



**MIKE CAUSEY**  
INSURANCE COMMISSIONER

**BRIAN TAYLOR**  
STATE FIRE MARSHAL

August 16, 2024

Mr. Robbie Ferris  
SfL+a Architects  
333 Fayetteville Street, Suite 225  
Raleigh, NC 27601

**RE: Flatwoods Middle School – 100% Design Development  
Lillington, NC – Harnett County**

Dear Mr. Ferris,

Preliminary construction documents (design development) received on 8-6-2024 relative to the above-named project has been reviewed for general compliance with the 2018 edition of the North Carolina State Building Code with the following comments. This review does not replace the plan review of the local Authority Having Jurisdiction (AHJ). This review is in addition to the plan review of the local AHJ. This plan review may contain comments related to Accessibility, Plumbing, Mechanical, Electrical, and Fire Codes.

Please provide a written response to the review comments and submit clouded revised signed, sealed plans as necessary. The comments shall describe which items are being addressed with the document set as well as where they are being addressed. Please also provide an electronic version of these updated plans via a download link or on a thumb drive as we are transitioning to electronic plans review, no CDs please.

This review does not cover the field house, dug outs, concession stands, ticket booth, ball fields or bleachers/grandstands.

1. All pages when ready for full review - Architects and engineers must have an original signature through each of their seals with a date, copies are not allowed per NC Board of Architecture rule 21 NCAC 02.0206
2. Pages are stamped "Design Development" and/or "Not For Construction". These will need to be updated to reflect construction documents for permitting or similar language.
3. Please provide an updated copy of the site geotechnical report that confirms the anticipated structural loads, building construction type and finished floor elevation. NC Building Code, Section 1803.1. Page 2 of the report from Terracon dated May 16, 2024 states these were not available at the time the report was made.

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4. Page G-002 - A specific street address will be required for the project before approvals can be issued, as this impacts permitting issuance, utility (electric, gas, water), first responder response, supply deliveries, etc. NC Fire Code section 505.1 and Building Code 501.2
5. The following sheets are listed in the drawing index but were not provided in the drawing set: G-003, A-002, A-010, A-206, A-313, A-314, S-110, S-137, S-138, S-162, A-401 – A-803 (48 Pages), FP-103, P-131, P-132, P-133, E-133, E-201, E-202, E-233, E-803, E-804, FA-101 and FA-102.
6. The following sheets are not listed in the drawing index but were provided: A-103, A-106, A-117, A-123.2, A-306, E-113.2, E-802 and TN116.2.
7. Page G-002 – Life Safety System Requirements, an emergency voice/alarm system will be required for this facility which is above and beyond the standard fire alarm system referenced on the Appendix B, please note this next to Fire Alarm in the Life Safety System Requirements section. 2018 NC Fire Code Section 907.2.3.
8. Page G-002 – Carbon Monoxide is checked YES, however no gas (LP or Natural) could be located. Please confirm.
9. Page G-002 - Life Safety Section, Emergency responder radio coverage shall have radio coverage based on existing coverage levels of the public safety communications system. Provide a written statement of how the path to compliance to achieve this safety feature will move forward to meet the needs of the jurisdiction. 2018 NC Fire Code, section 510. Also, section 27 53 19 – Emergency Responder Radio Antenna-Repeater System needs to be added in the specifications manual for details of this system. Some information was found on Page FA-601.
10. Page G-002 – Special Approvals to include NC Dept of Insurance, Department of Public Instruction, Harnett County Health Department, Department of Labor and NC Department of Transportation.
11. Page G-002 - UL Details U419 and U905 are listed in the Fire Protection Requirements Table. Please these details and any others used in this project.
12. Page G-111 – Exit sign needed in small hallway between Green Room and Main Hall. Directional exit signs missing in front of the Media Center x2 and near Secretary 215. Exit signs needed in Mechanical M301, electrical M300, emergency electrical M302, very end of corridors C400 and C500 at the exterior exit doors.
13. Page G-111 – Panic hardware to be shown on all doors where required. Doors including but not limited to: Main electrical room M300. 2018 NC Building Code section 1010.1.10, 2020 NC Electrical Code, Article 110.26 (C) (3)
14. If electrical equipment is considered large (over 6-foot wide or 1200 amps), a second egress may be required from the electrical room. 2020 NC Electrical Code, article 110.26 C 2 1
15. Page G-111 –Show all fire extinguisher locations, dedicated fire extinguisher are required in any IT Data Room X3 (MDF, IDF) if computer equipment/racks are stored inside. NC Fire Code 906.1 #6. 2<sup>nd</sup> Floor IDF Room may also require this.

16. Page G-112 – Dedicated fire extinguisher required in elevator room per NC Department of Labor.
17. Pages G-111 and G112 – Additional fire extinguishers required in the following areas due to travel distances exceeded or visibility is obscured: Mechanical platforms, Gym 307 on north side, Admin suite near secretary 215, Lobby main entrance between health 213 and media 223, Admin suite near office/testing 205, hallway outside of Art 103, Auditorium 105 on the north end and upstairs Collaboration 600 near stem lab.
18. Pages G-111 and G-112 - Interior and exterior emergency lights to be shown on the Life Safety Plans.
19. Page C0.0 – Vicinity Map is not accurate with respect to US-401 and the site.
20. Page C3.0 - The first accessible space in each parking facility cluster shall be identified as a van space per NC Building Code, Section 1106.5. This shall be located on the shortest accessible route of travel from accessible parking to the accessible entrance.
21. Page C3.0 – The Appendix B lists 12 ADA parking spaces but only 9 are shown on the plans.
22. Pages C3.0 and C3.1 - ADA spaces are to be distributed per each parking cluster. No ADA spaces could be located in the cluster next to Field House nor the southernmost student parking area.
23. A passenger loading zone(s) per ANSI 503 appears to be designed into this project, if people are being dropped off at the site in a drop-off location(s). Please provide the details (signage, slopes, widths, lengths, stripping) of the loading zone shown at the front of the building. See NCDOL ADA update, August 2016.
24. Civil Drawings – Provide the following but not limited to: generator location, electrical transformer location(s), electrical service underground, knock boxes at front door and riser room door, fire department connection (FDC) location (7 hot boxes are shown, identify the specific one for the FDC), etc.
25. Page C5.0 - The sign detail for ADA parking signage must be updated. The bottom of the lowest sign (R7-8D) must be at least 60 inches minimum from the final grade. This is usually the maximum penalty sign per NCDOL ADA update created June 2016.
26. Please provide the canopy shop drawings (deck, beam and brace) with the structural connection details when available.
27. Provide elevator shaft and car details.
28. Provide step tread rise and run details.
29. Provide guardrail and handrail details with diameter of pipe, opening dimensions and heights.
30. If applicable, Provide Cane Detection Rail detail that complies with ANSI 307.4 and .5.
31. Provide detail of roof access ladder front and side view to roof hatch with dimensions. Roof access is required to be by stair, alternating tread device or ships ladder. 2018 NC Building Code section 1011
32. Please show the 66-inch clear circle in each accessible stall combined with the 4+ feet clearance from the front of the water closet bowl to the stall door must be provided per ANSI 404.2.3.2f

33. Provide Detail for water fountain access and mounting heights per NCBC 1109.5.2 and ANSI 308.3.
34. Provide roof drain calculations for each area of the roof. 2018 NC Plumbing Code, sections 1105 and 1106
35. Submit manufacturers signed, sealed and dated Glulam truss drawings including layout.
36. The schedule of special inspections to be signed, sealed and dated with the firms name and address in the table on page 7.
37. Provide a Hazardous Materials Disclosure Inventory Statement formatted in accordance with Table 307.1 of the North Carolina Building Code that includes the volume of Stem/science chemicals, generator fuel, aerosols and sanitizing cleaners planned for this school project with regard to what would be on-site when open. These shall be identified as a solid, liquid or gas and be identified in pounds, gallons or cubic feet. Please provide a breakdown of the amounts being used and whether they are being used in an open or closed system. Control area may need to be identified as well.
38. Wall Types - Note on the drawings to stencil rated walls every 15 - 30' in minimum 2-inch lettering. Indicate the rating and purpose of the wall (ie. firewall, fire barrier, fire partition, smoke barrier, smoke partition) 2018 NC Building Code, section 703.7
39. Door schedule – Once completed, provide hardware types, fire ratings and in the “Keyed Notes or Comments” column list all doors that have “panic” hardware.
40. Specifications Manual Volume 1, section 08 71 00 – Door hardware to be completed, once determined.
41. Page A-701 - All new interior finishes to comply with Chapter 8 of the 2018 NC Building and Fire codes. Provide Class ratings on Finish schedules in the Notes column.
42. Fire Protection – Most sheets need Key Notes added where applicable.
43. Page P-001 – Section C408, system commissioning to be checked YES for being over 10,000 sf.
44. Plumbing – Most sheets need Key Notes added.
45. Provide three-compartment sink discharge detail per 2018 NC Plumbing Code, section 802.1.1.
46. Provide acid neutralization detail. Details 8, 9 & 10 could not be located on P-602.
47. Provide emergency eyewash/shower detail.
48. Provide elevator sump pump detail.
49. Page M-001 – Heating and Cooling loads to be completed in the Energy Table.
50. Mechanical – Most sheets need Key Notes added.
51. Pages M-003, M-101, M-115.2 - In exit enclosures, electric heaters are permitted provided they conform to the following: 1) The bottom of the heater must be located 80 inches or higher above the finished floor or on the stair’s floor intermediate landing. 2) Heaters are tested against the possibility of dust and/or lint accumulations creating a fire on/in the unit under normal operating conditions. This would allow the unit to sit idle for several months without creating a fire hazard when unit goes into use after the idle period. 3) The electric heater that is not exposed to combustible materials is less likely to create a fire hazard than a fluorescent

light fixture. 4) The heater can be fed from a maximum 16-inch metal box in the rated shaft/wall ceiling as long as the electric heater. Emergency power circuits require separate conduit and junction boxes; so, they are not to be considered when allowing the penetration for the electric heater circuit. 5) If the electric heater circuit cannot comply with Item 4 above, the circuit cannot penetrate the rated assemblies enclosing the shaft. The circuit would have to be brought in through the roof, floor slab or unrated exterior wall per memo dated 4/1/2010 from Carl Martin, NCDOT.

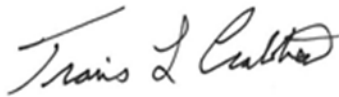
52. Please provide the smoke and heat vent shop drawings (profiles, dimensions, accessories and fusible links) with the construction and roofing details when available.
53. Provide mechanical exhaust/vent calculations for the smoke and heat vent system.
54. Pages M-114, M-115.1 and M-116.1, E-215.2 and E-801 – It appears that a few fire dampers are required in the rated wall separating the buildings.
55. Provide a fire damper installation detail.
56. Page E-111 – Exterior emergency lights needed outside of Art 103, Science 104 and Corridor C102.
57. Page E-112 – Exterior emergency lights needed outside Main Entrance C200 and interior emergency lighting needed in Media Center 223.
58. Page E-113.1 – Exterior emergency lights needed outside of Dining 300. Interior emergency lights needed in Corridor C300 between elevator, health room 316 and Dining 300.
59. Page E-114 – Exit signs needed in Classrooms 406, 407, 408 and 409.
60. Page E-115.1 – Exit signs needed at Classrooms 504, 505, 506 and 507.
61. Page E-115.1 – Emergency light needed in Electrical Room M508.
62. Page E-116.2 – Emergency light needed in Electrical M602.
63. Page E-121 – Additional emergency lights needed in Mezzanine 400 and 600.
64. Page E-211 – GFI protection needed at water coolers. 2020 NC Electric Code article 422.5(A) #2 Other pages impacted.
65. Page E-211 – Servicable equipment receptacle needed at HP-1 & 2. 2020 NC Electrical Code, article 210.63. Similar issue at Mech M101.
66. Page E-216.1 – Floor box needed in Conference 600B.
67. Page E-521 – GFI protection needed near sink in Detail #1. Circuit RPIG-19 Similar on E-522 Detail #3.
68. Provide UL listing for generator diesel fuel tank.
69. Electrical panels that are located in other than electrical rooms. Can an electrical sheet note be added for these panels to paint or tape an area in front of these panels to ensure the minimum required working clearances are maintained in the future? 2020 NC Electrical Code, article/table 110.26(A)(1)
70. Circuit directories (when complete) shall reference the 2020 NC Electric Code to include specific emergency and exit light circuits per 700.12 (f) and NC Fire Code 605.3.1. A note, an asterisk or EM (or similar) are acceptable identifiers for the circuits that serve these emergency

circuits. If all of these applicable circuits are picked up by an emergency generator, then a note stating such on the circuit directory pages.

71. Pages FA-001 and G-002 – Fire Alarm Matrix and Fire Alarm Riser Diagram to include Carbon Monoxide, if gas fired appliances are present.
72. Page FA-112 – Lobby C200, Fire alarm remote annunciator will require protection at the panel, if it has control functions. 2018 NC Fire Code section 907.4.1

Further reviews will follow when the above issues have been addressed. We will await further information from you concerning this project.

Sincerely,

A handwritten signature in black ink that reads "Travis L. Crabtree". The signature is written in a cursive style with a large initial 'T' and 'C'.

Travis L. Crabtree  
Building and Fire Code Consultant

TLC

CC: Harnett County