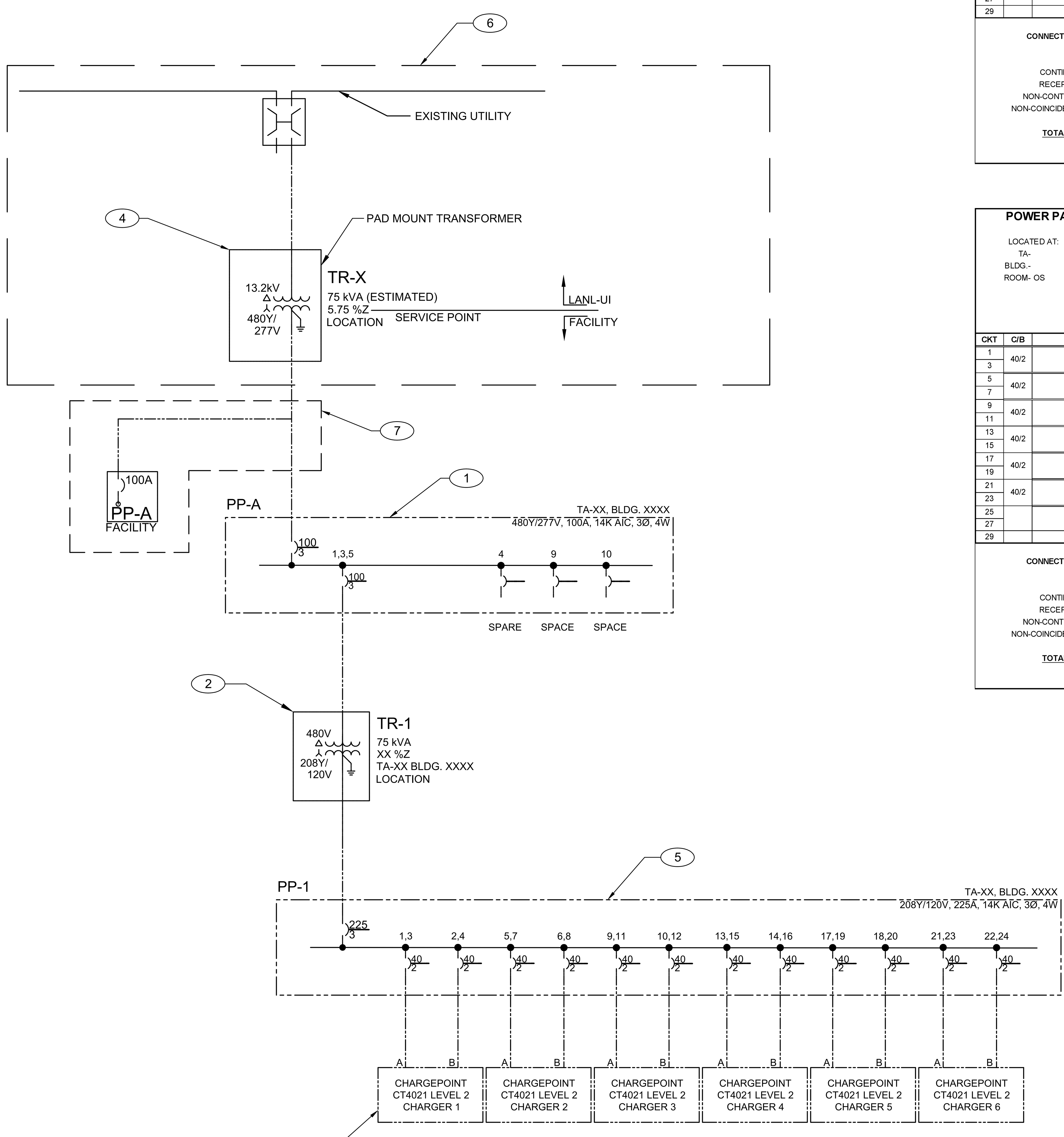
1	2	3	4	5	6



(6) DUAL LEVEL 2 CHARGERS

SCALE: NONE

POWER PANEL # PP-A

THREE PHASE PANEL SCHEDULE

SECTION: 1 of 1 | DATE: | REV.: 0

LOCATED AT: TA- BLDG.- ROOM- OS	FRAME SIZE: 100 A	TYPE OF MAIN: 100 A	MANUFACTURER:	SERVED BY: UTILITY
	VOLTAGE: 480 L-L / 277 L-N	MLO SIZE: A	ENCLOSURE TYPE: NEMA 3R	CKT: 480/277
	PHASE: 3 Φ	MAIN BRKR SIZE: 100A	MOUNTING: Surface	LOCATED AT: TA- BLDG.- ROOM- OS
	WIRE: 4 W	BUS BRACING: 22 kA	FED: UTILITY XFMR	
		MAIN BRKR AIC RATING: kA	SUB OR THRU FEEDS:	
		BRANCH BRKR AIC RATING: 14 kA	SUB/THRU LUG SIZE:	
		SHORT CIRCUIT AVAILABLE: kA		

CKT	C/B	SERVES	CONT	RCPT	PWR	NON-C	PHASE	NON-C	PWR	RCPT	CONT		C/B	CKT
1	100/3	SERVICE TO TR-1			16000		A					SPACE		2
3					16000		B							4
5					16000		C							6
7		SPACE					A							8
9							B							10
11							C							12
13							A							14
15							B							16
17							C							18
19							A							20
21							B							22
23							C							24
25							A							26
27							B							28
29							C							30

CONNECTED LOAD per PHASE: A: 16,000 B: 16,000 C: 16,000

CONECTED LOAD:		FEEDER SELECTION LOAD:			ESTIMATED DEMAND LOAD:		
CONTINUOUS LOAD (CONT):	0 VA	CONTINUOUS LOAD @	125%	0 VA	CONTINUOUS LOAD @	100%	0 VA
RECEPTACLE LOAD (RCPT):	0 VA	RECPT LOAD per NEC 220-44:	100%	0 VA	RECPT LOAD per NEC 220-44:	100%	0 VA
NON-CONTINUOUS LOAD (PWR):	48000 VA	NON-CONTINUOUS LOAD @:	100%	48000 VA	NON-CONTINUOUS LOAD @:	0%	0 VA
NON-COINCIDENTAL LOAD (NON-C):	0 VA	FUTURE GROWTH CAPACITY:	20%	9600 VA			
TOTAL CONNECTED LOAD:	48000 VA 58 AMPS	**LOAD FOR FEEDER DESIGN:**		57600 VA 69 AMPS	**ESTIMATED DEMAND LOAD:**		0 VA 0 AMPS

POWER PANEL # PP-1

THREE PHASE PANEL SCHEDULE

SECTION: 1 of 1 | DATE: | REV.: 0

LOCATED AT: TA- BLDG.- ROOM- OS	FRAME SIZE: 225 A	TYPE OF MAIN: 225 A	MANUFACTURER:	SERVED BY: TR-1
	VOLTAGE: 208 L-L / 120 L-N	MLO SIZE: A	ENCLOSURE TYPE: NEMA 3R	CKT: 208/120V
	PHASE: 3 Φ	MAIN BRKR SIZE: 225A	MOUNTING: Surface	LOCATED AT: TA- BLDG.- ROOM- OS
	WIRE: 4 W	BUS BRACING: 14 kA	FED: TR-1	
		MAIN BRKR AIC RATING: kA	SUB OR THRU FEEDS:	
		BRANCH BRKR AIC RATING: 10 kA	SUB/THRU LUG SIZE:	
		SHORT CIRCUIT AVAILABLE: kA		

CKT	C/B	SERVES	CONT	RCPT	PWR	NON-C	PHASE	NON-C	PWR	RCPT	CONT		C/B	CKT
1	40/2	LEVEL 2 EV CHARGER 1A		3120			A			3120		LEVEL 2 EV CHARGER 1B	40/2	2
3				3120			B			3120				4
5	40/2	LEVEL 2 EV CHARGER 2A		3120			C			3120		LEVEL 2 EV CHARGER 2B	40/2	6
7				3120			A			3120				8
9	40/2	LEVEL 2 EV CHARGER 3A		3120			B			3120		LEVEL 2 EV CHARGER 3B	40/2	10
11				3120			C			3120				12
13	40/2	LEVEL 2 EV CHARGER 4A		3120			A			3120		LEVEL 2 EV CHARGER 4B	40/2	14
15				3120			B			3120				16
17	40/2	LEVEL 2 EV CHARGER 5A		3120			C			3120		LEVEL 2 EV CHARGER 5B	40/2	18
19				3120			A			3120				20
21	40/2	LEVEL 2 EV CHARGER 6A		3120			B			3120		LEVEL 2 EV CHARGER 6B		22
23				3120			C			3120			40/2	24
25							A							26
27							B							28
29							C							30

CONNECTED LOAD per PHASE: A: 24,960 B: 24,960 C: 24,960

CONECTED LOAD:		FEEDER SELECTION LOAD:			ESTIMATED DEMAND LOAD:		
CONTINUOUS LOAD (CONT):	0 VA	CONTINUOUS LOAD @	125%	0 VA	CONTINUOUS LOAD @	100%	0 VA
RECEPTACLE LOAD (RCPT):	74880 VA	RECPT LOAD per NEC 220-44:	100%	42440 VA	RECPT LOAD per NEC 220-44:	100%	42440 VA
NON-CONTINUOUS LOAD (PWR):	0 VA	NON-CONTINUOUS LOAD @:	100%	0 VA	NON-CONTINUOUS LOAD @:	0%	0 VA
NON-COINCIDENTAL LOAD (NON-C):	0 VA	FUTURE GROWTH CAPACITY:	20%	14976 VA			
TOTAL CONNECTED LOAD:	74880 VA 208 AMPS	**LOAD FOR FEEDER DESIGN:**		57416 VA 159 AMPS	**ESTIMATED DEMAND LOAD:**		42440 VA 118 AMPS

PANEL SCHEDULES

GENERAL NOTES:

1. A SIGN SHALL BE ADDED TO THE FRONT OF OUR PP-A. IT SHALL BE 4" X 4", RED WITH WHITE LETTERING, AND SHALL READ "EMERGENCY SHUTOFF - ALL EV CHARGERS IN THIS LOCATION CAN BE SHUT DOWN BY SWITCHING OFF THE MAIN CIRCUIT BREAKER IN THIS PANEL."
2. ALL TRANSFORMER %Z TYP., FINALIZED AFTER PROCUREMENT.
3. SYSTEM ENGINEER TO PROVIDE INCIDENT ENERGIES FOR ALL NEW PANELS AND 480V EQUIPMENT.

KEYED NOTES:

(1) PROVIDE AND INSTALL 480V 100A PANEL. FEED FROM NEW 75 kVA TRANSFORMER AS SHOWN. CONDUCTORS TO PANEL ARE 4-#2 AWG IN 2" CONDUIT.

(2) PROVIDE AND INSTALL SQD OR EQUIVALENT 480V DELTA PRIMARY, 120/208Y SECONDARY, 75 KVA, 3-PHASE, NEMA 3R, PAD-MOUNT TRANSFORMER. CONDUCTORS TO TRANSFORMER FROM 480V PANEL ARE 3-#2 AWG AND #8 AWG EGC IN 1 1/4" RACEWAY. INSTALL SUPPLY SIDE BONDING JUMPER #4 CU.

(3) PROVIDE AND INSTALL SIX (6 DUAL) LEVEL 2 CHARGERS, TWELVE (12) PORTS TOTAL AT 40A PER PORT. CONDUCTORS TO BE 4-8 AWG AND 1-10 AWG EGC IN 1" RACEWAY EACH. INSTALL PER MANUFACTURER'S DIRECTIONS, INCLUDING COMPLETING INSTALLATION CHECKLIST.

(4) UI DESIGN RESPONSIBLE FOR NEW TRANSFORMER AND EVERYTHING ON ITS PRIMARY SIDE. THIS DESIGN RESPONSIBLE FOR DESIGN FROM NEW TRANSFORMER SECONDARY LUGS TO CHARGING STATIONS. UTILITY TRANSFORMER SUBJECT TO CHANGE BASED ON UI CONSTRAINTS.

(5) PROVIDE AND INSTALL 225A POWER PANEL PROVIDING 208V FEEDER. CONDUCTORS FROM TRANSFORMER TO PANEL TO BE 4-4/0 AWG AND 1-#2 AWG EGC IN 2" RACEWAY.

(6) SELECT THIS OPTION IF NO ADEQUATE PP-A EXISTS IN FACILITY.

(7) SELECT THIS OPTION IF PP-A EXISTS IN FACILITY AND ADD 1-#8CU BOND CONDUCTOR TO FEEDER PLACED IN 1.5" RACEWAY.

DESIGNER NOTES:

1. THIS CONFIGURATION HAS NO LEVEL 3 CHARGERS & SIX (6) DUAL LEVEL 2 CHARGERS.
2. IF NO LEVEL 3 CHARGERS ARE NEEDED, CONSIDER HAVING UTILITIES INSTALL A TRANSFORMER WITH A 208/120 VOLT SECONDARY. THEN REMOVE PP-A & SIZE TR-X FOR FEEDING TR-1

REMOVE DESIGNER NOTES FROM DRAWING PACKAGE.

LBO-DESIGN PACKAGE REVIEWER	
APPROVED FOR RELEASE A. YAEGER	ALAN YAEGER (Affiliate) Digitally signed by ALAN YAEGER (Affiliate) DN: c=US, o=U.S. Government, ou=Department of Energy, 0.9.2342.19200300.100.1.1=89001000521832, cn=ALAN YAEGER (Affiliate) Date: 2023.10.04 16:01:10 -06'00'
SUBMITTED T. KOSTRUBALA	THADDEUS KOSTRUBALA (Affiliate) Digitally signed by THADDEUS KOSTRUBALA (Affiliate) Date: 2023.10.05 07:07:55 -06'00'
VERIFIED R. DE LA TORRE	RAFAEL DE LA TORRE (Affiliate) Digitally signed by RAFAEL DE LA TORRE (Affiliate) Date: 2023.10.04 17:19:33 -06'00'
DESIGNED M. NELSON	MARK NELSON (Affiliate) Digitally signed by MARK NELSON (Affiliate) Date: 2023.10.04 16:12:38 -06'00'
DRAWN K. KETCHUM	Digitally signed by KRISTI KETCHUM (Affiliate) DN: OID.0.9.2342.19200300.100.1.1=89001004688005 + CN=KRISTI KETCHUM (Affiliate), OU=Department of Energy, O=U.S. Government, C=US Date: 2023.10.04 15:50:20-06'00' Kristi Ketchum
CLASSIFICATION [UNCLASSIFIED]	Digitally signed by DAVID SMITH (Affiliate) DN: c=US, o=U.S. Government, ou=Department of Energy, 0.9.2342.19200300.100.1.1=89001000604953, cn=DAVID SMITH (Affiliate) Reason: DC Review, Z#119113, ES-IPD Date: 2023.10.05 07:46:24 -06'00'

NO	REVISION DESCRIPTION	DATE
0	INITIAL ISSUE FOR	10/02/23

ENGINEERING STANDARDS

ELECTRICAL VEHICLE CHARGING STATIONS

ELECTRICAL ONE-LINE DIAGRAMS

TA-XX BLDG XXXX

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SHEET E-6001 5 OF 6

PROJECT ID: CHAPTER 7 | DRAWING NO: ST-G4090-5 | REV: 0