

#	DATE	REVISION

2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY - ELECTRICAL SUMMARY

C401 METHOD OF COMPLIANCE

2018 NCECC CHAPTER 4 NC SPECIFIC COMCHECK PROVIDED
 N/A BASED ON PROJECT SCOPE ASHRAE 90.1-2013

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

C406.1.1 EFFICIENT MECH EQUIPMENT C406.1.4 ON-SITE RENEWABLE ENERGY
 C406.1.2 REDUCED LIGHT DENSITY C406.1.5 DEDICATED OA SYSTEM
 C406.1.3 ENHANCED DIGITAL LIGHTING CONTROL C406.1.6 HI-EFF SERVICE WATER HEATING
 NOT APPLICABLE BASED ON PROJECT SCOPE

C405.2 - LIGHTING CONTROLS (MANDATORY REQUIREMENTS):

LIGHTING SYSTEMS ARE PROVIDED WITH CONTROLS AS REQUIRED PER SECTION C405.2, EXCEPT WHERE EXEMPT.
 NOT APPLICABLE

C405.3 - EXIT SIGNS (MANDATORY REQUIREMENTS):

INTERNALLY ILLUMINATED EXIT SIGNS DO NOT EXCEED 5 WATTS PER SIDE
 NOT APPLICABLE

C405.4 - INTERIOR LIGHTING POWER REQUIREMENTS (PRESCRIPTIVE) (NON-EXEMPT):

NOT APPLICABLE PER 2018 NCECC C503.1, EXCEPTION 2.G.

C405.4.1 - TOTAL CONNECTED INTERIOR LIGHTING POWER:
 4,986 WATTS SPECIFIED
 34 % REDUCTION OF SPECIFIED VS. ALLOWED
 (APPLICABLE IF C406.1.2 IS SELECTED)

C405.4.2 - TOTAL ALLOWABLE INTERIOR LIGHTING POWER:
 7,461 WATTS ALLOWED

METHOD OF COMPLIANCE:
 BUILDING AREA METHOD SPACE-BY-SPACE METHOD

C405.5.1 - EXTERIOR BUILDING LIGHTING POWER (NON-EXEMPT):

NOT APPLICABLE

TOTAL CONNECTED EXTERIOR LIGHTING POWER:
 WATTS SPECIFIED _____
 TOTAL ALLOWABLE EXTERIOR LIGHTING POWER:
 WATTS ALLOWED _____

C405.6 - ELECTRICAL ENERGY CONSUMPTION (DWELLING UNITS):

SEPARATE ELECTRICAL METERING HAS BEEN PROVIDED FOR EACH DWELLING UNIT IN GROUP R-2 BUILDINGS.
 NOT APPLICABLE

C405.7 - ELECTRICAL TRANSFORMERS (MANDATORY REQUIREMENTS):

ELECTRICAL TRANSFORMERS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.7, EXCEPT WHERE EXEMPT.
 NOT APPLICABLE

C405.8 - ELECTRICAL MOTORS (MANDATORY REQUIREMENTS):

ELECTRICAL MOTORS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.8, EXCEPT WHERE EXEMPT.
 NOT APPLICABLE

C408 - SYSTEM COMMISSIONING:

BUILDING IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.
 BUILDING IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

SYMBOL SCHEDULE POWER

SYMBOL	DESCRIPTION
—	WIRING SYSTEM CONCEALED IN WALL OR CEILING. WHEN SHOWN, CROSS LINES INDICATE NUMBER OF WIRES. (GROUND WIRES ARE NOT SHOWN).
—	WIRING SYSTEM CONCEALED IN OR UNDER SLAB OR UNDERGROUND.
—	WIRING SYSTEM EXPOSED.
—	CONDUIT TURNED UP TO FLOOR ABOVE.
—	CONDUIT TURNED DOWN TO FLOOR BELOW.
—	BRANCH CIRCUIT HOMERUN TO PANEL.
—	JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED.
—	200V/120V PANEL BOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL MAX. 6'-6" AFF.
—	480V/277V PANEL BOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL MAX. 6'-6" AFF.
—	480-208V/120V TRANSFORMER. SEE RISER FOR SIZE. PROVIDE 4" HOUSEKEEPING PAD.
—	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT COOPER S362 OR EQUAL.
—	GROUND FAULT RECEPTACLE, NEMA 5-20R DUPLEX, ALL RECEPTACLES INSTALLED OUTSIDE, WITHIN 6' OF A SINK OR IN A KITCHEN SHALL BE GFCI.
—	COMBINATION USB AND NEMA 5-20R DUPLEX. COOPER TR7756 OR EQUAL.
—	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT NOTED.
—	GROUND FAULT DUPLEX RECEPTACLE, NEMA 5-20R MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT NOTED.
—	COMBINATION USB AND NEMA 5-20R DUPLEX. COOPER TR7756 OR EQUAL. MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT NOTED.
—	QUAD RECEPTACLE, TWO NEMA 5-20R DUPLEX RECEPTACLES.
—	WEATHERPROOF RECEPTACLE, NEMA 5-20R DUPLEX, CORROSION RESISTANT COVER SHALL BE INTERMATIC #WP9020 (CLEAR) OR EQUAL.
—	SPECIAL OUTLET. SEE PLANS.
—	FLUSH MOUNTED FLOOR BOX, PROVIDE LEG AND RFI2 SERIES WITH TWO NEMA 5-20R RECEPTACLES.
—	FLUSH MOUNTED HOUR RATED FLOOR BOX FOR POWER. PROVIDE 60 MIN. GATC. PROVIDE TWO NEMA 5-20R RECEPTACLES. SELECT FINISH.
—	NON-FUSED HEAVY DUTY DISCONNECT SWITCH. NUMERALS INDICATE SWITCH RATING. NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.
—	CONNECTION TO MOTOR. POWER PROVIDED BY OTHERS UNLESS OTHERWISE NOTED. NUMBER INDICATES HORSEPOWER.
—	OPTIONAL MANUAL MOTOR STARTER.
—	ACCESSIBLE DOOR OPERATOR PUSH BUTTON. PROVIDE MINIMUM (2) GANG BOX WITH SINGLE GANG OPENING, 3/4" C TO DOOR OPERATOR. COORDINATE WITH EQUIPMENT PROVIDED. SEE DETAIL.

LIGHTING FIXTURE SYMBOLS AND DEVICES

SYMBOL	DESCRIPTION
—	LED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE. SUSPEND FOUR CORNERS WITH WIRE TO STRUCTURE. DO NOT ALLOW GRID ALONE TO SUPPORT FIXTURE.
—	LED STRIP FIXTURE.
—	RECESSED LED OR I.L.D. LIGHTING FIXTURE.
—	WALL MOUNTED LED LIGHTING FIXTURE.
—	FLUORESCENT OR LED FIXTURE. CONNECT TO GENERATOR. SEE FIXTURE SCHEDULE FOR FIXTURE TYPE.
—	SURFACE LINEAR LIGHT (TYPE DENOTED).
—	SUSPENDED OR PENDANT LIGHT (TYPE DENOTED).
—	RECESSED LINEAR LIGHT (TYPE DENOTED).
—	UNDERCABINET LIGHT
—	EXIT LIGHT WITH ARROWS AND NUMBERS OF FACES AS INDICATED ON PLANS. 90 MIN BATTERY BACKUP. SEE LIGHTING FIXTURE SCHEDULE.
—	SINGLE POLE SWITCH, 20 AMP, 120/277 VOLT, COOPER R8721, OR EQUAL, BY HUBBELL, LEVITON AND PASS & SEYMOUR.
—	THREE WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER R8723, THREE WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER R8724, OR EQUAL, BY HUBBELL, LEVITON AND PASS & SEYMOUR.
—	FOUR WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER R8724 OR EQUAL.
—	1/2 HR. TIMER SWITCH, 20 AMP, 120/277 VOLT, EQUAL TO INTERMATIC FF SERIES.
—	DIMMER SWITCH, 1/2 HR. SERIES, OR EQUAL. VERIFY LOAD ON CIRCUIT AND MATCH DIMMER SIZE TO LOAD AND DEVICE QUANTITY. PROVIDE DOUBLE GANG J-BOX WITH SINGLE GANG TRIM PLATE. PROVIDE DIMMING SWITCH AS RECOMMENDED BY LIGHTING FIXTURE. MATCH SWITCH TYPE TO SOURCE (LED, FLUORESCENT, OR DISCREET) WATTAGE, AND QUANTITY.
—	CEILING MOUNTED OCCUPANCY SENSOR. DUAL TECHNOLOGY. SENSOR SWITCH CM-P07-10, WATT STOPPER P07-300, COOPER OAC-DT OR EQUAL.
—	WALL MOUNTED OCCUPANCY SENSOR AND SWITCH. INFRARED TECHNOLOGY WITH NEUTRAL, 120/277V RATED. WATT STOPPER #WS-250, OR EQUAL BY SENSOR SWITCH, AND LEVITON.
—	WALL MOUNTED OCCUPANCY SENSOR AND DIMMER SWITCH. INFRARED TECHNOLOGY, WATT STOPPER #WS-311, SENSOR SWITCH, COOPER CONTROLS OR EQUAL. MATCH TYPE TO SOURCE.
—	CEILING MOUNTED OCCUPANCY SENSOR POWER PACK. SENSOR SWITCH PP-20, WATT STOPPER #P-100, COOPER SP-20, OR EQUAL.

SECURITY LOW VOLTAGE

SYMBOL	DESCRIPTION
—	CAMERA. CEILING MOUNTED. PROVIDE DOUBLE GANG BOX AND 1" CONDUIT WITH PULL STRING TO SS BOX.
—	CARD READER.
—	SSI BOX - SEE DETAILS.
—	PIM - SEE DETAILS.

TELECOMMUNICATIONS ELEC

SYMBOL	DESCRIPTION
—	TELEPHONE AND DATA OUTLET ABOVE COUNTER OR HEIGHT SPECIFIED. MINIMUM 1" CONDUIT TO NEAREST WIREWAY IN CORRIDOR WITH PULL STRING. 4" SQUARE BOX WITH A DOUBLE-GANG OPENING AND PLASTER RING.
—	TELEPHONE AND DATA OUTLET. MINIMUM 1" CONDUIT TO NEAREST WIREWAY IN CORRIDOR WITH PULL STRING. 4" SQUARE BOX WITH A DOUBLE-GANG OPENING AND PLASTER RING.

ELECTRICAL ABBREVIATIONS LIST

AW	AIR WINDING UNIT	AV	AUDIO VISUAL
AL	ALUMINUM	EC	ELECTRICAL CONTRACTOR
ALT	ALTERNATE	ELEC	ELECTRIC, ELECTRICAL
AT	AMP TRIP	ELEV	ELEVATOR
AMPL	AMPLIFIER	EM	EMERGENCY
ANNUN	ANNUNCIATOR	EMS	ENERGY MANAGEMENT SYSTEM
APPROX	APPROXIMATELY	EMT	ELECTRICAL METALLIC TUBING
AD-STAT	AQUASTAT	EP	ELECTRIC PNEUMATIC EQUIPMENT
ARCH	ARCHITECT, ARCHITECTURAL	EQUP	EQUIPMENT
AS	AMP SWITCH	EWC	ELECTRIC WATER COOLER
AT	AMP TRIP	EXIST	EXISTING
ATS	AUTOMATIC TRANSFER SWITCH	EXH	EXHAUST
AUTO	AUTOMATIC	EXP	EXPLOSION PROOF
AUX	AUXILIARY	FA	FIRE ALARM
AV	AUDIO VISUAL	FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL
BATT	BATTERY	FACP	FIRE ALARM CONTROL PANEL
BD	BOARD	FCU	FAN COIL UNIT
BLDG	BUILDING	FIXT	FIXTURE
BMS	BUILDING MANAGEMENT SYSTEM	FLR	FLOOR
C	CONDUIT	FLUR	FLUORESCENT MAIN CIRCUIT BREAKER
CAB	CABINET	FU	FUSE
CAT	CATALOG	FUSDS	FUSED SAFETY DISCONNECT SWITCH
CATV	CABLE TELEVISION	GA	GAUGE
CB	CIRCUIT BREAKER	GAL	GALLON
CCV	CLOSED CIRCUIT TELEVISION CIRCUIT	GEN	GENERATOR
CLG	CEILING	GR	GROUND FAULT CIRCUIT INTERRUPTER
COMP	COMBINATION COMPRESSOR	GFP	GROUND FAULT PROTECTOR
CONN	CONNECTION	GND	GROUND
CONST	CONSTRUCTION	GRS	GALVANIZED RIGID STEEL (CONDUIT)
CONT	CONTINUATION OR CONTINUOUS	GYP BD	GYPUM BOARD
CONTR	CONTRACTOR	HOA	HANDS-OFF AUTOMATIC SWITCH
CONV	CONNECTOR	HORIZ	HORIZONTAL
CP	CIRCULATING PUMP	HP	HORSEPOWER
CR	CATHODE-RAY TUBE	HPF	HIGH POWER FACTOR
CT	CURRENT TRANSFORMER	HT	HEIGHT
CTR	CENTER	HTG	HEATING
CU	COPPER	HTL	HEATING HEATER
		HV	HIGH VOLTAGE
		HVAC	HEATING, VENTILATING AND AIR CONDITIONING
		HWP	HYDROVIC WATER PUMP
		IC	INTERRUPTING CAPACITY
		IG	ISOLATED GROUND
		IMC	INTERMEDIATE METAL CONDUIT
		INCAND	INCANDESCENT
		IR	INFRARED
		IW	INTERLOCK WITH
		J-BOX	JUNCTION BOX
		KB	KILOVOLT
		KV	KILOVOLT-AMPERE
		KVA	KILOVOLT-AMPERE REACTIVE
		KVAR	KILOVATT
		KW	KILOWATT
		KWH	KILOWATT HOUR
		LOC	LOCATE OR LOCATION
		LT	LIGHT
		LTG	LIGHTING
		LTNG	LIGHTNING
		LV	LOW VOLTAGE
		MAX	MAXIMUM
		MAGS	MAGNETIC STARTER
		M/C	MOMENTARY CONTACT
		M/C	MECHANICAL CONTACTOR
		M/CB	MAIN CIRCUIT BREAKER
		MCC	MOTOR CONTROL CENTER
		MDC	MAIN DISTRIBUTION CENTER
		MDF	MAIN DISTRIBUTION PANEL
		MFR	MANUFACTURER
		MFS	MAIN FUSED DISCONNECT SWITCH
		MH	MANHOLE
		MIC	MICROPHONE
		MIN	MINIMUM
		MISC	MISCELLANEOUS
		MLO	MAIN LUGS ONLY
		MMS	MANUAL MOTOR STARTER
		MMA	MULTIOUTLET ASSEMBLY
		MSR	MOTOR STARTER PANEL BOARD
		MSD	MAIN SWITCHBOARD
		MT	MOUNT
		MTC	EMPTY CONDUIT
		MTS	MANUAL TRANSFER SWITCH
		MTR	MOTOR, MOTORIZED
		N.C.	NORMALLY CLOSED
		NEC	NATIONAL ELECTRICAL CODE
		NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
		NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
		NIC	NOT IN CONTRACT
		NL	NIGHT LIGHT
		N.O.	NORMALLY OPEN
		NPF	NORMAL POWER FACTOR
		NTS	NOT TO SCALE
		OH	OVERHEAD
		OL	OVERLOADS
		PA	PUBLIC ADDRESS
		PB	PULL BOX OR PUSH-BUTTON SYSTEM
		PE	PNEUMATIC ELECTRIC
		PED	PEDESTAL
		PF	POWER FACTOR
		PH	PHONE
		PIV	POST INDICATING VALVE
		PHL	PANEL
		PP	POWER POLE
		PR	PAIR
		PRE	PRIMARY
		PROJ	PROJECTION
		PRV	POWER ROOF VENTILATOR
		PTR	POTENTIAL TRANSFORMER
		PVC	POLYVINYL CHLORIDE (CONDUIT)
		PWR	POWER
		QUAN	QUANTITY
		W	WATT
		W/B	WITH
		WG	WIRE GUARD
		WH	WATER HEATER
		W/O	WITHOUT
		WP	WEATHERPROOF
		RTU	ROOF TOP UNIT
		SMR	TRANSFORMER
		STR	TRANSFER
		SC	SURFACE CONDUIT
		SEC	SECONDARY
		SHT	SHEET
		SIM	SIMILAR
		S/N	SOLID NEUTRAL
		SPEC	SPECIFICATION
		SPKR	SPEAKER
		SP	SPARE
		SR	SURFACE RACEWAY
		SS	STAINLESS STEEL
		SSW	SELECTOR SWITCH
		STA	STATION
		STD	STANDARD
		SURF	SURFACE MOUNTED SWITCH
		SW	SWITCH

ELECTRICAL SHEET INDEX

SHEET NUMBER	SHEET NAME
E0.01	ELECTRICAL LEGEND AND NOTES
E0.02	ELECTRICAL NOTES
E1.01	DEMOLITION LIGHTING PLAN - LEVEL 01
E1.02	LIGHTING PLAN - LEVEL 01
E2.01	DEMOLITION POWER PLAN - LEVEL 01
E2.02	POWER PLAN - LOWER LEVEL
E2.03	POWER PLAN - LEVEL 01
E4.01	ELECTRICAL DETAILS
E4.02	ELECTRICAL DETAILS
E4.03	ELECTRICAL DETAILS
E5.01	SCHEDULES
E5.02	RISER DIAGRAM AND PANEL SCHEDULES
E5.03	PANEL SCHEDULES

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