



Fire Marshal Division

January 11, 2021

Graham Boyd
333 Fayetteville St.
Suite 225
Raleigh, NC 27601

**Re: Johnsonville Elementary School Addition
18495 NC 27 Hwy W.
Cameron, NC 28326**

Application Number BCOM2101-0001

To Whom It May Concern,

Thank you for submitting plans for the elementary school addition. The plans have been carefully reviewed by a qualified code enforcement official to examine for full compliance with the North Carolina Fire Prevention Code and all other fire protection regulatory documents. There are some items that were found during the plan review process that need to be addressed before a final inspection of the new facility can be given. These items are outlined and described below.

- **Automatic fire-extinguishing systems.**
 - A construction permit is required for the fire sprinkler system installation before any such work commences. Submit complete construction documents that include the hydraulic calculations for the system. The system shall also be designed consistent with the architectural design documents and specifications. Construction documents shall include detail as described in NFPA 13 standard for automatic sprinkler system installation. Contractor must obtain construction permit for the fire sprinkler system before commencement of any work.

- **Fire alarm construction permits.**
 - A construction permit is required for the fire alarm installation. Submit complete shop drawings consistent with the architectural design documents and specifications. Shop drawings shall include detail as described in Section 907.1.2 of the NC State Fire Code. Contractor must obtain the construction permit for the fire alarm system before commencement of any work.



- **Fire pump and related equipment.**
 - A construction permit is required for the installation of or modification to fire pumps and related fuel tanks, jockey pumps, controllers and generators. Submit complete construction documents consistent with the architectural design, specifications and NFPA 20 standard. Contractor must obtain the construction permit for the fire pump and related equipment before commencement of any work.

- **Private fire hydrants.**
 - A construction permit is required for the installation or modification of private fire hydrants. Contractor must obtain the construction permit for the private hydrants before commencement of any work.

- **Physical Address**
 - The physical address of the building shall be posted in a conspicuous place so that it can be seen on approach from the road, access road, and/or parking lot.
 - The numbers used to make up the physical address shall be at least 5 inches in height.

- **Knox Box**
 - A Knox Box secure key box shall be installed on the new building that houses all keys to all the doors within the building in which the fire department would need access to in the event of an emergency. <https://www.knoxbox.com/commercial-knox-boxes>
 - The box shall be mounted 48 – 60 inches in height. Coordinate exact location with the Fire Marshal’s Office staff.

- **Fire Flow (NFF)**
 - Provide a fire flow analysis for the building(s) and determined by an approved method. NC Fire Code Appendix B is acceptable method.
 - Private fire service water mains shall be installed according to NFPA 24. All fire protection water mains shall be inspected by a fire official before covering. A contractor’s underground flush and test certificate is required at time of fire official inspection.

- **Control room identification.**
 - All rooms containing controls for air conditioning equipment, sprinkler risers and valves, or other fire detection, suppression, or control elements shall be physically identified in terms of use (i.e., FACP Room, Electrical Room, Riser Room)



- **Stationary generators.**
 - Stationary generators and standby power generators required by the fire code shall be listed in accordance with UL 2200. Provide construction documents, specifications and details for the complete installation. A construction permit is required for the installation of a flammable/combustible liquids tank.
 - The generator shall be fully tested for acceptance in accordance with NFPA 110 and 111.

- **State of Compliance.**
 - Before requesting final approval of the installation, where required by the fire code official, the installing contractor shall furnish a written statement to the fire code official that the subject fire protection system has been installed in accordance with the manufacture's specifications and the appropriate installation standard. Any deviations from the design standards shall be noted and copies of the approvals for such deviations shall be attached to the written statement.

- **Fire Extinguishers**
 - Fire extinguishers shall be placed in approved locations as drawn by the code enforcement official on the approved plans.
 - The fire extinguishers provided shall have a minimum rating of 2A 10B:C and shall not be installed higher than 5 feet above the finished floor.
 - Fire extinguishers shall be serviced and tagged on a yearly basis by an authorized company.
 - A Class K fire extinguisher is required in the kitchen within 30ft. of the cooking equipment.
 - Provide fire extinguishers in all special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms.

- **Duct Smoke detectors.**
 - Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is required. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function in accordance with this code and the International Mechanical Code. Duct smoke detectors shall not be used as a substitute for required open area detection.



- **Acceptance tests.**
 - A complete acceptance test is required to be witnessed by a representative from the fire marshal's office in conjunction with the installing contractor for each of the following. Notify the fire marshal's office in advance to schedule a test. (910) 893-0743.
 - Visual Inspection of Underground Line (with proper restraints)
 - Hydrostatic Test and Flush of Underground Line
 - Above Ceiling Inspection of ALL pipe and fittings
 - Hydrostatic Test of ALL piping
 - Pump Certification Test
 - Flow Test of sprinkler/standpipe system
 - Standpipe Certification
 - 100 % test of Fire Alarm System
 - Fire and Smoke Damper Testing
 - Acceptance Test of Kitchen Ansul Fire Suppression System.
 - Emergency generator(s)

- **Record of completion.**
 - A record of completion in accordance with NFPA 72 verifying that the system has been installed in accordance with the approved plans and specifications shall be provided.

- **Temperature of pump room.**
 - Suitable means shall be provided for maintaining the temperature of the fire pump room above 40 degrees F.
 - Indicate on construction documents for the fire pump installation permit application.

- **Posting of occupant load.**
 - Before final occupancy of all assembly spaces within the school an occupant load posting is required to be displayed in a prominent location for any Gym, Auditorium, Dining Room, Stage, Library, Science classrooms and rooms exceeding 49 occupants.

- **Emergency escape and rescue (B).**
 - Emergency escape and rescue openings shall be provided in rooms where distance of travel to exits exceeds 150'.



- **Egress Convergence**
 - Where the *means of egress* from stories above and below converge at an intermediate level, the capacity of the *means of egress* from the point of convergence shall be not less than the largest minimum width or the sum of the required capacities for the *stairways* or *ramps* serving the two adjacent stories, whichever is larger.
- **Enclosures required**
 - Interior exit stairways shall be enclosed with fire barriers constructed in accordance with Section 707 of the International Building Code. Exit enclosures shall lead directly to the exterior of the building.
- **Vehicle Impact Protection**
 - **Posts.** Guard posts shall comply with all of the following requirements:
 - Constructed of steel not less than 4 inches (102 mm) in diameter and concrete filled.
 - Spaced not more than 4 feet (1219 mm) between posts on center.
 - Set not less than 3 feet (914 mm) deep in a concrete footing of not less than a 15-inch (381 mm) diameter.
 - Set with the top of the posts not less than 3 feet (914mm) above ground.
 - Located not less than 3 feet (914 mm) from the protected object.
 - **Other barriers.** Barriers, other than posts specified above, that are designed to resist, deflect or visually deter vehicular impact commensurate with an anticipated impact scenario shall be permitted where *approved*.

On the building plans, it was listed that the 2018 North Carolina Building Code was reference but it was also indicated on the life safety plan as the 2012 North Carolina Building Code referenced.

Please distribute these comments to any necessary and applicable persons involved in the design and construction of the building and systems specified within this letter. If you have specific questions or concerns we can be contacted at (910) 893-0742.

Thank you again for submitting plans for the elementary school addition. Please review the plans and adhere to any notes and alterations that were made in addition to the original drawings. These remarks are for the plans that were submitted and its original intent. These remarks do not apply if the original intent changes or what was submitted on the above date changes. If you have any questions, please do not hesitate to call this office.

Please schedule all fire inspections through the Fire Marshal's Office (910) 893-0742.



Again, thank you and we look forward to working with you during the construction period!

Sincerely,



D. Banks Wallace
Chief Deputy Fire Marshal