall conform to ASTM A185 Lap sheets on mesh space and wire tie adjacent sheets together securely Cut alternate reinforcement at control joints
6 All slabs on grade shall have construction or control joints not to exceed 15' – 0" spacing, unless otherwise noted.
7. Electrical conduit and other pipes to be embedded in structural concrete floor slabs or walls shall be placed in accordance with the requirements of ACI-318, Paragraph 6 3

Masonry Construction Notes

1. Concrete masonry work shall conform to "Building Code Requirements for Masonry Structures" (ACI 530-02/ASCE5-05) and "Specifications for Masonry Structures (ACI 530 1-05/ASCE6-05)
2. Concrete masonry units shall be Type 1 and comply with "Standard Specifications for Hollow Load-Bearing Concrete Masonry Units" (ASTM C90-90).
3 The minimum net area compressive strength of masonry (f'm), as determined by the unit strength method, shall be 1500 psi.
4. Mortar shall conform to ASTM C270. Type M Mortar shall be used unless otherwise noted Type S Mortar shall be used with masonry in contact with earth.
5. Masonry column reinforcement shall have #2 ties in the bed joints at 8" oc, unless otherwise noted.
6 Grout for filling block cores and bond beams shall have a minimum compressive strength (f'c) of 3000 psi at the age of 28 days.

PROFESSIONAL SERVICES BY
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PLANS AND SPECIFICATIONS

The plans and specifications presented herein are applicable only for the anticipated construction at the locations shown. If construction plans change, the Design Professional should be notified so the plans and specifications can be re-evaluated The Design Professional should be given the opportunity to review final plans and specifications to see if the intent of the plans and specifications has been followed and/or if supplemental details and recommendations are needed. The Design Professional warrants that the plans and specifications contained herein, have been prepared in accordance with generally accepted professional engineering practice. No other warranties are implied or expressed.

CORPORATE PROTECTION

It is understood and agreed that the Design Professional's Basic Services under this Agreement do not include project observation or review of the Contractor's performance or any other construction phase services, and that such services will be provided by the Client. The Client assumes all responsibility for interpretation of the contractor Documents and for construction observation and supervision and waives any claims against the Design Professional that may be in any way connected thereto

In addition, the Client agrees, to the fullest extent permitted by law, to indemnify and hold the Design Professional harmless from any loss, claim or cost, including reasonable attorney's fees and costs of defense, arising or resulting from the performance of such services by other person or entities and from any and all claims arising from modifications, clarifications, interpretations, adjustments or changes made to Contract Documents to reflect changed field or other conditions, except for claims arising from the sole negligence or willful misconduct to the Design Professional

OWNERSHIP OF INSTRUMENTS OF SERVICE

All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Design Professional as instruments of service shall remain the property of the Design Professional. The Design Professional shall retain all common law, statutory and other reserved rights, including the copyright thereto

DEFECTS IN SERVICE

The Client shall promptly report to the Design Professional any defects or suspected defects in the Design Professional's work or services of which the Client becomes aware, so that the Design Professional may take measures to minimize the consequences of such a defect. The Client warrants that he or she will impose a similar notification requirement on all contractors in his or her Client/Contractor contract and shall require all subcontractors at any level to contain a like requirement Failure by the Client, and the Client's contractors or subcontractors to notify the Design Professional, shall relieve the Design Professional of the costs of remedying the defects above the sum such remedy would have cost had prompt notification been given.

VERIFICATION OF EXISTING CONDITIONS

Inasmuch as the remodeling and/or rehabilitation of an existing building requires that certain assumptions be made regarding existing conditions, and because some of these assumptions may not be verifiable without expending additional sums of money or destroying otherwise adequate or serviceable portions of the building, the Client agrees, to the fullest extent permitted by law, to indemnify and hold the Design Professional harmless from any claim, liability or cost (including reasonable attorney's fees and costs of defense) for injury or economic loss arising or allegedly arising out of the professional services provided under this Agreement, excepting only those damages, liabilities, or costs attributable to the sole negligence or willful misconduct of the Design Professional.

MECAWind Version 2.1.0.6 per ASCE 7-10

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Date	: 11/21/2013	Project No.	: DW13-25
Company Name	: Driscoll Engineering, Inc	Designed By	: MED
Address	: PO Box 357577	Description	: New Residence
City	: Gainesville	Customer Name	: Hopkins
State	: Fl	Proj Location	: 2116 Junction Rd Ft White, Fl

File Location: C:\Program Files\MECAWind\Default.wnd

Directional Procedure Simplified Diaphragrm Building (Ch 27 Part 2)

All pressures shown are based upon STRENGTH Design, with a Load Factor of 1

Basic Wind Speed(V)	= 130.00 mph		
Structural Category	= II	Exposure Category	= B
Natural Frequency	= N/A	Flexible Structure	= No
Importance Factor	= 1.00	Kd Directional Factor	= 0.85
Damping Ratio (beta)	= 0.01		
Alpha	= 7.00	Zg	= 1200.00 ft
At	= 0.14	Bt	= 0.84
Am	= 0.25	Bm	= 0.45
Cc	= 0.30	l	= 320.00 ft
Epsilon	= 0.33	Zmin	= 30.00 ft
Slope of Roof	= 3.16 : 12	Slope of Roof(Theta)	= 14.74 Deg
Ht: Mean Roof Ht	= 10.50 ft	Type of Roof	= Hipped
RHt: Ridge Ht	= 13.00 ft	Eht: Eave Height	= 8.00 ft
OH: Roof Overhang at Eave	= 2.00 ft	Roof Area	= 1371.00 ft^2
Bldg Length Along Ridge	= 48.00 ft	Bldg Width Across Ridge	= 34.00 ft

Gust Factor Category I Rigid Structures - Simplified Method

Gust1: For Rigid Structures (Nat. Freq.>1 Hz) use 0.85 = 0.85

Gust Factor Category II Rigid Structures - Complete Analysis

Zm:	0.6*Ht	= 30.00 ft
lzm:	Cc*(33/Zm)^0.167	= 0.30
Lzm:	l*(Zm/33)^Epsilon	= 309.99 ft
Q:	(1/(1+0.63*((B+Ht)/Lzm)^0.63))^0.5	= 0.92
Gust2:	0.925*((1+1.7*Izm*3.4*Q)/(1+1.7*3.4*Izm))	= 0.88

Gust Factor Summary

Not a Flexible Structure use the Lessor of Gust1 or Gust2 = 0.85

Table 26.11-1 Internal Pressure Coefficients for Buildings, GCpi

GCPi : Internal Pressure Coefficient = +/-0.18

Topographic Adjustment

0.33*z	= 3.47
Kzt (0.33*z): Topographic factor at elevation 0.33*z	= 1.00
Vtopo: Adjust V per Para 27.5.2: V * [Kzt(0.33*z)]^0.5	= 130.00 mph

Net Wind Pressures on Walls (Table 27.6-1)

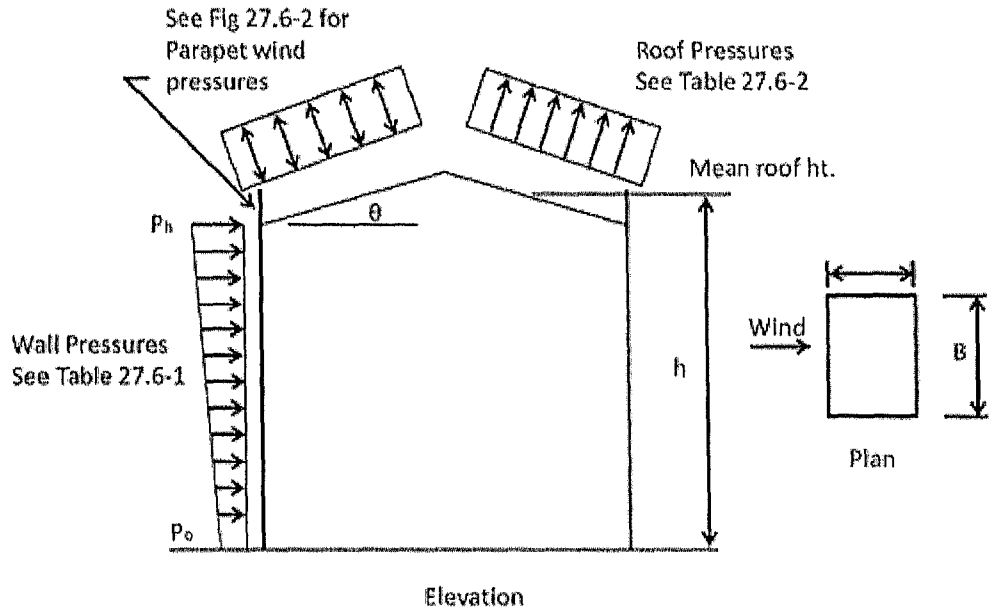
Wall Pressures do not include effect of internal pressure

MWFRS-Wall Pressures for Wind Normal to 34 ft wall

L/B	=	1.41
ph: Net Pressure at top of wall (windward + leeward)	=	22.06 psf
p0: Net Pressure at bottom of wall (windward + leeward)	=	22.06 psf
ps: Side wall pressure acting uniformly outward = .58 * ph	=	12.82 psf
pl: Leeward wall pressure acting uniformly outward = .33 * ph	=	7.39 psf
pwh: Windward wall pressure acting uniformly outward = ph-pl	=	14.68 psf
pw0: Windward wall pressure acting uniformly outward = p0-pl	=	14.68 psf

MWFRS-Wall Pressures for Wind Normal to 48 ft wall

L/B	=	0.71
ph: Net Pressure at top of wall (windward + leeward)	=	23.30 psf
p0: Net Pressure at bottom of wall (windward + leeward)	=	23.30 psf
ps: Side wall pressure acting uniformly outward = .54 * ph	=	12.58 psf
pl: Leeward wall pressure acting uniformly outward = .38 * ph	=	8.85 psf
pwh: Windward wall pressure acting uniformly outward = ph-pl	=	14.45 psf
pw0: Windward wall pressure acting uniformly outward = p0-pl	=	14.45 psf

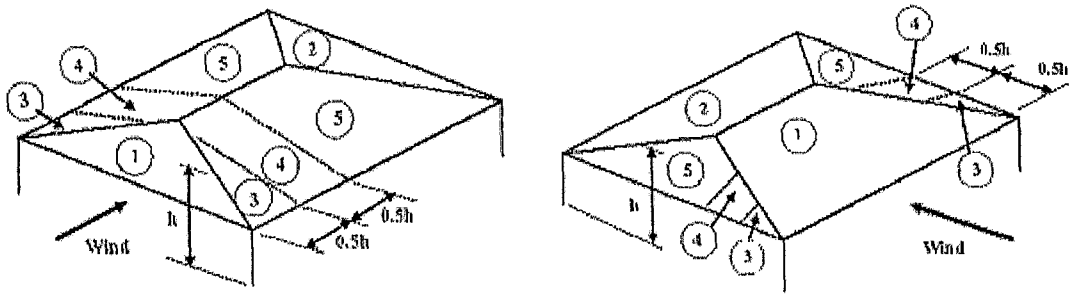


Net Wind Pressures on Roof (Table 27.6-2):

Exposure Adjustment Factor = 0.677

Zone	Load Case1 psf	Load Case2 psf
1	-21.34	3.69
2	-14.89	-4.80
3	-22.41	.00
4	-19.97	.00
5	-16.38	.00

Note: A value of '0' indicates that the zone/load case is not applicable.



Hipped Roof

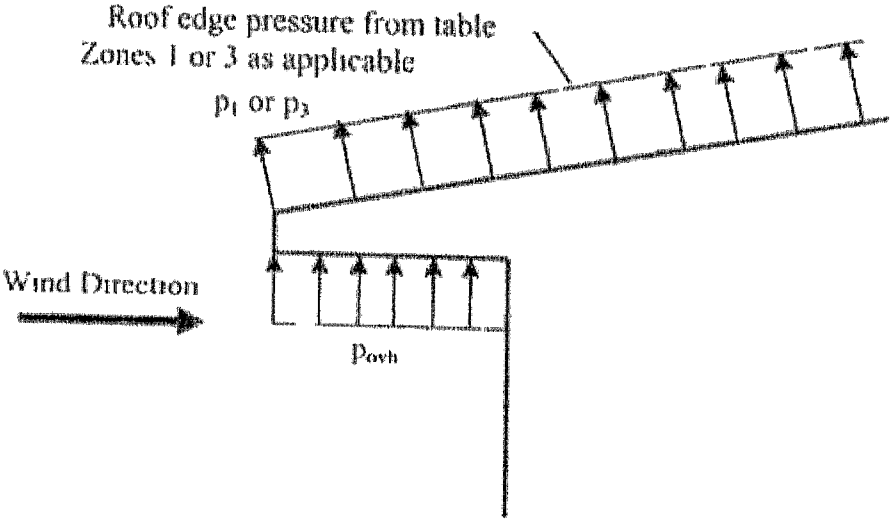
Roof Overhang Loads (Figure 27.6-3):

Load Case 1:

Povh1: Overhang pressure for zone 1	=	-16.01 psf
Povh3: Overhang pressure for zone 3	=	-16.81 psf

Load Case 2:

Povh1: Overhang pressure for zone 1	=	2.77 psf
Povh3: Overhang pressure for zone 3	=	.00 psf



MECAWind Version 2.1.0.6 ASCE 7-10

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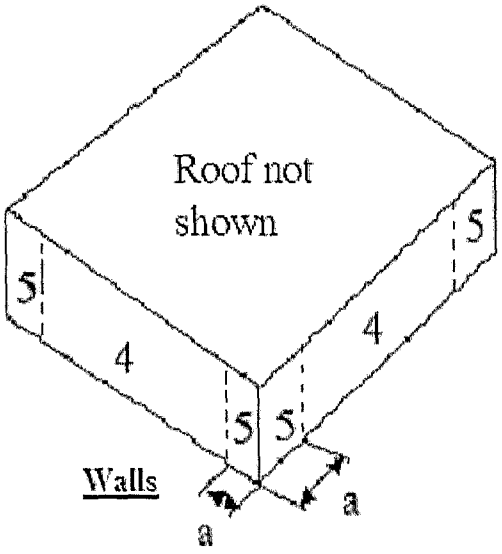
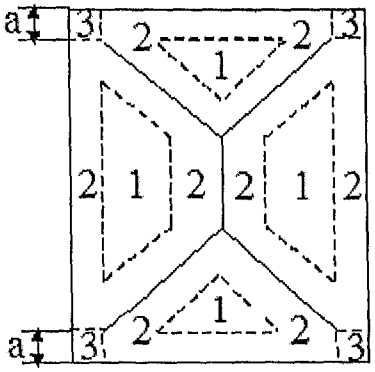
Date	: 11/21/2013	Project No.	: DW13-25
Company Name	: Driscoll Engineering, Inc	Designed By	: MED
Address	: PO Box 357577	Description	: New Residence
City	: Gainesville	Customer Name	: Hopkins
State	: Fl	Proj Location	: 2116 Junction Rd Ft White, Fl

File Location: C:\Program Files\MECAWind\Default.wnd



Walls



Hip Roof 7 < θ <= 27

Wind Pressure on Components and Cladding (Ch 30 Part 1)

All pressures shown are based upon STRENGTH Design, with a Load Factor of 1

Width of Pressure Coefficient Zone "a" = 3.4 ft

Description	Width ft	Span ft	Area ft^2	Zone	Max GCp	Min GCp	Max P psf	Min P psf
Zone 1	1.00	1.00	1.0	1	0.50	-0.90	17.52	-27.82
Zone 2	1.00	1.00	1.0	2	0.50	-1.70	17.52	-48.44
Zone 3	1.00	1.00	1.0	3	0.50	-1.70	17.52	-48.44
Zone 4	1.00	1.00	1.0	4	1.00	-1.10	30.40	-32.98
Zone 5	1.00	1.00	1.0	5	1.00	-1.40	30.40	-40.71
Zone 2H	1.00	1.00	1.0	2H	0.50	-2.20	16.00	-56.68
Zone 3H	1.00	1.00	1.0	3H	0.50	-3.70	16.00	-95.33

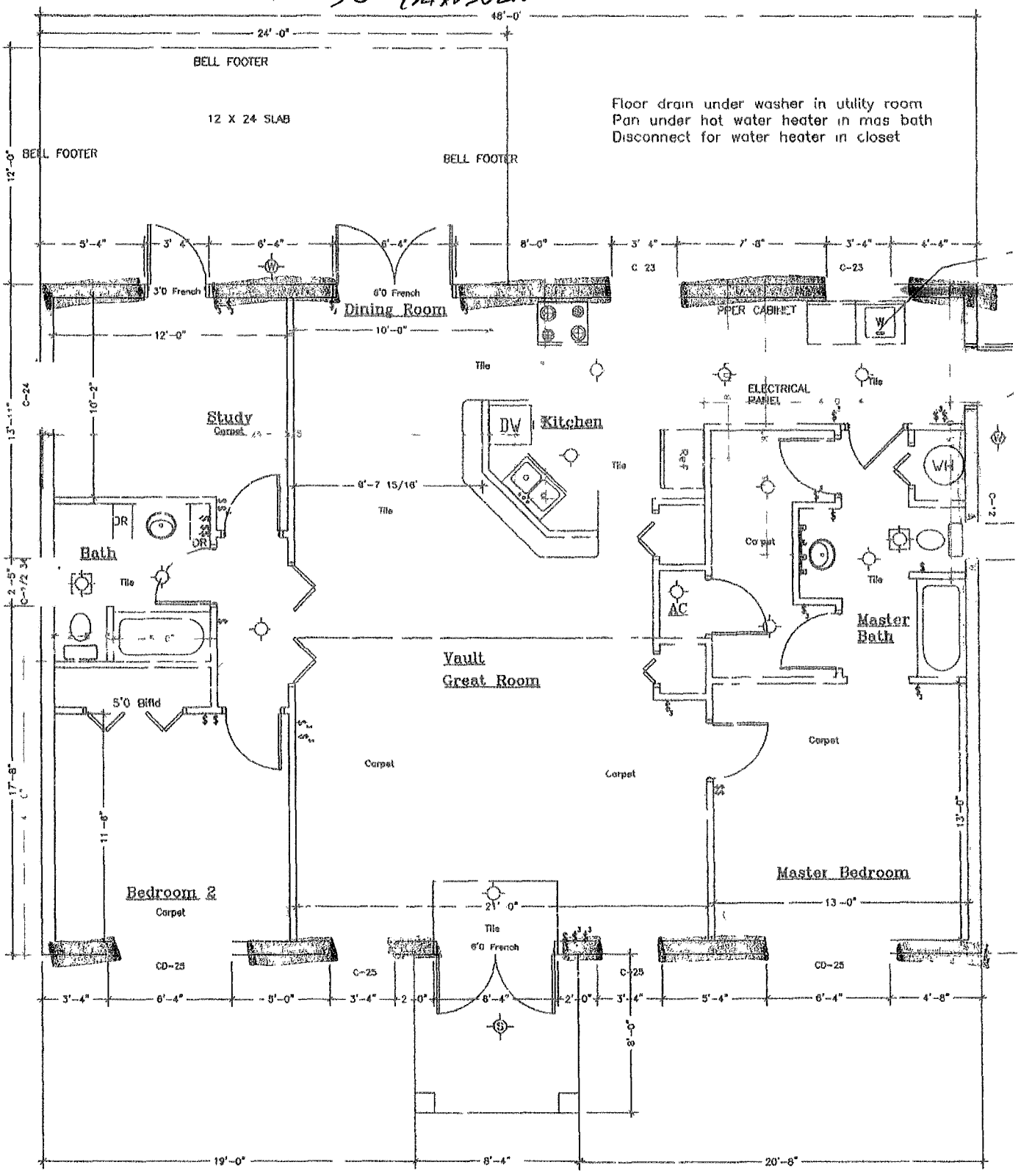
Khcc:Comp. & Clad. Table 6-3 Case 1 = 0.70

Qhcc:.00256*V^2*Khcc*Kht*Kd = 25.76 psf

SHEARWALLS

59' LONGITUDINAL

50' TRANSVERSE



CONNECTOR SCHEDULE FOR LOAD BEARING & SHEAR WALLS

TO CONNECT	TO	NO	PRODUCT CODE	FASTENER	UPLIFT CAPACITY LBS
MASONRY WALL	TRUSS/ GIRDER	1	HETA 12	7/10d COMMON	1420
MASONRY WALL	HEADERS	1	HETA 12	7/10d COMMON	1420

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NAME

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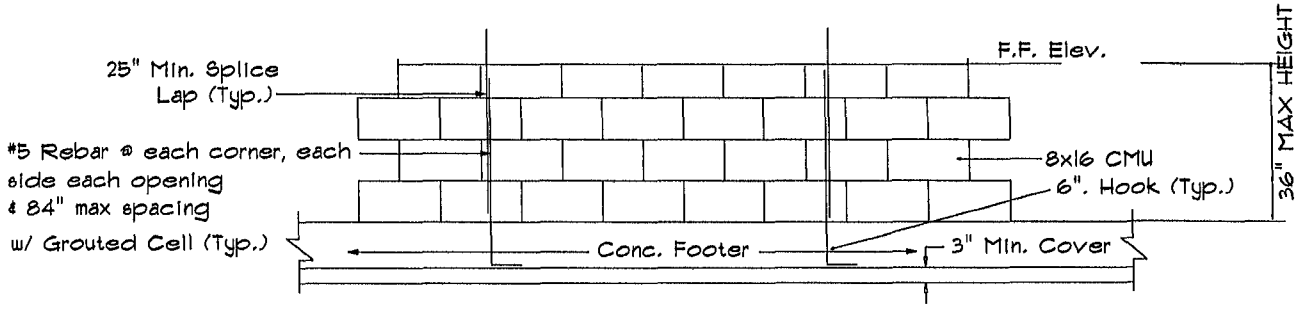
2116 JUNCHION RD
FT WHITE, FL DW13-25

DATE:
DESIGNER:
CHECKED:
DRAWN:
REVISED:
JOB NO.
SHEET
OF

Connector Schedule Notes:

1. Product codes refer to connector hardware as manufactured by Simpson Strong-Tie Company, Inc., Pleasanton, CA. Other manufacturers' products of equal or higher capacity may be substituted.
2. Use one connector on every other stud -32" OC max.
3. Use one connector each jack stud, each side of header.
4. Connector spacing: within 6" of each end of each plate, within 6" of corners, and at 32" o.c. maximum.
5. All metal hardware and fasteners in contact with pressure-treated wood shall be corrosion-resistant compatible with the chemical application of the treated wood. Type 304 or Type 316 stainless steel may also be used. Where allowed, provide moisture barrier between untreated wood and concrete in lieu of using pressure-treated wood.
6. Unless noted otherwise, all nails to be common wire nails with the following diameters:
    a. 8d: 0.131 in.
    b. 10d: 0.148 in.
    c. 16d: 0.162 in.
    d. #8 Ringshank (0.113 Diameter)
7. See truss calculations for truss-to-truss connectors.
8. Connections not otherwise specified herein or shown on the drawings shall be in accordance with Section 2306 of the 2010 Florida Building Code.



Masonry Stemwall Detail

NTS

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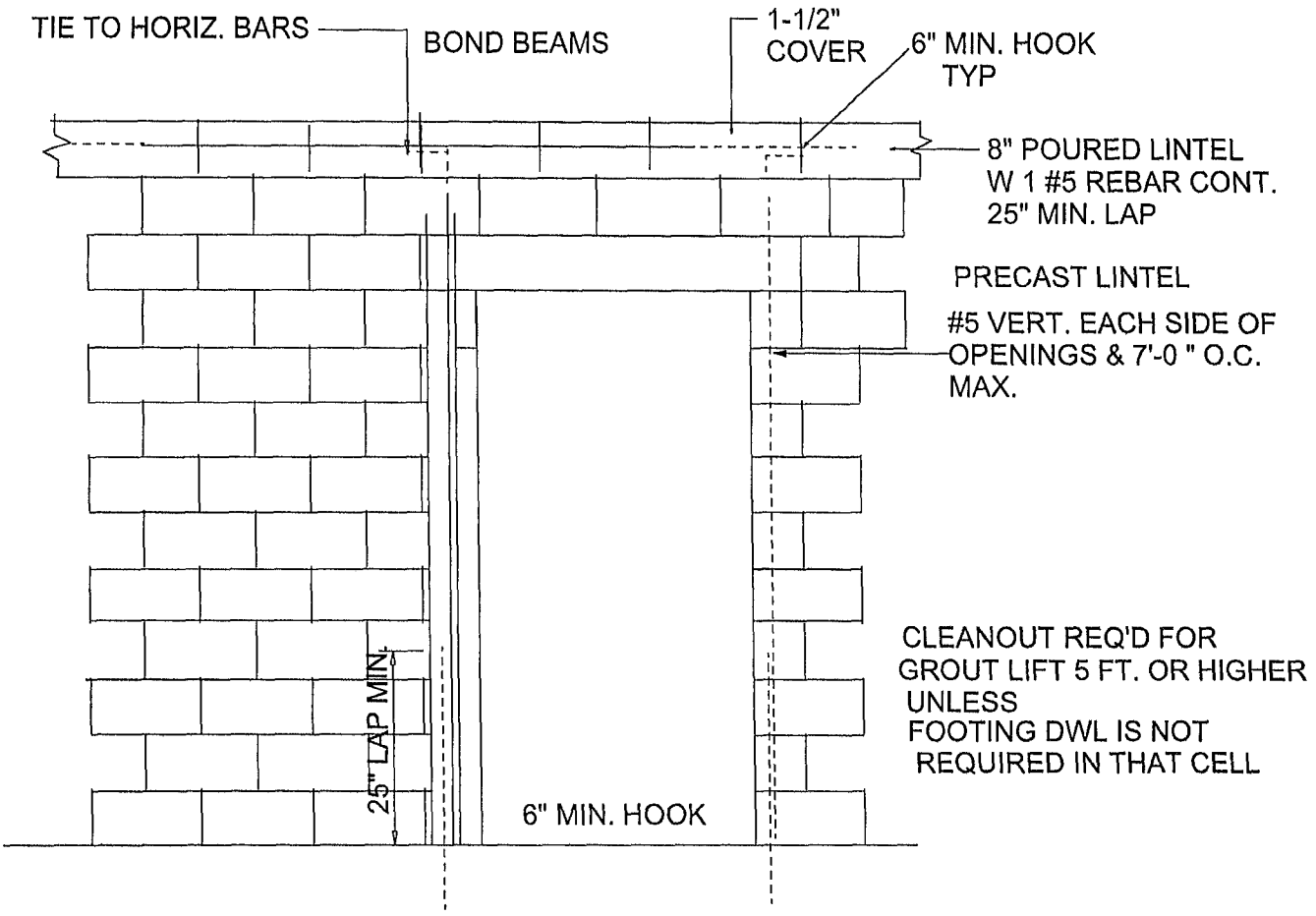

CMU WALL OPENING REINFORCING

NTS

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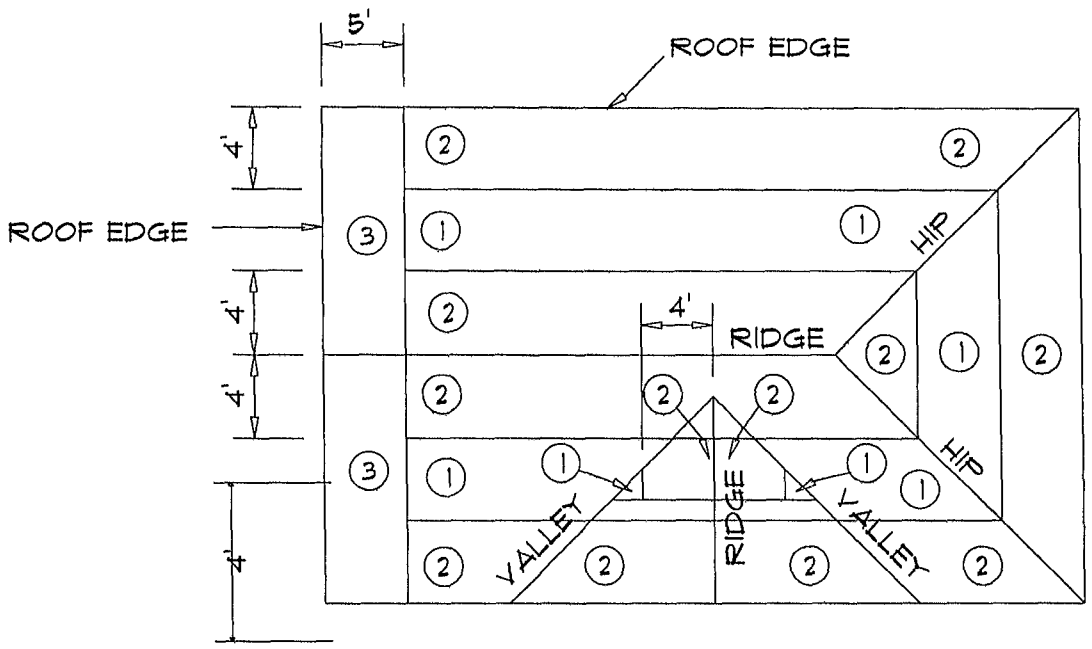

ROOF ATTACHMENT PLAN

ZONE 1 EDGES AT TRUSSES 6" O.C. AND INTERMEDIATE TRUSSES 10" O.C.
ZONE 2 EDGES AT TRUSSES 6" O.C. AND INTERMEDIATE TRUSSES 6" O.C.
ZONE 3 EDGES AT TRUSSES 4" O.C. AND INTERMEDIATE TRUSSES 6" O.C.

NOTES:

1. ALL NAILS TO BE #8 RING SHANK NAILS MIN.
2. IF BUILDING WIDTH EXCEEDS 40 FT OR HEIGHT IS MORE THAN 2 STORIES USE #10 RINGSHANK INSTEAD OF #8 RINGSHANK FOR ATTACHMENT OF ROOF SHEATHING
3. ALL STRUCTURAL SHEATHING PANELS TO BE 7/16" STRUCTURAL SHEATHING MIN.

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