2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Circle K – Angier, NC

Address: 9706 Kennebec Church Rd, Angier, NC 27501 Zip Code 27501

~~Owner~~/Authorized Agent: Rashmi Mehadia Phone # (703) 659-8253 E-Mail Rashmi.mehadia@rdcollaborative.com

Owned By: ☐ City/County ☒ Private ☐ State

Code Enforcement Jurisdiction: ☒ City - Town of Angier, NC ☐ County_____ ☐ State

CONTACT: _____

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	rdc.	Ralph Watson	14583	(703) 659-8232	ralph.watson@rdcollaborative.com
Civil	Timmons Group	Richard W. Baker	022530	(980) 446-3308	rick.baker@timmons.com
Electrical	Benchmark Group	Jason C. Adams	036972	(479) 636-5004	jca@teamofchoice.com
Fire Alarm	Benchmark Group	Jason C. Adams	036972	(479) 636-5004	jca@teamofchoice.com
Plumbing	Benchmark Group	Jason M. Scates	055196	(479) 636-5004	jms@teamofchoice.com
Mechanical	Benchmark Group	Jason M. Scates	055196	(479) 636-5004	jms@teamofchoice.com
Sprinkler-Standpipe	N/A	_____	_____	(____)_____	_____
Structural	JBA	Bart J. Halverson	_____	(____)_____	halverson@baengr.com
Retaining Walls >5' High	_____	_____	_____	(____)_____	_____
Other	_____	_____	_____	(____)_____	_____

("Others" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC CODE FOR: ☒ New Construction ☐ Addition ☐ Renovation
☒ 1st 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) _____ **ORIGINAL OCCUPANCY(S)** (Ch. 3)**:**_____
RENOVATED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3)**:**_____

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 ☒ V-B Convenience Store-M

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 ☒ Yes

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ.FT)	SUB-TOTAL
6th Floor				
5th Floor				
4th Floor				
3rd Floor				
2nd Floor				
Mezzanine				
1st Floor	N/A	3,962 SF (C-Store)		3,962 SF
Basement				
TOTAL				3,962 SF

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 ☐ 1 ☐ 2
☐ 1-2 Condition ☐ 1 ☐ 2
☐ 1-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ 1-4
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): __N/A_____

Incidental Uses (Table 509)**: ___N/A_____**

Special Uses (Chapter 4 – List Code Sections) _____

Special Provisions: (Chapter 5 – List Code Sections): _____

Mixed Occupancy: ☒ No ☐ Yes Separation: _N/A__ Hr. Exception: __N/A_____

☒ 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.

$$\frac{\textit{Actual Area of Occupancy A}}{\textit{Allowable Area of Occupancy A}} + \frac{\textit{Actual Area of Occupancy B}}{\textit{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ + ... = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1	**Convenience Store - M**	**3,962 SF**	**9,000 SF**	**N/A**	**9000 SF - VB**

[1] Frontage area increases from Section 506.3 are computed thus: N/A

a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase I_f = 100 [F/P - 0.25] x W/30 = _____ (%)

[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).

[4] The maximum area of open parking garages must comply with Table 406.5.4

[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	40’-0”	22’-0”	NCSBC 2018
Building Height in Stories (Table 504.4)	1	1	NCSBC 2018

[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

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING		DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
		REQ'D	PROVIDED (W/_____* REDUCTION)				
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists							
Floor Ceiling Assembly							
Column Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Column Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PERPERTY LINES	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	☐ No	☒ Yes		
Exit Signs:	☐ No	☒ Yes		
Fire Alarm:	☒ No	☐ Yes		
Smoke Detection Systems:	☐ No	☒ Yes	☐ Partial _____	
Carbon Monoxide Detection:	☒ No	☐ Yes		

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: A1.0 and G1.0

- ☐ 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 path 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	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING

(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	
	27	27	Provided 8'	N/A	N/A	2
TOTAL		27				

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G										
	NEW	1	2	N/A	2	3	3	N/A	N/A	N/A	N/A
	REQ'D	1	1	N/A	0	1	1	N/A	N/A	N/A	N/A

SPECIAL APPROVALS

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

Health Approval from NCDHHS

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)

Roof/ceiling Assembly (each assembly)

Description of assembly: TPO (Thermoplastic Polyolenm Membrane) Roofing System Over Sip Roof Panel.
U-Value of total assembly: .03 BTU/HR-FT2-F
R-Value of insulation: 25ci
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: Structurally insulated panels
U-Value of total assembly: .03 BTU/HR-FT2-F
R-Value of insulation: R24.7
Openings (windows or doors with glazing)
U-Value of assembly: .27
Solar heat gain coefficient: .25
Projection factor: .57
Door R-Values: 3.7

Walls below grade (each assembly) N/A

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly) N/A

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade

Description of assembly: 4" concrete slab w/ 15ml vapor barrier
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/Vertical requirement: _____
Slab Heated: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

STRUCTURAL DESIGN

(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_S) 1.0
Seismic (I_E) 1.0

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor 100 psf

Ground Snow Load: 15 psf

Wind Load: Ultimate Wind Speed 116 mph (ASCE-7)
Exposure Category C

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_____ %g S_1_____ %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 copy of test report) 2500 psf
Presumptive Bearing capacity N/A psf
Pile size, type, and capacity N/A

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone

winter dry bulb: 22.7 Deg F
summer dry bulb: 97 Deg F

Interior design conditions

winter dry bulb: 67
summer dry bulb: 80
relative humidity: 50

Building heating load: 49.3 MBH

Building cooling load: 95.3 MBH

Mechanical Spacing Conditioning System

Unitary
- description of unit: Rooftop Packaged Unit
- heating efficiency: 80%
- cooling efficiency: 16.1 SEER
- size category of unit: 4 and 5 ton

Boiler
- Size category. If oversized, state reason.: N/A

Chiller
- Size category. If oversized, state reason.: N/A

List equipment efficiencies: N/A

2018 APPENDIX B
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. – Reference E0.0 ELECTRICAL COVER SHEET AND LEGEND, lighting schedule.

number of lamps in fixture – Reference E0.0 ELECTRICAL COVER SHEET AND LEGEND, lighting schedule.

ballast type used in the fixture. – Reference E0.0 ELECTRICAL COVER SHEET AND LEGEND, lighting schedule.

number of ballasts in fixture – Reference E0.0 ELECTRICAL COVER SHEET AND LEGEND, lighting schedule.

total wattage per fixture – Reference E0.0 ELECTRICAL COVER SHEET AND LEGEND, lighting schedule.

total interior wattage specified vs. allowed (whole building or space by space) – 3517W total interior wattage allowed, 3441W total wattage proposed. Reference E5.1 LIGHTING COMPLIANCE REPORT.

total exterior wattage specified vs. allowed. – 5690W total exterior wattage allowed, 4857W total wattage proposed. Reference E5.1 LIGHTING COMPLIANCE REPORT.

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