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GENERAL NOTES

1. SYMBOLS LEGENDS ARE PROVIDED FOR REFERENCE PURPOSES ONLY. THE SYMBOLS REPRESENT THE TYPE OF DEVICES THAT MAY BE REQUIRED IN THE WORK; QUANTITIES AND LOCATIONS ARE AS SHOWN ON THE PLAN SHEETS.
2. PROVIDE 3/4" CONDUIT & #12 CONDUCTORS UNLESS NOTED OTHERWISE. PROVIDE ONE NEUTRAL CONDUCTOR FOR EACH UNGROUNDED CONDUCTOR OF SINGLE PHASE LINE-NEUTRAL BRANCH CIRCUITS. DO NOT SHARE NEUTRAL CONDUCTORS.
3. EACH FEEDER AND BRANCH CIRCUIT CONDUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NFPA 70, ARTICLE 250.
4. ALL ELECTRICAL EQUIPMENT IN PORTIONS OF THE BUILDING NOT BEING REMODELED SHALL BE LEFT IN WORKING CONDITION. RESTORE ANY CIRCUITS INTERRUPTED.
5. ALL NEW LIGHT FIXTURES AND FIXTURES IN AREAS ADJACENT DEMOLITION & CONSTRUCTION AREAS ARE TO BE THOROUGHLY CLEANED IMMEDIATELY PRIOR TO NOTICE OF SUBSTANTIAL COMPLETION.
6. THE FOLLOWING IS PART OF THIS PROJECT AND ALL COSTS PERTAINING THERETO SHALL BE INCLUDED IN THE BASE BID:
   - A. NEW ELECTRICAL EQUIPMENT AND APPARATUS SHALL BE COORDINATED AND CONNECTED INTO THE EXISTING SYSTEM AS REQUIRED.
   - B. POWER WIRING AND CABLE INSTALLATIONS SHALL BE CONCEALED ABOVE ACCESSIBLE CEILINGS AND IN WALLS. EXPOSED WIRING SHALL BE INSTALLED IN APPROVED SURFACE METAL RACEWAY WHERE INDICATED.
   - C. WHERE EXISTING CONDUITS ARE INDICATED FOR REUSE, FIELD VERIFY INTEGRITY OF REUSED RACEWAYS PRIOR TO INSTALLATION OF CONDUCTORS. PROVIDE NEW RACEWAYS WHERE EXISTING ARE UNUSABLE.
   - D. LOCATIONS OF ALL WALL MOUNTED DEVICES SUCH AS SWITCHES, RECEPTACLES, AND OUTLETS ARE SHOWN DIAGRAMMATICALLY. DETERMINE EXACT DEVICE LOCATIONS IN FIELD; COORDINATE INSTALLATIONS WITH FIXED CASEWORK, DOORS AND RELITES.
   - E. PROVIDE PENETRATIONS THROUGH WALLS, FLOORS, AND CEILINGS AS REQUIRED. PROVIDE SUITABLE FIRE RATED MATERIALS AND SEAL ALL CEILING, FLOOR, AND WALL PENETRATIONS TO MATCH FIRE RATING OF SURFACES PENETRATED.

LIGHTING AND RECEPTACLE NOTES

1. LIGHTING SYSTEMS SHALL BE PROVIDED WITH CONTROLS AS ZONED ON THE LIGHTING PLANS. SWITCHING AND DIMMING ZONES ARE INDICATED ADJACENT TO EACH FIXTURE.
2. MANUAL CONTROLS SHALL ALLOW OCCUPANTS TO UNIFORMLY REDUCE ILLUMINATION LEVELS AT LEAST 50%. EXCEPTION: CORRIDORS, RESTROOMS, LOBBIES, MECHANICAL, ELECTRICAL, AND INFORMATION TECHNOLOGY (IDF) ROOMS CONTROLLED BY OCCUPANCY SENSORS.
3. EACH AREA THAT IS REQUIRED TO HAVE A MANUAL CONTROL SHALL ALSO HAVE AUTOMATIC TIME SWITCH CONTROL. PROVIDE TIMED OVERRIDE SWITCHES THAT WILL SERVE A MAXIMUM AREA OF 2500 SF IN LOCATIONS SHOWN ON PLANS. EXCEPTIONS:
   - A. EMERGENCY EGRESS LIGHTING CONTROLLED BY OCCUPANCY SENSORS.
   - B. LIGHTING IN SPACES CONTROLLED BY OCCUPANCY SENSORS.
4. LUMINAIRES PROVIDING MEANS OF EGRESS ILLUMINATION AND HAVING BOTH NORMAL AND EMERGENCY POWER SOURCES SHALL BE CONTROLLED BY A COMBINATION OF U.L. 924 LISTED EMERGENCY RELAYS AND OCCUPANCY SENSORS THAT ENABLES THE LIGHTING TO BE SHUT OFF WHEN THE AREAS SERVED ARE UNOCCUPIED AND AUTOMATICALLY ILLUMINATES IN THE EVENT OF NORMAL POWER SOURCE FAILURE.
5. THE MAXIMUM LIGHTING POWER THAT MAY BE CONTROLLED FROM A SINGLE SWITCH OR AUTOMATIC CONTROL SHALL NOT EXCEED THAT WHICH IS PROVIDED BY A 20 AMPERE CIRCUIT LOADED TO NOT MORE THAN 80 PERCENT.
6. PROVIDE FUNCTIONAL TESTING OF AUTOMATIC LIGHTING CONTROLS. SUBMIT WRITTEN PROCEDURES FOR FUNCTIONAL TESTING OF ALL AUTOMATIC CONTROLS WITH DESCRIPTION OF THE EXPECTED SYSTEM RESPONSE.

ABBREVIATIONS

@	AT
A/C	AIR CONDITIONING(ER)
A (AMP)	AMPERE
AC	ABOVE COUNTER, ALTERNATING CURRENT
ADJ	ADJUSTABLE
ADJT	ADJACENT
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
ANN	ANNUNCIATOR
ARCH	ARCHITECT; ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BKBD	BACKBOARD
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CAP	CAPACITY
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COM	COMMUNICATION
CPS	CYCLES PER SECOND
CT	CURRENT TRANSFORMER
CTL	CONTROL
CU	COPPER
DC	DIRECT CURRENT
DISC SW	DISCONNECT SWITCH
DISC	DISCONNECT
DN	DOWN
DWG	DRAWING
E	EXIST, EAST
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENTR	ENTRANCE
EP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF
EQUIP/EQP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXH	EXHAUST
EXT	EXTERIOR
EXIST	EXISTING
F	FAHRENHEIT/FUSE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FAP	FIRE ALARM PANEL
FC	FOOTCANDLE
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FDR	FEEDER
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FSD	FIRE/SMOKE DAMPER
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFR	GROUND FAULT RELAY
H	HEIGHT
HOA	HAND OFF AUTOMATIC
HOR	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
HW	HOT WATER
HZ	HERTZ
IBC	INTERNATIONAL BUILDING CODE
IC	INTERCOM
IES	ILLUMINATING ENGINEERING SOCIETY
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IN	INCH
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
LF	LINEAR FEET (FEET)
LRA	LOCKED ROTOR AMPS
LS	LIFE SAFETY
LT	LIGHT
LTG	LIGHTING
LV	LOW VOLTAGE
MAG	MAGNETIC
MAN	MANUAL
MAT	MATERIAL
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MECH	MECHANICAL
MEZZ	MEZZANINE
MG	MOTOR GENERATOR
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUG ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MS	MAGNETIC STARTER
MTD	MOUNTED
MTG	MOUNTING
MTR	MOTOR
N	NORTH; NEUTRAL
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NESC	NATIONAL ELECTRICAL SAFETY CODE
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOC.
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED OVERLOAD
OL	
OS	OPTIONAL STANDBY
P	PRIMARY
PA	PUBLIC ADDRESS
PAR	PARALLEL
PB	PULL BOX
PE	PHOTO ELECTRIC
PF	POWER FACTOR
PH	PHASE
PIV	POST INDICATOR VALVE
PNL	PANEL
POC	POINT OF CONNECTION
PWR	POWER
QTY	QUANTITY
R (R)	RELOCATE (D)
RAD	RADIUS
RECPT	RECEPTACLE
REF	REFRIGERATOR
RLA	RATED LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
S	SOUTH
SC	SECURITY
SD	SMOKE DETECTOR
SECT	SECTION
SF	SUPPLY FAN
SHT	SHEET
SPEC	SPECIFICATION
SPL	SPECIAL
SQ	SQUARE
STOR	STORAGE
SPD	SURGE PROTECTION DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
SYS	SYSTEM
T	THERMOSTAT
TB	TERMINAL BOX
TC	TIME CLOCK
TEL	TELEPHONE
TV	TELEVISION
TYP	TYPICAL
UFC	UNIFORM FIRE CODE
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VOLT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VM	VOLTMETER
VOL	VOLUME
W	WATT, WEST
W/	WITH
W/O	WITHOUT
WH	WATER HEATER
WHM	WATTHOUR METER
WP	WEATHERPROOF
X	REACTANCE
XFMR	TRANSFORMER
XMTR	TRANSMITTER
Z	IMPEDANCE
&	AND
IE:	THAT IS

ELECTRICAL SHEET INDEX

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E1.02	PHOTOMETRIC SITE PLAN
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E6.00	ELECTRICAL ONE-LINE DIAGRAM
E7.00	ELECTRICAL PANELBOARD SCHEDULES

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CONSTRUCTION DOCUMENTS

Revision Schedule		
No.	Date	Description

ART PROJECT NO.
22025

DATE
04.21.2023

Registered Professional Engineer (Electrical) CERTIFICATE NO. 46291 STEPHEN A. SANDERS Date Signed 10.02.2023 ARIZONA, U.S.A.

DRAWING TITLE
GENERAL NOTES, ABBREVIATIONS AND SHEET INDEX

DRAWING
E0.00

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SYMBOLS LEGEND - GENERAL

SYMBOL	DESCRIPTION
#	DRAWING CONSTRUCTION ("FLAG") NOTE
X-XX	EQUIPMENT IDENTIFIER
	MATCHLINE
	REVISION CLOUD (ENCIRCLES DRAWING CHANGES MADE SINCE THE PREVIOUS RELEASE)
1	REVISION REFERENCE
	EXISTING TO BE REMOVED (HATCH)
	HEAVY LINEWEIGHT INDICATES NEW WORK
	LIGHT LINEWEIGHT INDICATES EXISTING INFORMATION
	POINT OF CONNECTION
X / XX.XX	DETAIL REFERENCE DETAIL IDENTIFICATION NUMBER SHEET WHERE DETAIL IS DRAWN
X / XX.XX	ELEVATION REFERENCE ELEVATION IDENTIFICATION NUMBER SHEET WHERE ELEVATION IS DRAWN
X / XX.XX	SECTION REFERENCE SECTION IDENTIFICATION NUMBER SHEET WHERE SECTION IS DRAWN
N	NORTH REFERENCE

SYMBOLS LEGEND - POWER

SYMBOL	DESCRIPTION
T	TRANSFORMER
X-XX-X	POLE-MOUNTED TRANSFORMER
	POLE
	DELTA
	WYE
	MEDIUM VOLTAGE CABLE TERMINATOR
	LIGHTNING ARRESTORS
	SURGE ARRESTORS
	NEUTRAL GROUNDING RESISTOR
M	METER
MM	MICROPROCESSOR CONTROLLED MONITOR REFER TO SPECIFICATIONS FOR METERING VALUES AND PROTECTIVE FUNCTIONS
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
AM	INDICATING INSTRUMENT AM-AMMETER; VM-VOLTMETER; FM-FREQUENCY METER; kVAR-KILOVAR METER; kWH-KILOWATT HOUR METER; kWH/D-KILOWATT HOUR DEMAND METER
AS	INSTRUMENT SWITCH AS-AMMETER SWITCH; VS-VOLTMETER SWITCH; SS-SYNCHRONIZING SWITCH; SV-SUPERVISORY (LOCAL-REMOTE) SWITCH
	SEPARABLE CONNECTOR
52	DRAWOUT AC TYPE POWER CIRCUIT BREAKER

SYMBOLS LEGEND - POWER

SYMBOL	DESCRIPTION
CB	CIRCUIT BREAKER ST - INDICATES SHUNT TRIP
CB xxxA/xP	ENCLOSED CIRCUIT BREAKER (PLAN VIEW) xxxA/xP - AMPS/POLES
	ENCLOSED CIRCUIT BREAKER (ONE-LINE DIAGRAM) xxxA/xP - AMPS/POLES
	BREAKER WITH EXTERNAL GROUND FAULT RELAY AND CT
	CIRCUIT BREAKER WITH INTEGRAL GROUND FAULT PROTECTION
	MOTOR-OPERATED CIRCUIT BREAKER
	SWITCH WITH EXTERNAL GROUND FAULT RELAY AND CT
	MOV SURGE PROTECTION
	RESISTOR
	FUSE
	MOTOR THERMAL OVERLOADS - (3) UNLESS OTHERWISE NOTED
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
SV	SOLENOID VALVE
M	MOTOR-OPERATED VALVE
T	THERMOSTAT
	TERMINAL BLOCK
A	INDICATING LIGHT - TYPE AS NOTED A-AMBER; B-BLUE; G-GREEN; R-RED; W-WHITE
− +	BATTERY

SYMBOLS LEGEND - POWER

SYMBOL	DESCRIPTION
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH HAND-OFF-AUTOMATIC
	ON-OFF SELECTOR SWITCH
	2-CIRCUIT PUSHBUTTON
	PUSHBUTTON SWITCH MOMENTARY CONTACT
	EQUIPMENT CONNECTION
G	GENERATOR
M	MOTOR CONNECTION
M SD	SMOKE DAMPER
M FSD	FIRE SMOKE DAMPER
M	STARTER 3-POLE, NEMA SIZE 1 MINIMUM UNLESS NOTED OTHERWISE
	COMBINATION STARTER HP RATED, 3-POLE, NEMA SIZE 1 MINIMUM, UNLESS NOTED OTHERWISE - OVERCURRENT PROTECTION AS REQUIRED BY EQUIPMENT MANUFACTURER OR AS NOTED
	DISCONNECT SWITCH 3-POLE UNLESS NOTED OTHERWISE
	FUSED DISCONNECT SWITCH 3-POLE UNLESS NOTED OTHERWISE
C	CONTACTOR
CR	RELAY COIL CR-CONTROL RELAY; TD-TIME DELAY RELAY; UV-UNDERVOLTAGE RELAY; M-MOTOR CONTACTOR;
$ M	MOTOR-RATED SWITCH - SIZE OL PER MOTOR REQUIREMENTS
	EQUIPMENT EMERGENCY SHUTDOWN SWITCH

SYMBOLS LEGEND - GENERAL

SYMBOL	DESCRIPTION
	CONDUIT CONCEALED IN CEILING SPACE OR IN WALL. PROVIDE MINIMUM 3/4" WITH #12 AWG CONDUCTORS AND DEDICATED NEUTRAL EACH CIRCUIT UNLESS OTHERWISE NOTED ON PLAN. PROVIDE EQUIPMENT GROUNDING CONDUCTORS SIZED PER NFPA 70.
	FLEXIBLE METAL CONDUIT
	CONDUIT - CONCEALED IN OR UNDER FLOOR
UG	CONDUIT - ROUTED UNDERGROUND
LV	LOW-VOLTAGE WIRING (CLASS B)
	CONDUIT OR CABLE VERTICAL DOWN
	CONDUIT OR CABLE VERTICAL UP
	CONDUIT STUB - TERMINATE WITH BUSHING OR CAP IF UNDERGROUND
	BREAK LINE
	CONDUIT SEAL
	EXPANSION FITTING
	CABLE TRAY
A-1,3,5	BRANCH CIRCUIT NUMBERS PANEL DESIGNATION HOME RUN TO SOURCE OF SUPPLY
	CONDUCTORS - CONNECTED
	CONDUCTORS - NOT CONNECTED
	JUNCTION BOX
PB	PULLBOX - SIZE AS INDICATED OR AS REQUIRED BY CODE
HH	HANDHOLE
MH	MANHOLE

SYMBOLS LEGEND - AUDIO VISUAL / CLOCK

SYMBOL	DESCRIPTION
TV	TV OUTLET

SYMBOLS LEGEND - POWER

SYMBOL	DESCRIPTION
	480Y/277V, 3Ø, 4W PANELBOARD
	208Y/120V, 3Ø, 4W PANELBOARD
	EQUIPMENT CABINET - TYPE AS NOTED
XX	PANELBOARD
	TRANSFER SWITCH (AUTO)
XXXXXX	AMPERES SHORT CIRCUIT AVAILABLE (SYMMETRICAL)
#####	FEEDER TAG - REFER TO FEEDER SCHEDULE

SYMBOLS LEGEND - COMMUNICATIONS

SYMBOL	DESCRIPTION
	WALL MOUNTED DATA DEVICE. MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. NUMBER INDICATES QUANTITY OF PORTS.
A/V	MUD RING TO ACCOMMODATE PASS THROUGH FOR AUDIOVISUAL CABLING. MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. NUMBER INDICATES NUMBER OF GANG SPACES.
	CEILING MOUNTED DATA DEVICE. COORDINATE WITH ARCHITECTURAL CEILING PLANS FOR MOUNTING HEIGHTS UNLESS OTHERWISE NOTED. NUMBER INDICATES QUANTITY OF PORTS.
AP	WIRELESS ACCESS POINT LOCATION. PROVIDE CABLING IN THE QUANTITY INDICATED WITH 10'-0" SERVICE LOOP IN ACCESSIBLE CEILING SPACE.
VP	VIDEO PROJECTOR LOCATION. PROVIDE CABLING IN THE QUANTITY INDICATED WITH 10'-0" SERVICE LOOP IN ACCESSIBLE CEILING SPACE.
AP	DATA DEVICE MOUNTED IN FLOOR BOX. NUMBER INDICATES QUANTITY OF PORTS. FLOOR BOX PROVIDED BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
	DATA DEVICE MOUNTED IN POKE-THRU. NUMBER INDICATES QUANTITY OF PORTS. POKE-THRU PROVIDED BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
	FLOOR SURFACE MOUNTED DATA DEVICE. NUMBER INDICATES QUANTITY OF PORTS.
	DATA DEVICE MOUNTED POWER/COMM POLE. NUMBER INDICATES QUANTITY OF PORTS. POWER/COMM POLE PROVIDED BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

SYMBOLS LEGEND - WIRING DEVICES

SYMBOL	DESCRIPTION
$	SINGLE-POLE WALL SWITCH MOUNT SWITCHES AT 48" AFF. TO TOP, UON.
$xx	WALL SWITCH - SUBSCRIPT 2 = 2-POLE; 3 = 3-WAY; 4 = 4-WAY; K = KEYED LV = LOW-VOLTAGE; OS = OCCUPANCY SENSOR TYPE; OP = OCCUPANCY/PHOTOELECTRIC TYPE; WP = WEATHERPROOF LOWER CASE LETTER INDICATES SWITCHING GROUP MOUNT SWITCHES AT +48" AFF. TO TOP, UON. ANY COMBINATION OF SWITCH TYPES CAN BE USED (IE. 3K = 3-WAY KEYED SWITCH)
	SPECIAL PURPOSE RECEPTACLE TYPE AS SHOWN ON PLANS
	SINGLE SERVICE OR COMBINATION FLUSH MOUNTED FLOOR BOX. REFER TO FLOOR PLANS FOR DEVICES.
	SINGLE SERVICE OR COMBINATION FLUSH FLOOR POKE THRU. REFER TO FLOOR PLANS FOR DEVICES.
	POWER/COMM POLE - FLOOR TO CEILING.
	SURFACE MOUNTED FLOOR BOX (PEDESTAL TYPE).
	PUSH BUTTON
	SIMPLEX RECEPTACLE NEMA 5-20R, +18" AFF UON
	NEMA 5-20R, +18" AFF UON
T	TAMPER RESISTANT, NEMA 5-20R, +18" AFF UON
S	SWITCHED RECEPTACLE, NEMA 5-20R, +18" AFF UON
IG	ISOLATED GROUND, NEMA 5-20R, +18" AFF UON
	NEMA 5-20R W/ GROUND FAULT CIRCUIT INTERRUPTER, +18" AFF UON
	SPLIT WIRED, NEMA 5-20R, +18" AFF UON
	CONTROLLED, NEMA 5-20R, +18" AFF UON
	NEMA 5-20R, ABOVE COUNTER. COORDINATE WITH CASEWORK SHOP DRAWINGS AND ARCHITECTURAL DRAWINGS.
	NEMA 5-20R WITH GROUND FAULT CIRCUIT INTERRUPTER, ABOVE COUNTER. COORDINATE WITH CASEWORK SHOP DRAWINGS AND ARCHITECTURAL DRAWINGS.
T	TAMPER RESISTANT, NEMA 5-20R WITH GROUND FAULT CIRCUIT INTERRUPTER, ABOVE COUNTER. COORDINATE WITH CASEWORK SHOP DRAWINGS AND ARCHITECTURAL DRAWINGS.
	NEMA 5-20R, CONNECTED TO EMERGENCY CIRCUIT, +18" AFF UON
	NEMA 5-20R ON EMERGENCY CIRCUIT MOUNTED ABOVE COUNTER. COORDINATE WITH CASEWORK SHOP DRAWINGS AND ARCHITECTURAL DRAWINGS.
	CEILING-MOUNTED, NEMA 5-20R
	NEMA 5-20R WITH USB CHARGER - (2) TYPE A USB PORTS
T	TAMPER RESISTANT, NEMA 5-20R WITH USB CHARGER - (2) TYPE A USB PORTS

SYMBOLS LEGEND - LIGHTING

SYMBOL	DESCRIPTION
L1 A - 1 Z-XXX-1 EM	LIGHT FIXTURE IDENTIFIER - REFER TO LUMINAIRE SCHEDULE PANEL NAME - CIRCUIT NUMBER SWITCH DESIGNATION - MIDDLE DIGITS REFER TO ROOM NUMBER - END DIGITS REFER TO SWITCH LEG SUBSCRIPT (IF APPLICABLE) * IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: RL1 / A-1 / a / NL
	SHADING INDICATES LUMINAIRE ON EMERGENCY CIRCUIT OR WITH BATTERY BACKUP
	2x4 LUMINAIRE
	1x4 LUMINAIRE
	2x2 LUMINAIRE
	LINEAR LUMINARE
	WALL WASH LUMINAIRE
	WALL MOUNTED LUMINAIRE
	UNDER-CABINET LUMINAIRE
	STRIP LUMINAIRE
	DOWNLIGHT
	WALL WASH DOWNLIGHT LUMINAIRE
	WALL MOUNTED LUMINAIRE
	WALL MOUNTED DIRECTIONAL LUMINAIRE
	PENDANT MOUNTED LUMINAIRE
	TRACK LIGHT - LENGTH AS INDICATED ON PLANS NUMBER OF LUMINAIRES AS SHOWN
	POLE-MOUNTED LUMINAIRE - NUMBER OF LUMINAIRES AS SHOWN ON PLANS
	STREET LIGHT
	IN-GROUND LANDSCAPE LUMINAIRE
	ILLUMINATED EXIT SIGN - SINGLE FACE ARROW INDICATES DIRECTION OF EGRESS, UNIVERSAL MOUNT
	ILLUMINATED EXIT SIGN - DOUBLE FACE ARROW INDICATES DIRECTION OF EGRESS, UNIVERSAL MOUNT
	BATTERY-POWERED EMERGENCY WALLPACK
	COMBINATION BATTERY POWERED EMERGENCY WALLPACK AND ILLUMINATED EXIT SIGN
TC	TIME CLOCK - TYPE AS NOTED
PP	LIGHTING CONTROL SYSTEM POWER PACK
SB	SWITCH BYPASS DEVICE
ICS1-1	ILLUMINATION CONTROL STATION
OS	OCCUPANCY SENSOR CEILING MOUNTED WITH POWER PACK - DUAL TECHNOLOGY TYPE UNLESS NOTED:
OS U	U = ULTRASONIC
OS P	P = PASSIVE INFRARED
OS	OCCUPANCY SENSOR WALL MOUNTED
PC	PHOTOELECTRIC CONTROL CEILING MOUNTED
PC	PHOTOELECTRIC CONTROL WALL MOUNTED

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ART PROJECT NO. 22025

DATE 04.21.2023

Registered Professional Engineer (Electrical) CERTIFICATE NO. 46291 STEPHEN A. SANDERS Date Signed 04.03.2023 ARIZONA, U.S.A.

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DRAWING TITLE
ELECTRICAL LEGEND

DRAWING
E0.01

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ELECTRICAL SPECIFICATIONS

1 GENERAL PROVISIONS:

SUMMARY: THIS DIVISION DESCRIBES IN GENERAL, REQUIREMENTS OF THE ELECTRICAL SYSTEM AND RELATED ITEMS OF WORK NECESSARY FOR THE COMPLETE JOB INDICATED BY THE CONTRACT DOCUMENTS. THE GENERAL AND SUPPLEMENTAL CONDITIONS OF THE CONTRACT ARE APPLICABLE TO THIS DIVISION AND SHALL FORM A PART OF THE CONTRACT.

ELECTRICAL RELATED WORK DESCRIBED IN OTHER DIVISIONS SHALL BE PROVIDED UNDER THIS DIVISION IN ACCORDANCE WITH THE ELECTRICAL REQUIREMENTS PRESCRIBED IN THE RESPECTIVE EQUIPMENT SPECIFICATIONS. REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR ELECTRICAL RELATED WORK AND PROVIDE ELECTIRCAL CONNECTIONS IN COORDINATION WITH WORK OF OTHER DIVISIONS

GENERAL LIST OF WORK:

DISTRIBUTION SYSTEMS FOR LIGHTING AND POWER INCLUDING FEEDERS, BRANCH CIRCUIT PANELS, LIGHTING FIXTURES WITH LAMPS, CONTROL SWITCHES/SYSTEMS, RECEPTACLES, AND DISCONNECT SWITCHES.

ELECTRICAL CONNECTIONS FOR KITCHEN EQUIPMENT

SLEEVES, BLOCK-OUTS, INSERTS, ANCHORAGE DEVICES, ETC.

ELECTRICAL CONNECTIONS FOR HVAC EQUIPMENT AND LINE VOLTAGE CONTROL SYSTEMS.

PERMITS: SECURE AND PAY FOR ALL NECESSARY PERMITS AND LICENSES, SERVICES, AND ALL INSPECTION FEES AS REQUIRED BY JOB.

CODES AND ORDINANCES: INSTALL ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ITS LATEST REVISIONS, WITH THE REGULATIONS OF ANY AND ALL STATE AND LOCAL CODES AND ORDINANCES.

CERTIFICATES:

ALL WORK INCLUDED SHALL COMPLY WITH ALL STATE AND LOCAL RULES AND REGULATIONS. FURNISH TO THE OWNER ALL CERTIFICATES OF INSPECTION AND APPROVAL AS REQUIRED.

EXAMINATION OF PREMISES:

PRIOR TO SUBMITTING A PROPOSAL, EXAMINE THE CONTRACT DOCUMENTS IN THEIR ENTIRETY AND VISIT THE SITE TO BECOME FAMILIAR WITH CONDITIONS WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. ALL SITE RELATED COSTS SHALL BE INCLUDED IN BASE BID. AFTER CONTRACT AWARD, CHANGES TO THE CONTRACT SUM OR CONTRACT TIME DUE TO SITE CONDITIONS WILL NOT BE ALLOWED.

PRIOR TO ORDERING ANY MATERIALS OR DOING ANY WORK, VERIFY THE DIMENSIONS AT THE SITE. NO EXTRA CHARGES OR COMPENSATION WILL BE ALLOWED FOR DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE DRAWINGS. IMMEDIATELY REPORT DIFFERENCES TO THE ARCHITECT AND DO NOT PROCEED WITH WORK UNTIL THE ARCHITECT RENDERS HIS DECISION.

HANGERS: PROVIDE ALL UNISTRUT, HANGERS, SUPPORTS, ETC., REQUIRED FOR WORK UNDER THIS DIVISION. SUPPORT CONDUIT FROM BUILDING STRUCTURE, NOT FROM CEILING SUPPORTS. BRANCH CIRCUIT CONDUIT 3/4" AND SMALLER MAY BE SUPPORTED USING SPRING STEEL CLIPS ON STEEL SUPPORT WIRE INSTALLED INDEPENDENT OF CEILING SUPPORTS.

FINAL LOCATION OF SURFACE FEATURES: SHALL BE ACCOMPLISHED IN THE FIELD, SUBJECT TO THE APPROVAL OF THE ARCHITECT. THE LOCATION OF ALL SWITCHES, FIXTURES, PANELS, ETC., AND THEIR PROXIMITY AND RELATIONSHIP TO ALL VISIBLE FEATURES OF EQUIPMENT FURNISHED BY OTHER TRADES, SHALL BE MADE KNOWN TO THE ARCHITECT. IN CASE OF CONFLICT BETWEEN TRADES, OR BETWEEN A TRADE AND THE ARCHITECT, THE DECISION OF THE ARCHITECT SHALL BE FINAL AND HIS INSTRUCTIONS IN THESE MATTERS SHALL BE FOLLOWED BY ALL CONCERNED.

STANDARD OF MATERIAL AND WORKMANSHIP: ALL MATERIALS SHALL BE NEW AND SHALL CONFORM TO UL STANDARDS IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED AND SHALL BEAR THE UL LABEL. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE BEST ACCEPTED STANDARDS OF GOOD WORKMANSHIP AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETE.

CUTTING AND PATCHING:

ALL CUTTING NECESSARY FOR INSTALLATION OF THE WORK AND REPAIR OF ALL DAMAGE TO WORK UNDER OTHER DIVISIONS, SHALL BE INCLUDED IN WORK SPECIFIED UNDER THIS DIVISION INCLUDING PATCHING, FLASHING AND SEALING ALL ROOF PENETRATIONS. NO CUTTING SHALL BE DONE WITHOUT APPROVAL OF ARCHITECT.

COORDINATE WORK WITH THAT OF OTHER TRADES. CUTTING, PATCHING, AND PROVIDING ANY OPENINGS, LINTEL, OR SUPPORTS REQUIRED FOR INSTALLATION OF THE WORK SHALL BE INCLUDED IN THIS DIVISION.

PAINTING:

ALL EXPOSED ELECTRICAL EQUIPMENT, CONDUIT, FLUSH PANEL FRONTS, TRANSFORMERS, SWITCHES, SWITCHBOARDS, PANELS AND SIMILAR ITEMS SHALL BE PAINTED AS SPECIFIED UNDER THE PAINTING SECTION OF ARCH. SPECIFICATIONS.

SUPERVISE ALL PAINTING OF ELECTRICAL EQUIPMENT.

EXISTING SERVICES AND REMODEL AREAS:

MAINTAIN ALL SERVICES, POWER, SOUND, TELEPHONE, ETC., TO EXISTING BUILDINGS OR AREAS. ANY INTERRUPTIONS OF SERVICES REQUIRED FOR "CUT-OVERS" OR CONNECTIONS OF NEW, ETC., SHALL BE DONE AT A TIME THAT IS CONVENIENT TO THE OWNER AND SHALL BE APPROVED IN WRITING PRIOR TO THE INTERRUPTION.

ALL SERVICES TO EXISTING BUILDINGS THAT ARE INTERRUPTED OR DISCONNECTED AS A RESULT OF THE NEW CONSTRUCTION SHALL BE RESTORED. ANY OUTLET, SWITCHES, RECEPTACLES, ETC. THAT ARE DISCONNECTED OR REMOVED BY THE CONSTRUCTION OR REMODELING SHALL BE RECONNECTED AND/OR REPLACED.

WORK BY OTHERS: CERTAIN ITEMS OF WORK BY OTHER TRADES WILL BE NECESSARY FOR THE COMPLETION OF WORK UNDER THIS DIVISION. COOPERATE WITH OTHER TRADES AND ARRANGE FOR THESE ITEMS TO BE PERFORMED IN ORDERLY COURSE OF WORK. FAILURE TO COOPERATE SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR SAID ITEMS.

CLEANING UP THE PREMISES: AT ALL TIMES KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH. METAL FLOOR PANS SHALL BE PROVIDED FOR PIPE THREADING MACHINES AND BENCHES AND SHALL BE USED AT ALL TIMES TO PREVENT CONCRETE FLOORS FROM BECOMING OIL SOAKED. UPON COMPLETION OF THE JOB, REMOVE ALL DEBRIS, CLEAN ALL SWITCHPLATES, FIXTURES, PANEL TRIMS AND IN GENERAL, LEAVE THE PREMISES IN A CLEAN AND TIDY CONDITION.

FINAL INSPECTION AND TEST:

FURNISH ALL METERS, CABLE, CONNECTIONS AND APPARATUS NECESSARY FOR MAKING TESTS.

TEST SYSTEM FOR SHORTS AND GROUNDS. FAULTY WIRING SHALL BE REMOVED AND REPLACED. ANY DEVICE, APPARATUS OR FIXTURE INSTALLED SHOWING SUBSTANDARD PERFORMANCE SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ARCHITECT.

GUARANTEE: FULLY GUARANTEE ALL WORK UNDER THIS DIVISION FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER, AGAINST IMPERFECT WORKMANSHIP OR FAILURE/MALFUNCTION OF MATERIALS AND/OR EQUIPMENT DUE TO FAULTY OR IMPERFECT WORKMANSHIP. GIVE THIS GUARANTEE IN WRITING TO THE OWNER AT THE TIME OF ISSUING FINAL CERTIFICATE. WORK FOUND TO BE DEFECTIVE WITHIN THIS PERIOD SHALL BE REPLACED WITHOUT COST TO THE OWNER.

2 BASIC MATERIALS AND METHODS:

WIRE AND CABLE:

GENERAL: ALL CONDUCTORS SHALL BE COPPER.

ALL INTERIOR BRANCH WIRING SHALL BE TYPE "THW-2", "THHN-2" OR "THWN-2", 600 VOLT AND A MINIMUM OF #12 EXCEPT FOR CONTROL WIRING WHICH SHALL BE STRANDED AND A MINIMUM OF #14.

WIRE #8 AND LARGER SHALL BE STRANDED. WIRE #2 AND LARGER, OR AS NOTED, SHALL BE TYPE "XHHW-2" WITH CROSS LINK POLYETHYLENE INSULATION.

MANUFACTURERS SHALL BE GENERAL CABLE, OKONITE, ROME CABLE, ANACONDA, GENERAL ELECTRIC, KAISER OR SOUTH-WIRE.

INSTALLATION: INSTALL ALL WIRE AND CABLE IN CONDUIT.

WIRE SINGLE PHASE EQUIPMENT AND LIGHTING SO THERE IS A MINIMUM OF IMBALANCE BETWEEN CURRENT CARRYING CONDUCTORS. CONDUCTORS SHALL BE CONTINUOUS AND OF SUCH LENGTHS THAT NO SPLICE OCCURS EXCEPT WITHIN OUTLET, JUNCTION OR PULL-BOXES, SWITCH, CONDUIT FITTINGS, OR OTHER SIMILAR DEVICES IN EQUIPMENT. SPLICES SHALL JOIN CONDUCTORS SECURELY TOGETHER BOTH MECHANICALLY AND ELECTRICALLY.

MAKE CONNECTIONS AND SPLICES FOR #10 WIRE AND SMALLER WITH BUCHANAN B-CAP, 3-M SCOTCHLOK OR IDEAL WING-NUT, PRE- INSULATED WIRE CONNECTORS (SIZES AS RECOMMENDED BY MANUFACTURER). MAKE CONNECTIONS AND SPLICES FOR #8 COMPRESSION TYPE CONNECTORS BY O.Z., BURNDY, BUCHANAN, T & B OR ILSCO. TAPE ALL SPLICES WITH PLASTIC SO INSULATION IS AT LEAST EQUIVALENT TO INSULATION OF CONDUCTORS. THOROUGHLY CLEAN ENDS BEFORE SPLICING. WHERE PLASTIC TAPE IS USED AND THERE IS ANY DANGER OF INSULATION DAMAGE FROM PRESSURE OR JOINT AGAINST NON-CURRENT CARRYING METAL PARTS, USE FRICTION TAPE FOR ADDITIONAL PROTECTION.

ALL WIRING IN PANELBOARDS, CENTERS AND GUTTERS SHALL BE NEATLY ARRANGED. WIRE SHALL BE HELD BUNDLED BY TY-RAPS. WIRES SHALL BE CONNECTED TO CIRCUIT BREAKERS, SWITCHES AND OTHER DEVICES PERPENDICULAR TO TERMINAL LUGS.

LIGHTING AND POWER CIRCUITS SHALL BE IDENTIFIED BY PANEL LETTER AND CIRCUIT NUMBER WITH BRADY WRAPAROUND CLOTH WIRE MARKERS AT ALL TERMINATIONS AND JUNCTIONS.

ALL BRANCH CIRCUIT AND FEEDER CONDUCTORS SHALL BE COLOR- CODED TO CONFORM TO THE EXISTING COLOR CODES.

SOLID CONDUCTORS SHALL LOOP TIGHTLY AND COMPLETELY AROUND TERMINAL SCREWS ON ALL WIRING DEVICES.

CONDUIT RACEWAYS:

CONDUIT SYSTEMS SHALL BE RIGID GALVANIZED METAL, INTERMEDIATE METAL CONDUIT (IMC), ELECTRICAL METALLIC TUBING (EMT), RIGID, NON-METALLIC PVC OR AS SPECIFIED HEREIN OR AS INDICATED ON THE PLANS. ALL SYSTEMS SHALL BE CONTINUOUS.

RIGID STEEL CONDUIT SHALL BE HEAVY-WALLED, HOT-DIPPED, GALVANIZED OR SHERARIZED. USE RIGID STEEL CONDUIT IN CONCRETE SLABS, IN GRADE, IN EXPOSED LOCATIONS SUCH AS TUNNELS AND EQUIPMENT ROOMS, WHERE EXPOSED TO WEATHER AND WHERE BURIED IN EARTH.

IMC SHALL BE ZINC COATED STEEL TUBING. IMC MAY BE USED WHERE RIGID STEEL IS PERMITTED.

EMT SHALL BE ZINC-COATED. EMT MAY BE USED IN FURRED SPACES, IN METAL OR WOOD STUD WALLS IN EITHER EXPOSED OR CONCEALED FASHION AND WHERE NOT SUBJECT TO DAMAGE EXCEPT FOR BRANCH CIRCUITS AND FEEDERS OVER 100A. EMT SHALL BE REAMED AFTER CUTTING AND SHALL BE MADE TO BUTT IN THE CENTER OF THE COUPLING.

FLEXIBLE CONDUIT SHALL BE USED IN MINIMUM LENGTHS TO CONNECT TO MOTORS, RECESSED FIXTURES, TRANSFORMERS AND EQUIPMENT SUBJECT TO VIBRATION. IN EXTERIOR AND WET LOCATIONS, USE ANACONDA TYPE VA FLEXIBLE CONDUIT WITH APPLETON OR T & B WATER TIGHT CONNECTORS. FLEXIBLE CONDUIT CONNECTORS SHALL BE COMPRESSION OR CLAMP TYPE; SCREW ON TYPE NOT PERMITTED.

WHERE EXPOSED, INSTALL CONDUIT PARALLEL TO WALLS AND PARTITIONS; DO NOT CROSS WINDOW OPENINGS.

WHERE SUSPENDED CEILING OCCURS, RUN CONDUIT CONCEALED ABOVE FURRED CEILING AND IN WALLS.

ALL CONDUIT STUBBED-UP THROUGH ROOF SHALL BE FLASHED WITH A TYPE OF FLASHING APPROVED BY MANUFACTURER OF ROOFING MATERIALS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

CONDUIT SHALL BE FIRMLY FASTENED WITHIN 3 FEET OF EACH OUTLET BOX, JUNCTION BOX, CABINET OR FITTING AND SHALL BE SUPPORTED AT LEAST EVERY 10 FEET.

CONDUIT FITTINGS:

EMT OR THREADLESS RIGID SHALL BE COMPRESSION TYPE, MACHINE STEEL INSULATED THROAT, APPLETON, RACO, T & B, OR TOMIC INSULATED TAP-ON. SET SCREW FITTINGS WILL BE PERMITTED IN DRY LOCATIONS WHEN TWO SCREWS PER CONDUIT END ARE PROVIDED. SINGLE SET SCREWS SHALL BE PERMITTED IN 1/2" AND 3/4" SIZES.

PROVIDE DOUBLE LOCKNUTS AND BUSHINGS AT ALL RIGID CONDUIT TERMINATIONS EXCEPT AT THREADED HUBS. BUSHINGS SHALL BE O.Z. TYPE A, MOLDED BAKELITE EXCEPT FOR 2" CONDUIT AND LARGER SHALL BE O.Z. TYPE B OR BL WHERE GROUNDING IS REQUIRED.

GUTTER, PULLBOXES AND JUNCTION BOXES:

BOXES SHALL BE FABRICATED FROM CODE GAUGE STEEL WITHOUT KNOCKOUTS AND A MINIMUM 14 GAUGE FRONT COVER. FINISH SHALL BE GALVANIZED STEEL OR PHOSPHATE UNDERCOATING WITH 2 FINISH COATS; HAMMER GRAY OR BAKED ENAMEL.

JUNCTION BOXES SHOWN OUTSIDE, FLUSH OR SURFACE MOUNTED, SHALL BE WATER TIGHT, ALL WELDED CONSTRUCTION WITH NEOPRENE GASKETED SCREWED COVERS, NEMA TYPE III.

NAMEPLATES:

PROVIDE CONTRAST PLASTIC EMBOSSING TAPE, ADHESIVE BACKED NAMEPLATES FOR ALL STARTERS AND DISCONNECT SWITCHES.PROVIDE LAMICOID NAMEPLATES FOR ALL DISTRIBUTION SWITCHES, BREAKERS, LIGHTING AND POWER PANELS; SIZE OF LETTERS SHALL BE A MINIMUM OF 3/16" HIGH.

FUSES:

FUSES SHALL BE HIGH-CAPACITY, CURRENT-LIMITING, LOW-PEAK OR DUAL ELEMENT AS INDICATED.

DUAL-ELEMENT FUSES SHALL BE USED FOR ALL MOTOR LOADS.

TYPE "R" FUSE SHALL BE USED FOR MOTOR LOADS AND WHERE INDICATED ON DRAWINGS.

FURNISH TO THE OWNER AT EACH SWITCHBOARD, 2 SETS OF SPARE FUSES FOR EACH SIZE USED BELOW 100 AMPS AND ONE SET FOR EACH SIZE 100 AMPS AND ABOVE.

ALL FUSES SHALL BE BY THE SAME MANUFACTURER.

OUTLETS:

OUTLET BOXES SHALL BE STANDARD GALVANIZED STEEL TYPE MINIMUM 1.5" DEEP, SINGLE OR GANG STYLE, OF SIZE TO ACCOMMODATE DEVICE NOTED AND INSTALLED IN ACCORDANCE WITH ARTICLE 370 OF THE NEC. HANDY BOXES AND SECTIONAL SWITCH BOXES WILL NOT BE PERMITTED.
BOXES EXPOSED OUTDOORS SHALL BE CAST FERROUS ALLOY, TYPE FS UNILETS WITH SCREW HUBS OR EQUAL.

BOXES SHALL BE SECURELY AND RIGIDLY FASTENED TO THE STRUCTURE UPON WHICH THEY ARE MOUNTED OR SECURELY AND RIGIDLY EMBEDDED IN CONCRETE OR MASONRY.

PROVIDE FIXTURE STUDS AND PLASTER RINGS AS REQUIRED TO BRING ALL OUTLETS TO WITHIN 1/8" OR LESS OF FINISHED SURFACE.

APPROVED MANUFACTURERS ARE: APPLETON, RACO, STEEL CITY OR BOWERS.

LIGHT SWITCHES: (COLOR SELECTION BY ARCH.)

HUBBELL #1221-I 20A SINGLE POLE

HUBBELL #1223-I 20A THREE WAY

MANUFACTURERS SHALL BE HUBBELL, BRYANT OR SIERRA.

RECEPTACLES:

HUBBELL #5362-I 20A/125V/DUPLEX
OR #5242 MOUNT WITH GROUND "U" SLOT DOWN FOR ISOLATED GROUND - HUBBELL #IG8300 (ORANGE)

FINISH WALL PLATES:

PLATES SHALL BE SMOOTH PLASTIC TO MATCH RECEPTACLE AND OF ONE MANUFACTURER; BRYANT, SIERRA OR APPROVED EQUAL. COLORS/FINISHES MUST BE SELECTED BY ARCH.

PROVIDE STAINLESS STEEL PLATES IN FOOD PREP AREAS.

DEVICE PLATES SHALL BE INSTALLED SO AS TO COMPLETELY SEAT AGAINST THE WALL SURFACE.

3 SERVICE AND DISTRIBUTION:

PANELBOARDS:

ELECTRICAL PANELS SHALL BE CIRCUIT BREAKER TYPE. CABINETS SHALL HAVE DOORS FASTENED TO TRIM WITH CONCEALED HINGES AND BE PROVIDED WITH FLUSH TYPE COMBINATION LATCH AND LOCK; THREE KEYS FOR EACH. ALL PANELS SHALL BE KEYED ALIKE. CABINETS AND TRIMS SHALL BE FACTORY PAINTED TWO FINISH COATS AND SHALL BE FLUSH OR SURFACE MOUNTED AS INDICATED. EACH CIRCUIT SHALL BE NUMBERED AND COMPLETELY IDENTIFIED BY MEANS OF A TYPEWRITTEN CARD PLACED IN DIRECTORY HOLDER ON INSIDE OF DOOR. ALL DIRECTORY HOLDERS SHALL BE SIX (6) INCHES WIDE. BEFORE INSTALLING, TIGHTEN ALL BOLTED CONNECTIONS THAT MAY HAVE BECOME LOOSE IN SHIPPING.

CABINETS SHALL BE WITHOUT KNOCKOUTS. ALL KNOCKOUTS SHALL BE CUT ON THE JOB.

STUB UP ON 3/4" CONDUIT INTO THE FURRED SPACE ABOVE FLUSH MOUNTED CABINETS FOR EACH TWO SPARE CIRCUITS OR SPACES; TO A MAXIMUM OF 5 CONDUITS.

ALL PANELS SHALL BE EQUIPPED WITH COPPER GROUND BUS.

ALL PANELBOARDS SHALL HAVE THE SIZE OF THE FEEDER AND CONDUIT STENCILED ON THE INSIDE OF THE DOOR. "DYMO" TAPE OR EQUIVALENT IS NOT ACCEPTABLE.

SAFETY (DISCONNECT) SWITCHES:

SHALL BE HEAVY DUTY TYPE WITH COVER INTERLOCKS. PROVIDE ALL DISCONNECT SWITCHES REQUIRED BY CODE. SWITCHES FOR MOTOR APPLICATIONS SHALL BE HORSEPOWER RATED.

SWITCHES LOCATED OUTSIDE/EXTERIOR OF THE BUILDING SHALL HAVE NEMA TYPE 3R ENCLOSURES.

FURNISH AND INSTALL THE PROPER SIZE FUSES (DETERMINED FROM FULL LOAD NAMEPLATE READINGS ON MOTORS AND COMPENSATED FOR AMBIENT TEMPERATURE) IN ALL SAFETY SWITCHES WHETHER THEY BE FURNISHED BY THIS CONTRACTOR OR OTHERS.

MOTOR WIRING:

ALL MOTORS WILL BE FURNISHED AND SET IN PLACE BY TRADE FURNISHING THE DRIVEN EQUIPMENT. FURNISH AND INSTALL ALL CONDUIT, WIRING, CIRCUIT PROTECTIVE DEVICES, SWITCHES AND SUCH OTHER APPURTENANCES NECESSARY TO COMPLETE CONNECTION OF ALL MOTORS AND CONTROLS. THIS SHALL INCLUDE THE HIGH AND LOW VOLTAGE CONTROL WIRING. MOTORS AND CONTROLS FOR MECHANICAL EQUIPMENT SHALL BE WIRED IN ACCORDANCE WITH MANUFACTURER'S WIRING DIAGRAMS.

CONNECTIONS TO MOTOR STARTERS AND CONTROLS SHALL BE MADE WITH CONDUIT. FINAL CONNECTIONS TO MOTORS ON ADJUSTABLE BASES OR MOTORS SUBJECT TO EXCESSIVE VIBRATION SHALL BE MADE WITH FLEXIBLE CONDUIT, EXCEPT FOR OUTDOOR INSTALLATION IN WHICH CASE SEAL-TITE NEOPRENE COVERED FLEXIBLE CONDUIT WITH SEAL-TITE FITTINGS OR TYPE "SO" CORD WITH RUBBER GLAND WATER-TITE CORD GRIPS SHALL BE USED, BUT ONLY TO THE EXTENT OF MINIMUM LENGTHS REQUIRED FOR A CASE GROUND. REFER TO AIR CONDITIONING SECTION FOR SPECIFIC CONTROLS, SWITCHES, THERMOSTATS, ETC., FURNISHED FOR INSTALLATION UNDER THIS DIVISION.

VERIFY HORSEPOWER RATINGS AND FULL LOAD CURRENTS OF MOTORS BEING SUPPLIED BY OTHER TRADES. ANY DISCREPANCY BETWEEN ACTUAL FULL LOAD CURRENTS OF MOTORS DELIVERED TO THE JOB SITE AND STANDARD FULL LOAD CURRENTS OF SINGLE PHASE AND THREE PHASE SQUIRREL CAGE INDUCTION MOTORS, (HORSEPOWER RATING AS LISTED) SHALL BE REPORTED TO THE ARCHITECT FOR CORRECTION AND DECISION BEFORE ANY AFFECTED WORK IS DONE.

GROUNDING:

THE NEUTRAL CONDUCTORS AND ALL OTHER EXPOSED NON CURRENT CARRYING METAL PARTS AS REQUIRED BY CODE SHALL BE GROUNDED. GROUNDING BUSHINGS SHALL BE USED AS REQUIRED AND SHALL BE O.Z. INSULATED TYPE BL OR APPROVED EQUAL. GAS PIPING SHALL BE BONDED PER 250.104(B). WHERE EQUIPMENT OR DEVICES ARE SERVED BY NON-METALLIC DUCTS, ENCLOSURES SHALL BE GROUNDED BY MEANS OF A CODE SIZE BARE OR GREEN INSULATED EQUIPMENT GROUND WIRE INSTALLED IN THE DUCT WITH THE CURRENT CARRYING CONDUCTORS AND BE BONDED SECURELY IN EACH CABINET TERMINATING THE GROUND WIRE. COPPER JUMPERS SHALL BRIDGE FLEXIBLE CONDUIT AND BE INSTALLED IN THE CONDUIT. ALL SERVICE GROUNDS SHALL BE IN ACCORDANCE WITH THE UFER GROUND.

4 LIGHTING:

LIGHTING FIXTURES:

FIXTURES SHALL BE FURNISHED COMPLETE WITH DRIVERS OF PROPER WATTAGE AND BE UL LISTED IN ACCORDANCE WITH LIGHTING FIXTURE SCHEDULE. PROVIDE ALL FITTINGS, HANGERS, SUPPORTS, PLASTER FRAMES AND OTHER NECESSARY APPURTENANCE. FIXTURES SHOWN IN FIXTURE SCHEDULE WITH SAME LETTER DESIGNATION SHALL BE OF ONE MANUFACTURER AND BE IDENTICAL IN DESIGN AND APPEARANCE.

ALL LED COMPONENTS TO BE UL 8750 RECOGNIZED OR LISTED AS APPLICABLE, AND TESTED IN ACCORDANCE WITH IES LM-79 AND IES LM-80. LED ESTIMATED USEFUL LIFE SHALL BE MINIMUM 50,000 HOURS AT 70% LUMEN MAINTENANCE.

FIXTURE MANUFACTURER SHALL PROVIDED THE PROPER DRIVER WITH THE FIXTURE TO PERMIT CONTINUOUS OPERATION WITHIN THE TEMPERATURE CONDITION OF THE INSTALLED LOCATION.

VERIFY THE TYPE AND CONSTRUCTION OF ALL CEILINGS BEFORE SUBMITTING SHOP DRAWINGS OR ORDERING FIXTURES TO DETERMINE COMPATIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE CEILING SUPPLIER AND MODIFICATION NECESSARY FOR PROPER INSTALLATION OF THE FIXTURES WITHIN OR ON THE CEILINGS.

LAMPS:

LED BOARDS AND INCANDESCENT LAMPS SHALL BE MINIMUM 80 CRI AND 3500K CCT U.N.O. SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE. ALL LED BOARDS AND INCANDESCENT LAMPS SHALL BE 130 VOLTS U.N.O SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE.

APPROVED MANUFACTURERS ARE: GENERAL ELECTRIC, SYLVANIA, PHILLIPS, COOPER, OR ACUITY.

LIGHTING FIXTURE INSTALLATION:

FIXTURES SHALL BE WIRED COMPLETE WITH COLOR-CODED WIRES TO INDICATED POLARITY. WHITE FIXTURE WIRE SHALL BE CONNECTED TO THE SHELL TERMINALS OF SOCKETS AND CONNECTED TO THE NEUTRAL WIRE OF THE LIGHTING SYSTEM.

INSTALL AND CONNECT LIGHTING FIXTURES ON ALL DESIGNATED OUTLETS IN BUILDING. NON-DESIGNATED OUTLETS SHALL BE EQUIPPED WITH FIXTURES SIMILAR TO LIKE AREAS.

ALL FIXTURES SHALL BE TESTED BEFORE AND AFTER INSTALLATION AND SHALL SHOW FREE OF GROUNDS, SHORTS, ETC.

ALL FIXTURES AND FIXTURE SUPPORTS SHALL BE CLEANED, PAINTED WHERE NECESSARY AND LEFT IN FIRST CLASS OPERATING CONDITION UPON COMPLETION OF THE WORK. THIS CONTRACTOR SHALL MAKE GOOD ALL BREAKAGE OF LAMPS, GLASS AND FIXTURE BOWLS OR OTHER DAMAGE OR ARRANGE FOR REPLACEMENT WITH THE ARCHITECT.

ALL FIXTURES SHALL BE PROPERLY SUPPORTED FROM CEILING STRUCTURE.

COMPLETE THE CONNECTION OF ALL FIXTURES TO THE BUILDING WIRING AT THE OUTLET FOR FIXTURES.

ALL LED FIXTURES RECESSED IN THE CEILING OR IN A GRID CEILING SHALL BE PROVIDED WITH EARTHQUAKE CLIPS.

END OF DIVISION

SÄZÄN
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CONSTRUCTION DOCUMENTS

Revision Schedule		
No.	Date	Description

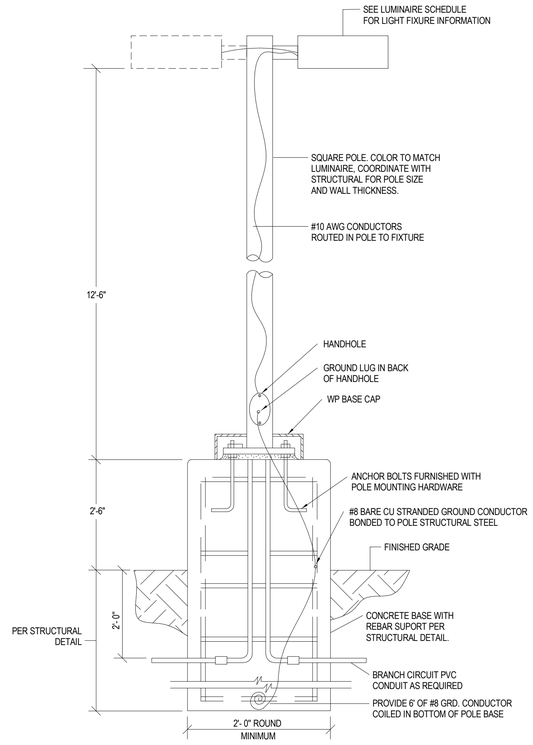
ART PROJECT NO.
22025

DATE
04.21.2023

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
46291
STEPHEN A. SANDERS
Date Signed 10.02.2023
ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL SPECIFICATIONS

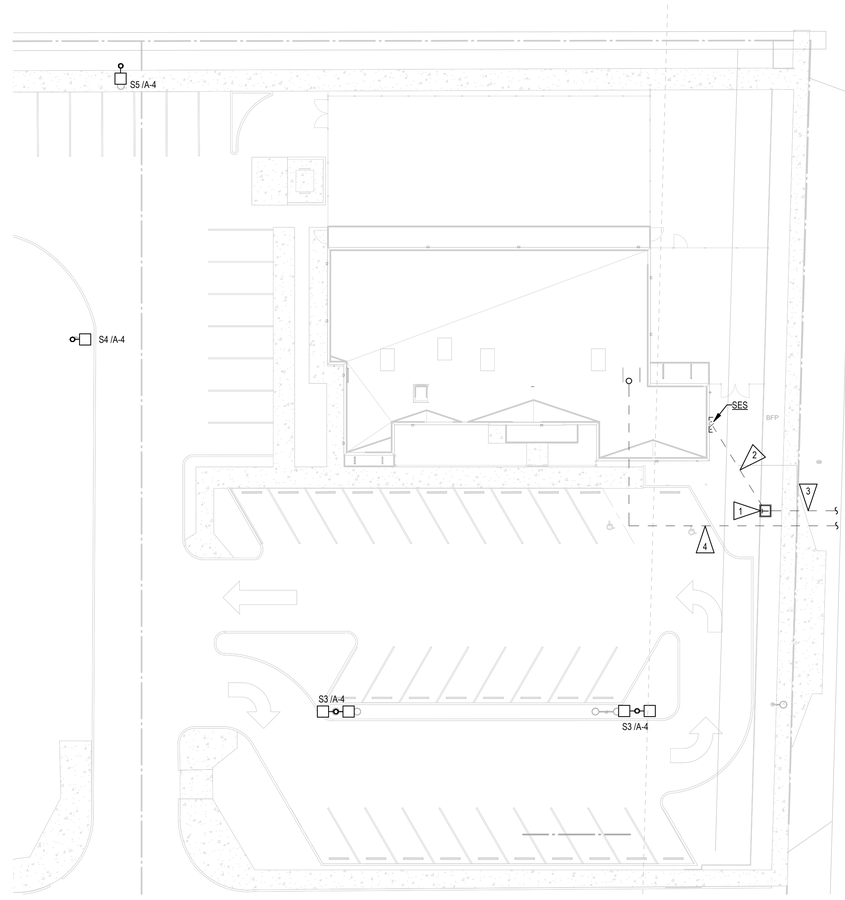
DRAWING
E0.02



NOTE: THE POLE MANUFACTURER SHALL PROVIDE AN ENGINEERED POLE BASE DESIGN FOR 100 MPH WIND LOADING WITH A 1.3 GUST FACTOR. THE POLE BASE DESIGN SHALL BE FROM A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ARIZONA. THE STRUCTURAL ENGINEER SHALL VERIFY THE WIND LOADING AND GUST FACTOR CRITERIA ABOVE ARE ADEQUATE FOR THE AREA OF INSTALLATION.

LIGHT POLE BASE DETAIL

SCALE: NTS



1 ELECTRICAL - SITE PLAN

1" = 20'-0"

ELECTRICAL SITE SHEET NOTES

A. COORDINATE ALL UTILITY WORK WITH FINAL SALT RIVER PROJECT (SRP) REQUIREMENTS DRAWINGS.

B. COORDINATE ALL PROPOSED PRIMARY AND SECONDARY SERVICE FEEDER CONDUIT ROUTINGS AND LOCATIONS WITH POWER COMPANY. VERIFY ALL REQUIREMENTS AND COMPLY AS DIRECTED.

C. SEE POWER COMPANY PLANS FOR REQUIRED TRANSFORMER(S), PULLING ENCLOSURES, SWITCHING CABINETS, CAPACITOR BANKS AND PRIMARY CONDUIT ROUTING. E.C. TO COMPLY WITH ALL POWER COMPANY REQUIREMENTS.

D. SEE SPECIFICATIONS FOR SRP CONTRACT INFORMATION.

E. PRIOR TO TRENCHING IN ANY AREA, THE ELECTRICAL CONTRACTOR SHALL CONTACT ELECTRICAL, GAS, CABLE TV, COMMUNICATIONS, AND WATER AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. DAMAGE TO ANY UNDERGROUND STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE PROJECT.

F. ELECTRICAL CONTRACTOR SHALL PERFORM A MANDREL TEST OF ALL UNDERGROUND CONDUITS. THE MANDREL MUST PULL THROUGH THE ENTIRE LENGTH OF EACH CONDUIT TO PASS THE TEST. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL UNDERGROUND CONDUIT REPAIR REQUIRED TO PASS THE MANDREL TEST. PROVIDE WRITTEN DOCUMENTATION OF SUCCESSFUL TEST FOR ALL RACEWAYS.

G. SPLICING OF UNDERGROUND CIRCUITS IS NOT PERMITTED, UNLESS APPROVED BY ENGINEER PRIOR TO INSTALLATION.

H. NUMBER OF BENDS IN A SINGLE CONDUIT RUN SHALL NOT EXCEED THE EQUIVALENT OF 4 QUARTER BENDS BETWEEN PULL POINTS. INSTALL CONCRETE FLUSH ON GRADE PULL BOXES AS REQUIRED BY NEC.

I. ALL UNDERGROUND CABLE, PIPE, AND CONDUITS SHALL BE DETECTIBLE (METALLIC) OR HAVE A DETECTIBLE UNDERGROUND LOCATION DEVICE INSTALLED WITH IT. THE RECOMMENCED DETECTIBLE UNDERGROUND LOCATION DEVICE IS A #12 OR LARGER COPPER TRACER WIRE SECURELY ATTACHED TO THE NON-METALLIC CABLE, PIPE, OR CONDUIT AT 8' O.C. IT SHALL HAVE A 12" OF TRACER WIRE ACCESSIBLE ABOVE GRADE AT ANY ABOVE GRADE TERMINATION.

J. ALL CONDUIT ROUTING AND STUB-UP LOCATIONS ARE SHOWN SCHEMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO ANY ROUGH-IN. COORDINATE ROUTING WITH NEW AND ANY EXISTING OBSTRUCTIONS. COORDINATE STUB-UP LOCATIONS WITH ACTUAL EQUIPMENT LOCATIONS IN FIELD.

K. ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, FLOORS, OR CEILINGS SHALL BE FIRE-STOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING. FIRE RATED SEALANT MUST BE LISTED INTUMESCENT FIRE BARRIER CAULK OR PUTTY. SEALANT MUST BE SANDED AND PAINTED TO MATCH EXISTING SURFACE. TYPICAL FOR ALL FIRE RATED PENETRATIONS.

L. ALL EXTERIOR LIGHT FIXTURES TO COMPLY WITH LOCAL NIGHT SKY ORDINANCE. SEE LIGHTING FIXTURE SCHEDULE ON SHEET E2.00.

M. ALL NEW EXTERIOR LIGHTING AND POWER RECEPTACLES SHOWN ON THIS SHEET TO BE FED WITH #10 CU. MINIMUM U.N.O.

N. ALL EXTERIOR ELECTRICAL EQUIPMENT TO BE HEAVY-DUTY RATED FOR WEATHER-PROOF/ NEMA-3R APPLICATIONS.

O. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410-4. ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES.

P. CONTRACTOR TO COORDINATE EXACT SITE LIGHTING FIXTURE LOCATIONS WITH LANDSCAPE DRAWINGS. ALL CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER AND ARCHITECT.

Q. ALL TRANSFORMER BOXES, METER PANELS, AND ANY OTHER ELECTRIC EQUIPMENT NOT ABLE TO BE SCREENED BY LANDSCAPING OR WALLS SHALL BE PAINTED TO MATCH BUILDING COLOR OR AS DIRECTED BY ARCHITECT.

R. NOT ALL UNDERGROUND FLUSH TO GRADE PULL BOXES ARE SHOWN ON THESE PLANS. EXACT SIZE, QUANTITY AND LOCATION OF PULL BOXES ARE TO BE DETERMINED BY CONTRACTOR BASED ON CEC REQUIREMENTS AND CONDUCTOR PULLING TENSION LIMITATIONS.

FLAG NOTES

1. PROPOSED PAD MOUNTED UTILITY TRANSFORMER. PROVIDE CONCRETE PAD AND MAINTAIN WORKING CLEARANCES PER ARIZONA PUBLIC SERVICES REQUIREMENTS.
2. (2) 4" CONDUITS FOR SECONDARY FEEDERS PER APS REQUIREMENTS.
3. PRIMARY FEEDERS PER APS REQUIREMENTS.
4. (1) 2" PVC CONDUIT FROM TELEPHONE/INTERNET UTILITY POINT OF SERVICE TO IT ROOM. COORDINATE EXACT STUB UP LOCATIONS WITH ARHICTECT/OWNER. VERIFY EXACT REQUIREMENTS WITH LOCAL UTILITY SERVICE PROVIDER.

SÄZÄN
GROUP
311 E. Veterans Way, Ste. 102
Tempe, AZ 85281
Tel 480.530.9101
Fax 480.530.9130
SAZAN# 700-22061

2504 S 91 st Ave, Tolleson, Az 85353

Catholic Charities
Westside Head Start - Tolleson

ARCHITECTURAL RESOURCE TEAM
design with purpose 1055 E. Indian School Rd., Phoenix, AZ 85014-4811 v | 602-307-5399 www.art-team.com

CONSTRUCTION DOCUMENTS

Revision Schedule		
No.	Date	Description

ART PROJECT NO. 22025

DATE 04.21.2023

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 46291
STEPHEN A. SANDERS
Date Signed 10.02.2023
ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL - SITE PLAN

DRAWING
E1.01

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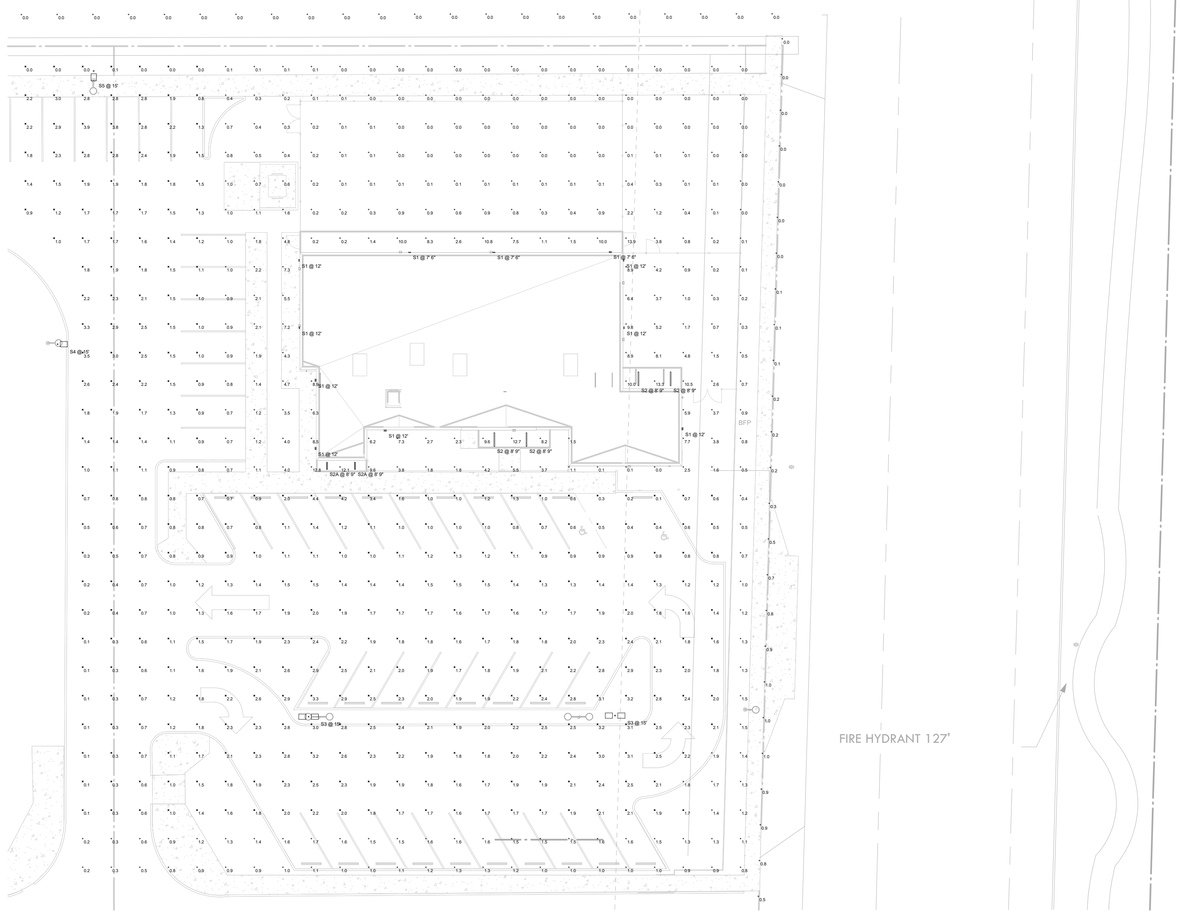

1 **PHOTOMETRIC SITE PLAN**
1" = 20'-0"

Schedule										
Symbol	Label	QTY	Manufacturer	Catalog	Description	Lamp	Number Lamps	Lamp Output	LLF	Input Power
	S1	11	ILP	SWP-3L-U-40-BRZ	ILP SLIM WALL PACK WITH DARK BRONZE FINISH, MOUNTED AT HEIGHTS PER ELEVATIONS	4000K LED	1	3310	0.91	22.8
	S2	4	LUMINAIRE LED	VPF4 4FT MIN10 25W 40K MVOLT OP FINISH	4' VANDAL RESISTANT LINEAR WET LOCATION LUMINAIRE WITH HIGH IMPACT POLYCARBONATE LENS AND 50□C AMBIENT TEMP RATING	4000K LED	168	17	0.91	26.9
	S2A	2	LUMINAIRE LED	VPF4 2FT MIN10 20W 40K MVOLT OP FINISH	2' VANDAL RESISTANT LINEAR WET LOCATION LUMINAIRE WITH HIGH IMPACT POLYCARBONATE LENS AND 50□C AMBIENT TEMP RATING	4000K LED	1	2303	0.91	21
	S3	2	LITHONIA	TWIN HEAD-DSX0 LED P3 40K 70CRI T5W MVOLT SPA FINISH / SSS 12.5' W/ 2.5' BASE	TWIN HEAD-D SERIES SIZE 0 AREA LUMINAIRE WITH P3 PERFORMANCE PACKAGE AND TYPE 5 WIDE OPTIC, MOUNTED AT 15' AFG	4000K LED	1	9333	0.91	137.9
	S4	1	LITHONIA	DSX0 LED P3 40K 70CRI T4M MVOLT SPA FINISH / SSS 12.5' W/ 2.5' BASE	D SERIES SIZE 0 AREA LUMINAIRE WITH P3 PERFORMANCE PACKAGE AND TYPE 4 MEDIUM OPTIC, MOUNTED AT 15' AFG	4000K LED	1	8926	0.91	68.95
	S5	1	LITHONIA	DSX0 LED P3 40K 70CRI BLC4 MVOLT SPA FINISH / SSS 12.5' W/ 2.5' BASE	D SERIES SIZE 0 AREA LUMINAIRE WITH P3 PERFORMANCE PACKAGE AND TYPE 4 EXTREME BACK LIGHT CONTROL OPTIC, MOUNTED AT 15' AFG	4000K LED	1	6607	0.91	68.95

Statistics						
Description	Symbol	Avg	Min	Max/Min	Avg/Min	Max
PL FC AFG	+	0.2 fc	0.0 fc	N/A	N/A	1.0 fc
SITE FC AFG	+	1.7 fc	0.0 fc	N/A	N/A	13.9 fc
PARKING AND DRIVES	✳	1.6 fc	0.0 fc	N/A	N/A	4.4 fc

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CONSTRUCTION DOCUMENTS

Revision Schedule		
No.	Date	Description

ART PROJECT NO. 22025
DATE 04.21.2023

Registered Professional Engineer (Civil) CERTIFICATE NO. 46291 STEPHEN A. SANDERS Date Signed 10.02.2023 ARIZONA, U.S.A.

DRAWING TITLE
PHOTOMETRIC SITE PLAN

DRAWING
E1.02

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PLEASE RECYCLE

Project Name:	Part Number:	Type: S1

SLIM WALL PACK
LED ADJUSTABLE WALL PACK

ILP
407-478-3759
www.ilp-inc.com

FEATURES
- Low profile die-cast aluminum housing
- Bronze polyester powder coat finish (std.)
- Custom and factory select colors available[1]
- Isolated optical compartment with tempered glass lens and silicone gaskets
- 90° adjustable Type IV distribution or Optional IDA fixed model[2]
- Quick mount bracket standard for easy surface mount installation
- Three ½" coin plugs on sides for conduit or electronic photocell
- 120–277V Universal Voltage or 347V–480V High Voltage[3]
- Achieve code compliance with a fixed down PIR sensor with fully adjustable distribution aiming
- 0–10V Dimmable Driver (std.)
- Deep box 10W CEC Title 20 compliant battery backup & cold weather battery[4]
- Optional Field Adjustable Output device (FAO) allows individual luminaire lumen output control
- 3000K, 4000K & 5000K CCT Selectable via Integral selector
- >70 Color Rendering Index (CRI)
- Calculated L_{70} >100,000 hrs @ 25°C per TM-21-11
- IP65 Rated Luminaire
- 5 Year Warranty (std); 10 Year Warranty Optional
- ETL Listed for Wet Locations
- DesignLights Consortium® Premium Qualified Luminaire

[1]Contact factory for pricing and availability [2]Fixed 3000K CCT model only
[3]347–480V available in 5L, 8L, 10L Lumen Packages Only

Small Housing 2L - 3L

Large Housing 5L-10L
Shown with Sensor Box

*With FAO Option

SUITABLE APPLICATIONS
- Pedestrian Walkways
- Building Entrances
- Multi-use Facilities
- Industrial Facilities
- Parking Lots
- Storage Facilities
- Institutions
- Schools
- Loading Docks

ORDERING GUIDE:

SERIES	LUMENS	DRIVER	CCT	FINISH	WARRANTY
☐ **SWP** Slim Wall Pack	☐ **2L** ☐ **3L** ☐ **5L** ☐ **8L** ☐ **10L**	☐ **U** 120-277V ☐ **HV**[1] 347-480V	☐ **CCTS** Selectable CCT (5000K, 4000K, 3000K) ☐ **30**[3]	☐ **BRZ** Bronze ☐ **BLK**[4] Black ☐ **WHT**[4] White ☐ **SLV**[4] Silver	☐ **BLANK** 5 Year ☐ **10YR**[1,4] 10 Year

OPTIONS

Factory Installed		Ship with Accessories	
☐ **SP1**[2,4]	10kA Max Univolt Surge Protection	☐ **SWP-FAO10V**	Field Adjustable Output via 0-10V Wires
☐ **SP2**[2,4]	22kA Max 120–277V Surge Protector	☐ **SWP-ARM3-xxx**	Pole Mount Arm Kit, 3" long (xxx=BRZ, BLK, WHT, SLV)
☐ **IDA**[5]	Dark Sky IDA Fixture Seal of Approval	☐ **SWP-BPS-xxx**	18x9 Beauty Plate Kit, Small (xxx=BRZ, BLK, WHT, SLV)
☐ **LEDBB**[1,2]	10W UNIV Battery Backup (32°–100°F)	☐ **SWP-BPL-xxx**	18x9 Beauty Plate Kit, Large (xxx=BRZ, BLK, WHT, SLV)
☐ **LEDBBCT**[1,2]	20W UNIV CT Battery Backup (-4°–122°F)		
☐ **FAO**	Field Adjustable Output via 0-10V Wires		
Controls			
☐ **PCU**[5]	Electronic UNIV Photocell (120-277V)		
☐ **USBDLx**[4,5]	Bluetooth User Select BI-Level Dim Occ. Sensor; (x= Mounting height; 2=8', 3=20')		

[1]5L, 8L, 10L Lumen Packages Only
[2]Not available with HV option
[3]Fixed to 3000K CCT and no angle adjustability for IDA Compliance. Must choose 30 CCT and IDA option to qualify
[4]Contact Factory for pricing and availability
[5]Does not qualify for DLC
[4]SP1/SP2 specified in combination with battery backups, separate surge protectors are required per electrical line
[4]Contact Factory for more details
[5]Requires additional surge protection (SP1, SP2, SPA80V2); For additional details see general terms and conditions
[5]Requires Bluetooth enabled device for programming (provided by others)

QUICK SHIP ITEMS:

SERIES	LUMENS	DRIVER	COLOR	FINISH
☐ **SWP** Slim Wall Pack	☐ **2L** ☐ **3L** ☐ **5L** ☐ **8L** ☐ **10L**	☐ **U** 120-277V	☐ **CCTS** Selectable CCT (5000K, 4000K, 3000K)	☐ **BRZ** Bronze

SWPSPEC0622

VISION VPF4

Vandal Resistant

VPF4 Series LED

Fixture Type Type S2, S2A	Date
Job Name	Approved By
Catalog Number	

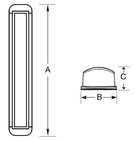
SPECIFICATIONS

UL Listing — ADA — BAA

Description	The Vision VPF4 series features an all aluminum, ligature resistant construction which allows it to be used in nearly any enviornmental condition. Designed in conjunction with an opthalmologist, the polycarbonate lens provides complete control of glare and LED image while maintaining the high efficiency of clear optical material. The Vision VPF4 series can be row mounted to any length. Natatorium finish is standard for all versions of this fixture.
Housing	Marine grade heat treated extruded aluminum. Finished with Super Durable Corrosion Resistant powder coat (SDCR) that meets AAMA 2605 high performance specification, providing superior UV durability and corrosion resistance. Salt spray test: 4,000 hours.
Lens	Extruded UV stabilized polycarbonate with integral prisms. Maximum wall thickness 0.160". Secured to housing with die cast aluminum clamps and stainless steel TORX® head screws.
End Caps	Die cast marine grade aluminum with conduit knockouts that are visible from interior of end cap.
Drivers	Dimming to 1%, 10% or Programable Lumen Output driver options. Non-Dimming Driver is also available.
LED	Samsung LM561B+ series @ 2700K, 3000K, 3500K, 4000K, or 5000K and 82 CRI wired in parallel-series. L_{70} projected life of over 130,000 hours at 50ºC.
UL Listing	U.L., C.UL. Damp Location Listing standard, Wet Location Listing optional.
Buy American Act	Luminaire LED, LLC products are assembled in the USA. Our products meet the Buy America(n) government procurement requirements under FAR, DFARS, and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.
Warranty	**Lifetime** warranty against vandalism. Luminaire LED will repair or replace any fixture damaged due to vandalism for the lifetime of the installation. **10-year** warranty on LED boards against operational defects. Tested in accordance with LM-80.
Note	Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

DIMENSIONAL DATA

	A	B	C
VPF4 1FT	15.50	4.35	2.70
VPF4 2FT	26.10	4.35	2.70
VPF4 3FT	37.88	4.35	2.70
VPF4 4FT	49.69	4.35	2.70



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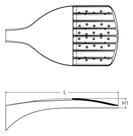
D-Series Size 0
LED Area Luminaire

Catalog Number
Notes
Type S3, S4, S5

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA: 0.44 ft² (0.04 m²)
Length: 26.18" (66.5 cm)
Width: 14.06" (35.7 cm)
Height H1: 2.26" (5.7 cm)
Height H2: 7.46" (18.9 cm)
Weight: 23 lbs (10.4 kg)



Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature[7]	Color Rendering Index[7]	Distribution		Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[1] T4M Type IV medium T4LG Type IV low glare[1] TFTM Forward throw medium T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[1] BLC4 Type IV backlight control[1] LCCO Left corner cutoff[1] RCCO Right corner cutoff[1]	MVOLT (120V-277V)[4] HVOLT (347V-480V)[1,8] XVOLT (277V-480V)[1,8]	**Shipped included** SPA Square pole mounting (4ft drilling, 3.5" min. SQ pole) RPA Round pole mounting (4ft drilling, 3" min. RND pole) SPA5 Square pole mounting (4ft drilling, 5" min. SQ pole)[9] RPA5 Round pole mounting (4ft drilling, 5" min. RND pole)[9] SPABN Square narrow pole mounting (4ft drilling, 3" min. SQ pole) WBA Wall bracket[10]

Control options		Other options		Finish (required)
Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.[11,12,16,19] PIR High/low, motion/ambient sensor, 8-40'mounting height, ambient sensor enabled at 3fc.[11,12,19] PER NEMA twist-lock receptacle only (controls ordered separate)[14] PER5 Five-pin receptacle only (controls ordered separate)[14,19]	PER7 Seven-pin receptacle only (controls ordered separate)[14,19] FAO Field adjustable output[15,19] BL30 Bi-level switched dimming, 30%[16,19] BL50 Bi-level switched dimming, 50%[16,19] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]	**Shipped installed** HS Houseside shield (black finish standard)[20] L90 Left rotated optics[7] R90 Right rotated optics[7] CCE Coastal Construction[21] **Shipped separately** EGSR External Glare Shield (reversible, field install required, matches housing finish) BSDB Bird Spikes (field install required)	DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white	

LITHONIA LIGHTING
COMMERCIAL OUTDOOR

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CONSTRUCTION DOCUMENTS

Revision Schedule		
No.	Date	Description

ART PROJECT NO. 22025
DATE 04.21.2023

Registered Professional Engineer (Electrical) CERTIFICATE NO. 46291 STEPHEN A. SANDERS Date Signed 10.02.2023 ARIZONA, U.S.A.

DRAWING TITLE
PHOTOMETRIC LIGHT FIXTURE CUT SHEETS

DRAWING
E1.03

PLEASE RECYCLE

COMcheck Software Version 4.1.5.5
Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Catholic Charities Westside Head Start - Tolleson
Project Type: New Construction

Construction Site:
2504 S 91st Ave.
Tolleson, AZ 85353

Owner/Agent:

Designer/Contractor:
S. Muniz
Sazan Group Inc.
Tempe, AZ

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-School/University	4996	0.73	3642
		Total Allowed Watts =	3642

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-School/University				
LED 1: A1: Other:	1	62	51	3162
LED 2: L1: Other:	1	1	44	44
LED 2 copy 1: L2: Other:	1	2	44	88
		Total Proposed Watts =		3294

Interior Lighting PASSES: Design 10% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

S. Muniz - Electrical Designer — Name - Title
Steve Muniz — Signature
04.26.2023 — Date

COMcheck Software Version 4.1.5.5
Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Catholic Charities Westside Head Start - Tolleson
Project Type: New Construction
Exterior Lighting Zone 2 (Residential mixed use area (LZ2))

Construction Site:
2504 S 91st Ave.
Tolleson, AZ 85353

Owner/Agent:

Designer/Contractor:
S. Muniz
Sazan Group Inc.
Tempe, AZ

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Parking area	21692 ft2	0.04	Yes	868
Walkway < 10 feet wide	307 ft of	0.5	Yes	154
		Total Tradable Watts (a) =		1021
		Total Allowed Watts =		1021
		Total Allowed Supplemental Watts (b) =		400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Parking area (21692 ft2): Tradable Wattage				
LED 1: S3: Other:	1	2	138	276
LED 1 copy 1: S4: Other:	1	1	69	69
LED 1 copy 2: S5: Other:	1	1	69	69
Walkway < 10 feet wide (307 ft of walkway length): Tradable Wattage				
LED 4: S1: Other:	1	12	20	240
LED 4 copy 1: S2/S2E: Other:	1	4	25	100
LED 4 copy 2: S2A: Other:	1	2	20	40
		Total Tradable Proposed Watts =		794

Exterior Lighting PASSES: Design 44% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

S. Muniz - Electrical Designer — Name - Title
Steve Muniz — Signature
04.26.2023 — Date

LUMINAIRE SCHEDULE

TYPE MARK	DESCRIPTION	MOUNTING	FIXTURE WATTAGE	VOLTAGE	MANUFACTURER	REMARKS /ACCESSORIES / OPTIONS
A1	2'x4' LED PANEL LUMINAIRE	RECESSED	51 W	120 V	LITHONIA - CPX 2X4 AL08 SWW7 M2	
A1E	2'x4' LED PANEL LUMINAIRE	RECESSED	51 W	120 V	LITHONIA - CPX 2X4 AL08 SWW7 M2	
L1	4'-0" LINEAR LED LUMINAIRE MOUNTED OVER DOOR	SURFACE	44 W	120 V	LITHONIA - CSS L48 AL03 MVOLT SWW3 80CRI	
L2	4'-0" LINEAR LED LUMINAIRE	SURFACE	44 W	120 V	LITHONIA - CSS L48 AL03 MVOLT SWW3 80CRI	
S1	WALL MOUNTED LINEAR LUMINAIRE	WALL	20 W	120 V	ILP - SWP 3L U 40 BRZ	
S1E	WALL MOUNTED LINEAR LUMINAIRE	WALL	20 W	120 V	ILP - SWP 3L U 40 BRZ LEDBB	
S2A	2'-0" LINEAR LED LUMINAIRE, VANDAL-RESISTANT	SURFACE	20 W	120 V	LUMINAIRE LED - VPF4 2FT MIN10 20W 40K MVOLT OP BRZ	
S3	EXTERIOR POLE MOUNTED FULL CUTOFF LED AREA LUMINAIRE. 2-LUMINAIRES, IES TYPE 5 WIDE DISTRIBUTION.	EXTERIOR POLE	138 W	120 V	LITHONIA - DSX0 LED P3 40K 70CRI T5W MVOLT SPA DDBXD	REFER TO POLE BASE DETAIL 2/E1.01.
S4	EXTERIOR POLE MOUNTED FULL CUTOFF LED AREA LUMINAIRE. 1-LUMINAIRE, IES TYPE 4 MEDIUM DISTRIBUTION	EXTERIOR POLE	69 W	120 V	LITHONIA - DSX0 LED P3 40K 70CRI T4M MVOLT SPA DDBXD	REFER TO POLE BASE DETAIL 2/E1.01.
S5	EXTERIOR POLE MOUNTED FULL CUTOFF LED AREA LUMINAIRE. 1-LUMINAIRE, IES TYPE 4 BACKLIGHT CONTROL DISTRIBUTION	EXTERIOR POLE	69 W	120 V	LITHONIA - DSX0 LED P3 40K 70CRI BLC4 MVOLT SPA DDBXD	REFER TO POLE BASE DETAIL 2/E1.01.
X1	THERMOPLASTIC EXIT SIGN W/ RED LETTERS AND 90 MINUTE BATTERY BACK-UP.	CEILING	3 W	120 V	EXITRONICS - ILXREMWH	

LIGHTING CONTROL DEVICE SCHEDULE

DESIGNATION	DEVICE DESCRIPTION	MANUFACTURER/MODEL	BUTTONS	FUNCTION	LABEL	NOTES
$OSD	ALL AUTO ON AT 100% / AUTO OFF	nLIGHT - WSXA MWO PDT D WH	1 2	ALL ON/HOLD DIM UP ALL OFF/HOLD DIM DOWN	ON OFF	
$LV	ALL MOMENTARY 2-HR OVERRIDE	nLIGHT - NPODMA WH	1 2	ALL ON ALL OFF	ON /\ OFF \/	
$LVD	ALL AUTO ON AT 100% / AUTO OFF	nLIGHT - NPODMA DX WH	1 2	ALL ON/HOLD DIM UP ALL OFF/HOLD DIM DOWN	ON OFF	
(OS)	CEILING MOUNTED OCCUPANCY SENSOR	nLIGHT - NCM PDT 10 RJB	-	DUAL TECHNOLOGY PIR/ULTRA-SONIC DETECTION 360 DEGREE LENS	-	
(PCO)	OUTDOOR PHOTOCELL	nLIGHT - ARPA PC	-	OUTDOOR ON/OFF PHOTOCELL LCP ACCESSORY	-	
PP	POWER/RELAY PACK SEE PLAN FOR LOCATIONS	nLIGHT - NPP16 D EFP	-	0-10V DIMMING FUNTION	-	
PPE	POWER/RELAY PACK SEE PLAN FOR LOCATIONS	nLIGHT - NPP16 D ER EFP	-	0-10V DIMMING FUNTION, UL924 EMERGENCY OPERATION	-	
LCP	LIGHTING CONTROL PANEL - 8 RELAY	nLIGHT - ARP INTENC08 NLT 8FCR MVOLT 1VB SC SM	-	TIME CONTROL SCHEDULE FOR; CORRIDOR, VESTIBULE, EXTERIOR BLDG LTG, SITE AREA LTG	-	
DTC	DIGITAL TIMECLOCK	nLIGHT - NDTC WH	-	ASTRONOMICAL TIMECLOCK LCP ACCESSORY	-	

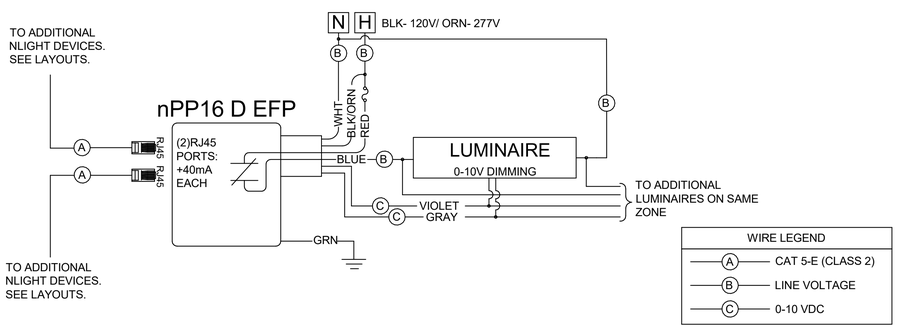
MECHANICAL EQUIPMENT CONNECTION SCHEDULE

SCHEDULE NOTES:
1) NEMA-3R FUSED DISCONNECT SWITCH.
2) PROVIDE MOTOR-RATED SWITCH, WITH WP COVER, AS DISCONNECT.
3) PROVIDE MOTOR-RATED SWITCH AS DISCONNECT.
4) EXHAUST FAN SHARES CIRCUIT WITH OTHER EXHAUST FANS.
5) WATER HEATER SHARES CIRCUIT WITH OTHER WATER HEATER.

ABBREVIATION:
FLA: FULL LOAD AMPERES
HP: HORSEPOWER
KVA: KILOVOLT-AMPERES
KW: KILOWATTS
MCA: MINIMUM CIRCUIT AMPACITY
MOCP: MAXIMUM OVERCURRENT PROTECTIVE DEVICE
OFOI: OWNER-FURNISHED, OWNER-INSTALLED
OFCI: OWNER-FURNISHED, CONTRACTOR-INSTALLED
W: WATTS
WP: WEATHERPROOF
VA: VOLT-AMPERS

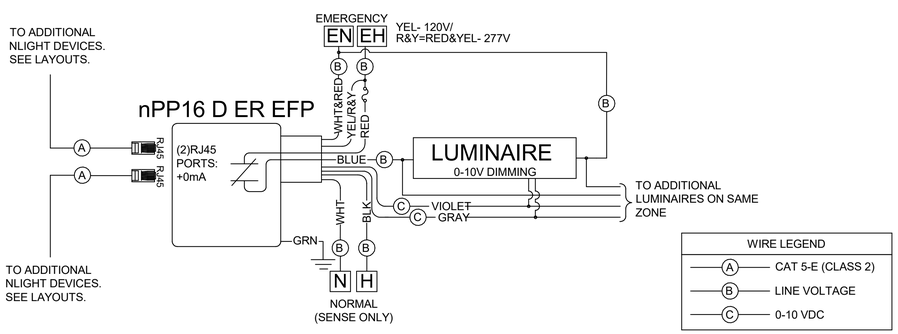
SCHEDULE GENERAL NOTES
1) DISCONNECTS ARE SHOWN AS FRAME RATING / FUSE SIZE
2) PROVIDE DUCT SMOKE DETECTORS FOR ALL HVAC UNITS SUPPLYING 2,000 CFM OR MORE. COORDINATE WITH FIRE ALARM CONTRACTOR.
3) ALL 120V, 15A AND 20A RECEPTACLES AND/OR EQUIPMENT CIRCUITS SHALL BE GFCI PROTECTED PER NOTE 2, UNLESS NOTED OTERWISE/

NO.	EQUIPMENT DESCRIPTION	VA	HP	KW	KVA	MCA	MOCP	VOLTAGE	PHASES	CONDUIT SIZE	WIRE SIZE	DISC/FUSE/ POLES	CIRCUIT NUMBER	NOTES
ERV-01	ENERGY RECOVERY UNIT	3661		6.3	3.7	20.3	25 A	208	1	3/4"	2#10, 1#10 GND	30/25/2	A - 31,33	
EWH-1	ELECTRIC WATER HEATER	23993		24.0	24.0		80 A	208	3	1-1/4"	3 #2, 1 #8 GND	100/90/3	A - 25,27,29	
OU-1	OUTDOOR UNIT	2959		15.9	3.0	17.0	25 A	208	1	1"	3 #10, 1 #10 GND	30/25/3	A - 34,36	
RTU-01	ROOFTOP UNIT	11800		12.2	11.8	44.0	50 A	208	3	1"	3 #8, 1 #10 GND	60/40/3	A - 1,3,5	
RTU-02	ROOFTOP UNIT	11800		12.2	11.8	44.0	50 A	208	3	1"	3 #8, 1 #10 GND	60/40/3	A - 7,9,11	
RTU-03	ROOFTOP UNIT	11800		12.2	11.8	44.0	50 A	208	3	1"	3 #8, 1 #10 GND	60/40/3	A - 13,15,17	
RTU-04	ROOFTOP UNIT	13798		15.9	13.8	50.0	60 A	208	3	1"	3 #6, 1 #10 GND	60/50/3	A - 19,21,23	



TYPICAL WIRING DIAGRAM: NPP16 D EFP

N.T.S.



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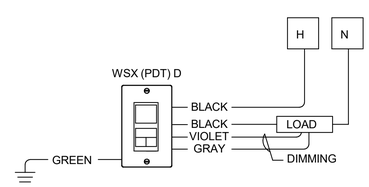

WALL SWITCH, 1 POLE, DIMMABLE AUTO ON/OFF

N.T.S.

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ART PROJECT NO. 22025
DATE 04.21.2023

Registered Professional Engineer (Electrical) CERTIFICATE NO. 46291 STEPHEN A. SANDERS Date Signed 10.02.2023 ARIZONA U.S.A.

DRAWING TITLE
ELECTRICAL SCHEDULES

DRAWING
E2.00

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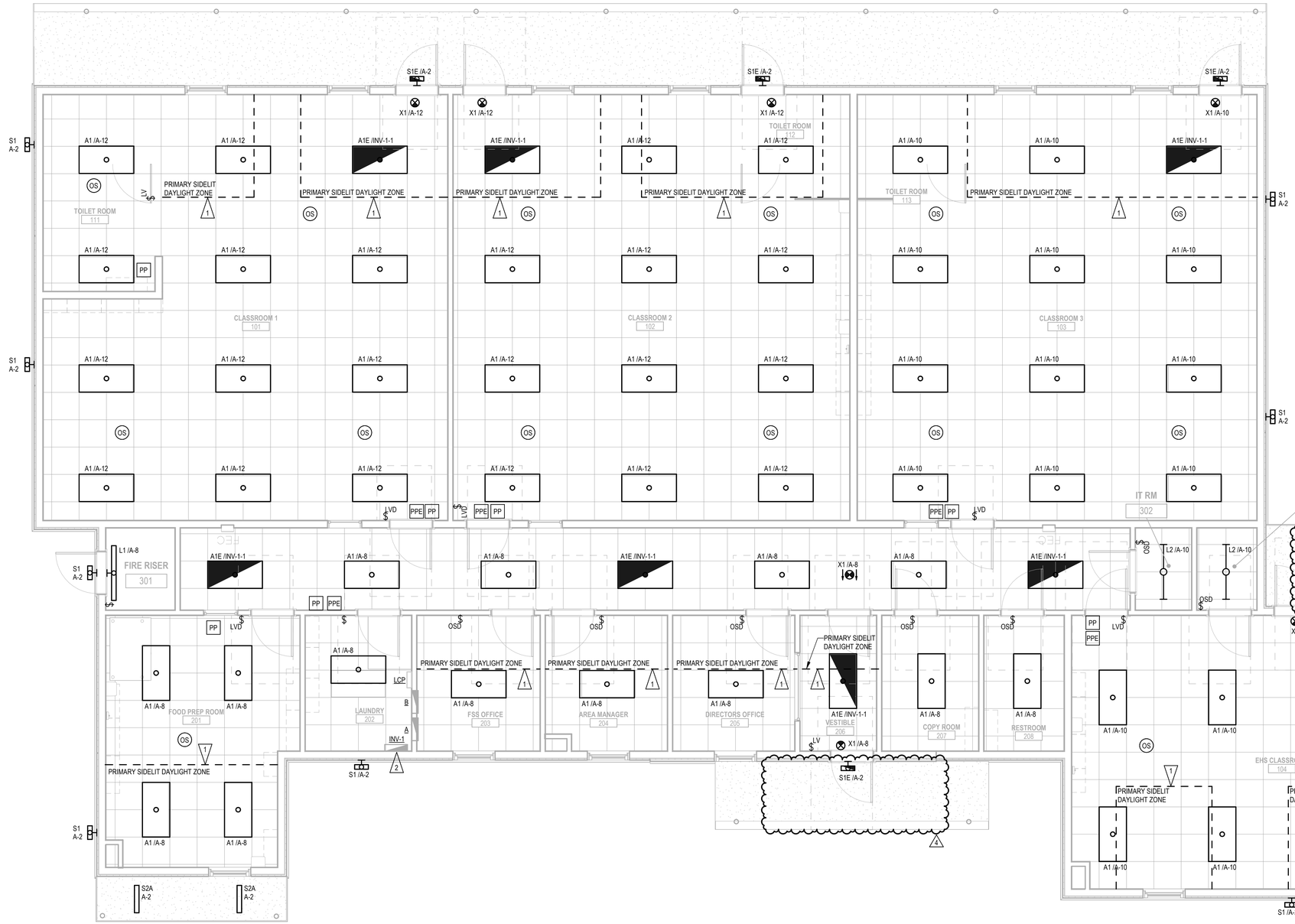

ELECTRICAL LIGHTING - PLAN

1/4" = 1'-0"

SHEET NOTES

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ALL AREAS OF THE BUILDING. VERIFY ALL CEILING TYPES AND LIGHTING FIXTURE COMPATIBILITY PRIOR TO SUBMITTING LIGHTING FIXTURE FOR APPROVAL.

B. CONDUIT SHALL RUN PARALLEL TO ROOF DECKING AND PERPENDICULAR TO STRUCTURAL COMPONENTS BUT NOT LIMITED TO BEAMS, JOISTS AND SUPPORT CHANNELS IN OPEN CEILING AREAS. PRIOR TO INSTALLATION, COORDINATE AND VERIFY ALL EXPOSED CONDUIT ROUTING LOCATIONS WITH THE ARCHITECT.

C. LOCATIONS WITH MULTIPLE SWITCHES SHALL BE INSTALLED WITH A MULTI-GANG BOX WITH SINGLE COVERPLATE.

D. INSTALLATION OF ALL FIXTURES IN OPEN CEILING AREAS SHALL BE NEAT AND ORDERLY WITH THREADED RODS AND/OR UNISTRUT SUPPORT.

E. OCCUPANCY SENSORS SHALL ENABLE LOCAL SWITCH OPERATION IN ROOMS COVERED BY SENSORS. REFERENCE SHEET E2.00 FOR ADDITIONAL INFORMATION.

F. INTERIOR EGRESS PATHWAY LIGHTING FIXTURES SHALL PROVIDE AN AVERAGE OF 1 FOOT-CANDLE PER CODE REQUIREMENTS. IN ADDITION, ALL EGRESS LIGHTING FIXTURES SHALL BE CONTROLLED THROUGH AN EMERGENCY GENERATOR.

G. WHERE EXIT SIGNS ARE INDICATED ABOVE DOOR, MOUNT AS FOLLOWS: CENTER THE EXIT SIGN BETWEEN TOP OF DOOR FRAME AND CEILING. IF DISTANCE BETWEEN TOP OF DOOR FRAME AND CEILING IS 24" OR LESS, OTHERWISE MOUNT BOTTOM OF EXIT SIGN 6" FROM TOP OF DOOR FRAME. MOUNT OTHER WALL MOUNTED EXIT SIGNS IN THE SAME AREA AT THE HEIGHT. COORDINATE WITH ARCHITECTURAL DETAILS. REFERENCE ARCHITECTURAL CODE SHEETS FOR FINAL LOCATIONS AND REQUIREMENTS.

H. CONDUCTOR COUNTS AND CONDUIT WIRING FOR THIS PLAN HAVE NOT BEEN INDICATED. CONTRACTOR SHALL PROVIDE CONDUCTORS FOR SWITCH LEGS AND NON-SWITCHED LOADS AS REQUIRED. ALL DIMMING LOADS SHALL INCLUDE A DEDICATED NEUTRAL INSTALLED FOR EACH CONTROLLED GROUP. SWITCHES OR OCCUPANCY SENSORS, PROVIDE ALL REQUIRED CONDUCTORS AND POWER PACKS REQUIRED TO SWITCH LIGHTING PER SPACE.

I. CONTRACTOR SHALL PROVIDE TRAINING, COMMISSIONING AND PROGRAMMING OF LIGHTING CONTROL SYSTEM BY AUTHORIZED MANUFACTURER'S REPRESENTATIVE. OWNER, ENGINEER, AND ARCHITECT SHALL BE NOTIFIED OF PROGRAMMING DATE AND TIME TWO WEEKS PRIOR.

J. CHOSEN CONTROL MANUFACTURER MAY REQUIRE ADDITIONAL DEVICES AND/OR ACCESSORIES. ADDITIONAL DESIGN MAY BE REQUIRED ONCE MANUFACTURER HAS BEEN CHOSEN. SUBMITTAL PACKAGE SHALL INCLUDE SYSTEM LAYOUT AND CONTROL DOCUMENTATION.

K. EMERGENCY OPERATION PER NEC ARTICLE 700 EMERGENCY SYSTEMS AMD NEC ARTICLE 701 LEGALLY REQUIRED STANDBY SYSTEMS AS REQUIRED.

L. ALL EMERGENCY FIXTURES SHALL COMPLY WITH NEC 700.12(F) AND 700.16.

FLAG NOTES

1. SIDE LIT DAYLIGHT ZONES ARE EXEMPT FROM INDEPENDENT LIGHTING CONTROLS PER 2018 IECC C405.2.3. GENERAL LIGHTING WITHIN PRIMARY DAYLIGHT ZONE DOES NOT EXCEED 150 WATTS.

2. WALL MOUNTED 490W EMERGENCY LIGHTING INVERTER. MANUFACTURER; ONLINE POWER, MODEL; WM-49R250P. MOUNT INVERTER AS HIGH AS POSSIBLE. COORDINATE EXACT LOCATION WITH ARCHITECT/TENANT PRIOR TO ROUGH-IN.

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4	09.29.23	Owner Comments

ART PROJECT NO. 22025

DATE 04.21.2023

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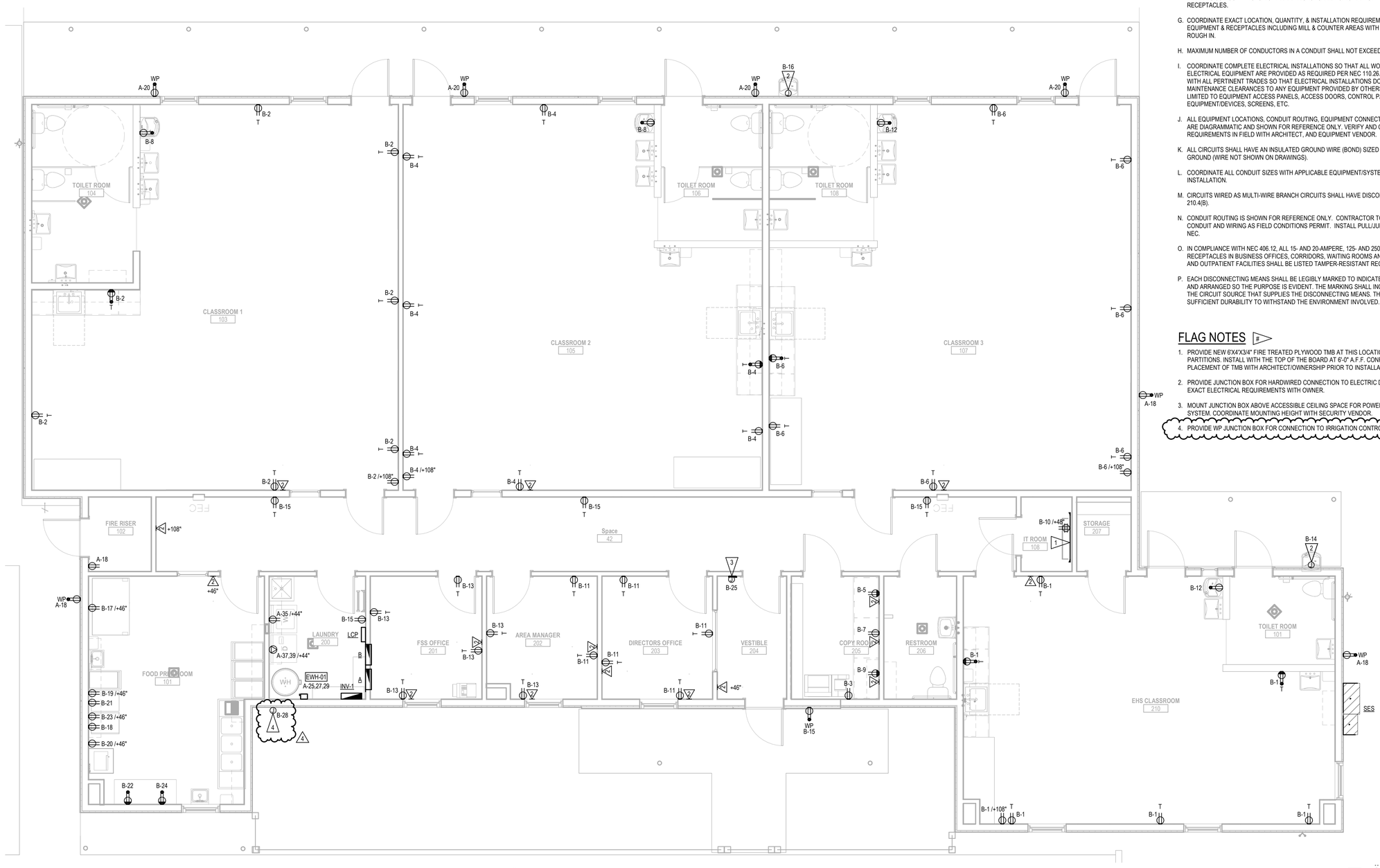
DRAWING TITLE
ELECTRICAL LIGHTING - PLAN

DRAWING
E3.01



ELECTRICAL POWER - PLAN

1/4" = 1'-0"

SHEET NOTES

A. ALL RECEPTACLES SHALL BE CENTERED 18" ABOVE FINISH FLOOR, U.N.O.

B. VERIFY LOCATION OF OUTLETS IN VICINITY OF CABINETS WITH FINAL CABINET DRAWINGS. FIELD COORDINATE EXACT LOCATIONS PRIOR TO ROUGH-INS.

C. LOCATE ALL TELEPHONE AND ELECTRICAL RECEPTACLES TO BE INSTALLED IN FLOOR SLAB AND MARK LOCATION FOR ARCHITECT'S APPROVAL PRIOR TO CUTTING.

D. RECEPTACLES SHOWN BACK-TO-BACK SHALL BE OFFSET. FURNISH AND INSTALL BRIDGING AS REQUIRED TO MAINTAIN DIMENSIONS INDICATED.

E. BATHROOM RECEPTACLE OUTLETS OR RECEPTACLE OUTLETS WITHIN 6'-0" OF A WATER SOURCE SHALL BE GFCI PROTECTED PER NEC 210.8 (A) (1) AND 210.8 (B) (1).

F. PROVIDE 3/4" CONDUIT STUBBED UP TO PLENUM AT ALL COMMUNICATIONS RECEPTACLE LOCATIONS. TENANT'S SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR CABLING AND TERMINATION OF RECEPTACLES.

G. COORDINATE EXACT LOCATION, QUANTITY, & INSTALLATION REQUIREMENTS OF ALL ELECTRICAL EQUIPMENT & RECEPTACLES INCLUDING MILL & COUNTER AREAS WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.

H. MAXIMUM NUMBER OF CONDUCTORS IN A CONDUIT SHALL NOT EXCEED 9, U.N.O..

I. COORDINATE COMPLETE ELECTRICAL INSTALLATIONS SO THAT ALL WORKING CLEARANCES FOR ALL ELECTRICAL EQUIPMENT ARE PROVIDED AS REQUIRED PER NEC 110.26. FURTHERMORE, COORDINATE WITH ALL PERTINENT TRADES SO THAT ELECTRICAL INSTALLATIONS DO NOT PREVENT WORKING AND MAINTENANCE CLEARANCES TO ANY EQUIPMENT PROVIDED BY OTHERS. THIS INCLUDES BUT IS NOT LIMITED TO EQUIPMENT ACCESS PANELS, ACCESS DOORS, CONTROL PANELS, CONTROL EQUIPMENT/DEVICES, SCREENS, ETC.

J. ALL EQUIPMENT LOCATIONS, CONDUIT ROUTING, EQUIPMENT CONNECTIONS AND TERMINATION POINTS ARE DIAGRAMMATIC AND SHOWN FOR REFERENCE ONLY. VERIFY AND COORDINATE EXACT REQUIREMENTS IN FIELD WITH ARCHITECT, AND EQUIPMENT VENDOR.

K. ALL CIRCUITS SHALL HAVE AN INSULATED GROUND WIRE (BOND) SIZED PER NEC #250.122., #12 MINIMUM GROUND (WIRE NOT SHOWN ON DRAWINGS).

L. COORDINATE ALL CONDUIT SIZES WITH APPLICABLE EQUIPMENT/SYSTEM VENDORS PRIOR TO BID AND INSTALLATION.

M. CIRCUITS WIRED AS MULTI-WIRE BRANCH CIRCUITS SHALL HAVE DISCONNECTING MEANS PER NEC 210.4(B).

N. CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY AND ROUTE CONDUIT AND WIRING AS FIELD CONDITIONS PERMIT. INSTALL PULL/JUNCTION BOXES AS REQUIRED BY NEC.

O. IN COMPLIANCE WITH NEC 406.12, ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NONLOCKING-TYPE RECEPTACLES IN BUSINESS OFFICES, CORRIDORS, WAITING ROOMS AND THE LIKE IN CLINICS, MEDICAL AND OUTPATIENT FACILITIES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES.

P. EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE UNLESS LOCATED AND ARRANGED SO THE PURPOSE IS EVIDENT. THE MARKING SHALL INCLUDE THE IDENTIFICATION OF THE CIRCUIT SOURCE THAT SUPPLIES THE DISCONNECTING MEANS. THE MARKING SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. 110.22, NEC.

FLAG NOTES

1. PROVIDE NEW 6'X4'X3/4" FIRE TREATED PLYWOOD TMB AT THIS LOCATION. PAINT TO MATCH ADJ. PARTITIONS. INSTALL WITH THE TOP OF THE BOARD AT 6'-0" A.F.F. CONFIRM DIMENSIONS AND PLACEMENT OF TMB WITH ARCHITECT/OWNERSHIP PRIOR TO INSTALLATION.
2. PROVIDE JUNCTION BOX FOR HARDWIRED CONNECTION TO ELECTRIC DRINKING FOUNTAIN. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH OWNER.
3. MOUNT JUNCTION BOX ABOVE ACCESSIBLE CEILING SPACE FOR POWER TO MAGNETIC-LOCK DOOR SYSTEM. COORDINATE MOUNTING HEIGHT WITH SECURITY VENDOR.
4. PROVIDE WP JUNCTION BOX FOR CONNECTION TO IRRIGATION CONTROLLER.

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DRAWING TITLE
ELECTRICAL POWER - PLAN

DRAWING
E4.01

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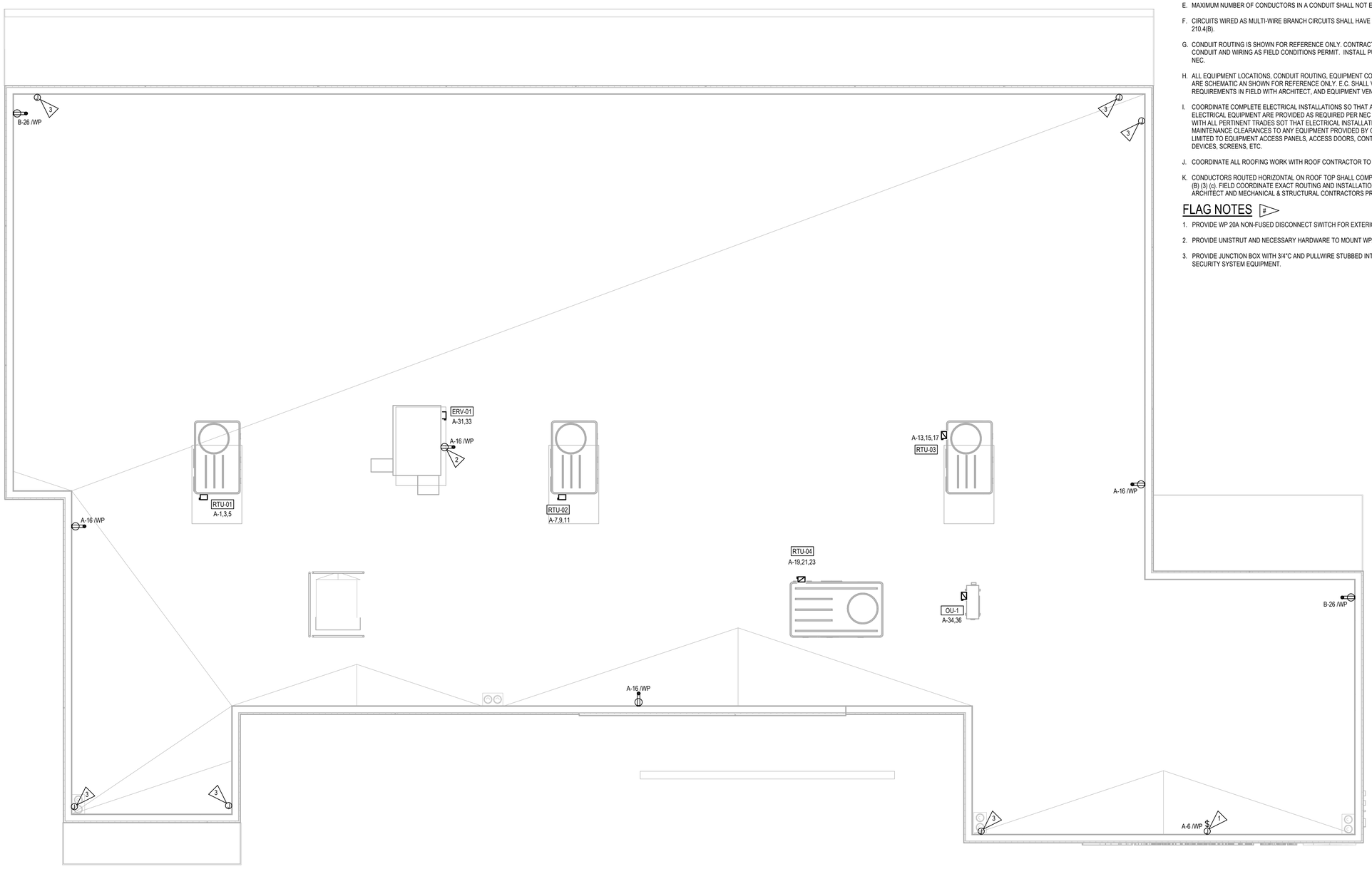

ELECTRICAL POWER - ROOF PLAN

1/4" = 1'-0"

SHEET NOTES

A. ALL EXTERIOR EQUIPMENT SHALL BE WEATHERPROOF, NEMA-3R RATED.

B. ALL EXTERIOR RECEPTACLES SHALL BE GFCI PROTECTED WITH WEATHERPROOF WHILE-IN-USE COVER.

C. COORDINATE EXACT LOCATION, QUANTITY, & INSTALLATION REQUIREMENTS OF ALL ELECTRICAL EQUIPMENT WITH ARCHITECT AND WITH ALL PERTINENT TRADES PRIOR TO ROUGH IN.

D. ALL CIRCUITS SHALL HAVE AN INSULATED GROUND WIRE (BOND) SIZED PER NEC #250.95, #12 MINIMUM GROUND, WIRE NOT SHOWN ON DRAWINGS.

E. MAXIMUM NUMBER OF CONDUCTORS IN A CONDUIT SHALL NOT EXCEED 7, UON.

F. CIRCUITS WIRED AS MULTI-WIRE BRANCH CIRCUITS SHALL HAVE A DISCONNECTING MEANS PER NEC 210.4(B).

G. CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY AND ROUTE CONDUIT AND WIRING AS FIELD CONDITIONS PERMIT. INSTALL PULL/JUNCTION BOXES AS REQUIRED BY NEC.

H. ALL EQUIPMENT LOCATIONS, CONDUIT ROUTING, EQUIPMENT CONNECTIONS AND TERMINATION POINTS ARE SCHEMATIC AN SHOWN FOR REFERENCE ONLY. E.C. SHALL VERIFY AND COORDINATE EXACT REQUIREMENTS IN FIELD WITH ARCHITECT, AND EQUIPMENT VENDOR.

I. COORDINATE COMPLETE ELECTRICAL INSTALLATIONS SO THAT ALL WORKING CLEARANCES FOR ALL ELECTRICAL EQUIPMENT ARE PROVIDED AS REQUIRED PER NEC 110.26. FURTHERMORE, COORDINATE WITH ALL PERTINENT TRADES SOT THAT ELECTRICAL INSTALLATIONS DO NOT PREVENT WORKING AND MAINTENANCE CLEARANCES TO ANY EQUIPMENT PROVIDED BY OTHERS. THIS INCLUDES BUT IS NOT LIMITED TO EQUIPMENT ACCESS PANELS, ACCESS DOORS, CONTROL PANELS, CONTROL EQUIPMENT/ DEVICES, SCREENS, ETC.

J. COORDINATE ALL ROOFING WORK WITH ROOF CONTRACTOR TO MAINTAIN ROOFING WARRANTY.

K. CONDUCTORS ROUTED HORIZONTAL ON ROOF TOP SHALL COMPLY WITH NEC 310.15 (B) (2) (a) AND 310.15 (B) (3) (c). FIELD COORDINATE EXACT ROUTING AND INSTALLATION OF ALL CONDUITS ON ROOF TOP WITH ARCHITECT AND MECHANICAL & STRUCTURAL CONTRACTORS PRIOR TO ROUGH-IN.

FLAG NOTES

1. PROVIDE WP 20A NON-FUSED DISCONNECT SWITCH FOR EXTERIOR BUILDING SIGNAGE.
2. PROVIDE UNISTRUT AND NECESSARY HARDWARE TO MOUNT WP/WR DUPLEX GFCI RECEPTACLE.
3. PROVIDE JUNCTION BOX WITH 3/4"C AND PULLWIRE STUBBED INTO ACCESSIBLE CEILING SPACE FOR SECURITY SYSTEM EQUIPMENT.

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ELECTRICAL POWER - ROOF PLAN

DRAWING
E4.11

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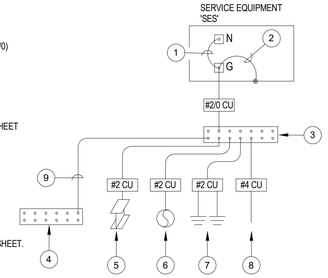
GROUNDING KEY NOTES

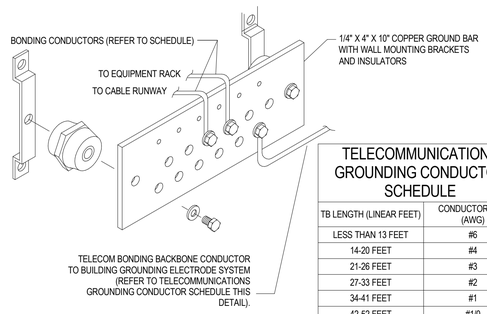
1. 'SES': FACTORY INSTALLED CU MAIN BONDING JUMPER (MINIMUM #2/0)
2. 'SES': #2/0 CU SUPPLY SIDE EQUIPMENT BONDING JUMPER.
3. COPPER GROUND BAR IN MAIN ELECTRICAL ROOM.
4. TYPICAL TELECOM BACKBOARD GROUND BAR. SEE DETAIL 2 THIS SHEET
5. BUILDING STEEL.
6. METAL PIPING.
7. (2) 5/8" Ø 10'L CU CLAD STEEL GROUND RODS, SPACED 10' APART.
8. CONCRETE ENCASED ELECTRODE "UFER". SIZE PER DETAIL 3 THIS SHEET.
9. SIZE PER GROUND BUS BAR DETAIL 2 THIS SHEET.



GROUNDING SYSTEM DETAIL

SCALE: NTS

1



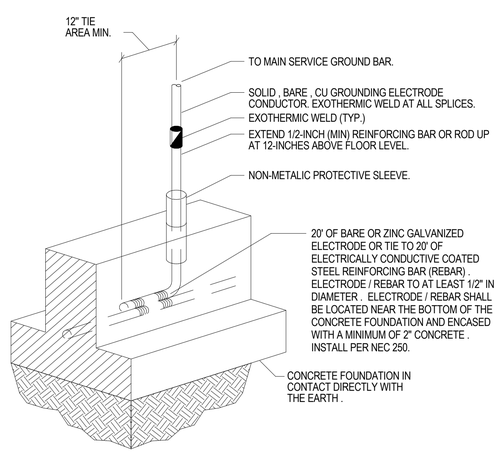
TELECOMMUNICATIONS GROUNDING CONDUCTOR SCHEDULE

TB LENGTH (LINEAR FEET)	CONDUCTOR SIZE (AWG)
LESS THAN 13 FEET	#6
14-20 FEET	#4
21-26 FEET	#3
27-33 FEET	#2
34-41 FEET	#1
42-52 FEET	#1/0
53-66 FEET	#2/0
GREATER THAN 67 FT	#3/0

GROUND BUS BAR ASSEMBLY DETAIL

SCALE: NTS

2



CONCRETE ENCASED ELECTRODE

SCALE: NTS

3

AVAILABLE FAULT CURRENT:

CALCULATIONS

$F = \frac{1.732 \times L \times AFC(1)}{N \times C \times V}$

$M = \frac{1}{1+F}$

$AFC(2) = AFC(1) \times M$

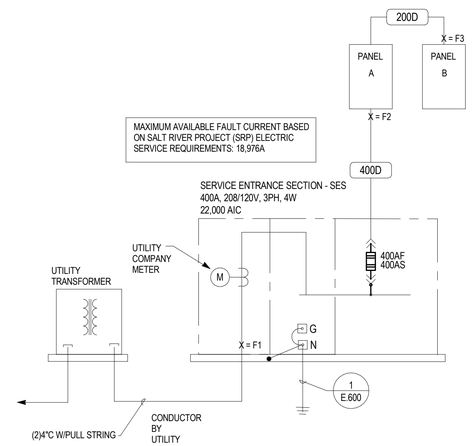
CALCULATIONS

$F1 = \frac{AFC(PRI) \times V(PRI) \times 1.73 \times ...}{100{,}000 \times KVA}$

$M1 = \frac{1}{1+F1}$

$AFC(SEC) = \frac{PRIMARY \times M1 \times AFC(1)}{V\ SECONDARY}$

LAB...	FAULT LOCATION	TYPE OF CALCULATION	Cable	Conduit Type	Conductor Type	AFC(1) or AFC(PRI)	V or V(PRI)	V(SEC)	L	C VALUE	KVA	%Z	N	f or f1	M or M1	AFC(2) or AFC(SEC)
F1	SES	AFC AT END OF A FEEDER				18976	208									18976
F2	SES TO PANEL A	AFC AT END OF A FEEDER	500 KCM	NON-MAGNETIC	COPPER	18976	208		95	26706			1	0.5614	0.6404	12153
F3	SES TO PANEL B	AFC AT END OF A FEEDER	3/O	MAGNETIC	COPPER	12153	208		5	12843			1	0.0394	0.9621	11693



ONE-LINE DIAGRAM

SCALE: NTS

4

ELECTRICAL ONE-LINE SHEET NOTES

A. SWITCHBOARD COMPONENTS, INCLUDING OVERCURRENT PROTECTIVE DEVICES SHALL BE FULLY RATED FOR THE AVAILABLE FAULT CURRENT SHOWN ON FAULT CURRENT CALCULATIONS ON THIS SHEET.

B. CONDUCTOR SIZES BASED ON THHN/XHHW-2, 90° C, 600V, INSULATED, COPPER WIRE APPLIED AT 60° C AMPACITIES FOR SIZES UP TO #1 AWG, AND 75° C, AMPACITIES FOR SIZES LARGER THAN #1.

C. NO DESIGN CHANGES MAY BE MADE TO THE SYSTEM WITHOUT THE PRIOR APPROVAL OF THE DESIGN ENGINEER AND THE ELECTRICAL INSPECTOR.

D. ALL ELECTRICAL SERVICE & SWITCHBOARD COMPONENTS SHALL HAVE PHYSICAL DIMENSIONS THAT WILL PERMIT ITS INSTALLATION IN SPECIFIED AREAS. THE ELECTRICAL CONTRACTOR SHALL ESTABLISH EXACT DIMENSIONS AND ADEQUATE CLEARANCES PRIOR TO ORDERING. REFER TO POWER PLANS FOR LOCATIONS.

E. ALL INTERIOR ELECTRICAL EQUIPMENT ENCLOSURE(S) SHALL BE NEMA 1, AND ALL EXTERIOR ELECTRICAL EQUIPMENT ENCLOSURE(S) SHALL BE NEMA 3R.

F. PROVIDE LABELING ON ALL EQUIPMENT THAT WARNS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER NEC 110.16.

G. IF METAL GAS PIPING IS INSTALLED, PROVIDE A BONDING CONDUCTOR TO METAL GAS PIPING PER NEC 250.104(B) SIZED PER NEC 250.122.

H. ELECTRICAL SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH THE MAXIMUM AVAILABLE FAULT CURRENT AND THE DATE THE CALCULATION WAS PERFORMED PER NEC 110-24.

I. EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE UNLESS LOCATED AND ARRANGED SO THE PURPOSE IS EVIDENT. THE MARKING SHALL INCLUDE THE IDENTIFICATION OF THE CIRCUIT SOURCE THAT SUPPLIES THE DISCONNECTING MEANS. THE MARKING SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. 110.22, NEC.

FEEDER SCHEDULE

COPPER CONDUCTORS				
CODE	AMPS	CONDUIT SIZE	CONDUCTOR SIZE	GROUND CONDUCTOR
200D	200	2-1/2"	(4) #3/0	#6
400D	380	3-1/2"	(4) 500 kCMIL	#2

FEEDER SCHEDULE NOTES:

1 ALL CONDUCTORS ARE COPPER WITH THWN/THHN INSULATION
2 CONDUIT FILL BASED ON RIGID PVC SCHEDULE 40 RACEWAY (MINIMUM SIZE 3/4")
3 ALL GROUNDING CONDUCTOR SIZES BASED ON TABLE 250-122 FOR EQUIPMENT GROUNDING CONDUCTORS.
4 CONDUCTOR AMPACITIES BASED ON TABLE 310-15(B)(16), 75 DEGREE COLUMN, EXCEPT WHERE NOTED.
5 CODE LETTER "C" INDICATES 3 PHASE, 3W OR 1 PHASE, 3W.
6 CODE LETTER "D" INDICATED 3 PHASE, 4W (NO DERATING FOR CURRENT-CARRYING NEUTRAL).
7 CODE LETTER "E" INDICATES 3 PHASE, 4W, 200% N (CONDUCTORSDERATED FROM 90 DEGREE COLUMN FOR CURRENT-CARRYING NEUTRAL).
8 FEEDERS FOR TRANSFORMER SECONDARIES MUST BE EQUAL AMPACITY TO DEVICE UPON WHICH THEY ARE TERMINATED PER NEC 240.21(C).
9 ALUMINUM ALTERNATE ONLY ALLOWED WITH HYPRESS LUGS. OR SADDLE TYPE WITH SET SCREW CONNECTORS.
10 FILL RATIO DENOTES PERCENTAGE OF MAXIMUM ALLOWABLE FILL FOR PVC CONDUIT AND TYPE THHN AS DENOTED.

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CONSTRUCTION DOCUMENTS

Revision Schedule		
No.	Date	Description

ART PROJECT NO. 22025

DATE 04.21.2023

Registered Professional Engineer (Electrical) 46291 STEPHEN A. SANDERS Date Signed 10.05.2023 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL ONE-LINE DIAGRAM

DRAWING
E6.00

PANEL A SCHEDULE

LOCATION: **LAUNDRY 200**
GROUNDING: **EQUIPMENT GROUND BUS**

FED FROM: **SES**

VOLTAGE: **120/208 Wye 3-PH. 4-WIRE**
TYPE: **BOLT-ON**
MOUNTING: **RECESSED**
SKIRTS: **NONE**
A.I.C. RATING: **22,000 AMPS**

400 A MLO

CKT #	ITEM	NOTE	AMPS	POLE	A		B		C		POLE	AMPS	NOTE	ITEM	CKT #
1	RTU-01		50 A	3	3933 VA	320 VA					1	20 A	LCR	LTG - EXTERIOR BUILDING	2
3	--	--	--	--			3933 VA	414 VA			1	20 A	LCR	LTG - SITE POLES	4
5	--	--	--	--					3933 VA	1200 VA	1	20 A	LCR	EXTERIOR BUILDING SIGNAGE	6
7	RTU-02		50 A	3	3933 VA	758 VA					1	20 A		LTG - FRONT OFFICES+CORRIDOR+FOOD PREP	8
9	--	--	--	--			3933 VA	1005 VA			1	20 A		LTG - CLASSROOM 3+EHS	10
11	--	--	--	--					3933 VA	1122 VA	1	20 A		LTG - CLASSROOM 1+2	12
13	RTU-03		50 A	3	3933 VA	405 VA					1	20 A	LCK	EMERGENCY LIGHTING INVERTER - INV-1	14
15	--	--	--	--			3933 VA	720 VA			1	20 A		RCPTS - ROOF	16
17	--	--	--	--					3933 VA	720 VA	1	20 A		RCPTS - FIRE RISER+EXTERIOR EAST/WEST WALLS	18
19	RTU-04		60 A	3	4599 VA	720 VA					1	20 A		RCPTS - EXTERIOR NORTH WALL	20
21	--	--	--	--			4599 VA	--			1	--		SPACE	22
23	--	--	--	--					4599 VA	--	1	--		SPACE	24
25	EWH-01		90 A	3	7998 VA	--					1	--		SPACE	26
27	--	--	--	--			7998 VA	--			1	--		SPACE	28
29	--	--	--	--					7998 VA	--	1	--		SPACE	30
31	ERV-01		25 A	2	1830 VA	--					1	--		SPACE	32
33	--	--	--	--			1830 VA	1480 VA			2	25 A		OU-1	34
35	CLOTHES WASHER - LAUNDRY		20 A	1					1500 VA	1480 VA	--	--	--	--	36
37	CLOTHES DRYER - LAUNDRY	A	30 A	2	2500 VA	10393 VA					3	200 A		PANELBOARD - B	38
39	--	--	--	--			2500 VA	8272 VA			--	--	--	--	40
41	SPACE		--	1					--	9560 VA	--	--	--	--	42
				Total Load:	41284 VA		40595 VA		39862 VA						
				Total Amps:	**345 A**		**339 A**		**332 A**						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	4024 VA	125.00%	5030 VA		
Motor	55818 VA	106.18%	59267 VA	**Total Conn. Load:**	121740 VA
Other	45772 VA	100.00%	45772 VA	**Total Est. Demand:**	123115 VA
Receptacle	16160 VA	80.94%	13080 VA	**Total Conn. Current:**	338 A
				Total Est. Demand Current:	342 A

Notes:
A) PROVIDE 2#10, 1#10 GND, IN 3/4"C LCK) PROVIDE LOCK-ON DEVICE. LCR) ROUTE BRANCH CIRCUIT THROUGH LIGHTING CONTROL PANEL.

PANEL B SCHEDULE

LOCATION: **LAUNDRY 200**
GROUNDING: **EQUIPMENT GROUND BUS**

FED FROM: **A**

VOLTAGE: **120/208 Wye 3-PH. 4-WIRE**
TYPE: **BOLT-ON**
MOUNTING: **RECESSED**
SKIRTS: **NONE**
A.I.C. RATING: **22,000 AMPS**

200 A MLO

CKT #	ITEM	NOTE	AMPS	POLE	A		B		C		POLE	AMPS	NOTE	ITEM	CKT #
1	RCPTS - EHS CLASSROOM		20 A	1	1260 VA	1440 VA					1	20 A		RCPTS - CLASSROOM 1	2
3	COPIER/PRINTER - COPY ROOM		20 A	1			1200 VA	1440 VA			1	20 A		RCPTS - CLASSROOM 2	4
5	RCPT - COPY ROOM COUNTER A		20 A	1					1200 VA	1440 VA	1	20 A		RCPTS - CLASSROOM 3	6
7	RCPT - COPY ROOM COUNTER B		20 A	1	1200 VA	1000 VA					1	20 A		EDF'S - CLASSROOM 1+2	8
9	RCPT - COPY ROOM COUNTER C		20 A	1			1200 VA	360 VA			1	20 A		SERVER - IT RM	10
11	RCPTS - DIRECTORS OFFICE+AREA MANAGER		20 A	1					1080 VA	1000 VA	1	20 A		EDF'S - EHS CLASSROOM+CLASS 3	12
13	RCPTS - FSS OFFICE+AREA MANAGER		20 A	1	1080 VA	1200 VA					1	20 A	LCK	EDF - EXTERIOR A	14
15	RCPTS - LAUNDRY+CORRIDOR		20 A	1			900 VA	1200 VA			1	20 A	LCK	EDF - EXTERIOR B	16
17	REFRIGERATOR - FOOD PREP	GF	20 A	1					1500 VA	1600 VA	1	20 A	GF	HOT BOX 4 - FOOD PREP	18
19	HOT BOX 1 - FOOD PREP	GF	20 A	1	240 VA	1600 VA					1	20 A	GF	MICROWAVE - FOOD PREP	20
21	HOT BOX 2 - FOOD PREP	GF	20 A	1			240 VA	1500 VA			1	20 A	GF	SMALL APPLIANCE 1 - FOOD PREP	22
23	HOT BOX 3 - FOOD PREP	GF	20 A	1					240 VA	1500 VA	1	20 A	GF	SMALL APPLIANCE 2 - FOOD PREP	24
25	SECURITY SYSTEM		20 A	1	1200 VA	360 VA					1	20 A		RCPTS - MISTING SYSTEM	26
27	SPARE		20 A	1			0 VA	360 VA			1	20 A		IRRIGATION CONTROLLER	28
29	SPARE		20 A	1					0 VA	0 VA	1	20 A		SPARE	30
31	SPACE		--	1	--	--					1	--		SPACE	32
33	SPACE		--	1			--	--			1	--		SPACE	34
35	SPACE		--	1					--	--	1	--		SPACE	36
37	SPACE		--	1	--	--					1	--		SPACE	38
39	SPACE		--	1			--	--			1	--		SPACE	40
41	SPACE		--	1					--	--	1	--		SPACE	42
				Total Load:	10393 VA		8272 VA		9560 VA						
				Total Amps:	**88 A**		**69 A**		**81 A**						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	19222 VA	100.00%	19222 VA		
Receptacle	9000 VA	100.00%	9000 VA	**Total Conn. Load:**	28197 VA
				Total Est. Demand:	28197 VA
				Total Conn. Current:	78 A
				Total Est. Demand Current:	78 A

Notes:
GF) PROVIDE GFCI TYPE CIRCUIT BREAKER LCK) PROVIDE LOCK-ON DEVICE.

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Registered Professional Engineer (Electrical) CERTIFICATE NO. 46291 STEPHEN A. SANDERS Date Signed 10.02.2023 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL PANELBOARD SCHEDULES

DRAWING
E7.00

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