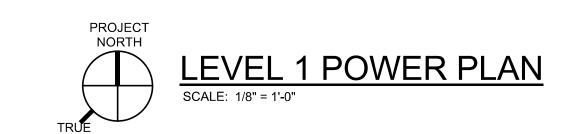


- 1. PROJECT DESCRIPTION:
 - a. Location: Central Receiving and Storage (CR), 1301 19th St, Golden, CO, 80401.
 - b. Install Siemens VersiCharge G3 electric vehicle (EV) chargers furnished by Owner, via EasyMile and Colorado Smart Cities Alliance.
 - c. New panelboard from existing main distribution panel. Provide feeders to nine EV chargers.
 - d. Provide and pay for all electrical permits and inspections.
 - e. Drawings show electrical load calculations, new panel schedule, and EV charger locations.
- 2. Provide fused disconnects or provide NEMA 14-60R receptacles. For the receptacle option, also provide a NEMA 14-60P for each EV charger and SO cord for the plug and EV chargers terminals.
- 3. Provide metal framing channel system and wall-mount, or pedestal-mount, EV charger and electrical accessories. Mount framing system to shelving, or provide floor legs and floor anchors.



* Provide new feeders from Panel' EV1' to nine new vehicle EV chargers. EV chargers furnished by Owner. Install EV chargers and make power wiring connections. New work shown in red.

DRAFTER: DRAWN

CHECKER: DPF

PROJECT: IH21-096

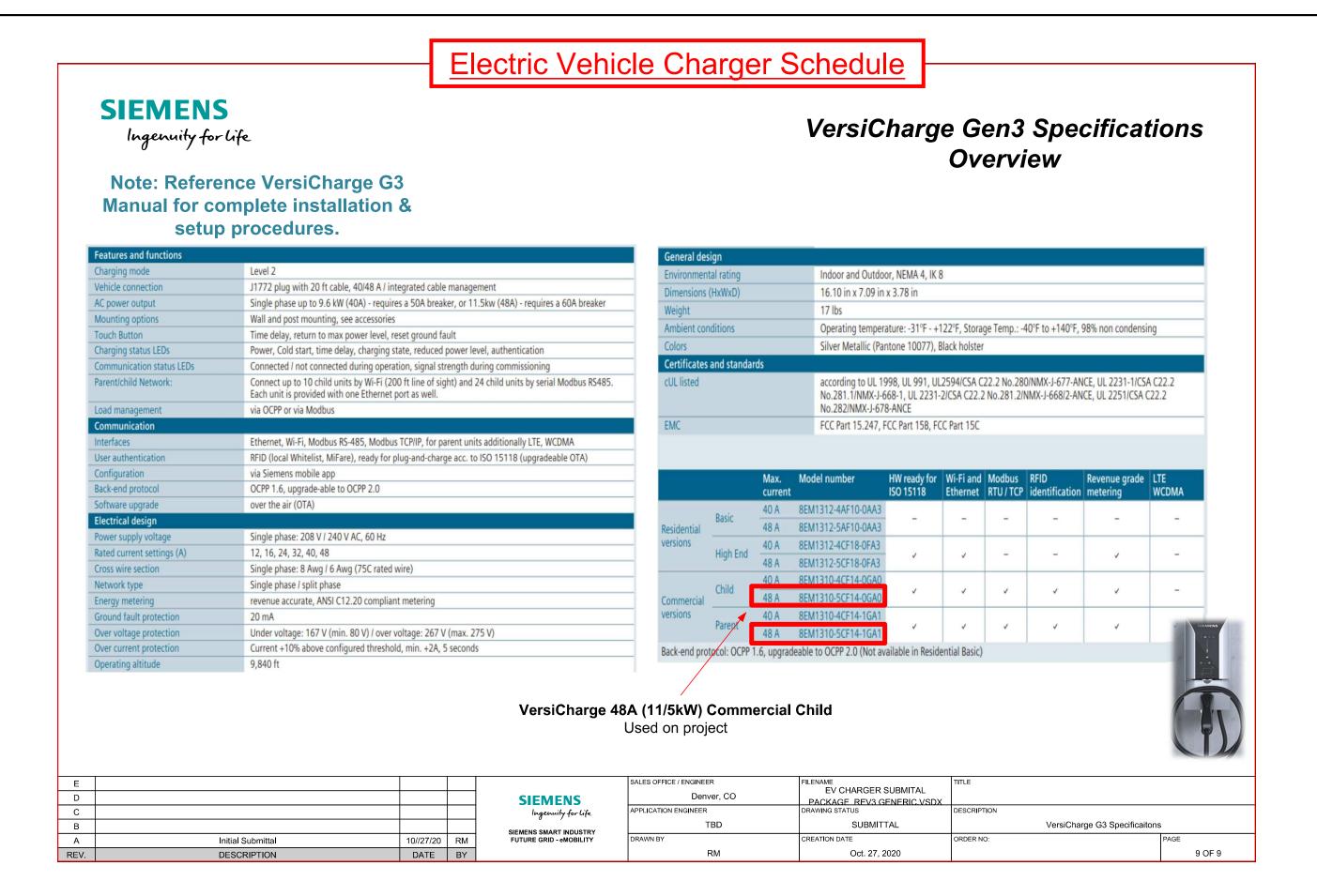
DESIGNER:

DRAWING NO.

| E100

2021-04-16 CR EasyMile Vehicle Chargers

ISSUE A

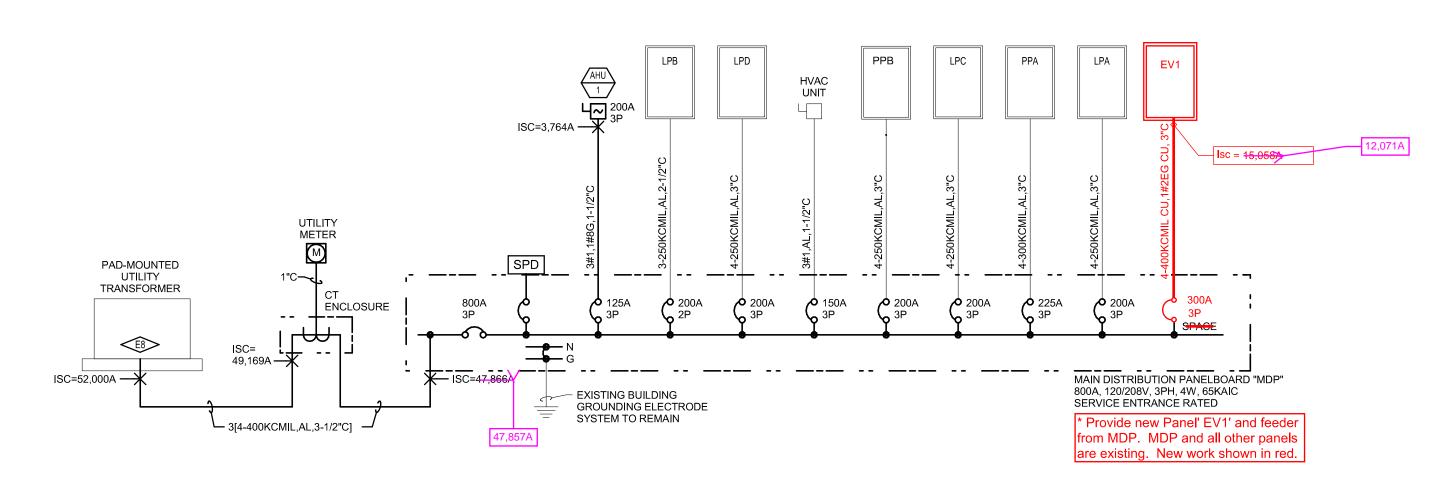


Short Circuit Current Calculations:

Dista	ance from Transformer to Panel CT:
	ft of 3[400kcmil AL] (Metal Raceway) (3*16,671 = 50,01
1.73	2 * 10ft * 52,000A 50,013 * 208V = f = 0.0866
1 1+f	= M = 0.9203
52,0	00A * M = 47,857A
	ance from Panel CT to Panel EV1:
153	ft of 400kcmil CU (Metal Raceway) (20,566)
1.73	2 * 153ft * 47,857A 20,566 * 208V
1 1+f	= M = 0.2522
47,8	57A * M = 12,071A
(Clos	ance from Panel EV1 to Closest Charger Fused Switch sest Switch has the Smallest Wire Impedance, Thereforest SCC of all Switches): If of 3#4AWG 1#8AWG EG (Metal Raceway) (3,806)
1.73	2 * 60.5ft * 12,071A 3,806 * 208V
1 1+f	= M = 0.3849
40.0	71A * M = 4,646A

	PANEL:	ANEL: EV1 (NEW) MAIN BU			AIN BUS RATING (AMPS):				400		MAIN	MAIN BREAKER (AMPS): 300					VOLTAGE: 120/208 60 Hz		
	FED FROM: MDP SURFACE PDU						hase: 3 Wire: 4		AIC (AMPS): 22,000				22,000)					
	☐ FLUSH	200% NEUTRAL	TRAL Phase Loads (kVA)																
уре		Load Description	kVA	Wire Size	Cond. Size	Brk	Р	Ckt. No.	Α	В	С	Ckt. No.	Р	Brk	Cond. Size	Wire Size	kVA	Load Description	Тур
ME	EV Charger 1		5.0	6	1	60	2	1	10.0			2	2	60	1	6	5.0	EV Charger 5	М
ИΕ	-		5.0	-	-	-		3		10.0		4		-	-	-	5.0	-	М
ИE	EV Charger 2		5.0	6	1	60	2	5			10.0	6	2	60	1	6	5.0	EV Charger 6	M
ИE	-		5.0	-	-	-		7	10.0			8		-	-	-	5.0	-	М
ИE	EV Charger 3		5.0	6	1	60	2	9		10.0		10	2	60	1	6	5.0	EV Charger 7	М
ИE	-		5.0	-	-	-		11			10.0	12		-	-	-	5.0	-	M
ИΕ	SPACE			-	-	-		13	5.0			14	2	60	1	6	5.0	EV Charger 8	М
ME	SPACE			-	-	-		15		5.0		16		-	-	-	5.0	-	М
ME	EV Charger 4		5.0	6	1	60	2	17			5.0	18		-	-	-		SPACE	М
ME	-		5.0	-	-	-		19	5.0			20		-	-	-		SPACE	М
ME	SPACE			-	-	-		21		5.0		22	2	60	1	6	5.0	EV Charger 9	М
ME	SPACE			-	-	-		23			5.0	24		-	-	-	5.0	-	М
ME	SPACE			-	-	-		25	0.0			26		-	-	-		SPACE	М
ME	SPACE			-	-	-		27		0.0		28		-	-	-		SPACE	М
ME	SPACE			-	-	-		29			0.0	30		-	-	-		SPACE	М
ME	SPACE			-	-	-		31	0.0			32		-	-	-		SPACE	М
ME	SPACE			-	-	-		33		0.0		34		-	-	-		SPACE	M
ME	SPACE			-	-	-		35			0.0	36		-	-	-		SPACE	М
ME	SPACE			-	-	-		37	0.0			38		-	-	-		SPACE	М
ME	SPACE			-	-	-		39		0.0		40		-	-	-		SPACE	М
ΜE	SPACE			-	-	-		41			0.0	42		-	-	-		SPACE	М
									30.0	30.0	30.0								
									Loa	d Summaı	'y								4
				Connected Demand Fa		ctor	or Dem		emand kVA						NOTES: Provide hinged door-in-door paneleboard with copper bus.		1		
		(L) Lighting:				125%			0.0								Mines s	standard manufacturers.	
	(R) Receptacles (1st 10 kVA): (R) Receptacles (> 10 kVA): (LM) Largest Motor Load: (M) Remaining HVAC Loads: (ME) Mechanical/Miscellaneous:			0.0 100%			0.0												
				0.0 50%				0.0											
								0.0											
				90.0 100%					90.0										
		(K) Kitchen Equipment:		0.0 100%			0.0								Spare Ampacity Remaining In Panel				
	TOTAL CONNECTED kVA = 90.0						OO O TOTAL DEMAND LVA												
						250.0 =TOTAL DEMAND AMPS					IPS			16.7%					

Service Load Justification		
Central Receiving and Storage, 1301 19th Street, Golden, CO 80401		
Building is provided with a 800-Amp, 120/208-volt, 3-phase electrical service.		
Actual billed peak demand is 59 kW in Sep 2019 during the period 01/2021 to 05/2017.		
59 kW / 0.80 (Assumed power factor) = 73.75 kVA. 73.75 kVA x 125 % (Per NEC) = 92.19 kVA.		
	Amps	kVA
Existing building demand		92.
Load added to electrical service as a result of this project Panel EV1		90.
Total load (Existing and Added)		182
,	800.0	
Existing electrical service size	000.0	
	506.3	



ELECTRICAL ONE-LINE DIAGRAM - NEW

2021-04-16 CR EasyMile Vehicle Chargers

COLORADO SCHOOL OF MINES EARTH ● ENERGY ● ENVIRONMENT OFFICE OF DESIGN AND CONSTRUCTION 1801 MOLY ROAD, GOLDEN, CO 80401



				2021-04-16	DATE
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					DESCRIPTION
				CODE REVIEW SET	
				CODE	
				٧	ISSUE
<u> </u>	-				\prec

EASYMILE SHUTTLE PROGRAM	ONE LINE AND PANEL SCHEDULES
NAME:	TITLE:
PROJECT NAME:	DRAWING TITLE:

DESIGNER: JGE

DRAFTER: DRAWN

CHECKER: DPF

PROJECT: IH21-096

CAD FILE:

DRAWING NO.



AN AUTODESK STUDENT VERSION

РРОВИСЕВ ВУ АИ АUTODESK STUDENT VERSION