

176 PENNINGTON AVE

EV CHARGING STATION INSTALLATION

176 PENNINGTON AVE

PASSAIC, NJ 07055

SCOPE OF WORK

- A. INSTALL NEW METER ENCLOSURE & 100A 208V 3PH PANEL IN EACH TOWNHOUSE (TH-1 & TH-2).
- B. INSTALL (8) LEVEL 2 ELECTRIC VEHICLE CHARGING STATIONS ON THE SIDE OF THE TOWNHOUSES BETWEEN THE GARAGES. THERFORE, (4) EV CHARGERS PER TOWNHOUSE.

APPLICABLE CODES

- ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES:
- NEW JERSEY BUILDING CODE 2021

NEW JERSEY ENERGY CODE 2021

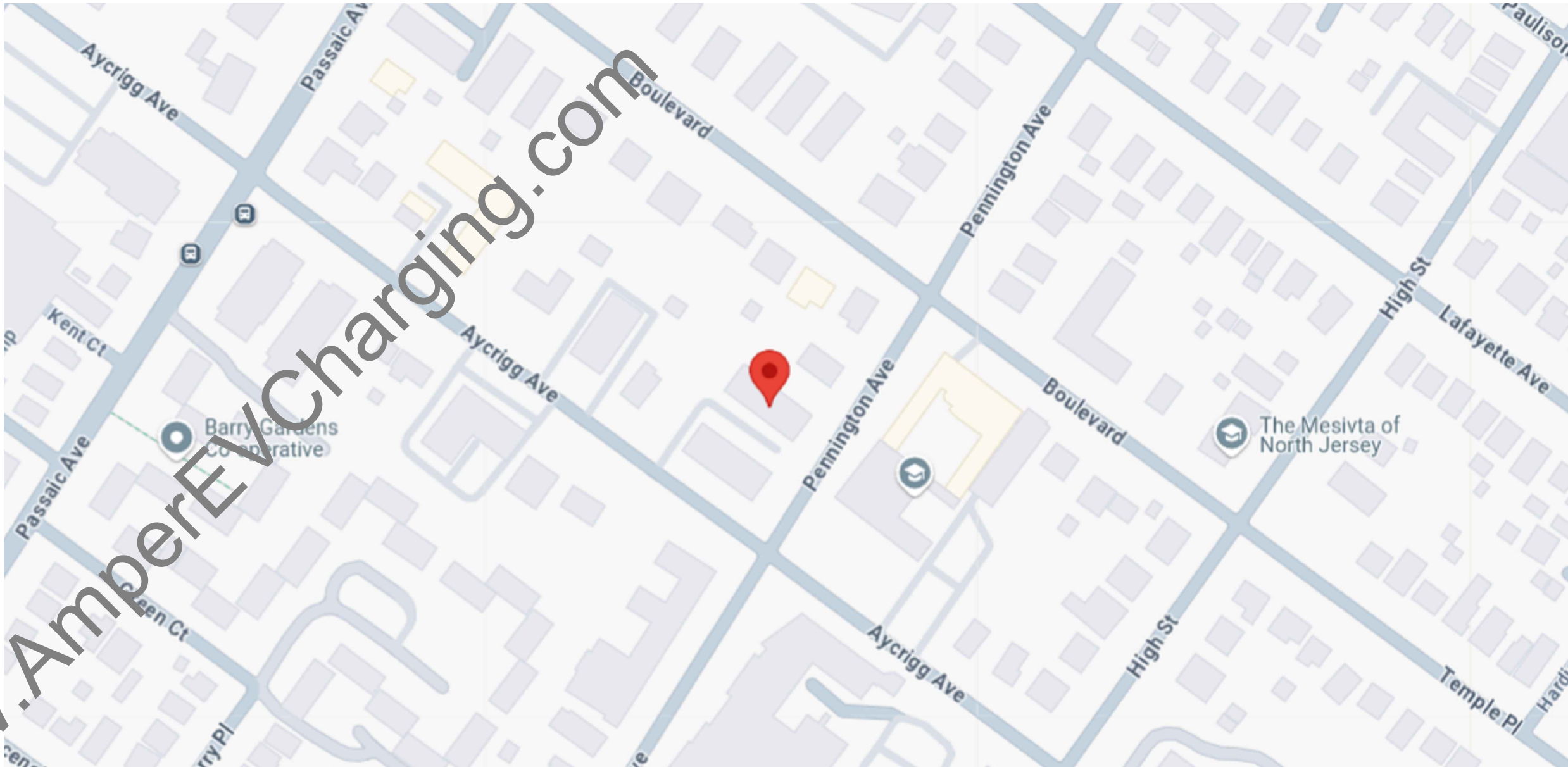
NEC 2020

SHEET INDEX

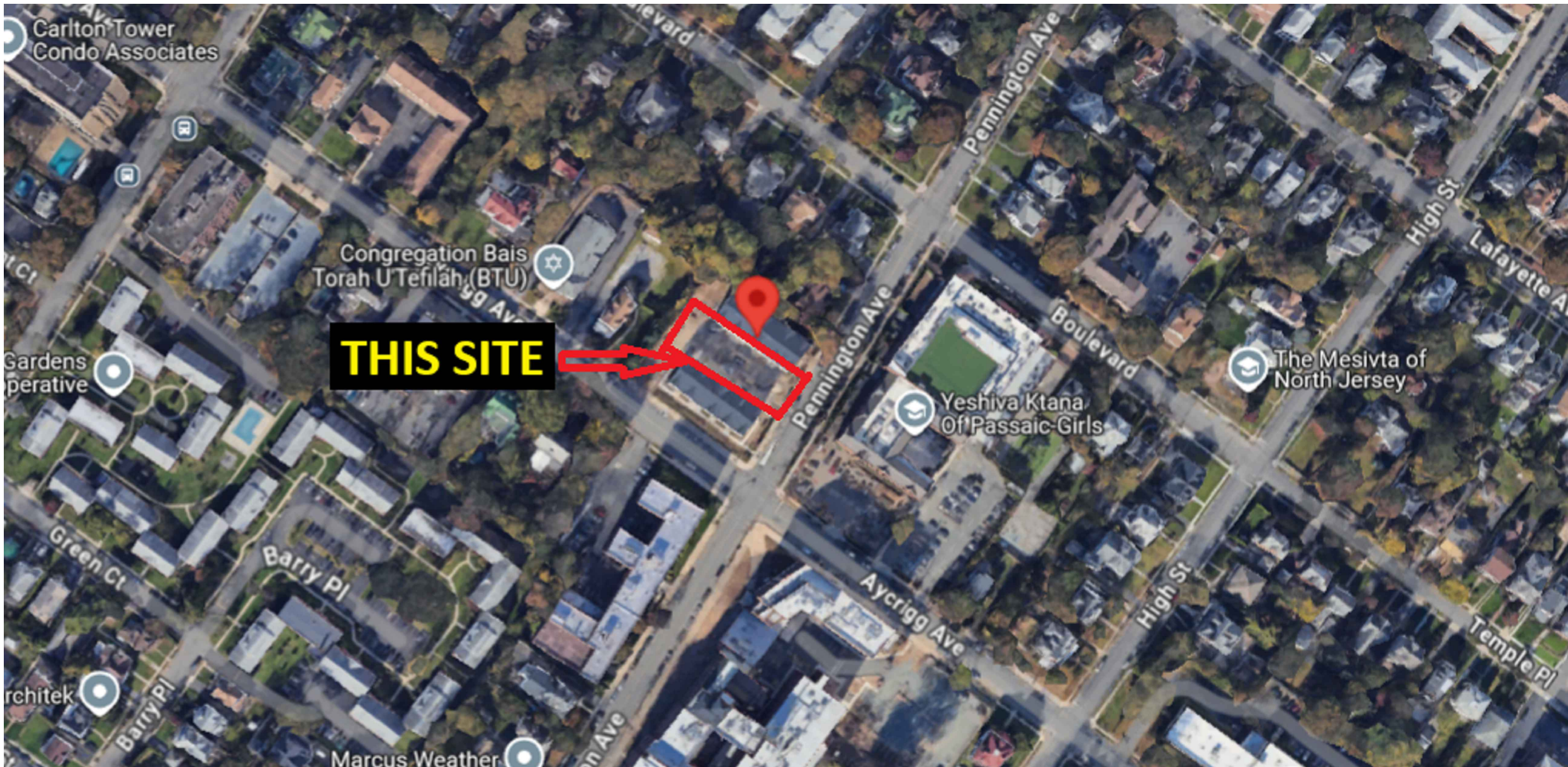
SHEET NO.	TITLE
EV01	COVER SHEET
EV02	NOTES, LEGEND & SYMBOLS
EV03	ELECTRICAL SITE LAYOUT
EV04	ONE LINE DIAGRAM, CALCULATION, & DATA SHEET
EV05	INSTALLATION DETAILS

(NOT USED)


VICINITY MAP



SATELLITE VIEW



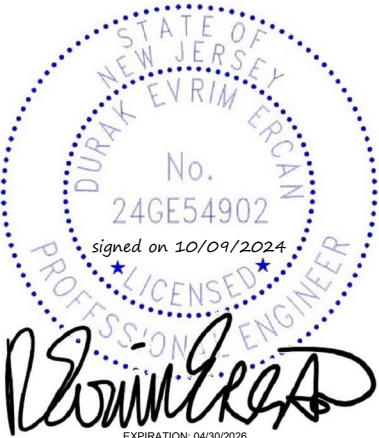
COORDINATING PROFESSIONAL:



ENGINEERING | CONSULTING | ESTIMATING

201-920-2899 | info@AmperEngineering.com

ENGINEER OF RECORD SEAL & STAMP:



PROFESSIONAL ENGINEER:
DURAK EVRIM ERCAN, P.E.
LICENSE #24GE54902

AMPER PROJECT NUMBER: 1997-NJ

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REV	DATE	DESCRIPTION
0	10/04/2024	ISSUED FOR PLAN REVIEW

CLIENT:



ADDRESS:
24 COKESBURY ROAD,
LEBANON, NJ 08833
PHONE:
908-735-6126

PROJECT:

176 PENNINGTON AVENUE
EVCS
INSTALLATION

ADDRESS:
176 PENNINGTON AVE
PASSAIC, NJ
07055

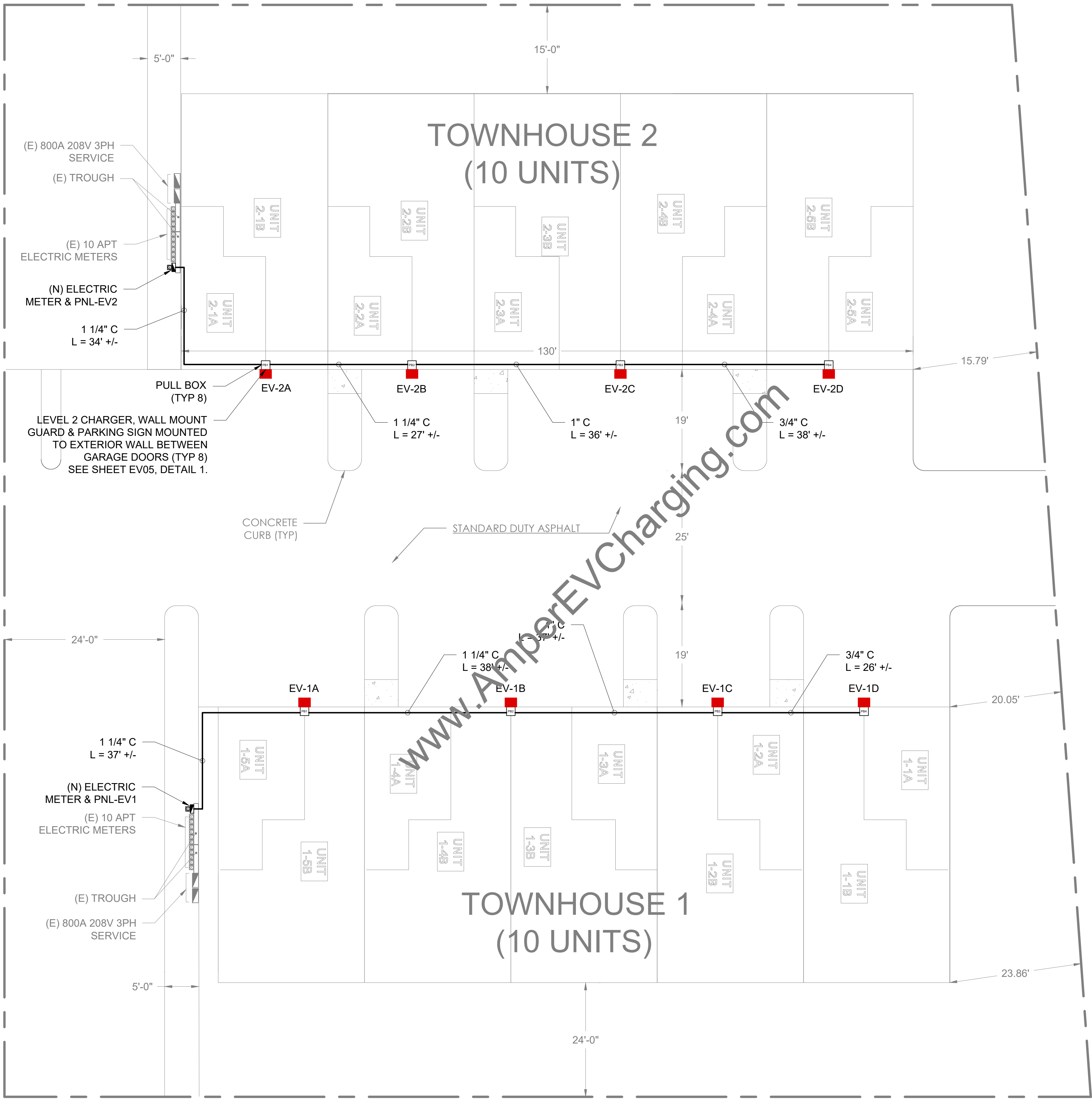
SHEET SIZE: 24X36	DRAWN BY: IB
DESIGNED BY: AC	CHECKED BY: DEE

SHEET TITLE:
COVER SHEET

SHEET NO:
EV01

NOTE:

1. THIS DRAWING WAS PRODUCED WITHOUT THE BENEFIT OF A CURRENT LAND SURVEY. ALL PROPERTY LINES, EASEMENTS, AND SETBACKS SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION.



ELECTRICAL SITE LAYOUT
SCALE: NTS



COORDINATING PROFESSIONAL:

AMPER
ENGINEERING

ENGINEERING | CONSULTING | ESTIMATING

201-920-2899 | info@AmperEngineering.com

ENGINEER OF RECORD SEAL & STAMP:

STATE OF NEW JERSEY
Professional Engineer Seal
No. 24GE54902
Signed on 10/04/2024
DURAK EYRIM ERGANCAN, P.E.
LISCENSE #24GE54902

PROFESSIONAL ENGINEER:
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Mt Salem
Electric

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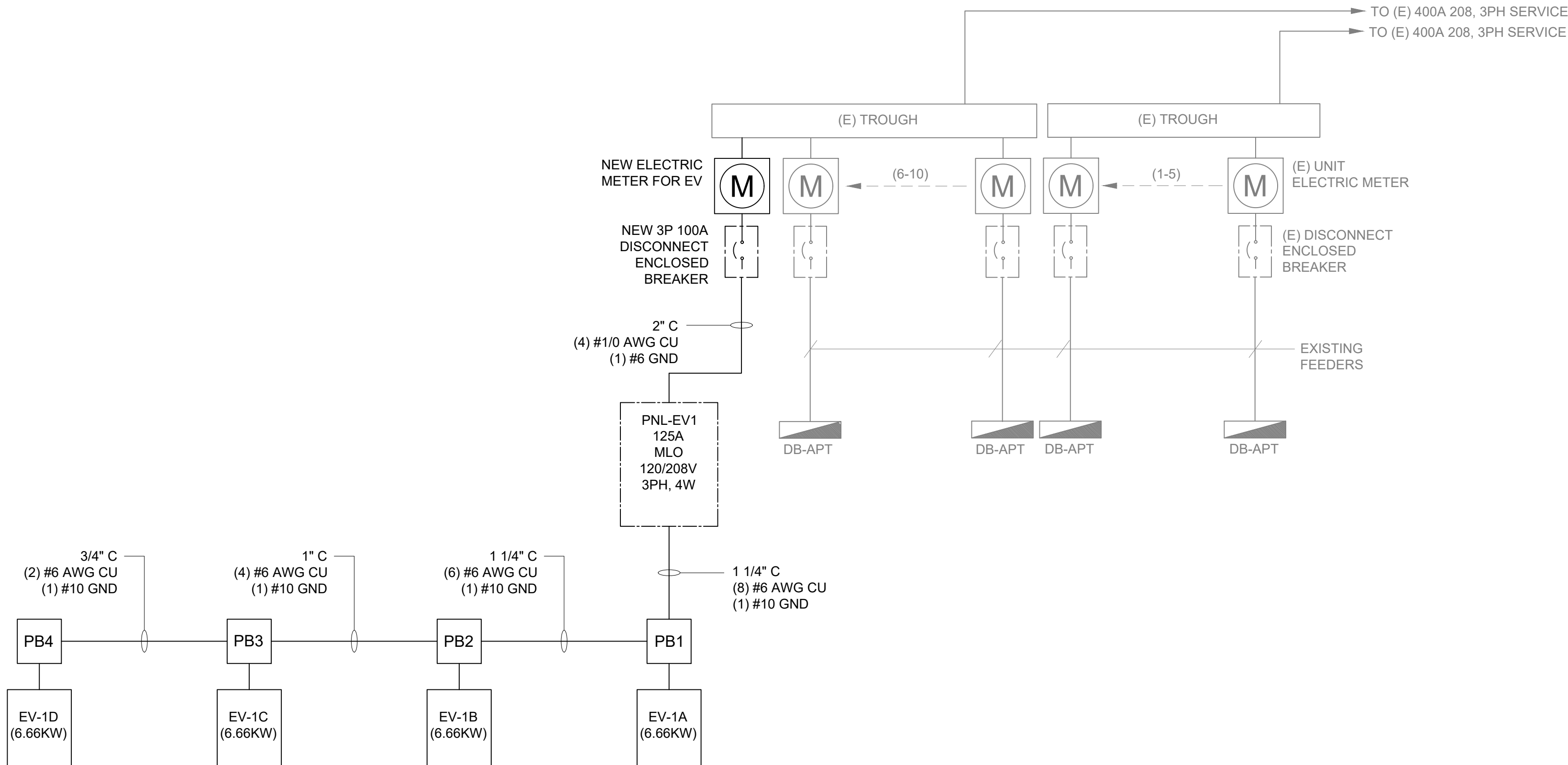
ADDRESS:
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SHEET TITLE:
ELECTRICAL SITE LAYOUT

SHEET NO:

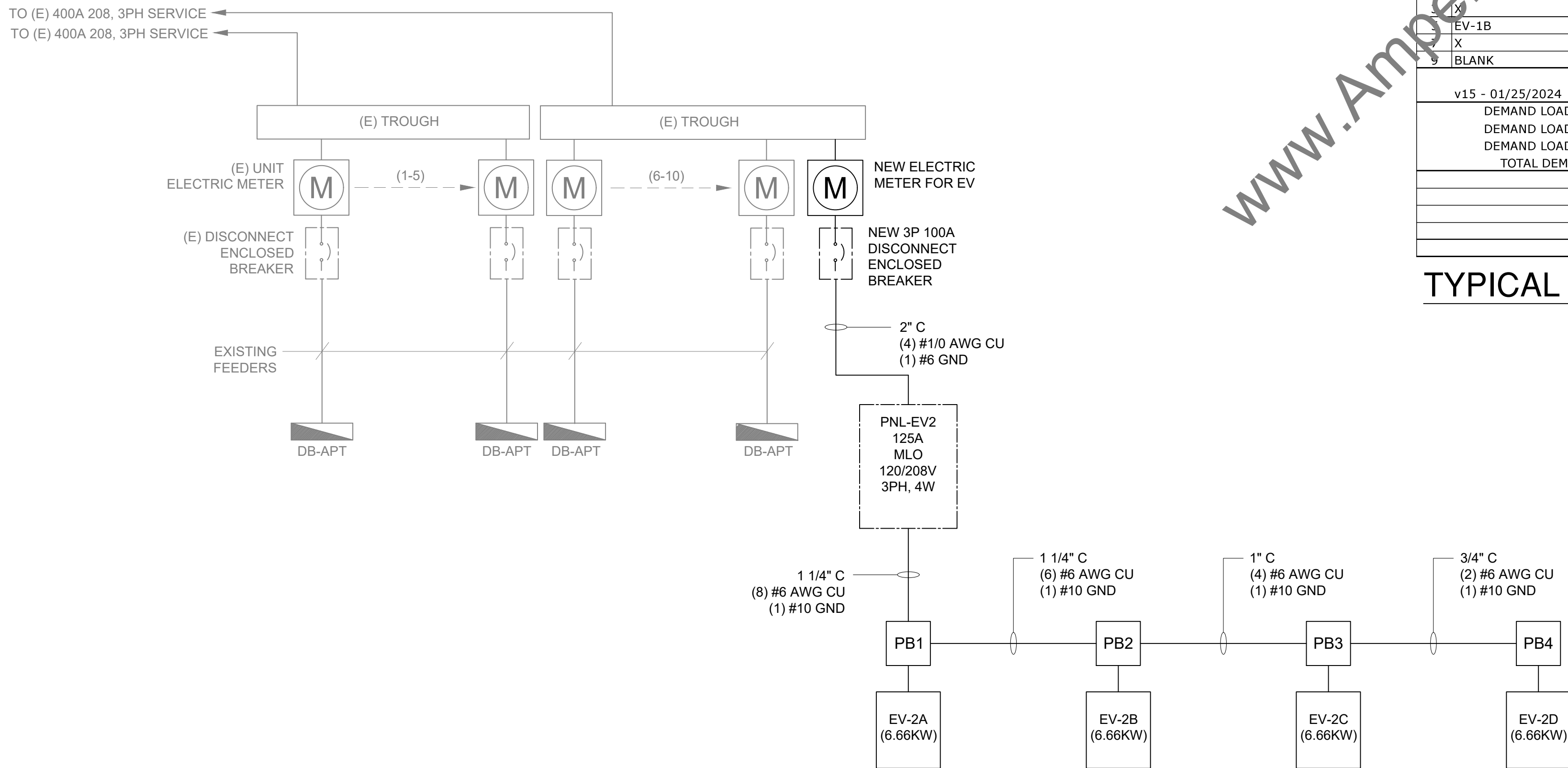
EV03



ONE LINE DIAGRAM - TOWNHOUSE 1

PANEL-EV1																											
VOLTAGE: 120/ 208 3 PHASE, 4 WIRE																	LOCATION: EXTERIOR WALL SIDE OF TOWNHOUSE 1 BUS (A): 125 MAIN (A): MLO										
No.	CIRCUIT DESCRIPTION	LOAD (KVA)						BREAKER		PHASE			BREAKER		LOAD (KVA)						CIRCUIT DESCRIPTION	No.					
		CONT	RCPT	MTR	A/C	KITCH	MISC	TRIP	POLE	A	B	C	POLE	TRIP	MISC	KITCH	A/C	MTR	RCPT	CONT							
1	EV-1A	3.33						40	2	3.33												BLANK	2				
X		3.33						X	X		6.66			2	40					3.33		EV-1C	4				
	EV-1B	3.33						40	2			6.66		X	X					3.33		X	6				
X		3.33						X	X	6.66				2	40					3.33		EV-1D	8				
	BLANK	3.33									3.33			X	X					3.33		X	10				
		LOADS W/ NEC 220 DEMAND FACTORS (KVA)						TOTAL		9.99	9.99	6.66			0.00	0.00	0.00	0.00	0.00	26.64	CONNECTED KVA 26.64						
v15 - 01/25/2024		CONT	RCPT	MTR	A/C	KITCH	MISC																PANEL NOTES				
DEMAND LOAD PHASE-A (KVA)		12.49	0.00	0.00	0.00	0.00	0.00	12.49	CONTINUOUS:125% LOAD															1)IF PANEL EXISTING AND ACTUAL CONNECTED KVA ARE NOT KNOWN, ASSUMPTIONS ARE MADE AS:			
DEMAND LOAD PHASE-B (KVA)		12.49	0.00	0.00	0.00	0.00	0.00	12.49	RECEPTACLES:100% 1ST 10 KW + 50% REMAINING															CONTINUOUS & NON-CONTINUOUS CONNECTED LOADS ASSUMED TO BE 80% OF THE OCPD RATING.			
DEMAND LOAD PHASE-C (KVA)		8.33	0.00	0.00	0.00	0.00	0.00	8.33	MOTORS:125% LARGEST MOTOR + 100% REMAINING															2)DESIGN IS BASED ON NEC TABLE 310.15(B)(16) COPPER THHN CONDUCTORS. EXISTING CONDUCTORS,			
TOTAL DEMAND LOAD (KVA)		33.30	0.00	0.00	0.00	0.00	0.00	33.30	A/C OR HEAT:100% LOAD															AND WIRING MAY NEED TO BE INSPECTED AND VERIFIED BY ELECTRICAL CONTRACTOR.			
LARGEST DEMAND LOAD OF ANY PHASE (KVA)		12.49						12.49	KITCHEN:65% LOAD															3)EVCS ARE CONSIDERED CONTINUOUS LOADS AND ACTUAL NAME PLATE VALUES ARE USED.			
LARGEST DEMAND LOAD OF ANY PHASE (AMP)								104	MISC:100% LOAD															4) ALL CONDUCTORS ON THE PANEL SCHEDULE ARE COPPER UNLESS OTHERWISE NOTED.			
TOTAL DEMAND LOAD OF ALL PHASES (KVA)		33.30						33.30																			
TOTAL DEMAND LOAD OF ALL PHASES (AMP)								104																			
MINIMUM FEEDER AMPACITY SELECTION (AMP)								104																			

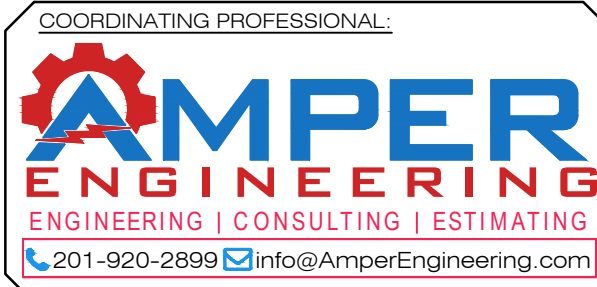
TYPICAL PANEL SCHEDULE (TH-1 & TH-2)



ONE LINE DIAGRAM - TOWNHOUSE 2

KEY NOTES:

- ALL ELECTRICAL WORK AND RELATED ACTIVITIES PERFORMED ON-SITE SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC) STANDARDS BEING ENFORCED BY ALL APPLICABLE JURISDICTIONAL REQUIREMENTS AT THE TIME OF CONSTRUCTION.
- CONDUIT PATHS ARE REPRESENTATIVE ONLY. EXACT CONDUIT PLACEMENT TO BE DETERMINED ON SITE BASED ON FIELD CONDITIONS.
- A NATIONALLY RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH NEC ARTICLE 110.3
- ALL EXTERIOR EQUIPMENT SHALL BE RAIN TIGHT AND APPROVED FOR USE IN WET CONDITIONS.
- ALL CONDUCTORS TO BE THHN/THWN COPPER.
- ALL CONDUCTORS AND CABLES SHALL BE PROVIDED WITH STRAIN RELIEF UPON ENTRY INTO ENCLOSURES.
- UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRECONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATIONS.
- ALL METALLIC COMPONENTS SHALL BE GROUNDED VIA ELECTRIC GROUNDING CONDUCTORS.
- WIRING FOR ELECTRICAL VEHICLE CHARGING STATIONS TO BE INSTALLED PER MANUFACTURER'S DIRECTIONS AND SPECIFICATIONS.
- CONTRACTOR TO ENSURE THAT ALL FEEDERS, CONDUITS, CONDUCTORS, OCPD, TRANSFORMERS, ELECTRICAL PANELS AND OTHER ELECTRICAL EQUIPMENT IS SIZED TO COMPLY WITH CURRENT NEC AND LOCAL AHJ CODES.
- CONTRACTOR IS RESPONSIBLE TO VERIFY DESIGN, ENGINEERING ASSUMPTIONS AND EXISTING FIELD CONDITIONS. REPORT ANY INSUFFICIENCIES TO ENGINEER OF RECORD PRIOR TO ANY WORK BEING PERFORMED.
- THE NEW PANEL AND CBs SHALL HAVE THE SAME KAIC OR HIGHER THAN FAULT CONTRIBUTION FROM THE UTILITY.
- GROUNDING INSTALLATION AS PER NEC ART. 250.
- THE EV CHARGING SUPPLY SHALL BE INSTALLED AS PER NEC ART. 625.
- ALL LEVEL 2 EV CHARGERS ARE PROGRAMMED TO DELIVER CONSTANT 32A. THEREFORE, AT 208V, EACH CHARGER CAPACITY IS 6.66KW.



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AC

DRAWN BY:

IB
CHECKED BY:
DEE

SHEET TITLE:

ONE LINE DIAGRAM,
CALCULATION & DATA
SHEET

SHEET NO:

EV04

EVOCHARGE
32A Level 2 Charging Stations
(EVSE, iEVSE, iEVSE Plus) Product Description and Specifications

ELECTRIC VEHICLE CHARGING STATIONS

- Modern Compact Design: EVSE form factor smaller than a standard sheet of letter size paper
- Robust Construction: Certified for Outdoor Use; tamper-resistant features; NEMA 4 certified for outdoor and indoor use
- Simple Operation: EVSE models simply plug-in to EV and charge
- Network Options: iEVSE and EVSE Plus are OCPP 1.6J networked enabled charging stations to support secure control, payment capability, remote management and control, demand response, Network connection via Wi-Fi; EVSE Plus models also include 4G LTE cellular, RFID card reader and Local Load Management capability
- Cable Management: Standard Connector and Cable Holder included, optional cable management solutions available

Part Number

EVOCHARGE EVSE, EVCSA00A2E1A1 (18 ft. charge cable) or EVCSA00B2E1A1 (25 ft. charge cable)	
EVOCHARGE EVSE, EVCSA00A2E1A1 (18 ft. charge cable) or EVCSA00B2E1A1 (25 ft. charge cable)	
EVOCHARGE EVSE Plus, EVCSA00B2E1A1 (25 ft. charge cable)	
EV Cable Management System (Optional): EVOREEL and Retractor	
SAE J1772, AC Level 2	

Max Output Rating
32A, 5.76 kW Maximum Output – For use with dedicated 40A (or greater) Supply Circuit

Alternate Adjustable Output – For use with 30A Circuit Rating: 30A, 3.84 kW Maximum Output – For use with 20A Circuit Rating

Electrical Circuitry
208-240VAC, 50/60 Hz, Single Phase Circuit Requirement; Dedicated; Branch Breaker; Double pole; Circuit Conductors: Line 1, Line 2, Earth Ground

Input Power Requirements
EVSE & EVSE Plus: Plug-in, NEMA 6-50 Plug (Removable for Hardwire Connection); iEVSE Plus: Hardwire

Operational Ratings
NEMA 4, Indoor/Outdoor Rated; Temp: -22°F to 122°F (-30°C to 50°C); Humidity: 95% RH

Mounting
Wall, Pedestal Installation

Dimensions
EVSE: 18.1" x 7.5" x 3.2 inches (28.0" x 19.0" x 8.1" cm)

Weight
EVSE: 18 lb.; iEVSE: 25 lb.; 16 lbs.

Display & Indicators
LED Charge Status Indicators (Power/Ready, Charging, Fault)

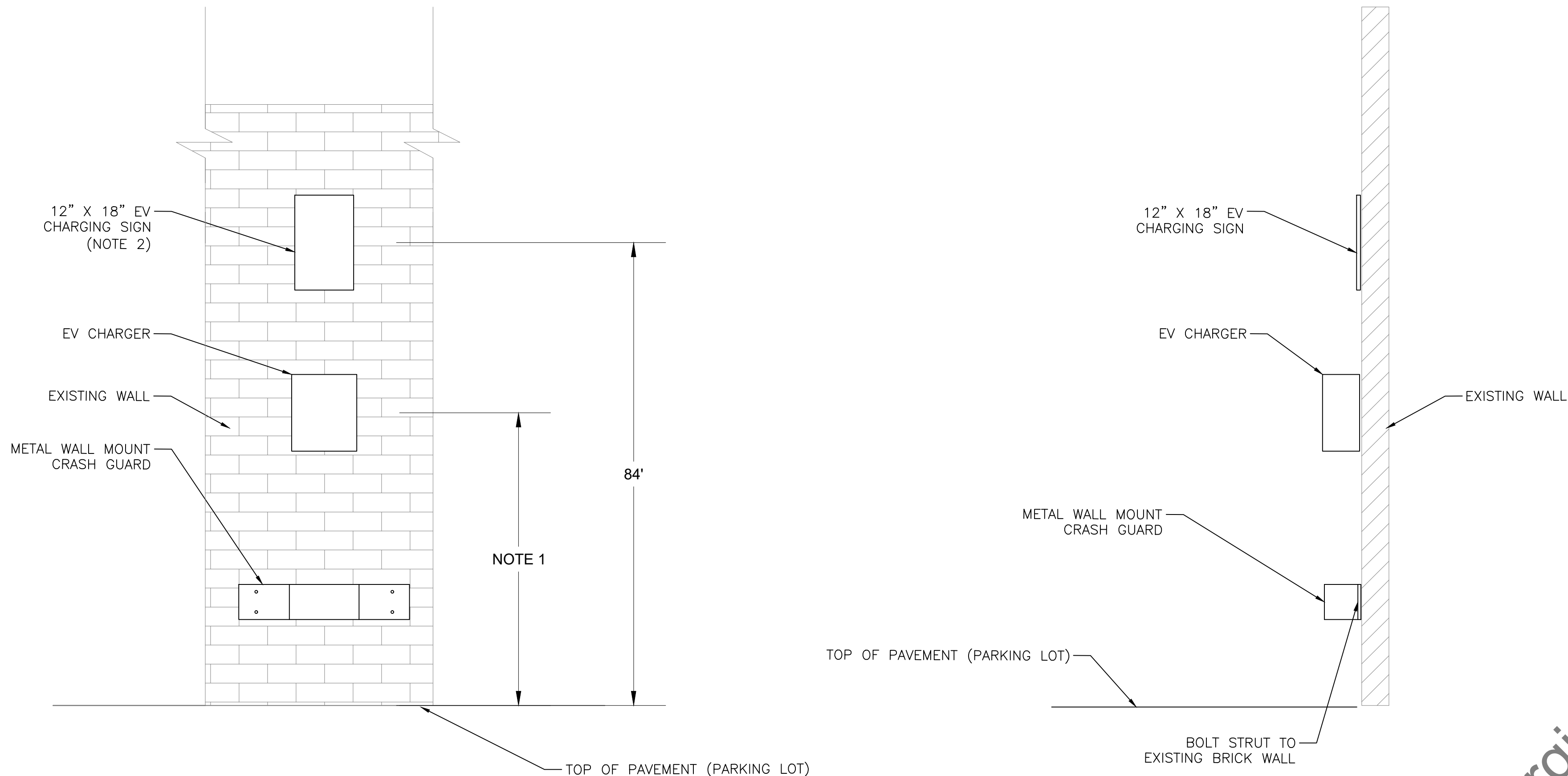
Cable Management
Connector/Cable Holder (Standard); Evoreel & Retractor Cable Management (Optional)

Standards & Compliance
Charging Station: UL631, UL631, SAE J1772, UL 2594, UL 355, CSA, EVOREEL, ETU/ETL

*Visit evocharge.com for more information or to download an installation manual

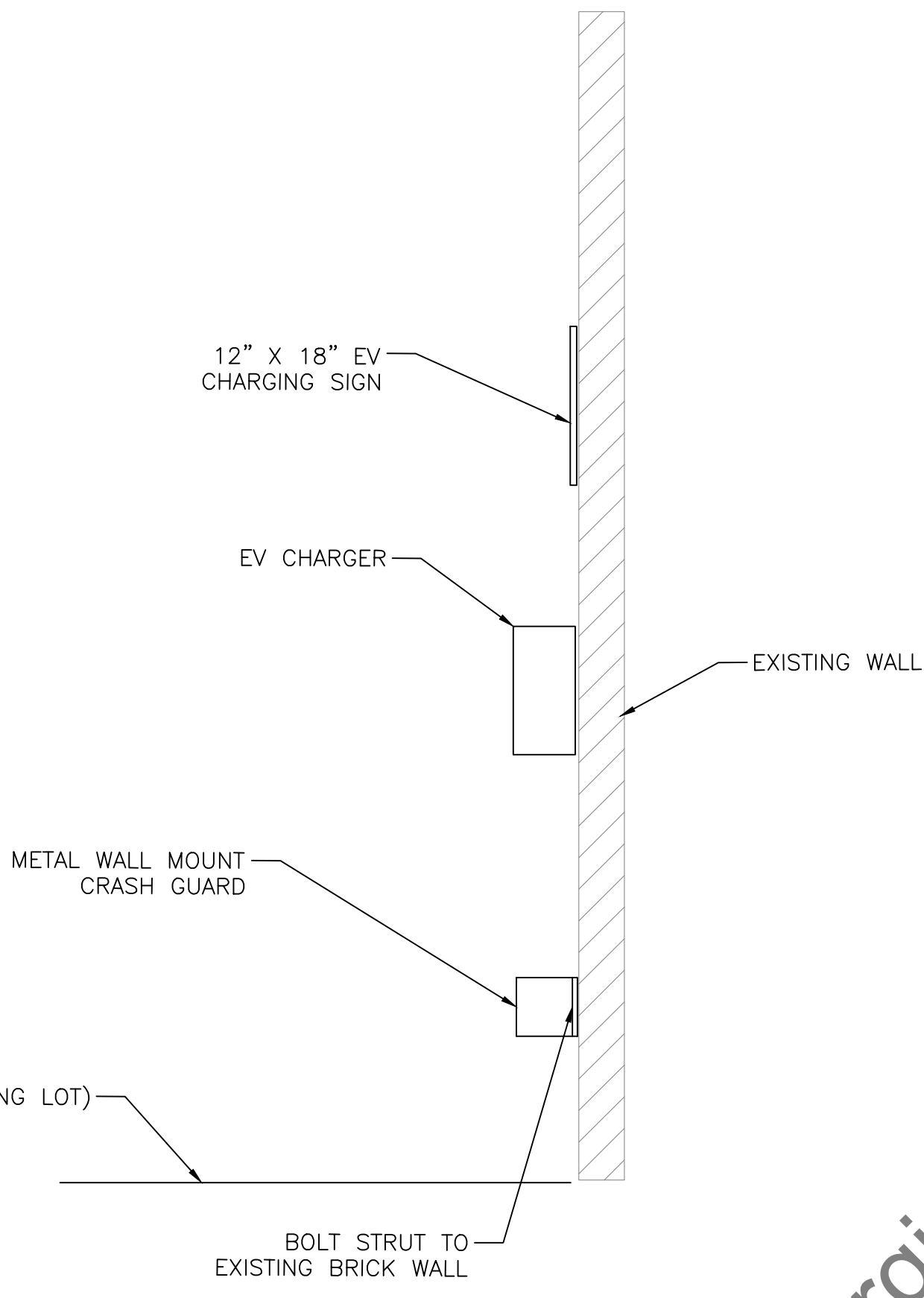
9700 West 74th Street, Eden Prairie, MN 55344
Phone: 952-341-9700 • Toll Free: 800-326-6388
evochargesales@phillipsindustries.com
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www.evocharge.com



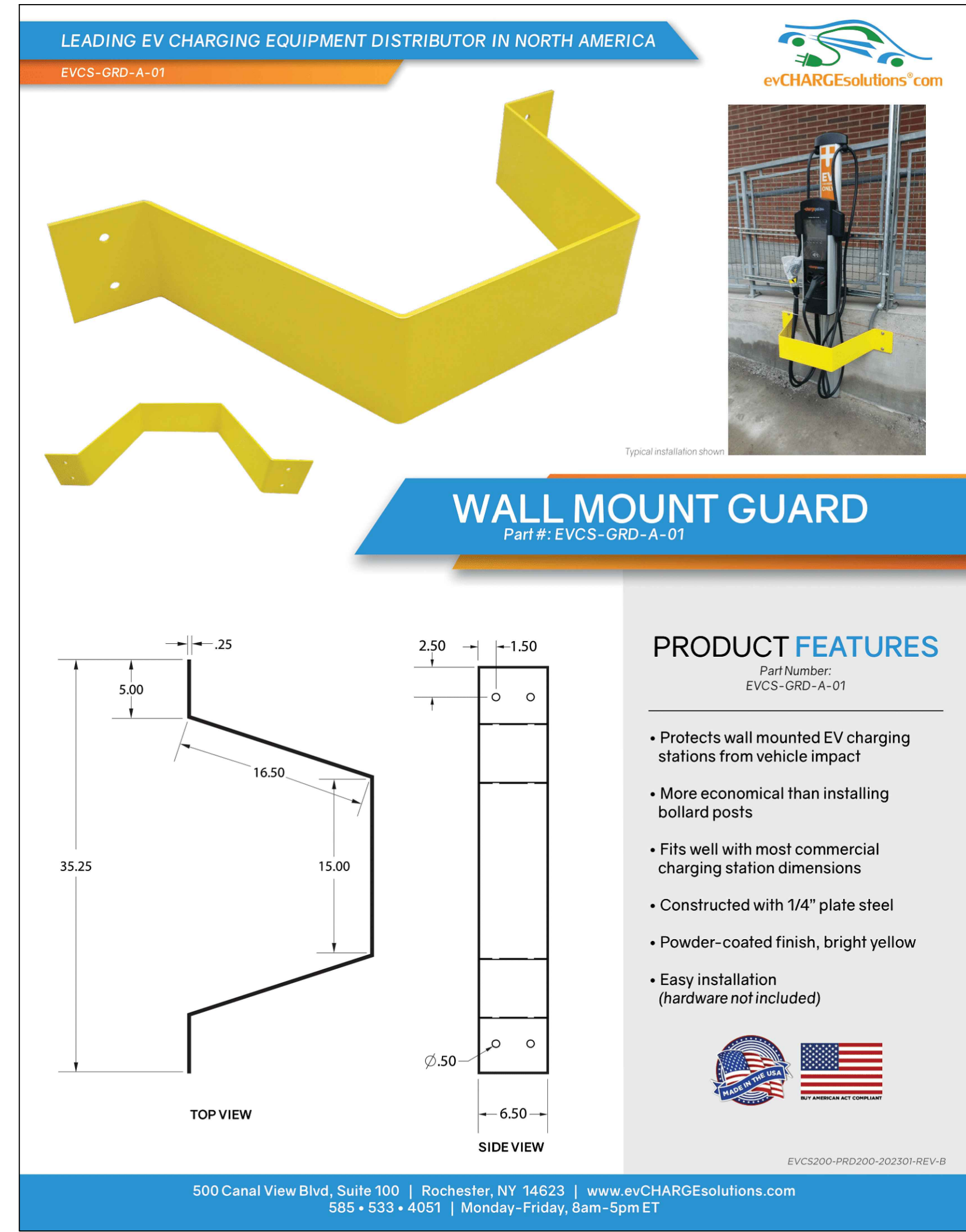
- NOTE:
1. THE UNIT SHALL BE MOUNTED AT A SUFFICIENT HEIGHT FROM GROUND BETWEEN 24" AND 48" FROM GROUND AS PER NEC ARTICLE 625.
 2. CONTRACTOR TO COORDINATE WITH MANUFACTURER TO DETERMINE EVCS SIGN TYPE PRIOR TO INSTALLATION.

FRONT



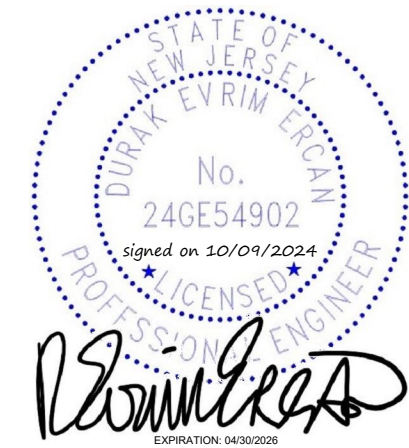
SIDE

1 EVCS WALL MOUNTED ELEVATION DETAILS



2 WALL MOUNT GUARD TYPICAL INSTALLATION

ENGINEER OF RECORD SEAL & STAMP:



PROFESSIONAL ENGINEER:
DURAK EVRİM ERCAN, P.E.
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AMPER PROJECT NUMBER: 1997-NJ

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EV05