ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH ALL STATE , COUNTY, LOCAL CODES, RULES AND REGULATIONS OF GOVERNING GOVERNMENT AGENCIES HAVING JURISDICTION AND THE PRESENTLY ADOPTED EDITION OF THE CALIFORNIA ELECTRICAL CODE (C.E.C.)

2. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, CHARGES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENTAL AGENCIES.

3. ALL UTILITY WORK (POWER, TELEPHONE, CABLE TELEVISION) SHALL BE IN COMPLIANCE WITH THESE DRAWINGS AND THE REQUIREMENTS OF THE SERVING UTILITY COMPANY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE SERVING UTILITY TO RECEIVE COMPLETE INFORMATION ON THEIR REQUIREMENTS PRIOR TO SUBMISSION OF THE BID. THE ACT OF SUBMITTING THE BID SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO INSTALL SERVICE IN COMPLIANCE WITH THE SERVING UTILITY AND THE CONTRACTS DOCUMENTS.

4. ALL ITEMS SUCH AS SERVICE CONDUIT, CONDUCTORS, DUCTS, CONCRETE PADS, TRANSFORMERS, RISERS, MANHOLE, PULL BOXES, AND PROTECTIVE COVERING FROM SERVICE LOCATIONS SHALL BE PROVIDED AND INSTALLED, AND SHALL BE VERIFIED WITH THE SERVING UTILITY COMPANY. THE CONTRACTOR SHALL INSTALL THE SERVICE IN COMPLIANCE WITH THE SERVING UTILITY COMPANY, AND SHALL PAY ALL CHARGES LEVIED BY THE SERVING UTILITY COMPANY FOR HIS SERVICE EXCEPT THE FIRST BILLING DEPOSIT. WHERE THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE, THE DOCUMENTS SHALL GOVERN.

5. THE CONTRACTOR SHALL VISIT THE SITE INCLUDING ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS (AND BY SUBMITTING A BID, ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK).

6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS AND SPECIFICATIONS. HE SHALL CHECK THE DRAWINGS OF THE OTHER TRADES AND SHALL CAREFULLY READ THE ENTIRE SPECIFICATIONS AND DETERMINE HIS RESPONSIBILITIES. FAILURE TO DO SO SHALL NOT RELEASE THE CONTRACTOR FROM DOING THE WORK IN COMPLETE ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

7. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL, OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY WHERE UL DOES NOT HAVE A LISTING. CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY. IN ADDITION, THE MATERIALS, EQUIPMENT, AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING:

   AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
   INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
   NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATIONS (NEMA)
   AMERICAN STANDARD ASSOCIATION (ASA)
   NATIONAL FIRE PROTECTION AGENCY (NFPA)
   AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
   CALIFORNIA ELECTRICAL CODE (CEC)
   CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
   INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
   ALL LOCAL CODES HAVING JURISDICTION

8. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN FIFTEEN DAYS AFTER AWARD OF THE CONTRACT. THE CONTRACTOR SHALL SUBMIT SIX COPIES OF A COMPLETE LIST OF MATERIALS AND EQUIPMENT INCLUDING MANUFACTURER AND MODEL NUMBER PROPOSED FOR THE JOB. SHOP DRAWINGS SHALL INCLUDE JOB DESCRIPTION AND ENGINEER IDENTIFICATION, AND ALL DATA WITH CAPACITIES, SIZES, DIMENSIONS, CATALOG NUMBERS, AND MANUFACTURER'S BROCHURES. SHOP DRAWINGS SHALL BE SUBMITTED FOR ITEMS LISTED IN SPECIFICATIONS. PARTIAL, INCOMPLETE, OR UNBOUND SUBMITTALS WILL BE RETURNED WITHOUT REVIEW. CONTRACTOR SHALL SUBMIT A SCHEDULE OF ALL SHOP DRAWINGS AND SUBMITTALS WHICH ARE TO BE REVIEWED WITHIN FIFTEEN DAYS OF CONTRACT AWARD.

9. THE CONTRACTOR SHALL PROVIDE AND KEEP UP-TO-DATE A COMPLETE RECORD SET OF DRAWINGS. THESE PRINTS SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS, THIS SET OF DRAWINGS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT WITHOUT DEFINITE INSTRUCTION IN EACH CASE. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE COUNTY, AND ALL CHANGES AS NOTED ON THE RECORD SET OF DRAWINGS SHALL BE INCORPORATED THEREON WITH BLACK INK IN A NEAT, LEGIBLE, UNDERSTANDABLE AND PROFESSIONAL MANNER. FAILURE TO KEEP RECORD DRAWINGS UP-TO-DATE SHALL CONSTITUTE CAUSE FOR WITHHOLDING OF PROGRESS PAYMENTS.

10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY POWER FACILITIES AT THE SITE.

11. WHENEVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT DEVICES, CIRCUIT BREAKERS, GROUND FAULT PROTECTION SYSTEMS, ETC. (ALL MATERIALS), ARISES ON THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.

12. DRAWINGS ARE DIAGRAMMATIC ONLY. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER SECTIONS. DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL OR EXISTING FEATURES.

13. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

14. REFER TO SINGLE LINE DIAGRAM AND FEEDER SCHEDULES FOR CONDUIT AND CONDUCTOR SIZE TO PANELS, TRANSFORMERS, EQUIPMENT, ETC. CONDUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART OF THIS CONTRACT.

15. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. SUPPLY POWER AND MAKE CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON THE SINGLE LINE DIAGRAM, ELECTRICAL DRAWINGS, AND DRAWINGS OF OTHER TRADES. REVIEW THE DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT. DISCONNECT SWITCHES, STARTERS, WIRING, CONTROLS, AND CONDUIT FOR MECHANICAL AND PLUMBING OPERATIONS SHALL BE PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUIT TO THIS EQUIPMENT.

16. EXACT METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENINGS IN CONCRETE WALLS OR FLOORS OR STRUCTURAL STEEL MEMBERS SHALL BE AS DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAWCUTTING, PATCHING, AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR OR CEILING. EXACT METHOD AND LOCATIONS OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS SHALL BE UL APPROVED.

17. FIRE STOPPING MATERIAL (PENETRATION SEALING) IS REQUIRED FOR EACH PENETRATION THROUGH A FIRE RATED WALL PER C.B.C/C.E.C.

18. CONNECTIONS TO VIBRATING EQUIPMENT AND SEISMIC SEPARATIONS:
    LIQUID-TIGHT FLEXIBLE STEEL CONDUIT IN DRY INTERIOR LOCATIONS.
    LIQUI-TIGHT FLEXIBLE STEEL CONDUIT IN AREAS EXPOSED TO WEATHER, DAMP LOCATIONS, CONNECTIONS TO TRANSFORMER ENCLOSURES, AND FINAL CONNECTIONS.
    PROVIDE A SEPERATE INSULATED EQUIPMENT GROUNDING CONDUCTOR IN FLEXIBLE CONDUIT RUNS. MAXIMUM LENGTH SHALL BE SIX FEET UNLESS OTHERWISE NOTED.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAWCUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK. ATTENTION IS CALLEDTO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED BY HIM OR HIS WORK.

20. FURNISH AND INSTALL SWITCHBOARDS AND PANELBOARDS AS INDICATED ON THE DRAWINGS. PANELBOARDS SHALL COMPLY WITH NEMA STANDARD FOR PANELBOARDS AND FEDERAL SPECIFICATION W-P-115A. PANELBOARDS SHALL BE COMPLETE WITH COPPER BUS BARS AND 40 DEGREE CELSIUS THERMAL MAGNETIC BOLT-ON TYPE CIRCUIT BREAKERS AS INDICATED ON DRAWINGS. PANELBOARDS SHALL BE SQUARE D OR EQUAL BY GENERAL ELECTRIC.

21. RECEPTACLES SHALL BE SPECIFICATION GRADE, 20 AMP, NEMA 5-20R GROUNDING TYPE HUBBELL #5362, OR EQUAL BY PASS & SEYMOUR OR GENERAL ELECTRIC. COLOR SHALL BE SELECTED BY ARCHITECT.

22. SWITCHES SHALL BE 20 AMP, 120/277 VOLT RATED SILENT TYPE SPECIFICATION GRADE HUBBELL OR EQUAL BY PASS & SEYMOUR OR GENERAL ELECTRIC. COLOR SHALL BE SELECTED BY ARCHITECT.

23. DEVICE PLATES SHALL BE STAINLESS STEEL FOR THE NUMBER OF GANGS AND TYPE OF OPENINGS NECESSARY, HUBBELL OR EQUAL BY PASS & SEYMOUR OR GENERAL ELECTRIC. PLATES SHALL BE ENGRAVED WITH PANEL AND CIRCUIT NUMBER.

24. FOR SMALL AC MOTORS HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED TO THE NAMEPLATE CURRENT RATING OF THE MOTOR. SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTIONS, PROVIDE A HORSEPOWER RATED TOGGLE TYPE DISCONNECT SWITCH.

25. SAFETY SWITCHES SHALL BE HEAVY DUTY NEMA TYPR HD BY SQUARE D OR GENERAL ELECTRIC. SWITCHES SHALL BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATES RATINGS.

26. TERMINAL CABINETS SHALL BE GALVANIZED CODE SHEET STEEL, FLUSH OR SURFACE MOUNTED AS INDICATED ON THE DRAWINGS, OR IDENTICAL MANUFACTURE AS BRANCH CIRCUIT PANELS. FLUSH MOUNTED CABINETS SHALL BE PRIMED AND PAINTED. FINISH COLOR AS SELECTED BY ARCHITECT.

27. RIGID GALVANIZED STEEL CONDUIT SHALL BE FULL WEIGHT TREADED TYPE. ELECTRIC METALLIC TUBING (EMT) MAY BE USED IN DRY WALLS OR CEILING SPACES WHERE NOT SUBJECT TO MECHANICAL DAMAGE. PVC SCHEDULE 40 SHALL BE INSTALLED BENEATH SLAB OR BELOW GRADE. FLEXIBLE STEEL CONDUIT MAY BE USED AT FIXTURE AND OUTLET CONNECTIONS WITH NO RUNS LONGER THAN SIX FEET. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED IN ALL CONDUIT RUNS.

28. RIGID GALVANIZED STEEL CONDUIT FITTINGS SHALL BE THREADED AND THOROUGHLY GALVANIZED. ELECTRICAL METALLIC TUBING (EMT) CONDUIT FITTINGS SHALL BE STEEL, RAINTIGHT THREADLESS COMPRESSION TYPE. DIE CAST, SET SCREW, OR INDENTER TYPES ARE NOT ACCEPTIBLE. FLEXIBLE STEEL CONDUIT FITTINGS SHALL BE MALLEABLE IRON CLAMP, SQUEEZE TYPE OR STEEL TWIST-IN TYPE WITH INSULATED THROAT. SET SCREW TYPE IS NOT ACCEPTABLE.

29. ALL CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM SIZE, TYPE THWN THERMOPLASTIC, 600 VOLT, 75 DEGREES CELSIUS WET AND 90 DEGREES CELSIUS DRY AND UL LISTED UNLESS NOTED OTHERWISE. CONDUCTORS #12 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #10 AWG AND LARGER SHALL BE STRANDED.

30. THE EQUIPMENT GROUNDING CONDUCTOR SHOWN ON CONDUIT RUNS SHALL RUN CONTINUOUS FROM PANEL TO LAST OUTLET. THIS WIRE SHALL BE PIGTAILED IN EACH OUTLET FOR CONNECTION TO BOX AND DEVICE SO THAT IF DEVICE IS REMOVED, GROUND WILL NOT BE INTERRUPTED. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSULATED GREEN CONDUCTORS. ALTERNATE METHODS OF IDENTIFICATION SHALL NOT BE USED. CONTRACTOR SHALL NOTIFY THE CITY TO EXAMINE CONDUCTOR INSTALLATION PRIOR TO INSTALLATION OF DEVICES.

31. IDENTIFICATION NAMEPLATES SHALL BE MICARTA 1/8 INCH THICK AND OF APPROVED SIZE WITH BEVELED EDGES AND ENGRAVED WHITE LETTERS A MINIMUM OF 1/4 INCHES HIGH ON BLACK BACKGROUND. NAMEPLATES SHALL BE PROVIDED FOR ALL CIRCUITS IN THE SERVICE DISTRIBUTION AND POWER DISTRIBUTION SWITCHBOARDS OR PANELBOARDS, LIGHTING DISTRIBUTION PANELBOARDS, LIGHTING CONTROL PANELS, DISCONNECTING SWITCHES, TRANSFORMERS, TERMINAL CABINETS, TELEPHONE CABINETS, ETC. ALL NAMEPLATES SHALL BE ATTACHED WITH SCREWS. PULL BOXES, JUNCTION BOXES, AND DEVICE BOXES SHALL BE MARKED WITH A PERMANENT MARKER.

32. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

33. THE CONTRACTOR SHALL FURNISH A ONE YEAR WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP FROM THE DATE OF SUBSTANTIAL COMPLETION.

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SHEET TITLE
ELECTRICAL GENERAL NOTES

100% CONSTRUCTION DOCUMENT

DATE	REVISIONS

STAMP

REGISTERED PROFESSIONAL ENGINEER
CIRILO C. REGALADO JR.
No. E16914
Exp. 6-30-11
ELECTRICAL
STATE OF CALIFORNIA

CHECKED BY	DATE
LRA	
DATE 01-07-10	FILE NAME
DRAWN BY CR	SHEET
JOB NO. 05208.00	EB-0.2
SCALE NONE	162 OF 313 SHEETS