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ABBREVIATIONS

(SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS)

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A or AMP	AMPERES	MH	MANHOLE
AC	ALTERNATING CURRENT	MIN	MINIMUM
A/C	AIR CONDITIONING	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CAPACITY	MOP, MOCP	MAXIMUM OVERCURRENT PROTECTION
AL	ALUMINUM	MTD	MOUNTED
ARCH	ARCHITECTURAL	MTG	MOUNTING
ATC	AUTOMATIC TEMPERATURE CONTROL	NC	NORMALLY CLOSED
ATS	AUTOMATIC TRANSFER SWITCH	N, NEUT	NEUTRAL
AWG	AMERICAN WIRE GAUGE	NIC	NOT IN CONTRACT
BIL	BASIC IMPULSE LEVEL	NO	NORMALLY OPEN
BKR	BREAKER	NTS	NOT TO SCALE
BLDG	BUILDING	OC	ON CENTER
C	CONDUIT	OD	OUTSIDE DIAMETER
C.O.	CONDUIT ONLY	OH	OVERHEAD
°C	DEGREES CELSIUS	PA	PUBLIC ADDRESS
CB	CIRCUIT BREAKER	PB	PULLBOX
CCTV	CLOSED CIRCUIT TELEVISION	PF	POWER FACTOR
CFM	CUBIC FEET PER MINUTE	ø or PH	PHASE
CKT	CIRCUIT	PNL	PANEL
CL	CENTER LINE	PR	PAIR
CLG	CEILING	PRI	PRIMARY
CONC	CONCRETE	PT	POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER	PVC	POLYVINYL CHLORIDE
CU	COPPER	RECPT	RECEPTACLE
CW	COLD WATER	REQ	REQUIRED
BD	DECIBELS	RF	RADIO FREQUENCY
DC	DIRECT CURRENT	RM	ROOM
DIA	DIAMETER	RMS	ROOT MEAN SQUARE
DIV	DIVISION	SEC	SECONDARY
DPDT	DOUBLE POLE, DOUBLE THROW	SHT	SHEET
DPST	DOUBLE POLE, SINGLE THROW	SMR	SURFACE METAL RACEWAY
DWG	DRAWING	SN	SOLID NEUTRAL
EGC	EQUIPMENT GROUND CONDUCTOR	SP	SINGLE POLE
ELEC	ELECTRIC	SPD	SURGE PROTECTIVE DEVICE
EMT	ELECTRICAL METALLIC TUBING	SPDT	SINGLE POLE, DOUBLE THROW
EXIST, (E)	EXISTING	SPST	SINGLE POLE, SINGLE THROW
°F	DEGREES FAHRENHEIT	SS	STAINLESS STEEL
FA	FIRE ALARM	STD	STANDARD
FC	FOOTCANDLE	SW	SWITCH
FLA	FULL LOAD AMPS	SWBD	SWITCHBOARD
FLEX	FLEXIBLE CONDUIT	TEL	TELEPHONE
GALV	GALVANIZED	TV	TELEVISION
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TTB	TELECOMMUNICATIONS TERMINAL BOARD
GND	GROUND	TYP	TYPICAL
H-O-A	HAND - OFF - AUTO	UL	UNDERWRITERS LABORATORY
HP	HORSEPOWER	UF	UNDERFLOOR
HPF	HIGH POWER FACTOR	UG	UNDERGROUND
H & V	HEATING AND VENTILATION	V	VOLTS
HVAC	HEATING, VENTILATION & AIR CONDITIONING	VA	VOLT AMPERES
HZ	HERTZ	VAC	VOLTS ALTERNATING CURRENT
IDF	INTERMEDIATE DISTRIBUTION FRAME	VAR	REACTIVE VOLT AMPERES
J-BOX	JUNCTION BOX	VAV	VARIABLE AIR VOLUME
KV	KILOVOLTS	VD	VOLTAGE DROP
KVA	KILOVOLT AMPERES	VDC	VOLTS DIRECT CURRENT
KVAR	REACTIVE KILOVOLT AMPERES	VFD	VARIABLE FREQUENCY DRIVE
KW	KILOWATTS	VT	VAPORTIGHT
KWH	KILOWATT HOURS	W	WATTS
LT	LIGHT	WP	WEATHERPROOF
LTG	LIGHTING	/W	WITH
MAX	MAXIMUM	W/O	WITHOUT
MCA	MINIMUM CIRCUIT AMPS	XFER	TRANSFER
MCB	MAIN CIRCUIT BREAKER	XFMR	TRANSFORMER
MCC	MOTOR CONTROL CENTER	XLPE	CROSS-LINKED POLYETHYLENE
MCM, KCM	THOUSAND CIRCULAR MILS	XP	EXPLOSION PROOF
MDF	MAIN DISTRIBUTION FRAME	Z	IMPEDANCE
MECH	MECHANICAL		

ELECTRICAL SYMBOL LEGEND

(SOME SYMBOLS MAY NOT BE USED ON DRAWINGS)

SYMBOL	DESCRIPTION
	GENERAL
	REVISION CALLOUT
	FLAG NOTE
	BUBBLE NOTE TAG SYMBOL: # - IDENTIFYING NUMBER
	DETAIL SYMBOL: (AS INDICATED ON DRAWINGS) # - IDENTIFYING NUMBER B - SHEET WHERE DETAIL TAKEN C - SHEET WHERE DETAIL SHOWN
	STRIP LUMINAIRE (LENGTH TO SCALE)
	LUMINAIRE (TO SCALE ON DRAWINGS)
	SINGLE POLE TOGGLE SWITCH
	DUPLEX RECEPTACLE (NEMA 5-20R) SUBSCRIPT: IG ISOLATED GROUND WC WATER COOLER REF REFRIGERATOR COP COPIER HWD HOT WATER DISPENSER MWO MICROWAVE OVEN P PEDESTAL WP WEATHERPROOF C CEILING DW DISHWASHER IWB INTERACTIVE WHITE BOARD TV VIDEO DISPLAY OUTLET. REFER TO ARCHITECTURAL DETAILS FOR MOUNTING HEIGHT
	GFCI DUPLEX RECEPTACLE (NEMA 5-20R)
	JUNCTION BOX
	VOICE (TELEPHONE) OUTLET WITH JACK
	CIRCUIT BREAKER
	DISCONNECT SWITCH
	FUSE
	TRANSFORMER
	GROUNDWYE CONNECTION
	DELTA CONNECTION
	UTILITY COMPANY METER
	CURRENT TRANSFORMER (CT)
	LOAD BREAK ELBOW - LOAD BREAK BUSHING
	DEVICE SIZE / FUSE OR TRIP RATING - No. OF POLES
	SHUNT TRIP RELAY
	AMMETER SWITCH
	VOLTMETER SWITCH
	AMMETER
	AUTOMATIC TRANSFER SWITCH
	FUSED SWITCH
	GROUND ELECTRODE SYSTEM
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	PANELBOARD
	CONTACT - NORMALLY OPEN
	RELAY CONTACT - NORMALLY CLOSED
	WIRING HOMERUN
	SMOKE DETECTOR

GENERAL ELECTRICAL NOTES:

1. ALL CONDUCTOR SIZES SCHEDULED OR OTHERWISE SHOWN ARE BASED ON COPPER CONDUCTORS UNLESS OTHERWISE INDICATED.

2. ALL ELECTRICAL DEVICES, EQUIPMENT, ENCLOSURES, PRODUCTS, AND MATERIAL SHALL BE UL LISTED AND SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE INSTALLED.

THREE PHASE PANEL SCHEDULE

ID: PDP2-3-2G
Section: 1 OF 1
Location: RM. 317A
GE
THED 25K CKT BREAKERS

Enclosure: Voltage: 480/277, 4W
☒ Flush
☐ Surface
☐ NEMA 3R
☐ NEMA 12/3R

Rating: 400 Amps
☒ Main Lugs
☐ Main Breaker
☐ Feed Thru Lugs
☐ Double Lugs

Assembly AIC: ☐ 14K
☐ 18K
☒ 25K
☐ Service Rated

CODE	DESCRIPTION	VA	BKR	CKT	PHASE	CKT	BKR	VA	DESCRIPTION	CODE	
-	UNKNOWN	-	20/3	1	A	2	20/3	2900	TRP2-1-EL	-	
-	-	-	-	3	B	4	-	2600	-	-	
-	-	-	-	5	C	6	-	-	-	-	
-	TRP2-2-1AH1 30 KVA XFRMR	-	50/3	7	A	8	50/3	-	SPARE	-	
-	-	-	-	9	B	10	-	-	-	-	
-	-	-	-	11	C	12	-	-	-	-	
-	TRP2-1-1AG 30 KVA XFRMR	-	50/3	13	A	14	50/3	-	TRP2-3-1AG 30 KVA XFRMR	-	
-	-	-	-	15	B	16	-	-	-	-	
-	-	-	-	17	C	18	-	-	-	-	
-	TRP2-2-1AH1B 45 KVA XFRMR	-	70/3	19	A	20	70/3	-	TRP2-3-1AG1 45 KVA XFRMR	-	
-	-	-	-	21	B	22	-	-	-	-	
-	-	-	-	23	C	24	-	-	-	-	
-	ELEVATOR #1 25 HP	9500	60/3	25	A	26	100/3	10870	LP2-2-1AHA	-	
-	-	9500	-	27	B	28	-	10870	-	-	
-	-	9500	-	29	C	30	-	10870	-	-	
-	LP2-1-AG	9650	100/3	31	A	32	100/3	8250	LP2-1-2E	-	
-	-	9650	-	33	B	34	-	8250	-	-	
-	-	9650	-	35	C	36	-	8250	-	-	
-	LP2-3-1-AG1	7200	100/3	37	A	38	110/3	14700	ELEVATOR #2 40 HP	-	
-	-	7200	-	39	B	40	-	14700	-	-	
-	-	7200	-	41	C	42	-	14700	-	-	
				A	B	C	PHASE				
				63.1	62.8	60.2	KVA CONNECTED				
Code	Description	KVA	X	125%	0.0				TOTAL LOAD	KVA	AMPS
L	Lighting	0.0	X	125%	0.0				CONNECTED	186.0	223.8
R	Receptacles	0.0	X	100%	0.0				CALCULATED	186.0	223.8
R	Receptacles over 10KVA	0.0	X	50%	0.0						
C	Computers	0.0	X	100%	0.0						
M	Motors	0.0	X	100%	0.0						
LM	Largest Motor	0.0	X	125%	0.0						
K	Kitchen	0.0	X	100%	0.0						
N	Noncoincident	0.0	X	0%	0.0						
W	Water Heater	0.0	X	100%	0.0						
	Remainder	186.0	X	100%	186.0						
								SPARE CAPACITY: 44.0%			
								REMARKS: * GFCI CIRCUIT BREAKER			
								BOLD TEXT INDICATES REVISED LOAD AND / OR NEW CIRCUIT BREAKER.			

SINGLE PHASE PANEL SCHEDULE

ID: EL
Section: 1 OF 1
Location: ELEV MACHINE RM

Enclosure: Voltage: 120/240, 3W
☐ Flush
☒ Surface
☐ NEMA 3R
☐ NEMA 12/3R

Rating: 60 Amps
☐ Main Lugs
☒ Primary Main Breaker -30A/2P (480V)
☒ Secondary Main Breaker - 60A/2P (240V)
☐ Double Lugs

Assembly AIC: ☒ 10K
☐ 22K
☒ 42K
☐ Service Rated

CODE	DESCRIPTION	VA	BKR	CKT	PHASE	CKT	BKR	VA	DESCRIPTION	CODE	
L	LTG - ELEV MACH RM	70	20/1	1	A	2	20/1	260	LTG - ELEV. PIT	L	
R	REC - ELEV MACH RM	180	20/1	3	B	4	20/1	180	REC - ELEV. PIT 1	R	
LM	AC-1 COOLING UNIT (OUTDOOR/INDOOR)	2205	30/2	5	A	6	15/1	250	LTG - ELEV CAB & VENT	L	
LM	INTERCOM	2205	-	7	B	8	20/1	180	REC - ELEV. PIT 2	R	
	SPACE	250	20/1	9	A	10	15/1		SPARE		
	SPACE			11	B	12	20/1		SPACE		
	SPACE			13	A	14			SPACE		
	SPACE			15	B	16			SPACE		
	SPACE			17	A	18			SPACE		
				A	B	C	PHASE				
				3.0		2.7	KVA CONNECTED				
Code	Description	KVA	X	125%	0.7				TOTAL LOAD	KVA	AMPS
L	Lighting	0.6	X	125%	0.7				CONNECTED	5.8	24.1
R	Receptacles	0.5	X	100%	0.5				CALCULATED	7.0	29.3
R	Receptacles over 10KVA	0.0	X	50%	0.0						
C	Computers	0.0	X	100%	0.0						
M	Motors	0.0	X	100%	0.0						
LM	Largest Motor	4.4	X	125%	5.5						
K	Kitchen	0.0	X	100%	0.0						
N	Noncoincident	0.0	X	0%	0.0						
W	Water Heater	0.0	X	125%	0.0						
	Remainder	0.3	X	100%	0.3						
								SPARE CAPACITY: 51.2%			
								REMARKS: PANEL WITH INTEGRAL 10KVA XFMR INPUT - 480V / SINGLE PHASE OUTPUT - 240/120V / SINGLE PHASE			

UNITED STATES POSTAL SERVICE

SEATTLE NDC - ELEVATOR UPGRADE & NEW INSTALL

34301 9TH AVE. S.

FEDERAL WAY, WA 98003

LEGEND, NOTES, ABBREVIATIONS & SCHEDULES

CHECKED: CTU

PROJECT NO. 19-160

DATE: 10-18-19

REVISIONS:

SHEET TITLE: SCHEDULES

DRAWN: AD

DATE: 10-18-19

REVISIONS:

SHEET

E0.1

0" 1" 2"

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

HULTZ & BHU

engineers inc

1111 Fawcett Ave Suite 100
Tacoma, WA 98402
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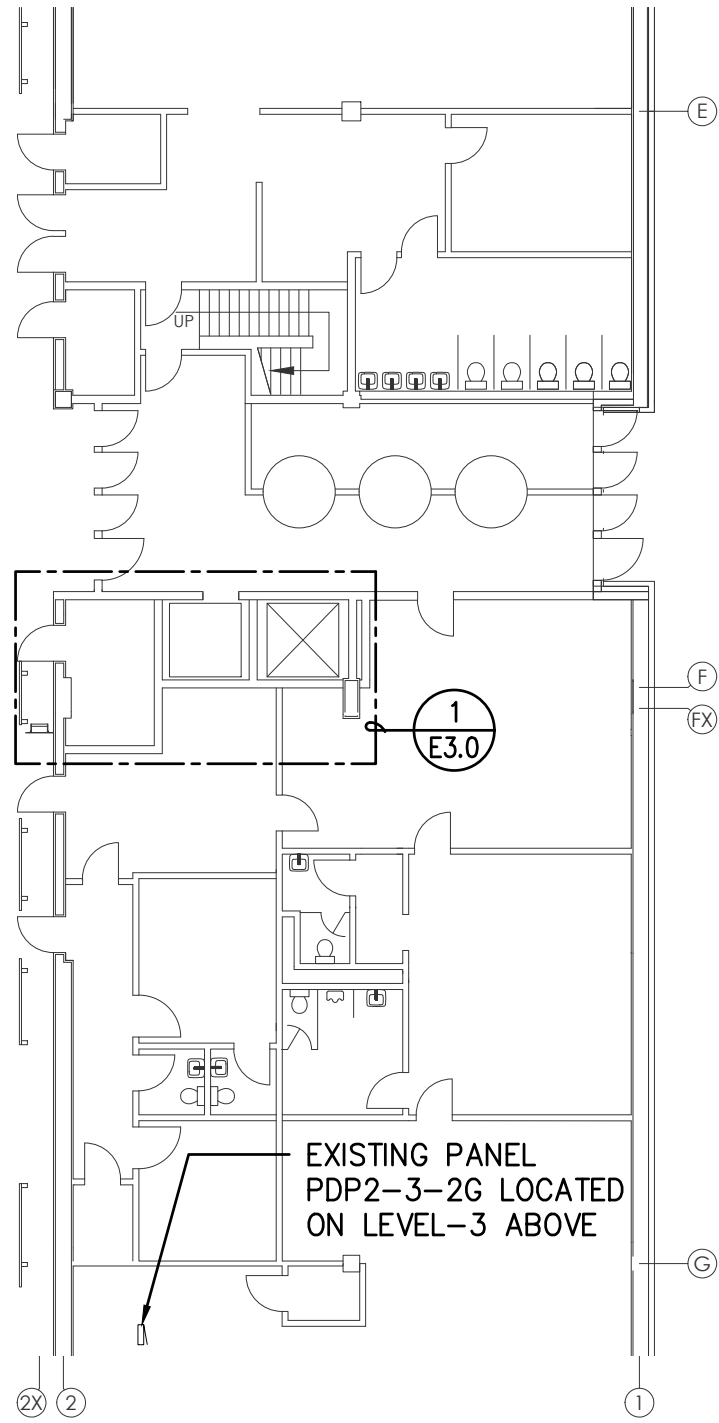
Job Number: 19-160

SIGNED

10-18-2019

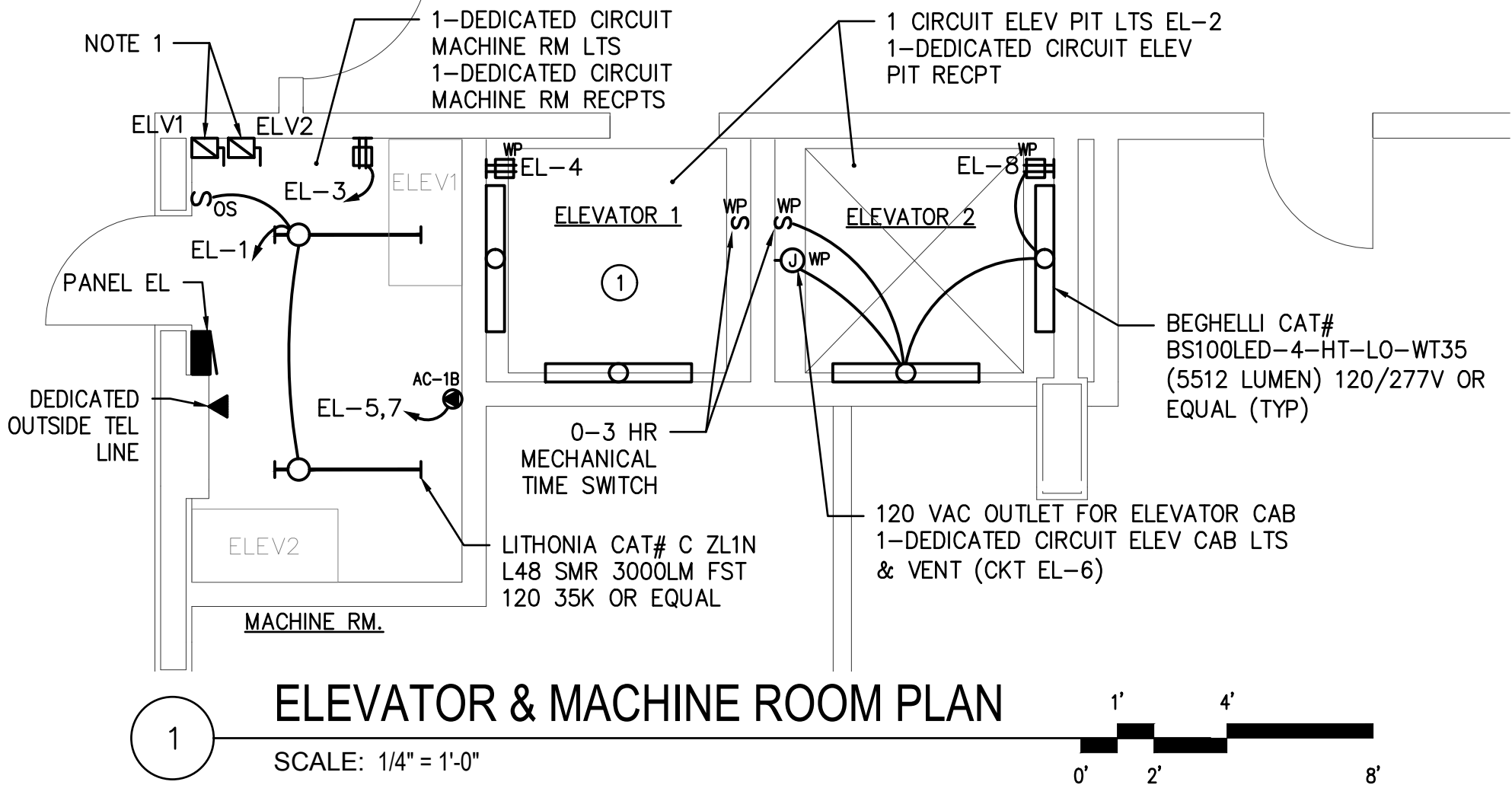
A B C D E F G H J K

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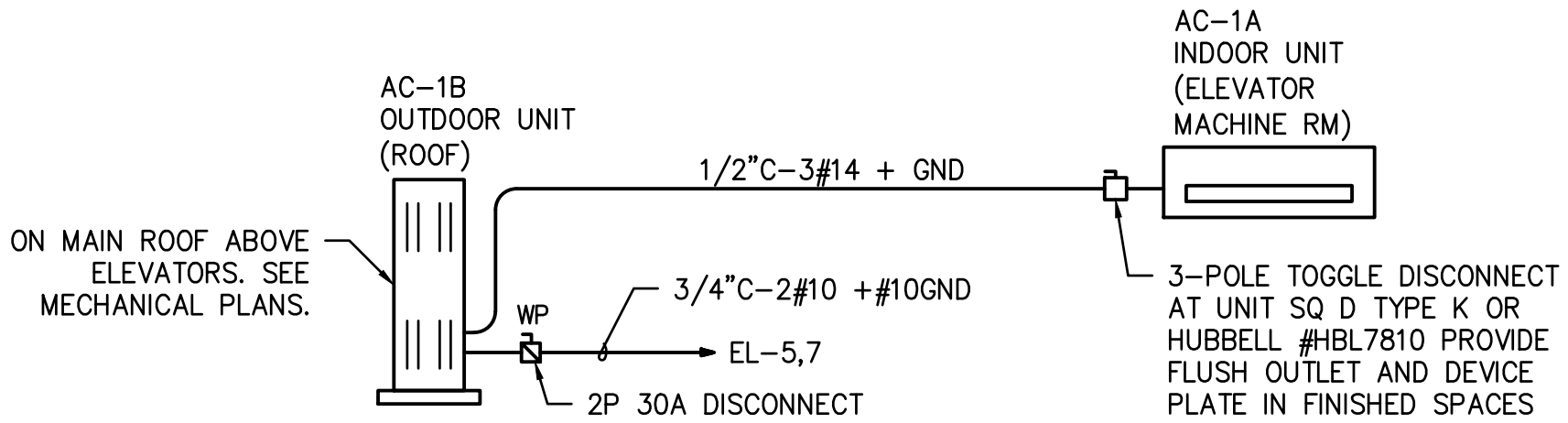
POWER PLAN

SCALE: 1/16" = 1'-0"



ELEVATOR & MACHINE ROOM PLAN

- SCALE: 1/4" = 1'-0"
- NOTES:
- THE ELEVATOR DISCONNECT SWITCH SHALL BE LOCATED INSIDE THE MACHINE ROOM DOOR ON THE LOCK JAMB SIDE AND NOT MORE THAN TWENTY-FOUR INCHES FROM THE JAMB TO THE OPERATING HANDLE.
 - COORDINATE AND OBTAIN APPROVAL FROM ELEVATOR CONTRACTOR FOR ALL CONDUIT, LIGHTING, AND DEVICES PRIOR TO ROUGH-IN.



MITSUBISHI SPLIT SYSTEM HVAC CONNECTION DIAGRAM

SCALE:

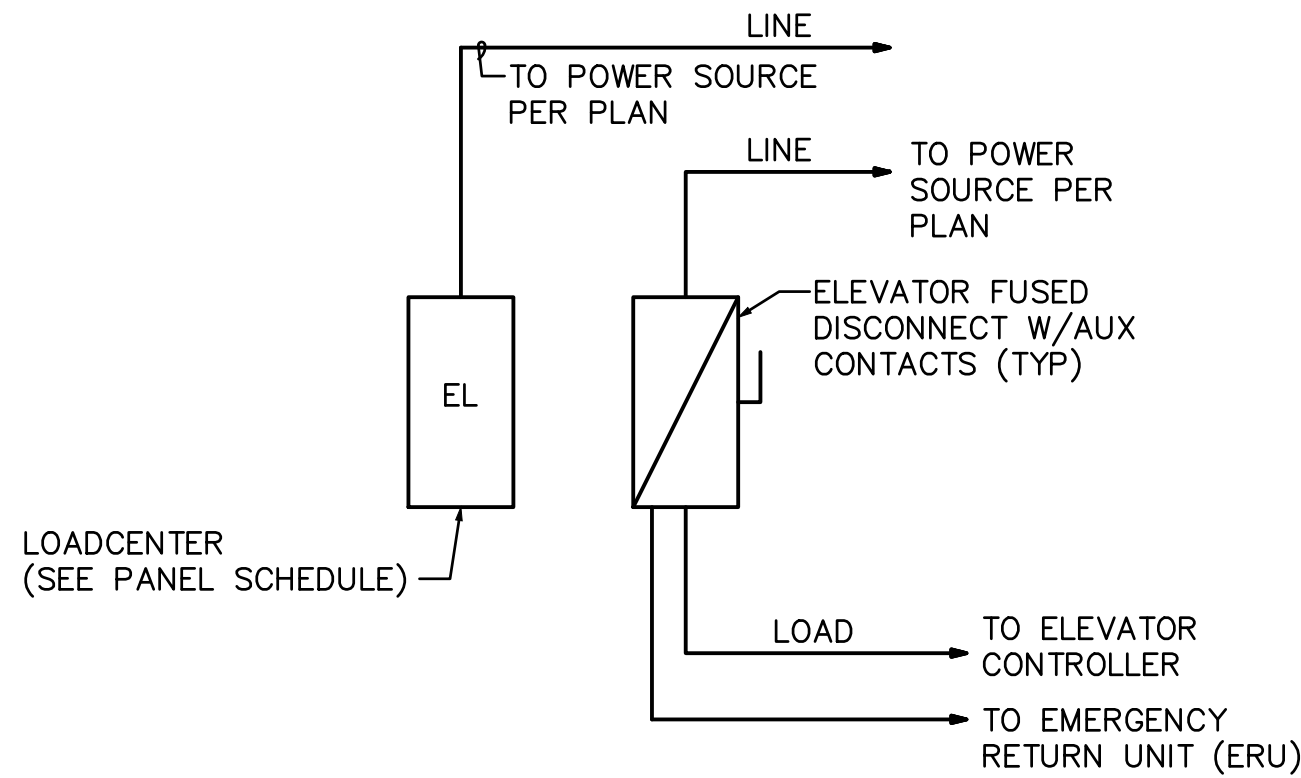
ELEVATOR CONNECTION SCHEDULE													
NAME	DESCRIPTION	LOCATION	MAXIMUM RATINGS					(CU) FEEDER	CIRCUIT#	DISCONNECT			REMARKS
			HP	KVA	FLA	MCA	VOLT/PH			BY	DESCRIPTION	FUSE	
ELEV1	EXISTING ELEVATOR 1	EMPLOYEE ENTRANCE	25	28.27	34.0	42.5	480 3	#12 EACH PHASE, NEUTRAL, PLUS GROUND	PDP2-3-2G #25,27,29	●	100A/3P	60A	
ELEV2	NEW ELEVATOR 2	EMPLOYEE ENTRANCE	40	43.23	52.0	65.0	480 3	3/4"C-3#8 + #10 GND		1"C-3#6 + #8 GND	●	100A/3P	

EQUIPMENT CONNECTION SCHEDULE NOTES:

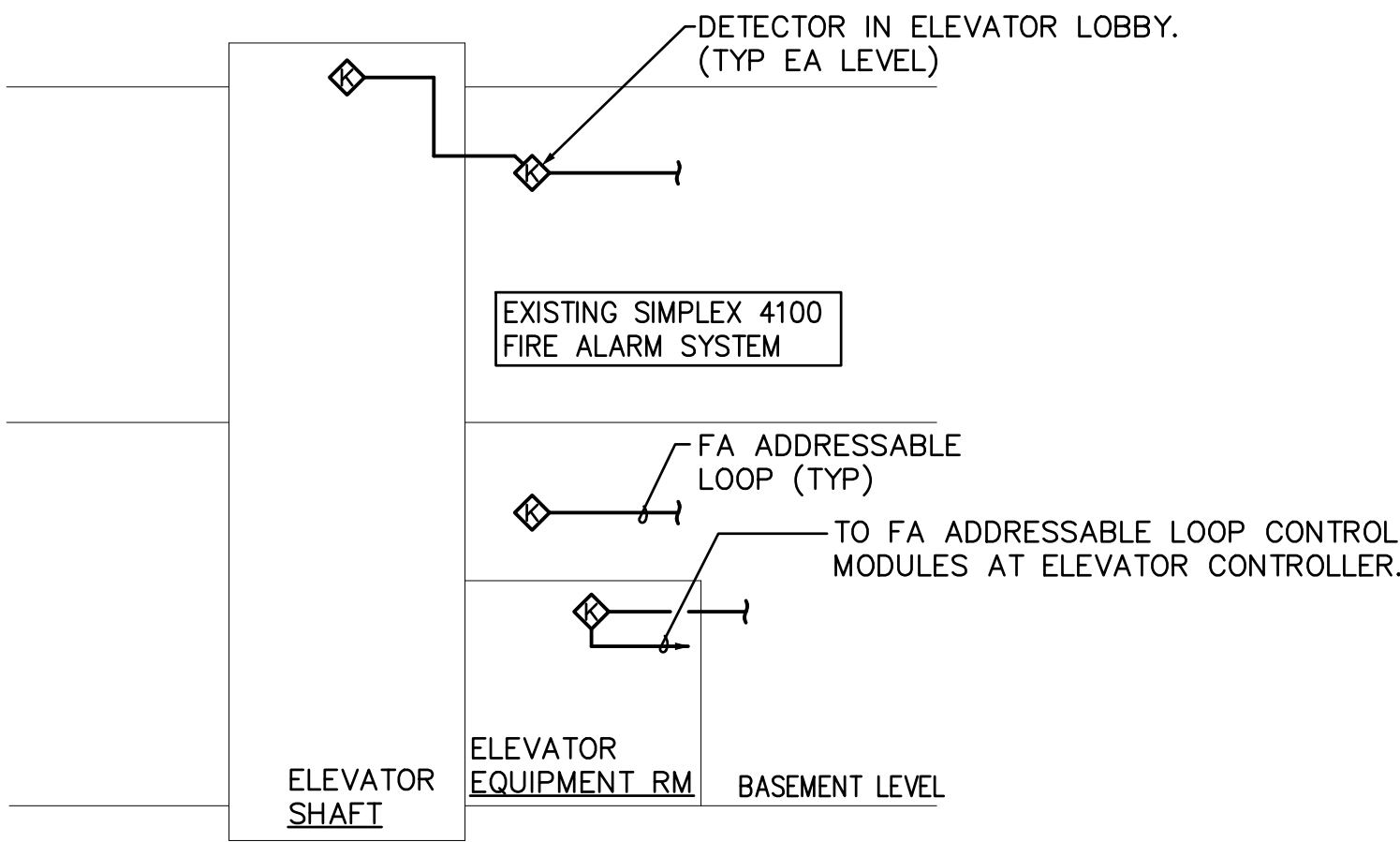
- VERIFY VOLTAGE, PHASE, FLA/MCA OF EACH CONNECTION WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. NOTIFY ARCHITECT/ENGINEER WHEN SCHEDULED SUPPLY WILL NOT MEET NEC REQUIREMENTS.
- OUTLETS, DISCONNECTS, CONTROLLERS, AND EQUIPMENT CONNECTIONS FOR ROOF TOP AND OTHER OUTDOOR EQUIPMENT SHALL BE WEATHER PROOF.
- LOCATION OF OUTLETS, DISCONNECTS, CONTROL DEVICES, AND EQUIPMENT CONNECTIONS ARE DIAGRAMMATIC AND TO BE LOCATED IN FIELD BY THE CONTRACTOR AS APPROVED BY THE ENGINEER. UNLESS OTHERWISE INDICATED ON PLANS, INSTALL SCHEDULED DISCONNECTS AND CONTROL DEVICES IN SIGHT OF EQUIPMENT. ARRANGE WIRING AND EQUIPMENT TO AVOID INTERFERENCE WITH OTHER WORK AND TO MAXIMIZE ACCESSIBILITY FOR MAINTENANCE AND REPAIRS.
- COORDINATE WITH THE OTHER INSTALLING CONTRACTORS TO ENSURE NEC REQUIRED ACCESS TO DISCONNECTS IS PROVIDED FOR EACH PIECE OF EQUIPMENT.
- NOT USED
- WIRING BETWEEN EQUIPMENT DISCONNECT AND POINT OF CONNECTION SHALL COMPLY WITH NEC BASED ON EQUIPMENT NAMEPLATE RATING EXCEPT MINIMUM BRANCH CIRCUIT RATING SHALL BE 20 AMPERES.
- SIZE OF DISCONNECT SWITCH AND MOTOR STARTER SHALL BE SIZED TO COMPLY WITH NEC REQUIREMENTS. WHERE INDICATED MOTOR CONTROL IS NOT LOCATED IN SIGHT OF MOTOR AS DEFINED BY NEC, PROVIDE ADDITIONAL DISCONNECTING MEANS TO COMPLY WITH NEC 430.102.
- WIRING SIZES ARE BASED ON 60 DEGREE C. FOR AMPACITIES 100 AMPERES AND LESS. FOR FEEDERS LESS THAN 100 FEET IN LENGTH, CONDUCTOR SIZES MAY BE SELECTED BASED ON 75 DEGREE C. WHERE EQUIPMENT INSTALLED IS LABELED FOR 75 DEGREE C. WIRING.
- SCHEDULE LEGEND: • = FURNISH AND INSTALL NEW UNDER DIVISION 26
○ = INSTALL UNDER DIVISION 26; FURNISHED WITH EQUIPMENT OR BY OTHERS.
X = FURNISH AND INSTALL BY OTHERS (NOT DIVISION 26)
* = EXISTING, RELOCATED EQUIPMENT

PLAN KEY NOTES:

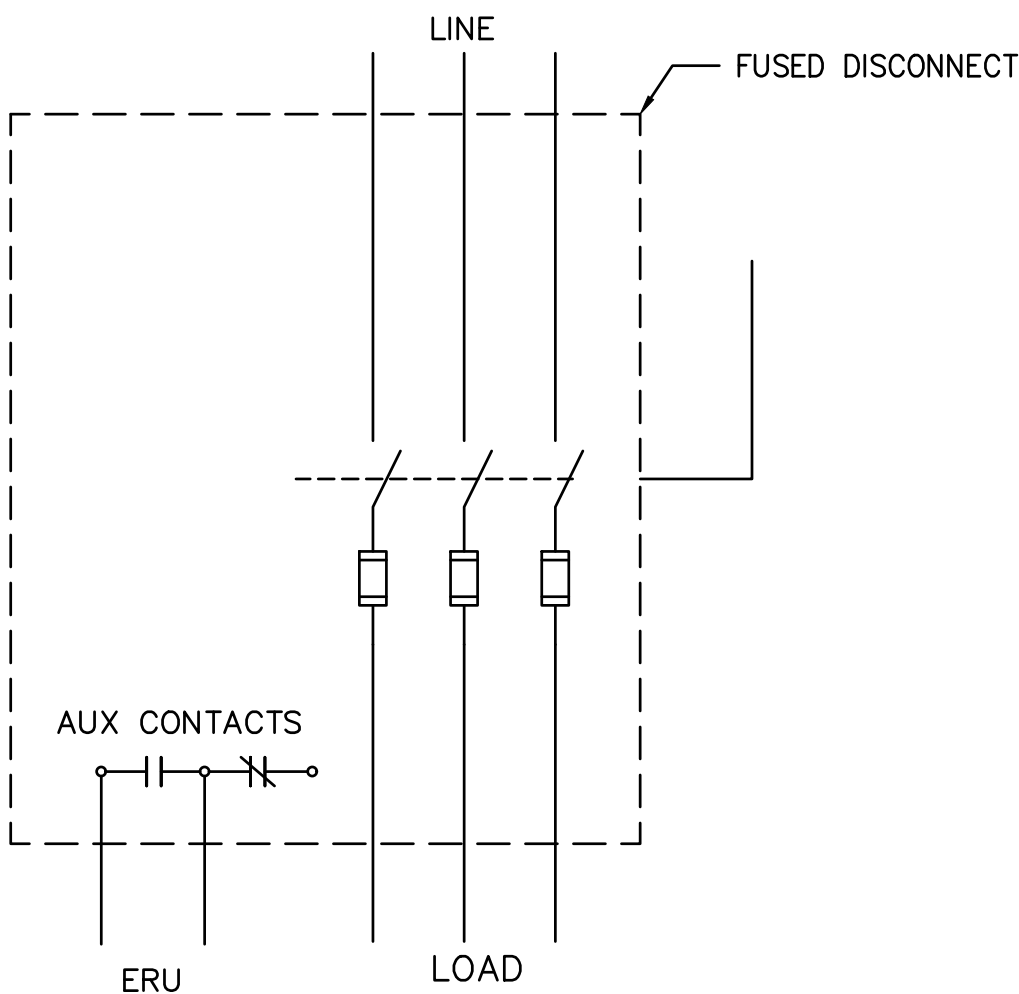
- REPLACE EXISTING LIGHTS AND RECEPTACLE WITH NEW AS REQUIRED.



ELEVATOR POWER RISER DIAGRAM



ELEVATOR FIRE ALARM RISER DIAGRAM



DISCONNECT WIRING DIAGRAM

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UNITED STATES POSTAL SERVICE
SEATTLE NDC - ELEVATOR UPGRADE & NEW INSTALL
34301 9TH AVE. S.
FEDERAL WAY, WA 98003

QUALITY
10-18-2019
SIGNED

SHEET TITLE: POWER PLAN
DRAWN: AD
DATE: 10-18-19
PROJECT NO. 19-160
CHECKED: CTU
REVISIONS:

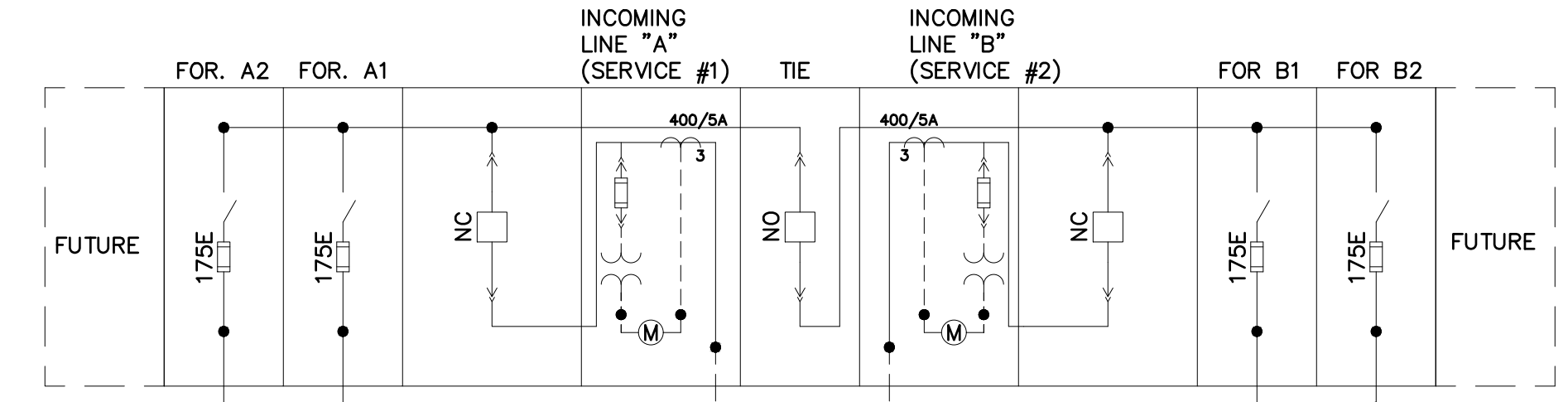
SHEET
E3.0
SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

A B C D E F G H J K

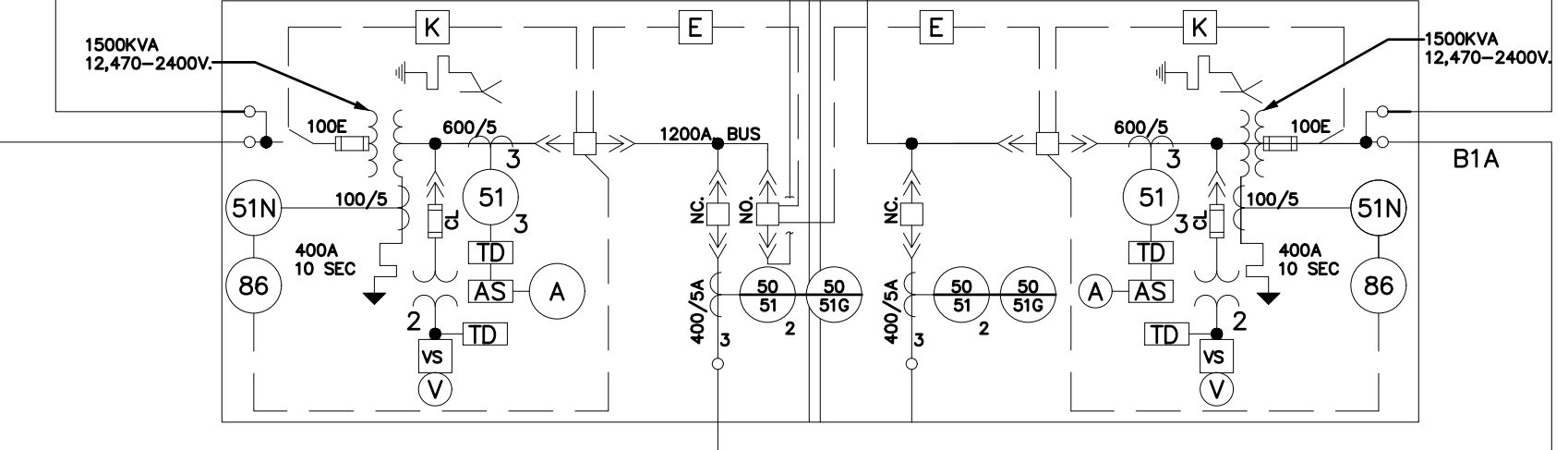
NOTE:
INCOMING PRIMARY SERVICE IS
12,470 VOLTS, 3 PHASE 4 WIRE
60 HERTZ GROUNDED NEUTRAL

- ① PROVIDE NEW CIRCUIT BREAKER FOR ELEVATOR ELV2. USE EXISTING
CIRCUIT BREAKER FOR ELEV. MACHINE ROOM XFMR PANEL EL.

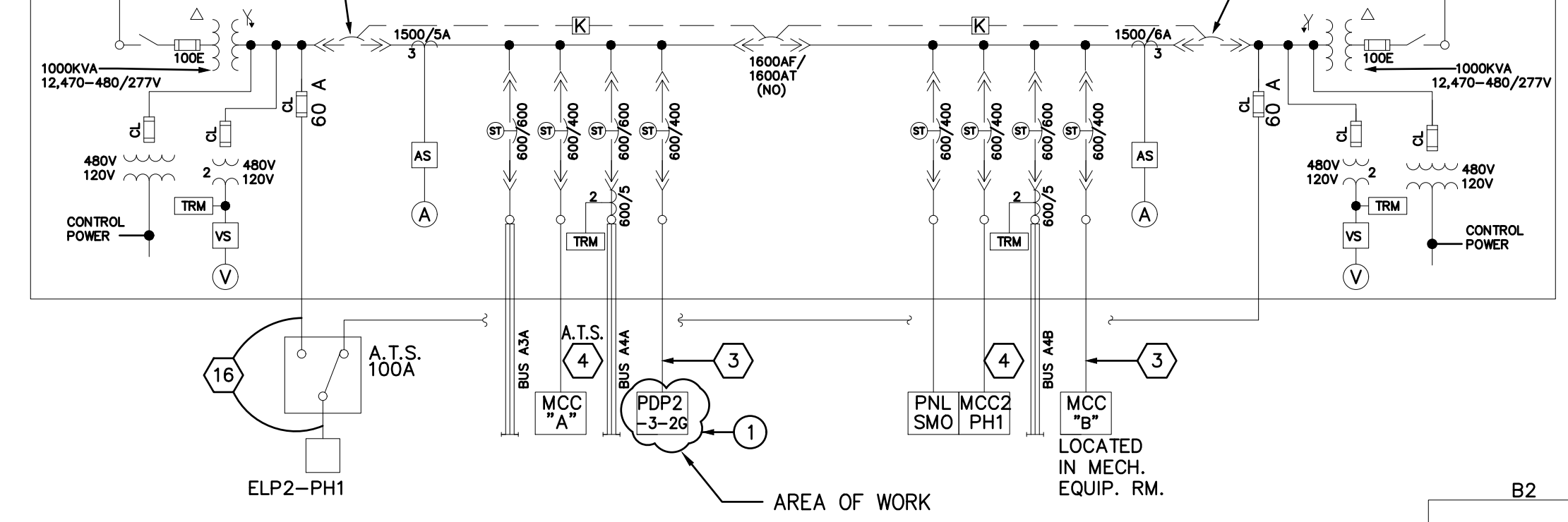
PRIMARY SWITCHGEAR (ELECT EQUIP RM)



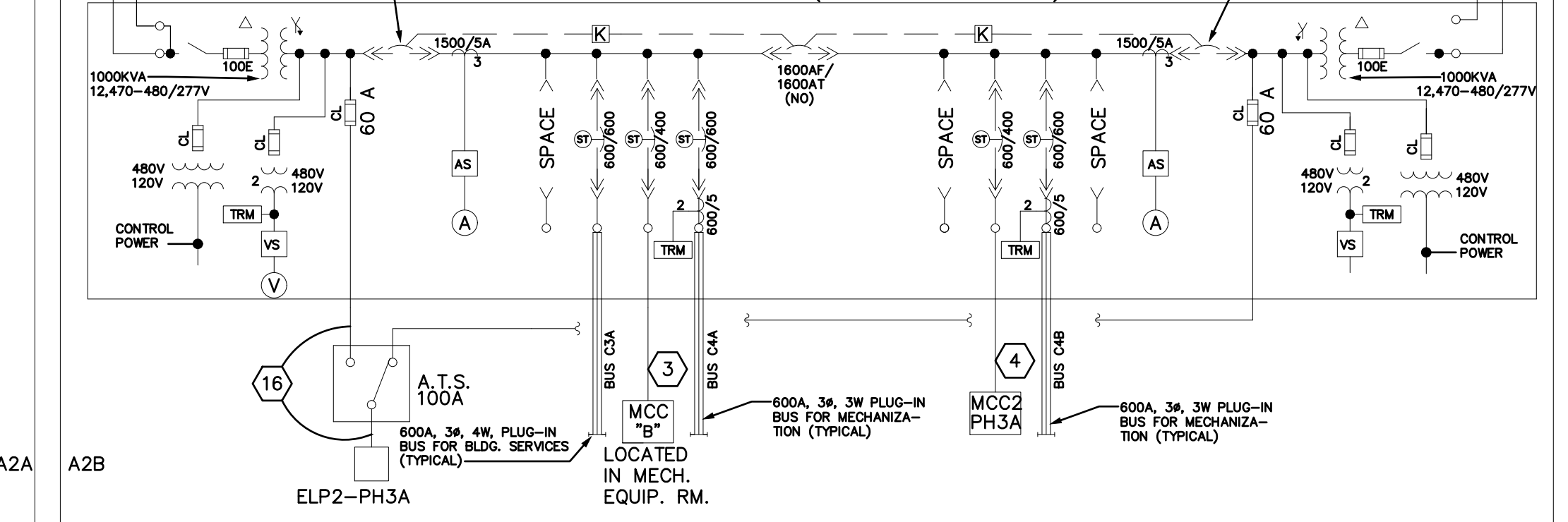
2400V. SUBSTATION "E"



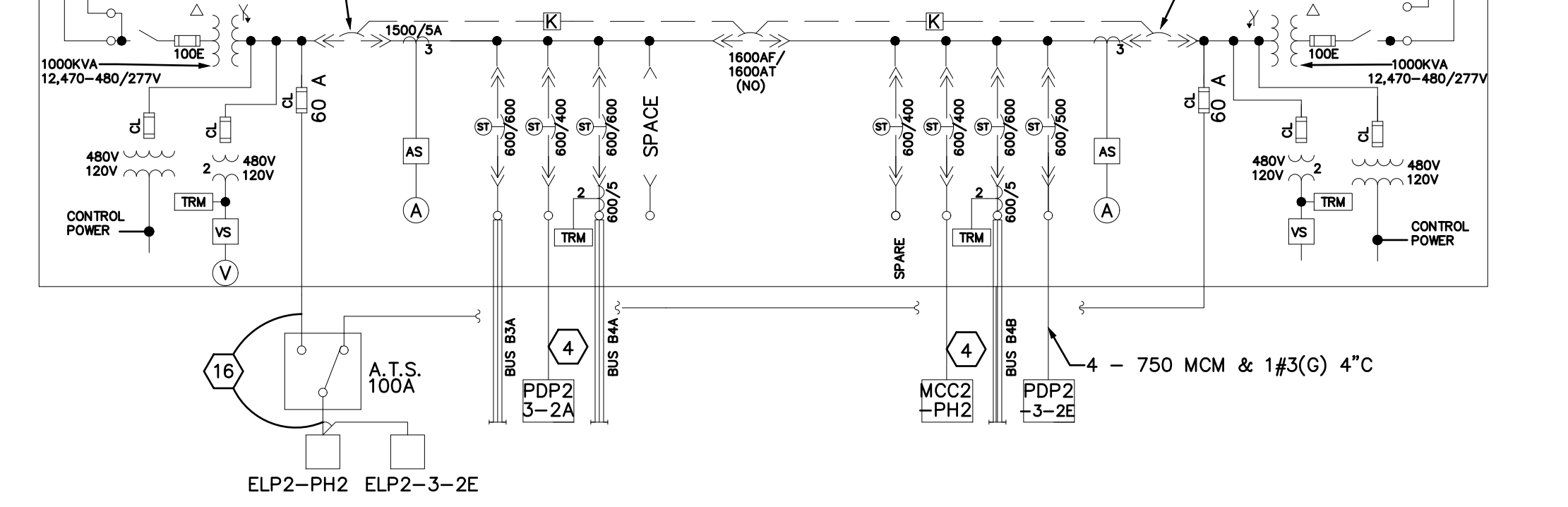
SUBSTATION "A" (PENTHOUSE No 1)



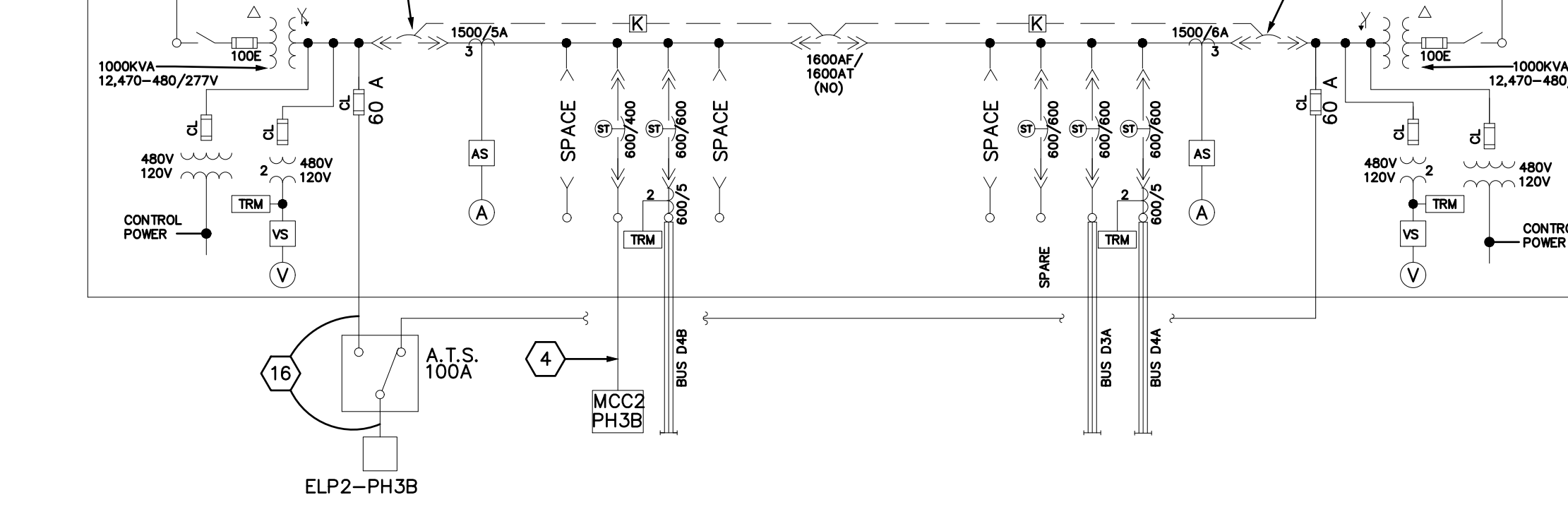
SUBSTATION "C" (PENTHOUSE No 3)



SUBSTATION "B" (PENTHOUSE No 2)



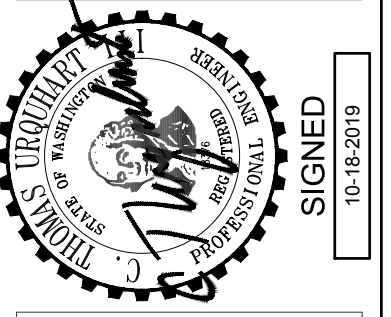
SUBSTATION "D" (PENTHOUSE No 3)



FEEDER CHART	
NO	WIRE AND CONDUIT SIZE
①	2-3 1/2" W/4-350 MCM & 1#2 (G) EACH
②	2-3 1/2" W/3-350 MCM & 1#2 (G) EACH
③	4-500 MCM & 1#1/0(G), 4"C.
④	3-500 MCM & 1#1/0(G), 3 1/2"C.
⑤	4#4/0 & 1#2(G), 3"C.
⑥	3#4/0 & 1#2(G), 2 1/2"C.
⑦	4#2 & 1#8(G), 2"C.
⑧	3#2 & 1#8(G), 1 1/2"C.
⑨	3#4 & 1#8(G), 1 1/4"C.
⑩	3#6 & 1#8(G), 1 1/4"C.
⑪	3#8 & 1#10(G), 1"C.
⑫	4#10 & 1#10(G), 1"C.
⑬	3#10 & 1#10(G), 3/4"C.
⑭	3#12 & 1#12(G), 3/4"C.
⑮	2#8 & 1#10(G), 3/4"C.
⑯	4#6 & 1#8(G), 1 1/4"C.
⑰	4#1/0 & 1#6(G), 2"C.
⑱	3#1/0 & 1#6(G), 2"C.

EXISTING DISTRIBUTION ONE-LINE DIAGRAM

UNITED STATES POSTAL SERVICE
SEATTLE NDC - ELEVATOR UPGRADE & NEW INSTALL
34301 9TH AVE. S.
FEDERAL WAY, WA 98003



SHEET TITLE: EXISTING DISTRIBUTION ONE-LINE DIAGRAM
DRAWN: AD
DATE: 10-18-19
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CHECKED: CTU
REVISIONS: