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DEPARTMENT OF FINANCE  
REAL PROPERTY MANAGEMENT  
Division of Construction Management**

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October 21, 2020

**TO: PUBLIC UNIVERSITIES, THE ALABAMA COMMUNITY COLLEGE SYSTEM,  
FACILITY MANAGERS, ARCHITECTS, AND ENGINEERS**

**FROM: MICKEY ALLEN, ASSISTANT FINANCE DIRECTOR** *M.A.*  
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**FRANK BARNES, DIRECTOR** *Frank Barnes*  
**ALABAMA DIVISION OF CONSTRUCTION MANAGEMENT (DCM)**

**SUBJECT: UPDATED GUIDANCE ON MANDATORY TORNADO STORM SHELTERS  
(HURRICANE SHELTERS WHERE APPLICABLE) IN NEW BUILDINGS  
OF PUBLIC UNIVERSITIES AND COLLEGES (ACT 2012-554)**

DCM's July 10, 2012 memo concerning Act 2012-554 is superseded by this October 21, 2020 bulletin which includes updated code references, terms, and details. Pursuant to Act 2012-554, any contract awarded on or after August 1, 2012, for a new building containing classrooms or dorm rooms constructed at a public 2-year or 4-year institution of higher education must include a DCM approved tornado storm shelter or hallway. DCM has adopted the *ICC/NSSA Standard for the Design and Construction of Storm Shelters (ICC 500 -2014)* as the minimum building code for tornado storm shelters located in these facilities.

The requirements for a DCM approved tornado storm shelter shall be included in any new building that is constructed as an independent facility that includes any classroom or dormitory space. Renovations, additions to existing buildings, or auxiliary buildings that do not contain classroom or dormitory spaces are not considered new buildings. Any determination as to whether or not a new facility is considered a new building under this Act shall be made by the DCM Director.

**Contracts awarded on or after August 1, 2012 must comply with Act 2012-554.** Plans for new buildings with classrooms or dorm rooms that have previously been submitted and approved by DCM are not exempt from compliance with this law. For plans approved by DCM prior to this Act, revised plans or addenda incorporating ICC 500 code-compliant storm shelters must be submitted to DCM if the contracts are awarded on or after August 1, 2012.

This bulletin is issued to provide owners, architects, and engineers additional guidance on the requirements and interpretation of the ICC 500 for construction projects subject to Act 2012-554.

**1. Combination Storm Shelters.** Combination storm shelters shall comply with the ICC 500 requirements for both tornado and hurricane storm shelters.

## 2. Occupant Load (ICC 500, Para. 501.1.1).

**A. New Buildings with Classroom Space.** Classroom space includes any room designated for general classroom instruction where a student may earn credit hours or equivalent certifications. Auxiliary support areas that are not used for instructing students such as research labs, offices, etc. do not have to be included in the occupant load determination of the storm shelter. The student occupant load for classroom spaces shall be calculated as follows:

- |                                   |                           |
|-----------------------------------|---------------------------|
| i. Typical classroom space        | 1 student per 30 SF gross |
| ii. Classrooms with fixed seating | 1 student per seat        |
| iii. Laboratory classroom space   | 1 student per 50 SF net   |

The total occupant load for the storm shelter shall include the student occupant load plus an additional 10% for faculty and administration. Fractions or portions shall be rounded up to whole numbers.

**B. New Buildings with Dormitory Space.** Each new dormitory owned in whole or in part and operated under the public 2-year or 4-year institution of higher education shall include a storm shelter or storm shelters of sufficient size to accommodate the resident student occupant load for the building. The occupant load shall be determined by the maximum number of beds provided plus an additional 10% for administration and guests. Auxiliary support areas such as common areas, kitchens, laundry rooms, etc. do not have to be included in determining the occupant load. Fractions or portions shall be rounded up to whole numbers.

**C. Mixed Use Buildings.** DCM approved tornado storm shelters are required to protect students who are being instructed or housed at a public 2-year or 4-year institution of higher education. At a minimum, storm shelters must be adequately sized to protect students who are being instructed in classrooms in new buildings or living in new university operated dormitory housing. Where classroom space and/or dormitory space is included in a new building that includes other uses, it is the responsibility of the public 2-year or 4-year institution of higher education to determine if additional occupants may require use of the storm shelter and to increase the size of the storm shelters for the additional occupants or to provide access to other storm shelters.

**D. Mandatory vs. Optional Tornado Storm Shelters.** DCM approved tornado storm shelters are mandatory for any new building that includes classroom or dorm rooms. However, if a public 2-year or 4-year institution of higher education chooses to provide storm shelters in other buildings or to provide additional storm shelters that exceed the mandatory requirements, the additional storm shelters must also comply with ICC 500.

**3. Storm Shelter Design Information (ICC 500, Para. 107.2.1 and 107.2.6).** The plan submittal shall include a Storm Shelter Plan (similar to the Life Safety Plan) with the design information required per these ICC 500 sections. In addition, the storm shelter plan shall include the maximum number of occupants (seating/standing and wheelchair bound), the number and location of required toilet and handwashing facilities (if applicable), the maximum travel distance to the shelter and accessible route, location of emergency escape openings, locations of all required signage, location of fire extinguishers and first aid kits (if applicable), and indicate the 2-hour fire barriers (see 601.1).

- 4. Tornado Wind Speed Determination (ICC 500, Para. 304.2).** A state map with counties is attached (Attachment A) that approximates the tornado shelter design wind speeds as illustrated in the ICC 500, Chapter 3, Figure 304.2 (1). The map is provided as a guide and the design professional must use their professional judgment when determining the appropriate design criteria. The design wind speed must be indicated on the Storm Shelter Plan and on the required storm shelter signage.
- 5. Hurricane Wind Speed Determination (ICC 500, Para. 304.2).** A state map with counties is attached (Attachment B) that approximates the hurricane shelter design wind speeds as illustrated in the ICC 500, Chapter 3, Figure 304.2 (2). The map is provided as a guide and the design professional must use their professional judgment when determining the appropriate design criteria. The design wind speed must be indicated on the Storm Shelter Plan and on the required storm shelter signage.
- 6. Labeling of Storm Shelter Openings (ICC 500, Para. 108.2).** All storm shelter-rated assemblies, including but not limited to door opening assemblies, shall include the applicable rating label on each component. The labels shall be factory applied and clearly visible. Labels shall be raised or embossed on metal labels or stamped into metal frames. Plastic or paper labels are not acceptable. Verify the opening protective, glazing or glazing systems used for the storm shelter area have been successfully tested for the identified hazard criteria for tornado. Verify that the testing method complies with ICC 500. Label required: the labels or stamps applied to frames, etc., must be provided by a manufacturer that has had their products tested in accordance with ICC 500 Chapter 8. Product specimens shall have passed the testing requirements of ICC 500 Chapter 8 as conducted by a third party, nationally recognized accredited and approved testing laboratory. The testing laboratory shall maintain ongoing periodic inspections of the products it has tested to confirm continued compliance. See Chapter 2 of DCM's Manual of Procedures for detailed requirements.
- 7. Labeling of Fire Barriers (ICC 500, Para. 601.1).** All 2-hour fire barriers shall be permanently identified with signs or stenciling in accordance with the applicable building code. See Chapter 2 of DCM's Manual of Procedures for detailed requirements.
- 8. Required Signage:**
  - A. Design Information Shelter Signage. (ICC 500, Para. 108.1).** In addition to the type of shelter, name of builder or manufacturer and the design wind speed, the shelter sign shall also include the maximum occupant load. An example of the required design information signage is attached (Attachment C).
  - B. Community Shelter Location Signage (ICC 500, Para. 504.1.1).** Every entrance must include a tactile and visual sign mounted on or adjacent to the door indicating "Tornado Storm Shelter", "Hurricane Storm Shelter" or "Tornado/Hurricane Storm Shelter" (or "Combination Storm Shelter"). The appropriate symbol(s) may be substituted for the wording. An example of the required location shelter signage is attached (Attachment D).
  - C. Community Shelter Identification Signage (ICC 500, Para. 504.1.2).** A sign depicting the general location of the storm shelter(s) and access ways must be provided adjacent to the access doors on the inside of each storm shelter, in the office of the building facility's manager (if provided) and in the designated storm shelter manager's area in the storm shelter (if provided). Where no building facility manager's office is provided, the sign shall be located in the central administration area for the building. The sign should be located in a clearly visible location.

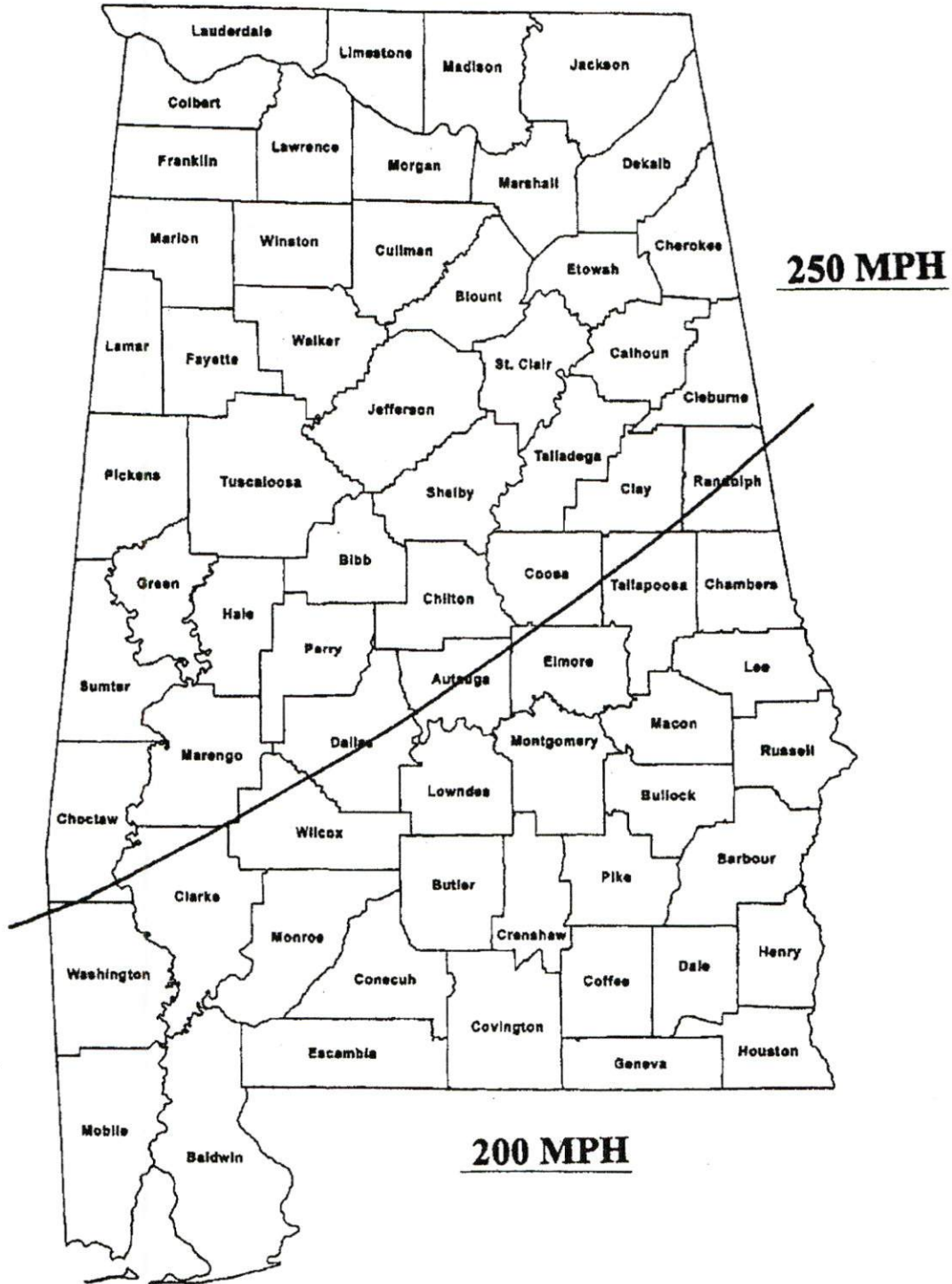
- 9. Peer Review (ICC 500, Para. 106.1.1).** Third party peer reviews are required with the final construction document submittal to DCM Plan Review and for final approval. See ICC 500-2014 Section 106.1.1. Peer reviews are required for the requirements listed in chapters 3, 5, 6 and 7. Note that issues which may be raised by the peer reviews must be addressed prior to submittal of final documents. Peer reviews must be sealed, (signed and dated as may be required) by design professionals (architects, mechanical, electrical and structural engineers) licensed to practice in the State of Alabama.
- 10. Mandatory Design Professional's Statement (ICC 500, Para. 106.4).** See attached DCM Form B-14: Certification of Structural Observations for instructions concerning its inclusion in specifications for the Final Plan Review submittal to DCM. Provide a completed copy of the form to the DCM Inspector at Final Inspection. The original completed form, signed and sealed by the architect or structural engineer of record, must be submitted as an attachment to the Certificate of Substantial Completion.
- 11. Mandatory Contractor's Statement (ICC 500, Para. 107.3.3).** See attached DCM Form C-17: Contractor's Statement of Responsibility for Construction of Tornado Storm Shelter (Hurricane Shelter Where Applicable) for instructions concerning its inclusion in specifications for the Final Plan Review submittal to DCM. The form must be completed by the contractor and submitted to the DCM Inspector at the pre-construction conference. A copy of the Quality Assurance Plan prepared by the design professional must be attached to the Contractor's Statement of Responsibility.
- 12. Special Inspections (ICC 500, Para. 107.2.4).** A list of Special Inspections required for the project must be submitted to the DCM Inspector at the Pre-Construction Conference.
- 13. Location of Tornado Storm Shelters.** It is highly recommended that storm shelters be adequately dispersed throughout the building to minimize travel times and located within the same structure when possible to avoid travel outside the building during inclement weather. The ideal travel time is 5-10 minutes and the maximum recommended travel time should be no more than 15 minutes. The travel time should consider the time required to notify students and faculty and to travel to the storm shelter.
- 14. Emergency Communication.** It is recommended that storm shelters include some form of reliable emergency communication. Cellular phone communication is not considered reliable since cell towers may be affected by a storm and/or the volume of calls.

If you should have any questions, please contact the DCM Plan Review Division at 334-242-4082 or [planreview@realproperty.alabama.gov](mailto:planreview@realproperty.alabama.gov).

Cc: Jimmy Baker, Chancellor, Alabama Community College System

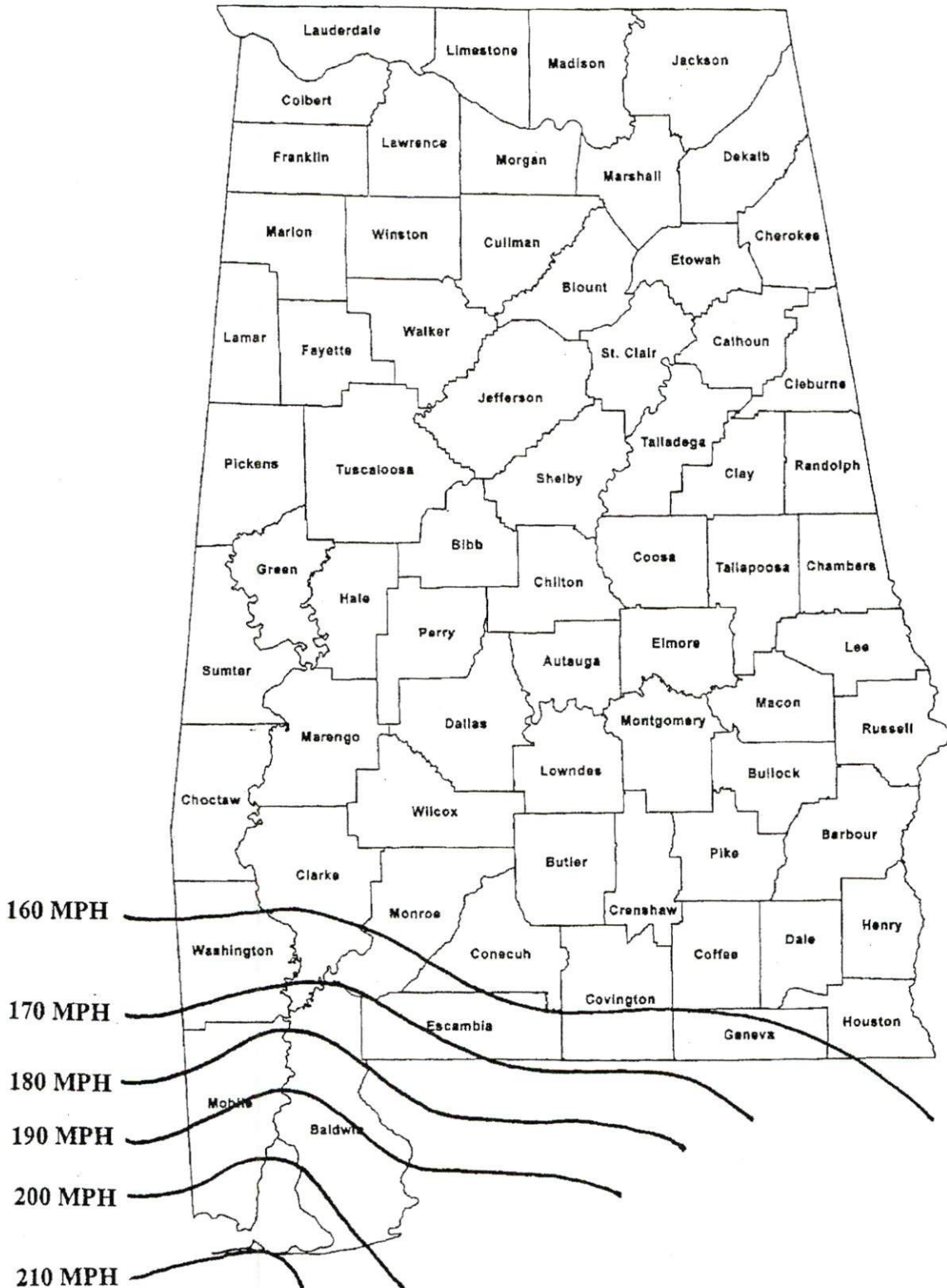
# ATTACHMENT A

## STATE MAP WITH COUNTIES SHOWING APPROXIMATE TORNADO WIND SPEED ZONES (Refer to ICC 500, Figure 304.2(1) for official map)



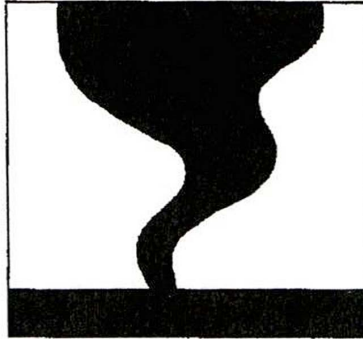
# ATTACHMENT B

## STATE MAP WITH COUNTIES SHOWING APPROXIMATE HURRICANE WIND SPEED ZONES (Refer to ICC 500, Figure 304.2(2) for official map)





**ATTACHMENT C  
DESIGN INFORMATION SHELTER SIGNAGE**



**TORNADO STORM SHELTER**

\_\_\_ MPH STORM SHELTER DESIGN WIND SPEED (3-SECOND GUST)

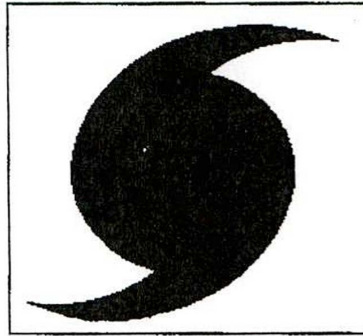
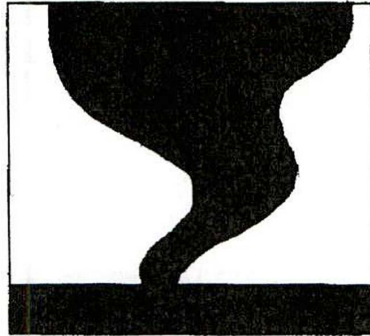
MISSILE IMPACT RESISTANCE:

\_\_\_ LBS. 2 X 4 @ \_\_\_ MPH (HORIZONTAL)

\_\_\_ LBS. 2 X 4 @ \_\_\_ MPH (VERTICAL)

STORM SHELTER MANUFACTURER/BUILDER \_\_\_\_\_

MAXIMUM OCCUPANT LOAD \_\_\_\_\_



**COMBINATION STORM SHELTER**

\_\_\_ MPH STORM SHELTER DESIGN WIND SPEED (3-SECOND GUST)

MISSILE IMPACT RESISTANCE:

\_\_\_ LBS. 2 X 4 @ \_\_\_ MPH (HORIZONTAL)

\_\_\_ LBS. 2 X 4 @ \_\_\_ MPH (VERTICAL)

STORM SHELTER MANUFACTURER/BUILDER \_\_\_\_\_

MAXIMUM OCCUPANT LOAD \_\_\_\_\_





DCM (BC) No. \_\_\_\_\_

# CERTIFICATION OF STRUCTURAL OBSERVATIONS

for

Project Name: \_\_\_\_\_

Owner Entity: \_\_\_\_\_

Contractor Company: \_\_\_\_\_

I \_\_\_\_\_, do hereby verify that I have personally conducted the visual  
Design Professional  
observations of the construction of the structural system for conformance to the approved construction documents for the referenced project. The visual observations of the structural systems were personally conducted by me at all significant construction stages and at the completion of the construction of the structural system. To the best of my knowledge, all structural deficiencies have been resolved except as noted below:

Signed and sealed on this date, \_\_\_\_\_, 20 \_\_\_\_.

Design Professional's Seal:

\_\_\_\_\_  
Architectural / Engineering Firm

\_\_\_\_\_  
Signature of Architect or Structural Engineer of Record

\_\_\_\_\_  
Print Name

**Specifications:** This form must be included in the project manual submitted to DCM for Final Plan Review for:

- All new public K-12 schools, awarded after July 1, 2010, with tornado storm shelters as required by Act 2010-746.
- All public K-12 additions and renovations which are required to contain tornado storm shelters by the International Building Code, Section 423.
- All private K-12 new schools, additions and renovations as required by the International Building Code, Section 423.
- All new buildings containing classrooms or dorm rooms on the grounds of all public 2-year or 4-year institutions of higher education, statewide, awarded on or after August 1, 2012, as required by Act 2012-554.

**Submittal of Form:** Provide a copy of the completed form to the DCM Inspector at Final Inspection. The original completed form, signed and sealed by the architect or structural engineer of record, must be included as an attachment to the Certificate of Substantial Completion submitted to DCM for:

- All new buildings constructed on the grounds of new public K-12 schools awarded after July 1, 2010.
- All new buildings containing classrooms or dorm rooms constructed on the grounds of public 2-year or 4-year institutions of higher education awarded on or after August 1, 2012. **EXCEPTION:** For ACCS projects started on or after August 1, 2021 (for which DCM is not inspecting the entire project): Provide the original completed form, signed and sealed by the architect or structural engineer of record, to the DCM Inspector at Final Inspection of Storm Shelter.

DCM (BC) No. \_\_\_\_\_

**CONTRACTOR'S STATEMENT OF RESPONSIBILITY FOR  
CONSTRUCTION OF TORNADO STORM SHELTER  
(HURRICANE SHELTER WHERE APPLICABLE)**

Project Name: \_\_\_\_\_

Owner Entity: \_\_\_\_\_

Architectural/Engineering Firm: \_\_\_\_\_

Contractor Company: \_\_\_\_\_

I \_\_\_\_\_, acknowledge that I am responsible to the Owner, the Alabama  
General Contractor  
Division of Construction Management, the Alabama Community College System or the State Department  
of Education as applicable, and the Architect/Engineer for the construction of the main wind-force  
resisting system and any other components listed in the **attached Quality Assurance Plan (QAP)**.

I acknowledge that I am aware of the special requirements contained in the QAP.

I certify that control will be exercised to obtain compliance with the construction documents. The  
procedures for exercising control shall be as listed below:

Control Procedure	How Reported	Distributed To	Distribution Frequency

(Attach additional pages if needed)

Furthermore, the following persons will be responsible for exercising control in accordance with the QAP. Any changes to the persons listed below will be coordinated with the Owner a minimum of 3 calendar days in advance of the change. The Owner shall provide written objections to the changes within 10 calendar days. No response shall be deemed acceptance.

Name of Person	Responsibility for QAP

Signed on this date, \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Contractor Company

By: \_\_\_\_\_  
Signature of Contractor

Name and Title: \_\_\_\_\_

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- All new public K-12 schools, awarded after July 1, 2010, with tornado storm shelters as required by Act 2010-746.
- All public K-12 additions and renovations which are required to contain tornado storm shelters by the International Building Code, Section 423.
- All private K-12 new schools, additions and renovations as required by the International Building Code, Section 423.
- All new buildings containing classrooms or dorm rooms on the grounds of all public 2-year or 4-year institutions of higher education, statewide, awarded on or after August 1, 2012, as required by Act 2012-554.

**Submittal of Executed Form:** The completed and signed form must be submitted to the DCM Inspector at the pre-construction conference for:

- All new buildings to be constructed on the grounds of new public K-12 schools awarded after July 1, 2010.
- All new buildings containing classrooms or dorm rooms to be constructed on the grounds of all public 2-year or 4-year institutions of higher education awarded on or after August 1, 2012.