

## SYMBOLS

**GENERAL**

———— LIGHT LINE INDICATES NON-ELECTRICAL OR BACKGROUND (THIS IS NOT CONTRACTUAL DEFINITION OF WORK)

———— HEAVY LINE INDICATES NEW WORK (THIS IS NOT CONTRACTUAL DEFINITION OF WORK)

DETAIL IDENTIFICATION

**SYMBOL** **NAME**

△ FLAG NOTE

◁ REVISION NOTE

☁ REVISION DEFINITION, AREA ENCIRCLED CONTAINS DRAWING CHANGES MADE SUBSEQUENT TO PREVIOUS ISSUE

**LIGHTING**

L10, 2-32 A

**SWITCHES**

\$<sub>o</sub> SWITCH, SINGLE POLE; WITH SWITCHING SUBSCRIPT

\$<sub>OS</sub> OCCUPANCY SENSOR SWITCH, PROXIMITY INFRARED

\$<sub>D</sub> SWITCH, SINGLE POLE; WITH SWITCHING SUBSCRIPT "D" INDICATES WALLBOX DIMMER

©<sub>OS</sub> CEILING MOUNTED OCCUPANCY SENSOR

©<sub>AL</sub> CEILING MOUNTED AMBIENT LIGHT SENSOR

©<sub>DT</sub> WALL MOUNTED DUAL TECHNOLOGY OCCUPANT SENSOR

\$<sub>T</sub> SWITCH, TIMER.

\$<sub>2</sub> SWITCH, TWO POLE.

**RECEPTACLES**

⊕ SINGLE RECEPTACLE

⊕ DUPLEX RECEPTACLE: WALL MOUNTED, +18" AFF

⊕<sub>o</sub> CONTROLLED AND NON CONTROLLED DUPLEX RECEPTACLE (SPLIT WIRED RECEPTACLE)

⊕ DUPLEX RECEPTACLE – ABOVE COUNTER

⊕<sub>o</sub> GFCI DUPLEX GFCI ABOVE COUNTER

⊕ GFCI DUPLEX GFCI

⊕ +42" DUPLEX RECEPTACLE, WITH HEIGHT ABOVE FINISHED FLOOR INDICATED

⊕<sub>o</sub> CEILING MOUNTED DUPLEX RECEPTACLE

⊕<sub>o</sub> DOUBLE DUPLEX RECEPTACLE: WALL MOUNTED, +18" AFF

⊕<sub>o</sub> FLOOR BOX ONE DUPLEX RECEPTACLE

⊕<sub>o</sub> FLOOR BOX ONE DUPLEX RECEPTACLE + ONE DATA

⊕<sub>o</sub> FLOOR BOX ONE DUPLEX RECEPTACLE + ONE DATA + ONE VOICE

⊕<sub>o</sub> SPECIAL PURPOSE RECEPTACLE, AS NOTED

**MISCELLANEOUS**

⊕ JUNCTION BOX: 4SQ MOUNTED

⊕ JUNCTION BOX: 4SQ WALL MOUNTED

⊕ JUNCTION BOX: 4SQ TRACK

⊕ CONNECTION FOR LIGHTED MIRROR COORDINATE LOCATION AND ELEVATION WITH ARCHITECT PRIOR TO ROUGH-IN

⊕ THERMOSTAT

**SIGNAL/COMMUNICATION**

▽ DATA OUTLET: WALL MOUNTED ⊕ +18" AFF U.O.N.

▽ TELEPHONE/DATA OUTLET: WALL MOUNTED ⊕ +18" AFF U.O.N.

▽ TELEVISION OUTLET: WALL MOUNTED ⊕ +18" AFF U.O.N.

**POWER**

⏞ PANELBOARD

⏞ WP NON-FUSED DISCONNECT SWITCH (WP = NEMA 3R WHERE APPROPRIATE )

⏞ FUSED DISCONNECT SWITCH

⏞ MAU-1,5HP,480,3 MOTOR CONNECTION (EQUIPMENT NAME, HORSEPOWER, VOLTAGE, AND PHASE INDICATED)

⏞ EF-1,12KVA,208,1 EQUIPMENT CONNECTION (EQUIPMENT NAME, LOAD, VOLTAGE, AND PHASE INDICATED)

T TRANSFORMER, DRY TYPE, SHOWN TO SCALE

M KW METER AND BASE

PART OF THE DESIGN/BUILD FIRE ALARM SYSTEM

[FACP] FIRE ALARM SYSTEM CONTROL PANEL

[P] FIRE ALARM SYSTEM PULL STATION

[S] FIRE ALARM SYSTEM STROBE/SPEAKER

[SD] FIRE ALARM PHOTOELECTRIC SMOKE DETECTOR AND SPEAKER.

[SD] FIRE ALARM COMBINATION PHOTOELECTRIC SMOKE DETECTOR, CARBON MONOXIDE DETECTOR, AND SPEAKER, GUESTROOM.

CO CARBON MONOXIDE DETECTOR.

EM ELECTRO-MAGNETIC DOOR HOLDER

DSO DUCT SMOKE DETECTOR

**ABBREVIATIONS**

A AMPERE

AC ALTERNATING CURRENT, ABOVE COUNTER

AFF ABOVE FINISHED FLOOR

AIC AMPS INTERRUPTING CAPACITY

AL ALUMINUM

AMP AMPERE

AWG AMERICAN WIRE GAUGE

BKR BREAKER

BLDG BUILDING

C COIL or CONDUIT

CKT CIRCUIT

CO CONDUIT/RACEWAY ONLY

CT CURRENT TRANSFORMER

Cu COPPER

CW COOL WHITE

D DIMMER

DED DEDICATED

EC ELECTRICAL CONTRACTOR

EF EXHAUST FAN

ELEC ELECTRICAL

EMT ELECTRICAL METALLIC TUBING

EQUIP EQUIPMENT

EXIST EXISTING

FAA FIRE ALARM ANNUNCIATOR

FACP FIRE ALARM CONTROL PANEL

FLUOR FLUORESCENT

GC GENERAL CONTRACTOR

GFCI GROUND FAULT CIRCUIT INTERRUPTER

GND GROUND

GRS GALVANIZED RIGID STEEL

HID HIGH INTENSITY DISCHARGE

HP HORSEPOWER

IG ISOLATED GROUND

KCML THOUSAND CIRCULAR MILLS

KVA KILOVOLT AMPERES

KW KILOWATT

LTG LIGHTING

LV LOW VOLTAGE

MFR MANUFACTURER

MIN MINIMUM

MLO MAIN LUGS ONLY

N NEUTRAL

NEC NATIONAL ELECTRICAL CODE (NFPA-70)

NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

NTS NOT TO SCALE

PNL PANEL

POC POINT OF CONNECTION

PT POTENTIAL TRANSFORMER

PVC POLYVINYL CHLORIDE

PWR POWER

QTY QUANTITY

RECEPT RECEPTACLE

REF REFERENCE

RI ROUGH-IN

RM ROOM

RO RACEWAY ONLY

SHT SHEET

SPEC SPECIFICATIONS

SW SWITCH

SWBD SWITCHBOARD

SWGR SWITCHGEAR

TYP TYPICAL

UG UNDERGROUND

UL UNDERWRITERS LABORATORIES

UON UNLESS OTHERWISE NOTED

V VOLTS

W WATTS

WW WARM WHITE

WP WEATHERPROOF

W/ WITH

W/O WITHOUT

XFMR TRANSFORMER

XFR TRANSFER

Z IMPEDANCE OR ZONE

### APPLICABLE CODES

THE FOLLOWING PROJECT DESIGN IS BASED ON THE FOLLOWING CODES:

- WASHINGTON ELECTRICAL CODE 2020
- 2021 WASHINGTON STATE ENERGY CODE COMMERCIAL PROVISIONS (WSEC)
- 2021 WASHINGTON STATE BUILDING CODE
- 2021 WASHINGTON STATE MECHANICAL CODE
- 2021 WASHINGTON STATE FIRE CODE

## GENERAL REQUIREMENTS

- DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED.
- THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
- REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS.
- PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

## CONTRACTOR SUBSTITUTIONS & REVISIONS

- PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR REVISIONS FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIAL OR DOING WORK.
- FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS, THE MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF SPECIFICATION.
- ENGINEERING COSTS FOR REVISING MEP PLANS SHALL BE ADDRESSED IN THE COST ANALYSIS OF THE SUBSTITUTION PROPOSAL.
- CONTRACTOR TO COORDINATE WITH ENGINEER AND DETERMINE ASSOCIATED DESIGN AND PERMITTING COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OTHER COSTS ASSOCIATED WITH UNFORESEEN ISSUES RESULTING FROM SUBSTITUTIONS OR REVISIONS.

## PRE-CON MEETING NOTES

CONTRACTORS SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH THE ENGINEER FOR THE PURPOSE OF REVIEWING THE WORK PRIOR TO ORDERING ANY EQUIPMENT OR PERFORMING ANY WORK. THE MEETING SHALL BE LOCATED AT THE PROJECT SITE ON A DATE AND TIME TO BE MUTUALLY AGREED. THE MEETING WILL BE A WORKING SESSION. THE MEETING WILL BE FACILITATED BY THE ENGINEER AND THE AGENDA WILL INCLUDE A DETAILED REVIEW OF THE PLANS AND SPECIFICATIONS, CROSS CHECK WITH OTHER TRADES FOR COORDINATION ISSUES, REVIEW OF PROPOSED PRODUCTS, REVIEW OF PLANNED MEANS AND METHODS, AND ON-SITE INVESTIGATION OF FIELD CONDITIONS RELATIVE TO EXISTING CONDITIONS THAT COULD AFFECT THE WORK. PERSONS ATTENDING THE MEETING SHALL BE KNOWLEDGEABLE OF THE PROJECT AND SHALL BE THE SPECIFIC PERSONS INTENDED TO CONTINUE WITH THE PROJECT THROUGH TO COMPLETION. IF REQUIRED, REVISED PLANS WILL BE ISSUED THROUGH OFFICIAL CHANNELS. CHANGES IN THE BID PRICE WILL BE DISCUSSED, BUT NO CHANGE ORDERS WILL BE ISSUED UNLESS PROCESSED THROUGH OFFICIAL CHANNELS. IT SHALL BE UNDERSTOOD THAT THE ENGINEER HAS NO AUTHORITY TO ISSUE CHANGE ORDERS.

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

MECHANICAL SHEET METAL	4 HOURS
PLUMBING/PIPING	4 HOURS
ELECTRICAL	4 HOURS
SPRINKLER	2 HOURS
GENERAL CONTRACTOR	ALL SESSIONS

## GENERAL NOTES

**GENERAL**

- PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE GOVERNING ELECTRICAL CODE, LOCAL CODES, ORDINANCES AND REQUIREMENTS OF UTILITY COMPANIES FURNISHING SERVICES TO INSTALLATION.
- PROVIDE ALL WORK AND ITEMS NECESSARY FOR COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY CONDUIT, BOX, CONDUCTOR OR SIMILAR ITEMS FOR A COMPLETE INSTALLATION.
- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND DETERMINE CONDITIONS WHICH MAY AFFECT BID. ANY ITEMS NOT FULLY UNDERSTOOD SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
- "REF" INDICATIONS DENOTE WORK COVERED ELSEWHERE (ARCHITECTURAL, STRUCTURAL, OR MECHANICAL).
- REFERENCE ARCHITECTURAL DRAWING FOR EXACT LOCATION OF DEVICES. QUESTIONS CONCERNING THE LOCATION OF DEVICES AND EQUIPMENT SHALL BE DIRECTED TO THE ARCHITECT. FAILURE TO COORDINATE REQUIREMENTS SHALL IN NO WAY RESULT IN ADDITIONAL COMPENSATION BEING PROVIDED TO THE CONTRACTOR.
- WHEREVER THE WORD "PROVIDE" IS USED, IT MEANS, "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
- COORDINATE LOCATION OF ELECTRICAL WITH OTHER TRADES.
- REFER TO EQUIPMENT DRAWINGS FOR MECHANICAL CHARACTERISTICS (SIZE, LOCATION, ETC.) OF MECHANICAL EQUIPMENT, UNLESS OTHERWISE INDICATED. COORDINATE INSTALLATION AND LOCATION OF ALL EQUIPMENT WITH MECHANICAL CONTRACTOR. VERIFY ALL FUSE RATINGS, WIRE SIZES AND DISCONNECT SIZES PRIOR TO INSTALLATION.

**SITE ELECTRICAL**

- TRENCHING: COORDINATE ALL TRENCHING WORK WITH OTHER UTILITY LOCATIONS AND DRAINAGE TRENCHES.
- UNDERGROUND CONDUITS: PROVIDE PVC, SCHEDULE 40, 3/4" MINIMUM. PROVIDE GRC CONDUIT TRANSITION ELBOW WHEN TURNING UP TO ABOVE GRADE.
- DIRECT-BURIED CONDUITS: CONDUIT FOR BRANCH CIRCUITS OUTSIDE BUILDINGS NOT BENEATH DRIVEWAYS OR PARKING AREAS SHALL BE DIRECTLY BURIED WITHOUT CONCRETE ENCASEMENT. THE DEPTH TO THE TOP OF BURIED CONDUITS SHALL BE 36". PROVIDE MARKER TAPE 12" BELOW GRADE.
- BELOW SLAB: CONDUIT ROUTED BELOW ON-GRADE FLOOR SLABS SHALL BE INSTALLED PRIOR TO FLOOR SLAB POUR. ROUTE CONDUITS BELOW SLAB AS STRAIGHT AS POSSIBLE TO MINIMIZE BENDS.
- ALL CONDUITS PENETRATING THE BUILDING ENVELOPE BELOW GRADE SHALL FOLLOW WATERPROOFING REQUIREMENTS IN THE ARCHITECTURAL DRAWINGS.

**NEUTRALS**

- AT CONTRACTOR'S OPTION, NEUTRALS MAY BE SHARED ON COMBINED HOMERUNS UNLESS THE CIRCUIT HAS A GFCI BREAKER, AN ISOLATED GROUND, OR IS FROM A PANEL WITH TVSS PROTECTION. ANY NEUTRAL DOWNSTREAM FROM A DIMMER SHALL BE DEDICATED TO THE DIMMED LOAD.
- NEUTRAL WIRES SHOWN FOR TWO AND THREE POLE MECHANICAL AND KITCHEN EQUIPMENT MAY BE OMITTED UPON VERIFICATION THAT THEY ARE NOT REQUIRED EITHER FOR OPERATION OR CONTROL CIRCUITS PER MANUFACTURER'S SPECIFICATIONS.

**LIGHTING**

- PROVIDE LIGHT FIXTURES WITH PROPER FITTING FLANGES, MOUNTING SUPPORTS, AND ACCESSORY ITEMS, UL LISTED FOR CONDITIONS OF USE.

**LOW VOLTAGE LIGHTING**

- PROVIDE LOW VOLTAGE TRANSFORMERS IN NEARBY ACCESSIBLE CEILING SPACE.
- PROVIDE LOW VOLTAGE CONDUCTORS SIZED PER MANUFACTURER'S GUIDELINES TO MINIMIZE VOLTAGE DROP.

**LIGHTING CONTROL**

- THE MAXIMUM LIGHTING POWER THAT MAY BE CONTROLLED FROM A SINGLE SWITCH OR AUTOMATIC CONTROL SHALL NOT EXCEED THAT WHICH IS PROVIDED BY A TWENTY AMPERE CIRCUIT LOADED TO NOT MORE THAN EIGHTY PERCENT. A MASTER CONTROL MAY BE INSTALLED PROVIDED THE INDIVIDUAL SWITCHES RETAIN THEIR CAPABILITY TO FUNCTION INDEPENDENTLY.
- EMERGENCY FIXTURES: EMERGENCY BATTERY/CHARGER SHALL BE CONNECTED TO AN UNSWITCHED LEG OF THE DESIGNATED CIRCUIT.

**MATERIALS AND METHODS**

- PROVIDE RACEWAY AND WIRING ROUTED CONCEALED WITHIN BUILDING STRUCTURE WHERE POSSIBLE. WHERE RACEWAY CANNOT BE CONCEALED, IT SHALL BE INSTALLED PER PROJECT MANAGER'S DIRECTION. ALL CONDUIT SHALL BE INSTALLED IN NEAT SYMMETRICAL LINES HORIZONTAL OR PERPENDICULAR TO BUILDING COLUMNS AND ROOF LINES. CONDUITS SHALL BE GROUPED ON COMMON SUPPORTS WHEREVER POSSIBLE.
- EXPOSED CONDUIT ROUTING: CONDUITS MAY BE ROUTED EXPOSED IN MECHANICAL AND ELECTRICAL ROOMS ONLY. EXPOSED CONDUITS SHALL BE SECURED A MINIMUM OF 6" ABOVE FLOOR.
- OUTDOOR EXPOSED CONDUIT ROUTING: CONDUITS ROUTED ON ROOF OR EXPOSED TO WEATHER SHALL BE GRC, PVC OR LIQUID-TIGHT FLEX. PROVIDE WATER-TIGHT CONNECTIONS AND FITTINGS.
- CLEARANCES: VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET.
- CONNECTIONS: PROVIDE GRS, METALLIC FLEX, OR LIQUIDITE FLEX CONDUITS FOR CONNECTIONS TO MOTORS OR MOTORIZED EQUIPMENT.
- WIRING: PROVIDE MINIMUM #12 AWG WIRE SIZE. IF CONDUIT IS TO BE USED MINIMUM IS TO BE 1/2" FLEXIBLE CONDUIT AND FLEXIBLE CABLE IS PERMISSIBLE THROUGHOUT THE BUILDING.

## DRAWING INDEX

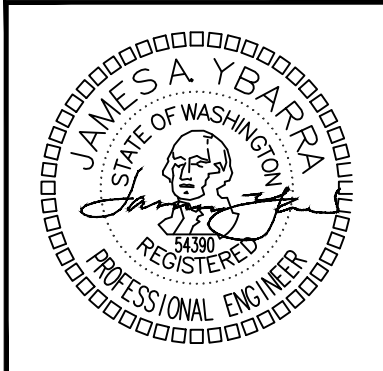
		INCLUDED IN SET	
DWG	DESCRIPTION	PERMIT SET	07/24/23
E0.00	LEGEND, GENERAL NOTES, DRAWING INDEX	X	
E0.10	SITE PLAN	X	
E0.11	SITE PHOTOMETRIC PLAN	X	
E1.01	LIGHTING PLAN – LEVEL 1	X	
E1.02	LIGHTING PLAN – LEVEL 2 / ROOF	X	
E1.11	PHOTOMETRIC PLAN – LEVEL 1		
E1.50	LIGHTING NOTES & LUMINAIRE SCHEDULE	X	
E2.01	POWER PLAN – LEVEL 1	X	
E2.02	POWER PLAN – LEVEL 2 / ROOF	X	
E3.00	ENLARGED POWER PLAN	X	
E5.00	ONE-LINE DIAGRAM	X	
E5.01	PANEL SCHEDULES	X	
E7.00	LIGHTING COMPLIANCE FORMS	X	

NO.

DATE

DESCRIPTION

REVISIONS



**ROBISON ENGINEERING, INC**

19401 40TH AVE W. SUITE 302  
LYNNWOOD, WA 98036  
206-846-4343  
REG PROJECT NO.: 1986-101  
CONTRACT: 1986-101

DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR
		APPROVED: PR

PROJECT: **SOPER HILL KIDS N' US**

8727 SOPER HILL RD  
LAKE STEVENS, WA 98258

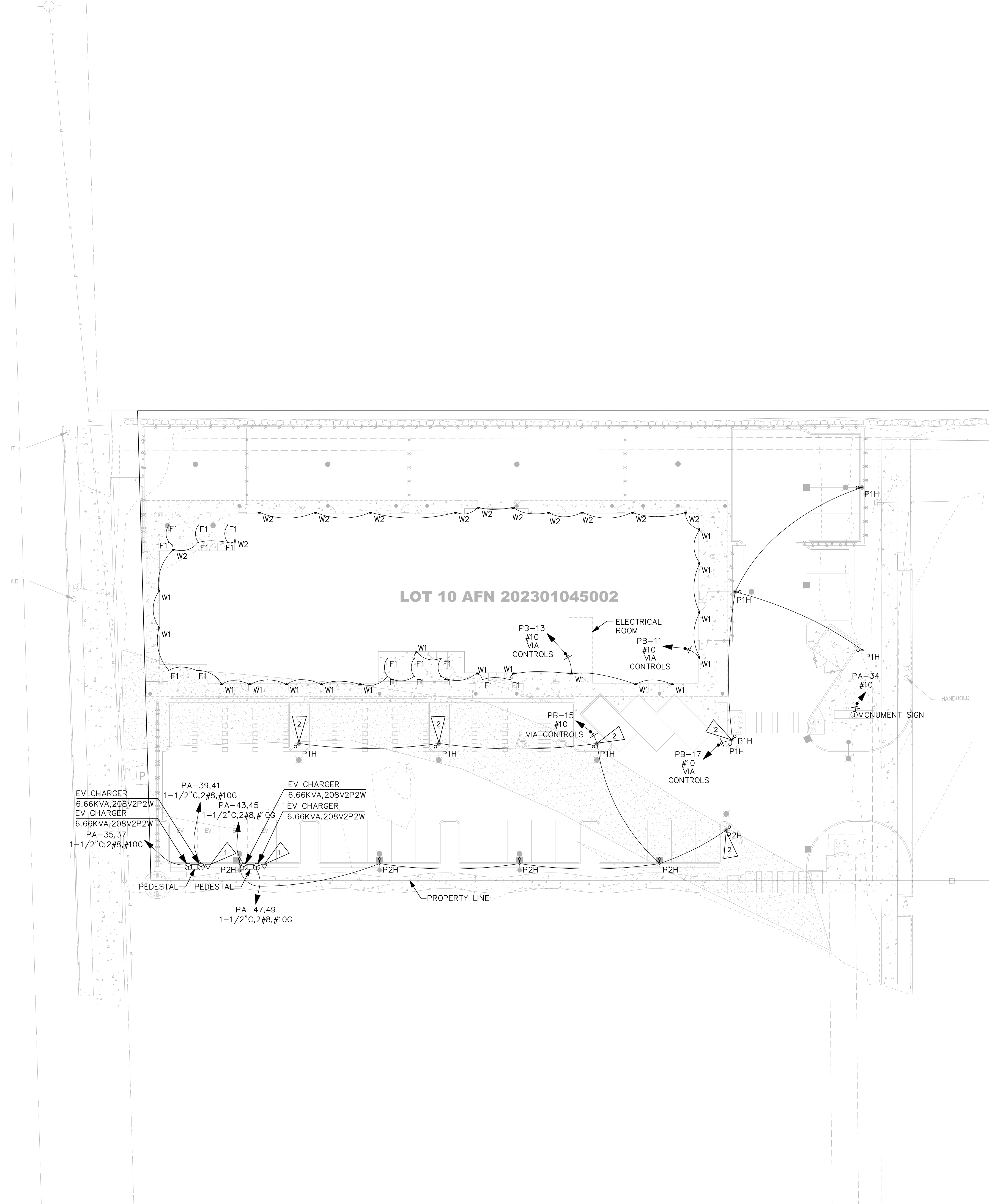
ROBISON ENGINEERING, INC

19401 40TH AVE W. SUITE 302  
LYNNWOOD, WA 98036  
PHONE: (206)864-3343

DATE: 7/24/23

SHEET TITLE:  
LEGEND, GENERAL NOTES, DRAWING INDEX

SHEET NO.  
**E0.00**



**GENERAL NOTES**

1. MOUNTING HEIGHT (MH) LISTED IN LUMINAIRE SCHEDULE SHALL BE FROM ABOVE GRADE TO BOTTOM OF COMPLETE EXPOSED FIXTURE.
2. ALL EXTERIOR MOUNTED LIGHTING SHALL BE CONTROLLED BY PHOTOCONTROL PER WASHINGTON STATE ENERGY CODE (WSEC) REQUIREMENTS C405.2.6.
3. DURING EMERGENCY CONDITIONS, EMERGENCY LIGHTING CIRCUITS SHALL BYPASS ALL LIGHTING CONTROLS IN ORDER TO ENERGIZE ALL CONNECTED LUMINAIRES AT FULL CAPACITY. PROVIDE UL924 RELAYS AS REQUIRED TO BYPASS AREA CONTROLS.
- 3.1. EMERGENCY PATHWAY EGRESS LIGHTING: EMERGENCY LIGHTING FACILITIES SHALL BE ARRANGED TO PROVIDE INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 1 FOOT CANDLE. (IBC 1008.3.5)
4. OUTDOOR ACTIVITY AREAS MUST MAINTAIN A MINIMUM EMERGENCY LIGHTING LEVEL OF 3 FOOT CANDLES MEASURED THIRTY INCHES ABOVE WORKING SURFACE PER WAC 296-79-070.

**FLAG NOTES**

1. PROVIDE 1" CONDUIT TO ELECTRICAL ROOM FOR DATA TO EV CHARGER.
2. ORIENT POLE LIGHT FIXTURE AT A 45 DEGREE ANGLE AS SHOWN.

**EV CHARGER CALCULATION**

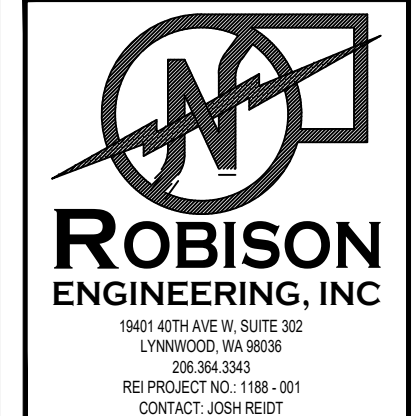
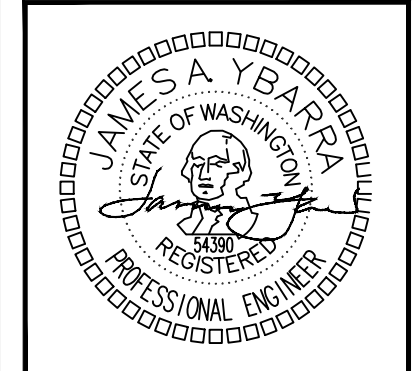
PER WAC 429.1 EXCEPTION #2, EV CHARGERS ARE NOT REQUIRED AND ARE EXEMPT UNDER GROUP E OCCUPANCY.

**SITE PLAN**

SCALE: 1" = 20'



NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR	APPROVED: PR
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8727 SOPER HILL RD  
LAKE STEVENS, WA 98258

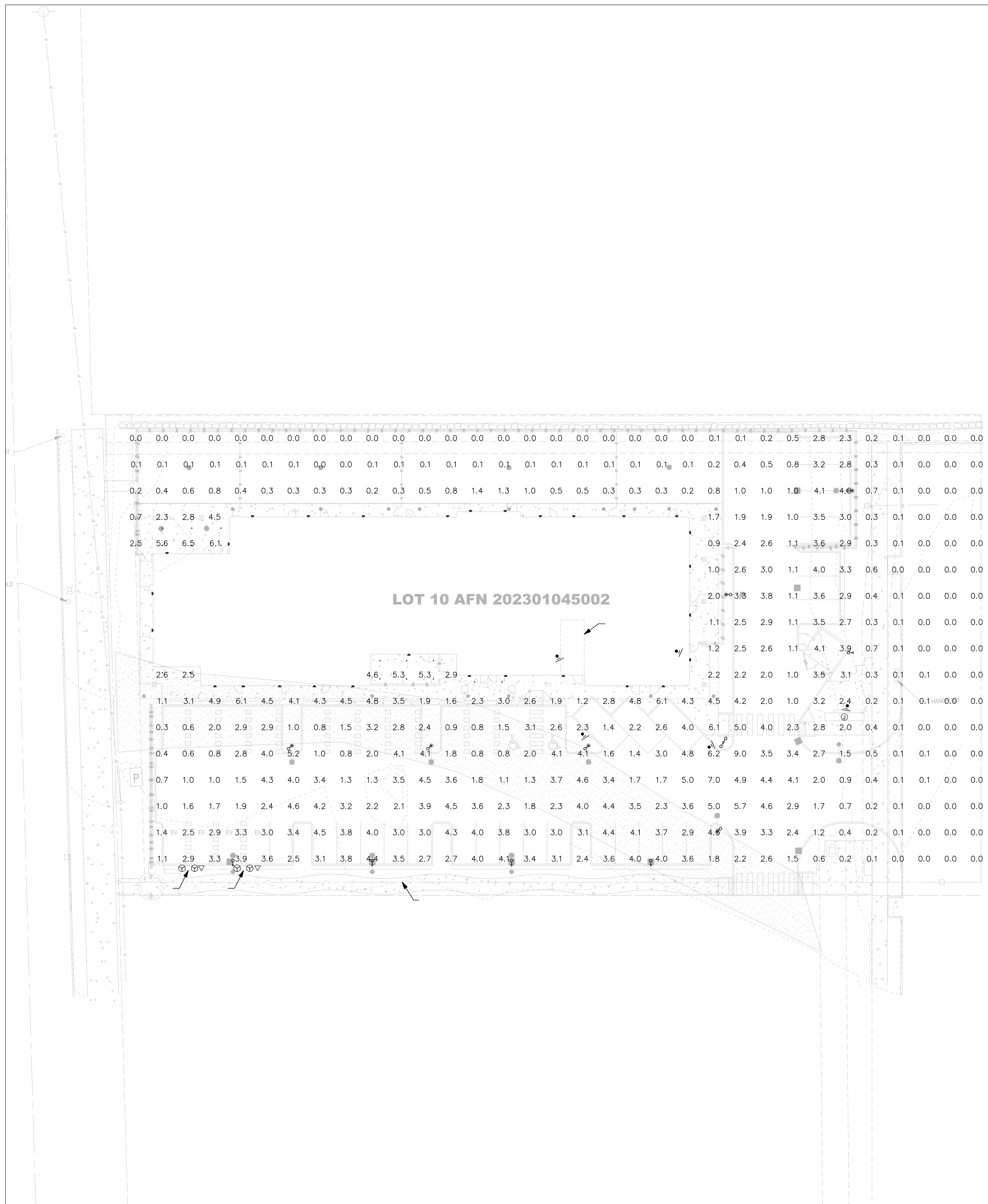
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LYNNWOOD, WA 98036  
PHONE: (206)364-3343**

**ROBISON ENGINEERING, INC.**

DATE: 7/24/23

SHEET TITLE:  
**SITE PLAN**

SHEET NO.  
**E0.10**



*General Photometric Schedule*

AVERAGE FOOT-CANDLES	1.83
MAXIMUM FOOT-CANDLES	9.0
MINIMUM FOOT-CANDLES	0.0
MINIMUM TO MAXIMUM FC RATIO	0.00
MAXIMUM TO MINIMUM FC RATIO	1282.49
AVERAGE TO MINIMUM FC RATIO	262.11

*EXTERIOR LUMINAIRE SCHEDULE*

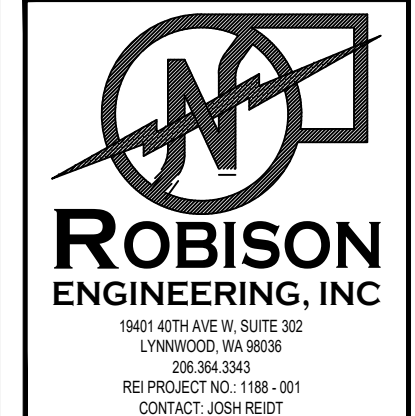
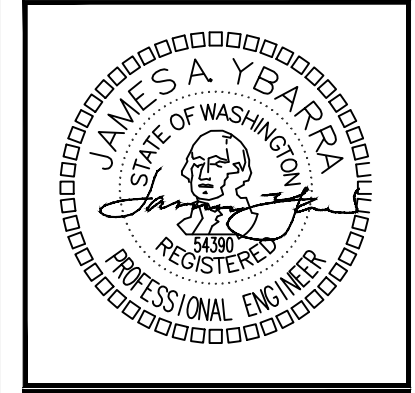
CALLOUT	SYMBOL	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	TYPE	LAMPING	NOTES
F1	.	CEILING	3" LED DOWNLIGHT	LITHONIA LTG: WF3 LED 27K [FINISH]	120	ELECTRONIC	(1) 8W LED 2700K 80CRI	
P1H	∞	POLE	AREA POLE LIGHT WITH TYPE V NARROW OPTICS   MH: 14'	COOPER LIGHTING MCGRAW-EDISON: GLNA-AF-01-LED-E1-SL2-7027	120	0-10V DIMMING	(1) 59W LED 2700K 70CRI	
P2H	∞	POLE	AREA POLE LIGHT WITH TYPE V SQUARE WIDE OPTICS   MH: 14'	COOPER LIGHTING MCGRAW-EDISON: GLNA-AF-01-LED-E1-SL4-7027	120	0-10V DIMMING	(1) 59W LED 2700K 70CRI	
W1	.	WALL	WALL SCONCE   MH: 8' WITH BATTERY BACKUP	LITHONIA LTG: WDGE2 LED P0 27K 80CRI T1S MVOLT SRM E10WH DMG [FINISH]	120	0-10V DIMMING	(1) 18W LED 2700K 80CRI	
W2	.	WALL	WALL SCONCE   MH: 8' WITH BATTERY BACKUP WIDE DISTRIBUTION	LITHONIA LTG: WDGE2 LED P0 27K 80CRI T3M MVOLT SRM E10WH DMG [FINISH]	120	0-10V DIMMING	(1) 18W LED 2700K 80CRI	

- NOTES:
- CONTRACTOR TO FURNISH AND INSTALL ALL FIXTURES.
  - LUMINAIRE SCHEDULE IS BID ONLY. CONTRACTOR TO SUBMIT FIXTURE MODEL OR EQUIVALENT. CONTRACTOR TO COORDINATE FIXTURE FINISHES WITH ARCHITECT/OWNER.
  - FIXTURE CATALOG NUMBERS DO NOT NECESSARILY DENOTE SPECIFIC MOUNTING ACCESSORIES. CONTRACTOR TO PROVIDE ALL NECESSARY ACCESSORIES TO SUCCESSFULLY COMPLETE THE INSTALLATION.
  - CONTRACTOR SHALL COORDINATE LANDSCAPE LIGHT FIXTURES LOCATIONS WITH PLANTING AND HARDSCAPE VIA THE ARCHITECT.
  - CONTRACTOR TO FIELD VERIFY ALL DISTANCES, LENGTHS, AND QUANTITIES.
  - NOT LESS THAN 90 PERCENT OF LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS PER 2018 WSEC R404.1.
  - BID ALLOWANCES: PROVIDE ALLOWANCE IN BID OF \$150.00 EACH FOR MODEL "TBD" LUMINAIRES WHICH HAVE NOT BEEN SELECTED AT TIME OF BID.

SITE PHOTOMETRIC PLAN

SCALE: 1" = 20'

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR	APPROVED: PR
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 8727 SOPER HILL RD  
 LAKE STEVENS, WA 98258

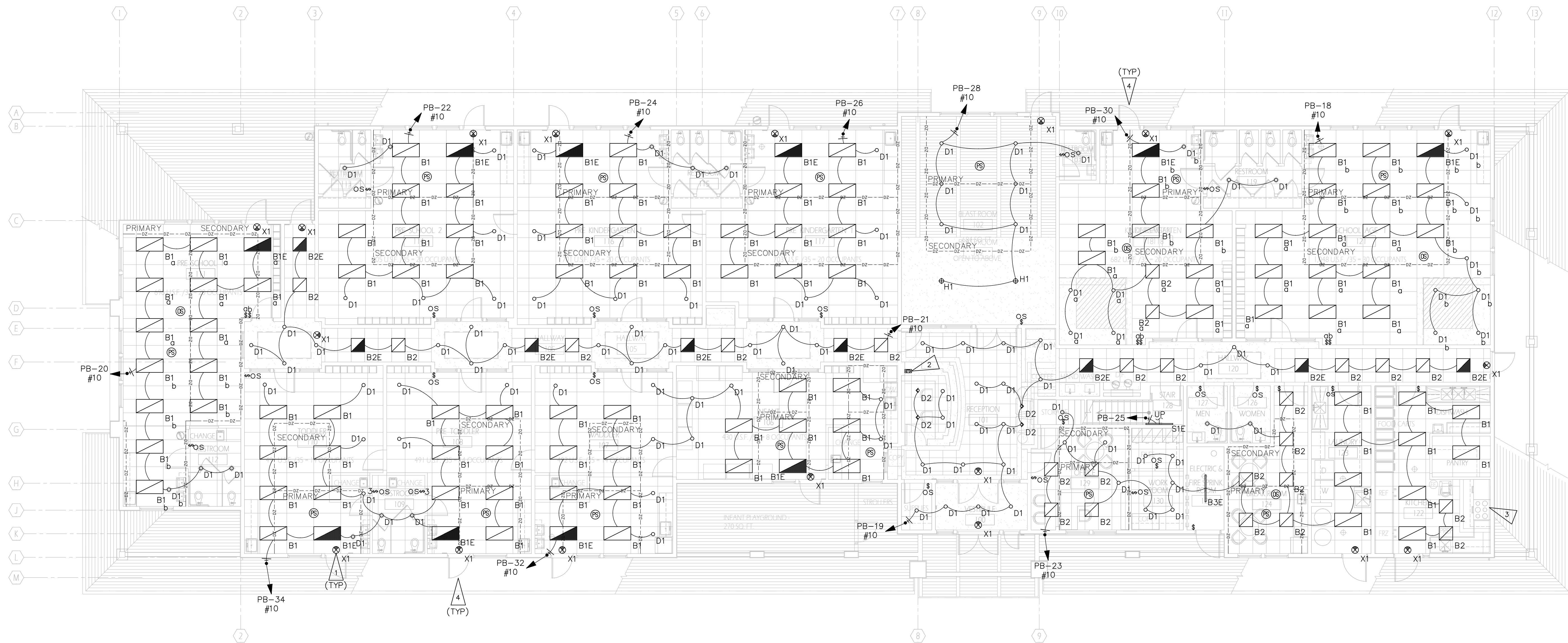
19401 40TH AVE W, SUITE 302  
 LYNNWOOD, WA 98036  
 PHONE: (206) 864-3343

**ROBISON ENGINEERING, INC**

DATE: 7/24/23

SHEET TITLE:  
 SITE PHOTOMETRIC PLAN

SHEET NO.  
**E0.11**



**GENERAL NOTES**

- EMERGENCY EGRESS LIGHTING: UPON LOSS OF NORMAL POWER SUPPLY, LIGHT FIXTURES PROVIDED WITH BATTERY BACKUP WILL ILLUMINATE.
- SEE SHEET E1.50 FOR LUMINAIRE SCHEDULE AND LIGHTING NOTES.

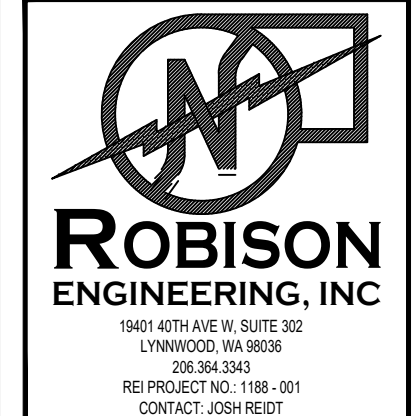
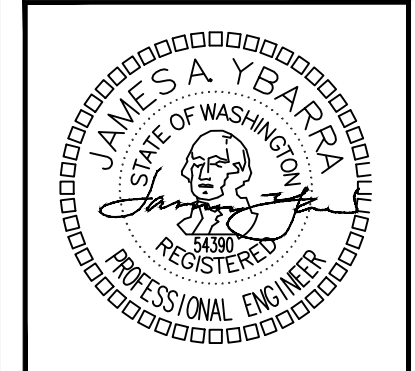
**FLAG NOTES**

- EXIT SIGNS: PROVIDE UNSWITCHED HOT. TYPICAL.
- PROVIDE LOCKED KEYED SWITCHES FOR MANUAL ON/OFF CONTROL OF LIGHTING IN CORRIDORS AND LOBBY. COORDINATE FINAL LOCATION OF LIGHTING CONTROLS.
- INSTALL LIGHTING SUPPLIED WITH HOOD AND PROVIDE POWER FROM NEAREST LIGHTING CIRCUIT.
- ALL EXITS PROVIDED WITH LIGHTING FIXTURES WITH EMERGENCY BATTERY BACKUP FOR EMERGENCY EGRESS. REFER TO SITE PLAN E0.10 FOR LIGHT FIXTURE LOCATIONS.

**LIGHTING PLAN - LEVEL 1**

SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION	REVISIONS



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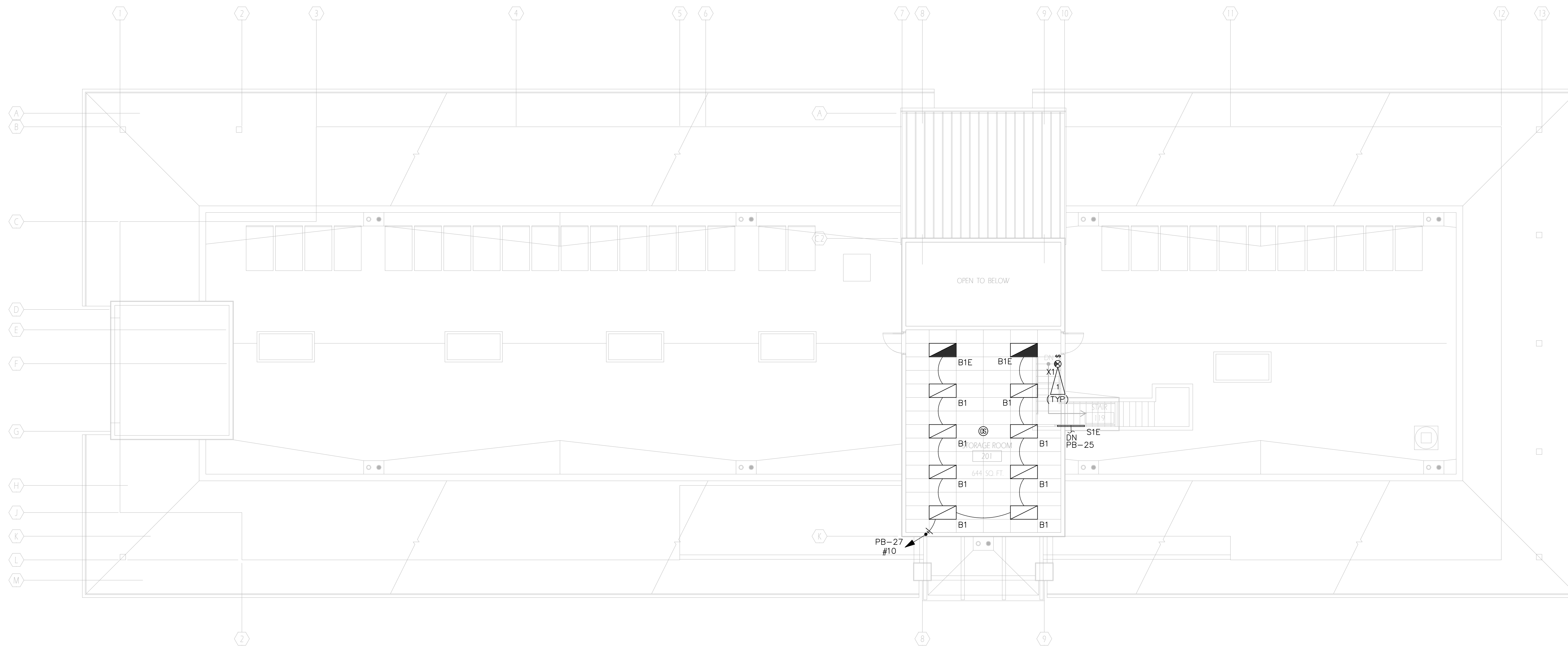
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**ROBISON ENGINEERING, INC**

DATE: 7/24/23

SHEET TITLE:  
**LIGHTING PLAN - LEVEL 1**

SHEET NO.  
**E1.01**



**GENERAL NOTES**

- EMERGENCY EGRESS LIGHTING: UPON LOSS OF NORMAL POWER SUPPLY, LIGHT FIXTURES PROVIDED WITH BATTERY BACKUP WILL ILLUMINATE.
- SEE SHEET E1.50 FOR LUMINAIRE SCHEDULE AND LIGHTING NOTES.

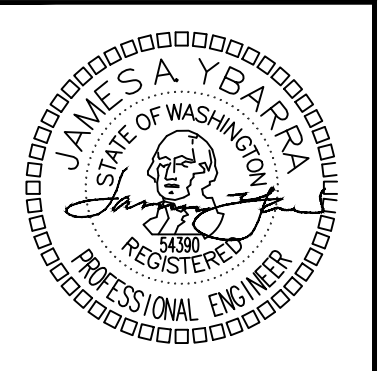
**FLAG NOTES**

- EXIT SIGNS: PROVIDE UNSWITCHED HOT. TYPICAL.

**LIGHTING PLAN – LEVEL 2/ROOF**

SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR	APPROVED: PR
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PROJECT: **SOPER HILL KIDS N' US**  
 8727 SOPER HILL RD  
 LAKE STEVENS, WA 98258

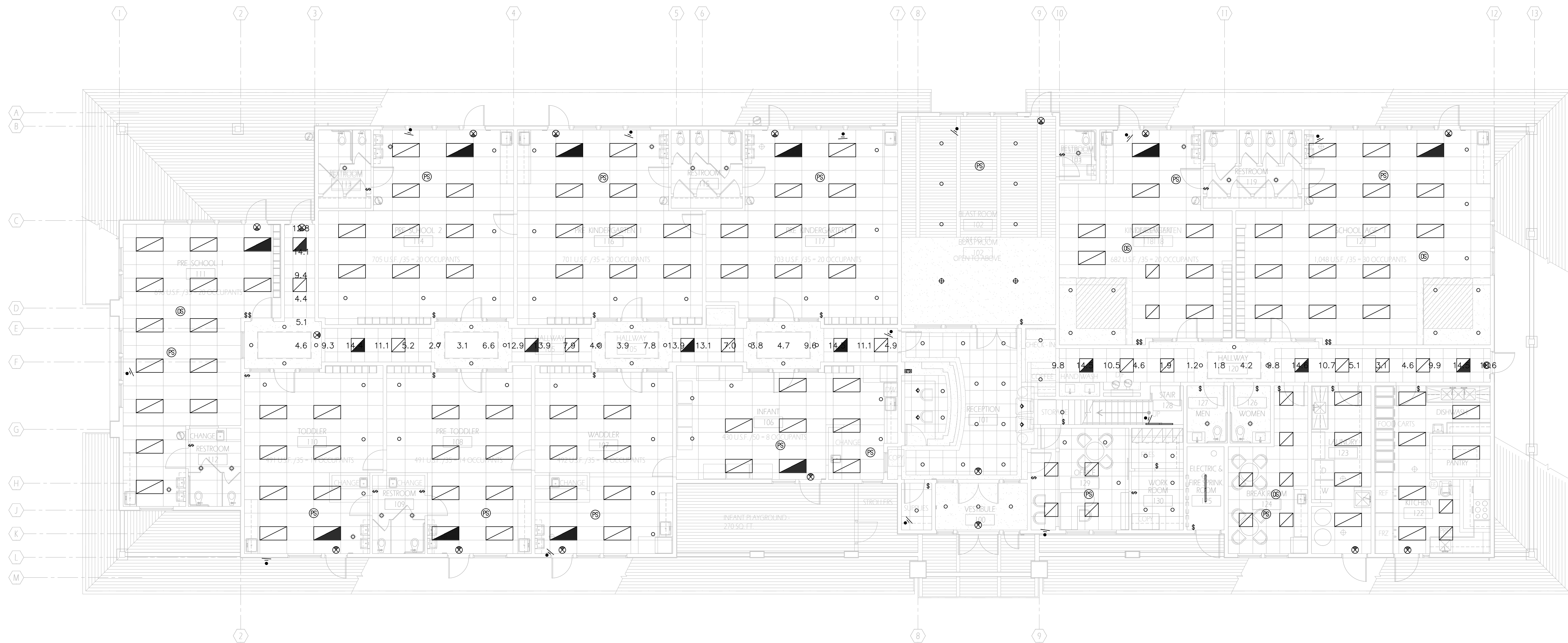
19401 40TH AVE W, SUITE 302  
 LYNNWOOD, WA 98036  
 PHONE: (206)864-3343

**ROBISON ENGINEERING, INC**

DATE: 7/24/23

SHEET TITLE:  
 LIGHTING PLAN -  
 LEVEL 2 / ROOF

SHEET NO.  
**E1.02**



*Egress Photometric Schedule*

AVERAGE FOOT-CANDLES	8.16
MAXIMUM FOOT-CANDLES	14.6
MINIMUM FOOT-CANDLES	1.2
MINIMUM TO MAXIMUM FC RATIO	0.08
MAXIMUM TO MINIMUM FC RATIO	11.79
AVERAGE TO MINIMUM FC RATIO	6.59

- GENERAL PHOTOMETRIC NOTES
1. PHOTOMETRIC CALCULATIONS BASED ON AVAILABLE IES FILES FROM FIXTURE MANUFACTURERS (OR EQUIVALENT). FIXTURE SUBSTITUTIONS MAY COMPROMISE FOOT CANDLE (FC) LEVELS.
  2. PHOTOMETRIC CALCULATION ELEVATION FROM CEILING HEIGHT UON IN LUMINAIRE SCHEDULE ON SHEET E1.50 OR ARCH/ID PLANS.
  3. EMERGENCY EGRESS PHOTOMETRIC CALCULATIONS BASED ON EMERGENCY LIGHTING ONLY. CALCULATION ELEVATION: 9' AFF.

LIGHTING PLAN - LEVEL 1 - PHOTOMETRIC  
SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	JUR, NL
DESIGNED: JUR, NL	JUR, NL
CHECKED: PR	PR
APPROVED: PR	PR

PROJECT: **SOPER HILL KIDS N' US**  
8727 SOPER HILL RD  
LAKE STEVENS, WA 98258

19401 40TH AVE W, SUITE 302  
LYNNWOOD, WA 98036  
PHONE: (206)364-3343

**ROBISON ENGINEERING, INC**

DATE: 7/24/23

SHEET TITLE:  
PHOTOMETRIC PLAN - LEVEL 1

SHEET NO.  
**E1.11**

LIGHTING CONTROLS LEGEND	
	TOGGLE SWITCH FOR MANUAL ON/OFF LIGHTING CONTROL (WSEC C405.2.3). SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY WHICH SWITCH. SUBSCRIPT 'k' INDICATES TAMPER RESISTANT KEYED SWITCH FOR USE BY AUTHORIZED PERSONNEL ONLY.
	DIMMER SWITCH FOR MANUAL MULTI-LEVEL LIGHTING CONTROL. SWITCH SHALL ALSO HAVE MANUAL ON/OFF FUNCTIONALITY. SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY WHICH DIMMER. (C405.2.3)
	SWITCHES LABELED 'os' OR 'vs' SHALL TURN OFF ALL CONNECTED LUMINAIRES WITHIN 20 MINUTES OF SPACE BEING VACANT. (C405.2.1.1)
	WALLBOX DIMMER OR SWITCH FOR MANUAL LOCAL LIGHTING CONTROL (C405.2.3). WALLBOXES SHALL ALSO HAVE MANUAL ON/OFF FUNCTIONALITY OF ALL CONNECTED LUMINAIRES. SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY ZONE ACCORDING TO LIGHTING CONTROL SCHEDULE; 'x' INDICATES MULTIPLE ZONE CONTROL. SUBSCRIPT 'TR' INDICATES TAMPER RESISTANT CONTROLS TO BE ACCESSED BY AUTHORIZED PERSONNEL ONLY.
	CONTROL STATION FOR MANUAL LOCAL LIGHTING CONTROL (C405.2.3). WALLBOXES SHALL HAVE MANUAL ON/OFF AND DIMMING FUNCTIONALITY OF ALL CONNECTED LUMINAIRES. SUBSCRIPT CORRESPONDS TO 'LIGHTING CONTROLS' TABLE.
	OCCUPANCY SENSOR SHALL AUTOMATICALLY TURN OFF ALL CONNECTED LUMINAIRES WITHIN 20 MINUTES OF SPACE BEING VACANT. (C404.2.1.1)
	MULTI-ZONE PHOTOSENSOR FOR DAYLIGHT ZONE CONTROL SHALL AUTOMATICALLY ADJUST THE LIGHT OUTPUT OF ALL CONNECTED LUMINAIRES BASED ON THE DAYLIGHT LEVEL IN THE PRIMARY AND SECONDARY ZONES (C405.2.4). SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY ZONE ACCORDING TO LIGHTING CONTROL SCHEDULE; 'x' INDICATES MULTIPLE ZONE CONTROL.

GENERAL LIGHTING NOTES	
1.	LIGHTING CONTROLS SHALL BE INSTALLED WHICH MEET ALL REQUIREMENTS OF LOCAL ENERGY CODES.
2.	EMERGENCY LIGHT FIXTURES: IN ADDITION TO SWITCH-LEG, PROVIDE UNSWITCHED HOT TO SERVE INTERNAL BATTERY AND CHARGER.
3.	LOCATIONS OF OCCUPANCY SENSORS, PHOTO SENSORS, DIMMERS, AND SWITCHES ARE DIAGRAMMATIC. CONTRACTOR TO COORDINATE QUANTITIES AND OPTIMAL LOCATIONS WITH LIGHTING CONTROL MANUFACTURER AND ARCH/OWNER.
4.	AUTOMATIC LIGHTING SHUT-OFF CONTROLS SHALL BE PROVIDED BY LOCAL OCCUPANCY SENSORS UNLESS OTHERWISE NOTED. PUBLIC SPACES ARE ACTIVE 24/7 AND THEREFORE EXEMPT FROM AUTOMATIC LIGHTING SHUT-OFF REQUIREMENTS FOR SECURITY. (WSEC C405.2)
5.	DAYLIGHT ZONES ARE SHOWN ON PLANS AS DEFINED BY WASHINGTON STATE ENERGY CODE (WSEC) C405.2.4.2. SIDELIGHT DAYLIGHT ZONES ARE REFERRED TO AS 'PRIMARY' AND 'SECONDARY' ON PLANS AND DENOTED BY DASHED LINES.
6.	FOR CUSTOM FF&E FIXTURES, IT IS THE MANUFACTURER'S RESPONSIBILITY TO FURNISH PRODUCTS WHICH ARE COMPLIANT WITH ALL REQUIREMENTS OF LOCAL ENERGY CODES, AS WELL AS MATCH THE ELECTRICAL SPECIFICATIONS PROVIDED IN THE LUMINAIRE SCHEDULES. PROVIDE SUBMITTAL SHOP DRAWINGS WITHIN 30 DAYS OF RECEIVING FIXTURE ORDER. SUBMITTALS SHALL CLEARLY INDICATE LAMPING AND MAXIMUM WATTAGE RATING OF LAMP SOCKETS. NON-COMPLIANT FIXTURES REJECTED BY ELECTRICAL INSPECTOR SHALL BE RETURNED TO THE MANUFACTURER FOR REWORKING AND/OR RE-LABELING.
7.	ALL FIXTURES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
8.	CONTRACTOR SHALL BE RESPONSIBLE TO ORDER ALL NECESSARY HARDWARE, ELECTRICAL CABLE, TIMERS, TRANSFORMERS, ETC., AS REQUIRED FOR COMPLETION OF INSTALLATION OF A FULLY FUNCTIONING SYSTEM.
9.	CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPPING ALL FIXTURES WITH THE EXACT LAMPS SPECIFIED IN THE FIXTURE SCHEDULE.
10.	WHERE FIXTURES REQUIRE REMOTE TRANSFORMERS OR BALLASTS, THE CONTRACTOR SHALL DETERMINE LOCATIONS AS REQUIRED FOR EVEN LOAD DISTRIBUTION, SERVICE ACCESS, AND VENTILATION.
11.	THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL ENGINEER FOR EXACT LOCATIONS OF TIMERS AND/OR PHOTO CELLS, IF ANY.
12.	WHERE APPLICABLE, THE CONTRACTOR SHALL AIM AND ADJUST LIGHTING FIXTURES AS DIRECTED BY THE LIGHTING DESIGNER UPON COMPLETION OF THE INSTALLATION.
<b>SPECIAL NOTE TO THE CONTRACTOR:</b>	
1.	FIXTURE SUBMITTALS THAT DO NOT INCLUDE LAMP SPECIFICATIONS WILL BE CONSIDERED INCOMPLETE AND WILL NOT BE REVIEWED.

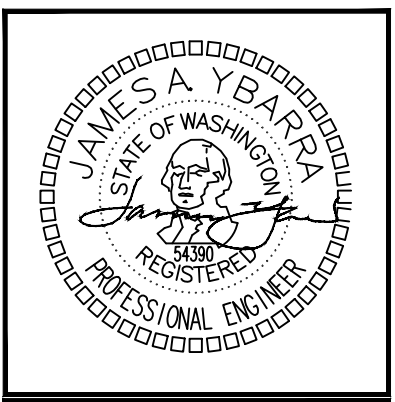
GENERAL LUMINAIRE SCHEDULE									
CALLOUT	SYMBOL	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	TYPE	CRI / CCT	LAMPING	WATTAGE
B1		RECESSED	2X4 TROFFER	METALUX: 24GR LD5 48 F1 UNV L835 CD1 U	120	0-10V DIMMING	80 / 3500K	(1) 38W LED	38
B1E		RECESSED	2X4 TROFFER - EMERGENCY BATTERY BACKUP	METALUX: 24GR LD5 48 F1 UNV EL10W L835 CD1 U	120	0-10V DIMMING	80 / 3500K	(1) 38W LED	38
B2		RECESSED	2X2 TROFFER	METALUX: 22GR LD5 32 F1 UNV L835 CD1 U	120	0-10V DIMMING	80 / 3500K	(1) 30W LED	30
B2E		RECESSED	2X2 TROFFER - EMERGENCY BATTERY BACKUP	METALUX: 22GR LD5 32 F1 UNV EL10W L835 CD1 U	120	0-10V DIMMING	80 / 3500K	(1) 30W LED	30
B3E		SURFACE	4" NARROW WRAP - BOH - EMERGENCY BATTERY BACKUP	SIGNIFY - DAY-BRITE: FSW 4 40L 830 UNV EMLED	120	0-10V DIMMING	80 / 3000K	(1) 31W LED	31
D1		CEILING	4" DOWNLIGHT	WAC: R4FRDT-930-[FINISH]	120	0-10V DIMMING		(1) 13W LED 3000K	13
D2		CEILING	4.5" WALLWASH	WAC: R4RWT-A830-907-[FINISH]	120	0-10V DIMMING		(1) 15W LED 3000K	15
H1		CEILING	LED LOW BAY	E-CONOLIGHT: E-ALB1L07NU	120			(1) 76W LED	76
S1E		SURFACE	4' STAIRWELL STRIP - INTEGRAL OCCUPANCY SENSOR - EMERGENCY BATTERY BACKUP	HE WILLIAMS: SLF 4 L26 830 HIA EM/10W (L37) OCCWS FSP-L2-120 SD50-120	120	BI-LEVEL MOTION	80 / 3000K	(1) 20W LED	20
X1		SURFACE	EXIT SIGN - SINGLE FACE - CIRCUIT TO NEAREST LIGHTING CIRCUIT	SURELITES: CX61 (OR EQUAL) WITH BATTERY BACKUP	MULTIPLE	EM	EM	(1) 5W LED	5

- NOTES:
- CONTRACTOR TO FURNISH AND INSTALL ALL FIXTURES.
  - LUMINAIRE SCHEDULE IS BOD ONLY. CONTRACTOR TO SUBMIT FIXTURE MODEL OR EQUIVALENT. CONTRACTOR TO COORDINATE FIXTURE FINISHES WITH ARCHITECT/OWNER.
  - FIXTURE CATALOG NUMBERS DO NOT NECESSARILY DENOTE SPECIFIC MOUNTING ACCESSORIES. CONTRACTOR TO PROVIDE ALL NECESSARY ACCESSORIES TO SUCCESSFULLY COMPLETE THE INSTALLATION.

LIGHTING CONTROL SYSTEM REQUIREMENTS	
1.	CONTRACTOR TO PROVIDE A FULLY OPERATIONAL LIGHTING CONTROL SYSTEM.
2.	CONTRACTOR SHALL VERIFY THE COMPATIBILITY OF DIMMING AND CONTROL MODULES WITH FIXTURE TYPES PRIOR TO INSTALLATION.
3.	ELECTRICAL CONTRACTOR SHALL COORDINATE WITH A LIGHTING CONTROLS VENDOR TO OBTAIN LIGHTING CONTROL SYSTEM PACKAGE COMPLETE WITH DEVICES, WIRING DIAGRAMS, ANNOTATED PLANS INDICATING WHICH DEVICE TO BE USED IN EACH LOCATION, CONNECTION REQUIREMENTS, SET UP INSTRUCTIONS, COMMISSIONING AND CHECK-OUT FOLLOWING COMPLETION. PROVIDE ALL LOW VOLTAGE WIRING AS REQUIRED FOR CONTROL DEVICE INTERCONNECTIONS.
4.	INSTALLER QUALIFICATIONS: TECHNICIAN INSTALLING AND WIRING THE LIGHTING CONTROL SYSTEM SHALL HAVE INSTALLED THIS SAME SYSTEM AT LEAST ONCE PREVIOUSLY. TECHNICIAN SHALL HAVE RECEIVED TRAINING BY FACTORY REPRESENTATIVE ON THE SYSTEM BEING INSTALLED.
5.	PROVIDE LIGHTING CONTROL SYSTEM TO PERFORM THE FUNCTIONS DESCRIBED BELOW:
5.1.	LIGHTING CONTROL SCHEDULE: PROVIDE SEPARATE SWITCHING AND DIMMING CONTROL FOR LIGHTING ZONES AS INDICATED.
5.2.	AUTOMATIC LIGHTING CONTROLS:
5.2.1.	UNLESS OTHERWISE NOTED ON PLANS, OCCUPANCY SENSORS SHALL AUTOMATICALLY TURN OFF ALL CONNECTED LIGHTING WITHIN 20 MINUTES OF SPACE BEING UNOCCUPIED. OCCUPANCY SENSORS SHALL EITHER BE MANUAL ON OR SHALL BE CONTROLLED TO AUTOMATICALLY TURN THE LIGHTING ON TO NOT MORE THAN 50 PERCENT POWER EXCEPT WHERE MANUAL ON WOULD ENDANGER THE SAFETY OR SECURITY OF THE ROOM OR BUILDING OCCUPANTS. (C405.2.1.1)
5.2.2.	MULTI-ZONE PHOTO-SENSORS SHALL PROVIDE SEPARATE CONTROL FOR LUMINAIRES IN EACH TYPE OF DAYLIGHT ZONE. (C405.2.4.1)
5.2.3.	EXTERIOR LIGHTING CONTROLS SHALL AUTOMATICALLY TURN OFF ALL EXTERIOR LIGHTING AS A FUNCTION OF AVAILABLE DAYLIGHT. BUILDING FACADE AND LANDSCAPE LIGHTING SHALL HAVE CONTROLS THAT AUTOMATICALLY SHUT OFF THE LIGHTING FOR A MINIMUM OF 6 HOURS PER NIGHT OR NOT LATER THAN ONE HOUR AFTER BUSINESS CLOSING TO NOT EARLIER THAN ONE HOUR BEFORE BUSINESS OPENING, WHICHEVER IS LESS. OTHER LIGHTING SHALL HAVE CONTROLS CONFIGURED TO AUTOMATICALLY REDUCE THE CONNECTED LIGHTING POWER BY AT LEAST 30 PERCENT FROM NO LATER THAN 12 MIDNIGHT TO 6 AM OR FROM ON HOUR AFTER BUSINESS CLOSING TO ONE HOUR BEFORE BUSINESS OPENING OR DURING ANY PERIOD WHEN NO ACTIVITY HAS BEEN DETECTED FOR A TIME OF NO LONGER THAN 15 MINUTES. (C405.2.6)
6.	MEANS OF EGRESS ILLUMINATION: AT ANY TIME THE BUILDING IS OCCUPIED, THE MEANS OF EGRESS SHALL BE ILLUMINATED AT AN INTENSITY OF NOT LESS THAN 1 FOOTCANDLE AT FLOOR LEVEL. (IBC 1008.2.1)
7.	DURING EMERGENCY CONDITIONS EMERGENCY LIGHTING CIRCUITS SHALL BYPASS ALL LIGHTING CONTROLS IN ORDER TO ENERGIZE ALL CONNECTED LUMINAIRES AT FULL CAPACITY. PROVIDE UL924 RELAYS AS REQUIRED TO BYPASS AREA CONTROLS.
7.1.	EMERGENCY PATHWAY EGRESS LIGHTING: ILLUMINATION PROVIDED ALONG THE EGRESS PATH AT FLOOR LEVEL SHALL AVERAGE AT LEAST 1 FOOT CANDLE. (IBC 1008.3.5)
7.2.	EMERGENCY LIGHTING SHALL BE SUPPLIED BY: INVERTER OR BATTERY BACK-UP FIXTURES.

EXIT SIGN NOTES	
DURING CONSTRUCTION UPON COMPLETION OF A TYPICAL FLOOR FRAMING AND BEFORE WALL COVER, ELECTRICAL CONTRACTOR SHALL WALK THE EGRESS PATHS WITH THE LOCAL INSPECTOR (AHJ) TO CONFIRM THAT ALL THE EXIT SIGNS ARE LOCATED PER THE AHJ'S SATISFACTION AND IDENTIFY ANY ADDITIONAL EXIT SIGNS THAT THE AHJ WISHES TO BE INSTALLED (IBC 1013.1). CONTRACTOR SHALL PROVIDE UP TO 10% ADDITIONAL EXIT SIGNS AT NO ADDITIONAL COST.	

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	JUR, NL	CHECKED: PR	APPROVED: PR
DESIGNED: JUR, NL			

PROJECT: SOPER HILL KIDS N' US  
 8727 SOPER HILL RD  
 LAKE STEVENS, WA 98258

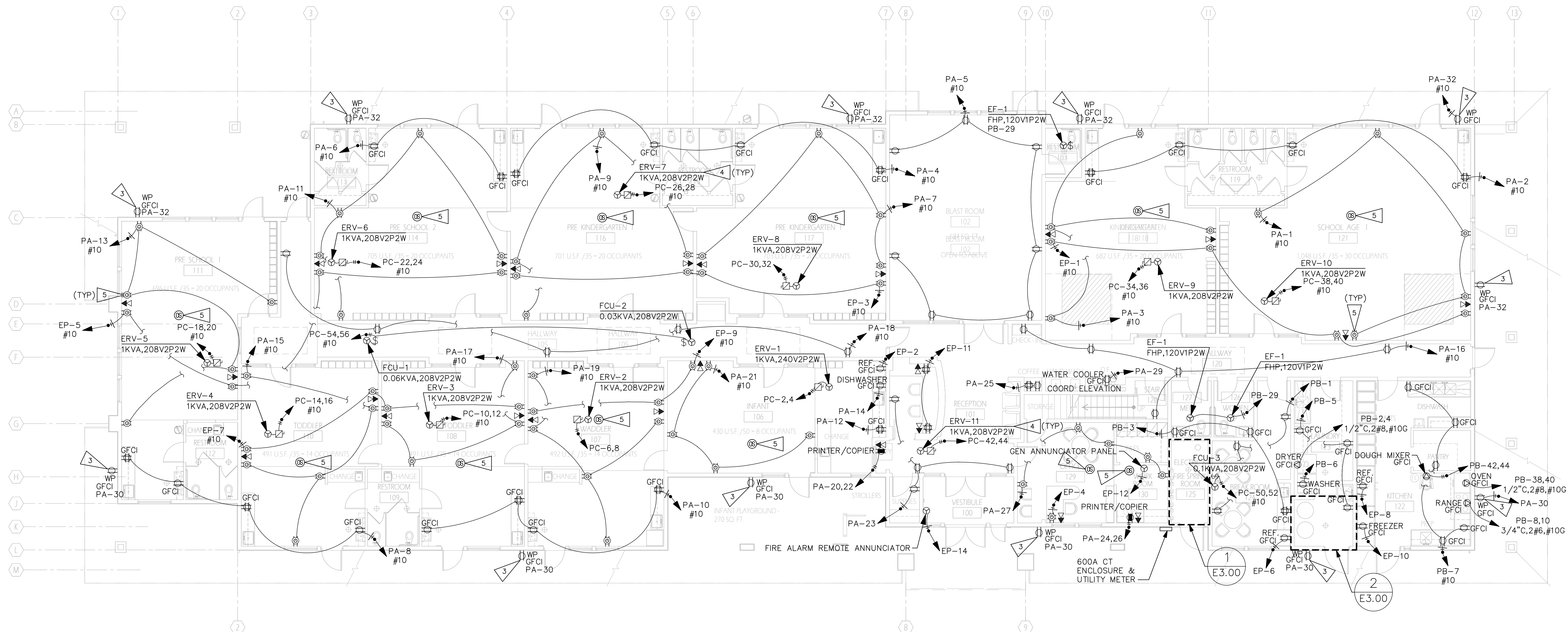
19401 40TH AVE W, SUITE 302  
 LYNNWOOD, WA 98036  
 PHONE: (206)364-3343

**ROBISON ENGINEERING, INC**

DATE: 7/24/23

SHEET TITLE:  
 LIGHTING NOTES &  
 LUMINAIRE  
 SCHEDULE

SHEET NO.  
**E1.50**



**GENERAL NOTES**

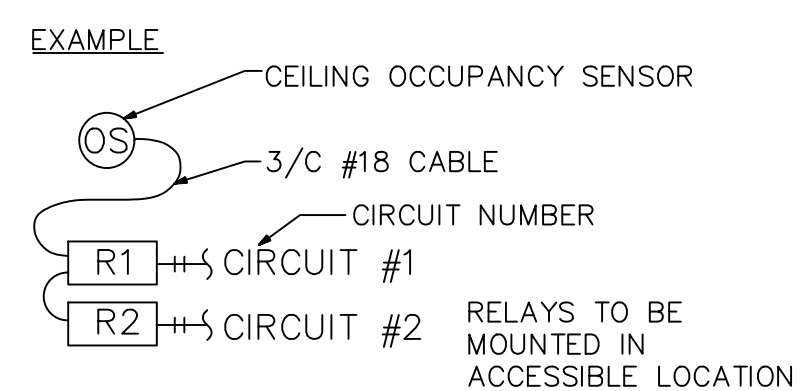
- ELECTRICAL CIRCUITING IS DIAGRAMMATIC. FINAL MEANS AND METHODS ARE TO BE DETERMINED IN FIELD. CONTRACTOR IS RESPONSIBLE FOR LOAD BALANCING AND ENSURING FIELD CIRCUITING CHANGES DO NOT RESULT IN OVERLOADING OF CIRCUITS.
- OCCUPANCY SENSOR LOCATIONS ARE NOTED ON E1.00 SERIES, LIGHTING SHEETS. FINAL DEVICE LOCATIONS AND QUANTITIES ARE TO BE DETERMINED BY CONTROLS CONTRACTOR FOR FULLY FUNCTIONAL SYSTEM.
- REFER TO LOW VOLTAGE DRAWINGS FOR LOW VOLTAGE EQUIPMENT LAYOUT DETAILS AND POWER REQUIREMENTS. TYPICAL FOR ALL IDF/MDF ROOMS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE DEDICATED CLEAR SPACE, 6" OR TO STRUCTURAL CEILING, WHICHEVER IS LESS, ABOVE ALL ELECTRICAL EQUIPMENT.
- MAINTAIN REQUIRED WORK SPACE ADEQUATE ILLUMINATION, ACCESS TO WORK SPACE AND HEAD ROOM ABOUT ELECTRICAL EQUIPMENT.
- ALL EXTERIOR WIRING TO BE WATERTIGHT AND PERMANENTLY SUPPORTED WITH SUPPORTS UL LISTED FOR SUCH USAGE. SEAL ALL CONNECTIONS, BOXES, ETC. ALL EQUIPMENT, DEVICES, SUPPORTS, PARTS, ETC INSTALLED ON THE EXTERIOR SHALL BE EXTERIOR-RATED. DURING CONSTRUCTION ALL CONDUIT, BOXES, ETC SHALL BE PROTECTED FROM WATER INFILTRATION.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY BUCKOUTS NOT SHOWN OR SLEEVE LOCATIONS FOR INDIVIDUAL RISER CONDUITS WITH THE STRUCTURAL ENGINEER.
- RECEPTACLE LOCATIONS IN THE FRONT OF HOUSE AREA TO BE COORDINATED WITH ARCHITECT AND/OR INTERIORS.
- REFER TO ARCHITECTURAL DRAWINGS FOR SLAB TO SLAB WALL LOCATIONS. CONTRACTOR SHALL PROVIDE PENETRATIONS AS REQUIRED AND FIREPROOFING INSULATION TO MAINTAIN RATING OF ANY FIRE-RATED WALLS AND FLOORS. ALL FLOOR PENETRATIONS SHALL BE FINISHED TO PROVIDE A SMOOTH SURFACE.
- PROVIDE CO DETECTORS/ALARMS AS REQUIRED BY SBC 420.5.

**FLAG NOTES**

- PROVIDE (1) 2" CONDUIT TO ROOF STUBBED UP FOR SOLAR SYSTEM TO ELECTRICAL ROOM. REFER TO PV PLANS FOR SOLAR SYSTEM DESIGN.
- PROVIDE STUB UP WHERE NECESSARY AND RECEPTACLE OUTLET ON ROOF. ROOFTOP RECEPTACLES SHALL BE WEATHERPROOF AND GFCI PROTECTED. SERVICE RECEPTACLE MUST BE WITHIN 25FT OF MECHANICAL EQUIPMENT. COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL MECHANICAL EQUIPMENT LOCATIONS.
- PROVIDE WP GFCI RECEPTACLE WITH LOCKING SECURITY COVER, PASS & SEYMOUR #WP26-L OR EQUIVALENT WITH KEY.
- COORDINATE EXACT EQUIPMENT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
- PROVIDE CONTROLLED RECEPTACLES AS REQUIRED BY WA STATE ENERGY CODE. PROVIDE MOTION SENSORS, RELAYS, OR OTHER AUTOMATIC MEANS TO AUTOMATICALLY TURN OFF THE LOWER OUTLET WHEN SPACE IS NOT OCCUPIED.
- PV MODULES AND RACK. REFER TO PV DESIGN FOR EXACT LOCATION AND DESIGN.

**WA ENERGY CODE -- CONTROLLED RECEPTACLES:**

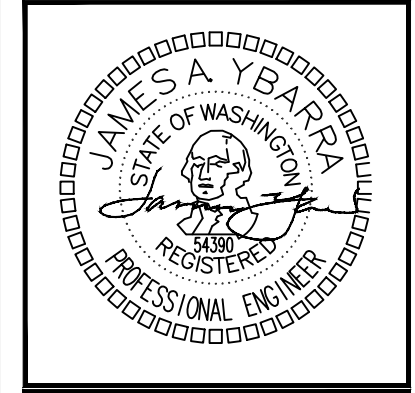
- PROVIDE CONTROLLED RECEPTACLES IN AREAS INDICATED PER WA ENERGY CODE C405.10.
- PROVIDE WATTSTOPPER DT-300 OR EQUIVALENT CEILING OCCUPANCY SENSOR AND BZ-200 CONTROL RELAYS IN ACCESSIBLE LOCATIONS.
- WHEN THE AREA IS OCCUPIED, THEN THE CONTROLLED RECEPTACLES SHALL BE ENERGIZED.
- SPLIT RECEPTACLES TO BE PROVIDED WITH CONTROLLED 120V HOT WIRE TO LOWER OUTLET AND CONTINUOUS 120V HOT WIRE TO UPPER OUTLET.



**POWER PLAN - LEVEL 1**

SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR	APPROVED: PR
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PROJECT: **SOPER HILL KIDS N' US**  
 8727 SOPER HILL RD  
 LAKE STEVENS, WA 98258

DATE: 7/24/23

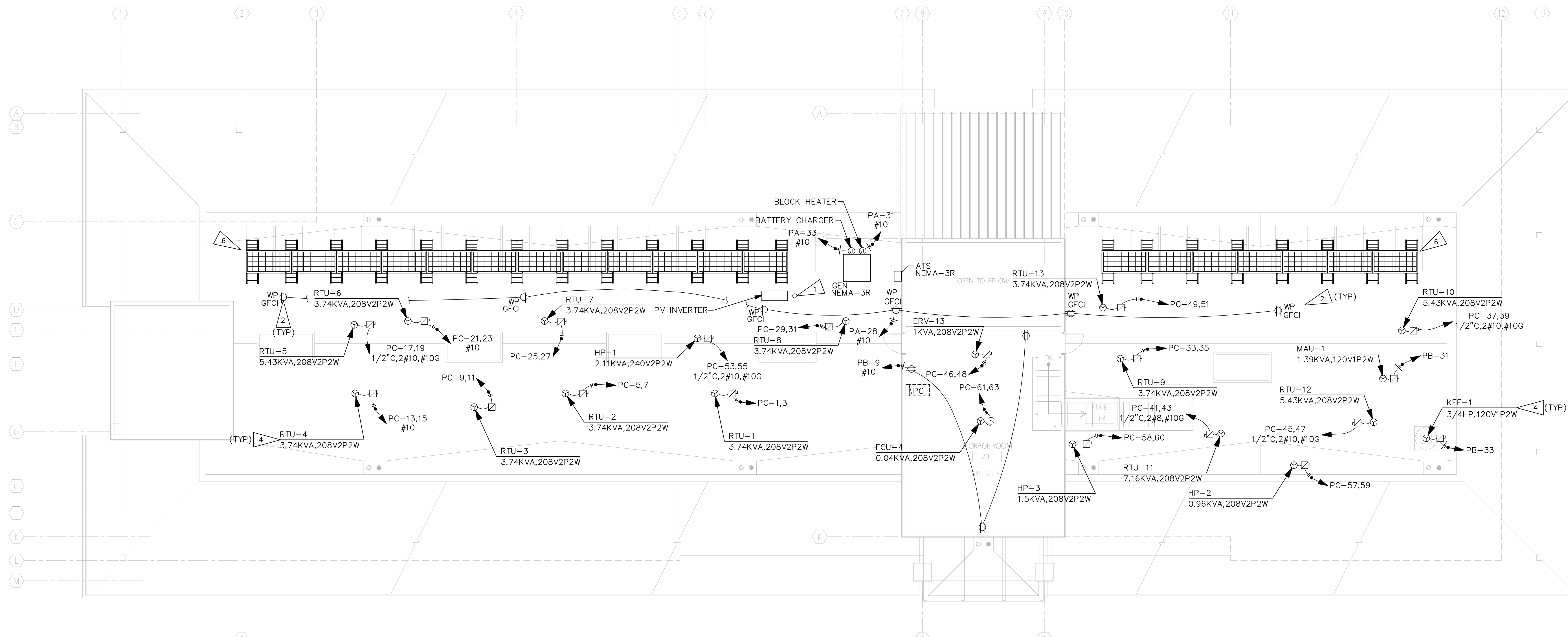
SHEET TITLE:  
**POWER PLAN - LEVEL 1**

SHEET NO.  
**E2.01**

19401 40TH AVE W, SUITE 302  
 LYNNWOOD, WA 98036  
 PHONE: (206) 864-3343

**ROBISON ENGINEERING, INC**





**GENERAL NOTES**

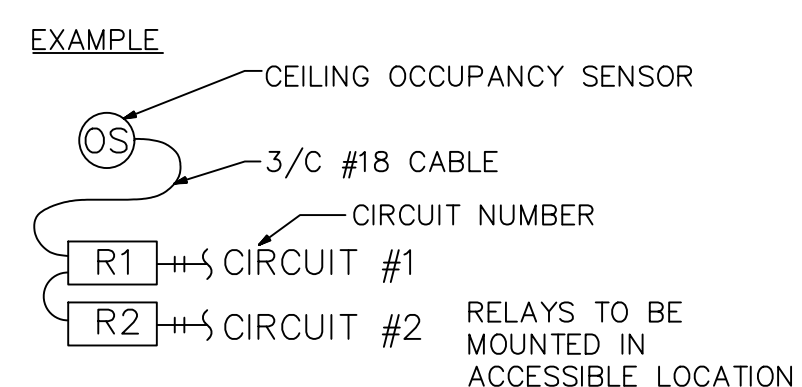
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**FLAG NOTES**

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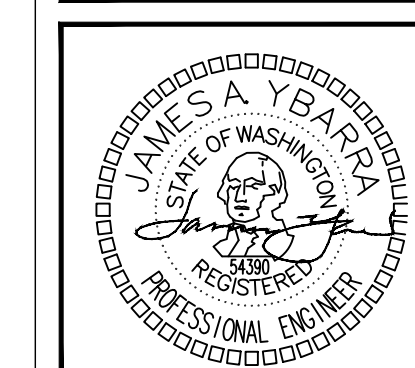
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**POWER PLAN - LEVEL 2/ROOF**

SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION	REVISIONS



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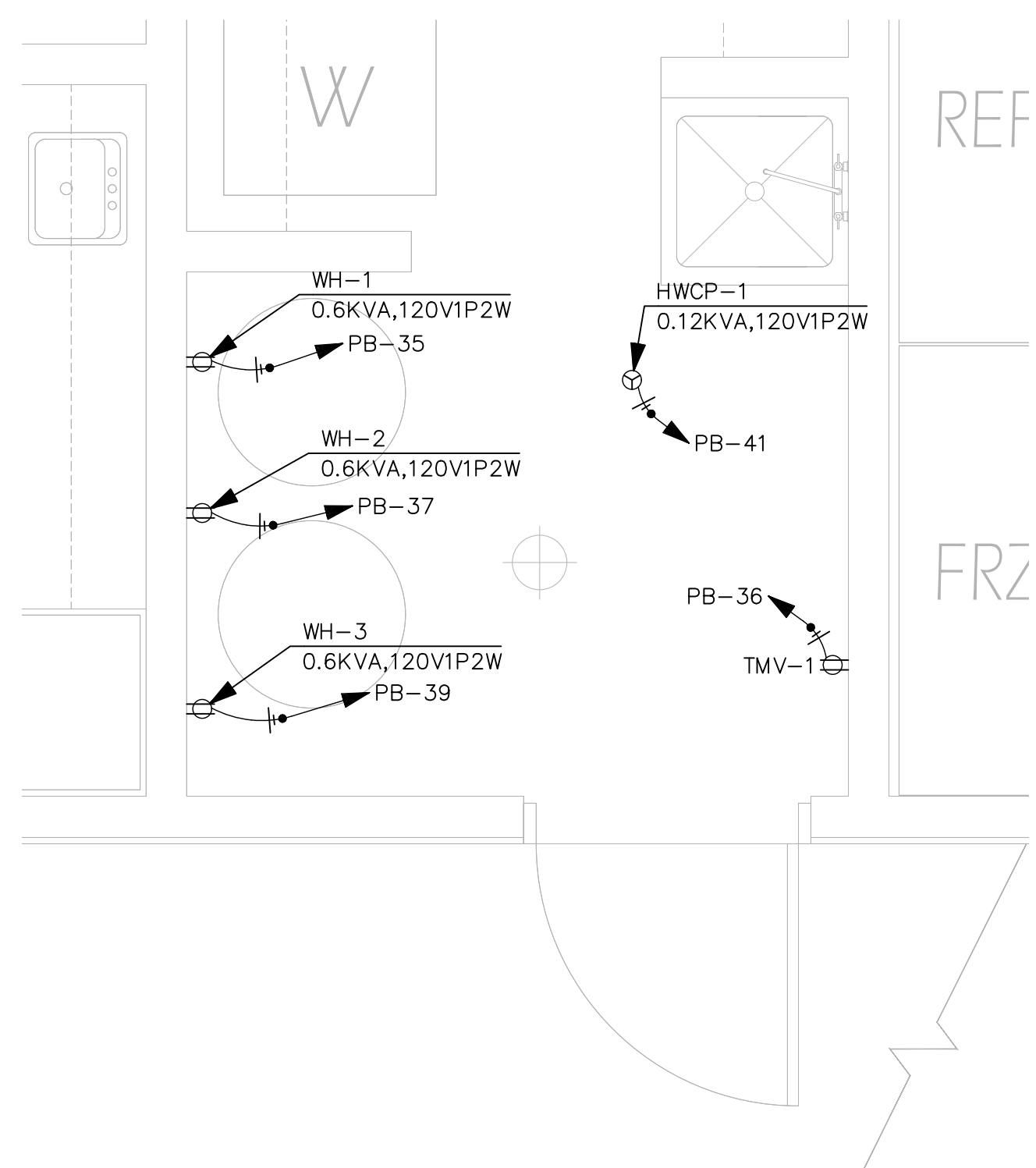
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**ROBISON ENGINEERING, INC**

DATE: 7/24/23

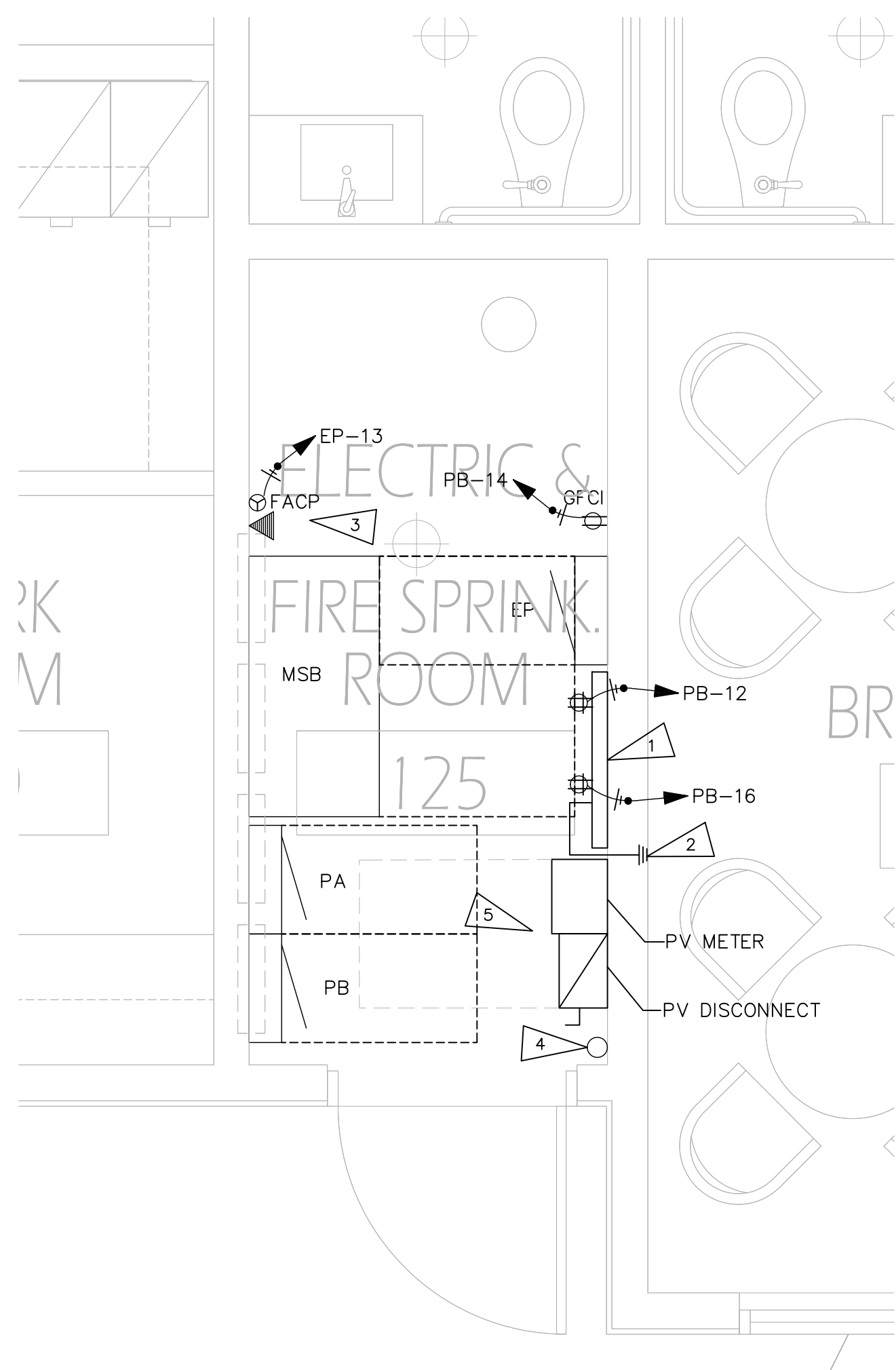
SHEET TITLE:  
**POWER PLAN - LEVEL 2 / ROOF**

SHEET NO.  
**E2.02**



LAUNDRY ROOM  
SCALE: 1/2" = 1'-0"

2  
E3.00



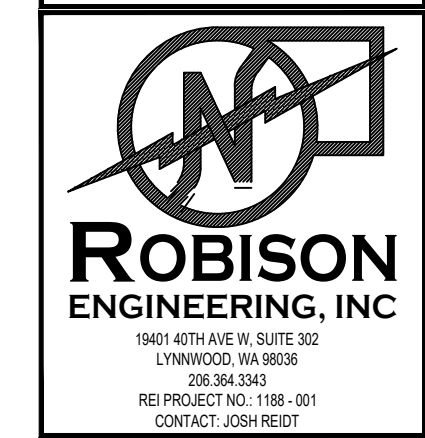
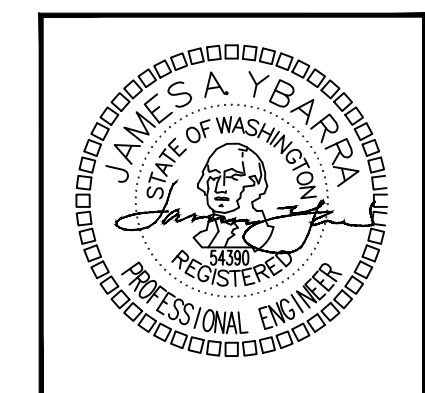
ELECTRICAL & FIRE SPRINKLER ROOM  
SCALE: 1/2" = 1'-0"

1  
E3.00

FLAG NOTES

1. PROVIDE 3/4" PLYWOOD BACKBOARD ON WALL, PAINTED WHITE WITH FIRE RETARDANT PAINT.
2. PROVIDE GROUND BAR WITH #6 GND ROUTED TO SERVICE GROUND.
3. FIRE ALARM CONTROL PANEL LOCATION TO BE VERIFIED WITH THE LOCAL AHJ.
4. PROVIDE (1) 2" CONDUIT TO ROOF FOR SOLAR SYSTEM. REFER TO PV PLANS FOR SOLAR SYSTEM DESIGN.
5. PV METER AND DISCONNECT. REFER TO PV PLANS FOR SOLAR SYSTEM DESIGN.

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR	APPROVED: PR
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PROJECT: SOPER HILL KIDS N' US  
8727 SOPER HILL RD  
LAKE STEVENS, WA 98258

19401 40TH AVE W, SUITE 302  
LYNNWOOD, WA 98036  
PHONE: (206)364-3343

**ROBISON**  
ENGINEERING, INC

DATE: 7/24/23

SHEET TITLE:  
ENLARGED POWER PLAN

SHEET NO.  
E3.00

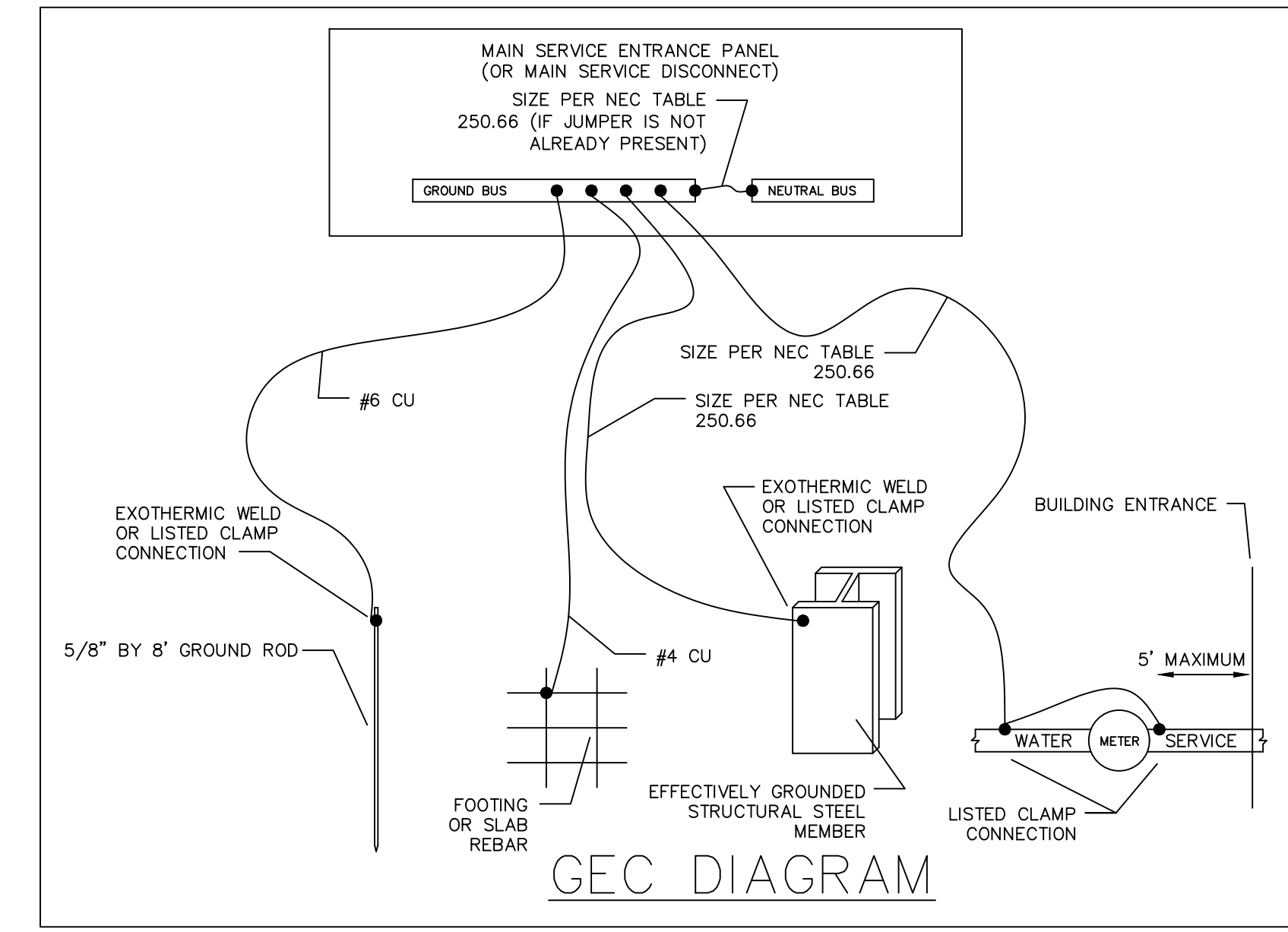
ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
①	100	1-1/2" C, 3#1/0 AL, #1/0 AL N, #6 AL G	ATS, ATG, EP
②	200	2-1/2" C, 3#250kcmil AL, #250kcmil AL N, #4 AL G	PA, PB
③	225	3" C, 3#300kcmil AL, #300kcmil AL N, #2 AL G	PC
④	600	(2) 3-1/2" C, 3#500kcmil AL, #500kcmil AL N, #4/0 AL G	MSB

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE

FAULT CURRENT SCHEDULE						
DEVICE	FAULT	AIC RATING	L-N VOLTS	FEEDER		
				UTILITY FAULT	SIZE	LENGTH
GEN	65,000		120V	65,000		
MSB	22,679	42,000	120V	21,848	(2)#500kcmil AL	100'
ATS	24,704	42,000	120V	24,704	#1/0 AL	101' / 19'
EP	4,298	22,000	120V	4,298	#1/0 AL	114'
PA	18,653	22,000	120V	18,090	#250kcmil AL	14'
PB	18,272	22,000	120V	17,718	#250kcmil AL	16'
PC	10,802	22,000	120V	9,974	#300kcmil AL	85'

### VOLTAGE DROP SCHEDULE

DEVICE	FEEDER			BRANCH CIRCUIT			TOTAL VOLTAGE DROP
	VOLTAGE DROP	WIRE SIZE	LENGTH	MAX VOLTAGE DROP	WIRE SIZE	LENGTH	
GEN	-	-	-	-	-	-	0%
MSB	1.21%	(2)#500kcmil AL	100'	-	-	-	1.21%
ATS	1.62% / 0.08%	#1/0 AL / #1/0 AL	101' / 19'	-	-	-	1.62%
EP	2.08%	#1/0 AL	114'	2.38% (CKT 5)	#10	265'	4.47%
PA	1.39%	#250kcmil AL	14'	3.31% (CKT 35,37)	#8	156'	4.7%
PB	1.36%	#250kcmil AL	16'	2.58% (CKT 33)	#12	65'	3.94%
PC	2.43%	#300kcmil AL	85'	2.37% (CKT 17,19)	#10	90'	4.8%

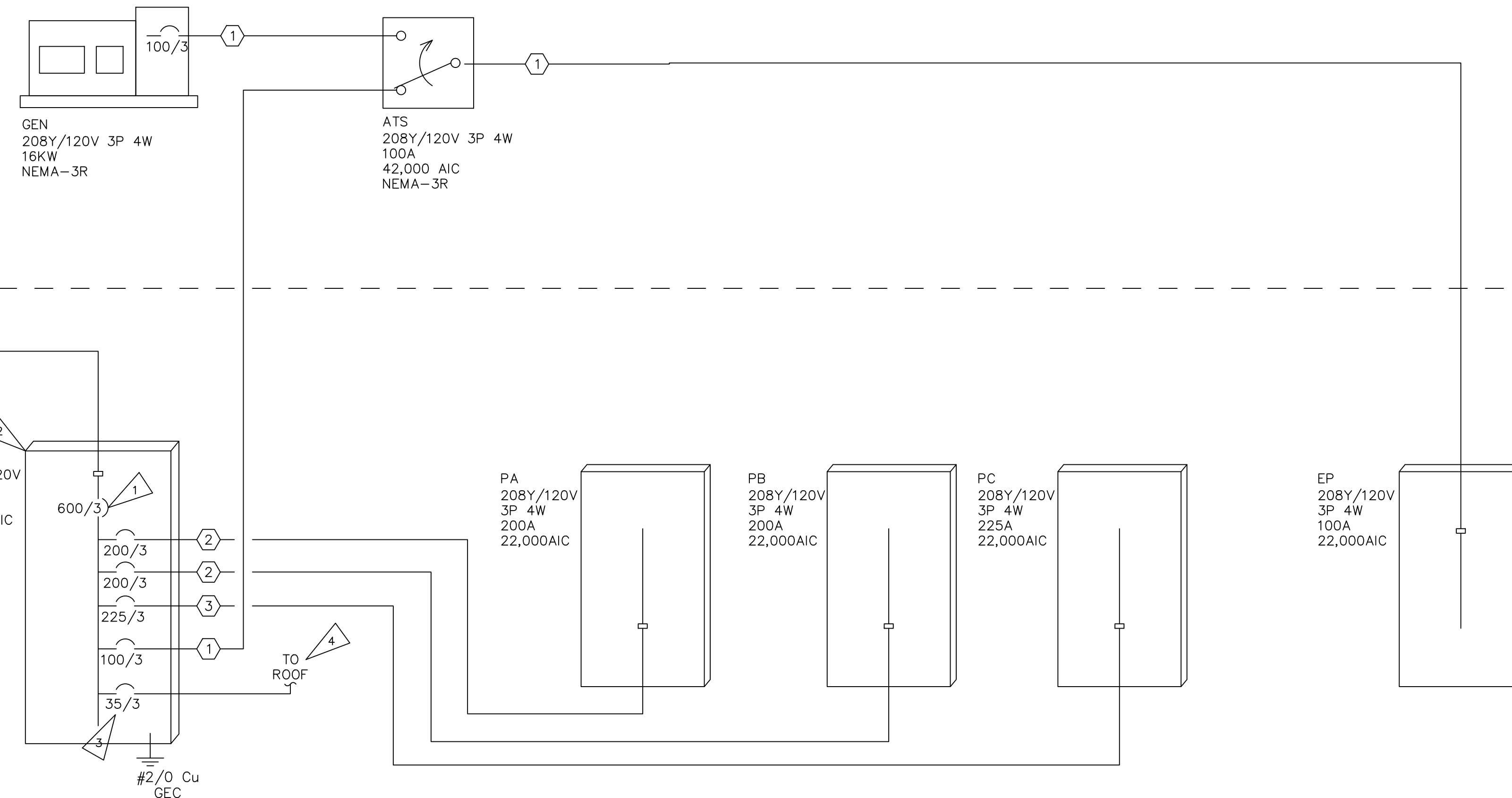


### FLAG NOTES

- SNOHOMISH PUD SERVICE TERMINATION POINT.
- ALL ELECTRICAL GEAR, INCLUDING PULL BOXES, MUST BE APPROVED BY SCL PRIOR TO PURCHASING. TYPICAL.
- PROVIDE 35A 3-PHASE BREAKER HARDWARE FOR PV SYSTEM. BREAKER TO BE OPPOSITE END OF THE MAIN BREAKER IN SWITCH GEAR. REFER TO PV DRAWINGS FOR SOLAR SYSTEM DESIGN.
- PROVIDE (1) 2" CONDUIT FOR SOLAR PATHWAY. REFER TO PV DRAWINGS FOR SOLAR SYSTEM DESIGN.

LEVEL 2

LEVEL 1



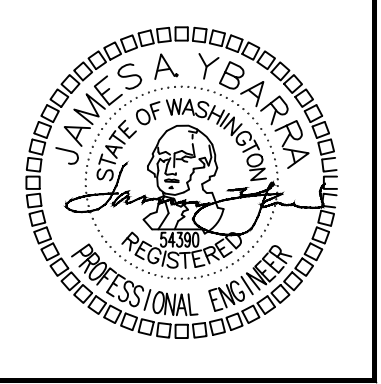
### ONE-LINE DIAGRAM

SCALE: NONE

FAULT CURRENT VALUE IS PRELIMINARY. CONTRACTOR TO CONFIRM AVAILABLE FAULT CURRENT PRIOR ORDERING ELECTRICAL SWITCHGEAR, AND PANELBOARDS.

SNOHOMISH PUD APPROVAL REQUIRED FOR METERING, TERMINATION, CABINET, AND SERVICE EQUIPMENT PRIOR TO ORDERING.

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN: JUR, NL	DESIGNED: JUR, NL	CHECKED: PR	APPROVED: PR
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PROJECT: SOPER HILL KIDS N' US  
 8727 SOPER HILL RD  
 LAKE STEVENS, WA 98258

19401 40TH AVE W, SUITE 302  
 LYNNWOOD, WA 98036  
 PHONE: (206) 364-3343

**ROBISON ENGINEERING, INC**

DATE: 7/24/23

SHEET TITLE:  
ONE-LINE DIAGRAM

SHEET NO.  
**E5.00**

MSB									
ROOM		VOLTS 208Y/120V 3P 4W		AIC 42,000					
MOUNTING SURFACE		BUS AMPS 600		MAIN BKR 600					
FED FROM UTILITY		NEUTRAL 100%		LUGS STANDARD					
NOTE									
CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA			FEEDER RACEWAY AND CONDUCTORS			
			A	B	C				
1	200/3	PANEL PA	22.4	17.8	19	2-1/2" C, 3#250kcmil AL, #250kcmil AL N, #4 AL G			
2	200/3	PANEL PB	16.9	15.7	8.2		2-1/2" C, 3#250kcmil AL, #250kcmil AL N, #4 AL G		
3	225/3	PANEL PC	25.4	23.8	24.7			3" C, 3#300kcmil AL, #300kcmil AL N, #2 AL G	
4	100/3	TRANSFER SWITCH ATS	3.74	2.82	2.34		1-1/2" C, 3#1/0 AL, #1/0 AL N, #6 AL G		
5	35/3	SOLAR	0	0	0				
TOTAL CONNECTED KVA BY PHASE			68.4	60.1	54.2				
			CONN KVA	CALC KVA		CONN KVA	CALC KVA		
LIGHTING			9.16	11.5	(125%)	CONTINUOUS	27.7	34.7	(125%)
LARGEST MOTOR			7.16	1.79	(25%)	NONCONTINUOUS	35.3	35.3	(100%)
MOTORS			18.4	18.4	(100%)	HEATING	60.7	60.7	(100%)
RECEPTACLES			31.4	20.7	(50%>10)	COOLING	58.9	0	(0%)
			TOTAL LOAD				183		
			BALANCED 3-PHASE LOAD				508 A		

GEN									
ROOM		VOLTS 208Y/120V 3P 4W		KVA 20					
NOTE				KW 16					
				PF 0.8					
NOTE									
CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA			FEEDER RACEWAY AND CONDUCTORS			
			A	B	C				
1	100/3	TRANSFER SWITCH ATS	3.74	2.82	2.34	1-1/2" C, 3#1/0 AL, #1/0 AL N, #6 AL G			
TOTAL CONNECTED KVA BY PHASE			3.74	2.82	2.34				
			CONN KVA	CALC KVA		CONN KVA	CALC KVA		
RECEPTACLES			4.5	4.5	(50%>10)	CONTINUOUS	0.8	1	(125%)
						NONCONTINUOUS	3.6	3.6	(100%)
			TOTAL LOAD				9.1		
			BALANCED 3-PHASE LOAD				25.3 A		

Panel EP									
ROOM		VOLTS 208Y/120V 3P 4W		AIC 22,000					
MOUNTING SURFACE		BUS AMPS 100		MAIN BKR MLO					
FED FROM ATS		NEUTRAL 100%		LUGS STANDARD					
NOTE									
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		
1	20/1	0.72	RM 118, 121 DED. COMPUTER RECEPTACLE	a	2	20/1	0.8	RM 106 REFRIGERATOR	
3	20/1	0.72	RM 116, 117 DED. COMPUTER RECEPTACLE	b	4	20/1	0.36	RM 129 RECEPTACLE	
5	20/1	0.72	RM 111, 114 DED. COMPUTER RECEPTACLE	c	6	20/1	0.8	RM 124 REFRIGERATOR	
7	20/1	0.72	RM 108, 110 DED. COMPUTER RECEPTACLE	a	8	20/1	0.8	RM 122 REFRIGERATOR	
9	20/1	0.54	RM 106, 107 DED. COMPUTER RECEPTACLE	b	10	20/1	1.2	RM 122 FREEZER	
11	20/1	0.72	RM 101 RECEPTION RECEPTACLE	c	12	20/1	0.1	GEN ANNUNCIATOR PANEL	
13	20/1	0.6	FACP	a	14	20/1	0.1	FIRE ALARM ANNUN	
15	20/1	0	SPARE	b	16	20/1	0	SPARE	
17	20/1	0	SPARE	c	18	20/1	0	SPARE	
19	20/1	0	SPARE	a	20	20/1	0	SPARE	
21	20/1	0	SPARE	b	22	20/1	0	SPARE	
23	20/1	0	SPARE	c	24	20/1	0	SPARE	
25	20/1	0	SPARE	a	26	20/1	0	SPARE	
27	20/1	0	SPARE	b	28	20/1	0	SPARE	
29	20/1	0	SPARE	c	30	20/1	0	SPARE	
TOTAL CONNECTED KVA BY PHASE									
			CONN KVA	CALC KVA		CONN KVA	CALC KVA		
RECEPTACLES			4.5	4.5	(50%>10)	CONTINUOUS	0.8	1	(125%)
						NONCONTINUOUS	3.6	3.6	(100%)
			TOTAL LOAD				9.1		
			BALANCED 3-PHASE LOAD				25.3 A		
			PHASE A				126%		
			PHASE B				95.1%		
			PHASE C				78.9%		

Panel PA									
ROOM		VOLTS 208Y/120V 3P 4W		AIC 22,000					
MOUNTING SURFACE		BUS AMPS 200		MAIN BKR MLO					
FED FROM MSB		NEUTRAL 100%		LUGS STANDARD					
NOTE									
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		
1	20/1	0.9	RM 121 RECEPTACLE	a	2	20/1	1.08	RM 118, 121 RECEPTACLE	
3	20/1	0.72	RM 118 RECEPTACLE	b	4	20/1	1.08	RM 116, 117 RECEPTACLE	
5	20/1	1.26	RM 102 RECEPTACLE	c	6	20/1	0.54	RM 114 RECEPTACLE	
7	20/1	0.72	RM 117 RECEPTACLE	a	8	20/1	1.08	RM 110, 111 RECEPTACLE	
9	20/1	0.72	RM 116 RECEPTACLE	b	10	20/1	1.08	RM 107, 108 RECEPTACLE	
11	20/1	0.9	RM 114 RECEPTACLE	c	12	20/1	0.36	RM 106 RECEPTACLE	
13	20/1	0.9	RM 111 RECEPTACLE	a	14	20/1	1.2	RM 106 DISHWASHER	
15	20/1	0.9	RM 110 RECEPTACLE	b	16	20/1	0.9	HALLWAY 120 RECEPTACLE	
17	20/1	0.72	RM 108 RECEPTACLE	c	18	20/1	0.9	HALLWAY 105 RECEPTACLE	
19	20/1	0.9	RM 107 RECEPTACLE	a	20	2/2	3	PRINTER	
21	20/1	0.72	RM 106 RECEPTACLE	b	22				
23	20/1	0.72	RM 101 RECEPTACLE	c	24	2/2	3	PRINTER	
25	20/1	0.54	COFFEE RECEPTACLE	a	26				
27	20/1	0.9	RM 129, 130 RECEPTACLE	b	28	20/1	1.08	ROOF RECEPTACLE	
29	20/1	1	WATER COOLER	c	30	20/1	1.08	EXTERIOR RECEPTACLE	
31	20/1	1	BLOCK HEATER	a	32	20/1	1.08	EXTERIOR RECEPTACLE	
33	20/1	1	BATTERY CHARGER	b	34	20/1	0.5	MONUMENT SIGN	
35	40/2	6.66	EV CHARGER	c	36	-1/1	0	SPACE	
37				a	38	-1/1	0	SPACE	
39	40/2	6.66	EV CHARGER	b	40	-1/1	0	SPACE	
41				c	42	-1/1	0	SPACE	
43	40/2	6.66	EV CHARGER	a	44	-1/1	0	SPACE	
45				b	46	-1/1	0	SPACE	
47	40/2	6.66	EV CHARGER	c	48	-1/1	0	SPACE	
49				a	50	-1/1	0	SPACE	
51	-1/1	0	SPACE	b	52	-1/1	0	SPACE	
53	-1/1	0	SPACE	c	54	-1/1	0	SPACE	
55	-1/1	0	SPACE	a	56	-1/1	0	SPACE	
57	-1/1	0	SPACE	b	58	-1/1	0	SPACE	
59	-1/1	0	SPACE	c	60	-1/1	0	SPACE	
TOTAL CONNECTED KVA BY PHASE									
			CONN KVA	CALC KVA		CONN KVA	CALC KVA		
LIGHTING			0.5	0.625	(125%)	CONTINUOUS	26.6	33.3	(125%)
RECEPTACLES			22.8	16.4	(50%>10)	NONCONTINUOUS	9.2	9.2	(100%)
			TOTAL LOAD				59.5		
			BALANCED 3-PHASE LOAD				165 A		
			PHASE A				113%		
			PHASE B				89.8%		
			PHASE C				96.8%		

Panel PC									
ROOM		VOLTS 208Y/120V 3P 4W		AIC 22,000					
MOUNTING SURFACE		BUS AMPS 225		MAIN BKR MLO					
FED FROM MSB		NEUTRAL 100%		LUGS STANDARD					
NOTE									
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		
1	30/2	3.74	RTU-1	a	2	15/2	0.998	ERV-1	
3				b	4				
5	30/2	3.74	RTU-2	c	6	15/2	0.998	ERV-2	
7				a	8				
9	30/2	3.74	RTU-3	b	10	15/2	0.998	ERV-3	
11				c	12				
13	30/2	3.74	RTU-4	a	14	15/2	0.998	ERV-4	
15				b	16				
17	40/2	5.43	RTU-5	c	18	15/2	0.998	ERV-5	
19				a	20				
21	30/2	3.74	RTU-6	b	22	15/2	0.998	ERV-6	
23				c	24				
25	30/2	3.74	RTU-7	a	26	15/2	0.998	ERV-7	
27				b	28				
29	30/2	3.74	RTU-8	c	30	15/2	0.998	ERV-8	
31				a	32				
33	30/2	3.74	RTU-9	b	34	15/2	0.998	ERV-9	
35				c	36				
37	40/2	5.43	RTU-10	a	38	15/2	0.998	ERV-10	
39				b	40				
41	50/2	7.16	RTU-11	c	42	15/2	0.998	ERV-11	
43				a	44				
45	40/2	5.43	RTU-12	b	46	15/2	0.998	ERV-13	
47				c	48				
49	30/2	3.74	RTU-13	a	50	15/2	0.096	FCU-3	
51				b	52				
53	25/2	2.11	HP-1	c	54	15/2	0.086	FCU-1, FCU-2	
55				a	56				
57	15/2	0.96	HP-2	b	58	15/2	1.5	HP-3	
59				c	60				
61	15/2	0.042	FCU-4	a	62	-1/1	0	SPACE	
63				b	64	-1/1	0	SPACE	
65	-1/1	0	SPACE	c	66	-1/1	0	SPACE	
TOTAL CONNECTED KVA BY PHASE									
			CONN KVA	CALC KVA		CONN KVA	CALC KVA		
LARGEST MOTOR			7.16	1.79	(25%)	MOTORS	15.1	15.1	(100%)
						HEATING	58.9	58.9	(100%)
						COOLING	58.9	0	(0%)
			TOTAL LOAD				75.7		
			BALANCED 3-PHASE LOAD				210 A		
			PHASE A				103%		
			PHASE B				96.7%		
			PHASE C				100%		

Panel PB								
ROOM		VOLTS 208Y/120V 3P 4W		AIC 22,000				
MOUNTING SURFACE		BUS AMPS 200		MAIN BKR MLO				
FED FROM MSB		NEUTRAL 100%		LUGS STANDARD				
NOTE								
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	
1	20/1	0.54	RM 124 RECEPTACLE	a	2	40/2	5	RM 123 DRYER
3	20/1	0.72	RM 124, 126, 127 RECEPTACLE	b	4			
5	20/1	0.54	RM 123 RECEPTACLE	c	6	20/1	1.5	RM 123 WASHER
7	20/1	0.9	RM 122 RECEPTACLE	a	8	50/2	8	RM 122 RANGE
9	20/1	0.54	RM 201 RECEPTACLE	b	10			
11	20/1	0.252	SITE LIGHTING	c	12	20/1	0.36	RM 125 LV RECEPTACLE
13								

