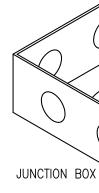
Panel		ROOM		VOLTS	VOLTS 208Y/120V 3P 4W		AIC EXISTING				
		MOUNTING	MOUNTING SURFACE		BUS A	BUS AMPS 225			MAIN BKR MLO		
	(,-/		FED FROM	FED FROM UTILITY		NEUTR	RAL	100%	100%		JGS STANDARD
	NOTE EXISTING PANEL										
	CKT	LOAD						CKT	LOAD		
#	BKR	KVA		DESCRIPTIO	N		#	BKR	KVA		T DESCRIPTION
1	20/1	1.92		LIGHTING L		a	1	20/1	1.92	EXISTIN	IG LIGHTING LOAD
3	20/1	1.92		LIGHTING L		b	1	20/1	1.92		IG LIGHTING LOAD
5	20/1	1.92		RECEPTACL		c	1	20/1	1.92	EXISTIN	IG RECEPTACLES LOAD
7	20/1	1.92		LIGHTING L		a	1	20/1	1.92	EXISTIN	IG LIGHTING LOAD
9	20/1	1.92		LIGHTING L		b	1	20/1	1.92	EXISTIN	IG LIGHTING LOAD
11	20/1	1.92	EXISTING	RECEPTACL	ES LOAD	c	12	20/1	1.92	EXISTIN	IG RECEPTACLES LOAD
13	20/1	1.92	EXISTING	LIGHTING L	DAD	a	14	20/1	1.92	EXISTIN	IG RECEPTACLES LOAD
15	20/1	1.92	EXISTING	EXISTING LIGHTING LOAD			16	20/1	1.92	HOT W	ATER EXISTING LOAD
17	20/1	1.92	WATER F	ount. Exist	ING LOAD	c	18	20/1	1.92	WATER	FOUNT. EXISTING LOAD
19	20/1	1.92	HOT WAT	HOT WATER EXISTING LOAD			20	20/1	1.92	WATER	FOUNT. EXISTING LOAD
21	20/1	1.92	EXISTING	EXISTING NIGHT LIGHT LOAD			22	20/1	1.92	WATER	FOUNT. EXISTING LOAD
23	20/1	1.92	EXISTING	EXISTING PLUGMOLD LOAD			24	20/1	1.92	EXISTIN	IG OUTSIDE DOORWAY LTS.
25	20/1	1.92	EXISTING	EXISTING NIGHT LIGHT LOAD			26	20/1	1.92	EXISTIN	IG OUTSIDE CANOPY LTS.
27	20/1	1.92	EXISTING	EXISTING POWER LOAD			28	20/1	1.92	EXISTIN	IG RECEPTACLES LOAD
29	20/1	1.92	EXISTING	EXISTING RECPTACLE LOAD			30	20/1	1.92	EXISTIN	IG RECEPTACLES LOAD
31	20/1	1.92	EXISTING	POWER POL	E LOAD	a	32	20/1	1.92	EXISTIN	IG RECEPTACLES LOAD
33	20/1	0.06	NEW CAN	NEW CANPOY LIGHTING			34	20/1	0	SPACE	
35	20/1	0.108	NEW EXT	NEW EXTERIOR WALL PACKS			36	20/1	1.92	EXSITIN	IG RECEPTACLE LOAD
37	20/1	0	SPACE			a	38	20/1	0	SPACE	
39	20/1	0	SPACE	SPACE			40	20/1	0	SPACE	
41	20/1	0	SPACE			c	42	20/1	0	SPACE	
		Ĩ					Ì				
			CONN KVA	CALC KVA							CALC KVA
	LIGHTING		<u></u>	20	(19597)		TOTAL				54.2
	RECEPTACLES		23.2 29 (125%) 40.3 25.2 (50%>10)		(125%) (50%>10)	TOTAL LOAD BALANCED 3–PHASE LOAD					54.2 150 A
			т U .J	23.2	(00%/10)		PHASE A				109%
								SE B			91%
							PHASE C				100%

EXISTING LOADS ARE APPROXIMATIONS. EC TO FIELD VERIFY EXISTING LOADS PRIOR TO BEGINING WORK.





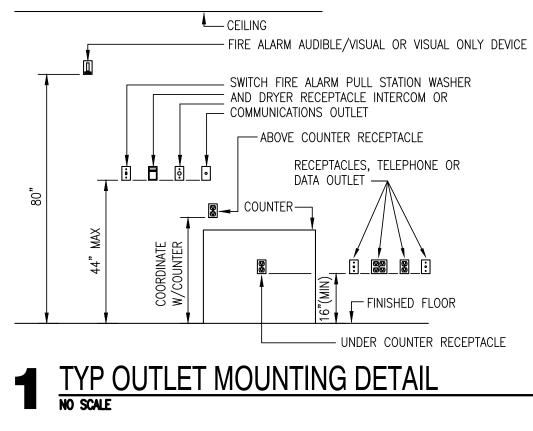
LIGHT F	LIGHT FIXTURE SCHEDULE									
TYPE	SYMBOL	DESCRIPTION	MANUFACTURER	REFERENCE CATALOG #						
EX1	∞	LED EMERGENCY EXIT SIGN WITH 90 BATTERY BACK-UP.	LITHONIA	LQM S W 3 R 120/277 EL N M6						
EX2	X	DOUBLE FACED LED EMERGENCY EXIT SIGN WITH 90 BATTERY BACK-UP.	LITHONIA	LQM S W 3 R 120/277 EL N M6						
S	•	1X4 WET LOCATION RATED STRIP FIXTURE.	LITHONIA	CSVT L48 ALO3 MVOLT SWW3 80CRI						
W	<u></u>	EXTERIOR WALL PACK.	LITHONIA	TWR1 LED ALO SWW2 UVOLT PE DDBTXD						

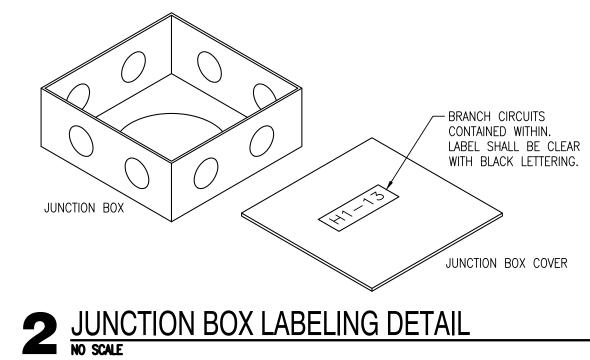
GENERAL NOTES:

EQUIVALENT ALTERNATE LIGHT FIXTURES MAY BE PROVIDED FOR BIDDING PURPOSES. THE ENGINEER DOES NOT TAKE RESPONSIBILITY FOR ENSURING ALTERNATE LIGHT FIXTURES USED FOR BIDDING ARE EQUAL; THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALTERNATE FIXTURES ARE EQUIVALENT TO THOSE SPECIFIED PRIOR TO BID. THE WINNING BID PACKAGE SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW IN ACCORDANCE WITH THE SPECIFICATIONS.

	ELECTRICAL	ABBREVIATIONS	GENERAL ELECTRICAL NOTES 1. CONTRACTOR TO VERIFY EXISTING ELECTRICAL CONDITIONS AND NOTIFY ARCHITECT/ENGINEER OF ANY ELECTRICAL OR CODE ISSUES PRIOR TO BID
AC	ABOVE COUNTERTOP	MC MECHANICAL CONTRACTOR	Antonine of Anthe Electricity Endine of Cobe 1000EC Private Dib:
AFF	ABOVE FINISH FLOOR	MCA MINIMUM CIRCUIT AMPS	CONTRACTÓR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND OPERATIONAL CODE COMPLIANT SYSTEM.
AFG	ABOVE FINISH GRADE	MDP MAIN DISTRIBUTION PANEL	2. ALL WORK SHALL BE IN CONFORMANCE WITH NATIONAL, STATE, AND LOCAL Partnership L.L
ANNC	ANNUNICIATOR	MTD MOUNTED	CODES AND/OR ORDINANCES.
сс	CONTROLS CONTRACTOR	NIC NOT IN CONTRACT	3. ELECTRICAL CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER CONTRACTORS & LOCAL UTILITY. E.C. SHALL CONTACT LOCAL UTILITY FOR 201 N. BROADWAY
DF	DRINKING FOUNTAIN	OCC OCCUPANCY	EXACT SERVICE REQUIREMENTS TO INCLUDE BUT NOT LIMITED TO SUITE 210
EC	ELECTRICAL CONTRACTOR	PC PLUMBING CONTRACTOR	TRANSFORMER, METERING AND CABLING. LOCAL UTILITY REQUIREMENTS MOORE, OK. 73160 SUPERSEDE DRAWINGS AND SPECIFICATIONS.
			4. SEE TECHNOLOGY DRAWINGS FOR ADDITIONAL REQUIREMENTS.
EF	EXHAUST FAN	PNL PANEL	4. SLE FECHNOLOGY DRAWINGS FOR ADDITIONAL REQUIREMENTS. AGP@theAGP.net 5. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. THEY ARE INTENDED TO www.theAGP.net
EX	EXISTING	SPST SINGLE POLE SINGLE THROW	GIVE APPROXIMATE LOCATIONS AND OVERALL DESIGN INTENT. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCTS,
EXR	EXISTING RELOCATED	TTB TELEPHONE TERMINAL BOARD	MATERIALS, AND ELECTRICAL METHODS WHICH HAVE NOT BEEN SHOWN OR
GC	GENERAL CONTRACTOR	TYP TYPICAL	STANDARDS OF THE INDUSTRY.
GFI	GROUND FAULT INTERRUPT	WG WIRE GUARD	6. INSTALL LIGHTING FIXTURES IN ACCORDANCE WITH MANUFACTURER'S
HP	HORSEPOWER	WP WEATHER PROOF	RECOMMENDATIONS. PROVIDE SUPPORTING DEVICES FOR ADEQUATE STRUCTURAL SUPPORT OF FIXTURES FROM STRUCTURE.
IBC	INTERNATIONAL BUILDING COD	E 20A 20 AMP	7. UPON COMPLETION OF THE ELECTRICAL WORK, THE INSTALLATION SHALL SALAS O'BRIEN
IG	ISOLATED GROUND	Ø PHASE	BE TESTED FOR CONTINUITY, GROUNDS, AND SHORT CIRCUITS. THE ELECTRICAL CONTRACTOR SHALL DEMONSTRATE PROPER PERFORMANCE OF MECHANICAL / ELECTRICAL
LV	LOW VOLTAGE	3W 3 WIRE	ALL SYSTEMS. ALL DEFECTIVE WORK OR MATERIALS SHALL BE REPLACED OR REPAIRED AS NECESSARY AND RETESTED.
LVRP	LV RELAY PANEL	1P20A SINGLE POLE 20 AMP	
2			8. ELECTRICAL RACEWAYS THAT PENETRATE FIRE RATED ASSEMBLIES SHALL BE SLEEVED AND SEALED AS PER THE LOCAL BUILDING CODE.
	ELECTRIC	CAL LEGEND	│ └────────────────────────────────────
	PANEL BO	ARD	FIXTURE LINE PHASE STYLES
		ON PANEL BOARD	LINE STYLE DESCRIPTION
	T TRANSFORI		
		CIRCUIT BREAKER	EXISTING FIXTURES TO REMAIN
			NEW/REPLACEMENT FIXTURES
	_	CONNECT SWITCH	
		Y FUSED DISCONNECT SWITCH	
		ARTER/CONTRACTOR	ELECTRICAL SHEET INDEX
		ON MOTOR STARTER	E-000 ELECTRICAL TITLE SHEET
		TON STATION AS NOTED	E-100 ELECTRICAL SPECIFICATIONS
	P PULL BOX,	SIZE AS REQUIRED BY CODE	

	FLECTE		BBBI	EVIATIONS		GENERAL ELEC	TRICAL NOTES		
AC AFF	ABOVE COUNTERTO			1.	CONTRACTOR TO VERIFY EXISTING I ARCHITECT/ENGINEER OF ANY ELEC CONTRACTOR IS RESPONSIBLE FOR OPERATIONAL CODE COMPLIANT SYS	the Abla Griffin			
AFG ANNC	ABOVE FINISH GRA			MAIN DISTRIBUTION PANEL	2.	ALL WORK SHALL BE IN CONFORM. CODES AND/OR ORDINANCES.	ANCE WITH NATIONAL, STATE, AND LOCAL	Partnership L.L.	.(
DF EC EF EX EXR EC	CONTROLS CONTRACTOR DRINKING FOUNTAIN ELECTRICAL CONTRACTOR EXHAUST FAN EXISTING EXISTING RELOCATED		NIC OCC PC PNL SPST TTB TYP	C OCCUPANCY PLUMBING CONTRACTOR PANEL ST SINGLE POLE SINGLE THROW TELEPHONE TERMINAL BOARD		ELECTRICAL CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER CONTRACTORS & LOCAL UTILITY. E.C. SHALL CONTACT LOCAL UTILITY FOR EXACT SERVICE REQUIREMENTS TO INCLUDE BUT NOT LIMITED TO TRANSFORMER, METERING AND CABLING. LOCAL UTILITY REQUIREMENTS SUPERSEDE DRAWINGS AND SPECIFICATIONS. SEE TECHNOLOGY DRAWINGS FOR ADDITIONAL REQUIREMENTS. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. THEY ARE INTENDED TO GIVE APPROXIMATE LOCATIONS AND OVERALL DESIGN INTENT. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCTS, MATERIALS, AND ELECTRICAL METHODS WHICH HAVE NOT BEEN SHOWN OR INDICATED BUT ARE REQUIRED FOR A COMPLETE SYSTEM TO THE		201 N. BROADWAY SUITE 210 MOORE, OK. 73160 405.735.3477 AGP@theAGP.net www.theAGP.net	
GFI HP BC	GENERAL CONTRACTOR GROUND FAULT INTERRUPT HORSEPOWER INTERNATIONAL BUILDING CODE		WG WP 20A	WIRE GUARD WEATHER PROOF 20 AMP	6.	STANDARDS OF THE INDUSTRY. INSTALL LIGHTING FIXTURES IN ACC RECOMMENDATIONS. PROVIDE SUP SUPPORT OF FIXTURES FROM STRU UPON COMPLETION OF THE ELECTF	KFC ENGINEERING STRUCTURAL SALAS O'BRIEN		
G _V	ISOLATED GROUND LOW VOLTAGE		ø 3W	PHASE 3 WIRE	/.	BE TESTED FOR CONTINUITY, GROU ELECTRICAL CONTRACTOR SHALL DE	NDS, AND SHORT CIRCUITS. THE EMONSTRATE PROPER PERFORMANCE OF K OR MATERIALS SHALL BE REPLACED	MECHANICAL / ELECTRICAL	
_VRP	LV RELAY PANEL	CTRICA		SINGLE POLE 20 AMP	8.	ELECTRICAL RACEWAYS THAT PENET SLEEVED AND SEALED AS PER THE	RATE FIRE RATED ASSEMBLIES SHALL BE LOCAL BUILDING CODE.		
		PANEL BOARD		GLND				1	
	DISTRIBUTION PANEL BOARD		OARD			PHASE STYLES			
	T	TRANSFORMER				LINE STYLE	DESCRIPTION		
							EXISTING FIXTURES TO REMAIN		
			E CIRCUIT BREAKER ECT ISCONNECT SWITCH				NEW/REPLACEMENT FIXTURES		
	Image: Second stateEmergency fused disconnect switchImage: Second stateMOTOR STARTER/CONTRACTOR			ELECTRICAL	- 22722724				
	COMBINATION MOTOR STARTER			E-(OFLAHOMA UN			
	PUSH BUTTON STATION AS NOTED			E-' E-'					
	PPULL BOX, SIZE AS REQUIRED BY CODEImage: ConstructionELECTRICAL CONNECTION				1				
	\checkmark	MOTOR CONNE							
		HOME RUN TO PANEL BOARD							
					1				





FINISHED FLOOR

MOORE PUBLIC SCHOOLS BOARD OF EDUCATION MOORE, OKLAHOMA

drawn by

TVO checked by

date

revisions

JANUARY 2024

MOORE Public Schools

SECURITY UPGRADES SANTA FE ELEMENTARY SCHOOL

sheet no:



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GENERAL NOTES AND ELECTRICAL SPECIFICATIONS

CODE INFORMATION

APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO: NATIONAL ELECTRICAL CODE (NFPA 70), INTERNATIONAL BLDG CODE, LIFE SAFETY CODE (NFPA 101), AMERICANS WITH DISABILITIES ACT, AND ALL LOCAL CODES AND AMENDMENTS.

BASIC ELECTRICAL REQUIREMENTS

PERMITS AND CODES: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND REQUIRED INSPECTIONS. COMPLY WITH ALL NATIONAL. STATE AND MUNICIPAL LAWS, CODES AND ORDINANCES RELATING TO BUILDING AND PUBLIC SAFETY. PROVIDE ANY REQUIRED TEMPORARY POWER AND UTILITIES FOR ALL TRADES AND ALL CONSTRUCTION TRAILERS. PROVIDE TEMPORARY CONSTRUCTION LIGHTING AND POWER. ELECTRICAL CONTRACTOR SHALL INCLUDE TEMPORARY ELECTRIC: ALL TEMPORARY ELECTRIC SHALL BE IN ACCORDANCE WITH OSHA CONSTRUCTION STANDARDS 29FCR, PART 1926 AND ARTICLE 590 OF THE NATIONAL ELECTRICAL CODE. TEMPORARY LIGHTING AND POWER SHALL BE PROVIDED IN ACCORDANCE WITH OSHA STANDARDS. THE OSHA MINIMUM ILLUMINATION IS 5 FOOTCANDLES IN GENERAL CONSTRUCTION AREAS, AND 10 FC IN MECHANICAL / ELECTRICAL ROOMS AND WORKROOMS. INCLUDED ARE CONNECTIONS TO ALL CONSTRUCTION TRAILERS. THE COST OF THIS WORK IS TO BE INCLUDED IN THE BASE ELECTRICAL BID FOR THE PROJECT.

VISITING THE JOB SITE

VISIT THE SITE OF THE PROPOSED CONSTRUCTION IN ORDER TO FULLY UNDERSTAND THE FACILITIES, DIFFICULTIES AND RESTRICTIONS ATTENDING THE EXECUTION OF THE WORK. NO ADDITIONAL COMPENSATION WILL BE ALLOWED THIS CONTRACTOR FOR WORK OR ITEMS OMITTED FROM HIS ORIGINAL PROPOSAL DUE TO HIS FAILURE TO INFORM HIMSELF REGARDING SUCH MATTERS AFFECTING THE PERFORMANCE OF THE WORK IN THIS CONTRACT OR NECESSARY FOR THE INSTALLATION AND COMPLETION OF THE WORK INCLUDED HEREIN.

DRAWINGS

DRAWINGS ARE DIAGRAMMATIC, CONFIRM DIMENSIONS & LOCATIONS IN THE FIELD. IF CONFLICTING DIMENSIONS ARE SHOWN. USE LARGER DIMENSIONS AND VERIFY WITH ARCHITECT. SEE ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF FIXTURES AND WALL MOUNTED DEVICES.

ALL MATERIALS SHALL BE NEW, MADE IN USA AND U.L. LISTED. MATERIAL INSTALLATION SHALL COMPLY WITH NEC REQUIREMENTS AND PERFORM BY CRAFTSMEN SKILLED IN THIS PARTICULAR WORK.

EQUIPMENT PROTECTION PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION.

COOPERATION WITH OTHER TRADES

COOPERATION WITH TRADES OF ADJACENT. RELATED OR AFFECTED MATERIALS OR OPERATIONS. AND WITH TRADES PERFORMING CONTINUATIONS OF THIS WORK UNDER SUBSEQUENT CONTRACTS, IS CONSIDERED A PART OF THIS WORK IN ORDER TO EFFECT TIMELY AND ACCURATE PLACING OF WORK AND TO BRING TOGETHER, IN PROPER AND CORRECT SEQUENCE, THE WORK OF SUCH TRADES. PROVIDE OTHER TRADES. AS REQUIRED. ALL NECESSARY TEMPLATES. PATTERNS. SETTING PLANS AND SHOP DETAILS FOR THE PROPER INSTALLATION OF THE WORK AND FOR THE PURPOSE OF COORDINATING ADJACENT WORK. ELECTRICAL POWER CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT ARE IN THIS DIVISION UNLESS NOTED OTHERWISE. VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT WITH OTHER DIVISIONS BEFORE ROUGHING IN THE ELECTRICAL CONNECTIONS AND ENERGIZING THE EQUIPMENT.

MECH/PLUMBING/SPECIAL EQPT ACCESS AND CLEARANCE AREAS: REMOVE ANY IMPROPERLY INSTALLED ELECTRICAL EQPT AND CONDUIT THAT ARE LIMITING PROPER ACCESS FOR EQPT SERVICE AND MAINTENANCE.

LOSS OR DAMAGE TO FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOSS OR DAMAGE TO THE FACILITIES CAUSED BY HIM AND HIS WORKMEN, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING SUCH LOSS OR DAMAGE. THE CONTRACTOR SHALL SEND PROPER NOTICES. MAKE NECESSARY ARRANGEMENTS, AND PERFORM OTHER SERVICES REQUIRED FOR THE CARE, PROTECTION AND IN-SERVICE MAINTENANCE OF ALL ELECTRICAL SERVICES FOR THE NEW FACILITIES. THE CONTRACTOR SHALL ERECT TEMPORARY BARRICADES, WITH NECESSARY SAFETY DEVICES, AS REQUIRED TO PROTECT PERSONNEL AND THE GENERAL PUBLIC FROM INJURY, REMOVING ALL SUCH TEMPORARY PROTECTION UPON COMPLETION OF THE WORK

THE CONTRACTOR SHALL MODIFY, REMOVE AND/OR REPLACE ALL MATERIALS AND ITEMS SO INDICATED NOT BE USED. ELECTRICAL NONMETALLIC TUBING (ENT, NEC ARTICLE 362) SHALL NOT BE USED ON THE DRAWINGS OR REQUIRED BY THE INSTALLATION OF NEW FACILITIES. SALVAGE MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE DELIVERED TO SUCH DESTINATION AS DIRECTED BY THE OWNER. DISPOSE OF SALVAGE MATERIAL IF NOT RETAINED BY OWNER. WHERE EXISTING CONSTRUCTION IS REMOVED TO PROVIDE WORKING AND EXTENSION ACCESS TO EXISTING FACILITIES. CONTRACTOR SHALL REMOVE CEILING GRIDS, TILES, DOORS, PIPING, AIR CONDITIONING DUCTWORK AND EQUIPMENT, ETC., TO PROVIDE THIS ACCESS AND SHALL REINSTALL SAME UPON COMPLETION OF WORK IN THE AREAS AFFECTED.

WORK IN OCCUPIED AREAS

WORK IN, ABOVE, BELOW OR NEAR OCCUPIED AREAS SHALL BE AT OWNER'S CONVENIENCE AND MAY BE DURING EVENINGS OR WEEKENDS. SCHEDULE ALL REQUIRED POWER OUTAGES A MINIMUM OF 7 DAYS IN ADVANCE WITH FACILITY ENGINEER. DO NOT TURN OFF ANY POWER SOURCES. ONLY FACILITY ENGINEER OR HIS AUTHORIZED REPRESENTATIVE MAY DO SO.

CLEAN UP

A) PROVIDE FOR ISOLATION OF WORK AREAS AND DAILY REMOVAL OF DEBRIS.

B) CLEAN ALL EQUIPMENT AND FIXTURE LENSES. C) REPLACE ALL BURNED OUT LAMPS.

D) TOUCH UP WITH PAINT WHERE REQUIRED.

<u>SUBMITTAL DATA</u>

SUBMITTALS ARE REQUIRED BUT NOT LIMITED TO THE FOLLOWING EQUIPMENT: BRANCH CIRCUIT PANELBOARDS, TRANSFORMERS, SWITCHES, CONDUIT/FITTINGS, WIRES, DEVICES, LIGHTING FIXTURES, ETC. ALTERNATE EQUIPMENT SHALL BE APPROVED BY ARCHITECT/OWNER.

SHOP DRAWINGS SHOP DRAWINGS AS REQUIRED SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO THE ARCHITECT. THESE SHOP DRAWINGS SHALL BE PREPARED TO INDICATE INSTALLATION AT MAJOR EQUIPMENT WHERE SPECIAL COORDINATION PROBLEM EXIST. OVERCURRENT & SAFETY DISCONNECT DEVICES FOR HVAC EQPT: OVERCURRENT (OC) & DISCONNECT DEVICES SHOWN ON PLANS ARE BASED ON A SPECIFIC HVAC EQUIPMENT MANUFACTURER. HVAC CONTRACTOR MAY SUBMIT OTHER MANUFACTURERS, DIFFERENT MODELS OR RATINGS. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE OC/DISCONNECT DEVICES WITH THE HVAC CONTRACTOR PRIOR TO SUBMITTING SUCH DEVICES FOR ENGINEER'S REVIEW. ANY DEVIATIONS FROM SIZES SHOWN ON DRAWINGS MUST BE NOTED IN THE SUBMITTALS. THE ELECTRICAL CONTRACTOR MUST CERTIFY THAT HE HAS REVIEWED AND COORDINATED WITH THE HVAC CONTRACTOR AND THAT ALL OC/DISCONNECT DEVICES SUBMITTED MATCH THE HVAC EQPT REQUIREMENTS. SHOP DRAWINGS WITHOUT SUCH CERTIFICATION WILL BE RETURNED TO THE CONTRACTOR. ONLY SUBMITTALS WITH SUCH CERTIFICATION WILL BE REVIEWED.

COMPLETE SYSTEMS ALL SYSTEMS SHALL BE COMPLETE AND WORKING AT COMPLETION OF CONSTRUCTION.

FINAL INSPECTION & OPERATING TESTS REQUIREMENTS. THIS INSPECTION. INDIVIDUAL SECTIONS.

guarante

THE PROJECT IS PERMITTED.

<u>CONDUIT</u> INDOORS ABOVE GRADE: EMT OR RGS. UNDER SLAB: RGS, SCHEDULE 80 PVC.

TYPE "AC" ARMORED CABLE (COMMONLY REFERRED TO AS "BX") IS NOT ACCEPTABLE AND SHALL UNLESS SPECIFICALLY APPROVED BY THE ENGINEER. FLEXIBLE CONDUIT SHALL BE UTILIZED AS FINAL ALL PANELS SHALL BE IDENTIFIED USING NAMEPLATES WITH 4 ROWS OF TEXT (LETTER HEIGHT SHALL CONNECTIONS (3'-5' ONLY) AT THE FOLLOWING EQUIPMENT: MOTORS, LIGHTING FIXTURES, HEATER, BE 1/4" MINIMUM), EXAMPLE: POWER SUPPLIES, AND ANY OTHER VIBRATION PRODUCING EQUIPMENT. UTILIZE 1/2" FLEXIBLE PANEL "XX" 225 AMPS MCB, SECTION #1 OF 2-SECTION PNL METALLIC CONDUIT MINIMUM AND INCLUDE A GREEN GROUND WIRE. USE SEALTITE IN WET LOCATIONS 208Y/120V, 3 PHASE, 4 WIRE SUCH AS OUTDOOR CONDENSING UNITS, WALK-IN COOLER/FREEZER, KITCHEN, ROOFTOP HVAC EQPT, FEEDER SIZE 4 # 4/0 THWN, 1 # 4 G, 2 1/2" C. ETC. CONDUIT SHALL BE SUPPORTED FROM STRUCTURE EVERY 5 FEET AND WITHIN 3 FEET OF ALL FED FROM DIST PANEL "XXX", 1ST FLOOR BOXES. USE LOCKNUTS INSIDE AND OUT AT BOXES. MAINTAIN MINIMUM 12" SEPARATION FROM ALL HIGH TEMPERATURE PIPES. ALL CONDUIT RUNS SHALL BE INSTALLED EITHER PARALLEL OR PANEL NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON PERPENDICULAR TO BUILDING LINES. ROUTE CONDUIT AS DIRECTLY AS POSSIBLE WITH LARGEST BLACK BACKGROUND. SECURE NAMEPLATES TO EQUIPMENT USING SCREWS OR RIVETS. RADIUS BENDS POSSIBLE. MAKE BENDS WITH STANDARD ELLS OR BENDS PER NEC. PROVIDE EXPANSIONS FITTINGS IF CONDUIT CROSSES STRUCTURAL EXPANSION JOINT. ALL CONDUIT ON ROOF ALL SWITCHES, STARTERS, COMBINATION STARTER/DISCONNECT, TRANSFORMERS, WIREWAYS, SHALL BE SUPPORTED BY AN ENGINEERED, PREFABRICATED PORTABLE PIPE SYSTEM SPECIFICALLY COMMUNICATION CABINETS, JUNCTION AND PULL BOXES ETC. SHALL BE SIMILIARLY IDENTIFIED. DESIGNED TO BE INSTALLED ABOVE FINISHED ROOF WITHOUT ROOF PENETRATIONS, FLASHINGS OR PROVIDE LABEL FOR EACH BRANCH CIRCUIT ON DISTRIBUTION PANELS, SWITCHBOARDS AND MCC'S. DAMAGE TO ROOF MEMBRANE. PROVIDE MANUFACTURED PIPE HANGER SYSTEMS SIMILAR TO PHP. EXAMPLE: PROVIDE SS8-C FOR CONDUIT UP TO 2 1/2", FOR CONDUIT 3 1/2" AND SMALLER PROVIDE PP10 ACCU-1 WITH STRUT, FOR CONDUIT 4" AND LARGER PROVIDE PSE-CUSTOM OR PPH-D. SUPPORT AT 208V, 3 PHASE, 3 WIRE INTERVAL NOT TO EXCEED 10' ON CENTER, AND WITHIN 5' OF ANY DEFLECTION OF CONDUIT. CLEAN FEEDER SIZE 3 # 4/0 THWN, 1 # 4 G, 2 1/2" C. CONDUIT INTERIOR AFTER INSTALLATION; COAT SCRATCHES WITH ZINC PAINT. PROVIDE PULL WIRE IN FED FROM DIST PANEL "XXX", 1ST FLOOR ALL CONDUIT (POWER, FIRE ALARM, TELEPHONE AND OTHER COMMUNICATION CONDUIT). PULL WIRE ALSO REQUIRED IN ALL SPARE CONDUIT. ELECTRICAL SERVICE PROJECT RECORD DOCUMENTS: ACCURATELY RECORD ACTUAL ROUTING OF ALL UNDERSLAB AND

JUNCTION /PULL BOXES: (A) FOR EACH CONDUIT RUN: PROVIDE ONE JUNCTION/PULL BOX FOR EACH_EQUIVALENT THREE QUARTER BENDS (270°). (B) UNDERGROUND FEEDERS: MINIMUM ONE PULL BOX FOR EACH 350 FEET <500 FEET> OF CONDUIT RUN.

BUILDING WIRE AND CABLE USED BUT ONLY AT 75°C AMPACITY.

A.) MINIMUM SIZE #12 EXCEPT CONTROLS MAY BE #14. USE #10 CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 100 FEET. USE #10 CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS LONGER THAN 200 FEET. B.) TYPE THHN/THWN STRANDED COPPER THERMOPLASTIC IN DRY LOCATIONS. C.) TYPE THWN IN WET LOCATIONS (OUTDOOR, UNDERGROUND, ON ROOF, ...). D.) ALL WIRE SHALL BE 98% CONDUCTIVITY COPPER, 600 VOLT. NO ALUMINUM WIRES. E.) WIRE #10 AND SMALLER MAY BE SOLID OR STRANDED, #8 OR LARGER SHALL BE STRANDED. F.) COMMUNICATION WIRES (FIRE ALARM, TELEPHONE, HVAC THERMOSTAT, DATA ETC.): PLENUM RATED LOW-SMOKE CABLE MAY BE USED IN LIEU OF WIRE/CONDUIT TYPE INSTALLATION. ALL PLENUM RATED CABLE SHALL BE PROPERLY SUPPORTED BY BRIDAL RINGS, CABLE TIES, CLIPS ETC MADE BY ERICO (CADDY COMMUNICATION FASTENERS) OR EQUAL. DO NOT USE SCRAP WIRE TO WRAP AND SUPPORT COMMUNICATION WIRES. HOMEMADE SUPPORT DEVICES ARE NOT ACCEPTABLE. DO NOT LAY COMMUNICATION CABLE DIRECTLY ON TOP OF CEILING TILES, INSTALL CABLES A MINIMUM OF 12" ABOVE CEILING TILES AND 12" FROM HVAC DUCTWORK. PROVIDE MINIMUM 6" SEPARATION BETWEEN POWER CONDUIT AND COMMUNICATION WIRINGS.

GENERAL ELECTRICAL SPECIFICATIONS

FIELD INSULATION TESTING

ALL ELECTRICAL SYSTEMS MUST BE CHECKED FOR PROPER POLARITY AND SEQUENCE, ALL MOTORS MUST BE CHECKED FOR PROPER ROTATION AND ALL EQUIPMENT (INCLUDING HVAC, ELEVATOR AND SPECIAL EQUIPMENT) CHECKED FOR PROPER VOLTAGE AND PHASING REQUIREMENTS. PRIOR TO THE APPLICATION OF ANY POWER, THE CONTRACTOR MUST CERTIFY THAT ALL CONNECTED EQUIPMENT MATCH THE CHARACTERISTICS OF THE SUPPLY CIRCUIT VOLTAGE, PHASING AND FEEDER

AT THE TIME DESIGNATED BY THE ARCHITECT, THE ENTIRE SYSTEM SHALL BE INSPECTED BY THE ARCHITECT AND THE ENGINEER. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE PRESENT AT

AFTER ALL SYSTEMS HAVE BEEN COMPLETED AND PUT INTO OPERATION, SUBJECT EACH SYSTEM TO AN OPERATING TEST UNDER DESIGN CONDITIONS TO ENSURE PROPER SEQUENCE AND OPERATION THROUGHOUT THE RANGE OF OPERATION. MAKE ADJUSTMENTS AS REQUIRED TO ENSURE PROPER FUNCTIONING OF ALL SYSTEMS. SPECIAL TESTS ON INDIVIDUAL SYSTEMS ARE SPECIFIED UNDER

THE CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS IN PDF FORMAT TO THE ARCHITECT. AFTER THE INSPECTION, ANY ITEMS WHICH ARE NOTED AS NEEDING TO BE CHANGED OR CORRECTED IN ORDER TO COMPLY WITH THESE SPECIFICATIONS AND THE DRAWINGS SHALL BE ACCOMPLISHED WITHOUT DELAY.

GUARANTEE ALL WORK AND MATERIALS FURNISHED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE TENANT AND ARCHITECT. GUARANTEE SHALL INCLUDE: ALL LABOR, PARTS, TRAVEL/SUBSISTENCE, SOFTWARE CHANGES / RE-PROGRAMMING, ETC.

SHORT CIRCUIT CALCULATION, PROTECTIVE DEVICE COORDINATION AND ARC FLASH STUDIES PROVIDE SHORT CIRCUIT CALCULATION, PROTECTIVE DEVICE COORDINATION AND ARC FLASH HAZARD STUDIES. STUDIES SHALL ENCOMPASS ELECTRICAL DISTRIBUTION SYSTEM FROM NORMAL POWER SOURCE OR SOURCES TO AND INCLUDING {BRANCH BREAKERS IN EACH PANELBOARD }. PREPARE STUDY PRIOR TO ORDERING DISTRIBUTION EQUIPMENT TO VERIFY EQUIPMENT RATINGS REQUIRED. SUBMIT REPORT WITH EQUIPMENT SUBMITTALS FOR ENGINEER'S REVIEW. PERFORM STUDY WITH AID OF COMPUTER SOFTWARE PROGRAMS. REPORT SHALL INCLUDE: (A) CALCULATION METHODS AND ASSUMPTIONS. (B) ONE LINE DIAGRAM. (C) STATE CONCLUSIONS AND RECOMMENDATIONS. STUDIES AND REPORT SHALL BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH

CONTRACTOR SHALL PROVIDE WARNING LABELS ON ELECTRICAL EQUIPMENT INDICATING INCIDENT ENERGY LEVEL, LEVEL OF HAZARD AND THE REQUIRED PERSONAL PROTECTION EQUIPMENT. EQUIPMENT SHALL INCLUDE, BUT NOT LIMITED TO, SWITCHBOARDS, DISTRIBUTION PANELS, MOTOR CONTROL CENTERS, PANELS, CONTACTORS, DISCONNECT SWITCHES AND MOTOR STARTERS.

CONDUIT: SHALL BE RIGID GALVANIZED STEEL (RGS) OR ELECTRICAL METALLIC TUBING (EMT) AS MANUFACTURED BY ALLIED, TRIANGLE OR WHEATLAND.

OUTDOORS ABOVE GRADE, STUB-UPS, OR ON ROOF: RGS, IMC.

BELOW GRADE: SCHEDULE 40 OR 80 PVC OR RGS. PROVIDE TRANSITION FITTINGS FROM PVC SCH 40 OR 80 TO RGS FOR ALL ABOVE GRADE CONDUIT. ALL UNDERGROUND METALLIC CONDUIT SHALL HAVE 40-MIL THICK EXTERNAL PVC COATING FOR CORROSION PROTECTION. UNDERGROUND CONDUIT MINIMUM SIZE 3/4". MINIMUM 24" BURIAL DEPTH FROM FINISHED GRADE TO TOP OF CONDUIT, PROVIDE DEEPER BURIAL DEPTH IF REQUIRED BY LOCAL CODES. PROVIDE CONCRETE ENCASEMENT FOR ALL INCOMING SERVICE CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE. PROVIDE RED DETECTABLE WARNING TAPE OVER ENTIRE RUN OF SERVICE AND MAJOR CONDUIT RUNS.

INSTALL GROUND WIRES WHERE SHOWN ON THE DRAWINGS. COMPRESSION OR SET-SCREW TYPE FITTINGS MAY BE USED FOR EMT. MINIMUM CONDUIT SIZE 1/2 INCH, HOWEVER HOMERUN TO PANEL SHALL BE MINIMUM 3/4 INCH. TYPE "MC" METAL CLAD CABLE IS ACCEPTABLE ONLY IF APPROVED BY THE OWNER IN WRITING AND THE LOCAL AUTHORITY

MC CABLE. IF APPROVED, HOWEVER, MAY BE USED ONLY FOR DROPS FROM CEILING PLENUM JUNCTION BOXES TO RECEPTACLES AND LIGHT SWITCHES IN WALLS. MC CABLE MAY ALSO BE USED AS FIXTURE WHIPS FROM CEILING PLENUM JUNCTION BOXES TO LIGHT FIXTURES, WHIPS MUST BE 6-FT OR LESS. HOMERUN CIRCUITS TO PANELS SHALL BE IN CONDUIT. MC HOMERUN TO PANELS ARE NOT ACCEPTABLE.

UNDERGROUND CONDUITS; INCLUDE DIMENSIONS FROM KEY BUILDING POINTS AND DEPTH OF COVER.

OUTLET BOXES: SHALL BE GALVANIZED STEEL SUITABLE FOR LOCATION. CEILING OUTLET BOXES SHALL BE 4" OCTAGON. WALL OUTLET BOXES SHALL BE PROPER DESIGN TO ACCOMMODATE THE DEVICES REQUIRED - 4 INCH SQUARE WITH RAISED COVER. PROVIDE RACO, STEEL CITY OR APPLETON. ALL J-BOXES / SPLICE BOXES MUST BE ACCESSIBLE.

WIRE: (TRIANGLE, AMERICAN INSULATED CABLE CO., OR CABLEC) ALL WIRING SHALL BE IN CONDUIT (EXCEPT PLENUM RATED LOW VOLTAGE CABLES). ALL WIRES MUST BE 75°C RATED OR BETTER, 60°C RATED WIRE SHALL NOT BE USED. 90°C RATED WIRE MAY BE

INSULATION RESISTANCE OF ALL CONDUCTORS SHALL BE TESTED. EACH CONDUCTOR SHALL HAVE ITS INSULATION RESISTANCE TESTED AFTER THE INSTALLATION IS COMPLETED AND ALL SPLICES, TAPS AND CONNECTIONS ARE MADE EXCEPT CONNECTION TO OR INTO ITS SOURCE AND POINT (OR POINTS) OF TERMINATION. INSULATION RESISTANCE OF CONDUCTORS WHICH ARE TO OPERATE AT 600 VOLTS OR LESS SHALL BE TESTED BY USING A BIDDLE MEGGER OF NOT LES THAN 1000 VOLTS DC. INSUALTION RESISTANCE OF CONDUCTORS RATED AT 600 VOLTS SHALL BE FREE OF SHORTS AND GROUNDS AND HAVE A MINIMUM RESISTANCE PHASE-TO-PHASE AND PHASE-TO-GROUND OF AT LEAST 10 MEGOHMS. CONDUCTORS THAT DO NOT EXCEED INSULATION RESISTANCE VALUES LISTED ABOVE SHALL BE REMOVED AT CONTRACTOR'S EXPENSE AND REPLACED AND TEST REPEATED. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND PERSONNEL REQUIRED FOR TESTS, SHALL TABULATE READINGS OBSERVED, AND SHALL FORWARD COPIES OF THE TEST READINGS TO THE ARCHITECT. THESE TEST REPORTS SHALL IDENTIFY EACH CONDUCTOR TESTED, DATE AND TIME OF TEST AND WEATHER CONDITIONS. EACH TEST SHALL BE SIGNED BY THE PARTY MAKING THE TEST.

WIRING DEVICES WIRING DEVICES: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS. ALL DEVICES SHALL BE LEVITON "DECORA" TYPE (CONFIRM W/ ARCHITECT) OR APPROVED EQUAL UNLESS SPECIFIED OTHERWISE BY ARCHITECT.

GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE SHALL COMPLY WITH 2006 UL 943 SAFETY STANDARD. GFCI RECEPTACLE SHALL HAVE INTEGRAL END-OF-LIFE LED INDICATOR LIGHT, AND CONTINUOUS SENSING AND SELF-TESTING EVERY 60 SECONDS. PROVIDE HUBBELL GFR5352 OR APPROVED EQUAL.

COVER PLATES: STAINLESS STEEL (CONFIRM W/ ARCHITECT). PROVIDE CIRCUIT NUMBER LABEL ON ALL DEVICE PLATES.

GROUNDING AND BONDING

GROUNDING: ALL CONDUIT WORK AND ELECTRICAL EQUIPMENT SHALL BE EFFECTIVELY AND PERMANENTLY GROUNDED IN ACCORDANCE WITH NEC REQUIREMENTS. PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR WITH ALL POWER AND RECEPTACLE AND LIGHTING CIRCUITS. GREEN EQUIPMENT GROUNDING CONDUCTOR SHALL BE ROUTED FROM PANEL GROUND BUS TO FINAL DEVICES.

GROUNDING AND BONDING

GROUNDING: ALL CONDUIT WORK AND ELECTRICAL EQUIPMENT SHALL BE EFFECTIVELY AND PERMANENTLY GROUNDED IN ACCORDANCE WITH NEC REQUIREMENTS. PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR WITH ALL POWER AND RECEPTACLE AND LIGHTING CIRCUITS. GREEN EQUIPMENT GROUNDING CONDUCTOR SHALL BE ROUTED FROM PANEL GROUND BUS TO FINAL DEVICES. GROUNDING ELECTRODES: PROVIDE 3/4" X 10-FT LONG, COPPER-CLAD, STEEL GROUNDING ROD. FOR BELOW-GRADE CONNECTIONS PROVIDE EXOTHERMIC WELDED TYPE; FOR ABOVE GRADE CONNECTIONS PROVIDE MECHANICAL BOLTED-TYPE CONNECTIONS UTILIZING HIGH CONDUCTIVE COPPER ALLOY OR BRONZE LUGS OR CLAMPS.

ELECTRICAL IDENTIFICATION

IDENTIFICATION: LABEL ALL JUNCTION AND PULL BOXES WITH PANELS AND CIRCUIT NUMBERS. FURNISH MARKERS OR PAINT BAND FOR EACH CONDUIT LONGER THAN 6 FEET, SPACING 20 FEET ON CENTER. COLOR OF PAINT BAND (CONFIRM COLOR MATCHES EXISTING FACITITY COLOR CODE.): (A) 480 VOLT SYSTEM – BLACK, (B) 208 VOLT SYSTEM – BLACK W/BLUE STRIPES, (C) FIRE ALARM SYSTEM - RED, (D) TELEPHONE SYSTEM - YELLOW, (E) OTHER SYSTEM - BY SPECIFIC LETTER DESCRIPTION. LABEL ALL HOMERUN AND MAJOR CONDUIT WITH HOME PANELS/SWITCHES, ETC. AT EVERY 10-FT. INTERVAL IF ACCESSIBLE AND/OR VISIBLE, EXAMPLE: PANEL "X", SW. "X", COND UNIT XXX, XFMR DISC. SW., FEEDER XXX, ETC. MARK ALL BRANCH CONDUIT WITH CIRCUIT NUMBERS AT EACH SURFACE MOUNTED PANEL LOCATION. FOR RECESSED PANELS, MARK BRANCH CONDUIT IN CEILING PLENUM JUST ABOVE PANELS. COLOR CODE: CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS.

	480Y/277V 3 Ph, 4W	208Y/120V 3 Ph, 4W	240/120V 3 Ph, 4W	120/240V 1 Ph, 3W
Phase A	Brown	Black	Black	Black
Phase B	Purple	Red	Orange (High Leg)	Red
Phase C	Yellow	Blue	Blue	
Neutral	Gray or White	White	White	White
Ground	Green	Green	Green	Green

CONTRACTOR SHALL MAKE ARRANGEMENTS FOR TEMPORARY AND PERMANENT SERVICE. COMPLY WITH ALL SERVICE INSTALLATION STANDARDS OF THE SERVING UTILITY. ELECTRICAL SERVICE CHARACTERISTICS SHALL BE AS SHOWN ON THE ELECTRICAL ONE LINE DIAGRAM. CONTRACTOR SHALL COORDINATE LOCATION OF SERVICE ENTRANCE WITH THE POWER COMPANY. PROVIDE MATERIALS AND EQUIPMENT REQUIRED TO CONNECT THE PROJECT SERVICE TO THE UTILITY SYSTEM. CONTRACTOR SHALL SUBMIT TO THE POWER COMPANY AN APPLICATION FOR SERVICE.

SHALL SUBMIT TO THE POWER COMPANY AN APPLICATION FOR SERVICE. SERVICE APPLICATION TO THE POWER COMPANY WITHIN 30 DAYS AFTER AWARD OF PROJECT CONTRACTOR SHALL SECURE A SERVICE OUTLET AND DATA STATEMENT ("STATEMENT") FROM THE POWER COMPANY. VERIFY THAT THE INFORMATION ON THE STATEMENT IS CORRECT, INCLUDING VOLTAGE, PHASE AND NUMBER OF WIRES, TYPE OF SERVICE, SERVICE FACILITY ARRANGEMENTS, AND LOCATION OF SERVICE OUTLET. PROVIDE A COPY OF THE STATEMENT FOR ENGINEER'S REVIEW. FAILURE TO SUBMIT SERVICE APPLICATION IN A TIMELY MANNER MAY CAUSE PROJECT DELAY AND ADDITIONAL COST. ALL SUCH COST DUE TO CONTRACTOR'S FAILURE TO APPLY AND COORDINATE FOR SERVICE IN A TIMELY MANNER SHALL BE BORNE BY THE CONTRACTOR. CONTRACTOR SHALL COORDINATE AND ASSIST OWNER IF APPLICATION IS REQUIRED TO BE SUBMITTED BY OWNER.

TRIP INDICATING. INCORPORATE INVERSE TIME CHARACTERISTIC BY BIMETALLIC OVERLOAD ELEMENTS AND INSTANTANEOUS CHARACTERISTIC BY MAGNETIC TRIP. FOR 2-POLE AND 3-POLE BREAKERS, USE THE COMMON-TRIP TYPE SO THAT AN OVERLOAD OR FAULT ON ONE POLE WILL TRIP ALL POLES SIMULTANEOUSLY. HANDLE TIES ARE NOT ACCEPTABLE. ALL BREAKERS SHALL BE BOLT-ON THERMAL MAGNETIC TYPE, STAB-ON BREAKERS ARE NOT ACCEPTABLE. DO NOT USE TANDEM CIRCUIT BREAKERS ALL CIRCUIT BREAKERS RATED 100 AMP OR LESS SHALL BE SUITABLE FOR TERMINATING 75°C WIRE (BREAKERS RATED FOR ONLY 60°C WIRE IS NOT ACCEPTABLE. SEE 16123 - BUILDING WIRE AND CABLE). ALL EQUIPMENT SHALL BE LABELED, PANELBOARDS SHALL BE LABELED BOTH ON THE COVERPLATES AND THE INTERIORS. PANELBOARD DIRECTORIES: PROVIDE A STEEL DIRECTORY FRAME MOUNTED INSIDE THE DOOR WITH A HEAT-RESISTANT TRANSPARENT FACE AND A DIRECTORY CARD FOR IDENTIFYING THE LOADS SERVED. IDENTIFY EACH CIRCUIT WITH LOAD AND LOCATIONS (ROOM NAMES AND ROOM NUMBERS) AND INDICATE WITH TYPED DIRECTORIES. (EXAMPLE: 5 DUPLEX RECEPTACLES, OFFICE, RM XXX). INSTALL THE PANELBOARDS SUCH THAT THE CENTER OF THE SWITCH OR CIRCUIT BREAKER IN THE HIGHEST POSITION WILL NOT BE MORE THAN 6 1/2 FEET ABOVE THE FLOOR OR WORKING PLATFORM. FOR EACH PANEL: FURNISH AND INSTALL ONE SPARE 3/4" CONDUIT FOR EVERY 6 SPARES AND/OR SPACES IN THE PANEL. EACH SPARE CONDUIT SHALL BE INSTALLED WITH PULL STRING STUBBED TO A J-BOX LOCATED IN ACCESSIBLE CEILING/PLENUM SPACE. INSTALL A MINIMUM OF ONE SPARE 3/4" CONDUIT FOR EVERY PANEL SHOWN ON PLANS, EVEN IF THERE ARE NO SPARES/SPACES IN SOME PANELS. MANUFACTURER SHALL BE SQUARE D.

ENCLOSED SAFETY SWITCHES ALL SAFETY SWITCHES SHALL BE HEAVY-DUTY TYPE WITH QUICK-MAKE, QUICK-BREAK CONTACTS AND SUITABLE FOR TERMINATING 75°C WIRE. PROVIDE EACH SWITCH WITH A GROUND LUG. PROVIDE A DEFEATABLE, FRONT ACCESSIBLE, COIN-PROOF DOOR INTERLOCK TO PREVENT OPENING THE DOOR WHEN THE SWITCH IS IN THE ON POSITION AND TO PREVENT TURNING THE SWITCH ON WHEN THE DOOR WHEN THE SWITCH IS IN THE ON POSITION AND TO PREVENT TURNING THE SWITCH ON WHEN THE DOOR IS OPEN. PROVIDE INCOMING LINE TERMINALS WITH AN INSULATED SHIELD SO THAT NO LIVE PARTS ARE EXPOSED WHEN THE DOOR IS OPEN. PROVIDE EACH SWITCH WITH AN ISOLATED, FULLY RATED NEUTRAL BLOCK WITH PROVISIONS FOR BONDING THE BLOCK TO THE ENCLOSURE. WHERE FUSIBLE SWITCHES ARE SHOWN, PROVIDE SWITCHES WITH REJECTION-TYPE FUSE HOLDERS WHICH ARE SUITABLE FOR USE WITH FUSES. IN GENERAL, MOUNT SWITCHES SO THAT OPERATING HANDLE IS APPROXIMATELY 44 INCHES ABOVE FINISHED FLOOR; WHERE GROUPED, ALIGN TOPS OF SWITCHES. MANUFACTURER SHALL BE SQUARE D.

INTERIOR LIGHTING FIXTURES, LAMPS, AND BALLASTS SEE THE LIGHT FIXTURE SCHEDULE ON THE DRAWINGS FOR TYPE OF LUMINAIRES AND CATALOG NUMBERS. CATALOG NUMBERS ARE SHOWN ON THE DRAWINGS FOR QUALITY AND PERFORMANCE REQUIREMENTS ONLY. LUMINAIRES MANUFACTURED BY OTHERS ARE EQUALLY ACCEPTABLE PROVIDED THEY MEET OR EXCEED THE PERFORMANCE OF THE INDICATED LUMINAIRES, AND MEET THE INTENT OF THE DESIGN.

LUMINAIRES SHALL BE CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (UL, ETL, OR IEC).

WHERE ALTERNATE FIXTURES TO THOSE SPECIFIED ARE PROVIDED, NOTIFICATION OF ALTERNATES ARE REQUIRED PRIOR TO BID AND MUST BE APPROVED BY THE ARCHITECT/OWNER. FULL PHOTOMETRIC DRAWINGS AND A SPREADSHEET INDICATING THE DIFFERENCES BETWEEN THE SPECIFIED FIXTURES AND ALTERNATE FIXTURES SHALL BE PROVIDED AS PART OF THE PRE-BID NOTIFICATION. THE SPREADSHEET SHALL INDICATE ALL ASPECTS OF THE ALTERNATE FIXTURE THAT DIFFER FROM THE SPECIFIED FIXTURE, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: 1. PHYSICAL DIMENSIONS.

2. MOUNTING TYPE. 3. FIXTURE RATINGS/LISTINGS. 4. HOUSING MATERIALS/CONSTRUCTION. 5. LUMEN OUTPUT. 6. FIXTURE VOLTAGE. 7. FIXTURE WATTAGE

8. FIXTURE EFFICACY.

9. CCT. 10.CRI.

<u> PANELBOARDS – DISTRIBUTION AND BRANCH CIRCUIT</u> ALL PANELBOARDS SHALL HAVE COPPER BUSES. LOAD CENTER TYPE PANELBOARDS ARE NOT ACCEPTABLE AND SHALL NOT BE USED. PROVIDE BREAKERS WHICH ARE QUICK-MAKE AND QUICK-BREAK ON BOTH MANUAL AND AUTOMATIC OPERATION. USE A TRIP-FREE BREAKER WHICH IS

11.BEAM ANGLES/DISTRIBUTION 12.MANUFACTURER WARRANTY. 13.EMERGENCY POWER.

14.CONTROLS REQUIREMENTS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH THE PROPER CEILING FRAMES FOR THE CEILING MATERIAL IN WHICH RECESSED FIXTURES ARE TO BE INSTALLED.

ALL FIXTURES BROKEN OR DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REPLACED WITHOUT ADDITIONAL COST TO THE OWNER.



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KFC ENGINEERING

STRUCTURAL

SALAS O'BRIEN

MECHANICAL / ELECTRICAL



drawn by

TVO checked by

JANUARY 2024 date

revisions

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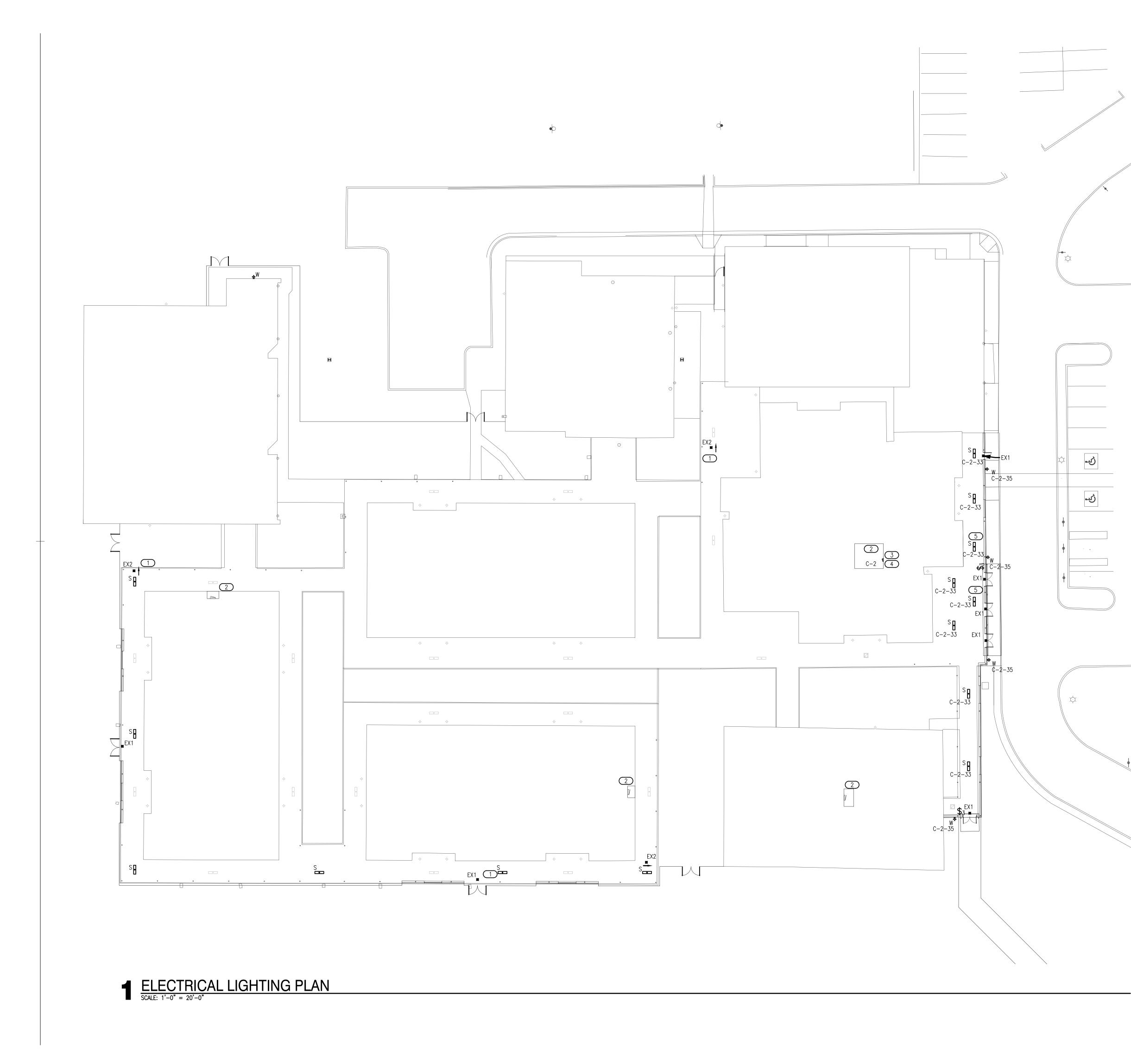
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LIGHTING GENERAL NOTES

- CONNECT BATTERY PACKS TO UNSWITCHED HOT OF LOCAL LIGHTING CIRCUIT.
 COORDINATE WITH THE ARCHITECT, OWNER, AND ASSOCIATED TRADES FOR THE EXACT HEIGHT/LOCATION OF EXTERIOR MOUNTED LIGHTING FIXTURES PRIOR TO ROUGH-IN.
- 3. LABEL SWITCH PLATES AND J-BOXES WITH CIRCUIT PER SPECS.
- 4. ALL NEW DEVICES TO BE GRAY UNLESS OTHERWISE NOTED.
- 5. ALL NEW LIGHTING TO BE CONNECTED TO EXISTING EXTERIOR LIGHTING CIRCUITS, UNLESS OTHERWISE NOTED IN DRAWINGS. EC TO DETERMINE PEAK LOAD ON PANEL AND REPORT ANY ANOMALIES TO THE ARCHITECT AND ENGINEERING BEFORE PROCEEDING.
- 6. PROVIDE NEW LIGHTING CONTACTOR. NEW LIGHTS SHALL BE CONTROLLED BY CONTACTOR TO INTERLOCK WITH EXISTING LIGHTING CONTROLS. EC SHALL FIELD INVESTIGATE AND REPORT ANY ANOMILIES TO THE ARCHITECT AND ENGINEER PRIOR TO PROCEEDING.

KEYED NOTES

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1 NEW EXIT SIGN TO BE CEILING MOUNTED AND TO BE PLACED UNDER CANOPY.

- 2 APPROXIMATE LOCATION OF EXISTING PANELS. EC TO FIELD VERIFY EXACT LOCATION AND EXISTING CONDITIONS.
- 3 EC TO PROVIDE NEW 120V CONNECTION FOR NEW WALL PACKS.
- 4 EC TO PROVIDE NEW 120V CONNECTION FOR NEW SURFACE MOUNTED CANOPY LIGHTS.
- 5 EXISTING LIGHT FIXTURE TO BE DEMOLISHED AND REPLACED WITH NEW. EC TO DISCONNECT LIGHTING FIXTURE FROM EXISTING CIRCUIT AND CONNECT TO NEW LIGHTING CIRCUIT.



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