GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NATIONAL ELECTRIC CODE AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES. WHERE THE PLANS SHOW MORE RESTRICTIVE REQUIREMENTS, THE PLANS SHALL GOVERN BUT NOTHING ON THESE PLANS SHALL BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. PROVIDE ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION, AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, INSTALLATION, AND MAKING FULLY OPERATIONAL THE WORK OF THIS DIVISION, COMPLETE, AND AS SHOWN AND/OR SPECIFIED HEREIN. EXCEPT SUCH MATERIAL OR EQUIPMENT SPECIFICALLY INDICATED AS PROVIDED BY THE OWNER OR BY OTHERS.
3. IN THE EVENT OF CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS, THE PLAN, NOTE OR SPECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
4. THE CONTRACTOR SHALL EXAMINE THE SITE AND THE AREA WHERE THE WORK IS TO BE PERFORMED. BY SUBMITTING A BID ON THE WORK, HE SHALL BE DEEMED TO HAVE ACCEPTED THE SITE CONDITION.
5. FINISH AND INSTALL ALL CONDUITS, WIRES, BOXES, SWITCHES, LIGHT FIXTURES(WITH LAMPS), RECEPTACLES, SERVICE DEVICES, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, AND ALL RELATED ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
6. FURNISH AND INSTALL CONDUIT AND CONDUCTORS FOR CABLE TV, TELEPHONE, DATA SYSTEMS, AND SECURITY SYSTEM AS OUTLINED IN PLANS.
7. ALL MATERIAL SHALL BE NEW AND OF THE HIGHEST QUALITY, AND SHALL MEET THE FULL APPROVAL OF OWNER OR ENGINEER.
8. MATERIALS FURNISHED SHALL BE STANDARD PRODUCTS OF THE MANUFACTURER REGULARLY ENGAGED IN MANUFACTURING OF SUCH PRODUCT. USE LATEST DESIGN THAT COMPLIES WITH THE SPECIFICATION REQUIREMENTS WITH AT LEAST 12 MONTH OF SUCCESSFUL RECORD.
9. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS' LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
10. ALL WORK AND MATERIALS OF THIS CONTRACT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. LIGHTING FIXTURES BALLASTS SHALL BE GUARANTEED FOR TWO(2) YEARS. BATTERY PACKS SHALL BE GUARANTEED FOR FIVE YEARS.
11. NO EXTRA WORK SHALL BE UNDERTAKEN WITHOUT WRITTEN APPROVAL OF THE OWNER OR HIS REPRESENTATIVE.
12. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMIT AND INSPECTIONS REQUIRED.
13. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENT OF CONDUIT RUNS ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE WORK AS TO SERVE THE POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURAL CONDITIONS ENCOUNTERED.
14. LOCATIONS SHOWN ON THE INTERIOR AND MECHANICAL DRAWINGS TAKE PRECEDENCE OVER THOSE SHOWN ON THE ELECTRICAL DRAWINGS. REFER TO MECHANICAL, PLUMBING AND HEAT/AC DRAWINGS FOR THE EXACT LOCATIONS, RATINGS, TYPE, CONNECTIONS, WIRING DIAGRAM AND AUXILIARY DEVICES.
15. REFER TO THE REFLECTED CEILING PLAN AND THE INFERIOR FLOOR PLANS FOR THE EXACT LOCATIONS OF LIGHTING FIXTURES AND DEVICES. VERIFY LOCATION OF LIGHTS WITH EXPOSED DUCTWORK AND PIPING.
16. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
17. THE ELECTRICAL CONTRACTOR IN COOPERATION WITH THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE THAT ALL EQUIPMENT IS IN PERFECT WORKING ORDER. THE ELECTRICAL CONTRACTOR SHALL MAKE ALL POWER CONNECTIONS OVER 100V TO A/C EQUIPMENT.
18. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT ONLY WITH PULL ROPE FOR LOW VOLTAGE CONTROL WIRING FOR THE A/C EQUIPMENT. CONTROL WIRING FROM THERMOSTATS AND OVERRIDES TO A/C UNITS IS BY THE MECHANICAL CONTRACTOR.
19. THE CONTRACTOR MAY USE TEMPORARY POWER AND WATER AVAILABLE FOR LIGHTING AND SMALL TOOLS. TOILET FACILITIES ON SITE MAY BE USED BY CONTRACTOR PERSONNEL.
20. SUBMIT THREE (3) SETS OF SHOP DRAWINGS FOR APPROVAL TO ENGINEER FOR ALL PANELBOARDS. DRAWINGS SHALL BE PICTORIAL AND INDICATE ALL MATERIAL RATINGS, DIMENSIONS AND FINISHES.
21. CONTRACTOR SHALL MAINTAIN, ON THE JOB, A SET OF PRINTS OF WHICH ALL DAILY CHANGES IN LOCATION OR RUNS SHALL BE CAREFULLY INDICATED. THESE PRINTS SHALL BE DELIVERED TO THE OWNER AT THE CONCLUSION OF THE PROJECT, INDICATING 'AS BUILT' CONDITION.
22. ACCOMPLISH ALL TEST NECESSARY TO DEMONSTRATE TO THE SATISFACTION OF THE OWNER THAT ALL EQUIPMENT IS IN PROPER WORKING ORDER AND IS IN COMPLIANCE WITH THE PLANS.
23. CLEAN UP ALL TRASH AND DEBRIS BY THE WORK DAILY.
24. THE GENERAL CONDITIONS OF THE CONTRACT APPLY TO ALL WORK HEREIN SPECIFIED.
25. CUTTING, DRILLING, AND PATCHING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.
26. ROUGH- AND FURNISHED-CONCRETE WORK REQUIRED SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.
27. SUBSTITUTIONS: MANUFACTURER AND CATALOG NUMBERS INDICATED ARE FOR THE PURPOSES OF ESTABLISHING STANDARDS OF QUALITY, ALLOWABLE SIZE OF COMPONENTS, AND THE TYPE OF MATERIALS TO BE USED, PRODUCTS BY OTHER MANUFACTURERS WILL BE CONSIDERED IF THE SUBMITTAL ASSOCIATED WITH THAT ITEM IS CLEARLY MARKED " THIS ITEM IS A SUBSTITUTION" AND IT COMPLIES WITH THE FOLLOWING: (1) QUALITY AND CAPACITY ARE EQUAL TO OR BETTER THAN SPECIFIED ITEM, AND (2) COMPONENTS FIT IN ALLOWED SPACES AND ARE SIMILAR IN APPEARANCE. NO SUBSTITUTION ITEMS MAY BE FURNISHED OR INSTALLED WITHOUT WRITTEN APPROVAL OF THE OWNER.
28. OPERATIONS AND MAINTENANCE MANUALS: THREE COPIES OF OPERATING AND MAINTENANCE DATA FOR ALL ELECTRICAL EQUIPMENT, BOUND IN A HARDCOVER THREE-RING PLASTIC BINDER WITH A TABLE OF CONTENT.
29. COORDINATION: PROVIDE NECESSARY COORDINATION WITH SERVING UTILITY COMPANIES TO ESTABLISH SERVICE ENTRANCE FACILITIES, AND TO MEET OTHER REQUIREMENTS FOR A COMPLETE AND OPERABLE INSTALLATION. VERIFY SIZE AND ORIENTATION OF EQUIPMENT TO BE ENSURE ADEQUATE WORKING CLEARANCE AND VENTILATION. COORDINATE THE WORK OF OTHER TRADES, VERIFYING REQUIRED WORKING. CLEARANCES, SLEEVES, SUPPORTS, DOOR SWINGS, AND OTHER ITEMS AFFECTING THE WORK OF THIS SECTION. VERIFY THE METHODS OF INSTALLING AND CONNECTING EQUIPMENT, OUTLETS, AND OTHER ITEMS.
30. QUALITY ASSURANCE: ALL MATERIALS AND THE MANNER IN WHICH THEY ARE APPLIED AND INSTALLED SHALL BE IN COMPLIANCE WITH THE LATEST RULES AND REGULATIONS OF THE CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 3 "CALIFORNIA ELECTRICAL CODE" THE NATIONAL ELECTRICAL CODE; AND OTHER APPLICABLE STATE- AND LOCAL-LAWS AND REGULATIONS. PROTECTION AND CLEANING: ALL PARTS OF EQUIPMENT AND MATERIALS SHALL BE THOROUGHLY CLEANED. PROTECT ALL WORK, MATERIALS AND EQUIPMENT FROM DAMAGE FROM ANY CAUSE AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL THE WORK UNTIL FINAL ACCEPTANCE BY THE OWNER; REPLACE ALL DAMAGED OR DEFECTIVE. WORK, MATERIALS AND EQUIPMENT PRIOR TO REQUESTING FINAL ACCEPTANCE. PROVIDE AND MAINTAIN SUITABLE BARRIERS, WARNING SIGNS, LIGHTS, ETC. WHERE REQUIRED FOR PROTECTION OF THE PUBLIC AND OCCUPANTS ABOUT THE SITE. AT THE CONCLUSION OF EACH WORKDAY, THE PREMISES SHALL BE LEFT FREE FROM DEBRIS INCIDENTAL TO THE WORK, AND IN A CONDITION ACCEPTABLE TO THE OWNER OR TENANT.

MATERIAL

1. CONDUITS OUTSIDE THE BUILDING SHALL BE RIGID STEEL STANDARD WEIGHT HOT DIPPED GALVANIZED THREADED AT BOTH ENDS OR EMT WHERE APPLICABLE.
2. UNDERGROUND CONDUITS IF ANY SHALL BE PVC SCHEDULE 40.
3. THE WIRING CAN BE ROMEX WHERE PERMITTED BY LOCAL JURISDICTION. ALL OTHER CONDUITS INSIDE THE BUILDING SHALL BE ELECTRICAL METALLIC TUBING (EMT) OR MC CABLE UNLESS IF SUBJECT TO DAMAGE. CONDUITS SUBJECT TO PHYSICAL DAMAGE SHALL BE RIGID GALVANIZED STEEL CONDUIT.
4. FLEXIBLE LIQUID TIGHT METAL CONDUITS SHALL BE USED FOR FINAL CONNECTION TO ROTATING EQUIPMENT, CONDENSING UNITS. EXHAUST FAN AND FAN COILS. A GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FLEXIBLE METALLIC CONDUIT RUNS.
5. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAT THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH IT MAY BE SUBJECTED.
6. ALL DEVICES INSTALLED OUTSIDE OR IN DAMP LOCATIONS SHALL BE APPROVED WEATHERPROOF.
7. CONDUCTORS SHALL BE COPPER WITH THHN/THWN INSULATION. INSULATED WIRES AND CABLES MANUFACTURED MORE THAN SIX (6) MONTH PRIOR TO DATE OF DELIVERY TO THE SITE SHALL NOT BE USED. ALL WIRE SHALL BE UL LISTED, RATED FOR 600 VOLTS, NO 12 MINIMUM SIZE EXCEPT FOR CONTROLS OR OTHERWISE AS NOTED.
8. GROUNDING CONDUCTORS SHALL BE SOFT DRAWN INSULATED COPPER WIRE AS INDICATED WITH GREEN COLORED INSULATION OR GREEN PLASTIC IDENTIFICATION BENDS. GROUNDING AND BONDING OF EQUIPMENT SHALL CONFORM TO UL 467.
9. WIRES SHALL BE SPLICED WITH AN INSULATED CONNECTOR. SPLICES OF WIRES NO. 8 AWG AND LARGER SHALL BE MADE WITH APPROVED SOLDERLESS CONNECTORS AND THEN SHALL BE COVERED NEATLY WITH INSULATING TAPES, HOT MOLDED COMPOSITION COVERS, OR OTHER APPROVED EQUIVALENT TO THE CONDUCTOR INSULATION.
10. CONNECTORS AND TERMINALS CONFORMING TO UL 486 SHALL BE DESIGNATED FOR USE WITH THE SPECIFIC ASSOCIATED CONDUCTOR MATERIAL, AND SHALL PROVIDE A UNIFORM COMPRESSION OVER THE ENTIRE CONTACT SURFACE. TERMINATION LUGS SHALL BE USED ON ALL STRANDED CONDUCTORS.
11. ELECTRICAL TAPES USED FOR ELECTRICAL INSULATION AND OTHER PURPOSES IN WIRE AND CABLE SPLICES, TERMINATIONS, REPAIRS, AND MISCELLANEOUS PURPOSES SHALL CONFORM TO THE REQUIREMENT OF UL STANDARD 510.
12. OUTLET BOXES, EXTENSION RINGS AND COVERS SHALL BE PRESSED STEEL, GALVANIZED, KNOCKOUT TYPE OR PLASTIC AS LOCAL JURISDICTION PERMITS. BOX SIZES SHALL BE AS REQUIRED BY CODE FOR THE NUMBER OF WIRES ENTERING BOX. PLASTER RINGS SHALL BE PROVIDED FOR FLUSH MOUNTING.
13. DISCONNECT SWITCHES FUSED OR UNFUSED SHALL BE HEAVY DUTY TYPE, SIZED FOR LOAD NOTED ON THE PLANS, UL LISTED AND HORSEPOWER RATED, WITH PROVISIONS TO PAD LOCK HANDLE IN "ON" OR "OFF" POSITION. ENCLOSURE SHALL BE NEMA 3R FOR OUTSIDE OR NEMA 1 FOR INSIDE.
14. THREE (3) SPARE FUSES OF EACH TYPE SHALL BE PROVIDED TO THE OWNER. FUSES SHALL BE DUAL ELEMENT, TIME DELAY, HIGH INTERRUPTING TYPE, UL APPROVED. FUSE SIZES IN SWITCHES FOR HVAC EQUIPMENT SHALL BE AS SPECIFIED BY EQUIPMENT MANUFACTURER.
15. FURNISH ALL RELAYS, TIME CLOCKS, CONTROL TRANSFORMERS, ETC., REQUIRED FOR INSTALLATION.
16. PANELBOARDS MAY BE PLUG-IN CIRCUIT BREAKER TYPE. DEAD FRONT IN BEAKERS SHALL BE RATED AS INDICATED ON PLANS, NEMA 1 ENCLOSURE FOR INTERIOR PANELS, NEMA 3R ENCLOSURE FOR EXTERIOR PANELS.
17. LIGHTING FIXTURES SHALL BE FURNISHED COMPLETE WITH ALL COMPONENTS, LAMPS AND MOUNTING ACCESSORIES. ALSO SEE FIXTURE SCHEDULE.
18. RECEPTACLES: DUPLEX, THREE-WIRE GROUNDING TYPE, RATED 20A AT 125V, NEMA CONFIGURATION 5-20R. PROVIDE GFCI (SELF-CONTAINED) TYPE AT LOCATIONS SHOWN. FOR EXTERIOR LOCATIONS, PROVIDE WITH WEATHERPROOF BOX, AND ALUMINUM GASKETED SPRING-SHUT COVER. HUBBELL 53XX-SERIES, OR EQUAL FROM PASS & SEYMOUR OR LEVITON.
19. SWITCHES: TOGGLE TYPE, NUMBER OF POLES AS SHOWN, QUIET TYPE, RATED 20A AT 120/277V. HUBBELL HBL 12XX-SERIES, OR EQUAL FROM PASS & SEYMOUR OR LEVITON.
20. SWITCHBOARDS (SEE SINGLE LINE DIAGRAM): NEMA PB 2; UL 891. RATED AS SHOWN. CU/AL BUS. SIEMENS, CUTLER HAMMER, OR EQUAL BY SQUARE-D OR GE.
21. DISCONNECT SWITCHES: NEMA KS 1, UL 98, UL 198C AND 198E. RATED AS SHOWN, HEAVY DUTY TYPE, EXTERNALLY-OPERATED, QUICK-MAKE QUICK-BREAK TYPE, THREE-POLE EXCEPT AS OTHERWISE SHOWN. FOR FUSIBLE TYPE, PROVIDE DUAL-ELEMENT TIME-DELAY CLASS RK-1 CURRENT -LIMITING FUSES. FOR EXTERIOR LOCATIONS, AND WHERE INDICATED, PROVIDE NEMA 3R ENCLOSURES. SQUARE-D, OR EQUAL BY GE OR WESTINGHOUSE.
22. MOTOR CONTROLLERS: A. NEMA ICS 2/ICS 6/250/AB 1/FU 1/KS 1; UL 98/198C/198E/489/508. PROVIDE MANUAL MOTOR CONTROLLERS FOR SINGLE-PHASE MOTORS RATED BELOW 2 HP, AND COMBINATION MOTOR CONTROLLERS AS SHOWN. B. MANUAL MOTOR CONTROLLERS: MANUAL MOTOR STARTING SWITCH WITH INTEGRAL THERMAL TYPE OVERLOAD PROTECTION, TOGGLE LEVER TYPE, ALLEN-BRADLEY BULLETIN 609, OR EQUAL BY SQUARE-D, GE OR WESTINGHOUSE. C. COMBINATION MOTOR CONTROLLERS: ENCLOSED COMBINATION STARTER, FUSIBLE DISCONNECT SWITCH TYPE, ALLEN-BRADLEY BULLETIN 512, OR EQUAL BY SQUARE-D, GE OR WESTINGHOUSE.
23. PHOTOELECTRIC CONTROLLERS: RATED FOR CONNECTED LOAD, 20A MINIMUM. PARAGON, TORK, SANGANMO, OR EQUAL. 24. TELEPHONE SYSTEM: A. PROVIDE TELEPHONE SYSTEM AS FOLLOWS, EXCEPT AS OTHERWISE SHOWN: B. SERVICE ENTRANCE FACILITY: PROVIDE WALL-MOUNTED 3/4" X 4" x 8" (OR SIZE AS I INDICATED) PLYWOOD "MAIN TELEPHONE BACKBOARD" AT THE LOCATION SHOWN WITH (1) A DEDICATED 20A/120V BRANCH CIRCUIT /QUADRAPLEX POWER RECEPTACLE AND (2) A GROUNDING ELECTRODE PIGTAIL ($6 AWG BARE STRANDED COPPER CABLE ROUTED IN 1" CONDUIT DIRECTLY TO FACILITY GROUNDING ELECTRODE AND CONNECTED THEREON), AT THE TELEPHONE BACKBOARD LOCATION. C. VOICE DROPS AND CABLING PATHWAYS: PROVIDE FLUSH MOUNTED 4" SQUAREBOX/WALLPLATE WITH TELEPHONE JACK AT EACH OF THE LOCATIONS SHOWN. INCLUDING ¾" CONDUIT (WITH PULLROPE) CONTINUOUS TO THE TELEPHONE BACKBOARD LOCATION AT THE SERVICE ENTRANCE FACILITY. TELEPHONE JACKS SHALL BE PROVIDED AS SPECIFIED BY OWNER. CABLING AND ENTRANCE FACILITY TELEPHONE EQUIPMENT/CROSS-CONNECT FRAMES/NETWORK INTERANCE DEVICES WILL BE PROVIDED BY OWNER

GREEN BLDG. NOTES

1. THE OUTDOOR LIGHTING SYSTEMS SHALL BE DESIGNED AND INSTALLED TO COMPLY WITH ALL THE FOLLOWING:
   1.1. THE MINIMUM REQUIREMENTS IN CALIFORNIA ENERGY CODE FOR LIGHTING ZONES 1-4.
   1.2. BACKLIGHT, UPLIGHT AND GLARE(BUG) RATING AS DEFINED IN IESNA TM-15-11.
   1.3. ALLOWABLE BUG RATINGS NOT EXCEEDING THOSE SHOWN IN TABLES 5.106.8.
2. NEW RESIDENTIAL GRADE EQUIPMENT AND APPLIANCES PROVIDED AND INSTALLED SHALL BE ENERGY STAR LABELED IF ENERGY STAR IS APPLICABLE TO THAT EQUIPMENT OR APPLIANCE

INSTALLATION

1. THE CONTRACTOR SHALL INSTALL ALL CONDUITS AND WIRES WITH A MINIMUM NUMBER OF BENDS AND IN SUCH A MANNER AS TO CONFORM TO THE STRUCTURE. AVOID OBSTRUCTIONS, PRESERVE HEAD ROOM, KEEP OPENINGS AND PASSAGE WAYS CLEAR AND MEET ALL STRUCTURAL CODE REQUIREMENTS. CODE-SIZED PULL BOXES SHALL BE I INSTALLED IN RUNS OF OVER 100 FEET OR MORE THAN 4 BENDS.
2. SUPPLY AND INSTALL ALL SUPPORTS AND BRACING NECESSARY FOR THE PROPER INSTALLATION OD THE EQUIPMENT.
3. ALL EXPOSED CONDUIT SHALL BE INSTALLED AT RIGHT ANGLE TO ROOM OR STRUCTURE OR ALONG EXPOSED BEAMS. CONDUITS SHALL BE SUPPORTED FROM BUILDING STRUCTURE WITH APPROVED PIPE HANGERS.
4. ALL PULL BOXES AND ALL JUNCTION BOXES MUST BE ACCESSIBLE AFTER THE CONSTRUCTION IS COMPLETE, ESPECIALLY IN CONCEALED CONDUIT INSTALLATIONS. FINISH FOR ALL EXPOSED J-BOXES AND PULL BOXES SHALL BE PER INTERIOR DESIGN.
5. ALL CONDUITS ARE SIZED TO MEET THE REQUIREMENT OF CEC TABLE 3A, "MAXIMUM NUMBER OD CONDUCTORS IN TRADE SIZES OF CONDUIT OR TUBING". CONTRACTOR SHALL CONSIDER THESE SIZES AS A MINIMUM REQUIREMENT AND INCREASE THE CONDUIT SIZE IF NECESSARY TO FACILITATE HIS CABLE PULLING.
6. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS SHOWN AND AS REQUIRED BY ALL APPLICABLE CODES AND THE SERVING UTILITY. NO CONDUIT SHALL BE USED AS A GROUND, EXCEPT FOR LIGHTING CIRCUIT.
7. INCLUDE A GREEN-WIRE SIZED AS REQUIRED BY NATIONAL ELECTRICAL CODE IN ALL CONDUIT RUN D FOR EQUIPMENT GROUND AND GREEN-YELLOW STRIPE WIRE FOR ISOLATED GROUND AS SHOWN ON PARTICULAR CONDUIT RUNS ALONG WITH THE GREEN WIRE. SAME APPLIES TO FLEXIBLE CONDUITS EVEN IF UL LABELED FOR GROUND, UNLESS USED IN LIGHTING CIRCUITS.
8. PROVIDE FIRE PROOFING FOR PENETRATIONS THROUGH RATED WALLS AND FLOORS.
9. ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF THE ELECTRICAL WORK SHALL BE DONE BY THIS CONTRACTOR. DO NOT CUT OR DRILL STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER. ALL CUTTING AND PATCHING SHALL BE NEAT, AND PATCHING SHALL MATCH ADJACENT SURFACE AS TO TEXTURE AND FINISH. ALL SURFACE SHALL BE REPLACED IN KIND.
10. BACK TO BACK INSTALLATION OF OUTLET IS NOT PERMITTED IN ROOMS INSULATED FOR SOUND, BECAUSE OF SOUND TRANSFERENCE THROUGH OUTLETS. SEAL SUCH OUTLETS AIR TIGHT.
11. DIMENSIONS SHOWN ON OUTLET BOXES SHALL BE FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX.
12. FLUORESCENT FIXTURES SHALL BE SUPPORTED FROM STRUCTURE ABOVE.
13. ALL PENETRATION THROUGH ROOF SHALL BE FLASHED AND COUNTER FLASHED TO MAKE WATER-TIGHT,
14. PROVIDE A MANUAL DISCONNECTING MEANS AT MOTOR FOR ALL MOTORS NOT WITHIN SIGHT OF THE SERVING PANEL OR THEIR DISCONNECT.
15. INSTALL BLANK PLATES AS REQUIRED TO CLOSE OPENINGS IN SWITCHBOARDS OR PANELS WHERE EQUIPMENT HAS BEEN REMOVED.
16. ELECTRICAL IDENTIFICATION: PROVIDE NAMEPLATES FOR SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, CONTACTORS/RELAYS, and TERMINALCABINET/BACKBOADS, MOTOR CONTROLLERS, INDIVIDUALLY-MOUNTED ANY OTHER CONTROL DEVICE OR MAJOR ITEMS OF ELECTRICAL EQUIPMENT.
17. NAMEPLATES SHALL BE BLACK-ON-WHITE LAMINATED PLASTIC, ATTACHED WITH MACHINE SCREWS. LETTERING SHALL BE ¼" HIGH MINIMUM, CORRESPONDING TO THE DESIGNATION (OR ADDITIONAL INFORMATION) SHOWN. COLOR CODE ALL WIRE WITH INSULATION/JACKET (FACTORY-APPLIED0 COLOR FOR PHASE IDENTIFICATION (CONTINUOUS FOR CIRCUIT FROM OUTLET-TO OUTLET, PULL BOX, OR CABINET) AS FOLLOWS:

SYSTEM VOLTAGE

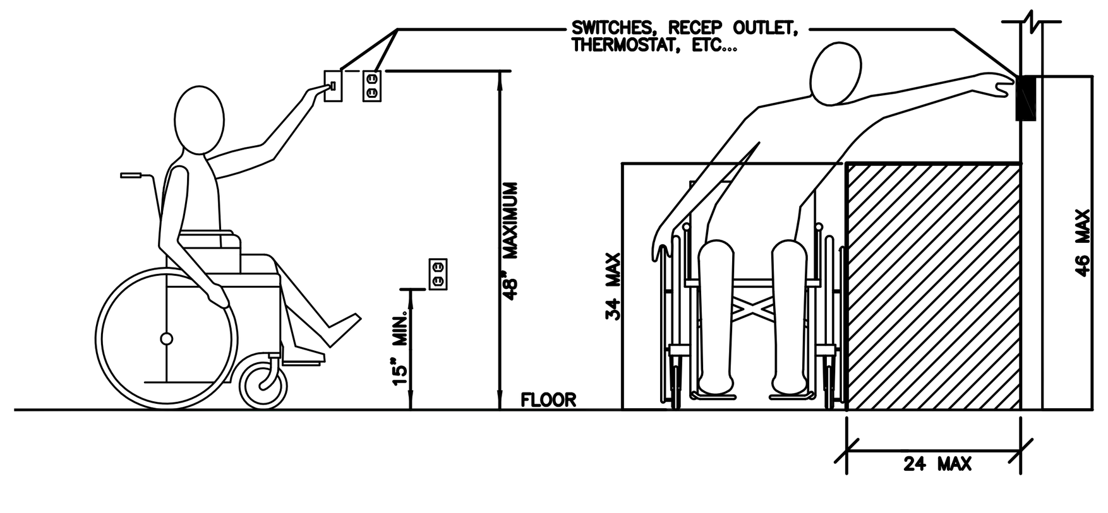
PHASE	208Y/120	480Y/277
A	BLACK	YELLOW
B	RED	BROWN
C	BLUE	ORANGE
NEUTRAL	WHITE	WHITE
GROUND	GREEN	GREEN

18. LIGHT FIXTURE IN CONTACT WITH INSULATION TO BE U.L. LISTED FOR THERMAL BARRIER OR PROVIDE 3" MINIMUM CLEARANCE.
19. PANEL CIRCUIT DIRECTORY TO COMPLY WITH SECT. 408.4, CEC.
20. W.P. COVER OF OUTLETS TO COMPLY WITH SECT. 406.8(B)(1), CEC.

START-UP

1. TEST THE ENTIRE WIRING SYSTEM FOR SHORT CIRCUITS, GROUNDS AND INSULATION RESISTANCE BETWEEN CONDUCTORS AND TO GROUND.
2. DEMONSTRATE THAT THE EQUIPMENT OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THESE DRAWINGS. DEMONSTRATE THAT PROTECTIVE FUNCTIONS ARE OPERATING PROPERLY AND INCORPORATED IN THE CONTROL SYSTEM CIRCUIT BREAKER, AND MOTOR CONTROL CENTER CIRCUITRY.
3. CHECK VOLTAGE AMPLITUDE AND BALANCE BETWEEN PHASES FOR LOADED AND UNLOADED CONDITIONS.
4. SET THE OVERLOAD HEATERS OF INDIVIDUAL MOTORS ACCORDING TO SERVICE, CODE AND MANUFACTURER'S REQUIREMENT.
5. CHECK AND CORRECT THE ROTATION OF ALL MOTORS. CHECKS WITH THE CONTRACTOR RESPONSIBLE FOR DRIVEN EQUIPMENT.
6. ALL TESTS TO BE PERFORMED IN PRESENCE OF THE OWNER. SUBMIT THE REPORTS TO THE ENGINEER FOR REVIEW.

RECEPT. MOUNTING HEIGHT



ELECTRICAL CODE

1. PROVIDE A GROUNDING SYSTEM FOR A SEPARATE STRUCTURE PER CEC 250-32(B).
2. PROVIDE WORKING CLEARANCES @ NEW & EXISTING EQUIPMENT. CEC ART. 110-26.
3. GROUNDING ELECTRODE CONDUCTOR INSTALLATION SHALL COMPLY WITH CEC ART.250-64.
4. GROUNDING ELECTRODE CONDUCTOR ENCLOSURE SHALL COMPLY WITH CEC, ART.250-64(E)
5. GROUNDING ELECTRODE CONDUCTOR CONNECTION TO THE ELECTRODE SHALL COMPLY WITH CEC 250-70.
6. COMPLY WITH CEC ART 670 FOR INSTALLATION OF INDUSTRIAL MACHINERY.
7. METHOD OF GROUNDING OF ALL TRANSFORMERS SHALL COMPLY WITH CEC, ART.250-30.
8. GROUND FAULT PROTECTION @ SERVICES SHALL BE PROVIDED PER CEC, ART.230-95.
9. CONDUIT BURIAL DEPTH PER CEC TABLE 300-5
10. BONDING FOR CIRCUITS OF OVER 250 VOLTS TO GROUND SHALL COMPLY WITH CEC, ART.250-97. NOTE THAT STANDARD LOCK NUTS ARE NOT PERMITTED IN THE INSTALLATION OF THE RACEWAY.
11. TORQUEING OF TERMINATIONS SHALL BE IN ACCORDANCE WITH THE EQUIPMENT LABEL AND PRIOR OF TORQUE IS REQUIRED PRIOR TO FINAL. CEC, ART.110-3(B).
12. ALL EQUIPMENT SHALL BE LISTED & LABELED BY AN APPROVED TESTING AGENCY. TESTING BY AN APPROVED TESTING LABORATORY WILL BE REQUIRED BEFORE FINAL APPROVAL IS GRANTED.
13. A NEUTRAL FAULT TEST IS REQUIRED PRIOR TO FINAL. CEC, ART.250-24(A) (5).
14. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR FOR ALL CIRCUITS PER CEC, ART.250-110 AND ART.250-118.
15. GROUNDING ELECTRODE SYSTEM SHALL COMPLY WITH CEC, ART.250-50.
16. BONDING SHALL COMPLY WITH CEC 250, PART E.
17. THE CONTRACTOR SHALL PROVIDE TO THE CITY THE AIC VALUE AND THE NOMINAL CIRCUIT VOLTAGE SUPPLIED TO THE SERVICE BY THE ELECTRICAL UTILITY IN THE FORM OF LETTER THAT SHALL BE WRITTEN UPON THE ELECTRICAL UTILITY'S LETTERHEAD. A COPY OF THIS SHALL BE PLACED ON THE PLAN.
18. THE ELECTRICAL EQUIPMENT SHALL BE RATED FOR THE AVAILABLE FAULT CURRENT AS SPECIFIED IN THE SINGLE LINE DIAGRAM NOTES PER CEC, ART.110-9.
19. ISOLATED GROUNDING CONDUCTORS SHALL TERMINATE AT THE SERVICE. CEC, ART.250-96(B).
20. ALARM SYSTEMS AND ELECTRIC SIGNS SHALL BE ON A SEPARATE AND ART.210-19(A).
21. DURATION OF CONDUCTORS WILL APPLY PER CEC, ART.310-15(B) (2) (A) PERMIT.
22. A 125V RECEPTACLE (GFCI PROTECTED & WP) IS REQUIRED WITHIN 25 FEET OF ROOF MOUNTED EQUIPMENT. CEC, ART.210-63, ART. 210-8(B).
23. COMMUNICATION & DATA CONDUCTORS RUN IN CONDUIT OR OTHER RACEWAYS SHALL HAVE A BUSHING, OR OTHER TERMINAL FITTING, WITH AN INTEGRAL BUSHED OPENING @ THE END OF THE CONDUIT OR RACEWAY. CEC, ART.300-4.
24. BREAKERS USED AS SWITCHES IN LIGHTING SYSTEMS SHALL BE MARKED"SWD" PER CEC, ART.240-83(D). 25. ELECTRICAL CONTRACTOR TO PREPARE CONDUITS AND BACK BOXES, SUPPORT, ETC. FOR FIRE ALARM SYSTEM INSTALLATION.

ABBREVIATIONS

WP	WEATHER PROOF
C.O.	CONDUIT ONLY
A/C	AIR CONDITIONING
CKT	CIRCUIT
FLA	FULL LOAD AMPERE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H.P.	HORSEPOWER
LTG	LIGHTING
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NL	UNSWITCHED NIGHT LIGHT
PB	PULL BOX
UG	UNDERGROUND
U.O.N.	UNDERGROUND UNLESS OTHERWISE NOTED
V.L.	VERIFY LOCATION
AHJ	AUTHORITY HAVING JURSTICTION
VOC	OPEN CIRCUIT VOLTAGE
ISC	SHORT CIRCUIT CURRENT
VMPP	OPERATING CURRENT
WSTC	WATTS AT STANDARD TEST CONDITIONS
WPTC	WATTS AT PV USA CONDITIONS
ADJ.STC	1.12 X STC
A	AMPERES
P	POLE
B.C	BARE COPPER
COND	CONDUIT
CU	COPPER
EGC	EQUIPMENT GROUNDING CONDUCTOR
N.E.C.	NATIONAL ELECTRICAL CODE

LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
A 3a	LIGHT OUTLET A-FIXTURE DESIGNATION a-SWITCH DESIGNATION 3- CIRC. NO. (SEE PANEL)
NEUTRAL, GRD, SWITCHED OR HOT LEG	CONDUIT RUN CONCEALED IN WALL OR CEILING. CROSS LINES INDICATE NO. OF #12 COPPER WIRES EXCLUDING GROUND CONDUCTORS WHERE REQ'D (1/2" CONDUIT U.O.N)
	CONDUIT RUN IN FLOOR OR U.G.
	CONDUIT RUN EXPOSED
	GROUND CONNECTION
	CONDUIT STUB OUT WITH CAP
	PANEL MOUNTED CIRCUIT BREAKER
OR	PANEL MOUNTED FUSED SWITCH
	ALL SWITCHES (36" MIN TO 48" MAX AFF, SEE NOTE1)
S	SINGLE POLE SWITCH
S3	THREE WAY SWITCH
S4	FOUR WAY SWITCH
D	DIMMER SWITCH
D3	THREE WAY DIMMER SWITCH
	DISCONNECT SWITCH, FUSED
	DISCONNECT SWITCH, NON FUSED
	MAGNETIC MOTOR STARTER
	PANELBOARD
	SWITCHBOARD
	TELEPHONE BACKBOARD
T	TRANSFORMER
P	PUSH BUTTON
	ALL RECEPTACLES AT 15" MIN TO 48" MAX AFF. MINIMUM DIMENSION IS MEASURED FROM THE BOTTOM OF THE BOX AND MAXIMUM IS MEASURED FROM THE TOP OF THE BOX.
	GROUND DUPLEX RECEPTACLE (15A)
	QUAD RECEPTACLE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER DOUBLE DUPLEX RECEPTACLE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
AFCI	ARC FAULT CIRCUIT INTRRUPTER RECEPTACLE
USB	GROUND DUPLEX RECEPTACLE WITH USB CHARGER (15A)
D	DEDICATED RECEPTACLE (20A)
	SWITCHED RECEPTACLE
	FLOOR MOUNTED RECEPTACLE
	CEILING MOUNTED RECEPTACLE
	SIMPLEX RECEPTACLE
J	JUNCTION BOX
	FLOOR MOUNTED J-BOX
	TELEPHONE OUTLET (+18 U.O.N.)
	TELEPHONE CLG. MOUNTED OUTLET
	TELEPHONE FLOOR MOUNTED OUTLET
INT	INTERCOM OUTLET
TV	CABLE TELEVISION OULET
	DATA (CAT 6) OUTLET (+18" U.O.N.)
	DATA (CAT 6) CLG. MOUNTED OUTLET
	DATA (CAT 6) FLR. MOUNTED OUTLET
	DUPLEX DATA (CAT 6) OUTLET (+18" U.O.N.)
SFD	SMOKE FIRE DAMPER
	EQUIPMENT
S	SMOKE DETECTOR
SC	SMOKE DETECTOR/CARBON MONOXIDE DETECTOR
	CARD READER

SHEET INDEX

REV.	DATE	BY	DESCRIPTION
A	02-06-17	VA	CARD READERS ADDED
B	06-06-17	VA	SLD UPDATED & TRAILERS ADDED
C			
D			

ABRARI
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ELECTRICAL ENGINEERS

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07.06.17 BID SET

PROJECT
CITY OF BEVERLY HILLS
FIRE STATION # 2- TENANT IMPROVEMENT
1100 COLDWATER CANYON DRIVE,
BEVERLY HILLS, CA 90210

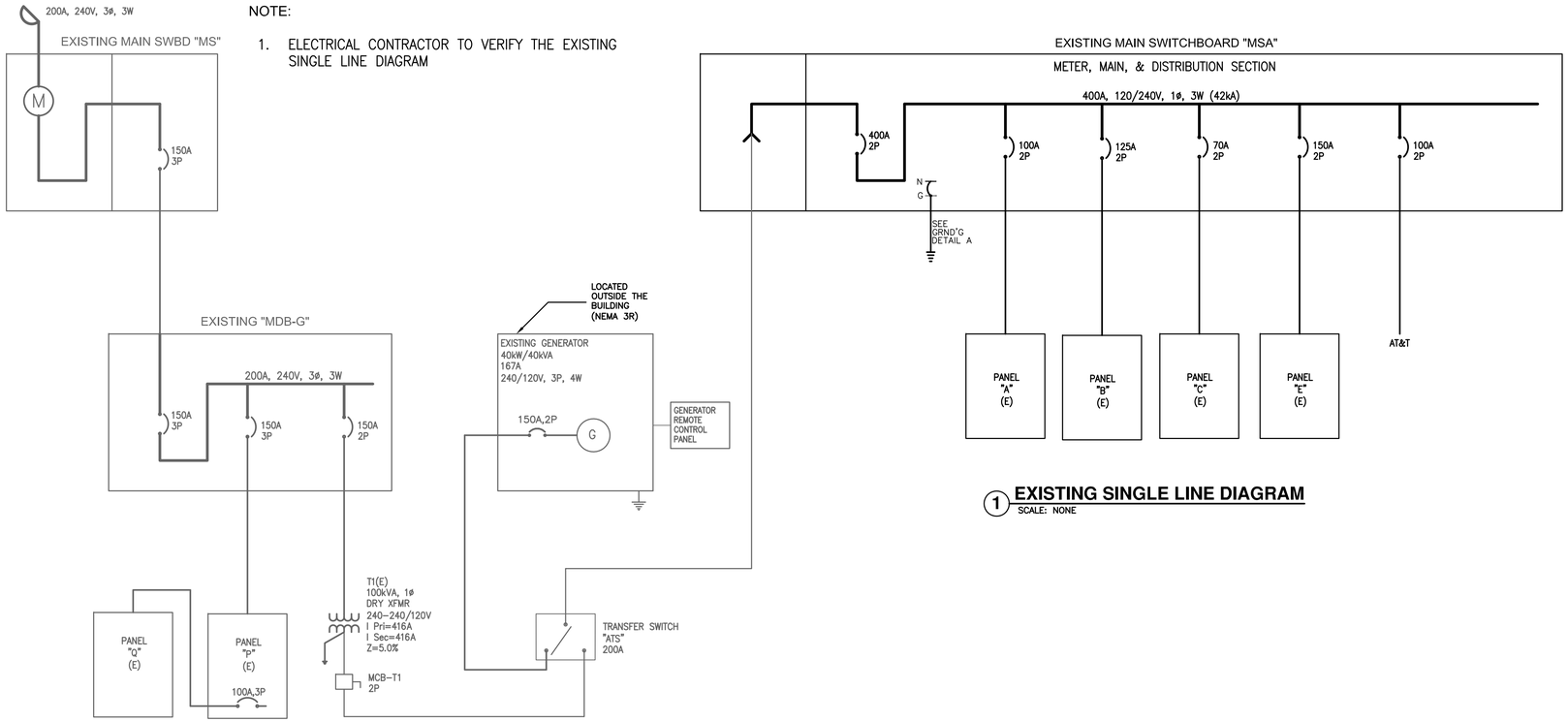
REGISTERED PROFESSIONAL ENGINEER
HAMID R. ABRARI
NO. 13294
EXP. 3-30-18
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE
NOTES & SYMBOLS

PROJECT NO.:	16-
SCALE:	NONE
DATE:	07-14-16
BY:	VA
CHECKED:	HRA
DRAWING NO.	E-1.0

NOTE:

1. ELECTRICAL CONTRACTOR TO VERIFY THE EXISTING SINGLE LINE DIAGRAM



1 **EXISTING SINGLE LINE DIAGRAM**
SCALE: NONE

MSA

ROOM
MOUNTING FLOOR
FED FROM ATS
NOTE

VOLTS 240/120V 2P 3W
BUS AMPS 400
NEUTRAL 100%

AIC 42,000
MAIN BKR MLO
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	FEEDER RACEWAY AND CONDUCTORS
1	100/2	PANEL A	14.13	12.33	1"C,2#3,#3N,#8G
2	125/2	PANEL B	12.56	12.49	1-1/4"C,2#1,#1N,#6G
3	70/2	PANEL C	4.57	4.35	1"C,2#4,#4N,#8G
4	150/2	PANEL E	14.43	16.02	1-1/2"C,2#1/0,#1/0N,#6G
5	100/2	AT&T	0.00	0.00	-
6	-/2	SPACE	0.00	0.00	
		TOTAL CONNECTED KVA BY PHASE	45.69	45.19	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	13.52	16.91	(125%)	CONTINUOUS	3.90	4.88	(125%)
LARGEST MOTOR	6.40	1.60	(25%)	HEATING	0.70	0.00	(0%)
OTHER MOTORS	19.72	19.72	(100%)	COOLING	6.40	6.40	(100%)
RECEPTACLES	46.64	28.32	(50%>10)	NONCONTINUOUS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)	DIVERSE	0.00	0.00	(N/A)
				METERED DEMAND	0.00	0.00	(125%)
				TOTAL KVA	90.88	77.82	
				BALANCED AMPS		324.23	

RECEPTACLE SCHEDULE

CALLOUT	SYMBOL	VOLTS	FEATURES	NOTE 1
COFFEE MACHINE		120V 1P 2W	GND	
DUPLEX		120V 1P 2W	GND	
DUPLEX-USB		120V 1P 2W	GND	DUPLEX RECEPTACLE W/ USB CHARGER
GFCI		120V 1P 2W	GFCI, GND	
HEATER	HEAT	120V 1P 2W	GND	MODEL PER MECHNAICAL ENGINEER
REFRIGERATOR		120V 1P 2W	GND	
XFMR-LV-40	40	120V 1P 2W	GND	LV TRANSFORMER BY LUMINII MODEL NO. PSV-40-24V-U2DIM-D
XFMR-LV-60	60	120V 1P 2W	GND	LV TRANSFORMER BY LUMINII MODEL NO. PSV-60-24V-U2DIM-D

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT WATTS	VOLTS
K-EXIT	EXIT	(1) 1W LED	ILLUMINATED EXIT SIGN W/ 90 MIN. BATTERY BACKUP	ELECTRONIC	CEILING	EXISTING	2	120V 1P 2W
LT-1		(1) 39W LED	2X4 LED LIGHT FIXTURE	DIMMING	CEILING	EXISTING	39	120V 1P 2W
LT-2	W	(1) 12.2W LED	6" RECESSED LIGHT FIXTURE W/ WET TRIM	DIMMING	RECESSED	COOPER LIGHTING HALO SLD6068-35-WH-JB	12.2	120V 1P 2W
LT-3		(1) 5W LED	VANITY LIGHT FIXTURE	DIMMING	WALL	LIGHTOLOGY TWIGGY 24V T1 LENSE RECTANGLE VANITY. MODEL EDG408588	5	120V 1P 2W
LT-4		(1) 3W LED	UNDER CABINET TAPE LIGHT FIXTURE	DIMMING	SURFACE	LUMINII LL36 (3WT/FT) MOUNTING CHANNEL: SLIM LINE 15	3	120V 1P 2W
LT-6		(1) 26W CFL	WALL MOUNTED LIGHT FIXTURE	ELECTRONIC	WALL	EXISTING	28	120V 1P 2W

ELECTRICAL DEMOLITION NOTES

1. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND THOROUGHLY FAMILIARIZE HIMSELF WITH THE WORKING CONDITIONS AND THE EXACT NATURE OF THE WORK TO BE DONE, AND TAKE INTO ACCOUNT ANY SPECIAL OR UNUSUAL FEATURES PECULIAR TO THIS JOB.
2. THE ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BID.
3. ALL EXISTING ELECTRICAL DEVICES (LIGHTING FIXTURES, LIGHT SWITCHES, EXIT LIGHTS, SPEAKERS, RECEPTACLE OUTLETS, TELEPHONE AND/OR DATA OUTLETS, ETC.) SHALL BE DISCONNECTED AND REMOVED U.O.N.
4. THE ELECTRICAL CONTRACTOR SHALL INSPECT AND CHECK THE ACTUAL SCOPE OF WORK TO BE DEMOLISHED.
5. FOR COMPLETE DEMOLITION PLAN SEE ARCHITECTURAL DRAWINGS.
6. ALL EXISTING ELECTRICAL EQUIPMENT, INCLUDING CONDUIT, WIRING, BOXES, ECT. THAT SERVE UNDISTURBED AREAS BUT PASS THROUGH REMODELED AREAS AND ARE IN CONFLICT WITH NEW WORK SHALL BE REPLACED OR RELOCATED AT NO EXTRA COST.
7. AREAS TO BE REMODELED. DISCONNECT AND REMOVE ALL UNUSED CONDUIT AND WIRE BACK TO NEAREST REMAINING OUTLET OR PANELBOARD. WHERE REQUIRED, RECONNECT WIRING TO RE-ESTABLISH ALL CIRCUITRY AS BEFORE. ELECTRICAL CONTRACTOR SHALL PROVIDE REQUIRED LABOR AND MATERIAL TO MAINTAIN CIRCUITRY FOR REMAINING DEVICES.
8. ALL FLOOR STUBBED-OUT CONDUITS AND WIRES: DISCONNECT CONDUIT AND WIRE AT BOTH ENDS AND REMOVE WIRE. CUT CONDUIT TO BELOW SLAB, CAP BOTH ENDS AND ABANDON. WHERE REQUIRED, RECONNECT WIRING (PROVIDE NEW BOXES, CONDUIT, WIRE, ETC.) TO RE-ESTABLISH ALL CIRCUITRY AS BEFORE.
9. PRIOR TO DISCONNECTING ANY CABLES (POWER FEEDERS, PAGING SYSTEM, TELEPHONE, FIRE ALARM, ETC.) FOR RE-ROUTING OR INTERCEPTING EXISTING CABLES, ELECTRICAL CONTRACTOR SHALL OBTAIN OWNER'S AND ARCHITECT'S WRITTEN APPROVAL.

SINGLE LINE DIAGRAM NOTES:

1. ALL WORK SHALL BE PERFORMED PER 2013 CALIFORNIA ELECTRICAL CODE.
2. ALL ELECTRICAL EQUIPMENT AND SWITCHBOARDS SHALL BE FULLY RATED.
3. ~~ALL ELECTRICAL EQUIPMENT AND SWITCHBOARDS SHALL BE SERIES RATED.~~
4. ~~PROVIDE A CAUTIONARY LABEL TO THE SERIES RATED DEVICE COVER STATING " CAUTION SERIES COMBINATION SYSTEM RATED _____A. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED".~~
5. ALL ELECTRICAL EQUIPMENT, SWITCHBOARDS, ETC. TO WITHSTAND AVAILABLE FAULT CURRENT. VERIFY WITH SERVING UTILITY COMPANY.
6. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF BEVERLY HILLS RECOGNIZED ELECTRICAL TESTING LABORATORY OR UL.
7. PROVIDE SEISMIC BRACING FOR ALL SERVICE EQUIPMENT, SWITCHBOARDS AND OTHER FLOOR STANDING EQUIPMENT BY INSTALLING APPROVED ANCHORS TO THE BUILDING STRUCTURE FROM EACH EQUIPMENT ENCLOSURE.
8. FURNISH ELECTRICAL EQUIPMENT OF THE SAME TYPE OR CLASS FROM ONE MANUFACTURER.
9. EQUIP ALL DISTRIBUTION FUSIBLE SWITCHES WITH REJECTION TYPE FUSE CLIPS FOR USE WITH CURRENT LIMITING, U.L. CLASS "R" FUSES.
10. PROVIDE FUSES FROM ONE MANUFACTURER OF THE FOLLOWING TYPES:
    A. "RK-1" - U.L. CLASS "RK-1" CURRENT LIMITING FUSES, "BUSSMANN" LOW-PEAK TYPE LPN-RK_SP.
    B. "RK5" - U.L. CLASS "RK5" CURRENT LIMITING, DUAL ELEMENT FUSES, "BUSSMANN" LOW-PEAK TYPE LPN-RK_SP.
11. ALL CONDUCTORS SHALL BE COPPER WITH TYPE "THWN/THHN" INSULATION RATED FOR 600 VOLTS.
12. FEEDER LENGTHS NOTED ON DRAWINGS ARE FOR VOLTAGE DROP AND SHORT CIRCUIT CALCULATIONS ONLY AND ARE NOT TO BE USED FOR ESTIMATE OR MATERIAL TAKE-OFF.
13. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE.
14. ALL TERMINALS/LUGS SHALL BE DUAL RATED 60°/75° C.
15. THE ELECTRICAL ROOM DOOR SHALL OPEN OUTWARD AND SHALL BE EQUIPPED WITH PANIC HARDWARE.
16. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO WATER PIPE (GROUNDING ELECTRODE) WITHIN 5' FROM THE POINT OF ENTRANCE INTO THE BUILDING.
17. PROVIDE SEISMIC ANCHORING AND BRACING FOR MAIN SWITCHBOARD AND ALL STANDING SECTIONS.
18. ~~ELEVATOR CIRCUIT BREAKER SHALL BE EQUIPPED W/ SHUNT TRIP (SIEMENS C/B TYPE FXD6 OR EQ.)~~
19. ~~INSTALL A 1" CONDUIT FROM THE MAIN SWITCHBOARD TO THE ROOF AND TERMINATE IN A 12"X12"X8" NEMA 3R BOX FOR FUTURE SOLAR. "THE CONDUIT FOR THE FUTURE ELECTRICAL SOLAR SYSTEM SHALL BE LABELED AS PER LOS ANGELES FIRE DEPARTMENT REQUIREMENTS"~~
20. CIRCUIT BREAKERS USED AS SWITCHES IN 120 AND 277 VOLT FLUORESCENT LIGHTING CIRCUITS SHALL BE LISTED AND MARKED AS "SWD" OR "HID".
21. PROVIDE A LABEL STATING "EV CAPABLE" IS A CONSPICUOUS PLACE AT THE SERVICE PANEL OR SUBPANEL AND NEXT TO THE RACEWAY TERMINATION POINT.
22. CONDUCTORS OF A MULTI-WIRE BRANCH CIRCUIT SHALL CONSPICUOUS ORIGINATE FROM THE SAME PANELBOARD. THE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES (210.4, 240.15(B)(1))

SERVICE SIZE	M.B.J. SIZE
0-1000 A	# 3/0
1200 A	# 4/0
1600 A	250 MCM
2000 A	300 MCM
2500 A	500 MCM
3000 A	500 MCM
4000 A	600 MCM

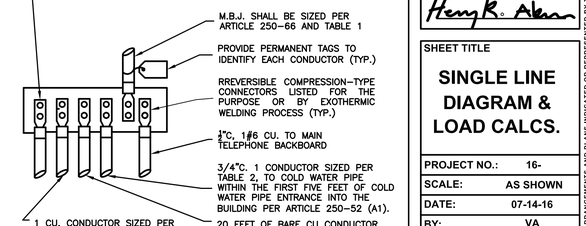
MAIN BONDING JUMPER
TABLE 1

Service Size	G.E.C. Size
0-200 A	#4
201-400 A	#1/0
Over 401 A	#3/0

GROUNDING ELECTRODE CONDUCTOR
TABLE 2

1 CU. CONDUCTOR SIZED PER TABLE 2, TO BE CONNECTED TO A 1/2"-10' LONG CU. ROD, BURIED A MIN. OF 8' IN GROUND. A SINGLE ROD, PIPE, OR PLATE ELECTRODE SHALL BE SUPPLEMENTED BY AN ADDITIONAL ELECTRODE OF A TYPE SPECIFIED IN 250.52(A)(2) THROUGH (A)(8). THE SUPPLEMENTAL ELECTRODE SHALL BE PERMITTED TO BE BONDED TO ONE OF THE FOLLOWING:
(1) ROD, PIPE, OR PLATE ELECTRODE
(2) GROUNDING ELECTRODE CONDUCTOR
(3) GROUNDED SERVICE-ENTRANCE CONDUCTOR
(4) NONFLEXIBLE GROUNDED SERVICE RACEWAY
(5) ANY GROUNDED SERVICE ENCLOSURE

EXCEPTION: IF A SINGLE ROD, PIPE, OR PLATE GROUNDING ELECTRODE HAS A RESISTANCE TO EARTH OF 25 OHMS OR LESS, THE SUPPLEMENTAL ELECTRODE SHALL NOT BE REQUIRED PER ARTICLE 250-52.



A **GROUNDING DETAIL**
SCALE: NONE

REV.	DATE	BY	DESCRIPTION
3	02-06-17	VA	CARD READERS ADDED
4	06-06-17	VA	SLD UPDATED & TRAILERS ADDED
5			
6			
7			

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07.06.17 BID SET

PROJECT
CITY OF BEVERLY HILLS
FIRE STATION # 2- TENANT IMPROVEMENT
1100 COLDWATER CANYON DRIVE,
BEVERLY HILLS, CA 90210

REGISTERED PROFESSIONAL ENGINEER
HAMID R. ABRARI
NO. 13294
EXP. 3-30-18
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE
SINGLE LINE DIAGRAM & LOAD CALCS.

PROJECT NO.:	16-
SCALE:	AS SHOWN
DATE:	07-14-16
BY:	VA
CHECKED:	HRA
DRAWING NO.	E-2.0

A

ROOM
MOUNTING **SURFACE**
FED FROM **MSA**
NOTE

VOLTS **240/120V 2P 3W**
BUS AMPS **225**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B
1	20/1	(E)FITNESS RM LTG. LTG.	0.68		2	20/1	(E)KITCHEN LTG. LTG.	0.90	
3	20/1	(E)DAY RM, BATH LTG. HEATER, LTG.		1.17	4	20/1	(E)STUDY, MEDICAL, LAUNDRY LTG.		0.83
5	20/1	(E)PATIO LTG.	0.20		6	20/1	(E)FLAG POLE LTG.	0.15	
7	20/1	(E)MECH. WELL LTG.		0.18	8	−/1	SPACE		0.00
9	20/1	(E)MECH. WELL REC.	0.18		10	20/1	(E)HOOD CONTROL	0.80	
11	−/1	SPACE		0.00	12	20/1	(E)ANSUL SYSTEM		0.80
13	20/1	(N)HOOD LIGHT	0.20		14	−/1	SPACE	0.00	
15	20/1	(N)HOOD		1.18	16	−/1	SPACE		0.00
17	20/1	(E)PATIO REC.	0.36		18	20/1	(E)DISHWASHER	1.40	
19	20/1	(E)CAPT. DORM LTG & REC.		0.56	20	20/1	(E)GARBAGE DISP.		1.10
21	20/1	(E)FITNESS RM REC.	1.08		22	20/1	(E)REFRIGERATOR	0.80	
23	20/1	(E)DAYROOM REC.		0.90	24	20/1	(E)REFRIGERATOR		0.80
25	20/1	(E)OFFICE REC.	0.72		26	20/1	(E)RANGE	0.20	
27	20/1	(E)BATHROOM GFCI		0.18	28	−/1	SPACE		0.00
29	20/1	(E)COUNTER REC.	0.54		30	20/1	COFFEE MACHINE	1.50	
31	20/1	(E)CIRCULATION PUMP (WH)		0.70	32	20/1	(E)MICORWAVE		1.50
33	20/1	BEDROOM REC.	0.72		34	20/1	(E)COFFEE MAKER	1.00	
35	20/1	KITCHEN GFCI REC.		0.18	36	20/1	(E)COUNTER REC.		1.08
37	20/1	REFRIGERATOR	0.80		38	20/1	REC.	0.72	
39	20/1	REFRIGERATOR		0.18	40	20/1	(E)TOASTER		1.00
41	20/1	REFRIGERATOR	0.18		42	20/1	(E)TOASTER	1.00	
							TOTAL CONNECTED KVA BY PHASE	14.13	12.33
							TOTAL CONNECTED AMPS BY PHASE	117.73	102.79

	CONN KVA	CALC KVA	
LIGHTING	3.65	4.56	(125%)
LARGEST MOTOR	1.18	1.47	(125%)
OTHER MOTORS	0.00	0.00	(100%)
RECEPTACLES	20.14	15.07	(50%>10)
KITCHEN EQUIP	0.00	0.00	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	1.50	1.88	(125%)
HEATING	0.00	0.00	(N/A)
COOLING	0.00	0.00	(N/A)
NONCONTINUOUS	0.00	0.00	(100%)
DIVERSE	0.00	0.00	(N/A)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	26.46	22.97	
BALANCED AMPS		95.72	

B

ROOM
MOUNTING **SURFACE**
FED FROM **MSA**
NOTE

VOLTS **240/120V 2P 3W**
BUS AMPS **225**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B
1	20/1	(E)APPARATUS	0.35		2	20/1	(E)EXTERIOR LTG.	0.75	
3	20/1	(E)APPARATUS		0.35	4	20/1	(E)EXTERIOR LTG.		0.75
5	20/1	(E)SHOP, STORAGE LTG.	0.13		6	20/1	(E)OUTSIDE BATHROOM LTG.	0.75	
7	20/1	(E)MAINTENANCE LTG.		0.75	8	20/1	(E)REC.		0.54
9	20/1	(E)LTG.	0.49		10	20/1	(E)REC.	0.54	
11	15/2	DOOR OPERATOR−4A		0.96	12	20/1	(E)REC.		0.54
13	|	|	0.96		14	20/1	(E)REC.	0.54	
15	20/1	(E)REC.		0.54	16	20/1	(E)REC.		0.54
17	20/1	(E)APPARATUS	0.90		18	20/1	(E)REC.	0.54	
19	20/1	(E)APPARATUS		0.90	20	15/2	DOOR OPERATOR−3A		0.96
21	20/1	(E)APPARATUS	0.90		22	|	|	0.96	
23	20/1	(E)BATHROOM & STORAGE REC.		0.72	24	15/2	DOOR OPERATOR−3B		0.96
25	20/1	(E)SHOP LTG.	0.50		26	|	|	0.96	
27	20/1	(E)SHOP LTG.		1.00	28	20/1	(E)SPRINKLER CONTROL	0.40	
29	20/1	(E)MAINTENANCE REC.	0.72		30	50/2	SPACE	0.00	
31	20/1	(E)REC.		0.54	32	|	|	0.00	
33	20/1	(E)REC.	0.54		34	15/2	DOOR OPERATOR−4B		0.96
35	20/1	(E)REC.		0.54	36	|	|	0.96	
37	20/2	SPACE	0.00		38	30/1	SPACE	0.00	
39	|	|	0.00	40	20/1	(E)REC.		0.54	
41	20/1	(E)REC.	0.54		42	20/1	(E)REC.	0.54	
							TOTAL CONNECTED KVA BY PHASE	12.56	12.49
							TOTAL CONNECTED AMPS BY PHASE	104.68	104.08

	CONN KVA	CALC KVA	
LIGHTING	5.69	7.11	(125%)
LARGEST MOTOR	1.92	2.40	(125%)
OTHER MOTORS	5.76	5.76	(100%)
RECEPTACLES	11.68	10.84	(50%>10)
KITCHEN EQUIP	0.00	0.00	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	0.00	0.00	(125%)
HEATING	0.00	0.00	(N/A)
COOLING	0.00	0.00	(N/A)
NONCONTINUOUS	0.00	0.00	(100%)
DIVERSE	0.00	0.00	(N/A)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	25.05	26.11	
BALANCED AMPS		108.81	

C

ROOM
MOUNTING **SURFACE**
FED FROM **MSA**
NOTE

VOLTS **240/120V 2P 3W**
BUS AMPS **225**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B
1	20/1	(E)ROOM & STORAGE LTG.	0.40		2	20/1	(E)COORIDOR LTG.	0.98	
3	20/1	(E)SOLAR PUMP		0.30	4	20/1	(E)TEL.REC.		0.20
5	−/1	SPACE	0.00		6	20/1	(E)TEL.REC.	0.20	
7	−/1	SPACE		0.00	8	−/1	SPACE		0.00
9	−/1	SPACE	0.00		10	−/1	SPACE	0.00	
11	−/1	SPACE		0.00	12	−/1	SPACE		0.00
13	−/1	SPACE	0.00		14	−/1	SPACE	0.00	
15	−/1	SPACE		0.00	16	30/2	(E)DRYER		1.25
17	20/1	(E)DRINK FOUNTAIN	0.50		18	|	|	1.25	
19	20/1	(E)BATHROOMS REC.		0.36	20	30/1	(E)WASHER		1.70
21	20/1	(E)UNIT HEATER	0.70		22	−/1	SPACE	0.00	
23	20/1	DORMS REC. REC.		0.54	24	−/1	SPACE		0.00
25	20/1	DORMS REC. REC.	0.54		26	−/1	SPACE	0.00	
27	−/1	SPACE		0.00	28	−/1	SPACE		0.00
29	−/1	SPACE	0.00		30	−/1	SPACE	0.00	
31	−/1	SPACE		0.00	32	−/1	SPACE		0.00
33	−/1	SPACE	0.00		34	−/1	SPACE	0.00	
35	−/1	SPACE		0.00	36	−/1	SPACE		0.00
37	−/1	SPACE	0.00		38	−/1	SPACE	0.00	
39	−/1	SPACE		0.00	40	−/1	SPACE		0.00
41	−/1	SPACE	0.00		42	−/1	SPACE	0.00	
							TOTAL CONNECTED KVA BY PHASE	4.57	4.35
							TOTAL CONNECTED AMPS BY PHASE	38.10	36.25

	CONN KVA	CALC KVA	
LIGHTING	1.38	1.73	(125%)
LARGEST MOTOR	0.30	0.38	(125%)
OTHER MOTORS	0.00	0.00	(100%)
RECEPTACLES	6.54	6.54	(50%>10)
KITCHEN EQUIP	0.00	0.00	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	0.00	0.00	(125%)
HEATING	0.70	0.70	(100%)
COOLING	0.00	0.00	(N/A)
NONCONTINUOUS	0.00	0.00	(100%)
DIVERSE	0.00	0.00	(N/A)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	8.92	9.34	
BALANCED AMPS		38.93	

E

ROOM
MOUNTING **SURFACE**
FED FROM **MSA**
NOTE

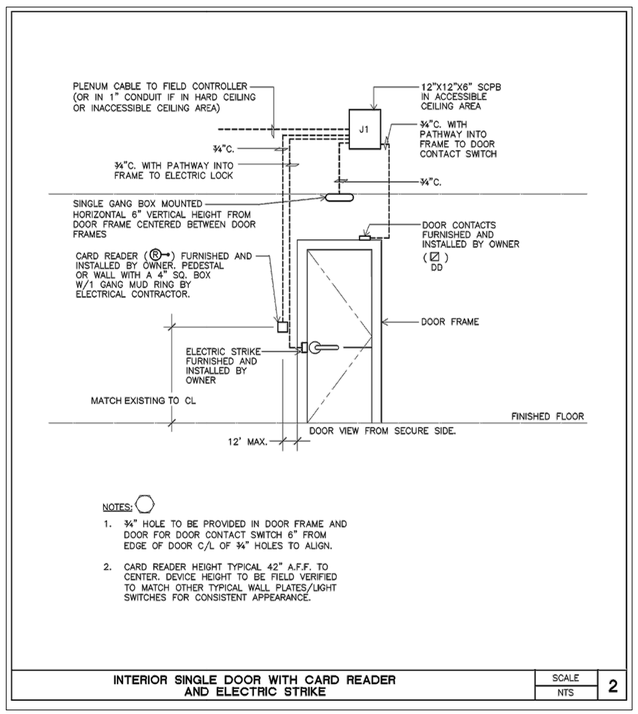
VOLTS **240/120V 2P 3W**
BUS AMPS **225**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B
1	20/1	(E)DORM LTG.	0.45		2	15/2	DOOR OPERATOR−1A	0.96	
3	20/1	(E)CAPT. DORM & KITCHEN LTG.		0.53	4	|	|		0.96
5	20/1	(E)COORDIRO LTG.	0.46		6	15/2	DOOR OPERATOR−1B	0.96	
7	20/1	(E)APPARATUS LTG.		0.43	8	|	|		0.96
9	20/1	(E)APPARATUS LTG.	0.45		10	20/2	MOTORIZED VEHICULAR GATE	1.44	
11	20/1	(E)STEP LTG. & OFFICE REC.		1.04	12	|	|		1.44
13	20/1	(E)SPARE DISCONNECT	0.00		14	20/1	GATE CONTROL	0.20	
15	20/1	(E)FIRE ALAM CNTRL PANEL		0.30	16	20/1	(E)AMPLIFIER		0.36
17	20/1	(E)AMPLIFIER REC.	0.36		18	20/1	(E)AMPLIFIER	0.36	
19	20/1	(E)RADIO		0.36	20	20/1	(E)AMPLIFIER		0.36
21	20/1	(E)CRT TERMINAL	0.18		22	20/1	(E)AMPLIFIER	0.36	
23	20/1	(E)GFCI REC. GENERATOR		0.54	24	20/1	(E)SPRINKLER BELL		0.18
25	20/1	(E)BURGLER ALAM SYSTEM	0.18		26	20/1	(E)GAS BOY PUMP	0.50	
27	20/1	(E)SPARE DISCONNECT		0.00	28	20/1	(E)CONTACTOR PANEL		1.00
29	60/2	(E)DATA FIBER RM. A/C	3.20		30	20/1	(E)WINDOW HEATER	1.20	
31	|	|		3.20	32	20/1	(E)WINDOW HEATER		1.20
33	−/2	(E)GENERATOR FUEL PUMP	0.00		34	20/2	(E)WASHER	1.25	
35	|	|		0.00	36	|	|		1.25
37	15/2	DOOR OPERATOR−2A	0.96		38	15/2	DOOR OPERATOR−2B	0.96	
39	|	|		0.96	40	|	|		0.96
41	−/1	SPACE	0.00		42	−/1	SPACE	0.00	
							TOTAL CONNECTED KVA BY PHASE	14.43	16.02
							TOTAL CONNECTED AMPS BY PHASE	120.21	133.50

	CONN KVA	CALC KVA	
LIGHTING	2.81	3.51	(125%)
LARGEST MOTOR	6.40	1.60	(25%)
OTHER MOTORS	10.56	10.56	(100%)
RECEPTACLES	8.28	8.28	(50%>10)
KITCHEN EQUIP	0.00	0.00	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	2.40	3.00	(125%)
HEATING	0.00	0.00	(N/A)
COOLING	6.40	6.40	(100%)
NONCONTINUOUS	0.00	0.00	(100%)
DIVERSE	0.00	0.00	(N/A)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	30.45	33.35	
BALANCED AMPS		138.94	



NOTES:

1. ¾" HOLE TO BE PROVIDED IN DOOR FRAME AND DOOR FOR DOOR CONTACT SWITCH 6" FROM EDGE OF DOOR C/L OF ¾" HOLES TO ALIGN.
2. CARD READER HEIGHT TYPICAL 42" A.F.F. TO CENTER. DEVICE HEIGHT TO BE FIELD VERIFIED TO MATCH OTHER TYPICAL WALL PLATES/LIGHT SWITCHES FOR CONSISTENT APPEARANCE.

INTERIOR SINGLE DOOR WITH CARD READER AND ELECTRIC STRIKE — SCALE NTS — 2

REV.	DATE	BY	DESCRIPTION
1	02-06-17	VA	CARD READERS ADDED
2	06-06-17	VA	SLD UPDATED & TRAILERS ADDED

ABRARI
ASSOCIATES
ELECTRICAL ENGINEERS
1713 STANDARD AVE.
GLENDALE, CA 91201
W 818.956.1900
MAIL@ABRARI.COM

07.06.17 BID SET

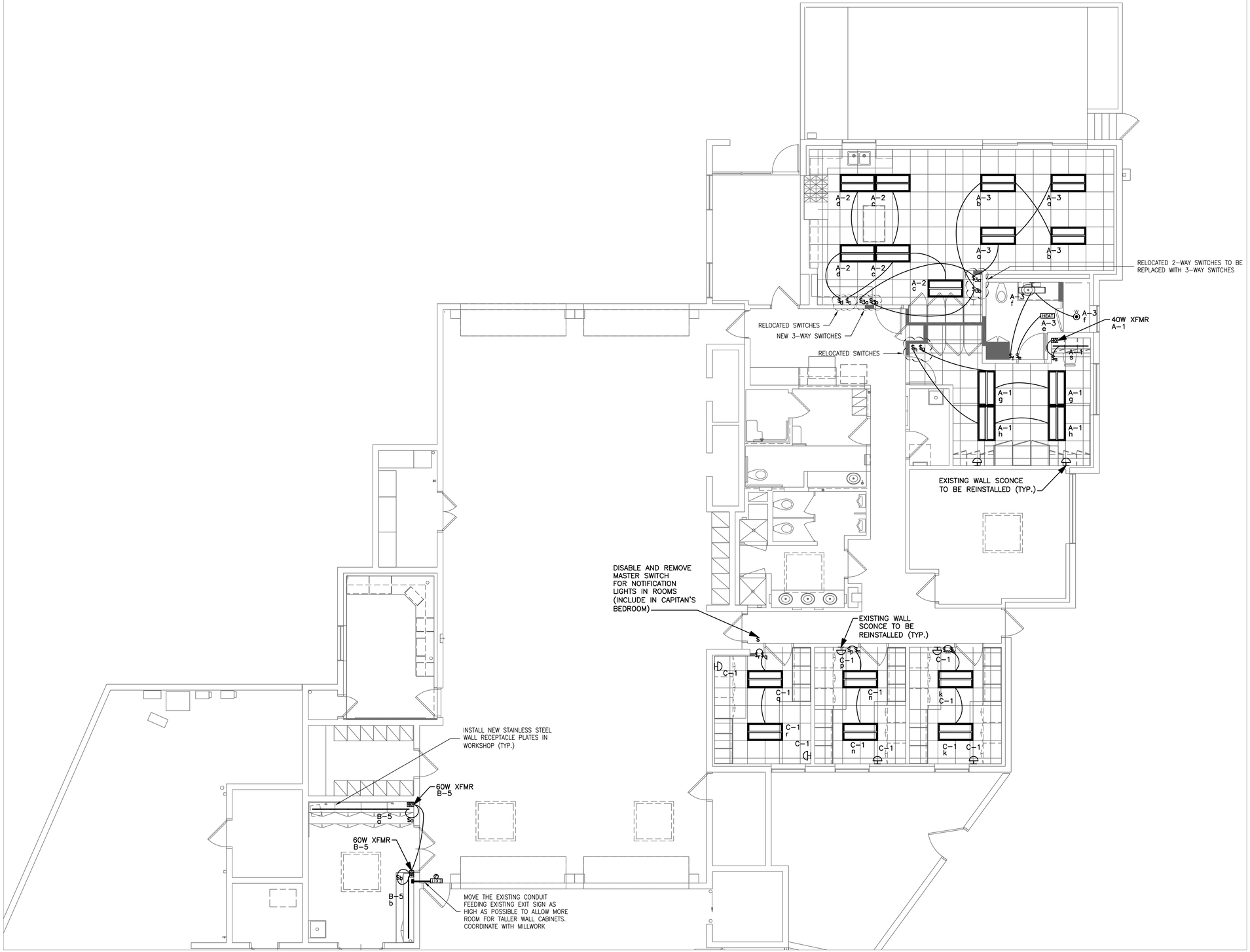
PROJECT
CITY OF BEVERLY HILLS
FIRE STATION # 2- TENANT IMPROVEMENT
1100 COLDWATER CANYON DRIVE,
BEVERLY HILLS, CA 90210

REGISTERED PROFESSIONAL ENGINEER
HAMID R. ABRARI
NO. 13294
EXP. 3-30-18
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE
PANEL SCHEDULES

PROJECT NO.:	16-
SCALE:	NONE
DATE:	07-14-16
BY:	VA
CHECKED:	HRA

DRAWING NO.
E-3.0



REV.	DATE	BY	DESCRIPTION
2	02-06-17	VA	CARD READERS ADDED
1	06-06-17	VA	SLD UPDATED & TRAILERS ADDED

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ELECTRICAL ENGINEERS

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07.06.17 BID SET

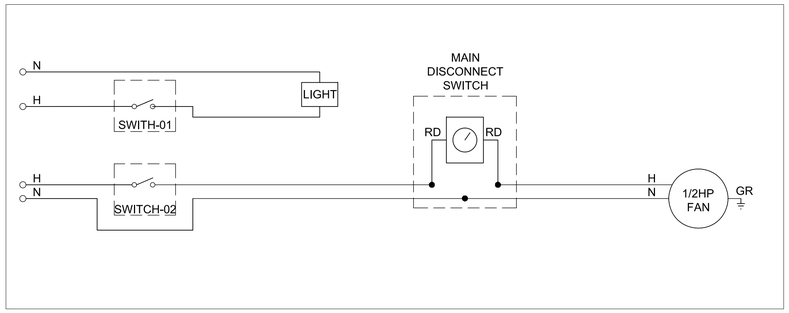
PROJECT
CITY OF BEVERLY HILLS
FIRE STATION # 2- TENANT IMPROVEMENT
1100 COLDWATER CANYON DRIVE,
BEVERLY HILLS, CA 90210

REGISTERED PROFESSIONAL ENGINEER
HAMID R. ABRARI
NO. 13294
EXP. 3-30-18
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE
LIGHTING PLAN

PROJECT NO.:	16-
SCALE:	3/16"=1'-0"
DATE:	07-14-16
BY:	VA
CHECKED:	HRA

DRAWING NO.
E-4.0



1 HOOD WIRING DIAGRAM
SCALE: NONE

MATCH LINE B
SEE SHEET E-5.1

REV.	DATE	BY	DESCRIPTION
2	02-06-17	VA	CARD READERS ADDED
3	06-06-17	VA	SLD UPDATED & TRAILERS ADDED
4			
5			

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07.06.17 BID SET

PROJECT
CITY OF BEVERLY HILLS
FIRE STATION # 2- TENANT IMPROVEMENT
1100 COLDWATER CANYON DRIVE,
BEVERLY HILLS, CA 90210

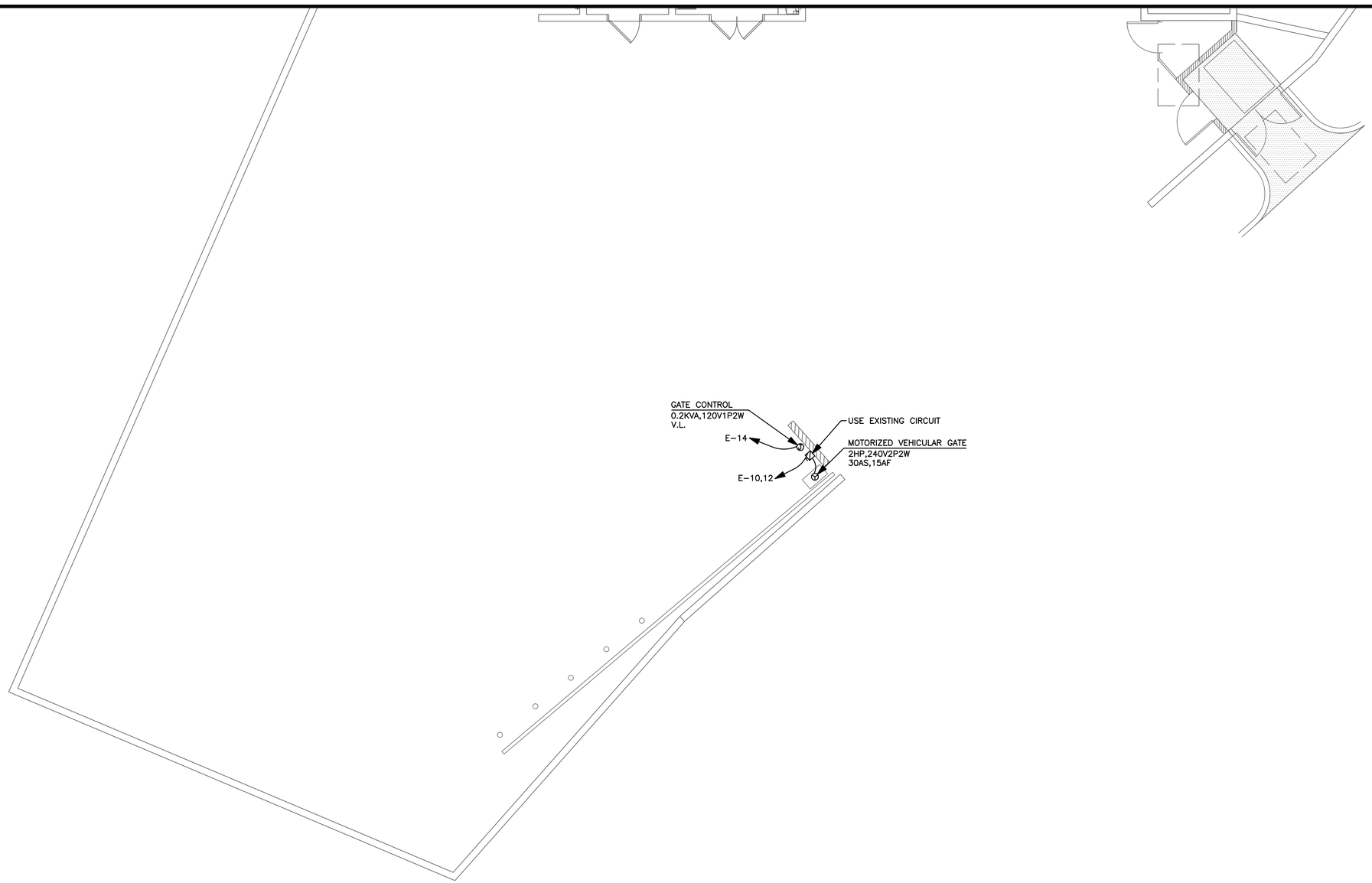
REGISTERED PROFESSIONAL ENGINEER
HAMID R. ABRARI
NO. 13294
EXP. 3-30-18
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE
POWER PLAN

PROJECT NO.:	16-
SCALE:	3/16"=1'-0"
DATE:	07-14-16
BY:	VA
CHECKED:	HRA

DRAWING NO.
E-5.0

MATCH LINE B
SEE SHEET E-5.0



GATE NOTE:

GATE CONTROLLER SHALL BE CONNECTED PER SHOP DRAWINGS OF GATE MANUFACTURER. CONTRACTOR SHALL REVIEW THIS DRAWINGS AND SUPPLY ALL WIRING EQUIPMENT AS REQUIRED AND SHALL INSTALL AND CONNECT ALL WIRING AND EQUIPMENT INCLUDING THOSE SUPPLIED BY GATE MANUFACTURER FOR A COMPLETE AND OPERATIVE SYSTEM

REV.	DATE	BY	DESCRIPTION
2	02-06-17	VA	CARD READERS ADDED
3	06-06-17	VA	SLD UPDATED & TRAILERS ADDED

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07.06.17 BID SET

PROJECT

CITY OF BEVERLY HILLS
FIRE STATION # 2- TENANT IMPROVEMENT
1100 COLDWATER CANYON DRIVE,
BEVERLY HILLS, CA 90210

REGISTERED PROFESSIONAL ENGINEER
HAMID R. ABRARI
NO. 13294
EXP. 3-30-18
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE

ALTERNATE #2
POWER
PLAN

PROJECT NO.:	16-
SCALE:	3/16"=1'-0"
DATE:	07-14-16
BY:	VA
CHECKED:	HRA

DRAWING NO.

E-5.1