Minutes
Mitigation Workgroup
1/28/08

Prepared by the Building Codes and Standards Unit Technical Staff
Florida Building Commission
2/8/08

Hurricane Mitigation Techniques
Proposed IBHS Language 12/12/07 and the Settlement Agreement with Comments
from the Mitigation Workgroup Meeting 01/28/08
[Red changes from the Challenge. Blue changes from 1/28/08 Meeting]

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
101 Retrofits Required. Pursuant to Section 553.844, Florida Statutes, strengthening of existing site-built, single family residential structures to resist hurricanes shall be provided. (original text)	See text below.
101 Retrofits Required. Pursuant to Section 553.844, Florida Statutes, strengthening of existing site-built, single family residential structures to resist hurricanes shall be provided. Site built single- family residential structures shall mean site built single family detached residential structures. **[Settlement]**	**101 Retrofits Required**. Pursuant to Section 553.844, Florida Statutes, strengthening of existing site-built, single family residential structures to resist hurricanes shall be provided as prescribed in section 101.1, 101.2, and 101.3. Site built single-family residential structures shall mean site built single family detached residential structures. Single family residential structures permitted subject to the Florida Building Code are not required to comply with this Rule.
101 Retrofits Required. Pursuant to Section 553.844, Florida Statutes, strengthening of existing site-built, single family residential structures permitted prior to the implementation of the 2001 Florida Building Code on March 1, 2002 to resist hurricanes shall be provided as prescribed in Sections 101.1, 101.2, and 101.3. (IBHS)	See revised text above.
Comment: Richard, permitted in accordance with the FBC or subsequent codes. Jim, permitted subject to the FBC. Chris, structures required to be strengthened, permits built to existing code. Eric, prior to effective date, Richard, applied for, Rick, permitted to code other than FBC, Jim, homes permitted subject to FBC shall be outside scope, Rick, code already requires renailing, Chris, standard tagging problems.	
101.1 When a roof on an existing site-built, single family residential structure is replaced: (a) Roof-decking attachment and fasteners shall be strengthened and corrected as required by section 201.1. (b) A secondary water barrier shall be provided as required by section 201.2. (Original text)	See revised text below.
101.1 When a roof on an existing site-built, single family	**101.1** When a roof covering on an existing site-built, single

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
residential structure is replaced, the following procedures shall be permitted to be performed by the roofing contractor: (a) Roof-decking attachment and fasteners shall be strengthened and corrected as required by section 201.1. (b) A secondary water barrier shall be provided as required by section 201.2. **(Settlement)**	family residential structure is removed and replaced, the following procedures shall be permitted to be performed by the roofing contractor: (a) Roof-decking attachment and fasteners shall be strengthened and corrected as required by section 201.1. (b) A secondary water barrier shall be provided as required by section 201.2.
101.1 When a roof covering on an existing site-built, single family residential structure is replaced: (a) Roof-decking attachment and fasteners shall be strengthened and corrected, in those areas of the building where the roof covering is removed, as required by section 201.1. (b) A secondary water barrier shall be provided as required by section 201.2. (IBHS)	See text above.
Comment: Jim Schock, roof covering is "removed and replaced", unanimous, Tim, reproofing or replaced, Rick, replaced, Chris, add roof to wall connections, roofing contractor is not allowed to make these connections, Tim, language is awkward, Rick, can change the code but not the rule, Richard, who does what is not addressed in the code elsewhere, 489 in conflict, Rick, secondary water barrier is within his license, Richard, address issue in 489, Cam, fix in legislature, Chris, add covering, Bill, add throughout the document.	
101.2 When a roof is replaced on a building that is located in the wind-borne debris region as defined in s. 1609.2 of the Florida Building Code, Building and that has an insured value of $300,000 or more or, if the building is uninsured or for which documentation of insured value is not presented, has a just valuation for the structure for purposes of ad valorem taxation of $300,000 or more: (a) Roof to wall connections shall be improved as required by section 201.3.	See text below.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
(b) Mandated retrofits of the roof-to-wall connection shall not be required beyond a 15 percent increase in the cost of re-roofing. (c) Where complete retrofits of all the roof-to-wall connections as prescribed in Section 201.3 would exceed 15 percent of the cost of the re-roofing project, the priorities outlined in Section 201.3.5 shall be used to limit the scope of work to the 15 percent limit. (Original text)	
101.2 When a roof is replaced on a building that is located in the wind-borne debris region as defined in s. 1609.2 of the Florida Building Code, Building and that has an insured value of $300,000 or more or, if the building is uninsured or for which documentation of insured value is not presented, has a just valuation for the structure for purposes of ad valorem taxation of $300,000 or more: (a) Roof to wall connections shall be improved as required by section 201.3. (b) Mandated retrofits of the roof-to-wall connection shall not be required beyond a 15 percent increase in the cost of re-roofing. (c) Where complete retrofits of all the roof-to-wall connections as prescribed in Section 201.3 would exceed 15 percent of the cost of the re-roofing project, the priorities outlined in Section 201.3.7~~5~~ shall be used to limit the scope of work to the 15 percent limit. **(Settlement)**	**101.2** When a roof covering is replaced on a building that is located in the wind-borne debris region as defined in s. 1609.2 of the Florida Building Code, Building and that has an insured value of $300,000 or more or, if the building is uninsured or for which documentation of insured value is not presented, has a just valuation for the structure for purposes of ad valorem taxation of $300,000 or more: (a) Roof to wall connections shall be improved as required by section 201.3. (b) Mandated retrofits of the roof-to-wall connection shall not be required beyond a 15 percent increase in the cost of re-roofing. (c) Where complete retrofits of all the roof-to-wall connections as prescribed in Section 201.3 would exceed 15 percent of the cost of the re-roofing project, the priorities outlined in Section 201.3.7~~5~~ shall be used to limit the scope of work to the 15 percent limit.
101.2 When a roof is replaced on a building that is located in the wind-borne debris region as defined in s. 1609.2 of the Florida Building Code, Building and that has an insured value of $300,000 or more or, if the building is uninsured or for which documentation of insured value is not presented, has a just	See revised text above.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
valuation for the structure for purposes of ad valorem taxation of $300,000 or more: (a) Roof to wall connections shall be improved as required by section 201.3. (b) Mandated retrofits of the roof-to-wall connection shall not be required beyond a 15 percent increase in the cost of re-roofing. (c) Where complete retrofits of all the roof-to-wall connections as prescribed in Section 201.3 would exceed 15 percent of the cost of the re-roofing project, the priorities outlined in Section 201.3.7~~5~~ shall be used to limit the scope of work to the 15 percent limit. **(Settlement)**	
101.3 When any activity requiring a building permit that is applied for on or after July 1, 2008, and for which the estimated cost is $50,000 or more for a building that is located in the wind borne debris region as defined in s. 1609.2 of the Florida Building Code, Building and that has an insured value of $750,000 or more, or, if the building is uninsured or for which documentation of insured value is not presented, has a just valuation for the structure for purposes of ad valorem taxation of $750,000 or more.**:** (a) Opening protections as required within the Florida Building Code, Building or Florida Building Code, Residential for new construction shall be provided. (Original text)	**101.3** When any activity requiring a building permit that is applied for on or after July 1, 2008, and for which the estimated cost is $50,000 or more for a building that is located in the wind borne debris region as defined in s. 1609.2 of the Florida Building Code, Building and that has an insured value of $750,000 or more, or, if the building is uninsured or for which documentation of insured value is not presented, has a just valuation for the structure for purposes of ad valorem taxation of $750,000 or more.**:** (a) Opening protections as required within the Florida Building Code, Building or Florida Building Code, Residential for new construction shall be provided.
101.4 When retrofit enhancement of gable end bracing is provided during construction which otherwise requires a permit the techniques in Appendix A shall be allowed. (Original text)	See text below.
101.4 When retrofit enhancement of gable end bracing is to be	**101.4** When retrofit enhancement of gable end bracing is to be

Hurricane Mitigation Techniques
Proposed IBHS Language 12/12/07 and the Settlement Agreement with Comments
from the Mitigation Workgroup Meeting 01/28/08
[Red changes from the Challenge. Blue changes from 1/28/08 Meeting]

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
provided ~~during construction which otherwise requires a permit~~ either as a stand alone mitigation measure or as part of a larger renovation, the techniques in Appendix A shall be ~~allowed~~ permitted. (IBHS)	provided ~~during construction which otherwise requires a permit~~ either as a stand alone mitigation measure or as part of a larger renovation, the techniques in Appendix A shall be ~~allowed~~ permitted.
Comments: See Ray Burrough's comment below. **See Mike Moore's comment below.** Tim, use voluntary language in comment, unanimous.	
201 Roof System Mitigation Techniques. Roof sheathing fastening, secondary water barriers, roof to wall connection and gable end bracing shall be permitted pursuant to this section. (Original text)	**201 Roof System Mitigation Techniques.** Roof sheathing fastening, secondary water barriers, roof to wall connection and gable end bracing shall be permitted pursuant to this section.
201.1 Roof sheathing fastening for site-built single family residential structures. For site-built single family residential structures the fasteners and spacing required in Table 201.1 are deemed to comply with the requirements of Section 507.2.2, of the 2004 Florida Building Code, Existing Building. (Original text)	See below.
Board roof decking secured with at least two 8d nails into roof framing members shall be deemed to be sufficiently connected. Board roof decking secured with smaller fasteners than 8d nails or with fewer than two 8d nails per board shall be deemed sufficiently connected if two 8d clipped head, round head, or ring shank nails are in place on each framing member. (Original text)	See below.
Supplemental fasteners as required by Table 201.1 shall be 8d ring shank nails with round heads and the following minimum dimensions: 1. 0.113 inch nominal shank diameter 2. Ring diameter of 0.012 over shank diameter 3. 16 to 20 rings per inch 4. 0.280 inch full round head diameter	See below.

<table>
<tr><th>Current Manual/ Settlement</th><th>Outcome of January 28, 2008 Workgroup Meeting</th></tr>
<tr><td>5. 2-1/4 inch nail length (Original text)</td><td></td></tr>
<tr><td>Supplemental fasteners as required by Table 201.1 shall be 8d ring shank nails with round heads and the following minimum dimensions:

1. 0.113 inch nominal shank diameter
2. Ring diameter of 0.012 over shank diameter
3. 16 to 20 rings per inch
4. 0.280 inch full round head diameter
5. Ring shank to extend a minimum of 1 ½” from the tip of the nail.
6. Minimum 2-1/4 inch nail length (Settlement)</td><td>See below.</td></tr>
<tr><td>Table 201.1
Supplement Fasteners at Panel Edges and Intermediate Framing
<table>
<tr><th>Existing fasteners</th><th>Existing spacing</th><th>Wind speed 110 mph or less supplemental fastening shall be no greater than</th><th>Wind speed greater than 110 mph supplemental fastening shall be no greater than</th></tr>
<tr><td>Staples or 6d</td><td>Any</td><td>6” o.c. [b]</td><td>6” o.c. [b]</td></tr>
<tr><td>8d clipped head, round head, or ring shank</td><td>6” o.c. or less</td><td>None necessary</td><td>None necessary</td></tr>
<tr><td>8d clipped head or round head</td><td>Greater than 6” o.c.</td><td>6” o.c.[a]</td><td>6” o.c.[b a]</td></tr>
<tr><td>8d round head ring shank</td><td>Greater than 6” o.c.</td><td>6” o.c.[a]</td><td>6” o.c.[a]</td></tr>
</table>
a. Maximum spacing determined based on existing fasteners and supplemental fasteners.
b. Maximum spacing determined based on supplemental fasteners only. (Original text)</td><td>See below.</td></tr>
</table>

<table>
<tr><th>Current Manual/ Settlement</th><th>Outcome of January 28, 2008 Workgroup Meeting</th></tr>
<tr><td>

Table 201.1
Supplement Fasteners at Panel Edges and Intermediate Framing

Existing fasteners	Existing spacing	Wind speed 110 mph or less supplemental fastening shall be no greater than	Wind speed greater than 110 mph supplemental fastening shall be no greater than
Staples or 6d	Any	6” o.c. [b]	6” o.c. [b]
8d clipped head, round head, or ring shank	6” o.c. or less	None necessary	None necessary
8d clipped head ~~or~~ round head **, or ring shank**	Greater than 6” o.c.	6” o.c. [a]	6” o.c. ~~b~~ [a]
~~8d round head ring shank~~	~~Greater than 6” o.c.~~	~~6” o.c.~~ [a]	~~6” o.c.~~ [a]

a. Maximum spacing determined based on existing fasteners and supplemental fasteners.
b. Maximum spacing determined based on supplemental fasteners only. **(Settlement)**

</td><td>See below.</td></tr>
<tr><td>

201.1 Roof decking ~~sheathing~~ fastening for site-built single family residential structures. For site-built single family residential structures the ~~fasteners and spacing required in Table 201.1 are deemed to comply with the requirements of Section 507.2.2, of the 2004 Florida Building Code, Existing Building.~~ Fastening shall be in accordance with section 201.1.1 or 201.1.2. as appropriate for the existing construction. 8d nails shall be a minimum of 0.141 inch in diameter and shall be a minimum of 2-1/4 inch long to qualify for the provisions of this section for

</td><td>

201.1 Roof decking ~~sheathing~~ fastening for site-built single family residential structures. For site-built single family residential structures the ~~fasteners and spacing required in Table 201.1 are deemed to comply with the requirements of Section 507.2.2, of the 2004 Florida Building Code, Existing Building.~~ Fastening shall be in accordance with section 201.1.1 or 201.1.2. as appropriate for the existing construction. 8d nails shall be a minimum of 0.141 inch in diameter and shall be a minimum of 2-1/4 inch long to qualify for the provisions of this section for

</td></tr>
</table>

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
existing nails regardless of head shape or head diameter. (IBHS)	existing nails regardless of head shape or head diameter.
~~Board roof decking secured with at least two 8d nails into roof framing members shall be deemed to be sufficiently connected. Board roof decking secured with smaller fasteners than 8d nails or with fewer than two 8d nails per board shall be deemed sufficiently connected if two 8d clipped head, round head, or ring shank nails are in place on each framing member.~~ (IBHS)	~~Board roof decking secured with at least two 8d nails into roof framing members shall be deemed to be sufficiently connected. Board roof decking secured with smaller fasteners than 8d nails or with fewer than two 8d nails per board shall be deemed sufficiently connected if two 8d clipped head, round head, or ring shank nails are in place on each framing member.~~
201.1.1 Roof decking consisting of sawn lumber or wood planks up to 12" wide and secured with at least two nails (minimum size 8d) to each roof framing member it crosses shall be deemed to be sufficiently connected. Sawn lumber or wood plank decking secured with smaller fasteners than 8d nails or with fewer than two nails (minimum size 8d) to each framing member it crosses shall be deemed sufficiently connected if fasteners are added such that two clipped head, round head, or ring shank nails (minimum size 8d) are in place on each framing member it crosses. (IBHS)	**201.1.1** Roof decking consisting of sawn lumber or wood planks up to 12" wide and secured with at least two nails (minimum size 8d) to each roof framing member it crosses shall be deemed to be sufficiently connected. Sawn lumber or wood plank decking secured with smaller fasteners than 8d nails or with fewer than two nails (minimum size 8d) to each framing member it crosses shall be deemed sufficiently connected if fasteners are added such that two clipped head, round head, or ring shank nails (minimum size 8d) are in place on each framing member it crosses.
201.1.2 For roof decking consisting of wood structural panels, fasteners and spacing required in columns 3 and 4 of Table 201.1.2 are deemed to comply with the requirements of Section 507.2.2, *Florida Building Code, Existing Building* for the indicated design wind speed range. Wood structural panel connections retrofitted with a two part urethane based closed cell adhesive sprayed onto the joint between the sheathing and framing members are deemed to comply with the requirements of Section 507.2.2, *Florida Building Code, Existing Building*, provided testing using the manufacturer's recommended application on panels connected with 6d smooth shank nails at no more than a 6-inch edge and 12-inch field spacing demonstrate an uplift	**201.1.2** For roof decking consisting of wood structural panels, fasteners and spacing required in columns 3 and 4 of Table 201.1.2 are deemed to comply with the requirements of Section 507.2.2, *Florida Building Code, Existing Building* for the indicated design wind speed range. Wood structural panel connections retrofitted with a two part urethane based closed cell adhesive sprayed onto the joint between the sheathing and framing members are deemed to comply with the requirements of Section 507.2.2, *Florida Building Code, Existing Building*, provided testing using the manufacturer's recommended application on panels connected with 6d smooth shank nails at no more than a 6-inch edge and 12-inch field spacing demonstrate

Hurricane Mitigation Techniques
Proposed IBHS Language 12/12/07 and the Settlement Agreement with Comments
from the Mitigation Workgroup Meeting 01/28/08
[Red changes from the Challenge. Blue changes from 1/28/08 Meeting]

<table>
<tr><th>Current Manual/ Settlement</th><th>Outcome of January 28, 2008 Workgroup Meeting</th></tr>
<tr><td>resistance of a minimum of 200 psf. (IBHS)</td><td>an uplift resistance of a minimum of 200 psf.</td></tr>
<tr><td>Supplemental fasteners as required by Table 201.~~1~~.2 shall be 8d ring shank nails with round heads and the following minimum dimensions:
1. 0.113-inch nominal shank diameter
2. Ring diameter a minimum of 0.012-inch-greater than ~~over~~ shank diameter
3. 16 to 20 rings per inch
4. a minimum 0.280-inch full round head diameter
5. 2-1/4 inch minimum nail length (IBHS)</td><td>Supplemental fasteners as required by Table 201.1.2 shall be 8d ring shank nails with round heads and the following minimum dimensions:
1. 0.113-inch nominal shank diameter
2. Ring diameter a minimum of 0.012-inch-greater than ~~over~~ shank diameter
3. 16 to 20 rings per inch
4. a minimum 0.280-inch full round head diameter
5. Ring shank to extend a minimum of 1 ½” from the tip of the nail.
6. Minimum 2-1/4 inch nail length</td></tr>
<tr><td>Table 201.1
Supplement Fasteners at Panel Edges and Intermediate Framing
<table>
<tr><th>Existing fasteners</th><th>Existing spacing</th><th>Wind speed 110 mph or less supplemental fastening shall be no greater than</th><th>Wind speed greater than 110 mph supplemental fastening shall be no greater than</th></tr>
<tr><td>Staples or 6d</td><td>Any</td><td>6” o.c. [b]</td><td>6” o.c. [b]</td></tr>
<tr><td>8d clipped head, round head, or ring shank</td><td>6” o.c. or less</td><td>None necessary</td><td>None necessary</td></tr>
<tr><td>~~8d clipped head or round head~~</td><td>Greater than 6” o.c.</td><td>6” o.c.[a]</td><td>6” o.c.~~[b]~~ [a]</td></tr>
<tr><td>~~8d round head ring shank~~</td><td>~~Greater than 6” o.c.~~</td><td>~~6” o.c.[a]~~</td><td>~~6” o.c.[a]~~</td></tr>
</table>
a. Maximum spacing determined based on existing fasteners and supplemental fasteners.
b. Maximum spacing determined based on supplemental fasteners only. (IBHS)</td><td>Table 201.1.2
Supplement Fasteners at Panel Edges and Intermediate Framing
<table>
<tr><th>Existing fasteners spacing</th><th>Existing spacing</th><th>Wind speed 110 mph or less supplemental fastening shall be no greater than</th><th>Wind speed greater than 110 mph supplemental fastening shall be no greater than</th></tr>
<tr><td>Staples or 6d</td><td>Any</td><td>6” o.c. [b]</td><td>6” o.c. [b]</td></tr>
<tr><td>8d clipped head, round head, or ring shank</td><td>6” o.c. or less</td><td>None necessary</td><td>None necessary</td></tr>
<tr><td>8d clipped head ~~or~~ round head , or ring shank</td><td>Greater than 6” o.c.</td><td>6” o.c.[a]</td><td>6” o.c. ~~[b]~~ [a]</td></tr>
<tr><td>~~8d round head ring shank~~</td><td>~~Greater than 6” o.c.~~</td><td>~~6” o.c.[a]~~</td><td>~~6” o.c.[a]~~</td></tr>
</table>
a. Maximum spacing determined based on existing fasteners and supplemental fasteners.</td></tr>
</table>

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
	b. Maximum spacing determined based on supplemental fasteners only.
Comments: See FRSA comment below. See Mike Moore comment below. Tim, replace draft as written by IHBS, 6/1, add ring shank language? Mo, combine, Eric, existing fasteners, Chris, clarify minimum, bring minimums brought over, title, "supplemental fastening space shall be no greater than", table stays as is. Keep, add fastener spacing to table.	
201.2 Roof secondary water barrier for site-built single family residential structures. A secondary water barrier shall be installed using one of the following methods when roofing replacement when reroofing. (Original text)	See below.
201.2 Roof secondary water barrier for site-built single family residential structures. A secondary water barrier shall be installed using one of the following methods when ~~roofing replacement when~~ reroofing. **(Settlement)**	**201.2 Roof secondary water barrier for site-built single family residential structures.** A secondary water barrier shall be installed using one of the following methods when roof covering is removed and replaced ~~roofing replacement when reroofing.~~
201.2 Roof secondary water barrier for site-built single family residential structures. A secondary water barrier shall be installed using one of the following methods during ~~when~~ roofing replacement when re-roofing. (IBHS)	See above.
a) All joints in roof sheathing or decking shall be covered with a minimum 4 in. wide strip of self-adhering polymer modified bitumen tape applied directly to the sheathing or decking. The deck and self adhering polymer modified bitumen tape shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof. (Original text)	See below.
a) All joints in structural panel roof sheathing or decking shall be covered with a minimum 4 in. wide strip of self-	a) All joints in structural panel roof sheathing or decking shall be covered with a minimum 4 in. wide strip of self-

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
adhering polymer modified bitumen tape applied directly to the sheathing or decking. The deck and self adhering polymer modified bitumen tape shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof. **(Settlement)**	adhering polymer modified bitumen tape applied directly to the sheathing or decking. The deck and self adhering polymer modified bitumen tape shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof.
b) The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen cap sheet. No additional underlayment shall be required on top of this cap sheet for new installations. (Original text)	See below.
b) The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen ~~cap~~ sheet. No additional underlayment shall be required on top of this ~~cap~~ sheet for new installations. **(Settlement)**	b) The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen ~~cap~~ sheet. No additional underlayment shall be required on top of this ~~cap~~ sheet for new installations.
c) The entire roof deck shall be covered with an approved asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ. **(No additional underlayment shall be required over the top of this sheet).** **(Settlement)**	c) The entire roof deck shall be covered with an underlayment in accordance with section 1518.4 of the Florida Building Code, Building or R4402.7.4 of the Florida Building Code, Residential, or an approved asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ. (No additional underlayment shall be required over the top of this sheet). This method shall be allowed outside the HVHZ.
d) Outside of the HVHZ, an underlayment complying with section 1507.2.3 of the Florida Building Code, Building fastened as described below or a layer of asphalt impregnated approved #30 felt shall be installed. The felt is to be fastened with 1" round plastic cap or metal cap nails, attached to a	d) Outside of the HVHZ, for slopes greater than 4:12, **an** underlayment complying with section 1507.2.3 of the Florida Building Code, Building fastened as described below or a layer of asphalt impregnated approved #30 felt shall be installed. The felt is to be fastened with 1" round plastic cap

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
nailable deck in a grid pattern of 12 inches (305 mm) staggered between the overlaps, with 6-inch (152 mm) spacing at the overlaps. For slopes of 2:12 to 4:12 an additional layer of felt shall be installed in a shingle-fashion and lapped 19" and fastened as described above. (No additional underlayment shall be required over the top of this sheet). **(Settlement)**	or metal cap nails, attached to a nailable deck in a grid pattern of 12 inches (305 mm) staggered between the overlaps, with 6-inch (152 mm) spacing at the overlaps. For slopes of 2:12 to 4:12 ~~an additional~~ layer of felt shall be installed in a shingle-fashion and lapped 19" and fastened as described above. (No additional underlayment shall be required over the top of this sheet).
	e) ~~3.~~ Application of a two-part urethane based closed cell spray-on adhesive to the attic side of the joints between the sheathing and along both sides of the truss top chords or rafters shall be deemed to meet the requirements for the secondary water barrier.
EXCEPTIONS: 1. An asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier. (Original text)	See below.
Exceptions: 1. Roof slopes < 2:12 having a continuous roof system shall be deemed to comply with section 201.2 requirements for a secondary water barrier. 2. Clay and Concrete tile roof systems installed as	**Exceptions**: 1. Roof slopes < 2:12 having a continuous roof system shall be deemed to comply with section 201.2 requirements for a secondary water barrier. 2. Clay and Concrete tile roof systems installed as

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
required by the Florida Building Code are deemed to comply with the requirements of section 201.2 for Secondary Water Barriers. ~~1. An asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier.~~ **(Settlement)**	required by the Florida Building Code are deemed to comply with the requirements of section 201.2 for Secondary Water Barriers. ~~1. An asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier.~~
EXCEPTIONS: 1. An asphalt impregnated 30# felt underlayment installed ~~with nails and tin-tabs as required for the HVHZ~~ in conformance with Section 1518.2 of the *Florida Building Code, Building* and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier. (IBHS)	See above.
2. A reinforced synthetic underlayment with an ICC approval as an alternate to ASTM D226 felt paper meeting ASTM D1970 nail sealing requirements and having a minimum tear strength per ASTM D1970 or ASTM D4533 of 20 lbs. This underlayment, when attached using annular ring or deformed shank roofing fasteners with minimum 1-inch diameter metal or plastic caps at the spacing required by the manufacturer for high wind	**Note: Eric, Frank O'Neil, and Loraine will provide substitute language.**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
installations or code requirements if more stringent; and, when all seams are sealed with a compatible adhesive or compatible 4-inch wide tape, shall be deemed to meet the requirements for the secondary water barrier. 3. Application of a two-part urethane based closed cell spray-on adhesive to the attic side of the joints between the sheathing shall be deemed to meet the requirements for the secondary water barrier.(IBHS)	
Comments: See Christ Schulte's, FRSA's, Mike Moore's, and Bill Dumbaugh's comments below. Eric, clarify, concept consistent with law (Rick), only applies to taking off old roof and adding new roof, "roof covering is removed and replaced", Jeff make change globally. "In the HVHZ", is mandatory in HVHZ, otherwise, optional, unanimous to clarify language, Jaime, add reference to1518 .4, Jack, use appropriate section from residential code. Lorraine, outside HVHZ, 3 layers of felt? Or 1 layer fastened better, 2 layers fastened better in lower slopes, Chris, remove above 4/12 slopes, greater than 4/12, Lorraine "for slopes greater than 4:12", remove "additional layer" below. Tim, add as 3&4, Loraine, "an approved reinforced underlayment" ICC does not approve, Tim, provide minimum, Loraine, did they do alternate tests? Tim, defining secondary water barrier, Lorraine, D226 not same strength as UL, put through product approval system to demonstrate performance, Mo, remove "alternate", require to meet ASTM D 226, we do not approve alternates, Loraine, there are approved synthetic underlayments on the web site, Tim, serving as a secondary water barrier, Jeff, qualifications, Chris, underlayment in residential code, D 226 referenced, approved felt underlayment, Loraine, code says minimum 15, a and b above do not say what standard has to be met, say an approved underlayment, Rick, intent of fastening schedule the same for synthetics? Tim, manufacturer's installation instructions, lack of specificity, Mo, code does not refer to specific products but to standards, can do evaluation report to demonstrate equivalency, let product approval, Chris, add synthetics, not an exception but an alternative, Rick, lack of performance goal for barrier, Chris what are we doing with vertical, Eric, spray in and it expands, Chris, Richard add language, all joints to top row of rafter, Lorraine, spraying underside of roof deck, closed cell foam spray insulation must meet fire requirements in R314, 5/1 Chris won't know when water comes through to fix roof, Matt, would encourage close cell use on underside of roof deck, mold, Chris, make these alternatives not exceptions, unanimous, Dwight sprayed along underside deck, adds strength to the underside of deck, why renail roof deck? See 201.	
201.3 Roof-to-wall connections for site-built single family residential structures. Where required by Section 101.2, the intersection of roof framing with the wall below shall be	See below.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
strengthened by adding metal connectors, clips, straps, and fasteners such that the performance level equals or exceeds the uplift capacities as specified in Table 201.3. As an alternative to an engineered design, the prescriptive retrofit solutions provided in Sections 201.3.1 through 201.3.4 shall be accepted as meeting the mandated roof-to-wall retrofit requirements. (Original text)	
201.3 Roof-to-wall connections for site-built single family residential structures. Where required by Section 101.2, the intersection of roof framing with the wall below shall be strengthened by adding metal connectors, clips, straps, and fasteners such that the performance level equals or exceeds the uplift capacities as specified in Table 201.3. As an alternative to an engineered design, the prescriptive retrofit solutions provided in Sections 201.3.3~~1~~ through 201.3.64 shall be accepted as meeting the mandated roof-to-wall retrofit requirements. **(Settlement)**	See below.
Exceptions: 1. Where it can be demonstrated (by code adoption date documentation and permit issuance date) that roof-to-wall connections and/or roof-to-foundation continuous load path requirements were required at the time of original construction. 2. Roof- to- wall connections shall not be required unless evaluation and installation of connections at gable ends or all corners can be completed for 15% of the cost of roof replacement. **(Settlement)**	See below.
201.3 Roof-to-wall connections for site-built single family residential structures. Where required by section 101.2, the intersection of roof framing with the wall below shall ~~be strengthened by adding metal connectors, clips, straps, and fasteners such that the performance~~	**201.3 Roof-to-wall connections for site-built single family residential structures.** Where required by section 101.2, the intersection of roof framing with the wall below shall ~~be strengthened by adding metal connectors, clips, straps, and fasteners such that the performance level equals or exceeds the~~

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
~~level equals or exceeds the uplift capacities as~~ provide sufficient resistance to meet the uplift loads specified in Table 201.3 either because of existing conditions or through retrofit measures. As an alternative to an engineered design, the prescriptive retrofit solutions provided in Sections 201.3.1~~2~~ through 201.3.4~~5~~ shall be accepted as meeting the mandated roof-to-wall retrofit requirements. (IBHS)	~~uplift capacities as~~ provide sufficient resistance to meet the uplift loads specified in Table 201.3 either because of existing conditions or through retrofit measures. As an alternative to an engineered design, the prescriptive retrofit solutions provided in Sections 201.3.1~~2~~ through 201.3.4~~5~~ shall be accepted as meeting the mandated roof-to-wall retrofit requirements.
201.3.1 Access for Retrofitting Roof to Wall Connections. These provisions are not intended to limit the means for gaining access to the structural elements of the roof and wall for the purposes of retrofitting the connection. The retrofit of roof to wall connections can be made by access through the area under the eave, from above through the roof, or from the interior of the house. Methods for above access include removal of roof panels or sections thereof or removal of portions of roof paneling at selected locations large enough for access, viewing, and installing the retrofit connectors and fasteners. Where panels or sections are removed, the removed portions shall not be reused. New paneling shall be used and fastened as in new construction. **(Settlement)**	**201.3.1 Access for Retrofitting Roof to Wall Connections.** These provisions are not intended to limit the means for gaining access to the structural elements of the roof and wall for the purposes of retrofitting the connection. The retrofit of roof to wall connections can be made by access through the area under the eave, from above through the roof, or from the interior of the house. Methods for above access include removal of roof panels or sections thereof or removal of portions of roof paneling at selected locations large enough for access, viewing, and installing the retrofit connectors and fasteners. Where panels or sections are removed, the removed portions shall not be reused. New paneling shall be used and fastened as in new construction. Holes shall be deemed adequately repaired if a patch of paneling is installed with no gap greater than ½ inch between the patch and the existing sheathing and if the patch is supported using one of the following methods.
201.3.1 Access for Retrofitting Roof to Wall Connections. These provisions are not intended to limit the means for gaining access to the structural elements of the roof and wall for the purposes of retrofitting the connection. The retrofit of roof to	See above.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
wall connections can be made by access through the area under the eave, from above through the roof, or from the interior of the house. Methods for above access include removal of roof panels or sections thereof or removal of portions of roof paneling by in effect making holes at selected locations large enough for access, viewing, and installing the retrofit connectors and fasteners. (IBHS) Where panels or sections are removed, the removed portions shall not be reused. New paneling shall be used and fastened as in new construction. Holes shall be deemed adequately repaired if a patch of paneling is installed with no gap greater than ½ inch between the patch and the existing sheathing and if the patch is supported using one of the following methods. (IBHS)	
a) Solid 1-1/2 inch lumber shall fully support the patch and shall be secured to the existing sheathing with #8 by 1-1/4 inch screws spaced a minimum of 3" around the perimeter with screws a minimum of ¾ inch from the near edge of the hole. The patch shall be secured to the lumber with #8 x 1-1/4 inch screws spaced on a grid no greater than 6 inches by 6 inches with no fewer than 2 screws. b) Holes that extend horizontally from roof framing member to adjacent roofing framing member that are less than or equal to 7" wide along the slope of the roof shall be supported by minimum of 2x4 lumber whose face is attached to each roofing framing members using a minimum of 2 each 3-inch long fasteners (#8 screws or 10d common nails) connecting	a) Solid 1-1/2 inch lumber shall fully support the patch and shall be secured to the existing sheathing with #8 by 1-1/4 inch screws spaced a minimum of 3" around the perimeter with screws a minimum of ¾ inch from the near edge of the hole. The patch shall be secured to the lumber with #8 x 1-1/4 inch screws spaced on a grid no greater than 6 inches by 6 inches with no fewer than 2 screws. b) Holes that extend horizontally from roof framing member to adjacent roofing framing member that are less than or equal to 7" wide along the slope of the roof shall be supported by minimum of 2x4 lumber whose face is attached to each roofing framing members using a minimum of 2 each 3-inch long fasteners (#8 screws or 10d common nails)

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
the two. The patch shall have attached to its bottom running horizontally a minimum 2x4 either flat wise or on edge secured with #8 x 1-1/4 inch screws a maximum of 4 inches on center and no more distant from the end of the added lumber than 3 inches. The patch shall be secured with two #8 x 1-1/4 inch screws to each support member. (IBHS)	connecting the two. The patch shall have attached to its bottom running horizontally a minimum 2x4 either flat wise or on edge secured with #8 x 1-1/4 inch screws a maximum of 4 inches on center and no more distant from the end of the added lumber than 3 inches. The patch shall be secured with two #8 x 1-1/4 inch screws to each support member.
201.3.1 Access for Retrofitting Roof to Wall Connections. These provisions are not intended to limit the means for gaining access to the structural elements of the roof and wall for the purposes of retrofitting the connection. The retrofit of roof to wall connections can be made by access through the area under the eave, from above through the roof, or from the interior of the house. Methods for above access include removal of roof panels or sections thereof or removal of portions of roof paneling at selected locations large enough for access, viewing, and installing the retrofit connectors and fasteners. Where panels or sections are removed, the removed portions shall not be reused. New paneling shall be used and fastened as in new construction. **(Settlement)**	See above.
201.3.2 Partially inaccessible straps: Where part of a strap is inaccessible, if the portion of the strap that is observed is fastened in compliance with these requirements, the inaccessible portion of the strap shall be presumed to comply with these requirements. **(Settlement)**	**201.3.2 Partially inaccessible straps:** Where part of a strap is inaccessible, if the portion of the strap that is observed is fastened in compliance with these requirements, the inaccessible portion of the strap shall be presumed to comply with these requirements.
201.3.1 Prescriptive method for gable roofs on a wood frame wall. Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end. The anchorage of each of the exposed rafters or truss shall be	See below.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. (Original text)	
201.3.31 Prescriptive method for gable roofs on a wood frame wall. ~~Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end.~~ The anchorage of each of the exposed rafters or truss within 6 ft of ~~the framing members as measured from~~ the corner along the exterior wall on each side of each gable end shall be inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. **(Settlement)**	**201.3.31 Prescriptive method for gable roofs on a wood frame wall.** ~~Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end~~. The anchorage of each of the exposed rafters or truss within 6 ft of ~~the framing members as measured from~~ the corner along the exterior wall on each side of each gable end shall be inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle ~~gusset~~ brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. Use of straps that connect directly from the rafter or truss to the wall stud below shall be allowed as

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
	an alternate provided the two members align with no more than 1-1/2" offset.
201.3.2~~1~~ Prescriptive method for gable roofs on a wood frame wall. Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided to ~~Sufficient eave sheathing shall be removed to expose a~~ minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end. ~~The anchorage of each of the exposed rafters or truss shall be inspected.~~ Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle ~~gusset~~ brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall finishes below the soffit), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. Use of straps that connect directly from the rafter or truss to the wall stud below shall be allowed as an alternate provided the two members align with no more than 1-1/2" offset. (IBHS)	See above.
201.3.2 Prescriptive method for gable roofs on a masonry wall. Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end. The anchorage of each of the exposed rafters or truss shall be inspected. Wherever a strap is missing or an existing strap has	See below.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws, each with supplementary ¼-inch washer, having sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter. (Original text)	
201.3.42 Prescriptive method for gable roofs on a masonry wall. ~~Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end~~. The anchorage of each of the exposed rafters or truss within 6 ft of ~~the framing members as measured from~~ the corner along the exterior wall on each side of each gable end shall be inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the	**201.3.42 Prescriptive method for gable roofs on a masonry wall.** ~~Sufficient eave sheathing shall be removed to expose a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end~~. The anchorage of each of the exposed rafters or truss within 6 ft of ~~the framing members as measured from~~ the corner along the exterior wall on each side of each gable end shall be inspected. Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle gusset brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws, each with supplementary ¼-inch washer, having sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter. **(Settlement)**	anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws, each with supplementary ¼-inch washer, having sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter.
201.3.3~~2~~ Prescriptive method for gable roofs on a masonry wall. Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided to ~~Sufficient eave sheathing shall be removed to expose~~ a minimum of 6-feet of framing members, measured from the corner, along the exterior wall on each side of each gable end. ~~The anchorage of each of the exposed rafters or truss shall be inspected.~~ Wherever a strap is missing or an existing strap has fewer than four fasteners on each end, approved straps, ties or right angle brackets with a minimum uplift capacity of 500 lbs shall be installed that connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws (each with a supplementary ¼-inch washer) having sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on	**See above.**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
the accessible wall side of the gable end truss or rafter. (IBHS)	
201.3.3 Prescriptive method for hip roofs on a wood frame wall. Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters that are not anchored with a strap having at least four fasteners on each end, shall be connected to the top plate below using a strap or a right angle gusset bracket having a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. (Original text)	See below.
201.3.5~~3~~ Prescriptive method for hip roofs on a wood frame wall. Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided at a minimum to the hip rafter (commonly known as a "king jack"), to the hip girder and at each corner of the hip roof. The hip rafter (commonly known as **a "king jack")**, the hip girder and the rafters/trusses adjacent to the hip girder ~~Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters~~ that are not anchored with a strap having at least four fasteners on each end, shall be connected to the top plate below using a strap or a right angle	**201.3.5~~3~~ Prescriptive method for hip roofs on a wood frame wall.** Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided at a minimum to the hip rafter (commonly known as a "king jack"), to the hip girder and at each corner of the hip roof. The hip rafter (commonly known **as a "king jack")**, the hip girder and the rafters/trusses adjacent to the hip girder ~~Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters~~ that are not anchored with a strap having at least four fasteners on each end, shall be connected to the top plate below using a strap or a right angle

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
gusset bracket having a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. **(Settlement)**	gusset bracket having a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall or soffit finishes), both top plate members shall be connected to the stud below using a stud to plate connector with a minimum uplift capacity of 500 lbs. Use of straps that connect directly from the hip rafter, hip girder or adjacent rafters/trusses to the wall stud below shall be allowed as an alternate provided the two members align with no more than 1-1/2" offset.
201.3.~~3~~4 Prescriptive method for hip roofs on a wood frame wall. Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided at a minimum to the hip rafter, to the hip girder and to one rafter/truss on each side of the hip girder at each corner of the hip roof. The hip rafter, the hip girder and the rafters/trusses adjacent to the hip girder ~~Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters~~ that are not anchored with a strap having at least four fasteners on each end, shall be connected to the top plate below using a strap or a right angle gusset bracket having a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. Wherever access makes it possible (without damage of the wall finishes below the soffit), both top plate members shall be connected to the stud	**See above.**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
below using a stud to plate connector with a minimum uplift capacity of 500 lbs. Use of straps that connect directly from the hip rafter, hip girder or adjacent rafters/trusses to the wall stud below shall be allowed as an alternate provided the two members align with no more than 1-1/2" offset. (IBHS)	
201.3.4 Prescriptive method for hip roofs on a masonry wall. Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters that are not anchored with a strap having at least four fasteners on each end, shall be connected to the concrete masonry wall below using approved straps or right angle gusset brackets with a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. The straps or right angle gusset brackets shall be installed such that they connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws, each with supplementary ¼-inch washer, with sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter. (Original text)	See below.
201.3.64 Prescriptive method for hip roofs on a masonry wall.	**201.3.64 Prescriptive method for hip roofs on a masonry**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided at a minimum to the hip rafter (commonly known as a "king jack"), to the hip girder and at each corner of the hip roof. The hip rafter (commonly known as a "king **jack"),** the hip girder and the rafters/trusses adjacent to the hip girder ~~Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters~~ that are not anchored with a strap having at least four fasteners on each end, shall be connected to the concrete masonry wall below using approved straps or right angle gusset brackets with a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. The straps or right angle gusset brackets shall be installed such that they connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws, each with supplementary ¼-inch washer, with sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter. **(Settlement)**	**wall.** Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided at a minimum to the hip rafter (commonly known as a "king jack"), to the hip girder and at each corner of the hip roof. The hip rafter (commonly known as **a "**king jack"**),** the hip girder and the rafters/trusses adjacent to the hip girder ~~Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters~~ that are not anchored with a strap having at least four fasteners on each end, shall be connected to the concrete masonry wall below using approved straps or right angle gusset brackets with a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. The straps or right angle gusset brackets shall be installed such that they connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws, each with supplementary ¼-inch washer, with sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
201.3.54 Prescriptive method for hip roofs on a masonry wall. Unless it is possible to verify through non-destructive inspection or from plans prepared by a design professional that the roof structure is anchored at least as well as outlined below, access shall be provided at a minimum to the hip rafter, to the hip girder and to one rafter/truss on each side of the hip girder at each corner of the hip roof. The hip rafter, the hip girder and the rafters/trusses adjacent to the hip girder ~~Sufficient corner eave sheathing shall be removed from the side of the hip ridge parallel to the roof ridge to provide access to a minimum 6-foot length of the exterior wall. The hip ridge board and any exposed rafters~~ that are not anchored with a strap having at least four fasteners on each end, shall be connected to the concrete masonry wall below using approved straps or right angle gusset brackets with a minimum uplift capacity of 500 lbs. Adding fasteners to existing straps shall be allowed in lieu of adding a new strap provided the strap is manufactured to accommodate at least 4 fasteners at each end. The straps or right angle gusset brackets shall be installed such that they connect each rafter or truss to the top plate below or directly to the masonry wall using approved masonry screws that will provide at least a 2-1/2 embedment into the concrete or masonry. When the straps or right angle gusset brackets are attached to a wood sill plate, the sill plate shall be anchored to the concrete masonry wall below. This anchorage shall be accomplished by installing ¼-inch diameter masonry screws (each with supplementary ¼-inch washer) with sufficient length to develop a 2-1/2 inch embedment into the concrete and masonry. These screws shall be installed within 4-inches of the truss or rafter on both sides of each interior rafter or truss and on the accessible wall side of the gable end truss or rafter. (IBHS)	**See above.**

Hurricane Mitigation Techniques
Proposed IBHS Language 12/12/07 and the Settlement Agreement with Comments
from the Mitigation Workgroup Meeting 01/28/08
[Red changes from the Challenge. Blue changes from 1/28/08 Meeting]

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
201.3.5 Priorities for mandated roof-to-wall retrofit expenditures. For houses with both hip and gable roof ends, the priority shall be to retrofit the gable end roof-to-wall connections unless the width of the hip end is more than 1.5 times greater than the width of the gable end. Priority shall be given to connecting the corners of roofs to walls below where the spans of the roofing members are greatest. (Original text)	See below.
201.3.75 Priorities for mandated roof-to-wall retrofit expenditures. For houses with both hip and gable roof ends, the priority shall be to retrofit the gable end roof-to-wall connections unless the width of the hip end is more than 1.5 times greater than the width of the gable end. Priority shall be given to connecting the corners of roofs to walls below where the spans of the roofing members are greatest. **(Settlement)**	**See below.**
201.3.65 Priorities for mandated roof-to-wall retrofit expenditures. Priority shall be given to connecting the exterior corners of roofs to walls where the spans of the roofing members are greatest. For houses with both hip and gable roof ends, the priority shall be to retrofit the gable end roof-to-wall connections unless the width of the hip end is more than 1.5 times greater than the width of the gable end. ~~Priority shall be given to connecting the corners of roofs to walls below where the spans of the roofing members are greatest.~~ (IBHS)	**201.3.65 Priorities for mandated roof-to-wall retrofit expenditures.** Priority shall be given to connecting the exterior corners of roofs to walls where the spans of the roofing members are greatest. For houses with both hip and gable roof ends, the priority shall be to retrofit the gable end roof-to-wall connections unless the width of the hip end is more than 1.5 times greater than the width of the gable end. ~~Priority shall be given to connecting the corners of roofs to walls below where the spans of the roofing members are greatest.~~
Table 201.3 **REQUIRED UPLIFT CAPACITIES FOR ROOF-TO-WALL CONNECTIONS** **(POUNDS PER LINEAR FOOT)**	
Comments: See table and Ray Burrow's comment below. Use settlement language and incorporate IBHS except where there is conflict. Unanimous 6/0	

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
	Appendix A Gable and Wall Bracing Retrofit. Deferred action for Richard Reynolds to provide language necessary to incorporate the appendix as a chapter in the Existing Building Volume.
A101.1 Intent and purpose. The provisions of this subsection provide prescriptive solutions for the retrofitting of gable ends of buildings. The retrofit measures are not intended to provide strengthening ~~of buildings~~ equal to the structural provisions of the latest building code requirements for new buildings. Design for compliance of new buildings and additions to existing buildings shall conform to the requirements of the Florida Building Code, Building or Florida Building Code, Residential as applicable.	**A101.1 Intent and purpose.** The provisions of this subsection provide prescriptive solutions for the retrofitting of gable ends of buildings. The retrofit measures are ~~not~~ based on engineering calculations and are intended to provide strengthening of gable ends such that the retrofitted gable ends have strength ~~of buildings~~ equal to the structural provisions of the latest building code requirements for new buildings. Design for compliance of new buildings and additions to existing buildings shall conform to the requirements of the *Florida Building Code, Building* or *Florida Building Code, Residential* as applicable.
Comments: Rick, needs to voluntary but mandatory building dept recognize state adopted techniques, referenced appendix? Eric, Richard wants to have a separate chapter, Mo will establish minimum requirements if in the code, alterative to engineering, alternative levels in reproofing, Jack, appendix not part of code unless adopted locally, meant to not require extensive engineering, its own inserted chapter, to be recognized as a reasonable alternative, Richard, appendices are optional, Tim, separate section, Richard anticipates other optional "shall" language, unanimous Richard allow roofers to nail roof sheathing and replace it, but he has problems with roof to wall connections, Cam will develop language and wants Commission support, Chris, Miami Dade allows roofer to do this, Jim, Licensing is on the state level, unanimous to request legislation on FL489.	
A101.2 Scope. The following prescriptive methods are intended for applications where the gable end wall framing is provided by a wood gable end wall truss or a conventionally framed rafter system. The retrofits are appropriate for wall studs oriented with their broad face parallel to or perpendicular to the gable wall surface. An overview perspective drawing of the retrofit is shown in Figure A104.1.	**No change.**
ANCHOR BLOCK. A nominal 2-inch thick by at least 4" wide piece of lumber secured to horizontal braces and filling the gap	**No change.**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
between existing framing members for the purpose of restraining horizontal braces from movement perpendicular to the framing members.	
COMPRESSION BLOCK. A nominal 2-inch thick by at least 4" wide piece of lumber used to restrain in the compression mode (force directed towards the interior of the attic) an existing or retrofit stud. It is attached to a horizontal brace and bears directly against the existing or retrofit stud.	**No change.**
CONVENTIONALLY FRAMED GABLE END. A conventionally framed gable end with studs whose faces are perpendicular to the gable end wall.	**No change.**
HORIZONTAL BRACE. A nominal 2-inch thick by at least 4" wide piece of lumber used to restrain both compression and tension loads applied by a retrofit stud. It is typically installed horizontally on the top of floor framing members (truss bottom chords or ceiling joists) or on the bottom of pitched roof framing members (truss top chord or rafters).	**No change.**
RETROFIT STUD. A nominal 2-inch lumber member used to structurally supplement an existing gable end wall stud.	**No change.**
RIGHT ANGLE GUSSET BRACKET. A 14 gage or thicker metal right angle bracket with a minimum load capacity perpendicular to the plane of either face of 350 lbs when connected to wood or concrete with manufacturer specified connectors.	**RIGHT ANGLE ~~GUSSET~~ BRACKET.** A 14 gage or thicker metal right angle bracket with a minimum load capacity perpendicular to the plane of either face of 350 lbs when connected to wood or concrete with manufacturer specified connectors.
STUD-TO-PLATE CONNECTOR. A manufactured metal connector designed to connect studs to plates with a minimum uplift capacity of 500 lbs.	**No change.**
TRUSS GABLE END. An engineered factory made truss or site built truss that incorporates factory installed or field installed vertical studs with their faces parallel to the plane of the truss and	**No change.**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
are spaced no greater than 24-inches on center. Web or other diagonal members other than top chords may or may not be present. Gable end trusses may be of the same height as nearby trusses or may be drop chord trusses in which the top chord of the truss is lower by the depth of the top chord or outlookers.	
A103.1 Existing materials. All existing wood materials that will be part of the retrofitting work (trusses, rafters, ceiling joists, top plates, wall studs, etc.) shall be in sound condition and free from defects or damage that substantially reduce the load-carrying capacity of the member. Any wood materials found to be damaged or deteriorated shall be strengthened or replaced with new materials to provide a net dimension of sound wood equivalent to its undamaged original dimensions.	**No change.**
A103.2 New Materials. All materials approved by this code, including their appropriate allowable stresses, shall be permitted to meet the requirements of this chapter.	**No change.**
A103.3 Dimensional Lumber. All dimensional lumber for braces, studs, and blocking shall conform to applicable standards or grading rules. Dimensional lumber shall be identified by a grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with DOC PS 20. All new dimensional lumber to be used for retrofitting purposes shall be a minimum grade and species of #2 Spruce-Pine-Fir or shall have a specific gravity of 0.42 or greater. In lieu of a grade mark, a certificate of inspection issued by a lumber grading or inspection agency meeting the requirements of this code shall be accepted.	**No change.**
A103.4 Metal Plate Connectors, Straps and Anchors. Metal plate connectors, straps and anchors shall have product approval. They shall be approved for connecting wood-to-wood or wood-to-	**No change.**

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
concrete as appropriate. Straps and tie plates shall be manufactured from galvanized steel with a minimum thickness provided by 20 gauge. Tie plates shall have holes sized for 8d nails.	
A103.5 Twists in straps. Straps shall be permitted to be twisted 90 degrees in addition to a 90 degree bend where they transition between framing members or connection points.	**A103.5 Twists in straps.** Straps shall be permitted to be twisted 90 degrees in addition to a 90 degree bend where they transition between framing members or connection points. Straps shall be bent only once at a given location though it is permissible that they be bent or twisted at multiple locations along their length.
A103.6 Fasteners. Fasteners meeting the requirements of Sections A103.6.1 and A103.6.2 shall be used and shall be permitted to be screws or nails meeting the minimum length requirement shown in figures and specified in tables.	**No change.**
A103.6.1 Screws. Screws shall be a minimum #8 size with head diameters no less than 0.3 inch. Screw lengths shall be no less than indicated in the Figures and in Tables. Permissible screws include deck screws, wood screws, or sheet metal screws (without drill bit type tip, but can be sharp pointed). Screws shall have at least 1 inch of thread. Fine threaded screws or drywall screws shall not be permitted. Note that many straps will not accommodate screws larger than #8.	**No change.**
A103.6.2 Nails. Unless otherwise indicated in the provisions or drawings, where fastener lengths are indicated in Figures and Tables as 1-¼ inch, 8d common nails with shank diameter 0.131 inch and head diameters no less than 0.3 inch shall be permitted. Unless otherwise indicated in the provisions or drawings, where fasteners lengths are indicated in Figures and Tables as 3 inch, 10d common nails with shank diameter of 0.148 inch and head diameters no less than 0.3 inch shall be permitted.	**No change.**
A103.7 Fastener spacing. Fastener spacing shall be as follows:	**A103.7 Fastener spacing.** Fastener spacing shall be as follows:

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
a) distance between fasteners and the edge of lumber shall be a minimum of ½ inch unless otherwise indicated, b) distance between fasteners and the end of lumber shall be a minimum of 2-½ inch, c) distance between fasteners parallel to grain (center-to-center) when straps are not used shall be a minimum of 2-1/2 inches unless a ½-inch stagger (perpendicular to the grain) is applied for adjacent fasteners, then the distance between fasteners parallel to the grain shall be a minimum of 1-1/4 inches. d). distance between fasteners across grain (row spacing) when straps are not used shall be a minimum of 1 inch, and the e) distance between fasteners inserted in metal plate connectors, straps and anchors as defined in Section A103.4 shall be those provided by holes manufactured into the straps.	a) distance between fasteners and the edge of lumber shall be a minimum of ½ inch <u>except where the holes in straps place fasteners closer to the edge. In that case, the minimum shall be1/4</u> inch unless otherwise indicated, b) distance between fasteners and the end of lumber shall be a minimum of 2-½ inch, c) distance between fasteners parallel to grain (center-to-center) when straps are not used shall be a minimum of 2-1/2 inches unless a ½-inch stagger (perpendicular to the grain) is applied for adjacent fasteners, then the distance between fasteners parallel to the grain shall be a minimum of 1-1/4 inches. d). distance between fasteners across grain (row spacing) when straps are not used shall be a minimum of 1 inch, and the e) distance between fasteners inserted in metal plate connectors, straps and anchors as defined in Section A103.4 shall be those provided by holes manufactured into the straps.
A104.1 Scope and intent. Gable ends to be strengthened shall be permitted to be retrofitted using methods prescribed by provisions of this section. These prescriptive methods of retrofitting are intended to increase the resistance of existing gable end wall construction for out-of-plane wind loads resulting from high wind events. The retrofit method addresses four issues. These include strengthening the framing members of the walls if necessary (retrofit studs), bracing the top and bottom of the gable wall so that lateral loads are transmitted into the roof and ceiling diaphragms (horizontal braces, straps to retrofit studs and compression blocks) and connecting the bottom of the gable end wall to the wall below to help brace the top of that wall (specialty metal brackets).	**No change.**
The following prescriptive methods are intended for	

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
applications where the gable end wall framing is provided by a wood gable end wall truss or a conventionally framed rafter system. The retrofits are appropriate for wall studs oriented with their broad face parallel to or perpendicular to the gable wall surface. An overview perspective drawing of the retrofit is shown in Figure A104.1.	
A104.2 Horizontal Braces. Horizontal braces shall be installed approximately perpendicular to the top and bottom chords of the existing roof trusses or approximately perpendicular to the rafters and ceiling joists at the location of each existing gable end wall stud greater than 3-feet in length. If the spacing of existing gable end studs is greater than 24 inches or no vertical gable end stud is present, a stud and horizontal braces shall be installed such that the maximum spacing between existing and added studs shall be 24–inches. Additional gable end wall studs shall not be required at locations where their length would be 3-feet or less. Each required added stud shall be attached to the existing roofing framing members (truss top chord or rafter and truss bottom chord or ceiling joist) using a minimum of two 3-inch toenail fasteners (#8 wood screws or 10d nails) and a metal connector or mending plate with a minimum of four 1-1/4 inch long fasteners (#8 wood screws or 8d nails) at each end. The horizontal braces shall consist of the minimum size member indicated in Table A104.2. The horizontal brace shall be oriented with their long face across the top and bottom chords of the wood trusses (or rafters and ceiling joists) and extend a minimum of three framing spacings from the gable end wall plus 2-1/2 inch beyond the last top chord or bottom chord member (rafter or ceiling joist) as shown in Figure A104.2.1 (and A104.2.6). The horizontal brace shall be located no farther than ½ inch from the inside face of the gable	**A104.2 Horizontal Braces.** Horizontal braces shall be installed approximately perpendicular to the roof and ceiling framing members at the location of each existing gable end wall stud greater than 3-feet in length. The horizontal braces shall consist of the minimum size member indicated in Table A104.2. The horizontal braces shall be oriented with their wide faces across the roof or ceiling framing members, be fastened to a minimum of three framing members, and extend at least 6-feet measured perpendicularly from the gable end wall plus 2-1/2 inch beyond the last top chord or bottom chord member (rafter or ceiling joist) from the gable end wall as shown in Figure A104.2.1 (and A104.2.6). The horizontal brace shall be located no farther than ½ inch from the inside face of the gable end wall truss. Each horizontal brace shall be fastened to each existing roof or ceiling member that it crosses using three 3-inch long fasteners (#8 wood screws or 10d nails) as indicated in Figures A104.2.2 through A104.2.5 for trusses (and Figures A104.2.7 through A104.2.10 for conventionally framed). If the spacing of existing gable end studs is greater than 24 inches or no vertical gable end stud is present, a new stud and corresponding horizontal braces shall be installed such that the maximum spacing between existing and added studs shall be 24–

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
end wall truss. Each horizontal brace shall be fastened to each existing framing member (top chord or rafter or bottom chord or ceiling joist) that it crosses using three 3-inch long fasteners (#8 wood screws or 10d nails) as indicated in Figures A104.2.2 through A104.2.5 for trusses (and Figures A104.2.7 through A104.2.10 for rafters).	inches. Additional gable end wall studs shall not be required at locations where their length would be 3-feet or less. Each end of each required new stud shall be attached to the existing roofing framing members (truss top chord or rafter and truss bottom chord or ceiling joist) using a minimum of two 3-inch toenail fasteners (#8 wood screws or 10d nails) and a metal connector or mending plate with a minimum of four 1-1/4 inch long fasteners (#8 wood screws or 8d nails).
	~~Horizontal braces shall be installed approximately perpendicular to the top and bottom chords of the existing roof trusses or approximately perpendicular to the rafters and ceiling joists at the location of each existing gable end wall stud greater than 3-feet in length. If the spacing of existing gable end studs is greater than 24 inches or no vertical gable end stud is present, a stud and horizontal braces shall be installed such that the maximum spacing between existing and added studs shall be 24-inches. Additional gable end wall studs shall not be required at locations where their length would be 3-feet or less. Each required added stud shall be attached to the existing roofing framing members (truss top chord or rafter and truss bottom chord or ceiling joist) using a minimum of two 3-inch toenail fasteners (#8 wood screws or 10d nails) and a metal connector or mending plate with a minimum of four 1-1/4 inch long fasteners (#8 wood screws or 8d nails) at each end. The horizontal braces shall consist of the minimum size member indicated in Table A104.2. The horizontal brace shall be oriented with their long face across the top and bottom chords of the wood trusses (or rafters and ceiling joists) and extend a minimum of three framing spacings from the gable end wall plus 2-1/2 inch beyond the last top chord or bottom chord member (rafter or ceiling~~

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
	~~joist) as shown in Figure A104.2.1 (and A104.2.6). The horizontal brace shall be located no farther than ½ inch from the inside face of the gable end wall truss. Each horizontal brace shall be fastened to each existing framing member (top chord or rafter or bottom chord or ceiling joist) that it crosses using three 3-inch long fasteners (#8 wood screws or 10d nails) as indicated in Figures A104.2.2 through A104.2.5 for trusses (and Figures A104.2.7 through A104.2.10 for rafters).~~
Exceptions: **1.** Where obstructions, other permanently attached obstacles or conditions exist that will not permit installation of new horizontal braces at the indicated locations, refer to Section A104.5 for permitted modification of these prescriptive retrofit methods.	**Exceptions:** 1. Where impediments ~~obstructions~~, other permanently attached obstacles or conditions exist that will not permit installation of ~~new~~ horizontal braces at the indicated locations, refer to Section A104.5 for permitted modification of these prescriptive retrofit methods.
2. Where obstructions, other permanently attached obstacles or conditions exist that will not permit extension of the new horizontal braces across the existing framing members a minimum of three framing spaces from the gable end wall, the horizontal braces may be shortened provided that all of the following conditions are met.	2. Where impediments ~~obstructions~~, other permanently attached obstacles or conditions exist that will not permit extension of the ~~new~~ horizontal braces across the existing framing members such that they can be fastened to a minimum of three framing members and extend at least 6-feet from the gable end wall plus 2-1/2 inches beyond the last roof or ceiling framing member, the horizontal braces may be shortened provided that all of the following conditions are met.
a. The horizontal brace shall be installed across a minimum of two framing spaces and fastened to each existing framing member with three 3-inch long fasteners (#8 wood screws or 10d nails).	a. The horizontal brace shall be installed across a minimum of two framing spaces, fastened to each existing framing member with three 3-inch long fasteners (#8 wood screws or 10d nails), and extend a minimum of 4-feet from the gable end wall.
b. The minimum size of the anchor block shall be equivalent to the existing framing members. The	b. ~~The minimum size of the anchor block shall be equivalent to~~

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
anchor block shall be fastened to the side of the horizontal brace in the second framing space from the gable end wall as shown in Figure A104.2.11. Six 3-inch long fasteners (#8 wood screws or 10d nails) shall be used to fasten the anchor block to the side of the horizontal brace.	~~the existing framing members. The~~ An anchor block shall be fastened to the side of the horizontal brace in the second framing space from the gable end wall as shown in Figure A104.2.11. The minimum edge and face sizes of the anchor block shall be equivalent to the existing roof or ceiling framing members as appropriate for that particular installation. Six 3-inch long fasteners (#8 wood screws or 10d nails) shall be used to fasten the anchor block to the side of the horizontal brace.
c. The anchor block shall extend beyond the surface of the horizontal brace that is in contact with the existing framing members ~~a~~ minimum of one-half the depth of the existing framing member. The anchor block shall be installed tightly between the existing framing members such that the gap at either end shall not exceed $^1/_8$ inch.	c. The anchor block shall extend into the space between the roof or ceiling framing members a minimum of one-half the depth of ~~beyond the surface of the horizontal brace that is in contact with~~ the existing framing members ~~a minimum of one-half the depth of the existing framing member~~ at the location where the anchor block is installed. The anchor block shall be installed tightly between the existing framing members such that the gap at either end shall not exceed $^1/_8$ inch.
A104.3 Retrofit Studs. The retrofit studs shall consist of the minimum size members for the height ranges of the existing vertical gable end wall studs indicated in Table A104.2. Retrofit studs shall be installed adjacent to the existing or added (Section A104.2) vertical gable end wall studs and extend from the top of the lower horizontal brace to the bottom of the upper horizontal brace. A maximum gap of 1/8-inch shall be permitted between the retrofit stud and the bottom horizontal brace. A maximum gap of ½-inch shall be permitted between the top edge of the retrofit stud closest to the upper horizontal brace and the horizontal brace surface. **Exception:** Where ~~obstructions~~, other permanently attached obstacles or conditions exist that will not permit the installation of a new	**A104.3 Retrofit Studs.** The retrofit studs shall consist of the minimum size members for the height ranges of the existing vertical gable end wall studs indicated in Table A104.2. Retrofit studs shall be installed adjacent to the existing or added (Section A104.2) vertical gable end wall studs and extend from the top of the lower horizontal brace to the bottom of the upper horizontal brace. A maximum gap of 1/8-inch shall be permitted between the retrofit stud and the bottom horizontal brace. A maximum gap of ½-inch shall be permitted between the top edge of the retrofit stud closest to the upper horizontal brace and the horizontal brace surface. **Exception:** Where impediments ~~obstructions~~, other permanently

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
retrofit stud adjacent to an existing gable end wall stud, refer to Section A104.5 for permitted modification of these prescriptive retrofit methods.	attached obstacles or conditions exist that will not permit the installation of a new retrofit stud adjacent to an existing gable end wall stud, refer to Section A104.5 for permitted modification of these prescriptive retrofit methods.
A104.3.1 Retrofit Stud Fastening. Each retrofit stud shall be fastened to the top and bottom horizontal brace members with a minimum of a 20 gauge, $1^1/_4$ inch wide flat metal strap with pre-punched fastener holes. The flat metal straps shall be the minimum length as indicated in Table A104.2. Each top and bottom strap shall extend sufficient distance onto the vertical face of the retrofit stud and be fastened with the number of 1-1/4 inch long fasteners (#8 wood screws or 8d nails) indicated in Table A104.2. Each strap shall be fastened to the top and bottom horizontal brace members with the minimum number of 1-1/4 inch long fasteners (#8 wood screws or 8d nails) as indicated in Table A104.2. The retrofit stud members shall also be fastened to the side of the existing vertical gable end wall studs with 3-inch long fasteners (#8 wood screws or 10d nails) spaced at 6-inches on center as shown in Figure A104.2.1.	**A104.3.1 Retrofit Stud Fastening.** Each retrofit stud shall be fastened to the top and bottom horizontal brace members with a minimum of a 20 gauge, 1-1/4 inch wide flat <u>or coil</u> metal strap with pre-punched fastener holes. The flat metal straps shall be the minimum length as indicated in Table A104.2. Each top and bottom strap shall extend sufficient distance onto the vertical face of the retrofit stud and be fastened with the number of 1-1/4 inch long fasteners (#8 wood screws or 8d nails) indicated in Table A104.2. Each strap shall be fastened to the top and bottom horizontal brace members with the minimum number of 1-1/4 inch long fasteners (#8 wood screws or 8d nails) as indicated in Table A104.2. The retrofit stud members shall also be fastened to the side of the existing vertical gable end wall studs with 3-inch long fasteners (#8 wood screws or 10d nails) spaced at 6-inches on center as shown in Figure A104.2.1.
A104.3.2 Retrofit Stud Splices. Retrofit studs greater than 8-feet in height may be field spliced as shown in Figure A104.3.	**No change.**
A104.4 Compression Blocks. Compression blocks shall have minimum lengths as indicated in Table A104.2. Compression blocks shall be installed on the horizontal braces directly against either the existing vertical gable end wall stud or the retrofit stud. For clarity, Figures A104.2.2 through A104.2.5 (trusses) and Figures A104.2.7 through A104.2.10 (rafters) show the installation of the compression block against the existing vertical gable end wall stud with the strap from the retrofit stud running beside the compression block. When the compression block is	**A104.4 Compression Blocks.** ~~Compression blocks shall have minimum lengths as indicated in Table A104.2.~~ Compression blocks shall be installed on the horizontal braces directly against either the existing vertical gable end wall stud or the retrofit stud. For clarity, Figures A104.2.2 through A104.2.5 (trusses) and Figures A104.2.7 through A104.2.10 (conventionally framed) ~~(rafters)~~ show the installation of the compression block against the existing vertical gable end wall stud with the strap from the retrofit stud running beside the compression block.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
installed against the retrofit stud, the block shall be allowed to be placed on top of the strap. A maximum gap between the compression block and the existing vertical gable end wall stud member or retrofit stud of $^1/_8$ inch shall be permitted. Compression blocks shall be fastened to the horizontal braces with the minimum number of 3-inch long fasteners (#8 wood screws or 10d nails). End and edge distances for fastener installation shall be as listed in Section A103.7 and shown in Figures A104.2.2 through A104.2.5 (trusses) and Figures A104.2.7 through A104.2.10 (rafters).	When the compression block is installed against the retrofit stud, the block shall be allowed to be placed on top of the strap. A maximum gap between the compression block and the existing vertical gable end wall stud member or retrofit stud of $^1/_8$ inch shall be permitted. Compression blocks shall be fastened to the horizontal braces with the minimum number of 3-inch long fasteners (#8 wood screws or 10d nails) specified in Table A104.2. End and edge distances for fastener installation shall be as listed in Section A103.7 and shown in Figures A104.2.2 through A104.2.5 (trusses) and Figures A104.2.7 through A104.2.10 (conventionally framed) ~~(rafters)~~.
A104.5 Obstructions – Permissible modifications to prescriptive gable end retrofits. Where obstructions, other permanently attached obstacles or conditions exist in attics that preclude the installation of a retrofit stud or horizontal braces in accordance with Sections A104.2 or A104.3, the gable end retrofit shall be deemed to meet the requirements of this section if the requirements of Section A104.5.1 are met. Obstructions to the installation of retrofit studs or horizontal braces include gable end vents, attic accesses, recessed lights, skylight shafts, chimneys, air conditioning ducts, or equipment. Where the installation of a horizontal brace for the top of a center stud is obstructed by truss plates near the roof peak, methods prescribed in A104.5.1 are permitted to be used, or retrofit ridge ties as prescribed in Section A104.5.2 are permitted to be used to support the horizontal brace.	**A104.5 Impediments ~~Obstructions~~ – Permissible modifications to prescriptive gable end retrofits.** Where impediments ~~obstructions~~, other permanently attached obstacles or conditions exist in attics that preclude the installation of a retrofit stud or horizontal braces in accordance with Sections A104.2 or A104.3, the gable end retrofit shall be deemed to meet the requirements of this section if the requirements of Section A104.5.1 are met. Impediments to the installation of retrofit studs or horizontal braces include gable end vents, attic accesses, recessed lights, skylight shafts, chimneys, air conditioning ducts, or equipment. Where the installation of a horizontal brace for the top of a center stud is obstructed by truss plates near the roof peak, methods prescribed in A104.5.1 are permitted to be used, or retrofit ridge ties as prescribed in Section A104.5.2 are permitted to be used to support the horizontal brace.
A104.5.1 Remedial measures where obstacles prevent installation of retrofit studs or horizontal braces. If a retrofit stud or horizontal brace cannot be installed because of an obstruction, the entire assembly can be omitted from that location	**A104.5.1 Remedial measures where obstacles prevent installation of retrofit studs or horizontal braces.** If a retrofit stud or horizontal brace cannot be installed because of an impediment ~~obstruction~~, the entire assembly can be omitted from

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
provided all of the following conditions are met.	that location provided all of the following conditions are met.
1. No more than two assemblies of retrofit studs and horizontal braces are omitted on a single gable end.	No change.
2. There shall be at least two retrofit studs and horizontal brace assemblies on either side of the locations where the retrofit studs and horizontal bracing members are omitted (no two ladder braces bearing on a single retrofit stud).	No change.
3. The retrofit studs on each side of the omitted retrofit stud are increased to the next indicated member size in Table A104.2 and fastened as indicated in Section A104.3.1.	No change.
4. The horizontal bracing members on each side of the omitted brace shall be sized in accordance with Table A104.2 for the required retrofit studs at these locations.	No change.
5. The horizontal bracing members on each side of the omitted brace shall extend a minimum of three framing spaces from the gable end wall unless anchor blocks are installed in accordance with Exception 2 of Section A104.2.	5. The horizontal bracing members on each side of the omitted brace shall meet the requirements ~~extend a minimum of three framing spaces from the gable end wall unless anchor blocks are installed in accordance with Exception 2~~of Section A104.2.
6. Ladder bracing is provided across the location of the omitted retrofit studs as indicated in Figures A104.5.1.1 (trusses) and A104.5.1.2 (rafters).	6. No change.
7. Ladder bracing shall consist of a minimum 2x4 members oriented horizontally and spaced at 12-inches on center vertically. Ladder bracing shall be attached to each	7. Ladder bracing shall consist of a minimum 2x4 members oriented horizontally and spaced a maximum ~~at~~ of 12-inches on center vertically. Ladder bracing shall be attached to each

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
adjacent retrofit stud with a metal framing angle with a minimum lateral capacity of 175 lbs. Ladder bracing shall be attached to the existing stud at the location of the omitted retrofit stud with a metal hurricane tie with a minimum capacity of 175 lbs.	adjacent retrofit stud with a metal framing angle with a minimum lateral capacity of 175 lbs. Ladder bracing shall be attached to the existing stud at the location of the omitted retrofit stud with a metal hurricane tie with a minimum capacity of 175 lbs.
8. Where ladder bracing spans across a gable end vent, no attachment to the gable end vent framing shall be required.	8. Where ladder bracing spans across a gable end vent, the gable end vent framing shall be attached to the ladder bracing using metal straps or clips. ~~No attachment to the gable end vent framing shall be required.~~
9. Notching of the ladder bracing shall not be permitted.	9. Notching of the ladder bracing shall not be permitted unless the net depth of the framing member is a minimum of 3-1/2 inches.
A104.5.2 Retrofit ridge ties. When obstructions along the ridge of the roof obstruct the installation of a horizontal brace for one or more studs near the middle of the gable wall, retrofit ridge ties may be used to provide support for the required horizontal brace. Retrofit ridge tie members shall be installed a maximum of 12 inches below the existing ridge line. The retrofit ridge tie members shall be installed across a minimum of three bays to permit fastening of the horizontal brace. A minimum of a 2x4 member shall be used for each ridge tie and fastening shall consist of two 3-inch long wood screws, four 3-inch long 10d nails or two 3-1/2 inch long 16d nails driven through and clinched at each top chord or web member intersected by the ridge tie as illustrated in Figure A104.5.2.	**A104.5.2 Retrofit ridge ties.** When impediments ~~obstructions~~ along the ridge of the roof impede ~~obstruct~~ the installation of a horizontal brace for one or more studs near the middle of the gable wall, retrofit ridge ties may be used to provide support for the required horizontal brace. The top of retrofit ridge tie members shall be installed a maximum of 12-inches below the existing ridge line or 4-inches below the impediment(s). The retrofit ridge tie members shall be installed across a minimum of three bays, but no less than 6-feet to permit fastening of the horizontal brace. A minimum of a 2x4 member shall be used for each ridge tie and fastening shall consist of two 3-inch long wood screws, four 3-inch long 10d nails or two 3-1/2 inch long 16d nails driven through and clinched at each top chord or web member intersected by the ridge tie as illustrated in Figure A104.5.2.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
A104.5.3 Notching of retrofit studs. Retrofit studs may be notched in one location along the height of the stud member provided that all of the following conditions are met.	**No change.**
1. The retrofit stud to be notched shall be sized such that the remaining depth of the member at the location of the notch (including cut lines) shall not be less than that required by Table A104.2.	No change.
2. The notched retrofit stud shall not be spliced within 12 inches of the location of the notch. The splicing member shall not be notched and shall be installed as indicated in Figure A104.3.	No change.
3. The length of the flat metal straps indicated in Table A104.2 shall be increased by the increased depth of the notched retrofit stud member to be installed.	No change.
4. The height of the notch shall not exceed 12 inches vertically as measured at the depth of the notch.	No change.
5. The notched retrofit stud member shall be fastened to the side of the existing gable end wall studs in accordance with Section A104.3.1. Two additional 3-inch fasteners (#8 wood screws or 10d nails) shall be installed on each side of the notch in addition to those required by Section A104.3.1.	No change.
A104.6 Connection of gable end wall to wall below. The bottom chords or bottom members of wood framed gable end walls shall be attached to the wall below using one of the methods prescribed in Sections A104.6.1 or A104.6.2. The particular method chosen shall correspond to the framing system and type of wall construction encountered. Due to access considerations, this retrofit needs to be carried out before any of the other gable	**A104.6 Connection of gable end wall to wall below.** The bottom chords or bottom members of wood framed gable end walls shall be attached to the wall below using one of the methods prescribed in Sections A104.6.1 or A104.6.2. The particular method chosen shall correspond to the framing system and type of wall construction encountered. ~~Due to access considerations, this retrofit needs to be carried out before any of~~

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
end retrofit activities referenced in Sections A104.2, A104.3, A104.4 or A104.5.	~~the other gable end retrofit activities referenced in Sections A104.2, A104.3, A104.4 or A104.5.~~
A104.6.1 Truss gable end wall. The bottom chords of the gable end wall shall be attached to the wall below using right angle gusset brackets consisting of 14 gage or thicker material with a minimum load capacity of 350 lbs perpendicular to the plane of either face of the connector. The right angle gusset brackets shall be installed throughout the portion of the gable end where the gable end wall height is greater than 3 feet at the spacing specified in Table A104.6. A minimum of two of the fasteners specified by the manufacturer shall engage the body of the bottom chord. Connection to the wall below shall be by one of the methods listed below:	**A104.6.1 Truss gable end wall.** The bottom chords of the gable end wall shall be attached to the wall below using right angle ~~gusset~~ brackets consisting of 14 gage or thicker material with a minimum <u>specified</u> load capacity of 350 lbs perpendicular to the plane of either face of the connector. The right angle ~~gusset~~ brackets shall be installed throughout the portion of the gable end where the gable end wall height is greater than 3 feet at the spacing specified in Table A104.6. A minimum of two of the fasteners specified by the manufacturer shall engage the body of the bottom chord. Connection to the wall below shall be by one of the methods listed below:
1. For a wood frame wall below, the two fasteners into the top of the wall below that are closest to the face of the gable end bottom chord shall be 4-1/2 inches long and of the same diameter and style specified by the bracket manufacturer. Other fasteners shall be consistent with the bracket manufacturer's specifications for size, style and length.	1. For a wood frame wall below, ~~the~~ two fasteners ~~into the top of the wall below that are closest to the face of the gable end bottom chord shall be 4-1/2 inches long and~~ of the same diameter and style specified by the bracket manufacturer ~~Other fasteners shall be consistent with the bracket manufacturer's specifications for size, style and length~~. <u>Shall engage the body of the bottom top plate of the wall below.</u>
2. For a concrete or masonry wall below without a sill plate, the fasteners into the wall shall be consistent with the bracket manufacturer's specifications for fasteners installed in concrete or masonry.	No change.
3. For a concrete or masonry wall below with a 2x sill plate, the fasteners into the wall below shall be of the diameter and style specified by the bracket manufacturer for	No change.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
concrete or masonry connections; but, long enough to pass through the wood sill plate and provide the required embedment into the concrete or masonry below. Alternatively, the bracket can be anchored to the sill plate using fasteners consistent with the bracket manufacturer's specifications for wood connections provided, the sill plate is anchored to the wall on each side of the bracket by a ¼-inch diameter masonry screw with a 2-1/2 inch embedment into the concrete or masonry wall. ¼-inch washers shall be placed under the heads of the masonry screws.	
A104.6.2 Conventionally framed gable end wall. Each stud in a conventionally framed gable end wall, throughout the length of the gable end wall where the wall height is greater than 3-feet, shall be attached to the bottom or sill plate using a stud to plate connector. The bottom or sill plate shall then be connected to the wall below using one of the methods listed below:	**A104.6.2 Conventionally framed gable end wall.** Each stud in a conventionally framed gable end wall, throughout the length of the gable end wall where the wall height is greater than 3-feet, shall be attached to the bottom or sill plate using a stud to plate connector. The bottom or sill plate shall then be connected to the wall below using one of the methods listed below:
1. For a wood frame wall below, the sill or bottom plate shall be connected to the top plates below using ¼-inch diameter screws 4-1/2 inches long. The fasteners shall be installed at the spacing indicated in Table A104.6.	1. For a wood frame wall below, ~~the sill or bottom plate shall be connected to the top plates below using ¼-inch diameter screws 4-1/2 inches long.~~ Two fasteners of the same diameter and style specified by the bracket manufacturer shall engage the body of the bottom top plate of the wall below. The fasteners shall be installed at the spacing indicated in Table A104.6.
2. For a concrete or masonry wall below, the sill or bottom plate shall be connected to the concrete or masonry wall below using ¼-inch diameter concrete or masonry screws of sufficient length to provide a 2-1/2 inch embedment into the top of the concrete or masonry wall. The	No change.

Current Manual/ Settlement	Outcome of January 28, 2008 Workgroup Meeting
fasteners shall be installed at the spacing indicated in Table A104.6.	

Table 201.1
Supplement Fasteners at Panel Edges and Intermediate Framing

Existing fasteners	Existing spacing	Wind speed 110 mph or less supplemental fastening shall be no greater than	Wind speed greater than 110 mph supplemental fastening shall be no greater than
Staples or 6d	Any	6" o.c.[b]	6" o.c.[b]
8d clipped head, round head, or ring shank	6" o.c. or less	None necessary	None necessary
8d clipped head or round head	Greater than 6" o.c.	6" o.c.[a]	6" o.c.~~[b]~~ [a]
8d round head ring shank	Greater than 6" o.c.	6" o.c.[a]	6" o.c.[a]

a. Maximum spacing determined based on existing fasteners and supplemental fasteners.
b. Maximum spacing determined based on supplemental fasteners only.

Proposed Change:

Table 201.1
Supplement Fasteners at Panel Edges and Intermediate Framing

Existing fasteners	Existing spacing	Wind speed 110 mph or less supplemental fastening shall be no greater than	Wind speed greater than 110 mph supplemental fastening shall be no greater than
Staples or 6d	Any	6" o.c.[b]	6" o.c.[b]

8d clipped head, round head, or ring shank	6" o.c. or less	None necessary	None necessary
~~8d clipped head or round head~~	Greater than 6" o.c.	6" o.c.[a]	6" o.c.[~~b~~ a]
~~8d round head ring shank~~	~~Greater than 6" o.c.~~	~~6" o.c.[a]~~	~~6" o.c.[a]~~

a. Maximum spacing determined based on existing fasteners and supplemental fasteners.
b. Maximum spacing determined based on supplemental fasteners only.

Table 201.3
REQUIRED UPLIFT CAPACITIES FOR ROOF-TO-WALL CONNECTIONS
(POUNDS PER LINEAR FOOT)

	BASIC WIND SPEED	ROOF SPAN (FEET)							OVERHANGS
		12	20	24	28	32	36	40	
Within 6 feet of building corner	85	-69.85	-116.42	-139.70	-162.99	-186.27	-209.55	-232.84	-27
	90	-82.67	-137.78	-165.34	-192.90	-220.45	-248.01	-275.57	-30.3
	100	-110.51	-184.18	-221.01	-257.85	-294.68	-331.52	-368.36	-37.4
	110	-141.27	-235.45	-282.55	-329.64	-376.73	-423.82	-470.91	-45.3
	120	-174.97	-291.62	-349.94	-408.26	-466.59	-524.91	-583.23	-53.9
	130	-211.60	-352.66	-423.19	-493.72	-564.26	-634.79	-705.32	-63.2
	140	-251.15	-418.59	-502.31	-586.02	-669.74	-753.46	-837.18	-73.3
	150	-293.64	-489.40	-587.28	-685.16	-783.04	-880.92	-978.80	-84.2
	170	-387.40	-645.67	-774.81	-903.94	-1033.08	-1162.21	-1291.35	-108
Greater than 6 ft from building corner	85	-39.10	-65.17	-78.20	-91.24	-104.27	-117.30	-130.34	-27
	90	-48.20	-80.33	-96.39	-112.46	-128.52	-144.59	-160.66	-30.3
	100	-67.95	-113.24	-135.89	-158.54	-181.19	-203.84	-226.49	-37.4
	110	-89.78	-149.63	-179.55	-209.48	-239.40	-269.33	-299.25	-45.3
	120	-113.68	-189.47	-227.37	-265.26	-303.16	-341.05	-378.94	-53.9
	130	-139.67	-232.78	-279.34	-325.90	-372.45	-419.01	-465.57	-63.2
	140	-167.74	-279.56	-335.47	-391.38	-447.29	-503.21	-559.12	-73.3
	150	-197.88	-329.80	-395.76	-461.72	-527.68	-593.64	-659.60	-84.2
	170	-264.41	-440.68	-528.81	-616.95	-705.08	-793.22	-881.35	-108

Notes:

a. The required capacities are pounds per lineal foot of building length. For roof framing spaced at 16 inches on center multiply table values by 1.33. For roof framing spaced at 24 inches on center multiply table values by 2.

b. The required capacities include an allowance for 10 pounds of dead load.

c. The required capacities do not account for the effects of overhangs. The overhang loads given shall be multiplied by the overhang projection and added to the required capacities in the table.

Ray Burroughs' Comment:

Section 101.4, if gable end bracing is voluntary as you indicated, this section needs to better indicate such. As written the retrofit is required as a part of a project involving "construction which otherwise requires a permit". Thus if they are doing any type of activity requiring a permit it would trigger gable wind bracing for example replacing their air conditioner, replacing their elect panel, etc.

Mike Moore's Comment:
101.5 When a home inspector inspects an existing home as part of a real estate transaction and determines that the roof decking attachment does not meet the requirements of Section 201.1, adhesives shall be used to strengthen the decking attachment per Section 201.2, unless the roof is being replaced per Section 101.1.

FRSA Comment:
Replace language with the following:
201.1 Roof sheathing fastening for site-built single family residential structures. Roof sheathing shall be fastened to meet the requirements of chapters 16 and 23 of the Florida Building Code, Building.
Add the following to chapter 15:
1510.1.1 Roof sheathing shall be fastened to meet the requirements of chapter 16 and 23 of the Florida Building Code, Building.

Mike Moore's Comment:
201.1 Roof sheathing fastening for site-built single family residential structures during re-roofing. For site-built single family residential structures the fasteners and spacing required in Table 201.1 are deemed to comply with the requirements of Section 511.5, Florida Building Code, Building.
201.2 Roof sheathing fastening for site-built single family residential structures prior to re-roofing. When a home inspection completed for a real estate transaction reveals that the roof decking attachment does not meet the fastener requirements of Table 201.1, and when this roof will not be re-roofed at the time of the transaction, an AFG-01 approved adhesive shall be applied in a ¼" bead to the 90-degree joint between the underside of the roof decking and the supporting roof framing to strengthen this connection.

FRSA Comment:
201.2 Roof secondary water barrier for site-built single family residential structures. A secondary water barrier shall be installed using one of the following methods ~~when roofing replacement~~ when reproofing, *and all materials used must meet the requirements of FBC's product approval system for wind driven rain and wind uplift resistance.*

a) All joints in roof sheathing or decking shall be covered with a minimum 4 in. wide strip of *adhered approved membrane* ~~self-adhering polymer modified bitumen tape~~ applied directly to the sheathing or decking. ~~The deck and self adhering polymer modified bitumen tape shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof.~~

b) The entire roof deck shall be covered with an approved *adhered membrane* ~~self-adhering polymer modified bitumen cap sheet. No additional underlayment shall be required on top of this cap sheet for new installations.~~

c) The entire roof deck shall be covered with a mechanically attached approved membrane.

d) All joints in the roof sheathing shall be sealed with an approved sealant.

e) All joints in the roof sheathing shall be sealed with an approved sealant; the entire roof shall then be covered with an approved coating.

~~EXCEPTIONS:~~
~~An asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier.~~

Bill Dumbaugh's Comment:
201.2 Secondary water barrier for site built single family residential structures.
A secondary water barrier shall be installed using one of the following methods when roofing replacement when reproofing.

1. All joints in roof sheathing or decking shall be covered with a minimum 4 in. wide strip of self-adhering polymer modified bitumen tape applied directly to the sheathing or decking. The deck and self adhering polymer modified bitumen tape shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof.
2. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen cap sheet. No additional underlayment shall be required on top of this cap sheet for new installations.

EXCEPTIONS:

1. In lieu of 1 and 2 above, buildings and structures located in HVHZ with nailable decks shall be installed in accordance with section 1518, and 1519, which shall be deemed to meet the requirements of a secondary water barrier

~~1. A asphalt impregnated 30# felt underlayment installed with nails and tin-tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot-mop application shall be deemed to meet the requirements for the secondary water barrier.~~

2. A roof deck that is sufficiently fastened as prescribed in Section 201.1 and provided with a secondary water barrier as outlined above shall be deemed to meet the requirements of this section.

Chris Schulte's comments.

201.2 Secondary water barrier for site built, single-family residential structures.
A secondary water barrier shall be installed using one of the following methods when ~~roofing replacement when~~ reproofing.

1. All joints in wood structural panel roof sheathing ~~or decking~~ shall be covered with a minimum 4 6 in. wide strip of product approved self-adhered~~ing~~ membrane ~~polymer modified bitumen tape~~ applied directly to the sheathing or decking in accordance with the product approval. The deck and self-adhered~~ing~~ membrane ~~polymer modified bitumen tape~~ shall be covered with one of the underlayment systems approved for the particular roof covering to be applied to the roof.
2. The entire surface of wood structural panel roof ~~deck~~ sheathing or board decking shall be covered with a~~n~~ product approved self-adhered~~ing~~ membrane in accordance with the product approval ~~polymer modified bitumen cap sheet~~. If the self-adhered membrane is approved as an underlayment for the particular finished roof covering, ~~N~~no additional underlayment shall be required on top of the membrane ~~cap sheet~~ for new installations.

~~Exceptions:~~

3~~1~~. Underlayments installed over wood structural panel roof sheathing or board decking in accordance with Sections 1518 and 1519 of the Florida Building Code, Building, or Sections 4407 and 4408 of the Florida Building Code, Residential ~~In lieu of 1 and 2 above, buildings and structures located in the HVHZ with nailable decks shall be installed in accordance with section 1518, and 1519, which~~ shall be deemed to meet the requirements of a secondary water barrier.

~~1. A asphalt impregnated 30# felt underlayment installed with nails and tin tabs as required for the HVHZ and covered with either an approved self-adhering polymer modified bitumen cap sheet or an approved cap sheet applied using an approved hot mop application shall be deemed to meet the requirements for the secondary water barrier.~~

Wood structural panel roof sheathing or board decking ~~A roof deck~~ that is sufficiently fastened as prescribed in Section 201.1 and provided with a secondary water barrier as outlined above shall be deemed to meet the requirements of this section.

Note: Options 1 & 2 are not for use in the HVHZ.

Ray Burroughs Comment:
Table 201.3, last column headered "overhangs", is this for all overhang projections, obviously a 12 inch overhang has less uplift than a 24 inch overhang.

General Comments:

Robert Bullard's Comments:
Our sister firm, Preservation Possibilities, Inc., uses a custom latex elastomeric coating material manufactured in the USA to anchor existing asphalt shingle roofs against being stripped off by high winds. The attached annotated photo shows two side by side comparisons: the less dense coating provides moderate wind-stripping resistance, the more dense will restrain the roofing to the extent that the original nails will hold the shingles themselves to the roof deck with no wind-peeling whatsoever for the life of the coating.
The coating is spray-applied to weathered roofs (shingles over five years old), with spray-jet challenging 100 per cent of the down slope flaps of the shingles (except those at the extreme edge of the roof), so that a significant amount of material extends up under the leading edge of the shingles to act as an adhesive. The less dense coating is a single layer spray application which is back-rolled with minimal membrane development over the leading edge. This application is intended for moderate enhancement of wind up-lift resistance of shingles; its main benefit is that by applying the special mildew-resistant white coating, there is at least a twenty per cent reduction in the energy bill of a typical single-story centrally-cooled Florida home.
As the coating weathers free of leaf deposition, the efficiency of the coating declines to about one-half of its original benefit at ten years, at which point a thin 50 square feet per gallon top coat can be applied to restore the energy efficiency.
The more dense application is achieved by applying a second coating to create and intact membrane over the leading edge of the shingles. If the original roofing was properly nailed (e. g., at least 6, 6d or larger per architectural shingle profile), a shingle roof with this coating is virtually unstrippable by wind, except for, perhaps, the first row of shingles at the edge strip. (With respect to anchoring the edge, at a single project site, we have have achieved robust anchorage by pneumatically-driven pairs of "X" pattern monel staples through the edge flaps and the metal drip edge under the flap in the perimeter of the roof overhang; there were three clusters (pairs) per architectural shingle. At this particular site (oceanfront) we have yet to coat because the shingles are still too "fresh" with asphalt solvents which can potentially impair the bond and chemical properties of the coating material.)
Present installed cost for the two-coat system is no more than the cost of the least expensive asphalt shingle replacement roof, a product which will not have nearly the energy efficiency or wind resistance of the two-coat roof.

Present installed cost for the two-coat system is no more than the cost of the least expensive asphalt shingle replacement roof, a product which will not have nearly the energy efficiency or wind resistance of the two-coat roof.

This coating system is a win-win for aged asphalt shingle roofs which do not have advanced deterioration problems (leaks, corrosion of flashings, rotten wood, etc.). (If there are leaks without structural consequences, these can usually be cured with the two-coat system, or, if around roof penetrations, such as vents, skylights, chimneys, etc. with multiple stripe coats during the original coating or subsequently.) With a top coating every ten years at about half the cost of the original two-coat roof, such a roofing system lasts forever. It should be part of the arsenal of the My Florida Safe Home concept.