

EXHIBIT C - ELECTRICAL DRAWINGS

ELECTRICAL LEGEND

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT PANELBOARDS, SURFACE AND RECESS MOUNTED
	MOTOR CONTROL CENTER WITH CODE CLEARANCES SHOWN, DASHED EQUIP. = FUTURE
	TRANSFORMER WITH CODE CLEARANCES SHOWN
	EQUIPMENT OR TERMINAL ENCLOSURE AS NOTED, SURFACE AND RECESS MOUNTED
	TWO STACKED 120/208-VOLT PANELBOARDS
	SERVICE AND/OR DISTRIBUTION EQUIPMENT WITH CODE CONCRETE EQUIPMENT PAD SHOWN.
	CONNECTION TO MOTOR PROVIDED BY OTHERS
	CONNECTION TO VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT
	DISCONNECT SWITCH, SIZE AS NOTED OR IF NOT SHOWN SIZE PER CONNECTED MOTOR SIZE AND MOTOR DISCONNECT SCHEDULE
	FUSED DISCONNECT SWITCH, SIZE AS NOTED. SIZE FUSE PER MANUFACTURER'S RECOMMENDATIONS
	ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH, TRIP SIZE AS NOTED.
	DISCONNECT W/ MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM.
	MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM.
	DAMPENER MOTOR CONNECTION
	BUSWAY RISER
	CONNECTION TO EQUIPMENT PROVIDED BY OTHERS. SHADED = ON ALT. POWER SOURCE NOTED
	CONNECTION TO EQUIPMENT WITH INTEGRAL DISCONNECT PROVIDED BY OTHERS. SHADED = ON ALTERNATE POWER SOURCE NOTED

SYMBOL	DESCRIPTION
	FIRE ALARM CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE 120V POWER AS REQUIRED OR AS INDICATED.
	FIRE ALARM SYSTEM ANNUNCIATOR
	FIRE ALARM SYSTEM MANUAL PULL STATION, WALL MOUNTED
	ALARM BELL OR GONG
	STROBE LIGHT - WALL, CEILING MOUNTED (# = CANDELA RATING)
	SPEAKER - WALL, CEILING MOUNTED
	COMBINATION SPEAKER/STROBE, WALL MOUNTED (# = CANDELA RATING)
	HORN - CEILING, WALL MOUNTED
	COMBINATION HORN/STROBE - WALL, CEILING MOUNTED (# = CANDELA RATING)
	COMBINATION MINI HORN/STROBE - WALL, CEILING MOUNTED (# = CANDELA RATING)
	SPRINKLER VALVE TAMPER SWITCH CONNECTION
	SPRINKLER FLOW SWITCH CONNECTION
	LIGHT BEAM TYPE SMOKE DETECTOR (BR=BEAM RECEIVER, BT=BEAM TRANSMITTER)
	SMOKE DETECTOR, DUCT MOUNTED, WITH FULL WIDTH SAMPLING TUBES. PHOTOELECTRIC TYPE U.O.N.
	SMOKE DETECTOR, LOW AIR VELOCITY IN DUCT MOUNTED PHOTOELECTRIC TYPE U.O.N.
	SMOKE DETECTOR - WALL, CEILING MOUNTED (P=PLENUM MOUNTED, B=W RELAY BASE, R=ELEVATOR RECALL, C=INTEGRAL TO DOOR CLOSURE)
	SMOKE DETECTOR MOUNTED BELOW RAISED FLOOR
	ELECTROMAGNETIC DOOR HOLDER - WALL, FLOOR, DOOR CLOSURE MOUNTED. VERIFY REQUIREMENTS WITH DOOR SUPPLIER.
	DATA LOOP ISOLATION MODULE
	ADDRESSABLE CONTROL MODULE
	ADDRESSABLE MONITOR MODULE
	EOL END OF LINE RESISTOR (NOT SHOWN ON PLANS)
	FIREMAN'S PHONE JACK, WALL MOUNTED
	FIREMAN'S PHONE HANDSET, WALL MOUNTED
	FIRE/SMOKE DAMPER, WIDTH OF SYMBOL WILL VARY WITH DUCT WIDTH. PROVIDE POWER AND MONITORING AS INDICATED. REFER TO FSD CONNECTION DETAIL.
	FLAME DETECTOR (FLICKER DETECTOR)
	HEAT DETECTOR, CEILING MOUNTED. RATE OF RISE AND FIXED TEMPERATURE TYPE, UON.
	HEAT DETECTOR (R/C=RATE OF COMBUSTION, F=FIXED TEMP. ONLY, R=RATE OF RISE ONLY)
	EARLY WARNING SMOKE DETECTION SYSTEM - INCLUDES ALL PIPING BY ELECTRICAL
	LIGHT (LAMP, SIGNAL LIGHT, INDICATOR LAMP, STROBE)
	FIRE ALARM OUTPUT OR RELEASE ABORT PUSHBUTTON, REFER TO SPECIFICATIONS AND DETAILS.
	AGENT RELEASE INITIATING VALVE
	BELL SILENCE SWITCH
	AGENT DISCHARGE SWITCH

SYMBOL	DESCRIPTION
	SIMPLEX RECEPTACLE - WALL, CEILING, ON ALT.
	DUPLEX RECEPTACLE - WALL, CEILING, ON ALT.
	DOUBLE DUPLEX RECEPTACLE - WALL, CLG, ON ALT.
	SPECIAL PURPOSE RECEPTACLE - WALL, CEILING ON ALT. POWER; NEMA CONFIGURATION AS NOTED
	"ON ALT." SHADED RECEPTABLES NOTED "ON ALT." ABOVE ARE CONNECTED TO ALTERNATE POWER SOURCE (EMERG., STANDBY, UPS, ETC.) PER CIRCUITING INDICATED
	LETTER DESIGNATIONS ADJACENT TO RECEPTACLE: AB = ABOVE COUNTER BACKSPASH, S.A.D. C = HALF OF ONE DUPLEX CONTROLLED BY ROOM OCCUPANCY SENSOR R = HALF OF ONE DUPLEX CONTROLLED BY TIMEBLOCK RELAY DC = ONE WHOLE DUPLEX CONTROLLED BY ROOM OCCUPANCY SENSOR DR = ONE WHOLE DUPLEX CONTROLLED BY TIMECLOCK RELAY GFI = DUPLEX RECEPTACLE W/ INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER WP = WEATHERPROOF DUPLEX RECEPTACLE W/ IN-USE COVER AND INTEGRAL GFI
	DUPLEX RECEPTACLE - WALL - HALF SWITCHED
	COMBINATION SWITCH/DUPLEX RECEPTACLE
	RECEPTACLE TYPE SHOWN AT SPECIAL HEIGHT
	WALL, FLOOR MOUNTED ELECTRICAL CONNECTION TO ELECTRIFIED FURNITURE. PROVIDE 8 WIRES (4 HOTS, 1 DEDICATED NEUTRAL, 1 COMMON NEUTRAL, 1 G) NEUTRALS TO BE #10 AWG. USE LIQUID-TIGHT FLEX.
	FLUSH FLOOR POKE THRU DEVICE - SIMPLEX, DUPLEX, DOUBLE DUPLEX
	FLUSH FLOOR BOX DEVICE - SIMPLEX, DUPLEX, DOUBLE DUPLEX
	PEDESTAL FLOOR DEVICE - SIMPLEX, DUPLEX, DOUBLE DUPLEX
	FLOOR POKE THRU PEDESTAL MOUNTED DEVICE - SIMPLEX, DUPLEX, DOUBLE DUPLEX RECEPTACLE
	POKE THRU UNIT WITH DOUBLE DUPLEX RECEPTACLE - FLUSH, PEDESTAL MOUNTED.
	COMBO POKE THRU UNIT WITH DUPLEX RECEPTACLE AND TELEDATA OUTLET - FLUSH, PEDESTAL MOUNTED.
	MULTI-SERVICE FLOOR BOX CAST IN CONC. OR IN RAISED FLOOR - SEE ARCH DWGS. WITH RECEPTABLES & SIGNAL OUTLETS AS NOTED.
	POKE THRU UNIT WITH JUNCTION BOX ABOVE FLOOR.
	TELEPOWER POLE, POWER POLE
	TWO-PIECE SURFACE METAL RACEWAY WITH RECEPTABLES AS NOTED, BACK LENGTH AS INDICATED ON THE DRAWINGS AND WITH ALL FITTINGS AS REQUIRED.
	TWO OR THREE COMPARTMENT SURFACE METAL RACEWAY WITH RECEPTABLES AND OUTLETS AS INDICATED, LENGTH AS INDICATED ON THE DRAWINGS. PROVIDE ALL FITTINGS AS REQUIRED.

SYMBOL	DESCRIPTION
	NEW WORK
	WIRING CONCEALED IN FLOOR OR UNDER GRADE OR ROUTED IN CEILING SPACE OF FLOOR BELOW.
	EXISTING WORK TO REMAIN
	EXISTING RELOCATED
	EXISTING WORK TO BE REMOVED
	FUTURE WORK
	TELEPHONE SYSTEM CONDUIT
	MEDIUM VOLTAGE CONDUIT
	WHEN SHOWN, STROKES INDICATE QUANTITY OF CONDUCTORS. NOTE: WIRING STROKES FOR 20A BRANCH CIRCUITS ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL USE INFORMATION IN PANEL AND BRANCH CIRCUIT SCHEDULES TO PROVIDE REQUIRED CIRCUITING.
	GROUND
	HOT
	NEUTRAL
	HOME RUN WIRING TO INDICATED DESTINATION, 3/4" MIN. OR AS OTHERWISE NOTED. CONTRACTOR SHALL USE CIRCUIT SIZES NOTED IN RESPECTIVE SCHEDULES AND INFORMATION IN THE FEEDER AND BRANCH CIRCUIT SCHEDULES.
	CONDUIT OR WIRE BREAK SYMBOL
	CONDUIT RUN TURNED UP THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED.
	CONDUIT RUN TURNED DOWN THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED.
	CONDUIT STUBBED OUT AT LOCATION SHOWN. PROVIDE INSULATED BUSHING & PULLROPE.
	TELEPHONE/DATA SLEEVE THROUGH WALL, ABOVE CEILING. EXTEND TO ACCESSIBLE TILE CLG. BOTH SIDES. TERMINATE WITH BUSHINGS: (1) 1.25" CO UON. COORDINATE LOCATIONS WITH CABLE INSTALLER(S) PRIOR TO ROUGH-IN.
	JUNCTION BOXES, WALL, CEILING AND FLUSH FLOOR MOUNTED. 4" SQ. BOX MIN., LARGER IF REQUIRED
	WIRING EXTENSION POINT - CONDUIT TO MC CABLE OR MANUFACTURED WIRING SYSTEM J-BOX ABOVE ACCESSIBLE CEILING AREAS, OR EXTEND CONDUIT & WIRE IN EXPOSED OR "HARD" CEILING AREAS. SHADED=ON ALT. POWER SOURCE (EMERG,UPS,ETC.)
	PULL BOX, MIN. SIZE PER NEC., UON.
	FLEXIBLE CONDUIT CONNECTION
	UNDERFLOOR RACEWAY WITH ACTIVATION BOXES
	LADDER STYLE CABLE TRAY, WIDTH AND RUNG SPACING AS SPECIFIED.
	BASKET STYLE CABLE TRAY, WIDTH AS SPECIFIED.

SYMBOL	DESCRIPTION
	TRANSFER SWITCH. ATS = AUTOMATIC. MTS = MANUAL TRANSFER
	AUTOMATIC TRANSFER SWITCH WITH MAINTENANCE BYPASS(BIATS)
	SWITCH
	BUSWAY STAB-IN TYPE CIRCUIT BREAKER OR FUSE DISCONNECT. SIZE AS NOTED.
	FIELD INSTALLED CONTROL CIRCUIT WIRING TO DESTINATION SHOWN, U.O.N.
	OVERLOADS
	NORMALLY CLOSED CONTACTOR OR RELAY CONTACTS
	NORMALLY OPEN CONTACTOR OR RELAY CONTACTS
	BUS DUCT
	BUS BAR
	BATTERY GENERAL
	RESISTOR
	CONNECTOR, FEMALE AND MALE RESPECTIVELY
	PIPE GROUND
	CONTACTOR COIL
	RELAY COIL
	LIGHTNING SURGE ARRESTOR D = DISTRIBUTION CLASS I = INTERMEDIATE CLASS
	SURGE PROTECTION DEVICE
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	NORMALLY OPEN PUSH BUTTON
	NORMALLY CLOSED PUSH BUTTON
	FUSED VOLTAGE SENSE LEADS
	METER: POWER FACTOR
	METER: KILOWATT HOUR
	UTILITY CO. APPROVED SOCKET WITH METER INSTALLED. SQUARE = REMOTE MOUNTED
	DIGITAL METER UNIT. REFER TO SPECIFICATIONS.
	CURRENT TRANSFORMER SHORTING TERMINAL BLOCK.
	TERMINAL FOR FIELD CONNECT, SIZE & TYPE SUITABLE FOR CONDUCTOR INSTALLED.
	LED INDICATOR LIGHT, PUSH TO TEST, R=RED, G= GREEN, B= BLUE, Y= YELLOW, W= WHITE
	DELTA CONNECTION
	GROUNDING WYE CONNECTION
	CONNECTION TO GROUND
	CIRCUIT BREAKER, WITH TRIP & FRAME AMPERE RATING
	FUSED SWITCH, WITH FUSE AND SWITCH AMPERE RATING
	INDIVIDUALLY MOUNTED CIRCUIT BREAKER
	CIRCUIT BREAKER, MEDIUM VOLTAGE, DRAWOUT
	DRAWOUT CIRCUIT BREAKER
	GROUND FAULT TRIP UNIT
	GROUND FAULT ALARM ONLY
	BELL ALARM TRIP MODULE CONTACTS
	SHUNT TRIP UNIT, 120VAC OR VOLTAGE AS NOTED
	MONITORING COMMUNICATION MODULE
	INTEGRAL AMMETER DISPLAY
	KEY INTERLOCK
	CAPACITOR, POWER FACTOR CORRECTION, SIZE IN KVAR
	FUSE, HOLDER & PULLER
	SOLENOID

SYMBOL	DESCRIPTION
	FIRE RATED PLYWOOD BACKBOARD, SIZE AS INDICATED ON PLANS
	SIGNAL SYSTEM EQUIPMENT ENCLOSURES AS NOTED- SURFACE, RECESSED MOUNTED
	COMBO TELE/DATA OUTLET. PROVIDE 4" SQUARE J-BOX WITH 1-GANG MUD RING AND 1"C.O. TO ABOVE NEAREST ACCESSIBLE CEILING
	TELEPHONE OUTLET - W = USE HIGHER MOUNTING HEIGHT PER MOUNTING HEIGHT DETAIL. ROUGH-IN BE SAME AS COMBO TELE/DATA OUTLET ABOVE.
	DATA OUTLET - WALL. ROUGH-IN TO BE SAME AS COMBO TELE/DATA OUTLET ABOVE.
	BELL
	BUZZER
	CHIME
	SYSTEM CLOCK - WALL, CEILING
	INTERCOM STATION - WALL, DESK. M = MASTER STATION
	PUSHBUTTON OR PUSHBUTTONS
	PUSHBUTTON OR PUSHBUTTONS PROVIDED WITH EQUIPMENT
	RF COAX CABLE OUTLET (TV, VCR, ETC.)
	COMBINATION RF COAX CABLE AND DATA OUTLET
	FURNITURE DATA FEED - WALL. PROVIDE 4" SQUARE J-BOX WITH 2-GANG MUD RING AND 1.75"C.O. TO ABOVE NEAREST ACCESSIBLE CEILING.
	FURNITURE FLOOR DATA FEED. PROVIDE 2"C.O. STUBBED THROUGH FLOOR.
	FLUSH FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
	PEDESTAL FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE

ELECTRICAL - BASIS OF DESIGN	
A.	THIS PROJECT CONSISTS OF A COOLING TOWER REPLACEMENT FOR AN EXISTING FACILITY LOCATED AT 2121 W CASINO RD, IN EVERETT WASHINGTON. THE TOWER SERVES A WATER SOURCE HEAT PUMP SYSTEM IN THE BUILDING AND IS A END OF LIFE.
B.	THE DESIGN INCLUDES THE FOLLOWING NOTABLE FEATURES, BUT IS NOT LIMITED TO THIS SCOPE. CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS AND COORDINATING WITH ALL DISCIPLINES. 1. BRANCH CIRCUIT DISTRIBUTION INCLUDING ALL REQUIRED PANELBOARDS, CONDUIT, WIRING, AND DEVICES.
C.	CODES AND STANDARDS 1. THE COMPLETE INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, UTILITY COMPANY REQUIREMENTS AND REGULATIONS INCLUDING NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES. a. WASHINGTON BUILDING CODES ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AHJ); b. 2018 INTERNATIONAL BUILDING CODE (IBC) WITH STATE AND LOCAL AMENDMENTS. c. 2018 INTERNATIONAL FIRE CODE (IFC) WITH STATE AND LOCAL AMENDMENTS. d. 2020 NATIONAL ELECTRICAL CODE (NEC) e. 2018 WASHINGTON STATE ENERGY CODE (WAC 51-11, WSEC)
D.	POWER SYSTEM DESIGN 1. POWER SYSTEM DESCRIPTION - a. FEED NEW COOLING TOWER FROM EXISTING COOLING TOWER SOURCE PANEL, EXISTING CIRCUIT BREAKER ON PANEL IS IN WORKING CONDITION, EXISTING RACEWAY SHALL BE REUSED AND NEW WIRING SHALL BE PULLED FOR NEW COOLING TOWER, REFER TO ELECTRICAL 1-LINE DIAGRAM, COOLING TOWER LOAD CALCULATION, AND PANEL SCHEDULE FOR EXACT REUSE OR NEW ELECTRICAL INFORMATION. 2. EMERGENCY POWER - a. EMERGENCY OR STANDBY POWER IS NOT REQUIRED FOR THIS COOLING TOWER.

ELECTRICAL DRAWING LIST	
SHEET NUMBER	SHEET NAME
E0.0	ELECTRICAL LEGEND AND ABBREVIATIONS
E3.1	LEVEL 1 - POWER AND SIGNAL PLAN
E5.1	ELECTRICAL 1-LINE DIAGRAM AND PANELBOARD SCHEDULES

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Project
WSIPC Cooling Tower Replacement
2121 W. Casino Road,
Everett, WA



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Revisions		
#	Description	Date

SHEET TITLE:
ELECTRICAL LEGEND AND ABBREVIATIONS

DRAWN BY: Author
CHECKED BY: Checker
SHEET

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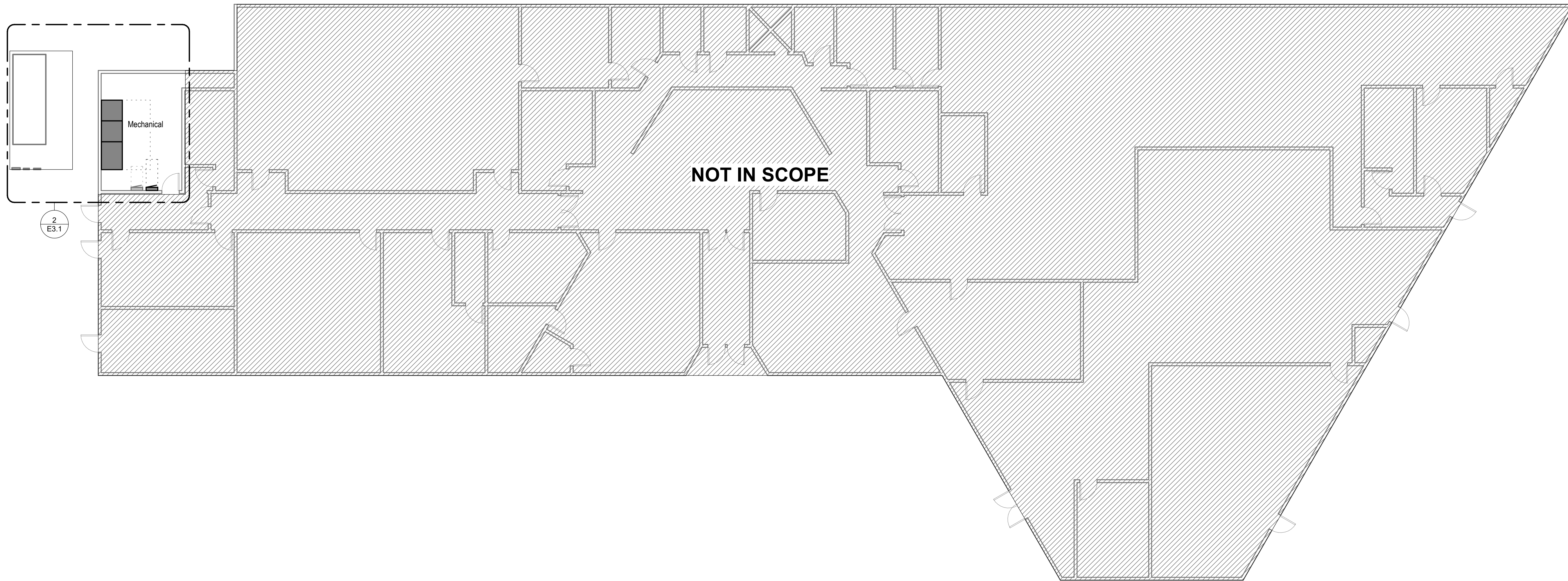
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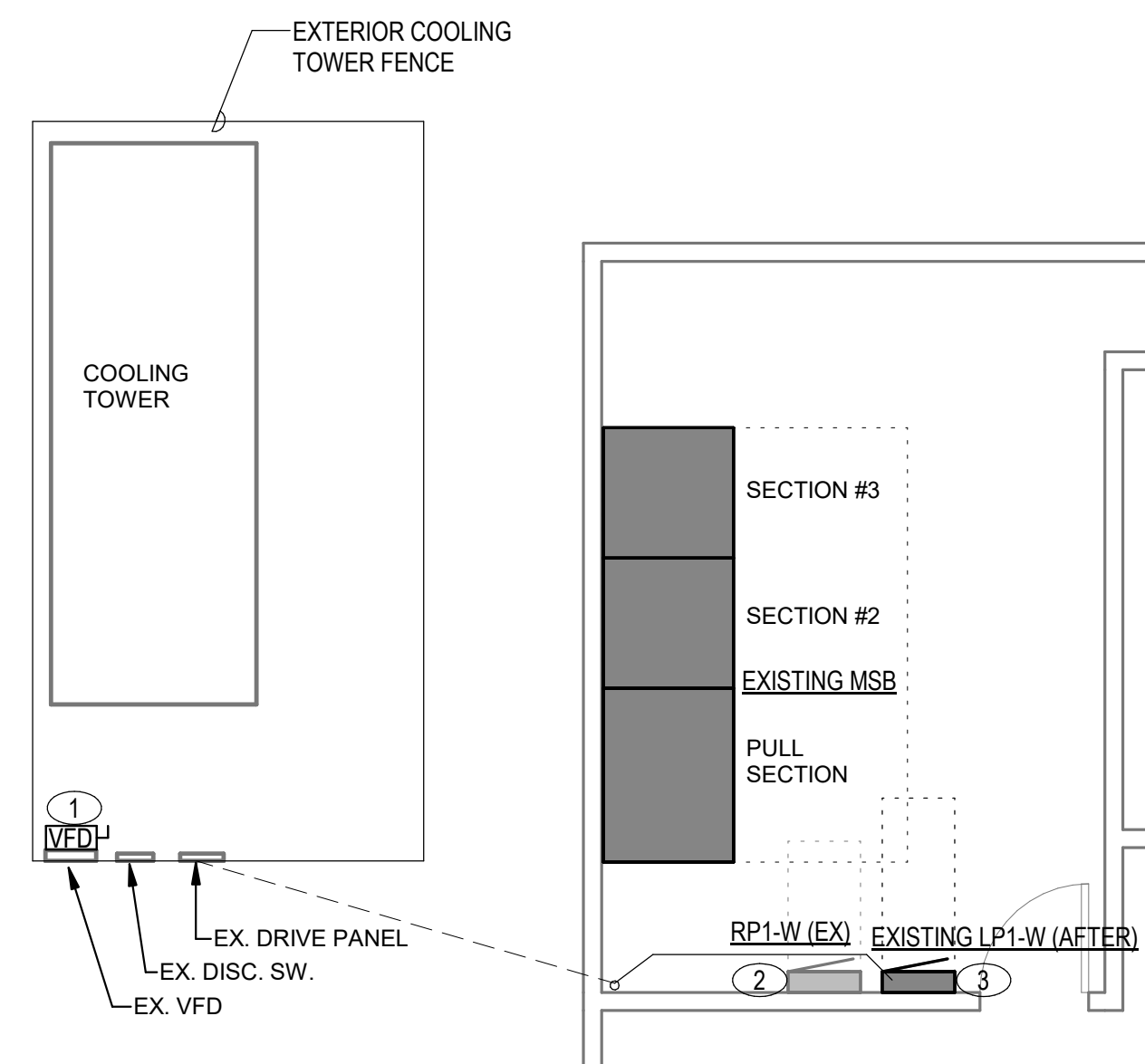


Project

WSIPC Cooling Tower Replacement
2121 W. Casino Road,
Everette, WA



1 LEVEL 1 - FLOOR PLAN - POWER & SIGNAL
SCALE: 1/8" = 1'-0"



2 LEVEL 1 - ENLARGED ELEC ROOM
SCALE: 1/4" = 1'-0"

SHEET NOTES

- A. COORDINATE EXACT MECHANICAL EQUIPMENT LOCATIONS AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. COORDINATE CONDUIT REQUIREMENTS FOR ALL HVAC EQUIPMENT WITH CONTROLS CONTRACTOR.
- B. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY POWER CONNECTIONS TO ALL FIRE PROTECTION SYSTEM EQUIPMENT AS SHOWN ON SEPARATE DESIGN BUILD FIRE PROTECTION DRAWINGS SET, PROVIDE ALLOWANCE IF THE INFORMATION IS NOT AVAILABLE AT BID PHASE.
- C. REFER TO ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION ON NAMED ELECTRICAL EQUIPMENT SHOWN.
- D. REFER TO ARCHITECTURAL FLOOR PLANS, INTERIOR ELEVATIONS AND DETAIL DRAWINGS PRIOR TO ROUGH-IN FOR EXACT LOCATION OF RECEPTACLES, FLOOR BOXES AND OUTLETS. INFORM ENGINEER OF CONFLICTS.
- E. FLOOR PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL DRAWINGS AND FIELD DETERMINE EXACT CONDUIT, PULL BOX, AND ROUTING REQUIREMENTS.
- F. CIRCUIT SIZES ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER AND BRANCH CIRCUIT SCHEDULES.
- G. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. THESE DRAWINGS ARE DIAGRAMMATIC.
- H. PROVIDE SPECIAL RECEPTACLES THAT MATCH CORD AND CAP PROVIDED WITH EQUIPMENT, UON. USE ADJACENT NEMA CONFIGURATION NUMBER, IF ONE IS SHOWN.
- I. ALL NEW RACEWAYS AND CONDUCTORS SHALL BE INSTALLED CONCEALED.
- J. WHERE BRANCH CIRCUIT WIRE SIZES ARE NOT EXPLICITLY CALLED OUT, BRANCH CIRCUIT WIRE SIZES FOR EACH NEW OR MODIFIED CIRCUIT SHALL BE BASED ON THE CIRCUIT BREAKER INDICATED ON THE ELECTRICAL PANEL SCHEDULES, PROVIDE THE FOLLOWING:
 - a. 20A-1P C.B. 20.1 BRANCH CIRCUIT,
 - b. 20A-2P C.B. 20.2 BRANCH CIRCUIT,
 - c. 20A-3P C.B. 20.3 COPPER FEEDER,
 - d. 30A-1P C.B. 30.1 BRANCH CIRCUIT,
 - e. 30A-2P C.B. 30.2 BRANCH CIRCUIT,
 - f. 30A-3P C.B. 30.3 COPPER FEEDER.

KEYED NOTES

- 1. REFER TO MANUFACTURER'S INSTALLATION WIRING DIAGRAM, PROVIDE ONE POINT CONNECTION TO COOLING TOWER DRIVE PANEL, REUSE AND CLEAN EXISTING CONDUITS FROM PANELBOARD SOURCE TO DRIVE PANEL LOCATION, EXTEND CONDUIT AS REQUIRED IF THE NEW DRIVE PANEL LOCATION IS MOVED, PROVIDE NEW WIRING TO REPLACE AND SIZE MATCH EXISTING CONDUCTORS THROUGH EXISTING CONDUIT TO NEW DRIVE PANEL. NEW COOLING TOWER IS SAME MODEL AS EXISTING ONE, REUSE THE EXISTING 50A-3P CIRCUIT BREAKER INSIDE THE PANEL.
- 2. ALL MISC. 120V POWER CONNECTIONS TO PUMPS, VALVES, HEATERS AND CONVENIENCE RECEPTACLES WITHIN THE FENCE, WHICH SERVING EXISTING COOLING TOWER WERE FED FROM THIS PANELBOARD, REUSE THE EXISTING CIRCUIT BREAKERS AND CONDUITS TO FEED NEW MISC. EQUIPMENT. REPLACE EXISTING CONDUCTORS WITH NEW CONDUCTORS. PROVIDE (1) NEW 20A-1P CIRCUIT FROM THIS PANELBOARD TO FEED (2) (NEW) 120V BYPASS ISOLATION VALVES WHICH ARE INSTALLED AS PART OF THIS PROJECT, SEE MECHANICAL DETAILS FOR ADDITIONAL INFORMATION.
- 3. AFTER EXISTING COOLING TOWER IS REMOVED, PROVIDE TEMPORARY POWER FED FROM EXISTING COOLING TOWER MAIN POWER CIRCUIT BREAKER FOR TEMPORARY COOLING TOWER USE, COORDINATE WITH MECHANICAL CONTRACTOR ON LOCATION OF TEMPORARY TOWER DURING CONSTRUCTION.



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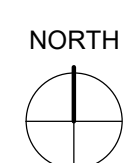
Revisions		
#	Description	Date

SHEET TITLE:
**LEVEL 1 -
POWER AND
SIGNAL PLAN**

DRAWN BY: Author

CHECKED BY: Checker

SHEET

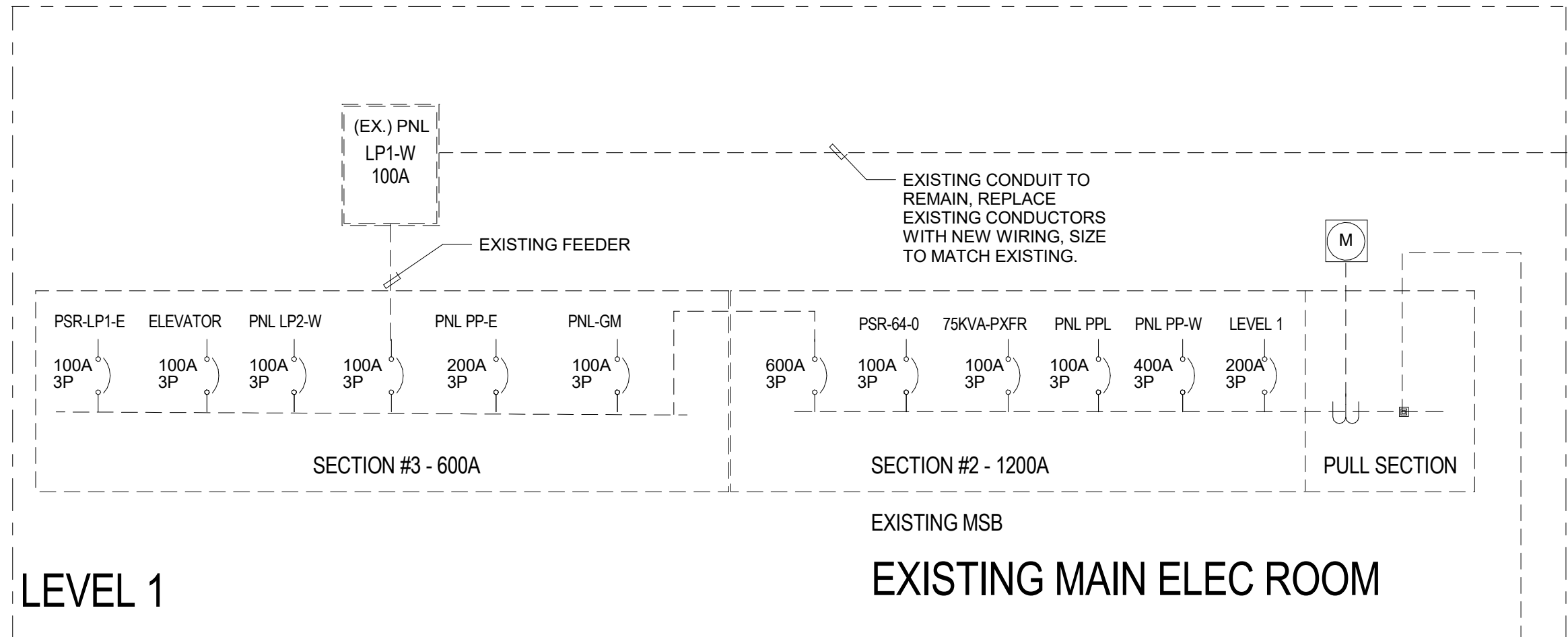


E3.1

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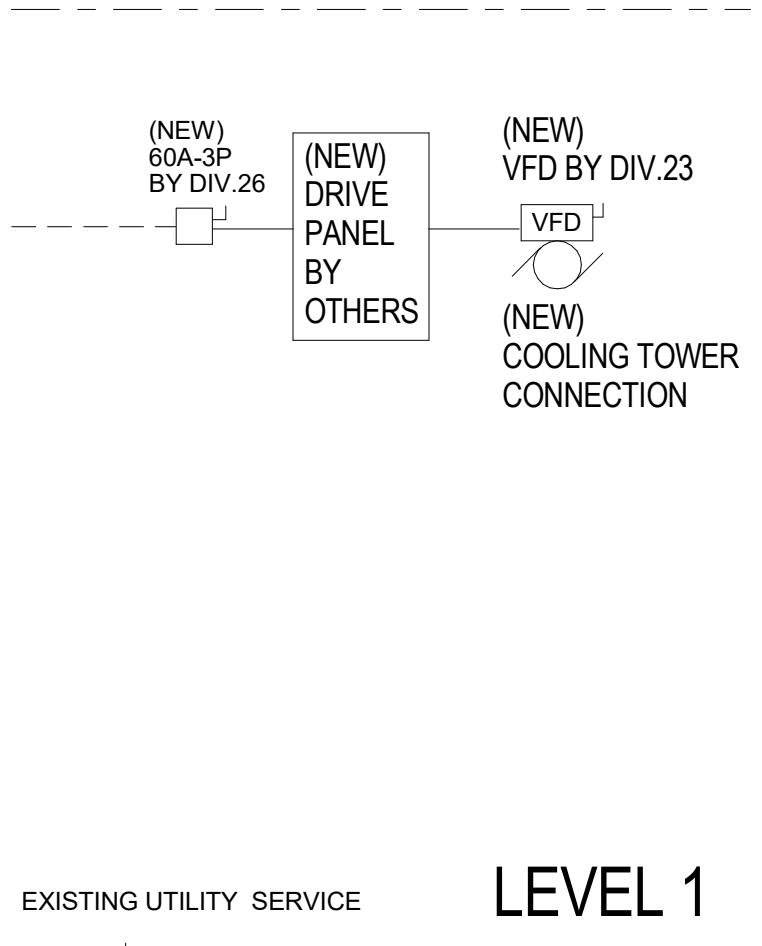
ROOF

LEVEL 2



ROOF

LEVEL 2



SHEET NOTES

- A. ALL CIRCUITS ARE 3 PHASE, UNLESS OTHERWISE NOTED.
- B. ITEMS SHOWN ARE ALL EXISTING UNLESS NOTED OTHERWISE. NEW EQUIPMENT WILL IDENTIFIED AS '(NEW)'.
- C. ALL COMPONENTS SHALL BE FULLY RATED. SERIES RATED IS NOT ALLOWED.
- D. PROVIDE CABLE SUPPORTS PER NEC 300.19(A).

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Project

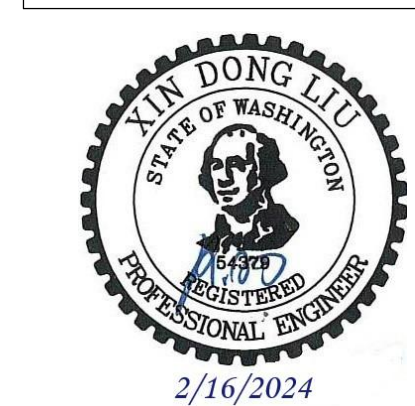
WSIPC Cooling Tower Replacement
2121 W. Casino Road,
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PANEL: EXISTING LP1-W (BEFORE)

VOLTAGE: 480Y/277V, 3PH, 4W		NEMA RATING: Type 1										
MOUNTING: SURFACE		INTEGRAL SPD: No										
BUS RATING: 100 A		ISOL GROUND BAR: No										
MAIN AMPS: 100 A MLO		FEED-THRU LUGS: No										
A/C RATING: 14KA		DOUBLE-LUGS: No										
LOCATION: SUPPLY FROM: EXISTING MSB												
CKT	TRIP	POLE	DESCRIPTION	TYPE	A (kVA)	B (kVA)	C (kVA)	TYPE	DESCRIPTION	POLE	TRIP	CKT
1	--	1	SPACE	--	--	--	--	--	SPACE	1	--	2
3	--	1	SPACE	--	--	9.7	0	--	LIGHTS-TRAINING LAB, LUNCH ROOM ^	1	20 A	4
5	50 A	3	EXISTING COOLING TOWER VFD	M	9.7	0	--	9.7	LIGHTS-CONSTELLATION A&B ^	1	20 A	6
7	--	1	SPACE	--	--	--	--	--	LIGHTS-COPIER ROOM ^	1	20 A	8
9	20 A	1	LIGHTS-STORE ROOM ^	--	--	0	0	--	LIGHTS-ELECTRICAL/MECH ROOM ^	1	20 A	10
11	--	1	SPACE	--	--	--	--	0	SPARE	1	20 A	12
13	30 A	3	SPACE	--	0	--	--	--	SPACE	1	--	14
15	--	1	SPACE	--	--	0	--	--	SPACE	1	--	16
17	--	1	SPACE	--	--	--	--	--	SPACE	1	--	18
19	--	1	SPACE	--	--	--	--	--	SPACE	1	--	20
21	--	1	SPACE	--	--	--	--	--	SPACE	1	--	22
23	--	1	SPACE	--	--	--	--	--	SPACE	1	--	24
25	--	1	SPACE	--	--	--	--	--	SPACE	1	--	26
27	--	1	SPACE	--	--	--	--	--	SPACE	1	--	28
29	--	1	SPACE	--	--	--	--	--	SPACE	1	--	30
SPECIAL PANEL FEATURES					9.7 kVA	9.7 kVA	9.7 kVA	CIRCUIT NOTES				
^ - EXISTING CIRCUIT TO REMAIN AS IS (X) - EXISTING CIRCUIT TO BE REMOVED.												
LOAD TYPE	CONNECTED	DEMAND FACTOR	DEMAND LOAD	LOAD TYPE KEY		PANEL TOTALS						
Motor	29.1 kVA	125%	36.37 kVA	C = CONTINUOUS		KVA	AMPS					
				E = ELEVATOR		29.1 kVA	35 A					
				K = KITCHEN		TOTAL DEMAND LOAD:	43.8 A					
				L = LIGHTING		36.37 kVA						
				M = MOTOR		SPARE CAPACITY:	25%					
				MOTOR = LARGEST MOTOR		DESIGNED CAPACITY:	45.47 kVA	55 A				
				N = NON-CONTINUOUS								
				R = RECEPTACLE								

PANEL: EXISTING LP1-W (AFTER)

VOLTAGE: 480Y/277V, 3PH, 4W		NEMA RATING: Type 1										
MOUNTING: SURFACE		INTEGRAL SPD: No										
BUS RATING: 100 A		ISOL GROUND BAR: No										
MAIN AMPS: 100 A MLO		FEED-THRU LUGS: No										
A/C RATING: 14KA		DOUBLE-LUGS: No										
LOCATION: SUPPLY FROM:												
CKT	TRIP	POLE	DESCRIPTION	TYPE	A (kVA)	B (kVA)	C (kVA)	TYPE	DESCRIPTION	POLE	TRIP	CKT
1	--	1	SPACE	--	--	--	--	--	SPACE	1	--	2
3	--	1	SPACE	--	--	9.7	0	--	LIGHTS-TRAINING LAB, LUNCH ROOM ^	1	20 A	4
5	50 A	3	NEW COOLING TOWER VFD	M	9.7	0	--	9.7	LIGHTS-CONSTELLATION A&B ^	1	20 A	6
7	--	1	SPACE	--	--	--	--	--	LIGHTS-COPIER ROOM ^	1	20 A	8
9	20 A	1	LIGHTS-STORE ROOM ^	--	--	0	0	--	LIGHTS-ELECTRICAL/MECH ROOM ^	1	20 A	10
11	--	1	SPACE	--	--	--	--	0	SPARE	1	20 A	12
13	30 A	3	SPACE	--	0	--	--	--	SPACE	1	--	14
15	--	1	SPACE	--	--	0	--	--	SPACE	1	--	16
17	--	1	SPACE	--	--	--	--	--	SPACE	1	--	18
19	--	1	SPACE	--	--	--	--	--	SPACE	1	--	20
21	--	1	SPACE	--	--	--	--	--	SPACE	1	--	22
23	--	1	SPACE	--	--	--	--	--	SPACE	1	--	24
25	--	1	SPACE	--	--	--	--	--	SPACE	1	--	26
27	--	1	SPACE	--	--	--	--	--	SPACE	1	--	28
29	--	1	SPACE	--	--	--	--	--	SPACE	1	--	30
SPECIAL PANEL FEATURES					9.7 kVA	9.7 kVA	9.7 kVA	CIRCUIT NOTES				
^ - EXISTING CIRCUIT TO REMAIN AS IS (X) - EXISTING CIRCUIT TO BE REMOVED.												
LOAD TYPE	CONNECTED	DEMAND FACTOR	DEMAND LOAD	LOAD TYPE KEY		PANEL TOTALS						
Motor	29.1 kVA	125%	36.37 kVA	C = CONTINUOUS		KVA	AMPS					
				E = ELEVATOR		29.1 kVA	35 A					
				K = KITCHEN		TOTAL DEMAND LOAD:	43.8 A					
				L = LIGHTING		36.37 kVA						
				M = MOTOR		SPARE CAPACITY:	25%					
				MOTOR = LARGEST MOTOR		DESIGNED CAPACITY:	45.47 kVA	55 A				
				N = NON-CONTINUOUS								
				R = RECEPTACLE								



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Revisions		
#	Description	Date

SHEET TITLE:
**ELECTRICAL
1-LINE
DIAGRAM AND
SCHEDULES**

DRAWN BY: Author

CHECKED BY: Checker

SHEET

E5.1

JOB NO. **24US00135**

Construction Documents 2/19/2024

1/8" = 1'-0"