-GENERAL ELECTRICAL NOTES (AS APPLICABLE).

INSPECTIONS.

1. ALL SYMBOLS ARE NOT NECESSARILY USED IN THIS PROJECT.

- 2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO ALLOW OTHER METHODS AND MATERIALS NOT REFLECTED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO REQUEST THE ENGINEER WAIVE THE STANDARDS TO ALLOW ALTERNATE MEANS AND METHODS PRIOR TO BEGINNING THE PROJECT. CONTRACT DOCUMENT REVISIONS TO ACCOMMODATE INSTALLED CONDITIONS, WITHOUT PRIOR APPROVAL, WILL RESULT IN ADDITIONAL DESIGN CHARGES TO THE CONTRACTOR.
- 3. ELECTRICAL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE NECA INSTALLATION STANDARDS TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.

EDITION OF ALL APPLICABLE NATIONAL, STATE AND CITY CODES AND ORDINANCES.

- 4. ALL WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE CURRENTLY ACCEPTED
- 5. ALL ELECTRICAL SYSTEM COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY AS ALLOWED BY AUTHORITY HAVING
- 6. WHERE AN APPARENT DISCREPANCY EXISTS BETWEEN THE REQUIREMENTS OF THE GENERAL NOTES AND INFORMATION PORTRAYED IN THE ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF THE GREATER QUALITY OR
- CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BID AND VERIFY EXISTING CONDITIONS. CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS REQUIRED FOR PERMITS AND
- 8. CONTRACTOR SHALL VERIFY, WITH OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING BID, ALLOWABLE WORKING HOURS, EMPLOYEE PARKING AREAS, MATERIAL DELIVERY, STORAGE REQUIREMENTS, DEMOLITION AND REMOVAL OF CONSTRUCTION DEBRIS, AS WELL AS DAILY CLEAN UP REQUIREMENTS. INCLUDE ALL COSTS IN BID FOR DUST BARRIERS, DUMPSTERS ETC. AS REQUIRED FOR THE DURATION OF THE PROJECT. PERFORM ALL WORK AS DIRECTED BY OWNER'S REPRESENTATIVE AND ARCHITECT.
- 9. ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS AT NO ADDITIONAL COST TO OWNER.
- 10. CONTRACTOR SHALL GUARANTEE ALL WORK AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. ALL DEFECTS SHALL BE PROMPTLY CORRECTED BY CONTRACTOR WITHOUT ADDITIONAL CHARGE TO OWNER.
- 11. PROVIDE AS-BUILT DRAWINGS TO ARCHITECT. DRAWINGS SHALL INCLUDE ACCURATE CONDUIT AND DEVICE LOCATIONS DIMENSIONED FROM PERMANENT LANDMARKS SUCH AS BUILDING WALLS.
- 12. DO NOT SCALE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATION OF ALL DEVICES, JUNCTION BOXES, LIGHTING FIXTURES, ETC. WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT AND OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ROUGH-IN. EVERY OUTLET HEIGHT SHALL BE VERIFIED ON EACH WALL WITH THE INTERIOR PLANNING AND DESIGN DRAWINGS. COORDINATE WITH CABINET SHOP DRAWINGS TO ENSURE PROPER HEIGHT AND LOCATION WITH RESPECT TO MILLWORK, EQUIPMENT, ETC.
- 13. THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE ELECTRICAL SYSTEMS, EQUIPMENT, LIGHTING FIXTURES, OUTLETS AND DEVICES. DUE TO STRUCTURAL CONDITIONS, MECHANICAL DUCT, PIPING CONFLICTS, OR OTHER LEGITIMATE REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK INDICATED IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING. UPON APPROVAL, THE WORK SHALL BE PERFORMED AND THE AS-BUILT DRAWINGS SHALL BE REVISED TO ACCURATELY REFLECT THE WORK AS ACTUALLY INSTALLED.
- 14. RACEWAY SYSTEMS ARE SHOWN DIAGRAMMATICALLY. ACTUAL LOCATION AND ROUTING OF ALL, SHALL BE DETERMINED BY CONTRACTOR TO SUIT FIELD CONDITIONS.
- 15. PROVIDE DEDICATED NEUTRAL FOR EACH NEW CIRCUIT. HOME RUN CONDUCTORS MAY BE COMBINED INTO ONE CONDUIT. NO RACEWAY OR CABLE SHALL CONTAIN MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS, WHERE MULTIPLE CONDUCTORS IN EXCESS OF THREE (3) ARE INDICATED ON THESE DRAWINGS, THEY HAVE BEEN DERATED AS REQUIRED BY NEC ARTICLE 310 REQUIREMENTS.
- 16. WHERE ALLOWED, MC CABLE MAY BE INSTALLED PER NEC ARTICLE 330. WHERE MULTIPLE CABLES ARE ROUTED ADJACENT TO EACH OTHER (BUNDLED), A MINIMUM SEPARATION OF ONE (1) CABLE DIAMETER (LARGEST) SHALL BE REQUIRED.
- 17. PLASTIC CABLE TIES SHALL NOT BE USED AS A MEANS OF SUPPORT FOR MC CABLE. USE ONLY APPROVED CABLE SUPPORTS PER CABLE MANUFACTURER'S INSTALLATION
- 18. RACEWAYS SHALL BE INSTALLED CONCEALED (IN CMU OR OTHER WALL) WHENEVER POSSIBLE. RACEWAYS INSTALLED EXPOSED SHALL BE ROUTED OUT OF PUBLIC VIEW AS MUCH AS POSSIBLE. RACEWAYS SHALL BE RUN PARALLEL WITH, OR AT RIGHT ANGLE TO WALLS.
- 19. PROVIDE APPROVED EXPANSION FITTINGS WHERE RACEWAYS CROSS BUILDING EXPANSION JOINTS. PROVIDE BONDING JUMPER(S) SIZED PER CODE WHERE REQUIRED. PROVIDE ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXPANSION JOINT LOCATION(S).
- 20. MINIMUM RACEWAY SIZE SHALL BE 1/2". MINIMUM HOMERUN SIZE SHALL BE 3/4". MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG UN.O. TYPICAL. ALL POWER RELATED CONDUITS SHALL HAVE A CODE SIZE GROUND WIRE INSTALLED IN EACH RUN.
- 21. CONTRACTOR SHALL PROVIDE PULL CORDS IN ALL EMPTY CONDUITS, WHERE MORE THAN ONE CONDUIT TERMINATES IN A JUNCTION BOX, THE CONTRACTOR SHALL IDENTIFY EACH CONDUIT AND JUNCTION BOX IN A MANNER ALLOWING IDENTIFICATION AFTER ALL WALL FINISHES HAVE BEEN APPLIED.
- 22. CONTRACTOR SHALL PROVIDE ALL RACEWAY SYSTEMS INDICATED ON THE DRAWING PER NEC REQUIREMENTS AND GENERAL NOTES. ANY DEVIATION FROM THE WIRING METHODS INDICATED SHALL BE ALLOWED ONLY BY SPECIFIC WRITTEN APPROVAL FROM EITHER THE ARCHITECT, ENGINEER OR OWNER. CONTRACTOR'S BID SHALL INCLUDE ALL COSTS FOR RACEWAY SYSTEMS AS SPECIFIED UNLESS SPECIFIC WRITTEN APPROVAL FOR AN ALTERNATIVE WIRING METHOD IS OBTAINED FROM EITHER THE ARCHITECT, ENGINEER OR OWNER AND IS SUBMITTED AS PART OF CONTRACTOR'S FORMAL BID PROPOSAL.
- 23. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT SIZE AND INSTALLATION OF ALL OUTLET, PULL AND JUNCTION BOXES IN ACCORDANCE WITH NEC 314-16. ALL BOXES SHALL BE MINIMUM 4" SQUARE BY 1-1/2" DEEP OR AS INDICATED ON THE DRAWINGS. ALL BOXES SHALL BE RECESSED WITH COVER PLATE TO SUIT THE INTENDED
- 24. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN(6) FOR EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES. ARCHITECTURAL DRAWINGS SHALL GOVERN IN CASE OF CONFLICT WITH THESE DRAWINGS.
- 25. PRIOR TO INSTALLATION, CONTRACTOR SHALL REVIEW THE COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR CONFLICTS WITH OTHER TRADES. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICT DURING INSTALLATION. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS IN EQUIPMENT LOCATION AND ROUTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- 26. CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED TO INSTALL NEW ELECTRICAL WORK ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP AND FINISH AS THE EXISTING WORK AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK TO THE SATISFACTION OF THE
- 27. ALL ELECTRICAL EQUIPMENT SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE QUANTITY AND SIZE OF CONDUCTORS REQUIRED. CONTRACTORS SHALL PROVIDE EQUIPMENT WITH OVERSIZED ENCLOSURES WHERE REQUIRED.
- 28. ALL NEW PANELBOARDS AND SWITCHBOARDS SHALL BE OF THE SAME MANUFACTURER AND HAVE LOCKING DOORS AND BE KEYED THE SAME UN.O.
- 29. PROVIDE TYPE WRITTEN UPDATED PANEL DIRECTORY TO BE MOUNTED ON INSIDE OF ALL PANEL DOOR COVERS. DIRECTORY SHALL REFLECT ALL ADDITIONS OR MODIFICATIONS TO EXISTING PANELS AND SHALL REFLECT ACTUAL "AS-BUILT"
- 30. VERIFY DEVICE COLOR AND MOUNTING ORIENTATION (VERTICAL OR HORIZONTAL) WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO ORDERING AN EQUIPMENT AND PROVIDE DEVICES AS REQUIRED. UNLESS NOTED OTHERWISE, DEVICES AND DEVICE PLATES SHALL BE WHITE IN COLOR.
- 31. WHERE MOTORS ARE INSTALLED IN SUSPENDED CEILINGS, CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH IN SUSPENDED CEILING WITHIN REACH FROM ACCESS
- 32. SIZING OF MOTOR-RELATED ELECTRICAL COMPONENTS, INCLUDING FEEDER AND/ OR BRANCH CIRCUITS (WIRE AND CONDUIT) AND OVERCURRENT PROTECTION (BREAKER AND/ OR FUSES) IS BASED ON RATINGS INDICATED IN THE CONTRACT DOCUMENTS AS WELL AS NEC APPROXIMATED LOADS FOR A GIVEN MOTOR HORSEPOWER, VOLTAGE AND PHAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL MOTOR AND APPLIANCE RATING AND LOADS. CONTRACTOR TO PROVIDE CORRECTLY SIZED MOTOR OVERLOAD ELECTRICAL COMPONENTS BASED ON NAMEPLATE RATING. REFLECT ALL CHANGES IN THE AS-BUILT DRAWINGS.

NOTES (CONT'D.)

FOLLOWING EQUIPMENT:

DEVICE PLATES.

VENTILATION CLEARANCES.

- 33. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW OF THE
- A. ELECTRICAL SWITCHGEAR: SWITCHBOARDS, WITH PANELS, MOTOR CONTROL
- CENTERS AND SAFETY DEVICES. B. OVERCURRENT DEVICES: CIRCUIT BREAKERS AND FUSES INCLUDING TIME/CURRENT TRIP CURVES.
- C. LIGHTING FIXTURES: INDOOR/OUTDOOR AS SPECIFIED, PHOTOMETRIC PERFORMANCE DATA AND LAMPS. D. DEVICES: SWITCHES, RECEPTACLES, MOTOR CONTROLLERS AND
- LIFE SAFTY/FIRE ALARM SYSTEM: CONTROL PANEL, ANNUNCIATOR PANEL, INITIATION AND NOTIFICATION DEVICES/APPLIANCES, SYSTEM WIRING REQUIREMENTS AND DIAGRAM, SYSTEM LOAD CALCS, STANDARD BATTERY CALCULATIONS, AND AUXILIARY POWER SUPPLY.
- 34. ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DIAGRAMS THAT CONFORM TO UL LISTING FOR "THROUGH-PENETRATION FIRE STOP SYSTEMS".
- 35. CONTRACTOR SHALL ENGAGE THE SERVICES FOR A STATE LICENSED FIRE ALARM MANUFACTURER/INSTALLER TO PREPARE ALL DESIGN DRAWINGS AND CALCULATIONS REQUIRED FOR SYSTEM APPROVAL BY THE AUTHORITY HAVING JURISDICTION. SUBMIT ALL PLANS AND PROVIDE ALL PERMITS REQUIRED FOR A COMPLETE AND OPERABLE APPROVED LIFE SAFETY SYSTEM.
- 36. FIRE ALARM DEVICE WIRING SHALL BE MINIMUM #14 AWG COPPER OR PER SYSTEM MANUFACTURER REQUIREMENTS. PROVIDE MINIMUM 3/4" SEPARATE RACEWAY SYSTEM OR AS REQUIRED FOR LIFE SAFETY SYSTEM WIRING CONFIGURATION.
- 37. UPON COMPLETION OF THE INSTALLATION OF LIFE SAFETY SYSTEM WIRING AND DEVICES, A PERFORMANCE TEST OF THE ENTIRE LIFE SAFETY SHALL BE PERFORMED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.

40. FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A 4" HIGH CONCRETE

- 38. ALL EQUIPMENT ELECTRICAL TERMINATIONS TO UNDERGO A TORQUE TEST. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MANUFACTURER'S RECOMMENDED TORQUE
- DOCUMENTATION AND TOOLS TO PERFORM TORQUE TEST. 39. ALL UNDERGROUND SERVICE CONDUITS SHALL BE SEALED PER NEC ARTICLE 230-8.
- 41. INSTALL TRANSFORMER FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR
- 42. COORDINATE ELECTRICAL REQUIREMENTS FOR ALL PLUMBING AND MECHANICAL EQUIPMENT WITH FINAL CONTRACTOR SELECTION. THE CONTRACTOR SHALL SIZE DISCONNECTS BASED UPON CIRCUIT BREAKER RATINGS AND PROVIDE FUSING. AS REQUIRED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS AND U.L. LISTING
- 43. PROVIDE 10 AWG CONDUCTORS FOR 20 AMPERE, 120V BRANCH CIRCUITS LONGER THAN 15' AND 8 AUG CONDUCTORS FOR 20 AMPERE, 120V BRANCH CIRCUITS LONGER THAN 120'. PROVIDE 10 AUG CONDUCTORS FOR 20 AMPERE, 27TV BRANCH CIRCUITS LONGER THAN 200'.

ELECTRICAL LEGEND

		SYMBOL	DESCRIPTION
CHTING		SIGNAL	
		① _{F-1}	THERMOSTAT OUTLET AT +54" (HVAC UNIT DESIGNATION)
	LINEAR FLUORESCENT FIXTURE		ENCLOSED CIRCUIT BREAKER
0	LINEAR FLUORESCENT FIXTURE	R	RELAY
<u> </u>	SUSPENDED LINEAR FLUORESCENT FIXTURE	TS	TIME SWITCH
0	FLUORESCENT WALL MOUNT FIXTURE	C	CONTACTOR
	LINEAR FLUORESCENT STRIP FIXTURE		TRANSFORMER
0	LIGHT FIXTURE - RECESSED OR SURFACE	ATS	AUTOMATIC TRANSFER SWITCH
\oplus	PENDANT FIXTURE		TELEPHONE OUTLET AT +18"
Ю	WALL MOUNTED LIGHT FIXTURE		DATA OUTLET AT +18"
D	WALL SCONCE	4	COMBINATION TELE/COMPUTER OUTLET AT +18"
•	WALL WASHER	•	TELEPHONE OUTLET ABOVE COUNTER
^{A}O	LETTER REFERS TO FIXTURE TYPE		
•	MONO-POINT LIGHT FIXTURE	4	TELE/DATA OUTLET ABOVE COUNTER
$\frac{\nabla \ \nabla}{\Delta}$	TRACK LIGHT FIXTURE	 	DATA OUTLET ABOVE COUNTER
•-	PARKING LOT POLE MOUNTED LIGHT FIXTURE		FLUSH FLOOR BOX WITH COMBINATION TELE/DATA OUTLET
\odot	BOLLARD LIGHT FIXTURE	<u>⊬</u> †√	TELEVISION OUTLET
⊗	EXIT SIGN - CEILING MOUNTED	Cd	TELEVISION CAMERA (CCTV)
ŀ⊗	EXIT SIGN - WALL MOUNTED	S □	FIRE ALARM HORN/STROBE
⊗↓	EXIT SIGN - W/ARROWS INDICATE DIRECTION	CR	CARD READER
4	EMERGENCY BATTERY UNIT WITH HEADS	FS	FLOW SWITCH
	FIXTURE W/ EMERGENCY BATTERY OR GENERATOR	TS	TAMPER SWITCH
		6 D	SMOKE DETECTOR
S	SINGLE POLE SWITCH, 20A, 120/277V	FD	FIRE/SMOKE DAMPER
S _a	LOW YOLTAGE (0-10Y) WALL MOUNTED SWITCH FOR MANUAL ON/OFF AND DIMMING (STEPPED/CONTINUOUS) CONTROL OF LIGHTING. "a" INDICATES ZONE WHERE SHOWN ON DRAWINGS.	60	CARBON MONOXIDE DETECTOR (SPECIFIED BY MECHANICAL ENGINEER)
Sab	LOW YOLTAGE (0-10Y) WALL MOUNTED SWITCH FOR MANUAL ON/OFF	DD	DUCT MOUNTED SMOKE DETECTOR
ub	AND DIMMING (STEPPED/CONTINUOUS) CONTROL OF LIGHTING, "ab" INDICATES ZONE WHERE SHOWN ON DRAWINGS.	H	HEAT DETECTOR
S ₂	TWO POLE SWITCH, 20A, 120/277V	(5)	SPEAKER, CEILING OR WALL MOUNTED
S ₃	THREE-WAY SWITCH, 20A, 120/277V	DH	DOOR HOLD OPEN
S ₄	FOUR-WAY SWITCH, 20A, 120/277V		PHONE AND DATA OUTLETS PROVIDE ONE (1) 3/4"C.O. RISER UP
S _D	DIMMER SWITCH, MIN. 2000W, 120/277V	WALI	WITH PULL STRING TO ACESSIBLE CEILING SPACE.
S _M	HP RATED MOTOR SWITCH WITH THERMAL OVERLOAD PROTECTION	SINGLE LINE	
S _K	KEY SWITCH, 20A, 120/277V		
•	PUSH BUTTON CONTROL STATION		CIRCUIT BREAKER
		─	

FUSED DISCONNECT SWITCH SURGE SUPPRESSOR CURRENT TRANSFORMER POTENTIAL TRANSFORMER

GROUND FAULT INTERRUPT

CONTACT (NORMALLY OPEN)

CONTACT (NORMALLY CLOSED)

TRANSFER SWITCH

CONTROL SWITCH

PUSH BUTTON

GROUNDING ELECTRODE POWER METER MOTOR

SINGLE RECEPTACLE, NEMA 5-20R, 20A, 125V, +18" AFF. OR AS NOTED DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125Y, +18" AFF. OR AS NOTED GFCI DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V, +18" AFF. OR AS NOTED

DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125Y, +18" AFF. OR AS NOTED DUPLEX RECEPTACLE / HALF-SWITCHED, +18" AFF. OR AS NOTED DUPLEX RECEPTACLE NEMA 5-20R, 125V, +18" AFF. OR AS NOTED. "C" INDICATES HALF CONTROLLED, PERMANETLY MARKED BY THE

GFCI RECEPTACLE NEMA 5-20R, 125V, +18" AFF. OR AS NOTED. "C" INDICATES HALF CONTROLLED, PERMANETLY MARKED BY THE DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - VERIFY MOUNTING HEIGHT

GFCI RECEPTACLE, ABOVE COUNTER

OCCUPANCY SENSOR - WALL MOUNTED, PROVIDE ADEQUATE

OCCUPANCY SENSOR W/DIMMER SWITCH- WALL MOUNTED

OCCUPANCY SENSOR W/ON/OFF SWITCH- WALL MOUNTED

DEVICES SENSING ENTIRE ENCLOSED SPACE

2-HR OVERRIDE SWITCH- WALL MOUNTED

LIGHTING CONTACTOR

TIME CLOCK

PHOTOCELL

DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - VERIFY MOUNTING HEIGHT. "C" INDICATES HALF CONTROLLED, PERMANENTLY MARKED BY THE MANUFACTURER GFCI RECEPTACLE, ABOVE COUNTER. "C" INDICATES HALF

CONTROLLED, PERMANENTLY MARKED BY THE MANUFACTURER SPECIAL PURPOSE OUTLET (TYPE AS NOTED) CLOCK OUTLET NEMA 5-20R, 20A, 125V W/ RECESSED COVER PLATE | MISCELLANEOUS AT +90", U.N.O.

DUPLEX RECEPTACLE NEMA 5-20R, 20A, 125Y - FLUSH MOUNT FLOOR OUTLET W/ DEVICE AS INDICATED COMBINATION FLOOR OUTLET W/ DEVICES AS INDICATED

JUNCTION BOX JUNCTION BOX - WALL MOUNT JUNCTION BOX - FLUSH FLOOR MOUNT MULTI-OUTLET SURFACE RACEWAY W/ NEMA 5-20R,

20A, 125Y AT 12" ON CENTER, UN.O. PULLBOX - EXTERIOR OR INTERIOR AS INDICATED TELEPHONE TERMINAL CABINET AT +72" TO TOP TELEPHONE BACKBOARD

PANELBOARD - SURFACE MOUNT

NON-FUSED DISCONNECT SWITCH

PANELBOARD - FLUSH MOUNT SWITCHBOARD OR DISTRIBUTION BOARD METER SERVICE PEDESTAL

FUSED DISCONNECT SWITCH MOTOR CONTROLLER OR STARTER

COMBINATION CONTROLLER/DISCONNECT SWITCH VENDOR FURNISHED COMBINATION CONTROLLER/DISCONNECT

CONDUIT ROUTED UNDERFLOOR / UNDERGROUND RACEWAY W/#12 CONDUCTORS UNO RACEWAY TURNED UP RACEWAY TURNED DOWN HOMERUN TO PANELBOARD 3/4"C W/3#12 CONDUCTORS UNO CONDUIT CAP-OFF EQUIPMENT TAG DIAGRAM TAG REVISION SYMBOL KEYNOTE SYMBOL SCHEDULED EQUIPMENT

MAX. MCB MAIN CIRCUIT BREAKER MECHANICAL MINIMUM MAIN LUGS ONLY MOUNTED NORMALLY CLOSED NATIONAL ELECTRICAL CODE NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION NEUTRAL NATIONAL FIRE CODE

STANDARD ABBREVIATIONS

ARCH'L

BLDG

CAT

C/B

CKT

CO, EC

COMM

DISC.

DWG

ELEY

EMT

EQUIP

FIXT

FLUOR

GFA GFCI, GFI

IBC

JB, J-BOX

LTG

KCMIL, MCM

(E), EXIST

ABOVE FINISHED FLOOR ARC FAULT, AMP FUSE

ABOVE FINISHED GRADE

AMERICAN WIRE GAUGE

CATALOG/CATEGORY

CIRCUIT BREAKER

CONDUIT ONLY

DISCONNECT

DOWN

DRAWING

ELECTRICAL

ELEVATOR

EQUIPMENT

EXISTING

FIXTURE

EMERGENCY

COMMUNICATION

DEMOLITION/DEMOLISH

ELECTRICAL METALLIC TUBING

FURNISHED BY OTHERS

GROUND FAULT ALARM

FINISHED FLOOR

FLUORESCENT

FEET OR FOOT

HORSEPOWER

JUNCTION BOX

KILOWATT

LIGHTING

MAXIMUM

KILOVOLT AMPERE

EXISTING ELECTRICAL RELOCATED

FLEXIBLE METALLIC CONDUIT (STEEL)

GROUND FAULT CIRCUIT INTERRUPTER

INTERNATIONAL BUILDING CODE

INTERNATIONAL RESIDENTIAL CODE

INTERMEDIATE METAL CONDUIT

SHORT CIRCUIT AMPERES

THOUSAND CIRCULAR MILS

HEATING, VENTILATING & AIR CONDITIONING

ARCHITECTURAL

BARE COPPER

BUILDING

CONDUIT

CIRCUIT

CEILING

AMP SWITCH

AMPERE INTERRUPTING CAPACITY

NON-FUSIBLE NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN NEVADA POWER COMPANY NOT TO SCALE OVERCURRENT PROTECTION

PHASE PANEL PY PHOTOYOLTAIC POLYVINYL CHLORIDE PWR POWER QUANTITY QTY REMOVE AND RELOCATE RECEPTACLE REQUIRED RSC

RIGID STEEL CONDUIT SCHED SCHEDULE SECTION SINGLE POLE SOLID NEUTRAL SPECIFICATION SWITCH SWITCHBOARD SWGR SWITCH GEAR SYS SYSTEM TEMPORARY TELE TELEPHONE

T-STAT THERMOSTAT TELEPHONE TERMINAL BACKBOARD TELEPHONE TERMINAL CABINET UNIFORM BUILDING CODE UNDERWRITERS LABORATORY UNLESS NOTED OTHERWISE VOLT OR VOLTAGE VOLT AMPERE

VOLTAGE DROP VAPOR PROOF WATT, WIRE WITHSTAND CURRENT RATING UL LISTED WEATHERPROOF, NEMA 3R WEATHER-RESISTANT

TRANSFORMER

XFMR

SHEET INDEX

• INDICATES PREVIOUSLY / CURRENTLY ISSUED SHEETS

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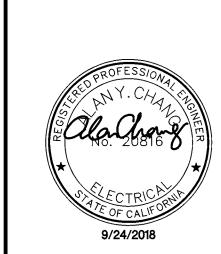
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Project Status ssue Date: 9/24/2018 REASON

PRINCIPAL IN CHARGE:

PROJECT MANAGER

THE 908

LBX - LONG BEACH **EXCHANGE** 3850 WORSHAM BOULEVARD SUITE 410, BUILING R-4

Sheet Title: **ELECTRICAL GENERAL NOTES AND**

LEGEND

Project Number:

_ELECTRICAL SPECIFICATIONS (AS APPLICABLE).

PART I - GENERAL

A. CONDITIONS

- FURNISH AND INSTALL A COMPLETELY WIRED AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO, THESE MAJOR ITEMS.
 - A. LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON THE PLANS.
- B. ELECTRICAL PANELS, SERVICE, CONDUIT, WIRING, ETC., FOR ALL OUTLETS AND EQUIPMENT.
 C. TELEPHONE OUTLETS AND CONDUIT AS INDICATED.

B. RELATED WORK BY OTHERS

- 1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR ELECTRICAL SERVICE ENTRANCE FROM THE MAIN SERVICE TO UTILITY POINT OF ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE WITH SERVING UTILITY COMPANY.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR PRIMARY PHONE AND CATY SERVICE FROM THE TELEPHONE TERMINAL BOARD OR CABINET TO THE PHONE COMPANY AND CATY COMPANY POINT OF SERVICE.

C. CODES, REGULATIONS, AND STANDARDS

- THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, WITH THE REGULATIONS OF THE CURRENTLY ACCEPTED EDITION OF THE NATIONAL ELECTRIC CODE AND WITH THE REQUIREMENTS OF THE POWER, TELEPHONE, AND CATY COMPANIES FURNISHING SERVICES TO THIS INSTALLATION.
- 2. THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS, AND CODES ARE MINIMUM REQUIREMENTS:
- A. THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION STANDARDS.
 B. THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AMENDMENTS.
 C. UNDERWRITER LABORATORIES INCORPORATED STANDARDS.

D. INSPECTION OF SITE

- 1. PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES, AND WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NONCOMPLIANCE WITH THIS CONDITION AFTER BIDDING.
- 2. ELECTRICAL INSTALLATION SHALL MEET THE EXISTING CONDITIONS.

ANY DAMAGE OR LOSS THAT MAY OCCUR DURING THIS PERIOD

E. STORAGE AND HANDLING OF MATERIAL

D. AMERICAN NATIONAL STANDARDS INSTITUTE.

- E. STORAGE AND FIANDLING OF MATERIAL

 I. DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S
 ORIGINAL, UNOPENED, LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMPERING,
 OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. CONTRACTOR SHALL PROTECT
 AND BE RESPONSIBLE FOR ANY DAMAGE TO WORK OR MATERIALS UNTIL FINAL
 ACCEPTANCE BY THE OWNER, AND SHALL MAKE GOOD WITHOUT COST TO THE OWNER,
- 2. ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPMENT TO THE JOB SITE IN ORDER TO MINIMIZE THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATION.
- 3. COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFECTED BY THE WEATHER WHILE IN TRANSIT OR STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEFECTIVE OR NOT INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY THE ENGINEER.

F. CLEANUP

 KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, OR RUBBISH CAUSED BY EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES BROOM-CLEAN.

G. EXCAVATION

PERFORM ALL EXCAVATION AND BACK FILLING REQUIRED FOR WORK PERFORMED UNDER THIS DIVISION OF THE SPECIFICATIONS. USE EXCAVATED MATERIALS FOR

BACKFILL UNLESS OFF SITE MATERIALS ARE DEEMED NECESSARY.

H. DRAWINGS

- 1. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. REVIEW ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS, USE ACTUAL BUILDING DIMENSIONS.
- I. EXCAVATION, CUTTING, AND FITTING
- PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING, AND FINISHING OF THE WORK NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT OF THIS SECTION. HOWEVER, NO CUTTING OF THE WORK OF OTHER TRADES OR OF ANY STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE CONSENT OF THE ARCHITECT.

J. COOPERATION WITH OTHER CONTRACTORS

- COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF THE ELECTRICAL OUTLETS AND EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, LIGHTING FIXTURES, AND OTHER EQUIPMENT LOCATIONS SHALL BE CHECKED WITH OTHER TRADES TO AVOID CONFLICT WITH THE PIPING, DUCTWORK, STEEL, BEAMS, OR OTHER OBSTRUCTIONS.

 CAREFULLY CHECK THE LOCATIONS OF THE OUTLET BOXES AND DETERMINE THAT THEY HAVE NOT BEEN DISTURBED DURING THE INSTALLATION OF MATERIALS OF OTHER
- 2. COORDINATE THE LOCATION OF THE TRENCHES AND CONDUITS FOR ELECTRICAL AND TELEPHONE UTILITY SERVICES WITH THE GENERAL CONTRACTOR
- TELEPHONE UTILITY SERVICES WITH THE GENERAL CONTRACTOR.

 3. COORDINATE HVAC EQUIPMENT CONNECTION REQUIREMENTS WITH HVAC CONTRACTOR.

PART II - PRODUCTS AND EXECUTION A. MATERIALS

ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECIFIED ON THE PLANS OR SPECIFICATIONS AND MUST CARRY THE UNDERWRITER'S LABORATORIES APPROVAL COVERING THE PURPOSE FOR WHICH THEY ARE USED, IN ADDITION TO MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND REGULATIONS.

B. CONDUIT

- 1. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC CONDUIT EXCEPT AS PERMITTED BELOW. RGS, WITH A 20 MIL PYC COATING WILL BE USED WHEN IN CONTACT WITH EARTH. IMC MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH THE EARTH. EMT MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH EARTH, NOT IN CONCRETE SLABS OR WALLS AND NOT SUBJECT TO DAMAGE. PYC MAY BE USED IN OR BELOW CONCRETE AND DIRECT BURIED IN EARTH. FLEXIBLE STEEL CONDUIT SHALL BE USED FOR INDOOR FINAL CONNECTIONS TO EQUIPMENT IN LENGTHS NOT TO EXCEED 12". LIQUID-TIGHT FLEXIBLE STEEL CONDUIT SHALL BE FOR OUTDOOR FINAL CONNECTIONS TO EQUIPMENT NOT TO EXCEED 36".
- 2. WHERE CONDUIT ENTERS OUTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW, COMPRESSION CONNECTORS, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS OR INSULATED THROAT CONNECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN EXPOSED CONDUIT PARALLEL TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT, T & B OR APPLETON, OR EQUAL).
- 3. COVER METALLIC CONDUIT IN CONTACT WITH EARTH WITH POLYETHYLENE TAPED SPIRAL WRAPPED, 1/2 LAPPED TO PROVIDE 20 MIL. THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS NOT UNDER BUILDINGS AND FEEDER DUCTS SHALL BE INSTALLED PER N.E.C. 300-5. MAKE JOINTS WITH COMPOUND TO BE WATERTIGHT.
- 4. FITTINGS AND CONDUIT BODIES SHALL BE STEEL. NO DIECAST FITTINGS.
- 5. CONDUIT SIZES SHALL BE AS REQUIRED BY CODE AND AS INDICATED OR SPECIFIED.
- 6. ALL EMPTY CONDUIT SYSTEMS SHALL HAVE A NYLON PULL STRING TO FACILITATE INSTALLATION OF FUTURE WIRE.
 7. SCHEDULE 40 PVC CONDUIT SHALL BE PERMITTED UNDERGROUND WITH PROPER
- FITTINGS, ALL UL APPROVED AND CEMENTED JOINTS. PENETRATIONS THROUGH FLOOR SLABS AND BENDS GREATER THAN 22° SHALL BE WRAPPED RIGID GALVANIZED STEEL ELBOWS.

 CONDUITS AND OUTLETS SHALL BE CONCEALED WITH THE BUILDING STRUCTURE, EXCEPT
- 8. CONDUITS AND OUTLETS SHALL BE CONCEALED WITH THE BUILDING STRUCTURE, EXCEPT THAT CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS INDICATED ON THE DRAWINGS. CONDUIT SHOWN TO BE INSTALLED IN CABINETS, COUNTERS, AND CASEWORK SHALL BE RUN AS DIRECTED BY THE ARCHITECT.

B. CONDUIT (CONT'D.)

- 9. ALL CONDUIT SYSTEMS SHALL HAVE A CODE SIZED COPPER GROUND CONDUCTOR INCREASE CONDUIT SIZE AS REQUIRED.
- 10. CONDUIT PENETRATION THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER FLASHING. SLEEVE. INSTALLATION SHALL BE WATERTIGHT.
- 11. CONDUITS SHALL BE ROUTED SURFACE ON THE STRUCTURE, PARALLEL AND

C. OUTLET, PULL, AND JUNCTION BOXES

PERPENDICULAR TO THE STRUCTURE.

- EACH SWITCH, LIGHT. RECEPTACLE OR OTHER OUTLET SHALL BE PROVIDED WITH A CODE GAUGE, GALVANIZED STEEL OUTLET BOX. JUNCTION AND PULL BOXES SHALL BE CODE GAUGE, GALVANIZED STEEL. OUTLET BOXES SHALL BE OF THE ONE PIECE, KNOCKOUT TYPE, IN GENERAL 4" SQUARE WITH PLASTER RING. PLASTER RINGS SHALL BE SET TO PROVIDE NOT MORE THAN 1/8" FROM WALL SURFACE TO RING. IN NO CASE SHALL PLASTER RING PROJECT BEYOND SURFACE OF WALL. SINGLE GANG RINGS SIMILAR TO STEEL CITY 52050 SHALL BE USED FOR 4" BOXES IN UNFINISHED BRICK NUMBER 180 BOXES MAY BE USED FOR UNFINISHED MASONRY FLUSH WALL OUTLETS. CENTER ALL OUTLET BOXES IN BLOCK COURSE.
- 2. BOXES INSTALLED IN POURED CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH WATERTIGHT GASKETED COVERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR COVERING, COVERS SHALL BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING.
- 3. BOXES INSTALLED FOR THE ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH APPROPRIATE COVER PLATES.
- 4. BOXES FOR TELEPHONE, COMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE MINIMUM 4" SQUARE AND 2-1/8" DEEP.

D. SWITCHBOARDS

- SWITCHBOARDS SHALL BE PROVIDED WITH FULLY RATED COPPER OR ALUMINUM BUS. HORIZONTAL TAPERED BUSSING SHALL NOT BE ALLOWED.
- 2. ACCEPTABLE MANUFACTURERS EATON, SEIMENS, SQUARE D'OR APPROVED EQUAL.
- SWITCHBOARD ASSEMBLY CONFORMING TO NEMA PB 2, AND UL 891, AND COMPLETE FROM INCOMING LINE TERMINALS TO LOAD SIDE TERMINATIONS.

 4. LINE AND LOAD TERMINATIONS: ACCESSIBLE FROM THE FRONT ONLY OF THE

3. FACTORY ASSEMBLED DEAD FRONT, METAL ENCLOSED, AND SELF-SUPPORTING

- SWITCHBOARD. SUITABLE FOR THE CONDUCTOR MATERIALS AND NUMBER OF CONDUCTORS USED.
 BUS CONNECTIONS: BOLTED. ACCESSIBLE FROM FRONT FOR MAINTENANCE. PROVIDE BELLEVILLE WASHERS FOR AND PROPERLY TORQUE ALL CONNECTIONS.
- 5. PROVIDE FULLY-RATED NEUTRAL BUS AND FULLY RATED GROUND BUS MATCHING MATERIAL USED FOR MAIN BUS.
- 6. FUTURE PROVISIONS: FULLY EQUIP SPACES FOR FUTURE DEVICES WITH BUSSING AND BUS CONNECTIONS. SUITABLY INSULATED AND BRACED FOR SHORT CIRCUIT CURRENTS. CONTINUOUS CURRENT RATING AS INDICATED ON DRAWINGS.

E. PANEL BOARDS

- 1. CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT-ON CIRCUIT BREAKERS FOR 30 PANELS. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SIEMENS, EATON OR EQUAL WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS.
- 2. THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE, DOUBLE-POLE, AND THREE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAIN TERMINALS SHALL BE OF THE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE.
- 3. WIRE TERMINATION FOR PANEL BOARDS AND CIRCUIT BREAKERS SHALL BE LISTED AS SUITABLE FOR 15 DEGREES C.
- 4. PROVIDE A TYPEWRITTEN CIRCUIT INDEX BEHIND CLEAR PLASTIC COVER ON INSIDE OF DOOR. INFORMATION SHALL INCLUDE ROOM AND TYPE LOAD SERVED. ALL CIRCUIT BREAKERS SHALL BE IDENTIFIED, INCLUDING SPARES. INDEX CARD FRAME SHALL BE METAL, SECURED TO DOOR.

5. WHERE PANEL BOARDS ARE INSTALLED FLUSH WITH THE WALLS, EXTEND EMPTY

CONDUITS FORM THE PANEL BOARD TO AN ACCESSIBLE SPACE ABOVE OR BELOW.
PROVIDE 3/4" (MINIMUM SIZE) CONDUIT FOR EVERY THREE SINGLE SPARE CIRCUIT
BREAKERS OR SPACE OR EQUIVALENT MULTI-POLE ARRANGEMENT, OR FRACTION
THEREOF, BUT NOT LESS THAN TWO CONDUITS FOR EACH PANEL.

6. PANEL BOARDS TO BE PROVIDED WITH COPPER BUSSING ONLY.1. LOAD CENTERS SHALL NOT BE ALLOWED UNLESS NOTED OTHERWISE.

8. ALL NEW PANELBOARDS SHALL COMPLY WITH NEC ARTICLE 110.16. EQUIPMENT MANUFACTURERS SHALL PROVIDE WARNING LABELS FOR ALL PANELBOARDS, GENERATORS, AUTOMATIC TRANSFER SWITCHES, ETC TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICE, OR MAINTENANCE OF THE EQUIPMENT.

F. WIRE

- 1. CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE BASED ON COPPER WIRE. UNLESS OTHERWISE SPECIFIED, ALL WIRE SHALL BE TYPE XHHW FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN 4 AWG, TYPE THHN/THWN INSULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL BRANCH CIRCUIT WIRING SHALL BE COPPER. SERVICE AND PANEL FEEDERS *1/0 AND LARGER MAY BE ALUMINUM, PROVIDED THE CONDUCTOR SIZES ARE INCREASED FOR EQUAL OR GREATER AMPACITY AND EQUAL OR LESS EQUIVALENT VOLTAGE DROP. INCREASE CONDUIT SIZE AS REQUIRED. THE WIRES SHALL BE MARKED WITH COLOR TO SIMPLIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE 120V- WHITE, 27TV- GRAY, AND LIVE WIRES 208Y/120V AND 120/240 SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C). FOR 480Y/2TTV CIRCUITS, THE COLOR CODE SHALL BE BROWN (PHASE A), ORANGE (PHASE B), AND YELLOW (PHASE C). THE WIRE SHALL BE 12 AWG UNLESS
- 2. WHERE ALUMINUM WIRE IS USED, ALUMINUM CONDUCTOR MATERIAL SHALL COMPLY WITH N.E.C. 310-104 AND ALL CONNECTIONS AND TERMINATIONS SHALL BE MACHINE COMPRESSION TYPE EQUAL TO BURNDY "HI PLUG" OR "MACADAPT", NO EXCEPTIONS.
- 3. NO WIRE SHALL BE INSTALLED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE MINERALAC NO. 100 OR EQUIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE CONDUCTORS IN THE CONDUIT SYSTEM.

OTHERWISE INDICATED. CIRCUIT SHALL BE LABELED IN EACH J-BOX.

- 4. SPLICES IN EXTERIOR PULL BOXES AND MANHOLES SHALL BE WEATHERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR APPROVED EQUAL.
- 5. PROVIDE SOLID CONDUCTOR FOR 12 AUG AND SMALLER.

G. WIRING DEVICES

- 1. WALL SWITCHES SHALL BE SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A, 120/277 YOLT.
- RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX TYPE, NEMA 5-20R, 20
 AMPERE, 120 VOLT GROUNDED TYPE. SPECIAL APPLICATION RECEPTACLES SHALL BE
 INDICATED ON PLANS. MOUNT WITH THE GROUND DOWN.
- 3. DEVICE PLATES SHALL BE EQUAL TO SIERRA SMOOTH-LINE PLASTIC WALL PLATES. COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.
- 4. RECEPTACLES IN OUTDOOR AND WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET COVER/ENCLOSURE CLEARLY MARKED AND U.L. LISTED SUITABLE FOR WET LOCATIONS WHILE IN USE, EQUAL TO TAYMAC SPECIFICATION GRADE.

H. LIGHTING FIXTURES

PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE
THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS
SHALL BE BY THE SAME MANUFACTURER. VERIFY CEILING CONSTRUCTION BEFORE
ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED.
CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND BALLASTS TO
MEET THE EXISTING CONDITION.

I. SERVICE ENTRANCE SECTION

- THE SERVICE ENTRANCE EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS.
 EQUIPMENT SHALL CARRY THE U.L. LABEL AND SHALL CONFORM TO THE POWER
 COMPANY REGULATIONS.
- SERVICE ENTRANCE EQUIPMENT SHALL BE PROVIDED WITH A FULLY RATED COPPER OR ALUMINUM BUS, HORIZONTALLY TAPERED BUSSING SHALL NOT BE ALLOWED.

J. SYSTEM GROUNDING

OR SPECIFICATIONS.

- GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED.
- 2. GROUNDING CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE ENCLOSURE FOR THE SYSTEM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE PLANS
- 3. A GROUND BUS SEPARATE FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL SWITCHBOARDS AND PANELBOARDS. GROUND BUS SHALL BE RETORQUED (CHECKED) PRIOR TO ENERGIZING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
- 4. GROUND BUSES AND NEUTRAL BUSES IN ALL DISTRIBUTION PANELS, SWITCHBOARDS, PANELBOARDS, AND THOSE PROVIDED IN ANY EQUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED AS SPECIFIED ABOVE FOR THE SERVICE ENTRANCE AND IN TRANSFORMER TERMINAL COMPARTMENTS.
- 5. WHEN INDICATED ON THE DRAWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM THE GROUND BUS IN THE DISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE THEY ARE PROVIDED. WHERE LUGS ARE NOT PROVIDED, EQUIPMENT GROUNDING CONDUCTORS SHALL BE CONNECTED TO EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF THE RECEPTACLE, EQUIPMENT GROUND CONDUCTORS, OR GROUND JUMPERS FROM GROUND BUSING SHALL NOT AFFECT THE GROUND SYSTEM.
- 6. RACEWAYS MAY NOT BE USED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. ALL CONDUIT SHALL HAVE SEPARATE CODE SIZED GREEN GROUND WIRE
- INSTALLED IN THE CONDUIT TO INSURE A CONTINUOS GROUNDING PATH.

 1. IN INACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.
- 8. IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED SOLDERLESS BRONZE GROUNDING DEVICES.
- 9. BOND TOGETHER METAL SIDING NOT ATTACHED TO GROUNDED STRUCTURE BOND TO

K. TELEPHONE SYSTEM

. TELEPHONE WALL OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. CONNECT OUTLETS TO TELEPHONE TERMINAL WITH SEPARATE 3/4" CONDUIT UNLESS OTHERWISE SHOWN ON DRAWINGS. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.

L. LIGHTING CONTROL

- 1. FURNISH AND INSTALL TIME SWITCHES, PHOTOCELLS, CONTACTORS AND FULL LIGHTING CONTROL SYSTEMS AS REQUIRED FOR LIGHTING CONTROLS INDICATED ON THE
- DRAWINGS.

 2. TIME SWITCHES SHALL BE EQUAL TO PARAGON, GENERAL ELECTRIC, TORK, OR
- INTERMATIC AND SHALL HAVE SIZE AND NUMBER OF POLES AS REQUIRED.

 3. PHOTOCELLS SHALL BE EQUAL TO TORK OR INTERMATIC WITH VOLTAGE AS INDICATED.

M. DRY TYPE TRANSFORMERS

- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- A. ACME ELECTRIC CORPORATION± POWER DISTRIBUTION PRODUCTS DIVISION.
 B. GE ELECTRICAL DISTRIBUTION & CONTROL.
- D. SQUARE D/GROUPE SCHNEIDER NA.2. COILS: CONTINUOUS WINDINGS WITHOUT SPLICES, EXCEPT FOR TAPS
- A. INTERNAL COIL CONNECTIONS BRAZED OR PRESSURE TYPE.
 B. COIL MATERIAL COPPER
- 3. ENCLOSURE VENTILATED, NEMA 250, TYPE 2 (NEMA 3R FOR OUTDOOR INSTALLATIONS).
- 4. INSULATION CLASS 220 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
- 5. TAPS FOR TRANSFORMERS 25 KVA AND LARGER TWO 2.5 PERCENT TAPS ABOVE AND FOUR 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
- 6. WALL BRACKETS MANUFACTURER'S STANDARD BRACKETS.
- LOW-SOUND-LEVEL-REQUIREMENTS MINIMUM OF 3 dBA LESS THAN NEMA ST 20 STANDARD SOUND LEVELS WHEN FACTORY TESTED ACCORDING TO IEEE C51.12.91.

N. GUARANTEE

GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO EXPENSE TO THE OWNER.

O. SHOP DRAWINGS AND APPROVALS

- 1. THE ITEMS SPECIFIED HEREIN AND ON DRAWINGS ARE USED AS A STANDARD OF QUALITY. ANY MATERIALS OF EQUAL QUALITY AND AESTHETIC VALUE WILL BE GIVEN CONSIDERATION AS A SUBSTITUTE FOR THE MATERIALS SPECIFIED. NO APPROVAL WILL BE GIVEN TO A SPECIFIC CATALOG NUMBER, MODEL, OR TYPE OF EQUIPMENT, PRIOR TO BIDDING. AFTER BIDDING, THE DECISION OF THE ARCHITECT AND/OR ENGINEER DETERMINING EQUAL MATERIALS WILL BE FINAL.
- 2. THE CONTRACTOR SHALL SUBMIT SEVEN (7) IDENTICAL BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING: ITEMS:
- A. LIGHTING FIXTURE CUTS AND PERFORMANCE DATA. B. OUTLINE DRAWINGS AND DATA SHEETS OF EACH PANELBOARD AND SWITCHBOARD.

AT THE COMPLETION OF THE PROJECT, ONE SET OF REPRODUCIBLE DRAWINGS, SHOWING ALL AS-BUILT CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACCEPTANCE

3. SUBMIT ITEMS AT ONE TIME IN A NEAT AND ORDERLY MANNER WITHIN 15 DAYS OF AWARD OF CONTRACT. PARTIAL SUBMITTALS WILL NOT BE ACCEPTABLE.

P. RECORD AND AS-BUILT DRAWINGS

PRIOR TO FINAL PAYMENT.

C. OUTLINE DRAWINGS OF ALL SWITCHGEAR.

I. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS FROM THE WORK INDICATED ON THE DRAWINGS.

PRINCIPAL IN CHARGE:

PROJECT MANAGER:

DRAWN BY: STAFF

BOULEVARD

Project Number:

Project Address:
THE 908
LBX - LONG BEACH
EXCHANGE
3850 WORSHAM

SUITE 410, BUILING R-4

Sheet Title:
ELECTRICAL

SPECIFICATIONS

E101



GEOFFREY B. LIM

AIA, NCARB, LEED AP

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9/24/2018

REASON

ssue For:

ssue Date:

9/24/2018

Project Status

oject Owner:

			FIXTURE		SCHEDULE
TYPE	MANUFACTURER CATALOG #	LAMP QTY. & TYPE	WATTAGE	VOLTS	DESCRIPTION
DP	JMA-RT/RP-BK / JMA-MOD-27/90 / OPI- JMA-20 / JMA-RH-120	LED 7qty.	18.813	120	Black aluminum heatsink with frosted lens and round pinhole trim attached to whit steel housing
SP	HDL-HO-R-NC-A17-18-120-0-10V/HDL-HP- RA-A17-TL-SLV-SP-279-HEX	LED 9qty.	18.7	120	Ameriux Lighting Hornet Series Recessed Adjustable 18w LED downlight unit w/ Spot Optics (trimless)
NF	HDL-HO-R-NC-A17-18-120-0-10V/HDL-HP- RA-A17-TL-SLV-SP-279-HEX	LED 5qty.	18.7	120	Ameriux Lighting Hornet Series Recessed Adjustable 18w LED downlight unit w/ Narrow Flood (trimless)
NFt	HDL-HO-R-NC-A17-18-120-0-10V/HDL-HP- RA-A17-T-SLVW-SP-279-HEX	LED 4qty.	18.7	120	Amerlux Lighting Hornet Series Recessed Adjustable 18w LED downlight unit w/ Narrow Flood (white trim)
WFt	HDL-HO-R-NC-A17-18-120-0-10V/HDL-HP- RA-A17-T-SLVW-SP-279-HEX	LED 16qty.	18.7	120	Amerlux Lighting Hornet Series Recessed Adjustable 18w LED downlight unit w/ Medium Flood (White trim)
WFT EM	HDL-HO-R-NC-A17-18-120-0-10V/HDL-HP- RA-A17-T-SLVW-SP-279-HEX	LED 16qty.	18.7	120	Amerlux Lighting Hornet Series Recessed Adjustable 18w LED downlight unit w/ Medium Flood (White trim), with battery pack
R11	L50-I-12-10-27-80-MULT-9X29	LED 17qty.	11.7003	120	EcoSense Lighting Trov Graze Series Linear 1ft. LED wall graze unit w/9x29 degree beam optics
R14	L50-I-48-10-27-80-MULT-9X29	LED 8qty.	46.8	120	EcoSense Lighting Trov Graze Series Linear 4ft. LED wall graze unit w/9x29 degree beam optics
R21	L50-I-12-10-27-80-MULT-9X29	LED 3qty.	11.7003	120	EcoSense Lighting Trov Graze Series Linear 1ft. LED wall graze unit w/9x29 degree beam optics
R24	L50-I-48-10-27-80-MULT-9X29	LED 7qty.	46.8	120	EcoSense Lighting Trov Graze Series Linear 4ft. LED wall graze unit w/9x29 degree beam optics
SL	XD20-25C-27K/1050-BK-X-TS	LED 20qty.	12.5	120	Power Secure Solais Xd20 Series LED trackhead unit w/25 degree narrow flood optics
T EM	EPANL-2X4-4000LM-80CRI-35K-MIN 10-ZT- MVOLT	LED 15qty.	38.83	120	Lithonia Lighting EPANL Series Recessed 2x4 LED flat panel unit
TE	EPANL-2X4-4000LM-80CRI-35K-MIN 10-ZT- MVOLT	LED 15qty.	38.83	120	Lithonia Lighting EPANL Series Recessed 2x4 LED flat panel unit, with battery pack
NV	NF-PRO-O-120-[12V/24V]-2700K	LED 7qty.	3	120	NovaFlex Pro 120 Series Linear LED Tape Light (Interior Bar Wall, Exterior Bar Wall, Back Bar)
V	HL-386 / SM16-09-25D-827-03	LED 24qty.	9	120	HeviLite HL-386 Series Adjustable Mono-Point LED Flood Unit w/Soraa mr16 LED Lamp
FAN	5WF52BK	3qty.	50	120	Monte Carlo Ceiling Fan Company Weatherford series outdoor black fa unit
P1	TBD	2qty.	9	120	TO BE DETERMINED Decorative wall mounted glass globe unit
P2	TBD	8qty.	9	120	TO BE DETERMINED Decorative brass globe pendant unit
P3	TBD	11qty.	100	120	TO BE DETERMINED Large Dome Pendant Unit w/ black trim at the base & G40 black tipped lamp
P4	TBD	7qty.	9	120	TO BE DETERMINED Decorative Glass globe pendant unit
P5	TBD	46qty.	100	120	TO BE DETERMINED Exposed Bulb Style Pendant Unit (BRASS ROD) w/G40 and A19 Black Tipped Lamps
P6	LSM24102BKF	LED 4qty.	60	120	Sival Lighting Decorative String Lighting w/A19 Black Tipped Lamps
Х	MANUFACTURER CATALOG# #MODEL PER PLANS	LED GREEN	5.5W	UNV	LED EDGE LIT EXIT SIGN "GREEN" WITH INTEGRAL 90 MINUTE BATTERY UNIT "SELF POWERED"

LIGHTING FIXTURE NOTES:

- COORDINATE LIGHT FIXTURE LOCATION AND MOUNTING WITH OTHER EQUIPMENT AND ARCHITECTURAL ELEVATIONS.
- INSTALL ALL WALL AND SURFACE MOUNTED EXIT SIGN FIXTURES AT THE LOCATION INDICATED AND PROVIDE FACES AND ARROWS AS INDICATED.
- JUNCTION BOXES SHALL BE PROVIDED FOR ALL EXIT FIXTURES UNLESS FIXTURES ARE APPROVED FOR THROUGH WIRING.
- SUPPORT LAY-IN TYPE LIGHT FIXTURES INDEPENDENT OF GRID. LIGHT FIXTURES TO BE PROVIDED WITH BALLASTS HAVING LESS THAN 10% TOTAL HARMONIC DISTORTION
- CONTRACTOR SHALL PROVIDE ALL LAMPS, ACCESSORIES AND MOUNTING HARDWARE AS REQUIRED.
- CONTRACTOR SHALL VERIFY EXACT FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- CONTRACTOR SHALL VERIFY CEILING TYPES AND PROVIDE TRIMS AND ACCESSORIES AS REQUIRED
- PROVIDE DISCONNECTING MEANS FOR FLUORESCENT FIXTURES PER NEC 410.73(G)
- PROVIDE LIGHT FIXTURES BY MANUFACTURER SPECIFIED OR APPROVED EQUAL. SUBSTITUTED FIXTURES WILL REQUIRE PHOTOMETRIC CALCULATIONS AND MUST PERFORM EQUAL TO OR BETTER THAN LIGHT FIXTURE SPECIFIED. ENGINEER TO MAKE FINAL DETERMINATION.

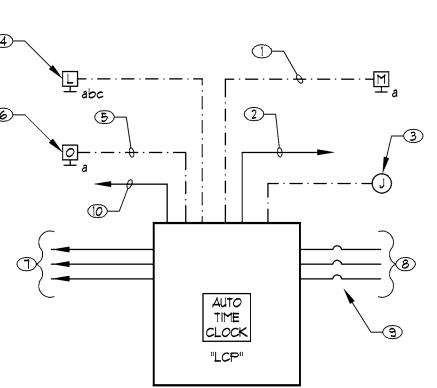
LIGHTING CONTROL PANEL SPECIFICATIONS

- LIGHTING CONTROL PANEL SHALL BE U.L. AND C.E.C. CERTIFIED.
 2. SYSTEM SHALL INCLUDE TIME OF DAY SCHEDULE VIA AN INTERNAL TIME CLOCK.
- 3. INPUTS SHALL ACCEPT EXTERNAL DEVICES SUCH AS PHOTOCELLS, SWITCHES AND OCCUPANCY SENSORS. 4. UP TO 48 PROGRAMMABLE SWITCH INPUTS.
- 5. INTEGRAL KEY PAD WITH BACKLIT DISPLAY. 6. TIMED SWITCH OVERRIDES FOR A MAXIMUM OF 2 HOURS.
- 7. SYSTEM SHALL HAVE "WARN OFF" FEATURE TO AUTOMATICALLY FLASH "OFF" TO WARN OCCUPANTS BEFORE
- IMPENDING "OFF". 8. AFTER HOURS SWEEP "OFF" FEATURE. LCP SHALL BE ABLE TO PROGRAM 365 DAYS + HOLIDAYS, ETC.
- 9. LIGHTING CONTROL PANEL SHALL BE MANUFACTURED BY WATTSTOPPER OR LC&D OR EQUAL. IO. LIGHTING CONTROL PANEL SHALL HAVE INTEGRAL BYPASS FUNCTION FOR NORMAL LIGHTING POWER FAIL
- AUTOMATIC LIGHTING CONTROL PANEL USED TO CONTROL (OUTDOOR) LIGHTING SHALL:
- * BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULES FOR WEEKDAYS AND WEEKENDS; AND
- * HAVE PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF THE DEVICES PROGRAM AND TIME SETTING FOR AT LEAST 10 HOURS IF POWER IS INTERRUPTED. * CONTAIN AT LEAST 2 SEPERATELY PROGRAMMABLE CHANNELS PER FUNCTION AREA; AND

* HAVE THE ABILITY TO INDEPENDENTLY OFFSET THE ON AND OFF TIMES FOR EACH CHANNEL BY 0 TO 99 MINUTES

- BEFORE OR AFTER SUNRISE OR SUNSET; AND * HAVE SUNRISE AND SUNSET PREDICTION ACCURACY WITHIN +/- 15 MINUTES
- AND TIMEKEEPING ACCURACY WITHIN 5 MINUTES PER YEAR; AND * STORE TIME ZONE, LONGITUDE AND LATITUDE IN NON-VOLATILE MEMORY; AND
- * DISPLAY DATE/TIME, SUNRISE AND SUNSET; AND * HAVE AN AUTOMATIC DAYLIGHT SAVINGS TIME ADJUSTMENT; AND * HAVE AUTOMATIC TIME SWITCH CAPABILITIES INCLUDING 365 DAY, ASTRONOMICAL TIME CLOCK

LIGHTING CONTROL PANEL WIRING DIAGRAM

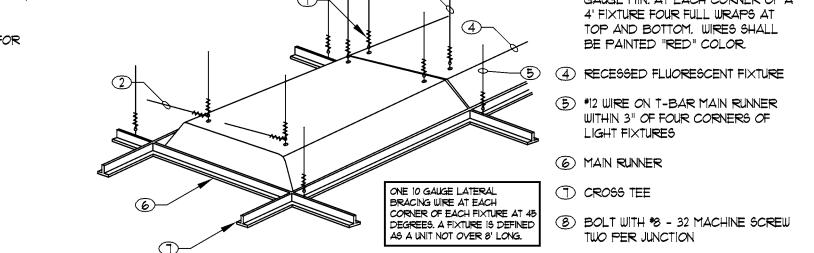


2) 120 YOLT CIRCUIT FORLCP POWER

- 3 PHOTOCELL-MOUNT ON ROOF ORIENT TOWARD NORTH 4 LOCAL SWITCH TYPICAL
- DATA CONNECTION WIRING PER MFR'S SPEC'S - TYPICAL
 - 6 2-HR OVER-RIDE SWITCH TYPICAL
 - 1 TO LOADS PER PLAN
 - 8 FROM LIGHTING PANEL PER PLAN ③ CIRCUIT BREAKERS IN LIGHTING
 - 120V CURCUIT FOR DETECTION NORMAL LIGHTING POWER FAIL
 - A. SEE PLANS AND SCHEDULE FOR QUANTITY AND LOCATION OF SWITCHES.

20A/IP PANEL _____ PHOTOCELL ON ROOF -ORIENTATE FACING NORTH.

- 2 RELAY (EXTERIOR LIGHTS & SIGNS) ELECTRICALLY HELD (PHOTOCELL ON/TIMECLOCK OFF)
- 3 TO LIGHTING CIRCUITS
- 4 TO LIGHTING LOADS 5 24 HOUR DIAL TIMECLOCK WITH
- ASTRO DIAL PARAGON *4003-005Z (TYPICAL) © REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT NUMBER
- A. MOUNT RELAYS ADJACENT TO



PLAN VIEW

TYPICAL 1/4" CLOSED EYE BOLT -4 PER 4' FIXTURE, OMIT EYE BOLT WHEN FIXTURE IS EQUIPPED WITH MOUNTING STRAPS

2 ONE 10 GAUGE LATERAL BRACING WIRE AT EACH CORNER OF EACH FIXTURE AT 45 DEGREES. A FIXTURE IS DEFINED AS A UNIT NOT

OVER 8' LONG. 3 GALVANIZED SOFT IRON WIRE #12 GAUGE MIN. AT EACH CORNER OF A 4' FIXTURE FOUR FULL WRAPS AT TOP AND BOTTOM. WIRES SHALL BE PAINTED "RED" COLOR. 4 RECESSED FLUORESCENT FIXTURE

5) #12 WIRE ON T-BAR MAIN RUNNER WITHIN 3" OF FOUR CORNERS OF LIGHT FIXTURES 6 MAIN RUNNER

9 LATERAL BRACING AT 45 DEGREE

EXTERIOR LIGHTING CONTROL DIAGRAM NO SCALE

NO SCALE

NO SCALE

RECESSED LIGHTING FIXTURE MOUNTING DETAIL

LIGHTING SCHEDULES, **DIAGRAMS** AND DETAILS

Issue Date:

9/24/2018

PRINCIPAL IN CHARGE:

PROJECT MANAGER:

THE 908

EXCHANGE

BOULEVARD

Project Number:

Sheet Title:

3850 WORSHAM

LBX - LONG BEACH

SUITE 410, BUILING R-4

REASON

ARCHITECTURE Innovation and Design in Architecture, Inc. 218 The Promenade North Long Beach, CA 90802 www.idaexperience.net

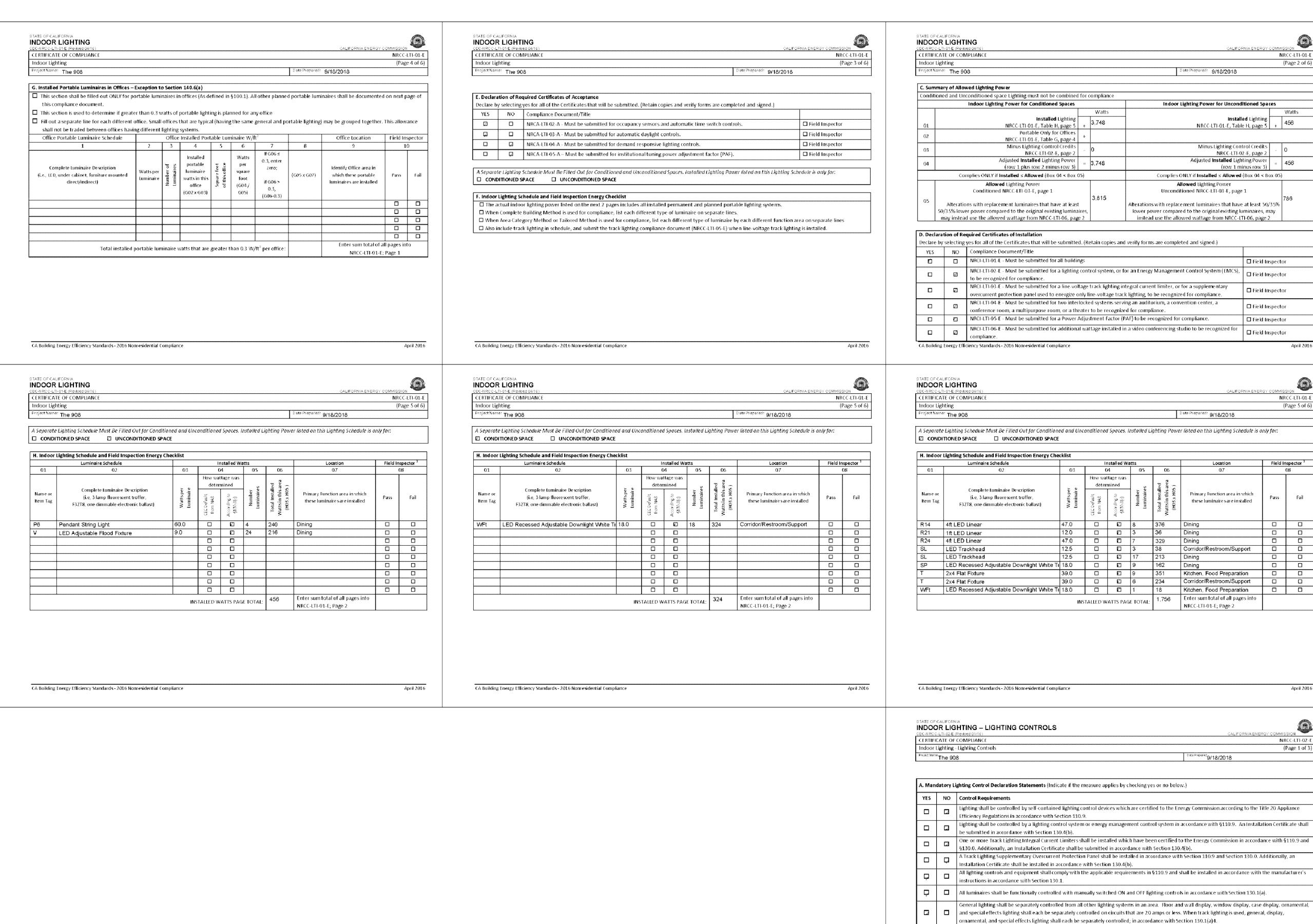
GEOFFREY B. LIM aia, ncarb, leed ap Plans, maps, specifications, studies, and reports not containing a red ink seal imprint accompanied by an original signature by the licensed professional may have been fraudulently altered and shall not be considered an original

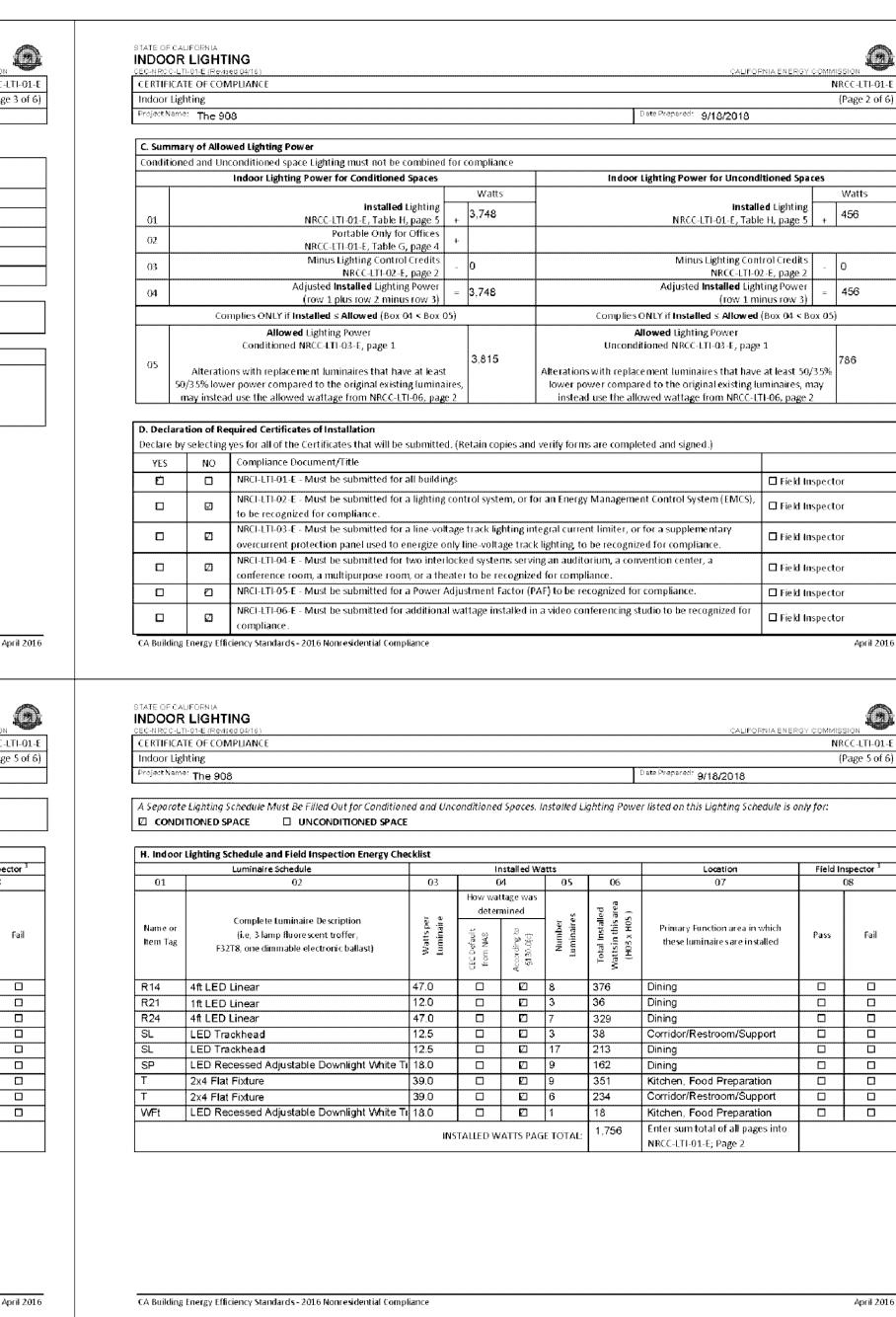
by the professional whose signature appears above. Copyright Protected 2018.

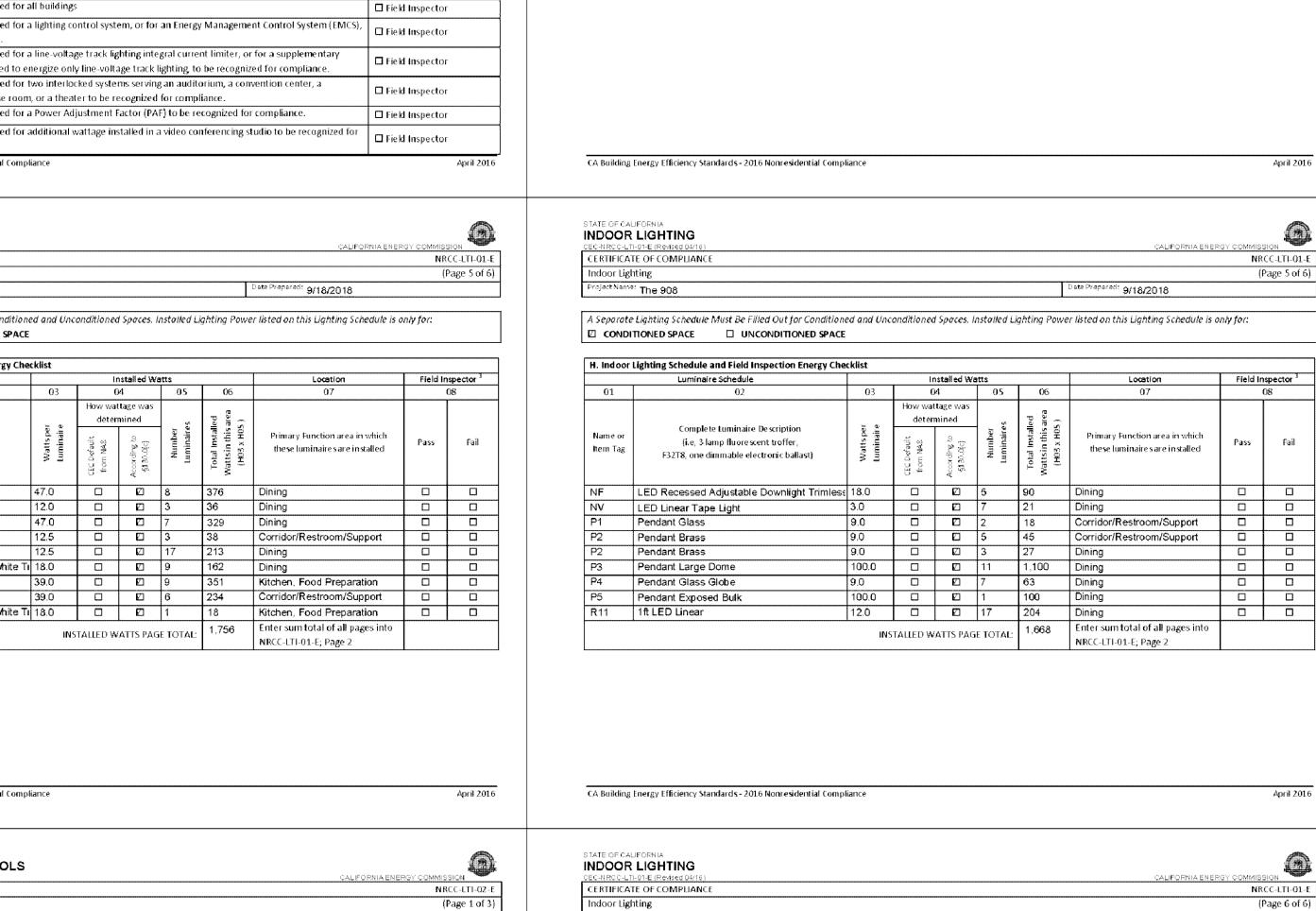
2 Venture Suite 200 Irvine, CA 92618 949.477.4001 wrighte.com

engineers

Engineering Consultant:







ject Name: The 908

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

RESPONSIBLE PERSON'S DECLARATION STATEMENT

builder provides to the building owner at occupancy.

E Alan Chang

Wright Engineers

Irvine, CA 92618

2 Venture, Suite 200

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

(responsible designer).

[©] Alan Chang

Wright Engineers

Irvine, CA 92618

2 Venture Suite 200

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

certify the following under penalty of perjury, under the laws of the State of California

Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations

The information provided on this Certificate of Compliance is true and correct.

repared 9/18/2018

General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental,

The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the

Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for

accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF

All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).

Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.

Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in

normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in

multi-level lighting control requirements in accordance with Section 130.1(b).

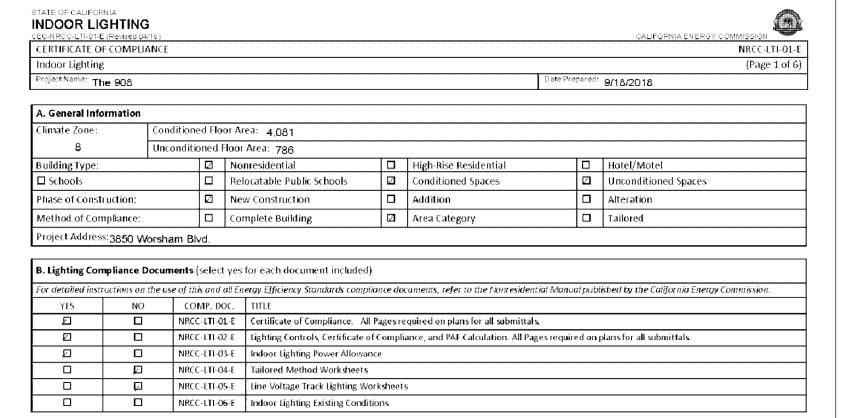
accordance with Section 130.1(e).

CA Building Energy Efficiency Standards - 2016 Nonre sidential Compliance

controls, and demand responsive controls.

(Page 2 of 6)

Watts



ARCHITECTURE Innovation and Design in Architecture, Inc. 218 The Promenade North Long Beach, CA 90802 www.idaexperience.net GEOFFREY B. LIM AIA, NCARB, LEED AP Plans, maps, specifications, studies, and reports not original signature by the licensed professional may have been udulently altered and shall not be considered an original opy. All information should be disregarded unless verified by the professional whose signature appears above.

Engineering Consultant:

2 Venture Suite 200 Irvine, CA 92618 949.477.4001 wrighte.com

roject Owner:

April 2016

Date Prepared: 9/18/2018

E20816

9/18/2018

949 477 4001

Lam 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

The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of

The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance

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. Lunderstand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the

documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

A Certification Identification (if applicable):

9/24/2018

E20816

949-477-4001



ssue For: Project Status ssue Date: 9/24/2018 REASON

PRINCIPAL IN CHARGE: PROJECT MANAGER:

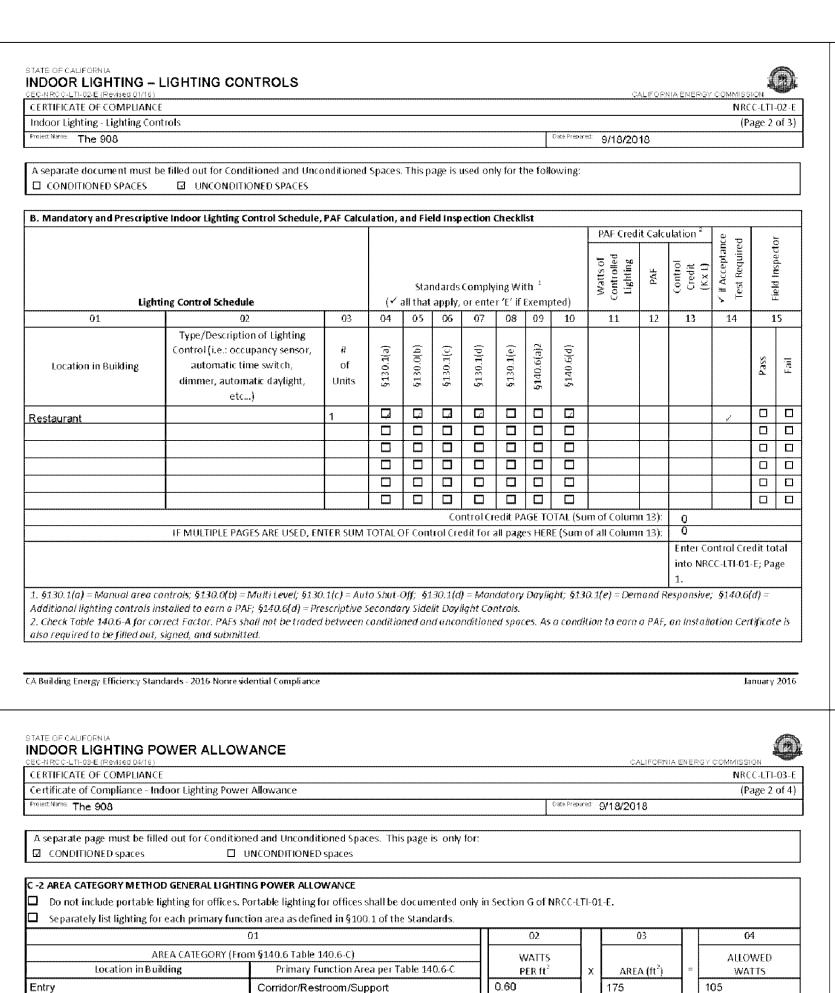
THE 908 LBX - LONG BEACH **EXCHANGE** 3850 WORSHAM BOULEVARD

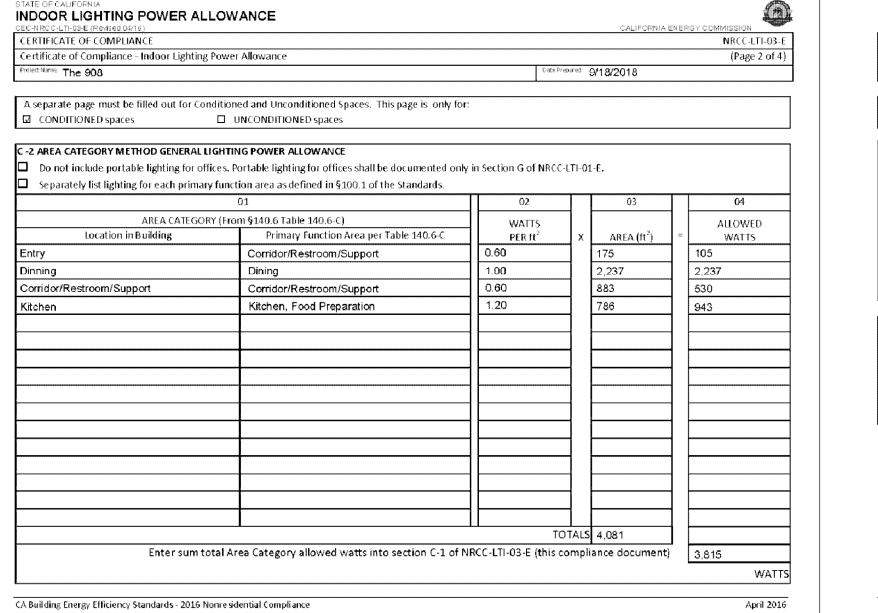
SUITE 410, BUILING R-4

Sheet Title: LIGHTING **ENERGY**

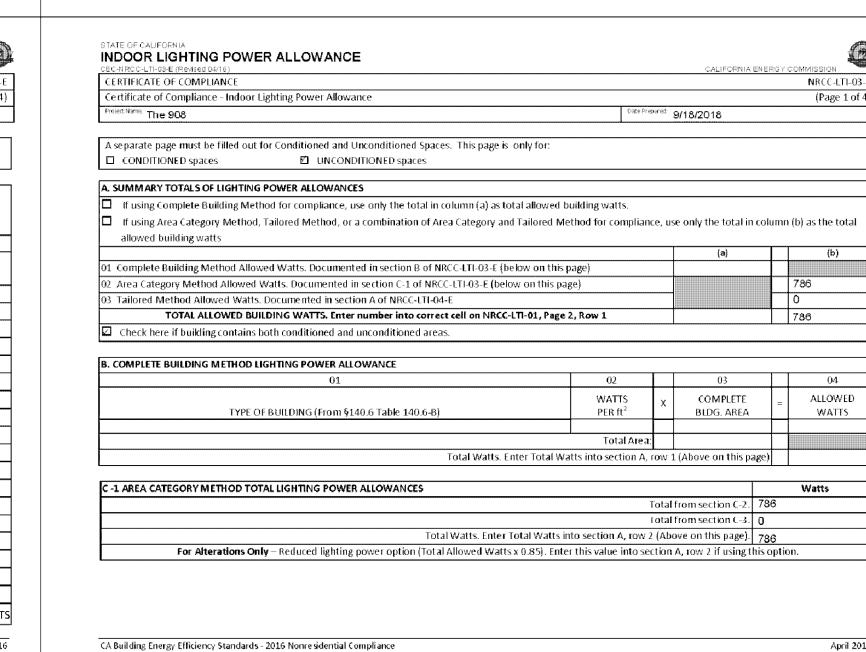
CALCULATIONS

CERTIFICATE OF COMPLIANCE Certificate of Compliance - Indoor Lighting Power Allowance Certificate of Compliance - Indoor Lighting Power Allowance Certificate of Compliance - Indoor Lighting Power Allowance	CEC-NRCC-LTI-02-E (Revised 01/16) CERTIFICATE OF COMPLIANCE Indoor Lighting - Lighting Controls CERTIFICATE OF COMPLIANCE (Page 3 of 3)	CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA CERTIFICATE OF COMPLIANCE Indoor Lighting - Lighting Controls	NIA ENERGY COMMISSION NRCC-LTI (Page 2
Project Name The 908 Date Prepared: 9/18/2018	Project Name The 908 Date Prepared: 9/18/2018	Project Name: The 908 Date Prepared: 9/18/2018	li abe 2
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for: On CONDITIONED spaces UNCONDITIONED spaces	DOCUMENTATION AUTHOR'S DECLARATION STATEMENT 1. I certify that this Certificate of Compliance documentation is accurate and complete. Documentation Author Names Alan Chang Documentation Author Signature:	A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following: ☐ CONDITIONED SPACES ☐ UNCONDITIONED SPACES	
SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.	Company: Wright Engineers Signature Date: 9/18/2018	B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist PAF Credit Calculation	
If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts	Address 2 Venture Suite 200 CEA Certification (if applicable): E20816	par circuit calcul	ol it col
(a) (b) Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)	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 Contificate of Compliance is true and correct	Standards Complying With 1 Standards Complying With 2 Standards Complying With 3 Standards Complying W	Contro Credi (Kx I V if Acc
Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page) Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E TOTAL ALL CANCED PLUI DING MACTE. Exception to some of the NRCC-LTI-04 Page 3. Page 1.	 The information provided on this Certificate of Compliance is true and correct. 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). The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of 	01 02 03 04 05 06 07 08 09 10 11 12	13 14 1
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1 Check here if building contains both conditioned and unconditioned areas.	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.	Control (i.e.: occupancy sensor, # (a) (b) (b) (c) (c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	Pass
OMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE 01 02 03 04	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. Lunderstand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the	etc)	
TYPE OF BUILDING (From §140.6 Table 140.6-B) WATTS PER ft ² X COMPLETE BLDG. AREA = ALLOWED WATTS WATTS	Responsible Designer Name: Alan Chang Responsible Designer Signature: Alan Chang	Restaurant 1 4 4 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6	, 0
Total Area: Total Area: Total Area: Total Walts. Enter Total Walts into section A, row 1 (Above on this page)	Address: 2 Venture, Suite 200 E20816		
AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES Watts	Irvine, CA 92618 949-477-4001	Control Credit PAGE TOTAL (Sum of Column 13):	
Total from section C-2. 3,815 Total from section C-3. 0		IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):	1 -
Total Watts. Enter Total Watts into section A, row 2 (Above on this page). 3.815 For Alterations Only — Reduced lighting power option (Total Allowed Watts x 0.85). Enter this value into section A, row 2 if using this option.			into NRCC-LTI-01-E; Pa 1.
		1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Res Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls. 2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, a	
		also required to be filled out, signed, and submitted.	
uilding Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016	CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016	CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance	January
TE OF CAUFORNIA DOOR LIGHTING POWER ALLOWANCE NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION	STATE OF CAUFORNIA INDOOR LIGHTING POWER ALLOWANCE CEC-NRCC-LITI-09-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION		NIA ENERGY COMMISSION
RTIFICATE OF COMPLIANCE Intificate of Compliance - Indoor Lighting Power Allowance Intercept of C	CERTIFICATE OF COMPLIANCE Certificate of Compliance - Indoor Lighting Power Allowance Project Name: The 908 Once Property 9/18/2018	CERTIFICATE OF COMPLIANCE Certificate of Compliance - Indoor Lighting Power Allowance Project Name: The 908 Date Prepared: 9/18/2018	NRCC-LTI- (Page 2
eparate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:	A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:	A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:	
CONDITIONED spaces UNCONDITIONED spaces AREA CATEGORY METHOD ADDITIONAL LIGHTING WATTAGE ALLOWANCE (from Table 140.6-C Footnotes)	□ CONDITIONED spaces □ UNCONDITIONED spaces	☐ CONDITIONED spaces ☐ UNCONDITIONED spaces	
01 02 03 2 04 05 06 07 ALLOWED	C -2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E. Separately list lighting for each primary function area as defined in §100.1 of the Standards.	C -2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E. Separately list lighting for each primary function area as defined in §100.1 of the Standards.	
Primary Sq.Ft or Watts Allowance Description(s) and Quantity of Special Total Design Smaller of University of Special Watts Allowed (02 x 03) Luminaire Types in each Primary Function Area Watts 04 or 06	01 02 03 04	01 02 03	04
Tarkdori (dizarti palored (dizago) Edilliniar e ripe sur edel rimitar y runculor raca (dizago) e racio de	AREA CATEGORY (From §140.6 Table 140.6-C) Location in Building Primary Function Area per Table 140.6-C Patio Dining 1.00 786 786	AREA CATEGORY (From §140.6 Table 140.6-C) Location in Building Primary Function Area per Table 140.6-C Entry Corridor/Restroom/Support United States of the States of	= ALLOWED WATTS
		Dinning Dining 1.00 2,237 Corridor/Restroom/Support Corridor/Restroom/Support 0.60 883	2,237 530
		Kitchen Kitchen, Food Preparation 1.20 786	943
			_
TOTALS — Enter into TOTAL AREA CATEGORY METHOD ADDITIONAL ALLOWANCES — Section C-1 . 0			
e linear feet only for additional allowance for white board or chalk board. All other additional Area Category allowances shall use watts per square foot. Iditional watts are available only when allowed according to the footnotes on bottom of Table 140.6-C, which include: Specialized taskwork; Ornamental lighting; ecision commercial and industrial work; Per linear foot of white board or chalk board; Accent, display and feature lighting; and Videoconferencing studio lighting.	TOTALS 786	TOTALS 4,081	
iminaire classification and wattage shall be determined in accordance with §130.0(c) of the Standards.	Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document) 786 WATTS	Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document	ent) 3,815 W
ilding Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016	CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016	CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance	April
		STATE OF CAUFORNIA INDOOR LIGHTING POWER ALLOWANCE _CEC-NRCC-LTI-09-E (Revised 04/16) CALIFORNIA	NIA ENERGY COMMISSION
		CERTIFICATE OF COMPLIANCE Certificate of Compliance - Indoor Lighting Power Allowance	NRCC-LTI (Page 4
		Project Name: The 908	
		DOCUMENTATION AUTHOR'S DECLARATION STATEMENT 1. I certify that this Certificate of Compliance documentation is accurate and complete. Documentation Author Name: Alan Chang Documentation Author Signature:	
		Company: Signature Date: 9/18/2018 Addition: Signature Date: 9/18/2018	
		2 Venture Suite 200 E20010 City/State/Zip: Irvine, CA 92618 949 477 4001	
		RESPONSIBLE PERSON'S DECLARATION STATEMENT 1 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.	
		 Lam eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certific (responsible designer). The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified or 	•
		 Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other appropriate documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 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 m 	
		enforcement agency for all applicable inspections. Lunderstand that a completed signed copy of this Certificate of Compliance is required to be included with builder provides to the building owner at occupancy.	with the documentation the
		Company: Wright Engineers DateSigned: 9/24/2018	n g
		2 Venture, Suite 200 E20816 Ott/State/Zip Invine, CA 92618 Phone: 949-477-4001	





(Page 4 of 4)



INDOOR LIGHTING - LIGHTING CONTROLS

☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

Lighting Control Schedule

Control (i.e.: occupancy sensor,

automatic time switch,

dimmer, automatic daylight,

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.

CERTIFICATE OF COMPLIANCE

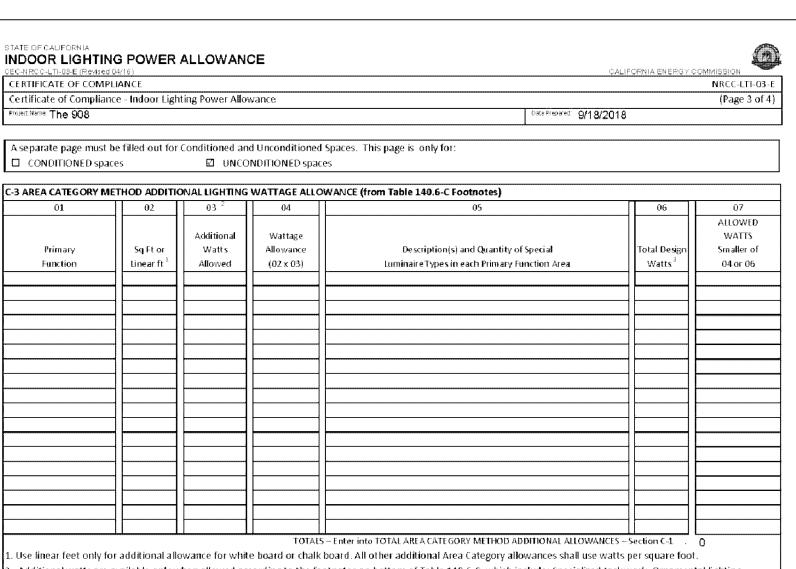
Location in Building

also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

iject Name: The 908

Indoor Lighting - Lighting Controls



Additional watts are available only when allowed according to the footnotes on bottom of Table 140.6-C, which include: Specialized taskwork; Ornamental lighting: Precision commercial and industrial work; Per linear foot of white board or chalk board; Accent, display and feature lighting; and Videoconferencing studio lighting. Luminaire classification and wattage shall be determined in accordance with §130.0(c) of the Standards.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

NRCC-LTI-02-E (Page 2 of 3) ARCHITECTURE Innovation and Design in Architecture, Inc. 218 The Promenade North Long Beach, CA 90802 www.idaexperience.net GEOFFREY B. LIM aia, ncarb, leed ap Plans, maps, specifications, studies, and reports not original
signature by the licensed professional may have been
fraudulently altered and shall not be considered an original
copy. All information should be disregarded unless verified by the professional whose signature appears above. Copyright Protected 2018. into NRCC-LTI-01-E; Page 1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) =

(Page 1 of 4)

ALLOWED

Date Prepared: 9/18/2018

Standards Complying With ¹

(✓ all that apply, or enter 'E' if Exempted)

IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):

2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an installation Certificate is

Control Credit PAGE TOTAL (Sum of Column 13):

PAF Credit Calculation 2

Engineering Consultant:

2 Venture Suite 200 Irvine, CA 92618 949.477.4001 wrighte.com

Project Owner:



Project Status Issue Date: 9/24/2018 REASON

PRINCIPAL IN CHARGE:

PROJECT MANAGER:

THE 908 LBX - LONG BEACH EXCHANGE 3850 WORSHAM

BOULEVARD SUITE 410, BUILING R-4 Sheet Title:

CALCULATIONS

LIGHTING **ENERGY**

(B) p (9) 8 µB-22 (8) LB-6 **3 3 3** LB-6 LB-6 ₩ LB-8 8 LB-6 P2 ENTRY 2 LB-3 ₹(2) LB-3 PRIVATE DINNING 3 LB-6 PRIMARY DAYLIT ZONE 102 LB-IT 4LB-7 3 LB-6 (8) LB-6 4 LB-7 ¹ 4 LB-7 3 LB-2 3 LB-6 (10)(4) LB-17 - INVERTER - SWITCH BANK 4LB-1 OFAN ©(4) LB-17 4LB-1 8 LB-6 **T** LB-24 ① LB-24 DINNING 104 (5) LB-9 ©wFt EM €wFt 110 owFt 8 LB-6 8 LB-4 8 LB-6 OFAN V 8 LB-6 LB-15 6 LB-11 6 LB-11 6 LB-5) LB-9 3 LB-6 **⑥** LB-1' **Ø** ODP ● P4 ③ LB-15 (3) LB-15 (3) LB-15 ③ LB-6 (T) LB-24 6 LB-1 ODFOP4 (5) LB-9 (3) LB-15 (3) LB-15 KITCHEN 8 LB-6 8 LB-4 8 LB-6 EM WFt B-13 107 3 LB-15 OFAN ODF⊖P4 3 LB-6 [5 LB-9 **WIC**(6) LB-15(0) 108 SECONDARY DAYLIT ZONE | PRIMARY DAYLIT ZONE **⑧LB-6**

LIGHTING PLAN GENERAL NOTES (AS APPLICABLE)

- A. PROVIDE A DISCONNECTING MEANS FOR EACH MULTI-WIRE LIGHTING BRANCH CIRCUIT IN ACCORDANCE W/ NEC 410.130(G.X.1) THRU (3). DISCONNECTING MEANS SHALL BE LOCATED AT POINT WHERE CIRCUIT ORIGINATES AND SHALL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS.
- B. REFER TO ARCH'L REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.
- C. VERIFY EXACT CEILING CONSTRUCTION W/ ARCH'L REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ ALL NECESSARY MOUNTING HARDWARE.
- D. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS W/ MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
- E. ALL RECESSED FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF ALL APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
- F. ALL DIMMING BRANCH CIRCUITS SHALL BE PROVIDED W/ A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
- G. ALL FLUORESCENT DIMMING ZONES/CHANNELS SHALL BE PROVIDED w/3 LINE VOLTAGE CONDUCTORS (NEUTRAL, DIMMED HOT, SWITCHED HOT) OR 2 LINE VOLTAGE
- CONDUCTORS (NEUTRAL, DIFFIED HOT, SWITCHED HOT) OR 2 LINE VOLTAGE

 CONDUCTORS/2 CONTROL CONDUCTORS AS REQUIRED BY THE CONTROL/BALLAST TYPE.

NUMBER OF FACES PER EXIT SIGN. ANY DISCREPANCIES BETWEEN EXIT SIGNS SHOWN ON

- PROVIDED WITH AN UNSWITCHED CONSTANT HOT CONNECTION TO THE CHARGING LEAD.

 I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXIT SIGN CHEVRONS AND
- THE ELECTRICAL AND ARCHITECTURAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO ORDERING EXIT SIGNS.

H. ALL EMERGENCY BATTERY PACK FIXTURES AND NITE LIGHT FIXTURES SHALL BE

- J. ALL ELECTRICAL EQUIPMENT LOCATED OUTSIDE SHALL BE WEATHERPROOF.

 K. ALL LOW YOLTAGE WIRING NOT RUN IN CONDUIT SHALL BE PLENUM RATED.
- L. PROVIDE UNIFORM DUAL LEVEL SWITCHING OF LIGHTS IN ROOMS WHERE TWO SWITCHES ARE SHOWN CONNECTED TOGETHER. CONTRACTOR TO PROVIDE ALL NECESSARY
- CONDUCTORS FOR ALL DUAL SWITCHING APPLICATIONS AS SHOWN ON PLAN.

 M. CONTRACTOR TO PROVIDE ALL NECESSARY TRAVELER CONDUCTORS FOR ALL 3 AND 4 WAY SWITCHING APPLICATIONS.
- N. ALL EXTERIOR BUILDING MOUNTED LIGHTING SHALL BE 2*8, 1*10 GND IN A 3/4"C, U.N.O.
- O. GENERAL CONTRACTOR SHALL VERIFY CEILING FIRE RATING WITH ARCHITECT, AND BOX OR TENT ALL RECESSED LIGHT FIXTURES, IF REQUIRED, TO MAINTAIN CEILING FIRE RATING.
- P. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
- Q. ALL LIGHT FIXTURES W/EMERGENCY BATTERY PACKS AND NITE LIGHTS TO BE PROVIDED W/A CONSTANT UN-SWITCHED CONDUCTOR IN ADDITION TO THE SWITCHED CIRCUIT CONDUCTOR. SWITCHING TO BE PROVIDED AS SHOWN ON PLAN.
- R. LIGHT FIXTURES IN FOOD PREP AREAS SHALL BE ENCLOSED, GASKETED WITH 0.125"
 MINIMUM ACRYLIC LENS AND/OR FLUORESCENT LAMPS PROVIDED WITH SHATTER PROOF
- SLEEVES.

 S. ALL EMERGENCY EGRESS LIGHTING SHALL BE PROVIDED W/ A MINIMUM 90 MINUTE
- T. REFER TO ARCHITECTURAL ELEVATIONS FOR LOCATIONS OF EXTERIOR LIGHTING AND
- SIGNAGE REQUIREMENTS.
- U. PROVIDE UNCONTROLLED HOT WIRES FROM LIGHTING CIRCUITS FOR EXIT SIGN, EMERGENCY LIGHTS, AND LIGHTING CONTROL DEVICES.

LIGHTING PLAN KEYNOTES

BATTERY BACKUP.

① TO DIMMER SWITCH BANK A, AND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.

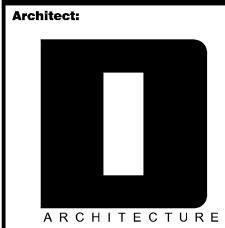
- 2 TO DIMMER SWITCH BANK 6, AND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.
- 3 TO DIMMER SWITCH BANK CAND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.
- 4 TO DIMMER SWITCH BANK &, AND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.

 5 TO DIMMER SWITCH BANK &, AND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.
- 6 TO DIMMER SWITCH BANK F, AND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.
- 1 TO DIMMER SWITCH BANK g, AND THROUGH LIGHTING CONTROL PANEL/TIMER CONTROL.
- (8) TO TIME CLOCK & PHOTOCELL CONTROL.
- 3 BUILDING SIGNAGE THROUGH TIMER & PHOTOCELL CONTROL.
- (10) CONNECT LIGHTING FIXTURES THROUGH EMERGENCY INVERTER 120V 600W MINIMUM AND LIGHTING CONTROLS, FIXTURES ARE FULLY ON WHEN POWER FAIL.
- ① DAY LIGHT SENSOR FOR DAY LIGHT AREA CONTROL.
- (2) 2-HR OVERRIDE SWITCH.
- (3) TO SD, TIMER
 (4) TO SD, TIMER
- 15 to SD, TIMER
- IO SD, IMER

THE ARCHITECTURAL/CIVIL/HYAC AND PLUMBING DRAWINGS.

- (6) WALK IN BOX LIGHTS AND SWITCHES SHALL BE PROVIDED BY MANUFACTURE, PROVIDE CONTROL RELAY FOR WALK IN LIGHTS FOR AUTOMATIC SHUT OFF CONTROL.
- (T) PROVIDE SEALS & EXPANSION COUPLINGS ON ALL CONDUITS ENTERING OR LEAVING A DIFFERENCE IN TEMPERATURE.

NOTE:
ELECTRICAL CONTRACTOR TO INCLUDE IN THE BID AND PART OF THE SCOPE OF WORK
ELECTRICAL RELATED REQUIREMENTS NOT SHOWN ON THIS PLAN BUT ARE SHOWN NOTED IN



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Issue For:
Project Status
Issue Date:
9/24/2018

REASON

WE PROJECT MANAGER:

DRAWN BY: STAFF

THE 908

LBX - LONG BEACH
EXCHANGE
3850 WORSHAM
BOULEVARD
SUITE 410, BUILING R-4

Sheet Title:

FLOOR PLAN

E105

NORTH

SCALE: 3/16" = 1'-0" LIGHTING FLOOR PLAN.

STORAGE

LIGHTING FLOOR PLAN - .

SCALE: 3/16" = 1'-0" EQUIPMENT PLATFORM

- 450 INVERTER

— PANEL-"LB" — PANEL-"LC"

- LIGHTING CONTROL

PANEL/TIMER

FIRE SUPPRESSION REQUIREMENTS

- 1. ALL ELECTRICAL RECEPTACLES AND COOKING APPLIANCES UNDER HOOD MUST
- BE SHUT DOWN. EXHAUST FANS MUST STAY ON, REFER TO MECHANICAL DRAWINGS FOR WIRING
- 4. ALL GAS SUPPLIED TO COOKING EQUIPMENT UNDER HOOD TO BE SHUT OFF VIA THE GAS SHUT-OFF VALVE. SEE PLUMBING DRAWINGS FOR INFORMATION.
- B. THE FIRE ALARM SHALL BE TIED TO THE ANSUL SYSTEM.
- C. MANUAL RESET RELAY MICRO SWITCH, F.B.O., SHALL BE CONNECTED TO GAS VALVE BY ELECTRICAL. REFER TO FIRE SYSTEM SPECIFICATIONS.
- D. SEE ANSUL SYSTEM WIRING DIAGRAM FOR INFORMATION. SEE CAFE RIO #131002, BWW #130796 FOR ANSUL DETAIL.

ELECTRICAL CONTRACTOR TO INCLUDE IN THE BID AND PART OF THE SCOPE OF WORK

AAA

112

UUU

LB-10

e e e

TV'S AT PATIO STRUCTURE

① CL-12

EXTERIOR PATIO

LED STRIP LIGHTS USB + TYPICAL CONVIENCE AT BAR DIE WALL FOR

PRIVATE DINNING

102

INTERIOR LED STRIP LIGHTS

104

LB-18

THE ARCHITECTURAL/CIVIL/HYAC AND PLUMBING DRAWINGS.

OUTLET FOR CUSTOMERS

ROOF ACCESS LADDER LOCATED HOSTESS STAND

101

INSIDE OF MECHANICAL ROOM

LB-18 __

RESTROOM

105

" LB-18 "

VESTIBULE

110

ELECTRICAL RELATED REQUIREMENTS NOT SHOWN ON THIS PLAN BUT ARE SHOWN NOTED IN

- A. WHEN THE FIRE SUPPRESSION SYSTEM IS DISCHARGED, THE FOLLOWING ACTIONS MUST TAKE PLACE:

 - C. ALL 125V SINGLE PHASE, 20 AMP RECEPTACLES INSTALLED IN THE KITCHEN, BATHROOM 3. MAKE UP AIR MUST SHUT OFF. REFER TO MECHANICAL DRAWINGS FOR WIRING
 - AND ON THE ROOF SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION PER

DEVICES W/ KITCHEN EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.

- D. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION AND PULL BOXES REQUIRED FOR THE INSTALLATION OF ELECTRICAL DEVICES AND EQUIPMENT WHETHER OR NOT SPECIFICALLY INDICATED ON PLANS. SIZING OF BOXES SHALL BE PER NEC.
- E. ALL CONDUIT PASSING THROUGH WALL OF COOLER/FREEZER SHALL BE PROVIDED WITH EYS FITTINGS.

POWER PLAN GENERAL NOTES (AS APPLICABLE)

A. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHT OF ALL ELECTRICAL OUTLETS AND

B. ALL ELECTRICAL WIRING RUNS SHALL BE CONCEALED IN WALLS, FLOOR, CEILING OR

- F. CONDUITS THAT ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, SUCH AS COOLERS,
- FREEZERS, DIRECT SUN OR SERVICE ENTRANCE CONDUCTORS, SHALL BE SEALED TO PREVENT CIRCULATION OF AIR AND/OR MOISTURE. G. IN ALL KITCHEN FOOD PREP., DISHWASHING, AND SERVING AREAS, PROVIDE STAINLESS
- STEEL OUTLET COVER PLATES. IN ALL OTHER AREAS, MATCH ADJACENT FINISH COLOR COORDINATE W/ ARCHITECT...
- H. ALL EQUIPMENT SHALL BE HARDWIRED W/ AN APPROVED DISCONNECTING MEANS UNLESS EQUIPMENT IS SUPPLIED W/ A FACTORY INSTALLED CORD AND PLUG.
- I. ELECTRICAL CONTRACTOR TO VERIFY ALL POWER REQUIREMENTS AND LOCATIONS OF FOOD SERVICE EQUIPMENT W/ FOOD SERVICE CONTRACTOR PRIOR TO ROUGH-IN.
- J. ALL RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 12" MINIMUM. FIRE RATED WALLS SHALL HAVE AN OFFSET OF 24" MINIMUM. COORDINATE W/ ARCH'L FIRE RATED WALL DETAILS.
- K. ALL PENETRATIONS THROUGH FIRE-RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE W/ AN APPROVED FIRESTOP SYSTEM, EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
- L. HEIGHT OF ALL RECEPTACLES AT COUNTER SHELVES, ETC., SHALL BE VERIFIED W/ OWNER PRIOR TO ROUGH-IN. PROVIDE G.F.C.I. TYPE RECEPTACLE WITHIN 6 FEET OF ANY SINK.
- M. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHED. 40, MINIMUM 3/4"C. RUN CODE SIZE INSULATED EQUIPMENT GROUND CONDUCTOR
- N. EACH AND EVERY 15 AND 20 AMP, 120 VOLT RECEPTACLE IN KITCHEN, FOOD PREP, BAR AREAS AND RESTROOMS SHALL BE GFC! TYPE PROTECTION.

SIGNAL PLAN GENERAL NOTES

A. CONDUITS SHALL CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 100 FT. AND NO MORE THAN (2) 90 DEGREE BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULLBOX. CONDUITS IN PLACE OF PULL BOXES ARE UNACCEPTABLE.

B. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 20 LBS.

- C. CONDUIT BEND RADIUS SHALL BE (a) A MINIMUM OF 6 TIMES OF THE INTERNAL CONDUIT
- DIAMETER FOR CONDUITS 2" IN DIAMETER OR LESS, AND (b) 10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2" IN DIAMETER.
- D. TERMINATE CONDUITS THAT PROTRUDE THROUGH STRUCTURAL FLOORS 3" ABOVE THE FLOOR SURFACE.
- E. INSTALL BUSHINGS AND BELL ENDS AS REQUIRED ON ALL CONDUITS.
- F. FLEX CONDUIT IS GENERALLY UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND AS APPROVED IN WRITING BY THE ENGINEER
- G. ALL SUBSLAB CONDUITS SHALL BE INSTALLED IN A MATTER THAT PREVENTS WATER INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATION CABLES.
- H. ALL PULL BOXES SHALL BE SIZED AND INSTALLED PER ANSI/TIA/EIA-569A. PULL BOXES FOR UNDER FLOOR CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL BOXES FOR OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITHIN THE ACCESSIBLE CEILING SPACE.
- I. CONDUIT(S) SHALL EXIT A PULL BOX ON THE WALL OPPOSITE THE WALL ENTERED.
- J. IF FIRE ALARM DEVICES ARE INDICATED ON PLANS, THEN THE ELECTRICAL CONTRACTOR SHALL SUBMIT FIRE ALARM PLANS AND OBTAIN APPROVAL PRIOR TO
- K. SEE ARCHITECTURAL AND KITCHEN CONSULTANT SHEETS FOR EXACT LOCATIONS OF POWER AND DATA RECEPTACLES.

KEYNOTES

- PROVIDE J-BOX FOR PATIO HEATER MODEL*BH0420032 TUNGSTEN SMART-HEAT ELECTRIC
- (2) 1" UNDERGROUND CONDUITS FOR POWER AND TELE/DATA, CUT AND PATCH FLOOR AS REQUIRED. COORDINATE FLOOR CUTTING WITH LANDLORD PRIOR TO STARTING WORK.
- 3 CONNECT TO HOOD LIGHTS, ANSUL SYSTEM VENTILATION CONTROL, ELECTRICALLY OPERATED GAS VALVES, ETC. AS REQUIRED.
- 4 PROVIDE ELECTRICALLY HELD GAS VALVES. SEE PLUMBING DRAWING FOR GAS SHUT OFF YALVE EXACT LOCATION.
- (5) ELECTRICAL CONTRACTOR TO PROVIDE SHUNT TRIP BREAKERS FOR ALL EQUIPMENT UNDER HOOD AND INTERWIRE TO FIRE PROTECTION SYSTEM PER LOCAL CODE, PROVIDE DEDICATE NEUTRAL FOR ALL CIRCUITS WITH SHUNT TRIP BREAKERS.
- 6 HOOD LIGHT, FAN CONTROL STATION, AND ANSUL CONTROL PANEL. VERIFY FINAL LOCATION ON FIELD WITH ARCHITECT/OWNER
- T PROVIDE SEALS & EXPANSION COUPLINGS ON ALL CONDUITS ENTERING OR LEAVING A DIFFERENCE IN TEMPERATURE.
- (8) CONTRACTOR TO VERIFY WITH OWNER FOR FINAL W.I. BOX MANUFACTURER AND MODEL, COORDINATE WITH MANUFACTURER FOR W.I. BOX FAN, LIGHT, HEATER, COMPRESSOR WIRING AND POWER REQUIREMENTS. INCLUDE ALL COST IN BIDDING.
- 3 3/4"C, 3*10 +10 G.
- (10) RUN 1" CONDUIT WITH PULL STRING FROM BUILDING MAIN TELEPHONE BOARD TO TENANT 2'X2'X3/4" THICK PLYWOOD TELE BKBD MOUNTED ON WALL. VERIFY WITH OWNER FOR REQUIREMENTS.

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Project Status Issue Date: 9/24/2018

REASON

PROJECT MANAGER:

THE 908 LBX - LONG BEACH EXCHANGE 3850 WORSHAM BOULEVARD SUITE 410, BUILING R-4

Sheet Title: **POWER AND**

SIGNAL FLOOR PLAN

SCALE: 3/16" = 1'-0"

LA-32,34

N LB-25 €

100AS/70AF 1 1/2"C, 4*4 + 1*10G.

CO LB-25

- PANEL-"LC"

- LIGHTING CONTROL PANEL/TIMER

LB-33 CO

LB-30 ₽

EQUIPMENT PLATFORM

EQUIPMENT

CO LB-31 LB-33

LB-31 ♥

POWER PLAN - EQUIPMENT

SCALE: 3/16" = 1'-0" PLATFORM

.POWER AND SIGNAL FLOOR PLAN-

ROOF PLAN GENERAL NOTES (AS APPLICABLE)

- A. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT LISTED IN SCHEDULE. ANY MODIFICATIONS AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID
- B. ALL TEMPERATURE CONTROL AND INTERLOCK CONDUIT AND WIRING SHALL BE BY ELECTRICAL CONTRACTOR, U.N.O. SEE MECH/PLUMB'G DRAWINGS FOR ALL INFORMATION
- C. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL CONNECTION POINTS W/ THE EQUIPMENT INSTALLER PRIOR TO ROUGH-IN.
- D. ELECTRICAL CONTRACTOR SHALL PROVIDE LOCAL REMOTE DISCONNECTING MEANS FOR ALL ELECTRIC HEATING EQUIPMENT IF REQUIRED BY THE LOCAL ELECTRICAL CODE.
- E. ELECTRICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF POWER WIRING TO ROOF-MOUNTED EQUIPMENT WITHIN MECHANICAL PIPE CURB ASSEMBLY. NO SEPARATE ROOF PENETRATIONS WILL BE PERMITTED. ALL WIRING SHALL BE BELOW THE ROOF IN AN ACCESSIBLE CEILING SPACE LOCATION.
 FINAL CONNECTION TO ROOF EQUIPMENT WITHOUT CURB IS LIMITED TO 5'-0" OF DIRECT SOLAR EXPOSURE.
- F. PROVIDE W.P. J-BOX AND SWITCH (ONE SWITCH PER CIRCUIT INDICATED) AND CONNECT TO BUILDING MOUNTED SIGN. VERIFY EXACT LOCATION AND REQUIREMENTS W/ SIGN
- G. ALL ROOF MOUNTED ELECTRICAL EQUIPMENT SHALL BE NEMA 3R RATED.
- H. ALL DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED IN ACCORDANCE W/ NEC 430.

FOR MECHANICAL EQUIPMENT SCHEDULE REFER TO MECHANICAL DRAWINGS.

ELECTRICAL CONTRACTOR TO INCLUDE IN THE BID AND PART OF THE SCOPE OF WORK
ELECTRICAL RELATED REQUIREMENTS NOT SHOWN ON THIS PLAN BUT ARE SHOWN NOTED IN
THE ARCHITECTURAL/CIVIL/HYAC AND PLUMBING DRAWINGS.

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THE 908

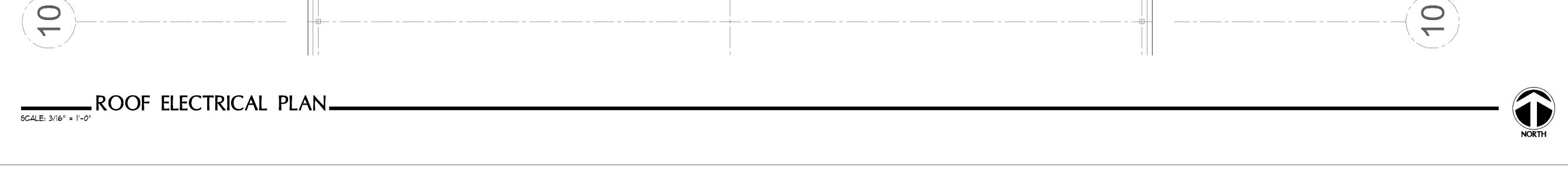
LBX - LONG BEACH EXCHANGE 3850 WORSHAM BOULEVARD SUITE 410, BUILING R-4

Sheet Title:

ELECTRICAL PLAN

Sheet Number:

E107



___ LC-32 3/4"C, 2*12 + 1*12 GRD

H-31,33,35 — 1"C, 3*4 + 1*8 GRD

H-32,34,36 —

1"C, 3*4 + 1*8 GRD

WEATHER PROOF -

3ø, 70AF/100AS

DISCONNECT SWITCH

WEATHER PROOF — DISCONNECT SWITCH 3¢, 10AF/100AS

H-25,27,29 —

3/4C, 3#12 + 1#12 GRD

DISCONNECT SWITCH

WEATHER PROOF -

DISCONNECT SWITCH 1¢, 15AF/30AS

WEATHER PROOF -

3¢, 20AF/30AS

LC-19,21,23 —

3/4"C, 3*12 + 1*12 GRD

DISCONNECT SWITCH

H-26,28,30 — 3/4C, 3*12 + 1*12 GRD

WEATHER PROOF _

DISCONNECT SWITCH 3ø, 20AF/30AS

LC-26,28,30 —

3/4"C, 3*12 + 1*12 GRD

WEATHER PROOF -

DISCONNECT SWITCH 3ø, 20AF/30AS

LC-202224 — 3/4"C, 3*12 + 1*12 GRD

WEATHER PROOF DISCONNECT SWITCH 3ø, 20AF/30AS

WEATHER PROOF -

3ø, 20AF/30AS

COPPER FEEDER SCHEDULE
3ø, 4W, WITH GROUND

		30, 4W, WITH	GROUND	
FEEDER	AMPS	CONDUIT	CONDUCTOR	GROUND
F204	20	3/4"C	4*12	#12
F304	30	3/4"C	4*10	* 1 <i>O</i>
F404	40	3/4"C	4*8	#10
F504	50	1"C	4*6	*10
F604	60	1"C	4#4	*10
F704	70	1-1/4"C	4#4	*8
F804	80	1-1/4"C	4*2	*8
F904	90	1-1/4"C	4*2	*8
F1004	100	1-1/2"C	4#1	*8
F1254	125	2"C	4*1/0	*6
F1504	150	2"C	4*1/0	*6
F1754	175	2"C	4*2/0	*6
F2004	200	2"C	4*3/0	*6
F2254	225	2-1/2"C	4*4/0	*4
F2504	250	3"C	4*250KCMIL	*4
F4004	400	4"C	4*500KCMIL	*2
F6004	600	(2) 3"C.	4*350KCMIL	#1
F8004	800	(2) 4"C	4*500KCMIL	#1/0
F10004	1000	(3) 4°C	4*500KCMIL	*3/0
F12004	1200	(4) 3"C	4*350KCMIL	* 3/0
F16004	1600	(5) 4"C	4*500KCMIL	*4/0
F20004	2000	(5)5"C	4*600KCMIL	250KCMIL
F30004	3000	(8)5"C	4*500KCMIL	500KCMIL

F40004 4000 (10) 5"C 4*600KCMIL 500KCMIL

COPPER FEEDER SCHEDULE 3¢, 3W, WITH GROUND

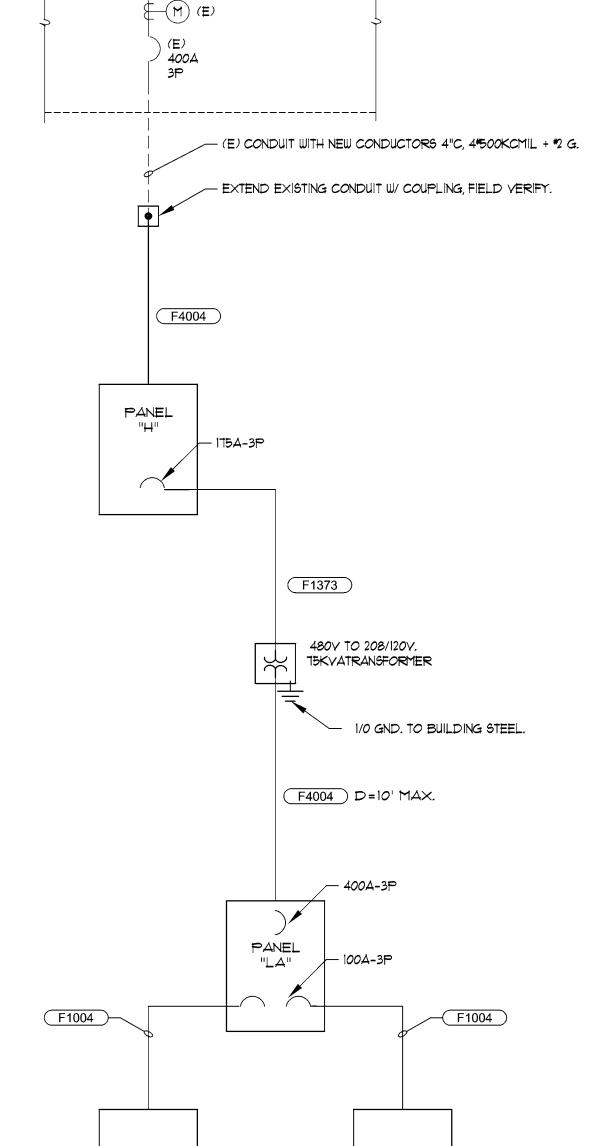
FEEDER	AMPS	CONDUIT	CONDUCTOR	GROUND
F203	20	3/4"C	3 [#] 12	#12
<u>F303</u>	30	3/4"C	3*10	*10
F403	40	3/4"C	3 * 8	*10
F503	50	1"C	3*6	*10
F603	60	1"C	3*4	*10
F703	70	1"C	3*4	*8
F803	80	1-1/4"C	3*2	*8
F903	90	1-1/4"C	3*2	*8
F1003	100	1-1/4"C	3#1	*8
F1253	125	1-1/2"C	3*1/0	*6
F1503	150	1-1/2"C	3#1/0	*6
F1753	175	1-1/2"C	3*2/0	*6
F2003	200	2"C	3 * 3/0	*6
F2253	225	2-1/2"C	3*4/0	*4
F2503	250	2-1/2"C	3*250KCMIL	*4
F4003	400	4"C	3#500KCMIL	*2
F6003	600	(2) 3"C	3*350KCMIL	*1
F8003	800	(2) 4°C	3#500KCMIL	*1/0
F10003	1000	(3) 3"C	3#500KCMIL	*3/0
F12003	1200	(4) 3"C	3*350KCMIL	*3/0
F16003	1600	(5) 3"C	3*500KCMIL	*4/0
F20003	2000	(5) 4"C	3*600KCMIL	250KCMI
F30003	3000	(8) 3°C	3#500KCMIL	500KCMI
F40003	4000	(10) 4"C	3*600KCMIL	500KCMI

GENERAL NOTES

- 1. ALL OVERCURRENT DEVICES IN AN INDIVIDUAL PIECE OF EQUIPMENT SHALL HAVE AN AIC RATING EQUAL TO THE OVERALL RATING OF THE EQUIPMENT - SERIES RATING OF DEVICES WITHIN A PIECE OF EQUIPMENT IS NOT ALLOWED.
- 2. SERIES CONNECTED DEVICES SHALL HAVE BEEN INVESTIGATED BY UL IN COMBINATION WITH THE END USE EQUIPMENT, AND THE EQUIPMENT IN WHICH THESE DEVICES ARE USED SHALL BE MARKED WITH THE SERIES CONNECTED RATING. ALL EQUIPMENT SHALL BE
- 3. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 15 DEGREE CELSIUS CONDUCTORS.

MARKED IN ACCORDANCE WITH NEC REQUIREMENTS.

- 4. ALL SERVICE ENTRANCE EQUIPMENT, SWITCHBOARDS, DISTRIBUTION BOARDS, AND PANELBOARDS RATED AT 400 AMPS OR GREATER, SHALL BE PROVIDED WITH A MAIN
- OVERCURRENT DEVICE AND BUSSING RATED AT 100% CONTINUOUS OPERATION. 5. ALL BRANCH OR FEEDER CIRCUIT OVER-CURRENT DEVICES RATED AT 400 AMPS OR
- HIGHER SHALL BE RATED FOR 100% CONTINUOUS OPERATION.
- 6. CONTRACTOR SHALL SUBMIT SWITCHBOARD SHOP DRAWINGS TO THE SERVING UTILITY FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR SHALL SECURE CONFIRMATION THAT
- THE PROPOSED SWITCHBOARD COMPLIES WITH THE POWER COMPANY REGULATIONS. T. BUSSING:
- A. ALL BUSSING SHALL BE COPPER OR ALUMINUM IN CONSTRUCTION. MAIN HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL CAPACITY IN ALL SWITCHBOARD SECTIONS. B. HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH. ALL BUSSING SHALL
- HAYE A MINIMUM WITHSTAND RATING EQUAL TO THE AVAILABLE FAULT CURRENT INDICATED, BUT IN NO CASE SHALL THE RATING BE LESS THAN 65,000 AMPS, SYMMETRICAL. 8. GROUND FAULT RELAY SETTINGS:
- A. TO MINIMIZE NUISANCE TRIPPING OF THE MAIN AND FEEDER BREAKER, THE CONTRACTOR SHALL ADJUST THE GROUND FAULT RELAY SETTINGS FOR ALL THE GFP DEVICES TO BE HIGHER THAN ALL DOWNSTREAM GFP AND NON-GFP DEVICES. THE GROUND FAULT CURRENT PICK-UP AND TIME DELAY SETTINGS SHALL BE ADJUSTED, PER THE MANUFACTURERS RECOMMENDATIONS, RESULTING FROM A CONTRACTOR/MANUFACTURER PREPARED COORDINATION STUDY - WHICH SHALL BE DOCUMENTED IN THE SHOP DRAWING SUBMITTAL.
- B. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL GROUND FAULT RELAYS SHALL BE SET AT THE SHORTEST AVAILABLE TIME DELAY.
- C. AFTER ALL SETTINGS HAVE BEEN ADJUSTED, THE CONTRACTOR SHALL HAVE THE GROUND FAULT SYSTEM TESTED BY AN INDEPENDENT TESTING AGENCY PER NEC 230-95 (C). THIS TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION AND THE TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD.
- 9. DRY TYPE TRANSFORMERS: A. DRY TYPE TRANSFORMERS OVER 112-1/2KVA SHALL HAVE A MINIMUM CLASS 155 INSULATION RATING SYSTEM, B. ALL DRY TYPE TRANSFORMERS SHALL BE COMPLETELY ENCLOSED EXCEPT FOR VENTILATED OPENINGS.
- 10. EACH SERVICE DISCONNECTING MEANS, AND THE EXTERIOR DOOR PROVIDING ACCESS TO THE DISCONNECTING MEANS, LOCATED IN AN APPROVED ELECTRICAL ROOM, SHALL BE PERMANENTLY MARKED WITH A 1 FOOT SQUARE YELLOW SIGN WITH 1" HIGH X 1/4" STROKE BLACK LETTERING OR NUMBERS AS REQUIRED BY CODE AND THE AUTHORITY HAVING JURISDICTION.



PANEL "LC"

TENANT R4A

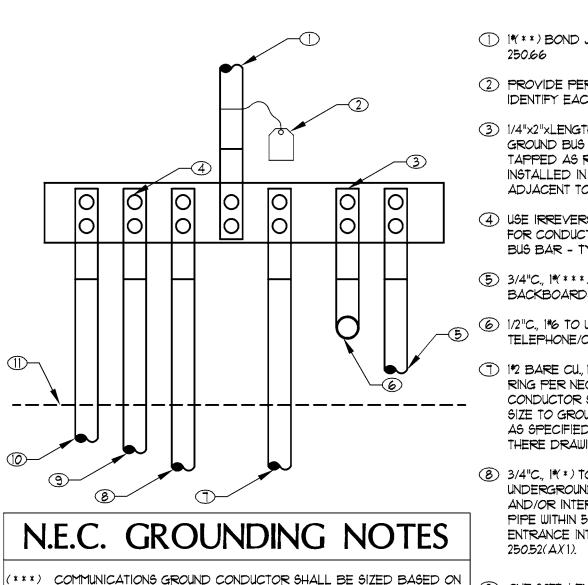
---- (E) 'MSB': 1200A

277/480Y, 3Ø, 3W, 65 KAIC IN MAIN ELECTRICAL ROOM

SINGLE LINE DIAGRAM_

PANEL

TENANT R4A



(***) COMMUNICATIONS GROUND CONDUCTOR SHALL BE SIZED BASED ON DISTANCE BETWEEN TELECOMMUNICATIONS ROOM AND SYSTEM GROUNDED BUS BAR AS FOLLOWS:

OVER 200 FT. (**) MAIN BONDING JUMPER SHALL BE SIZED AS FOLLOWS: SERVICE SIZE M.B.J. SIZE 0-1,000A 1,200A 2,000A 2,500A 300KCMIL

3,000A 500KCMIL 4,000A 600KCMIL F) GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED AS FOLLOWS: SERVICE SIZE 0-200A 201-400A

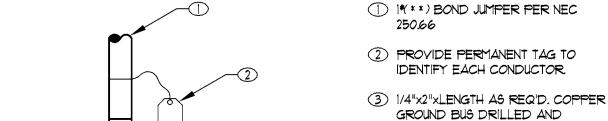
500KCMIL

OVER 400A NOTES:

THE ELECTRICAL CONTRACTOR SHALL PROVIDE A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 250.52(AX1)

2. IF NONE OF THESE SYSTEMS ARE AVAILABLE, THEN THE ELECTRODES SPECIFIED IN NEC 250.52(AX4) THROUGH (AX7) SHALL BE PROVIDED.

MAIN SERVICE SYSTEM GROUNDING DETAIL



TAPPED AS REQ'D. BUS TO BE INSTALLED IN ELECTRICAL ROOM ADJACENT TO SWBD. 4 USE IRREVERSIBLE FASTENERS FOR CONDUCTORS LOADED ONTO BUS BAR - TYPICAL

5) 3/4"C,, 1*(***) TO TELECOM, ROOM BACKBOARDS.

⑥ 1/2"C,, 1*6 TO UTILITY TELEPHONE/CATY BACKBOARD. 1 1 BARE CU., MINIMUM TO GROUND RING PER NEC 250,52(AX4). CONDUCTOR SHALL BE EQUAL IN SIZE TO GROUND RING CONDUCTOR AS SPECIFIED ELSEWHERE IN THERE DRAWINGS

8 3/4"C,, I*(*) TO METAL UNDERGROUND WATER PIPE AND/OR INTERIOR METAL WATER PIPE WITHIN 5' OF POINT OF ENTRANCE INTO BLDG PER NEC

(9) ONE 20FT. LENGTH OF #4 BARE COPPER ENCASED IN MIN. 2" OF CONCRETE ALL AROUND PER NEC 250.52(AX3).

TINISHED FLOOR

1 3/4"C,, I*(*) TO EFFECTIVELY GROUNDED METAL FRAME OF THE BLDG. PER NEC 250-250.52(AX2).

NO SCALE

ARCHITECTURE Innovation and Design in

218 The Promenade North Long Beach, CA 90802 www.idaexperience.net GEOFFREY B. LIM aia, ncarb, leed ap Plans, maps, specifications, studies, and reports not

Architecture, Inc.

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2 Venture Suite 200 Irvine, CA 92618

Engineering Consultant:



949.477.4001 wrighte.com

Project Owner:



Project Status Issue Date: 9/24/2018

REASON

PRINCIPAL IN CHARGE:

PROJECT MANAGER:

THE 908 LBX - LONG BEACH **EXCHANGE** 3850 WORSHAM **BOULEVARD**

SUITE 410, BUILING R-4

Sheet Title: SINGLE LINE DIAGRAM AND LOAD

Project Number:

CALCULATIONS

							PANI	EL "LA	\"						
		MOUNTING RECESSED NEMA 3R NO FEED THRU NO LOCATION	DOL	JBLE LUG 200% I/G BUS	NO	Volts: Phases: Wires:	_	<u> </u>					MAIN MLO BUS 400 A.I.C. 18,000 FED FROM		_
L	C	DESCRIPTION	TRIP AMPS	POLES	A	В	С	A	В	С	POLES	TRIP AMPS	DESCRIPTION	C R C	L
K	1 K1		25A	1	1800			900			1	20A	K29	2	ŀ
K	3 K3		30A	1		2400			528		1	20A	K30	4	ŀ
K	5 K5		90A	1			2400			1008	1	25A	K33	6	ŀ
K	7 HEAT	LAMP K9	20A	2	1000			60			1	20A	K34	8	ı
K	9 -		-			1000			1404		1	20A	K36	10	l
K	11 K11		20A	1			1200			996	1	20A	K37	12	
K	13 B11		20A	1	1200			1000			1	20A	K50	14	1
K	15 K12		20A	1		720			1040		2	20A	WALK-IN COOLER COMPRESSOR K46	16	L
K	17 K14		30A	2			2434			1040		-	-	18	L
K	19 -				2434			600			1	20A	WALK-IN COOLER FAN K47	20	L
K	21 K18		70A	3		7621						20A	SPARE	22	L
K	23 -		-				7621				1	20A	SPARE	24	
K	25 -		-	-	7621						1	20A	SPARE	26	
K	27 B19		20A	1		1200			1387		2	30A	WALK-IN FREEZER COMPRESSOR K49	28	ļ
K	29 B19		20A	1			1200			1387			-	30	L
K	31 B19		20A	1	1200			3120			2	25A	WALK-IN FREEZER FAN K50	32	L
K	33 B15		20A	1		1200			3120			-	-	34	L
	35 SPAR		20A	1							1	20A	SPARE	36	
P	37 PANEI	_ "LC"	100A	3	10669			7905			3	100A	PANEL "LB"	38	L
P	39		-	3		9134			5777			-	-	40	
P	41		-				8136			6296		-	-	42	
						ðΑ	Q	ØB .	Ø	С					
			OTAL LOAD			264		685	278]	81%	PERCENT BALANCE		
		LOAD CLASSIFICATION	OTAL DEM		285 CTED LO		264	· A MAND FAC	232		MATED DE	MANID	PANEL LOADS		
		CONTINUOUS LOAD =		CONNE		AD	DEI			E311	0	IVAND	PANEL LOADS		
			_		0			125% 65%			32596		TOTAL CONN. LOAD (VA):	109758	_
		KITCHEN EQUIPMENT LOAD =			50147			125%					` ′	93767	_
		LIGHTING LOAD =			0			100%			0 13254		TOTAL EST. DEMAND (VA).	305	
		MOTOR LOAD = NON-CONTINUOUS LOAD =	7.7.		11694			100%			0		TOTAL CONN. (AWPS). TOTAL EST. DEMAND (AMPS):	260	
		PANEL LOAD =			0			100%			47917		TOTAL EST. DEIVAND (AVIPS).	260	
		RECEPTACLE LOAD =			47917 0			100%			0				
NII	EL OCHED	ULE NOTES:	<u> </u>					100 /6							_
_		E LOCK-ON DEVICE.		(A)	PROVIDE	GFCI TYP	E DEVICE		7 PROVI	JE "HACR"	' TYPE CIR	CUIT BREA	AKE (9) EXISTING BREAKER		
\simeq		E LOCK-OFF DEVICE.		\simeq		A RED CI			_	VAC EQUIF		OUI DIVE	(10) CIRCUIT MADE AVAILABLE THRO	UGH	
		BREAKER CONTROLLED BY		\simeq		: A NEW BI		L/ UNLIN.	(8) PROVID			TIME OLO	<u> </u>	5511	
(3	•	YSTEM. REFER TO HOOD		•		ING TYPE			_		LAYS FOR		(11) PROVIDE HANDLE-TIE TO SHUT		ı
		STEM INTERLOCK DIAGRAM.			RATING I		AND A.I.U.						RIC CIRCUITS SIMULTANEOUSLY		J
	I II CL OIC				I CALING II	TI ANLL.				NG CONTR			THE SHOOTS SHOULTAINEOUSET		

						PANI	EL "LB	"					
	MOUNTING RECESSED NEMA 3R NO FEED THRU NO LOCATION	DO	UBLE LUG 200% I/G BUS	NO	Volts: Phases: Wires:	: <u>208Y/120</u> : <u>3</u>						MAIN MLO BUS 200 A.I.C. 18,000 FED FROM	
C I R C S S S S S S S S S S S S S S S S S S	DESCRIPTION	TRIP AMPS	POLES	A	В	С	A	В	С	POLES	TRIP AMPS	DESCRIPTION	LOADS
L 1 PRIVA	TE DINNING 102 LIGHT	20A	1	50			300			1	20A	EXTERIOR ROPE LIGHT	2 L
L 3 ENTRY	/ 101 LIGHT	20A	1		200			300		1	20A	EXTERIOR FAN	4 L
L 5 BAR 1	03 LIGHT	20A	1			200			360	1	20A	TELEPHONE BORAD	6 R
L 7 DINNIN	NG 104 LIGHT	20A	1	1000						1	20A	SPARE	8
L 9 DINNIN	NG 104 LIGHT	20A	1		70			360		1	20A	TV OUTLET	10 R
L 11 DINNIN	NG 104 LIGHT/VESTIBULE	20A	1			1000			360	1	20A	TV/USB OUTLET	12 R
L 13 MEN'S	/WOMEN'S RESTROOM 105/106 LIGHT	20A	1	400			360			11	20A	TV/GENERAL OUTLET	14 R
L 15 KITCH	EN 107 LIGHT	20A	1		400			360		11	20A	HOSTESS OUTLET	16 R
L 17 EMER	GENCY LIGHT	20A	1			400			1080	1	20A	GENERAL OUTLET	18 R
L 19 EQUIP	MENT/STORAGE 201/202 LIGHT	20A	1	300			1200			1	20A	BUILDING SIGN	20 L
L 21 COVE	LIGHT	20A	1		50			1200		11	20A	BUILDING SIGN	22 L
23 SPARI		20A	1						300	1	20A	TRACK LIGHTS	24 L
R 25 CONV	IENENCE OUTLET	20A	1	720						1	20A	SPARE	26
R 27 CONV	IENENCE OUTLET	20A	1		720			180		1	20A	K60	28 R
R 29 CONV	IENENCE OUTLET	20A	11			720			180	1	20A	K62	30 R
R 31 CONV	IENENCE OUTLET	20A	1	900		J	276			1	20A	B1	32 R
R 33 CONV	IENENCE OUTLET	20A	1		900			336		1	20A	B12	34 R
R 35 HAND	DRYER OUTLET	20A	1			1500				1	20A	B17	36 R
R 37 HAND	DRYER OUTLET	20A	1	1500		4	360			11	20A	ROOF RECEPTACLE	38 R
R 39 RESTE	ROOM OUTLET	20A	1		360					11	20A	SPARE	40
41 SPARI	E	20A	1							1	20A	SPARE	42
			D DEMAND:	79	005	57	ØΒ 777 3 A	62	96 296 2 A		73%	PERCENT BALANCE	
	LOAD CLASSIFICATION	OTAL DEM	IAND AMPS: CONNE	CTED LO			MAND FAC		1	MATED DE	MAND	PANEL LOADS	
	CONTINUOUS LOAD =			0		5	125%			0	110 (110	1,442220,83	
	KITCHEN EQUIPMENT LOAD =			0			100%			0		TOTAL CONN. LOAD (VA):	18902
	LIGHTING LOAD =			7370			125%			9213		TOTAL EST. DEMAND (VA):	19979
	MOTOR LOAD =			0			100%			0		TOTAL CONN. (AMPS):	52
	NON-CONTINUOUS LOAD =			0			100%			0		TOTAL EST. DEMAND (AMPS):	55
	PANEL LOAD =	, ,		0			100%			0			
	RECEPTACLE LOAD =			11532			93%			10766			
NEL SCHED	ULE NOTES:	, ,		. 1002								<u> </u>	
	E LOCK-ON DEVICE.		(4)	PROVIDE	GFCI TYP	E DEVICE		(7) PROV	DE "HACR'	TYPE CIR	CUIT BREA	AKE(9) EXISTING BREAKER	
$\stackrel{\smile}{=}$	E LOCK-OFF DEVICE.		\simeq	PROVIDE				\sim	IVAC EQUIF			(10) CIRCUIT MADE AVAILABLE TH	HROUGH
\simeq	BREAKER CONTROLLED BY		$\stackrel{\smile}{\sim}$	PROVIDE				_	DE PHOTO		TIME CLO	<u> </u>	
$\overline{}$	YSTEM. REFER TO HOOD					AND A.I.C.	,	$\overline{}$	K WITH RE			(11) PROVIDE HANDLE-TIE TO SH	HUT DOWN
	STEM INTERLOCK DIAGRAM.			RATING IN				LIGHIT	NG CONTF		R TO EXTE	ERIC CIRCUITS SIMULTANEOUSLY	

							PAN	EL "H'	•							
		MOUNTING RECESSE NEMA 3R NO FEED THRU NO LOCATION	ED DOI	JBLE LUG 200% I/G BUS	NO	Volts: Phases: Wires:	_	<u>/</u>					MAIN MLO BUS 400 A.I.C. 65,000 FED FROM			
: ;		C R C DESCRIPTION	TRIP AMPS	POLES	A	В	С	A	В	С	POLES	TRIP AMPS	DESCRIPTION		R C	L COA DES
		1 SPARE	20A	1							1	20A		SPARE	2	
1	\perp	3 SPARE	20A	1							1	20A		SPARE	4	
1	4	5 SPARE	20A	1							1	20A		SPARE	6	
	-	7 SPARE	20A	1							1	20A		SPARE	8	
	-	9 SPARE	20A	1				<u> </u>		-	1	20A		SPARE	10	\rightarrow
1	_	11 SPARE	20A	1							1	20A		SPARE SPARE		\rightarrow
1	_	13 SPARE	20A	1							1	20A		SPARE		\rightarrow
1	-	15 SPARE 17 SPARE	20A 20A	1							1	20A 20A		00.00	18	\rightarrow
1	-	19 SPARE	20A 20A	1							1	20A 20A		SPARE		\rightarrow
-	\dashv	21 SPARE	20A	1							1	20A		SPARE		\rightarrow
)	-+	23 SPARE	20A	1							1	20A		SPARE		\rightarrow
1		25 HP-60A	20A	3	4157			4157			3	20A		HP-60B		мĈ
) ,	_	27 -				4157			4157		3	-			28	
)	и	29 -	-	-			4157			4157		-			30	
)	и	31 RTU-1	70A	3	16073			16703			3	70A		RTU-2	32	м (
) 1	и	33 -				16073			16703					-	34	м 🤇
1	и	35 -					16073	ļ		16073	-				36	м
1	_	37 SPARE	20A	1							1	20A		SPARE		_{
1	-	39 SPARE	20A	1							1	20A		SPARE		->
_		41 SPARE	20A	1				<u> </u>		<u> </u>	1	20A	1	SPARE	42	
			TOTAL LOAD			213	· ·	213	Ø 445 161	583		99%	PERCENT BALANCE			
		LOAD CLASSIFICATION	TOTAL DEM		CTED LO		1	MAND FAC			IMATED DE	MAND	PANEL LOADS			
		CONTINUOUS LOAD	= C	00,1112	0			125%	, , , ,		0		17,1,122,237,333			
		KITCHEN EQUIPMENT LOAD			0			100%			0		TOTAL CONN. LOAD (VA):	1476	57	
		LIGHTING LOAD			0			125%			0		TOTAL EST. DEMAND (VA):	1600	27	
		MOTOR LOAD	= M	1	47657			100%			160027		TOTAL CONN. (AMPS):	178	3	
		NON-CONTINUOUS LOAD	= N		0			100%			0		TOTAL EST. DEMAND (AMPS):	19:	2	
		PANEL LOAD	= p		0			100%			0					
		RECEPTACLE LOAD	= R		0			100%			0					
_	_	L SCHEDULE NOTES:		_					$\widehat{}$							
- 7	=	PROVIDE LOCK-ON DEVICE.		\simeq			E DEVICE.		_			CUIT BRE	AKE 9 EXISTING BREAKER			
- 3	=	PROVIDE LOCK-OFF DEVICE.		=			RCUIT BRE		_	VAC EQUI			① CIRCUIT MADE AVAILABLE TH	HROUGH	1	
(_	CIRCUIT BREAKER CONTROLLED BY		_		A NEW B			_		OCELL AND		_			
		ANSUL SYSTEM, REFER TO HOOD					AND A.I.C.				LAYS FOR		11) PROVIDE HANDLE-TIE TO SH		ΝN	
		FIRE SYSTEM INTERLOCK DIAGRAM.			RATING IN	N PANEL.				NG CONT			ERIC CIRCUITS SIMULTANEOUSLY			

						PANE	EL "LC								
	MOUNTING SURFACE NEMA 3R NO FEED THRU NO LOCATION	DO	UBLE LUG 200% I/G BUS	NO	Volts: Phases: Wires:		<u>′</u>					MAIN MLO BUS 100 A.C. 65,000 FED FROM			
LOADS	DESCRIPTION	TRIP AMPS	POLES	A	В	C	Α	В	С	POLES	TRIP AMPS	DESCRIPTION	C I R C	L 0 A D	Z O T E S
K 1	K24	20A	1	1200			667			1	20A	WATER HEATER K58	2	N	\bigcirc
K 3	K26	20A	1		1248			4000		1	20A	PATIO HEATER	4	R	\subseteq
K 5	K27	20A	1						4000	1	20A	PATIO HEATER	6	R	\bigcirc
	K28	20A	1	500			4000			1	20A	PATIO HEATER	8	-	\bigcirc
	SPARE	20A	1				-	4000		1	20A	PATIO HEATER		R	\geq
	SPARE	20A	1						4000	1	20A	PATIO HEATER PATIO HEATER		R	\succeq
1 1	SPARE	20A	1				4000			1	20A	SPARE		R	\geq
 	SPARE	20A	1							1	20A	SPARE	16	-	\succeq
	SPARE	20A	1	204			550			1	20A	FC-1	18	+	\succeq
M 19 M 21	MUA-3	20A	3	901	901		552	552		3	20A	-		M	\succeq
M 23		-			301	901		332	552	_	*			М	\succeq
	SPARE	20A	1			301	791		332	3	20A	FC-2		M	\succeq
	SPARE	20A	1				/31	791			- -	_		M	\succeq
	SPARE	20A	1					701	791	_	<u>-</u>	_		М	\succeq
 	SPARE	20A	1				506			1	20A	FC-3		M	Ŏ
\vdash	SPARE	20A	1							1	20A	SPARE	34		Ŏ
35	SPARE	20A	1							1	20A	SPARE	36		Č
37	SPARE	20A	1							1	20A	SPARE	38		\subset
39	SPARE	20A	1							1	20A	SPARE	40		\subseteq
41	SPARE	20A	1							1	20A	SPARE	42	:	\subseteq
	т		D DEMAND: IAND AMPS:	10	ØA 1669 D A	91 76	34	Ø 81 68	36		76%	PERCENT BALANCE			
	LOAD CLASSIFICATION	TAL DEN		CTED LO			VAND FAC		т	MATED DE	MAND	PANEL LOADS			
	CONTINUOUS LOAD =	- c		0			125%			0					
	KITCHEN EQUIPMENT LOAD =			2948			80%			2358		TOTAL CONN. LOAD (VA):	34853		
	LIGHTING LOAD =	= L		0			125%			0		TOTAL EST. DEMAND (VA):	27939		
	MOTOR LOAD =	- м		7238			100%			7914		TOTAL CONN. (AMPS):	97		
	NON-CONTINUOUS LOAD =	N		667			100%			667		TOTAL EST. DEMAND (AMPS):	78		
	PANEL LOAD =			0			100%			0					
	RECEPTACLE LOAD =	R		24000			71%			17000					
	CHEDULE NOTES:		_					<u> </u>							
\simeq	OVIDE LOCK-ON DEVICE.		\simeq			E DEVICE.		_			CUIT BREA	KE 9 EXISTING BREAKER			
	OVIDE LOCK-OFF DEVICE.		\simeq			RCUIT BRE	AKER.	_	VAC EQUIF		TH. 477 C: -	10 CIRCUIT MADE AVAILABLE TH	IROUGH		
-	RCUIT BREAKER CONTROLLED BY		(6)		A NEW BI			_				CK DEMOLITION			
	SUL SYSTEM. REFER TO HOOD RE SYSTEM INTERLOCK DIAGRAM.			RATING I	TING TYPE N PANEL.	AND A.I.C.		LIGHITN	NG CONTR	LAYS FOR OL. REFE OL DIAGR	R TO EXTE	(11) PROVIDE HANDLE-TIE TO SH ERIC CIRCUITS SIMULTANEOUSLY		١	

LIGHTING CONTROL DIAGRAM.

GENERAL PANEL SCHEDULE NOTES:

- WHERE PANEL IS INDICATED TO INCLUDE FEED THRU LUGS, PROVIDE FEED THROUGH LUGS AT THE TOP/BOTTOM OF THE PANELBOARD FOR FEEDERS TO ANOTHER PANEL.
- WHERE PANEL IS INDICATED TO INCLUDE DOUBLE LUGS, PROVIDE A DOUBLE LUG KIT AT THE TOP/BOTTOM OF THE PANELBOARD FOR FEEDERS TO ANOTHER PANEL.
- 3. WHERE PANEL IS INDICATED TO INCLUDE 200% NEUTRAL, PROVIDE PANELBOARDS UL LISTED AS HAVING NEUTRAL BUSSES RATED TO CARRY 200 PERCENT OF THE CURRENT CARRYING CAPACITY OF THE PHASE BUSSING.
- 4. WHERE PANEL IS INDICATED TO INCLUDE AN I/G BUS, PROVIDE PANELBOARDS WITH AN ISOLATED GROUND BUS, DRILLED AND TAPPED FOR NUMBER OF ISOLATED GROUND CONDUCTORS SHOWN, AS WELL AS FOR ALL SPARES AND SPACES SHOWN ON THE PANELBOARD.
- 5. WHERE PANEL CIRCUIT BREAKER RATING IS SHOWN AS SERIES RATED, PROVIDE CIRCUIT BREAKERS IN PANELBOARD WHICH ARE SERIES RATED WITH THE UPSTREAM SYSTEM FOR THE AVAILABLE FAULT CURRENT. THE PANELBOARD SHALL BE MARKED WITH THE SERIES CONNECTED RATINGS, AS WELL AS ALL MARKING AS REQUIRED BY
- CONNECTED RATINGS, AS WELL AS ALL MARKING AS REQUIRED BY THE NEC, 240-83(C).

 6. WHERE PANEL IS INDICATED AS RECESSED OR FLUSH MOUNTED, PROVIDE SPARE CONDUITS STUBBED UP INTO THE ACCESSIBLE CEILING SPACE. PROVIDE ONE (1) 3/4" CONDUIT ONLY FOR EACH
- THREE (3) SPARES OR SPACES, MINIMUM OF TWO (2). EACH CONDUIT SHALL BE TAGGED, CAPPED AND MARKED FOR FUTURE USE.
- 7. COORDINATE WITH APPLICABLE TRADE TO INSURE RECESSED MOUNTED PANELBOARDS WILL SEAT FLUSH IN THE WALLS PROVIDED.
- ALL CIRCUIT BREAKERS USED AS SWITCHES SHALL BE UL LISTED AND LABELED "SWD" FOR SWITCHING DUTY.

 9. ALL CIRCUIT BREAKERS USED TO SERVE MECHANICAL OR HEATING EQUIPMENT SHALL BE UL LISTED AND LABELED "HACR" FOR USE WITH
- EQUIPMENT SHALL BE UL LISTED AND LABELED "HACR" FOR USE WITH THESE LOADS, WHERE REQUIRED.
- 10. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE, BREAKERS IN LOAD CENTERS FOR DWELLING UNITS CAN BE PLUG IN TYPE.
 11.
- PROVIDE SHOP DRAWING SUBMITTAL PER THE ELECTRICAL SPECIFICATION SUBMITTAL REQUIREMENTS FOR EACH PANEL DEPICTING CONFORMANCE WITH THE ABOVE NOTES AND SCHEDULES.

ARCHITECTURE

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Issue Date:
9/24/2018
Revisions:
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PRINCIPAL IN CHARGE: WE

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PROJECT MANAGER:

STAFF
Project Address:

THE 908

LBX - LONG BEACH
EXCHANGE

EXCHANGE
3850 WORSHAM
BOULEVARD
SUITE 410, BUILING R-4
Project Number:

Sheet Title:

ELECTRICAL

PANEL

SCHEDULES

E109

		EQUIP	MENT SCHEDULE															
Abbreviations,	KEC: Kitchen Equipment Company; OSV: Owner Selec	cted Vendor; GC: General Contractor					[ELE	CTF	RICA	AL S	CHEDULE		PLU	MBI	NG	SCHE	DULE
tem No Qty	Equipment Category	Manufacturer	Model Number	Equipment Remarks	Supplied By	Installed By	Volts	Phase	Amps Direct	Plug	NEMA Electrical	Elec Remarks	Cold Water Size (in) Water	AFF (in) Hot Water Size (in)	Direct Drain	Indir Drain	Gas Size (in) Gas AFF (in)	ຸດ Plumbing B Remarks
< 1 1	Coffee/Tea Brewer Combo	Bunn-o-matic	ITCB-DV HV		OSV	GC	120	1	5	χ 5-	15P 48	Verify Requirements	0.5 48					
K3 1	Beverage Dispenser, Drop-in Stainlees Counter	Coke	ICD 2300	Include Ice Scoop Holder	KEC	OSV	120	1 2	20	X 5-	15P 16	Verify Requirements	0.5 18			Х		Drains to FS7
(5 1	Water Filtration System	Bunn	45800.0001	Airpot Not Included	KEC	GC	120	1 (60	X 5-	15P 48					Χ		Drains to FS7
9 2	Heat Lamp	Eagle Group	RHHL-120-208H	Install with Item K8	KEC	GC	208	1										
1 1Lo	Screen POS Monitor	Verify With Owner	Verify With Owner	Verify Location With Owner	OSV	GC	120	1	10	X 5-	15P 48	1						
2 1Lo	POS Printer	Verify With Owner	Verify With Owner	Verify Location With Owner	OSV	GC	115	1 6	5.0	X 5-	15P 48							
4 1	Ice Cuber w/ Bin	Manitowoc Ice	IDT1900W-970	Include 2 SW4 San Jamar Ice Tote S16000	KEC	GC	208	1 2	3.4 X		84	Cat5E Control Wire from Condenser				Х		Drains to FS7
8 1	Dish Machine (Ventless)	CMA	CMA-180-VL	Supply with Atmospheric Vacuum Breaker	KEC	GC	240	3 !	55 X		16		12	0.75		Х		Drains to FS7
4 1	Air Curtain	Mars Air System	LPV2361E	12" Flashing Suggested	KEC	GC	120	1 1	0	X 5-1	15P 84+							
6 2	Prep Table w/ Draws	Turbo Air	TPR-67SD-D4		KEC	GC	115	1 10).4	X 5-1	15P 12							
1	Prep Table w/ Draws	Turbo Air	TPR-44SD-D4		KEC	GC	115	1 10).4	X 5-1	15P 12							
1	Exhaust Hood	Captive-Aire	CUSTOM	See Hood Drawings	KEC	GC					AB'	V Power Routed Through 28C						
D 1	Exhaust and Make-up Air Fan	Captive-Aire	CUSTOM	See Hood Drawings	KEC	GC					AB'	V Power Routed Through 28C						Drains to FS7
) 1	Stacked Convection Oven	Alto Shaam	2-ASC-4G/STK		KEC	GC	120	1 7	.5	X 5-1	15P 8 & 3	39				Х	0.50 16 & 47	50 Supply with 48" Quick Disconnect Gas Hose; Drains To F
1	Heavy Duty Oven	Montague	V136S	18 High Back Panel	KEC	GC	120	1 4	.4	X 5-1	15P 6						1.25 29.5	45 Supply with 48" Quick Disconnect Gas Hose
1	Salamander Broiler	Vulcan	36SB	Wall Mounted Brackets Req'd	KEC	GC											0.75 60	66 Supply with 48" Quick Disconnect Gas Hose
1	6 Burner Counter Top Range	Electrolux Prof.	169103-ACG36	EMPower - 4 pins to fix top to Chef Base	KEC	GC											0.75 8	28 Supply with 48" Quick Disconnect Gas Hose
1	Refrigerated Chefs Base	Montague	RB-96-SC	Self Contained	KEC	GC	115	1 8	.4	X 5-1	15P 8.5	i						
1	Heavy Duty Griddle	Montague	DG2448-SAT	Automatic Pilot Re-Light	KEC	GC	120	1 0	.5	X 5-1	15P 36						0.75 28	17.5 Supply with 48" Quick Disconnect Gas Hose
1	Infrared Broiler with Plancha Top	Montague	C36SHBPL	3/4" Thick Plancha Plate	KEC	GC											0.75 28	24.6 Supply with 48" Quick Disconnect Gas Hose
1	Evolution Elite Gas Fryer	Henny Penny	EEG-143	Oil Dispensing Jug	KEC	GC	120	1 12	2.2	X 5-1	15P 8						1.0 8	225K Supply with 48" Quick Disconnect Gas Hose
1	Work Top Freezer with Draws	Turbo AIR	TWF-48SD-D4		KEC	GC	115	1 8	.3	X 5-1	15P 12							
1	Refigerated, Walk-in Cooler	Custom	Custom		KEC	GC						See WI-1 drawings				Х		Drains to FS7
1	Condenser Remote, Air-Cooled	Custom	Custom		KEC	GC	115	1 2	2.9 X		AB\	V See WI-1 drawings						
1	Evaporator Coil, Cooler	Custom	Custom		KEC	GC	208-230	1 9	0.8 X		AB\	V See WI-1 drawings						
1	Refrigerator, Walk-In Freezer	Custom	Custom		KEC	GC										X		Drains to FS7
1	Condenser Remote, Air-Cooled	Custom	Keg Stacker		KEC	GC												
1	Evaporator Coil, Cooler	Custom	Varies, Epoxy Green FF-G	6 Tier Evenly Spaced	KEC	GC												
1	Water Heater	AO Smith or Equal	BTH150	Install a 6" Curb	GC	GC						Verify Requirements						Verify Requirements
1	Soda System w/ Bulk CO2 Tank	Coke or Equal	CUSTOM		OSV	osv	120	1	7	X	84	Verify Requirements	0.5 84			Х		Drains to FSxxx
1	H20 Filter	Eversoft or Equal	CUSTOM		OSV	OSV						Verify Requirements	0.5 84					Drains to FSxxx
2 1	Bag N Box	Coke or Equal	CUSTOM	14"W x 46.6"H x 10"D	OSV	osv												Verify Requirements

			E	QUIPMENTS	CHEDULE	- B A	A R									
Item No	Qty Equipment Category	Manufacturer	Model Number	Equipment Remarks	Supplied By Installed By	Volts	Phase	Amps Direct		Electrical AFF (in)	Elec Remarks	Cold Water Size (in) Water AFF (in) Hot Water Size (in)	Direct Drain Indir Drain	Gas Size (in)	· := <u>.</u> s	
B1	1 Under Counter Refrigerator	Perlick	HC24FS	rtemante	KEC GC	115	1	2.3	(5-15P	6-5/8						
B11	1 Glasswasher	EcoLab	OMEGA 5E		KEC GC	115	1	16		21			Х			
B12	1 2 Door / Dual -Zone Wine Reserve Refrigertor	Perlick	HC48WW w/ Glass Doors		KEC GC	115	1	2.8	(5-15P	12						
B15	1 Direct Draw Wine Dispenser	Micro Matic	MDD58		KEC GC	115	1	6.5	(5-15P	12			Х			
B17	1 Beer System	Perlick	4006-20B		KEC GC								X			
B19	2 POS System / Printer / Cash Draw	Verify with Owner	Verify with Owner		KEC GC	120	1	10	X 5-15P	48						



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