

HUNTINGTON RIDGE

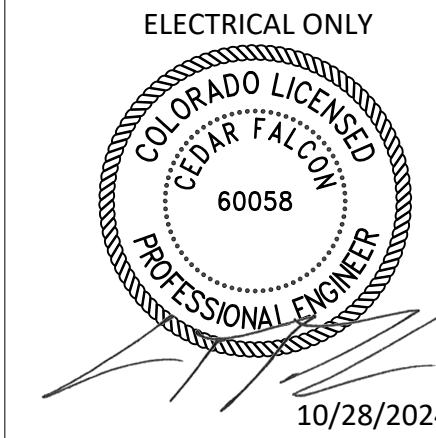
ELECTRIC VEHICLE CHARGING STATION

9868 E LOUISIANA DR, AURORA, CO 80247



SYSTEM INFORMATION
(4)ZEROVATECH AX SERIES
48A EV CHARGING STATION
MINIMUM
TEMPERATURE: -23.6°C
MAXIMUM
TEMPERATURE: 34.7°C

FOR STAMPS

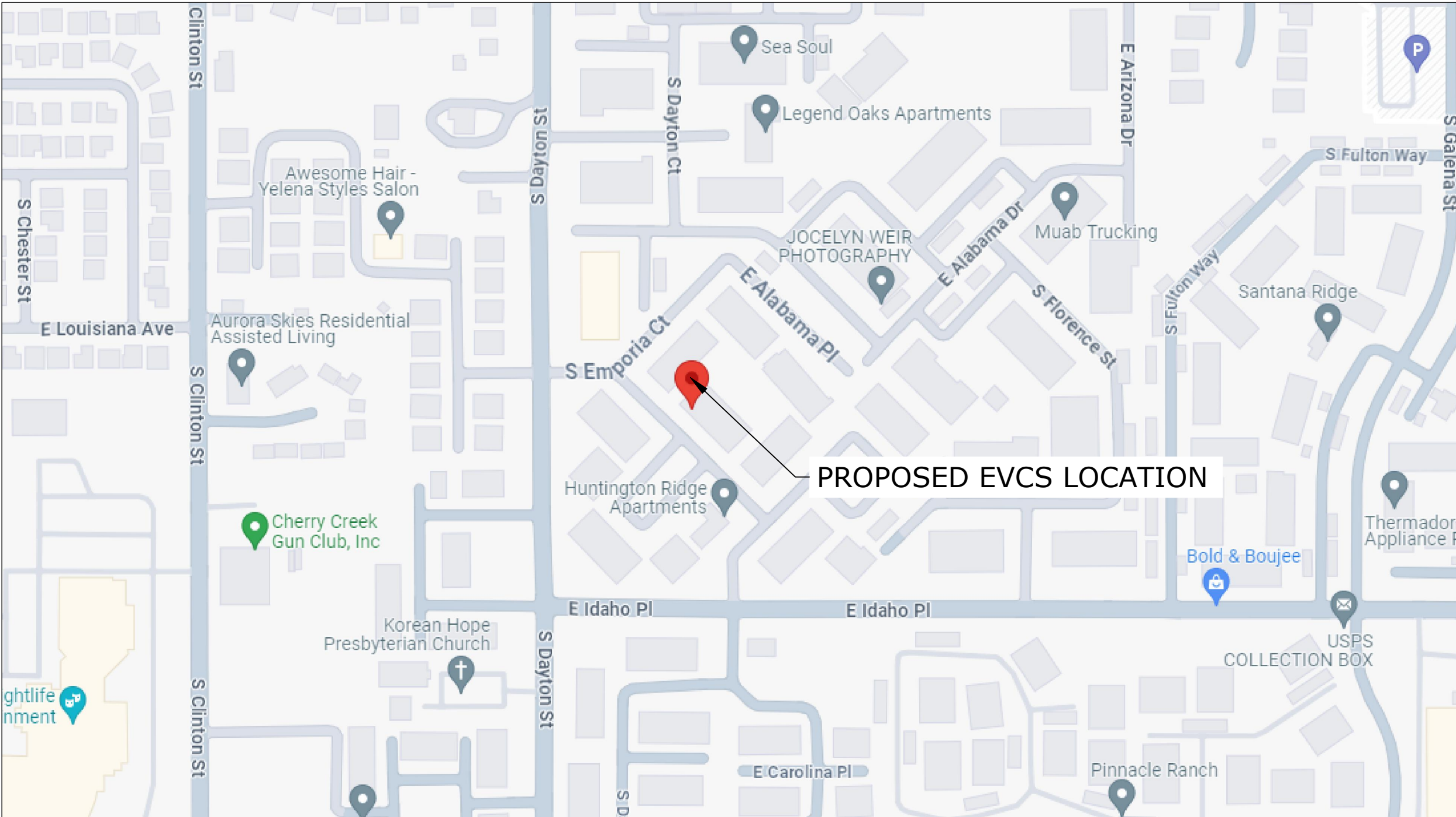


EVCS PROJECT
FOR
HUNTINGTON RIDGE
9868 E LOUISIANA DR, AURORA, CO 80247
39.692255, -104.874591

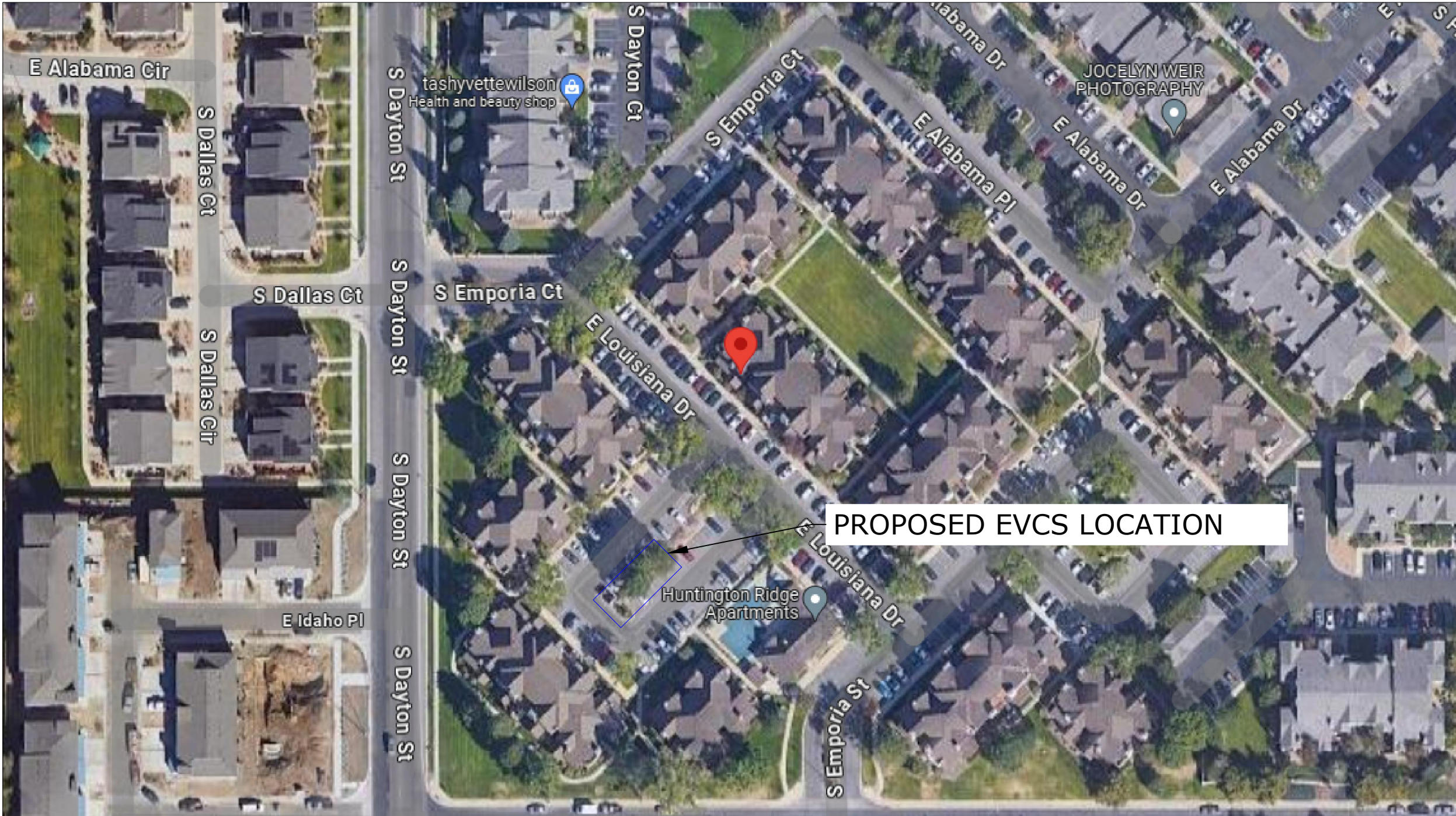
REVISION		
DATE	DESCRIPTION	REV
10/15/2024	EVCS PERMIT PLAN	A
10/25/2024	AHJ REJECTION	B

PROJECT INFORMATION	
NAME:HUNTINGTON RIDGE	
ADDRESS:9868 E LOUISIANA DR, AURORA, CO 80247	
39.692255, -104.874591 APN: 197322113001	
AHJ:CO-CITY OF AURORA	
PRN NUMBER:EVS-CU-2024-1925	
 ILLUMINE INTERNATIONAL INC. 1205 BMC DR, SUITE 110, CEDAR PARK, TX 78613. cfalcon@illuminei.com CONTACT NUMBER: 510-707-6406	
COVER SHEET	
DRAFTED BY/QC'ED BY: ABINESH G/ABDUL WAHAB A	
SCALE:AS NOTED	REV:B
DATE:10/25/2024	CS-01

VICINITY MAP



AERIAL VIEW



SHEET CATALOG	
INDEX NO.	DESCRIPTION
CS-01	COVER SHEET
A-01	SITE PLAN
A-02	ENLARGED SITE PLAN
E-01	ELECTRICAL DIAGRAM AND CALCULATION
SS-01	SPEC SHEETS

PROJECT CONTACTS:
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ENGINEERING
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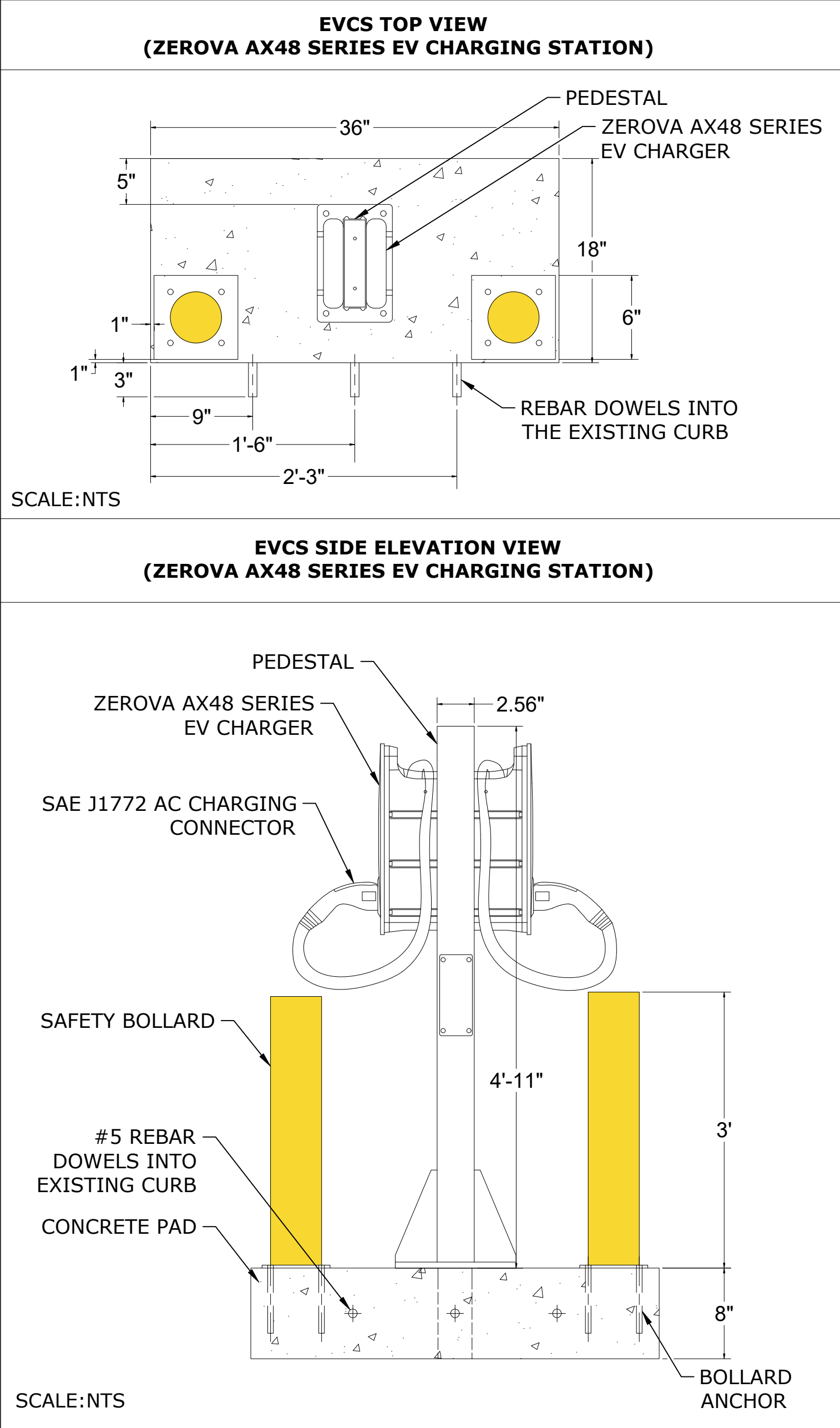
SCOPE OF WORK:
(4)ZEROVATECH AX SERIES 48A EV CHARGING STATION
MINIMUM TEMPERATURE: -23.6°C
MAXIMUM TEMPERATURE: 34.7°C

APPLICABLE CODES:
2023 NATIONAL ELECTRICAL CODE
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL FIRE CODE
ADDITIONALLY, CONFORM TO ALL LOCAL ORDINANCES AND REQUIREMENTS



GENERAL NOTES:
1.DRAWINGS ARE DIAGRAMMATIC IN NATURE, INDICATING GENERAL ARRANGEMENT. ACTUAL SITE CONDITION MIGHT VARY.
2.WORKING CLEARANCES AROUND ALL ELECTRICAL EQUIPMENT SHALL BE MAINTAINED IN ACCORDANCE WITH NEC.
3.ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/SERVICE EQUIPMENT.
4.ALL CONDUCTORS SHALL BE 90°C STANDARD COPPER UNLESS OTHERWISE NOTED.
5.THE SYSTEM SHALL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.

- LEGEND:**
- XX - EQUIPMENT
 - - PEDESTAL
 - - SAFETY BOLLARD
 - - SIGNAGE(LOCATION)
 - - CONDUIT RUN
 - - EV CHARGER
 - EV CHARGING ONLY



SITE PLAN:



SCALE:1"=40'-0"

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ELECTRICAL ONLY

10/28/2024

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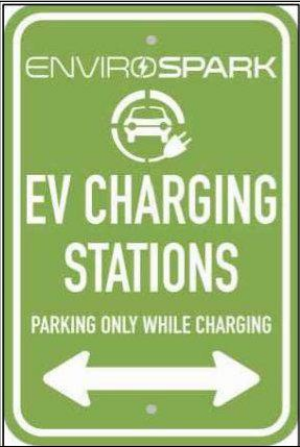
SITE PLAN

DRAFTED BY/QC'ED BY:
ABINESH G/ABDUL WAHAB A

SCALE:AS NOTED	REV:B
DATE:10/25/2024	A-01

NOTE:
1. SCOPE OF WORK SHALL COMPLY WITH THE 2023 NEC ART. 625 – ELECTRIC VEHICLE POWER TRANSFER SYSTEM.
2.THREE CUBIC FEET OF CEMENT PER BASE . THIS IS FOR PAD PLACED BEHIND THE CURB,ON THE SIDEWALK.
3.EMERGENCY SHUT OFF FOR EV CHARGING SHALL BE LABELED AS EV CHARGING EMERGENCY SHUT OFF.
4. SIGNAGE WILL BE INSTALLED ON THE SWITCHBOARD INDICATING THE SECTION THE MAIN BREAKER IS IN AND THAT IT FUNCTION AS THE EMERGENCY DISCONNECT.
5. CHARGER POWER CONVERTER SHALL BE PEDESTAL MOUNTED AT A HEIGHT OF NOT LESS THAN 600MM(24 IN.) ABOVE GRADE LEVEL FOR OUTDOOR LOCATIONS

NOTE 6:
PARKING SIGN:

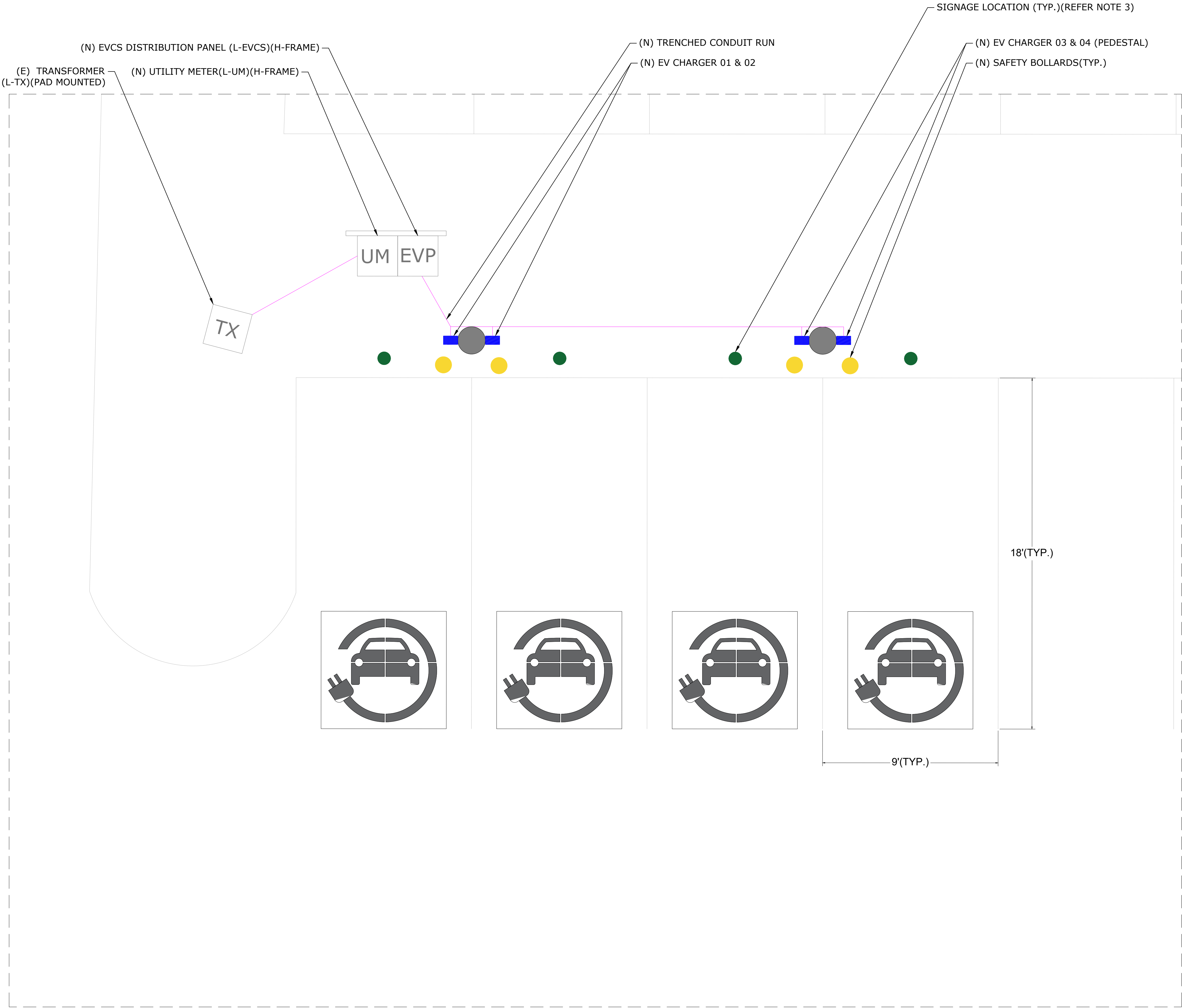


NOTE 7:
EXCEPTION: EVCS NOT AVAILABLE TO THE GENERAL PUBLIC AND INTENDED FOR USE BY A DESIGNATED VEHICLE OR DRIVER SHALL NOT BE REQUIRED TO COMPLY WITH SECTION 11A-228.3.2. EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO, EVCS SERVING PUBLIC OR PRIVATE FLEET VEHICLES AND EVCS SERVING PUBLIC OR PRIVATE FLEET VEHICLES AND EVCS ASSIGNED TO AN EMPLOYEE.

NOMENCLATURE:

L-EVCS: LOW VOLTAGE EVCS DISTRIBUTION PANEL
L-UM: LOW VOLTAGE UTILITY METER

ENLARGED SITE PLAN :



SCALE:3/8"=1'-0"

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ENLARGED SITE PLAN

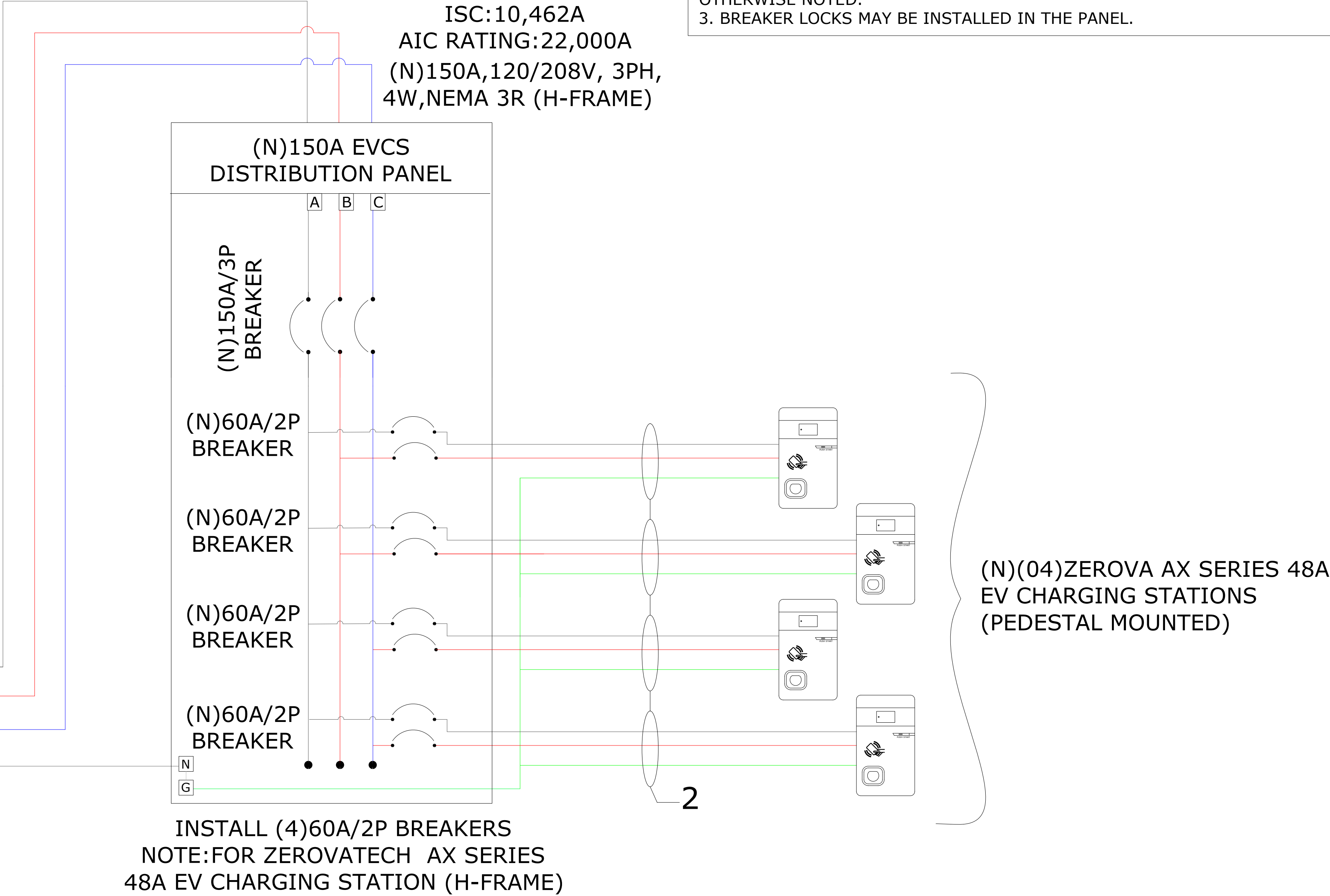
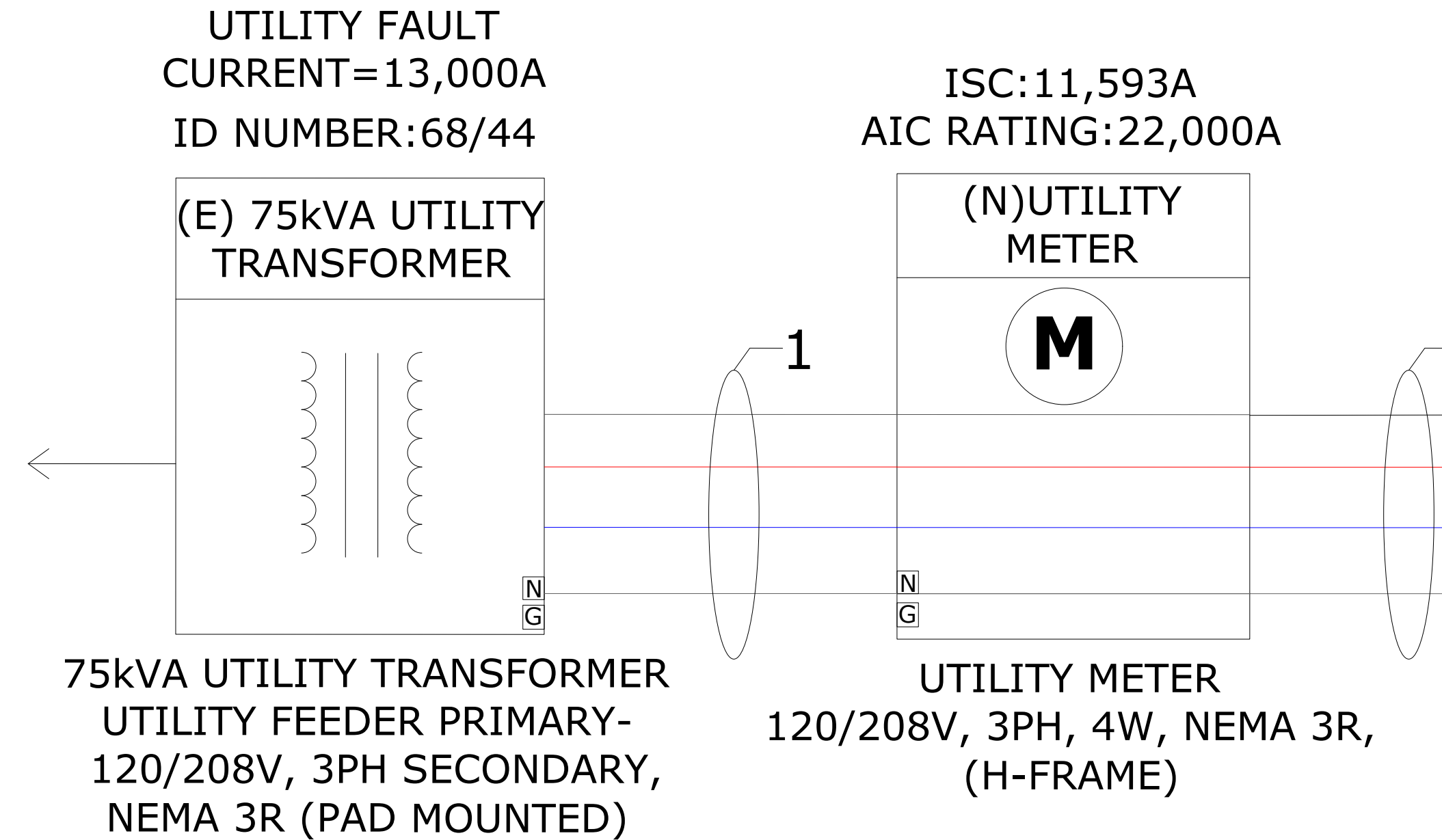
DRAFTED BY/QC'ED BY:
ABINESH G/ABDUL WAHAB A

SCALE:AS NOTED	REV:B
DATE:10/25/2024	A-02




ELECTRICAL DIAGRAM AND CALCULATION:

CONDUIT SCHEDULE				
TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	1-1/2"	(3) 1/0 AWG THHN/THWN-2	(1) 1/0 AWG THHN/THWN-2	NONE
2	3/4"	(2) 6 AWG THHN/THWN-2	NONE	(1) 10 AWG THHN/THWN-2



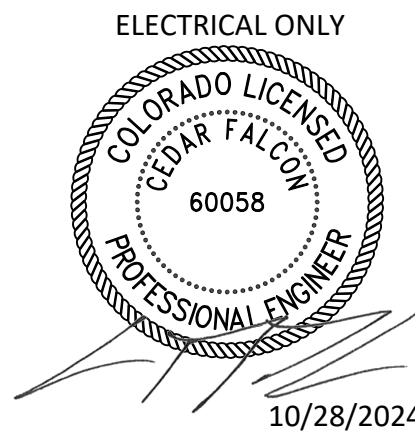
- NOTE:**
- SCOPE OF WORK SHALL COMPLY WITH THE 2023 NEC ART. 625 – ELECTRIC VEHICLE POWER TRANSFER SYSTEM.
 - CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LAGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID, UNLESS OTHERWISE NOTED.
 - BREAKER LOCKS MAY BE INSTALLED IN THE PANEL.



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ELECTRICAL DIAGRAM AND CALCULATION

DRAFTED BY/QC'ED BY:
ABINESH G/ABDUL WAHAB A

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DATE:10/25/2024	E-01

OCPD CALCULATIONS:
OCPD FOR EVCS=(MAX INPUT) X (1.25) [PER 625.41]
=48x1.25=60A OCPD LOAD CALCULATIONS
OCPD FOR EVCS DISTRIBUTION PANEL =(48 X 4 X 208 X 1.25)/(208 X 1.732)=138.57A =150A OCPD LOAD CALCULATIONS

ELECTRICAL CALCULATIONS:

WIRE SIZING(TAG1):
MAX AC INPUT CURRENT = 150A
ADJUSTED CONDUCTOR AMPACITY = (HIGH TEMP) [PER TABLE 310.15(B)(1)(1)] X (CONDUIT FILL) [PER TABLE 310.15(C)(1)]
X(CONDUCTOR AMPACITY) [PER TABLE 310.16]= 0.96 X 1 X 170A = 163.2A
TERMINAL RATING, [PER 110.14(C)] - 1/0 AWG, 75°C RATED = 150A
150A ≥ 150A, SO THE CONDUCTOR AMPACITY GOVERNS THE CONDUCTOR SIZING
ALSO, 163.2A ≥ 150A, AND **1/0 AWG** IS SUFFICIENT

WIRE SIZING(TAG2):
MAX AC INPUT CURRENT = (MAX INPUT) X (CONTINUOUS LOAD) =(48A X 1.25) =60A
ADJUSTED CONDUCTOR AMPACITY = (HIGH TEMP) [PER TABLE 310.15(B)(1)] X (CONDUIT FILL) [PER TABLE 310.15(C)(1)]
X(CONDUCTOR AMPACITY) [PER TABLE 310.16]= 0.96 X 1 X 75A = 72.0A
TERMINAL RATING, [PER 110.14(C)] - 6 AWG, 75°C RATED = 65A
65A ≥ 60A, SO THE CONDUCTOR AMPACITY GOVERNS THE CONDUCTOR SIZING
ALSO, 72.0A ≥ 48A, AND **6 AWG** IS SUFFICIENT

SPLIT PHASE AC VOLTAGE DROP CALCULATION											
SOURCE	TERMINATION	TAG	CURRENT	VOLTAGE	#SET OF PARALLEL CONDUCTOR	CONDUCTOR	CONDUCTOR MATERIAL	RESISTEN CE AT 75 DEG C	RESISTENCE AT 2%DB	MAX CONDUTOR LENGTH(ft)	%V.DROP
EVCS DISTRIBUTION PANEL	EV CHARGER 01, EV CHARGER 02	2	60	208	1	D AWG 08	Cu	0.00078	0.000686782	10	0.40%
EVCS DISTRIBUTION PANEL	EV CHARGER 03, EV CHARGER 04	2	60	208	1	D AWG 08	Cu	0.00078	0.000686782	30	1.19%

3 PHASE AC VOLTAGE DROP CALCULATION											
EVCS DISTRIBUTION PANEL	UTILITY METER	1	150	208	1	J AWG 1/0	Cu	0.00013	0.000114464	10	0.14%
UTILITY METER	TRANSFORMER	1	150	208	1	J AWG 1/0	Cu	0.00013	0.000114464	10	0.14%
										MAX Vdrop	1.47%
										AVERAGE Vdrop	0.55%

EVCS DISTRIBUTION PANEL: 150A - 208Y/120V - 3PH - 4W												
Circuit	Name	OCPD Rating	Poles	Connected Load	A	B	C	Connected Load	Poles	OCPD Rating	Name	Circuit
1	Level 2 EV Charger 1	60A	2	4,992	9,984			4,992	2	60A	Level 2 EV Charger 2	2
3				4,992		9,984		4,992				4
5	Level 2 EV Charger 3	60A	2	4,992			9,984	4,992	2	60A	Level 2 EV Charger 4	6
7				4,992	9,984			4,992				8

Connected load (VA)	19,968	9,984	9,984
Demand Load (VA)	24,960	12,480	12,480
Line Current (Amps)	208.00	104.00	104.00

Total Demand (VA):	49,920
Total Demand (A):	138.56



AX Series



Applications

- Parking Garages
- Commercial Fleet Operators
- EV Infrastructure Operators and Service Providers
- EV Dealer Workshops

Features

- Residential and Commercial EV Charging
- Wired/Wireless Connection for Central Management System
- Support for RFID Card and QR Code for User Authentication and Management
- Input: 200Vac~240Vac
- Modern, Ergonomic and Custom Design
- Optional 5-inch LCD Display
- IP56/NEMA 4 Rated for Indoor/Outdoor Applications
- Charging Interface: SAE J1772 (Type 1)/IEC 62196-2 (Type 2)
- OCPP 1.6 JSON (Upgradeable to 2.0)
- ISO 15118 Protocol
- Local Load Management, Making the Field Power Configuration Planning of Charging Stations More Flexible
- Over the Air Technology

ZEROVA TECHNOLOGIES USA LLC | 47800 FREMONT BLVD., FREMONT, CA 94538 | WWW.ZEROVATECH.COM | CHARGERSALES@ZEROVATECH.COM | 1.510.936.9000

EMPOWERING THE FUTURE

Model Name		AX48 Series
Safety		UL/cULus (North America)
Picture		
Power Specification		
AC Input	Input Rating	Single-Phase: 200~240Vac
	AC Input Connection	L1/L2/GND or L/N/PE
	Input Current	48A
	Frequency	50Hz/60Hz
AC Output	Output Current	48A
	Output Power	11.5kW (240Vac*48A)
User Interface & Control		
Display		LED Pilot Lamp (standard), 5-inch LCD (Optional)
User Authentication		RFID (ISO/IEC 14443A/B, ISO/IEC 15693, FelCa*, MIFARE), ISO 15118
Meter		Meter IC (1% Accuracy)
Communication		
External		LAN+WiFi (Standard) or LAN+4G+WiFi (Optional)
Internal		OCPP 1.6 JSON (Upgradeable to 2.0) EEBUS (Support in 2022)
Environmental		
Operating Temperature		-30°C ~ +50°C (-22°F ~ +122°F) Standard
Humidity		< 85% (RH) @50°C (+122°F)
Altitude		≤ 2000m (6562ft)
Enclosure Protection (IK/IP Level)		NEMA TYPE 4
Cooling Method		Natural Cooling
Mechanical		
Dimension(WxDxH)		295mm x 158mm x 505mm (11.61in x 6.22in x 19.88in)
Weight		<7kg (15.43lbs) with Socket, <10kg (22lbs) With Cable
Cable Length		5m (16.4ft) 7.5m (24.6ft) with Optional Cable Management
Protection		
RCD/CCID		CCID 20
Input Side		UVP, OVP, Surge Protection, Ground Fault
Output Side		CCP, Control Pilot Fault, Residual Current Protection
Protocol		OTP, Relay Welding Detection, CCID Self-Test, MCU Function Fault Detection
Regulation		
Certification		UL2594, UL2231-1/-2, CTEP, EnergyStar™
Wireless Certification		FCC/IC
Charging Interface		SAEJ1772 Type 1 Plug

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SPEC SHEETS

DRAFTED BY/QC'ED BY:

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SS-01

Standard Safety Bollard - 4 1/2 x 36", Fixed



Protect equipment from damage caused by forklifts and pallet trucks.

- Sturdy steel bollard posts have removable black caps. Fill with concrete for extra strength.
- 11 gauge steel.
- Permanent installation.
- Concrete Installation Kit and 10' Steel Chain available.