SITE AND ELECTRICAL PLAN:

SITE PLAN CHECKLIST:

A DIMENSIONED (OR SCALED) DRAWING THAT INCLUDES THE FOLLOWING:
- DRAW THE PROPERTY LINES WITH DIMENSIONS (LOT WIDTH X DEPTH)
- SHOW ALL BUILDINGS ON THE PROPERTY. THIS INCLUDES THE HOUSE AND OTHER ABOVE GRADE STRUCTURES LIKE: PATIO COVERS, TRASH ENCLOSURES, BBQ, FIRE PITS, ETC.
- SHOW POOLS, SPAS, AND OTHER DECORATIVE WATER FEATURES.
- SHOW ALL EASEMENTS & SETBACKS FROM ULTIMATE PROPERTY LINES AND THE DISTANCES BETWEEN BUILDINGS AND OTHER STRUCTURES.
- SHOW DRIVEWAYS
- SHOW STREETS, WITH STREET NAMES, AND SIDEWALKS ADJACENT TO THE PROPERTY
- SHOW ORIENTATION WITH A NORTH ARROW
- SHOW FENCE LOCATIONS WITH HEIGHTS AND TYPE (WOOD, VINYL, BLOCK WALL)

WARNINGS & DISCLOSURES:

THE CITY OF COSTA MESA PROVIDES THESE STANDARD PLANS FOR A LIMITED NUMBER OF PERMITS AND A NARROWLY DEFINED SCOPE OF WORK. BY USING THESE STANDARDS, THE PERMIT HOLDER AGREES TO THE FOLLOWING TERMS:
- THE PLANS MUST BE SUBMITTED EXACTLY AS PROVIDED BY THE CITY, WITHOUT ALTERATION OR MODIFICATION. ANY UNAUTHORIZED CHANGES, INCOMPLETE SECTIONS, OR DOCTORED INFORMATION INVALIDATE THE PLANS & PERMIT.
- THESE PLANS MAY ONLY BE USED FOR THE SPECIFIC PROJECT AND SCOPE ASSOCIATED WITH THE CURRENT PERMIT APPLICATION. USE FOR ANY OTHER PURPOSE, INCLUDING PROJECTS OUTSIDE OF COSTA MESA, IS PROHIBITED.
- ALL INTELLECTUAL PROPERTY RELATED TO THESE PLANS REMAINS THE PROPERTY OF THE CITY OF COSTA MESA.
- FAILURE TO ADHERE TO THE PROVIDED STANDARDS, OR SUBMISSION OF INCOMPLETE OR INCORRECT INFORMATION, WILL RESULT IN DELAYS, AND MAY: REQUIRE ADDITIONAL DOCUMENTATION, SUBMITTAL OF NEW APPLICATION(S), VOIDING OF THE PERMIT, AND/OR LEAD TO CODE ENFORCEMENT ACTIONS, INCLUDING CITATIONS AND FINES.

BY PROCEEDING, THE APPLICANT ACKNOWLEDGES THESE TERMS AND AGREES TO COMPLY FULLY WITH THE CITY OF COSTA MESA'S RESIDENTIAL RE-ROOF STANDARD DETAILS,
SPECIFICATIONS, LIMITATIONS, AND REQUIREMENTS.

SIGNATURE: _____

SPECIFIC PROJECT INFORMATION:

ALL MATERIALS, EQUIPMENT, INSTALLATION, AND WORK SHALL COMPLY WITH THE LATEST VERSION OF THE:
- 2022 CALIFORNIA BUILDING CODE (CBC)
- 2022 CALIFORNIA RESIDENTIAL CODE (CRC)
- 2022 CALIFORNIA MECHANICAL CODE (CMC)
- 2022 CALIFORNIA ELECTRICAL CODE (CEC)
- 2022 CALIFORNIA PLUMBING CODE (CPC)
- CALIFORNIA FIRE CODE (CFC),
- CALIFORNIA ENERGY CODE (T24),
- CALIFORNIA GREEN CODE (CALGREEN),
- CITY OF COSTA MESA MUNICIPAL CODE.

SCOPE OF WORK:

1. IS GENERATOR PORTABLE (ON WHEELS)? YES ___ NO
2. GENERATOR FUEL TYPE: _____
3. GENERATOR TANK CAPACITY: _____ GALLONS
4. DOES THE GENERATOR HAVE DOUBLE-WALLED CONTAINMENT: ___ YES ___ NO
   A. IF NO, TYPE OF CONTAINMENT: _____
5. INSTALLATION LOCATION IS (CHECK ONE):
   EXTERIOR - SITE: ___ EXTERIOR - ROOF: ___ INTERIOR:
   IF INTERIOR, THE ROOM MUST BE 2-HOUR FIRE RATED WITH EMERGENCY EGRESS

GENERAL REQUIREMENTS:

A. TEMPORARY POWER GENERAL NOTES:
1. ALL MATERIALS, EQUIPMENT, INSTALLATION AND WORK SHALL COMPLY WITH THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE (CBC), CALIFORNIA ELECTRICAL CODE (CEC), CALIFORNIA ENERGY CODE (T24), CALIFORNIA GREEN CODE (CALGREEN), CALIFORNIA FIRE CODE (CFC), CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA RESIDENTIAL CODE (CRC), AND CITY OF COSTA MESA MUNICIPAL CODE.
2. THE GENERATOR AND ALL ASSOCIATED ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED AND LABELED BY AN APPROVED NATIONALLY RECOGNIZED TESTING LABORATORY AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ITS LISTING.
3. SEPARATE APPROVAL BY THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT IS REQUIRED PRIOR TO INSTALLATION.
   a. CALL THE EMERGENCY IC ENGINE HOTLINE AT 909-396-3396 FOR MORE INFORMATION.
   b. THE SCAQMD DEFINITION OF A "TEMPORARY" GENERATOR: A STANDBY ICE OR TURBINE FOR NON-UTILITY POWER GENERATION THAT DOES NOT OPERATE MORE THAN 200 HOURS A YEAR AND IS ONLY OPERATED IN THE EVENT OF AN EMERGENCY POWER FAILURE OR FOR ROUTINE TESTING AND MAINTENANCE IS CONSIDERED AN EMERGENCY BACKUP GENERATOR FOR POWER GENERATION.
   c. GENERATORS WHICH ARE INTERNAL COMBUSTION ENGINES (ICES) THAT ARE GREATER THAN 50 BRAKE HORSEPOWER (BHP) OR GAS TURBINES GREATER THAN 2,975,000 BRITISH THERMAL UNITS (BTU) PER HOUR ARE REQUIRED TO OBTAIN A PERMIT TO CONSTRUCT FROM THE SOUTH COAST AQMD PRIOR TO INSTALLATION AT A SITE.
   d. AS PART OF THE SOUTH COAST AQMD'S PERMIT STREAMLINING PROGRAM, CERTAIN EMERGENCY GENERATORS HAVE BEEN PRE-CERTIFIED AS MEETING SOUTH COAST AQMD RULES/REGULATIONS. FACILITIES WHO WANT TO INSTALL/OPERATE THESE PRE-CERTIFIED UNITS CAN APPLY FOR A PERMIT USING THE PERMIT "REGISTRATION" PROGRAM THAT OFFERS LOWER PROCESSING FEES AND SHORTER PERMIT PROCESSING TIMES. PLEASE VISIT SCAQMD'S WEBSITE TO FIND THEIR CERTIFIED ICE-EMERGENCY GENERATORS LIST AND THEIR END-USER FORM FOR EMERGENCY GENERATOR (FORM EIC-RE)
4. SEPARATE NOTIFICATION AND APPROVAL BY SOUTHERN CALIFORNIA EDISON ARE REQUIRED PRIOR TO INSTALLATION.
   a. CALL 1(800)655-4555 FOR INFORMATION, AND PLEASE VISIT HTTPS://WWW.SCE.COM/PARTNERS/CONSULTING-SERVICES/LOCALPLANNING FOR SCE'S REQUIRED FORMS AND SUBMITTAL PROCEDURES.
   b. INSPECTIONS AND APPROVAL OF THE INSTALLATION ARE REQUIRED AFTER OBTAINING A TEMPORARY GENERATOR PERMIT. ELECTRICAL INSPECTION BY A CITY INSPECTOR SHOULD BE SCHEDULED 24 HOURS IN ADVANCE. PLEASE USE THE QR CODE IN THE AREA LABELLED 'INSPECTION' TO GET TO THE ONLINE PORTAL TO SCHEDULE AN INSPECTION.

B. PANELBOARD CLEARANCES AND LOCATION
5. OVERCURRENT PROTECTION DEVICES (OCPDS) SHALL BE INSTALLED IN LOCATIONS THAT ARE READILY ACCESSIBLE. (CEC 240.24(A))
6. THE MAXIMUM HEIGHT OF THE OPERATING HANDLE OF A BREAKER SHALL BE 6 FEET 7 INCHES ABOVE THE FINISHED FLOOR (AFF). (CEC 240.24(A))
7. PANELBOARDS AND CABINETS SHALL NOT BE ALLOWED IN LOCATIONS WHERE THEY ARE SUBJECT TO PHYSICAL DAMAGE. (CEC 240.24(C))
8. PANELBOARDS AND CABINETS SHALL NOT BE LOCATED NEAR EASILY IGNITABLE MATERIALS, SUCH AS CLOTHES CLOSETS. (CEC 240.24(D))
9. PANELBOARDS AND CABINETS SHALL NOT BE ALLOWED IN BATHROOMS OF DWELLINGS. (CEC 240.24(E))
10. PANELBOARDS AND CABINETS SHALL NOT BE ALLOWED TO BE INSTALLED OVER THE STEPS OF A STAIRWAY. (CEC 240.24(F))

C. DRY, DAMP AND WET LOCATIONS
11. ENCLOSURES IN WET OR DAMP LOCATIONS SHALL BE WEATHERPROOF. (CEC 312.2)
12. SURFACE-MOUNTED METAL ENCLOSURES IN WET OR DAMP LOCATIONS SHALL MAINTAIN A MINIMUM ¼ INCH AIRSPACE BETWEEN THE ENCLOSURE AND THE WALL. (CEC 312.2)
13. IN WET LOCATIONS, RACEWAYS, AND CABLES ENTERING ABOVE THE LEVEL OF UNINSULATED LIVE PARTS SHALL USE FITTINGS LISTED FOR WET LOCATIONS. (CEC 312.2)
14. EQUIPMENT RATED FOR DRY OR DAMP LOCATIONS SHALL BE PROTECTED AGAINST DAMAGE FROM WEATHER DURING CONSTRUCTION. (CEC 110.11)
15. ENCLOSURES SHALL BE MARKED WITH THEIR ENCLOSURE TYPE. (CEC 110.28)
16. EQUIPMENT RATED FOR DRY OR DAMP LOCATIONS OR MARKED "INDOOR USE ONLY" OR ENCLOSURE TYPES 1, 2, 5, 12, 12K, AND 13 SHALL BE PROTECTED AGAINST DAMAGE FROM WEATHER DURING CONSTRUCTION. (CEC 110.11)

D. ENCLOSURES (CABINETS)
17. THE MAXIMUM SETBACK IN A NONCOMBUSTIBLE WALL (E.G., STEEL STUDS) IS ¼ INCH. (CEC 312.3)
18. ENCLOSURES SHALL BE FLUSH TO THE FINISH SURFACE IN COMBUSTIBLE (WOOD-FRAME) WALLS. (CEC 312.3)
19. THE MAXIMUM PLASTER GAP AT THE SIDE OF A FLUSH MOUNT PANEL SHALL BE ⅛ INCH. (CEC 312.4)
20. ENCLOSURES FOR OCPDS SHALL BE INSTALLED IN A VERTICAL POSITION. (CEC 240.33)
21. PANELBOARDS SHALL NOT BE ALLOWED TO BE INSTALLED IN A FACE-UP POSITION. (CEC 408.43 EXCEPTION 2)
22. OPEN KNOCKOUTS (KOS) SHALL BE PROPERLY FILLED, EXCEPT FOR MANUFACTURER HOLES SUCH AS THOSE FOR MOUNTING. (CEC 110.12(A))

E. OVERCURRENT PROTECTION DEVICES (OCPDS)
23. BREAKERS SHALL BE LISTED OR CLASSIFIED AND INSTALLED ACCORDING TO THE APPROVED MANUFACTURER INSTRUCTIONS FOR THE PANEL. (CEC 110.3(B))
24. BACK-FED BREAKERS SHALL BE SECURED IN PLACE (CEC 408.36(D))
   a. EXCEPTION: OUTPUT CIRCUITS FROM LISTED UTILITY INTERACTIVE INVERTERS, WHICH MAY NOT REQUIRE ADDITIONAL SECURING FOR BACK-FED BREAKERS. (CEC 705.12(E))
25. BREAKERS SHALL INDICATE WHETHER THEY ARE IN THE "ON" OR "OFF" POSITION. (CEC 240.81)
26. IF A BREAKER OPERATES VERTICALLY, THE "UP" POSITION SHALL INDICATE "ON." (CEC 240.81)
27. FOR RECEPTACLES ON A SHARED YOKE OR MOUNTING STRAP, EITHER A 2-POLE BREAKER OR 2 SINGLE-POLE BREAKERS WITH APPROVED HANDLE TIES SHALL BE USED. (CEC 210.7)

F. BUS BARS
28. BUS BARS AND OTHER INTERNAL PARTS SHALL BE PROTECTED FROM CONTAMINATION (E.G., PAINT OR PLASTER) DURING CONSTRUCTION. (CEC 110.12(B))
29. SUBPANELS REQUIRE OVERCURRENT PROTECTION ON THE SUPPLY SIDE (CEC 408.36)
   a. EXCEPTION APPLIES FOR EXISTING SERVICES IN INDIVIDUAL RESIDENTIAL OCCUPANCY SETTINGS. (CEC 408.36(B))

G. COVERS AND CIRCUIT DIRECTORIES
30. EACH PANEL SUPPLIED BY A FEEDER SHALL BE PROVIDED WITH A DURABLE LABEL (NOT HANDWRITTEN) INDICATING WHERE THE POWER ORIGINATES IF IN A DIFFERENT LOCATION THAN THE PANEL. (CEC 408.4(B))
31. PANELS SHALL HAVE A DEAD-FRONT COVER. (CEC 408.38)
32. BREAKER HANDLES DO NOT HAVE TO BE LOCATED BEHIND A DOOR. (CEC 240.40(B))
33. CIRCUIT DIRECTORIES SHALL DISTINGUISH EACH CIRCUIT FROM ALL OTHERS. (CEC 408.4(A))
34. CIRCUIT DESCRIPTIONS SHALL NOT RELY ON TRANSIENT CONDITIONS FOR IDENTIFICATION. CEC 408.4(A))
35. LABEL SPARE POSITIONS THAT CONTAIN UNUSED OVERCURRENT PROTECTION DEVICES (OCPDS). (CEC 408.4(A))
36. FILL PLATES SHALL BE INSTALLED IN ANY MISSING TWIST-OUTS THAT DO NOT HAVE BREAKERS INSTALLED. (CEC 110.12(A))
37. EMPTY EDISON-BASE FUSE SOCKETS SHALL NOT BE PERMITTED. (CEC 110.12(A))

H. PANEL WIRING
38. ONLY ONE WIRE SHALL BE ALLOWED PER TERMINAL UNLESS THE TERMINAL IS SPECIFICALLY IDENTIFIED FOR MORE THAN ONE WIRE. PANEL INSTRUCTIONS MAY ALLOW FOR UP TO 2 OR 3 EGCS PER TERMINAL. (CEC 110.14(A))
39. EACH NEUTRAL CONDUCTOR SHALL HAVE ITS OWN INDIVIDUAL TERMINAL, WITH EXCEPTIONS FOR PARALLELED CONDUCTORS ON TERMINALS IDENTIFIED FOR MORE THAN ONE CONDUCTOR. (CEC 408.41 AND 408.41 EXCEPTION 1)
40. EQUIPMENT GROUNDING CONDUCTORS (EGCS) AND NEUTRALS MAY NOT SHARE THE SAME TERMINAL, EVEN IN SERVICE EQUIPMENT WHERE ALLOWED ON THE SAME TERMINAL BAR. (CEC 408.41)
41. TORQUE ALL BREAKERS AND TERMINALS ACCORDING TO APPROVED MANUFACTURER INSTRUCTIONS. (CEC 110.3(B))
42. USE APPROVED MEANS, SUCH AS TORQUE SCREWDRIVERS, TO ACHIEVE THE INDICATED TORQUE. (CEC 110.14(D))
43. ANTIOXIDANT SHALL BE APPLIED ON ALUMINUM CONDUCTORS AS REQUIRED IN ACCORDANCE WITH MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS (CEC 110.14)
44. EACH CABLE SHALL BE SECURED TO THE CABINET OR ENCLOSURE. (CEC 312.5(C))

I. NEUTRAL CONDUCTORS AND EGCS
45. NEUTRAL, EGCS, AND ENCLOSURE SHALL BE BONDED IN SERVICE PANELS. (CEC 250.24(B))
46. NEUTRALS SHALL NOT BE BONDED IN SUBPANELS. (CEC 250.24(A)(5))
47. THE CONTINUITY OF NEUTRALS SHALL NOT DEPEND ON THE ENCLOSURES THEY ARE WITHIN. (CEC 200.2(B))
48. EACH NEUTRAL CONDUCTOR SHALL HAVE ITS OWN INDIVIDUAL TERMINAL, WITH EXCEPTIONS FOR PARALLELED CONDUCTORS ON TERMINALS IDENTIFIED FOR MORE THAN ONE CONDUCTOR. (CEC 408.41)
49. A NEUTRAL SHALL NOT SERVE MORE THAN ONE CIRCUIT OR MWBC CIRCUIT. (CEC 200.4(A))
50. NEUTRAL CONDUCTORS SHALL BE FACTORY-APPLIED WHITE OR GRAY, WITH CONDUCTORS SIZED #4 AWG OR GREATER ALLOWED TO HAVE WHITE OR GRAY TAPE ENCIRCLING THE ENDS. (CEC 200.6(A) AND 200.6(B))
51. WHITE CONDUCTORS SHALL NOT BE ALLOWED ON UNGROUNDED CONDUCTORS (CEC 200.7(A))
   a. EXCEPTION: WHITE CONDUCTORS OF A CABLE ASSEMBLY ARE ACCEPTABLE AS UNGROUNDED CONDUCTORS IF TAPED (NOT WHITE, GRAY, OR GREEN) ENCIRCLING THE ENDS. (CEC 200.7(C))
52. GROUNDING TERMINAL BARS SHALL BE REQUIRED IF WIRE EGCS ARE PRESENT IN THE PANEL. (CEC 408.40)
53. EGCS SHALL NOT BE TERMINATED ON THE NEUTRAL BAR IN SUBPANELS. (CEC 250.24(A)(5))
54. MORE THAN ONE EGC PER TERMINAL SHALL BE ACCEPTABLE IF ALLOWED BY THE LISTING AND LABELING OF THE PANEL. (CEC 110.14(A))
55. OVERCURRENT PROTECTION DEVICES (OCPDS) SHALL NOT BE ALLOWED IN SERIES WITH THE NEUTRAL, EXCEPT WHEN OCPD SIMULTANEOUSLY OPENS ALL OTHER CONDUCTORS OF THE CIRCUIT OR WHERE REQUIRED FOR MOTOR OVERLOAD PROTECTION. (CEC 240.22)

CITY OF

COSTA MESA

TEMPORARY POWER STANDARD

PERMIT LIMITATIONS:

TEMPORARY POWER POLE
1. THIS PERMIT IS FOR THE INSTALLATION OF EITHER TEMPORARY POWER POLE(S) OR GENERATOR(S) ON A RESIDENTIAL, COMMERCIAL, OR INDUSTRIAL SITE.
2. TEMPORARY POWER MAY ONLY BE USED FOR CONSTRUCTION ACTIVITIES OR OUTDOOR EVENTS WHERE PERMANENT POWER IS NOT PRESENT OR AVAILABLE.
3. THIS PERMIT MAY NOT BE USED TO POWER PERMANENT STRUCTURES OR INSTALLATIONS.
4. THIS PERMIT SHALL NOT BE USED FOR WORK BEYOND THE SCOPE OF THE TEMPORARY POWER INSTALLATION

GENERATOR SPECIFIC CONDITIONS:
1. A TEMPORARY GENERATOR PERMIT IS VALID FOR 90 DAYS FROM PERMIT ISSUANCE. AFTER 90 DAYS, THE GENERATOR SHALL EITHER BE REMOVED, THE INSTALLATION FORMALLY PERMITTED FOR A PERMANENT INSTALLATION BASIS USING PERMANENT WIRING METHODS, OR THE TEMPORARY PERMIT MAY BE RENEWED.
2. THIS PERMIT IS VALID ONLY FOR A TEMPORARY GENERATOR PROVIDING ELECTRICAL POWER TO NON-EMERGENCY SYSTEMS NOT REQUIRED BY CALIFORNIA CODES.
3. FOR EMERGENCY ELECTRICAL POWER SYSTEMS THAT ARE REQUIRED TO BE PERMANENTLY INSTALLED BY CALIFORNIA CODES, A SEPARATE REVIEW AND PERMIT ARE REQUIRED.

CITY REQUIREMENTS:

1. JOB PLACARD SHALL BE POSTED ON THE SITE, IN A LOCATION READILY VISIBLE FROM THE STREET.
2. ALL COMPANIES & CONTRACTORS WORKING OR OPERATING WITHIN THE CITY OF COSTA MESA MUST HAVE A VALID CITY OF COSTA MESA BUSINESS LICENSE. (BUSINESS LICENSES CAN BE APPLIED FOR ONLINE WITH TESSA)
3. OVERSIZED LOAD PERMITS ARE REQUIRED FOR:
   - SINGLE TRUCKS EXCEEDING 8'-6" W X 40' L X 14.
   - COMBINATION TRUCKS EXCEEDING 8'-6" W X 75' L X 14'.
4. (OVERSIZED LOAD PERMITS CAN BE APPLIED FOR ONLINE WITH TESSA)
5. A PRELIMINARY PUBLIC WORKS INSPECTION IS REQUIRED PRIOR TO THE COMMENCEMENT OF ANY WORK.
6. A FINAL PUBLIC WORKS INSPECTION IS REQUIRED IMMEDIATELY PRIOR TO THE FINAL BUILDING INSPECTION.
7. ANY DAMAGE TO THE EXISTING PUBLIC IMPROVEMENTS (E.G. SIDEWALKS, CURB & GUTTER, STREET PAVING, LANDSCAPING, ETC.) THAT OCCURRED TO THE AREA SURROUNDING THE SITE DURING THE COURSE OF CONSTRUCTION SHALL BE REPAIRED PER THE CITY STANDARDS AT THE PROPERTY OWNERS EXPENSE.
8. AN ENCROACHMENT PERMIT IS REQUIRED FOR ANY AND ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY (SEPARATE APPLICATION REQUIRED)

CONSTRUCTION WORKING HOURS:
- MONDAY THROUGH FRIDAY, 7AM TO 7PM
- SATURDAYS, 9AM THROUGH 6PM
- CONSTRUCTION WORK IS NOT ALLOWED ON SUNDAYS OR THE FOLLOWING SPECIFIED FEDERAL HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY.
- VIOLATORS WILL BE CITED AND POTENTIALLY FINED.

INSPECTIONS:

☐

* AFTER BOOKING THIS INSPECTION, LOG INTO TESSA TO UPLOAD THE SUPPORTING DOCUMENTATION TO THIS INSPECTION ITEM BEFORE THE INSPECTOR ARRIVES.

TO BOOK AND INSPECTION, VIEW THE INSPECTION SCHEDULE, OR SEE INSPECTION RESULTS, VISIT TESSA

FOR OFFICE USE ONLY:

PERMIT #:
___-___-___

ISSUED:
___-___-___

PROJECT NAME:
PROJECT ADDRESS: COSTA MESA, CA

OWNER INFO
NAME:
PHONE:
EMAIL:

CONTRACTOR INFO
NAME:
PHONE:
EMAIL:
LICENSE: EXPIRATION:

PLAN PREPARER INFO
NAME:
PHONE:
EMAIL:

EMERGENCY CONTACT INFO
NAME:
PHONE:
ROLE/RELATION TO PROPERTY:

TENANT INFO (IF APPLICABLE)
NAME:
PHONE:
EMAIL:

FORM NUMBER: CBPG-1

(RELEASE: 09-2024)

TABLES:

2022 CEC Table 250.122 Minimum Size Equipment Grounding Conductors for Grounding Raceway and Equipment		
Rating or Setting of Automatic Overcurrent Device in Circuit Ahead of Equipment, Conduit, etc., Not Exceeding (Amperes)	Size (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum*
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1

Note: Where necessary to comply with 250.4(A)(5) or (B)(4), the equipment grounding conductor shall be sized larger than given in this table.

2022 CEC Table 312.6(A) Minimum Wire-Bending Space at Terminals and Minimum Width of Wiring Gutters											
Wire Size (AWG or kcmil)		Wires per Terminal									
		1		2		3		4		5	
All Other Conductors	Compact Stranded AA-8000 Aluminum Alloy Conductors (see Note 2)	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
14—10	12—8	Not specified		—	—	—	—	—	—	—	—
8—6	6—4	38.1	1 1/2	—	—	—	—	—	—	—	—
4—3	2—1	50.8	2	—	—	—	—	—	—	—	—
2	1/0	63.5	21/2	—	—	—	—	—	—	—	—
1	2/0	76.2	3	—	—	—	—	—	—	—	—
1/0—2/0	3/0—4/0	88.9	31/2	127	5	178	7	—	—	—	—
3/0—4/0	250—300	102	4	152	6	203	8	—	—	—	—
250	350	114	41/2	152	6	203	8	254	10	—	—
300—350	400—500	127	5	203	8	254	10	305	12	—	—
400—500	600—750	152	6	203	8	254	10	305	12	356	14
600—700	800—1000	203	8	254	10	305	12	356	14	406	16
750—900	—	203	8	305	12	356	14	406	16	457	18
1000—1250	—	254	10	—	—	—	—	—	—	—	—
1500—2000	—	305	12	—	—	—	—	—	—	—	—

Notes:

1. Bending space at terminals shall be measured in a straight line from the end of the lug or wire connector (in the direction that...

2. This column shall be permitted to be used to determine the minimum wire-bending space for compact stranded aluminum conductors in sizes up to 1000 kcmil and manufactured using AA-8000 series electrical grade aluminum alloy conductor material in accordance with 310.3(B). The minimum width of the wire gutter space shall be determined using the all other conductors value in this table.

2022 CEC Table 312.6(B) Minimum Wire-Bending Space at Terminals									
Wire Size (AWG or kcmil)		Wires per Terminal							
		1		2		3		4 or More	
All Other Conductors	Compact Stranded AA-8000 Aluminum Alloy Conductors...	mm	in.	mm	in.	mm	in.	mm	in.
14—10	12—8	Not specified		—	—	—		—	—
8	6	38.1	2-Nov	—	—	—		—	—
6	4	50.8	2	—	—	—		—	—
4	2	76.2	3	—	—	—		—	—
3	1	76.2	3	—	—	—		—	—
2	1/0	88.9	31/2	—	—	—		—	—
1	2/0	114	41/2	—	—	—		—	—
1/0	3/0	140	5 1/2	140	5 1/2	178	7	—	—
2/0	4/0	152	6	152	6	190	71/2	—	—
3/0	250	165 (a)	6 1/2 (a)	165 (a)	6 1/2 (a)	203	8	—	—
4/0	300	178 (b)	7 (b)	190 (c)	7 1/2 (c)	216 (a)	8 1/2 (a)	—	—
250	350	216 (d)	8 1/2 (d)	216 (d)	8 1/2 (d)	229 (b)	9 (b)	254	10
300	400	254 (e)	10 (e)	254 (d)	10 (d)	279 (b)	11 (b)	305	12
350	500	305 (e)	12 (e)	305 (d)	12 (e)	330 (e)	13 (e)	356 (d)	14 (d)
400	600	330 (e)	13 (e)	330 (e)	13 (e)	356 (e)	14 (e)	381 (e)	15 (e)
500	700—750	356 (e)	14 (e)	356 (e)	14 (e)	381 (e)	15 (e)	406 (e)	16 (e)
600	800—900	381 (e)	15 (e)	406 (e)	16 (e)	457 (e)	18 (e)	483 (e)	19 (e)
700	1000	406 (e)	16 (e)	457 (e)	18 (e)	508 (e)	20 (e)	559 (e)	22 (e)
750	—	432 (e)	17 (e)	483 (e)	19 (e)	559 (e)	22 (e)	610 (e)	24 (e)
800	—	457	18	508	20	559	22	610	24
900	—	483	19	559	22	610	24	610	24
1000	—	508	20	—	—	—		—	
1250	—	559	22	—	—	—		—	
1500	—	610	24	—	—	—		—	
1750	—	610	24	—	—	—		—	
2000	—	610	24	—	—	—		—	

Notes:

1. Bending space at terminals shall be measured in a straight line from the end of the lug or wire connector in a direction perpendicular to the enclosure wall.

2. For removable and lay-in wire terminals intended for only one wire, bending space shall be permitted to be reduced by the following number of millimeters (inches):

(a) 12.7 mm (1/2 in.)

(b) 25.4 mm (1 in.)

(c) 38.1 mm (11/2 in.)

(d) 50.8 mm (2 in.)

(e) 76.2 mm (3 in.)

3. This column shall be permitted to determine the required wire-bending space for compact stranded aluminum conductors in sizes up to...

GENERAL REQUIREMENTS:

a. RACEWAYS AND CABLE ARMOR USED AS EGCS SHALL HAVE APPROVED FITTINGS; ALL JOINTS, FITTINGS, AND CONNECTIONS SHALL BE MADE TIGHT. (CEC 250.120(A))
b. FLEXIBLE METAL CONDUIT (FMC) SHALL BE ACCEPTABLE AS AN EGC WITH LISTED FITTINGS FOR CIRCUITS WITH A MAXIMUM OF 20A OCPD. THE MAXIMUM LENGTH OF FMC OR LFMC IN THE SAME FAULT-CURRENT PATH IS 6 FEET, WITH A MAXIMUM TRADE SIZE OF 1¼ INCHES AND NO VIBRATION OR FLEXIBILITY AFTER INSTALLATION. (CEC 250.118(5))
c. FLEXIBLE METAL CONDUIT (LFMC) SHALL BE LIQUID-TIGHT AND IS ACCEPTABLE AS AN EGC FOR CIRCUITS WITH UP TO 60A OCPD, ALLOWABLE IN TRADE SIZES FROM ¾ TO 1¼ INCHES. (CEC 250.118(6))

JJ. SIZE OF EGCS
174. EGCS SHALL BE SIZED PER THE PROVIDED MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6(A) AND (B) BASED ON THE MAXIMUM RATING OF OVERCURRENT PROTECTION DEVICES (OCPD). (CEC 250.122(A))
175. WHEN MULTIPLE CIRCUITS ARE IN THE SAME RACEWAY, A SINGLE EGC SHALL BE ACCEPTABLE BASED ON THE LARGEST OCPD OF CONDUCTORS IN THE RACEWAY. (CEC 250.122(C))
176. WHERE UNGROUNDED CONDUCTORS ARE INCREASED IN SIZE FOR REASONS OTHER THAN DERATING, EGCS SHALL BE INCREASED PROPORTIONALLY. (CEC 250.122(B))

KK. EGCS IN BOXES
177. SPLICES OF EGCS IN BOXES SHALL REQUIRE DEVICES LISTED FOR THE PURPOSE. (CEC 250.8(A))
178. SPLICED CONDUCTORS WITHIN A BOX SHALL NOT BE REQUIRED TO HAVE INSULATION. (CEC 250.148(A))
179. EGCS SHALL BE CONNECTED WITHIN THE BOX OR BONDED TO THE BOX, WITH EXCEPTIONS FOR ISOLATED GROUND RECEPTACLES. (CEC 250.148(B))
180. REMOVAL OF A DEVICE IN A BOX SHALL NOT INTERRUPT THE CONTINUITY OF THE EGC. THIS MAY REQUIRE PIGTAILS TO DEVICES. (CEC 250.148(B))
181. DEDICATED CONNECTIONS SHALL BOND EGCS TO A METAL BOX. (CEC 250.148(C))

MM. EGCS TO RECEPTACLES IN BOXES
182. AN EQUIPMENT BONDING JUMPER, SIZED ACCORDING TO THE PROVIDED MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6(A) AND (B), SHALL BE REQUIRED FOR CONNECTING RECEPTACLES TO METAL BOXES (CEC 250.146
a. EXCEPTIONS:
- DIRECT METAL CONTACT BETWEEN DEVICE YOKE AND SURFACE-MOUNTED METAL BOX IS PERMITTED IF AT LEAST ONE INSULATING WASHER IS REMOVED. (CEC 250.146(A))
- LISTED EXPOSED-WORK COVERS WHERE THE DEVICE IS SECURED BY TWO OR MORE THREADED LOCKING OR SCREW-AND-NUT LOCKING MEANS OR BY RIVETS. (CEC 250.146(A))
- SELF-GROUNDING YOKE AND SUPPORTING SCREWS (CAPTIVE METAL SCREW WITHOUT INSULATING WASHER) ARE ACCEPTABLE FOR FLUSH-MOUNTED BOXES. (CEC 250.146(B))
- FLOOR BOXES SHALL BE LISTED AS PROVIDING CONTINUITY TO THE BOX. (CEC 250.146(C))

NN. USE OF GROUNDED CONDUCTOR FOR EQUIPMENT GROUNDING
183. GROUNDED CONDUCTORS MAY CONNECT TO NONCURRENT-CARRYING METAL PARTS OF EQUIPMENT ON THE SUPPLY SIDE OR WITHIN THE SERVICE DISCONNECTING MEANS. (CEC 250.142(A))
184. GROUNDING LOAD-SIDE EQUIPMENT TO GROUNDED CONDUCTOR SHALL NOT BE ACCEPTABLE, WITH EXCEPTIONS FOR EXISTING RANGES AND DRYERS WITH MINIMUM #10 COPPER OR #8 ALUMINUM IF THE NEUTRAL IS INSULATED OR PART OF SERVICE ENTRANCE CABLE AND ORIGINATES AT SERVICE EQUIPMENT. (CEC 250.142(B))

OO. ISOLATED GROUND RECEPTACLES
185. INSULATED EGC FROM ISOLATED GROUND RECEPTACLES SHALL NOT BE PERMITTED TO BE BONDED TO THE BOX. (CEC 250.146(D))
186. INSULATED EGC SHALL BE ALLOWED TO PASS THROUGH PANELBOARDS WITHOUT CONNECTIONS TO THE EQUIPMENT GROUND BUS. (CEC 250.146(D))
187. METAL BOXES AND RACEWAYS OF ISOLATED GROUND RECEPTACLES SHALL BE REQUIRED TO BE CONNECTED TO AN EGC. (CEC 250.146(D))
188. AN ORANGE TRIANGLE IDENTIFICATION SHALL BE REQUIRED ON THE FACEPLATE OF ISOLATED GROUND RECEPTACLES. (CEC 406.3(D))
189. IDENTIFIED ISOLATED GROUND RECEPTACLES SHALL NOT BE ALLOWED FOR NON-ISOLATED GROUND INSTALLATIONS. (CEC 406.3(D))
190. ISOLATED GROUND RECEPTACLES IN NONMETALLIC BOXES SHALL REQUIRE NONMETALLIC FACEPLATES OR METAL FACEPLATES THAT CONNECT TO AN EGC. (CEC 406.3(D))

PP. HIGH-LEG DELTA SYSTEMS
191. ON A 4-WIRE DELTA-CONNECTED SYSTEM WITH A MIDPOINT ON ONE PHASE GROUNDED, THE PHASE CONDUCTOR WITH HIGHER VOLTAGE TO GROUND SHALL BE MARKED WITH AN ORANGE LABEL AT EACH POINT WHERE A CONNECTION IS MADE IF A GROUNDED CONDUCTOR IS PRESENT. (CEC 110.15)
192. PANEL PHASE ARRANGEMENT A, B, C FROM LEFT TO RIGHT REQUIRES THE B PHASE TO BE THE PHASE WITH HIGHER VOLTAGE TO GROUND (CEC 408.3(E)(1))
a. EXCEPTION 1: THE B PHASE IS TYPICALLY DESIGNATED FOR HIGHER VOLTAGE, BUT THIS MAY VARY WHEN THE SAME PANELBOARD OR SWITCHBOARD SECTION IS USED FOR METERING. (CEC 408.3(E)(1) EXCEPTION 1)
b. EXCEPTION 2: EACH SWITCHBOARD OR PANEL SHALL HAVE A PERMANENT LABEL STATING "CAUTION–PHASE HAS ___ VOLTS TO GROUND." (CEC 408.3(E)(2))
193. "SLASH-RATED" BREAKERS, SUCH AS 120/240V, SHALL NOT BE USED IF THE LOWER RATING IS LESS THAN THE HIGHEST VOLTAGE TO GROUND IN THE PANEL. (CEC 240.85)

QQ. GENERAL FIRE REQUIREMENTS FOR TEMPORARY POWER (CFC SECTION 605.9):
194. TEMPORARY POWER SYSTEMS, INCLUDING GENERATORS AND TEMPORARY POWER POLES, SHALL REQUIRE PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) BEFORE INSTALLATION AND USE. COMPLIANCE WITH LOCAL REGULATIONS AND INSPECTION REQUIREMENTS IS MANDATORY. (CFC 605.9)
195. ALL TEMPORARY POWER SYSTEMS SHALL BE INSTALLED, MAINTAINED, AND USED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE (CEC) AND THE NATIONAL ELECTRICAL CODE (NEC) AS ADOPTED BY THE LOCAL JURISDICTION. (CFC 605.9.1)
196. REQUIREMENTS FOR TEMPORARY GENERATORS (CFC SECTION 313):
a. TEMPORARY GENERATORS SHALL BE LOCATED AT LEAST 20 FEET (6096 MM) AWAY FROM STRUCTURES, BUILDING OPENINGS, COMBUSTIBLE MATERIALS, AND VEHICLES TO PREVENT FIRE HAZARDS. THE LOCATION SHALL BE ACCESSIBLE FOR MAINTENANCE AND EMERGENCY OPERATIONS. (CFC 313.1)
b. GENERATORS SHALL BE PLACED IN WELL-VENTILATED AREAS TO PREVENT THE ACCUMULATION OF CARBON MONOXIDE AND OTHER HAZARDOUS GASES. EXHAUST OUTLETS SHALL BE DIRECTED AWAY FROM STRUCTURES, BUILDING OPENINGS, AND AIR INTAKES. (CFC 313.1.1)
c. FUEL FOR GENERATORS SHALL BE STORED IN APPROVED CONTAINERS, LOCATED AWAY FROM THE GENERATOR, AND COMPLY WITH THE STORAGE REQUIREMENTS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS. SAFETY MEASURES SUCH AS SECONDARY CONTAINMENT, SPILL CONTROL, AND PROPER VENTILATION SHALL BE IN PLACE. (CFC 313.2)
d. TEMPORARY GENERATORS SHALL BE PROPERLY GROUNDED AND BONDED TO PREVENT ELECTRICAL SHOCK HAZARDS. ELECTRICAL CORDS, CABLES, AND CONNECTIONS SHALL BE RATED FOR THE LOAD AND PROTECTED AGAINST PHYSICAL DAMAGE. ALL CONNECTIONS SHALL BE WEATHERPROOF AND PROPERLY INSULATED. (CFC 313.3)
e. GENERATORS SHALL BE PROTECTED FROM PHYSICAL DAMAGE BY BARRIERS OR OTHER MEANS TO PREVENT ACCIDENTAL CONTACT, VEHICULAR IMPACT, OR OTHER HAZARDS. (CFC 313.4)
f. GENERATORS SHALL HAVE SIGNAGE INDICATING "EMERGENCY GENERATOR" OR EQUIVALENT WORDING AND INCLUDE INFORMATION ABOUT THE FUEL TYPE, SHUT-OFF PROCEDURES, AND CONTACT INFORMATION FOR RESPONSIBLE PERSONNEL. (CFC 313.5)
197. REQUIREMENTS FOR TEMPORARY POWER POLES (CFC SECTION 605.10):
a. TEMPORARY POWER POLES SHALL BE INSTALLED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE (CEC) AND LOCAL UTILITY REQUIREMENTS. POLES SHALL BE SECURELY ANCHORED AND BRACED TO WITHSTAND ENVIRONMENTAL AND OPERATIONAL CONDITIONS. (CFC 605.10.1)
b. TEMPORARY POWER POLES SHALL MAINTAIN REQUIRED CLEARANCES FROM BUILDINGS, ROADWAYS, OVERHEAD LINES, AND OTHER STRUCTURES TO ENSURE SAFE OPERATION AND ACCESSIBILITY. THE MINIMUM CLEARANCE SHALL COMPLY WITH CEC AND UTILITY COMPANY STANDARDS. (CFC 605.10.2)
c. TEMPORARY POWER POLES SHALL BE EQUIPPED WITH OVERCURRENT PROTECTION DEVICES, SUCH AS CIRCUIT BREAKERS OR FUSES, TO PROTECT AGAINST ELECTRICAL OVERLOADS. A DISCONNECT SWITCH SHALL BE INSTALLED TO PROVIDE A MEANS OF EMERGENCY SHUT-OFF. (CFC 605.10.3)
d. TEMPORARY POWER POLES SHALL BE GROUNDED IN ACCORDANCE WITH CEC STANDARDS TO PREVENT ELECTRICAL SHOCK AND ENSURE SAFE OPERATION. GROUNDING CONDUCTORS AND ELECTRODES SHALL BE PROPERLY INSTALLED AND TESTED FOR CONTINUITY AND RESISTANCE. (CFC 605.10.4)
198. MAINTENANCE AND INSPECTION OF TEMPORARY POWER SYSTEMS (CFC SECTION 605.11):
a. TEMPORARY POWER SYSTEMS, INCLUDING GENERATORS AND POWER POLES, SHALL BE REGULARLY INSPECTED AND TESTED TO ENSURE THEY ARE IN SAFE OPERATING CONDITION. INSPECTIONS SHOULD BE DOCUMENTED, AND ANY DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY. (CFC 605.11)
b. APPROPRIATE FIRE EXTINGUISHERS SHALL BE READILY ACCESSIBLE NEAR TEMPORARY POWER EQUIPMENT, INCLUDING GENERATORS AND POWER POLES. PERSONNEL SHALL BE TRAINED IN THE USE OF EXTINGUISHERS AND EMERGENCY SHUT-DOWN PROCEDURES. (CFC 605.11.1)
c. TEMPORARY POWER INSTALLATIONS SHALL INCLUDE SIGNAGE WARNING OF ELECTRICAL HAZARDS, EMERGENCY SHUTDOWN PROCEDURES, AND CONTACT INFORMATION FOR RESPONSIBLE PERSONNEL. (CFC 605.11.2)
199. TEMPORARY WIRING REQUIREMENTS (CFC SECTION 605.12):
a. TEMPORARY WIRING, INCLUDING CORDS AND CABLES, SHALL BE SUITABLE FOR THE CONDITIONS AND PROTECTED FROM PHYSICAL DAMAGE. WIRING SHALL BE PROPERLY RATED, INSULATED, AND ROUTED TO AVOID TRIPPING HAZARDS AND POTENTIAL CONTACT WITH WATER OR COMBUSTIBLE MATERIALS. (CFC 605.12)
b. ALL TEMPORARY WIRING SHALL BE WEATHERPROOF AND SUITABLE FOR THE ENVIRONMENTAL CONDITIONS IT WILL BE EXPOSED TO, INCLUDING MOISTURE, HEAT, AND PHYSICAL IMPACT. GFCI (GROUND-FAULT CIRCUIT INTERRUPTER) PROTECTION IS REQUIRED FOR ALL TEMPORARY WIRING SYSTEMS. (CFC 605.12.1)
c. TEMPORARY POWER SYSTEMS AND WIRING SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE PROJECT OR EVENT, OR WHEN THEY ARE NO LONGER REQUIRED. THIS ENSURES THAT NO UNNECESSARY ELECTRICAL HAZARDS REMAIN. (CFC 605.12.2)
200. EMERGENCY POWER SUPPLY AND BACKUP SYSTEMS (CFC SECTION 1206):
a. FOR APPLICATIONS WHERE TEMPORARY GENERATORS SERVE AS BACKUP OR EMERGENCY POWER SUPPLIES, THE INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS FOR EMERGENCY AND STANDBY POWER SYSTEMS, INCLUDING AUTOMATIC TRANSFER SWITCHES, FUEL SUPPLY, AND DURATION OF OPERATION. (CFC 1206)
b. EMERGENCY GENERATORS AND POWER SUPPLY SYSTEMS SHALL BE MAINTAINED AND TESTED REGULARLY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND LOCAL FIRE CODE REQUIREMENTS TO ENSURE RELIABILITY AND READINESS DURING EMERGENCIES. (CFC 1206.1)

GENERAL REQUIREMENTS:

W. CONNECTION METHODS
109. BURIED CLAMPS SHALL BE LISTED AND LABELED FOR DIRECT BURIAL (MARKED "DB"). (CEC 250.70)
110. COPPER WATER TUBING CLAMPS SHALL BE LISTED AND LABELED FOR TUBING. (CEC 250.70)
111. UFER CLAMPS SHALL BE LISTED AND LABELED FOR REBAR AND ENCASEMENT. (CEC 250.70)
112. LISTED SHEET-METAL STRAP-TYPE CLAMPS SHALL BE SUITABLE ONLY FOR INDOOR TELECOMMUNICATIONS. (CEC 250.70)
113. MAXIMUM OF ONE CONDUCTOR PER CLAMP SHALL BE ALLOWED UNLESS THE CLAMP IS LISTED FOR MORE CONNECTIONS. (CEC 250.70)
114. CONNECTIONS DEPENDENT ON SOLDER ALONE SHALL NOT BE USED. (CEC 250.8(B))
115. NONCONDUCTIVE COATINGS (E.G., PAINT, ENAMEL, LACQUER) SHALL BE REMOVED FROM CONTACT SURFACES TO ENSURE ELECTRICAL CONTINUITY. (CEC 250.12)

X. PROTECTION REQUIREMENTS
116. RACEWAY OR ARMOR SHALL BE PROVIDED FOR #8 GEC (CEC 250.64(B)(3))
117. PROTECTIONS OF GEC SHALL BE PROVIDED UNLESS #8 GECS ARE NOT EXPOSED TO DAMAGE (CEC 250.64(B)(1))
118. GECS SUBJECT TO PHYSICAL DAMAGE REQUIRE PROTECTION WITH RMC, IMC, PVC 80, RTRC, EMT, OR CABLE ARMOR. (CEC 250.64(B)(2))
119. EACH END OF FERROUS RACEWAYS ENCLOSING GECS SHALL HAVE BONDING TO THE ENCLOSURE, ELECTRODE, OR TO THE GEC. (CEC 250.64(E)(1))
120. BONDING METHODS SHALL BE THE SAME AS FOR SUPPLY-SIDE BONDING. (CEC 250.64(E)(2))
121. BONDING JUMPER SHALL BE THE SAME SIZE AS THE ENCLOSED GEC. (CEC 250.64(E)(2))
122. CLAMPS AND OTHER FITTINGS SHALL BE PROTECTED FROM PHYSICAL DAMAGE BY LOCATION OR ENCLOSURES IF NOT APPROVED FOR APPLICATIONS WITHOUT PROTECTION. (CEC 250.10)

Z. BONDING AND EQUIPMENT GROUNDING METHODS
123. PERMITTED CONNECTION METHODS GECS, EGCS AND BONDING JUMPERS SHALL INCLUDE LISTED PRESSURE CONNECTORS, TERMINAL BARS, EXOTHERMIC WELDING, MACHINE SCREWS ENGAGING AT LEAST 2 THREADS OR SECURED WITH A NUT, THREAD-FORMING MACHINE SCREWS WITH AT LEAST 2 THREADS IN THE ENCLOSURE, AND CONNECTIONS THAT ARE PART OF A LISTED ASSEMBLY. (CEC 250.8(A))
124. SHEET METAL OR DRYWALL SCREWS SHALL NOT BE PERMITTED FOR BONDING CONNECTIONS. (CEC 250.8(A))
125. CONNECTIONS SHALL NOT DEPEND SOLELY ON SOLDER FOR CONTINUITY. (CEC 250.8(B))
126. NONCONDUCTIVE COATINGS (E.G., PAINT) SHALL BE REMOVED FROM CONTACT SURFACES TO ENSURE ELECTRICAL CONTINUITY. (CEC 250.12)

AA. SUPPLY-SIDE BONDING
127. ALL SERVICE EQUIPMENT, RACEWAYS, CABLE ARMOR, AND ENCLOSURES THAT CONTAIN SERVICE CONDUCTORS SHALL BE BONDED. (CEC 250.92(A))
128. THREADED COUPLINGS OR LISTED THREADED HUBS MADE WRENCH-TIGHT SHALL BE ACCEPTABLE FOR BONDING SERVICE CONDUITS. (CEC 250.92(B)(2))
129. STANDARD LOCKNUTS SHALL NOT BE ACCEPTABLE FOR USE ON THE SUPPLY SIDE OF SERVICE. (CEC 250.92(B)(2))
130. BONDING LOCKNUTS SHALL BE ACCEPTABLE WHERE NO REMAINING CONCENTRIC KNOCKOUTS ARE PRESENT. (CEC 250.92(B)(4))
131. JUMPERS AROUND IMPAIRED CONNECTIONS (CONCENTRIC KNOCKOUTS OR REDUCING WASHERS) SHALL BE REQUIRED ON THE SUPPLY SIDE OF SERVICE. (CEC 250.92(B)(2))
132. THE SERVICE NEUTRAL MAY BOND SUPPLY-SIDE EQUIPMENT. (CEC 250.142(A))
133. SUPPLY-SIDE BONDING JUMPERS SHALL BE SIZED PER THE BONDING JUMPER SIZING CHART WITHIN THIS DOCUMENT (CEC 250.102(C))
134. THE MAIN BONDING JUMPER SHALL CONNECT THE ENCLOSURE, SERVICE NEUTRAL, AND EQUIPMENT GROUNDS. (CEC 250.24(B))
135. LIGHTNING PROTECTION SYSTEMS SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM (GES). (CEC 250.106)

BB. BONDING FOR OVER 250 VOLTS
136. CIRCUITS OVER 250V TO GROUND SHALL REQUIRE BONDING OF RACEWAYS AND METAL-SHEATH CABLES BY THE SAME METHODS USED FOR SUPPLY-SIDE BONDING BUT NOT CONNECTED TO THE GROUNDED CONDUCTOR.
a. EXCEPTION: WHERE OVERSIZED, CONCENTRIC, OR ECCENTRIC KNOCKOUTS ARE NOT ENCOUNTERED, OR WHERE BOXES WITH CONCENTRIC OR ECCENTRIC KNOCKOUTS ARE LISTED FOR BONDING (CEC 250.97)
137. THREADLESS COUPLINGS AND CONNECTORS FOR METAL-SHEATHED CABLES SHALL BE LISTED FOR BONDING. (CEC 250.97)
138. TWO LOCKNUTS ON RIGID METAL CONDUIT (ONE INSIDE AND ONE OUTSIDE) ARE REQUIRED ON METAL BOXES OR CABINETS FOR RACEWAY BONDING. (CEC 250.97)
139. FITTINGS WITH FIRMLY SEATED SHOULDERS AND LOCKNUTS INSIDE THE BOX SHALL BE LISTED FOR BONDING. (CEC 250.97)

CC. BONDING OTHER ENCLOSURES
140. METAL ENCLOSURES OF CONDUCTORS, DEVICES, AND EQUIPMENT TO THE EQUIPMENT GROUNDING CONDUCTOR (EGC) SHALL BE BONDED (CEC 250.86)
a. EXCEPTIONS: SHORT SECTIONS OF PROTECTIVE METAL RACEWAYS ARE EXEMPT WHEN ISOLATED BY AT LEAST 18 INCHES OF SOIL COVER OR 2 INCHES OF CONCRETE. (CEC 250.86 EXCEPTION NO. 2)
141. METAL RACEWAYS, CABLE ARMOR, CABLE SHEATH, ENCLOSURES, FRAMES, AND FITTINGS THAT SERVE AS EGCS SHALL BE BONDED (CEC 250.96(A))
142. NONCONDUCTIVE COATINGS SHALL BE REMOVED BEFORE ADDING BONDING JUMPERS OR USE APPROPRIATE FITTINGS THAT MAKE SUCH REMOVAL UNNECESSARY. (CEC 250.96(A))
143. STRUCTURAL METAL BUILDING FRAMES SHALL BE SIZED PER THE CONDUCTOR SIZING CHART PROVIDED WITHIN THIS DOCUMENT TO BOND THE SERVICE ENCLOSURE, GROUNDED SERVICE CONDUCTOR, GEC OF SUFFICIENT SIZE, OR DISCONNECTING MEANS FOR BUILDINGS SUPPLIED BY A FEEDER. (CEC 250.104(C))

DD. BONDING OF PIPING SYSTEMS
144. WATER PIPE BONDING SHALL BE SIZED PER THE PROVIDED BONDING JUMPER TABLE (CEC TABLE 250.102(C)(1))
145. ANY METAL PIPING SYSTEM CAPABLE OF BECOMING ENERGIZED, INCLUDING GAS, METAL DUCTS, ETC. SHALL BE BONDED (CEC 250.104(B))

EE. INTERSYSTEM BONDING
146. WHERE SEPARATE GROUNDING ELECTRODES ARE INSTALLED FOR PHONE, CATV, ETC., A MINIMUM OF #6 COPPER WIRE SHALL BE USED TO POWER THE GROUNDING ELECTRODE SYSTEM (GES). (CEC 800.100(D))
147. THE INTERSYSTEM BONDING TERMINATION (IBT) DEVICE SHALL BE EXTERNAL TO THE SERVICE EQUIPMENT AND AT DISCONNECTING MEANS OF SEPARATE BUILDINGS, EXCEPT WHEN COMMUNICATION SYSTEMS ARE UNLIKELY TO BE USED. (CEC 250.94(A)(1))
148. IBT SHALL BE ACCESSIBLE FOR CONNECTION AND INSPECTION. (CEC 250.94(A)(1))
149. MINIMUM OF THREE TERMINALS FOR INTERSYSTEM BOND CONDUCTORS SHALL BE REQUIRED. (CEC 250.94(A)(2))
150. IBT SHALL NOT INTERFERE WITH OPENING THE ENCLOSURE COVER. (CEC 250.94(A)(3))
151. IBT SHALL BE MOUNTED TO THE METER OR SERVICE ENCLOSURE OR NONFLEXIBLE METAL SERVICE RACEWAY OR CONNECT WITH #6 COPPER FROM THE IBT TO ONE OF THESE ENCLOSURES. (CEC 250.94(A)(4))
152. IBT SHALL BE MOUNTED TO DISCONNECTING MEANS FOR OTHER BUILDINGS OR CONNECT WITH #6 COPPER FROM IBT TO DISCONNECTING MEANS. (CEC 250.94(A)(5))
153. IBT SHALL BE LISTED AS GROUNDING AND BONDING EQUIPMENT. (CEC 250.94(A)(6))
154. IBT SHALL NOT BE REQUIRED IN EXISTING BUILDINGS IF OTHER SYSTEM GECS CAN BE BONDED TO A NONFLEXIBLE RACEWAY OR EXPOSED GEC. (CEC 250.94(A)(7))
155. IBT MAY BE AN ALUMINUM OR COPPER BUSBAR WITH A MINIMUM SIZE OF ¼ INCH THICK BY 2 INCHES WIDE BY SUFFICIENT LENGTH FOR AT LEAST THREE TERMINATIONS FOR COMMUNICATION SYSTEMS. (CEC 250.94(B))

FF. BONDING OTHER ENCLOSURES
156. METAL ENCLOSURES OF CONDUCTORS, DEVICES, AND EQUIPMENT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR (EGC), WITH EXCEPTIONS. (CEC 250.86)
a. EXCEPTION: SHORT SECTIONS OF PROTECTIVE METAL RACEWAYS ARE EXEMPT WHEN ISOLATED BY AT LEAST 18 INCHES OF SOIL COVER OR 2 INCHES OF CONCRETE. (CEC 250.86 EXCEPTION NO. 2)
157. METAL RACEWAYS, CABLE ARMOR, CABLE SHEATH, ENCLOSURES, FRAMES, AND FITTINGS THAT SERVE AS EGCS SHALL BE BONDED. (CEC 250.96(A))
158. NONCONDUCTIVE COATINGS SHALL BE REMOVED PRIOR TO ADDING BONDING JUMPERS OR USE FITTINGS THAT MAKE SUCH REMOVAL UNNECESSARY. (CEC 250.96(A))
159. STRUCTURAL METAL BUILDING FRAMES SHALL BE BONDED USING BONDING JUMPERS SIZED PER THE PROVIDED BONDING JUMPER TABLE (CEC TABLE 250.102(C)(1)). BOND TO THE SERVICE ENCLOSURE, GROUNDED SERVICE CONDUCTOR, OR GEC USING SUFFICIENT SIZE BONDING JUMPER, OR DISCONNECTING MEANS FOR BUILDINGS SUPPLIED BY A FEEDER. (CEC 250.104(C))

GG. BONDING OF PIPING SYSTEMS
160. SIZE WATER PIPE BONDING PER SIZE OF EQUIPMENT GROUNDING CONNECTORS TABLE (CEC TABLE 250.122) CEC 250.104(A)(1))
161. ANY METAL PIPING SYSTEM CAPABLE OF BECOMING ENERGIZED SHALL BE BONDED, INCLUDING GAS, METAL DUCTS, ETC. (CEC 250.104(B))
162. GAS PIPING SHALL BE BONDED PER THE PROVIDED MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6(A) AND (B) (CEC 250.104(B))

HH. PURPOSE AND ROUTING
163. AN EFFECTIVE GROUND-FAULT CURRENT PATH SHALL BE ESTABLISHED TO ENSURE A LOW-IMPEDANCE PATH FOR FAULT CURRENTS. (CEC 250.4(A)(5))
164. EARTH IS NOT CONSIDERED AN EFFECTIVE GROUND-FAULT CURRENT PATH FOR CLEARING FAULTS. (CEC 250.4(A)(5))
165. A GROUNDING ELECTRODE CONDUCTOR (GEC) SHALL NOT BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR (EGC). (CEC 250.121(A))
a. EXCEPTION: WHERE THE GEC COMPLIES WITH BOTH THE GROUNDING AND BONDING REQUIREMENTS AND CARRIES NO OBJECTIONABLE CURRENT. (CEC 250.121 EXCEPTION)
166. METAL BUILDING FRAMES OR STRUCTURES SHALL NOT BE PERMITTED TO SERVE AS EGCS. (CEC 250.121(B))
167. EGCS SHALL RUN WITH THE OTHER CONDUCTORS OF THE CIRCUIT THEY SERVE, WITH THE EXCEPTION FOR THE REPLACEMENT OF NON-GROUNDING RECEPTACLES. (CEC 250.134(C))

II. TYPES AND IDENTIFICATION OF EQUIPMENT GROUNDING CONNECTORS (EGCS)
168. WIRE EGCS MAY BE COPPER, ALUMINUM, OR COPPER-CLAD ALUMINUM, SOLID OR STRANDED, BARE, COVERED, OR INSULATED. (CEC 250.118(1))
169. CONDUCTORS SIZED #6 AWG OR SMALLER SHALL BE FACTORY INSULATED WITH GREEN (OR GREEN WITH YELLOW STRIPES) INSULATION. (CEC 250.119)
170. CONDUCTORS SIZED #4 AWG OR LARGER SHALL BE IDENTIFIED WITH GREEN TAPE OR LABELS ENCIRCLING THE CONDUCTOR AT EACH END AND AT EVERY ACCESSIBLE POINT. (CEC 250.119(A))
171. GREEN SHALL NEVER BE ALLOWED FOR NEUTRAL OR UNGROUNDED CONDUCTORS. (CEC 250.119)
172. COPPER, ALUMINUM, OR COPPER-CLAD ALUMINUM CONDUCTORS, RIGID METAL CONDUIT (RMC), INTERMEDIATE METAL CONDUIT (IMC), ELECTRICAL METALLIC TUBING (EMT), AC CABLE ARMOR, AND ELECTRICALLY CONTINUOUS RACEWAYS AND SURFACE METAL RACEWAYS SHALL BE ACCEPTABLE AS EGCS (CEC 250.118(2))
173. RACEWAYS AND CABLE ARMOR AS EGC SHALL MEET THE FOLLOWING REQUIREMENTS:

GENERAL REQUIREMENTS:

J. MULTIWIRE BRANCH CIRCUITS (MWBC)
56. UNGROUNDED CONDUCTORS SHALL HAVE VOLTAGE POTENTIAL BETWEEN THEM, I.E., THEY SHALL ORIGINATE FROM THE SAME POLE. (CEC 100)
57. ALL MWBC CONDUCTORS SHALL ORIGINATE FROM THE SAME PANEL. (CEC 210.4(A))
58. EACH NEUTRAL SHALL BE IDENTIFIED OR GROUPED WITH UNGROUNDED CONDUCTORS OF THE CIRCUIT WHEN PASSING THROUGH A BOX WITHOUT A LOOP OR SPLICE. (CEC 200.4(B))
59. GROUPING SHALL NOT BE REQUIRED WHEN IT IS OBVIOUS, SUCH AS IN A CABLE SYSTEM. (CEC 200.4(B)(1))
60. EACH NEUTRAL SHALL BE IDENTIFIED OR GROUPED WITH ITS ASSOCIATED UNGROUNDED CONDUCTORS IN A BOX WITHOUT LOOPS OR SPLICES. (CEC 200.4(B)(2))
61. THE CONTINUITY OF A NEUTRAL SHALL NOT DEPEND ON A CONNECTED DEVICE. PIGTAIL FROM NEUTRAL TO DEVICES IN A BOX; NOT FEED-THROUGH. (CEC 300.13(B))
62. THE NEUTRAL SHALL CONNECT TO DEVICES IN A BOX (CEC 300.13(B))
63. ALL MWBCS SHALL REQUIRE HANDLE TIES OR A SINGLE-HANDLE BREAKER. (CEC 210.4(B))
64. INDIVIDUAL SINGLE-POLE BREAKERS WITH AN APPROVED HANDLE TIE SHALL BE ACCEPTABLE FOR MULTIWIRE CIRCUITS THAT SERVE ONLY LINE-TO-NEUTRAL LOADS. (CEC 240.15(B)(1))

K. WIRING SPACE INSIDE CABINETS
65. CONDUCTORS INSIDE CABINETS SHALL NOT BE CROWDED TO ALLOW PROPER HEAT DISSIPATION AND TO PREVENT OVERHEATING. (CEC 312.7)
66. SPLICES AND TAPS WITHIN CABINETS SHALL NOT FILL MORE THAN 40% OF THE AVAILABLE SPACE, AND ALL CONDUCTORS TOGETHER SHALL NOT EXCEED 75% OF THE CROSS-SECTIONAL AREA. (CEC 312.8)
67. POWER-MONITORING OR ENERGY MANAGEMENT EQUIPMENT AND CONDUCTORS SHALL BE ACCEPTABLE WITHIN AN ENCLOSURE IF LISTED AND MEETING THE ABOVE FILL REQUIREMENTS. (CEC 312.8(B))
68. FEED-THROUGH CONDUCTORS SHALL BE ALLOWED TO PASS THROUGH THE PANEL IF A WARNING LABEL IS APPLIED TO THE ENCLOSURE IDENTIFYING THE POWER SOURCE. (CEC 312.8(A)(3))
69. WIRE BENDING SPACE IN SWITCHBOARDS AND PANELS SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFIC REQUIREMENTS OUTLINED IN SECTION 312.6. (CEC 408.3(G))
70. THE MINIMUM BENDING SPACE FOR CONDUCTORS NOT ENTERING OR LEAVING THE WALL OPPOSITE TERMINALS ("L" BEND) SHALL COMPLY WITH MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6(A))
71. THE MINIMUM BENDING SPACE FOR CONDUCTORS ENTERING OR LEAVING THE WALL OPPOSITE TERMINALS ("S" BEND) SHALL ALSO COMPLY WITH MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6 (B))
a. EXCEPTION: WHERE THE DISTANCE OPPOSITE THE TERMINAL MEETS THE REQUIRED DISTANCE FOR CONDITION B, CONDUCTORS CAN BE SIZED ACCORDING TO MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6(A) AND (B) (CEC 312.6(B)(2) EXCEPTION 1)
72. CONDUCTORS ENTERING FROM BACK WALL REQUIRE SPECIFIC DISTANCE TO COVER AND TERMINALS: CONDUCTORS ENTERING FROM THE BACK WALL OF A CABINET SHALL HAVE THE REQUIRED DISTANCE PER THE PROVIDED MINIMUM WIRING BEND SPACE TABLES (CEC TABLE 312.6(A) AND (B). (CEC 408.55(C))

L. GROUNDING ELECTRODE SYSTEM (GES)
73. USE ALL ELECTRODES THAT ARE AVAILABLE ON THE PREMISES SHALL BE BONDED TOGETHER AND UTILIZED. (CEC 250.50)
a. EXCEPTION: IF AN EXISTING BUILDING HAS CONCRETE-ENCASED ELECTRODES THAT CANNOT BE ACCESSED WITHOUT DISTURBING THE CONCRETE, IT SHALL NOT BE INCLUDED. (CEC 250.50 EXCEPTION)
74. BOND ALL ELECTRODES TOGETHER TO FORM THE CONTINUOUS GROUNDING ELECTRODE SYSTEM (GES). (CEC 250.50)
75. METAL UNDERGROUND GAS PIPING SYSTEMS, ALUMINUM ELECTRODES, AND POOL OR SPA SHELL BONDING GRIDS SHALL NOT PERMITTED AS GROUNDING ELECTRODES. (CEC 250.52(B))

M. WATER PIPE ELECTRODES
76. UNDERGROUND METAL WATER PIPES MAY BE USED AS AN ELECTRODE IF THE PIPING HAS AT LEAST 10 FEET IN LENGTH IN CONTACT WITH SOIL. (CEC 250.52(A)(1))
77. BOND SHALL BE PROVIDED AROUND WATER METERS, FILTERS, PRESSURE REGULATORS, AND SIMILAR EQUIPMENT TO ENSURE CONTINUITY OF THE GROUNDING PATH. (CEC 250.53(D)(1))
78. THE WATER PIPE ELECTRODE SHALL NOT BE THE SOLE ELECTRODE; IT SHALL BE SUPPLEMENTED BY ANOTHER TYPE OF GROUNDING ELECTRODE. (CEC 250.53(D)(2))
79. METAL WELL CASINGS THAT SERVE AS ELECTRODES SHALL HAVE BONDING AROUND ANY INSULATING JOINTS OR PIPES. (CEC 250.52(A)(7))

N. ROD AND PLATE ELECTRODES
80. COPPER-CLAD RODS SHALL BE AT LEAST ⅝ INCH IN DIAMETER UNLESS OTHERWISE LISTED. (CEC 250.52(A)(5))
81. RODS SHALL HAVE A MINIMUM OF 8 FEET IN CONTACT WITH SOIL. (CEC 250.52(A)(5))
82. RODS SHALL BE DRIVEN VERTICALLY AND FULLY BELOW GRADE, WITH EXCEPTIONS FOR CERTAIN CONDITIONS. (CEC 250.53(A)(4))
a. EXCEPTION: IF BEDROCK IS ENCOUNTERED, THE ROD MAY BE BURIED HORIZONTALLY 2½ FEET DEEP OR DRIVEN AT A MAXIMUM 45° ANGLE FROM VERTICAL. (CEC 250.53(A)(4))
83. ROD ENDS AND CLAMPS ABOVE GROUND SHALL HAVE PROTECTION AGAINST PHYSICAL DAMAGE. (CEC 250.53(A)(4))
84. FERROUS PLATES SHALL BE A MINIMUM OF ¼ INCH THICK AND HAVE AT LEAST 2 SQUARE FEET IN CONTACT WITH THE SOIL. (CEC 250.52(A)(7))
85. PLATE ELECTRODES SHALL BE BURIED A MINIMUM OF 30 INCHES BELOW THE SURFACE OF THE EARTH. (CEC 250.53(A)(5))
86. SUPPLEMENTAL ELECTRODE REQUIRED FOR HIGH RESISTANCE: A SUPPLEMENTAL ELECTRODE SHALL BE REQUIRED IF THE RESISTANCE EXCEEDS 25 OHMS. (CEC 250.53(A)(2))

O. CONCRETE-ENCASED ELECTRODE (UFER)
87. UFER SHALL BE 20 FEET OF UNCOUPLED REBAR OR BARE COPPER WIRE WITH A MINIMUM OF 2 INCHES OF CONCRETE ENCASEMENT IN FOOTINGS OR PIERS IN DIRECT EARTH CONTACT. (CEC 250.52(A)(3))
a. MINIMUM SIZE FOR REBAR SHALL BE #4 OR COPPER WIRE #4. (CEC 250.52(A)(3))
88. UFER SHALL BE PRESENT DURING CONSTRUCTION. (CEC 250.50)
a. EXCEPTION: EXISTING BUILDINGS SHALL NOT BE REQUIRED TO HAVE UFER PRESENT DURING CONSTRUCTION. (CEC 250.50 EXCEPTION)
89. SHORTER SECTIONS OF REBAR MAY BE CONNECTED USING STEEL TIE WIRES OR WELDING TO OBTAIN A 20-FOOT CONTINUOUS LENGTH. (CEC 250.52(A)(3))
90. WHERE MULTIPLE CONCRETE-ENCASED ELECTRODES ARE PRESENT, ONLY ONE IS REQUIRED TO BE BONDED TO THE GROUNDING ELECTRODE SYSTEM (GES). CEC 250.52(A)(3))

P. METAL IN-GROUND SUPPORT STRUCTURES
91. METAL SUPPORT STRUCTURES SHALL HAVE AT LEAST 10 FEET OF VERTICAL CONTACT IN DIRECT CONTACT WITH EARTH, WITH OR WITHOUT CONCRETE ENCASEMENT. (CEC 250.52(A)(4))

Q. GROUND RING
92. GROUND RING SHALL ENCIRCLE THE BUILDING OR STRUCTURE, AND SHALL BE IN DIRECT CONTACT WITH EARTH. (CEC 250.52(A)(4))
a. GROUND RING SHALL BE MINIMUM OF #2 AWG COPPER WITH A MINIMUM OF 20 FEET IN LENGTH IN DIRECT CONTACT WITH THE EARTH. (CEC 250.52(A)(4))
b. GROUND RING SHALL BE A MINIMUM 30 INCHES BELOW THE SURFACE OF THE EARTH. (CEC 250.53(F))

R. SUPPLEMENTAL ELECTRODES
93. A SINGLE ROD OR PLATE ELECTRODE SHALL HAVE ANOTHER SUPPLEMENTAL ELECTRODE OTHER THAN WATER PIPING (CEC 250.53(A)(2))
a. EXCEPTION: WHEN SINGLE ROD OR PLATE HAS LESS THAN 25 OHMS RESISTANCE TO EARTH. (CEC 250.53(A)(2) EXCEPTION))
b. A SPACING OF MINIMUM 6 FEET SHALL BE REQUIRED (16 FEET PREFERRED) FOR MULTIPLE RODS. (CEC 250.53(A)(3))
94. SUPPLEMENTAL ELECTRODE BOND SHALL BE MADE TO ONE OF THE FOLLOWING: (CEC 250.53(A)(3))
a. A ROD, PIPE, OR PLATE ELECTRODE.
b. A GROUNDING ELECTRODE CONDUCTOR.
c. A GROUNDED SERVICE CONDUCTOR.
d. A NON-FLEXIBLE GROUNDED SERVICE RACEWAY.
e. A GROUNDED SERVICE ENCLOSURE.

S. OTHER ELECTRODES
95. LOCAL METAL UNDERGROUND SYSTEMS, SUCH AS TANKS, SHALL NOT BE UTILIZED AS GROUNDING ELECTRODES. (CEC 250.52(A)(8))
a. LISTED GROUNDING ELECTRODE CONDUCTORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER INSTRUCTIONS. (CEC 250.52(A)(6))

T. GROUNDING ELECTRODE CONDUCTORS (GECS)
96. GEC SHALL BE SIZED PER SERVICE CONDUCTOR SIZE. (CEC 250.66)
a. WHERE GEC OR BONDING JUMPER IS CONNECTING ONLY TO SINGLE OR MULTIPLE ROD, OR PLATE ELECTRODES, OR ANY COMBINATION OF THOSE OPTIONS, AND DO NOT EXTENT ON TO OTHER TYPES OF ELECTRODES, #6 COPPER OR #4 ALUMINUM SHALL BE THE LARGEST SIZE REQUIRED. (CEC 250.66(A))
b. WHERE THE GEC ENDS AT A UFER (CONCRETE-ENCASED ELECTRODE), #4 COPPER SHALL BE THE LARGEST SIZE REQUIRED (CEC 250.66(B))
c. WHERE THE GEC ENDS IN A GROUND RING, #2 COPPER SHALL BE THE LARGEST SIZE REQUIRED (CEC 250.66(C))
97. GEC SHALL BE SIZED PER LARGEST REQUIRED SIZE AMONG ALL ELECTRODES WITHIN THE GES. (CEC 250.66)
98. BONDING CONDUCTORS SHALL BE THE SIZE OF GES AS PER THE PROVIDED SIZE OF EQUIPMENT GROUNDING CONNECTORS TABLE (CEC TABLE 250.122) (CEC 250.53(C))

U. GEC CONNECTION LOCATIONS - GENERAL
99. THE GROUNDING ELECTRODE CONDUCTOR (GEC) SHALL CONNECT EQUIPMENT GROUNDING CONDUCTORS (EGCS), SERVICE EQUIPMENT, AND SERVICE NEUTRAL TO THE GROUNDING ELECTRODES. (CEC 250.24(D))
100. THE GEC SHALL CONNECT TO THE SERVICE NEUTRAL AT ANY ACCESSIBLE POINT FROM THE LOAD END OF THE SERVICE DROP TO THE NEUTRAL BUS IN THE SERVICE DISCONNECT. (CEC 250.24(A)(1))
101. SPLICES SHALL NOT BE ALLOWED BETWEEN THE SERVICE AND THE GEC, WITH EXCEPTIONS FOR LISTED IRREVERSIBLE COMPRESSION CONNECTORS OR EXOTHERMIC WELDING. (CEC 250.64(C))
102. ALL GEC CONNECTIONS SHALL BE ACCESSIBLE, EXCEPT WHERE CONNECTIONS ARE BURIED OR ENCASED IN CONCRETE. (CEC 250.68(A) AND 250.68(A) EXCEPTION 1)

V. GEC CONNECTIONS TO ELECTRODES
103. GEC MAY CONNECT TO ANY GROUNDING ELECTRODE SYSTEM (GES) ELECTRODE WHERE OTHER ELECTRODES ARE INTERCONNECTED BY BONDING JUMPERS TO FORM THE GES. (CEC 250.64(F)(1))
104. INDIVIDUAL GECS MAY CONNECT TO ELECTRODES WITHIN THE GES. (CEC 250.64(F)(2))
105. GECS MAY CONNECT TO A COMMON BUS THAT IS SECURELY FASTENED, ACCESSIBLE, AND AT LEAST ¼ INCH THICK AND 2 INCHES WIDE. (CEC 250.64(F)(3))
106. METAL STRUCTURAL FRAMING SHALL BE ACCEPTABLE TO INTERCONNECT GECS. HOLD-DOWN ANCHOR BOLTS OF METAL STRUCTURAL COLUMNS CAN BE USED AS CONNECTION POINTS. (CEC 250.68(C)(2))
107. UFER BAR EXTENDED THROUGH THE FOUNDATION SHALL BE ALLOWED AS A CONNECTION POINT FOR THE GEC IF ACCESSIBLE AND NOT SUBJECT TO CORROSION. (CEC 250.68(C)(3))
108. UFER SHALL NOT BE CONSIDERED AN ACCEPTABLE MEANS FOR INTERCONNECTION OF GECS. (CEC 250.68(C)(3) NOTE 19)

TEMPORARY POWER STANDARD

FOR OFFICE USE ONLY:
PERMIT #: ____-____-____
ISSUED: ____-____-____

PROJECT NAME: ________
PROJECT ADDRESS: ________ **COSTA MESA, CA**

OWNER INFO
NAME:
PHONE:
EMAIL:

CONTRACTOR INFO
NAME:
PHONE:
EMAIL:
LICENSE: EXPIRATION:

PLAN PREPARER INFO
NAME:
PHONE:
EMAIL:

EMERGENCY CONTACT INFO
NAME:
PHONE:
ROLE/RELATION TO PROPERTY:

TENANT INFO (IF APPLICABLE)
NAME:
PHONE:
EMAIL:

FORM NUMBER:
CBPG-2
(RELEASE: 09-2024)

MANUFACTURER'S INFORMATION:

SINGLE LINE DIAGRAM:

TABLES:

2022 CEC Table 250.102(C)(1) Grounded Conductor, Main Bonding Jumper, System Bonding Jumper, and Supply-Side Bonding Jumper for Alternating-Current Systems			
Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil)		Size of Grounded Conductor or Bonding Jumper* (AWG/kcmil)	
Copper	Aluminum or Copper-Clad Aluminum	Copper	Aluminum or Copper-Clad Aluminum
2 or smaller	1/0 or smaller	8	6
1 or 1/0	2/0 or 3/0	6	4
2/0 or 3/0	4/0 or 250	4	2
Over 3/0 through 350	Over 250 through 500	2	1/0
Over 350 through 600	Over 500 through 900	1/0	3/0
Over 600 through 1100	Over 900 through 1750	2/0	4/0
Over 1100	Over 1750	See Notes 1 and 2.	

Notes:

1. If the ungrounded supply conductors are larger than 1100 kcmil copper or 1750 kcmil aluminum, the grounded conductor or bonding jumper shall have an area not less than 121/2 percent of the area of the largest ungrounded supply conductor or equivalent area for parallel supply conductors. The grounded conductor or bonding jumper shall not be required to be larger than the largest ungrounded conductor or set of ungrounded conductors.

2. If the ungrounded supply conductors are larger than 1100 kcmil copper or 1750 kcmil aluminum and if the ungrounded supply conductors and the bonding jumper are of different materials (copper, aluminum, or copper-clad aluminum), the minimum size of the grounded conductor or bonding jumper shall be based on the assumed use of ungrounded supply conductors of the same material as the grounded conductor or bonding jumper and will have an ampacity equivalent to that of the installed ungrounded supply conductors.

3. If multiple sets of service-entrance conductors are used as permitted in 230.40, Exception No. 2, or if multiple sets of ungrounded supply conductors are installed for a separately derived system, the equivalent size of the largest ungrounded supply conductor(s) shall be determined by the largest sum of the areas of the corresponding conductors of each set.

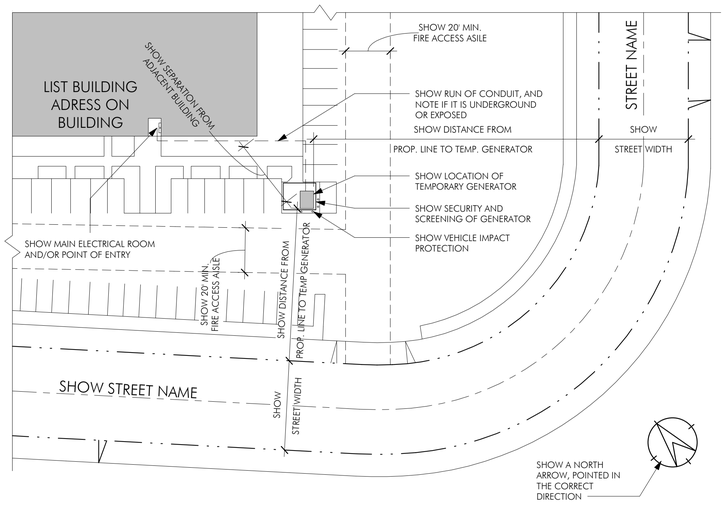
4. If there are no service-entrance conductors, the supply conductor size shall be determined by the equivalent size of the largest service-entrance conductor required for the load to be served.

*For the purposes of applying this table and its notes, the term bonding jumper refers to main bonding jumpers, system bonding jumpers, and supply-side bonding jumpers.

CLEARANCES CHART:

Tank Capacity Gallons	Required Setback to Property Line	Required Setback to Adjacent Building
0-275	10 feet	5 feet
276-750	20 feet	5 feet
751-1000	30 feet	5 feet

SAMPLE SITE PLAN SHOWING REQUIREMENTS:



1. GENERAL INFORMATION:
   - A. PROVIDE COPIES OF GENERATOR MANUFACTURER'S SPECIFICATIONS.
   - B. PLANS MUST BE PREPARED BY A REGISTERED DESIGN PROFESSIONAL OR LICENSED ELECTRICAL CONTRACTOR FOR DESIGN BUILD PROJECTS.
2. SITE PLAN:
   - A. LOCATION OF THE TEMPORARY GENERATOR, PROPERTY LINES WITH DISTANCES FROM THE GENERATOR, STREET, THE NORTH ORIENTATION, BUILDINGS FOOTPRINTS SHOWING THE LOCATION OF THE BUILDING ELECTRICAL SERVICE/MAIN PANELBOARD/DISTRIBUTION BOARD THAT IS TO BE ENERGIZED, LAYOUT OF OTHER EXISTING/PROPOSED ELECTRICAL EQUIPMENT, FEEDER CONDUITS/CABLE LAYOUT AND REQUIRED WORKING CLEARANCES OF ELECTRICAL EQUIPMENT.
   - B. LOAD CALCULATION ANALYSIS BASED ON ARTICLE 220 FOR THE LOADS TO BE SUPPLIED AND TO INCLUDE ADJUSTMENTS FOR CONTINUOUS LOADS AND LARGEST MOTOR LOAD. INDICATE EMERGENCY VEHICLE ACCESS DRIVE LOCATIONS, ENSURING A MINIMUM 20-FOOT WIDTH.
   - C. DETAIL VEHICLE IMPACT PROTECTION, SUCH AS POSTS. ADDITIONAL PROTECTION IS NOT REQUIRED FOR TEMPORARY INSTALLATIONS ON RAISED TRAILERS.
   - D. SHOW THE LOCATION AND DETAILS OF PROPOSED SECURITY OR SCREENING FENCING AND SPECIFY THE MATERIAL TYPE. SCREENING IS REQUIRED FOR INSTALLATIONS FRONTING STREETS BUT NOT REQUIRED FOR INSTALLATIONS VISIBLE ONLY FROM ADJACENT PROPERTIES.
   - E. INDICATE THE METHOD OF PROVIDING PHYSICAL PROTECTION FOR CONDUCTORS AND SPECIFY WHETHER CONDUCTORS ARE IN CONDUIT AND ABOVE OR BELOW GRADES.
   - F. CLARIFY LOCATION OF CONDUITS ABOVE GROUND OR UNDERGROUND. APPLY ADJUSTMENT FACTORS FOR AMBIENT TEMPERATURE FOR ABOVE GROUND PER TABLES CEC 310.15(B)(3)(C) AND/OR CEC 400.5(A)(3) AS APPLICABLE.
3. ELECTRICAL PLANS:
   - A. PROVIDE A SINGLE LINE DIAGRAM SHOWING THE TRANSFER OF LOADS TO THE TEMPORARY GENERATOR. AT MINIMUM, SHOW THE FOLLOWING ITEMS: TYPES OF FEEDER/WIRING METHODS (INCLUDING CORD/CABLE ASSEMBLY AND/OR CONDUCTORS, GAUGE, TYPE OF MATERIAL, INSULATION, AND CONDUIT); EQUIPMENT VOLTAGES, AMPS, VA/WATTS AND AIC RATINGS; GROUNDING ELECTRODE AND CONDUCTOR TYPES, AMOUNTS AND SIZES; CIRCUIT BREAKERS AND/OR FUSES; TRANSFORMERS; PANELBOARD; AND DISCONNECTS.
   - B. IDENTIFY ANY EMERGENCY LOADS REQUIRED BY CALIFORNIA CODES TO HAVE BACKUP POWER FROM AN APPROVED EMERGENCY POWER SOURCE.
   - C. INCLUDE LOAD CALCULATIONS TO DEMONSTRATE THAT THE GENERATOR SIZE IS SUFFICIENT FOR THE LOAD TO BE SERVED.
   - D. SPECIFY RATINGS OF VOLTAGE AND AMPACITY, NUMBER OF PHASES, WIRE CONFIGURATIONS FOR ALL ELECTRICAL EQUIPMENT; (FORMAT EXAMPLE: 240 VOLT, SINGLE PHASE, 3 WIRE).
   - E. DETAIL THE TRANSFER SWITCH METHOD (AUTOMATIC OR MANUAL) AND INCLUDE SPECIFICS SUCH AS VOLTAGE, AMPERAGE, AND THE NUMBER OF POLES. ENSURE THE TRANSFER SWITCH IS LISTED BY UL OR ANOTHER APPROVED TESTING AGENCY.
   - F. SPECIFY CONDUCTOR AND OVERCURRENT PROTECTION TYPE AND SIZE.
   - G. PROVIDE THE GENERATOR SIZE (KW AND VOLTAGE).
   - H. SPECIFY FUEL TYPE AND QUANTITY.
   - I. INCLUDE FUEL TANK DETAILS, SUCH AS DOUBLE WALL TANK CONSTRUCTION LISTED BY AN APPROVED TESTING AGENCY OR PROVIDE OTHER DETAILS FOR SECONDARY CONTAINMENT PER WM-4 CASQA SPILL PREVENTION AND CONTROL.
   - J. PROVIDE VENTING DETAILS, INCLUDING PIPE LOCATION, DIAMETER, AND HEIGHT FOR NORMAL AND EMERGENCY VENTS.
   - K. PROVIDE GROUNDING METHOD AND SIZING DETAILS. A GROUND ROD IS NOT REQUIRED FOR A GENERATOR ON A TRAILER WITH TIRES.
   - L. SHOW THE REQUIRED AVAILABLE FAULT CURRENT (AIC) FROM THE SERVING UTILITY AND GENERATOR. ENSURE EQUIPMENT IS RATED FOR THE AVAILABLE FAULT CURRENT.
   - M. PROVIDE PANELBOARD SCHEDULE FOR PROPOSED DISTRIBUTION PANELBOARDS.
   - N. PROVIDE CALCULATIONS TO DETERMINE AMPACITY OF CORDS/CABLES PER CEC 400.5 APPLYING AMBIENT TEMPERATURE CORRECTION FACTOR.
   - O. CLEARLY AND SPECIFICALLY SPECIFY CORD/CABLE TYPE PER TABLE CEC 400.4 THAT IS SUITABLE FOR CONDITIONS OF USE AND ITS LOCATION.
   - P. NOTES ARE TO BE PROVIDED INDICATING THAT "ALL OF THE UNUSED LOADS ARE TO BE SAFELY DISCONNECTED", "NEUTRALS ARE TO BE ISOLATED FROM ANY GROUNDING CONNECTIONS IN THE FED PANELBOARDS/DISTRIBUTION BOARDS" AND "BACK-FED CIRCUIT-BREAKERS SHALL HAVE HOLD-DOWN KITS INSTALLED".

TEMPORARY POWER STANDARD

FOR OFFICE USE ONLY:

PERMIT #:

____-____-____

ISSUED:

____-____-____

PROJECT NAME:

PROJECT ADDRESS: COSTA MESA, CA

OWNER INFO
NAME:
PHONE:
EMAIL:

CONTRACTOR INFO
NAME:
PHONE:
EMAIL:
LICENSE: EXPIRATION:

PLAN PREPARER INFO
NAME:
PHONE:
EMAIL:

EMERGENCY CONTACT INFO
NAME:
PHONE:
ROLE/RELATION TO PROPERTY:

TENANT INFO (IF APPLICABLE)
NAME:
PHONE:
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FORM NUMBER:
CBPG-3

(RELEASE: 09-2024)