

ELECTRICAL SYMBOL SCHEDULE

PLEASE NOTE:
THIS IS A MASTER ELECTRICAL SYMBOL SCHEDULE. ALL SYMBOLS MAY NOT APPLY DIRECTLY TO THIS JOB. ALL MOUNTING HEIGHTS SHOWN TO CENTERLINE OF DEVICE, UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS OR PLAN NOTES FOR MANUFACTURERS AND PART NUMBERS.

- LUMINAIRE (NUMBER INDICATES CIRCUIT, CAPITAL LETTER INDICATES LUMINAIRE TYPE, LOWER CASE LETTER INDICATES SWITCHING CONTROL) TYPICAL FOR ALL LUMINAIRES
- WALL MOUNTED LUMINAIRE
- LUMINAIRE
- STRIP LUMINAIRE
- LUMINAIRE WITH EMERGENCY BATTERY PACK OR ON EMERGENCY LIGHTING CIRCUIT (BATTERY PACK SHALL NOT BE SWITCHED). IF NOT ON EMERGENCY CIRCUIT, SHADED LUMINAIRE INDICATES UNSWITCHED NIGHT LIGHT
- LIGHTING TRACK WITH LUMINAIRES
- POLE MOUNTED AREA LUMINAIRE WITH CONCRETE BASE
- POST TOP MOUNTED AREA LUMINAIRE WITH CONCRETE BASE
- FLOODLIGHT LUMINAIRE, SINGLE OR DOUBLE LAMP LUMINAIRE
- SINGLE FACE, UNIVERSAL MOUNT EXIT LIGHT (WITH BATTERY, UNO)
- DOUBLE FACE, UNIVERSAL MOUNT EXIT LIGHT (WITH BATTERY, UNO)
- EMERGENCY BATTERY PACK LUMINAIRE, WALL MOUNT AT 12" BELOW CEILING UNO
- JUNCTION BOX (4" SQUARE UNO), DEPTH AS REQUIRED
- ELECTRICAL CONNECTION OR POINT OF TERMINATION
- JUNCTION BOX WITH FLEX CONNECTION TO LUMINAIRE OR EQUIPMENT
- FLUSH FLOOR JUNCTION BOX WITH COVER PLATE UNO
- TOGGLE SWITCHES - SINGLE POLE/SINGLE THROW, THREE WAY, +44" UNO
- DUAL TECHNOLOGY OCCUPANCY SENSOR, +44" UNO
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
- DIMMER SWITCH, 1800W, +44" UNO
- FUSIBLE SWITCH WITH SWITCH ADAPTER AND FUSE AS REQUIRED
- KEYED SWITCH, +44" UNO
- MANUAL MOTOR STARTING SWITCH WITH OVERLOAD PROTECTION
- SINGLE POLE TOGGLE SWITCH WITH PILOT LIGHT, +44" UNO
- THERMOSTAT OUTLET, FURNISH 1/2" EG TO UNIT CONTROLLED (SEE MECHANICAL DRAWINGS)
- TIMECLOCK, NUMBER INDICATES QUANTITY OF POLES
- CIRCUIT BREAKER, NUMBER INDICATES QUANTITY OF POLES (E = ELECTRICALLY HELD, M = MECHANICALLY HELD)
- MAGNETIC STARTER AND CONTROLS FURNISHED BY OTHERS, INSTALLED BY ELECTRICAL CONTRACTOR
- MAGNETIC STARTER AND CONTROLS FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, NUMBER INDICATES RECOMMENDED NEMA SIZE, VERIFY WITH EQUIPMENT MANUFACTURER
- COMBINATION FUSIBLE SWITCH AND MAGNETIC STARTER WITH CONTROLS FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, NUMBER INDICATES RECOMMENDED NEMA SIZE, VERIFY WITH EQUIPMENT MANUFACTURER
- DISCONNECT SWITCH (HEAVY DUTY) FUSED PER EQUIPMENT MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS (NUMBERS INDICATE SWITCH AMPACITY/NUMBER OF POLES)
- MOTOR
- SURFACE MOUNTED PANEL, LETTER INDICATES PANEL DESIGNATION
- FLUSH MOUNTED PANEL, LETTER INDICATES PANEL DESIGNATION
- CONDUIT RUN CONCEALED IN CEILING OR WALL
- CONDUIT TURNED UP OR TOWARDS OBSERVER. SEE APPROPRIATE PLAN FOR CONTINUATION
- CONDUIT TURNED DOWN OR AWAY FROM OBSERVER. SEE APPROPRIATE PLAN FOR CONTINUATION
- CONDUIT RUN UNDER RAISED COMPUTER FLOOR OR UNDERGROUND
- CONDUIT STUB OUT - CAP AND MARK WITH APPROVED MARKER
- CONDUIT HOME RUN TO PANEL OR AS NOTED, HASH MARKS INDICATE QUANTITY OF CONDUCTORS, NO HASH MARKS INDICATE TWO CONDUCTORS, PLUS GROUND(S). (NOTE: WIRE SIZE AND CONDUIT SHOWN AT HOME RUN IS MINIMUM SIZE FOR ENTIRE CIRCUIT; #12 MINIMUM). ALL CIRCUITS SHALL HAVE AN INSULATED GROUND WIRE SIZED PER THE NEC, #12 MINIMUM. EACH ISOLATED CIRCUIT SHALL HAVE A SEPARATE INSULATED GROUND WIRE SIZED PER THE NEC AND A SEPARATE NEUTRAL. GROUND WIRE(S) ARE NOT SHOWN ON DRAWINGS
- GROUND - EXTEND AND CONNECT TO BUILDING GROUND
- TELEPHONE TERMINAL BOARD (TTB) 4' X 8' X 3/4" PLYWOOD OR SIZED AS SHOWN WITH A #6 CU GROUND
- FLUSH FLOOR TELEPHONE OUTLET
- TELEPHONE OUTLET +11" TO CENTERLINE UNO, WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE
- DATA OUTLET +11" TO CENTERLINE UNO, WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE
- TELE/DATA COMBINATION OUTLET +11" TO CENTERLINE UNO, WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE
- SINGLE CONVENIENCE RECEPTACLE, +11" UNO
- DUPLEX CONVENIENCE RECEPTACLE, +11" UNO
- WEATHERPROOF, WEATHER RESISTANT CONVENIENCE RECEPTACLE INSTALLED IN ACCORDANCE WITH THE NEC
- DUPLEX CONVENIENCE RECEPTACLE, +4" ABOVE COUNTER TOP BACKSPLASH
- ISOLATED GROUND TYPE DUPLEX RECEPTACLE, +11" UNO
- GROUND FAULT CIRCUIT INTERRUPTING DUPLEX RECEPTACLE OUTLET, +11" UNO
- GROUND FAULT CIRCUIT INTERRUPTING DUPLEX RECEPTACLE OUTLET MOUNTED ABOVE COUNTER, COORDINATE MOUNTING HEIGHT WITH OWNER
- SURGE SUPPRESSION TYPE DUPLEX RECEPTACLE, +11" UNO

- SPLIT WIRED RECEPTACLE, +11" UNO
- 4-FLEX CONVENIENCE RECEPTACLE, +11" UNO
- FLUSH FLOOR DUPLEX CONVENIENCE RECEPTACLE
- SPECIAL PURPOSE OUTLET, NEMA TYPE AS NOTED, PROVIDE MATCHING CORD AND CAP AS REQUIRED, +11" UNO
- CLOCK OUTLET, +84" UNO
- TELE-POWER POLE WITH POWER AND TELECOMMUNICATION RACEWAY
- MULTI OUTLET ASSEMBLY WITH OUTLETS SPACED AT 24" ON CENTER, +11" UNO

FIRE ALARM

- MANUAL PULL STATION, +44" UNO
- SMOKE DETECTOR, CEILING MOUNTED UNO
- DUCT SMOKE DETECTOR, EXACT LOCATION TO BE DETERMINED BY CONTRACTOR PER NFPA (R = RETURN, S = SUPPLY)
- DUCT DETECTOR REMOTE ALARM INDICATING LIGHT, CEILING MOUNTED UNO
- HEAT DETECTOR, 135° CEILING MOUNTED UNO
- WATER FLOW DETECTOR
- TAMPER SWITCH
- ELECTROMAGNETIC DOOR HOLDER
- HORN, +80" TO BOTTOM OF DEVICE UNO
- STROBE, +80" TO BOTTOM OF DEVICE UNO
- HORN/STROBE COMBINATION, +80" TO BOTTOM OF DEVICE UNO
- FIRE ALARM CONTROL PANEL (FACP)
- FIRE ALARM ANNUCIATOR PANEL (FAAP)
- FIREMANS PHONE CABINET AND HANDSET, +44" UNO
- FIREMANS PHONE OUTLET, +44" UNO
- BEAM TYPE SMOKE DETECTOR - TRANSMITTER
- BEAM TYPE SMOKE DETECTOR - RECEIVER
- ZONE ADDRESSABLE MODULE

AUDIO/VISUAL

- SPEAKER VOLUME CONTROL, +44" UNO
- CEILING MOUNTED SPEAKER
- WALL MOUNTED SPEAKER WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE, +80" TO BOTTOM OF DEVICE UNO
- VIDEO OUTLET WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE, +11" UNO
- INTERCOM SYSTEM HANDSET WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE, +44" UNO
- INTERCOM SYSTEM CALL SWITCH WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE, +44" UNO
- INTERCOM SYSTEM HANDSET WITH VISUAL DISPLAY WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE, +11" UNO
- MICROPHONE OUTLET WITH 3/4" EG STUBBED INTO ACCESSIBLE CEILING SPACE, +44" UNO
- FLUSH FLOOR MICROPHONE OUTLET

SECURITY

- CEILING MOUNTED 360° MOTION SENSOR
- ALARM HORN WALL MOUNTED AT 80" TO BOTTOM OF DEVICE UNO
- SECURITY SYSTEM CLOSED CIRCUIT TELEVISION CAMERA
- SECURITY CARD READER
- SECURITY PANIC BUTTON
- PUSH BUTTON FOR AUTOMATIC DOOR OPENER

ABBREVIATIONS

A	AMPERE	KCM	KCMIL, MCM, THOUSAND CIRCULAR MILS
AFG	AVAILABLE FAULT CURRENT	KVA	KILOVOLT AMPERE
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AFB	ABOVE FINISHED GRADE	LTG	LIGHTING
AIC	AMPERE INTERRUPTING CAPACITY	MBJ	MAIN BONDING JUMPER
AL	ALUMINUM	MCB	MAIN CIRCUIT BREAKER
ARCH	ARCHITECT	MDF	MAIN DISTRIBUTION FRAME
C	CONDUIT	MH	MANHOLE
CB	CIRCUIT BREAKER	N	NEUTRAL
CKT	CIRCUIT	NEC	NATIONAL ELECTRICAL CODE
CT	CURRENT TRANSFORMER	NF	NON-FUSED
CU	COPPER	NL	NIGHT LIGHT
CWB	COLD WATER BOND	PNL	PANEL
DB	DIRECT BURIED	SES	SERVICE ENTRANCE SECTION
DISC	DISCONNECT SW	SW	SWITCH
DN	DOWN	SWBD	SWITCHBOARD
EC	EMPTY CONDUIT	TYP	TYPICAL
EDF	ELECTRIC DRINKING FOUNTAIN	UC	UNDER COUNTER
EF	EXHAUST FAN	UNO	UNLESS NOTED OTHERWISE
FBO	FURNISHED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	VP	VANDALPROOF
GF	GROUND FAULT CIRCUIT INTERRUPTER	WH	WATER HEATER
GFIC	GROUND FAULT CIRCUIT INTERRUPTER	WP	WEATHER-PROOF (NEMA-3R UNO)
GND	GROUND	WR	WEATHER-RESISTANT
G	GROUND	X	EXISTING TO REMAIN
IT	INFORMATION TECHNOLOGY	XFMR	TRANSFORMER
		XR	EXISTING TO BE REMOVED
		XRR	EXISTING TO BE REMOVED AND RELOCATED

ELECTRICAL SPECIFICATIONS

I. GENERAL

- A. ABIDE BY THE GENERAL CONTRACT WITH THE OWNER IN ALL RESPECTS, INCLUDING THE FOLLOWING:
 1. REQUESTS FOR INFORMATION (RFI), COMPLETELY DESCRIBE THE REASON FOR RFI, AND OFFER RECOMMENDATION(S) FOR RESOLUTION OF THE ISSUE AT HAND.
 2. EQUIPMENT AND MATERIAL SUBMITTALS/SHOP DRAWINGS, WHERE OPTIONS ARE OFFERED BY MANUFACTURER, CLEARLY INDICATE WHICH ARE INTENDED FOR THIS PROJECT.
 3. ENGINEER WILL NOT BE RESPONSIBLE FOR "UPDATING" CONTRACT DOCUMENTS TO REFLECT CONTRACTOR-INITIATED CHANGES.
- B. ALL MATERIALS SHALL BE NEW AND MUST CARRY THE UNDERWRITER'S LABORATORIES LISTINGS COVERING THE PURPOSE FOR WHICH THEY ARE USED, INDIVIDUAL ARTICLES AS WELL AS ENTIRE ASSEMBLIES, IN ADDITION TO MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND REGULATIONS.
- C. THE CURRENT EDITIONS OF THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS AND CODES ARE MINIMUM REQUIREMENTS:
 1. NATIONAL ELECTRICAL CODE (NEC).
 2. LOCAL CITY, STATE AND COUNTY CODE.
 3. UNDERWRITERS LABORATORIES INCORPORATED (UL) STANDARDS.
 4. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS.
 5. AMERICAN STANDARDS ASSOCIATIONS.
 6. AMERICANS WITH DISABILITIES ACT (ADA).
 7. NATIONAL ENERGY POLICY ACT.
- D. GUARANTEE ALL MATERIALS AND WORKMANSHIP PROVIDED OR PERFORMED IN COMPLETION OF THIS PROJECT FOR A PERIOD OF AT LEAST ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. ANY DEFECTS IN MATERIAL OR WORKMANSHIP DEVELOPING IN THIS PERIOD SHALL BE CORRECTED AT NO EXPENSE TO THE OWNER.
- E. ALL ELECTRICAL RACEWAYS, DEVICES AND EQUIPMENT ARE SHOWN DIAGRAMMATICALLY. DO NOT SCALE THE DRAWINGS. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS WITH ARCHITECT/OWNER PRIOR TO ANY ROUGH-IN.
- F. PLAN AND INSTALL WORK IN SUCH A MANNER AS TO PREVENT OBSTRUCTIONS AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. CONSULT GENERAL CONTRACT DRAWINGS FOR CONDITIONS AFFECTING THIS WORK AND VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. NOTIFY ENGINEER IMMEDIATELY OF POSSIBLE CONFLICTS, WHERE INTERFERENCES WITH STRUCTURAL, MECHANICAL OR OTHER FEATURES EXIST, OR WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN LOCATIONS AND ARRANGEMENT OF INDICATED EQUIPMENT, CONDUIT, OUTLETS OR WIRING. CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT EXTRA COST TO OWNER, ARCHITECT OR ENGINEER.
- G. FOR ANY EXISTING CIRCUIT THAT IS SHOWN TO BE EXTENDED AND/OR DISTURBED THEN RE-ESTABLISHED IN ANY WAY, MATCH EXISTING MATERIALS IN SIZE, TYPE AND INSULATION.
- H. RACEWAYS SHALL NOT BE ATTACHED TO, NOR SUPPORTED BY, ANY WIRE OR CABLE WHICH IS USED TO SUSPEND CEILING GRID.
- I. DO NOT INTERRUPT OR REMOVE ANY EXISTING CIRCUITS OR EQUIPMENT UNLESS NOTED OTHERWISE ON PLANS. ANY DAMAGED OR DISRUPTED CIRCUITS OR EQUIPMENT SHALL BE RESTORED TO LIKE-NEW CONDITION AT NO ADDITIONAL COST TO OWNER, ARCHITECT OR ENGINEER.
- J. ALL PENETRATIONS OF FIRE-RESISTIVE FLOORS OR RATED WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORIES LISTINGS FOR THROUGH-PENETRATION FIRE STOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FURNISHED BY THE MANUFACTURER OF THE FIRE STOP MATERIAL, WHICH SHOW COMPLETE CONFORMANCE TO THE UL STANDARD. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION, WITH ALL VARIABLES DEFINED.
- K. FOR ENTIRE CONTRACT AREA, FIELD VERIFY SOURCE OF ALL LIGHTING AND POWER CIRCUITS, IDENTIFYING BY PANEL AND POLE NUMBERS, WHETHER EXISTING OR NEW.
- L. EXISTING CONDUIT AND JUNCTION/PULL BOXES MAY BE REUSED WHERE PRACTICAL. ANY REUSED ITEMS SHALL BE PROPERLY SUPPORTED AND SHALL MEET ALL OTHER REQUIREMENTS AS IF NEW.
- M. CONDUCTORS REMOVED IN THE COURSE OF DEMOLITION SHALL NOT BE REUSED.

II. MATERIALS

- A. RACEWAY
 1. ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
 2. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN STUD WALLS OR ABOVE CEILINGS. FITTINGS SHALL BE STEEL COMPRESSION OR SET SCREW TYPE WITH INSULATED THROAT CONNECTORS.
 3. FITTINGS FOR ALL CONDUITS EXPOSED TO WEATHER SHALL BE APPROVED BY AHJ FOR THE APPLICATION.
 4. FLEXIBLE METAL CONDUIT SHALL BE UTILIZED FOR ALL CONNECTIONS TO VIBRATING EQUIPMENT SUCH AS MOTORS (MINIMUM OF 2'-0" - MAXIMUM OF 6'-0") AND CONNECTION TO LAY-IN TYPE LIGHT FIXTURES.
 5. CONDUIT (INCLUDING EMT) SHALL BE SIZED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE. MINIMUM SIZE SHALL BE 3/4". FACTORY FURNISHED FLEX TAILS FOR LUMINAIRES MAY BE 3/8".
 6. PROVIDE EXPANSION-TYPE FITTINGS FOR ALL CONDUITS WHICH CROSS EXPANSION JOINTS.
 7. OUTLET BOXES SHALL BE STEEL WITH APPROPRIATE MUD RINGS REQUIRED FOR THE USE INTENDED.
 8. TYPE MC (METAL-CLAD) CABLE MAY BE UTILIZED WHERE ALLOWABLE BY THE NEC AND LOCAL CODES.
9. WHEN EXPOSED TO PHYSICAL DAMAGE, UNLESS NOTED OTHERWISE, RACEWAYS BELOW 8'-0" AFF SHALL BE RIGID GALVANIZED STEEL.
- B. CONDUCTORS
 1. INSULATION SHALL BE TYPE THHN/THWN FOR BRANCH CIRCUITS, AND XHHW FOR FEEDERS.
 2. MINIMUM BRANCH CIRCUIT SIZE SHALL BE #12 AWG, COPPER
 3. FEEDERS SHALL BE COPPER UNLESS NOTED OTHERWISE
 4. FOLLOWING COLOR CODING SHALL BE UTILIZED:

	120/208V, 3ø, 4W	120/240V, 1ø, 3W	277/480V, 3ø, 4W
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C	BLUE		YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN
- C. WIRING DEVICES
 1. DEVICES SHALL BE SPECIFICATION GRADE UNLESS NOTED OTHERWISE.
 2. PLATE COLOR TO BE SELECTED BY ARCHITECT/OWNER.
- D. LUMINAIRES
 1. PROVIDE ALL LUMINAIRES WIRED AND CONNECTED. PROVIDE RECESSED UNITS WITH PROPER PLASTER FRAMES, HANGERS, ETC., AS REQUIRED FOR CEILING TYPE IN WHICH THEY ARE MOUNTED.
 2. PROVIDE LAMPS, DRIVERS AND APPURTENANCES FOR ALL LUMINAIRES AS SCHEDULED.
- E. PANELBOARDS
 1. UNLESS NOTED OTHERWISE, PANELBOARDS SHALL BE PLUG-IN CIRCUIT BREAKER TYPE, AMPACITY AND NUMBER OF POLES AS INDICATED.
 2. PROVIDE A TYPEWRITTEN AND DATED CIRCUIT INDEX CARD BEHIND CLEAR PLASTIC COVER HELD WITH METAL FRAME ON INSIDE OF DOOR.
- F. IDENTIFICATION
 1. PROVIDE ENGRAVED 3-LAYER LAMINATED PLASTIC NAMEPLATES ON ALL SWITCHGEAR, DISTRIBUTION AND PANELBOARDS, TRANSFORMERS, CONTROL CABINETS, AND DISCONNECT SWITCHES RATED 100 AMP AND GREATER.
 - a. WHITE LETTERS ON BLACK BACKGROUND FOR NORMAL POWER.
 - b. WHITE LETTERS ON RED BACKGROUND FOR STANDBY OR EMERGENCY POWER.
 2. MARK WIRES WITH ADHESIVE LABELS MADE FOR THE PURPOSE (3M OR EQUAL).
 3. LAY 4" WIDE PLASTIC TAPE WITH APPROPRIATE WARNING LEGEND MINIMUM 6" ABOVE BURIED FEEDERS. TAPE SHALL BE YELLOW, DETECTABLE.
- III. EXECUTION
 - A. WORK SHALL BE PERFORMED BY SKILLED CRAFTSMEN IN ACCORDANCE WITH ALL ORDINANCES AND REGULATIONS. CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS AND LICENSES UNLESS NOTED OTHERWISE.
 - B. COOPERATE WITH OTHER TRADES SO THAT THE INSTALLATION OF THE ELECTRICAL OUTLETS AND EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, FIXTURES, AND OTHER EQUIPMENT LOCATIONS SHALL BE CHECKED WITH OTHER TRADES TO AVOID CONFLICT WITH PIPING, DUCTWORK, STEEL, BEAMS, OR OTHER OBSTRUCTIONS.
 - C. USE INDELIBLE BLACK PEN (SHARPIE OR EQUAL) TO MARK COVERS OF JUNCTION BOXES, GUTTERS, PULL BOXES, ETC. TO IDENTIFY CONTENTS ACCORDING TO CIRCUIT NUMBER AND PANEL ETC. IN FINISHED AREAS, MARKINGS SHALL BE ON INSIDE OF COVER.
 - D. ALL EXPOSED CONDUIT (INCLUDING CONDUIT INSTALLED IN CEILING PLENUMS) SHALL BE ROUTED PARALLEL OR PERPENDICULAR WITH THE BUILDING WALLS. SUPPORT CONDUIT AS REQUIRED BY NEC.
 - E. COORDINATE ALL DEVICE AND LIGHTING FIXTURE FINISHES WITH ARCHITECT PRIOR TO PURCHASING ANY EQUIPMENT.
 - F. ALL LUMINAIRES, LAMPS AND LENSES SHALL BE THOROUGHLY CLEANED PRIOR TO FINAL ACCEPTANCE.
 - G. PROVIDE ALL ELECTRICAL WIRING, RACEWAYS, OUTLETS AND JUNCTION BOXES, MOTOR STARTERS, DISCONNECT AND CONTROLS FOR EQUIPMENT FURNISHED UNDER OTHER SECTIONS, UNLESS NOTED OTHERWISE.
 - H. THE TERM "PROVIDE" SHALL BE INTERPRETED TO MEAN "FURNISH AND INSTALL" UNLESS SPECIFICALLY NOTED OTHERWISE.
 - I. MAINTAIN AT THE JOB SITE A PAPER SET OF DRAWINGS, MARKED IN RED WITH ALL SIGNIFICANT DEVIATIONS FROM ORIGINAL CONTRACT. SUCH CHANGES SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, RFI RESPONSES, FIELD CHANGES AND APPROVED CHANGE ORDERS.
 - J. FOR THE PURPOSES OF THESE SPECIFICATIONS AND NOTES ON THE DRAWINGS, REFERENCES TO "CONDUIT" SHALL BE UNDERSTOOD TO MEAN EMT ALSO, WITH RESPECT TO THE MANNER OF INSTALLATION.

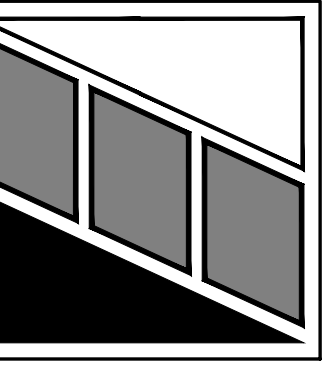
GENERAL SCOPE OF WORK

ELECTRICAL WORK TO SUPPORT MECHANICAL EQUIPMENT REPLACEMENT INCLUDING REMOVAL OF EXISTING EQUIPMENT. REMODEL WORK INCLUDES NEW FEEDER & CONNECTION TO NEW COOLING TOWER.

ELECTRICAL DRAWING INDEX

DWG No.	TITLE
E1	SYMBOLS & SCHEDULES
E2	POWER DEMOLITION FLOOR PLAN
E3	POWER REMODEL FLOOR PLAN
E4	ONE-LINE DIAGRAM & PANEL SCHEDULES

PEARSON ENGINEERING ASSOCIATES INC.
 8825 N. 23RD AVENUE
 PHOENIX, ARIZONA 85021
 PH: (602) 264-0807
 SUITE 11
 FAX: (602) 274-7542



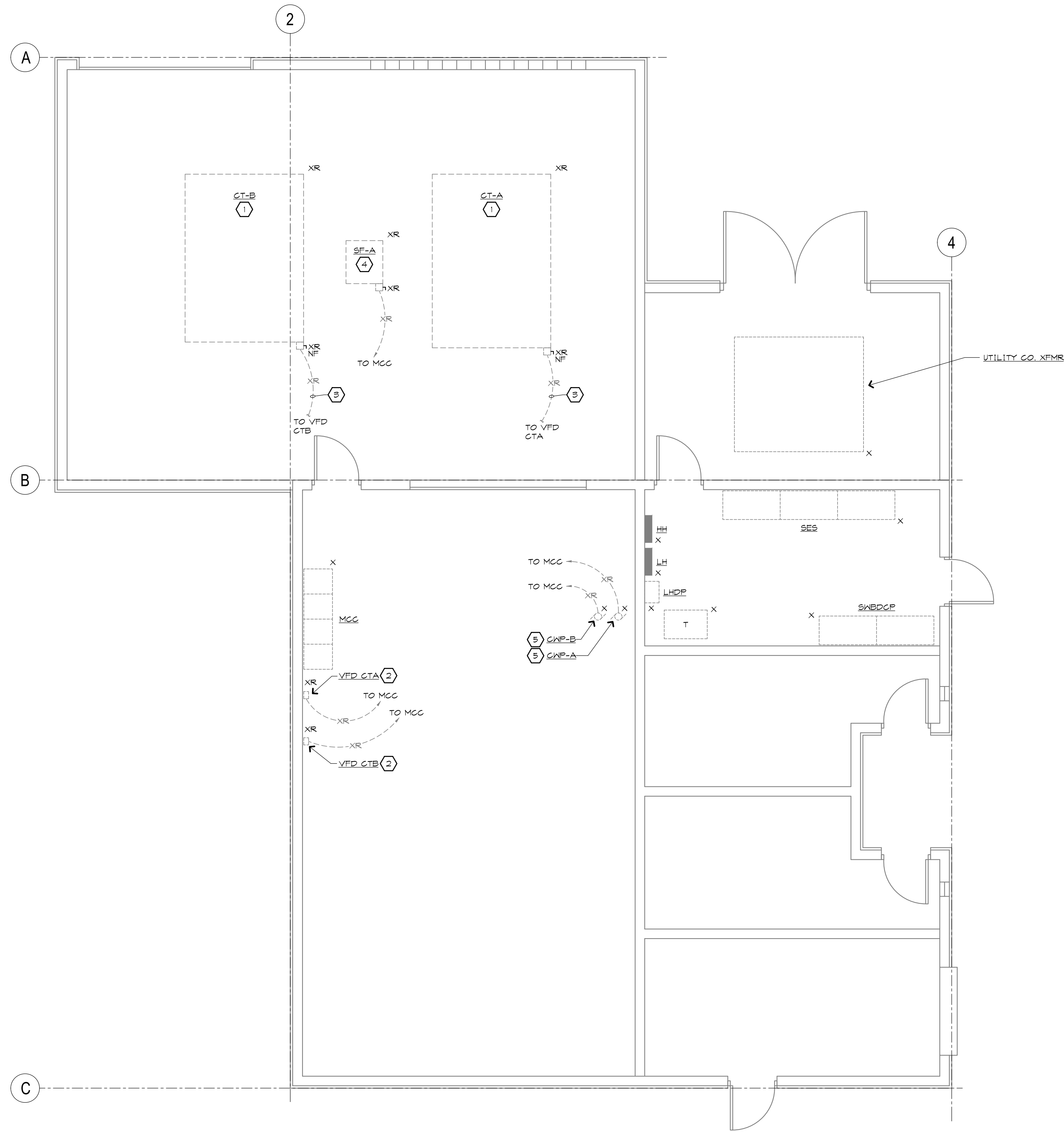
REVISIONS

 Expires 12 / 31 / 24

PALM VALLEY ELEMENTARY SCHOOL
COOLING TOWER REPLACEMENT
2801 N. 135TH AVE
GOODYEAR, AZ 85395

DATE	01/28/22
JOB No.	2022013
DRAWN	ADD
CHECKED	RON
APPROVED	JMP

SHEET TITLE
SYMBOLS & SCHEDULES



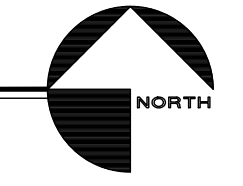
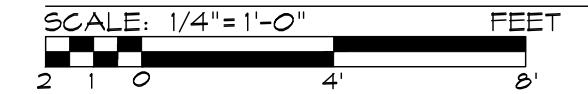
KEYNOTES

- ① EXISTING COOLING TOWER TO BE REMOVED IN ITS ENTIRETY. COORDINATE WITH MECHANICAL PRIOR TO COMMENCING WORK.
- ② EXISTING VFD TO BE REMOVED IN ITS ENTIRETY. COORDINATE WITH MECHANICAL PRIOR TO COMMENCING WORK.
- ③ EXISTING UNDERGROUND CIRCUITS TO BE REMOVED BACK TO SOURCE. CONDUIT TO BE ABANDONED IN PLACE. CAP EACH END AND MAKE SAFE.
- ④ EXISTING SAND FILTER TO BE REMOVED IN ITS ENTIRETY. REMOVE CIRCUIT BACK TO SOURCE. COORDINATE WITH MECHANICAL PRIOR TO COMMENCING WORK.
- ⑤ EXISTING PUMP TO REMAIN. REMOVE EXISTING CIRCUIT AND CONDUIT BACK TO SOURCE AND MAKE SAFE FOR REMODEL WORK. COORDINATE WITH MECHANICAL PRIOR TO COMMENCING WORK.

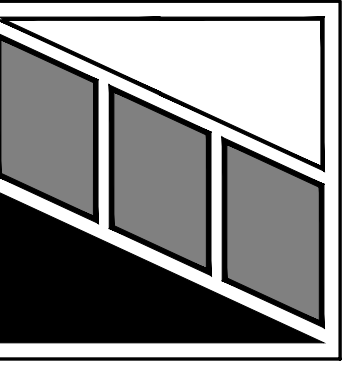
GENERAL NOTE

- 1. SEE ONE-LINE DIAGRAM AND REMODEL PLAN FOR ADDITIONAL INFORMATION.

POWER DEMOLITION FLOOR PLAN



PEARSON ENGINEERING ASSOCIATES INC.
 8825 N. 23RD AVENUE SUITE 11 PHOENIX, ARIZONA 85021
 PH: (602) 264-0807 FAX: (602) 274-7542

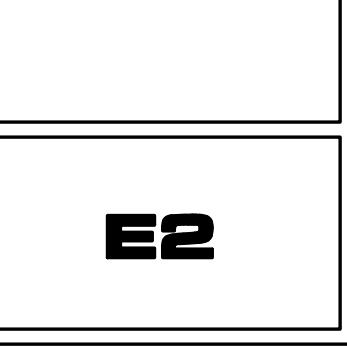


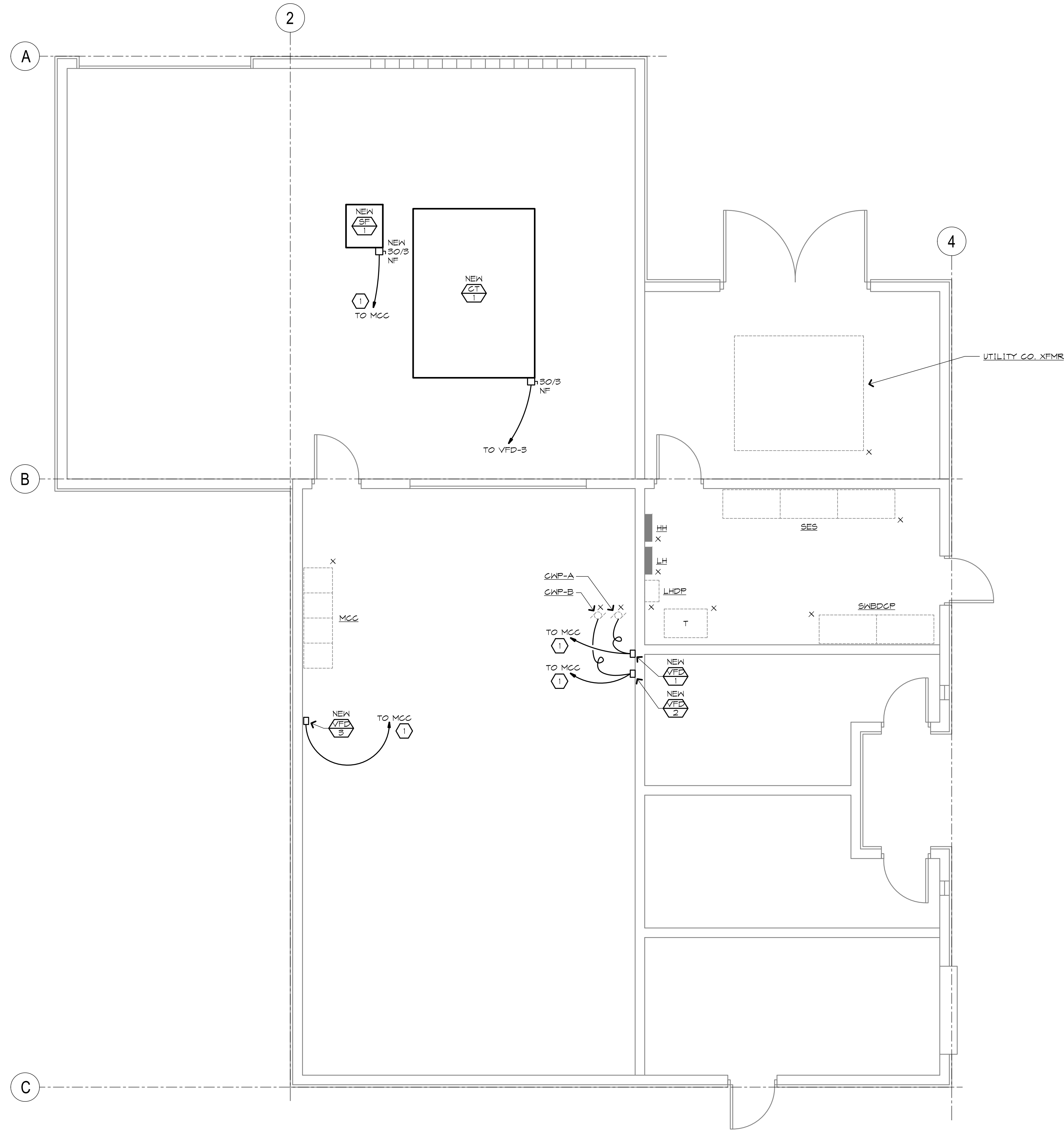
REVISIONS

**PALM VALLEY ELEMENTARY SCHOOL
 COOLING TOWER REPLACEMENT
 2801 N 135TH AVE
 GOODYEAR, AZ 85395**

DATE	01/28/22
JOB No.	2022013
DRAWN	ADO
CHECKED	RGN
APPROVED	JMP

SHEET TITLE
 POWER
 DEMOLITION
 FLOOR PLAN





KEYNOTES

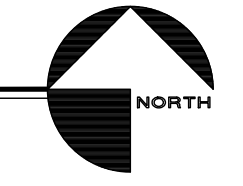
① SEE ONE-LINE DIAGRAM FOR NEW CIRCUIT INFORMATION.

GENERAL NOTE

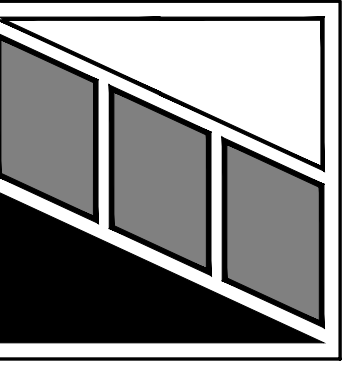
1. COORDINATE AND VERIFY EXACT LOCATION AND MOUNTING OF ALL MECHANICAL EQUIPMENT PRIOR TO INSTALLATION.

POWER REMODEL FLOOR PLAN

SCALE: 1/4" = 1'-0" FEET
 2 1 0 4 8

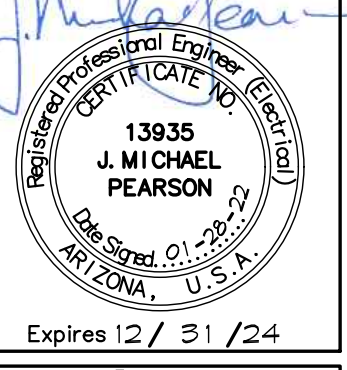


PEARSON ENGINEERING ASSOCIATES INC.
 8825 N. 23RD AVENUE SUITE 11 PHOENIX, ARIZONA 85021
 PH: (602) 264-0807 FAX: (602) 274-7542



REVISIONS

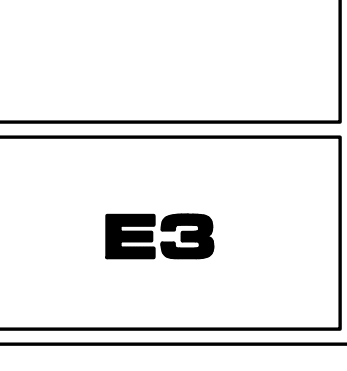
--	--



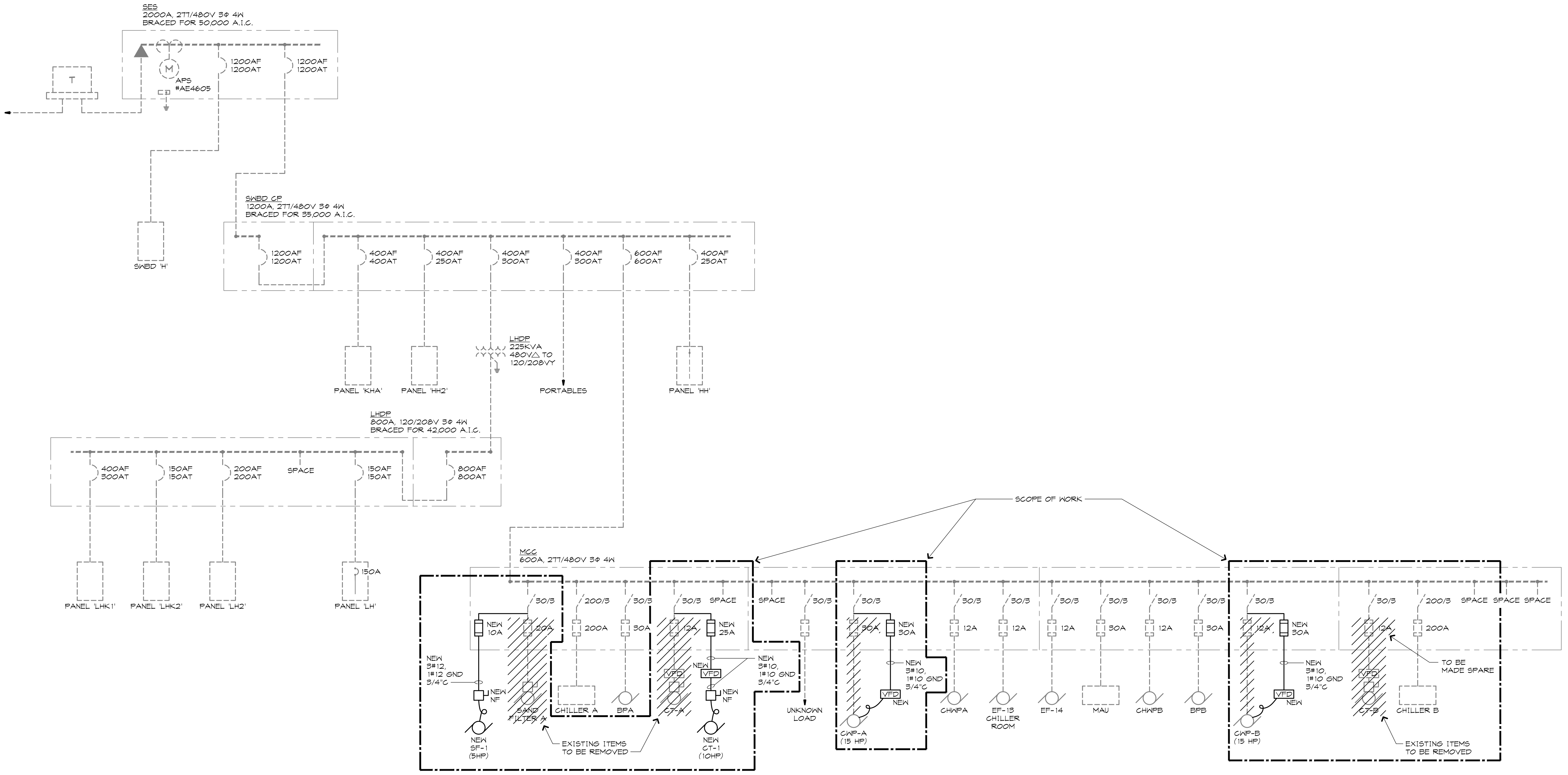
PALM VALLEY ELEMENTARY SCHOOL
COOLING TOWER REPLACEMENT
 2801 N 135TH AVE
 GOODYEAR, AZ 85395

DATE	01/28/22
JOB No.	2022013
DRAWN	ADO
CHECKED	RGN
APPROVED	JMP

SHEET TITLE
 POWER
 REMODEL
 FLOOR PLAN



File: \\2022\2022013\Elec\2022013 E4 ONE-LINE DIAGRAM & PANEL SCHEDULES.dwg DATE: Jan, 27 2022 TIME: 11:33 am Login Name: ADO



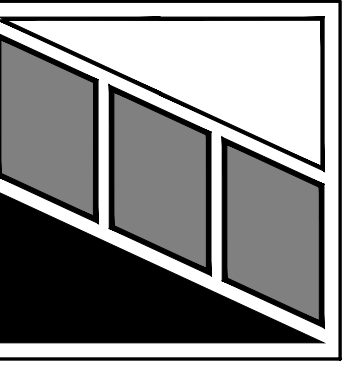
ONE-LINE DIAGRAM

ALL ITEMS SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

LOAD SUMMARY

EXISTING LOAD REMOVED		
SAND FILTER	2HP	<2825 VA>
COOLING TOWER A	10HP	<11634 VA>
COOLING TOWER B	10HP	<11634 VA>
NEW LOAD ADDED		
SAND FILTER	2HP	6316 VA
COOLING TOWER 1	10HP	11634 VA
COOLING TOWER 2	10HP	11634 VA
NET CHANGE IN LOAD		
3491 VA + 480V $\sqrt{3}$	=	4.2 AMPS

PEARSON ENGINEERING ASSOCIATES INC.
 8825 N. 23RD AVENUE SUITE 11 PHOENIX, ARIZONA 85021
 PH: (602) 264-0807 FAX: (602) 274-7542



REVISIONS

J. Michael Pearson

Professional Engineer (Electrical)
 13035 J. MICHAEL PEARSON
 License No. 01-22222
 ARIZONA, U.S.A.
 Expires 12/31/24

PALM VALLEY ELEMENTARY SCHOOL
COOLING TOWER REPLACEMENT
 2801 N 135TH AVE
 GOODYEAR, AZ 85395

DATE	01/28/22
JOB No.	2022013
DRAWN	ADO
CHECKED	RGN
APPROVED	JMP

SHEET TITLE
 ONE-LINE
 DIAGRAM &
 PANEL
 SCHEDULES

