



STATE OF ALABAMA
BUILDING COMMISSION

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July 10, 2012

**TO: PUBLIC UNIVERSITIES AND COMMUNITY COLLEGE SYSTEMS,
ARCHITECTS AND ENGINEERS**

**FROM: KATHERINE LYNN, DIRECTOR
ALABAMA BUILDING COMMISSION** *Katherine Lynn*

**SUBJECT: MANDATORY SAFE SPACES IN NEW COLLEGE AND UNIVERSITY
BUILDINGS (ACT 2012-554)**

On May 23, 2012, Governor Robert Bentley signed House Bill 427 enacting a requirement that any new 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 must include a Building Commission approved safe space or hallway. Pursuant to this act (Act 2012-554), the Building Commission is adopting the *ICC/NSSA Standard for the Design and Construction of Storm Shelters (ICC 500-2008)* as the minimum building code for safe spaces located in these facilities.

The requirements for a Building Commission approved safe space 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 Director of the Alabama Building Commission.

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

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

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

2. **Occupant Load (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 and operated under the public 2-year or 4-year institution 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% increase 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.** Building Commission approved safe spaces are required to protect students that are being instructed or housed at a public 2-year or 4-year institution. 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 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 Safe Spaces.** Building Commission approved safe spaces are mandatory for any new building that includes classroom or dorm rooms. However, if a 2-year or 4-year institution 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 (2009 IBC, Section 423).

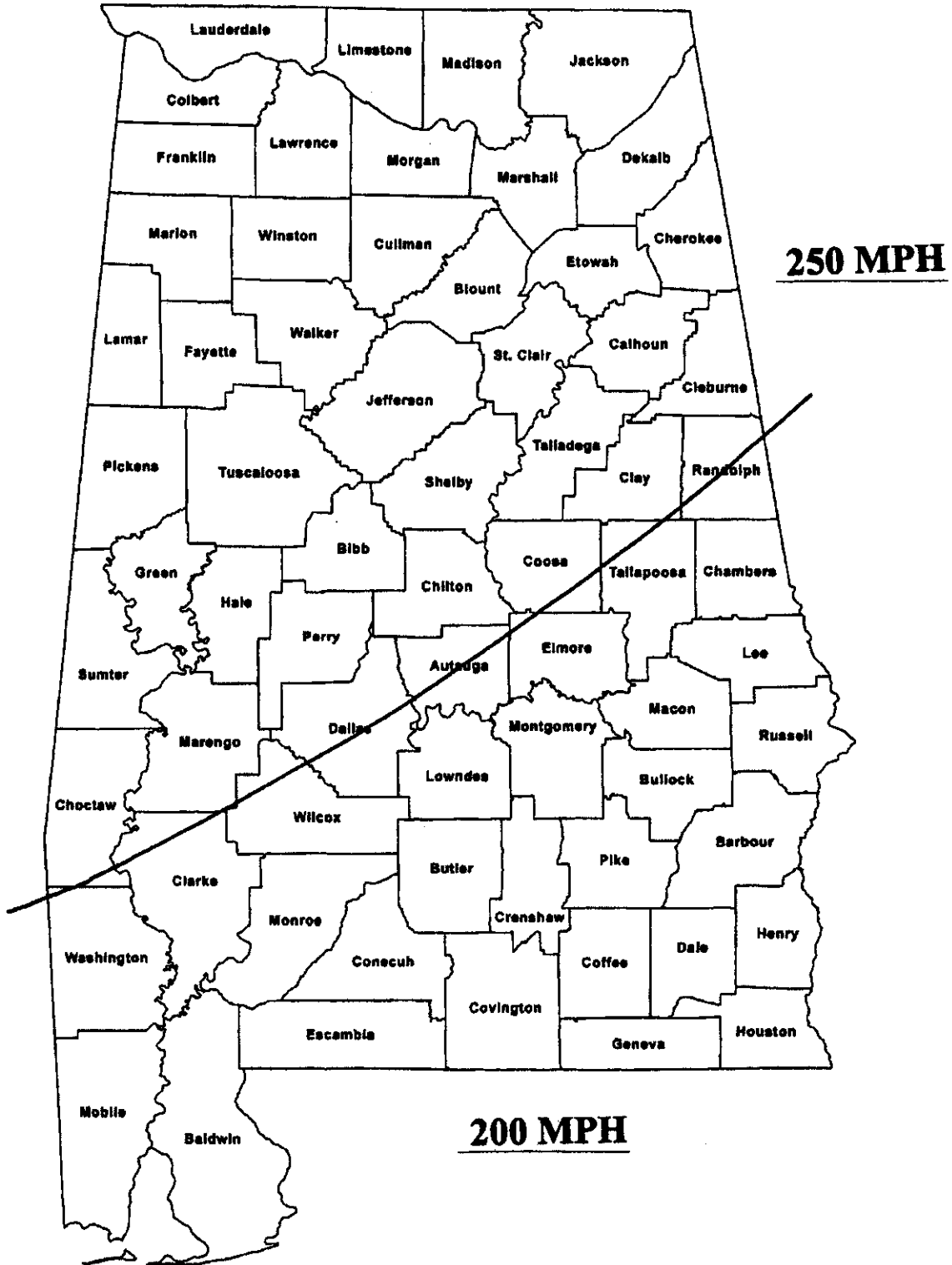
3. **Storm Shelter Design Information (Para. 107.2.1 and 107.2.6).** The plan submittal shall include a Storm Shelter Plan (similar to the Life Safety Plan) with the design information required per these ICC sections. In addition, the storm shelter plan shall include the maximum number of occupants (seating/standing 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 firewalls.
4. **Tornado Wind Speed Determination (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 (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 (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.
7. **Labeling of Fire Barriers (Para. 601.1).** All 2-hour fire barriers shall be permanently identified with signs or stenciling in accordance with the applicable building code.
8. **Required Signage:**
 - A. **Design Information Shelter Signage. (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 (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 (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, 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's manager 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. (Para. 106.1.1).** When the maximum occupant load of a storm shelter exceeds 300 occupants, the design professional must submit a letter from an independent structural engineer who has reviewed the construction documents for compliance with Chapter 3 – Structural Design Criteria. The letter must be stamped, signed and dated by the structural engineer and must be submitted with the Final Submittal.
10. **Mandatory Design Professional's Statement. (Para. 106.4).** The attached "Certification of Structural Observations" (Attachment E) must be completed by the architect or structural engineer of record and submitted to the Building Commission Inspector at the Final Inspection.
11. **Mandatory Contractor's Statement. (Para. 107.3.3).** The attached "Contractor's Statement of Responsibility" (Attachment F) must be completed by the contractor and submitted to the Building Commission Inspector prior to the start of construction. A copy of the Quality Assurance Plan as prepared by the design professional must be attached to the Contractor's Statement.
12. **Special Inspections. (Para. 107.2.4).** A list of Special Inspections required for the project must be submitted to the Building Commission Inspector at the Pre-Construction Conference.
13. **Location of Safe Spaces.** 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.

I understand that the new requirement for storm shelters will present some challenges both in design and implementation. However, I am confident that your commitment to implementing this important legislation will provide a positive and immediate impact on protecting the citizens of the State of Alabama and I appreciate your support. If you should have any questions, please feel free to contact me at (334) 242-4082.

ATTACHMENT A

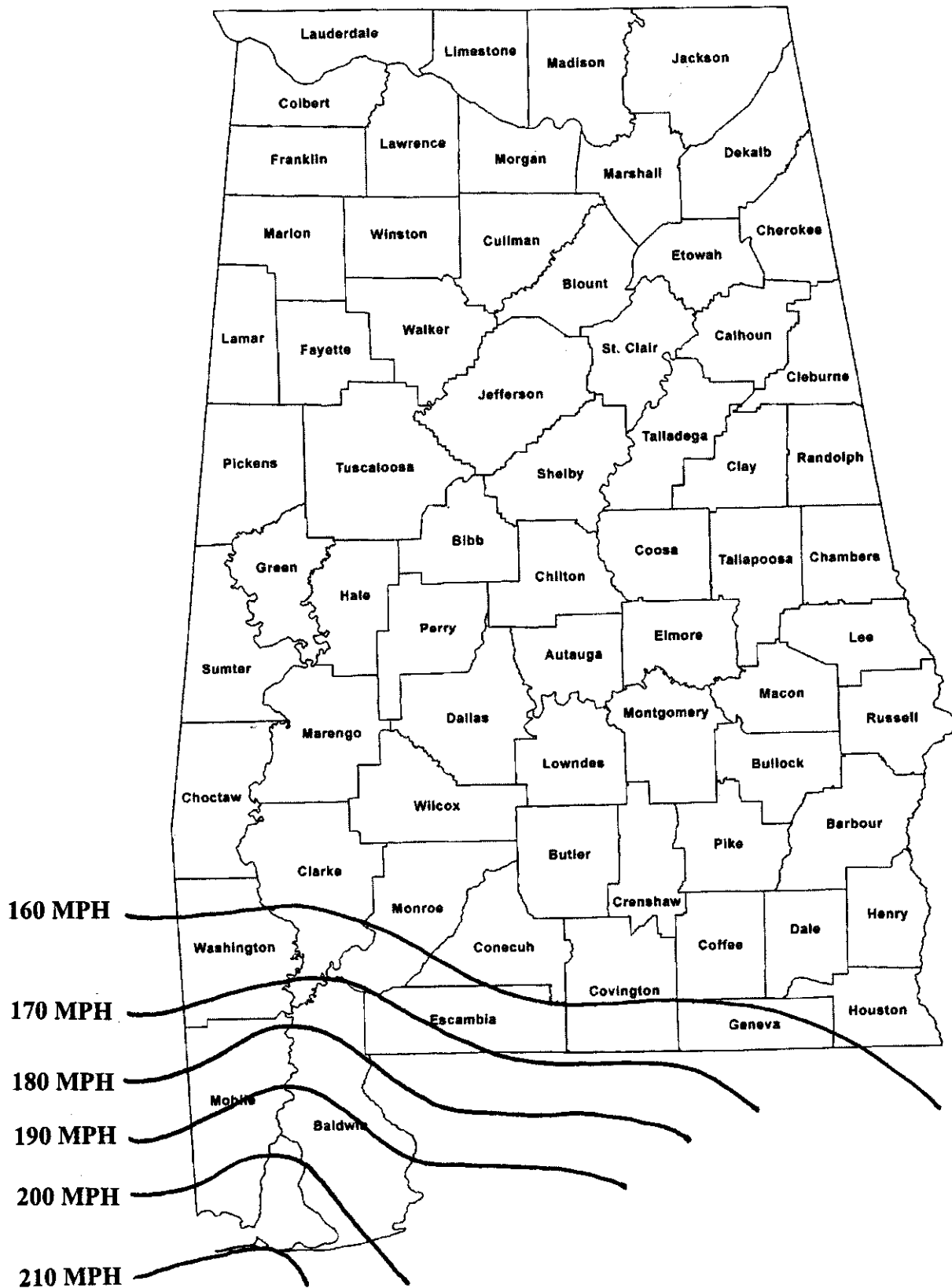
STATE MAP WITH COUNTIES SHOWING APPROXIMATE TORNADO WIND SPEED ZONES (Refer to ICC 500, Figure 304.2(1) for official map)



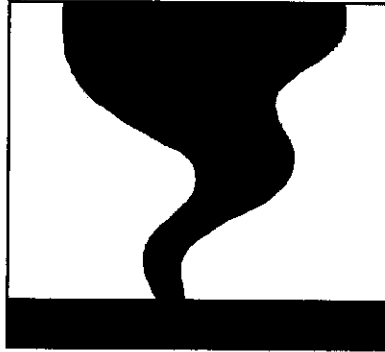
ATTACHMENT B

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)

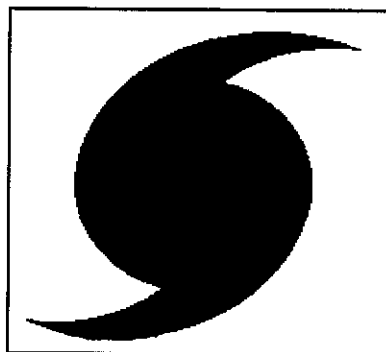
MISSILE IMPACT RESISTANCE:

___ 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 _____

This form is mandatory and must be attached to all Certificates of Substantial Completion for all new buildings containing class rooms or dorm rooms constructed on the grounds of a public 2-year or 4-year institution awarded after August 1, 2012.

ATTACHMENT E

B.C. # _____

CERTIFICATION OF STRUCTURAL OBSERVATIONS

for

Project Name _____

Owner _____

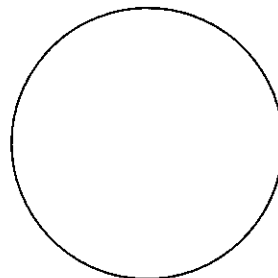
Contractor _____

I, _____, do hereby verify that I have personally
Design Professional

conducted the visual 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_____.

Architect or Structural Engineer of Record



Design Professional's Seal

This form is mandatory and must be executed prior to the start of construction for all new buildings containing class rooms or dorm rooms constructed on the grounds of a public 2-year or 4-year institution awarded after August 1, 2012.

ATTACHMENT F

B.C. # _____

Contractor's Statement of Responsibility for Construction of Safe Space

Project Name _____

Owner _____

Architect _____

I, _____, acknowledge that I am responsible to the
General Contractor

Alabama Building Commission, State Department of Education, Architect and Owner 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:

<u>Control Procedure</u>	<u>How Reported</u>	<u>Distributed To</u>	<u>Frequency of Distribution</u>
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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(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

This form is mandatory and must be executed prior to the start of construction for all new buildings containing class rooms or dorm rooms constructed on the grounds of a public 2-year or 4-year institution awarded after August 1, 2012.
within 10 calendar days. No response shall be deemed acceptance.

Name of Person	Responsibility for QAP

Signed and sealed on this date, _____, 20_____.

Contractor

By _____
Name and Title _____