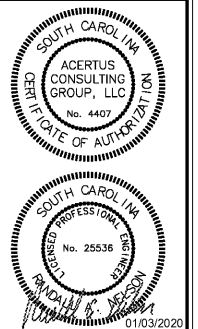




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NEW FCAC STORE
 2020 ER
 1762 STATE RD
 SUMMERVILLE, SC



ISSUE BLOCK	01/06/20	REV #1
PROPERTY NO.:	317910	
6 DIGIT NO.:	798862	
4 DIGIT NO.:	013K	
AOR PROJECT NUMBER:	1955867	
TO PERMIT:	DATE: 12-20-19	
TO BID:	DATE: ##-##-##	
SHEET TITLE:	ONE-LINE DIAGRAM, PANEL SCHEDULES, AND NOTES	
SHEET NUMBER:	E5	

COMMERCIAL LOAD SUMMARY

BUILDING AREA: 6,808 SQ. FT. VOLTAGE: 208Y/120V, 3PH, 4W

LOAD DESCRIPTION	CONNECTED LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)
INTERIOR LIGHTING	4,809	x 125%	= 6,011
EXTERIOR LIGHTING	668	x 125%	= 835
SIGNAGE	7,200	x 125%	= 9,000
MINIMUM GENERAL LIGHTING PER NEC-220 X 125%			19,611
MINIMUM TRACK LIGHTING/SHOW WINDOW PER NEC-220 X 125%			4,000
POWER & HVAC			
EXISTING	0	x 100%	= 0
RECEPTACLES	13,440	x 100% 50%	= 11,720
MISCELLANEOUS EQUIPMENT	57,520	x 100%	= 57,520
REFRIGERATION EQUIPMENT	0	x 100%	= 0
KITCHEN	0	x 100%	= 0
HVAC - SUMMER	5,728	x 100%	= 5,728
HVAC - WINTER	0	x 100%	= 0
SUPP. ELECTRIC HEAT	400	x 100%	= 400
MOTORS	7,211	x 100%	= 7,211
LARGEST MOTOR	4,864	x 25%	= 1,216
SUB-TOTAL (VA)	101,830		117,235
SUB-TOTAL (AMPS)	283		325
SERVICE SIZE (AMPS)			400
SPARE CAPACITY (AMPS)			75

PANELBOARD LP

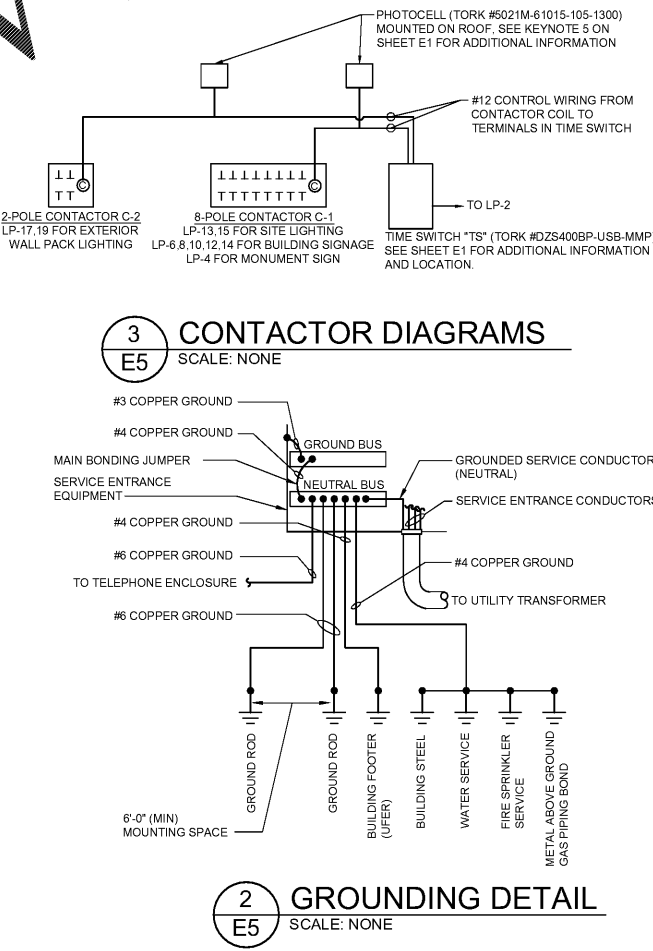
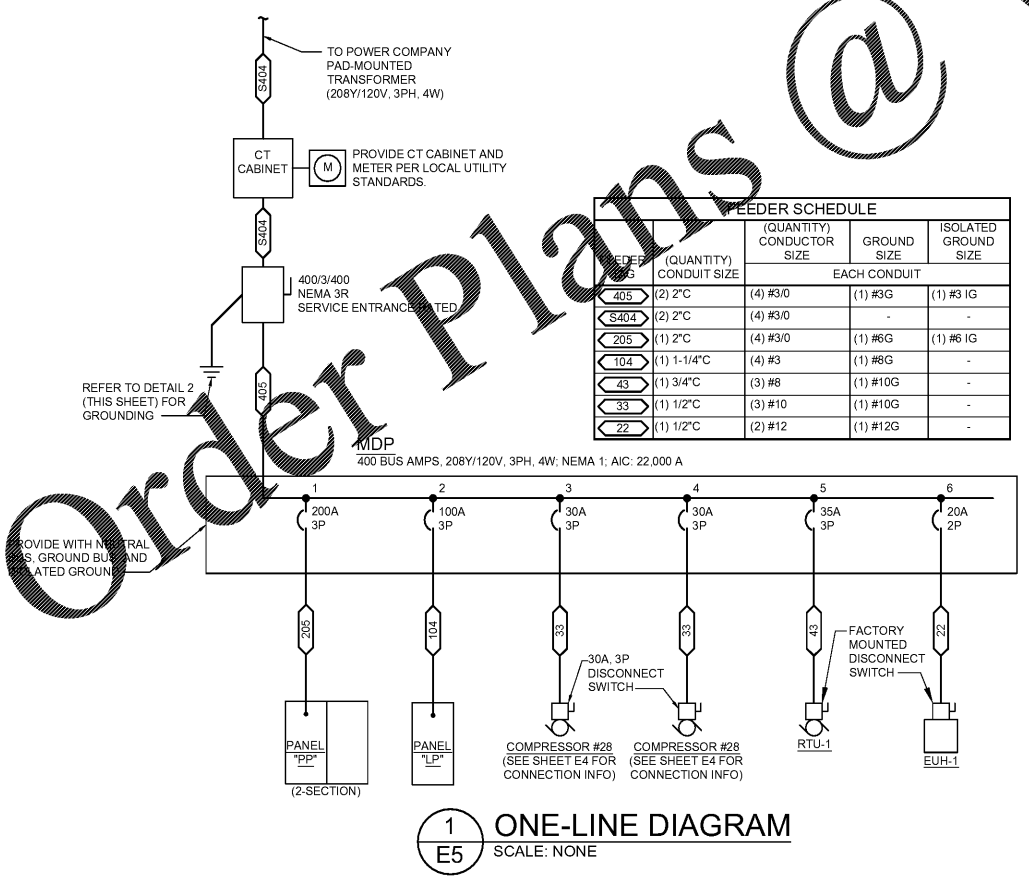
BUS AMPS: 100A MAIN SIZE / TYPE: MLO LOCATION: UTILITY AREA GROUND BUS: YES
 VOLTS/PHASE: 208Y/120V, 3PH, 4W AFC VALUE: 16.217 A ISOL. GROUND BUS: NO
 MOUNTING: SURFACE AIC RATING: 22,000 A FULLY RATED SECTIONS: 1 FEED THRU LUGS:

CKT #	CIRCUIT DESCRIPTION	BREAKER	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA)			LOAD (VA)	WIRE SIZE	BREAKER	CIRCUIT DESCRIPTION	CKT #
					A	B	C					
1	SPARE	20	1	0	1,000			1,000	12	1	TIME SWITCH AND CONTACTORS	2
3	SERVICE AREA LIGHTING	20	1	1,420		2,620		1,200	SL	1	MONUMENT SIGN	4
5	SERVICE AREA LIGHTING	20	1	1,562			2,762	1,200	12	1	BUILDING SIGN	6
7	INVENTORY LTG / EM LTG	20	1	782	1,982			1,200	12	1	BUILDING SIGN	8
9	OFFICE / TOILET / BREAK / EM LTG & EF-2	20	1	934		2,134		1,200	12	1	BUILDING SIGN	10
11	SHOWROOM / EM LTG	20	1	539			1,739	1,200	12	1	BUILDING SIGN	12
13	SITE LIGHTING	20	1	172	1,372			1,200	12	1	BUILDING SIGN	14
15	SITE LIGHTING	20	1	258		258		0	1	20	SPARE	16
17	EXTERIOR WALL PACKS	20	1	114		114		0	1	20	SPARE	18
19	EXTERIOR WALL PACKS	20	1	114		114		0	1	20	SPARE	20
21	SERVICE AREA LTG / EM LTG	20	1	68		68		0	1	20	SPARE	22
23	SPARE	20	1	0		0		0	1	20	SPARE	24
25	SPARE	20	1	0		0		0	1	20	SPARE	26
27	SPARE	20	1	0		0		0	1	20	SPARE	28
29	SPARE	20	1	0		0		0	1	20	SPARE	30
PER PHASE SUB-TOTALS					4,466	5,080	4,615	LEGEND:				
TOTAL CONNECTED PANELBOARD (VA)					14,163			TS - VIA TIME SWITCH				
TOTAL CONNECTED PANELBOARD (AMPS)					39			GF - GROUND FAULT INTERRUPTER				
TOTAL PANELBOARD DEMAND (VA)					17,280			FA - FIRE ALARM / RED / LOCKING TAB				
TOTAL PANELBOARD DEMAND (AMPS)					48			EM - EMERGENCY LTG. / LOCKING TAB				
								SL - REFER TO SITE LIGHTING PLAN ESL1				

PANELBOARD PP

BUS AMPS: 200A MAIN SIZE / TYPE: MLO LOCATION: UTILITY AREA GROUND BUS: YES
 VOLTS/PHASE: 208Y/120V, 3PH, 4W AFC VALUE: 17.459 A ISOL. GROUND BUS: YES
 MOUNTING: SURFACE AIC RATING: 22,000 A FULLY RATED SECTIONS: 1 FEED THRU LUGS:

CKT #	CIRCUIT DESCRIPTION	BREAKER	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA)			LOAD (VA)	WIRE SIZE	BREAKER	CIRCUIT DESCRIPTION	CKT #	
					A	B	C						
1	SALES POD	20	1	360	1,297			937				2	
3	SALES POD	20	1	360		1,297		937	12	3	EF-1	4	
5	SALES POD	20	1	360			1,297	937				6	
7	CUSTOMER SHOWROOM / OFFICE RCPTS	20	1	720	1,440			720	1	1	SERVICE AREA RCPTS	8	
9	CUSTOMER SHOWROOM IG RCPT	20	1	180		900		720	1	1	SERVICE AREA RCPTS	10	
11	CHARGING STATION	20	1	720			1,440	720	1	1	SERVICE AREA RCPTS	12	
13	COFFEE BAR	20	1	180	540			180	1	1	SERVICE AREA WORK BENCH	14	
15	BOSS TV	20	1	12		860		360	12	1	MVS DESK IG	16	
17	MENU BOARDS	20	1	12			2,300	800	12	1	SERVICE AREA EWC	18	
19	SHOWROOM PRINTER	20	1	12	680			200	12	1	ROOF CONVENIENCE RCPT	20	
21	MRT DISPLAY	20	1	12	560		1,220	200	12	1	INVENTORY RCPT	22	
23	TOILET RCPT & SHOWROOM EWC	20	1	12	860			180	12	1	UTILITY AREA RCPT	24	
25	OFFICE IG RCPTS	20	1	12	360	720		360	12	1	TELEPHONE SERVICE	26	
27	SERVER CABINET IG RCPT	20	1	12	360			360	12	1	FIRE SERVICE PANEL	28	
29	MICROWAVE	20	1	10	200			360	12	1	OPTIONAL SECURITY SYSTEM	30	
31	REFRIGERATOR	20	1	10	1,000	700		1,200	12	1	ALIGNMENT COMPUTER	32	
33	BREAK RCPTS	20	1	12	540			200	12	1	TOXALERT SYSTEM	34	
35	SIGNAGE CONVENIENCE RCPT	20	1	SL				180	12	1	EXTERIOR FRONT RCPT	36	
37	SPARE	20	1	0				0	1	20	SPARE	38	
39	SPARE	20	1	0				0	1	20	SPARE	40	
41	SPARE	20	1	0				0	1	20	SPARE	42	
SECTION 2													
43	AIR DRIVER #9	20	1	12	94			1,800	10	2	SMART LIFT (BAY #1)	44	
45	BRAKE SHOP #10	20	1	12	94			1,500	10	2	SMART LIFT (BAY #2)	46	
47	ELECTRONIC WHEEL BAL	20	2	12	1,200			1,500	10	2	SMART LIFT (BAY #2)	48	
49	#13A	20	1	12	1,200			1,500	10	2	SMART LIFT (BAY #3)	50	
51	BALANCER MOUNT FORCE	20	2	10	1,200			1,500	10	2	SMART LIFT (BAY #3)	52	
53	#13B	20	1	12	1,200			1,500	10	2	SMART LIFT (BAY #4)	54	
55	RM CLAMP TIRE CHANGER	30	2	8	1,200			1,500	10	2	SMART LIFT (BAY #4)	56	
57	#18	20	1	12	2,760			1,800	10	2	SMART LIFT (BAY #5)	58	
59	SHOP FAN #42	20	1	12	264			1,800	10	2	SMART LIFT (BAY #5)	60	
61	SHOP FAN #42	20	1	12	264			1,800	10	2	SMART LIFT (BAY #5)	62	
63	SHOP FAN #42	20	1	12	264			2,064	6	2	ALIGNMENT LIFT (BAY #6)	64	
65	SHOP FAN #42	20	1	12	264			2,964	2,700	6	2	ALIGNMENT LIFT (BAY #6)	66
67	SHOP FAN #42	20	1	12	264			1,800	10	2	SMART LIFT (BAY #7)	68	
69	SHOP FAN #42	20	1	12	264			1,864	10	2	SMART LIFT (BAY #7)	70	
71	SHOP FAN #42	20	1	12	264			864	400	12	1	WATER HEATER / RECIRC. PUMP	72
73	SPARE	20	1	0		414		414	12	1	UNIT HEATER UH-1	74	
75	OVERHEAD DROP LIGHTS #2	20	1	12	200			614	14	1	UNIT HEATER UH-2	76	
77	CORD REEL #17	20	1	10	1,500			360	12	1	RADIANT HEATER RAD-1	78	
79	CORD REEL #17	20	1	10	1,500			360	12	1	RADIANT HEATER RAD-2	80	
81	MOTORIZED DAMPER	20	1	12	200			360	12	1	RADIANT HEATER RAD-3	82	
83	SHOW WINDOW RCPTS	20	1	12	540			540	0	1	SPARE	84	
PER PHASE SUB-TOTALS					22,587	22,299	21,469	LEGEND:					
TOTAL CONNECTED PANELBOARD (VA)					66,374			TS - VIA TIME SWITCH					
TOTAL CONNECTED PANELBOARD (AMPS)					184			GF - GROUND FAULT INTERRUPTER					
TOTAL PANELBOARD DEMAND (VA)					68,704			FA - FIRE ALARM / RED / LOCKING TAB					
TOTAL PANELBOARD DEMAND (AMPS)					191			EM - EMERGENCY LTG. / LOCKING TAB					
								SL - REFER TO SITE LIGHTING PLAN ESL1					



- ### CONTACTOR NOTES
- ALL CONTACTORS TO BE ELECTRICALLY HELD TYPICAL.
 - ALL CONTACTORS AND TIME SWITCH SHALL BE INSTALLED IN ONE (1) GENERAL PURPOSE CABINET WITH HINGED DOOR, VERIFY CABINET SIZE IN FIELD.
 - CONTRACTOR TO PROVIDE TIME SWITCH "TS" CONTACTORS, AND PHOTOCELLS, AS SHOWN TO CONTROL ALL EXTERIOR LIGHTING AND SIGNAGE AS SHOWN IN "CONTACTOR DIAGRAM" THIS SHEET. COORDINATE WITH STORE MANAGER THE HOURS OF OPERATION AND DEMONSTRATE ALL "TIME SWITCH" FUNCTIONS. PROVIDE STORE MANAGER AND FIRESTONE CONSTRUCTION DEPARTMENT WITH COPIES OF ALL OPERATION AND INSTALLATION MANUALS.
 - WALL MOUNT TIME SWITCH AND CONTACTOR PANEL.
 - PROVIDE PHOTOCELL DOWNSTREAM OF TIMESWITCH TO ALLOW FOR PHOTOCELL OVERRIDE OF TIMESWITCH CONTROLS. CONTROL INTENT IS FOR PARKING LOT LIGHTING, SIGNAGE AND BUILDING SIGN LIGHTING TO BE "OFF" BETWEEN 2AM AND STORE OPENING TIME. AT STORE OPENING TIME, THE FIXTURES SHOULD BE ON PHOTOCELL CONTROL ONLY TO ALLOW THESE FIXTURES TO ENERGIZE "ON" DURING DARKER PERIODS THROUGHOUT THE DAY. WALL PACKS SHALL BE ON PHOTOCELL CONTROL ONLY 24 HOURS/DAY.
 - THE CONDUIT WHICH PROVIDES POWER TO THE EXTERIOR SIGN LIGHTING, EXTERIOR LIGHTING, OR OTHER EXTERIOR REQUIREMENTS REQUIRING UNDERGROUND CONDUIT SHOULD COMMENCE UNDERGROUND AT THE INSIDE FACE OF AN EXTERIOR WALL AND EXIT THE BUILDING IMMEDIATELY WITHOUT RUNNING HORIZONTAL UNDER OR IN THE GROUND FLOOR CONSTRUCTION.

- ### ONE-LINE DIAGRAM NOTES
- ALL METERING EQUIPMENT AND PANELS SHALL BE AS MANUFACTURED PER THE ELECTRICAL SPECIFICATION, AND MEET ALL REQUIREMENTS.
 - GROUNDING CONDUCTORS, AND ALL GROUNDING REQUIREMENTS, SHALL BE INSTALLED AS DIRECTED BY EQUIPMENT MANUFACTURER AND AS SHOWN ON DRAWINGS.
 - LABEL EACH JUNCTION BOX, PULL OR TAP BOX, DISCONNECT SWITCH ETC. WITH BLACK LETTERING ON AN ORANGE STICKER WITH LETTERING SIZED IN RELATION TO SIZE OF COVER, AND FOR PANELS SEE SPECIFICATIONS.
 - IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL REQUIREMENTS WITH THE UTILITY COMPANY. FIELD VERIFY THE AVAILABLE FAULT CURRENT WITH THE UTILITY COMPANY AND CONTACT THE ENGINEER OF RECORD WITH THE DISCREPANCY SO AS TO REVISE THE EQUIPMENT RATINGS AS NEED BE.
 - PROVIDE MULTI-LAYERED ACRYLIC LABELS PER SPECIFICATION FOR ALL DISTRIBUTION PANEL BOARDS, PANEL BOARDS, SWITCH GEAR SECTIONS, STARTERS AND INDIVIDUAL SWITCH GEAR FUSED SWITCHES.
 - SIZE ALL BRANCH CIRCUITS NOT TO EXCEED 3% VOLTAGE DROP. ALL WIRE SIZES SHALL BE FOR AMPERAGE REQUIRED PER NEC.
 - ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL THROUGHOUT, EXCEPT WHERE OTHERWISE NOTED.
 - SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 - INCLUDE IN CONTRACT ALL ONE TIME TAP CHARGERS AND FEES FROM UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY.
 - ALL ELECTRICAL AND TELEPHONE CONDUITS THAT PENETRATE FIRE RATED WALLS SHALL BE SEALED WITH FIRE STOP MATERIAL TO MEET ALL GOVERNING CODE REQUIREMENTS.
 - CONTRACTOR TO PROVIDE LABEL STATING ARC-FAULT AND AIC RATING ON EACH PANEL.