

POWER SYMBOLS

	MOTOR, HP AS INDICATED
	CONTROLLER TO BE FURNISHED UNDER DIVISION 15
	DISCONNECT SWITCH
	MAGNETIC MOTOR STARTER
	COMBINATION MOTOR STARTER
	CONTACTOR
	JUNCTION BOX
	JUNCTION BOX
	RELAY
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	GFI
	WP
	GF=GROUND FAULT INTERRUPTING
	WP=WEATHERPROOF
	IG=ISOLATED GROUND
	DOUBLE DUPLEX (QUADRUPLEX) RECEPTACLE
	FLOOR OUTLET DUPLEX RECEPTACLE
	FLOOR OUTLET SIMPLEX RECEPTACLE
	FLOOR OUTLET QUADRUPLEX RECEPTACLE
	DROP CORD RECEPTACLE
	SPECIAL PURPOSE OUTLET AS DESIGNATED
	SINGLE FACE PEDESTAL
	DOUBLE FACE PEDESTAL RECEPTACLE
	EQUIPMENT CONNECTION
	CONNECT TO EXISTING

LIGHTING CONTROL SYMBOLS

	S ₁	SINGLE POLE SWITCH, SUBSCRIPT INDICATES ASSOCIATED CIRCUITRY
	S ₂	DIMMABLE SWITCH
	S ₂	DOUBLE POLE SWITCH
	S ₃	THREE-WAY SWITCH
	S ₄	FOUR-WAY SWITCH
	S _K	KEY OPERATED SWITCH
	S _P	SWITCH WITH PILOT LIGHT IN HANDLE (ON-LIGHTED UNLESS OTHERWISE NOTED)
	S _{WP}	WEATHERPROOF SWITCH
	S _M S _{MT}	MANUAL MOTOR STARTER (T=THERMAL OVERLOAD, SIZED FOR MOTOR)
	S _T	TIMER SWITCH
	S _{SC}	SPEED CONTROL
	S _{PB}	PUSH BUTTON
	◆	OCCUPANCY SENSOR, CEILING MOUNTED, DUAL TECHNOLOGY. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED POWER PACKS
	◆	OCCUPANCY SENSOR WALL MOUNTED, DUAL TECHNOLOGY. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED POWER PACKS
	◆	SWITCH, OCCUPANCY SENSOR, WALL MOUNT
	S _{LV}	MOMENTARY CONTACT OVERRIDE SWITCH

LIGHTING SYMBOLS

	INCANDESCENT OR HID FIXTURE, CEILING MOUNTED
	INCANDESCENT OR HID FIXTURE, WALL MOUNTED
	FLUORESCENT TROFFER, RECESSED OR SURFACE MOUNTED
	EXIT SIGN - SINGLE FACE
	EXIT SIGN - SINGLE FACE WITH ONE-WAY DIRECTIONAL ARROW
	EXIT SIGN - SINGLE FACE WITH TWO-WAY DIRECTIONAL ARROWS
	EXIT SIGN - DOUBLE FACE
	EXIT SIGN - DOUBLE FACE WITH 2 ONE-WAY DIRECTIONAL ARROWS
	EMERGENCY LIGHT, BATTERY TYPE WITH CHARGER
	EXTERIOR FLOOD LIGHT
	POLE MOUNTED LUMINAIRE (SQUARE)
	POLE MOUNTED LUMINAIRE (ROUND)
	TRACK LIGHT WITH HEADS AS INDICATED
	LIGHTING CONTACTOR

ELECTRICAL RACEWAYS

	CONDUIT CONCEALED IN WALL OR CEILING
	CONDUIT UNDER FLOOR OR UNDERGROUND
	SWITCH LEG
	SURFACE MOUNTED RACEWAY WITH ALL REQUIRED FITTINGS AND HARDWARE. PROVIDE RECEPTACLES AS INDICATED.
	SURFACE MOUNTED RACEWAY RISER SECTION WITH ALL REQUIRED FITTINGS AND HARDWARE
	BUS DUCT WITH TAKE OFF DEVICE
	UNDERGROUND ELECTRICAL (APPROXIMATE LOCATION, CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD)
	UNDERGROUND TELEPHONE (APPROXIMATE LOCATION, CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD)
	BRANCH CIRCUIT HOMERUN SUBSCRIPT "N/A" INDICATES PANEL AND 2 & 6 INDICATES BREAKER POSITION

CABLE TRAY AND RELATED ITEMS

	CABLE TRAY - 24/90 DEGREE FITTING
	CABLE TRAY - 24" TEE FITTING
	CABLE TRAY - 24" X FITTING
	CABLE TRAY - 24/90 DEGREE VERTICAL BENDS IN & OUT FOR ELEVATION CHANGE
	CABLE TRAY - 24/90 DEGREE VERTICAL BEND IN OR OUT FOR TRAY UP OR DOWN
	CABLE TRAY - 24" WIDE X 4" SIDE WALL

SPECIAL SYSTEMS SYMBOLS

	[FACP]	FIRE ALARM CONTROL PANEL
	[ANN]	REMOTE ANNUNCIATOR PANEL
	[FAEX]	FIRE ALARM EXPANSION PANEL
	[F]	MANUAL PULL STATION (G=VANDAL PROOF GUARD)
	[F] [O]	AUDIOVISUAL ANNUNCIATOR (G=VANDAL PROOF GUARD) [] = WALL MOUNT [O] = CEILING MOUNT
	[P]	VISUAL ANNUNCIATOR (G=VANDAL PROOF GUARD) [] = WALL MOUNT [O] = CEILING MOUNT
	[A]	AUDIBLE ANNUNCIATOR (G=VANDAL PROOF GUARD) [] = WALL MOUNT [O] = CEILING MOUNT
	[SD]	SMOKE DETECTOR (G=VANDAL PROOF GUARD)
	[SD] [D]	SMOKE DETECTOR, DUCT MOUNTED
	[HD]	HEAT DETECTOR (G=VANDAL PROOF GUARD)
	—	SMOKE FIRE DAMPER
	[TS]	TEST SWITCH
	[TS]	TAMPER SWITCH
	[PS]	FIRE SPRINKLER PRESSURE SWITCH
	[FS]	FIRE ALARM SPEAKER ANNUNCIATOR
	[PJ]	FIRE FIGHTERS PHONE JACK
	[FF]	FIRE FIGHTERS TELEPHONE
	[DH]	MAGNETIC DOOR HOLDER
	[H]	WALL MOUNTED AUDIBLE ANNUNCIATOR (HORN) (G= VANDAL PROOF GUARD, WP=WEATHERPROOF)
	—	CEILING MOUNTED CLOCK
	—	WALL MOUNTED CLOCK
	—	HEIGHT AS DESIGNATED BY ARCHITECT
	—	WALL MOUNTED DOUBLE FACE HEIGHT AS DESIGNATED BY ARCHITECT
	[SP]	INTERCOM SPEAKER, CEILING MOUNTED (G=VANDAL PROOF GUARD)
	[SP]	INTERCOM SPEAKER, WALL MOUNTED (G=VANDAL PROOF GUARD)
	[H]	INTERCOM SPEAKER, EXTERIOR HORN-TYPE (G=VANDAL PROOF GUARD, WP=WEATHERPROOF)
	S _I	INTERCOM PUSHBUTTON (V=VOLUME CONTROL)
	[DS]	DOOR SWITCH

NURSE CALL SYSTEM SYMBOLS

	[MON]	MONITOR
	[CB]	CODE BLUE
	[PS]	PATIENT STATION
	[CI]	CODE BLUE INTERFACE
	[AMP]	AMPLIFIER
	[ITC]	INTERCOM SYSTEM TERMINAL CABINET
	[IC]	INTERCOM
	[SEC]	SECURITY MAIN CONTROL PANEL
	[DB]	DURESS ALARM PUSHBUTTON
	[DB]	DURESS SYSTEM WIRELESS RECEIVER/ANTENNA
	[PB]	PUSH BUTTON
	[EPB]	EGRESS PUSHBUTTON
	[CR]	CARD READER
	[CCTV]	CLOSED CIRCUIT TELEVISION OUTLET
	[DC]	DOOR CONTACT
	[ML]	MAGNETIC DOOR LOCK
	[MD]	MOTION DETECTOR, ROUGH-IN ONLY, 90" AFF, MAXIMUM 6" FROM NEAREST CORNER TO CENTER OF BOX, 1/2" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH BUSHINGS AND PULL-STRING UNLESS INDICATED OTHERWISE.
	[GB]	GLASS BREAK SENSOR ROUGH-IN ONLY, 90" AFF, MAXIMUM 6" FROM NEAREST CORNER TO CENTER OF BOX, 1/2" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH BUSHINGS AND PULL-STRING UNLESS INDICATED OTHERWISE.
	[REX]	REQUEST TO EXIT SENSOR
	[ES]	ELECTRIC STRIKE
	—	TELEPHONE OUTLET IN WALL, ROUGH-IN ONLY, 1" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH BUSHINGS AND PULL-STRING UNLESS INDICATED OTHERWISE.
	2	DATA OUTLET IN WALL, ROUGH-IN ONLY, 1" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH BUSHINGS AND PULL-STRING UNLESS INDICATED OTHERWISE.
	2	PHONE AND DATA OUTLET IN WALL, ROUGH-IN ONLY, 1" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH BUSHINGS AND PULL-STRING UNLESS INDICATED OTHERWISE.
	[V]	FLOOR TELEPHONE AND DATA OUTLET, POKE-THRU TYPE
	[T]	THERMOSTAT
	[T]	CABLE TELEVISION OUTLET, ROUGH-IN ONLY, 15" A.F.F. UNLESS INDICATED OTHERWISE.
	[T]	FLOOR CABLE TELEVISION OUTLET
	[CAM]	CAMERA (FOI)
	[CAM]	CAMERA (FCI)
	[WAP]	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED WIRELESS ACCESS POINT
	—	ANTENNA

ONE-LINE DIAGRAM SYMBOLS

	[I]	H-O-A SELECTOR SWITCH
	[S]	STOP/START PUSHBUTTON STATION
	—	LIGHTING ARRESTER AND SURGE CAPACITOR
	—	TRANSFORMER
	—	TRANSFORMER (SHIELDED)
	[M]	MOTOR STARTER RELAY AND CONTACTOR
	[ETM]	ELAPSED (RUNNING) TIME METER
	[MCP]	CONTROL POWER TRANSFORMER
	—	CIRCUIT BREAKER (MOTOR CIRCUIT PROTECTOR)
	—	DISCONNECT SWITCH
	—	BUS STAB
	[CT]	CURRENT TRANSFORMER
	—	MOTOR RESISTANCE TYPE WINDING HEATER
	—	THERMAL OVERLOAD CIRCUIT
	—	BREAKER (THERMAL MAGNETIC TYPE)
	—	FUSE
	—	CONTACT (NORMALLY OPEN)
	—	CONTACT (NORMALLY CLOSED)
	—	PUSHBUTTON (NORMALLY OPEN)
	—	PUSHBUTTON (NORMALLY CLOSED)
	—	LIMIT SWITCH (NORMALLY OPEN)
	—	TIME DELAY CONTACT
	—	PILOT LIGHT W/COLOR INDICATED (A=AMBER, G=GREEN, R=RED)
	—	SOLENOID VALVE
	—	DIFFERENTIAL PRESSURE SWITCH
	—	AUTOMATIC TRANSFER SWITCH
	—	DISCONNECT SWITCH 400/3400AFNDR INDICATES FRAME SIZE/POLES/FUSE AMPACITY/ENCLOSURE

PANELS AND RELATED EQUIPMENT

	—	PANELBOARD SURFACE MOUNTED (REFER TO PANEL SCHEDULE)
	—	PANELBOARD FLUSH MOUNTED (REFER TO PANEL SCHEDULE)
	[T]	TRANSFORMER, WITH CONCRETE HOUSEKEEPING PAD (REFER TO ONE-LINE DIAGRAM)
	[ATS]	AUTOMATIC TRANSFER SWITCH (REFER TO ONE-LINE DIAGRAM)

ABBREVIATIONS

A	AMPERE	RECPT	RECEPTACLE
AC	ABOVE COUNTER	REQD	REQUIRED
AFF	ABOVE FINISHED FLOOR	REQT	REQUIREMENT
AFG	ABOVE FINISHED GRADE	RGS	RIGID GALVANIZED STEEL
AIC	AMPERE INTERRUPTING CAPACITY	SC	SPLIT CIRCUIT
BLDG	BUILDING	SFD	SMOKE FIRE DAMPER
C	CONDUIT	SW	SWITCH
CAB	CABINET	TID	TELEPHONE & DATA
CKT	CIRCUIT	TTB	TELEPHONE TERMINAL BOARD
CPSE	CITY PUBLIC SERVICE ENERGY	TYP	TYPICAL
CONN	CONNECT OR CONNECTION	UC	UNDER COUNTER
CONTR	CONTRACTOR	UG	UNDERGROUND
CDSA	CITY OF SAN ANTONIO	UNO	UNLESS NOTED OTHERWISE
CT	CURRENT TRANSFORMER	V	VOLT
EA	EACH	W	WATTS
EF	EXHAUST FAN	WI	WITH
ELEC	ELECTRIC	WP	WEATHER PROOF
EMER	EMERGENCY	XFMR	TRANSFORMER
EMT	ELECTRIC METALLIC TUBING		
EWIC	ELECTRIC WATER COOLER		
FACP	FIRE ALARM CONTROL PANEL		
FLA	FULL LOAD AMPS		
FLEX	FLEXIBLE CONDUIT		
GFI	GROUND FAULT INTERRUPTER		
GND	GROUND		
HQA	HAND-OFF-AUTO		
HP	HORSEPOWER		
HPS	HIGH PRESSURE SODIUM		
HTR	HEATER		
IMC	INTERMEDIATE METAL CONDUIT		
J-BOX	JUNCTION BOX		
KVA	KILOVOLT AMPERE		
KVAR	KILOVOLT AMPERE REACTIVE		
KCM	THOUSAND CIRCULAR MILS		
KV	KILOWATT		
LIG	LIGHT OR LIGHTING		
MANUF	MANUFACTURER		
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MCP	MOTOR CIRCUIT PROTECTOR		
MIN	MINIMUM		
MH	METAL HALIDE		
MLO	MAIN LUG ONLY		
MSB	MAIN SWITCHBOARD		
MTD	MOUNTED		
NEC	NATIONAL ELECTRICAL CODE		
NTS	NOT TO SCALE		
Ø	PHASE		
OL	OVERLOAD		
OVHD	OVERHEAD		
PA	PUBLIC ADDRESS		
PVC	POLYVINYL CHLORIDE		

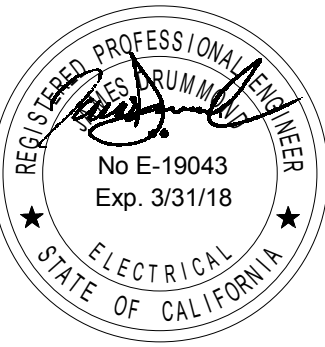
ELECTRICAL SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT. REFER TO SPECIFICATIONS MANUAL FOR ADDITIONAL REQUIREMENTS.

ELECTRICAL SYMBOLS & ABBREVIATIONS

INTERIOR T.I. FOR:
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DATE: 3/30/16
JOB NO: PEP2004.00
DRAWN BY: JD
DRAWING NO.: E0.0

SECTION 16000 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1. RELATED DOCUMENTS

- 1.A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.

2. SCOPE:

- 2.A. PROVIDE ALL ELECTRICAL WORK FOR A COMPLETE AND OPERABLE SYSTEM AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THIS SECTION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- 2.A.1. SITE INVESTIGATIONS PRIOR TO BIDDING TO ESTABLISH EXISTING CONDITIONS.
- 2.A.2. SWITCHBOARDS, PANELBOARDS, DRY TYPE TRANSFORMERS, AND FEEDERS FOR POWER AND LIGHTING AS SHOWN ON THE DRAWINGS.
- 2.A.3. COMPLETE GROUNDING SYSTEM AS REQUIRED.
- 2.A.4. LIGHTING AND POWER BRANCH CIRCUIT WIRING, INCLUDING DISCONNECT SWITCHES, TIME SWITCHES, CONTRACTORS, PHOTOCELL CONTROLS, RELAYS, OUTLETS, DEVICES, PLATES, MATERIALS, ETC., FOR A COMPLETE INSTALLATION AS SHOWN ON THE DRAWINGS.
- 2.A.5. LIGHTING FIXTURES AND LAMPS.
- 2.A.6. A TELECOMMUNICATION SYSTEM INCLUDING CONDUITS, CABLES, BACKBOARDS, TERMINAL CABINETS, AND GROUNDING.
- 2.A.7. PROVISIONS FOR CABLE TELEVISION SYSTEM.
- 2.A.8. CUTTING AND PATCHING AND SEALING OF PENETRATIONS.
- 2.A.9. FLASHING OF CONDUITS AT ROOF PENETRATIONS.
- 2.A.10. PROVIDE MATERIALS AND LABOR FOR ELECTRICAL WORK AS SPECIFIED IN OTHER SECTIONS.
- 2.A.11. RECORD DRAWINGS.
- 2.A.12. TEST OF ALL ELECTRICALLY OPERATED EQUIPMENT.
- 2.A.13. GUARANTEE.
- 2.A.14. PAINTING OF EXPOSED CONDUIT OR EQUIPMENT.
- 2.A.15. CUTTING AND PATCHING.

3. QUALITY ASSURANCE

- 3.A. IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
- 3.A.1. REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION.
- 3.A.2. REQUIREMENTS OF STATE FIRE MARSHAL, STATE AND MUNICIPAL BUILDING AND ELECTRICAL SAFETY ORDINANCES.
- 3.A.3. ALL PRODUCTS IN THIS WORK SHALL BE UL LABELED AND SHALL CONFORM TO ALL REQUIREMENTS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS FOR ELECTRICAL WIRING APPARATUS.
- 3.A.4. REQUIREMENTS OF ALL OTHER AUTHORITIES HAVING JURISDICTION.

4. JOB CONDITIONS

4.A. DRAWINGS

- 4.A.1. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE LOCATIONS OF THE COMPONENTS OF THE WORK, AND FURTHER INDICATE THE REQUIRED SIZE AND POINTS OF TERMINATION OF THE CONDUIT, NUMBER AND SIZE OF WIRES, PROVIDE ALL CONDUIT, WIRE AND NECESSARY CONNECTIONS FOR THE COMPLETE ELECTRICAL SERVICE, COORDINATING CONDUIT RUNS WITH BUILDING STRUCTURE, AND ALL WORK OF OTHER TRADES.

- 4.A.2. UNLESS OTHERWISE APPROVED BY THE ARCHITECT, THE FOLLOWING CONDITIONS SHALL BE ADHERED TO:
- 4.A.2.A. GROUP OUTLETS AND WIRING DEVICES WITHIN CLOSE PROXIMITY HORIZONTALLY OR VERTICALLY FOR A UNIFORM AND NEAT APPEARANCE.
- 4.A.2.B. ALL EQUIPMENT AND MATERIAL LOCATED OUTDOORS OR IN HAZARDOUS OR OTHER SPECIAL AREAS SHALL BE UL LABELED FOR THE CONDITIONS TO BE ENCOUNTERED.

5. PERMITS, FEES AND INSPECTIONS

- 5.A. OBTAIN AND PAY FOR ALL PERMITS AND LICENSES REQUIRED FOR THE ELECTRICAL WORK, AND ARRANGE AND SCHEDULE ALL REQUIRED INSPECTIONS. OBTAIN PERMITS PRIOR TO COMMENCING ANY WORK.
- 5.B. PAY ALL FEES OR CHARGES LEVIED BY THE UTILITY COMPANY OR CITY FOR PERMANENT AND TEMPORARY SERVICES TO THE PROJECT, AND ANY OTHER IMPOSED FEES.

6. COORDINATION

- 6.A. VERIFY AND COORDINATE ALL SIZES OF EQUIPMENT TO BE INSTALLED WITHIN ROOMS WITH THE MANUFACTURER OF EQUIPMENT, INSURING ADEQUATE CLEARANCES, VENTILATION AND ACCESS.
- 6.B. COORDINATE WORK OF MECHANICAL TRADES FOR WORK REQUIRED AS A PART OF THIS SECTION, AND VERIFY QUANTITY, SIZE AND LOCATION OF ALL WORK.
- 6.C. COORDINATE THE WORK OF ALL OTHER TRADES, VERIFYING ALL REQUIRED CLEARANCES, PROPER SLEEVES, SUPPORTS, DOOR SWINGS AND OTHER ITEMS AFFECTING THIS WORK. DETERMINE IN ADVANCE THE METHODS OF INSTALLING AND CONNECTING ALL EQUIPMENT, OUTLETS AND OTHER ITEMS.

7. SUBMITTALS

7.A. EQUIPMENT ORDER LIST:

- 7.A.1. WITHIN TWENTY (20) DAYS AFTER AWARD OF CONTRACT, DELIVER TO THE ARCHITECT SIX (6) COPIES OF A COMPLETE LIST OF EQUIPMENT AND MATERIALS ORDERED GIVING DESCRIPTION, PLATE NUMBERS, DATE OF ORDERS AND REQUESTED DELIVERY DATES. ARRANGE DELIVERY OF PROPER QUANTITIES SO THAT THE PROGRESS OF THE WORK WILL NOT BE DELAYED.

7.B. MATERIAL LIST

- 7.B.1. SUBMIT COMPLETE MATERIAL LIST FOR ALL PRODUCTS TO BE USED IN THIS WORK.
- 7.C. RECORD DRAWINGS.
- 7.D. MARK AND DIMENSION ACTUAL ROUTINGS OF ALL UNDERGROUND CONDUITS INSTALLED EXTERIOR TO BUILDINGS AND ALL FEEDERS UNDER BUILDING SLABS. DIMENSION THE TERMINAL LOCATION AND SHOW ITS DEPTH BELOW FINISHED GRADE FOR EACH UNDERGROUND SUB-OUT.

8. GUARANTEE

- 8.A. ALL MATERIALS AND EQUIPMENT FURNISHED AND INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE BUILDING AGAINST DEFECTIVE MATERIAL, DESIGN AND WORKMANSHIP. UPON RECEIPT OF NOTICE FROM THE OWNER OF THE FAILURE OF ANY PART OF THE WORK DURING THE GUARANTEE PERIOD, THE AFFECTED WORK SHALL BE REPLACED PROMPTLY WITH NEW WORK BY AND AT THE EXPENSE OF THE CONTRACTOR AND AT NO COST TO THE OWNER.

PART 2 - PRODUCTS

1. MATERIALS

- 1.A. EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE, PROVIDE ONLY NEW MATERIALS HAVING ALL LEGALLY REQUIRED APPROVALS AND/OR LABELS.
- 1.B. PROVIDE MATERIALS COMPLYING WITH THE STANDARDS OF NATIONALLY RECOGNIZED ORGANIZATIONS (SUCH AS ANSI, NEMA AND UL).
2. MAIN SWITCHBOARD
- 2.A. PROVIDE MAIN SWITCHBOARDS CONTAINING SERVICE, METERING, CURRENT TRANSFORMER COMPARTMENT, MAIN DISCONNECT AND DISTRIBUTION SECTION AS INDICATED AND AS REQUIRED.

2.B. ENCLOSURES:

- 2.B.1. TOTALLY ENCLOSED SECTIONS BOLTED TOGETHER TO FORM A SINGLE FLOOR-STANDING ASSEMBLY. NEMA TYPE 1 GENERAL PURPOSE FOR INDOOR INSTALLATION, FRONT ACCESS ONLY UNLESS INDICATED. PROVIDE SERVICE PULL SECTIONS WHERE REQUIRED AND SIZE AS REQUIRED BY THE SERVING UTILITY. SECTIONS 90 IN. HIGH AND ALL OF THE SAME DEPTH. MINIMUM 14 INCHES UNLESS INDICATED. LEGAL GAUGE SHEET STEEL FINISHED MANUFACTURERS STANDARD GRAY BAKED ENAMEL. IT IS THE CONTRACTORS RESPONSIBILITY TO FURNISH A SWITCHBOARD TO FIT THE SPACE INDICATED.

2.C. BUSBARS:

- 2.C.1. RECTANGULAR CROSS-SECTION, FULL HEIGHT IN EACH DISTRIBUTION SECTION WITH HORIZONTAL CROSS BUSBARS BETWEEN SECTIONS. SILVER PLATED COPPER OR TIN PLATED ALUMINUM BUSSING, JOINTS AND CONNECTIONS, THROUGHOUT. SHORT CIRCUIT CAPABILITIES IN ACCORDANCE WITH MINIMUM REQUIREMENTS FOR THE CIRCUIT PROTECTORS UNLESS INDICATED GREATER. WHENEVER FUTURE SECTIONS OR SPACE FOR FUTURE EXPANSION IS INDICATED ON THE PLANS, PROVIDE BUSSING AND COVERED OPENING IN SWITCHBOARD AS REQUIRED FOR FUTURE EXPANSION.

2.D. LUGS:

- 2.D.1. LUGS FOR ALL EXTERNAL AND INTERNAL CONNECTIONS, PLATES OR OTHERWISE SHALL BE SUITABLE FOR EITHER COPPER OR ALUMINUM CONDUCTORS.
- 2.E. CIRCUIT PROTECTORS:
- 2.E.1. CIRCUIT BREAKERS OR FUSED SWITCHES AS INDICATED. SERIES RATED MINIMUM INTERRUPTING CAPACITY OF 42,000 SYMMETRICAL RMS AMPERES.

2.E.1.A. CIRCUIT BREAKERS:

- 2.E.1.A.1. MOLDED CASE, THERMAL MAGNETIC TYPE, PADLOCKABLE IN THE "OFF" POSITION. FUSED SWITCHES: QUICK-MAKE, QUICK-BREAK, VISIBLE BLADE, HORSEPOWER RATED, SPRING PRESSURE FUSE CLIP, AND BLADE JAW CONTACT. PADLOCKABLE IN THE "OFF" POSITION, WITH POSITION-INDICATING OPERATING HANDLES AND DEFEATABLE COVER INTERLOCK TO PREVENT ACCESS TO THE FUSES UNLESS THE SWITCH IS IN THE "OPEN" POSITION.

2.E.3. FUSES:

- 2.E.3.1. CURRENT-LIMITING TYPE, MINIMUM 100,000 SYMMETRICAL RMS AMPERES INTERRUPTING CAPACITY, BUSS TYPE RKG-TO OR EQUAL BY GOULD, UNLESS OTHER CLASS OR TYPE INDICATED. PROVIDE THREE SPARE FUSES FOR EACH SIZE AND TYPE AND MOUNT IN A SUITABLE CABINET BEHIND A HINGED DOOR WITH NAMEPLATE ENGRAVED "SPARE FUSES". LOCATE CABINET ON OR NEAR SWITCHBOARD. ALL CIRCUIT PROTECTORS SHALL HAVE A SHORT CIRCUIT INTERRUPTING CAPACITY EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT AT THAT POINT. IF THE AVAILABLE FAULT CURRENT IS NOT INDICATED, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN THIS INFORMATION FROM THE ARCHITECT. FAILURE TO DO THIS WILL NOT ENTITLE THE CONTRACTOR TO COMPENSATION FOR ANY ADDITIONAL COSTS INCURRED IN MEETING THIS REQUIREMENT.

2.E.5. FUSE HOLDERS:

- 2.E.5.1. FUSE HOLDERS FOR CURRENT-LIMITING FUSES SHALL BE TYPE "R".
- 2.F. METERING PROVISIONS:
- 2.F.1. SEQUENCE OF METER TO MAIN, PULL SECTION LANDING LUGS, BUSBARS AND PROVISIONS FOR CURRENT TRANSFORMER AS REQUIRED BY SERVING UTILITY.

2.G. DISTRIBUTION SECTIONS:

- 2.G.1. DISTRIBUTION SECTIONS SHALL BE CONVERTIBLE TYPE WITH FULL LENGTH RECTANGULAR BUSSING AND CROSS BUSSING OF CAPACITY AND POLES AS REQUIRED ON THE DRAWINGS AND BRACED TO WITHSTAND 50,000 AMPS SYMMETRICAL SHORT CIRCUIT CURRENT (UNLESS OTHERWISE INDICATED).
- 2.H. ENDS OF SWITCHBOARD SHALL BE LOUVERED. EACH SWITCH OR BREAKER SHALL HAVE AN ENGRAVED BAKELITE NAMEPLATE INDICATING EQUIPMENT OR PANEL CONTROLLED. PROVIDE GOLD AMP-TRAP FUSES OR EQUAL BY BUSS OR ECONOMY, OF PROPER SIZE FOR EACH SWITCH. INSTALL WITH REJECTION CLIPS.

- 2.I. ALL SECTIONS SHALL BE EQUIPPED WITH MICARTA NAMEPLATES INDICATING "CAUTION - INSTALL ONLY CURRENT-LIMITING FUSES AS ORIGINALLY INSTALLED".

- 2.J. ALL FUSES SHALL BE CLAMPED TO THE BUSBARS AND SHALL ADEQUATELY PROTECT THE EQUIPMENT SERVED FROM FAULT CURRENTS IN EXCESS OF THEIR RATINGS.

- 2.K. SERVICE SWITCHBOARDS SHALL BE AS MANUFACTURED BY G.E., WESTINGHOUSE, CHALLENGER OR SQUARE D.

2.L. PROVIDE THREE (3) SPARE CURRENT-LIMITING FUSES FOR EACH FUSE RATING SHOWN ON THE SINGLE LINE DIAGRAM.

2.M. PROVIDE NAMEPLATES.

2.N. USE LEVELING SCREWS TO SET THE SWITCHBOARD PLUMB AND TRUE.

3. PANELBOARDS

- 3.A. PROVIDE PANELBOARDS WITH RATINGS, COMPONENTS AND FEATURES IN ACCORDANCE WITH THE SINGLE-LINE DIAGRAM AND PANEL SCHEDULES ON DRAWINGS.
- 3.B. ENCLOSURES:
- 3.B.1. LEGAL GAUGE SHEET STEEL BOX, GALVANIZED FOR FLUSH BOX, DOOR AND TRIM MINIMUM NO. 12 GAUGE STEEL, FLUSH OR SURFACE TYPE AS INDICATED. HINGED LOCKABLE DOOR WITH CONCEALED HINGES AND FASTENERS. WEATHERPROOF WHERE LOCATED OUTDOORS.

- 3.B.2. WITH BARRIERED TOP OR SIDE SECTION HAVING SEPARATE HINGED LOCKABLE DOOR WHERE INDICATED. SPRAY WITH ACQUISTICAL MATERIAL WHERE USED FOR CONTRACTORS. MAINTAIN 2 IN. OF SOLID TRIM BETWEEN DOORS.
- 3.C. FINISH: PARTS EXPOSED TO VIEW TO HAVE ONE COAT ZINC CHROMATE AND ONE COAT HAMMERTONE GRAY OR MANUFACTURERS STANDARD GRAY BAKED ENAMEL.

- 3.D. LOCKS AND KEYS: FURNISH FLUSH TYPE LOCK AND TWO KEYS WITH EACH PANELBOARD. ALL LOCKS SHALL BE KEYPED ALIKE.

- 3.E. SIZES: MINIMUM 20 IN. WIDE UNLESS INDICATED. SURFACE MOUNT 5-3/4 IN. DEEP UNLESS INDICATED. TOP AND BOTTOM GUTTERS MINIMUM 6 IN. HIGH. PROVIDE 12 IN. HIGH GUTTER WHERE DOUBLE LUGS ARE REQUIRED OR WHERE CABLE SIZE EXCEEDS BUS SIZE.

- 3.F. PROVIDE ADDITIONAL, SIDE GUTTER SPACE OR SEPARATE BARRIERED SIDE SECTION WITH COVER WHERE INDICATED. TRENCHES FOR FEEDTHROUGH LUGS.

- 3.G. BUSBARS: BUS SHALL BE SILVER PLATED COPPER OR TIN PLATED ALUMINUM. PROVIDE SPLIT BUSBARS WHERE INDICATED. NEUTRAL BUS ELECTRICALLY ISOLATED FROM ENCLOSURE.

- 3.H. LUGS FOR ALL EXTERNAL CONNECTIONS SHALL BE SUITABLE FOR COPPER CONDUCTORS. SHOP DRAWINGS MUST INDICATE QUANTITY AND SIZES OF LUGS BASED ON ACTUAL CONDUCTORS TO BE USED AS SHOWN ON THE PLANS.

- 3.I. GROUNDING: WHENEVER GROUND CONNECTORS ARE INSTALLED OR REQUIRED, PROVIDE A SEPARATE EQUIPMENT GROUND BUS IN PANEL ELECTRICALLY CONNECTED TO THE ENCLOSURE.

- 3.J. CIRCUIT BREAKERS:
- 3.J.1. MOLDED CASE, THERMAL MAGNETIC, AUTOMATIC TRIP, BOLTED TYPE. COMMON TRIP FOR MULTIPLE TYPES.

- 3.J.2. VOLTAGE RATING AS REQUIRED FOR THE APPLICATION. SERIES RATED NEMA INTERRUPTING CAPACITY OF MINIMUM 65,000 RMS SYMMETRICAL AMPERES.

- 3.J.3. ALL CIRCUIT BREAKERS WHICH ARE LOCATED OUTSIDE OF AIR CONDITIONED SPACES SHALL BE AMBIENT COMPENSATED. USE "HACR" CIRCUIT BREAKERS FOR AIR CONDITIONING LUGS. USE "SWD" CIRCUIT BREAKERS FOR LIGHTING CIRCUITS CONTROLLED FROM PANELS.

- 3.J.4. MAIN BREAKER SHALL BE PADLOCKABLE IN THE "OFF" POSITION. ALL BRANCH BREAKERS SHALL BE ABLE TO ACCOMMODATE LOCKOUT CLIPS. PROVIDE CLIP TO LOCK BREAKERS SERVING MOTORS, REFRIGERATORS, CONTROLS FOR MECHANICAL SYSTEMS. CIRCUIT BREAKERS CONTROLLING FLUORESCENT FIXTURES (WHICH ARE NOT LOCALLY CONTROLLED) SHALL BE CAPABLE OF BEING LOCKED IN THE "OFF" OR "ON" POSITION.

- 3.J.5. ARRANGE ALL BREAKERS TO CORRESPOND EXACTLY WITH THE SCHEDULES.

- 3.J.6. WHERE INDICATED, PROVIDE MAIN BREAKER, AUTOMATIC TYPE UNLESS NON-AUTOMATIC INDICATED IN PANELS.

- 3.K. CIRCUIT IDENTIFICATION:
- 3.K.1. CIRCUIT NUMBER ON BLACK-ON-WHITE LAMINATED PLASTIC TABS OR OTHER PERMANENT TYPE NOT READILY CHANGED FROM THE FRONT.

- 3.K.2. UNDER THE PANEL DESIGNATION (IN 1/4 IN. HIGH LETTERS) INSTALL IN 1/8 IN. HIGH LETTERS THE VOLTAGE AND PHASE, AS "277/480 VOLT, 3 PHASE, 4 WIRE, 100A BUS".

4. TRANSFORMERS
- 4.A. TRANSFORMERS SHALL BE DRY TYPE, INDOOR OR OUTDOOR, SELF-COOLED TYPE MINIMUM CLASS 155 INSULATION SYSTEM RATING. TRANSFORMERS SHALL HAVE FOUR 2-1/2% FULL CAPACITY TAPS. TRANSFORMERS SHALL BE OF VOLTAGE, PHASE, AND KVA RATINGS AS SHOWN ON THE DRAWINGS. MOUNT ON SOUND DAMPENING MATERIAL.

5. CONDUIT

- 5.A. ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED. ALL COUPLINGS AND CONNECTORS SHALL BE WATER-TIGHT, RIGID TYPE.

- 5.B. METAL-CLAD CABLE: TYPE MC CABLE SHALL BE CORRUGATED TUBE, TYPE CS. MC CABLE SHALL INCLUDE A FULL SIZE GROUND CONDUCTOR AND ANTI-SHORT BUSHINGS AT EACH TERMINATION POINT.

- 5.C. FLEXIBLE CONDUIT SHALL BE HOT DIPPED GALVANIZED STEEL.

- 5.D. CONNECTORS FOR FLEXIBLE STEEL CONDUIT SHALL BE THE SCREW IN TYPE (JAKE) AS MANUFACTURED BY DURO FITTING COMPANY, OR APPROVED EQUAL.

6. OUTLET BOXES

- 6.A. ONE-PIECE GALVANIZED PRESSED STEEL, KNOCKOUT TYPE EQUAL TO STEEL CITY MANUFACTURING COMPANY, 4" X 2-1/8" SQUARE, MINIMUM 1/4 IN. DEEP MINIMUM (CEILING).

- 6.B. CAST BOXES SHALL BE THREADED HUB CAST FERROUS, OR ALUMINUM BOXES WHERE LEGALLY PERMITTED AND EQUIVALENT TO CROUSE-HINDS, KILLARK, OR PYLE-ANTONLINE. PROVIDE PLUGS FOR SPARE HUBS.

7. VOICEDATA OUTLET

- 7.A. DEVICE SHALL BE A DUPLEX JACK OUTLET BY HUBBELL #DUJO, COORDINATE DEVICE WITH OWNERS EQUIPMENT REQUIREMENTS. COLOR, AS SELECTED BY ARCHITECT.

8. SHEET STEEL PULL BOXES

- 8.A. IN WET LOCATIONS, OUTDOORS OR WHERE INDICATED TO BE WEATHERPROOF, PROVIDE BOXES THAT HAVE BEEN HOT-DIPPED GALVANIZED AFTER CONSTRUCTION AND GIVEN TWO COATS OF GRAY COLOR RUST-RESISTANT PAINT. INSTALL COVERS WITH STAINLESS STEEL, SCREWS AND NEOPRENE GASKETS. SEAL AROUND CONDUIT ENTRIES WITH SILICONE SEALANT, GENERAL ELECTRIC OR EQUAL.

- 8.B. IN DRY LOCATIONS, FINISH ALL BOX SURFACES WITH ONE COAT OF METAL PRIMER AND ONE COAT OF PRIMER SEALER.

9. CONDUCTORS

- 9.A. PROVIDE NEW CONDUCTORS MANUFACTURED WITHIN ONE YEAR OF DATE OF DELIVERY TO JOB. DELIVER CONDUCTORS TO SITE IN THEIR ORIGINAL UNBROKEN PACKAGES OR ON THEIR ORIGINAL CABLE REELS.

- 9.B. ALL CONDUCTOR PACKAGES AND CABLE REELS SHALL BE MARKED AND TAGGED PLAINLY WITH UL LABEL, SIZE, VOLTAGE RATING, INSULATION TYPE, TYPE OF STRANDING, MANUFACTURERS NAME, TRADE NAME AND MONTH AND YEAR WHEN MANUFACTURED.

- 9.C. CONDUCTORS SHALL BE DRAWN, MINIMUM 98% CONDUCTIVITY STRANDED COPPER, TYPE THW, XHHW OR THW/THHN, 600 VOLT, UNLESS OTHERWISE NOTED. POWER CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID.

- 9.D. ALUMINUM CONDUCTORS ARE NOT ACCEPTABLE.

- 9.E. UNLESS NOTED OTHERWISE, PROVIDE ALLOY CONNECTORS OR LUGS. ALUMINUM CONNECTORS OR LUGS ARE NOT ACCEPTABLE. THE FOLLOWING CONNECTORS ARE PROVIDED FOR COPPER CONDUCTORS:

- 9.D.1. FOR WIRE NO. 10 AWG AND SMALLER, 3M "SCOTCH-LOC", IDEAL "SUPER-NUT", BUCHANAN "B3".

- 9.D.2. FOR WIRE NO. 8 AWG AND LARGER, BUNDRY "VERSITAPS" AND HEAVY DUTY CONNECTORS, O.Z. SOLDERLESS CONNECTORS OR THE EQUIVALENT BY BUCHANAN, KEARNEY OR PENN-JUNION.

10. WIRING DEVICES

- 10.A. RECEPTACLES SHALL BE BONDED IN ACCORDANCE WITH ARTICLE E250-74 OF TITLE 24, STATE OF CALIFORNIA ADMINISTRATIVE CODE.

10.B. FINISH OF DEVICES SHALL BE AS SELECTED BY ARCHITECT.

11. TOGGLE SWITCHES

- 11.A. FOR FLUSH-MOUNTED WEATHERPROOF SWITCHES, PROVIDE GASKETED STAINLESS STEEL LIFT COVER PLATE, PASS & SEYMOUR WP SERIES. WHERE SURFACE MOUNTED, USE CAST BOX WITH GASKETED CAST ALUMINUM LIFT COVER PLATE, HUBBELL NO. 7420, WHERE APPLICABLE.

12. COVER PLATES

- 12.A. PLATES SHALL BE DECORA STYLE WHITE PLASTIC U.O.N.

13. PHOTOELECTRIC CONTROLLERS

- 13.A. AS MANUFACTURED BY AUTOMATIC SWITCH COMPANY, SQUARE D, TORK, PARAGON, OR SANGAMA.

14. CONTACTORS

- 14.A. AS MANUFACTURED BY AUTOMATIC SWITCH COMPANY, SQUARE "D", G.E. OR WESTINGHOUSE.

15. SUPPORTS

- 15.A. SWING CONNECTORS FOR STEEL ROADS SUPPORTING HANGING ELECTRICAL EQUIPMENT (TRANSFORMERS, JUNCTION BOXES, ETC.) SHALL BE EQUAL TO STEEL CITY E-165, E-170 AND E-232.

16. DISCONNECT SWITCHES

- 16.A. FOR ALL MOTORS OR EQUIPMENT OUT OF SIGHT OF THE CONTROLLER OR MORE THAN 50 FEET FROM THE CONTROLLER, PROVIDE A DISCONNECT SWITCH AT THE MOTOR OR EQUIPMENT LOCATION.

- 16.B. UNLESS OTHERWISE INDICATED OR REQUIRED, USE ONLY NONFUSED TYPE FOR MOTOR OR EQUIPMENT CONNECTIONS. PROVIDE SWITCHES WITH THE NUMBER OF POLES AND THE VOLTAGE, CURRENT AND HORSEPOWER RATINGS AS REQUIRED.

- 16.C. NON-FUSIBLE DISCONNECT SWITCHES SHALL BE SAME TYPE AS SPECIFIED FOR FUSIBLE DISCONNECT SWITCHES, EXCEPT FOR SINGLE PHASE MOTORS 2 H.P. OR LESS. MANUAL MOTOR STARTERS MAY BE USED.

- 16.D. FUSIBLE DISCONNECT SWITCHES SHALL HAVE QUICK-MAKE, QUICK-BREAK MECHANISM AND AN INTERLOCKED COVER WHICH CANNOT BE OPENED WHEN SWITCH IS IN THE "ON" POSITION AND BE PROVIDED WITH VOIDABLE INTERLOCKS. SWITCHES SHALL BE HORSEPOWER RATED AND TYPE THAT CAN BE USED ON INDUCTIVE LOADS.

- 16.E. PROVIDE A FUSIBLE DISCONNECT WITHIN SIGHT OF AND READILY ACCESSIBLE FROM AIR CONDITIONING EQUIPMENT, PER NEC 440-14. SIZE FUSES PER EQUIPMENT NAMEPLATES.

- 16.F. PROVIDE EXTERNALLY OPERABLE-BREAK-MRE WITH COVER INTERLOCK AND PADLOCKABLE IN EITHER THE OPEN OR CLOSED POSITION, UNLESS INDICATED OTHERWISE, PROVIDE SWITCHES INDOORS IN NEMA TYPE 1 ENCLOSURE. PROVIDE SWITCHES OUTDOORS, OR WHERE INDICATED OR REQUIRED TO BE WEATHERPROOF, IN NEMA TYPE 3R RAINTIGHT ENCLOSURE. PROVIDE EACH SWITCH WITH A NAMEPLATE INDICATING EQUIPMENT CONTROLLED.

19. SOUND DAMPENING MATERIAL

- 19.A. LOWERY CLAY PADS.

20. PLYWOOD BACKBOARDS

- 20.A. DOUGLAS FIR PLYWOOD, EXTERIOR GRADE, 4" X 4" X 3/4 IN. THICK (MINIMUM) FINISHED ONE SIDE AND PRIMER COAT PAINTED ON ALL SURFACES WITH FINISH COAT OF LIGHT GRAY ENAMEL ON FRONT (FINISHED) SIDE.

21. VANDAL-PROOF FASTENINGS

- 21.A. PROVIDE APPROVED VANDAL-PROOF TYPE SCREWS, BOLTS AND NUTS WHERE EXPOSED TO SIGHT THROUGHOUT THE PROJECT. PROVIDE OWNER WITH SIX (6) SCREWDRIVERS FOR THIS TYPE.

22. TERMINAL CABINETS

- 22.A. TERMINAL CABINETS SHALL BE FABRICATED OF CODE GAUGE SHEET STEEL, SIZE AS INDICATED ON THE DRAWING. COMPLETE WITH HINGED DOORS AND THE NUMBER OF 2-WAY SCREW TERMINALS REQUIRED FOR TERMINATION OF ALL CONDUCTORS. THE DOOR TO TERMINAL CABINETS SHALL BE CONTINUOUSLY HINGED ON ONE SIDE AND BE THE SAME SIZE AS THE CABINET SO AS TO ALLOW MAXIMUM TERMINATION SPACE WITHIN THE CABINET. TERMINAL CABINETS SHALL HAVE 3/8" PLYWOOD BACKING FINISHED IN BLACK INSULATING VARNISH.

- 22.B. ALL TERMINAL CABINETS SHALL BE FINISHED WITH ONE COAT OF ZINC CHROMATE AND A COST OR PRIMER SEALER AFTER A THOROUGH CLEANING WHERE EXPOSED TO PUBLIC VIEW (E.G. CORRIDORS, COVERED PASSAGES, OFFICES, ETC.). PRIME COATED TERMINAL CABINETS SHALL BE PAINTED TO MATCH SURROUNDINGS AFTER INSTALLATION.

- 22.C. TERMINAL CABINETS NOT LOCATED IN ELECTRICAL ROOMS OR ELECTRICAL CLOSETS SHALL HAVE CCL SECURITY PRODUCTS 15670 LOCKS AND KEYS.

- 22.D. TERMINALS FOR SIGNAL SYSTEMS CABINETS TO BE CANNON TYPE "SS" OR EQUAL.

- 22.E. PROVIDE ENGRAVED NAMEPLATE ON EACH CABINET INDICATING ITS DESIGNATION AND SYSTEM (I.E., "LIFESAFETY SYSTEM - PANEL 2LS").

PART 3 - EXECUTION

1. STORAGE

- 1.A. ALL MATERIALS AND EQUIPMENT IN STORAGE AND DURING CONSTRUCTION, SHALL BE COVERED IN SUCH A MANNER THAT NO FINISH SURFACE WILL BE DAMAGED OR MARRED, AND ALL MOVING PARTS SHALL BE KEPT PERFECTLY CLEAN AND DRY.

2. EXCAVATIONS

- 2.A. TRENCHES FOR UNDERGROUND CONDUIT EXTERIOR TO BUILDING SHALL PROVIDE A MINIMUM EARTH COVER OF 24 INCHES FOR CONDUITS UNLESS NOTED OTHERWISE. CONDUITS FOR LANDSCAPE AND PARKING LOT LIGHTING MAY BE MINIMUM 18 INCHES BELOW FINISHED GRADE UNLESS NOTED OTHERWISE.

3. CONCRETE

- 3.A. PROVIDE CONCRETE PADS (MINIMUM 4 IN. HIGH) FOR ALL FLOOR MOUNTED EQUIPMENT INSTALLED OUTDOORS, IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS SUSCEPTIBLE TO BEING WET OR HOSED DOWN.

4. SLEEVES

- 4.A. PROVIDE SLEEVES OF SUFFICIENT SIZE TO PERMIT READY INSTALLATION OF EACH CONDUIT WHICH PASSES THROUGH CONCRETE WALLS OR SUSPENDED SLABS. SLEEVES IN CONCRETE BEAMS, JOISTS, COLUMNS OR FOOTING WALLS MAY BE INSTALLED ONLY WHERE PERMITTED BY THE STRUCTURAL ENGINEER.

- 4.B. FOR CONDUIT THAT PASSES THROUGH SUSPENDED CONCRETE SLABS, PLACE SLEEVES WITH THE TOP 1 INCH ABOVE FINISHED SLAB AND THE BOTTOM FLUSH WITH UNDERSIDE OF SLAB. IN ALL OTHER CASES, PLACE SLEEVES WITH THE ENDS FLUSH WITH CONCRETE SURFACES. SPACE SLEEVES AT LEAST THREE DIAMETERS APART ON CENTER OR MORE IF REQUIRED BY THE ARCHITECT.

- 4.C. WHERE CONDUITS PASS THROUGH FIRE RESISTIVE WALLS, CEILING OR FLOORS, THEY SHALL BE PACKED WITH FIRE RESISTANT COMPOUND OR CONCRETE.

- 4.D. PROVIDE SLEEVES OF GALVANIZED SHEET STEEL, AND OF PROPER GAUGE TO RETAIN THEIR SHAPE DURING FORMING AND CONCRETE OPERATIONS. WHERE A CONDUIT PASSES THROUGH AN EXTERIOR SURFACE, SEAL THE SPACE BETWEEN THE CONDUIT AND ITS SLEEVE WITH AN APPROVED WATERTIGHT COMPOUND.

5. ROOF STUBS

- 5.A. AT BUILD-UP ROOFING, PROVIDE PITCH POCKETS AT ALL ROOF STUBS. FOR OTHER TYPE ROOFS, PROVIDE A GALVANIZED IRON ROOF JACK OF THE PROPER SIZE FOR EACH CONDUIT THAT STUBS-UP THROUGH A ROOF. FLASH AND COUNTER FLASH. COORDINATE THIS WORK WITH AFFECTED TRADES. INSTALL ROOF SEALS IN SUCH A MANNER AS NOT TO VOID ROOF GUARANTEES.

6. CONDUIT

- 6.A. UNLESS OTHERWISE INDICATED, PROVIDE CONDUITS OF TYPE PERMITTED OR REQUIRED. FOR ALL CONDUCTORS OR CABLES OF ALL SYSTEMS AND VOLTAGES.

- 6.B. CONDUITS SHALL NOT CONTAIN MORE THAN NINE (9) CONDUCTORS UNLESS INDICATED EXCEPT FOR SIGNAL, REMOTE CONTROL OR COMMUNICATIONS SYSTEMS.

- 6.C. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE INDICATED OR REQUIRED.

- 6.D. UNLESS OTHERWISE INDICATED, USE ELECTRICAL METALLIC TUBING (EMT) AS FOLLOWS: ABOVE GRADE IN DRY LOCATIONS, IN ACCESSIBLE CEILINGS, AND WHERE NOT SUBJECT TO MECHANICAL INJURY OR OTHERWISE PROHIBITED. CONCRETE OR MASONRY IN CONTACT WITH EARTH ARE NOT CONSIDERED DRY LOCATIONS.

- 6.E. METAL-CLAD CABLE MAY BE USED WHERE CONCEALED FOR FIRE ALARM AND BRANCH CIRCUITING OF LIGHTING AND CONVENIENCE RECEPTACLES (IT IS NOT PERMITTED EXPOSED, AT PROJECTION BOOTHS OR AT CONCESSION STANDS).

6.F. FLEXIBLE STEEL CONDUIT SHALL BE USED ONLY:

- 6.F.1. WHERE INDICATED, SIX FOOT MAXIMUM LENGTH PLUS GREEN GROUND WIRE.

- 6.F.2. FOR FINAL CONNECTIONS TO MOTORS, VIBRATING EQUIPMENT OR WHERE REQUIRED FOR EQUIPMENT SERVICING.

- 6.F.3. FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES FROM NEARBY ACCESSIBLE JUNCTION BOXES.

- 6.F.4. FOR CONCEALED RUNS IN STUD WALLS, IN INACCESSIBLE CEILINGS AND IN DRY LOCATIONS WHERE STRUCTURAL CONDITIONS PREVENT THE USE OF OTHER TYPES OF CONDUIT OR WHERE EXCESSIVE CUTTING OR NOTCHING OF WOOD MEMBERS WOULD OTHERWISE BE REQUIRED.

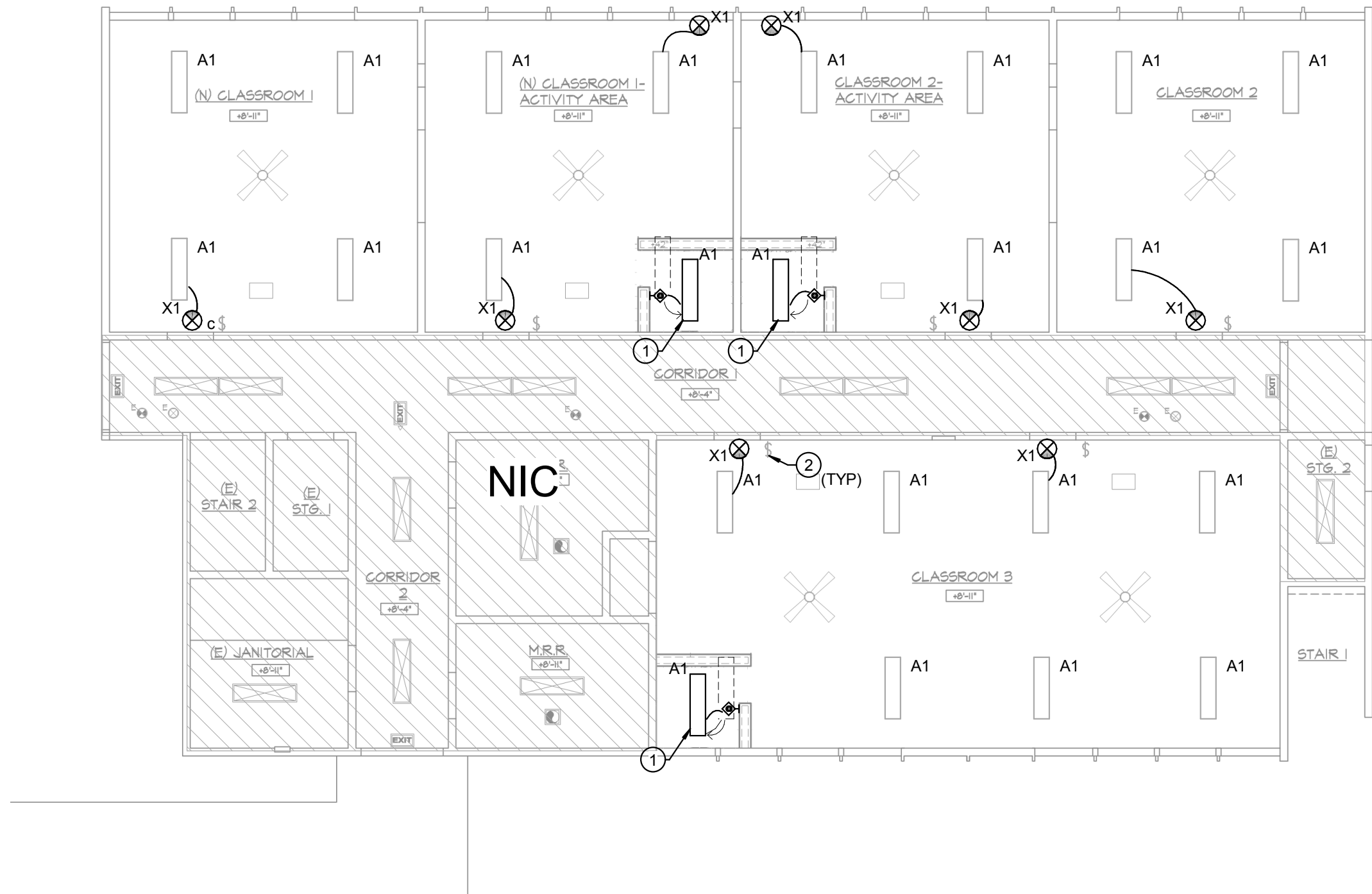
- 6.G. SIZE ALL CONDUIT AS REQUIRED, OR LARGER WHERE INDICATED OR PREFERRED. WHERE PORTIONS OF A CONDUIT RUN ARE INCREASED IN SIZE FOR WHATEVER REASON, MAKE ALL REMAINING PORTIONS IN THAT RUN THE SAME SIZE AND INCREASE THE FITTING AS REQUIRED.

- 6.H. SEAL ENDS OF ALL CONDUIT WITH APPROVED MANUFACTURED CONDUIT SEALS, CAPS OR PLUGS IMMEDIATELY AFTER INSTALLATION. KEEP ENDS SEALED UNTIL IMMEDIATELY PRIOR TO PULLING CONDUCTORS.

- 6.I. WHERE CONDUIT IS UNDERGROUND, UNDER SLAB OR GRADE, EXPOSED TO THE WEATHER OR IN WET LOCATIONS, MARK JOINTS LIQUID-TIGHT AND GASTIGHT. END OF UNDERGROUND FEEDER CONDUITS SHALL BE SEALED AFTER THE CABLE IS INSTALLED TO PREVENT BREATHING AND CONDENSATION.

- 6.J. KEEP BENDS AND OFFSETS IN CONDUIT RUNS TO AN ABSOLUTE MINIMUM. FOR THE SERVING UTILITIES, MAKE LARGE-RADIUS BENDS TO MEET THEIR REQUIREMENTS. REPLACE ALL DEFORMED, FLATTENED OR KINKED CONDUIT.

- 6.K. SUPPORT



1 LIGHTING FLOOR PLAN
SCALE: 1/8" = 1'-0"

Lighting Fixture Schedule										
Type	Manufacturer	Catalog Number	Description	Lamp Qty	Lamp Type	Ballast Qty	Ballast Type	Mounting	Voltage	Wattage
A1	LITHONIA	EXISTING/RELOCATED	EXISTING 1/4 SURFACE MOUNTED LENSED WRAP AROUND FIXTURE	2	40W T12	1	ELECTRONIC	SURFACE	120 V	62 VA
X1	LITHONIA	EC LED HO M6	SINGLE/DOUBLE FACE BATTERY BACKUP LED COMBO BUG EYE AND EXIT SIGN. REFER TO PLANS FOR REQUIRED NUMBER OF FACES, ARROWS AND MOUNTING REQUIREMENTS (CEILING/WALL). VERIFY FINISH AND LED COLOR (RED/GREEN) WITH ARCHITECT PRIOR TO ORDERING.	1	LED	1	LED DRIVER	WALL/CEILING	120 V	10 VA

KEYED NOTES (APPLIES TO THIS SHEET ONLY) ○

- RELOCATE EXISTING LIGHT FIXTURE INDICATED. INTERCEPT AND EXTEND EXISTING CIRCUIT AS REQUIRED FOR NEW SWITCHING REQUIREMENTS FOR OCCUPANCY SWITCH INDICATED.
- FIELD VERIFY WHICH SIDE OF DOOR EXISTING SWITCH IS LOCATED.

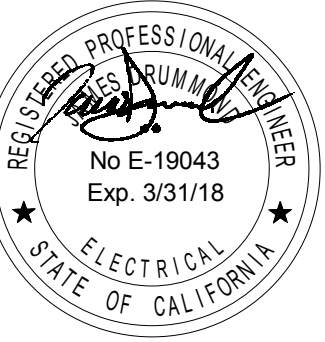
GENERAL LIGHTING NOTES (THIS SHEET ONLY)

- ALL WORK TO BE COMPLETED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND THE AUTHORITY HAVING JURISDICTION.
- COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED.
- ALL NEW LIGHT SWITCHES TO BE MOUNTED AT 44" ABOVE FINISHED FLOOR.
- SINGLE HOMERUNS ARE SHOWN FOR CIRCUIT IDENTIFICATION ONLY. CONTRACTOR MAY GROUP A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN RACEWAY, UNLESS NOTED OTHERWISE. TYPICAL FOR ALL ELECTRICAL FLOOR PLANS.
- MULTI-WIRED (SHARED NEUTRAL) BRANCH CIRCUITS SHALL NOT BE INSTALLED. ALL 120- & 277- VOLT BRANCH CIRCUITS SHALL HAVE A DEDICATED INDIVIDUAL NEUTRAL CONDUCTOR.
- ALL HOMERUNS AND RUNS BETWEEN JUNCTION BOXES TO BE A MINIMUM OF 3/4" CONDUIT WITH #10 WIRE. NO MORE THAN THREE (3) CIRCUITS PER HOMERUN. ALL WIRING SHALL HAVE A SEPARATE INSULATED GREEN GROUNDING CONDUCTOR. #10 CONDUCTORS SHALL EXTEND FROM OCPD TO A JUNCTION BOX IN THE AREA OF THE OUTLETS OR UTILIZATION EQUIPMENT. DROPS TO INDIVIDUAL 20A SWITCHES AND RECEPTACLES MAY BE #12 THHN COPPER.
- ALL ITEMS AND FIXTURES SHALL BE U.L. LISTED.
- EXPOSED GRID CEILINGS: FLOURESCENT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING GRID BY A MINIMUM OF FOUR #6 GALVANIZED WIRES ATTACHED TO THE FIXTURE AT EACH CORNER.
- VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 3%.
- ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL WORK ABOVE THE CEILING TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR PLUMBING AND MECHANICAL EQUIPMENT BOTH CURRENT AND FUTURE. CONDUITS SHALL BE KEPT TIGHT TO STRUCTURE OR ROUTED THROUGH STRUCTURAL TRUSSES WHEREVER POSSIBLE.
- PROVIDE U.L. LISTED FIRE STOP SYSTEMS AT ALL PENETRATIONS THROUGH WALLS.
- ALL JUNCTION BOX COVERS WILL BE MARKED USING "SHARPIE" OR "MARKSALOT" INDICATING THE PANEL AND CIRCUIT #'S CONTAINED WITHIN THE JUNCTION BOX.
- ALL SWITCH COVER PLATES WILL BE MARKED TO INDICATE PANEL AND CIRCUIT #'S USING APPROVED LABEL MAKER.
- THERE SHALL BE NO JUNCTION BOXES LOCATED ABOVE A HARD CEILING. ALL CONNECTIONS TO FIXTURES IN A HARD CEILING WILL COME FROM A JUNCTION BOX LOCATED IN AN ACCESSIBLE AREA OUTSIDE OF THE ROOM.
- FIXTURES SHALL NOT BE DAISY CHAINED TOGETHER. EACH FIXTURE SHALL HAVE ONLY ONE FLEXIBLE CONDUIT CONNECTION FROM A JUNCTION BOX LOCATED WITHIN 6'.
- FLEXIBLE CONDUIT (FMC) CAN BE USED ONLY FOR FINAL CONNECTIONS TO LIGHT FIXTURES. RUNS LONGER THAN 6' WILL NOT BE ALLOWED.
- LIQUIDTIGHT FLEXIBLE CONDUIT (LFMC) SHALL BE USED FOR CONNECTIONS TO EQUIPMENT AND MOTORS.

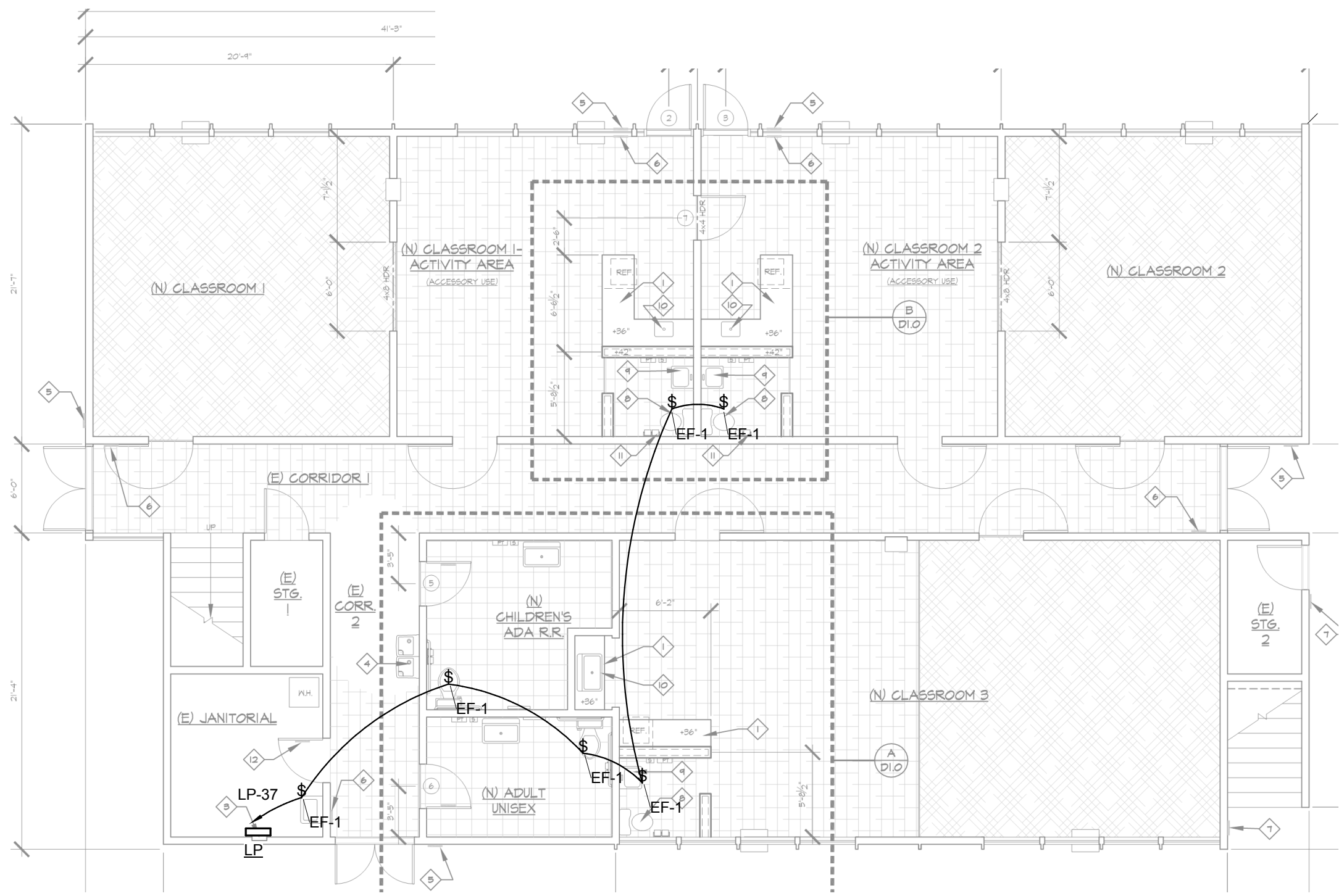
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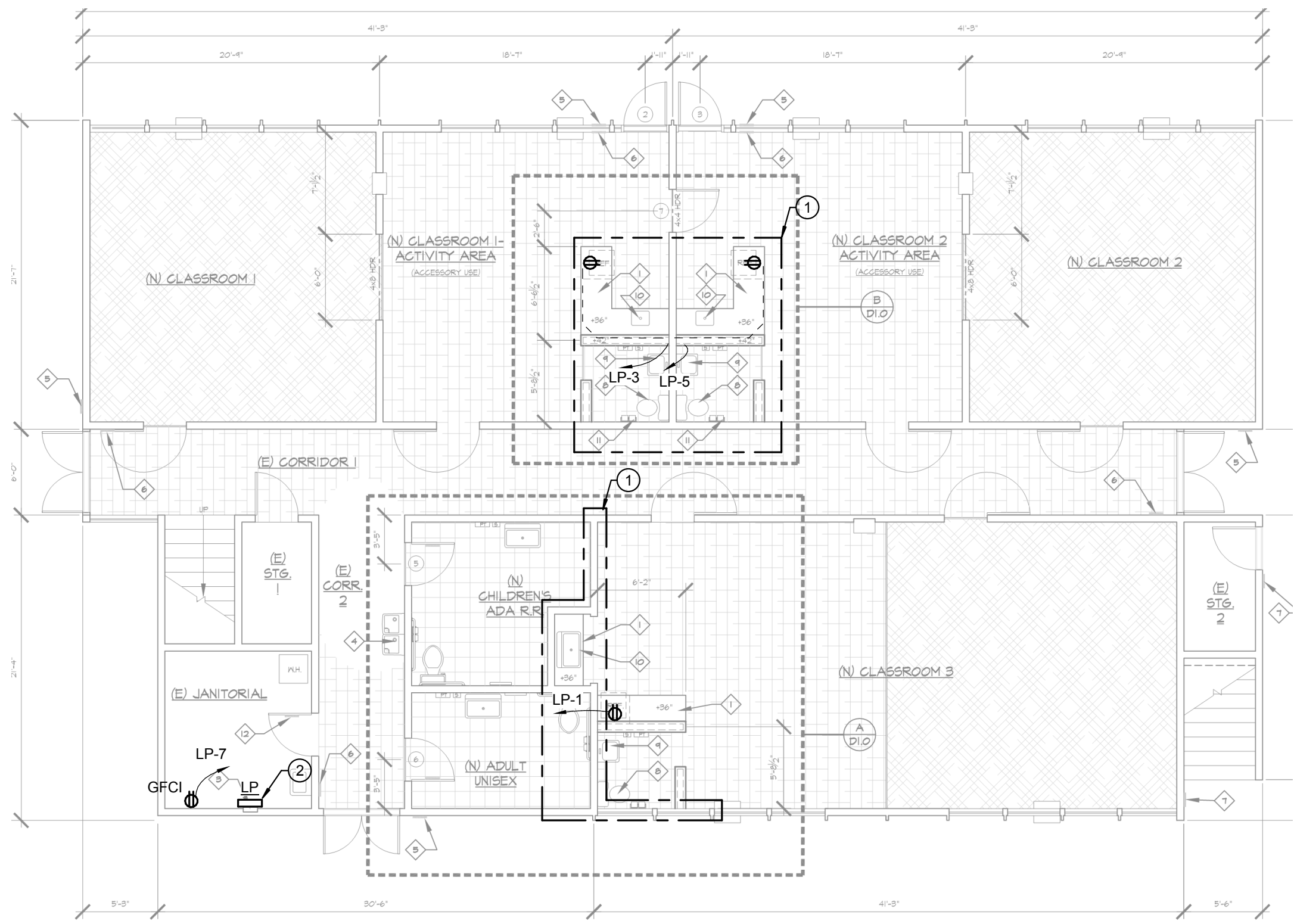


DATE 3/30/16
JOB NO. PEP2004.00
DRAWN BY JD
DRAWING NO. E1.1



2 MECH. EQUIPMENT POWER PLAN
SCALE: 1/8" = 1'-0"

Electrical Mechanical/Plumbing Equipment Schedule													
HVAC Unit Designation	HP	LML	FLA	Subload kW	MCA	MOCP	Total kW	Voltage	Ph	Disconnect	Panel Name	Circuit #	Remarks
EF-1		0.2 A	0.2 A		0.3 A	15.0 A	0.0 kW	120 V	1	TOGGLE	LP	37	INTERCONNECT WITH LOCAL LIGHTING. REFER TO MECHANICAL SHEETS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



1 POWER FLOOR PLAN
SCALE: 1/8" = 1'-0"

Branch Panel: LP												
Location: Supply From: Mounting: SURFACE Enclosure: NEMA 1/Series Rated				Volts: 120/240 Single Phases: 1 Wires: 3				A.I.C. Rating: 65000 A Mains Type: MCB Mains Rating: 225 A MCB Rating: 225 A				
CKT	Circuit Description		Type	Trip	Poles	A	B	Poles	Trip	Type	Circuit Description	CKT
1	Under Counter Refrig - Classroom 3	Recept...	20 A	1	180	0		1	20 A	--	Spare	2
3	Under Counter Refrig - Classroom 1	Recept...	20 A	1		180	0	1	20 A	--	Spare	4
5	Under Counter Refrig - Classroom 2	Recept...	20 A	1	180	0		1	20 A	--	Spare	6
7	Receptacle - Janitorial Room	Recept...	20 A	1		180	0	1	20 A	--	Spare	8
9	Existing Receptacles - 1st Floor	Recept...	20 A	1	900	0		1	20 A	--	Spare	10
11	Existing Receptacles - 1st Floor	Recept...	20 A	1		900	460	1	20 A	Lighting	Existing Lighting - 2nd Floor	12
13	Existing Receptacles - 1st Floor	Recept...	20 A	1	900	744		1	20 A	Lighting	Existing Lighting - 2nd Floor	14
15	Existing Receptacles - 2nd Floor	Recept...	20 A	1		900	744	1	20 A	Lighting	Existing Lighting - 2nd Floor	16
17	Existing Receptacles - 2nd Floor	Recept...	20 A	1		900	744	1	20 A	Lighting	Existing Lighting - 2nd Floor	18
19	Spare	--	20 A	1		0	744	1	20 A	Lighting	Existing Lighting - 2nd Floor	20
21	Spare	--	20 A	1	0	744		1	20 A	Lighting	Existing Lighting - 2nd Floor	22
23	Spare	--	20 A	1		0	744	1	20 A	Lighting	Existing Lighting - 2nd Floor	24
25	Spare	--	20 A	1	0	744		1	20 A	Lighting	Existing Lighting - 2nd Floor	26
27	Spare	--	20 A	1		0	744	1	20 A	Lighting	Existing Lighting - 2nd Floor	28
29	Spare	--	20 A	1	0	744		1	20 A	Lighting	Existing Lighting - 2nd Floor	30
31	Spare	--	20 A	1		0	500	1	20 A	Lighting	Existing Lighting - 2nd Floor	32
33	Spare	--	20 A	1	0	744		1	20 A	Lighting	Existing Lighting - 1st Floor	34
35	Spare	--	20 A	1		0	744	1	20 A	Lighting	Existing Lighting - 1st Floor	36
37	HVAC Units(EF-1)	Cooling	15 A	1		144	744	1	20 A	Lighting	Existing Lighting - 1st Floor	38
39	Existing FACP	Other	20 A	1		100	500	1	20 A	Lighting	Existing Lighting - 1st Floor	40
41	Existing Water Heater	Other	20 A	2	1500	0		1	20 A	--	Spare	42
43		--	--	--	--	--	--	1	20 A	--	Spare	44
45	Ceiling Fans - 2nd Level	Other	20 A	2	1250	0		1	20 A	--	Spare	46
47		--	--	--	--	--	--	1	20 A	--	Spare	48
49	Spare	--	15 A	1	0	0		1	20 A	--	Spare	50
51	Spare	--	20 A	1		0	0	1	20 A	--	Spare	52
53	Spare	--	20 A	1	0	0		1	20 A	--	Spare	54
Total Load:				11162 VA		10190 VA						
Total Amps:				93 A		85 A						
Load Classification				Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Cooling				144 VA		100.00%		144 VA				
Lighting				10388 VA		125.00%		12985 VA		Total Conn. Load(KVA): 21352 VA		
Other				5600 VA		100.00%		5600 VA		Total Demand(KVA): 23949 VA		
Receptacle				5220 VA		100.00%		5220 VA		Total Demand(Amps): 100 A		
Notes:												

KEYED NOTES

(APPLIES TO THIS SHEET ONLY) ○

- 1 REMOVE ALL EXISTING RECEPTACLES IN AREA INDICATED ON PLAN.
- 2 REMOVE EXISTING 120/240V 225A PANEL AND REPLACE WITH NEW PANEL "LP" INDICATED. INTERCEPT AND EXTEND ALL EXISTING CIRCUITS TO NEW PANEL AND NEW ASSOCIATED BREAKERS. REFER TO PANEL SCHEDULE ON THIS SHEET FOR ADDITIONAL INFORMATION.

GENERAL POWER NOTES

(THIS SHEET ONLY)

1. ALL WORK TO BE COMPLETED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND AUTHORITIES HAVING JURISDICTION.
2. ALL WALL MOUNTED RECEPTACLES TO BE LOCATED 18" A.F.F. TO BOTTOM OF BOX UNLESS OTHERWISE NOTED.
3. ALL OUTLETS SHOWN AS "AC" (ABOVE COUNTER) ARE TO BE INSTALLED 3" ABOVE COUNTER OR BACK SPLASH TO BOTTOM OF BOX.
4. SINGLE HOME RUNS ARE SHOWN FOR CIRCUIT IDENTIFICATION ONLY. CONTRACTOR MAY GROUP A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN RACEWAY, UNLESS NOTED OTHERWISE. TYPICAL FOR ALL ELECTRICAL FLOOR PLANS.
5. MULTI-WIRED (SHARED NEUTRAL) BRANCH CIRCUITS SHALL NOT BE INSTALLED. ALL 120V & 277V-VOL. BRANCH CIRCUITS SHALL HAVE A DEDICATED INDIVIDUAL NEUTRAL CONDUCTOR.
6. ALL HOMERUNS AND RUNS BETWEEN JUNCTION BOXES TO BE A MINIMUM OF 3/4" CONDUIT WITH #10 WIRE. NO MORE THAN THREE (3) CIRCUITS PER HOMERUN. ALL WIRING SHALL HAVE A SEPARATE INSULATED GREEN GROUNDING CONDUCTOR. #10 CONDUCTORS SHALL EXTEND FROM OCPD TO A JUNCTION BOX IN THE AREA OF THE OUTLETS OR UTILIZATION EQUIPMENT. DROPS TO INDIVIDUAL 20A SWITCHES AND RECEPTACLES MAY BE #12 THHN COPPER.
7. COORDINATE LOCATIONS OF ALL POWER AND DATA OUTLETS WITH FURNITURE AND CASEWORK FOOTPRINTS PRIOR TO COMMENCING ANY DEVICE ROUGH-IN TO AVOID CONFLICTS OR LOCATING DEVICES BEHIND OR UNDER EQUIPMENT THAT WOULD RENDER THE DEVICE USELESS OR INACCESSIBLE.
8. PROVIDE U.L. LISTED FIRE STOP SYSTEMS AT ALL PENETRATIONS THROUGH WALLS.
9. ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL WORK ABOVE THE CEILING TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR PLUMBING AND MECHANICAL EQUIPMENT BOTH CURRENT AND FUTURE. CONDUITS SHALL BE KEPT TIGHT TO STRUCTURE OR ROUTED THROUGH STRUCTURAL TRUSSES WHEREVER POSSIBLE.
10. ALL SWITCHES AND RECEPTACLES SHALL BE U.L. LISTED AND SHALL BE SPECIFICATION GRADE.
11. ALL FEEDER AND BRANCH CIRCUIT WIRING SHALL BE COPPER.
12. ALL JUNCTION BOX COVERS WILL BE MARKED USING "SHARPIE" OR "MARKSALOT" INDICATING THE PANEL AND CIRCUIT #S CONTAINED WITHIN THE JUNCTION BOX.
13. ALL SWITCH AND RECEPTACLE COVER PLATES WILL BE MARKED TO INDICATE PANEL AND CIRCUIT #S USING APPROVED LABEL MAKER.
14. IN ALL CASES VOLTAGE DROP TO LAST OUTLET MUST NOT EXCEED 3%.
15. FLEXIBLE METAL CONDUIT (FMC) CAN BE USED ONLY FOR FINAL CONNECTIONS TO LIGHT FIXTURES. RUNS LONGER THAN 6' WILL NOT BE ALLOWED.
16. LIQUIDTIGHT FLEXIBLE CONDUIT (LFMC) SHALL BE USED FOR CONNECTIONS TO EQUIPMENT AND MOTORS.
17. ALL DATA CONDUITS, SLEEVES AND STUBS SHALL BE TERMINATED WITH PLASTIC BUSHINGS.
18. COORDINATE LOCATION OF ALL DISCONNECT SWITCHES TO ENSURE THAT ALL NEC MINIMUM WORKING CLEARANCES ARE MAINTAINED.
19. REFER TO BRANCH CIRCUIT SCHEDULES FOR CONDUCTOR SIZING. CIRCUITS FEEDING COMPUTERS SHALL CONSIST OF THE FOLLOWING:
(1) CURRENT CARRYING CONDUCTOR
(1) NEUTRAL CONDUCTOR
(1) INSULATED GND. CONDUCTOR
(1) INSULATED ISOLATED GND. CONDUCTOR
20. PROVIDE CEILING ACCESS DOORS TO GAIN ACCESS TO EQUIPMENT ABOVE HARD CEILINGS.


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POWER FLOOR PLAN
INTERIOR T.I. FOR:
ORANGE COUNTY HEAD START
1321 E. CHAPMAN AVE.
Fullerton, CA 92831

DAA
DRUMMOND & ASSOCIATES
CONSULTING ENGINEERS
1191 S. GARREY AVE SUITE C
POMONA CA, 91768
Ph: (714) 904-9655
Fax: (909) 210-4430
PM: JAMES DRUMMOND P.E.

REGISTERED PROFESSIONAL ENGINEER
No E 19043
Exp. 3/31/18
ELECTRICAL
STATE OF CALIFORNIA

DATE: 3/30/16
JOB NO: PEP204.00
DRAWN BY: JD
DRAWING NO.:
E2.1

STATE OF CALIFORNIA INDOOR LIGHTING CEC-NRCC-LT-01-E (Revised 06/14)		 CALIFORNIA ENERGY COMMISSION	
CERTIFICATE OF COMPLIANCE		NRCC-LT-01-E	
Indoor Lighting		(Page 2 of 5)	
Project Name: ORANGE COUNTY HEAD START		Date Prepared: 3/30/16	

5.	Complies ONLY if Installed ≤ Allowed		Complies ONLY if Installed ≤ Allowed		
6.	Allowed Lighting Power Conditioned NRCC-LTI-03-E, page 1	2079	Allowed Lighting Power Unconditioned NRCC-LTI-03-E, page 1		

Declaration of Required Installation Certificates – Declare by selecting yes for all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)			
YES	NO	Form/Title	
X		NRCLTI-01-E - Must be submitted for all buildings	<input type="checkbox"/> Field Inspector
X		NRCLTI-02-F - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	<input type="checkbox"/> Field Inspector
X		NRCLTI-03-F - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	<input type="checkbox"/> Field Inspector
	X	NRCLTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	<input type="checkbox"/> Field Inspector
	X	NRCLTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	<input type="checkbox"/> Field Inspector
	X	NRCLTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	<input type="checkbox"/> Field Inspector


Declaration of Required Certificates of Acceptance – Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)			
YES	NO	Form/Title	
X		NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	<input type="checkbox"/> Field Inspector
X		NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	<input type="checkbox"/> Field Inspector
X		NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	<input type="checkbox"/> Field Inspector

June 2014

STATE OF CALIFORNIA INDOOR LIGHTING CEC-NRCC-LT1-01-E (Revised 06/14)		 CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE Indoor Lighting		NRCC-LT1-01-E (Page 5 of 5)
Project Name: ORANGE COUNTY HEAD START	Date Prepared: 3/30/16	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I, _____, certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: James Drummond Documentation Author Signature: 

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: James Drummond	Documentation Author Signature: 
Company: DAA Consulting Engineers	Signature Date: 3/30/16
Address: 1191 S. Garey Ste #C	CEAA/HERS Certification Identification (if applicable):
City/State/Zip: Pomona, CA 91766	Phone: 714-904-9655

RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury under the laws of the State of California:	
1. The information provided on this Certificate of Compliance is true and correct.	
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).	
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.	
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.	
Responsible Designer Name: James Drummond	Responsible Designer Signature: 
Company: DAA Consulting Engineers	Date Signed: 3/30/16
Address: 1191 S. Garey Ste #C	Licorise:
City/State/Zip: Pomona, CA 91766	Phone: 714-904-9655

June 2014

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:

☒ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

B. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)

☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance form.

☐ This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office.

☐ Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance

The NRCC-LTI-02-E shall be used to document all mandatory and prescriptive lighting controls that are applicable to the project.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance

Fullerton, CA 92831

DRAWN BY

E4.1

E4.1

NO.	DATE	REVISION
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WHEELER & WHEELER
ARCHITECTS

PLANNING

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