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SEP 21 1993  
CLERK OF THE BOARD

AN ORDINANCE AMENDING COLLIER COUNTY CONSTRUCTION CODE ORDINANCE NO. 92-70, THE COLLIER COUNTY CONSTRUCTION CODE ORDINANCE, BY DELETING APPENDIX "J" IN ITS ENTIRETY AND BY AMENDING SECTION 1205 WIND LOADS OF CHAPTER 12 MINIMUM DESIGN LOADS BY ADDING SPECIFIC REQUIREMENTS FOR HURRICANE RESISTANT CONSTRUCTION METHODS FOR ONE AND TWO FAMILY DWELLINGS INCLUDING, BUT NOT LIMITED TO TIE BEAMS, MASONRY CONSTRUCTION, FRAME CONSTRUCTION, TRUSS DESIGN AND ATTACHMENTS, SHINGLE ROOFS, TILE ROOFS, METAL ROOFS, WINDOWS AND DOORS, COMPONENT SYSTEMS, METAL BUILDINGS, AND ALUMINUM STRUCTURES; BY INCORPORATING THE AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD 7 (ASCE-7); PROVIDING FOR CONFLICT AND SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Board of County Commissioners of Collier County, Florida adopted the Collier County Construction Code Ordinance, No. 92-70, on October 12, 1992; and

WHEREAS, the State of Florida and the Eastern Coast of the United States in recent years have experienced hurricane-type storms that have resulted in extensive damage to structures in the path of the storm; and

WHEREAS, Collier County staff, local architects, engineers, members of the Development Community, the Collier County Contractors Association and the Development Service Steering Committee ("Committee") have monitored each storm after it has occurred through a hurricane assessment team to find the causes of damages; and

WHEREAS, after many meetings and discussions, it has been determined by the Committee that some revisions and additions to the adopted Collier County Construction Code, Ordinance No. 92-70, are required to provide additional strength and safety to structural components that were most vulnerable and most consistently damaged after each storm; and

WHEREAS, the Committee has determined that additional inspections should be required during construction of all structures to insure compliance with Chapter 1205 and the American Society of Civil Engineers Standard 7 (ASCE-7); and

WHEREAS, Board of County Commissioners has determined that the Collier County Construction Code Ordinance, No. 92-70,

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Words underlined are added; words ~~struck-through~~ are deleted.

should be amended by deleting Appendix J and amending Chapter 1205 thereof to better protect the health, safety, welfare, common interest and convenience of the citizens, visitors and residents of Collier County Florida.

NOW, THEREFORE BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF COLLIER COUNTY, FLORIDA that:

SECTION ONE. AMENDMENT TO SECTION ONE OF COLLIER COUNTY ORDINANCE NO. 92-70 (DELETION OF APPENDIX "J"; INCLUSION OF ASCE-7).

Section One of Collier County Ordinance No. 92-70 is hereby amended to read as follows:

SECTION ONE:

The "Standard Building Code 1991 Edition" including Appendices A, C, J, and M, the "Standard Plumbing Code 1991 Edition" including Appendices B, C, D, G, I, J, and K, the "Standard Mechanical Code 1991 Edition" the "Standard Gas Code 1991 Edition" including Appendix A, and including those subsections of ASCE-7 specifically referenced herein. as published by the Southern Building Code Congress International Inc., and as amended herein, are adopted by reference as the "Collier County Construction Code" to protect the health, safety, welfare, common interest and convenience of the citizens, visitors and residents of Collier County, Florida.

SECTION TWO. AMENDMENTS TO SECTION TWO OF COLLIER COUNTY ORDINANCE NO. 92-70.

The first sentence of Section Two of Collier County Ordinance No. 92-70 is hereby amended to read as follows:

SECTION TWO:

The "Standard Building Code, 1991 Edition" including Appendices A, C, J and M, is hereby amended as follows:

SECTION THREE. AMENDMENT ADDING LANGUAGE TO SECTION TWO OF COLLIER COUNTY ORDINANCE NO. 92-70.

The following paragraph is added to Section Two of Collier County Ordinance No. 92-70 to appear immediately following the first sentence of Section Two referenced hereabove:

This code refers to typical construction methods which shall be used to comply with criteria established by Collier County. Other materials or procedures may be presented to the

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Collier County Development Service, for approval, if certified by a Florida Registered Architect or Florida Registered Engineer.

Collier County Building Officials may require engineering calculations, assembly drawings or testing from a certified testing laboratory, before approval is given.

SECTION FOUR: AMENDMENT DELETING APPENDIX J HURRICANE REQUIREMENTS APPEARING IN COLLIER COUNTY ORDINANCE NO. 92-70.

Appendix J as referenced and appearing in Collier County Ordinance No. 92-70 is hereby deleted in its entirety.

~~APPENDIX J - HURRICANE REQUIREMENTS~~

~~J102-Masonry Construction~~

~~J102.1 Exterior Walls and Beams~~

~~J102.1.2 - A reinforced tie beam shall be placed around the perimeter at each floor and roof level on exterior walls of masonry units. Reinforcing shall be not less than 4 #5 reinforcing bars. Reinforcing bar placement shall be two bars top and two bottom of beam, the minimum thickness of concrete cover to the reinforcing steel shall be 1 1/2 inches.~~

~~Beam size shall not be less than 6 inches wide by 16 inches deep. Beam shall be poured with minimum 3000 pound per square inch concrete mix. Openings below this minimum tie beam 5 feet or less in load bearing walls are allowed without additional reinforcement. Openings 11.5 feet are permitted in non-load bearing walls and nine (9) feet hip supporting end walls. Every opening twelve (12) feet and over shall have the blocks on each side of the opening filled with concrete and reinforced with 4 #5 bars. When the tie beam is interrupted, the block shall be filled with poured concrete 2 cells back from the termination, both cells shall be reinforced with 4 #5 bars. Vertical reinforcing bars shall run~~

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~~from the footing steel to the tie beam steel.~~

J102.1.3 ~~Walls in all buildings (except one and two family residences) of non-reinforced masonry construction, hollow masonry units, masonry bonded walls and vanity walls shall not exceed 144 square feet without approved vertical and horizontal support where the nominal wall thickness is eight (8) inches and units are laid in Type M, S, or N mortar. Such walls with a nominal thickness of 12 inches and laid in Type M, N, or S mortar shall not exceed 192 square feet without approved vertical and horizontal support.~~

J102.1.5 ~~R-3 occupancy stem wall construction shall comply with all of the aforementioned requirements.~~

J102.1.7 ~~An optional bond beam with precast lintels shall be permitted in lieu of a formed tie beam. Only an approved engineered bond beam system will be permitted. Completed work sheets indicating calculation for the precast lintels must accompany the permit application or appear on the drawing.~~

~~Note: Other Collier County Ordinance addressing these topics are; the Flood Ordinance and the Coastal Building Zone Ordinance.~~

#### ~~J103 Wood Construction~~

##### ~~J103.1 Fasteners and Connectors~~

J103.1.3 ~~Fasteners and connectors shall be hot-dipped galvanized. From the coastline to U.S. 41, connectors shall have a minimum galvanized coating of 1.5 oz. per sq. ft. of steel or painted after installation.~~

##### ~~J103.2 Roof Construction-Rafters~~

~~All such members shall be securely fastened at the ridge and the exterior walls with approved~~

~~hurricane anchors or clips.~~

SECTION FIVE. AMENDMENT TO SECTION 1205 WIND LOADS OF CHAPTER  
12 MINIMUM DESIGN LOADS OF COLLIER COUNTY  
ORDINANCE NO. 92-70.

Section 1205 Wind Loads of Chapter 12 Minimum Design Loads  
of Collier County Ordinance No. 92-70 is amended by adding the  
following:

1205.7 - Foundations

All floors supported by beams & columns such as  
piles or piers shall require engineer or architect design and  
certification.

1205.8 - Masonry Construction

1205.8.1 - Exterior Walls and Beams

1205.8.2 - Exterior walls constructed of masonry units shall be  
not less than a nominal thickness of 8 inches. In hollow  
masonry unit construction, unit cells shall be reinforced with  
at least one No. 5 bar at all corners, poured solid with  
concrete. Such reinforcing shall be properly anchored into the  
footing and tie beam.

- (1) All 8" block masonry walls with openings greater  
than six feet shall have a #5 vertical bar at each  
side of opening.
- (2) Openings 8'-0" or greater shall require 2-#5  
vertical bars at each side of opening.
- (3) All vertical dowels shall be embedded into the  
concrete foundation to a minimum depth of 8".
- (4) Dowel shall have a 6"-90 degree bend.
- (5) All block cells where verticals are placed shall be  
filled with a minimum of 3,000 lb. per square inch  
concrete mix.
- (6) Dowels shall be provided in the foundation where  
vertical reinforcement is required.
- (7) Reinforcement bars shall be minimum grade 60.  
Minimum lap splice is 48 Bar diameters.
- (8) Horizontal masonry reinforcement is required in all  
8" block masonry walls over 10'-0" high.
- (9) Where required, reinforcement shall be placed at

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every third course.

(10) Eight inch block masonry walls shall not exceed 8'-0" feet in length without vertical reinforcement nor shall the wall exceed 14'-0" in height at gable ends.

(11) Walls in all buildings of non-reinforced 8" hollow masonry units shall not exceed 96 square feet without approved vertical and horizontal supports.

1205.9 - Reinforced Tie Beams

All formed and poured beams and tie beams shall be constructed in accordance with IS.13,14, and 15.

All beams exceeding span tables provided in IS-13,14,15, and 16 shall be designed and sealed by an architect or engineer.

1205.9.1 - An optional bond beam with precast lintels shall be permitted in lieu of a formed tie beam. Only an approved engineered bond beam system will be permitted. Completed work sheets indicating calculations of uplift requirements on the beam and load calculations for the precast lintels must accompany the permit application or appear on the drawings.

Note: Other Collier County Ordinances addressing these topics are: the Flood Ordinance and the Coastal Building Zone Ordinance.

(1) Reinforced tie beam shall be placed around the perimeter at each floor and roof level on exterior walls of masonry units.

1205.9.2 - Tie Beam and Columns

(1) Block gable ends shall be a maximum of 12'-0" high without intermediate tie beams.

(2) All structural columns supporting roof trusses spanning more than 30' or where the vertical loads are 5,000 lbs. or more must be designed by an engineer or architect or have product certification.

(3) Minimum size block columns shall be 8"x12" with four #4 reinforcement bars tied with #2 tie 8" on

center from footer to tie beam.

- (4) Minimum cast concrete columns shall be 8"X8" W/4 #4 bars and #2 ties @ 8".
- (5) All columns shall be designed for uplift as well as vertical and horizontal reaction loads.
- (6) All tie beams shall require a minimum of two outside corner bars with a minimum lap of 24" for bars of 5/8" diameter or less. Bars greater than 5/8" shall be lapped a minimum of 40 bar diameters or require lap splice as designed by an engineer or architect.

1205.9.3 - In solid masonry unit construction, the tie beam shall be anchored to the footing in an approved manner.

1205.10 - Roof Construction - Rafters

Where conventional wood framing is implemented, rafters must be sized to accommodate all assigned roof and reaction loads to resist winds of 110 MPH.

- (1) Sizing of rafters must be in accordance with National Forest Products Association Span Tables.
- (1a) Rafter sizing must take into account wood species and grade of lumber.
- (2) Rafters, spans, spacing, uplifts and horizontal loads are provided on attachment IS-17 and IS-18 respectively.
- (2a) Design parameter for attachment IS-17 and IS-18.
  - (a) Wind Velocity - 110 MPH
  - (b) Exposure Category - C
  - (c) Building Category - I
  - (d) Force Coefficients - Enclosed Building
  - (e) Tributary Area - 32 SF
  - (f) Roof Slopes 2/12 - 7/12 (10° - 30°)
  - (g) Mean Roof Height - 12 Feet
  - (h) Roofing Shingles
  - (i) Two Point Bearing
- (3) Collar beams are required on every rafter at the upper third of the roof. (See IS 12)

(4) Minimum size ridge board shall be no less in depth than the cut end of the rafters attached to it and no less than 2" in thickness.

(5) All such members shall be securely fastened to the exterior walls with approved hurricane anchors or clips.

1205.11 - Truss Design and Attachments

(1) Where trusses are spanning more than 30' and are extended over exterior walls and finally resting on an exterior beam, the exterior wall must be designed as a bearing wall to support the trusses. Foundation footers will be required. Trusses shall be designed with three point bearing. All beams shall be designed to accommodate truss loads.

(2) Attachment of trusses to beams shall be anchored to accommodate all assigned uplifts, reaction and horizontal loads.

(3) Anchors and straps shall be installed per manufacturers specification.

(4) Gable exterior zones shall be identified by truss manufacturer. See Exterior Zone Nailing Schedule attachment IS-1.

(5) Minimum design load for trusses shall be as follows:

TLL - 20 PSF

TDL - 20 PSF

BLL - 0 PSF

BDL - 10 PSF

(6) Defl. L/160.

(7) Duration loading factors of 25% for gravity or 33% for wind may be applied.

1205.11.1 - Gable Ends/Roof Sheathing

(1) See attachments IS-1 thru IS-3 for nailing and bracing gable ends.

(2) Exterior end walls on wood framing adjacent to a cathedral ceiling shall be balloon framed.

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