

2018 APPENDIX B

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

Name of Project: Rolesville Police Department Expansion
 Address: 204 Southtown Circle, Rolesville, NC 27571
 Owner or Authorized Agent: Orlando Soto Phone: 919-556-7226 Email: orlando.soto@rolesville.nc.gov
 Owned By: () City/ County (X) Private () State
 Code Enforcement Jurisdiction: () City (X) County Wake () State

CONTACT:	DESIGNER:	FIRM:	NAME:	LICENSE:	TELEPHONE:	E-MAIL:
DESIGNER:	Baxter Armistead Architecture, PC	Baxter Armistead Architecture, PC	Joe Armistead	9197	919-554-1505	joe@baxterarmistead.com
Civil:						
Electrical:	Kilian Engineering, Inc.	Kilian Engineering, Inc.	Jacob A. Bender	046202	252-438-8778	jbender@kilainengineering.com
Fire Alarm:						
Plumbing:	Kilian Engineering, Inc.	Kilian Engineering, Inc.	Jacob A. Bender	046202	252-438-8778	jbender@kilainengineering.com
Mechanical:	Kilian Engineering, Inc.	Kilian Engineering, Inc.	Jacob A. Bender	046202	252-438-8778	jbender@kilainengineering.com
Sprinkler-Standpipe:						
Structural:						
Precast:						
Trusses:						
Retaining Walls >5' High:						
Other:						

2018 NC Building Code: () New Building () Addition (X) Renovation
 () 1st Time Interior Completion
 () Shell/ Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
 () Phased Construction - Shell/ Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
 2018 NC Existing Building Code: Existing: () Prescriptive () Repair () Chapter 14
 Alteration: () Level I () Level II () Level III
 () Historic Property () Change of Use
 CONSTRUCTED: (date) _____ CURRENT OCCUPANCY(S) (Ch.3): _____
 RENOVATED: (date) _____ PROPOSED OCCUPANCY(S) (Ch.3): _____
 OCCUPANCY 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
 () I-B () II-B () III-B () V-B
 Sprinklers: (X) No () Partial () Yes () NFPA 13 () NFPA 13R () NFPA 13D
 Standpipes: (X) No () Yes Class () I () II () III () Wet () Dry
 Fire District: (X) No () Yes Flood Hazard Area: () No () Yes
 Special Inspections Required: (X) No () Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	()	()	()
2nd Floor	()	()	()
Mezzanine	()	()	()
1st Floor	(7,741)	(0)	(7,741)
Basement	()	()	()
TOTAL	(7,741)	(0)	(7,741)

Primary Occupancy Classification(s): Select One
 Assembly () A-1 () A-2 () A-3 () A-4 () A-5
 Business (X)
 Educational ()
 Factory () F-1 Moderate () F-2 Low
 Hazard () H-1 Detonate () H-2 Deflagrate () H-3 Combust () H-4 Health () H-5 HPM
 Institutional () I-1 Condition () I-2 () I-2 Condition () I-2 () I-3 Condition () I-2 () I-3 () I-4 () 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): _____
 Incidental Uses (Table 509): _____
 Special Uses (Chapter 4 - List Code Sections): _____
 Special Provisions: (Chapter 5 - List Code Sections): _____
 Mixed Occupancy: () No (X) Yes Separation: _____ Hr. Exception: _____
 (X) Non-Separated Mixed Occupancy (508.3.2) - 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 be entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
 () Separated Mixed Occupancy (508.3.3) - 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.

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

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	Business (Tenant)	5315	23,000	-	-
1	Business	2,426	23,000	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

1 Frontage area increases from Section 506.2 are computed thus:
 a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (ft)
 b. Total Building Perimeter = _____ (ft)
 c. Ratio (FP) = _____ (ft)
 d. W = Minimum width of public way = _____ (ft)
 e. Percent of frontage increase = $100 \left(\frac{FP}{W} - 0.25 \right)$ or $W/30 = \dots$ (%)
 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) (106.2)
 4 The maximum area of parking garages must comply with 406.5.4. The maximum area of air traffic control towers must comply with 412.3.1
 5 Frontage increase is based on the unimpervious area value in Table 506.2

ALLOWABLE HEIGHT

	Allowable	Shown on Plans	Code Reference
Building Height in Feet (Table 504.3)	55	20	-
Building Height in Stories (Table 504.4)	2	1	-

1 Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

Building Element	Fire Separation Distance (Feet)	Rating		Detail # and Sheet #	Design # For Rated Assembly	Sheet # For Rated Penetration	Sheet # For Rated Joints
		REQ'D*	Provided (W/ H+ Reduction)				
Structural Frame, including columns, girders, trusses	-	-	-	-	-	-	-
Bearing Walls	-	-	-	-	-	-	-
Exterior	-	-	-	-	-	-	-
North	-	0	0	-	-	-	-
East	-	0	0	-	-	-	-
West	-	0	0	-	-	-	-
South	-	0	0	-	-	-	-
Interior	-	n/a	n/a	-	-	-	-
Non-Bearing Walls and Partitions	-	-	-	-	-	-	-
Exterior Walls	-	-	-	-	-	-	-
North	-	n/a	n/a	-	-	-	-
East	-	n/a	n/a	-	-	-	-
West	-	n/a	n/a	-	-	-	-
South	-	n/a	n/a	-	-	-	-
Interior Walls and Partitions	-	0	0	-	-	-	-
Floor construction, including supporting beams and joists. List construction type.	-	n/a	n/a	-	-	-	-
Floor Ceiling Assembly	-	n/a	n/a	-	-	-	-
Columns Supporting Floors	-	n/a	n/a	-	-	-	-
Roof construction, including supporting beams and joists	-	0	0	-	-	-	-
Roof Ceiling Assembly	-	0	0	-	-	-	-
Columns Supporting Roof	-	0	0	-	-	-	-
Shafts Enclosures - Exit	-	n/a	n/a	-	-	-	-
Shafts Enclosures - Other	-	n/a	n/a	-	-	-	-
Corridor Separation	-	0	0	-	-	-	-
Occupancy/ Fire Barrier Separation	-	0	0	-	-	-	-
Party/ Fire Wall Separation	-	n/a	n/a	-	-	-	-
Smoke Barrier Separation	-	n/a	n/a	-	-	-	-
Smoke Partition	-	n/a	n/a	-	-	-	-
Tenant/ Dwelling Unit/ Sleeping Unit Separation	-	1-Hr	1-Hr	T-2	U 419	-	-
Incidental Use Separation	-	n/a	n/a	-	-	-	-

PERCENTAGE OF WALL OPENING CALCULATIONS			
Fire Separation Distance (Feet) from Property Lines	Degree of Openings Protection (Table 705.8)	Allowable Area (%)	Actual Shown on Plans (%)
-	-	-	-
-	-	-	-

LIFE SAFETY SYSTEM REQUIREMENTS
Emergency Lighting: () No (X) Yes
Exit Signs: () No (X) Yes
Fire Alarm: (X) No () Yes
Smoke Detection Systems: (X) No () Yes () Partial
Carbon Monoxide Detection: (X) No () Yes

LIFE SAFETY SYSTEM REQUIREMENTS
 Life Safety Plan Sheet #: T-1
 (X) Fire and/ or smoke rated wall locations (Chapter 7)
 () Assumed and real property line locations (if not on site plan)
 () Exterior wall opening area with respect to distance to assumed property lines (705.8)
 (X) Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
 (X) Exit access travel distances (1017)
 () Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
 () Dead end lengths (1020.4)
 (X) Clear exit widths for each exit door
 (X) Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
 (X) 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
 (X) 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)
 (X) 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

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 Width 5' Access Aisle	Van Spaces with 132" Access Aisle	8' Access Aisle	
Main	See Civil Drawings	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Total	-	-	-	-	-	-

OCCUPANT LOAD AND EXIT WIDTH

Use Group and/ or Space Designation	Area(1) Sq.Ft.	Area(1) per Occupant	Number of Occupants	Egress Width per Occupant (Table 1005.1)		Exit Width (in) (2,3,4,5)			
				Stair	Level	Required Width (Section 1005.1) (a/b) x c		Actual Width Shown on Plans	
Business	5,315	100	53.15	n/a	0.2"	n/a	10.63	n/a	32
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Total # of Occupants	-	-	54	-	-	-	-	-	-

(1) See Table 1005.1 for minimum egress width and gross area as applicable.
 (2) Minimum stairway width (Section 1009.1), min. corridor width (Section 1017.2), min. door width (Section 1008.1.1)
 (3) Minimum width of exit passageway (Section 1021.2)
 (4) The loss of 1 means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1.1)
 (5) Assembly occupancy (Section 1025)

ASSEMBLY OCCUPANCY INFORMATION This section for Assembly Use Area(s)

Space Description	Area - SF	Occupant Load Factor	Occupant Load	Exit Width	Exit Quantity
()	()	()	()	()	()
()	()	()	()	()	()
()	()	()	()	()	()

PLUMBING FIXTURE REQUIREMENTS

Use	Water Closets			Urinals	Lavatories			Showers / Tubs	Drinking Fountains	
	Male	Female	Unisex		Male	Female	Unisex		Regular	Accessible
Business	Ratio	1:25	1:25	1:25	1:40	1:40	1:25	1:25-100		
	Exist'g	1.00	1.00	1.00	1.00	1.00	1.00	1	Hi-Lo	
	New									
	Req'd	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Space	Ratio									
	Exist'g									
	New									
	Req'd									
TOTALS	Req'd									
	Provid									

SPECIAL APPROVALS

Special Approval: (Local jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

NO NEW STRUCTURAL LOADS ARE IMPOSED ON EXISTING SYSTEM

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy 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 versus the annual energy cost for the proposed design.

Energy building envelope complies with code: (X) (If checked, the remainder of this section is not applicable.)

Exempt Building: () Provide code or statutory reference: _____

Climate Zone: () 3A () 4A () 5A

Method of Compliance: _____
 Energy Code: _____
 ASHRAE 90.1: _____
 Other: _____

EXISTING THERMAL ENVELOPE TO REMAIN UNCHANGED

THERMAL ENVELOPE: () _____ method only

Roof Ceiling Assembly (each assembly)
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Skylights in each assembly: _____
 U-Value of skylight: _____
 Total square footage of skylights in each assembly: _____

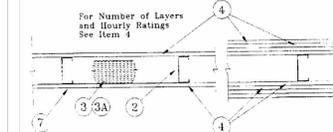
Exterior Walls (each assembly)
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Openings (windows or doors with glazing)
 U-Value of skylight: _____
 Solar heat gain coefficient: _____
 projection factor: _____
 Door R-Value: _____

Walls below grade (each assembly)
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____

Floors over unconditioned space (each assembly)
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____

Floors slab on grade
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Horizontal/ Vertical requirement: _____
 slab heated: _____

Design No. U419 Non Bearing Wall Ratings—1, 2, 3 or 4 Hr (See Items 3 & 4)



- Floor and Ceiling Runners**—(Not shown)—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
- Steel Studs**—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
- Batts and Blankets**—(Required as indicated under Item 4)—Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or B232)** Categories for names of Classified companies.
- Wallboard, Gypsum**—Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:
 1. **First and Ceiling Runners**—(Not shown)—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
 2. **Steel Studs**—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
 3. **Batts and Blankets**—(Required as indicated under Item 4)—Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or B232)** Categories for names of Classified companies.
 3A. **Batts and Blankets**—(Optional)—Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV or B232)** Categories for names of Classified companies.
 4. **Wallboard, Gypsum**—Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:
 5. **Fasteners**—(Not shown)—Type S or 5-12 self-drilling, self-tapping steel screws used to attach panels to studs (Item 2) or furring channels (Item 6).
 6. **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically.
 7. **Two layer systems:** First layer—1 in. long for 1/2 in., 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer—1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 24 in. OC. Third layer—2-1/4 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer—1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer—2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 3/4 in. thick panels, spaced 24 in. OC. Fourth layer—2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.
 8. **Four-layer systems:** First layer—1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer—1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer—2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 3/4 in. thick panels, spaced 24 in. OC. Fourth layer—2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.
 9. **Furring Channels**—(Optional, not shown), for single or double



ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOOR		BASE		WALLS		CEILING		HEIGHT	REMARKS
		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH		
100	OFFICE	CONC	CARPET	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
101	OFFICE	CONC	CARPET	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
102	OFFICE	CONC	CARPET	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
103	OFFICE	CONC	CARPET	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
104	SITUATION ROOM	CONC	LVT	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
105	OFFICE	CONC	CARPET	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
106	CORRIDOR	CONC	LVT	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
107	EXISTING TOILET ROOM	CONC	LVT	RUBBER	FACT	GYP. BD	PAINT	LAY-IN	FACT	10'-0"	-
108	EXISTING EVIDENCE ROOM	-	-	-	-	-	-	-	-	-	-
109	EXISTING DATA ROOM	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-

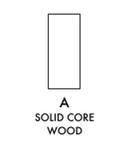
ROOM FINISH NOTES:
01. FACT. INDICATED IN SCHEDULE STANDS FOR FACTORY FINISH (TO BE SELECTED BY OWNER).
02. CONC INDICATED IN SCHEDULE STANDS FOR CONCRETE.

DOOR SCHEDULE

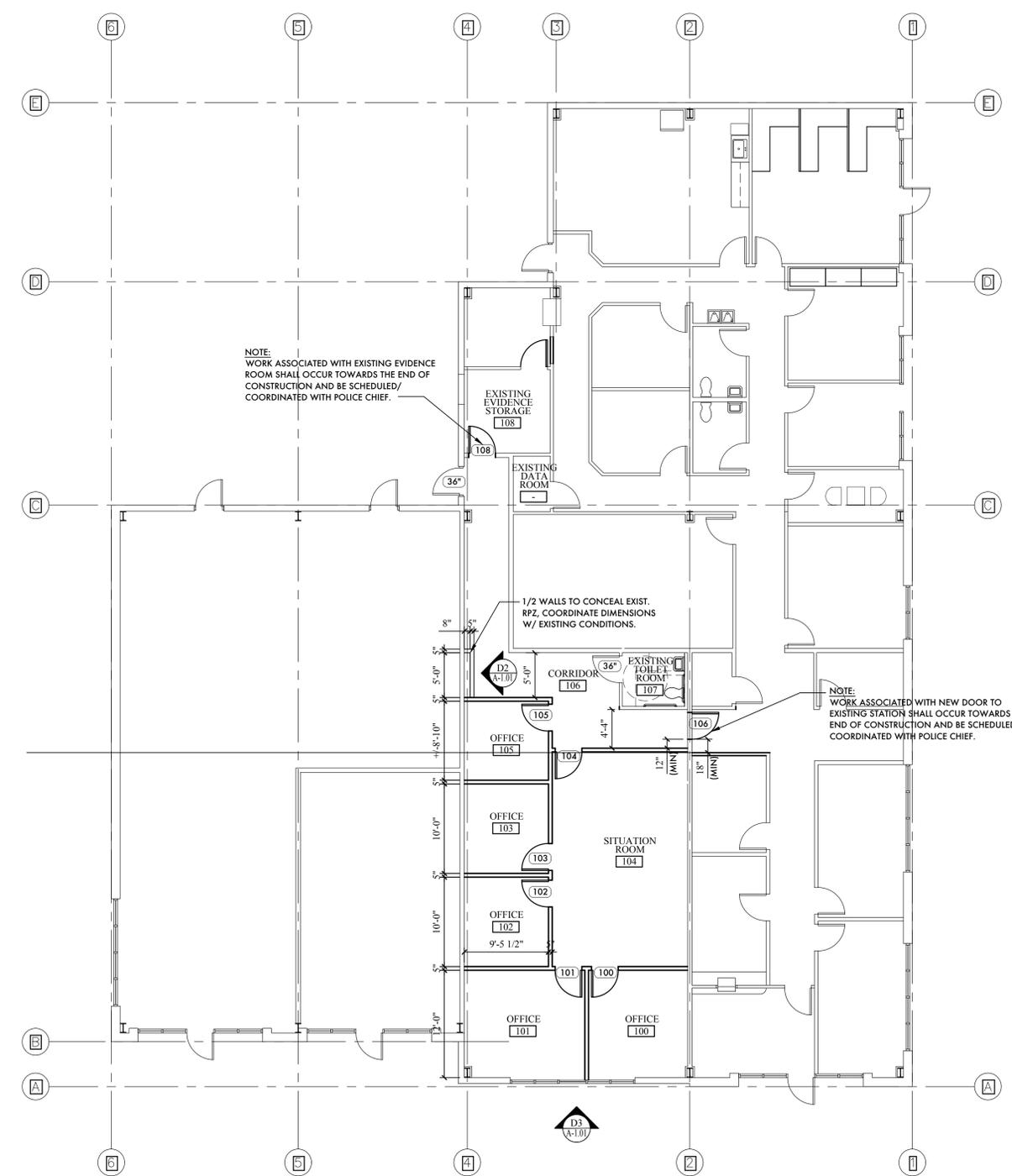
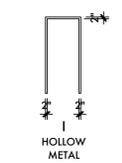
NO.	TYPE	DOOR				FRAME				HWRE	SIGNAGE	THRES-HOLD	REMARKS
		WIDTH	HEIGHT	THICK.	CONST.	MATERIAL	FINISH	MAT.	FINISH				
100	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
101	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
102	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
103	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
104	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
105	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
106	A	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	HM	PAINT	I	-	-	-
107	EXISTING TO REMAIN												
108	-	3'-0"	7'-0"	1-3/4"	HM	METAL	PAINT	HM	PAINT	I	-	-	REUSE EXISTING EVIDENCE DOOR/ FRAME REMOVED

DOOR SCHEDULE NOTES:
01. ALL DOOR HARDWARE SHALL BE "ADA" COMPLIANT WITH LEVER TYPE HANDLES.
02. STYLE AND DOOR SIZES SHALL MATCH EXISTING DOORS IF APPLICABLE OR UNLESS OTHERWISE NOTED.
03. FACT INDICATED IN SCHEDULE STANDS FOR FACTORY.
04. SC INDICATED IN SCHEDULE STANDS FOR SOLID CORE.
05. HM INDICATED IN SCHEDULE STANDS FOR HOLLOW METAL.
06. ALL RATED DOORS TO HAVE SMOKE SEALS PER CODE, IF APPLICABLE.
07. "T" INDICATES TEMPERED GLASS.

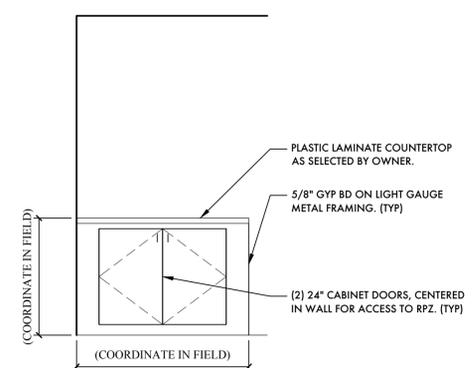
DOOR TYPES:



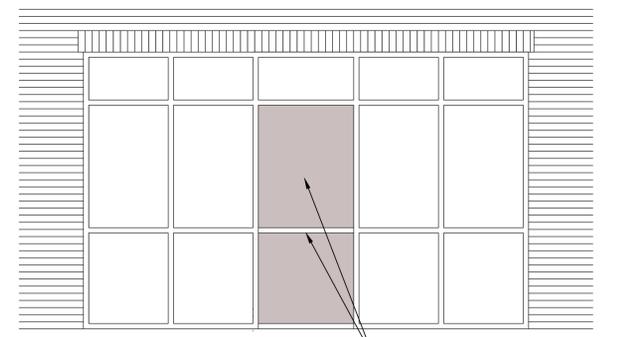
FRAME TYPES:



C2 FLOOR PLAN
A-1.01 SCALE: 1/8"=1'-0"



D2 RPZ CONCEALMENT DETAIL
A-1.01 SCALE: 3/8"=1'-0"



D3 STOREFRONT ELEVATION
A-1.01 SCALE: 3/8"=1'-0"

- GENERAL NOTES:**
- CONTRACTOR & ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATION & FIELD VERIFYING ALL EXISTING CONDITIONS. CONTRACTOR & ALL SUBCONTRACTORS SHALL REVIEW ALL CONST. DOCUMENTS (ALL DISCIPLINES) PRIOR TO THE START OF CONST. & REPORT ANY DISCREPANCIES/ CONFLICTS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO THE COMMENCEMENT OF ANY WORK.
 - GEN. CONTRACTOR SHALL COORDINATE ALL ARCHITECTURAL DRAWINGS WITH WORK OF OTHER DISCIPLINES PRIOR TO START OF WORK & THROUGHOUT THE CONSTRUCTION SCHEDULE.
 - ALL DIMENSIONS ARE NOMINAL UNLESS OTHERWISE INDICATED.
 - ALL DOORS IN NEW WALLS SHALL HAVE A 4" JAMB @ THE HINGE SIDE, UNLESS OTHERWISE NOTED.
 - IN ALL CASES MAINTAIN A 18" CLEAR SURFACE ADJACENT TO LATCH ON PULL SIDE OF DOORS & A 12" CLEAR SURFACE ADJACENT TO LATCH ON PUSH SIDE OF DOORS ONLY WHEN DOOR IS PROVIDED WITH A CLOSER.
 - ALL CONSTRUCTION SHALL COMPLY WITH LOCAL JURISDICTION'S REGULATIONS AND THE NC STATE BUILDING CODES.
 - MOUNT ROOM IDENTIFICATION & DIRECTIONAL SIGNAGE WITH RAISED CHARACTERS & BRAILLE 60" AFF TO THE CENTER OF SIGN ON THE LATCH SIDE OF DOORS.
 - FIELD VERIFY ALL DIMENSIONS.
 - PROVIDE ADEQUATE BLOCKING FOR ALL WALL MOUNTED EQUIP.
 - PROVIDE ABC FIRE EXTINGUISHER(S) AS REQUIRED BY NCSBC, VERIFY SIZE, TYPE, QUANTITY AND LOCATIONS WITH LOCAL FIRE MARSHALL PRIOR TO INSTALLATION.
 - ALL BUSINESS TRANSACTION COUNTERS SHALL BE A.D.A. COMPLIANT WITH MIN. 36" WIDE COUNTER @ 36" A.F.F. MAX.
 - PROVIDE BUILDING ADDRESS NUMBERS TO MATCH EXISTING BUILDING AND PER LOCAL FIRE MARSHALL.
 - PROVIDE KNOX BOX PER LOCAL FIRE DEPT. DIRECTION.

- WALL LEGEND:**
- 1. INDICATES NEW STUD WALLS W/ GYP.BD. EACH SIDE, STUDS @ 16" O.C.
 - 2. INDICATES EXISTING STUD WALLS
 - 3. INDICATES EXISTING 1-HOUR RATED FIRE BARRIER.
 - 4. INDICATES WALL OR ITEM TO BE REMOVED.

No.	Revision	Date
0	Issued for Permitting/ Construction	07/27/2020

xxxx.dwg J. Armistead
File Name: _____
Client/ Project: _____
Town of Rolesville/
ROLESVILLE POLICE DEPARTMENT EXPANSION
Rolesville, North Carolina



Sealed Date: 07/27/2020

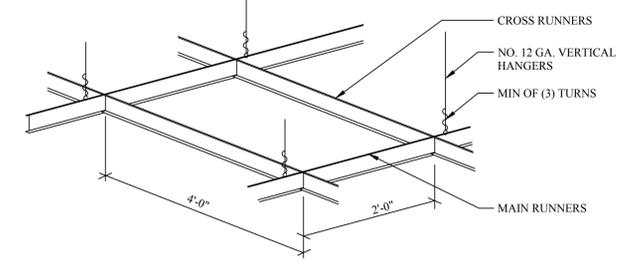
Address:
3206 Heritage Trade Drive, Suite 108
Wake Forest, North Carolina 27587
Phone: (919) 554-1505

Consultant:



C3 REFLECTED CEILING PLAN
A-2.01 SCALE: 1/8"=1'-0"

1. METAL SUSPENSION SYSTEM FOR ACOUSTICAL TILE AND LAY-IN PANEL CEILING SHALL CONFORM TO THE REQUIREMENTS OF ASTM C635-87 FOR INTERMEDIATE DUTY SYSTEMS.
2. INSTALLATION OF METAL CEILING SUSPENSION SYSTEM FOR ACOUSTICAL TILE AND LAY-IN PANELS SHALL CONFORM TO THE REQUIREMENT OF ASTM C636-86.
3. MAIN RUNNERS AT 48" OC, CROSS RUNNERS AT 24" OC.
4. VERTICAL HANGERS TO BE MAX. 8" FROM WALLS.



D4 TYPICAL LAY-IN CEILING DETAIL
A-2.01 SCALE: NOT TO SCALE

No.	Revision	Date
0	Issued for Permitting/Construction	07/27/2020

No. Issued: _____ Date: _____

File Name: xxxxx.dwg Drawn By: J. Armistead

Client/Project:
Town of Rolesville/
ROLESVILLE POLICE DEPARTMENT
EXPANSION
Rolesville, North Carolina

Sheet Title:
REFLECTED CEILING PLAN

Project No.: 20026 Revision: 0

Sheet No.: **A-2.01**

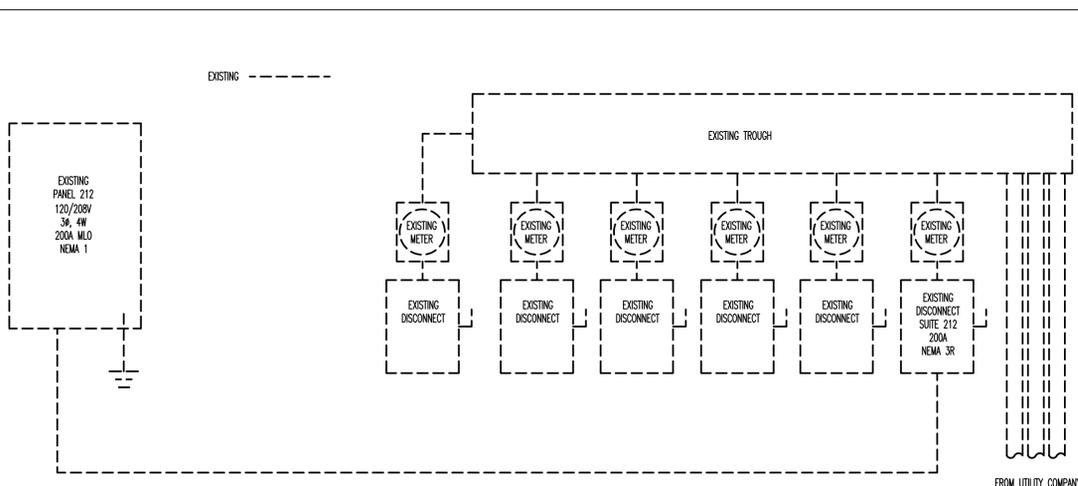
MARK	DESCRIPTION	LOUVER/LENS	LAMP - SYLVANIA				MOUNTING	REMARKS	MFG	MODEL	
			TYPE	CCT	VOLTAGE	INPUT WATTAGE					
A	2X4 LED FLAT PANEL	ACRYLIC	LED	3500K	120	45.0	RECESSED	2	LITHONIA	EPANL-2X4-4800LM-80CRI-35K-EZT-MVOLT	
B	EXISTING EVIDENCE ROOM LIGHT	-	-	-	-	-	-	3	EXISTING	-	
DE	EXISTING EXTERIOR DUAL LED EMERGENCY LIGHT	-	-	N/A	120	-	SURFACE	1,3	EXISTING	EXISTING	
EXH	EXISTING LED EXIT/COMBO W/ BATTERY BACKUP	-	-	N/A	120	-	SURFACE	1,3	EXISTING	EXISTING	
EH	DUAL HEAD EMERGENCY FIXTURE	-	-	LED	N/A	120	0.62	SURFACE	1,2	LITHONIA	ELUC-SD

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, PHILIPS OR DAY-BRITE LIGHTING.
3. EXISTING LIGHT FIXTURE.

CKT	LOAD	EXISTING PANEL - P212				LOAD	CKT
		BKR	LOAD KVA	PH	LOAD KVA		
1	A/C	30/2	2.15 A	A	4.65	45/2	HEAT
3			2.15 B	B	4.65		
5	RECPYS-SITUATION RM-NORTH WALL	20/1	1.44 C	1.44	20/1	RECPY IN FRONT OFFICES	4
7	RECPYS-SITUATION RM	20/1	0.90 A	A	0.00	30/2	SPARE
9	KEY FDB READERS	20/1	0.50 B	B	0.00		
11	LIGHTS & EXIT/EMERGENCY	20/1	1.01 C	C	0.00	-	SPACE
13	RECPYS - BACK OFFICE, HALLWAY	20/1	0.72 A	A	0.00	-	SPACE
15	WATER HEATER	20/1	2.40 B	B	0.00	-	SPACE
17	SPACE	-	0.00 C	C	0.00	-	SPACE
19	SPACE	-	0.00 A	A	0.00	-	SPACE
21	SPACE	-	0.00 B	B	0.00	-	SPACE
23	SPACE	-	0.00 C	C	0.00	-	SPACE
25	SPACE	-	0.00 A	A	0.00	-	SPACE
27	SPACE	-	0.00 B	B	0.00	-	SPACE
29	SPACE	-	0.00 C	C	0.00	-	SPACE
31	SPACE	-	0.00 A	A	0.00	-	SPACE
33	SPACE	-	0.00 B	B	0.00	-	SPACE
35	SPACE	-	0.00 C	C	0.00	-	SPACE
37	SPACE	-	0.00 A	A	0.00	-	SPACE
39	SPACE	-	0.00 B	B	0.00	-	SPACE
41	SPACE	-	0.00 C	C	0.00	-	SPACE
			KVA	PH	AMPS		
			8.4	A	70		
			9.7	B	81		
			3.9	C	32		
	VOLTAGE/PHASE	208Y/120V, 3P, 4W					
	BUS RATING	200A					
	MAIN CIRCUIT BREAKER RATING	MLO					
	AIC RATING	EXISTING					
	SERVICE ENTRANCE RATED	NO					
	ENCLOSURE	NEMA 1					
	MOUNTING	RECESSED					

NEC ELECTRIC DEMAND SUMMARY 208Y/120V, 3P, 4W							
EQUIPMENT	DEMAND FACTOR	KVA			LOAD KVA	NEC REFERENCE	NOTES/CALCULATIONS
		A	B	C			
LIGHTING	125%	1.30	1.30	1.30	3.90	220.12	1247 SF X 2.5 VA/SF X 1.25
RECEPTACLES < 10 KVA	100%	1.62	0.50	2.88	5.00	220.44	
HVAC	100%	6.80	6.80	0.00	13.60	--	BASED ON MCA
WATER HEATER	125%	0.00	3.00	0.00	3.00	422.13	STORAGE TANK (120 GAL @ 125%)
	DEMAND KVA PER PHASE	9.72	11.60	4.18			
	DEMAND AMPS PER PHASE	81	97	35			

THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.



POWER RISER - NOT TO SCALE | 1

LIGHTING DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
⚡	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-5-896.
⚡	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER IN-100 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
⚡	LDV VOLTAGE SWITCH	WATTSTOPPER LVS-1 LDV VOLTAGE MOMENTARY CONTROL SWITCH.
⚡	CEILING OCCUPANCY SENSOR	WATTSTOPPER, 01-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
⚡	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
⚡	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

POWER DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
⚡	DATA AND TELEPHONE JACK	PHONE/DATA OUTLET, EC TO INSTALL 3/4" C WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CABLING BY OTHERS.
⚡	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. "MP" DENOTES WEATHERPROOF COVER. "CH" DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
⚡	QUAD RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE.
⚡	DEDICATED RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. UNLESS OTHERWISE NOTED ON PLANS, VERIFY PLUG TYPE PRIOR TO PURCHASE & INSTALLATION. GFCI OR AFCI IF NOTED. "MP" DENOTES WEATHERPROOF COVER. "CH" DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596. MAY BE EITHER SIMPLEX, DUPLEX, OR QUAD.
⚡	DUPLEX FLOOR RECEPTACLE	DUPLEX RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
⚡	QUAD FLOOR RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
⚡	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE I ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
⚡	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE I ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.
⚡	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.

ELECTRICAL DESIGNER'S STATEMENT			
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE			
PRESCRIPTIVE	X	PERFORMANCE	___
ENERGY COST BUDGET	___		___
LIGHTING SCHEDULE:			
LAMP TYPE REQUIRED IN FIXTURE:		SEE LIGHTING LEGEND	
NUMBER OF LAMPS PER FIXTURE:		SEE LIGHTING LEGEND	
BALLAST TYPE USED IN FIXTURE:		SEE LIGHTING LEGEND	
NUMBER OF BALLASTS IN FIXTURE:		SEE LIGHTING LEGEND	
TOTAL WATTAGE PER FIXTURE:		SEE LIGHTING LEGEND	
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:		WATTS SPECIFIED: 810.0	WATTS ALLOWED: 1084.89
OCCUPANCY			
POLICE STATION	1247	0.87	1084.89
TOTAL	1247		1084.89
EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)			
MOTOR HORSEPOWER:	N/A		
NUMBER OF PHASES:	N/A		
MINIMUM EFFICIENCY:	N/A		
MOTOR TYPE:	N/A		
NUMBER OF POLES:	N/A		
DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.			
FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2018 NORTH CAROLINA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 - REDUCED LIGHTING POWER DENSITY.			
810.0 W SPECIFIED <= 976.40 W (1084.89 W ALLOWED X 90%)			

ELECTRICAL SCHEDULES | 2

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
 - PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR, FASC - FIRE ALARM SYSTEM CONTRACTOR.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE ELECTRICAL CONTRACTOR SHALL ALSO INSTALL MATERIALS AND EQUIPMENT SUPPLIED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INTERFERABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE ELECTRICAL CONTRACTOR AT AN APPROVED LOCATION. THE ELECTRICAL CONTRACTOR SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND ELEMENTS. MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE ELECTRICAL CONTRACTOR UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
6. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
9. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
10. GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELEIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH 250.32, SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDING IN ACCORDANCE WITH 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.56 AS NECESSARY.
11. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
12. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
13. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
14. ALL WORK SHALL CONFORM TO 2017 NATIONAL ELECTRIC CODE, 2018 STATE BUILDING CODE, AND ALL APPLICABLE LOCAL CODES.

MATERIALS:

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC. UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS. CUTLER-HAMMER, SEMENS, OR GE BUSSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METER BASES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. ELECTRICIAN SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
3. ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D, EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSMANN, LITTELFUSE, OR MERSEN.
4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
5. CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-WAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
6. ALL WIRE, CONDUCTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THIN/THIN OR XHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THIN OR XHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC., INDUSTRIAL WIRE & CABLE, INC., OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS," 3M "SCOTCH LOCK," OR "TAB TIGHT" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO JUNCTION BOXES, TROUGHS, OR CUTTERS. WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
9. ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS NOTED. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANS C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLICON, RACO, OR O-Z/GENEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED.
11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR RIGID STEEL CONDUIT (ERSS), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANS C80.6 AND UL 1242.
12. METAL CONDUIT SHALL BE BY ALLED TUBING & CONDUIT, BECK MANUFACTURING, INC. OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC., ELECTRIFLEX COMPANY, OR INTERNATIONAL METAL HOSE.
13. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
14. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4" IN CONDUIT. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT GROUP ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
15. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
16. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID. MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY, SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
17. MOUNT LIGHT SWITCHES AT 48" AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH OFF POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, WYR PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
18. LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
19. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6"-8" IN BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE FULL WIRE ENTRIES CONDUITS, USE CONDUIT FROM MINIMUM SIZE TO NECESSARY FOR LONGER PULPS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2" IN ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.7(A), AND 300.5(E) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILING PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SEAL ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY BY AN EMT CONDUIT USING A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
20. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2" IN MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL-CORRUGATED SHEET DECKING-TYPE ROOF. SEE NEC 300.4(E).
21. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLICON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE F.S. VAPORITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACILITIES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN OUTLET BOXES SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 712.2.2 (MAXIMUM BOX SIZE IS 16 SQUARE IN AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.
22. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1" IN EMT CONDUIT MAXIMUM AND 4" IN JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE NORTH CAROLINA GENERAL CONSTRUCTION BUILDING CODE.
23. ABANDONED CONDUIT AND BOXES SHALL HAVE ALL ELECTRICAL WIRING REMOVED COMPLETELY AND NOT JUST "MADE SAFE." CONDUIT AND BOXES SHALL BE REMOVED WHERE PRACTICAL WITHOUT CREATING ADDITIONAL DEMOLITION/RESTITUTION WORK FOR OTHER TRADES.
24. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
25. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE 4" IN SQUARE BY 2-1/8" IN DEEP BOX WITH 3/4" IN KNOCK-OUTS AND A 3/4" IN CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
26. ELECTRICAL CONTRACTOR SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARMED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART II. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC. IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
27. ELECTRICAL CONTRACTOR SHALL FIELD IDENTIFY ALL SWITCH BOARDS, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARY QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
28. ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4" IN MINIMUM) ETCHED INTO THE WHITE CORE. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.

SYSTEM COMMISSIONING PLAN

PURSUANT TO THE REQUIREMENTS OF SECTION 408 OF THE NC ENERGY CONSERVATION CODE, COMMISSIONING MAY BE REQUIRED BY THE AHJ ON MECHANICAL, HOT WATER, AND LIGHTING CONTROLS SYSTEMS. A REPRESENTATIVE OF KILIAN ENGINEERING, INC. WOULD THEN BE REQUIRED TO PERFORM A SITE VISIT TO OBSERVE THE INSTALLED AND OPERATIONAL SYSTEMS AND VIEW ANY PRE-PERFORMED TESTS AS NOTED BELOW. KILIAN ENGINEERING SHALL BE CONTACTED NOT LESS THAN 3 BUSINESS DAYS PRIOR TO NECESSARY TESTING TO SCHEDULE A VISIT. COORDINATION BETWEEN THE MC, EC, AND PC SHALL OCCUR SO THAT SYSTEM COMMISSIONING CAN BE DONE FOR ALL THREE PORTIONS OF THE APPENDIX C1 DOCUMENT IN A SINGLE VISIT.

- LIGHTING CONTROLS:
- ELECTRICAL CONTRACTOR TO TEST ALL OCCUPANCY SENSORS FOR OPERATION ACCORDING TO MANUFACTURER'S INSTRUCTIONS

