COPPER FEEDER SCHEDULE

FEEDER (AMPS)	COND. SIZE	2 WIRE WITH GROUND	FEEDER (AMPS)	COND. SIZE	3 WIRE WITH GROUND	FEEDER (AMPS)	COND. SIZE	4 WIRE WITH GROUND
15S	12	2#12, 1#12 GND IN 3/4"C	15	12	3#12, 1#12 GND IN 3/4"C	15N	12	4#12, 1#12 GND IN 3/4"C
20S	12	2#12, 1#12 GND IN 3/4"C	20	12	3#12, 1#12 GND IN 3/4"C	20N	12	4#12, 1#12 GND IN 3/4"C
25S	10	2#10, 1#10 GND IN 3/4"C	25	10	3#10, 1#10 GND IN 3/4"C	25N	10	4#10, 1#10 GND IN 3/4"C
30S	10	2#10, 1#10 GND IN 3/4"C	30	10	3#10, 1#10 GND IN 3/4"C	30N	10	4#10, 1#10 GND IN 3/4"C
35S	8	2#8, 1#10 GND IN 3/4"C	35	8	3#8, 1#10 GND IN 3/4"C	35N	8	4#8, 1#10 GND IN 3/4"C
40S	8	2#8, 1#10 GND IN 3/4"C	40	8	3#8, 1#10 GND IN 3/4"C	40N	8	4#8, 1#10 GND IN 3/4"C
45S	6	2#6, 1#10 GND IN 3/4"C	45	6	3#6, 1#10 GND IN 3/4"C	45N	6	4#6, 1#10 GND IN 1"C
50S	6	2#6, 1#10 GND IN 3/4"C	50	6	3#6, 1#10 GND IN 3/4"C	50N	6	4#6, 1#10 GND IN 1"C
60S	4	2#4, 1#10 GND IN 1"C	60	4	3#4, 1#10 GND IN 1"C	60N	4	4#4, 1#10 GND IN 1 1/4"C
70S	4	2#4, 1#8 GND IN 1"C	70	4	3#4, 1#8 GND IN 1"C	70N	4	4#4, 1#8 GND IN 1 1/4"C
80S	3	2#3, 1#8 GND IN 1"C	80	3	3#3, 1#8 GND IN 1"C	80N	3	4#3, 1#8 GND IN 1 1/4"C
90S	2	2#2, 1#8 GND IN 1"C	90	2	3#2, 1#8 GND IN 1 1/4"C	90N	2	4#2, 1#8 GND IN 1 1/2"C
100S	1	2#1, 1#8 GND IN 1 1/4"C	100	1	3#1, 1#8 GND IN 1 1/4"C	100N	1	4#1, 1#8 GND IN 1 1/2"C
			110	2	3#2, 1#6 IN 1 1/4"C	110N	2	4#2, 1#6 GND IN 1 1/4"C
			125	1	3#1, 1#6 GND IN 1 1/4"C	125N	1	4#1, 1#6 GND IN 1 1/2"C
			150	1/0	3#1/0, 1#6 GND IN 1 1/2"C	150N	1/0	4#1/0, 1#6 GND IN 2"C
			175	2/0	3#2/0, 1#6 GND IN 1 1/2"C	175N	2/0	4#2/0, 1#6 GND IN 2"C
			200	3/0	3#3/0, 1#6 GND IN 2"C	200N	3/0	4#3/0, 1#6 GND IN 2"C
			225	4/0	3#4/0, 1#4 GND IN 2"C	225N	4/0	4#4/0, 1#4 GND IN 2 1/2"C
			250	250	3-250 KCMIL, 1#4 GND IN 2"C	250N	250	4-250 KCMIL, 1#4 GND IN 2 1/2"C
			300	350	3-350 KCMIL, 1#4 GND IN 2"C	300N	350	4-350 KCMIL, 1#4 GND IN 3"C
			350	500	3-500 KCMIL, 1#3 GND IN 3"C	350N	500	4-500 KCMIL, 1#3 GND IN 3 1/2"C
			400	600	3-600 KCMIL, 1#3 GND IN 3 1/2"C	400N	600	4-600 KCMIL, 1#3 GND IN 4"C
			450	2-4/0	(2) 3#4/0, 1#2 GND IN 2"C	450N	2-4/0	(2) 4#4/0, 1#2 GND IN 2 1/2"C
			500	2-250	(2) 3-250 KCMIL, 1#2 GND IN 2 1/2"C	500N	2-250	(2) 4-250 KCMIL, 1#1 GND IN 3"C
			600	2-350	(2) 3-350 KCMIL, 1#1 GND IN 2 1/2"C	600N	2-350	(2) 4-350 KCMIL, 1#1 GND IN 3"C
			700	2-500	(2) 3-500 KCMIL, 1#1/0 GND IN 3"C	700N	2-500	(2) 4-500 KCMIL, 1#1/0 GND IN 3 1/2"C
			800	2-600	(2) 3-600 KCMIL, 1#1/0 GND IN 3 1/2"C	800N	2-600	(2) 4-600 KCMIL, 1#1/0 GND IN 4"C
			1000	3-500	(3) 3-500 KCMIL, 1#2/0 GND IN 3"C	1000N	3-500	(3) 4-500 KCMIL, 1#2/0 GND IN 3 1/2"C
			1200	3-600	(3) 3-600 KCMIL, 1#3/0 GND IN 4"C	1200N	3-600	(3) 4-600 KCMIL, 1#3/0 GND IN 4"C
			1600	4-600	(4) 3-600 KCMIL, 1#4/0 GND IN 4"C	1600N	4-600	(4) 4-600 KCMIL, 1#4/0 GND IN 4"C
			2000	5-600	(5) 3-600 KCMIL, 1-250 KCMIL GND IN 4"C	2000N	5-600	(5) 4-600 KCMIL, 1-250 KCMIL GND IN 4"C
			2500	7-500	(7) 3-500 KCMIL, 1-350 KCMIL GND IN 3 1/2"C	2500N	7-500	(7) 4-500 KCMIL, 1-350 KCMIL GND IN 3 1/2"C
			3000	8-500	(8) 3-500 KCMIL, 1-400 KCMIL GND IN 3 1/2"C	3000N	8-500	(8) 4-500 KCMIL, 1-400 KCMIL GND IN 3 1/2"C
			4000	10-600	(10) 3-600 KCMIL, 1-500 KCMIL GND IN 4"C	4000N	10-600	(10) 4-600 KCMIL, 1-500 KCMIL GND IN 4"C
			5000	12-600	(12) 3-600 KCMIL, 1-700 KCMIL GND IN 4"C	5000N	12-600	(12) 4-600 KCMIL, 1-700 KCMIL GND IN 4"C
			6000	15-600	(15) 3-600 KCMIL, 1-500 KCMIL GND IN 4"C	6000N	15-600	(15) 4-600 KCMIL, 1-800 KCMIL GND IN 4"C

NOTES:

1. AMPACITIES FOR FEEDER SIZES ARE BASED ON N.E.C. CODE 110-14. (TERMINATION PROVISIONS FOR EQUIPMENT RATED 100A OR LESS ARE RATED FOR USE WITH CONDUCTORS RATED 60°C. TERMINATION PROVISIONS FOR EQUIPMENT RATED GREATER THAN 100A ARE RATED FOR USE WITH CONDUCTORS RATED 75°C.)
2. CONTRACTOR MAY OPTIONALLY USE 1/2" CONDUIT IN LIEU OF 3/4" CONDUIT FOR #10 AND #12 CONDUCTORS.
3. CONDUIT FILL IS BASED ON 40% FILL USING SINGLE CONDUCTOR BUILDING WIRE OF INSULATION TYPES THHN, THWN, THWN-2, XHH, XHHW, AND XHHW-2 IN RMC. FOR OTHER RACEWAY TYPES REFER TO APPROPRIATE N.E.C. APPENDIX C TABLES.
4. EQUIPMENT GROUND SIZING BASED ON N.E.C. TABLE 250.122.

TECHNOLOGY SYMBOL LIST

SYMBOL	DESCRIPTION
	CAMERA
CR	CARD READER
	TECHNOLOGY OUTLET – 6" ABOVE COUNTER
	TECHNOLOGY OUTLET – FLOOR
	TECHNOLOGY OUTLET – WALL
DH	MAGNETIC DOOR HOLDER
	PUSH BUTTON
S	SPEAKER
	WALL CLOCK – SINGLE FACE
	WALL CLOCK – DOUBLE FACE
S	WALL CLOCK AND SPEAKER UNIT
WAP	WIRELESS ACCESS POINT

NOTES:
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR BOX AND CONDUIT FOR ALL DEVICES INDICATED.
2. LOW VOLTAGE CONTRACTOR SHALL PROVIDE EXACT SPECIFICATIONS AND LOCATIONS OF ALL DEVICES.

POWER SYMBOL LIST

SYMBOL	DESCRIPTION
	CONDUIT DOWN
	CONDUIT UP
	DISCONNECT SWITCH – NON FUSED
	DISCONNECT SWITCH – FUSED
	DISCONNECT SWITCH – COMB. MOTOR STARTER
	ELECTRICAL PANEL
	GROUNDING ROD
	GROUND
	GROUNDING BAR
J	JUNCTION BOX
M	METER
	MOTOR – SINGLE PHASE
	MOTOR – THREE PHASE
$M	MOTOR RATED SWITCH
	POWER RECEPTACLE – SIMPLEX TYPE
	POWER RECEPTACLE – DUPLEX TYPE
	POWER RECEPTACLE – DUPLEX 6" ABOVE COUNTER
USB	POWER RECEPTACLE – USB/DUPLEX COMBO. DEVICE
	POWER RECEPTACLE – QUADRUPLEX TYPE
FB	POWER RECEPTACLE – RECESSED FLOOR TYPE
PT	POWER RECEPTACLE – POKE THRU TYPE
	POWER RECEPTACLE – SPECIALTY TYPE
TC	TIME CLOCK
T	TRANSFORMER

NOTES:
1. ALL DEVICE RATINGS/SIZES SHALL BE COORDINATED WITH PLANS AND SCHEDULES.

FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION
F	AUDIBLE DEVICE/WALL MOUNTED
F	VISUAL DEVICE/WALL MOUNTED
F	COMBO AUDIBLE/VISUAL DEVICE/WALL MOUNTED
F	AUDIBLE DEVICE/CEILING MOUNTED
F	VISUAL DEVICE/CEILING MOUNTED
F	COMBO AUDIBLE/VISUAL DEVICE/CEILING MOUNTED
CS	CO ALARM/SMOKE DETECTOR
S	SMOKE DETECTOR
CO	CO ALARM
S	DUCT MOUNTED SMOKE DETECTOR
H	HEAT DETECTOR
FD	FIRE DEPARTMENT COMMUNICATION OUTLET
	EXISTING / NEW — COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL)
	EXISTING / NEW — COMBINATION FIRE/SMOKE DAMPER (VERTICAL)
F	MANUAL PULL STATION
FS	FLOW SWITCH
TS	TAMPER SWITCH
FAA	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
I/O	INPUT/OUTPUT CONTROL MODULE

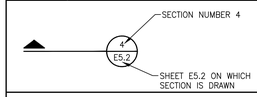
NOTES:
1. DRAWINGS INDICATE DESIGN INTENT ONLY, FINAL LOCATIONS AND DEVICE SPECIFICATIONS SHALL BE PROVIDED BY FIRE ALARM MANUFACTURER. REFER TO PROJECT SPECIFICATIONS FOR APPROVED MANUFACTURERS.
2. FIRE DETECTION AND SIGNALING DEVICES ARE SHOWN FOR COORDINATION PURPOSES. FINAL SYSTEM DESIGN TO BE PERFORMED BY CONTRACTOR AND SUPPLIER FOR OFFICIAL SUBMISSION. COORDINATE ALL DEVICE QUANTITIES AND LOCATIONS WITH SUPPLIER PRIOR TO INSTALLATION. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PATHWAYS, POWER SUPPLIES AND DEVICES PER SUPPLIER CONTRACT DOCUMENTS.

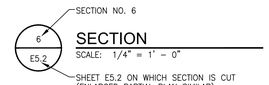
ELECTRICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
A	AMPERE
AF	AMPERE FUSE/AMPERE FRAME
AWG	AMERICAN WIRE GAUGE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AIC	AVAILABLE INTERRUPTING CURRENT (AMPS)
C	CONDUIT OR CEILING MOUNTED
CB	CIRCUIT BREAKER
CL	CONTROL LOAD
CU	COPPER
CT	CURRENT TRANSFORMER
DIA	DIAMETER
DISC	DISCONNECT
EMT	ELECTRICAL METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EPO	EMERGENCY POWER OFF
(E)	EXISTING ELECTRICAL EQUIPMENT OR WORK
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
F	FUSE
G/GRD	GROUND
GFCI/GFI	GROUND FAULT CIRCUIT INTERRUPTER
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
IG	ISOLATED GROUND
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LP	LIGHTING PANEL
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MAX	MAXIMUM
MIN	MINIMUM
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
N/NEU	NEUTRAL
NF	NON-FUSIBLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
PH. OR ø	PHASE
P	POLE
PF	POWER FACTOR
PVC	POLYVINYL CHLORIDE (PLASTIC)
(R)	RELOCATED EXISTING ELECTRICAL EQUIPMENT
(RR)	REMOVE AND REINSTALL
RMC	RIGID METALLIC CONDUIT
RP	RECEPTACLE PANEL
TBB	TELEPHONE BACKBOARD
TYP.	TYPICAL
UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
V	VOLT
VA	VOLT AMPERE
W	WATT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

DRAWING NOTATION

SYMBOL	DESCRIPTION
L1	LIGHTING FIXTURE TAG
1	CONSTRUCTION KEY NOTE NUMBER 1
1	DEMOLITION KEY NOTE NUMBER 1
20	COPPER FEEDER SIZE TAG (REFER TO FEEDER SCHEDULE)
20	ALUMINUM FEEDER SIZE TAG (REFER TO FEEDER SCHEDULE)
EQUIPMENT	EQUIPMENT TAG
	EXISTING DEVICES OR EQUIPMENT
	NEW OR MODIFIED DEVICES OR EQUIPMENT
	NEW OR MODIFIED UNDERGROUND WIRING
	EXISTING SYSTEM COMPONENT TO BE REMOVED
	POINT OF NEW CONNECTION





APPLICABLE CODES AND REGULATIONS

YEAR	CODE
2015	MICHIGAN BUILDING CODE
2015	MICHIGAN ENERGY CODE
2015	MICHIGAN REHABILITATION CODE
2017	MICHIGAN ELECTRICAL CODE RULES, PART 8
2017	NATIONAL ELECTRICAL CODE (NFPA 70)

PROJECT INFORMATION:
BRANCH-CIRCUIT PANELBOARDS AND TRANSFORMERS INDICATED WITH KEYED NOTES ARE BEING PROVIDED BY OWNER.

IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO HAVE ALL OWNER PROVIDED EQUIPMENT MOVED FROM WSU FACILITY AT 1200 HOLDEN.

ALTERNATE #1:
INSTALL NEW EQUIPMENT IN LOT 50 PER PLANS AND SPECIFICATIONS.

BASE BID: LEAVE EQUIPMENT INDICATED AS-IS.

SES
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Phone 248.399.1900 Fax 248.399.1901
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SES Project # 23 0407 01

CLIENT:

PROJECT:
WAYNE STATE UNIVERSITY
EV INFRASTRUCTURE UPGRADES
VARIOUS LOCATIONS
DETROIT, MI

Seal

Keyplan

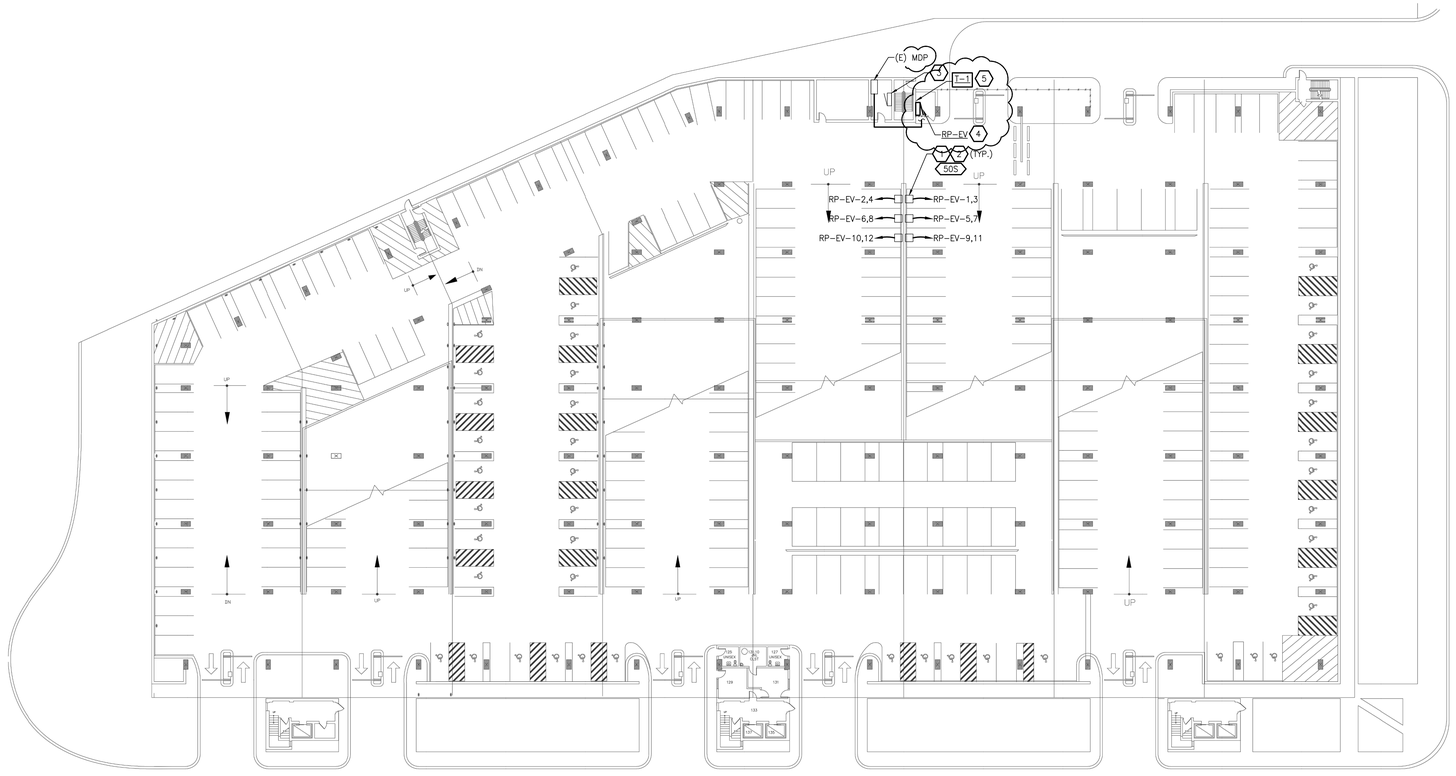
ISSUED FOR:

ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW	08/28/23
ISSUED	DATE

DESIGNER: DAD
ENGINEER: DAD

SHEET TITLE:
ELECTRICAL GENERAL INFORMATION

SHEET NUMBER:
E-0



PS1 ELECTRICAL FLOOR PLAN

NO SCALE

KEYED NOTES

1. LOCATION OF EXISTING ELECTRIC VEHICLE CHARGING STATIONS. ONE STATION, WHICH SERVES ONE CAR, IS FED BY A 208V/1PH CIRCUIT. A NEW 208V/1PH CIRCUIT SHALL BE BROUGHT TO EACH STATION SUCH THAT STATIONS CAN OPERATE AT FULL OUTPUT OF 7.2KW PER PORT. TOTAL OF (6) STATIONS.
2. CAPTURE AND EXTEND EXISTING FEEDERS FOR CURRENTLY INSTALLED EV STATIONS TO NEW PANEL RP-EV.
3. EXISTING EV STATIONS ARE FED FROM PANEL X AT THIS LOCATION. REFER TO KEYED NOTE #2.
4. NEW BRANCH-CIRCUIT PANELBOARD PROVIDED BY OWNER, INSTALLED BY EC. PROVIDE NEW LABELING PER SPECIFICATIONS.
5. NEW TRANSFORMER PROVIDED BY OWNER, INSTALLED BY EC. TRANSFORMER SHALL BE INSTALLED ON NEW CONCRETE HOUSEKEEPING PAD PER SPECIFICATIONS.

PS1 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

DRY TYPE TRANSFORMER SCHEDULE - 480VD TO 208Y/120V

KVA	PRIMARY BREAKER OR FUSE	FEEDER (AMPS)	PRIMARY WIRE SIZE	SECONDARY BREAKER OR FUSE	FEEDER (AMPS)	SECONDARY WIRE SIZE
15	30A	30TP	3#10 & 1#10 GND IN .75"C	60A	60TS	4#6 & 1#8 GND IN 1"C
45	70A	70TP	3#4 & 1#8 GND IN 1"C	~~175A~~	~~175TS~~	4#2/0 & 1#4 GND IN 2"C
75	125A	125TP	3#1 & 1#6 GND IN 1.25"C		200TS	4#4/0 & 1#4 GND IN 2.5"C

NOTES:

1. THE PRIMARY AND SECONDARY BREAKERS OR FUSES ARE LOCATED IN SWITCHBOARD OR PANELBOARD UNLESS SHOWN OTHERWISE.
2. THE SECONDARY NEUTRAL OF DRY-TYPE TRANSFORMERS SHALL BE GROUNDED PER NATIONAL ELECTRICAL CODE AND LOCAL CODE.
3. THIS TRANSFORMER SCHEDULE IS A MASTER LIST. EVERY TRANSFORMER SIZE LISTED MAY NOT BE USED IN EVERY PACKAGE. SEE PLANS FOR ACTUAL SIZES USED.

Panel Designation: **RP-EV**
Panel Location: ELECTRICAL ROOM
Fed From: MSB
Feeder Size: REF: ONE-LINE DIAGRAM
PANELBOARD FURNISHED BY OWNER

Main: MLO
Bussing: 200A
Ground Bus: STANDARD
Mounting: SURFACE
Neutral: 100%

P-P Voltage: 208
P-N Voltage: 120
Phase: 3
Wire: 4
Min SC Interrupting Rating: 14kA

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	Ø A	Ø B	Ø C	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	40		3600			NEW EV STATION
			3600			3		X		4			3600			
NEW EV STATION			3600		40	5			X	6	40		3600			NEW EV STATION
			3600			7	X			8			3600			
NEW EV STATION			3600		40	9		X		10	40		3600			NEW EV STATION
			3600			11			X	12			3600			
SPACE					--	13	X			14	--					SPACE
SPACE					--	15		X		16	--					SPACE
SPACE					--	17			X	18	--					SPACE

	Connected Load				Demand	Demand Load				
Load Description	**ØA**	**ØB**	**ØC**	**Total**	**Factor**	**ØA**	**ØB**	**ØC**	**Total**	
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0	
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0	**Receptacle Demand Factor per Article 220.44 of the National Electrical Code.**
	Amount over 10kVA			*0*	0.50 (> 10kVA)	0	0	0	0	
Continuous Load (Volt-Amps)	14400	14400	14400	43200	1.25	18000	18000	18000	54000	
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0	
Total Load (kVA)	14.40	14.40	14.40	43.20	**125% of Light/Cont and Recept**	18.00	18.00	18.00	54.00	
Total Ampacity (Amps)	119.9	119.9	119.9	119.9	**(<10kVA) load plus other load**	149.9	149.9	149.9	149.9	
Minimum Feeder Sizing (Amps)	119.9	119.9	119.9	119.9	**<---- per NEC Article 215.2 ---->**	149.9	149.9	149.9	149.9	

Drawing: S:\23 0407 01 WSU EV Stations\CAD\Elec\E-1.dwg
Date: Oct 10, 2023, 3:29pm Layout: E-1 Plotted by: dad

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CLIENT:

PROJECT:

WAYNE STATE
UNIVERSITY
EV INFRASTRUCTURE
UPGRADES
VARIOUS LOCATIONS
DETROIT, MI

Seal

Keyplan

ISSUED FOR:

ISSUED	DATE
ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW	08/28/23

DESIGNER: DAD
ENGINEER: DAD

SHEET TITLE:

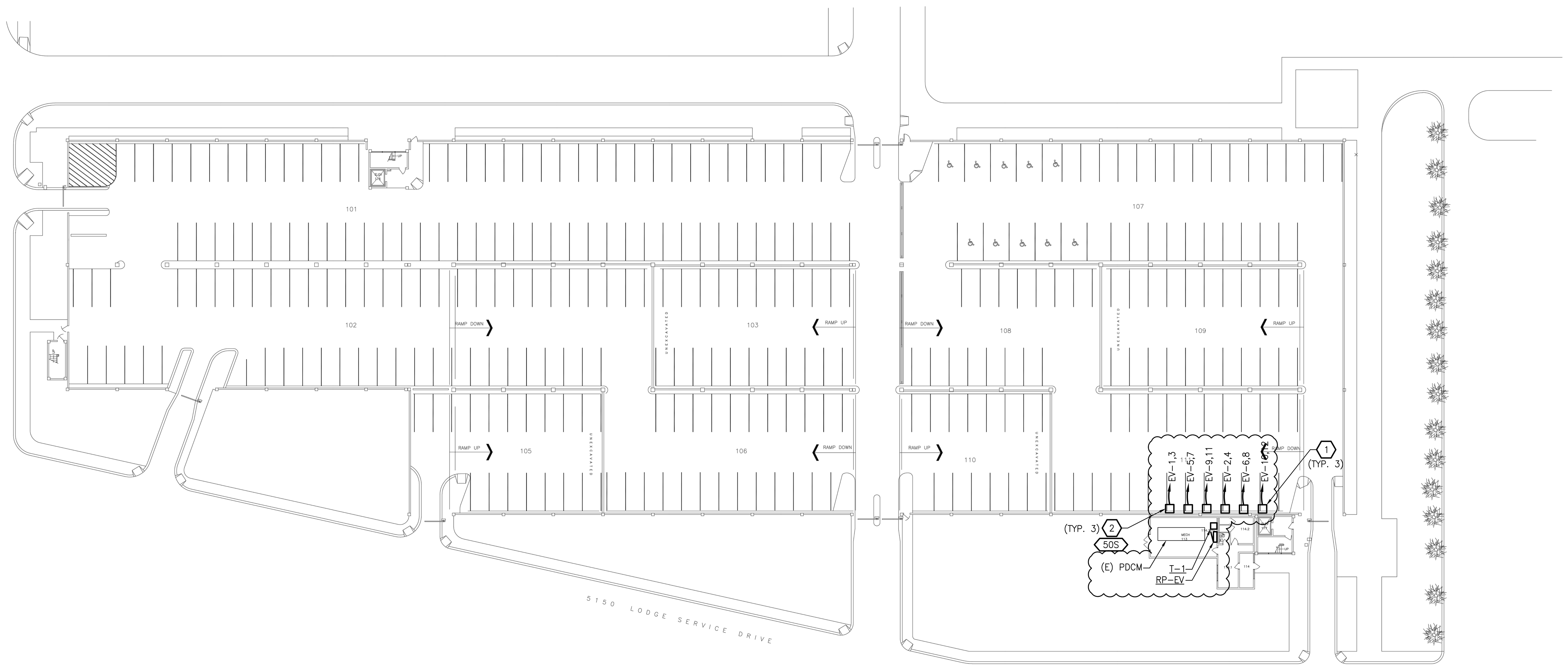
PS1 ELECTRICAL PLANS AND
DIAGRAMS

SHEET NUMBER:

E-1

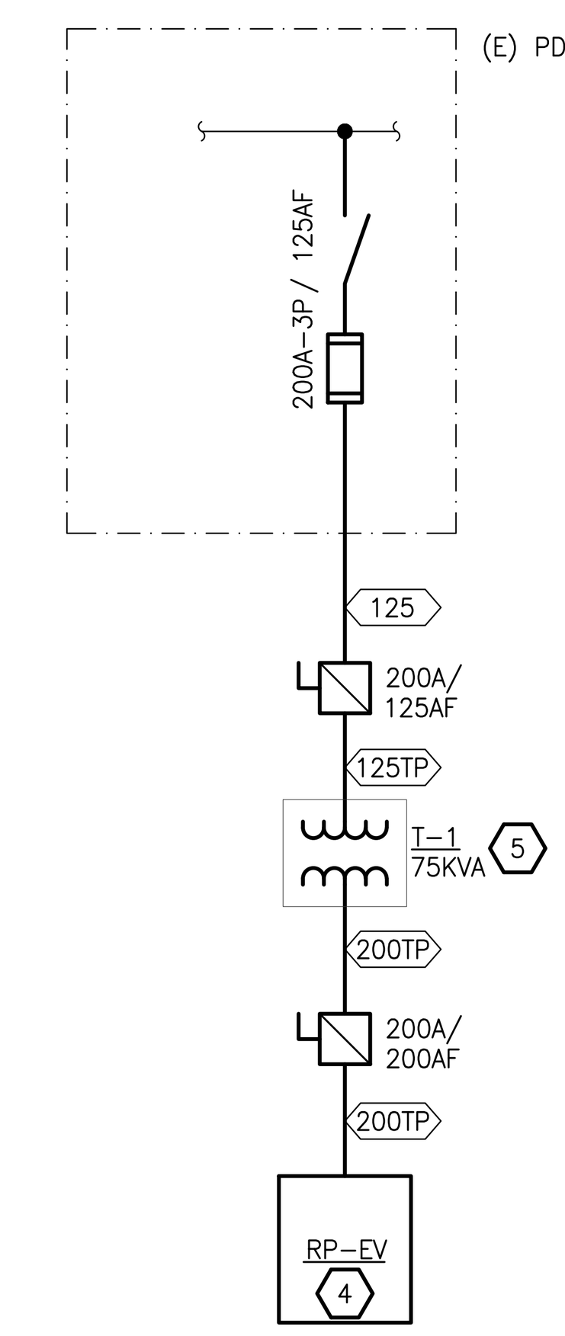
KEYED NOTES

1. RE–FEED EXISTING EV STATIONS TO NEW BRANCH–CIRCUIT PANEL AS SHOWN.
2. NEW 208V/1PH CIRCUIT SHALL BE BROUGHT TO EACH STATION SUCH THAT STATIONS CAN OPERATE AT FULL OUTPUT OF 7.2KW PER PORT. TOTAL OF (3) STATIONS.
3. NOT USED.
4. NEW BRANCH–CIRCUIT PANELBOARD PROVIDED BY OWNER, INSTALLED BY EC. PROVIDE NEW LABELING PER SPECIFICATIONS.
5. NEW TRANSFORMER PROVIDED BY OWNER, INSTALLED BY EC. TRANSFORMER SHALL BE INSTALLED ON NEW CONCRETE HOUSEKEEPING PAD PER SPECIFICATIONS.



PS2 ELECTRICAL FLOOR PLAN

NO SCALE



PS2 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

Panel Designation: RP-EV
Panel Location: ELECTRICAL ROOM
Fed From: MSB
Feeder Size: REF: ONE-LINE DIAGRAM
PANELBOARD FURNISHED BY OWNER ____________

Main: 250A MCB
Bussing: 400A
Ground Bus: STANDARD
Mounting: SURFACE
Neutral: 100%

P-P Voltage: 208
P-N Voltage: 120
Phase: 3
Wire: 4
Min SC Interrupting Rating: 14kA

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	Ø A	Ø B	Ø C	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	40		3600			NEW EV STATION
			3600			3		X		4			3600			
NEW EV STATION			3600		40	5			X	6	40		3600			NEW EV STATION
			3600			7	X			8			3600			
NEW EV STATION			3600		40	9		X		10	40		3600			NEW EV STATION
			3600			11			X	12			3600			
SPACE					--	13	X			14	--					SPACE
SPACE					--	15		X		16	--					SPACE
SPACE					--	17			X	18	--					SPACE

	Connected Load				Demand	Demand Load				
Load Description	ØA	ØB	ØC	Total	Factor	ØA	ØB	ØC	Total	
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0	
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0	Receptacle Demand Factor per Article 220.44 of the National Electrical Code.
	Amount over 10kVA			*0*	0.50 (> 10kVA)	0	0	0	0	
Continuous Load (Volt-Amps)	14400	14400	14400	43200	1.25	18000	18000	18000	54000	
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0	
Total Load (kVA)	14.40	14.40	14.40	43.20	125% of Light/Cont and Recept	18.00	18.00	18.00	54.00	
Total Ampacity (Amps)	119.9	119.9	119.9	119.9	(<10kVA) load plus other load	149.9	149.9	149.9	149.9	
Minimum Feeder Sizing (Amps)	119.9	119.9	119.9	119.9	<---- per NEC Article 215.2 ---->	149.9	149.9	149.9	149.9	

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SES Project # 23 0407 01

CLIENT:

PROJECT:
WAYNE STATE UNIVERSITY
EV INFRASTRUCTURE UPGRADES
VARIOUS LOCATIONS
DETROIT, MI

Seal

Keyplan

ISSUED FOR:

ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW	08/28/23
ISSUED	DATE

DESIGNER:	DAD
ENGINEER:	DAD

SHEET TITLE:
PS2 ELECTRICAL PLANS AND DIAGRAMS

SHEET NUMBER:
E-2

Drawing: S:\23 0407 01 WSU EV Stations\CAD\Elec\E-2.dwg Layout: E-2 Plotted by: dad
Date: Oct 11, 2023, 3:02pm

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SES Project # 23 0407 01

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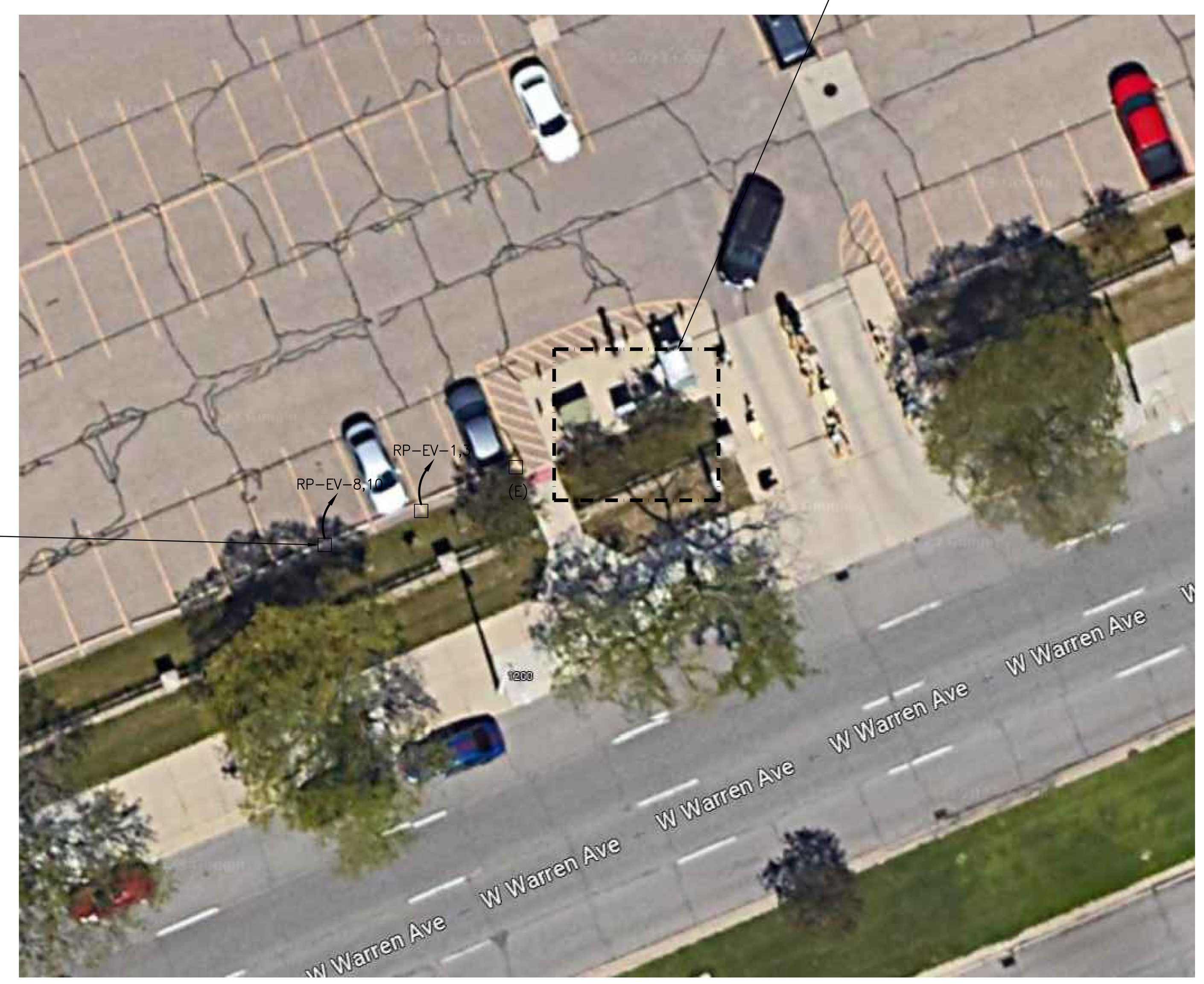
VARIOUS LOCATIONS
DETROIT, MI

KEYED NOTES

1. LOCATION OF EXISTING ELECTRIC VEHICLE CHARGING STATIONS. ONE STATION, WHICH SERVES TWO CARS, IS FED BY A 208V/1PH CIRCUIT. A NEW 208V/1PH CIRCUIT SHALL BE BROUGHT TO EACH STATION SUCH THAT STATIONS CAN OPERATE AT FULL OUTPUT OF 7.2KW PER PORT. TOTAL OF (3) STATIONS.



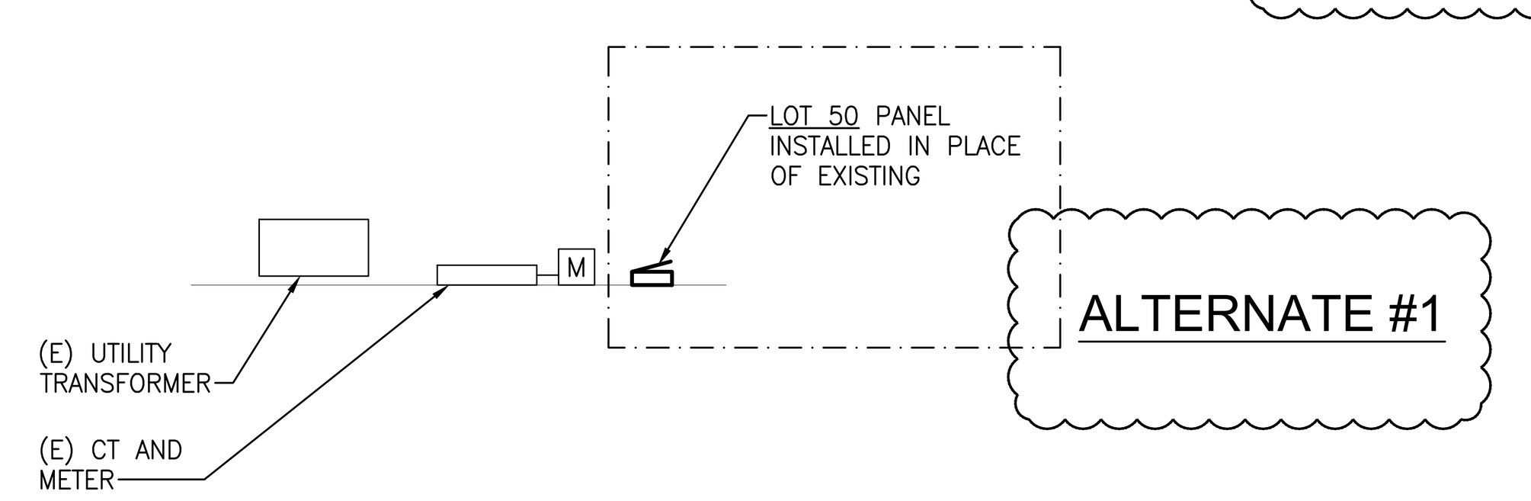
LOT 50 ELECTRICAL FLOOR PLAN
NO SCALE

ALTERNATE #1

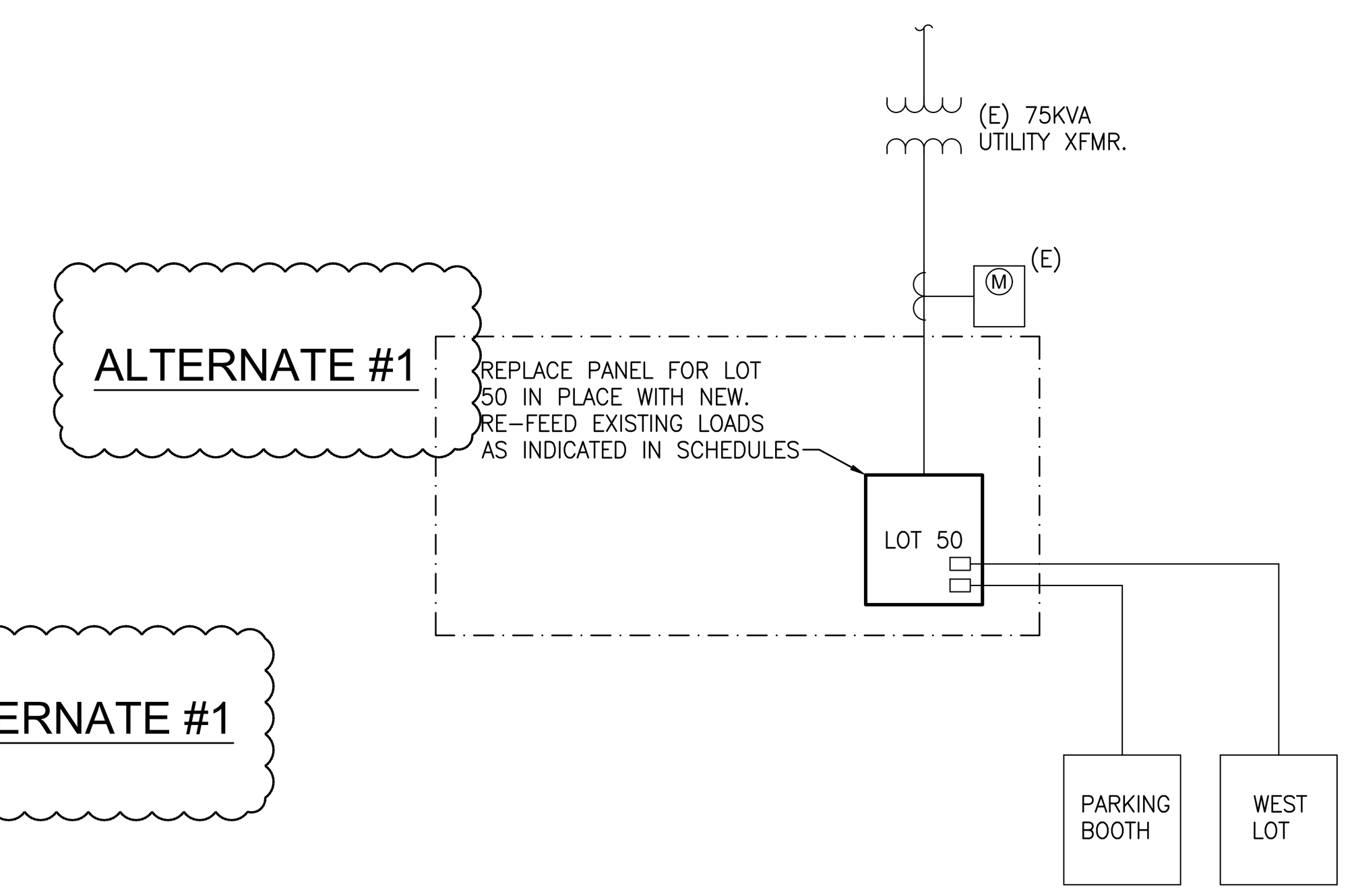
Panel Designation: LOT 50 PANEL — Main: 250A MCB — P-P Voltage: 208
Panel Location: LOT 50 SITE — Bussing: 400A — P-N Voltage: 120
Fed From: MAIN SERVICE — Ground Bus: STANDARD — Phase: 3
Feeder Size: REF: ONE-LINE DIAGRAM — Mounting: SURFACE — Wire: 4
NEMA 4 RATED ENCLOSURE — Neutral: 100% — Min SC Interrupting Rating: 14kA

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	ØA	ØB	ØC	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	50					EXISTING LOAD
			3600			3		X		4						
SPACE					--	5			X	6						
EXISTING LOAD					100	7	X			8	40		3600			NEW EV STATION
						9		X		10			3600			
						11			X	12	20					EXISTING LOAD
EXISTING. RP-50 PARKING BOOTH					100	13	X			14	100					EXISTING, RP-50 WEST SIDE
						15		X		16						
						17			X	18						
SPACE					--	19	X			20	--					SPACE
SPACE					--	21		X		22	--					SPACE
SPACE					--	23			X	24	--					SPACE
SPACE					--	25	X			26	--					SPACE
SPACE					--	27		X		28	--					SPACE
SPACE					--	29			X	30	--					SPACE

	Connected Load				Demand	Demand Load				
Load Description	**ØA**	**ØB**	**ØC**	**Total**	**Factor**	**ØA**	**ØB**	**ØC**	**Total**	
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0	
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0	**Receptacle Demand Factor per Article 220.44 of the National Electrical Code.**
	Amount over 10kVA			*0*	0.50 (> 10kVA)	0	0	0	0	
Continuous Load (Volt-Amps)	7200	7200	0	14400	1.25	9000	9000	0	18000	
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0	
Total Load (kVA)	7.20	7.20	0.00	14.40	**125% of Light/Cont and Recept**	9.00	9.00	0.00	18.00	
Total Ampacity (Amps)	60.0	60.0	0.0	40.0	**(<10kVA) load plus other load**	74.9	74.9	0.0	50.0	
Minimum Feeder Sizing (Amps)	60.0	60.0	0.0	40.0	**<---- per NEC Article 215.2 ---->**	74.9	74.9	0.0	50.0	



LOT 50 PARTIAL ELECTRICAL PLAN
NO SCALE



LOT 50 PARTIAL ELECTRICAL ONE-LINE DIAGRAM - NEW WORK
NO SCALE

Seal

Keyplan

ISSUED FOR:

ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW	08/28/23
ISSUED	DATE

DESIGNER: DAD
ENGINEER: DAD

SHEET TITLE:
LOT 50 ELECTRICAL PLANS AND DIAGRAMS

SHEET NUMBER:
E-3

Drawing: S:\23 0407 01 WSU EV Stations\CAD\Elec\E-3.dwg
Date: Oct 11, 2023, 2:11pm Layout: E-3 Plotted by: dad

KEYED NOTES

1. LOCATION OF EXISTING ELECTRIC VEHICLE CHARGING STATIONS. ONE STATION, WHICH SERVES ONE CAR, IS FED BY A SINGLE 208V/1PH CIRCUIT. A NEW 208V/1PH CIRCUIT SHALL BE BROUGHT TO EACH STATION INDICATED SUCH THAT STATIONS CAN OPERATE AT FULL OUTPUT OF 7.2KW PER PORT. TOTAL OF (3) STATIONS.
2. NEW BRANCH-CIRCUIT PANELBOARD PROVIDED BY OWNER, INSTALLED BY EC. PROVIDE NEW LABELING PER SPECIFICATIONS.
3. NEW TRANSFORMER PROVIDED BY OWNER, INSTALLED BY EC. TRANSFORMER SHALL BE INSTALLED ON NEW CONCRETE HOUSEKEEPING PAD PER SPECIFICATIONS.
4. EV STATION SHALL BE REMOVED OUTSIDE OF THIS WORK SCOPE.

Panel Designation: RP-EV
Panel Location: ELECTRICAL ROOM
Fed From: MSB
Feeder Size: REF: ONE-LINE DIAGRAM

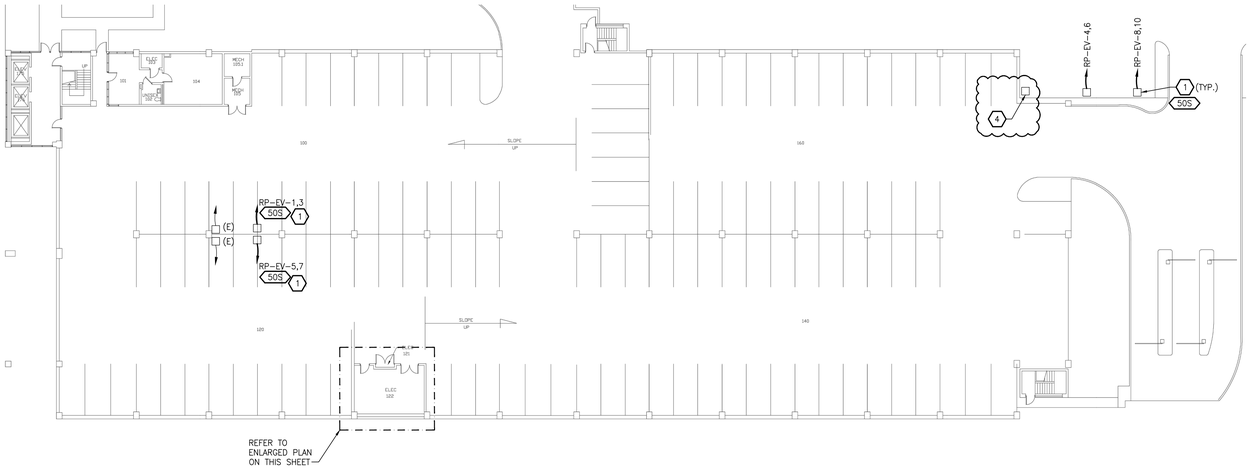
Main: MLO
Bussing: 200A
Ground Bus: STANDARD
Mounting: SURFACE
Neutral: 100%

P-P Voltage: 208
P-N Voltage: 120
Phase: 3
Wire: 4
Min SC Interrupting Rating: 14kA

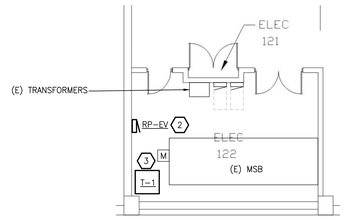
PANELBOARD FURNISHED BY OWNER

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	Ø A	Ø B	Ø C	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	40		3600			NEW EV STATION (LOT 75)
			3600			3		X		4			3600			
NEW EV STATION			3600		40	5			X	6	40		3600			NEW EV STATION (LOT 75)
			3600			7	X			8			3600			
SPACE					--	9		X		10	40		3600			NEW EV STATION (LOT 75)
SPACE					--	11			X	12			3600			
SPACE					--	13	X			14	--					SPACE
SPACE					--	15		X		16	--					SPACE
SPACE					--	17			X	18	--					SPACE

	Connected Load				Demand Factor	Demand Load				
Load Description	ØA	ØB	ØC	Total		ØA	ØB	ØC	Total	
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0	
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0	Receptacle Demand Factor per Article 220.44 of the National Electrical Code.
	Amount over 10kVA			0	0.50 (> 10kVA)	0	0	0	0	
Continuous Load (Volt-Amps)	14400	10800	10800	36000	1.25	18000	13500	13500	45000	
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0	
Total Load (kVA)	14.40	10.80	10.80	36.00	125% of Light/Cont and Recept	18.00	13.50	13.50	45.00	
Total Ampacity (Amps)	119.9	89.9	89.9	99.9	(<10kVA) load plus other load	149.9	112.4	112.4	124.9	
Minimum Feeder Sizing (Amps)	119.9	89.9	89.9	99.9	<---- per NEC Article 215.2 ---->	149.9	112.4	112.4	124.9	



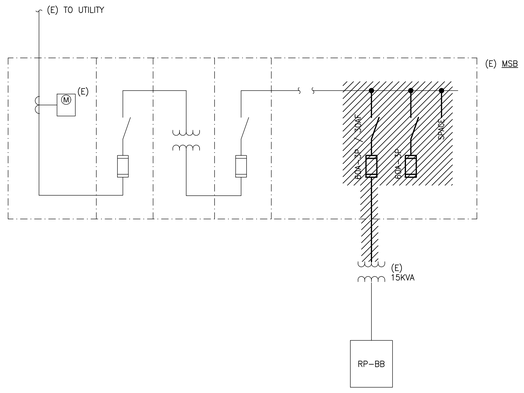
PS-4 AND LOT 75 ELECTRICAL FLOOR PLAN
NO SCALE



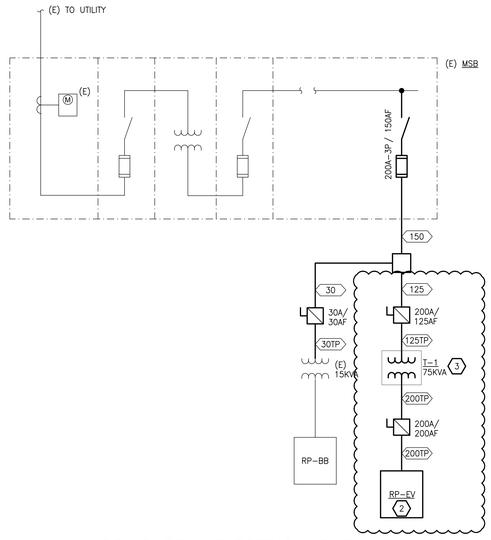
PS-4 PARTIAL ELECTRICAL ROOM PLAN
NO SCALE

DRY TYPE TRANSFORMER SCHEDULE - 480VD TO 208Y/120V						
KVA	PRIMARY BREAKER OR FUSE	FEEDER (AMPS)	PRIMARY WIRE SIZE	SECONDARY BREAKER OR FUSE	FEEDER (AMPS)	SECONDARY WIRE SIZE
15	30A	30TP	3#10 & 1#10 GND IN .75"C	60A	60TS	4#6 & 1#8 GND IN 1"C
45	70A	70TP	3#4 & 1#8 GND IN 1"C	175A	175TS	4#2/0 & 1#4 GND IN 2"C
75	125A	125TP	3#1 & 1#6 GND IN 1.25"C		200TS	4#4/0 & 1#4 GND IN 2.5"C

NOTES:
1. THE PRIMARY AND SECONDARY BREAKERS OR FUSES ARE LOCATED IN SWITCHBOARD OR PANELBOARD UNLESS SHOWN OTHERWISE.
2. THE SECONDARY NEUTRAL OF DRY-TYPE TRANSFORMERS SHALL BE GROUNDED PER NATIONAL ELECTRICAL CODE AND LOCAL CODE.
3. THIS TRANSFORMER SCHEDULE IS A MASTER LIST. EVERY TRANSFORMER SIZE LISTED MAY NOT BE USED IN EVERY PACKAGE. SEE PLANS FOR ACTUAL SIZES USED.



PS4 PARTIAL ELECTRICAL ONE-LINE DIAGRAM - DEMOLITION
NO SCALE



PS-4 PARTIAL ELECTRICAL ONE-LINE DIAGRAM - NEW WORK
NO SCALE

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CLIENT:

PROJECT:
WAYNE STATE UNIVERSITY
EV INFRASTRUCTURE UPGRADES
VARIOUS LOCATIONS
DETROIT, MI

Seal

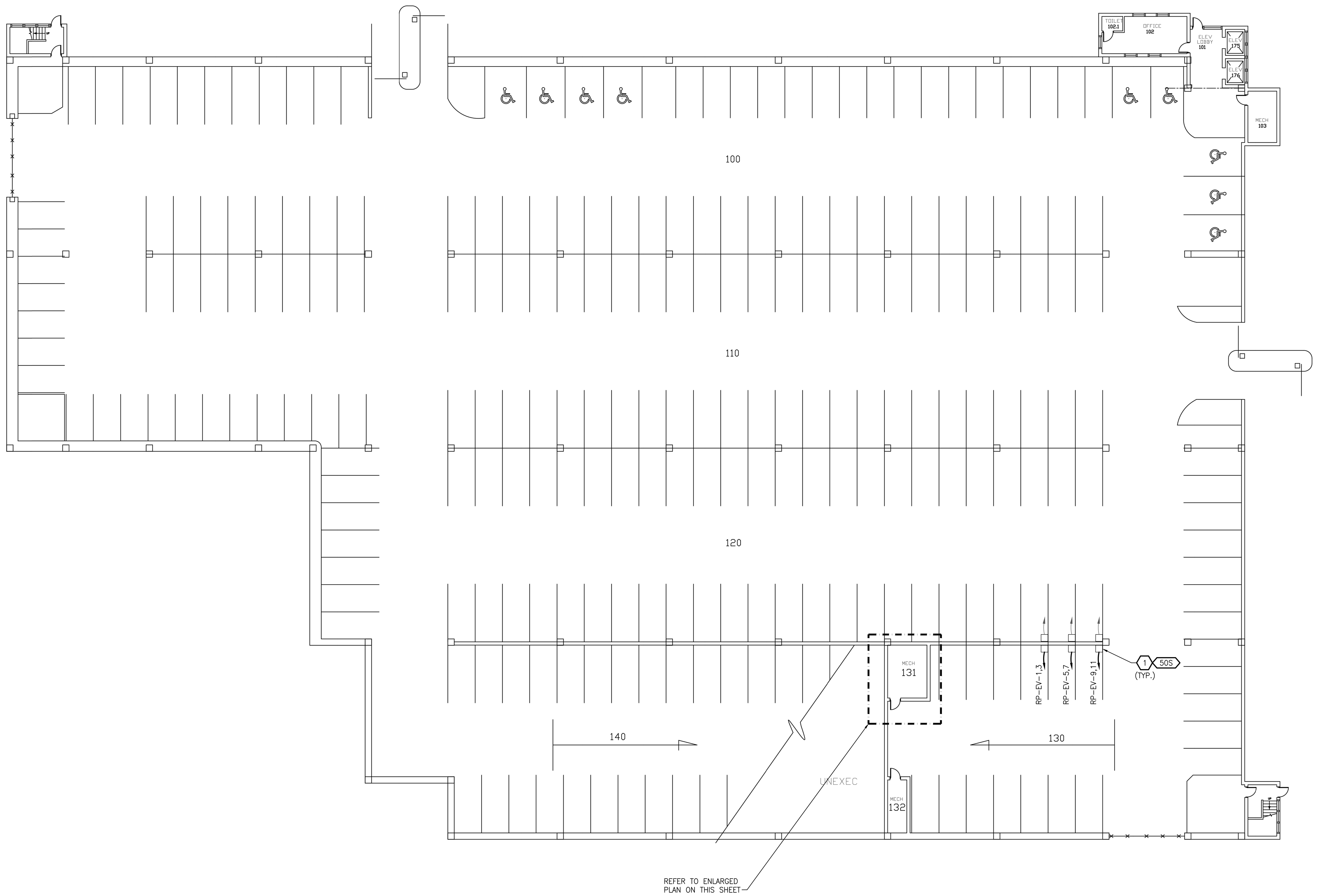
Keyplan

ISSUED FOR:

ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW ISSUED	08/28/23 DATE
DESIGNER:	DAD
ENGINEER:	DAD

SHEET TITLE:
PS4 AND LOT 75 ELECTRICAL PLANS AND DIAGRAMS

SHEET NUMBER:
E-4

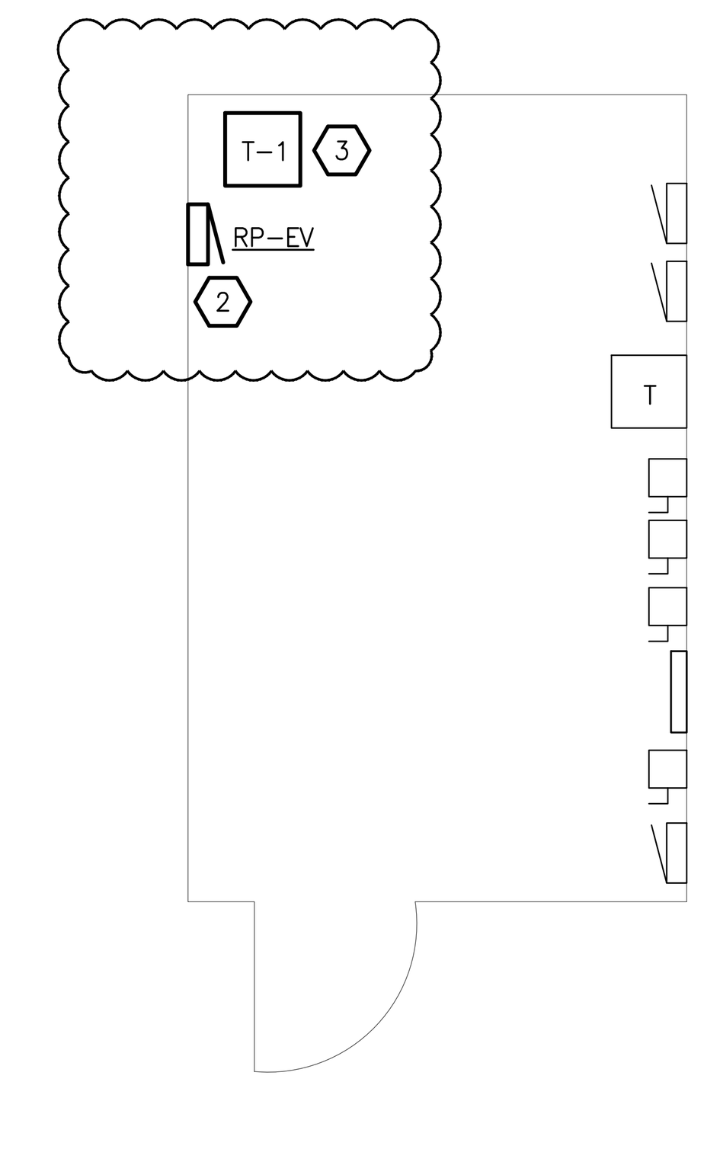


PS5 ELECTRICAL FLOOR PLAN

NO SCALE

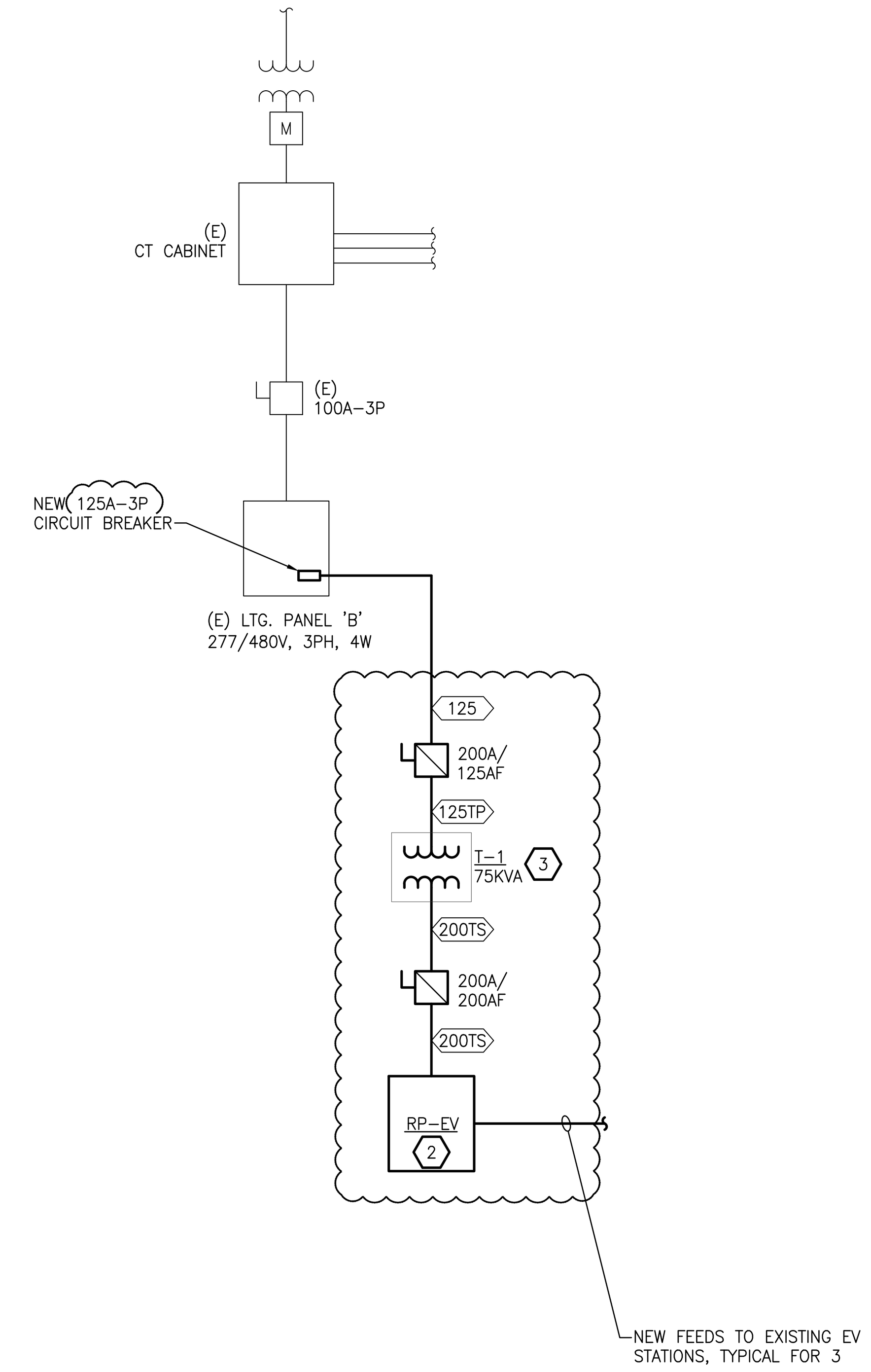
KEYED NOTES

1. LOCATION OF EXISTING ELECTRIC VEHICLE CHARGING STATIONS. ONE STATION, WHICH SERVES ONE CAR, IS FED BY A SINGLE 208V/1PH CIRCUIT. A NEW 208V/1PH CIRCUIT SHALL BE BROUGHT TO EACH STATION INDICATED SUCH THAT STATIONS CAN OPERATE AT FULL OUTPUT OF 7.2KW PER PORT. TOTAL OF (3) STATIONS.
2. NEW BRANCH–CIRCUIT PANELBOARD PROVIDED BY OWNER, INSTALLED BY EC. PROVIDE NEW LABELING PER SPECIFICATIONS.
3. NEW TRANSFORMER PROVIDED BY OWNER, INSTALLED BY EC. TRANSFORMER SHALL BE INSTALLED ON NEW CONCRETE HOUSEKEEPING PAD PER SPECIFICATIONS.



PS-5 PARTIAL ELECTRICAL ROOM PLAN

NO SCALE



PS-5 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

Panel Designation: RP-EV
Panel Location: ELECTRICAL ROOM
Fed From: MSB
Feeder Size: REF: ONE-LINE DIAGRAM
Main: MLO
Bussing: 200A
Ground Bus: STANDARD
Mounting: SURFACE
Neutral: 100%
P-P Voltage: 208
P-N Voltage: 120
Phase: 3
Wire: 4
Min SC Interrupting Rating: 14kA

PANELBOARD FURNISHED BY OWNER

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	Ø A	Ø B	Ø C	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	--					SPACE
			3600			3		X		4	--					SPACE
NEW EV STATION			3600		40	5			X	6	--					SPACE
			3600			7	X			8	--					SPACE
NEW EV STATION			3600		40	9		X		10	--					SPACE
			3600			11			X	12	--					SPACE
SPACE					--	13	X			14	--					SPACE
SPACE					--	15		X		16	--					SPACE
SPACE					--	17			X	18	--					SPACE

Load Description	Connected Load ØA	Connected Load ØB	Connected Load ØC	Connected Load Total	Demand Factor	Demand Load ØA	Demand Load ØB	Demand Load ØC	Demand Load Total
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0
	Amount over 10kVA			0	0.50 (> 10kVA)	0	0	0	0
Continuous Load (Volt-Amps)	7200	7200	7200	21600	1.25	9000	9000	9000	27000
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0
Total Load (kVA)	7.20	7.20	7.20	21.60	125% of Light/Cont and Recept	9.00	9.00	9.00	27.00
Total Ampacity (Amps)	60.0	60.0	60.0	60.0	(<10kVA) load plus other load	74.9	74.9	74.9	74.9
Minimum Feeder Sizing (Amps)	60.0	60.0	60.0	60.0	<---- per NEC Article 215.2 ---->	74.9	74.9	74.9	74.9

Receptacle Demand Factor per Article 220.44 of the National Electrical Code.

DRY TYPE TRANSFORMER SCHEDULE - 480VD TO 208Y/120V

KVA	PRIMARY BREAKER OR FUSE	FEEDER (AMPS)	PRIMARY WIRE SIZE	SECONDARY BREAKER OR FUSE	FEEDER (AMPS)	SECONDARY WIRE SIZE
15	30A	30TP	3#10 & 1#10 GND IN .75"C	60A	60TS	4#6 & 1#8 GND IN 1"C
30	50A	50TP	3#6 & 1#10 GND IN .75"C	100A	100TS	4#3 & 1#8 GND IN 1.25"C
45	70A	70TP	3#4 & 1#8 GND IN 1"C	175A	175TS	4#2/0 & 1#4 GND IN 2"C
75	125A	125TP	3#1 & 1#6 GND IN 1.25"C		200TS	4#4/0 & 1#4 GND IN 2.5"C

NOTES:

1. THE PRIMARY AND SECONDARY BREAKERS OR FUSES ARE LOCATED IN SWITCHBOARD OR PANELBOARD UNLESS SHOWN OTHERWISE.
2. THE SECONDARY NEUTRAL OF DRY–TYPE TRANSFORMERS SHALL BE GROUNDED PER NATIONAL ELECTRICAL CODE AND LOCAL CODE.
3. THIS TRANSFORMER SCHEDULE IS A MASTER LIST. EVERY TRANSFORMER SIZE LISTED MAY NOT BE USED IN EVERY PACKAGE. SEE PLANS FOR ACTUAL SIZES USED.

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CLIENT:

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DETROIT, MI

Seal

Keyplan

ISSUED FOR:

ISSUED	DATE
ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW	08/28/23

DESIGNER: DAD
ENGINEER: DAD

SHEET TITLE:
PS5 ELECTRICAL PLANS AND DIAGRAMS

SHEET NUMBER:
E-5

Drawing: S:\23 0407 01 WSU EV Stations\CAD\Elec\E-5.dwg Layout: E-5 Plotted by: dad
Date: Oct 10, 2023, 3:35pm

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VARIOUS LOCATIONS
DETROIT, MI

KEYED NOTES

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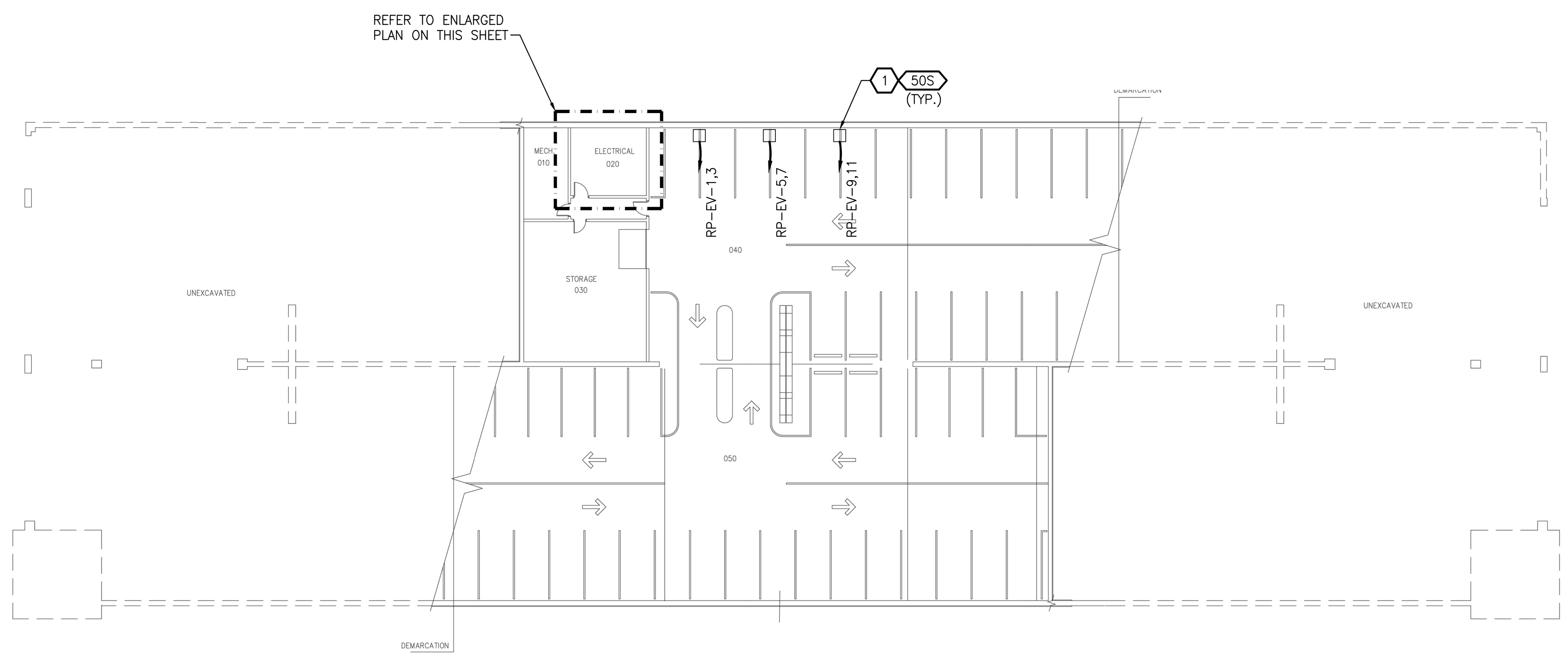
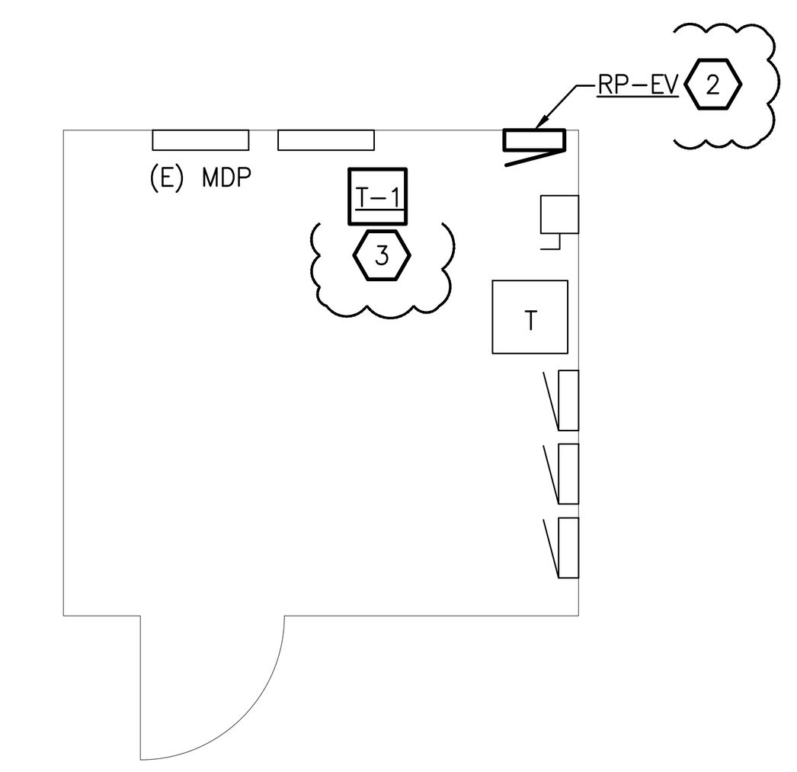
2. NEW BRANCH-CIRCUIT PANELBOARD PROVIDED BY OWNER, INSTALLED BY EC. PROVIDE NEW LABELING PER SPECIFICATIONS.
3. NEW TRANSFORMER PROVIDED BY OWNER, INSTALLED BY EC. TRANSFORMER SHALL BE INSTALLED ON NEW CONCRETE HOUSEKEEPING PAD PER SPECIFICATIONS.



PS7 ELECTRICAL FLOOR PLAN
NO SCALE



PS7 PARTIAL ELECTRICAL ROOM PLAN
NO SCALE

Panel Designation: RP-EV	Main: MLO	P-P Voltage: 208
Panel Location: ELECTRICAL ROOM	Bussing: 200A	P-N Voltage: 120
Fed From: MSB	Ground Bus: STANDARD	Phase: 3
Feeder Size: REF: ONE-LINE DIAGRAM	Mounting: SURFACE	Wire: 4
PANELBOARD FURNISHED BY OWNER	Neutral: 100%	Min SC Interrupting Rating: 14kA

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	Ø A	Ø B	Ø C	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	--					SPACE
			3600			3		X		4	--					SPACE
NEW EV STATION			3600		40	5			X	6	--					SPACE
			3600			7	X			8	--					SPACE
NEW EV STATION			3600		40	9		X		10	--					SPACE
			3600			11			X	12	--					SPACE
SPACE					--	13	X			14	--					SPACE
SPACE					--	15		X		16	--					SPACE
SPACE					--	17			X	18	--					SPACE

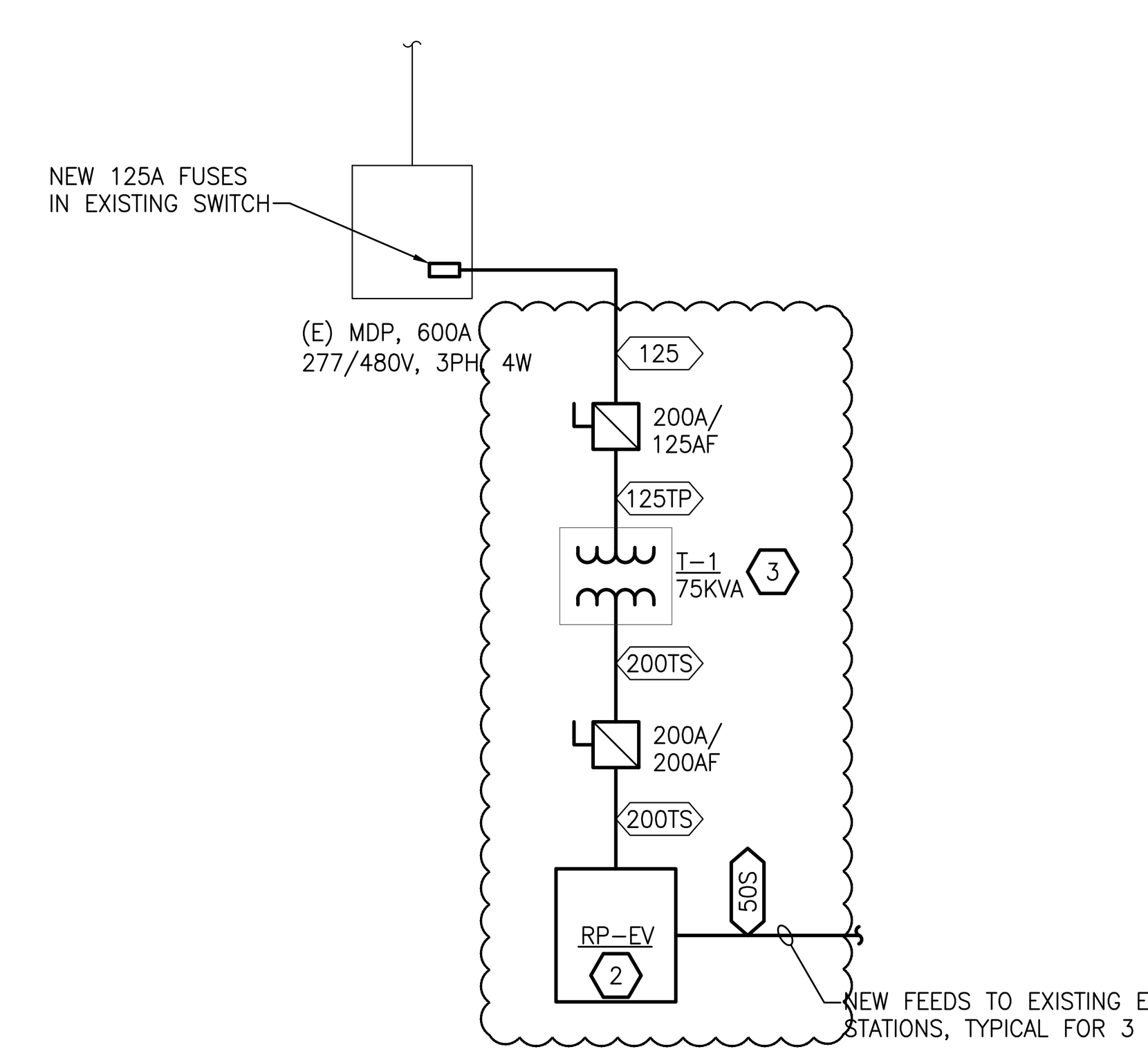
	Connected Load				Demand	Demand Load				
Load Description	ØA	ØB	ØC	Total	Factor	ØA	ØB	ØC	Total	
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0	
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0	Receptacle Demand Factor per Article 220.44 of the National Electrical Code.
	Amount over 10kVA			0	0.50 (> 10kVA)	0	0	0	0	
Continuous Load (Volt-Amps)	7200	7200	7200	21600	1.25	9000	9000	9000	27000	
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0	
Total Load (kVA)	7.20	7.20	7.20	21.60	125% of Light/Cont and Recept	9.00	9.00	9.00	27.00	
Total Ampacity (Amps)	60.0	60.0	60.0	60.0	(<10kVA) load plus other load	74.9	74.9	74.9	74.9	
Minimum Feeder Sizing (Amps)	60.0	60.0	60.0	60.0	<---- per NEC Article 215.2 ---->	74.9	74.9	74.9	74.9	

DRY TYPE TRANSFORMER SCHEDULE - 480VD TO 208Y/120V

KVA	PRIMARY BREAKER OR FUSE	FEEDER (AMPS)	PRIMARY WIRE SIZE	SECONDARY BREAKER OR FUSE	FEEDER (AMPS)	SECONDARY WIRE SIZE
15	30A	30TP	3#10 & 1#10 GND IN .75"C	60A	60TS	4#6 & 1#8 GND IN 1"C
30	50A	50TP	3#6 & 1#10 GND IN .75"C	100A	100TS	4#3 & 1#8 GND IN 1.25"C
45	70A	70TP	3#4 & 1#8 GND IN 1"C	175A	175TS	4#2/0 & 1#4 GND IN 2"C
75	125A	125TP	3#1 & 1#6 GND IN 1.25"C		200TS	4#4/0 & 1#4 GND IN 2.5"C

NOTES:

1. THE PRIMARY AND SECONDARY BREAKERS OR FUSES ARE LOCATED IN SWITCHBOARD OR PANELBOARD UNLESS SHOWN OTHERWISE.
2. THE SECONDARY NEUTRAL OF DRY-TYPE TRANSFORMERS SHALL BE GROUNDED PER NATIONAL ELECTRICAL CODE AND LOCAL CODE.
3. THIS TRANSFORMER SCHEDULE IS A MASTER LIST. EVERY TRANSFORMER SIZE LISTED MAY NOT BE USED IN EVERY PACKAGE. SEE PLANS FOR ACTUAL SIZES USED.



PS7 PARTIAL ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

Seal

Keyplan

ISSUED FOR:

ADDENDUM #2	10/10/23
BIDS/PERMITS	09/20/23
100% REVIEW	08/28/23
ISSUED	DATE

DESIGNER: DAD
ENGINEER: DAD

SHEET TITLE:
PS7 ELECTRICAL PLANS AND DIAGRAMS

SHEET NUMBER:
E-7

Drawing: S:\23 0407 01 WSU EV Stations\CAD\Elec\E-7.DWG Layout: E-7 Plotted by: dad
Date: Oct 10, 2023, 3:30pm

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SES Project # 23 0407 01

CLIENT:

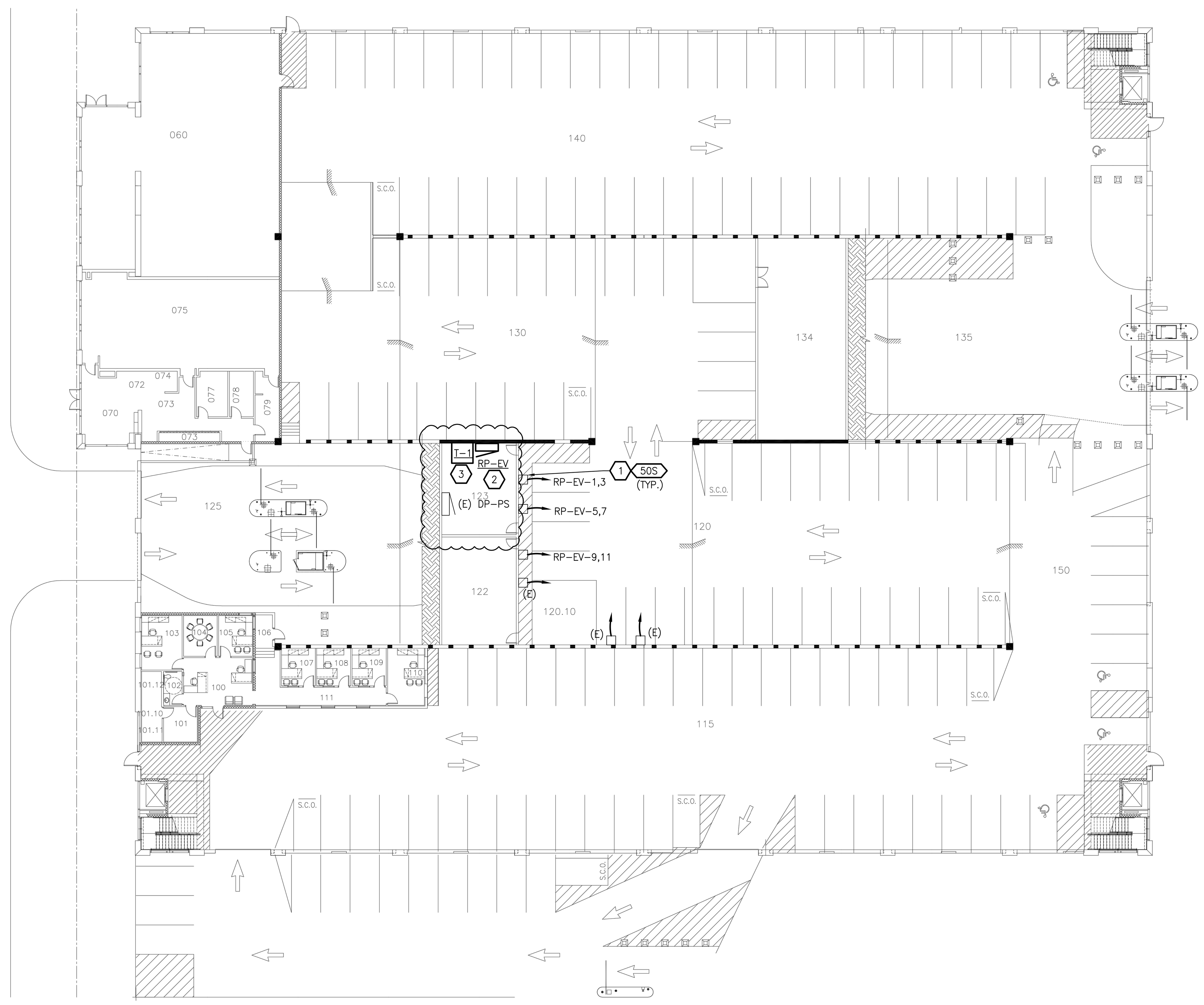
PROJECT:
WAYNE STATE UNIVERSITY
EV INFRASTRUCTURE UPGRADES
VARIOUS LOCATIONS
DETROIT, MI

Seal

Keyplan

KEYED NOTES

1. LOCATION OF EXISTING ELECTRIC VEHICLE CHARGING STATIONS. ONE STATION, WHICH SERVES ONE STALL, IS FED BY A 208V/1PH CIRCUIT. A NEW 208V/1PH CIRCUIT SHALL BE BROUGHT TO EACH STATION SUCH THAT STATIONS CAN OPERATE AT FULL OUTPUT OF 7.2KW PER PORT. TOTAL OF (6) STATIONS.
2. NEW BRANCH–CIRCUIT PANELBOARD PROVIDED BY OWNER, INSTALLED BY EC. PROVIDE NEW LABELING PER SPECIFICATIONS.
3. NEW TRANSFORMER PROVIDED BY OWNER, INSTALLED BY EC. TRANSFORMER SHALL BE INSTALLED ON NEW CONCRETE HOUSEKEEPING PAD PER SPECIFICATIONS.



PS8 ELECTRICAL FLOOR PLAN

NO SCALE

Panel Designation: RP-EV
Panel Location: ELECTRICAL ROOM
Fed From: MSB
Feeder Size: REF: ONE-LINE DIAGRAM
PANELBOARD FURNISHED BY OWNER
Main: MLO
Bussing: 200A
Ground Bus: STANDARD
Mounting: SURFACE
Neutral: 100%
P-P Voltage: 208
P-N Voltage: 120
Phase: 3
Wire: 4
Min SC Interrupting Rating: 14kA

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prot	CKT	Ø A	Ø B	Ø C	CKT	OC Prot	nonC Load	Cont Load	Recept Load	Light Load	Remarks
NEW EV STATION			3600		40	1	X			2	--					SPACE
			3600			3		X		4	--					SPACE
NEW EV STATION			3600		40	5			X	6	--					SPACE
			3600			7	X			8	--					SPACE
NEW EV STATION			3600		40	9		X		10	--					SPACE
			3600			11			X	12	--					SPACE
SPACE					--	13	X			14	--					SPACE
SPACE					--	15		X		16	--					SPACE
SPACE					--	17			X	18	--					SPACE

Load Description	Connected Load ØA	ØB	ØC	Total	Demand Factor	Demand Load ØA	ØB	ØC	Total
Lighting or Continous Load (Volt-Amps)	0	0	0	0	1.25	0	0	0	0
180VA Receptacle Load (Volt-Amps)	0	0	0	0	1.00 (First 10kVA)	0	0	0	0
	Amount over 10kVA			0	0.50 (> 10kVA)	0	0	0	0
Continuous Load (Volt-Amps)	7200	7200	7200	21600	1.25	9000	9000	9000	27000
Non-Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0
Total Load (kVA)	7.20	7.20	7.20	21.60	125% of Light/Cont and Recept	9.00	9.00	9.00	27.00
Total Ampacity (Amps)	60.0	60.0	60.0	60.0	(<10kVA) load plus other load	74.9	74.9	74.9	74.9
Minimum Feeder Sizing (Amps)	60.0	60.0	60.0	60.0	<---- per NEC Article 215.2 ---->	74.9	74.9	74.9	74.9

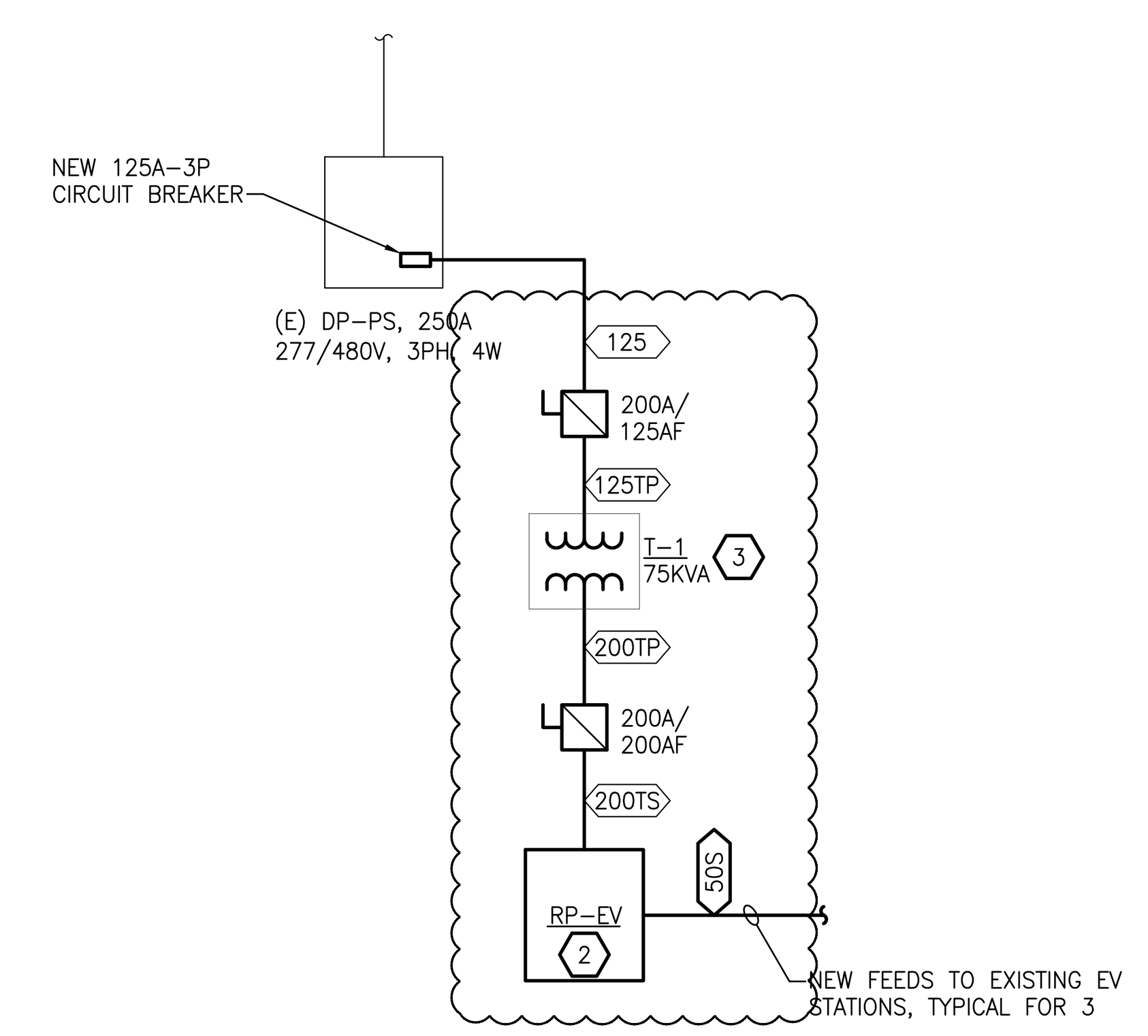
Receptacle Demand Factor per Article 220.44 of the National Electrical Code.

DRY TYPE TRANSFORMER SCHEDULE - 480VD TO 208Y/120V

KVA	PRIMARY BREAKER OR FUSE	FEEDER (AMPS)	PRIMARY WIRE SIZE	SECONDARY BREAKER OR FUSE	FEEDER (AMPS)	SECONDARY WIRE SIZE
15	30A	30TP	3#10 & 1#10 GND IN .75"C	60A	60TS	4#6 & 1#8 GND IN 1"C
30	50A	50TP	3#6 & 1#10 GND IN .75"C	100A	100TS	4#3 & 1#8 GND IN 1.25"C
45	70A	70TP	3#4 & 1#8 GND IN 1"C	175A	175TS	4#2/0 & 1#4 GND IN 2"C
75	125A	125TP	3#1 & 1#6 GND IN 1.25"C		200TS	4#4/0 & 1#4 GND IN 2.5"C

NOTES:

1. THE PRIMARY AND SECONDARY BREAKERS OR FUSES ARE LOCATED IN SWITCHBOARD OR PANELBOARD UNLESS SHOWN OTHERWISE.
2. THE SECONDARY NEUTRAL OF DRY–TYPE TRANSFORMERS SHALL BE GROUNDED PER NATIONAL ELECTRICAL CODE AND LOCAL CODE.
3. THIS TRANSFORMER SCHEDULE IS A MASTER LIST. EVERY TRANSFORMER SIZE LISTED MAY NOT BE USED IN EVERY PACKAGE. SEE PLANS FOR ACTUAL SIZES USED.



PS8 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

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Drawing: S:\23 0407 01 WSU EV Stations\CAD\Elec\E–8.DWG
Date: Oct 10, 2023, 3:31pm Layout: E–8 Plotted by: dad