ELECTRICAL SYMBOLS NOTE:	POWER	LIGHTING	ABBREVIATIONS
THIS IS A MASTER SYMBOLS LIST. ALL SYMBOLS, ABBREVIATIONS, ETC. MAY NOT	PANELBOARD, ELECTRICAL DISTRIBUTION PANEL, OR LOAD CENTER SURFACE MOUNTED	NOTE: UPPER CASE LETTER DENOTES LUMINAIRE TYPE. LOWER CASE LETTER ADJACENT	
NECESSARILY BE USED ON ALL DRAWINGS.	SURFACE MOUNTED PANELBOARD, ELECTRICAL DISTRIBUTION PANEL, OR LOAD CENTER RECESS	TO LUMINAIRE INDICATES SWITCH THAT CONTROLS LUMINAIRES	A AMPS, AIR (COMPRESSED) AC ABOVE COUNTER AFC ABOVE FINISHED CEILING
ONE LINE AND RISER	MOUNTED	A HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	AFEA AREA FOR EVACUATION ASSISTANCE AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE
PANEL	20 AMP, 125V, NEMA 5-20R DUPLEX RECEPTACLE	2' X 4' SURFACE MOUNTED LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE	AHU AIR HANDLING UNIT AIC AMPERE INTERRUPTING CURRENT
PANEL	20 AMP, 125V, NEMA 5-20R SIMPLEX RECEPTACLE	SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH A EMERGENCY BATTERY BACKUP.	AL ALUMINUM ATS AUTOMATIC TRANSFER SWITCH AWG AMERICAN WIRE GAUGE
FAINEL	20 AMP, 125V, NEMA 5-20R QUAD RECEPTACLE	2' X 2' RECESSED LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY	AV FOR AUDIO VISUAL MEDIA CABINET
CURRENT TRANSFORMER, RATED AS SPECIFIED OR REQUIRED	20 AMP, 125V, NEMA 5-20R GFCI RECEPTACLE	BACKUP.	BFF BELOW FINISHED FLOOR BKR BREAKER BOS BOTTOM OF STRUCTURE
\mathbf{O}	20 AMP, 125V, NEMA 5-20R GFCI DUPLEX RECEPTACLE, MOUNTED 6" ABOVE COUNTER AND/OR ABOVE BACKSPLASH, UNLESS OTHERWISE NOTED	A 2' X 2' SURFACE MOUNTED LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH	BTU BRITISH THERMAL UNIT
M MOTOR	20 AMP, 125V, NEMA 5-20R DUPLEX RECEPTACLE, MOUNTED 6" ABOVE	EMERGENCY BATTERY BACKUP.	C CONDUIT CATV CABLE TELEVISION SYSTEM CCTV CLOSED CIRCUIT TELEVISION
SPD SURGE PROTECTION DEVICE	COUNTER AND/OR ABOVE BACKSPLASH, UNLESS OTHERWISE NOTED	A 1' X 4' RECESSED LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP	CFM CUBIC FEET PER MINUTE CKT CIRCUIT
GROUND CONNECTION	20 AMP, 125V, NEMA 5-20R SWITCHED DUPLEX RECEPTACLE		CLG CEILING CM COFFEE MAKER CU COPPER, CONDENSING UNIT
800A3P SWITCH, RATING AS SHOWN	20 AMP, 125V, NEMA 5-20R CEILING MOUNTED DUPLEX RECEPTACLE	A 1' X 4' SURFACE MOUNTED FLUORESCENT LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	(D) DEMOLISH
400A FRN	20 AMP, 125V, NEMA 5-20R CEILING MOUNTED SIMPLEX RECEPTACLE	1' X 4' WALL MOUNTED LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE	DDC DIRECT DIGITAL CONTROL DISC DISCONNECT DN DOWN
FUSE, FUSE AMPACITY AND TYPE AS SHOWN	Ψ	A SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	DPDT DOUBLE POLE, DOUBLE THROW DPST DOUBLE POLE, SINGLE THROW DW DISHWASHER
CIRCUIT BREAKER, RATING AS SHOWN	SPECIAL RECEPTACLE, CEILING MOUNTED, CONFIGURATION AS NOTED ON PLAN	LINEAR PENDANT LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE,	DX DIRECT EXPANSION
M UTILITY METER (AS REQUIRED BY UTILITY)	20 AMP, 125V, NEMA 5-20R DUPLEX FLOOR RECEPTACLE, 3/4" CONDUIT RUN CONCEALED IN FLOOR SLAB	A HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	(E) EXISTING TO REMAIN EPO EMERGENCY POWER OFF
		A PENDANT LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP	FBO FURNISHED BY OTHERS FF FINISHED FLOOR
SAFETY SWITCH, NON-FUSED, 240V, U.N.O.	20 AMP, 125V, NEMA 5-20R QUAD FLOOR RECEPTACLE, 3/4" CONDUIT RUN CONCEALED IN FLOOR SLAB		FHCFIRE HOSE CABINETFLAFULL LOAD AMPSFLRFLOOR
	JUNCTION BOX, CEILING MOUNTED	A HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	FVNR FULL VOLTAGE, NON REVERSING
COMBINATION STARTER/DISCONNECT (SIZE AS INDICATED)	JUNCTION BOX, WALL MOUNTED	O A SURFACE MOUNTED DOWNLIGHT, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE. HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH	GD GARBAGE DISPOSAL GFI GROUND FAULT CIRCUIT INTERRUPTER (PERSONAL PROTECTION ON DEVICE)
	JUNCTION BOX, FLOOR MOUNTED	EMERGENCY BATTERY BACKUP.	GFP GROUND FAULT PROTECTED FROM UPSTF RECEPTACLE OR CIRCUIT BREAKER
	SPECIAL RECEPTACLE, WALL MOUNTED, CONFIGURATION AS NOTED ON PLAN	A RECESSED MOUNTED DOWNLIGHT, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH	GFR GROUND FAULT RELAY GND GROUND
T T-XX TRANSFORMER, TYPE AND RATING AS SHOWN	P FURNITURE FEED RECEPTACLE, WALL MOUNTED, CONFIGURATION AS NOTED ON PLAN	EMERGENCY BATTERY BACKUP.	HOA HAND OFF AUTOMATIC HPS HIGH PRESSURE SODIUM
CONDUIT CONNECTION		Q A HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	HSTAT HUMIDISTAT HTG HEATING HTR HEATER
CIRCUIT BREAKER WITH GROUND FAULT PROTECTION	MOTOR: HORSEPOWER AS INDICATED ON PLANS OR DIAGRAMS	WALL WASH LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE,	IG ISOLATED GROUND
г-ГGЪ-ч	PLUGMOLD, REFER TO DRAWING FOR LENGTHS	HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP.	KCMIL 1000 CIRCULAR MILS KV KILOVOLT
	SAFETY SWITCH, NON-FUSED, 240V, U.N.O.	A RECESSED STEP LIGHT LUMINAIRE, MOUNTING IS NOTED ON LUMINAIRE SCHEDULE, HATCHING DENOTES FIXTURE SHALL BE PROVIDED WITH	KVA KILOVOLT AMPS KVAR KILOVOLT AMPS REACTIVE
GROUND CONNECTION WITH TEST WELL	FUSED DISCONNECT	EMERGENCY BATTERY BACKUP.	KW KILOWATT KWH KILOWATT HOUR
GROUND ROD		A I RACK LOMINAIRE, MOUNTING IS NOTED ON LOMINAIRE SCHEDOLE	LF LINEAR FEET LRA LOCKED ROTOR AMPS
WEATHER HEAD		CEILING MOUNTED EXIT SIGN. PROVIDE DIRECTIONAL ARROWS AS REQUIRED	MATV MASTER ANTENNA TELEVISION SYSTEM MBH 1000 BTU PER HOUR
\sim	ENCLOSED CIRCUIT BREAKER	EMERGENCY BATTERY LUMINAIRE (2 HEAD) 84" AFF, UNLESS OTHERWISE	MCA MINIMUM CIRCUIT AMPACITY MCB MAIN CIRCUIT BREAKER
G GENERATOR	PHOTOCELL	NOTED, LETTER DENOTES LUMINAIRE TYPE.	MCC MOTOR CONTROL CENTER MD MOTORIZED DAMPER MDP MAIN DISTRIBUTION PANEL
	Single Pole Switch; 3= Three Way Switch, 4= Four Way Switch, K= Key Switch, D= Dimmer Switch, T0= Motor Rated Switch, OS= Occupancy Sensing, 3D= Three Way Dimmer Switch, T0= Motor	EMERGENCY BATTERY LUMINAIRE (2 HEAD) WITH MOUNTED EXIT SIGN. PROVIDE DIRECTIONAL ARROWS AS REQUIRED MOUNT AT 84" AFF, UNLESS OTHERWISE	MFR MANUFACTURER MG MOTOR GENERATOR MH MANHOLE
MISCELLANEOUS	RATED SWITCH.	NOTED. LETTER DENOTES LUMINAIRE TYPE.	MSB MAIN SWITCHBOARD MTD MOUNTED
X KEY NOTE DESIGNATION	GROUND BAR	WALL MOUNTED EXIT SIGN. PROVIDE DIRECTIONAL ARROWS AS REQUIRED	MW MICROWAVE
X SHORT CIRCUIT TAG DESIGNATION	R RELAY	A A 	NIC NOT IN CONTRACT N/O NORMALLY OPEN
1 FEEDER TAG DESIGNATION	EMERGENCY POWER OFF (EPO) PUSH BUTTON		N/C NORMALLY CLOSED N/L NIGHT LIGHT
			OC ON CENTER OV OVEN
NEW TO EXISTING CONNECTION	PP POWER POLE	QUAD POLE MOUNTED, EXTERIOR LUMINAIRE	PDU POWER DISTRIBUTION UNIT PH.Ø PHASE
NEW CONSTRUCTION	COMMUNICATIONS	A BOLLARD LUMINAIRE	PIV POST INDICATOR VALVE PJ MOUNTED ON CEILING FOR PROJECTOR
	JUNCTION BOX FOR INSTALLATION OF COMMUNICATION OR DATA OUTLET,		PNL PANEL PT POTENTIAL TRANSFORMER
DEMOLITION WORK	MOUNTED 18" AFF, UNLESS OTHERWISE NOTED. INSTALL 1" CONDUIT FROM BOX TO 3" INTO ACCESSIBLE LOCATION ABOVE FINISHED CEILING.	CEILING FAN	QTY QUANTITY (RL) RELOCATE
FIRE ALARM	FLOOR JUNCTION BOX FOR INSTALLATION OF COMMUNICATION OR DATA	S SINGLE POLE SWITCH; 3= THREE WAY SWITCH, 4= FOUR WAY SWITCH, K= KEY SWITCH, D= DIMMER SWITCH, FAN= CEILING FAN SWITCH, TO= MOTOR RATED	RA RETURN AIR RCP REFLECTED CEILING PLAN
FACP FIRE ALARM CONTROL PANEL	OUTLET. INSTALL 1" CONDUIT FROM BOX CONCEALED IN FLOOR SLAB TO WALL AND TO 3" INTO ACCESSIBLE LOCATION ABOVE FINISHED CEILING.	SWITCH, D= DIMMER SWITCH, FAN= CEILING FAN SWITCH, TO= MOTOR RATED SWITCH, 3D= THREE WAY DIMMER SWITCH, P= PILOT LIGHT, OS= OCCUPANCY SENSOR; LOWER CASE LETTER INDICATES LUMINAIRES CONTROLLED	REF REFRIGERATOR REV REVISION RH RELATIVE HUMIDITY
	JUNCTION BOX FOR INSTALLATION OF TV OUTLET. MOUNTED 18" AFF,	SS DUAL LEVEL SWITCH	RLA RUNNING LOAD AMPS RPM REVOLUTIONS PER MINUTE
FARA FIRE ALARM REMOTE ANNUNCIATOR PANEL	♥ UNLESS OTHERWISE NOTED. INSTALL 1" CONDUIT FROM BOX TO 3" INTO ACCESSIBLE LOCATION ABOVE FINISHED CEILING. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.	OS CEILING MOUNTED OCCUPANCY SENSOR	SA SUPPLY AIR SD SMOKE DETECTOR
SMOKE DETECTOR, ADDRESSABLE PHOTO ELECTRIC		DS DAYLIGHT SENSOR	SF SQUARE FEET SPDT SINGLE POLE, DOUBLE THROW
COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR, ADDRESSABL	E SPEAKER, CEILING MOUNTED	TC WALL MOUNTED TIMECLOCK	SPSTSINGLE POLE, SINGLE THROWSPSTATIC PRESSURESTOSHORT TOGGLE OPERATOR
HD HEAT DETECTOR	SPEAKER, WALL MOUNTED, 84" (CENTERLINE) A.F.F. OR 8" (CENTERLINE) BELOW CEILINGS THAT ARE 8'-0" OR LOWER, UNLESS NOTED OTHERWISE.	STANDARD MOUNTING HEIGHT U.N.O.	SWBD SWITCHBOARD
DUCT SMOKE DETECTOR, ADDRESSABLE PHOTO ELECTRIC		ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER MOUNTING HEIGHTS	TSTAT THERMOSTAT TL TWISTLOCK TV TELEVISION
FIRE ADA ALARM STROBE MOUNTED AT 90" AFF OR 6" BELOW CEILING WHICHEVER IS LOWER	S HORN SPEAKER	INDICATED ON ELECTRICAL DRAWINGS. RECEPTACLES (CENTERLINE) 18"	TYP TYPICAL
FIRE ADA ALARM HORN MOUNTED AT 90" AFF OR 6" BELOW CEILING	CLOCK, 84" (CENTERLINE) A.F.F. OR 8" (CENTERLINE) BELOW CEILINGS THAT ARE 8'-0" OR LOWER, UNLESS NOTED OTHERWISE.	RECEPTACLES IN EQUIP. RMS.48"RECEPTACLES (EXTERIOR)24"RECEPTACLES (CARACES)24"	U/G UNDERGROUND U/S UNDER SLAB
WHICHEVER IS LOWER Image: Stress of the stress of		RECEPTACLES (GARAGES) 24" ALARMS, SWITCHES AND CONTROLS (CENTERLINE) 48" TELEPHONE (PUBLIC) 1@48" AND 1@36"	UL UNDERWRITERS LABORATORIES, INC. UNO UNLESS NOTED OTHERWISE UPS UNINTERRUPTIBLE POWER SUPPLY
BELOW CEILING, WHICHEVER IS LOWER	CONDUIT DESIGNATIONS	TELEPHONE (POBLIC) 1000 TELEPHONE OUTLETS (CENTERLINE) 18" TELEPHONE TERMINAL BOARD (BTM.) 6"	VAC VOLTS ALTERNATING CURRENT, VACUUM
F FIRE ALARM MANUAL PULL STATION, ADDRESSABLE DOUBLE ACTION MACHETIC DOOP HOLDER	BRANCH CIRCUITS HOMERUN USE NUMBER 12 AWG WIRE, UNLESS OTHERWISE NOTED. ALL CIRCUITS SHALL CONTAIN A GROUND AND	SAFETY SWITCHES48"STARTERS48"	VAV VARIABLE AIR VOLUME VM VENDING MACHINE
→ MAGNETIC DOOR HOLDER FS FIRE ALARM FLOW SWITCH	NEUTRAL CONDUCTOR, UNLESS NOTED OTHERWISE. CONTRACTOR SHALL PROVIDE MULTI-WIRE CIRCUIT HANDLE TIES AS FINAL FIELD INSTALLED WIRING REQUIRES.	PANELS (TOP) 72" CLOCK OUTLETS (CENTERLINE) 90" EIRE ALARM PLUL STATIONS (HANDLE) 44"	W/ WITH W/O WITHOUT
TS FIRE ALARM TAMPER SWITCH	CONDUIT AND WIRE CONCEALED, 3/4" UNLESS OTHERWISE NOTED,	FIRE ALARM PULL STATIONS (HANDLE)44"STROBES (CENTERLINE)80"*FIRE ALARM BELLS (EXTERIOR)12'-0"	WP WEATHERPROOF WT WATERTIGHT, WEIGHT
	CONDUIT USED FOR SWITCH LEGS, AND CONDUIT USED FOR CONTROL WIRING	CONTROLS (FIRE ALARM CONTROL PANEL)48"ANNUNCIATION PANELS48"	XFMR TRANSFORMER XP EXPLOSION PROOF
	CONDUIT AND WIRE EMBEDDED IN CONCRETE OR BELOW GRADE	INTERCOM (AFEA ONLY) 36" REMOTE INDICATING LIGHT (EQUIP. RMS.) 48"	
		REMOTE INDICATING LIGHT (FIN. AREAS) CEILING EXIT SIGNS (WALL MOUNTED BTM.) 80" TELED (10) OUTLET C 18"	
	CONDUIT TURNING DOWN	TELEVISION OUTLETS 18"	1

ELECTRICAL GENERAL NOTES

DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS ON ARCHITECTURAL DRAWINGS AND IN FIELD PRIOR TO COMMENCEMENT OF WORK. REFER TO MECHANICAL PLANS FOR LOCATION OF ALL MECHANICAL EQUIPMENT. REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER DRAWINGS PRIOR TO BID. COORDINATE ELECTRICAL WORK REQUIRED BY OTHER DISCIPLINES.

PROVIDE ELECTRICAL DEMOLITION REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR LOCATION AND EXTENT OF DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT SITE PRIOR TO BID TO DETERMINE EXTENT OF WORK INVOLVED. PROVIDE LABOR AND MATERIALS AS REQUIRED TO MAINTAIN AND/OR RESTORE CONTINUITY OF SERVICE TO EXISTING CIRCUITS.

FIELD VERIFY EXISTING EQUIPMENT OR CIRCUITS THAT ARE REMAINING TO BE RECONNECTED TO NEW OR EXISTING SWITCHBOARDS/PANELBOARDS. PROVIDE SWITCHES, RECEPTACLES, CONDUIT, WIRE, ETC. AS REQUIRED TO RESTORE CONTINUITY OF CIRCUITS.

PROVIDE ALL DEMOLITION REQUIRED TO REMOVE EXISTING UNUSED CONDUIT, WIRE, CABLE, J-BOXES, RECEPTACLES, SWITCHES, LIGHTS, FIRE ALARM DEVICES, ETC. COMPLETE WITH ASSOCIATED CIRCUITING TO SOURCE OR NEAREST ACTIVE DEVICE. WHERE IT IS NOT FEASIBLE TO REMOVE THE ABOVE AND WITH PERMISSION FROM THE OWNER, OUTLET SHALL BE ABANDONED, WIRE REMOVED AND BLANK COVER PLATES PROVIDED. IN ALL CONDUIT ABANDONED IN PLACE INSTALL A PULL STRING LABELED AT BOTH ENDS.

CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO EQUIPMENT. FINAL CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. COORDINATE EQUIPMENT CONNECTION REQUIREMENTS WITH DIVISION 22 AND 23 CONTRACTOR. CONTRACTOR SHALL PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT SUPPLIED.

COORDINATE EQUIPMENT SIZES WITH ROOM SIZES. CONTRACTOR SHALL VERIFY THAT ELECTRICAL EQUIPMENT ORDERED CAN BE INSTALLED IN THE SPACE PROVIDED WHILE MAINTAINING CODE REQUIRED CLEARANCES.

EXISTING SYSTEMS AND CONDITIONS SHOWN ON DRAWINGS FOR EXISTING BUILDINGS ARE TO BE NOTED "FOR GUIDANCE ONLY". THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING AND TO INCLUDE IN HIS BID AN ALLOWANCE FOR REMOVAL AND/OR RELOCATION OF EXISTING CONDUITS, WIRES, DEVICES, FIXTURES, OR OTHER EQUIPMENT AS INDICATED ON THE PLANS OR AS REQUIRED TO COORDINATE AND ADAPT NEW AND EXISTING ELECTRICAL SYSTEM TO ALL OTHER WORK.

SYSTEM OUTAGES SHALL BE PERMITTED ONLY AT TIMES APPROVED BY OWNER IN WRITING. WORK WHICH COULD RESULT IN AN ACCIDENTAL OUTAGE SHALL BE PERFORMED WITH THE OWNER'S MAINTENANCE PERSONNEL ADVISED OF SUCH WORK.

REVIEW ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO STARTING WORK IN THESE AREAS.

WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.

. WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES. COORDINATE WORK WITH LOCAL FIRE DEPARTMENT.

PROVIDE PERMITS AND INSPECTIONS REQUIRED.

SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.

WIRE SHALL BE COPPER, 60 DEGREES C RATED UP TO 30 AMPS AND 75 DEGREES C RATED ABOVE 30 AMPS. SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30 DEGREES C AMBIENT. CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS.

PROVIDE SHOP DRAWINGS AND/OR SUBMITTALS FOR ITEMS NOTED IN THE SPECIFICATIONS. SHOP DRAWINGS NOT REQUIRED BY THE SPECIFICATIONS WILL NOT BE REVIEWED.

CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION, OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.

CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR INSTALLATION METHODS.

SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION. LIGHTS, SWITCHES, RECEPTACLES, MOTORS, ETC. SHALL BE CONNECTED AND OPERABLE.

NEW RECESSED FIXTURES INSTALLED INDOORS SHALL BE THERMALLY PROTECTED. PROVIDE NEW TYPED UPDATED PANELBOARD DIRECTORIES FOR EXISTING AND NEW

CONDUITS PENETRATING THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER FLASHING SLEEVE. INSTALLATION SHALL BE WATERTIGHT.

FINAL CONNECTIONS TO MOTORS, TRANSFORMERS AND OTHER VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUID TIGHT FLEXIBLE CONDUIT AND APPROVED FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS, OR DEVICES TO DUCTWORK OR MECHANICAL EQUIPMENT. PROVIDE VIBRATION ISOLATION PADS FOR ALL TRANSFORMERS AND MOTORS.

WHERE PANELS ARE INSTALLED FLUSH WITH WALLS, EMPTY CONDUITS SHALL BE EXTENDED FROM THE PANEL TO AN ACCESSIBLE SPACE ABOVE OR BELOW. A MINIMUM OF ONE 3/4" CONDUIT SHALL BE INSTALLED FOR EVERY THREE SINGLE POLE SPARE CIRCUIT BREAKERS OR SPACES, OR FRACTION THEREOF, BUT NOT LESS THAN TWO CONDUITS.

WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS 75 DEGREES C.

ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED BY UL.

CIRCUITS BEING UTILIZED FOR COMPLETION OF PROJECT.

FIRE ALARM SYSTEM SHALL BE DESIGNED AND SUBMITTED AS DELEGATED DESIGN SUBMITTAL. PROVIDE SYSTEM DEVICES, CONDUIT, WIRES, AND CABLE AS DIRECTED BY EQUIPMENT MANUFACTURER. MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE IN EVERY RESPECT. SUBMIT SHOP DRAWINGS ACCORDING TO SPECIFICATIONS. SHOP DRAWINGS SHALL INCLUDE A SINGLE LINE DIAGRAM THAT SHOWS DEVICES, CONDUIT, WIRE, CABLE SIZES AND EQUIPMENT TO BE USED. SHOP DRAWINGS SHALL BE STAMPED AND SIGNED BY A REGISTERED ENGINEER PROVIDED BY THE FIRE ALARM VENDOR. SYSTEM CALIBRATION AND TESTING SHALL BE BY FACTORY CERTIFIED TECHNICIAN.

BACK-TO-BACK OUTLETS IN THE SAME WALL, OR "THRU-WALL" TYPE BOXES SHALL NOT BE PERMITTED. PROVIDE 24-INCH SEPARATION TO OFFSET OUTLETS SHOWN ON OPPOSITE SIDES OF A COMMON WALL TO MINIMIZE SOUND TRANSMISSION. COVER BACKBOXES WITH EITHER FIRE OR SOUND PUTTY PAD.

OUTLET BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS AND PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.

PROVIDE TAMPER-RESISTANT RECEPTACLES PER NEC 406.12 FOR ALL CHILD CARE AND EDUCATION FACILITIES, GUEST ROOMS, WAITING/OFFICE/CORRIDORS IN CLINIC, AND ASSEMBLY AREAS OCCUPIED BY CHILDREN. CONFIRM REQUIREMENTS WITH AHJ.

BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED TO PREVENT A VOLTAGE DROP EXCEEDING 3%.

CODE SUMMARY

XISTING BUILDING IRE IECHANICAL UEL GAS LUMBING NERGY CONSERVATION LECTRICAL IRE ALARM



RAMIREZ, JOHNSON, ASSOCIATE 3301 LAWR SUIT DENVER, O P: 720.59	ES, LLC ENCE ST, E 2 CO 80205 98.0774
	ed for pliance 2023
DOLA SQUARE - BUILDII	2305 MT. WERNER CIRCLE STEAMBOAT SPRINGS, CO 80487
DATE:	2305 MT. V STEAMBO
PROJECT: RELEASE: CDs	22.048 2023-05-03

ENGINEER

ELECTRICAL LEGEND



PART I - GENERAL

1.01 GENERAL PROJECT REQUIREMENTS

A. ALL DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING DIVISION 1 SPECIFICATION SECTIONS AND GENERAL AND SUPPLEMENTARY CONDITIONS, SHALL APPLY TO THIS SECTION.

B. RELATED DOCUMENTS: ARCHITECTURAL SPECIFICATIONS, LIGHTING FIXTURE SPECIFICATIONS INCLUDED IN OTHERS' DOCUMENTS, GENERAL, SPECIAL AND SUPPLEMENTARY CONDITIONS, AND SIMILAR DOCUMENTS SHALL FORM A PART OF THESE SPECIFICATIONS.

C. SCOPE OF WORK: PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE AND SAFE INSTALLATION OF ELECTRICAL WORK IN CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND/OR DESCRIBED IN THESE SPECIFICATIONS.

D. SITE CLEANLINESS: KEEP SITE FREE FROM SURPLUS MATERIAL, TOOLS, AND RUBBISH AT ALL TIMES DURING CONSTRUCTION PERIOD AND, UPON COMPLETION, LEAVE SITE IN CLEAN CONDITION.

E. DAMAGE: REPAIR ANY DAMAGE CAUSED TO WORK OF OTHER TRADES AND ANY OTHER DAMAGE CAUSED BY THIS SECTION TO INTENDED/ORIGINAL CONDITION.

F. PASSAGE OF EQUIPMENT: CHECK THE DIMENSIONS OF EQUIPMENT OF THIS SECTION TO ENSURE THAT SUCH EQUIPMENT CAN PASS THROUGH THE NECESSARY AREAS TO REACH ITS ULTIMATE INSTALLED LOCATION. INCLUDE IN BID COSTS FOR ALL WORK REQUIRED, INCLUDING ANY WORK REQUIRED TO MOVE THE EQUIPMENT THROUGH THE SITE TO THIS FINAL LOCATION AND ANY DISMANTLING/RE-ASSEMBLY

G. GUARANTEE: CONTRACTOR SHALL GUARANTEE THAT ALL PORTIONS OF THE WORK ARE IN ACCORDANCE WITH CONTRACT REQUIREMENTS. GUARANTEE ALL WORK AGAINST FAULTY AND IMPROPER MATERIAL AND WORKMANSHIP FOR A MINIMUM PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER. IF GUARANTEES OR WARRANTIES FOR LONGER TERMS ARE SPECIFIED BY CONTRACT. SUCH LONGER TERM SHALL APPLY.

H. PERMITS AND INSPECTIONS: CONTRACTOR SHALL SECURE ALL APPROVALS AND PAY ALL FEES FOR WORK INSTALLED AND DELIVER CERTIFICATE TO OWNER. INCLUDE ALL COSTS IN BASE BID.

I. PRIOR TO SUBMITTING BID, CONTRACTOR SHALL VERIFY ALLOWABLE WORKING HOURS, EMPLOYEE PARKING AREAS, MATERIAL DELIVERY AND STORAGE REQUIREMENTS, AND REQUIREMENTS FOR DEMOLITION AND REMOVAL OF CONSTRUCTION DEBRIS (IF ANY). INCLUDE ALL COSTS IN BID FOR DUST BARRIERS AND DUMPSTERS FOR THE DURATION OF THE PROJECT AS REQUIRED.

J. DURING PREPARATION OF BID, CONTRACTOR MAY DISCOVER ERRORS IN THESE DOCUMENTS OR DISCREPANCIES BETWEEN THESE DOCUMENTS AND THOSE OF OTHER TRADES. IN CASE OF DISCREPANCIES. CONTRACTOR IS RESPONSIBLE FOR BIDDING THE GREATER QUANTITY OR HIGHER QUALITY ITEMS IF NO SUFFICIENT RESOLUTION OF THE DISCREPANCY IS DETERMINED PRIOR TO SUBMITTING BID.

K. RECORD DRAWINGS: UPON PROJECT COMPLETION, DELIVER TO OWNER ONE SET OF REPRODUCIBLE DRAWINGS AND ONE BOUND SET OF BLUEPRINTS AND PANEL SCHEDULES SHOWING ALL WORK AS ACTUALLY INSTALLED.

1.02 DEFINITIONS AND TERMINOLOGY

A. DRAWINGS AND SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL", "SHALL BE", "FURNISH", "PROVIDE", "A", "AN", "THE" AND "ALL" MAY BE OMITTED FOR BREVITY.

- B. WORDS AND/OR PHRASES USED IN THESE DOCUMENTS ARE DEFINED AS FOLLOWS: 1. "FURNISH" OR "PROVIDE": TO SUPPLY, INSTALL, AND CONNECT COMPLETELY AND READY FOR SAFE AND REGULAR OPERATION OF PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY NOTED OTHERWISE 2. "INSTALL": TO ERECT, MOUNT, AND CONNECT COMPLETE WITH ANY NECESSARY RELATED ACCESSORIES (WHETHER SPECIFICALLY INDICATED OR NOT).
- 3. "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE, AND DELIVER COMPLETE WITH ANY NECESSARY RELATED ACCESSORIES. 4. "WORK": LABOR, MATERIALS, EQUIPMENT, AND ACCESSORIES, AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION. 5. "CONTRACTOR": ELECTRICAL CONTRACTOR, UNLESS NOTED OTHERWISE
- 6. "PROJECT MANAGER": THE ENTITY/PROFESSIONAL RESPONSIBLE FOR COORDINATION AND COMPLETION OF ALL REQUIRED CONSTRUCTION WORK FOR THIS PROJECT (THE GENERAL CONTRACTOR OR ARCHITECT OR OTHER AUTHORITY AS DESCRIBED IN THE CONTRACT). 7. "OWNER": THE OWNER OR TENANT THAT IS THE ULTIMATE RECIPIENT OF THE
- CONSTRUCTION WORK PERFORMED. 8. "WIRING": RACEWAY, FITTINGS, CONDUCTORS, BOXES, AND RELATED ITEMS. 9. "CONCEALED": INSTALLED EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, IN
- FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, IN ENCLOSURES, OR AS DEFINED IN NEC ARTICLE 100. 10."EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE, OR
- AS DEFINED IN NEC ARTICLE 100. 11."EQUAL": ACCEPTABLE EQUIVALENT IN MATERIALS, WEIGHT, SIZE, DESIGN, OPERATION, AND EFFICIENCY OF SPECIFIED PRODUCT. FINAL DETERMINATION OF ACCEPTABLE EQUIVALENCY SHALL BE MADE BY ENGINEER WHEN AN ITEM IS INDICATED AS "APPROVED FOUAI "

C. WHERE TERMS ARE NOT DEFINED IN THESE DOCUMENTS, THE DEFINITIONS IN NEC ARTICLE 100 SHALL TAKE PRECEDENCE.

1.03 REFERENCE STANDARDS

A. COMPLY WITH ALL PUBLISHED CODES, SPECIFICATIONS, STANDARDS, TESTS, OR RECOMMENDED METHODS OF TRADE, INDUSTRY OR GOVERNMENTAL ORGANIZATIONS, OR LOCAL UTILITIES AS THEY APPLY TO WORK IN THIS DIVISION AS OUTLINED BELOW:

- 1. ADA AMERICANS WITH DISABILITIES ACT. 2. ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
- 3 ASTM AMERICAN SOCIETY OF TESTING AND MATERIALS 4. CBM - CERTIFIED BALLAST MANUFACTURERS.
- 5. FTL FLECTRICAL TESTING LABORATORIES.
- 6. FAA FEDERAL AVIATION ADMINISTRATION 7. FCC - FEDERAL COMMUNICATIONS COMMISSION.
- 8. FM FACTORY MUTUAL
- 9. IEEE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS. 10.IES - ILLUMINATING ENGINEERING SOCIETY.
- 11.NEC NATIONAL ELECTRICAL CODE.
- 12.NECA NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION. 13 NEMA - NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
- 14.NFPA NATIONAL FIRE PROTECTION ASSOCIATION.
- 15.0SHA OCCUPATIONAL SAFETY AND HEALTH ACT. 16.UL - UNDERWRITERS' LABORATORIES, INC.

17.LOCALLY ADOPTED BUILDING CODES AND/OR OTHER BUILDING CODES SPECIFIC TO THIS JURISDICTION. 18.LOCALLY ADOPTED ELECTRICAL CODES AND/OR OTHER ELECTRICAL CODES SPECIFIC TO

THIS JURISDICTION. 19.LOCAL UTILITY AUTHORITIES. 20.LOCAL FIRE DEPARTMENT.

1.04 SUBMITTALS

B. COMPLIANCE WITH GOVERNING CODES AND REGULATIONS SHALL BE SUBJECT TO THE FOLLOWING GUIDELINES: 1. DRAWINGS AND SPECIFICATION REQUIREMENTS SHALL GOVERN WHERE THEY EXCEED

GOVERNING CODE AND REGULATION REQUIREMENTS. 2. WHERE REQUIREMENTS BETWEEN GOVERNING CODES AND REGULATIONS VARY, THE MORE STRINGENT SHALL APPLY. 3. NOTHING CONTAINED IN CONTRACT DOCUMENTS SHALL BE CONSTRUED AS AUTHORITY

OR PERMISSION TO DISREGARD OR VIOLATE LEGAL REQUIREMENTS. CONTRACTOR SHALL IMMEDIATELY DRAW THE ATTENTION OF THE PROJECT MANAGER TO ANY SUCH CONFLICTS NOTED IN THE CONTRACT DOCUMENTS.

A. PROVIDE ELECTRONIC COPIES OF SUBMITTALS WITH DESCRIPTIVE DATA FOR ALL PRODUCTS AND MATERIALS FOR REVIEW BY ENGINEER PRIOR TO ORDERING. SUBMITTALS SHALL CLEARLY IDENTIFY MANUFACTURER, MODEL NUMBER, AND ANY DETAILS NECESSARY TO SHOW COMPLIANCE WITH THE SPECIFICATION DOCUMENTS IN ADDITION TO THOSE PARAMETERS OUTLINED BELOW FOR THE FOLLOWING ITEMS:

- 1. LIGHTING FIXTURES: INCLUDING PHOTOMETRIC PERFORMANCE DATA AND ANALYSIS (WITH PARAMETERS OUTLINED) AS REQUIRED BY ENGINEER, FIXTURE POLES AND MOUNTING ARMS, BALLASTS, AND LAMPS. 2. DEVICES AND EQUIPMENT: INCLUDING WALL SWITCHES. WALL-BOX DIMMERS. RECEPTACLES, DEVICE COVER PLATES, SAFETY SWITCHES, ETC.
- 3. OVERCURRENT DEVICES: INCLUDING TIME/CURRENT CURVES IF REQUESTED. 4. SWITCHBOARDS. DISTRIBUTION BOARDS. MOTOR CONTROL CENTERS. AND PANELBOARDS: DIMENSIONS, ENCLOSURE DATA, VOLTAGE AND PHASE, AMPACITY,
- OVERCURRENT DEVICES (INCLUDING QUANTITIES, AMPACITY RATINGS, TYPES, POLES, FTC.) CATALOG CUTS, AND ANY RELATED ACCESSORIES 5. TRANSFORMERS: WEIGHT OF TRANSFORMER, MOUNTING DETAILS, AND PERFORMANCE DATA (INCLUDING IMPEDANCE, EFFICIENCY, AND SOUND LEVEL)
- 6 SPECIAL SYSTEMS AND FOUIPMENT ARCHITECTURAL /THEATRICAL DIMMING FOUIPMENT AND CONTROLS, OCCUPANCY AND DAYLIGHT HARVESTING SENSORS, EMERGENCY POWER SOURCES AND RELATED TRANSFER EQUIPMENT, TRANSIENT VOLTAGE SURGE SUPPRESSORS, SUB-METERING DEVICES, ETC.

B. SHOP DRAWINGS: COORDINATED LAYOUT PLANS FOR ELECTRICAL ROOMS, INFORMATION TECHNOLOGY ROOMS, AND OTHER SPECIALIZED AREAS AS REQUESTED BY THE ENGINEER. SHOWING WORK OF ALL TRADES INCLUDING BUT NOT LIMITED TO DUCTWORK. HVAC, PLUMBING. FIRE PROTECTION PIPING, ELECTRICAL CONDUITS, BUS DUCTS, AND ALL RELATED EQUIPMENT.

1.05 SUBSTITUTIONS

- A. PROCEDURE: CONTRACTOR'S BID SHALL INCLUDE PRODUCTS AS OUTLINED IN THE SPECIFICATION DOCUMENTS. EXCEPT IN THE CASE OF PRODUCT UNAVAILABILITY, SUBSTITUTIONS WILL NOT BE ALLOWED. ENGINEER WILL CONSIDER SUBSTITUTION OF PRODUCTS ONLY IF THE REQUEST MEETS THE FOLLO 1. WRITTEN EVIDENCE OF PRODUCT UNAVAILABILITY NECESSI
- SUBSTATION FROM THE SPECIFIED PRODUCT'S MANUFACTURE SUPPI IFR. 2. COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOS
- REQUIREMENTS AND SPECIFICATIONS STATED IN CONTRACT DOCUMENTS. DATA RELATING TO CHANGES IN CONSTRUCTION SCHEDULE. 4. COMPLETE DESCRIPTION OF ANY EFFECT OF SUBSTITUTION ON OTHER WORK IN THIS AND OTHER TRADES.

B. FAILURE TO PLACE ORDERS FOR SPECIFIED ITEMS IN A TIMELY MANNER (WITH RESPECT TO THE PROJECT MANAGER'S CONSTRUCTION SCHEDULE) DOES NOT CONSTITUTE PRODUCT UNAVAII ABILITY

C. CONTRACTOR SHALL BE RESPONSIBLE AT NO EXTRA COST TO OWNER FOR ANY CHANGES RESULTING FROM PROPOSED SUBSTITUTIONS WHICH AFFECT WORK OF OTHER TRADES OR RELATED CONTRACTS.

D. CLAIMS FOR ADDITIONAL COSTS CAUSED BY SUBSTITUTION WHICH MAY SUBSEQUENTLY BECOME APPARENT SHALL BE MET BY THE CONTRACTOR.

E. SUBSTITUTIONS WILL NOT BE CONSIDERED FOR ACCEPTANCE WHEN ACCEPTANCE WILL REQUIRE SUBSTANTIAL REVISION OF CONTRACT DOCUMENTS, UNLESS CONTRACTOR BEARS COST OF REDESIGN.

F. SUBSTITUTE PRODUCTS SHALL NOT BE ORDERED OR INSTALLED WITHOUT PRIOR WRITTEN APPROVAL/ACCEPTANCE BY ENGINEER.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. SHIP EQUIPMENT IN ORIGINAL PACKAGES TO PREVENT DAMAGE OR ENTRANCE OF FOREIGN MATTER. HANDLE AND SHIP IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

C. REPLACE, AT NO EXPENSE TO OWNER, EQUIPMENT OR MATERIAL DAMAGED, LOST, OR STOLEN DURING STORAGE OR HANDLING AS DIRECTED BY THE PROJECT MANAGER.

1.07 EXISTING CONDITIONS (AS APPLICABLE)

A. VERIFICATION: BEFORE SUBMITTING BID, BECOME THOROUGHLY FAMILIAR WITH ACTUAL EXISTING CONDITIONS AND THE PRESENT INSTALLATIONS TO WHICH CONNECTIONS MUST BE MADE OR WHICH MUST BE ALTERED. THE INTENT OF THE WORK IS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN, AND NO CONSIDERATION WILL BE GRANTED BY REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR WITH ACTUAL PHYSICAL CONDITIONS, REQUIREMENTS, AND PRACTICES AT THE SITE.

B. TEMPORARY SHUTDOWNS: SHALL BE PERFORMED AT NO ADDITIONAL CHARGES TO OWNER SHUTDOWNS SHALL BE UNDERTAKEN AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF

EXISTING FACILITIES. OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO SHUTDOWNS. C. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED.

D. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.

E. REMOVAL AND RELOCATION OF EXISTING WORK:

- 1. DISCONNECT AND REMOVE OR RELOCATE ANY ELECTRICAL EQUIPMENT AND/OR DEVICES REQUIRED BY REMOVAL OR CHANGES IN EXISTING CONSTRUCTION. 2. REMOVE CONDUCTORS FROM EXISTING RACEWAYS TO BE REUSED AND REPLACE WITH NEW CONDUCTORS 3. REMOVE EXISTING CONDUCTORS NO LONGER USED. REMOVE RACEWAYS IN ALL CASES
- EXCEPT WHERE THE REMOVAL OF THE RACEWAY WOULD CAUSE DAMAGE TO EXISTING CONSTRUCTION. CAP AND MARK AS "ABANDONED" ANY UNUSED RACEWAYS TO REMAIN. 4. CUT AND CAP ABANDONED FLOOR RACEWAYS FLUSH WITH CONCRETE FLOOR OR BEHIND WALLS AND CEILINGS.
- 5. DISPOSE OF ALL REMOVED RACEWAYS AND WIRE. 6. DISPOSE OF REMOVED ELECTRICAL EQUIPMENT, LIGHTING FIXTURES, AND DEVICES AS DIRECTED.
- 7. CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED. ALL PATCHING SHALL BE OF THE SAME MATERIALS, FINISH, AND WORKMANSHIP AS THE EXISTING AREA AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK TO THE SATISFACTION OF THE PROJECT MANAGER.
- 8. IF ASBESTOS INSULATION IS FOUND WHEN WORKING IN EXISTING AREAS, IMMEDIATELY STOP WORK AND NOTIFY PROJECT MANAGER. DO NOT RESTART WORK UNTIL ADVISED IN WRITING BY PROJECT MANAGER THAT IT IS SAFE TO DO SO FOLLOWING ABATEMENT, ENCAPSULATIONS. ETC.

1.08 TELECOMMUNICATIONS AND OTHER LOW-VOLTAGE SYSTEMS

A. SCOPE: ALL TELECOMMUNICATIONS AND OTHER LOW-VOLTAGE CABLE DESIGNS ARE OUTSIDE OF THE SCOPE OF THE ELECTRICAL DOCUMENTS. THE DOCUMENTS REPRESENT THE GENERAL ARRANGEMENT OF EMPTY RACEWAYS AND BOXES TO ACCOMMODATE THE TELECOMMUNICATIONS AND LOW-VOLTAGE SYSTEMS. CONTRACTOR SHALL VERIFY EXACT RACEWAY, JUNCTION BOX, AND DEVICE BOX REQUIREMENTS WITH THE OWNER'S SELECTED TELECOMMUNICATIONS CONSULTANT PRIOR TO ORDERING THE COMPONENTS OF THE RACEWAY AND BOX SYSTEM.

B. SUBMITTALS: CONTRACTOR SHALL SUBMIT ALL COMPONENTS OF THE TELECOMMUNICATION AND OTHER LOW-VOLTAGE SYSTEMS TO THE OWNER'S SELECTED TELECOMMUNICATIONS CONSULTANT FOR APPROVAL

PART II - PRODUCTS

2.01 QUALITY ASSURANCE

A. QUALITY OF MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING: 1. MATERIALS SHALL BE NEW AND LISTED BY UL (OR SIMILAR AGENCY ACCEPTED BY THE AUTHORITY HAVING JURISDICTION) AND BEARING THEIR LABEL 2. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF THE SAME MANUFACTURE, UNLESS OTHERWISE NOTED. 3. MATERIALS SHALL CONFORM TO NEMA, ANSI, AND IEEE STANDARDS.

2.02 RACEWAYS

A. RIGID GALVANIZED STEEL CONDUIT (RGS): FULL-WEIGHT PIPE, GALVANIZED, THREADED.

B. INTERMEDIATE METAL CONDUIT (IMC): LIGHTWEIGHT STEEL PIPE, GALVANIZED, THREADED.

C. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.

- D. RIGID NONMETALLIC CONDUIT: SCHEDULE 40 PVC.
- E. FLEXIBLE STEEL CONDUIT: STANDARD-WALL, GALVANIZED.
- F. FLEXIBLE ALUMINUM CONDUIT: STANDARD-WALL
- G. MINIMUM TRADE SIZE IS 1/2" FOR ALL RIGID AND FLEXIBLE CONDUITS. 2.03 RACEWAY FITTINGS AND ACCESSORIES

(DRY LOCATIONS ONLY). GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER. C. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT. D. BUSHINGS:

2.04 BOXES

METALLIC INSULATED TYPE.

A. OUTLET BOXES: STAMPED OR WELDED STEEL, 4 IN. SQUARE OR OCTAGON WITH APPROPRIATE MUD RING, EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, AS FOLLOWS:

- 1. LIGHTING FIXTURES: 1-1/2" DEEP ABOVE CEILING, 2-1/8" DEEP IN WALL. 2. IN WALL FOR RECEPTACLES. SWITCHES. TELE/DATA DEVICES: 1-1/2" DEEP
- 3. IN WALL FOR WALL-BOX DIMMERS AND GFCI RECEPTACLES: 2-1/8" DEEP.
- 4. WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. 5. THROUGH-THE-WALL TYPE, NOT PERMITTED
- 6. WITHOUT FIXTURE OR DEVICE: BLANK COVER.
- 7. OFFSET BACK-TO-BACK OUTLETS: MINIMUM 6 IN. SEPARATION. COVER BACK BOXES WITH EITHER FIRE OR SOUND PUTTY PAD.
- B. BOXES FOR WET/DAMP LOCATIONS: WEATHERPROOF (NEMA 3R), CAST METAL.
- C. IN HAZARDOUS LOCATIONS: CAST, COPPER-FREE ALUMINUM.
- D. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL. SCREW-ON COVERS, INSULATED

SUPPORTS FOR CABLES,	INSTALLED ONLY I	N ACCESSIBLE LOCATIONS

WITH BOLT-DOWN COVERS. METALLIC COVERS ARE NOT PERMITTED.

E. FLOOR BOXES: GALVANIZED CAST IRON WITH BRASS COVERS AND FLANGES, SUITABLE FOR	
CONDUIT AND DEVICES INDICATED.	

F. EXTERIOR GRADE-MOUNTED PULL BOXES: CONCRETE OR COMPOSITE FIBER CONSTRUCTION

G. PROVIDE BARRIERS IN ALL BOXES BETWEEN 480Y/277 VOLT WIRING ENERGIZED FROM

SEPARATE SERVICES, 208Y/120 VOLT AND 480Y/277 VOLT WIRING, EMERGENCY AND NORMAL

FORMAL REQUESTS FOR
WING CONDITIONS:.
ITATING THE PROPOSED
ER REPRESENTATIVE OR
SED SUBSTITUTION WITH

WIRING

B. PROVIDE AND MAINTAIN PROTECTIVE COVERINGS DURING CONSTRUCTION.

A. RIGID GALVANIZED AND INTERMEDIATE METAL CONDUIT: ZINC DIE CAST NOT PERMITTED.

B. ELECTROMETALLIC TUBING: COMPRESSION (WET LOCATIONS) OR DOUBLE SET SCREW TYPE

2.05 WIRE AND CABLE A. CONDUCTORS: ASTM STANDARD SOLID; STRANDED FOR #8 AWG AND LARGER. 1. TYPE: COPPER. UNLESS OTHERWISE NOTED. CONTRACTOR SHALL NOT SUBSTITUTE ALUMINUM FOR ANY BRANCH CIRCUITS. CONTRACTOR MAY SUBSTITUTE ALUMINUM FOR FEEDERS SIZED #1/0 AWG OR LARGER ONLY WITH WRITTEN CONSENT OF ENGINEER. 2. SIZE, FOR GENERAL USE (BASED UPON 10A LOAD): A. #12 AWG MINIMUM FOR ALL CIRCUITS 120V OR MORE.

B. FOR 20A/1P 120V BRANCH CIRCUITS OVER 70 FEET IN TOTAL LENGTH: #10 AWG THROUGHOUT ENTIRE CIRCUIT. C. FOR 20A/1 P 120V BRANCH CIRCUITS OVER 110 FEET IN TOTAL LENGTH: #8 AWG FOR HOMERUN, #10 AWG THROUGHOUT REMAINDER OF CIRCUIT. D. FOR 20A/1P 277V BRANCH CIRCUIT HOMERUNS OVER 160 FEET IN LENGTH: #10 AWG THROUGHOUT ENTIRE CIRCUIT E. FOR 20A/1 P 277V BRANCH CIRCUITS OVER 260 FEET IN LENGTH: #8 AWG FOR HOMERUN, #10 AWG THROUGHOUT REMAINDER OF CIRCUIT.

3. SIZE, FOR CONTROL AND ALARM: #14 AWG MINIMUM, EXCEPT FOR 120V CIRCUITS OR CIRCUITS OVER 200 FEET IN LENGTH PROVIDE #12 AWG MINIMUM. 4. OTHER VOLTAGES AND PHASES: BRANCH CIRCUIT SIZE ADJUSTED AS REQUIRED TO MAINTAIN VOLTAGE DROP BELOW 3% (FEEDERS BELOW 2%). 5. WHERE BRANCH CIRCUITS OR FEEDERS HAVE BEEN ADJUSTED FOR VOLTAGE DROP, INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED. EQUIPMENT GROUNDING CONDUCTOR TO BE RESIZED TO CORRESPOND TO THE NORMAL AMPACITY OF THE NEW FEEDER SIZE

B. INSULATION: 1. THWN-2/THHN: FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. 2. SFF-2: BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES OR WHERE AMBIENT TEMPERATURES EXCEED 90°C. 3. TYPE NM ("ROMEX") CABLE NOT ALLOWED

4. COLOR CODING: CONDUCTORS SHALL BE COLOR CODED TO DIFFERENTIATE THE PHASES, THE SAME COLOR CODE BEING ASSIGNED TO THE SAME PHASE THROUGHOUT THE PROJECT 5. RATING: CONDUCTORS FOR CIRCUITS RATED 30A OR LESS HAVE BEEN SIZED BASED UPON 60° C TEMPERATURE RATING [NEC TABLE 310.15 (B)(16)]. CONDUCTORS FOR CIRCUITS RATED OVER 30A HAVE BEEN SIZED BASED UPON 75° C TEMPERATURE RATING. 90° C CONDUCTOR TEMP RATING IS USED ONLY FOR CALCULATING DERATING WHERE ALLOWED

C. METAL CLAD (MC) CABLE: FOR BRANCH CIRCUITS IN DRY LOCATIONS, WALLS, HUNG CEILINGS, AND FURRED SPACES TO BRANCH DISTRIBUTION BOX ONLY. NOT ALLOWED FOR HOMERUNS.

D. TAGS: PROVIDE TAGS IN ACCESSIBLE LOCATIONS FOR ALL FEEDERS, MADE OF FLAMEPROOF LINEN OR FIBER, INDICATING FEEDER SIZE, PHASE, AND POINTS OF ORIGIN AND TERMINATIONS.

E. TERMINATIONS, SPLICES AND TAPS UNDER 600V: 1. COPPER CONDUCTORS #10 AWG AND SMALLER: WITH COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND NYLON-INSULATED COVERING. 2. COPPER CONDUCTORS #8 AWG AND LARGER: MECHANICAL BOLTED PRESSURE OR HYDRAULIC-COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. 3. CABLE LUGS AND CONNECTORS: COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE.

2.06 DEVICES

A. LOCAL WALL SWITCHES: HEAVY DUTY, TOGGLE, OR ROCKER QUIET TYPE, 20A, 120/277VAC, COORDINATE WITH ARCHITECT FOR FINISH COLOR.

B. DIMMER SWITCHES: SLIDER TYPE, SIZED PER TOTAL CONTROLLED LOAD OR AS INDICATED, COORDINATE WITH ARCHITECT FOR FINISH COLOR.

- C. RECEPTACLES: A. DUPLEX CONVENIENCE: NEMA 5-20R UNLESS OTHERWISE NOTED, GFCI-TYPE WHERE INDICATED OR REQUIRED BY CODE, COORDINATE WITH ARCHITECT FOR FINISH COLOR. B. SINGLE: NEMA 5-20R UNLESS NOTED OTHERWISE, COORDINATE WITH ARCHITECT FOR FINISH COLOR. C. SPECIAL USE: NEMA TYPES AND RATINGS AS INDICATED ON DRAWINGS OR AS REQUIRED
- TO MATCH CORD CAP OF FOUIPMENT. D. DEVICE PLATES: VERIFY TYPE WITH ARCHITECT. E. WEATHERPROOF DEVICE COVERS: FOR RECEPTACLES INSTALLED OUTDOORS, PROVIDE

NEMA 3R, CAST METAL, LOCKABLE, "IN-USE" TYPE COVERS. 2.07 LOW VOLTAGE DISTRIBUTION EQUIPMENT

A. DISCONNECT SWITCHES

1. FUSED OR NONFUSED AS NOTED. 2. VOLTAGE AS REQUIRED FOR APPLICATION. 3. AMPACITY AS REQUIRED FOR APPLICATION (MINIMUM SIZE SHALL BE 125% OF FULL-LOAD AMPS OF EQUIPMENT SERVED, UNLESS OTHERWISE NOTED).

4. HEAVY DUTY, UNLESS OTHERWISE NOTED. 5. HORSEPOWER RATED FOR MOTOR LOADS.

6. TOGGLE TYPE: NON-FUSED, MAXIMUM RATING OF 20A AT 600V OR 30A AT 250V, USE ONLY WHEN FULL-LOAD AMPS OF LOAD DOES NOT EXCEED 80% OF SWITCH RATING. 7. KNIFE-BLADE TYPE: LOAD BREAK, QUICK-MAKE-QUICK-BREAK, UL CLASS R UP TO 600V, MAXIMUM RATING 800A EXCEPT AS NOTED, ARC QUENCHERS, INDIVIDUALLY MOUNTED EXCEPT AS NOTED.

B. FUSES:

1. MATCH EXISTING WHERE APPLICABLE. 2. FOR MOTOR AND TRANSFORMER LOADS: CURRENT LIMITING, DUAL ELEMENT, TIME DELAY TYPE, 200,000 AIC, EQUAL TO BUSSMANN FUSETRON FRN OR FRS OR LO-PEAK LPN OR LPS (UL CLASS R), VOLTAGE RATINGS TO SUIT APPLICATIONS, AMP RATINGS PER PLANS, UNLESS OTHERWISE NOTED. 3. FOR OTHER LOADS: CURRENT LIMITING, FAST ACTING TYPE, 200,000 AIC, EQUAL TO

BUSSMANN LIMITRON KTN, KTS, OR KTU (UL CLASS R, UP TO 600A; CLASS L, OVER 600A), UNLESS OTHERWISE NOTED 4. ALL FUSES SHALL BE OF THE SAME MANUFACTURER.

5. SUPPLY 1 SPARE MATCHING FUSE FOR EACH SET OF 3 INSTALLED.

C. CIRCUIT BREAKERS:

1. GENERAL REQUIREMENTS: THERMAL-MAGNETIC. QUICK-MAKE-QUICK-BREAK. MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE, MULTI-POLE TYPES WITH INTERNAL TRIP BAR, TERMINALS UL LISTED FOR 75° C, SUITABLE FOR COPPER OR ALUMINUM, HACR-RATED TO SUIT APPLICATION, MANUFACTURER TO MATCH EXISTING EQUIPMENT, IF ANY. 2. SHORT CIRCUIT INTERRUPTING CAPACITY:

A. SIZE TO MATCH EQUIPMENT AIC RATING INDICATED ON DIAGRAMS AND SCHEDULES. B. SERIES-RATED COMBINATIONS: AIC RATINGS ON DRAWINGS ARE BASED UPON FULLY-RATED EQUIPMENT. SERIES-RATED EQUIPMENT IS ALLOWED ONLY IF SPECIFICALLY IDENTIFIED ON THESE DRAWINGS

3. GFCI PROTECTION: WHERE THE ELECTRICAL CODE REQUIRES GFCI PROTECTION OF SPECIFIC RECEPTACLES WHICH ARE NOT READILY ACCESSIBLE (SUCH AS BEHIND REFRIGERATORS OR SIMILAR UTILIZATION EQUIPMENT), PROVIDE GFCI-TYPE CIRCUIT BREAKERS IN LIEU OF GFCI RECEPTACLES.

D. MOTOR CONTROLLERS/STARTERS: 1. MANUAL MOTOR CONTROLLERS: 600VAC HEAVY DUTY RATED, SINGLE- OR MULTI-POLE TO SUIT APPLICATION, MOUNTED IN SUITABLE NEMA ENCLOSURE, HORSEPOWER RATED TO SUIT MOTOR TO BE CONTROLLED, H-O-A OR START-STOP OPERATION AS NEEDED FOR APPLICATION.

E. BRANCH CIRCUIT PANELBOARDS: 1. GENERAL REQUIREMENTS:

FATON/CUTLER-HAMMER

- A. PROVIDE FACTORY-ASSEMBLED, ENCLOSED PANELBOARDS WITH DOORS, SURFACE-MOUNTED OR RECESSED AS INDICATED. B. PROVIDE FEEDER TERMINAL LUGS FOR BOTH MAIN BREAKERS AND MAIN LUGS, RATED FOR USE WITH COPPER OR ALUMINUM CABLES AS REQUIRED. C. ALL DOOR LOCKS SHALL BE KEYED ALIKE.
- D. PROVIDE SEPARATE HINGED AND LOCKABLE DOORS FOR MAIN CONTACTOR COMPARTMENTS AS REQUIRED. E. AIC RATING FOR PANEL BUS SHALL BE AS INDICATED ON DRAWINGS.
- F. PANEL BUS MAY BE COPPER OR ALUMINUM. G. PROVIDE CONTROL TRANSFORMER FOR THE SHUNT TRIP ELEMENT IN THE PANELBOARD ENCLOSURE AS REQUIRED
- H. PROVIDE CIRCUIT DIRECTORY CONSISTING OF METAL FRAME WITH TRANSPARENT PLASTIC COVER. PROVIDE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS AND LOADS TO MATCH ACTUAL "AS-BUILT" CONDITIONS (TO CORRESPOND WITH PROJECT RECORD DRAWINGS) 2. ACCEPTABLE MANUFACTURERS: SQUARE D, SIEMENS, GENERAL ELECTRIC, AND

F. ENCLOSURES: DEAD FRONT, NEMA TYPE 1 (INDOOR) OR NEMA TYPE 3R (OUTDOOR), UNLESS OTHERWISE NOTED. ALL EQUIPMENT SHALL HAVE SUFFICIENT GUTTER SPACE TO ACCOMMODATE THE THE QUANTITY AND SIZE OF CONDUCTORS REQUIRED. CONTRACTOR SHALL PROVIDE LISTED OVERSIZED ENCLOSURES WHERE REQUIRED.

G. TEMPERATURE RATING: ALL LOW-VOLTAGE DISTRIBUTION EQUIPMENT SHALL BE RATED FOR 75° C MINIMUM, NO EXCEPTIONS.

H. NAMEPLATES: PROVIDE NAMEPLATES FOR ALL DISCONNECT SWITCHES, ENCLOSED BREAKERS, PANELS, CABINETS, TRANSFORMER ENCLOSURES, MOTOR CONT DISTRIBUTION BOARDS, AND SWITCHBOARDS. NAMEPLATES SHALL BE FASTENED WIT CEMENT, ENGRAVED BLACK BACKGROUND WITH 3/4" WHITE LETTERING, INSCRIPTION INE EQUIPMENT AND VOLTAGE.

2.08 LUMINAIRES

A. PROVIDE LUMINAIRES, COMPONENTS, AND LAMPS AS SPECIFIED IN THE DRAWINGS. B. LUMINAIRE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECE DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. IT IS THE CONTE RESPONSIBILITY TO PROVIDE FIXTURE MOUNTING TYPES TO SUIT APPLICATION AND TO I REQUIRED ACCESSORIES TO SUIT.

C. LIGHTING CONTROL SYSTEM:

1. GENERAL: PROVIDE LIGHTING CONTROL SYSTEM COMPONENTS AS SPECIFIED DRAWINGS, CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL COMPONEN COMPLETE AND OPERABLE SYSTEM PER MANUFACTURER'S REQUIREMENTS, WHE COMPONENTS ARE SPECIFIED IN THE DRAWINGS OR NOT. COORDINATE COMMI REQUIREMENTS WITH LIGHTING DESIGNER AND/OR ENGINEER AS REQUIRED. 2. COMPATIBILITY WITH LED DRIVERS: LIGHTING DIMMING CONTROLS SH COMPATIBLE WITH THE LED LUMINAIRES AND/OR LAMPS SPECIFIC IN THESE DF CONTRACTOR SHALL VERIFY COMPATABILITY WITH LED AND DIMMER MANUFAC SUCH THAT LED LUMINAIRES AND LAMPS DIM TO 20% OR LESS WITHOUT FLICKERIN

D. LAMPS: PROVIDE AS SPECIFIED IN THE DRAWINGS AND TO SUIT APPLICATION. PART III - EXECUTION

3.01 INSTALLATION

A. GENERAL REQUIREMENTS 1. DO NOT SCALE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATIONS OF ALL F DEVICES. BOXES. RACEWAYS. AND OTHER EQUIPMENT WITH THE DRAW ARCHITECTS, INTERIOR DESIGNERS, AND ALL OTHER CONSULTANTS. EACH DEV FIXTURE HEIGHT SHALL BE VERIFIED WITH OTHERS' DIMENSIONED DRAWINGS (IN MILLWORK SHOP DRAWINGS) TO ENSURE PROPER HEIGHT AND LOCATION. CONT SHALL VERIFY THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT AND ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ROUGH-IN. 2. THE CONTRACT DRAWINGS INDICATE THE GENERAL ARRANGEMENTS ELECTRICAL SYSTEMS. PRIOR TO INSTALLATION, CONTRACTOR SHALL REVI COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR CONFLICTS WITH OTHER DRAWINGS ARE DIAGRAMMATIC AND DO NOT INDICATE ALL OBSTRUCTIONS, MECHANICAL DUCT OR PIPING CONFLICTS, OR STRUCTURAL CONDITIONS T AFFECT THE INSTALLATION. DUE TO THESE OR OTHER LEGITIMATE REASO CONTRACTOR MAY DECIDE TO INSTALL THE WORK INDICATED IN A MANNER DI FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED FOR REVIEW AND AF

FROM THE PROJECT MANAGER PRIOR TO PROCEEDING. UPON APPROVAL, TH SHALL BE PERFORMED AND THE RECORD DRAWINGS PREPARED TO ACCURATELY THE WORK AS ACTUALLY INSTALLED. 3. IN ALL CASES, MANUFACTURER'S DRAWINGS, DETAILS, AND/OR INSTRUCTIONS FOLLOWED FOR ALL EQUIPMENT AND DEVICES INSTALLED. IN CASES OF CONFL THESE DRAWINGS AND SPECIFICATIONS, THE MANUFACTURER'S RECOM

INSTALLATION METHODS SHALL TAKE PRECEDENCE. 4. THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION. CAP OPENINGS CONSTRUCTION TO PREVENT INFILTRATION OF DIRT AND OTHER FOREIGN OBJEC FINAL CONNECTIONS HAVE BEEN MADE.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ANCHORS, SUPPOR CONNECTIONS OF ELECTRICAL WORK TO THE BUILDING STRUCTURE AS REQU BUILDING CODES AND IN COMPLIANCE WITH THE LISTING OF THE ANCHORS AND SU UTILIZED, INCLUDING MANUFACTURED EQUIPMENT AND THE CONNECTION AND IN OF SHOP FABRICATED AND FIELD FABRICATED MATERIALS AND EQUIPME SUPPORTS, EQUIPMENT, AND CONNECTIONS SHALL BE DESIGNED TO CONF REQUIREMENTS OF THE GOVERNING CODES AND AUTHORITY HAVING JURISDICTIO

6. ALL EQUIPMENT SHALL BE SECURELY FASTENED TO BUILDING CONSTRUCT APPROVED SUPPORTS. ALL WORK SHALL BE PROPERLY SUPPORTED FROM STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER INDEPENDENT OF THE SUPPORT SYSTEM. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS, FURNISH ADDITIONAL FRAMING 7. FIELD-VERIFY FEEDER CONDUCTOR LENGTHS AND TRANSFORMER PARA

(INCLUDING UTILITY TRANSFORMERS) VERSUS THE VALUES LISTED IN THESE DOC THAT ARE A PART OF THE AVAILABLE FAULT-CURRENT CALCULATIONS. FIELD-VERIFIED CONDITION IS DIFFERENT THAN THOSE DEPICTED IN THESE DF NOTIFY ENGINEER IMMEDIATELY FOR RE-CALCULATION OF AVAILABLE FAULT CURR

B. RACEWAYS, WIRE, AND CABLES: 1. ROUTING OF RACEWAY SYSTEMS AS SHOWN IS DIAGRAMMATIC. ACTUAL LOCAT ROUTING OF ALL RACEWAYS SHALL BE DETERMINED BY CONTRACTOR TO SU CONDITIONS

2. RACEWAYS SHALL BE INSTALLED CONCEALED, EXCEPT IN AREAS OUT OF PUB EQUIPMENT ROOMS, AND OTHER SIMILAR AREAS, OR WHERE CONDITIONS CONCEALMENT IMPRACTICAL. WHERE EXPOSED, INSTALL PARALLEL WITH OR ANGLES TO WALLS. WHERE INSTALLED IN MASONRY, RUN VERTICALLY ONLY. 3. RIGID STEEL AND INTERMEDIATE METALLIC CONDUIT SHALL BE PERMITTED WITH FEEDERS AND BRANCH CIRCUITS. IN EXPOSED AREAS WHERE SUBJECT TO DAMAGE, USE ONLY RIGID GALVANIZED STEEL CONDUIT. RIGID AND INTERMEDIA CONDUIT: USE THREADED RIGID STEEL CONDUIT FITTINGS UNLESS OTHERWISE IND COMPLY WITH NEMA FB 2.10 4. EMT SHALL BE PERMITTED FOR USE WITH FEEDERS AND BRANCH CIRCUITS, AND

INSTALLED IN WET LOCATIONS (ABOVE GRADE), DRY LOCATIONS, WALLS, HUNG HOLLOW BLOCK WALLS, AND FURRED SPACES. 5. FLEXIBLE STEEL CONDUIT: USE FOR BRANCH CIRCUITS ONLY.

A. PERMITTED USES: DRY LOCATIONS (EXCEPT AS NOTED), IN WALLS, HUNG AND FURRED SPACES FOR SHORT CONNECTIONS WHERE RIGID CON IMPRACTICABLE, FROM OUTLET BOX TO A RECESSED LIGHTING FIXTURE (MA FT. LENGTH).

B. REQUIRED USES: FOR FINAL CONNECTION TO MOTOR TERMIN TRANSFORMERS AND OTHER VIBRATING EQUIPMENT (WITH POLYVINYL SH WHERE INSTALLED IN WET LOCATIONS), FOR EXPANSION JOINT CROSSINGS AT RIGHT ANGLES AND ANCHOR ENDS, MINIMUM LENGTH 18" WITH SLACK). 6. WHERE ALLOWED BY CODE, MC CABLE MAY BE INSTALLED. WHERE MULTIPLE ARE ROUTED ADJACENT TO EACH OTHER (BUNDLED). A MINIMUM SEPARATION C CABLE DIAMETER (LARGEST) SHALL BE MAINTAINED THROUGHOUT THE LENGTH RUN, OTHERWISE CONTRACTOR SHALL BE RESPONSIBLE FOR DERATING CA REQUIRED BY CODE. PLASTIC CABLE TIES SHALL NOT BE USED AS MEANS OF SUPP 7. SUPPORTS: USE CEILING TRAPEZE, STRAP HANGERS OR WALL BRACKETS (LOADING 75% OF RATING). USE U-BOLTS AT EACH FLOOR LEVEL OF RISER RA CONNECTED TO ACCEPTABLE SUPPORTS. FOR GROUPED LINES AND SERVIC TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS. SECURE RACEWAYS TO SL WITH PIPE STRAPS OR U-BOLTS. SPACED MINIMUM 10 FEET ON CENTERS FOR RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY, OR PER CODE. BUILDING CONSTRUCTION IS INADEQUATE PROVIDE ADDITIONAL FRAMING. 8. MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWA

GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR CONNECTIONS. 9. REAM ENDS OF METALLIC CONDUITS PRIOR RACEWAY SYSTEM ASSEMBLY. 10.NO RACEWAY SHALL CONTAIN MORE THAN NINE (9) CURRENT-CARRYING CONI UNLESS OTHERWISE NOTED. WHERE MULTIPLE CONDUCTORS (IN EXCESS OF THE INDICATED ON THESE DRAWINGS. THEY HAVE BEEN DERATED AS REQUIRED BY TO THREE HOMERUNS FOR 20A/1P #12 AWG BRANCH CIRCUITS MAY BE COMBINE SINGLE CONDUIT HOMERUN (PROVIDE MULTI-POLE BREAKERS OR HANDLE

BREAKERS SUPPLYING MULTIWIRE BRANCH CIRCUITS WITH SHARED NEUTRALS OTHER CASES, CONTRACTOR SHALL NOT COMBINE HOME RUN CONDUITS IN CONDUIT WITHOUT AUTHORIZATION FROM ENGINEER. 11.WHERE MORE THAN ONE CONDUIT TERMINATES IN A JUNCTION BOX, CONT SHALL IDENTIFY EACH CONDUIT AND JUNCTION BOX IN A MANNER A IDENTIFICATION AFTER ALL WALL FINISHES HAVE BEEN APPLIED. 12. PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE IN ALL EMPTY RA OVER 10 FEET LONG.

13.SLEEVES: FURNISH AND SET ALL SLEEVES FOR PASSAGE OF CONDUIT THROUGH ROOF, FLOORS, AND ELSEWHERE AS REQUIRED FOR PROPER PROTECTION CONDUIT PASSING THROUGH BUILDING SURFACES. 14.SEPARATE RACEWAYS FOR CONDUCTORS OF 208Y/120 AND 480Y/277 VOLT S EXCEPT 480 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT WIRING 15.THREADED CONDUIT JOINTS, EXPOSED TO WET, DAMP, CORROSIVE, OR O

CONDITIONS: APPLY LISTED COMPOUND TO THREADS OF RACEWAY AND FITTINGS MAKING UP JOINTS. FOLLOW COMPOUND MANUFACTURER'S WRITTEN INSTRUCTION C. OUTLET AND PULL BOXES:

1. SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. 2. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS OR GROUT MASONRY 3. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAW

INTERIOR DETAILS AND FINISHES 4. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHAS VOLTAGES EXCEEDING 150 VOLTS TO GROUND. 5. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES, ONLY IN ACC I OCATIONS

6. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS: ACCESSIBLE OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON CEILING SUI 7. OUTDOOR INSTALLATION: WEATHERPROOF EXCEPT AS NOTED; BELOW

WATERPROOF 8. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT SIZE AND INSTALLATION OUTLET. PULL, AND JUNCTION BOXES IN ACCORDANCE WITH NEC 314.16.

D. SWITCHBOARDS, DISTRIBUTION BOARDS, PANELBOARDS, AND TRANSFORMERS:

	1. BALANCE THE LOAD OVER PHASES WHEN NEW CIRCUITS ARE ADDED TO NEW OR	ENGINE	EER
D CIRCUIT ROLLERS, TH EPOXY NDICATING	EXISTING PANELBOARDS (IF ANY). 2. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS CHANGED. 3. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD. 4. ALL FLOOR-MOUNTED EQUIPMENT SHALL HAVE A 3" HIGH HOUSEKEEPING PAD, EXTENDING 3" OR LESS OUTSIDE THE EQUIPMENT FOOTPRINT IN ALL DIRECTIONS (EXCEPT FOR REAR OF SWITCHBOARDS AND DISTRIBUTION BOARDS THAT ARE NOT	R amirez, J ohnson,	&
ESSARILY RACTOR'S 9 PROVIDE	REAR-ACCESSIBLE). 5. ALL EQUIPMENT SHALL BE INSTALLED TO MEET NEC 110.26 REQUIRED CLEARANCES. 6. CONTRACTOR SHALL VERIFY WITH PROJECT STRUCTURAL ENGINEER (OR RETAIN THE SERVICES OF A LICENSED STRUCTURAL ENGINEER) TO PROVIDE ANY MOUNTING DIAGRAMS OR CALCULATIONS REQUIRED TO VERIFY MOUNTING OF ANY WALL- OR TRAPEZE-MOUNTED TRANSFORMER PRIOR TO ROUGH-IN. ANY RELATED COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.	ASSOCIATES 3301 LAWRE SUITE DENVER, CO	NCE ST, 2 0 80205
D ON THE TS FOR A	E. ELECTRICAL ROOMS WITH EQUIPMENT OVER 800 AMPS 1. EGRESS DOORS FROM ELECTRICAL ROOMS WITH EQUIPMENT OVER 800 AMPS SHALL INCLUDE PANIC HARDWARE LISTED FOR USE WITH THE DOOR INSTALLED (SPECIFIC TO ANY FIRE-RATINGS OF THE DOOR).	P: 720.598	3.0774
THER ALL ISSIONING SHALL BE RAWINGS. ACTURERS NG.	 F. LUMINAIRES: 1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN(S) OR LIGHTING DESIGN DRAWINGS FOR EXACT LOCATION OF ALL CEILING-MOUNTED LIGHTING FIXTURES. ARCHITECTURAL DRAWINGS OR LIGHTING DESIGN DRAWINGS SHALL GOVERN IN CASE OF CONFLICT WITH ELECTRICAL LIGHTING DRAWINGS. 2. RECESSED LUMINAIRES IN FIRE-RATED CEILINGS AND SUPPLY AIR PLENUMS SHALL BE APPROVED FOR THE FIRE RATING OF THE CEILING OR SHALL BE FULLY ENCLOSED IN A FIRE-RATED HOUSING ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. 3. SEAL ALL OPENING TO ELIMINATE AIR LEAKS. 	41315 8:05/04/20	1. 12
FIXTURES, /INGS OF VICE AND NCLUDING	 VERIFY TYPE OF MOUNTING REQUIRED FOR ALL LUMINAIRES AND PROVIDE ALL MOUNTING HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION. ALL ADJUSTABLE LUMINAIRES SHALL BE PROPERLY AIMED AS DIRECTED BY THE ARCHITECT OR LIGHTING DESIGNER. AIMING OF BUILDING FACADE LIGHTING (IF ANY) SHALL BE PERFORMED AT NIGHT IF REQUIRED BY ARCHITECT OR LIGHTING DESIGNER. ALL FLUORESCENT LAMPS INSTALLED IN LUMINAIRES WITH DIMMABLE BALLASTS SHALL BE BURNED AT FULL POWER FOR A MINIMUM OF 24 HOURS PRIOR TO ANY SYSTEM DIMMING TESTS OR COMMISSIONING. 		
TRACTOR L OTHER FOR THE (IEW THE TRADES. OFFSETS, HAT MAY DNS. THE	 G. GROUNDING: 1. GROUNDING CONNECTIONS SHALL BE MADE WITH APPROVED CONNECTORS ONLY. 2. IN INACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS. 3. PROVIDE #6 AWG GROUND FOR ALL COMMUNICATIONS CIRCUITS (AT TERMINAL BOARDS AND SIMILAR EQUIPMENT LOCATIONS) IN ACCORDANCE WITH NEC 800.40. 4. PROVIDE GROUNDING FOR ALL SEPARATELY DERIVED SYSTEMS PER NEC 250.30 REQUIREMENTS. H. MOTORS: 	Reviewed Code Comp	d for bliance
DIFFERENT APPROVAL HE WORK YREFLECT SHALL BE LICT WITH MMENDED DURING CTS UNTIL	 1. WHERE MOTORS ARE INSTALLED IN HUNG CEILINGS, CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS IN HUNG CEILING WITHIN REACH FROM ACCESS POINT. 2. SIZING OF MOTOR-RELATED ELECTRICAL COMPONENTS, INCLUDING FEEDER AND/OR BRANCH CIRCUITS (WIRE AND CONDUIT) AND OVERCURRENT PROTECTION (BREAKER AND/OR FUSES) IS BASED UPON RATINGS INDICATED IN THE CONTRACTOR DOCUMENTS AS WELL AS NEC APPROXIMATED LOADS FOR A GIVEN MOTOR HORSEPOWER, VOLTAGE, AND PHASE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL MOTOR AND APPLIANCE RATING AND LOADS AND TO PROVIDE CORRECTLY-SIZED MOTOR-RELATED ELECTRICAL COMPONENTS. WHERE EQUIPMENT OVERCURRENT PROTECTION IS RATED ONLY FOR FUSES, THE CONTRACTOR SHALL PROVIDE A FUSED DISCONNECT WITH FUSES SIZED PER MANUFACTURER'S RECOMMENDATIONS, WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT. REFLECT ALL CHANGES IN THE RECORD DRAWINGS. 	0 0 0 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	023
RTS, AND UIRED BY SUPPORTS NTEGRITY ENT. ALL FORM TO DN. TON WITH BUILDING	 I. PENETRATIONS: 1. ALL PENETRATIONS OF FIRE-RESISTIVE FLOORS, WALLS, OR OTHER FIRE LISTED ASSEMBLIES SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO U.L. LISTING FOR "MEMBRANE-PENETRATION FIRE STOP SYSTEMS" OR "THROUGH-PENETRATION FIRE STOP SYSTEMS" AS APPLICABLE. 2. ALL PENETRATIONS OF EXTERIOR ASSEMBLIES SHALL BE PROPERLY SEALED AND WATERPROOFED. 	0) ロ じ	
E CEILING T DIRECT AMETERS CUMENTS IF ANY	J. FIRE/SMOKE DAMPERS: VERIFY EXACT LOCATIONS WITH MECHANICAL DRAWINGS. PROVIDE LINE VOLTAGE MOTOR CONNECTIONS AND LOCAL DISCONNECT SWITCHES AS REQUIRED. PROVIDE DUCT AND/OR AREA SMOKE DETECTORS AS REQUIRED FOR ACTUATION OF DAMPER MOTORS.	N N N	
TION AND	 K. SIGNAGE: 1. PROVIDE ALL WARNING SIGNAGE AND LABELLING AS REQUIRED BY CODES AND AUTHORITIES HAVING JURISDICTION. 2. PROVIDE SIGNAGE INDICATING AVAILABLE FAULT CURRENT AT SERVICE MAIN DISCONNECT(S) AS INDICATED ON THESE DRAWINGS, INCLUDING (EXISTING CONDITIONS ONLY) IF ANY SUCH EQUIPMENT IS NOT ALREADY LABELLED WITH THIS INFORMATION. 		
BLIC VIEW, RENDER AT RIGHT FOR USE PHYSICAL TE STEEL	L. ACCESS DOORS/PANELS: PROVIDE CONCEALED OUTLET BOXES, JUNCTION/PULL BOXES, AND EQUIPMENT REQUIRING ACCESS WITH ADEQUATELY SIZED ACCESS DOORS/PANELS. IN REMOVABLE TYPE CEILING, PROVIDE ACCESS-TILE IDENTIFICATION ONLY. WHERE ACCESS LOCATIONS ARE NOT DEFINED IN THESE OR OTHER DOCUMENTS, COORDINATE ACCESS POINTS WITH THE GENERAL CONTRACTOR AND/OR ARCHITECT. 3.02 PROJECT CLOSE-OUT	- B	-87
IDICATED. D MAY BE CEILINGS,	A. ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS AT NO COST TO OWNER.	Ш	804
CEILINGS, NDUIT IS AXIMUM 6	B. UPON COMPLETION OF THE FIRE ALARM SYSTEM'S INSTALLATION, THE SYSTEM INSTALLER SHALL CONDUCT A THOROUGH TEST OF THE SYSTEM TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND SUBMIT A WRITTEN REPORT OF THE FINDING TO THE PROJECT MANAGER.	AF	CO
AL BOX, IEATHING S (CROSS	C. AFTER FINAL OPERATION FOR INSPECTION AND ACCEPTANCE, DELIVER ALL COPIES OF OPERATION INSTRUCTIONS, MAINTENANCE MANUALS AND PARTS DESCRIPTIONS TO THE ARCHITECT.		CIR(GS,
E CABLES F ONE (1) H OF THE BLES AS ORT. MAXIMUM ACEWAYS,	D. ALL TOOLS SUPPLIED WITH THE EQUIPMENT FOR MAINTENANCE SHALL BE TAGGED AND TEMPORARILY SECURED TO THE UNIT, OR TURNED OVER TO THE OWNER.	∆ S(NER (PRIN
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SHORT CIRCUIT SCHEDULE															
	PROJECT NAME: CHRISTY SPORTS PROJECT NO: 22048 BY: NDM														
		LENGTH/	VOLTAGE/	WIRE SIZE/	WIRE MATERIAL/	CONDUIT	VOLTAGE	WIRES	C OR Z	# OF	lsc	f	М	I(sc Fault)	
	DESCRIPTION	PRIMARY	SECONDARY	XFRMR	TRANSFORMER	(S OR N)	CLASS	(S OR T)	VALUE	PARALLEL	AVAILABLE				
		VOLTAGE	VOLTAGE	KVA RATING	(C OR A) T=XFRMR		(V)			RUNS	UPSTREAM				
X0	UTILITY COMPANY XFMR													23,100	X0
X1	DISTRIBUTION BOARD	60	480	300	С	N	600	S	20867	3	23,100	0.0799	0.9260	21,391	X1
X2	PANEL LEC	225	480	4X	С	S	600	S	15082	1	21,391	1.1515	0.4648	9,942	X2
X3	100A3P DISCONNECT	115	480	2	С	S	600	S	5906	1	9,942	0.6986	0.5887	5,853	X3
X4	TRANSFORMER T-L2	480	208	75	Т	S	600	S	1.4	1	5,853	0.9084	0.5240	7,078	X4
X5	400A3P DISCONECT	5	208	4X	C	S	600	S	15082	1	7,078	0.0195	0.9808	6,942	X5
X6	PANEL L2	20	208	4X	С	S	600	S	15082	1	9,942	0.1098	0.9011	8,959	X6

	EXISTING P									TING	9 PAN									
	PROJECT: JOB NO.: LOCATION:	2022-048	VOLTAG TYPE:	EL-N (V):	120	4-WIRE		JOB NO	O.: TION:			2022-0	48	VOLTAGE TYPE:	L-N (V):	277	-WIRE			
	MINIMUM BUS CAPACITY (A): MAIN O.C. DEVICE (A): DESIGN CAPACITY (A):	225A MCB	MOUNTI	NG:	RECCESS	ED		MAIN O.C. DEVICE (A): 225A MCB		ICB	MOUNTING:		UNTING: SURFACE		3					
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	3 WIRE PLUS GROUND					
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90A4	4 #2, 1 #8 GND-1 1/2" C					
100A4	4 #1, 1 #8 GND-1 1/2" C					
225A4	4 #4/0, 1 #4 GND-2 1/2" C					
225A4X	4 #4/0, 1 #2 GND-2 1/2" C					
	4 WIRE SERVICE					
800S4	3 SETS OF 4 300 KCMIL - 2 1/2" C					

GENERAL NOTES

- (THIS SHEET)
- 1. REFER TO ELECTRICAL FLOOR PLANS FOR PANEL LOCATIONS.
- 2. ALL EQUIPMENT IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
- 3. INFORMATION ON THIS SHEET WAS OBTAINED FROM FIELD SURVEY OBSERVATIONS AND RECORD DRAWINGS. THE DRAWINGS REPRESENT INFORMATION AS ACCURATE AS POSSIBLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BID. NOTIFY ENGINEER IMMEDIATELY IF ACTUAL FIELD CONDITIONS DIFFER FROM INFORMATION INDICATED ON THE DRAWINGS.
- 4. ALL NEW DEVICES IN EXISTING GEAR SHALL BE UL LISTED FOR THE EQUIPMENT, BE OF THE SAME MANUFACTURER AND WITHSTAND RATING.
- 5. ITEMS SHOWN IN THIN DASHED LIGHT LINEWEIGHT ARE EXISTING TO REMAIN. ITEMS SHOWN IN THICK BLACK LINEWEIGHT ARE NEW.

LOAD SUMMARY PANEL LEC METERING PERIOD 02/27/2023 - 03/28/2023

30 DAY METERING MAXIMUM DEMAND RECORDED ON 3/23/2023	39.792kVA
SEASONAL COOLING LOAD	8.075kVA
MAXIMUM DEMAND LOAD X 125%	59.834kVA
NEW ADDED LOAD	61.102kVA
TOTAL LOAD	120.936kVA 145.5 AMPS

L	_OAD SUMMARY PA	NEL L2
	NEW SNOW/ICE MELTING LOAD	12 570kVA
	NON-COINCIDENT COOLING LOAD	8.075kVA
	TOTAL EXISTING LOAD	70.031kVA
	TOTAL LOAD	74.526kVA 206.8 AMPS









