

OPTIONAL PROGRAM FOR RETROFITS DONE BETWEEN  
JULY 2, 2002 AND SEPTEMBER 18, 2006.

Because the Wind Resistive Devices Technical Specifications were not made available to the public until September 18, 2006, persons who did a retrofit between July 2, 2002 and September 18, 2006 may at their option choose to apply for a grant under an older set of specifications. These older specifications are called the Hawaii Hurricane Relief Fund Construction Classes, Definitions, Rate Credits Attachment B and are enclosed in this packet. These specifications were used by the Hawaii Hurricane Relief Fund until the end of 2002 to provide premium credits for hurricane retrofits.

Enclosed in this packet are:

1. Hawaii Hurricane Relief Fund Construction Classes, Definitions, Rate Credits Attachment B.
2. Exhibit E: Application Form
3. Exhibit F: Contractor Certification
4. Exhibit G: Inspector Certification for do it yourself retrofits

**DO NOT USE THESE DOCUMENTS IF YOU DID YOUR RETROFIT AFTER SEPTEMBER 18, 2006. IF YOU DID YOUR RETROFIT AFTER THAT DATE, YOU MUST USE THE PRIMARY LOSS MITIGATION PROGRAM DOCUMENTS LISTED ON OUR WEBSITE, INCLUDING THE WIND RESISTIVE DEVICES TECHNICAL SPECIFICATIONS.**

By applying for this special program, the applicant holds the State of Hawaii harmless for any and all liability pertaining to the retrofits since the retrofits were not done in reliance upon specifications established by the State prior to the retrofit. Attachment B is adopted as of October 18, 2006, and is solely for the purpose of providing grants. The State of Hawaii does not recommend Attachment B as a guidelines for doing retrofits as it has been superseded by the Wind Resistive Devices Technical Specifications.

## CONSTRUCTION CLASSES, DEFINITIONS RATE CREDITS

### (RISK BASED PREMIUM STRUCTURE)

THE PURPOSE OF THIS MANUAL IS TO DEVELOP PROPERTY INSURANCE PRICING INFORMATION; IT IS NOT FOR PROPERTY LOSS PREVENTION OR LIFE SAFETY PURPOSES. THE INFORMATION IN THIS MANUAL DOES NOT GUARANTEE COMPLIANCE WITH ANY WARRANTY, ORDINANCE, LAW, REGULATION OR BUILDING CODE. REFERENCE TO THE UNIFORM BUILDING CODE (UBC) IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE AN ENDORSEMENT BY THE STATE OF HAWAII OR THE HAWAII HURRICANE RELIEF FUND OR ANY OF THEIR EMPLOYEES OR AGENTS.

#### General Rules

1. This manual sets forth certain rate credits that may be obtained for certain types of wind resistive construction or devices. In general, the user will (a) determine if any wind resistive devices are present that may receive a rate credit (see "Protection Factors for Wind Resistive Devices"), (b) classify various aspects of the property to be insured according to their construction class (see "Construction Class Definitions"), (c) locate the percentage reductions, that correspond to the appropriate construction class (see "Wind Resistive Devices Credit Table" in Section IV of the Hawaii Hurricane Relief Fund Procedures and Rating Manual), and (d) total the available percentage reductions and apply them in calculating the premium (see "Rating Formulas" in Attachment "A"). The final rate applies to all coverages in the HHRF Residential and Commercial Policies.
2. Terms in bold lettering followed by an asterisk are defined under "Definitions".
3. When calculating percentages of exterior wall area for Construction Class determination, disregard foundation walls below grade level. Where walls have **openings\***, the construction of that percentage of the wall that is the **opening\*** shall be determined by the material providing the structural support for the floor and/or roof immediately above the opening. For example: a wood beam over an opening in a masonry wall results in classifying that percentage of wall area to be wood frame.
4. To qualify for a Construction Class, all criteria listed for that Construction Class must be met. If a building does not meet the construction criteria in a specific Construction

Class, review the next higher or lower numerical Construction Class until an appropriate description is found for the building you are classifying.

5. Eligibility: To be eligible for HHRF's rate credit program, the premises and or land associated with the insured location must be in compliance with the following conditions:
- All buildings must be **properly maintained**. There are no portions of exterior walls or roof in serious disrepair. For example: missing areas of sheathing, visual signs of termite damage, structural supports or walls out of plumb, missing wall sections, large cracks in masonry walls possibly due to abnormal settling. There are no signs of un-repaired damage to the structure, including but not limited to wind, fire or water damage.
  - Any detached buildings (other structures), including carports, sheds, **portable\*** buildings, extensions, or other lightly constructed structures at the premises of the insured, must have walls and roofs firmly connected and be **anchored\*** to the ground.
  - No more than 25% of the land at the insured location is used for storage of loose material, debris or other similar items that could become wind driven objects.

### CONSTRUCTION CLASS DEFINITIONS

#### STANDARD FRAME CONSTRUCTION CLASS, CODE 1

Buildings with less than 66 2/3% of the exterior wall area constructed with **masonry materials\*** or wood and/or metal framed buildings without specific **wind resistive devices\*** and, in each case, not specifically **engineered\*** and constructed to withstand wind speeds up to 80 MPH. Included in this definition are buildings constructed of materials such as brick veneer, stone veneer, iron clad or stucco on wood.

#### MASONRY CONSTRUCTION CLASS, CODE 2

Buildings with at least 66 2/3% of the exterior wall area constructed of **masonry materials\***; horizontal levels (floors and roofs) constructed of either metal or wood frame. Walls constructed of **masonry materials\*** must support at least 66 2/3% of the structural loads (weight) from the horizontal levels.

#### SEMI-WIND RESISTIVE CONSTRUCTION CLASS, CODE 3

1. Buildings with at least 66 2/3% of the exterior wall area constructed with **masonry materials\***; horizontal levels (floors and roofs) constructed of a metal deck covered with a minimum of 2" (two inches) thick concrete. Masonry walls must support 66 2/3% of the structural loads (weight) from the horizontal levels.

2. **Engineered Building**, including a wood or a metal framed building, that is **engineered\*** and constructed to withstand wind speeds from 101 MPH to 120 MPH.

#### WIND RESISTIVE CONSTRUCTION CLASS, CODE 4

1. Buildings with at least 66 2/3% of the exterior wall area constructed with **masonry materials \***; horizontal levels (floors and roofs), constructed of a minimum 4" (four inches) thick concrete. Masonry walls must support at least 66 2/3% of the structural loads (weight) from the horizontal levels.
2. **Engineered Building**, including a wood or a metal framed building, that is **engineered\*** and constructed to withstand wind speeds from 121 MPH to 160 MPH..

#### LIGHT FRAME CONSTRUCTION CLASS, CODE 5

1. Sheds, mobile homes and similar **portable\*** buildings or
2. Any building where over 50% of the exterior wall area is **open\*** and the building is not specifically **engineered\*** and constructed to withstand windspeeds up to 80 MPH.

#### SUPERIOR FRAME CONSTRUCTION CLASS, CODE 6

1. Wood or metal framed buildings constructed in accordance with the 1991 (or later) Uniform Building Code including appendices (1991 UBC) resulting in a structure built to withstand wind speeds from 80 MPH to 100 MPH.
2. **Engineered Building**, including a wood or a metal framed building **engineered\*** and constructed to withstand wind speeds from 80 MPH to 100 MPH built prior to the 1991 UBC.

#### SUPERIOR WIND RESISTIVE CONSTRUCTION CLASS, CODE 7

1. Buildings with 100% of the exterior wall area constructed with **masonry materials\*** supporting structural loads from horizontal levels (floors and roofs) and constructed entirely with **masonry materials\***. The building is required to have **opening\* protection** (shutters/storm panels) **engineered\*** to withstand wind speeds over 160 MPH.
2. **Engineered Building**, including a wood or a metal framed building, **engineered\*** and constructed to withstand wind speeds over 160 MPH. The building is required to have **opening\* protection** (shutters/storm panels) **engineered\*** to withstand wind speeds over 160 MPH.

*All surface materials (roof surface/veneers) used to construct the building must be engineered\* or approved\* to withstand wind speeds up to 160 MPH. Submit qualifying documentation to HHRF for approval to rate the building a Superior Wind Resistive Construction Code 7.*

## TYPE OF PROTECTION (WIND RESISTIVE DEVICES)

Note: Do not apply Type of protection credits for **Wind Resistive Devices\*** if the Eligibility Requirements stated in "General Rules" have not been met.

Type of Protection credits for 1. Roof to Wall and 2. Wall to Foundation are not available for buildings that qualify as an **engineered building** under the Construction Class Definitions.

For the purposes of this section *ties, straps, etc.* are generic terms. See Definitions under **Wind Resistive Devices\*** for clarification and minimum requirements.

**1. Roof to Wall** connection *ties* when **properly connected\*** and installed on each roof truss, rafter or joist in accordance with 1991 UBC, including appendix 2518, or other **approved\*** or **engineered\*** connection method qualify for premium reduction credits. See Exhibits A, B, or, C for installation examples.

For an explanation of **properly connected\*** structural members, such as **post and beam\*** and **heavy timber\*** construction, see Definitions.

**2. Wall to Foundation** connection *straps* when **properly connected\*** and installed at 48" center to center, in accordance with 1991 UBC, including appendix 2518, or other **approved\*** or **engineered\*** connection method qualify for premium reduction credits.

Foundations must be **engineered\*** and embedded in the ground in accordance with the 1991 or later Uniform Building Code (UBC). All new foundations constructed to qualify for Wall to Foundation credits must be **engineered\*** or approved by the HHRF.

Wall to Foundation credits apply to **Bearing Plates\*** that are connected to a masonry foundation or concrete slab on grade at 48" center to center.

Floor to Wall (floor to floor) ties/straps are required to be installed every 48" and for each story to be recognized for credit under this item. See **Metal Cable Systems** for additional Wall to Foundation credits.

For an explanation of **properly connected\*** structural members, such as **post and beam\*** and **heavy timber\*** construction, see Definitions.

Connecting columns or posts to concrete pads not embedded in the ground will not be recognized for credit under this item.

**3. Opening\* Protection** such as storm shutters and plywood panels, or other **approved\*** **opening\*** protection, when installed, qualify for premium reduction credits. There are

two (2) types of credits available, "credit A" and "credit B". All installations must be in compliance with the following criteria:

**Opening\*** protection must protect each opening in the structure. **Openings\*** include but are not limited to doors, windows, skylights and vents other than roof ridge and soffit vents four square feet and under. A garage door does not require shuttering or additional protection if the door is **engineered\*** or **approved\*** (includes retrofitting) to withstand sustained windspeeds of 80 MPH or more. Credit for **opening\*** protection is not available for Construction Class 7.

Deployable systems (shutter/panels) or systems that require installation prior to an approaching storm must have the fittings permanently installed on the building. For example, wood or metal panels require bolts, screws and tracks in order for panels to be installed correctly. These bolts, screws and or tracks (fittings) must be permanently installed. This eliminates the need to install the fittings when a storm is approaching.

Credit A applies when the **Opening\*** protection system complies with the "Dade County Florida Ordinances" for storm shutters utilizing the "Large Missile" impact test.

Credit A, for wood panels, requires a minimum of 19/32" (inch) thick treated plywood (or equal) and shall be continuous over two or more spans (no unsupported joints) with face grain perpendicular to the supports. The allowable spans between bracing for plywood panels shall not exceed four feet in any direction. See Exhibit D for a suggested panel installation.

Credit B applies when the **opening\*** protection complies with the "Dade County Florida Ordinances" for storm shutters utilizing the "Small Missile" impact test. For example: **approved\*** laminated glass and impact resistant plastic window film. The laminated glass and window film must be **approved\*** and installed in accordance with the manufacturer's guidelines.

Credit B for wood panels require a minimum of 1/2" (inches) thick treated plywood (or equal). There shall not be any unsupported joints. The allowable spans between bracing for the 1/2" plywood panels shall not exceed two feet in one direction and four feet in the other direction. See exhibit D for panel installation.

4. **Metal Cable Systems:** when **engineered\***, qualify for credit A or credit B and must be reviewed by HHRF for the specific credit that applies.

## DEFINITIONS

The information contained in these Definitions are not intended to supersede or replace an Architect's or Structural Engineer's design requirements, definitions or specifications.

The main purpose of the following definitions is to specify minimum retrofit requirements for existing structures and to qualify for HHRF's rate credit program. See Eligibility Requirements under "General Rules".

**Anchored\***: The anchoring or fastening of structural members to a foundation, e.g., Wall to Foundation. Anchoring to a foundation, whether a masonry connection or a cable tie-down system, must be constructed to resist the uplift and sliding movement from wind forces.

**Approved\***: Materials and/or structural connections will be considered "approved" if documentation is submitted indicating that the material used to construct the building bears a label or a listing in a publication issued by a recognized testing laboratory. Examples of recognized testing laboratories include ICBO Evaluation Service, Underwriters Laboratory (UL), Factory Mutual (FM), Dade County Florida Ordinances, and American Standards for Testing Materials (ASTM). Without such label or listing, substitutions will be considered "approved" if documentation is submitted from a licensed Architect or Structural Engineer certifying that the materials and/or structural connections meet HHRF's wind speed resistance criteria specified under the respective Construction Classes 3, 4, 6 or 7.

Protection for **openings\***, other than the plywood panels described in this document, must bear a label or listing indicating compliance with "Dade County Florida Ordinances" for opening protection using the "Large Missile" (credit A) or "Small Missile" (credit B) impact test.

**Bearing Plate\***: A horizontal wood, metal, or masonry structural member that provides a connection point for, and to receive the weight of, structural members such as roof rafters or walls. See Exhibits A, B, and C for examples. **Bearing plates\*** must be connected to masonry foundations with at least 1/2" diameter anchor bolts spaced no more than 48" center to center to be recognized as **properly connected\***. If the connection is questionable or the anchor bolt spacing is indeterminable, additional **approved\*** connections are required.

**Engineered\***: The buildings structure and/or materials used to construct or protect the building has been designed by a licensed Architect or Structural Engineer. Plans or drawings, bearing an Architect's or Structural Engineer's professional stamp, must be submitted stating that the construction and materials used meets the wind speed resistance or other criteria specified under the respective HHRF Construction Classes. Building materials, if **approved\***, may not require the submission of documents indicating an Architect or Engineer's professional stamp.



**Heavy Timber\*:** Wood columns 8" thick or greater in any dimension, floor framing members not less than 6" in width by 10" in depth, and roof framing members not less than 6" in width by 8" in depth. All widths and depths are nominal dimensions.

Buildings constructed with heavy timber \* structural members must be properly connected\*.

**Masonry Materials\*:**

**Walls:**

1. Solid masonry, not less than 8" thick. Concrete block (CMU) with continuous metal reinforcing in solid grouted cells horizontally and vertically at 48" (inches) center to center will be considered "solid".
2. Reinforced concrete, pre-cast, and pre-stressed concrete not less than 6" thick.
3. Non-reinforced concrete not less than 10" thick.
4. Natural stone, brick, and concrete block (CMU) not less than 12" thick.

**Floors and Roofs:**

1. Reinforced concrete slabs not less than the thickness described in the respective HHRF Construction Class Definitions, including but not limited to poured in place concrete slabs, pre-cast, and pre-stressed concrete planks surfaced with reinforced concrete.
2. Horizontal levels (floors and roofs) must be supported by walls made of masonry materials\* except where allowed under the respective Construction Class Definitions. For example: A Construction Class 6 masonry roof may be supported by a metal beam or girder if the condition does not exceed 33 1/3% of the wall area.

**Open\*:** Openings in walls or roofs where no barrier exists which would inhibit air flow or resist impact from wind driven objects.

**Openings\*:** Openings in walls or roofs where a barrier exists such as doors, windows, skylights, and vents other than roof ridge and soffit vents. See also 1991 UBC Section 2312 for reference.

**Portable\*:** Movable structures not securely anchored\* to a foundation by mechanical means. For example: sheds, mobile homes or offices, glass houses, greenhouses' gazebos, tiki huts, and similar structures.

**Post and Beam\*:** Wood structural members as follows:

Columns: less than 8" thick but more than 2" thick in any dimension. For example: 6X6  
floor framing members less than 6" thick but more than 2" thick. For example: 4X8  
roof framing member(s) less than 6" thick but more than 2" thick and with depth less than 8". For example: 4X6. All widths and depths are nominal dimensions. Buildings with post and beam\* construction must be properly connected\*.

Properly Connected\* structural members are:

1. Buildings with **post and beam\*** construction shall have **wind resistive devices\*** at each connection point. For example: bottom of post to floor structure, top of post to horizontal ridge beam or post and beam connections located in the exterior wall. Purlins or roof rafters spaced over 24" center to center require two walls to roof *ties*; one each side of the purlin or rafter.
2. Roof overhangs more than 4' (four feet) require, at a minimum, **wind resistive devices\*** connecting each 4' roof section to a **bearing plate\*** where uplift forces (load paths) are transferred to a foundation embedded in the ground. For example: A 10' (foot) overhang or awning requires three connection points; one at the exterior wall plane, the second at 4' (foot) and the third connection occurring 8' (feet) from the exterior wall plane.
3. Buildings constructed of **heavy timber\*** structural members require **engineered\*** documentation (architect/engineer plans) indicating that the installation of **Wind Resistive Devices\*** or the overall construction comply with the wind resistance criteria specified under the respective HHRF Construction Class Definitions. For example: superior frame construction class requires **engineered\*** documentation depicting that the building design will resist wind speeds of 80 mph - 100 mph.
4. Connecting structural members with **wind resistive devices\*** will be considered **properly connected\*** when the connection is made between wood members that are not less than 1 1/2" (net) in thickness. For example: roof to wall *ties* connected to 3/4" thick tongue and grooved single walls is not acceptable unless a continuous nailer is provided increasing the wall thickness to 1 1/2" net. See Exhibit "B".
5. For **openings\*** exceeding 6' (six feet) and 16' in width, the required **wind resistive device\*** must connect a minimum 4X4 jamb or column (structural frame) to the floor structure (wood framing or masonry). For **openings\*** 6' to 12' in width, the required **wind resistive device\*** must be doubled at each edge of the opening. For **openings\*** 12' to 16' in width, the required **wind resistive device\*** must be specifically design for the installation such as a *column base or metal angle* (3/16" thick) and connected with two 5/8" diameter bolts through the jamb and one 5/8" diameter by 8" anchor bolt embedded in **masonry materials\***.
6. Nails, bolts, cables, and other such connecting devices that are used to connect structural members with **wind resistive devices\*** must be **approved\***. For example: Nailing patterns, size of nails, number and type, etc., must be listed in a manufacturers catalog, building code, or other similar document.

**Wind Resistive Devices (WRD):** are **approved\*** connectors and include generic terms such as *straps, ties, ridge ties, clips, joist hangers, post caps, post cap bases, foundation*

*anchors, column base or angled anchor, "T" & "L" strap ties* and, other **approved\*** connectors.

Metal used in wind resistive devices connecting roof rafters spaced at 24" (inches) center to center or less must be a minimum of 1 1/8" wide by 20 gauge sheet steel.

Metal used in wind resistive devices connecting floor to floor members must be a minimum of 18 gauge sheet steel.

All sheet steel must be corrosion resistant. If the installation is located within 1000 feet of the ocean shore line, the corrosion resistance for wind resistive devices must be equal to hot dipped galvanizing.

Bending, crimping, or cutting of pre-manufactured **wind resistive devices\*** will not be considered **approved\***. See also UBC Sec. 2518 (1991) for clarification.

See Exhibit "A" for examples of double wall construction retrofit options.  
See Exhibit "B" for examples of single wall construction retrofit options.  
See Exhibit "C" for examples of masonry wall construction retrofit options.  
See Exhibit "D" for plywood or corrugated metal panels protecting openings.  
See Exhibit "E" for 1/2" plywood panels protecting openings.

TYPES OF WIND RESISTIVE DEVICES (WRD)  
 (SEE DEFINITIONS FOR MINIMUM REQUIREMENTS AND OTHER ACCEPTABLE WRDS)

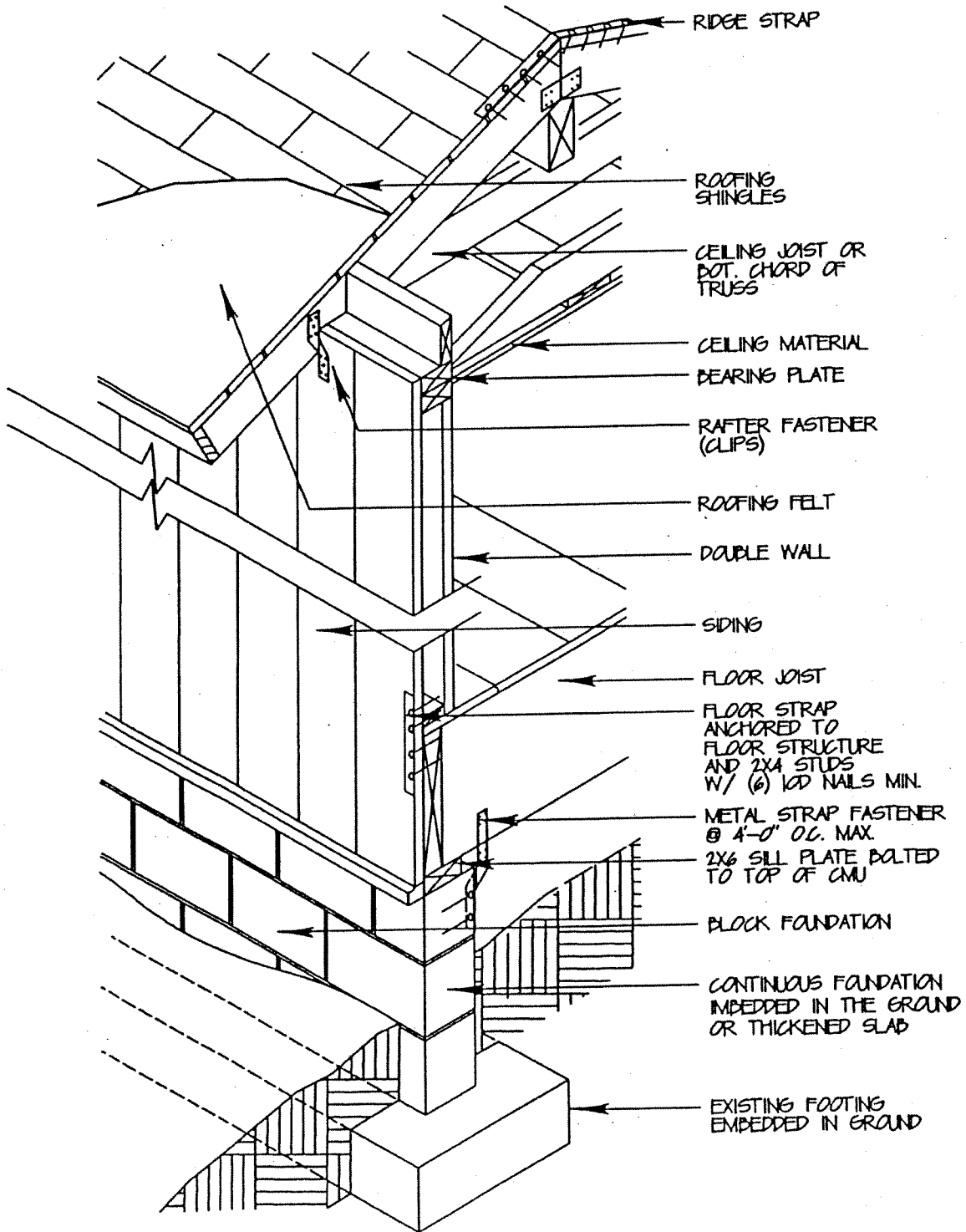


EXHIBIT 'A'  
 DOUBLE WALL CONSTRUCTION  
 (MINIMUM WORK REQUIRED FOR RETROFITTING)

NOTES  
 WRD = WIND RESISTIVE DEVICE

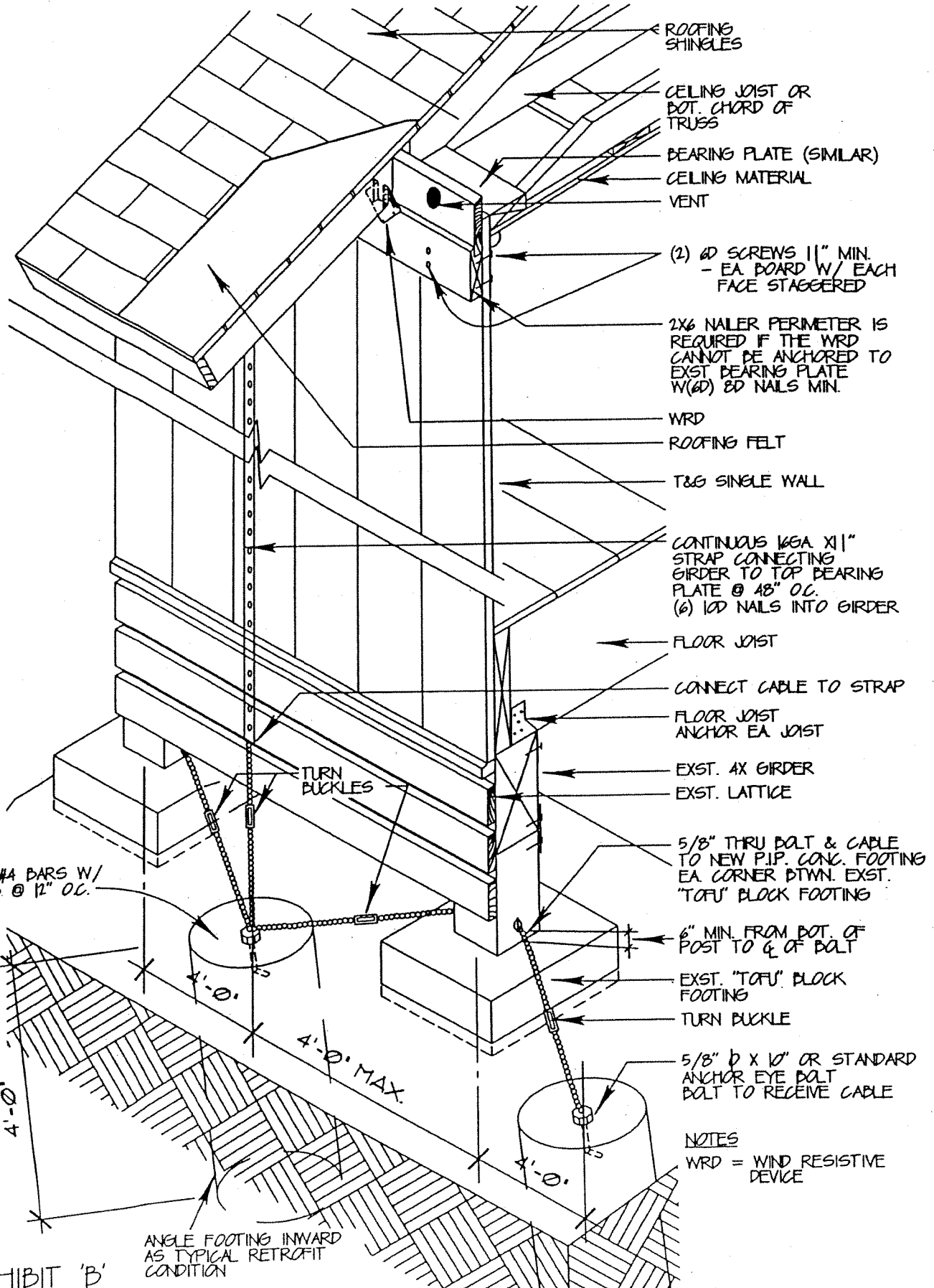


EXHIBIT 'B'

SINGLE WALL CONSTRUCTION (MINIMUM WORK REQUIRED FOR RETROFITTING)

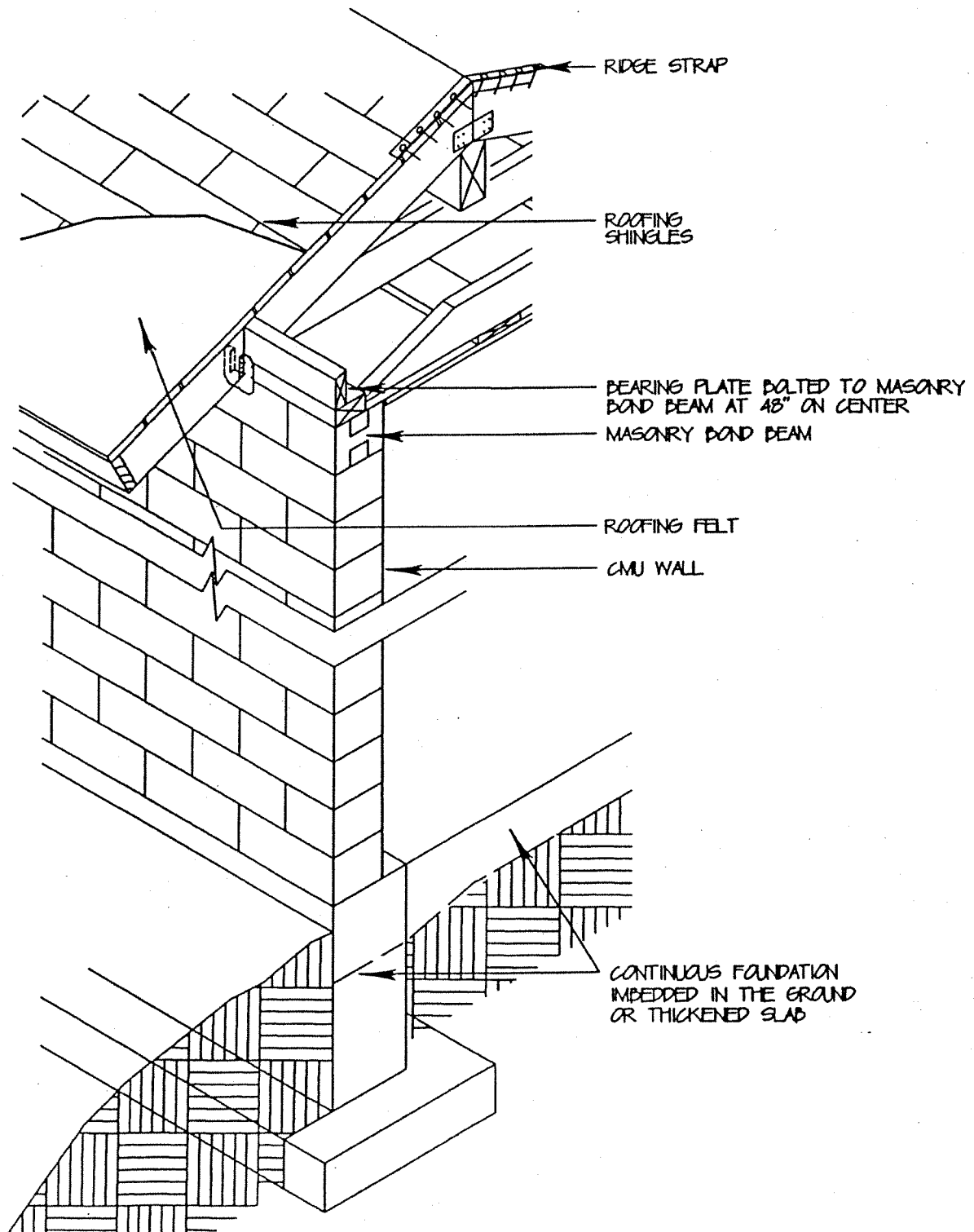
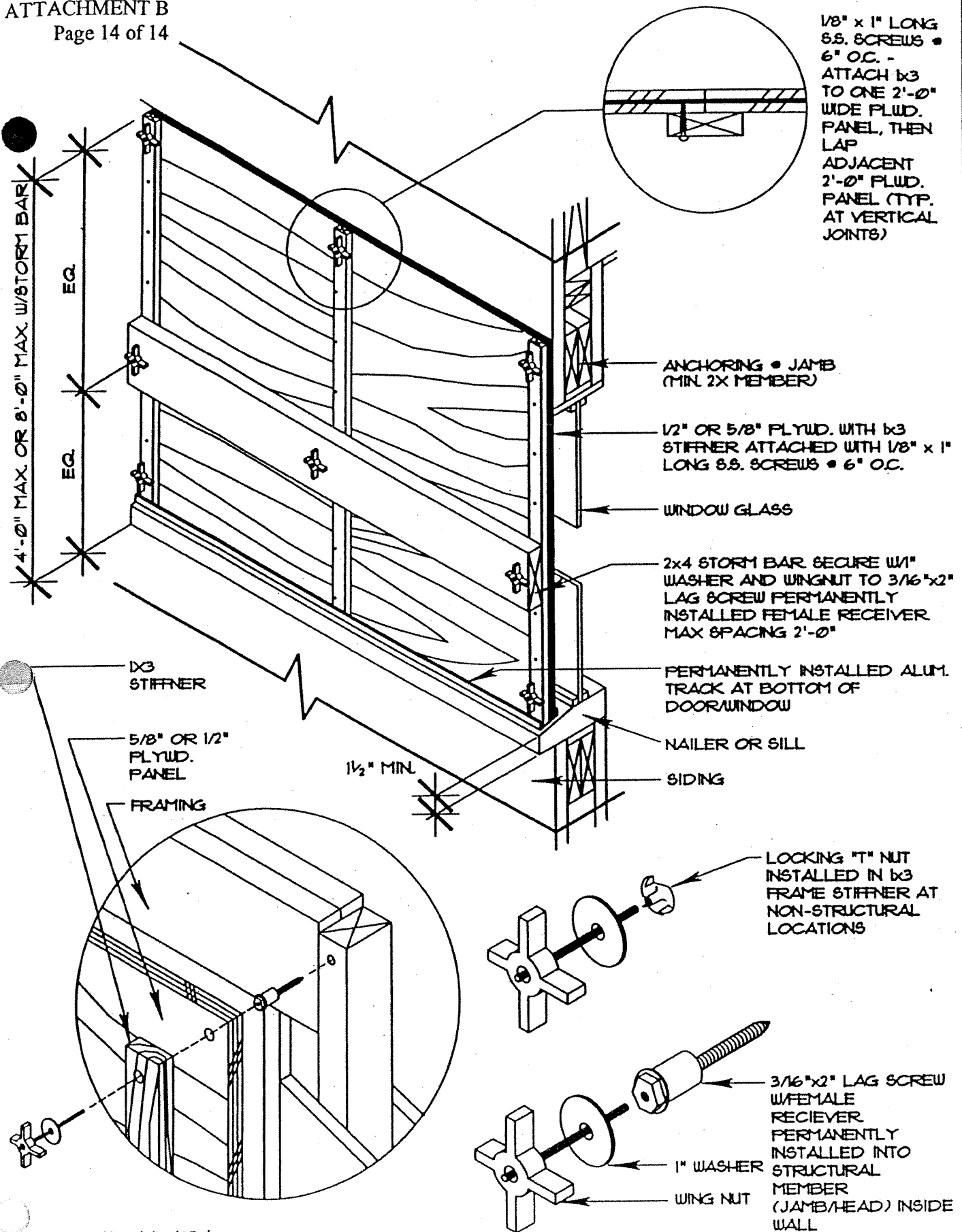


EXHIBIT 'C'  
MASONRY CONSTRUCTION  
(MINIMUM WORK REQUIRED FOR RETROFITTING)



**EXHIBIT 'D'**

**OPENING PROTECTION**  
(MINIMUM WORK REQUIRED FOR RETROFITTING)

For State of Hawaii Use Only

Grant applicant number \_\_\_\_\_

Grant amount \_\_\_\_\_

EXHIBIT E  
LOSS MITIGATION GRANT APPLICATION FORM B  
FOR USE ONLY BY PERSONS WHO RETROFITTED THEIR HOMES  
BETWEEN JULY 2, 2002 AND SEPTEMBER 18, 2006

SECTION ONE: I hereby apply to the State of Hawaii for a wind resistive device grant.

My name is: Suffix \_\_\_\_\_ First Name \_\_\_\_\_ MI \_\_\_\_\_

Last Name \_\_\_\_\_

Name(s) of the legal owner(s) of the property: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Island where the property is located (e.g. Oahu)

\_\_\_\_\_

Tax Map Key of the property:

Zone (1 digit)	Section (1 digit)	Plat (3 digits)	Parcel (3 digits)	CPR (4 digits)

The home that was retrofitted is located at the following address (include zip code):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

If the property is an apartment, the apartment number is: \_\_\_\_\_

I have owned the property since (month/day/year): \_\_\_\_\_



I am a former policyholder of the Hawaii Hurricane Relief Fund (circle one): Yes No

This application is for a retrofit to a (circle one): Dwelling Attached garage Both

SECTION TWO: The wind resistive devices for which I am seeking a grant fall into the following category/categories (check each one applicable):

\_\_\_\_\_ Uplift restraint ties at roof ridges and roof framing members to wall or beam supports;

\_\_\_\_\_ Fastening of existing or new roof sheathing and roof decking for high wind uplift;

\_\_\_\_\_ Impact and pressure resistant exterior opening protective devices; and/or

\_\_\_\_\_ Wall to foundation uplift restraint connections strengthening for wood foundation posts on footings.

The wind resistive devices were installed on the following date: \_\_\_\_\_.

The total cost of the wind resistive devices retrofit was \$ \_\_\_\_\_.

I apply for a grant in the amount of \$ \_\_\_\_\_ (may not exceed \$2,100 or 35 percent of the total cost of the retrofit for the lifetime grant per dwelling).

The check should be mailed to the following address (if different from property address):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The check should be made out to the following payee name:

\_\_\_\_\_

My phone numbers are: \_\_\_\_\_ (residence) \_\_\_\_\_ (business).

SECTION THREE: I have attached (a) receipts for all costs of installation and inspection of wind resistive devices for which I am seeking grant moneys; (b) photographs of approximately thirty per cent of the wind resistive devices which were installed and for which I am seeking grant moneys; and (c) a signed and completed contractor certification in the proper form (or inspector certification for do it yourself retrofits).

SECTION FOUR: I represent that: (a) I have read and understood the Loss Mitigation Grant Program Guidelines and the Hawaii Hurricane Relief Fund Construction Classes, Definitions, Rate Credits Attachment B (hereinafter "Attachment B"); (b) all requirements set forth in these documents have been met by me; and (c) I agree to be bound by all requirements set forth in these documents.

SECTION FIVE: The following information is provided to the best of my knowledge:

Approximate age of the home in years	
How many years have you owned this residence	
Number of stories	
Size of the home or living unit including any attached covered garage (approximate square feet)	Not more than 1,500 square feet
	More than 1,500 but less than 3,000 square feet
	More than 3,000 square feet <sup>4</sup>
Type of home construction	Wood; "single-wall"
	Wood; conventional "double-wall"
	Masonry or concrete tile, or concrete
	Metal framing
Type of roofing	Corrugated metal
	Wood Shingle or Shake
	Tile (Monier or similar, etc.)
	Asphalt Shingle
	Built-up Composition
What is the shape of your roof?	Hip
	Gable
	Flat or Shed
If you installed additional fastening of roof sheathing and roof decking for high wind uplift, did you also install plywood sheathing underlayment and a secondary roof membrane?	
If visible at the exterior eaves, are your roof rafter beams spaced at more than 24 inches on center?	
What type of foundation does your home have?	Concrete Slab on grade
	Elevated on Post on footing or pier
How would you describe the geographic terrain of your property	Flat land or near the shoreline
	Up on a hill or ridge
	Within a valley
	Partially up the side of the valley

SECTION SIX: ACKNOWLEDGMENTS, REPRESENTATIONS AND AGREEMENTS OF APPLICANTS.

By using this application and signing below, the Applicant(s) acknowledge(s) that the State of Hawaii makes no representations, guaranty, or warranty, either express or implied, regarding the performance or effectiveness of the wind resistive devices, installed pursuant to the Attachment B, in actual wind conditions including tropical storms and hurricanes with respect to protecting property, loss prevention, life safety and protection purposes, or fitness for a particular purpose. Applicants acknowledge that installation of wind resistive devices may not protect either their homes or persons within the home and/or garage from any loss or injury. Applicant(s) further acknowledge(s) that the grant program is subject to availability of funds, which are limited, and also recognize that the Applicant(s) may receive no funds. Applicant(s) understand(s) and agree(s) that nothing contained herein shall be construed as conferring upon any Applicant(s) any right to payment for any wind resistive device or installation. The State of Hawaii reserves the right to modify the information contained in its grant program documents without notice. Applicant(s) acknowledge(s) and agree(s) that in no event shall the State of Hawaii be liable for any damages or loss sustained by any Applicant(s) due to the Applicant's utilization of any wind resistive device or any information contained in the Attachment B. Any and all use of or reliance upon wind resistive devices or the information contained in the Attachment B, including but not limited to any selection of products or vendors, is solely the Applicant's responsibility and the Applicant(s) assume(s) all risks and liabilities, if any, with respect to the use of the wind resistive devices or the information contained on this application, the Loss Mitigation Grant Program Guidelines or in the Attachment B. The State of Hawaii does not assume any responsibility for the accuracy or completeness of any information contained in this application or the Attachment B. This application, the Attachment B, and all information and material contained therein or provided pursuant thereto are provided to the Applicant(s) as is without warranty of any kind. Applicant(s) swear(s) or affirm(s) under penalty of law that the information in this application is true and correct to the best of his/their knowledge and belief.

(All property owners must sign)

Signature: \_\_\_\_\_ Dated: \_\_\_\_\_  
Applicant/Property Owner

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Dated: \_\_\_\_\_  
Applicant/Property Owner

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Dated: \_\_\_\_\_  
Applicant/Property Owner

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Dated: \_\_\_\_\_  
Applicant/Property Owner

Print name: \_\_\_\_\_

EXHIBIT F: FORM FOR CONTRACTOR CERTIFICATION (For use only for retrofits done between July 2, 2002 and September 18, 2006).

SECTION ONE: I am supplying this certification in conjunction with the application of \_\_\_\_\_ to the State of Hawaii for a wind resistive device grant.

SECTION TWO: I installed and inspected the wind resistive devices checked below at the following address and Tax Map Key:

Address:

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Tax Map Key of the Property:

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The wind resistive devices I inspected fall into the following category/categories (check each one that is applicable) and that each has been fully installed prior to the date of this certification:

- Uplift restraint ties at roof ridges and roof framing members to wall or beam supports;
- Fastening of existing or new roof sheathing and roof decking for high wind uplift;
- Impact and pressure resistant exterior opening protective devices (residence) and/or
- Impact and pressure resistant exterior opening protective devices (attached garage);
- Wall to foundation uplift restraint connections strengthening for wood foundation posts on footings

Name of owner / grant applicant:

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Name of contractor / installer:

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Contractor License Number:

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Address of contractor / installer:

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Phone Number of contractor / installer:

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Date of Installation: \_\_\_\_\_

SECTION THREE: I represent to the State of Hawaii and the grant applicant that: (a) I have read and understood the Loss Mitigation Grant Program Guidelines and the Hawaii Hurricane Relief Fund Construction Classes, Definitions, Rate Credits Attachment B (hereinafter "Attachment B"), (b) the wind resistive devices for which a grant is being sought by this applicant meet all the requirements of Attachment B; and (c) I am a licensed contractor in the State of Hawaii.

Under the penalties of perjury, I hereby swear or affirm that the information in this certification is true and correct to the best of my knowledge and belief:

By: \_\_\_\_\_

Dated: \_\_\_\_\_

EXHIBIT G: FORM FOR INSPECTOR CERTIFICATION FOR SELF-RETROFIT (For use only for retrofits done from July 2, 2002 to September 18, 2006).

SECTION ONE: I, \_\_\_\_\_ am supplying this certification in conjunction with an application to the State of Hawaii for a roof to wall wind resistive devices by \_\_\_\_\_ (name of grant applicant).

My address is:

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My phone number is:

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SECTION TWO: The grant applicant installed (check all that apply):

\_\_\_\_\_ uplift restraint ties at roof ridges and roof framing members to wall or beam supports; and/or

\_\_\_\_\_ plywood panels for opening protection;

at the following address and Tax Map Key. I inspected these wind resistive devices as installed on the property (See Table of Inspection Responsibilities on the following page).

Property address:

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Tax Map Key of the Property:

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SECTION THREE: I represent to the State of Hawaii that: (a) I have read and understood the Loss Mitigation Grant Program Guidelines and the Hawaii Hurricane Relief Fund Construction Classes, Definitions, Rate Credits Attachment B (hereinafter "Attachment B"), (b) the wind resistive devices for which a grant is being sought by this applicant that were visible meet all the requirements of the Attachment B; and (c) I am either (i) a building inspector certified by a county building official as qualified for special inspection of Complete Load Path and Uplift Ties per Uniform Building Code or Wood Construction per the International Building Code or (ii) a licensed Professional Engineer in the Structural Branch, State of Hawaii.

Under the penalties of law, I hereby swear or affirm that the information in this certification is true and correct to the best of my knowledge and belief:

By: \_\_\_\_\_

Dated: \_\_\_\_\_

Inspection Responsibilities:

**WRD Option 1:**

Where application for a grant is made for self-installed construction of the uplift restraint ties at roof ridges and roof framing members to wall or beam supports, the homeowner shall employ an inspector. The inspector need not be present during the installation of all of the connectors, provided that the inspector verifies that the connectors are installed in substantial conformance with the loss mitigation grant program requirements. Discovered discrepancies shall be brought to the immediate attention of the homeowner for correction prior to issuance of the final inspection report. Inspection shall include verification by observation of approximately two-thirds of the metal connectors, anchors, or fasteners for wood construction at the locations applicable to the Wind Resistive Device. Additional verification by photographic documentation shall be permitted as an augmentation of the on-site in-person physical observations of the work.

**WRD Option 3:**

Where application for a grant is made for self-installed temporary plywood panels for opening protection at the first story (ground floor), the homeowner shall employ an inspector. The inspector need not be present during the installation of all of the panels, provided that the inspector witnesses the completion of a trial installation and verifies that the fasteners were installed in substantial conformance with the loss mitigation grant program requirements. Discovered discrepancies shall be brought to the immediate attention of the homeowner for correction prior to issuance of the final inspection report.

<b>Summary of the Minimum Items to Inspect for Wind Resistive Devices requiring independent inspection</b>	<b>Verify that the work proceeded per the Specifications</b>	<b>Items to verify to be in substantial conformance through a combination of direct inspection and photographic evidence taken during construction</b>
<b>Wind Resistive Device Option 1: Uplift restraint ties at roof ridges and roof framing members to wall or beam supports:</b>	Drawings not required; refer to the Wind Resistive Devices Technical Specifications	Correct fit-up to achieve fastener penetration for the type and number of fasteners of the connector ties to the framing and wall top plates, adequate type of hurricane clip for the spacing of rafters, connectors at rakes and rafters to any supporting beams, and connectors between roof beams and posts

<p><b>Wind Resistive Option 3: Exterior Opening Protection with Temporary Plywood Panels (allowed to be installed only on the first story)</b></p>	<p>Drawings shall be prepared by a Hawaii architect or structural engineer showing details for the attachment of the panels using permanent corrosion-resistant hardware</p>	<p>Witness a completed trial installation of all panels. Verify correct size and fit-up of the panels, and verify that the correct number of fasteners was used. Verify that permanent corrosion-resistant hardware used in the attachments to the structure. Verify that the panels are marked and indexed to a set of deployment drawings. Submit an inspector's report of a successfully completed trial exercise deployment of all of the wood protective panels.</p>
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