

TESLA SUPERCHARGER ALHAMBRA, CA - 2400 W COMMONWEALTH AVE

12 SUPERCHARGERS

APN: 5342-005-030

TRT: 26322

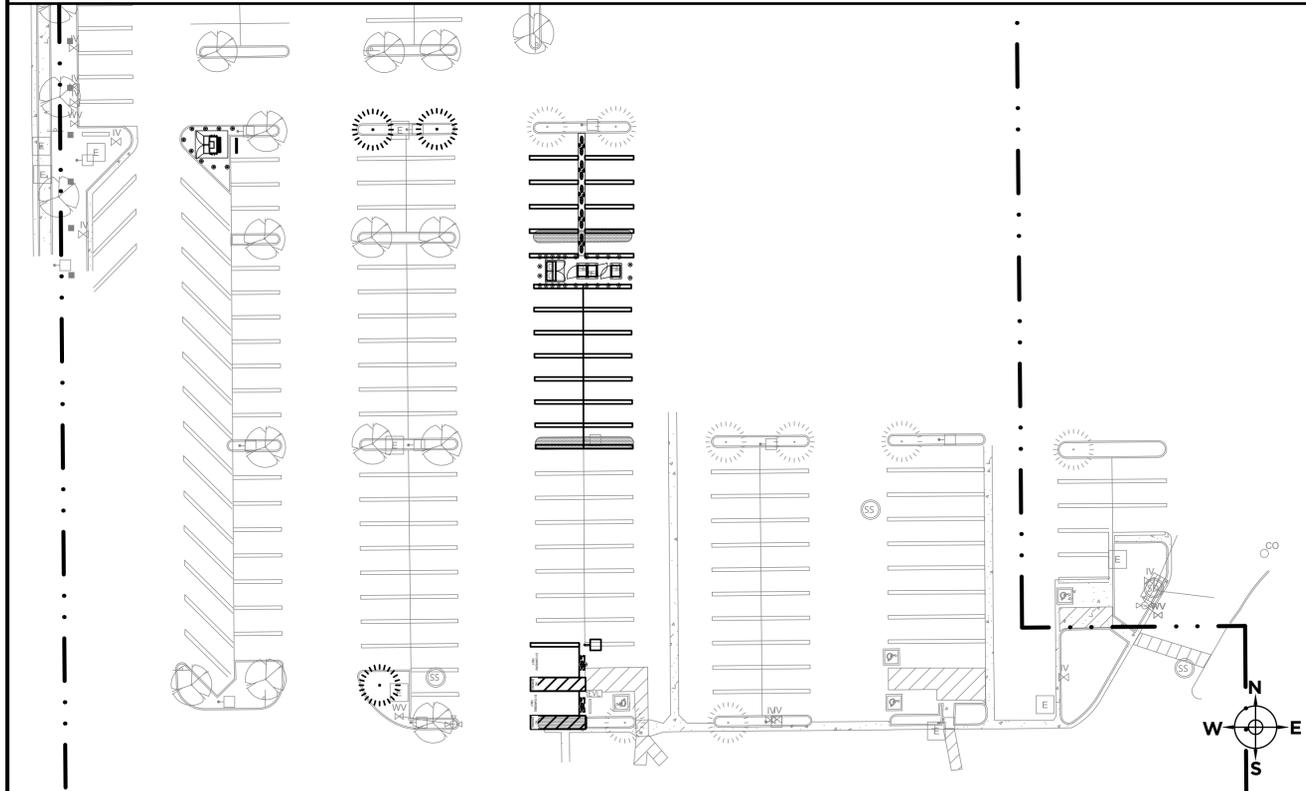
TESLA

3500 DEER CREEK RD.
PALO ALTO, CA 94304
(650) 681-5000

ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"



SITE LAYOUT



AERIAL MAP



TESLA SUPERCHARGER_ALHAMBRA, CA
12 SUPERCHARGERS
2400 W COMMONWEALTH AVE,
ALHAMBRA, CA 91803

NO.	REVISION	DATE	DESCRIPTION
A	1	01/25/23	ADD COMMENTS RESPONSE SET
B	1	03/01/23	AVOIDING TREE REMOVAL NOTES

COVER PAGE

G-001

JB-918383-00

REV: B IFF

ABBREVIATIONS

AC	ALTERNATING CURRENT	LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS GROUND
ADA	AMERICANS WITH DISABILITIES ACT	LV	LOW-VOLTAGE
BLDG	BUILDING	MAX	MAXIMUM
CLR	CLEAR	MIN	MINIMUM
COMM	COMMUNICATION	MV	MEDIUM-VOLTAGE
CONC	CONCRETE	(N)	NEW
DC	DIRECT CURRENT	NEC	NATIONAL ELECTRIC CODE
DIA	DIAMETER	NIC	NOT IN CONTRACT
DIST	DISTANCE	NRTL	NATIONALLY-RECOGNIZED TESTING LABORATORY
(E)	EXISTING	NTS	NOT TO SCALE
EA	EACH	OC	ON CENTER
EGC	EQUIPMENT GROUNDING CONDUCTOR	PCC	POINT OF COMMON COUPLING
EMT	ELECTRICAL METALLIC TUBING	PL	PROPERTY LINES
EQ	EQUAL	PLC	POWER LINE COMMUNICATION
ERMS	ENERGY REDUCTION MAINTENANCE SETTINGS	PP	POWERPACK
ESS	ENERGY STORAGE SYSTEM	PSU	PRE-ASSEMBLED SUPERCHARGER UNIT
EV	ELECTRIC VEHICLE	PV	PHOTOVOLTAIC
GAB	GRADED AGGREGATE BASE	PVC	POLYVINYL CHLORIDE
GALV	GALVANIZED	RSD	RAPID SHUTDOWN
GEC	GROUNDING ELECTRODE CONDUCTOR	SCCR	SHORT CIRCUIT CURRENT RATING
GFP	GROUND FAULT PROTECTOR	SCH	SCHEDULE
GND	GROUND	SQ. IN.	SQUARE INCHES
HVAC	HEATING, VENTILATION, & AIR CONDITIONING	SS	STAINLESS STEEL
I	CURRENT	SSD	SEE STRUCTURAL DRAWINGS
IMP	CURRENT AT MAX POWER	STC	STANDARD TESTING CONDITIONS
INV	INVERTER	TYP	TYPICAL
ISC	SHORT CIRCUIT CURRENT	UON	UNLESS OTHERWISE NOTED
KVA	KILOVOLT AMPERE	VIF	VERIFY IN FIELD
KW	KILOWATT	W	WATT
KWH	KILOWATT-HOUR		

PROJECT TEAM

STRUCTURAL ENGINEER OF RECORD: KIRILL VORONOV TESLA, INC. 721 FERNCREST RD., TRINIDAD, CA 95570 (818) 943-7621 KVORONOV@TESLA.COM	ELECTRICAL ENGINEER OF RECORD: JARED MARCHAND TESLA, INC. 3500 DEER CREEK RD, PALO ALTO, CA 94304 (608) 951-5489 JMARCHAND@TESLA.COM
PROJECT DESIGNER: REEMA SURESH TESLA, INC. 3500 DEER CREEK RD. PALO ALTO, CA 94304 (650) 681-5928 RSURESH@TESLA.COM	ARCHITECT OF RECORD: CHRIS MARESCA TESLA, INC. 3500 DEER CREEK RD., PALO ALTO, CA 94304 P:(619) 764-8142 CMARESCA@TESLA.COM

DESIGN CRITERIA

- WIND DESIGN
 - DESIGN WIND SPEED = 95 MPH (ULTIMATE)
 - RISK CATEGORY = II
 - WIND EXPOSURE = C
- SEISMIC DESIGN
 - RISK CATEGORY = II
 - SEISMIC IMPORTANCE FACTOR = 1.0
 - SITE CLASS = D
 - S_s = 2.069 / S₁ = 0.723
 - S_{ds} = 1.656 / S_{d1} = 0.819
 - SEISMIC DESIGN CATEGORY = D
 - BASIC SEISMIC-FORCE-RESISTING SYSTEM = NON-STRUCTURAL COMPONENT
 - R = 2.5 / a_p = 1.0
- GROUND SNOW LOAD = 0 PSF

APPLICABLE CODES

- 2019 CALIFORNIA BUILDING CODE
- 2019 CALIFORNIA ELECTRICAL CODE
- 2019 CALIFORNIA FIRE CODE
- 2019 CALIFORNIA ENERGY CODE

REFERENCED DOCUMENTS

- SUPERCHARGER INSTALLATION MANUAL
- SUPERCHARGER POST INSTALLATION MANUAL
- TOPOGRAPHIC SURVEY
- UTILITY DESIGN

PROJECT SCOPE

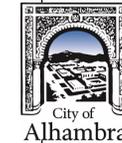
INSTALLATION OF SUPERCHARGERS AND ASSOCIATED AC AND DC EQUIPMENT.
INSTALLATION OF CONCRETE EQUIPMENT PADS AND WALKWAYS.
INSTALLATION OF NEW PARKING STRIPING, SIGNAGE AND ADA ACCESS FEATURES.
ASPHALT OVERLAY FOR PROPOSED EV ADA STALLS.

SYSTEM SUMMARY

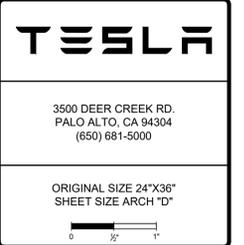
SUPERCHARGER SYSTEM SUMMARY	
EQUIPMENT	QTY
V3 SUPERCHARGER CABINETS	3
V3 OR ALTERNATIVE SUPERCHARGER POSTS	12
UTILITY TRANSFORMER	1
SWITCHBOARD	1

SHEET INDEX

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E-502	ELECTRICAL DETAILS
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S-301	ENLARGED SITE PLAN
S-501	STRUCTURAL DETAILS
S-502	STRUCTURAL DETAILS



Community Development
Planning Division Approval
J. V. P. [Signature]
111 Hill Street
Alhambra CA 91801
(626) 470-3000 • Planning@cityofalhambra.org



TESLA SUPERCHARGER_ALHAMBRA, CA
12 SUPERCHARGERS
2400 W COMMONWEALTH AVE,
ALHAMBRA, CA 91803

NO.	REVISION	DATE
A	AHJ COMMENTS RESPONSE SET	01/25/23
B	AVOIDING TREE REMOVAL NOTES	03/01/23

NOTES
G-002
JB-918383-00
 REV: B | IFF

GENERAL NOTES

ALL WORK SHALL COMPLY WITH ALL STATE AND LOCAL CODES AND ANY OTHER REGULATING AUTHORITIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK.

PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND NOTIFY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FROM TESLA OF ANY DISCREPANCIES. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED AT THE SUBCONTRACTORS SOLE EXPENSE.

SUBCONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO TESLA FOR APPROVAL BEFORE MAKING ANY CHANGES. DEVIATION FROM PLANS BEFORE WRITTEN APPROVAL FROM TESLA PLACES LIABILITY ON THE SUBCONTRACTOR.

ALL EQUIPMENT SHALL BE MOUNTED AS SHOWN, WHERE DETAILS ARE NOT PROVIDED, CONTRACTOR SHALL USE STANDARD CONSTRUCTION PRACTICES.

ALL SURFACES SHALL BE PATCHED AND PAINTED AROUND NEW DEVICES AND EQUIPMENT TO MATCH EXISTING FINISHES.

ANY METAL SHAVINGS FROM SITE WORK SHALL BE CLEANED FROM ALL SURFACES WHERE OXIDIZED OR CONDUCTIVE METAL SHAVINGS MY CAUSE RUST, ELECTRICAL SHORT CIRCUITS, OR OTHER DAMAGE.

APPROVALS FROM BUILDING INSPECTORS SHALL NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE DRAWINGS.

NEW PAVEMENT INSTALLED AS PART OF THIS PROJECT SHALL MATCH EXISTING PAVEMENT SECTION. ASPHALT AND GAB DEPTHS SHALL BE MAINTAINED.

ELECTRICAL NOTES

GENERAL NOTES

- ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AS AMENDED BY APPLICABLE STATE AND LOCAL CODES.
- ALL WIRING SHALL BE MANAGED IN A PROFESSIONAL, WORKMAN-LIKE MANNER AND MUST BE SUPPORTED, SECURED, AND PROTECTED TO PREVENT DAMAGE.
- AC CIRCUIT CONDUCTORS SHALL BE IDENTIFIED BY PHASE AND SYSTEM PER ART 210.5 OR 215.12. UNLESS OTHERWISE REQUIRED BY ART 210.5(1) OR AHJ, COLOR-CODING OF POWER CONDUCTORS SHALL BE AS FOLLOWS:

CONDUCTOR	277/480V	120/208V
PHASE A	BROWN	BLACK
PHASE B	ORANGE	RED
PHASE C	YELLOW	BLUE
NEUTRAL	GRAY	WHITE
- DC CIRCUIT CONDUCTORS SHALL BE IDENTIFIED PER ART 210.5 OR 215.12:

CONDUCTOR	STD COLOR	ALT COLOR
DC+	RED	RED-STRIPED
DC-	BLACK	BLACK-STRIPED
- TERMINATIONS OF AC, DC, AND COMMUNICATIONS CONDUCTORS SHALL BE PROFESSIONALLY AND LEGIBLY LABELED WITH CIRCUIT SCHEDULE IDENTIFIER, CONDUCTOR SIZE (AS APPLICABLE) AND TERMINATION TORQUE.
- ALL EQUIPMENT SHALL BE LISTED BY A NRTL IN COMPLIANCE WITH ART 110.3. WHERE EXISTING NRTL LISTING CANNOT BE MAINTAINED, ENGINEERING APPROVAL SHALL BE OBTAINED PRIOR TO EQUIPMENT MODIFICATION, AND THE EQUIPMENT SHALL BE RELISTED BY A SUITABLE NRTL.
- UNDERGROUND CONDUCTORS & CABLES TO BE INSTALLED IN CONDUIT UON.
- ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY INTO BOXES AS REQUIRED BY NRTL LISTING.
- REFER TO MANUFACTURER'S CURRENT PLANNING AND INSTALLATION MANUAL FOR TORQUE SPECS FOR ALL BOLTS AND TERMINAL CONNECTIONS.
- ALL CONDUCTOR TERMINATIONS ON BUSSING OR TRANSFORMER SPADES SHALL BE MADE WITH HIGH-PRESS CRIMP LUGS UON.
- ALL TERMINATIONS OF ALUMINUM CONDUCTORS SHALL BE PROPERLY INSTALLED WITH BEST PRACTICES INCLUDING BUT NOT LIMITED TO:
 - USE OF TERMINATION EQUIPMENT RATED FOR ALUMINUM AT THE CONDUCTOR TEMPERATURE, CURRENT, AND VOLTAGE
 - ALLOWANCE FOR MOVEMENT DUE TO THERMAL EXPANSION/CONTRACTION
 - PROPER COATING OF EXPOSED ALUMINUM WITH ANTI-OXIDIZATION COMPOUND
 - USE OF CALIBRATED DEVICES TO TORQUE AND MARK TERMINALS TO REQUIRED SETTINGS
- DUCT SEAL COMPOUND SHALL BE APPLIED WHEREVER CONDUITS TRANSITION INDOOR/OUTDOOR OR UNDERGROUND/ABOVEGROUND. REFER TO EQUIPMENT NOTES FOR ADDITIONAL DUCT SEAL REQUIREMENTS.
- BELL ENDS SHALL BE INSTALLED WHEREVER CONDUIT ENTERS EQUIPMENT FROM UNDERGROUND AND WHEREVER POTENTIAL FOR DAMAGE TO CONDUCTORS IS PRESENT AT ANY POINT. BELL ENDS SHALL NOT PREVENT THE USE OF GROUNDING FITTINGS OR COUPLERS WHEN REQUIRED.
- ALL STUB-UPS WITHIN FLOOR-MOUNTED EQUIPMENT SHALL BE 3-5" ABOVE FINISHED GRADE.
- ALL CONDUITS EXPOSED TO VEHICULAR OR EQUIVALENT PHYSICAL DAMAGE SHALL BE RIGID GALVANIZED STEEL.
- GROUND LUGS SHALL BE RATED FOR THEIR ENVIRONMENT AND CONDITION OF USE.

SUPERCHARGER NOTES

- NEUTRAL MUST BE INCLUDED FOR PROPER OPERATION OF TESLA SUPERCHARGERS.
- ALL CONDUIT FURNISHED AND INSTALLED BY CONTRACTOR. ALL WIRING FURNISHED BY TESLA AND INSTALLED BY CONTRACTOR.
- ALL BUSHINGS AND WIRING INTERNAL OF PROPOSED SERVICE EQUIPMENT PROVIDED BY MANUFACTURER. ANY MODIFICATIONS SHALL REQUIRE ENGINEERING APPROVAL PRIOR TO ANY CHANGES BEING MADE.
- ALL ALUMINUM(AI) CONDUCTORS TO RECEIVE ANTI-OXIDATION COATING DURING INSTALLATION. ALL OTHER CONDUCTORS ARE COPPER UNLESS OTHERWISE NOTED.
- THE FOLLOWING CHARGING CABINETS AND THE CHARGING POSTS USED ON THIS PROJECT COMPLY WITH THE FOLLOWING STANDARDS:
 - IEC 61851-23: 2014 / EN 61851-23: 2014
 - UL 2202: 2009(R2012)
 - CAN CSA C22.2 NO. 107.1-01(R2011)
- THE AFOREMENTIONED STANDARDS IDENTIFY THE REQUIREMENTS MET BY THE EQUIPMENT, INCLUDING BUT NOT LIMITED TO:
 - PROTECTION AGAINST ELECTRIC SHOCK
 - OVERLOAD AND SHORT CIRCUIT PROTECTION
 - FAULT PROTECTION
 - DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS LIVE PARTS
 - THE INTERNAL COMPONENTS OF THE SYSTEM ARE PROPRIETARY. ANY QUESTIONS CONCERNING ACTUAL INTERNAL PROTECTIVE DEVICES MUST BE COORDINATED DIRECTLY WITH TESLA.
- TESLA SUPERCHARGER SIGNAL WIRING RATED 1000V AND USED FOR POWER LIMITED CLASS 1 CIRCUITS SHALL BE PERMITTED TO RUN IN CONDUITS, CABLE TRAYS, WIRE WAYS, OR RACEWAYS ALONG WITH ASSOCIATED DC CONDUCTORS AS ALLOWED PER NEC 725.48(B)(1) AND 620.36.
- SUPERCHARGER CABINET AC CONDUCTORS SIZED UNDER ENGINEERING SUPERVISION USING THERMAL MODELING SOFTWARE. SPECIFICATIONS ABOUT THE TRENCHING REQUIREMENTS ARE SHOWN IN E-501
- FOR DC RUNS IN EXCESS OF 330 FEET, CONTACT TESLA.
- UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC OR UL LISTED HDPE. THE ABOVEGROUND PORTION OF AN UNDERGROUND/ABOVEGROUND TRANSITION SHALL BE SCHEDULE 80 PVC OR UL LISTED HDPE.
- ABOVEGROUND CONDUITS EXPOSED TO VEHICULAR OR EQUIVALENT PHYSICAL DAMAGE SHALL BE RMC. ABOVEGROUND CONDUITS NOT EXPOSED TO VEHICULAR OR EQUIVALENT DAMAGE SHALL BE PERMITTED TO BE EMT.
- IF APPROVED BY TESLA CONSTRUCTION MANAGER, ALTERNATIVE CONDUIT MATERIALS SUCH AS FLEXIBLE OR FIBERGLASS ARE PERMISSIBLE IF INSTALLED PER MANUFACTURER INSTALLATION GUIDELINES AND LOCAL CODES.
- WIRE SPLICES ARE NOT PERMITTED TO EXTEND WIRE RUN LENGTH. CONTRACTOR IS RESPONSIBLE FOR RERUNNING FULL LENGTH OF WIRE IF RUN LENGTH IS MISCALCULATED.
- SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED CONCRETE ANCHORS.
- PLANT GUARANTEE: CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF PROJECT ACCEPTANCE BY THE OWNER. CONTRACTOR IS RESPONSIBLE FOR PLANT MAINTENANCE FOR THE FIRST GROWING SEASON.
- IF EXISTING GRASS IS DAMAGED/REMOVED DURING CONSTRUCTION, CONTRACTOR SHALL APPLY SEED PER HYDROSEED METHOD. RATING OF SEED SHALL BE PER DISTRIBUTOR BASED ON SPECIES TYPE.
- CONTRACTOR SHALL MATCH EXISTING LANDSCAPE; USE GRASS, RIVER ROCK, MULCH ETC. TO MATCH EXISTING LANDSCAPE AROUND EQUIPMENT, UNLESS OTHERWISE NOTED.
- CONTRACTOR TO INSTALL WEED BARRIER IN FRONT OF SUPERCHARGER CABINETS AND SWITCHBOARD. BARRIER TO EXTEND FULL WIDTH AND DEPTH OF NEC REQUIRED WORKING CLEARANCES.

SCOPE OF WORK

UTILITY CATEGORY	SOUTHERN CALIFORNIA EDISON		
	ITEMS	TESLA	UTILITY
PRIMARY	PRIMARY TRENCHING	X	
	INSTALL PRIMARY CONDUIT	X	
	INSTALL PULL ROPE	X	
	INSTALL PRIMARY FEEDERS		X
	PROVIDE PRIMARY FEEDERS		X
	PROVIDE ROAD CUTS / ROAD BORES	X	
TRANSFORMER	PAVEMENT REPLACEMENT	X	
	INSTALL TRANSFORMER PAD	X	
	PROVIDE TRANSFORMER		X
	INSTALL TRANSFORMER		X
	INSTALL CONNECTIONS - PRIMARY		X
	INSTALL CONNECTIONS - SECD		X
SWITCHBOARD	PROVIDE METER		X
	INSTALL METER		X
SECONDARY	LAND SECONDARY FEEDERS	X	
	SECONDARY TRENCHING	X	
	INSTALL SECONDARY CONDUIT	X	
	INSTALL PULL ROPE	X	
	INSTALL SECONDARY FEEDERS		X
	PROVIDE SECONDARY FEEDERS		X
	PROVIDE ROAD CUTS / ROAD BORES	X	
	PAVEMENT REPLACEMENT	X	

SITE LEGEND

	SANITARY MANHOLE
	SANITARY CLEANOUT
	GREASE TRAP
	STORM MANHOLE
	STORM INLET (RECTANGLE)
	FIRE HYDRANT
	WATER VALVE
	IRRIGATION CONTROL VALVE
	WATER METER
	LIGHT POLE
	ELECTRIC MANHOLE
	ELECTRIC BOX
	ELECTRIC CABINET
	ELECTRIC VAULT
	GAS METER
	HANDICAP PARKING
	TRAFFIC SIGNAL CONTROL BOX
	TRAFFIC DELINEATOR
	TRAFFIC SIGNAL MAST
	CONIFEROUS TREE
	DECIDUOUS TREE
	PALM TREE
	SIGN
	CONCRETE AREA
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND STORM DRAIN LINE
	UNDERGROUND WATER LINE
	UNDERGROUND GAS LINE
	UNDERGROUND TELEPHONE LINE
	UNDERGROUND SANITARY SEWER LINE

SITE LEGEND

- (N) CONDUIT ROUTE, SHOWN FOR DIAGRAMMATIC PURPOSES ONLY.
- (N) UTILITY BOLLARD
- (N) FIXED BOLLARD
- (N) BOLLARD-MOUNTED SIGN

PARKING STALL SCHEDULE

EXISTING STANDARD STALLS UTILIZED AS A RESULT OF THIS PROJECT	27
PROPOSED TESLA STALLS	12
PROPOSED STANDARD STALLS	14
AB1100 EV VAN CREDIT	2
NET STALL COUNT	+1



3500 DEER CREEK RD.
PALO ALTO, CA 94304
(650) 681-5000

ORIGINAL SIZE 24"x36"
SHEET SIZE ARCH "D"



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12 SUPERCHARGERS**

**2400 W COMMONWEALTH AVE,
ALHAMBRA, CA 91803**

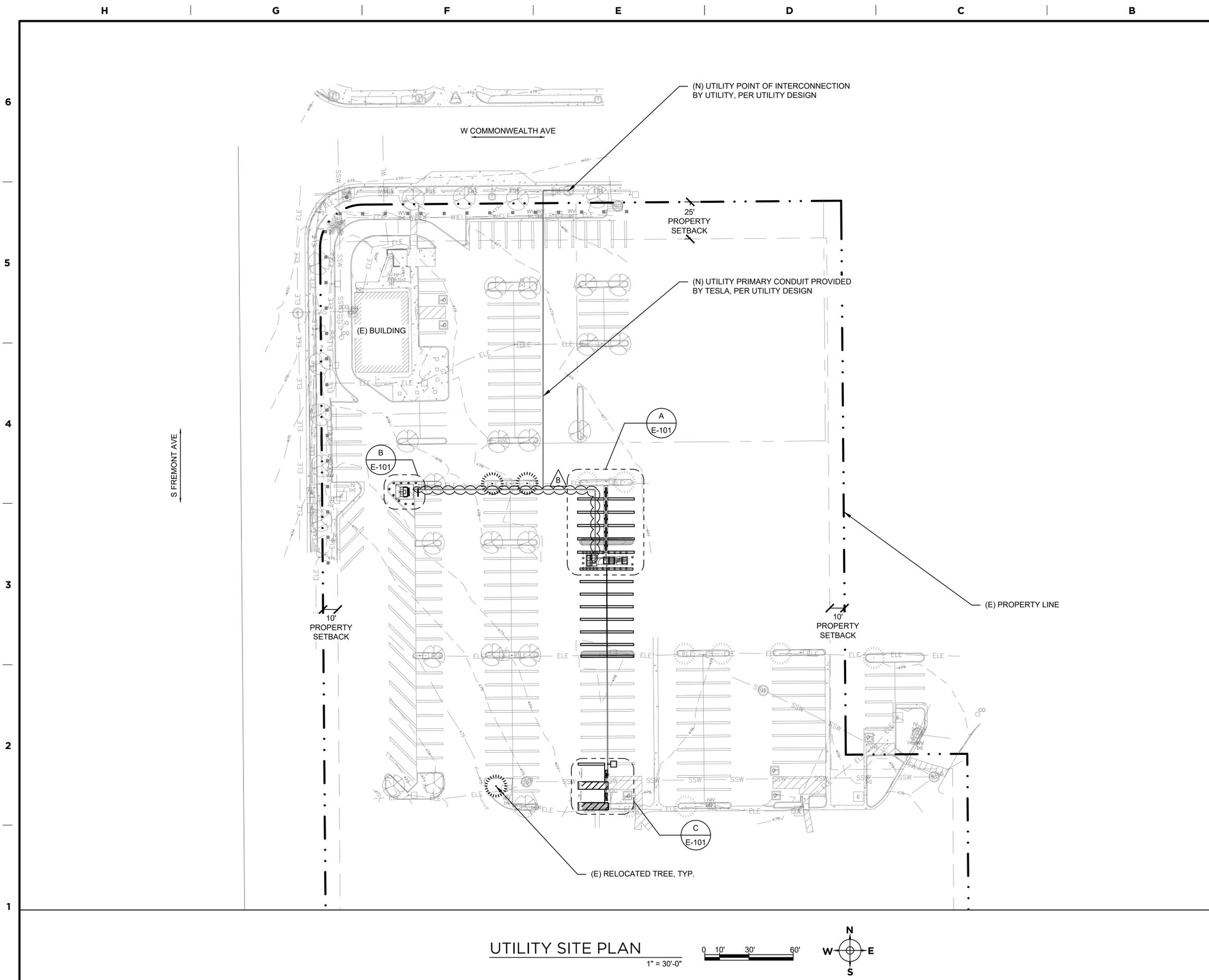
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B	AVOIDING TREE REMOVAL NOTES	03/01/23

UTILITY SITE PLAN

E-100

JB-918383-00

REV: B IFF



UTILITY SITE PLAN

1" = 30'-0"



LOAD SCHEDULE

SWITCHBOARD "SB-1" LOAD SCHEDULE							
CKT NO	TRIP AMPS	DESCRIPTION	VOLT-AMPS			TRIP AMPS	CKT NO
			A	B	C		
1	600	SUPERCHARGER #1	129,000	-	-	600	2
3	"	"	-	129,000	-	"	4
5	"	"	-	-	129,000	"	6
7	15	MONITORING	50	-	-	600	8
9	"	"	-	50	-	"	10
11	"	"	-	-	129,000	"	12
TOTALS			PHASE	A	B	C	
			APPARENT POWER	387 kVA	387 kVA	387 kVA	
			CURRENT	1,396 A	1,396 A	1,396 A	

EQUIPMENT NOTES

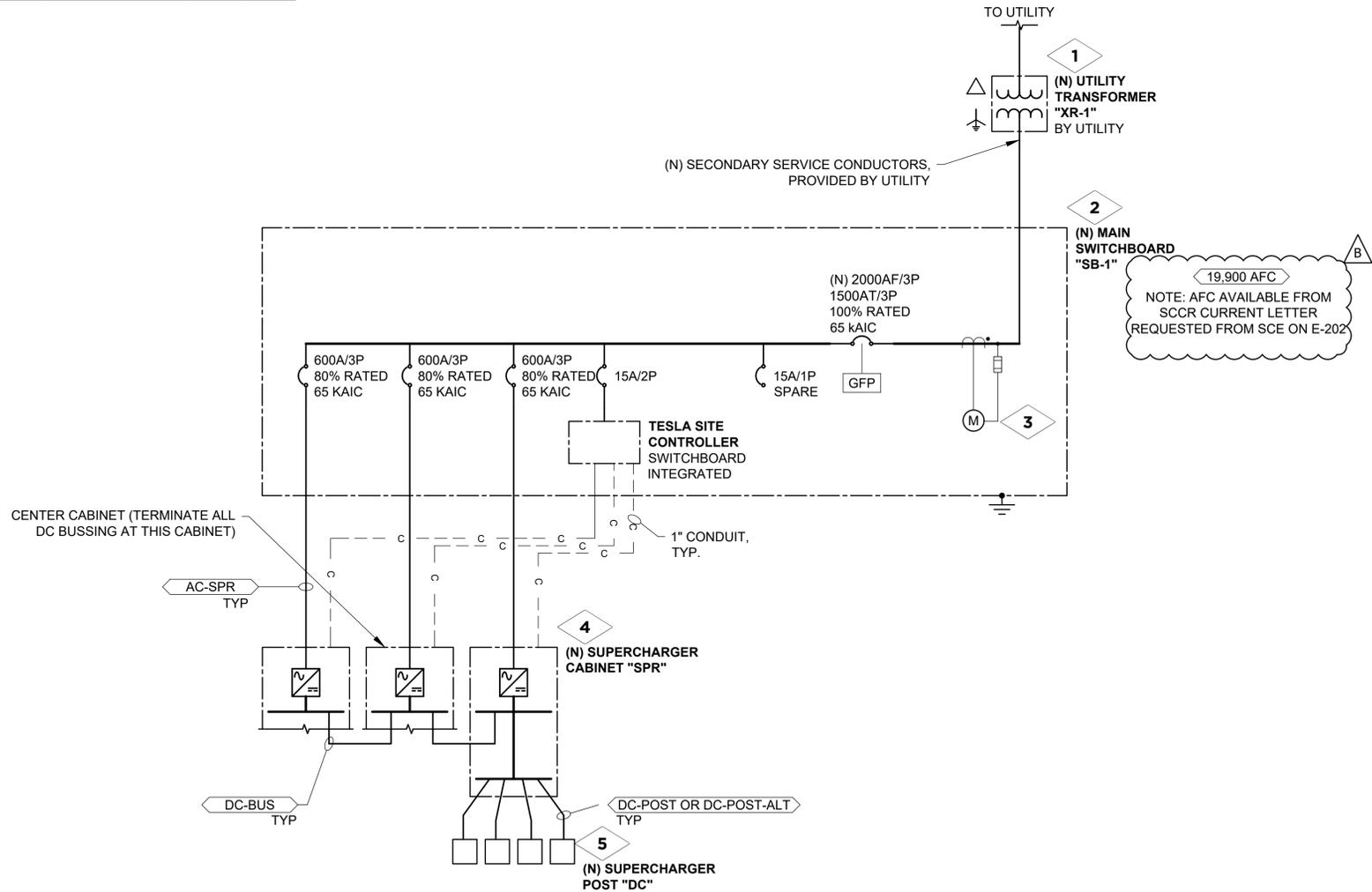
- (N) UTILITY TRANSFORMER "XR-1"
• SIZE & PRIMARY VOLTAGE PER UTILITY
• SECONDARY 480Y/277V
- (N) MAIN SWITCHBOARD "SB-1"
• 480/277 VAC, 2000A
• 2000A MAIN BREAKER, 1500A TRIP UNIT LOCKED, 100%-RATED, L/SIG AND ERMS
• 65 KAIC
• NEMA 3R
- (N) UTILITY METER
• METER # TBD
- (N) SUPERCHARGER CABINET "SPR"
• (3) SUPERCHARGER CABINETS
• 480VAC, 3PH, 4W
• 465A MAX AC INPUT
• DC OUTPUT TO 4 CHARGE POSTS MAX EACH
• 85 kA SCCR
- (N) SUPERCHARGER POST "DC"
• 250KW
• (12) SUPERCHARGER POSTS
• 0 VDC - 500 VDC



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LEGEND

- BUSSING
- CONDUCTORS
- SHIELDED CAT6 CABLE
- CIRCUIT BREAKER
- SWITCH
- FUSE
- CURRENT TRANSFORMER
- POWER TRANSFORMER
- DELTA TRANSFORMER WINDING
- WYE TRANSFORMER WINDING
- GROUNDING WYE TRANSFORMER WINDING
- EQPT. ENCLOSURES
- METER
- AC-DC OR DC-AC CONVERTER
- LIGHT WITH MOTION AND PHOTO SENSOR



SYSTEM PLACARDS

TESLA SUPERCHARGER
2400 W COMMONWEALTH
AVE
1-877-798-3752

ATTACH ON FRONT OF SWITCHBOARD

TESLA EV SYSTEM
DISCONNECT

ATTACH ON SWITCHBOARD MAIN
DISCONNECT

PLACARD NOTES:
PLACARDS TO BE MADE OF RED PHENOLIC PLASTIC W/ 1" WHITE LETTERING. ATTACH PLACARDS WITH RIVETS OR SELF-TAPPING SCREWS
ADDITIONAL PLACARDS REQUIRED FOR ARC FLASH LABELS

AC CIRCUIT SCHEDULE

CIRCUIT #	CONDUCTOR METAL UON	# OF CONDUITS	# PHASE CONDUCTORS PER CONDUIT	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	EGC	SSBJ	MAX CIRCUIT LENGTH	WIRE TYPE	CONDUIT TYPES	MIN CONDUIT SIZE (IN)
AC-SPR	AL	2	3	500 KCMIL	500 KCMIL	AWG 2/0 (AL) OR AWG #1 (CU)	-	600'	XHHW-2	PVC, RMC, EMT	4

DC CIRCUIT SCHEDULE

CIRCUIT #	CONDUCTOR METAL UON	# OF CONDUITS	# POWER CONDUCTORS PER CONDUIT	POWER CONDUCTOR SIZE	EGC	LVDC	SIGNAL WIRE	DC MID	MAX CIRCUIT LENGTH	WIRE TYPE	CONDUIT TYPES	MIN CONDUIT SIZE (IN)
DC-POST*	AL	1	4	350 KCMIL	AWG 2/0 (CU)	-	TESLA PROVIDED	-	330'	XHHW-2 (1000V)	PVC, RMC, EMT, HDPE	4
DC-POST-ALT*	AL	1	4	600 KCMIL	AWG 2/0 (CU)	(2) AWG 6 (CU)	TESLA PROVIDED	-	330'	XHHW-2 (1000V)	PVC, RMC, EMT, HDPE	4
DC-BUS	AL	2	2	600 KCMIL	AWG 1/0 (CU)	-	-	AWG 3/0	900'	XHHW-2 (1000V)	PVC, RMC, EMT	3

*CONFIRM WITH TESLA CONSTRUCTION MANAGER WHICH CIRCUITING WILL BE USED FOR FINAL INSTALLATION.
"DC-POST" CIRCUIT APPLIES TO "V3" TYPE CHARGING POSTS AND
"DC-POSTS-ALT" APPLIES TO "ALTERNATIVE" TYPE CHARGING POST.
PROVIDE ONE CIRCUIT TYPE PER POST.

SINGLE LINE DIAGRAM

E-201

JB-918383-00

REV: B IFF

6

5

4

3

2

1

Date of Response: 11/16/2022



Response to Letter of Request for Short Circuit Current Value for Panel Sizing and Protection Coordination

Disclaimer:

SCE provides the information contained in this letter on an “as is” basis without warranty of any kind, either express or implied. This disclaimer of liability applies to any claim or cause of action for damages or injuries occurring as a result of any error, omission, deletion or defect in the content of the information provided, including, but not limited to, negligence, breach of contract, or tort. Under no circumstances shall SCE or any of its parent or affiliate companies, employees, directors or shareholders be liable to any party for (i) any direct, indirect, special, punitive, incidental, exemplary, consequential, or any other damages arising in any way out of the availability, use or reliance on the information provided; or (ii) any claim attributable to errors, omissions or other inaccuracies in the information provided herein.

The values provided above are maximum Short Circuit values, based on current distribution system conditions. Utility distribution systems are dynamic, and the electrical characteristics of the system can vary significantly due to abnormal conditions, upgrades, modifications, and temporary or permanent reconfigurations. Therefore, the Short Circuit values provided above are subject to change frequently and without notice. SCE does not guarantee to hold the system parameters represented in this information constant. Consequently, SCE recommends that all electrical work on the service panel main breaker should be done in a de-energized condition to eliminate arc flash hazard at this location.

To: Customer: Tesla Motors Inc. Phone: 0
 Address: 6900 Dumbarton Circle Fax: 0
 City, Zip: Fremont, 84555 Email: 0

From: Southern California Edison (SCE) - Engineering & Technical Services - Field Engineering

Engineer: Louie Contreras Phone: 909-201-1498
 Address: 3 Innovation Way Fax: 0
 City, Zip: Pomona, 91768 Email: Luis.J.Contreras@sce.com

Subject: Southern California Edison’s Contribution to Short Circuit Current at the Point-of-Connection of the SCE’s Service Conductors to the Customer’s Service Entrance Facilities (see disclaimer above)

Project: Name: Tesla Motors Inc.
 Address: 2400 W Commonwealth Suite EV
 City, Zip: Alhambra, 91803
 Structure #: P5767821

Date of Response: 11/16/2022

- (1) The voltage and service configuration to be utilized for this project will be 480 volts 3 phase 4 wire, to serve your 1500 Ampere main switchboard
- (2) SCE’s contribution to Short Circuit Current, **at the time of calculation**, is approximately 18,700 Amperes (3-phase) and 19,900 Amperes (phase-ground). **The 3-phase X/R = 4.43 and the phase-ground X/R = 4.98.**

Service Conductors: 4 runs of 700 Size (Al Cu)

Distance from Transformer: 179 feet

Transformer: 1000 kVA, 3 phase, %Z = 5.32

Existing Transformer New Transformer

Comments:

- (3) SCE’s **maximum** contribution to Short Circuit Current is approximately 20,000 Amperes (3-phase), and 20,800 Amperes (phase-ground). These maximum Short Circuit Current values are based on SCE’s largest transformer capable of serving your 1,500 Ampere main service switchboard (at 100% rating).

Service Conductors: 5 runs of 700 Size (Al Cu)

Distance from Transformer: 179 feet

Transformer: 1000 kVA, 3 phase, %Z = 5.32

Comments:



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 PALO ALTO, CA 94304
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ORIGINAL SIZE 24"X36"
 SHEET SIZE ARCH "D"



3/2/2023

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 ALHAMBRA, CA 91803

NO.	REVISION	DATE
A	AHJ COMMENTS RESPONSE SET	01/25/23
B	AVOIDING TREE REMOVAL NOTES	03/01/23

FAULT
 CURRENT
 LETTER
 E-202
 JB-918383-00
 REV: B | IFP

6
5
4
3
2
1

H | G | F | E | D | C | B | A

BREAKER SETTINGS

MAIN SWITCHBOARD SB-1, MCB 2000A ZPOWER			
DESIGNATION	FRAME AMPS	PHASE	GROUND
	AIC KA	2,000	2,000
	MFR	65	65
	GE	SS	SS
	TYPE MODEL	1,500	1,500
	SENSOR AMPS	1,500	1,500
	PLUG AMPS	1,500	1,500
	TRIP UNIT	LS(CB), 800-2000AF, UL489	GF, 200-2000AF
	DESCRIPTION	SS, SH POWERBREAK II, EGTU	SS, SH POWERBREAK I & II, EGTU
	TYPE/MODEL	1.00X (1500A)	C-7
	TRIP UNIT SETTINGS (1600A TRIP)	LT	2.5X (3750A)
		LTD	ST02-MIN (I'S T OFF)
		STPU	4.5X (6,750A)
		STD / I'S T	0.8 (1200A)
		INST PU	GFD09 (I'S T OFF)
		GF PU	
		GFD I'S T	

BREAKER SETTINGS - SEQUENCE

SWITCHBOARD MAIN BREAKER	SUPERCHARGER CABINET BREAKERS
ENTELIGUARD LSIG HMI TRIP UNIT (1600A TRIP)	SPECTRA RMS ELECTRONIC TRIP (600A TRIP)
SETUP <ENTER (TYP.)>	
->LONG TIME	
->CURVE: PT	
->PICKUP: 1.0	
->BAND: C7	
->SHORT TIME	
->PICKUP: 2.5	
->BAND: 2.0	
->SLOPE: OFF	
->INST	
->PICKUP: 4.5	
->GF SUM	
->PICKUP: 0.75	
->BAND: 9.0	
->SLOPE: OFF	

TRENCHING NOTES

- THE TRENCH DESIGNS FOR AC-SPR, DC-POST, AND DC-BUS CIRCUITS ARE THE RESULT OF A THERMAL ANALYSIS OF THE CONDUCTORS UNDER LOAD. FOR PROPER PROTECTION THEY MUST BE FOLLOWED.
- APPROVED BACKFILL IS REQUIRED TO MEET THE DESIGNED RHO VALUES. USE THE SPECIFIED BACKFILL LISTED BELOW OR TEST NATIVE SOIL CONDITIONS TO CONFIRM MAX DEFINED RHO VALUES. MINIMUM 2" OF APPROVED BACKFILL COVERAGE AROUND CONDUITS REQUIRED.
- RHO 60 BACKFILL** -CONCRETE BACKFILL WITH MIN 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI MUST BE USED TO ACHIEVE MAX RHO 60.
- RHO 90 BACKFILL** - LOW STRENGTH FLUIDIZED THERMAL (SLURRY) BACKFILL WITH MIN 28 DAY COMPRESSIVE STRENGTH OF 150 PSI MUST BE USED TO ACHIEVE MAX RHO 90.
- FOR TRENCHES WITH MIXED CIRCUIT TYPES, APPLY THE CONDUIT SPACING FOR THE CIRCUIT TYPE WITH THE LARGER SPACING REQUIREMENT.
- CONDUIT TO BE INSTALLED TO A MAX COVER OF 24". COVER MAY BE REDUCED PER THE NEC TABLE 300.5.
- CONDUIT ARE PERMITTED TO HAVE GREATER THAN 24" COVER FOR SHORT DISTANCES WHERE REQUIRED TO CROSS UNDER (E) UTILITY LINES, TO ALLOW FOR NEC REQUIRED MIN RADIUS FOR CONDUIT TURN-UPS INTO PAD-MOUNTED EQUIPMENT, TO AVOID (E) OBSTRUCTIONS, ETC.

TESLA

3500 DEER CREEK RD.
PALO ALTO, CA 94304
(650) 681-5000

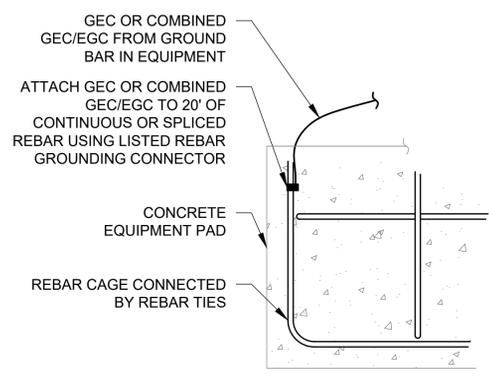
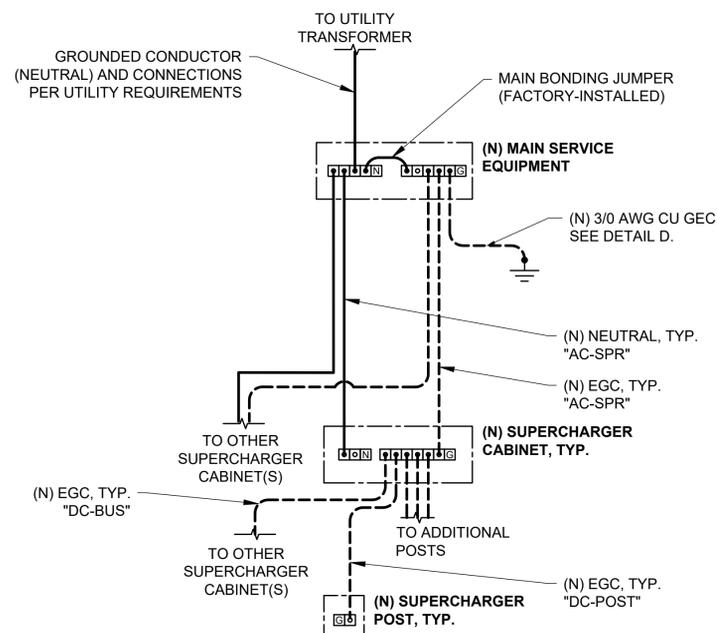
ORIGINAL SIZE 24"x36"
SHEET SIZE ARCH "D"

NOTES

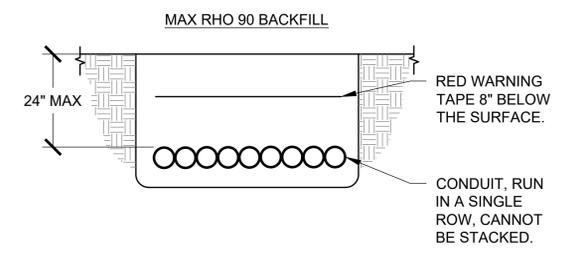
- REFER TO ONE-LINE DIAGRAM FOR SPECIFIC CIRCUIT IDENTIFIERS BETWEEN EQUIPMENT.
- REFER TO AC & DC CIRCUIT SCHEDULES FOR NEUTRAL/GROUND SIZING PER CIRCUIT.

LEGEND

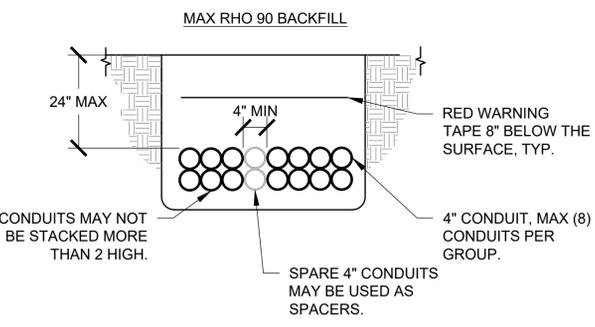
- ☐ NEUTRAL BUSBAR
- ☐ GROUND BUSBAR
- ☐ PRIMARY OR SECONDARY COMMON TERMINAL, AS APPLICABLE
- ☐ TERMINAL ON NEUTRAL OR GROUND BUSBAR
- IRREVERSIBLE SPLICE OR CRIMP PER NEC 250.64(C)
- ⚡ NEC 250.52(A)-COMPLIANT GROUNDING ELECTRODE



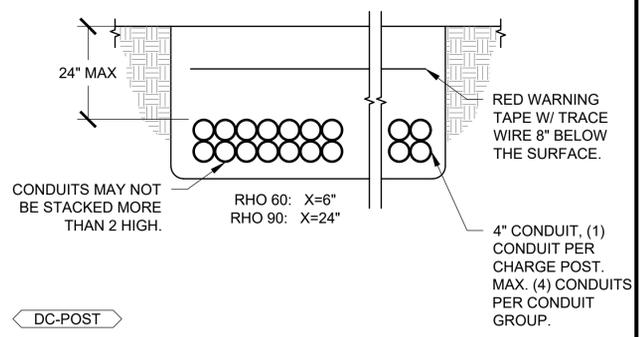
D CONCRETE-ENCASED ELECTRODE FOR CAST-IN-PLACE PADS ONLY
E501-102 REBAR UPPER GROUNDING DETAIL, IFC NTS



B "DC-BUS" CIRCUIT TRENCH - MAX RHO 90
E501-102 DC-BUS CIRCUITS TRENCH- MAX RHO 90, IFC NTS



C "AC-SPR" CIRCUIT TRENCH - MAX RHO 90
E501-102 SPR & CIRCUIT TRENCH- MAX RHO 90, IFC NTS



A "DC-POST" CIRCUIT TRENCH - RHO 60 & 90
E501-102 DC-BUS CIRCUIT TRENCH- RHO 60 & 90, IFC NTS

TESLA SUPERCHARGER_ALHAMBRA, CA
12 SUPERCHARGERS
2400 W COMMONWEALTH AVE,
ALHAMBRA, CA 91803

NO.	REVISION	DATE	COMMENTS
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B		03/01/23	AVOIDING TREE REMOVAL NOTES

ELECTRICAL DETAILS

E-501

JB-918383-00

REV: B | IFF

H | G | F | E | D | C | B | A

6

5

4

3

2

1

TESLA

3500 DEER CREEK RD.
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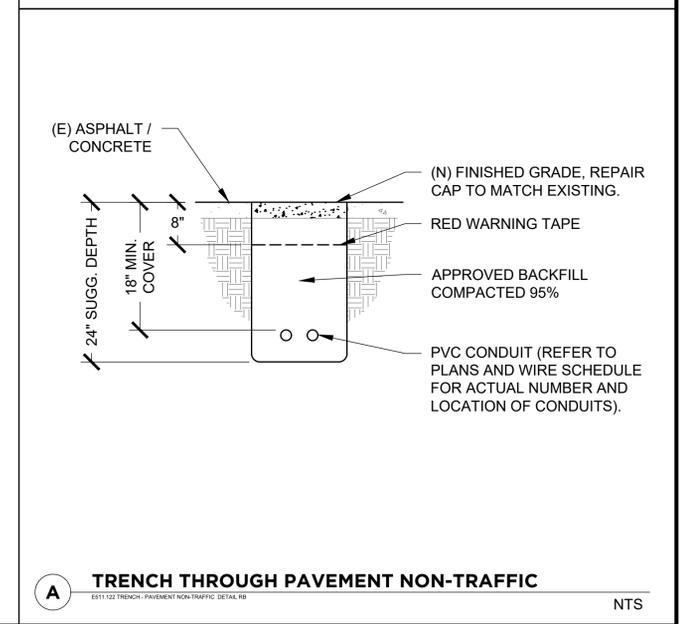
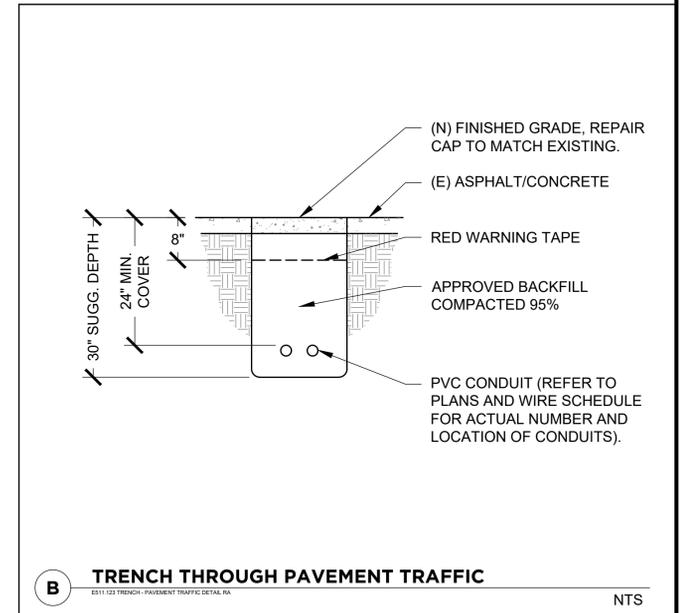
ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"



3/2/2023

TESLA SUPERCHARGER_ALHAMBRA, CA
12 SUPERCHARGERS

2400 W COMMONWEALTH AVE,
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**ELECTRICAL
DETAILS**

E-502

JB-918383-00

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