SAMPLE OFFICE PARK - EV CHARGING

ELECTRICAL PERMIT DRAWINGS - NEW LEVEL 2 EV CHARGING STATIONS

PROJECT DATA

ITEM	DESCRIPTION
ADDRESS	1000 SAMPLE AVE, LOS ANGELES, CA 91300 (FICTITIOUS)
APN	0000-000-000
OCCUPANCY / USE	B (OFFICE) - EXISTING SURFACE PARKING
AHJ	CITY OF LOS ANGELES (LADBS)
UTILITY	LADWP
EXISTING SERVICE	800 A, 120/208 V, 3PH, 4W
NEW EVSE	(8) LEVEL 2, 48 A, 208 V 1PH
EVEMS SETPOINT	150 A PER PHASE (NEC 625.42)
SERVICE CHECK (220.87)	772 A <= 800 A - NO SERVICE UPGRADE
ACCESSIBLE EVCS	(1) VAN ACCESSIBLE + (1) STANDARD ACCESSIBLE

SCOPE OF WORK

1. INSTALL NEW 200 A/3P BREAKER IN (E) MSB (E) AND NEW FEEDER TO NEW PANEL 'EVP' (225 A, 120/208V 3PH 4W, SURFACE, NEMA 3R, EXTERIOR WALL).
2. INSTALL (8) NEW LEVEL 2 EVSE ON PEDESTALS WITH BOLLARDS; NEW UNDERGROUND BRANCH CIRCUITS.
3. INSTALL NETWORKED EVEMS (LOAD MANAGEMENT) LIMITING TOTAL EV LOAD PER NEC 625.42.
4. RESTRIPE STALLS FOR ACCESSIBLE EVCS, SIGNAGE AND IDENTIFICATION PER CBC 11B-812.
5. NO CHANGE TO EXISTING SERVICE, UTILITY METERING OR BUILDING STRUCTURE.

APPLICABLE CODES

2025 CALIFORNIA ELECTRICAL CODE (NEC 2023)
2025 CALIFORNIA BUILDING CODE (CBC) CH. 11B
2025 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN)
2025 CALIFORNIA FIRE CODE
LOS ANGELES MUNICIPAL CODE (AS AMENDED)

SHEET INDEX

SHEET	TITLE
E-0.0	COVER SHEET, NOTES & INDEX
E-1.0	ELECTRICAL SITE PLAN
E-2.0	SINGLE LINE DIAGRAM
E-3.0	LOAD CALCULATION & SCHEDULES
E-4.0	DETAILS & EQUIPMENT LABELS

GENERAL ELECTRICAL NOTES

1. ALL WORK SHALL COMPLY WITH THE 2025 CEC (NEC 2023), CBC, CALGREEN, CFC AND LOCAL AMENDMENTS.
2. CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS, SPARE BREAKER SPACE AND ROUTES BEFORE WORK.
3. ALL CONDUCTORS COPPER, THHN/THWN-2, 75°C TERMINATION RATING USED FOR AMPACITY (NEC 110.14(C)).
4. EVSE SHALL BE LISTED (UL 2594 / UL 2202) AND INSTALLED PER MANUFACTURER INSTRUCTIONS (NEC 110.3(B)).
5. EACH EVSE IS SUPPLIED BY AN INDIVIDUAL BRANCH CIRCUIT (NEC 625.40).
6. BRANCH OCPD SIZED AT NOT LESS THAN 125% OF EVSE MAXIMUM LOAD (NEC 625.41).
7. EV LOAD IS LIMITED BY A LISTED EVEMS PER NEC 625.42; SETPOINT SHALL BE PASSWORD-PROTECTED.
8. EXISTING SERVICE LOAD DETERMINED FROM 12 MONTHS OF UTILITY DEMAND DATA PER NEC 220.87.
9. UNDERGROUND RACEWAY COVER PER NEC TABLE 300.5; PROVIDE WARNING RIBBON 12" ABOVE RACEWAY.
10. ALL EQUIPMENT EXPOSED TO WEATHER SHALL BE NEMA 3R MINIMUM.
11. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL RACEWAYS (NEC 250.118, 250.122).
12. LABEL ALL NEW EQUIPMENT PER SHEET E-4.0 AND NEC 110.21(B), 110.22, 408.4.
13. ACCESSIBLE EVCS PER CBC 11B-228.3 AND 11B-812; SLOPES NOT TO EXCEED 2.083% IN ANY DIRECTION.
14. PATCH AND RESTORE ALL SURFACES DISTURBED BY TRENCHING TO MATCH EXISTING.

SYMBOL LEGEND

- EV — NEW LEVEL 2 EVSE ON PEDESTAL
- PANELBOARD / SWITCHBOARD
- NEW CONDUIT / CONDUCTORS
- EXISTING TO REMAIN
- EVEMS COMMUNICATION (NETWORK / CELLULAR)
- PROTECTIVE BOLLARD
- 1 — KEYNOTE
- EV-1 — EQUIPMENT TAG

ABBREVIATIONS

A AMPERE
AFF ABOVE FINISHED FLOOR
AHJ AUTHORITY HAVING JURISDICTION
C CONDUIT
(E) EXISTING
EGC EQUIPMENT GROUNDING CONDUCTOR
EMT ELECTRICAL METALLIC TUBING
EVCS EV CHARGING SPACE
EVEMS EV ENERGY MANAGEMENT SYSTEM
EVSE EV SUPPLY EQUIPMENT
MLO MAIN LUGS ONLY
MSB MAIN SWITCHBOARD
(N) NEW
OCPD OVERCURRENT PROTECTIVE DEVICE
PH PHASE
PVC RIGID PVC CONDUIT SCH 40
TYP TYPICAL
VD VOLTAGE DROP

VICINITY MAP

VICINITY MAP - INSERTED FROM SITE DATA

CONTRACTOR DESIGN STATEMENT

THESE DRAWINGS WERE PREPARED UNDER THE DIRECTION OF THE LICENSED CONTRACTOR WHO WILL PERFORM THE INSTALLATION (BPC 6737.3) OR, WHERE REQUIRED BY THE AHJ, A CALIFORNIA REGISTERED ELECTRICAL ENGINEER. THE DRAFTING SERVICE PROVIDES DRAFTING ONLY AND DOES NOT PRACTICE ENGINEERING.

SAMPLE - NOT FOR CONSTRUCTION

PREPARED BY:
AMPPLANS (AMPPLANS.COM)
PERMIT DRAFTING & DESIGN SUPPORT

CONTRACTOR OF RECORD:
ABC ELECTRIC INC.
C-10 #000000

SIGNATURE: _____

(DESIGN BY LICENSED CONTRACTOR, BPC 6737.3)

ENGINEER OF RECORD (WHERE REQUIRED BY AHJ):

PE STAMP

PROJECT:
SAMPLE OFFICE PARK - EV CHARGING
1000 SAMPLE AVE, LOS ANGELES, CA 91300 (FICTITIOUS)
APN: 0000-000-000
OWNER: SAMPLE PROPERTIES LLC
AHJ: CITY OF LOS ANGELES (LADBS)

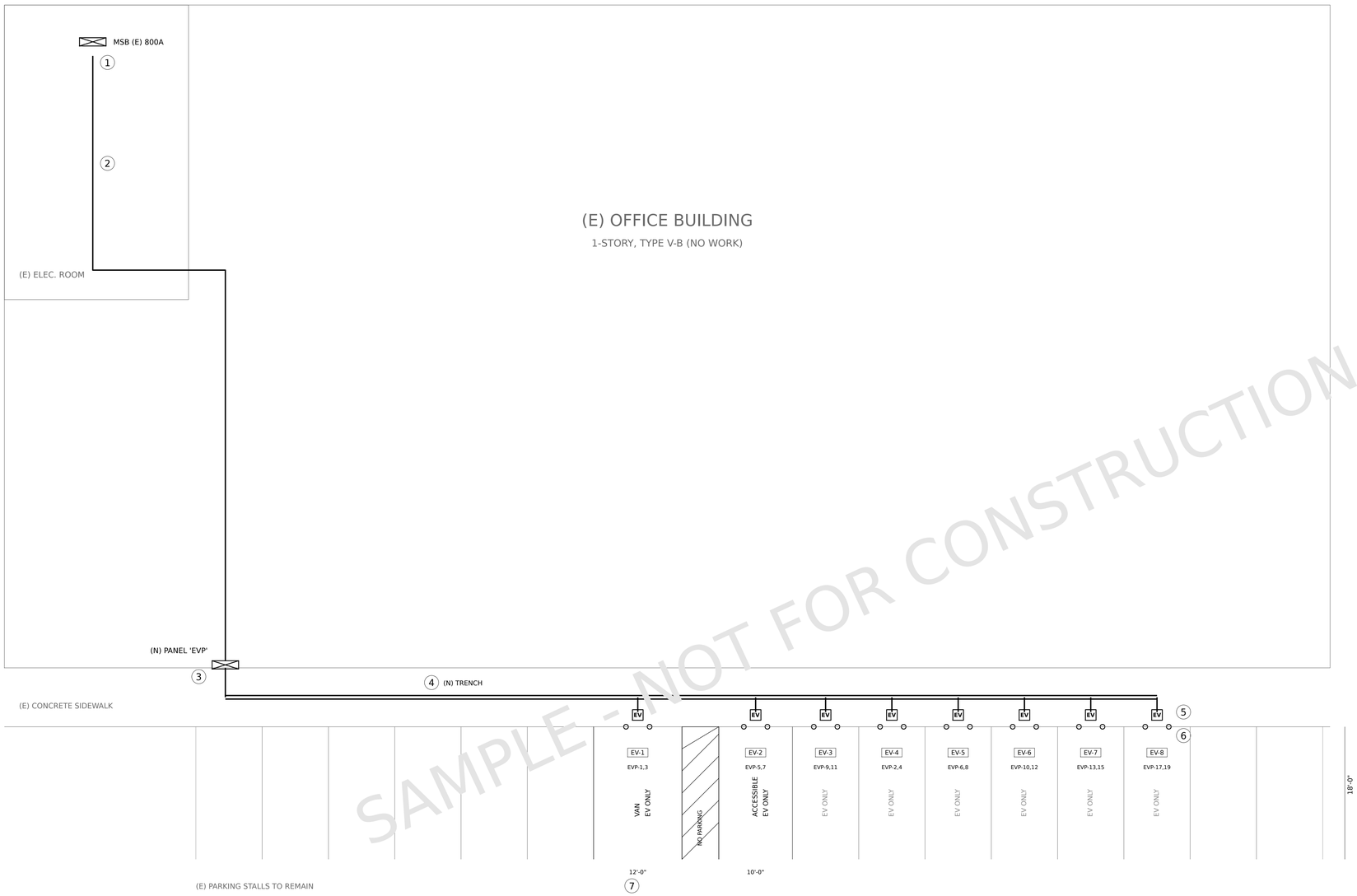
REVISIONS

REV	DESCRIPTION	DATE
0	PERMIT SUBMITTAL	2026-11-18

PROJECT NO: EV-2611-001
DATE: 2026-11-18
DRAWN: AUTO / QA: REVIEWER
SCALE: AS NOTED

COVER SHEET, NOTES & INDEX

E-0.0



SAMPLE - NOT FOR CONSTRUCTION

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

0' 4' 8' 12' 16'

N

KEYNOTES

1. (E) MSB (E) 800 A, 120/208V 3PH 4W. PROVIDE (N) 200 A/3P BREAKER IN SPARE SPACE; MATCH (E) MANUFACTURER, SERIES & AIC.
2. (N) FEEDER: 2" EMT W/ (3) #3/0 + (1) #6 N + (1) #6 EGC CU, ROUTED OVERHEAD IN (E) BUILDING. LENGTH ~110 FT.
3. (N) PANEL 'EVP' 225 A MLO, 120/208V 3PH 4W, 22 kAIC MIN, NEMA 3R, SURFACE MOUNTED ON EXTERIOR WALL.
4. (N) COMMON TRENCH IN SIDEWALK; INDIVIDUAL PVC CONDUIT PER EVSE CIRCUIT. SEE DETAIL 1/E-4.0 AND CONDUCTOR SCHEDULE ON E-3.0.
5. (N) LEVEL 2 EVSE ON CONCRETE PEDESTAL BASE, SEE DETAIL 2/E-4.0.
6. (N) 6" DIA. CONCRETE-FILLED STEEL BOLLARDS, 36" MIN. HEIGHT, (2) PER EVSE.
7. ACCESSIBLE EVCS (VAN + STANDARD) WITH SHARED 5'-0" ACCESS AISLE PER CBC 11B-812. PROVIDE SIGNAGE PER CBC 11B-812.8. RESTRIPE PER SITE PLAN.

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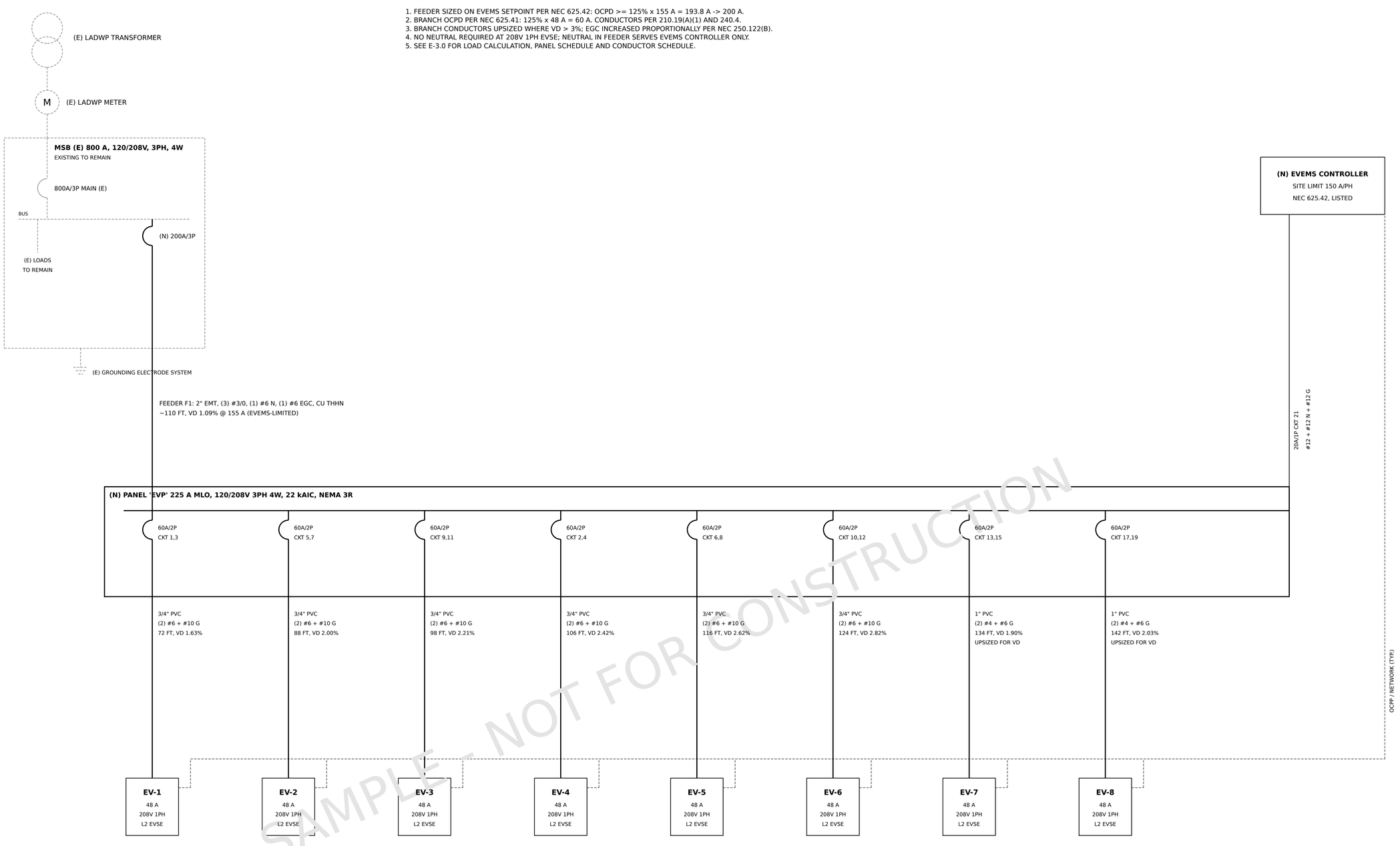
1 / E-1.0 ELECTRICAL SITE PLAN
SCALE: 1/8" = 1'-0"

ELECTRICAL SITE PLAN

E-1.0

SLD NOTES

1. FEEDER SIZED ON EVEMS SETPOINT PER NEC 625.42: OCPD >= 125% x 155 A = 193.8 A -> 200 A.
2. BRANCH OCPD PER NEC 625.41: 125% x 48 A = 60 A. CONDUCTORS PER 210.19(A)(1) AND 240.4.
3. BRANCH CONDUCTORS UPSIZED WHERE VD > 3%; EGC INCREASED PROPORTIONALLY PER NEC 250.122(B).
4. NO NEUTRAL REQUIRED AT 208V 1PH EVSE; NEUTRAL IN FEEDER SERVES EVEMS CONTROLLER ONLY.
5. SEE E-3.0 FOR LOAD CALCULATION, PANEL SCHEDULE AND CONDUCTOR SCHEDULE.



SAMPLE - NOT FOR CONSTRUCTION

1 / E-2.0 **SINGLE LINE DIAGRAM**

SCALE: NONE

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SINGLE LINE DIAGRAM

E-2.0

SERVICE LOAD CALCULATION - NEC 220.87 (EXISTING LOAD FROM UTILITY DATA)

LINE	DESCRIPTION	VALUE	REF / NOTE
1	MAX DEMAND, LAST 12 MONTHS (15-MIN INTERVAL DATA)	150.0 kW	
2	ASSUMED POWER FACTOR (CONSERVATIVE)	0.90	
3	MAX DEMAND kVA = (1) / (2)	166.7 kVA	
4	EXISTING DEMAND CURRENT = (3) / (1.732 x 208 V)	462.6 A	
5	EXISTING LOAD AT 125% (NEC 220.87)	578.3 A	
6	NEW EV LOAD (EVEMS SETPOINT 150 A + CONTROLLER)	155.0 A	625.42
7	NEW LOAD AT 125% (CONTINUOUS)	193.8 A	625.41
8	TOTAL = (5) + (7)	772.0 A	
9	SERVICE RATING	800 A	
10	RESULT	OK	SPARE 28.0 A
11	FOR REFERENCE: TOTAL WITHOUT EVEMS (ALL EVSE AT NAMEPLATE)	890.3 A	UPGRADE AVOIDED

FEEDER & BRANCH CIRCUIT CONDUCTOR SCHEDULE

TAG	FROM-CKT	LOAD A	OCPD	CONDUCTORS (CU)	EGC	RACEWAY	FT	VD %	FILL
F1	MSB -> EVP	155	200/3P	(3) #3/0, #6 N	#6	2" EMT	110	1.09	27%
EV-1	EVP-1,3	48	60/2P	(2) #6	#10	3/4" PVC	72	1.63	24%
EV-2	EVP-5,7	48	60/2P	(2) #6	#10	3/4" PVC	88	2.00	24%
EV-3	EVP-9,11	48	60/2P	(2) #6	#10	3/4" PVC	98	2.21	24%
EV-4	EVP-2,4	48	60/2P	(2) #6	#10	3/4" PVC	106	2.42	24%
EV-5	EVP-6,8	48	60/2P	(2) #6	#10	3/4" PVC	116	2.62	24%
EV-6	EVP-10,12	48	60/2P	(2) #6	#10	3/4" PVC	124	2.82	24%
EV-7	EVP-13,15	48	60/2P	(2) #4 *	#6	1" PVC	134	1.90	26%
EV-8	EVP-17,19	48	60/2P	(2) #4 *	#6	1" PVC	142	2.03	26%
EMS	EVP-21	5	20/1P	(2) #12	#12	1/2" EMT	10	0.16	13%

* CONDUCTOR UPSIZED TO LIMIT BRANCH VOLTAGE DROP TO 3% (NEC 210.19(A) INFO NOTE); EGC INCREASED PER 250.122(B).
LENGTHS MEASURED ALONG ROUTE ON E-1.0 PLUS 10 FT FOR RISERS AND TERMINATIONS. VD: K = 12.9 OHM-CMIL/FT (CU).
AMPACITY: NEC TABLE 310.16, 75°C COLUMN; AMBIENT 30°C; NO MORE THAN 3 CCC PER RACEWAY.
RACEWAY FILL PER NEC CHAPTER 9, TABLE 1 (40% FOR 3+ CONDUCTORS), TABLE 4 AND TABLE 5 (THHN).

PANEL SCHEDULE - 'EVP' 225 A MLO, 120/208V 3PH 4W, 22 kAIC, SURFACE, NEMA 3R, EXTERIOR WALL

DESCRIPTION	BKR	VA	CKT	PH	CKT	VA	BKR	DESCRIPTION
EV-1 L2 EVSE 48A, 208	60/2P	4,992	1	A	2	4,992	60/2P	EV-4 L2 EVSE 48A, 208
"		4,992	3	B	4	4,992		"
EV-2 L2 EVSE 48A, 208	60/2P	4,992	5	C	6	4,992	60/2P	EV-5 L2 EVSE 48A, 208
"		4,992	7	A	8	4,992		"
EV-3 L2 EVSE 48A, 208	60/2P	4,992	9	B	10	4,992	60/2P	EV-6 L2 EVSE 48A, 208
"		4,992	11	C	12	4,992		"
EV-7 L2 EVSE 48A, 208	60/2P	4,992	13	A	14			SPACE
"		4,992	15	B	16			SPACE
EV-8 L2 EVSE 48A, 208	60/2P	4,992	17	C	18			SPACE
"		4,992	19	A	20			SPACE
EMS EVEMS CONTROLLER	20/1P	600	21	B	22			SPACE
SPACE			23	C	24			SPACE
SPACE			25	A	26			SPACE
SPACE			27	B	28			SPACE
SPACE			29	C	30			SPACE

PHASE	CONNECTED VA	CONNECTED A	EVEMS-LIMITED A	NOTE
A	29,952	249.6	150	EVEMS CAPS PER-PHASE CURRENT
B	25,560	213.0	150	EVEMS CAPS PER-PHASE CURRENT
C	24,960	208.0	150	EVEMS CAPS PER-PHASE CURRENT

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LOAD CALC & SCHEDULES

E-3.0

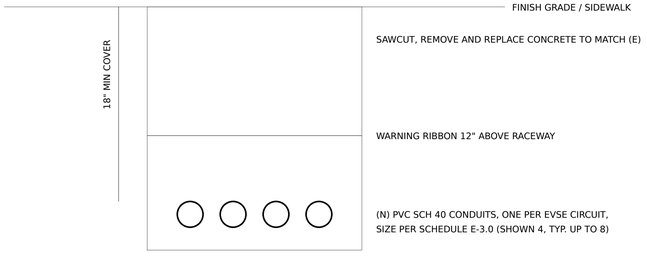
REQUIRED LABELS & PLACARDS

NO.	LOCATION	TEXT / TYPE	NEC
L1	(E) MSB (E)	"FEEDER TO EV PANEL 'EVP'" AT (N) 200A BREAKER	408.4
L2	PANEL 'EVP'	"PANEL EVP - FED FROM MSB (E)"	408.4(B)
L3	PANEL 'EVP'	"EV LOAD MANAGED BY EVEMS - MAX 150 A PER PHASE"	625.42
L4	EVEMS CONTROLLER	"ADJUSTABLE SETTINGS - RESTRICTED ACCESS / PASSWORD PROTECTED"	625.42
L5	ALL (N) EQUIPMENT	ARC FLASH WARNING LABEL	110.16
L6	EACH EVSE	CIRCUIT IDENTIFICATION (PANEL & CKT NO.)	110.22
L7	ACCESSIBLE EVCS	SIGNAGE PER CBC 11B-812.8	CBC

LABELS: ENGRAVED PHENOLIC OR UV-RESISTANT, WHITE ON RED FOR WARNINGS, PERMANENTLY AFFIXED, LETTERING 3/8" MIN (NEC 110.21(B)).

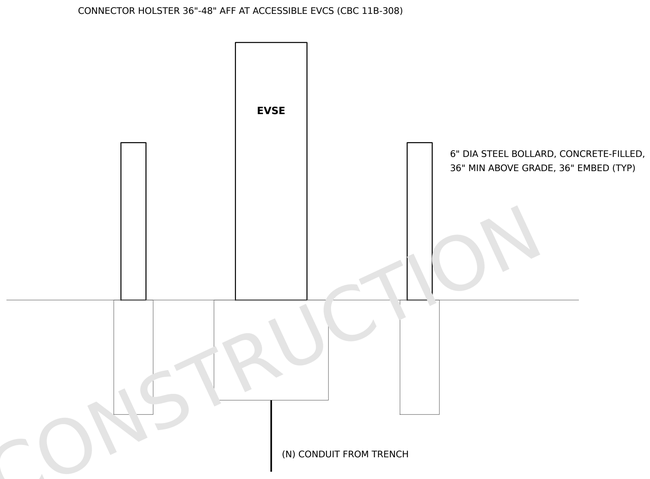
EVEMS (LOAD MANAGEMENT) REQUIREMENTS

1. EVEMS SHALL LIMIT TOTAL EV LOAD ON FEEDER F1 TO 150 A PER PHASE AT ALL TIMES.
2. ON LOSS OF COMMUNICATION, EVSE SHALL FAIL-SAFE TO A REDUCED CURRENT SUCH THAT THE SUM OF ALL EVSE DOES NOT EXCEED THE SETPOINT.
3. SETPOINT ADJUSTMENT RESTRICTED TO QUALIFIED PERSONS (NEC 625.42).
4. COMMISSIONING: CONTRACTOR TO DEMONSTRATE SETPOINT TO INSPECTOR ON REQUEST.



1 E-4.0 **TRENCH SECTION**

SCALE: NTS



2 E-4.0 **EVSE PEDESTAL & BOLLARDS (ELEVATION)**

SCALE: NTS

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DETAILS & EQUIPMENT LABELS

E-4.0