

2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(BLDG#1 – LEVEL II INTERIOR ALTERATION)
(EXCEPT I AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Cooper Academy – Additions & Renovations – Building #1 (Interior Alteration)
Address: 849 Mial St., Clayton, NC Zip Code: 27520
Owner/Authorized Agent: Brooks Moore Phone # (919) 934-2021 E-Mail: brooksmoore@johnston.k12.nc.us
Owned By: ☒ City/County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☒ City ☐ County ☐ State

CONTACT: Boomerang Design Duane Hutchins (919) 573-6400 dhutchins@thinkboomerang.com
DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
Architectural Boomerang Design, PA Angela Easterdy 9248 (919) 573-6400 info@thinkboomerang.com
Civil CLDT Design, PA Keith Downing 1047 (919) 319-6716 kdowning@cltdesign.com
Electrical PDC Engineers, PA Tom Butkovich 024651 (919) 790-9989 thbutkovich@pdcengineers.com
Fire Alarm PDC Engineers, PA Tom Butkovich 024651 (919) 790-9989 thbutkovich@pdcengineers.com
Plumbing PDC Engineers, PA Steve Campbell 025020 (919) 790-9989 scampbell@pdcengineers.com
Mechanical PDC Engineers, PA Steve Campbell 025020 (919) 790-9989 scampbell@pdcengineers.com
Sprinkler-Standpipe PDC Engineers, PA Steve Campbell 025020 (919) 790-9989 scampbell@pdcengineers.com
Structural Lynch Mykins, PC Stephen N Sparks 053114 (919) 782-1833 nsparks@lynchmykins.com
Retaining Walls >5' Lynch Mykins, PC Stephen N Sparks 053114 (919) 782-1833 nsparks@lynchmykins.com
Other _____
(*Others* should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC CODE FOR: ☐ New Construction ☐ Addition ☒ Renovation
☐ 1" Time Interior Completion
☐ Shell/Core
☐ Phased Construction – Shell/Core
☐ Renovation

2018 NC EXISTING BUILDING CODE: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use
CONSTRUCTED:(date) 1954 ORIGINAL OCCUPANCY(S) (Ch. 3): Educational (E) _____
RENOVATED: (date) 2006 CURRENT OCCUPANCY(S) (Ch. 3): Educational (E) _____
RISK CATEGORY (table 1604.5) Current: ☐ I ☐ II ☒ III ☐ IV
Proposed: ☐ I ☐ II ☒ III ☐ IV

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B
Sprinklers: ☒ No ☐ Partial ☐ Yes NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☐ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ No ☐ Yes (Primary) Flood Hazard Area: ☒ No ☐ Yes
Special Inspections Required: ☒ No (Interior work only Bldg #1) ☐ Yes

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Gross Building Area:									
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ FT)	SUB-TOTAL					
6 th Floor	N/A	N/A	N/A	N/A					
5 th Floor	N/A	N/A	N/A	N/A					
4 th Floor	N/A	N/A	N/A	N/A					
3 rd Floor	N/A	N/A	N/A	N/A					
2 nd Floor	N/A	N/A	N/A	N/A					
Mezzanine	880	N/A	N/A	880					
First Flr	26,481	N/A	2,795	29,276					
Ground Flr	N/A	N/A	N/A	N/A					
TOTAL	27,361 SQ FT	--	2,795 SQ FT	30,156 SQ FT					

ALLOWABLE AREA
Primary Occupancy Classification: SELECT ONE
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☒
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ I-2 Condition ☐ I-3 Condition ☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): Business (B) & Storage (S-2)
Incidental Uses (Table 509): Boiler Room (existing 2-hr separation)
Special Uses (Chapter 4 – List Code Sections): NC Section 430 (NC Public School)
Special Provisions: (Chapter 5 – List Code Sections): N/A
Mixed Occupancy: ☒ No ☐ Yes Separation: N/A Hr. Exception: _____
☐ Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☐ Separated Use (508.4) -
See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$
$$+ \dots = \dots \leq 1.00$$

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STORY NO.	DESCRIPTION AND USE	(A) BUILDING AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA	(C) AREA FOR FRONTAGE INCREASE ^{1,2}	(D) ALLOWABLE AREA PER STORY OR UNLIMITED ^{2,3}
First Floor	Group E	30,156 SF (Existing no change)	Existing (no change)	Existing (no change)	Existing (no change)
		** Interior	Level II	Alteration Only**	

- ¹ Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = Existing (not calc'd)
b. Total Building Perimeter = Existing (not calc'd) (P)
c. Ratio (F/P) = Existing (not calc'd) (F/P)
d. W = Minimum width of public way = Existing (not calc'd) (W)
e. Percent of frontage increase $I = 100 \{ F/P - 0.25 \} \times W/30 =$ Existing (not calc'd) (%)
² Unlimited area applicable under conditions of Section 507.
³ Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
The maximum area of open parking garages must comply with Table 406.5.4
⁴ Frontage increase is based on the unobstructed area value in Table 506.2

ALLOWABLE HEIGHT			
	ALLOWABLE (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	55 ft.	30 ft. (existing hgt)	504.3
Building Height in Stories (Table 504.4)	2	1 (existing)	504.4

- ¹ Provide code reference if the "Show on Plans" quantity is not based on Table 504.3 or 504.4.
² The maximum height of air traffic control towers must comply with Table 412.3.1
³ The maximum height of open parking garages must comply with Table 406.5.4

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING		DETAIL # FOR AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
		REQ'D	PROVIDED (N/A, REDUCTION, CHANGE)				
Structural Frame, including columns, girders, mases	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Roofing Walls	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Exterior	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
North	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
East	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
West	SEE PLANS	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
South	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Interior	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Nonbearing Walls and Partitions	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Exterior walls	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
North	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
East	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
West	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
South	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Interior walls and partitions	>50FT	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Floor Construction including supporting beams and joists	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Floor Ceiling Assembly	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Column Supporting Floors	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Roof Construction, including supporting beams and joists	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Roof Ceiling Assembly	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Column Supporting Roof	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Shaft Enclosures - East	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Shaft Enclosures - Other	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Corridor Separation	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A
Occupancy/Fire Barrier Separation	--	N/A	N/A	N/A	N/A	N/A	N/A
Party/Fire Wall Separation	SEE PLANS	1&2 HR, RW-02	See G103	U905	Sheet G103	N/A	N/A
Smoke Barrier Separation	--	N/A	N/A	N/A	N/A	N/A	N/A
Smoke Partition	--	N/A	N/A	N/A	N/A	N/A	N/A
Tenant Dwelling Unit/ Sleeping Unit Separation	--	N/A	N/A	N/A	N/A	N/A	N/A
Incidental Use Separation	--	0 HR (essn)	N/A	N/A	N/A	N/A	N/A

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS			
FIRE SEPARATION DISTANCE (FEET FROM)	DEGREES OF OPENINGS PROTECTION	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
N/A	N/A	N/A	N/A

LIFE SAFETY SYSTEM REQUIREMENTS
Emergency Lighting: ☐ No ☒ Yes
Exit Signs: ☐ No ☒ Yes
Fire Alarms: ☐ No ☒ Yes
Smoke Detection Systems: ☐ No ☒ Yes ☐ Partial
Carbon Monoxide Detection: ☐ No ☒ Yes

LIFE SAFETY PLAN REQUIREMENTS
Life Safety Plan Sheet #: Sheet G106 and G110
☒ Fire and/or smoke rated wall locations (Chapter 7)
☒ Assumed and real property line locations (if not on the site plan)
☒ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☒ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit access travel distances (1017)
☒ Common paths of travel distances (1006.2.1 & 2006.3.2(1))
☐ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.
☒ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☒ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS (SECTION 1107)						
TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED
N/A	--	--	--	--	--	--

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(SECTION 1106)						
LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	8' ACCESS AISLE	
See Civil Sheet C000 (Table) For Calculations & LUDO req'ts	--	--	--	--	--	--
TOTAL						

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

NOTE TO PLAN REVIEWER: PER 2018 NC EXISTING BUILDING CODE SECTION 810: OCCUPANT LOAD IS NOT INCREASED BY 20%; SO EXISTING FIXTURE COUNT IS WITHSTANDING. ADDITIONAL FIXTURES ARE ADDED TO MEET OWNER PROGRAM REQUIREMENTS.

USE		WATERCLOSETS			URINALS			LAVATORIES			SHOWERS / TUBS		DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX	REGULAR	ACCESSIBLE	REGULAR	ACCESSIBLE
SPACE	EXIST'G	5	5		3	5	6				--		1	1
	NEW	1	3	1	2	2	2	1	N/A					
	REQ'D	5	5		3	5	6				N/A		1	1

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

NCDOI, DPI, Johnston County Inspections and The Town of Clayton

ENERGY SUMMARY						

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ No ☒ Yes (The remainder of this section is not applicable)

Exempt Building: ☒ No ☐ Yes (Provide Code or Statutory reference).

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☒ Prescriptive
ASHRAE 90.1 ☐ Performance ☒ Prescriptive
(If "Other" specify source here)

THERMAL ENVELOPE (Prescriptive method only) SEE SHEET G103 FOR TYPICAL ASSEMBLIES

Roof/Ceiling Assembly (each assembly)
Description of assembly: Existing Roof to Remain (per Section C503 of NC Energy Code) _____
U-Value of total assembly: Existing _____
R-Value of insulation: N/A _____
Skylights in each assembly: N/A _____
U-Value of skylight: N/A _____
Total square footage of skylights in each assembly: ____ N/A _____

Exterior Walls (each assembly)
Description of assembly: Existing Exterior Walls to Remain (per Section C503 of NC Energy Code) _____
U-Value of total assembly: Existing _____
R-Value of insulation: N/A _____
Openings (windows or doors with glazing)
U-Value of assembly: N/A _____
Solar heat gain coefficient: N/A _____
Projection factor: N/A _____
Door R-Values: N/A _____

Walls below grade (each assembly)
Description of assembly: Existing Walls to Remain (per Section C503 of NC Energy Code) _____
U-Value of total assembly: N/A _____
R-Value of insulation: N/A _____

Floors over unconditioned space (each assembly)
Description of assembly: N/A _____
U-Value of total assembly: N/A _____
R-Value of insulation: N/A _____
Horizontal/Vertical requirement: N/A _____
Slab Heated: No

Floors slab on grade
Description of assembly: Existing concrete slab on grade
U-Value of total assembly: N/A _____
R-Value of insulation: Not Required in Zone 3A
Horizontal/Vertical requirement: N/A _____
Slab Heated: No

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:
Importance Factors: Snow (Is) 1.1
Seismic (Is) 1.25
Live Loads: Roof 20 psf
Mezzanine 150 psf
Floor 40 psf (Reference General Notes for Other Loading)
Ground Snow Load: 15 psf
Wind Load: Ultimate Wind Speed 115 mph (ASCE-7)
Exposure Category B

SEISMIC DESIGN CATEGORY: ☐ A ☒ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☐ II ☒ III ☐ IV
Spectral Response Acceleration S_s 0.165 %g S_d 0.076 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data
Basic structural system ☒ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☒ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:
Field Test (provide some test report) PROVIDED IN PROJECT MANUAL
Bearing capacity: 2000 psf
The size, type, and capacity N/A

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb 10 degrees
summer dry bulb 94.1 degrees
Interior design conditions
winter dry bulb 68 degrees
summer dry bulb 74 degrees
relative humidity 55%
Building heating load: 1,500,000 BTU/h
Building cooling load: 100 tons
Mechanical Spacing Conditioning System
Unitary
description of unit: REFER TO SCHEDULES
heating efficiency: REFER TO SCHEDULES
cooling efficiency: REFER TO SCHEDULES
size category of unit: REFER TO SCHEDULES
Boiler
Size category: If oversized, state reason: N/A
Chiller
Size category: If oversized, state reason: N/A
List equipment efficiencies: REFER TO SCHEDULES

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BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY
ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ☒ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (each fixture type)
lamp type required in fixture ALL LEDs – SEE FIXTURE SCHEDULE ON SHEET E801
number of lamps in fixture ALL LEDs – SEE FIXTURE SCHEDULE ON SHEET E801
ballast type used in the fixture ALL LEDs – SEE FIXTURE SCHEDULE ON SHEET E801
number of ballasts in fixture ALL LEDs – SEE FIXTURE SCHEDULE ON SHEET E801
total wattage per fixture SEE FIXTURE SCHEDULE ON SHEET E801
total interior wattage specified vs. allowed (whole building or by space) SEE ELECTRICAL DWGS
total exterior wattage specified vs. allowed SEE ELECTRICAL DWGS

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient Mechanical Equipment
☒ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

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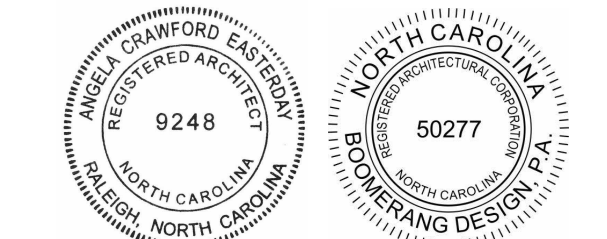


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COOPER ACADEMY
A & R
PROJECT TITLE

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