ELECTRICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED. V2.00

STANDARD MOUNTING HEIGHTS

*REFER TO ARCHITECTURAL DRAWINGS FOR LIGHT FIXTURE MOUNTING HEIGHTS

AUDIBLE APPLIANCES (CENTERLINE)	84"
ALARMS	48"
ANNUNCIATOR PANELS	48"
CONTROLS (TOP OF DEVICE)	48"
EXIT SIGNS (WALL MOUNTED)	80"
FIRE ALARM ANNUNCIATOR PANEL (DISPLAY)	60"
FIRE ALARM BELL (EXTERIOR)	120"
FIRE ALARM CONTROL PANEL/UNIT (DISPLAY)	60"
INTERCOM (AFEA ONLY)	36"
INTERCOMS (TOP OF DEVICE)	48"
PULL STATIONS (TOP OF DEVICE)	48"
PHOTOCELLS	144"
RECEPTACLES	16"
RECEPTACLES (EXTERIOR)	24"
RECEPTACLES (GARAGES)	24"
RECEPTACLES (POOLS)	27"
RECEPTACLES (ABOVE COUNTER)	40"
RECEPTACLES IN EQUIPMENT ROOMS	44"
REMOTE INDICATING LIGHT (EQUIPMENT ROOMS)	48"
REMOTE INDICATING LIGHT (FINISHED AREAS)	CEILING
SAFETY SWITCHES (TOP OF DEVICE)	48"
STARTERS (TOP OF DEVICE)	48"
SWITCHES	44"
TELEPHONE, DATA OUTLETS	SAME AS ADJACENT DEVICE, UNO
TELEPHONE TERMINAL BOARD (BOTTOM)	6"
TELEVISION OUTLETS	REFER TO ARCH DRAWINGS
VISIBLE APPLIANCES (CENTERLINE)	84"

USE THE DEFAULT MOUNTING HEIGHTS SHOWN ABOVE UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS OR ELSEWHERE. MOUNTING HEIGHTS LISTED ARE ABOVE FINISHED FLOOR (AFF) OR ABOVE FINISHED GRADE (AFG) TO BOTTOM OF OUTLET BOX. ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.

ABBREVIATIONS

AF	AMPERE FRAME SIZE	MCB	MAIN CIRCUIT BREAKER
AFC	ABOVE FINISHED CEILING	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	MIN	MINIMUM
AHJ	AUTHORITY HAVING JURISDICTION	MLO	MAIN LUGS ONLY
AHU	AIR HANDLING UNIT	MOCP	MAXIMUM OVERCURRENT PROTECTION
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED
AS	AMPERE SWITCH	N/A	NOT APPLICABLE
AT	AMPERE TRIP SETTING	NF	NON-FUSED
ATS	AUTOMATIC TRANSFER SWITCH	NL	NIGHT LIGHT (24HR ON)
AV	AUDIO VISUAL	NRTL	NATIONALLY RECOGNIZED TESTING LAB (CSA,ETL,NSF,UL)
BAS	BUILDING AUTOMATION SYSTEM	OS	OCCUPANCY SENSOR
BKR	BREAKER	P	POLE
C	CONDUIT	PART	PARTIAL CIRCUIT
CAT	CATEGORY	PH	PHASE
CATV	CABLE TELEVISION SYSTEM	Ø	PHASE
CCTV	CLOSED CIRCUIT TELEVISION	PNL	PANEL
CD	CANDELA	PNLBD	PANELBOARD
CKT	CIRCUIT	PROVIDE	FURNISH AND INSTALL
CODE	APPLICABLE CODE ADOPTED BY JURISDICTION	PT	POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER	QTY	QUANTITY
CTR	CENTER	RCPT	RECEPTACLE
CVD	CUMULATIVE VOLTAGE DROP	RELO	RELOCATE
DEMO	DEMOLITION	RLA	RUNNING LOAD AMPS
DPDT	DOUBLE-POLE, DOUBLE-THROW	RTU	ROOFTOP UNIT
DPST	DOUBLE-POLE, SINGLE-THROW	SCCR	SHORT-CIRCUIT CURRENT RATING
(E)	EXISTING	SD	SMOKE DUCT DETECTOR
EC	ELECTRICAL CONTRACTOR	SF	SQUARE FEET
EF	EXHAUST FAN	SPDT	SINGLE-POLE, DOUBLE-THROW
EM	EMERGENCY	SPST	SINGLE-POLE, SINGLE-THROW
EMS	ENERGY MANAGEMENT SYSTEM	ST	SHUNT TRIP
ETR	EXISTING TO REMAIN	SWBD	SWITCHBOARD
EWC	ELECTRIC WATER COOLER	SWGR	SWITCHGEAR
FAAP	FIRE ALARM ANNUNCIATOR PANEL	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FACP	FIRE ALARM CONTROL PANEL	TBD	TO BE DETERMINED
FCA	FAULT CURRENT AMPS AVAILABLE	TGB	TELECOMMUNICATIONS GROUND BUS BAR
FCU	FAN COIL UNIT	TL	TWISTLOCK
FF	FINISHED FLOOR	TMGB	TELECOMMUNICATIONS MAIN GROUND BUS BAR
FLA	FULL LOAD AMPS	TX	TRANSFORMER
FLR	FLOOR	TYP	TYPICAL
GC	GENERAL CONTRACTOR	U/F	UNDERFLOOR
GEC	GROUNDING ELECTRODE CONDUCTOR	U/G	UNDERGROUND
GES	GROUNDING ELECTRODE SYSTEM	U/S	UNDERSLAB
GFR	GROUND FAULT RELAY	UH	UNIT HEATER
G	GROUND	UNO	UNLESS NOTED OTHERWISE
IG	ISOLATED GROUND	UPS	UNINTERRUPTIBLE POWER SUPPLY
ISC	SHORT CIRCUIT CURRENT	VD	VOLTAGE DROP
JB/J-BOX	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVE
LF	LINEAR FEET	W	WIRE
LRA	LOCKED ROTOR AMPS	W/	WITH
LTG/LTS	LIGHTING/LIGHTS	WP	WEATHER PROOF
MAU	MAKE-UP AIR UNIT	WR	WEATHER RESISTANT
MAX	MAXIMUM	WT	WATERTIGHT
MCA	MINIMUM CIRCUIT AMPACITY	XP	EXPLOSION-PROOF

ANNOTATION

- MECHANICAL OR FIRE PROTECTION PLAN CALLOUT
- PLUMBING PLAN NOTE CALLOUT
- ELECTRICAL PLAN NOTE CALLOUT
- TECHNOLOGY PLAN CALLOUT
- PLUMBING EQUIPMENT DESIGNATION. (CONTRACTOR FURNISHED AND INSTALLED). REFER TO PLUMBING FIXTURE OR EQUIPMENT SCHEDULES
- EQUIPMENT DESIGNATION (OWNER FURNISHED, CONTRACTOR INSTALLED)
- CU — MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- CONNECTION POINT OF NEW WORK TO EXISTING
- 1 / E1 — DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- SECTION CUT DESIGNATION

CIRCUITING & WIRING

- 7 5 3 P1 OR P1-3,5,7 — HOMERUN TO PANELBOARD. INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO PANELBOARD SCHEDULES FOR BRANCH CIRCUIT CONDUCTOR SIZES.
- CONDUIT CONCEALED
- CONDUIT IN/UNDER FLOOR/GROUND CONSTRUCTION
- EXPOSED CONDUIT
- FLEXIBLE CONDUIT
- LOW VOLTAGE CABLE (NOT ROUTED IN CONDUIT)
- CONDUIT TURNING DOWN
- CONDUIT TURNING UP
- CONNECTION POINT OR EQUIPMENT TERMINATION
- EQUIPMENT TERMINATION

CONDUCTOR TICK MARK LEGEND

WHERE TICK MARKS ARE SHOWN, THE FOLLOWING SHALL GOVERN:

- SWITCHED HOT (PHASE) CONDUCTORS (SHOWN TRAILING NEUTRAL)
- NEUTRAL (GROUNDED) CONDUCTOR
- UNSWITCHED HOT (PHASE) CONDUCTORS (SHOWN LEADING NEUTRAL)
- NOTE: HASH MARKS INDICATE QUANTITY OF CONDUCTORS
- EQUIPMENT GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION OR BARE)
- ISOLATED GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION WITH YELLOW TRACER)

BRANCH CIRCUIT CONDUCTOR TABLE

WHERE TICK MARKS ARE NOT SHOWN, THE FOLLOWING SHALL GOVERN:

# OF POLES	HOT (PHASE)*	NEUTRAL (GROUNDED)**	GROUNDING***
1P	(1)	(1) UNO	(1)
2P	(2)	(1) UNO	(1)
3P	(3)	(1) UNO	(1)

* PROVIDE ADDITIONAL CONDUCTORS THROUGH ENTIRE CIRCUIT (SWITCHED, UNSWITCHED/EM, ETC.) AS INDICATED THROUGHOUT CONSTRUCTION DOCUMENTS AND AS REQUIRED FOR A COMPLETE AND WORKING SYSTEM.
** REFER TO SPECIFICATIONS FOR LIMITATIONS ON SHARING NEUTRAL (GROUNDED) CONDUCTORS. DO NOT CIRCUIT AS A MULTI-WIRE BRANCH CIRCUIT, UNO.
*** PROVIDE ADDITIONAL ISOLATED GROUNDING CONDUCTORS WHERE INDICATED.

REFER TO SPECIFICATIONS, PLANS, NOTES, WIRING AND CONTROL DIAGRAMS FOR ADDITIONAL CIRCUITING REQUIREMENTS.

LINETYPE LEGEND

THROUGHOUT THE DRAWINGS DIFFERENT LINE-TYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC.

EXISTING — NEW
DEMOLISH — FUTURE

LIGHTING (REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFO)

- LIGHT FIXTURE
  - A = LIGHT FIXTURE TYPE "A"
  - ⊥ = WALL MOUNT
- EMERGENCY LIGHT FIXTURE WITH EMERGENCY LIGHTING BATTERY PACK OR CONNECTED TO EMERGENCY SOURCE
- LIGHTING TRACK WITH LIGHT FIXTURE TYPES AS INDICATED
- EXIT SIGN - CEILING / WALL MOUNTED, ARROWS AS INDICATED
- EMERGENCY BATTERY PACK LIGHT FIXTURE - CEILING/WALL MOUNTED

2

POWER EQUIPMENT & DEVICES

- ELECTRICAL SERVICE PANELBOARD (SURFACE OR FLUSH MOUNT)
- TERMINAL CABINET (SURFACE OR FLUSH MOUNT), TYPE AS NOTED
- PLYWOOD TERMINAL BOARD FOR TELEPHONE SYSTEM, UNO. SIZE AS NOTED
- ELECTRICAL DISTRIBUTION PANELBOARD
- SWITCHBOARD OR MOTOR CONTROL CENTER ON HOUSEKEEPING PAD
- TRANSFORMER
- MOTOR
- 200/3/150/3R — DISCONNECT SWITCH - "200/3/150/3R" DENOTES AMPERES/POLE/FUSE/NEMA RATING, NF= NON-FUSED, CB= CIRCUIT BREAKER (200/3/CB), NO VALUE (200/3/150) FOR NEMA MEANS STANDARD NEMA 1 RATING
- 30/3/15/1/3R — COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTER "30/3/15/1/3R" DENOTES AMPERES/POLE/FUSE/NEMA STARTER SIZE/NEMA ENCL RATING. NF= NON-FUSED, CB= CIRCUIT BREAKER (30/3/CB/1), NO VALUE (200/3/150/1) FOR NEMA ENCL RATING MEANS STANDARD NEMA 1 ENCL RATING
- MAGNETIC MOTOR STARTER, NEMA SIZE AS NOTED. 3-POLE, UNO
- 20A, 120V FRACTIONAL HORSEPOWER DISCONNECT
- MANUAL MOTOR STARTER DISCONNECT
- FRACTIONAL HORSEPOWER MANUAL CONTROLLER
- INTEGRAL HORSEPOWER MANUAL CONTROLLER
- VFD — VARIABLE FREQUENCY DRIVE
- R — RELAY OR CONTACTOR (IN SCHEMATICS)
- C P — MAGNETIC CONTACTOR, SIZE, COIL VOLTAGE AND NUMBER OF POLES AS INDICATED (BLANK = LTG CONTACTOR, P = POWER CONTACTOR)
- TS — TIME SWITCH
- PC — PHOTOCELL
- INDICATING LIGHT
- PUSH BUTTON
- STOP-START PUSH BUTTON CONTROL STATION
- HAND-OFF-AUTO PUSH BUTTON CONTROL STATION
- MUSHROOM-TYPE PUSH BUTTON
- OVERHEAD PADDLE FAN

LIGHTING CONTROL, WIRING DEVICES & BOXES

- $ — SINGLE POLE WALL SWITCH (NO LETTER DESIGNATION)
- $³ — SWITCH LETTER DESIGNATIONS AS FOLLOWS:
  - 2 = TWO POLE
  - 3 = THREE-WAY
  - 4 = FOUR-WAY
  - D = DIMMER
  - F = FAN SPEED CONTROL
  - K = KEYED
  - LV = LOW VOLTAGE
  - OS = OCCUPANCY SENSOR
  - P = SPST PILOT LIGHT
  - VS = VACANCY SENSOR
  - WP = WEATHER PROOF
- ALC — AUTOMATIC LOAD CONTROL RELAY
- BTS — BRANCH CIRCUIT TRANSFER SWITCH
- SIMPLEX RECEPTACLE - NEMA 5-20R, UNO
- DUPLEX RECEPTACLE - NEMA 5-20R, UNO
- DOUBLE DUPLEX RECEPTACLE - NEMA 5-20R, UNO
- SPECIAL RECEPTACLE - NEMA TYPE AS NOTED
- TWIST-LOCK TYPE RECEPTACLE
- OR GFCI — GFCI TYPE RECEPTACLE*
- ISOLATED GROUND TYPE RECEPTACLE*
- OR EM — EMERGENCY RECEPTACLE*
- RECEPTACLE INSTALLED ABOVE COUNTER OR BACKSPLASH*
- RECEPTACLE INSTALLED IN CEILING*
- RECEPTACLE INSTALLED IN FLOOR*
- RECEPTACLE INSTALLED VIA DROP CORD*
- WR/WP — RECEPTACLE LETTER DESIGNATIONS AS FOLLOWS:
  - C = CONTROLLED
  - CH = CLOCK HANGER TYPE
  - D = DEMOLISHED
  - E/ETR/EX = EXISTING
  - EM = EMERGENCY POWER
  - H = HORIZONTALLY MOUNTED
  - IG = ISOLATED GROUND
  - R = RELOCATED
  - S = SWITCHED
  - TR = TAMPER RESISTANT
  - TV = TELEVISION
  - USB = USB/DUPLEX
  - WP = WEATHER PROOF COVER
  - WR = WEATHER RESISTANT
- MULTI-OUTLET ASSEMBLY
- DATA OUTLET
- VOICE OUTLET
  - ABOVE COUNTER, TYP
  - WALL, TYP
  - FLOOR, TYP
- A — MULTI-SERVICE POWER POLE WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
- A — MULTI-SERVICE FLOOR BOX WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
- A — POKE THROUGH, A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
- THERMOSTAT
- J — JUNCTION BOX/OUTLET BOX
- G — BLANK FACE GFCI FEED THROUGH DEVICE

*SYMBOL DEMONSTRATED WITH DUPLEX RECEPTACLE, WHEN USED IN COMBINATION WITH OTHER DEVICES MEANING IS SIMILAR FOR THOSE DEVICE TYPES.

REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL DEVICE SYMBOLS AND DEFINITIONS SPECIFIC TO THIS PROJECT.

SIGNALING

- B — SIGNALING BELL
- B — SIGNALING BUZZER
- T — LV TRANSFORMER

ELECTRICAL ONE-LINE & RISER DIAGRAM

- SWITCH (RATING AS INDICATED)]
- DRAWOUT CIRCUIT BREAKER (RATINGS AS INDICATED)
- FUSED SWITCH (RATING, POLES AND FUSE TYPE AS INDICATED)
- COMBINATION FUSED SWITCH/STARTER AND STARTER SIZE
- CIRCUIT BREAKER (RATINGS AS INDICATED)
- COMBINATION CIRCUIT BREAKER/STARTER AND STARTER SIZE
- PANELBOARD (REFER TO SCHEDULES)
- PANELBOARD (REFER TO SCHEDULES) MULTI-SECTION
- ISOLATED POWER PANELBOARD W/ INTEGRAL TRANSFORMER (REFER TO SCHEDULES)
- TX?? — TRANSFORMER (TYPE AND RATINGS AS INDICATED)
- TX?? — SHIELDED TRANSFORMER (TYPE AND RATINGS AS INDICATED)
- ATS? — AUTOMATIC TRANSFER SWITCH (RATINGS AS INDICATED)
- ATS? (W/BYPASS) — AUTOMATIC TRANSFER SWITCH WITH BYPASS (RATINGS AS INDICATED)
- ??KW GENERATOR — GENERATOR (RATINGS AS INDICATED)
  - NON-SEPARATELY DERIVED SOURCE OR SEPARATELY DERIVED SOURCE
- MDP SWITCHBOARD ELEC ROOM ??? AMPS 480Y/277V 3Ø 4W — SWITCHGEAR, SWITCHBOARD AND/OR DISTRIBUTION PANELBOARD (TYPE, RATING, DEVICES AND ACCESSORIES AS INDICATED)
- DIGITAL VM AM — COMBINATION DIGITAL VOLT METER/AMMETER
- ### — CIRCUIT IDENTIFICATION (REFER TO CIRCUIT SCHEDULE)
- GFR — GROUND FAULT RELAY
- PFR — PHASE FAILURE RELAY
- KK3 — KIRK-KEY INTERLOCK
- ST — SHUNT TRIP
- AM — AMMETER (RANGE AS SPECIFIED OR REQUIRED)
- VM — VOLTMETER (RANGE AS SPECIFIED OR REQUIRED)
- UTILITY METER M — UTILITY METER (AS REQUIRED BY UTILITY)
- AS — AMMETER SWITCH
- VS — VOLTMETER SWITCH
- WH D 15 — WATT-HOUR METER, "D" DENOTES DEMAND REGISTER, "15" DENOTES MINUTES OF DEMAND INTERVAL
- CURRENT TRANSFORMER RATING AS SPECIFIED OR REQUIRED
- POTENTIAL TRANSFORMER RATING AS SPECIFIED OR REQUIRED
- SPD — SURGE-PROTECTIVE DEVICE
- GROUND CONNECTION
- GROUND CONNECTION WITH TEST WELL
- GROUND ROD
- LIGHTNING ARRESTER
- CAPACITOR
- = ≠ — CONTACT (OPEN OR CLOSED)
- HEATER
- HP — MOTOR
- ## — BLOCK LOAD KW OR KVA
- ×F# — FAULT POINT REFERENCED IN SHORT CIRCUIT CURRENT AND VOLTAGE DROP SPREADSHEET

LOW VOLTAGE CABLING MATRIX

LOW VOLTAGE SYSTEM	SYMBOLS		CABLE TYPE	CABLE PATH	SPECIAL NOTES
DATA/VOICE/AUDIO/TV	DATA (SOLID TRIANGLE)	▼	CAT 5E - WHITE	FLOOR LOCATION TO TELCO ROOM	ALL WIRES NEED TO BE CLEARLY LABELED AT BOTH ENDS ACCORDING TO THE PRINT. EX: D1, D2 ETC.
	VOICE (HOLLOW TRIANGLE)	▽	CAT 5E - GRAY	FLOOR LOCATION TO TELCO ROOM	ALL WIRES NEED TO BE CLEARLY LABELED AT BOTH ENDS ACCORDING TO THE PRINT. EX: V1, V2, ETC.
	SPEAKERS (S CIRCLE)	S	18G 4C SPEAKER WIRE	FLOOR LOCATION TO TELCO ROOM	DO NOT RUN AUDIO LOOP WITH VOICE/DATA BUNDLES. LABEL ON BOTH ENDS
	PAGE/SPEAKERS (PS CIRCLE)	PS	18G 4C SPEAKER WIRE	FLOOR LOCATION TO TELCO ROOM	DO NOT RUN AUDIO LOOP WITH VOICE/DATA BUNDLES. LABEL ON BOTH ENDS
	TV'S/DIGITAL SIGNAGE (CT DIAMOND)	CT	CAT 5E	FLOOR LOCATION TO TELCO ROOM	ALL WIRE NEED TO BE CLEARLY MARKED AT BOTH ENDS ACCORDING TO THE PRINT
	TRAFFIC COUNTER (SOLID TRIANGLE)	▼	CAT 5E -WHITE	FLOOR LOCATION TO TELCO ROOM	ALL WIRE NEED TO BE CLEARLY MARKED AT BOTH ENDS ACCORDING TO THE PRINT EX: D1, D2 ETC.
	AUDIO SPEAKERS (A CIRCLE)	A	3 CONDUCTOR XLR CABLE	SEE NOTES BELOW	
BURGLAR ALARM	DOOR CONTACTS (DC SQUARE)	DC	22G 2C	FLOOR LOCATION TO BURGLAR ALARM PANEL	REFER TO GUITAR CENTER BURGLAR ALARM VENDOR DRAWINGS FOR DEVICE LOCATIONS.
	MOTION DETECTORS (M SQAURE)	M OR M_W	18G 4C	FLOOR LOCATION TO BURGLAR ALARM PANEL	"W" INDICATES WALL MOUNT MOTION DETECTOR. REFER TO DETAILS 7-11 ON SHEET E2.1 FOR ROUGH-I
	KEYPAD (KP SQAURE)	KP	18G 4C	FLOOR LOCATION TO BURGLAR ALARM PANEL	LABEL ALL CABLES ON BOTH ENDS WITH THE DEVICE SERVED. USE MAKSING TAPE. DO NOT
	GLASS BREAK (G SQAURE)	G	18G 4C	FLOOR LOCATION TO BURGLAR ALARM PANEL	WRITE ON CABLE JACKET.
	INTERIOR ALARM SIREN (BA SQUARE)	BA	22G 2C	FLOOR LOCATION TO BURGLAR ALARM PANEL	
CCTV	NVR (NVR RECTANGLE)	NVR			REFER TO GUITAR CENTER BURGLAR ALARM VENDOR DRAWINGS FOR DEVICE LOCATIONS.
	CAMERA (CA CIRCLE)	CA	CAT 5E	FLOOR LOCATION TO NVR	PROVIDE 20' OF CABLE COILED UP AND TIED OFF TO BUILDING STEEL AT EACH CAMERA LOCATION,
	VIDEO MONITORS (MTR RECTANGLE)	MTR	CAT 5E	FLOOR LOCATION TO NVR	EXCEPT FOR LESSON ROOMS. PROVIDE 5' OF COILED CABLE AT EACH LESSON ROOM.

AUDIO SPEAKERS (A CIRCLE) NOTES:
- PA/LIVE ROOM XLR CABLE INSTALLATION
- THE PA/LIVE ROOM WILL REQUIRE 2 XLR CABLE RUNS PER SINGLE GANG BOX. LEAVE 3' SLACK IN THE BOX AND NUMBER ALL CABLES ON BOTH ENDS.
- HOME RUN ALL PA/LIVE ROOM XLR CABLE THROUGH THE 6" CONDUIT ABOVE THE CEILING BEHIND THE MAIN TRUSS AND LEAVE 15' COILED SLACK AT THE BOTTOM OF THE CONDUIT.
- PA/LIVE ROOM XLR CABLE WILL BE SOLDERED TO SINGLE GANG FACEPLATES HOUSING 2 - XLR MALE PLUGS. FOLLOW THE TERMINATION EXAMPLE.

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
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1750003949

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

Guitar Center

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER DAVID D. HAAKE E 16137 ELECTRICAL STATE OF CALIFORNIA

Mar 28 2018

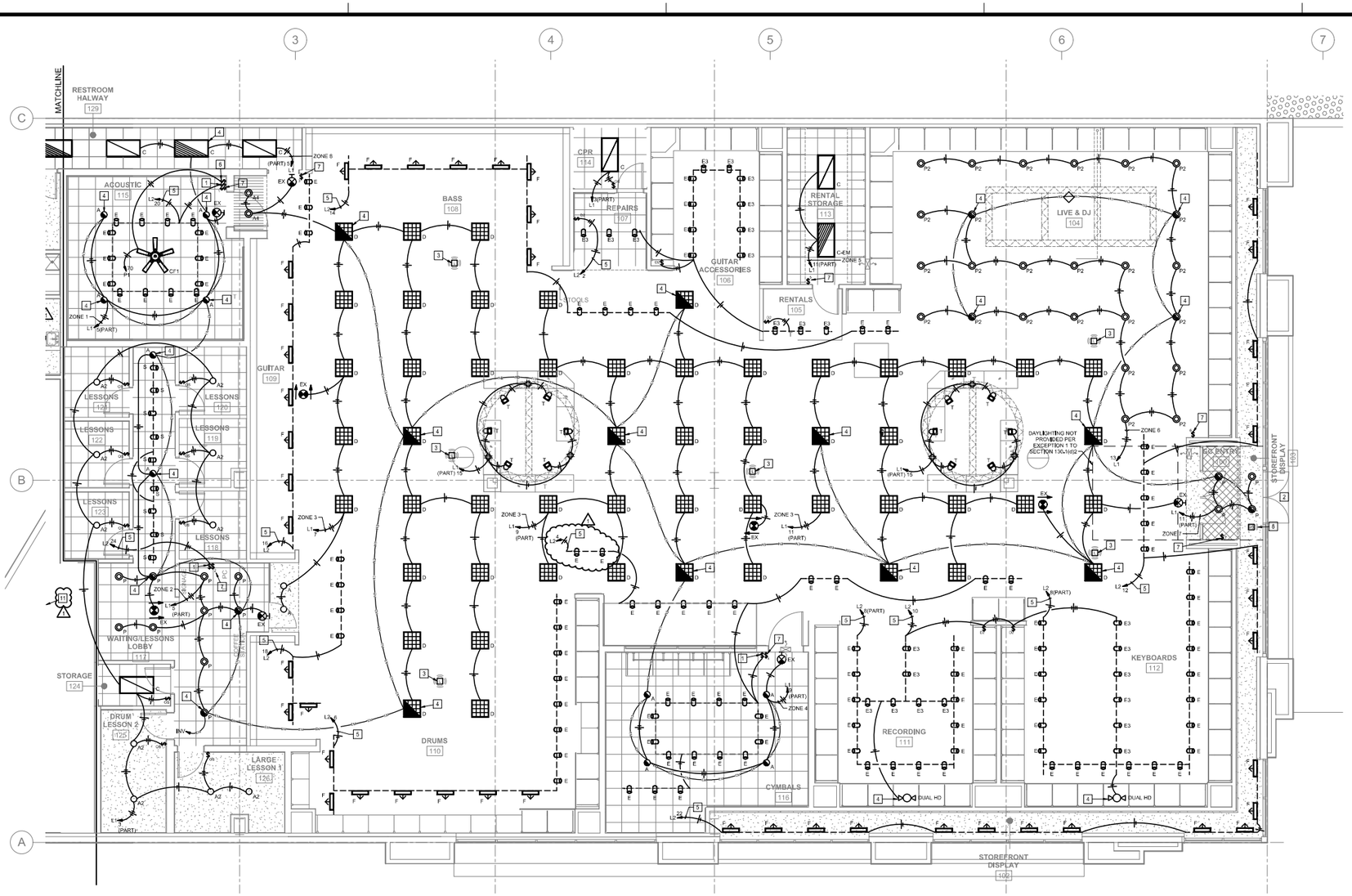
REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
ELECTRICAL SYMBOLS AND LEGEND

SHEET NO:
E0.0

J:\Lenexa\Programs\F-J\Guitar Center\Guitar Center - Monterey Park CA\001\Elec\1750003949 Guitar Center\1750003949E00.dwg, Plot, 3/28/2018 1:39:02 PM, MarkAnderson, 1:1
DAVID D. HAAKE



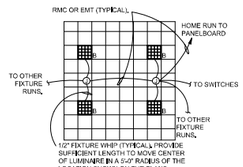
1 LIGHTING FLOOR PLAN
SCALE: 3/16"=1'-0"

LIGHTING GENERAL NOTES:

1. REFERENCE ARCHITECTURAL REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION.
2. INSTALL ALL LIGHT FIXTURES AND LAMPS FURNISHED BY GUITAR CENTER VENDOR.
3. ALL ROOMS DESIGNATED TO HAVE BLACK CEILINGS SHALL HAVE BLACK TRACK AND BLACK LIGHT FIXTURES. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS.
4. LIGHT FIXTURES DESIGNATED "-EM" AND LOCATED IN OTHER THAN D.J. LIVE AND OFFICE AREAS (INCLUDING OFFICES, BREAK ROOM, RESTROOMS AND TELE/DATA AND ELECTRICAL ROOMS) SHALL SERVE AS A NIGHT-LIGHT WITH AN UNSWITCHED HOT CONDUCTOR CONNECTED. ALL FIXTURES LOCATED IN OFFICE AREAS SHALL BE SWITCHED AS INDICATED ON PLAN.
5. PROVIDE A SEPARATE CODE SIZED GREEN EQUIPMENT GROUND CONDUCTOR IN ALL CONDUITS AND RACEWAYS CONTAINING LINE VOLTAGE CIRCUITS.
6. REFER TO SHEET E5.0 FOR LIGHTING CONTACTOR INFORMATION AND SHEET E5.1 FOR PANELBOARD SCHEDULES. COORDINATE EXACT REQUIREMENTS AND OPERATION WITH EQUIPMENT MANUFACTURERS.
7. REFER TO SHEET E1.0 FOR LIGHTING FIXTURE SCHEDULE.
8. ALL LIGHT FIXTURE TYPES H3, H4, AND S SHALL BE INSTALLED ON THE UNDERSIDE OF SHELVING EXCEPT IN THE GUITAR CENTER STUDIO HALLWAY.
9. REFER TO DETAIL 2/SHEET 1.0A FOR TYPICAL LUMINAIRE WIRING FOR RECESSED LUMINAIRES IN SUSPENDED CEILINGS.

☐ LIGHTING PLAN NOTES:

1. SWITCH FOR LOCAL OVERRIDE OFF CONTROL OF FIXTURES IN THIS ROOM.
2. ALL FIXTURES OUTSIDE GUITAR CENTER'S LEASE SPACE WILL BE BY LANDLORD UNLESS NOTED OTHERWISE, INCLUDING ALL NORMAL AND EMERGENCY EGRESS LIGHTING REQUIRED PER APPLICABLE BUILDING CODE.
3. INSTALL OCCUPANCY SENSOR FURNISHED BY LIGHTSTAT.
4. PROVIDE UNSWITCHED HOT CONDUCTOR FOR EMERGENCY LIGHT FIXTURES ON SAME CIRCUIT FEEDING LIGHTS TO BYPASS THE LIGHTING CONTROL CONTACTOR PANEL OR CONTACTOR.
5. CIRCUIT THOUGH CURRENT LIMITING PANEL "CL" AND LIGHTSTAT CONTACTOR PANEL. REFER TO CURRENT LIMITER SCHEDULE ON SHEET E1.0B.
6. PROVIDE VARIABLE FAN SPEED CONTROLLER FOR CONTROL OF CEILING FAN.
7. LIGHTSTAT DIMMING SYSTEM SWITCHES FOR USE WITH LIGHTSTAT DIMMING PANEL "LD", REFER TO SHEET E5.1.
8. INSTALL INTERIOR LIGHT SENSOR FURNISHED BY LIGHTSTAT, REFER TO SHEET E5.1.



2 STANDARD LUMINAIRE WIRING
NO SCALE

HENDERSON ENGINEERS
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JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ ASSOCIATES
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MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER
DAVID D. HAAKE
E 16137
ELECTRICAL
STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

LIGHTING FLOOR PLAN

SHEET NO:

E1.0A

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DAVID.D.HAAKE

LIGHT FIXTURE SCHEDULE

SYMBOL	TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS NO.	LAMPS TYPE	LAMPS VOLT	FIXTURE WATTS	FIXTURE VA	DESCRIPTION	FINISH
○	A	CONTECH	MR6LIC-430K-12D2/CRM6321L2SL-CLR-BL	-	LED, 3000K	120	16	18	6" RECESSED IC RATED LED DOWNLIGHT W/ CUSTOM BLACK TRIM, 0-10V DIM	BLACK
○	A2	CONTECH	MR6LIC-530K-12D2/CRM6321L2SL-CLR-BL	-	LED, 3000K	120	29	31	6" RECESSED IC RATED LED DOWNLIGHT W/ CUSTOM BLACK TRIM, 0-10V DIM	BLACK
○	A3	CONTECH	R6NC-530K-12D/CRM6321L2SL-CLR-BL	-	LED, 3000K	120	37	41	6" RECESSED IC RATED LED DOWNLIGHT W/ CUSTOM BLACK TRIM, 0-10V DIM	BLACK
○	A3-EM	CONTECH	R6NC-530K-12D-ER/CRM6321L2SL-CLR-BL	-	LED, 3000K	120	37	41	SAME AS TYPE "A3" EXCEPT WITH EMERGENCY DRIVER	BLACK
○	A4	MAXILUME	HS8PL-1X26-E-MVOLT	1	CF26TTE	UNV	29	31	8" RECESSED SHALLOW COMPACT FLUORESCENT DOWNLIGHT W/ CUSTOM BLACK TRIM	BLACK
▭	C	MOBERN	RG24-LED48DMV30	-	LED, 3000K	UNV	48	53	2'X4 PRISMATIC ACRYLIC LENS LED TROFFER, 0-10V DIM	WHITE
◩	C-EM	MOBERN	RG24-LED48DMV30EM	-	LED, 3000K	UNV	48	53	SAME AS TYPE "C" EXCEPT WITH EMERGENCY DRIVER	WHITE
◩	C2-EM	MOBERN	RG24-LED48DMV30EM-DRYWALL KIT	-	LED, 3000K	UNV	48	53	SAME AS TYPE "C2" EXCEPT WITH EMERGENCY DRIVER	WHITE
✱	CF1 ***	PER ARCH.	PER ARCHITECTURAL DRAWINGS	-	-	120	-	-	52" CEILING FAN	BY ARCH
▦	D	MOBERN	SRG22-LED45DMVFR35BK	-	LED, 3000K	UNV	40	43	2'X2 SURFACE MOUNT PRISMATIC ACRYLIC LENS LED TROFFER, 0-10V DIM	BLACK
	E	CONTECH	CTL2230B-13WLBL	1	410126 / 12W PAR 30S LED 3K 22D	120	12	15	TRACK HEAD ROUNDBACK	BLACK
	E2	SOLAIS	XI20-25-30K-900-BL-J-BL	-	LED, 3000K	120	13	14	LED TRACK HEAD	BLACK
	F	CONTECH	CTL182V3D-B	-	LED, 3000K	120	41	45	LED WALL WASH TRACK HEAD	BLACK
— —	TRACK	LIGHTOLIER	ADVENT LYTESPAN - LENGTH PER PLANS	N/A	-	UNV	-	-	COMMERCIAL GRADE 1 CIRCUIT TRACK SYSTEM & ACCESSORIES	BLACK
	TRK END	CONTECH	LA-10A	-	-	-	-	-	REVERSE POLARITY ACCESSORY. PROVIDE AS REQUIRED.	BLACK
	G	MOBERN	LDA96-LED60RFDMV-WH-35K	-	LED, 3500K	UNV	82	92	8' LED STRIP, 0-10V DIM	WHITE
	G4	MOBERN	LDA48-LED30RFDMV-WH-35K	-	LED, 3500K	UNV	41	46	4' LED STRIP, 0-10V DIM	WHITE
	H3	CONTECH	LPL1-33-30K-P	-	LED, 3000K	120	10	12	3' LED STRIP UNDER SHELF. PROVIDE CONNECTING CABLE TO JOIN FIXTURES END-TO-END	WHITE
	J	NOVA FLEX	60 SERIES 24V LED RIBBON	-	LED, 6500K	120	1.4/LF	2/LF	REFER TO PLANS FOR REQUIRED HARD WIRED POWER SUPPLIES.	-
	J2	NOVA FLEX	RGB SERIES 12V LED RIBBON WITH RGB CONTROLLER AND REMOTE	-	LED, RGB	120	4.3/LF	5/LF	REFER TO PLANS FOR REQUIRED HARD WIRED POWER SUPPLIES.	-
○	P	CONTECH	MR6LIC-530K-12D2/CRM6321L2SL-CLR-BL	-	LED, 3000K	120	29	31	6" RECESSED IC RATED LED DOWNLIGHT W/ CUSTOM BLACK TRIM, 0-10V DIM	BLACK
○	P2	RAB	SK-9-R-YN-W	-	LED, 3500K	120	9	10	5" DIAMETER SURFACE MOUNT DOWNLIGHT. MOUNT TO BLACK UNISTRUT.	WHITE
	S	CONTECH	CTL116TB-10WLBL / LF16SL	1	414789 / 10W MR16 LED 3K NFL	120	10	13	TRACK HEAD ROUNDBACK.	BLACK
	T	CONTECH	CTL5038B-174WLBL / BD40-B / LA118RP-B	1	410183 / 17W PAR38 LED 3K NFL	120	17	20	TRUSS MOUNTED SPOT LIGHT**	BLACK
	EX	LITHONIA	EXRLEDELM6	-	RED LED	UNV	2	4	UNIVERSAL EXIT WALL/CEILING MTD.	WHITE
	DUAL HD	LITHONIA	ELM2-LED-BM12	-	LED	UNV	-	-	DUAL HEAD EMERGENCY	BLACK

1. VERIFY ALL INFORMATION IN FIXTURE SCHEDULE WITH GUITAR CENTER. LIGHT FIXTURES TO BE FURNISHED BY GUITAR CENTER'S VENDOR AND INSTALLED BY CONTRACTOR.
2. ALL AUTOMATIC LIGHTING CONTROL DEVICES AND APPLICABLE FLUORESCENT LUMINAIRES (INCLUDING LAMPS AND BALLASTS) SHALL BE CERTIFIED TO THE CALIFORNIA ENERGY COMMISION AND SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL, (TITLE 20, 24) AND ANY OTHER STATE AND LOCAL REQUIREMENTS. ADDITIONALLY, ALL LIGHT FIXTURES, EXIT SIGNS AND LIGHTING CONTROLS AND SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE CALIFORNIA APPLIANCE EFFICIENCY REGULATIONS.
3. THE LIGHT FIXTURES WATTAGE VALUES LISTED ABOVE ARE THE TOTAL INPUT WATTS PER LIGHT FIXTURE INCLUDING ALL LOSSES AND BALLAST FACTORS AND WHEN AVAILABLE IS TAKEN FROM THE LATEST EDITION OF THE CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL, (APPENDIX NA8 - ILLUMINANCE CATEGORIES AND LUMINAIRE POWER).

**PROVIDE MANUFACTURER LABEL STATING THAT THE SPECIFIED LAMP WATTAGE IS THE MAXIMUM ALLOWED WATTAGE OF THE FIXTURE.
*** CEILING FAN SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

Lightstat Current Limiter 'CL'

Panel Name: CL
Location: ELECTRICAL
No. Limiters: 16
Panel Product No.

CL	Circuit	Load Controlled	Limiter Wattage	Limiter Amperage
1	L2-2	GEN TRACK NORTH	600	5
2	L2-4	DISPLAY TRACK SOUTH	600	5
3	L2-6	DRUMS TRACK	720	6
4	L2-8	KYBD & REC DISP TRACK	720	6
5	L2-10	KYBD & REC GEN TRACK	480	4
6	L2-12	ENTRY, SHOW TRACK	720	6
7	L2-14	BASS TRACK	720	6
8	L2-16	GUITAR WALL TRACK	600	5
9	L2-18	USED TRACK	360	3
10	L2-20	ACOUSTIC GTRS TRACK	600	5
11	L2-22	SHOW TRACK	840	7
12	L2-1	KEYBOARDS CSWK TRACK	840	7
13	L2-3	RECORDING CSWK TRACK	840	7
14	L2-5	CYMBALS CSWK TRACK	360	3
15	L2-24	STUDIO CORRIDOR	360	3
16		SPARE	0	0

LIGHTING CONTROL DEVICE SCHEDULE

OCCUPANCY SENSORS

SYMBOL TYPE	MANUFACTURER MODEL/SERIES	EQUIVALENT MANUFACTURER	DEVICE DESCRIPTION	COVERAGE (W X D)	ON MODE	TIME DELAY	VOLTAGE	NOTES
^{OS}	WATTSTOPPER PW-100	COOPER HUBBELL LEVITON SENSORSWITCH	WALL MOUNT PASSIVE INFRARED OCCUPANCY SENSOR. SINGLE RELAY. INTEGRAL MANUAL OVERRIDE SWITCH. LINE VOLTAGE.	MAJOR 30' x 35' MINOR 15' x 20'	MANUAL	15 MIN	120/277V	
DS	WATTSTOPPER DT-300	COOPER HUBBELL LEVITON SENSORSWITCH	CEILING MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR. 360 DEGREE COVERAGE. LOW VOLTAGE. ISOLATED RELAY.	PIR MAJOR 44' Ø PIR MINOR 25' Ø ULT MAJOR 40' x 40' ULT MINOR 30' x 30'	AUTO	20 MIN	24V	
L	LIGHTSTAT		SENSOR FURNISHED BY LIGHTSTAT.					

AUXILIARY DEVICES

SYMBOL TYPE	MANUFACTURER MODEL/SERIES	EQUIVALENT MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
P	WATTSTOPPER BZ-150	COOPER HUBBELL LEVITON SENSORSWITCH	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSORS WITH 20A LOAD RELAY AND INTEGRAL TRANSFORMER. MANUAL- AND AUTO-ON MODES. HOLD-ON AND HOLD-OFF INPUTS.	120/277V	

WALL DIMMING SWITCHES

SYMBOL TYPE	MANUFACTURER MODEL/SERIES	EQUIVALENT MANUFACTURER	DEVICE DESCRIPTION	LOAD TYPE	WATTAGE	VOLTAGE	NOTES
^{D}	LUTRON DIVA	LEVITON LEGRAND	0-10V DIMMING SWITCH CAPABLE OF DIMMING LED LOADS. POWER PACK MAY BE REQUIRED, DEPENDING ON MANUFACTURER AND LOAD CONTROLLED	LED FLR	960	120V	
^{D2}	LUTRON DIVA DV-600	LEVITON LEGRAND	INCADESCENT DIMMING SWITCH COMPATIBLE WITH FIXTURE "E3".	INC	600	120V	

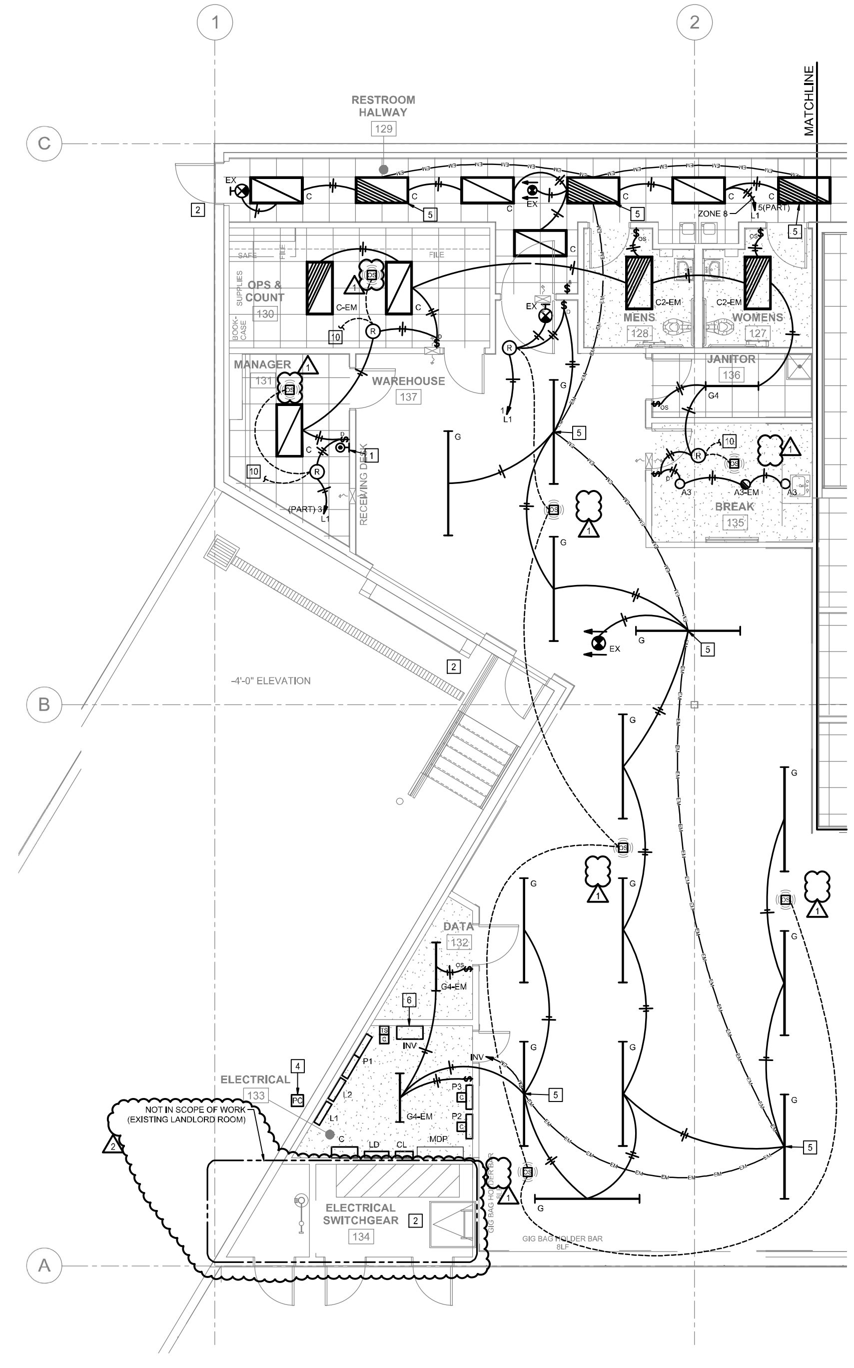
GENERAL NOTES:

A OCCUPANCY SENSOR LAYOUT BASED ON WATTSTOPPER COVERAGE PATTERNS. ADJUST QUANTITIES AND LOCATIONS FOR EQUIVALENT MANUFACTURERS LISTED BELOW PER MANUFACTURER-SPECIFIC SPACING CRITERIA.
B MANUFACTURERS CONSIDERED EQUIVALENT FOR SUBMISSION ARE LISTED IN 'EQUIVALENT MANUFACTURER' COLUMN IN SCHEDULE. DURING SUBMITTALS, PROVIDE PRODUCT CUTSHEETS AND SHOP DRAWINGS (AS FURTHER DEFINED IN GENERAL NOTES OF THIS SCHEDULE) FOR ENGINEER'S REVIEW.
C SHOP DRAWINGS FOR LIGHTING CONTROL DEVICES THAT ARE INTENDED FOR USE AS A LIGHTING CONTROL SYSTEM SHALL INCLUDE PROJECT SPECIFIC LIGHTING CONTROL SCHEMATICS AND SCHEDULES. ALSO, AT ENGINEER'S REQUEST, PROVIDE A SCALED EQUIPMENT PLAN FOR REVIEW OF EQUIPMENT LOCATIONS WITHIN PROJECT SPACE CONSTRAINTS
D OCCUPANCY SENSOR SHOP DRAWINGS SHALL INCLUDE LIGHTING PLANS SHOWING LOCATION, MOUNTING HEIGHT, ORIENTATION AND COVERAGE AREAS FOR EACH OCCUPANCY SENSOR. ALSO INCLUDE ON PLANS OTHER CEILING MOUNTED SYSTEMS, SHOWNG COORDINATION WITH CEILING DEVICES INCLUDING BUT NOT LIMITED TO HVAC SUPPLY AND RETURN GRILLES, SPRINKLERS, AND LIGHT FIXTURES.
E PROVIDE ALL OCCUPANCY SENSORS BY THE SAME MANUFACTURER.
F VERIFY COLOR(S) FOR ALL WALL AND CEILING MOUNTED LIGHTING CONTROL DEVICES WITH THE ARCHITECT.
G PROVIDE COPIES OF OPERATION INSTRUCTIONS FOR ALL DEVICES TO OWNER.
H ALL WALL SWITCH AND CEILING SENSORS SHALL HAVE AN ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO.
I DO NOT INSTALL LINE VOLTAGE SENSORS ON GFCI PROTECTED CIRCUITS.
J LIGHTING CONTROLS PRICING SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING. ANY LIGHTING CONTROLS PRICING THAT IS SUBMITTED WITH LIGHT FIXTURE PRICING (UNIT OR MINI-LOT) WILL BE IMMEDIATELY REJECTED IN ITS ENTIRETY.
K INSTALL WALL BOX DIMMERS TO ACHIEVE FULL RATING SPECIFIED AND INDICATED AFTER DE-RATING FOR GANGING AS INSTRUCTED BY MANUFACTURER.
L CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPATIBILITY OF ALL LIGHTING CONTROL DEVICES IN THIS SCHEDULE THAT ARE INTENDED TO OPERATE TOGETHER.
M PROVIDE A NEUTRAL CONDUCTOR TO ALL WALL BOX DIMMERS. DO NOT SHARE NEUTRAL CONDUCTOR ON LOAD SIDE OF DIMMER.

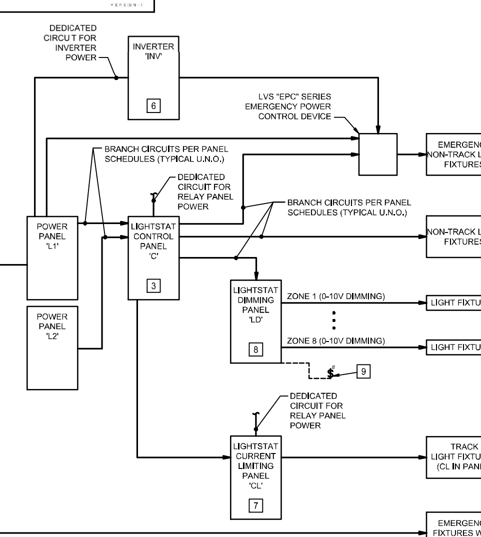
SCHEDULED NOTES:

1. REQUIRES A NEUTRAL CONDUCTOR FOR OPERATION.
2. FOR SELECTED DAYLIGHT SENSOR, CONFIRM FINAL LOCATION AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS. INCLUDE MANUFACTURER'S RECOMMENDED LOCATION WITH SUBMITTALS FOR REVIEW.
3. MOMENTARY SWITCH SHALL BE COMPATIBLE WITH ITS CONNECTED LIGHTING CONTROL DEVICE (I.E. OCCUPANCY SENSOR, RELAY PANEL, ETC.)
4. LIGHT LEVEL SETPOINT REPRESENTS AVERAGE MEASURED VALUE AT HORIZONTAL TASK PLANE WITHIN DAYLIT ZONE AND DOES NOT NECESSARILY REFLECT VALUE MEASURED AT THE SENSOR ITSELF. DURING STARTUP, COMMISSION DAYLIGHT SENSOR AND LIGHTING CONTROLLER TO ADJUST LIGHTS ON/OFF AND RAISE/LOWER TO SATISFY INDICATED SETPOINT.
5. SENSORSWITCH DOES NOT HAVE ULTRASONIC TECHNOLOGY SENSORS. THEREFORE, THEY MAY SUBMIT ALTERNATE TECHNOLOGY SENSORS THAT CAN MEET EQUIVALENT COVERAGE AND PERFORMANCE OF ULTRASONIC FOR REVIEW AND CONSIDERATION.

VERSION 1



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



2 LIGHTING CONTROL DIAGRAM
NO SCALE

LIGHTING GENERAL NOTES:

1. REFER TO SHEET E1.0A FOR LIGHTING GENERAL NOTES.

LIGHTING PLAN NOTES:

1. INSTALL PUSHBUTTON TO CONTROL LIGHTING CONTROL SYSTEM FURNISHED BY LIGHTSTAT.
2. ALL FIXTURES OUTSIDE GUITAR CENTER'S LEASE SPACE WILL BE BY LANDLORD UNLESS NOTED OTHERWISE, INCLUDING ALL NORMAL AND EMERGENCY EGRESS LIGHTING REQUIRED PER APPLICABLE BUILDING CODE.
3. INSTALL LIGHTING CONTROL CONTACTOR PANELS/ENCLOSURE FURNISHED BY LIGHTSTAT. REFER TO CONTACTOR SCHEDULE ON SHEET E5.0 AND MANUFACTURER'S DATA SHEETS FOR ADDITIONAL INFORMATION. INSTALL SECURITY ALARM INTERFACE FURNISHED BY LIGHTSTAT NEXT TO LIGHTING CONTROL PANEL.
4. INSTALL EXTERIOR PHOTOCELL FURNISHED BY LIGHTSTAT ABOVE ROOF LEVEL, FACING NORTH WITH UNOBSTRUCTED VIEW.
5. PROVIDE UNSWITCHED HOT CONDUCTOR FOR EMERGENCY LIGHT FIXTURES ON SAME CIRCUIT FEEDING LIGHTS TO BYPASS THE LIGHTING CONTROL CONTACTOR PANEL OR CONTACTOR.
6. LIGHTING INVERTER LVS MODEL #CEPS-2000-120. UL 924 LISTED. PROVIDE "EPC" EMERGENCY POWER CONTROLS AS REQUIRED FOR EMERGENCY FIXTURES.
7. INSTALL LIGHTSTAT CURRENT LIMITING PANEL FURNISHED BY GUITAR CENTER. REFER TO SHEET E5.0. PROVIDE PERMANENTLY INSTALLED LABEL THAT IS PROMINENTLY LOCATED STATING THE FOLLOWING: "NOTICE: THIS PANEL FOR TRACK LIGHTING ENERGY CODE COMPLIANCE ONLY. THE OVERCURRENT PROTECTION DEVICES IN THIS PANEL SHALL ONLY BE REPLACED WITH THE SAME OR LOWER AMPERAGE. NO OTHER OVERCURRENT PROTECTIVE DEVICE SHALL BE ADDED TO THIS PANEL. ADDING TO, OR REPLACEMENT OF EXISTING OVERCURRENT PROTECTIVE DEVICE(S) WITH HIGHER CONTINUOUS AMPERE RATING, WILL VOID THE PANEL LISTING AND REQUIRE RE-SUBMITTAL OF COMPLIANCE DOCUMENTATION TO THE ENFORCEMENT AGENCY RESPONSIBLE FOR COMPLIANCE WITH THE CALIFORNIA TITLE 24, PART 6 BUILDING EVERGY EFFICIENCY STANDARDS."
8. LIGHTSTAT DIMMING PANEL FURNISHED BY LIGHTSTAT. REFER TO MANUFACTURER DRAWINGS, DETAIL 2 SHEET E1.0B, AND SHEET E5.1 FOR COMPLETE WIRING DIAGRAM AND ALL SYSTEM COMPONENTS.
9. LIGHTSTAT DIMMING SYSTEM SWITCHES FOR USE WITH LIGHTSTAT DIMMING PANEL "LD". REFER TO SHEET E5.1.
10. PROVIDE LOW VOLTAGE WIRING TO ADDITIONAL POWER PACK FOR CONTROLLED RECEPTACLES ON SHEET E2.0B.
11. OCCUPANCY SENSOR AND POWER PACK PROVIDED BY DIVISION 26. REFER TO LIGHTING CONTROL DEVICE SCHEDULE ON E1.0B FOR SPECIFICATION.

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SHEET TITLE:
LIGHTING FLOOR PLAN

SHEET NO:
E1.0B

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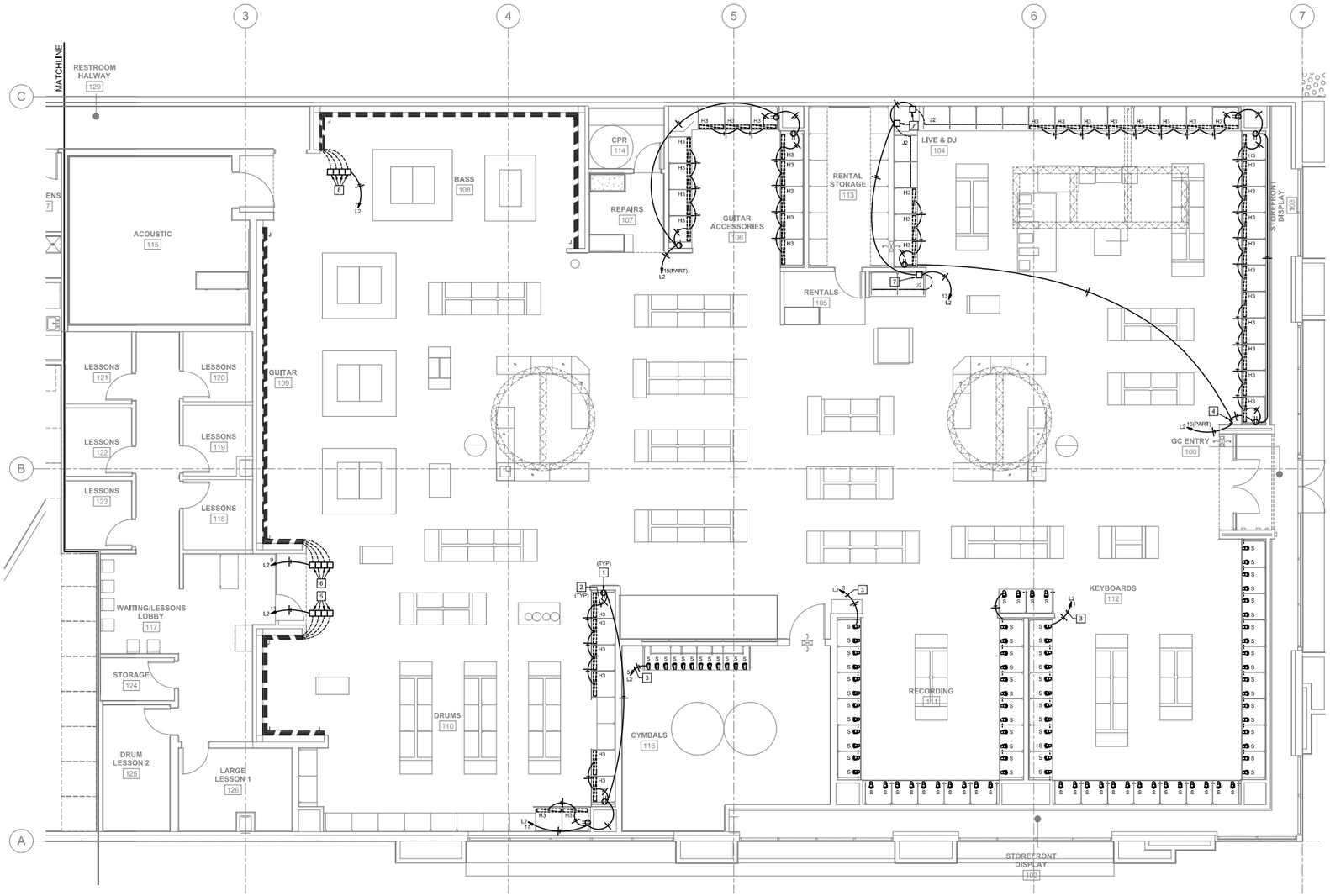
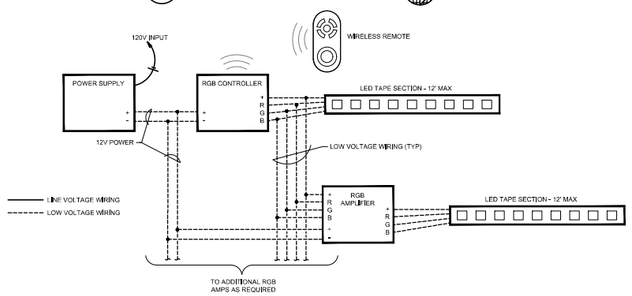
DAVID D. HAAKE



1 UNDER SHELVING LIGHTING PLAN
SCALE: 3/16"=1'-0"



1. POWER SUPPLY(S), RGB CONTROLLER(S), RGB AMPLIFIER(S), AND WIRELESS REMOTE FURNISHED BY GUITAR CENTER LIGHTING VENDOR AND INSTALLED BY DIVISION 16 CONTRACTOR. THIS DETAIL REPRESENTS GENERAL WIRING OF DEVICES FOR BASIS OF DESIGN. QUANTITY OF DEVICES DETERMINED BY LIGHTING VENDOR AND IS SUBJECT TO CHANGE PER PROJECT. REFER TO FINAL APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS FOR INSTALLATION.

2 TYPE "J2" LED TAPE WIRING DIAGRAM
NO SCALE

CASEWORK LIGHTING GENERAL NOTES:

1. REFER TO GENERAL NOTES ON SHEET E1.0A.

CASEWORK LIGHTING PLAN NOTES:

1. PROVIDE RECESSED CLOCK RECEPTACLE FOR CONNECTION TO LIGHT FIXTURES. MOUNT RECEPTACLES AT 2" BELOW SHELF ELEVATION. REFER TO ARCHITECTURAL ELEVATIONS FOR SHELF ELEVATIONS.
2. PROVIDE PLUG ON END OF CIRCUIT FOR POWER CONNECTION BETWEEN LIGHT FIXTURES AND RECEPTACLE.
3. CIRCUIT THROUGH CURRENT LIMITER "CL" AND LIGHTSTAT CONTRACTOR PANEL. REFER TO CURRENT LIMITER SCHEDULE ON SHEET E1.0B.
4. SWITCH FOR LOCAL OVERRIDE OFF CONTROL OF FIXTURES IN LIVE AND DJ.
5. INSTALL 60W POWER SUPPLIES FOR LED TAPE LIGHTING IN WALL DISPLAY. INCONSPICUOUSLY MOUNT DRIVERS AS HIGH AS POSSIBLE ON WALL AND ROUTE LOW VOLTAGE WIRING FROM POWER SUPPLY TO LED TAPE. EACH POWER SUPPLY SERVES ONE ROW OF LED TAPE, MAXIMUM 15'-0" LEAD LENGTH FROM POWER SUPPLY TO LED TAPE.
6. INSTALL 100W POWER SUPPLIES FOR LED TAPE LIGHTING IN WALL DISPLAY. INCONSPICUOUSLY MOUNT DRIVERS AS HIGH AS POSSIBLE ON WALL AND ROUTE LOW VOLTAGE WIRING FROM POWER SUPPLY TO LED TAPE. EACH POWER SUPPLY SERVES ONE ROW OF LED TAPE. MAXIMUM 15'-0" LEAD LENGTH FROM POWER SUPPLY TO LED TAPE.
7. INSTALL POWER SUPPLY, RGB CONTROLLER, AND AMPLIFIER(S) FOR LED TAPE LIGHTING. REFER TO DETAIL 2, THIS SHEET FOR WIRING DIAGRAM. COORDINATE DEVICE LOCATIONS WITH GUITAR CENTER PM.

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ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER
DAVID D. HAASE
E 16137
ELECTRICAL
STATE OF KANSAS

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

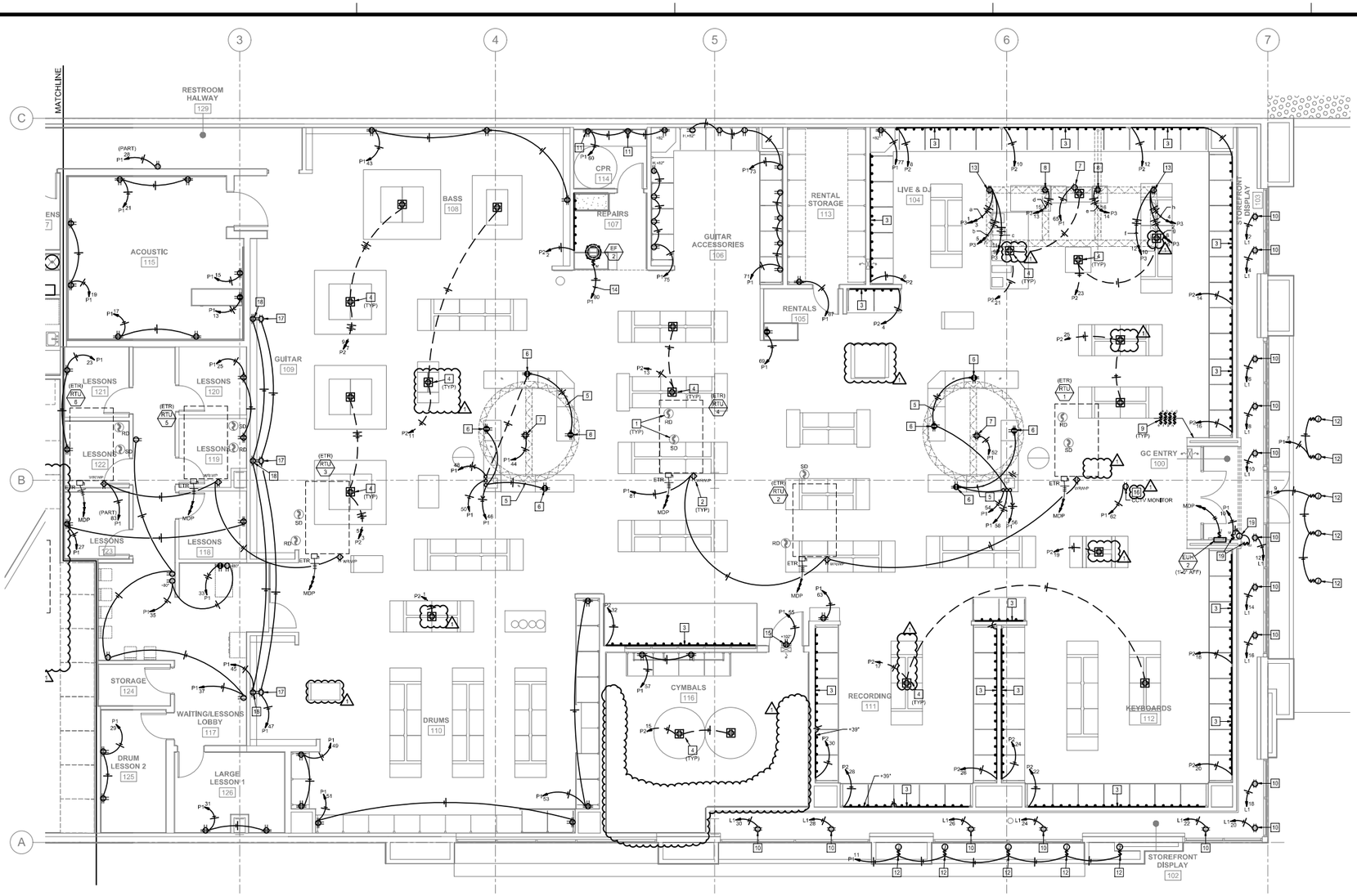
SHEET TITLE:

UNDER SHELVING LIGHTING PLAN

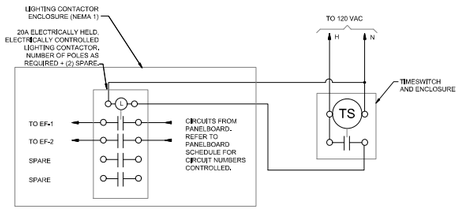
SHEET NO:

E1.1

J:\Revit\Projects_C-J\Guitar Center\135003486 Guitar Center - Monterey Park CA\001\Rec\135003486F11.dwg, Rec, 3/28/2018 1:39:48 PM, Ma4Anderson, 1:1
DAVID.D.HAASE



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



2 CONTACTOR DIAGRAM
NO SCALE

GENERAL POWER NOTES:

1. PRIOR TO SUBMITTING BID, THE CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR REVIEW OF THE GENERAL NOTES, SPECIFICATIONS AND ALL OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS.NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF ANY DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT 'AS-BUILT' CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CONTRACTOR SHALL CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
3. THERMOSTATS AND HUMIDISTATS WILL BE LOCATED, SET, AND WIRED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND BACKBOX. REFER TO MECHANICAL PLAN FOR EXACT LOCATIONS.
4. REFER TO SHEET E2.1 FOR LOW VOLTAGE ROUGH-IN. PROVIDE BACKBOXES AND CONDUITS AS REQUIRED FOR ALL LOW VOLTAGE SYSTEMS SHOWN ON SHEET E2.1 AND INDICATED IN THE THE LOW VOLTAGE MATRIX.
5. CONCEAL ALL POWER AND ALARM WIRING FOR EXIT DOORS IN DOOR FRAME.
6. PROVIDE SMOKE DETECTORS IN SUPPLY AND RETURN DUCTS OF MECHANICAL EQUIPMENT UNLESS EXISTING. PROVIDE REMOTE TEST STATION AND AUDIO VISUAL DEVICE WITH KEYED RESET UNLESS EXISTING. COORDINATE EXACT LOCATION WITH OWNERS REPRESENTATIVE.
7. REFER TO ARCHITECTURAL ELEVATIONS AND DEVICE LAYOUT FOR LIVE ROOM AND DJ ELECTRICAL REQUIREMENTS. VERIFY ALL MOUNTING HEIGHTS PRIOR TO ROUGH-IN.
8. PROVIDE A SEPARATE CODE SIZED GREEN EQUIPMENT GROUND CONDUCTOR IN ALL CONDUITS AND RACEWAYS CONTAINING LINE VOLTAGE CIRCUITS.
9. ALL RECEPTACLES ON THE WALLS WHERE WALL FIXTURING/PANELS ARE INSTALLED SHALL BE MOUNTED TO THE SURFACE OF THE WALL FIXTURE. PROVIDE 2x4" WHIP THROUGH THE WALL FIXTURING/PANELS FOR INSTALLATION OF RECEPTACLES AFTER WALL FIXTURING/PANELS HAVE BEEN INSTALLED. IT IS THE CONTRACTORS RESPONSIBILITY TO REVIEW THE FULL SET OF CONSTRUCTION DRAWINGS FOR PROPER COORDINATION.
10. ALL WALL RECEPTACLES, SWITCHES AND COVER PLATES ARE TO BE GRAY EXCEPT AS FOLLOWS: PROVIDE BLACK AT ALL PAINTED BLACK WALLS, BLACK SLAT, DARK GRAY PLATINUM WALLS AND BLACKENED METAL, PROVIDE IVORY AT ALL WOOD FINISH WALLS
11. PLUGMOLD TO BE V20GB612 AS MANUFACTURED BY WIREMOLD. RECEPTACLES TO BE 12" O.C. FINISH TO BE GRAY. KEYBOARDS PLUGMOLD RECEPTACLES TO BE 6" O.C.
12. ALL FLOOR DOUBLE DUPLEX RECEPTACLE COVERS TO BE NOTED PER CARPET/FLOOR FINISH:
    A. GRAY CARPET: ALUMINUM TRIM COVER
    B. BURGUNDY CARPET: ALUMINUM TRIM COVER
    C. BLACK CARPET: ALUMINUM TRIM COVER
    D. VINYL FLOORING: BRASS TRIM COVER.
13. ALL CEILING RECEPTACLES AND COVER PLATES SHALL BE BLACK.
14. PROVIDE ALL ROUGH-IN AS REQUIRED FOR FIRE ALARM SYSTEM. REFER TO FIRE ALARM DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
15. PRIOR TO ANY FLOOR PENETRATIONS, COORDINATE LOCATIONS WITH STRUCTURAL ENGINEER AND PROVIDE GROUND PENETRATING RADAR (GPR) TO CONFIRM PLACEMENT OF PENETRATION. REPORT ANY PROPOSED PENETRATION LOCATION REVISIONS TO GUITAR CENTER PROJECT MANAGER FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.
16. SALES FLOOR AREA IS OPEN TO STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS AND INSTALLING LIGHTING, SIGNALING AND POWER SHOWN ON ELECTRICAL SHEETS IN A NEAT AND ORDERLY FASHION. TIGHT TO UNDERSIDE OF DECK. FOR MOUNTING OF DEVICES IN AREAS OPEN TO STRUCTURE USE BLACK UNISTRUT AND STEEL ROD SYSTEMS FOR HANGING OF DEVICES AND EQUIPMENT.

POWER PLAN NOTES:

1. LOW VOLTAGE SMOKE DETECTORS POWERED BY FIRE ALARM CONTROL PANEL. REFER TO MECHANICAL SCHEDULES AND FIRE ALARM DRAWINGS.
2. CONNECT POWER TO FACTORY INSTALLED FIELD WIRED RECEPTACLE PROVIDED WITH MECHANICAL UNIT. REFER TO MECHANICAL SCHEDULES.
3. WIREMOLD #V24GB612, 120V, 20A, CUSTOM FINISH PLUGMOLD WITH RECEPTACLES SPACED 12" O.C. RECEPTACLES IN KEYBOARDS SHALL BE SPACED AT 6" O.C. PROVIDE MULTIPLE LENGTHS OF PLUGMOLD AS INDICATED, DO NOT MAKE CONTINUOUS, BREAK AT CORNERS. REFER TO ARCHITECTURAL DETAILS FOR ADDITIONAL INFORMATION. LOAD CALCULATED AT 180VA/6'-0" PER THE NEC.
4. INSTALL DOUBLE DUPLEX FLOOR RECEPTACLES FURNISHED BY GUITAR CENTER. HUBBELL SYSTEM ONE SERIES #CR8263CR WITH #SAGCCVRALU ALUMINUM COVER PLATE. COORDINATE FINAL LOCATION WITH OWNER'S FIELD REPRESENTATIVE PRIOR TO ROUGH-IN. WHEN A FLOOR BOX IS SERVED BY (2) CIRCUITS, ONE CIRCUIT SHALL SERVE ONE DUPLEX RECEPTACLE AND ONE CIRCUIT SHALL SERVE THE OTHER DUPLEX RECEPTACLE. FLOOR BOXES SHALL BE U.L. LISTED FOR SCRUB WATER EXCLUSION.
5. PROVIDE 1" FLEXIBLE METAL CONDUIT WHIP WITH CONDUCTORS TO POWER CONNECTION IN CASEWORK. VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
6. 120V, 20A DOUBLE DUPLEX RECEPTACLE MOUNTED IN CASEWORK. PROVIDE A SEPARATE ISOLATED GROUND FROM EACH DUPLEX RECEPTACLE BACK TO PANELBOARD.
7. RECEPTACLE FOR A/V EQUIPMENT.
8. DOUBLE DUPLEX RECEPTACLE MOUNTED IN JUNCTION BOX SUSPENDED FROM STRUCTURE AT 14'-0" AND FACING THE FLOOR FOR LIGHTING TRUSS.
9. PROVIDE SWITCH FOR CONTROL OF TRUSS RECEPTACLES. REFER TO NOTE 9, SHEET E2.0B FOR ADDITIONAL INFORMATION.
10. FLUSH MOUNTED CEILING RECEPTACLE FOR SHOW WINDOW. INSTALL WITHIN 18" OF TOP OF SHOW WINDOW.
11. PROVIDE RECEPTACLE FOR TECH BENCH. COORDINATE EXACT LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
12. PROVIDE JUNCTION BOX FOR CONNECTION OF BUILDING SIGNAGE. PROVIDE 20A1P, TOGGLE SWITCH WITH WATER PROOF COVER IN ACCESSIBLE LOCATION FOR SIGN DISCONNECTING MEANS. VERIFY EXACT LOCATION WITH GUITAR CENTER PROJECT MANAGER BEFORE ROUGH-IN. PROVIDE FINAL CONNECTION TO SIGN.
13. PROVIDE SOCAPEX 19-PIN FEMALE CONNECTORS IN JUNCTION BOX SUSPENDED FROM STRUCTURE AT 14'-0" AND FACING THE FLOOR IN LOCATIONS SHOWN. PENDANT MOUNT VIA RIGID CONDUIT AND UNISTRUT ATTACHED TO STRUCTURE. CONNECT ALL SIX CIRCUITS INDICATED TO EACH SOCAPEX OUTLET AS INDICATED. COORDINATE EXACT WIRING REQUIREMENTS WITH EQUIPMENT MANUFACTURER. REFER TO DETAIL 4, SHEET E2.1B.
14. ROUTE CIRCUIT THROUGH CONTACTOR AND TIMESWITCH C-1. REFER TO PANELBOARD SCHEDULES FOR ADDITIONAL INFORMATION. REFER TO DETAIL 2 ON SHEET E2.2A FOR ADDITIONAL INFORMATION.
15. MOUNT RECEPTACLE FOR TV 18" ABOVE CYMBALS ROOM DOOR. COORDINATE EXACT LOCATION WITH OWNER.
16. MOUNT RECEPTACLE FOR CCTV AT 13'-0" AFF.
17. MOUNT TOP OF HORIZONTAL DUPLEX RECEPTACLE AT 143" AFF FOR TV.
18. DOUBLE DUPLEX RECEPTACLE MOUNTED AT STANDARD MOUNTING HEIGHT, VERTICALLY ALIGNED WITH TV RECEPTACLE.
19. PROVIDE POWER CONNECTION AND SWITCH FOR COILING DOOR. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT MANUFACTURER.

HENDERSON ENGINEERS
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WWW.HENDERSONENGINEERS.COM
1750003949

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER
DAVID D. HAAKE
E 16137
ELECTRICAL
STATE OF CALIFORNIA
Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

POWER FLOOR PLAN

SHEET NO:

E2.0A

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DAVID D. HAAKE

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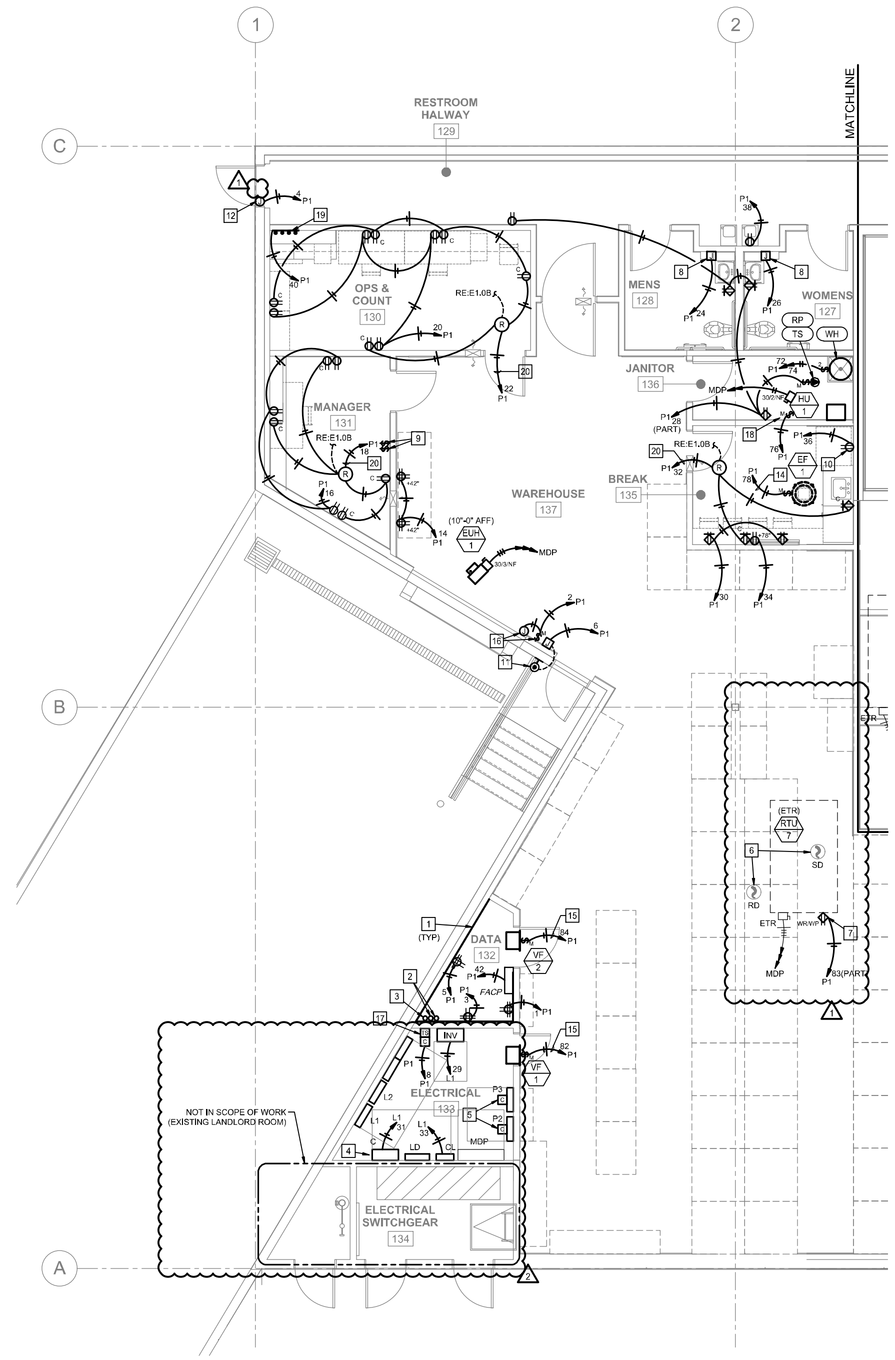
DAVID D. HAAKE

Voltage Drop Calculations

Panel	Circuit	Description	Length	Voltage	Phase	Load (VA/Ph)	Wire Size	% VD
L1	1	LTG-WAREHOUSE	90	120	1	1288	12	2.9
L1	2	RCPT-SHOW WINDOW A	235	120	1	1000	8	2.4
L1	3	LTG-BACK OF HOUSE	110	120	1	956	12	2.7
L1	4	RCPT-SHOW WINDOW B	230	120	1	1000	8	2.3
L1	5	LTG-RR CORR, LSNS LBY, ACST	125	120	1	948	12	3.0
L1	6	RCPT-SHOW WINDOW C	210	120	1	1100	8	2.3
L1	7	LTG-SALES (BASS, GTR, DRUM)	160	120	1	896	10	2.2
L1	8	RCPT-SHOW WINDOW D	205	120	1	1100	8	2.3
L1	9	LTG-SALES (GEN, CYMBALS)	180	120	1	1063	10	2.9
L1	10	RCPT-SHOW WINDOW E	200	120	1	1000	8	2.0
L1	11	LTG-SALES (GEN, RCRD, KYBD)	215	120	1	972	10	3.2
L1	12	RCPT-SHOW WINDOW F	185	120	1	1100	8	2.1
L1	13	LTG-LIVE/DJ	255	120	1	250	12	1.6
L1	14	RCPT-SHOW WINDOW G	180	120	1	1100	8	2.0
L1	16	RCPT-SHOW WINDOW H	175	120	1	1000	8	1.8
L1	18	RCPT-SHOW WINDOW I	180	120	1	1200	8	2.2
L1	20	RCPT-SHOW WINDOW J	175	120	1	1200	8	2.1
L1	22	RCPT-SHOW WINDOW K	170	120	1	1200	8	2.1
L1	24	RCPT-SHOW WINDOW L	150	120	1	1800	8	2.7
L1	26	RCPT-SHOW WINDOW M	145	120	1	1800	8	2.6
L1	28	RCPT-SHOW WINDOW N	130	120	1	1800	8	2.4
L1	29	PWR-INV	15	120	1	1241	12	0.5
L1	30	RCPT-SHOW WINDOW O	120	120	1	1800	8	2.2
L1	31	PWR-C	15	120	1	200	12	0.1
L1	33	PWR-CL	15	120	1	200	12	0.1
L2	1	LTG-KEYBOARDS CSWK TRACK	205	120	1	572	12	3.0
L2	2	LTG-GEN TRACK NORTH	195	120	1	300	12	1.5
L2	3	LTG-RECORDING CSWK TRACK	180	120	1	494	12	2.3
L2	4	LTG-DISPLAY TRACK SOUTH	185	120	1	360	12	1.7
L2	5	LTG-CYMBALS CSWK TRACK	140	120	1	156	12	0.6
L2	6	LTG-DRUMS TRACK	125	120	1	435	12	1.4
L2	7	LTG-BASS CSWK	150	120	1	400	12	1.5
L2	8	LTG-KYBD & REC DISP TRACK	205	120	1	510	12	2.7
L2	9	LTG-GUITAR CSWK	100	120	1	400	12	1.0
L2	10	LTG-KYBD & REC GEN TRACK	165	120	1	288	12	1.2
L2	11	LTG-USED CSWK	95	120	1	240	12	0.6
L2	12	LTG-ENTRY, SHOW TRACK	255	120	1	435	12	2.8
L2	13	LTG-LIVE & DJ RGB CSWK	235	120	1	120	12	0.7
L2	14	LTG-BASS TRACK	175	120	1	360	12	1.6
L2	15	LTG-LIVE, DJ, GACS CSWK	235	120	1	408	12	2.4
L2	16	LTG-GUITAR WALL TRACK	145	120	1	360	12	1.3
L2	17	LTG-DRUM CSWK	130	120	1	96	12	0.3
L2	18	LTG-USED TRACK	105	120	1	195	12	0.5
L2	20	LTG-ACOUSTIC GTRS TRACK	125	120	1	330	12	1.0
L2	22	LTG-SHOW TRACK	215	120	1	540	12	3.0
L2	24	LTG-STUDIO CORRIDOR	105	120	1	117	12	0.3
P1	1	RCPT-DATA N	30	120	1	360	12	0.3
P1	2	PWR-WH ROLL-UP DOOR	80	120	1	400	12	0.8
P1	3	RCPT-DATA E	25	120	1	360	12	0.2
P1	4	PWR-CORR ARM-A-DOOR	105	120	1	400	12	1.1
P1	5	RCPT-DATA S	35	120	1	360	12	0.3
P1	6	PWR-BUZZER	85	120	1	200	12	0.4
P1	7	PWR-SIGNAGE A	215	120	1	1200	8	2.6
P1	8	PWR-CONTACTORS	15	120	1	200	12	0.1
P1	9	PWR-SIGNAGE B	215	120	1	1200	8	2.6
P1	10	PWR-ENTRY ROLL-UP DOOR	215	120	1	400	12	2.2
P1	11	PWR-SIGNAGE C	215	120	1	1200	8	2.6
P1	12	RCPT-ENTRY CCTV MON	200	120	1	180	12	0.9
P1	13	RCPT-ACOUSTIC DESK	125	120	1	360	12	1.1
P1	14	RCPT-RECEIVING DESK	75	120	1	720	12	1.4
P1	15	RCPT-ACOUSTIC N	125	120	1	360	12	1.1
P1	16	RCPT-MGR GEN	90	120	1	540	12	1.2
P1	17	RCPT-ACOUSTIC E	125	120	1	720	12	2.3
P1	18	RCPT-MGR CONTROLLED	90	120	1	720	12	1.6
P1	19	RCPT-ACOUSTIC S	125	120	1	720	12	2.3
P1	20	RCPT-OPS GEN	110	120	1	720	12	2.0
P1	21	RCPT-ACOUSTIC W	125	120	1	720	12	2.3
P1	22	RCPT-OPS CONTROLLED	110	120	1	900	12	2.5
P1	23	RCPT-LESSONS 121 & 122	90	120	1	720	12	1.6
P1	24	PWR-MEN'S HAND DRYER	100	120	1	1200	10	1.8
P1	25	RCPT-LESSONS 119 & 120	110	120	1	720	12	2.0
P1	26	PWR-WOMEN'S HAND DRYER	105	120	1	1200	10	1.9
P1	27	RCPT-LESSONS 118 & 123	95	120	1	720	12	1.7
P1	28	RCPT-BACK OF HOUSE GEN	90	120	1	900	12	2.1
P1	29	RCPT-DRUM LESSON	60	120	1	720	12	1.1
P1	30	RCPT-BREAK GEN	90	120	1	360	12	0.8
P1	31	RCPT-LARGE LESSON	90	120	1	720	12	1.6
P1	32	RCPT-BREAK CONTROLLED	90	120	1	360	12	0.8
P1	33	RCPT-LESSONS DESK	85	120	1	360	12	0.8
P1	34	RCPT-BREAK TV	90	120	1	180	12	0.4
P1	35	RCPT-LESSONS MONITORS	85	120	1	360	12	0.8
P1	36	RCPT-REFRIGERATOR	90	120	1	800	12	1.8
P1	37	RCPT-LESSONS GEN	110	120	1	720	12	2.0
P1	38	RCPT-WATER COOLER	100	120	1	440	12	1.1
P1	40	PLGMLD-NVR	105	120	1	720	12	1.9
P1	42	PWR-FACP	35	120	1	200	12	0.2
P1	43	RCPT-BASS	165	120	1	1080	10	2.7
P1	44	RCPT-S CORRAL TV	140	120	1	360	12	1.3
P1	45	RCPT-GUITARS	115	120	1	1080	10	1.9
P1	46	RCPT-S CORRAL POS A	140	120	1	720	12	2.6
P1	47	RCPT-GUITARS TVS	115	120	1	540	12	1.6
P1	48	RCPT-S CORRAL POS B	140	120	1	720	12	2.6
P1	49	RCPT-DRUMS S	90	120	1	720	12	1.6
P1	50	RCPT-S CORRAL	140	120	1	360	12	1.3
P1	51	RCPT-DRUMS E	125	120	1	720	12	2.3
P1	52	RCPT-N CORRAL TV	105	120	1	300	12	1.7
P1	53	RCPT-DRUMS N	130	120	1	720	12	2.4
P1	54	RCPT-N CORRAL POS A	185	120	1	720	10	2.0
P1	55	RCPT-CYMBALS TV	140	120	1	180	12	0.6
P1	56	RCPT-N CORRAL POS B	185	120	1	720	10	2.0
P1	57	RCPT-CYMBALS W	140	120	1	720	12	2.6
P1	58	RCPT-N CORRAL	185	120	1	360	12	1.7
P1	60	RCPT-CPR	185	120	1	720	10	2.0
P1	63	RCPT-END DISPLAY	155	120	1	360	12	1.4
P1	65	RCPT-DJ/LIVE TV	220	120	1	180	12	1.0
P1	67	RCPT-RENTAL STORAGE	185	120	1	360	12	1.7
P1	69	RCPT-RENTAL DESK	180	120	1	360	12	1.6
P1	70	PWR-CF1	115	120	1	200	12	0.6
P1	71	RCPT-GCS N	200	120	1	720	10	2.2
P1	72	WH	95	208	1	4500	10	2.2
P1	73	RCPT-GCS W	200	120	1	720	10	2.2
P1	75	RCPT-GCS S	190	120	1	720	10	2.1
P1	76	HU-1 PUMP	95	120	1	696	12	1.7
P1	77	RCPT-GCS CORNER	185	120	1	360	12	1.7
P1	78	EF-1	85	120	1	528	12	1.1
P1	79	RCPT-CPR	180	120	1	720	10	2.0
P1	80	EF-2	165	120	1	528	12	2.2
P1	81	RCPT-N RTU CONV.	195	120	1	540	12	2.7
P1	82	VF-1	30	120	1	528	12	0.4
P1	83	RCPT-S RTU CONV.	105	120	1	720	12	1.9
P1	84	VF-2	50	120	1	528	12	0.7
P2	1	FLRBX-USED	80	120	1	360	12	0.7
P2	2	PLGMLD-REPAIRS	170	120	1	360	12	1.6
P2	3	FLRBX-GUITARS A	110	120	1	360	12	1.0
P2	4	PLGMLD-RENTALS	195	120	1	360	12	1.8
P2	5	FLRBX-GUITARS B	110	120	1	360	12	1.0
P2	6	PLGMLD-LIVE,DJ A	200	120	1	540	10	1.7
P2	7	FLRBX-GUITARS, BASS A	150	120	1	360	12	1.4
P2	8	PLGMLD-LIVE,DJ B	210	120	1	540	10	1.7
P2	9	FLRBX-GUITARS, BASS B	150	120	1	360	12	1.4
P2	10	PLGMLD-LIVE,DJ C	220	120	1	540	10	1.8
P2	11	FLRBX-BASS, DISPLAY	160	120	1	720	12	2.9
P2	12	PLGMLD-LIVE,DJ D	230	120	1	540	10	1.9
P2	13	FLRBX-ACCESSORIES	165	120	1	720	12	3.0
P2	14	PLGMLD-LIVE,DJ E	220	120	1	540	10	1.8
P2	15	FLRBX-CYMBALS	130	120	1	720	12	2.4
P2	16	PLGMLD-LIVE,DJ F	210	120	1	540	10	1.7
P2	17	FLRBX-REC, KYBDS	180	120	1	720	10	2.0
P2	18	PLGMLD-KEYBOARDS A	200	120	1	540	12	2.7
P2	19	FLRBX-ENTRY	195	120	1	360	12	1.8
P2	20	PLGMLD-KEYBOARDS B	190	120	1	540	12	2.6
P2	21	FLRBX-FLOOR DISPLAYS	215	120	1	720	10	2.4
P2	22	PLGMLD-KEYBOARDS C	180	120	1	720	10	2.0
P2	23	FLRBX-LIVE, DJ	225	120	1	720	10	2.5
P2	24	PLGMLD-KEYBOARDS D	185	120	1	720	10	2.0
P2	25	FLRBX LIVE, DJ 2	225	120	1	720	10	2.5
P2	26	PLGMLD-RECORDING A	160	120	1	900	10	2.2
P2	28	PLGMLD-RECORDING B	150	120	1	540	12	2.1
P2	30	PLGMLD-RECORDING C	140	120	1	720	12	2.6
P2	32	PLGMLD-CYMBALS DISPLAY	125	120	1	720	12	2.3
P3	1	SOCAPEX-LIVE TRUSS "a"	225	120	1	800	10	2.8
P3	2	SOCAPEX-LIVE TRUSS "h"	235	120	1	800	10	2.9
P3	3	SOCAPEX-LIVE TRUSS "a"	225	120	1	800	10	2.8
P3	4	SOCAPEX-LIVE TRUSS "h"	235	120	1	800	10	2.9
P3	5	SOCAPEX-LIVE TRUSS "b"	225	120	1	800	10	2.8
P3	6	SOCAPEX-LIVE TRUSS "g"	235	120	1	800	10	2.9
P3	7	SOCAPEX-LIVE TRUSS "b"	225	120	1	800	10	2.8
P3	8	SOCAPEX-LIVE TRUSS "g"	235	120	1	800	10	2.9
P3	9	SOCAPEX-LIVE TRUSS "c"	225	120	1	800	10	2.8
P3	10	SOCAPEX-LIVE TRUSS "f"	235	120	1	800	10	2.9
P3	11	SOCAPEX-LIVE TRUSS "c"	225	120	1	800	10	2.8
P3	12	SOCAPEX-LIVE TRUSS "f"	235	120	1	800	10	2.9
P3	13	RCPT-LIVE TRUSS "d"	225	120	1	800	10	2.8
P3	14	RCPT-LIVE TRUSS "e"	235	120	1	800	10	2.9
P3	15	RCPT-LIVE TRUSS "d"	225	120	1	800	10	2.8
P3	16	RCPT-LIVE TRUSS "e"	235	120	1	800	10	2.9



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

GENERAL POWER NOTES:

1. REFER TO SHEET E2.0B FOR GENERAL POWER NOTES.

POWER PLAN NOTES:

1. TELEPHONE AND ALARM BOARD LOCATION. PROVIDE 5/8" PLYWOOD, TYPE "B" GRADE, FIRE RESISTANT PAINT TO MATCH ADJACENT SURFACE ALONG 3 WALLS FLOOR TO CEILING. PROVIDE #4 CU GROUND TERMINATED AT BOARD AND BONDED TO LANDLORD'S ELECTRICAL SYSTEM GROUNDING SYSTEM.
2. (2) 3" CONDUIT SLEEVES THROUGH THE CEILING. PAINT SLEEVES TO MATCH EXISTING SURFACE.
3. PROVIDE 2" C WITH PULL STRING FROM LANDLORD'S TELEPHONE CLOSET TO TELEPHONE/DATA CLOSET. COORDINATE LOCATION WITH LANDLORD.
4. INSTALL LIGHTSTAT CONTACTOR PANEL AND SECURITY ALARM INTERFACE FURNISHED BY OWNER'S VENDOR. MOUNT SECURITY ALARM INTERFACE NEXT TO CONTACTOR PANEL.
5. 100A/3P CONTACTOR INTEGRAL TO PANELBOARD P2 OR P3 FOR CONTROL OF ALL CIRCUITS IN PANELBOARD. CONTROL VIA WALL SWITCH. REFER TO NOTE #9 AND SHEET E3.0 FOR ADDITIONAL INFORMATION.
6. LOW VOLTAGE SMOKE DETECTORS POWERED BY FIRE ALARM CONTROL PANEL. REFER TO MECHANICAL SCHEDULES AND FIRE ALARM DRAWINGS.
7. CONNECT POWER TO FACTORY INSTALLED FIELD WIRED RECEPTACLE PROVIDED WITH MECHANICAL UNIT. REFER TO MECHANICAL SCHEDULES.
8. JUNCTION BOX FOR ELECTRIC HAND DRYER. ROUGH-IN AND MAKE FINAL CONNECTION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. HAND DRYER FURNISHED BY GUITAR CENTER.
9. 120V, 20A WALL SWITCH TO CONTROL PLUGMOLD AND FLOOR RECEPTACLES VIA CONTACTOR FOR PANELBOARD P2 AND P3. SWITCH SHALL BE SUITABLE FOR CONTROL OF MECHANICALLY HELD CONTACTOR. PROVIDE (3) #12, (1) #12G, 3/4" C CONNECTION TO CONTACTOR IN PANELBOARD P2 AND P3. VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
10. DUPLEX RECEPTACLE FOR REFRIGERATOR. INSTALL AT 36" ABOVE FINISHED FLOOR.
11. PUSHBUTTON AND BUZZER FOR REAR DOOR. MOUNT TRANSFORMER INSIDE. REFER TO SPECIFICATIONS, SHEET E4.0.
12. PROVIDE POWER FOR EXTERIOR DOOR PANIC ALARM.
13. NOT USED. (1)
14. ROUTE CIRCUIT THROUGH CONTACTOR AND TIMESWITCH C-1. REFER TO PANELBOARD SCHEDULES FOR ADDITIONAL INFORMATION. REFER TO DETAIL 2 ON SHEET E2.0A FOR ADDITIONAL INFORMATION.
15. VENTILATION FAN FAN CONTROLLED VIA LINE VOLTAGE THERMOSTAT. REFER TO MECHANICAL PLANS AND SCHEDULES FOR ADDITIONAL INFORMATION.
16. PROVIDE POWER CONNECTION AND SWITCH FOR COILING DOOR. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
17. PROVIDE CONTACTOR AND TIMESWITCH FOR CONTROL OF EXHAUST FANS EF-1 AND EF-2. REFER TO DETAIL 2, SHEET E2.0A AND PANELBOARD SCHEDULES FOR ADDITIONAL INFORMATION.
18. PROVIDE POWER CONNECTION TO HUMIDIFER PUMP MOTOR. COORDINATE EXACT LOCATION AND ADDITIONAL REQUIREMENTS WITH DIVISION 23.
19. PROVIDE 2'-0" LONG PLUGMOLD WITH RECEPTACLES SPACED AT 6" O.C. AT 60" AFF, CENTERED ABOVE NVR SHELF FOR NVR AND MONITOR.
20. ROUTE CIRCUIT THROUGH POWER PACK CONTROLLED BY CEILING OCCUPANCY SENSOR. WIRE THE CONTROLLED CIRCUIT TO (1) DUPLEX AND THE UNCONTROLLED CIRCUIT TO (1) DUPLEX IN THE DOUBLE DUPLEX (QUAD) RECEPTACLE.

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

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JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

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MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

Guitar Center

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

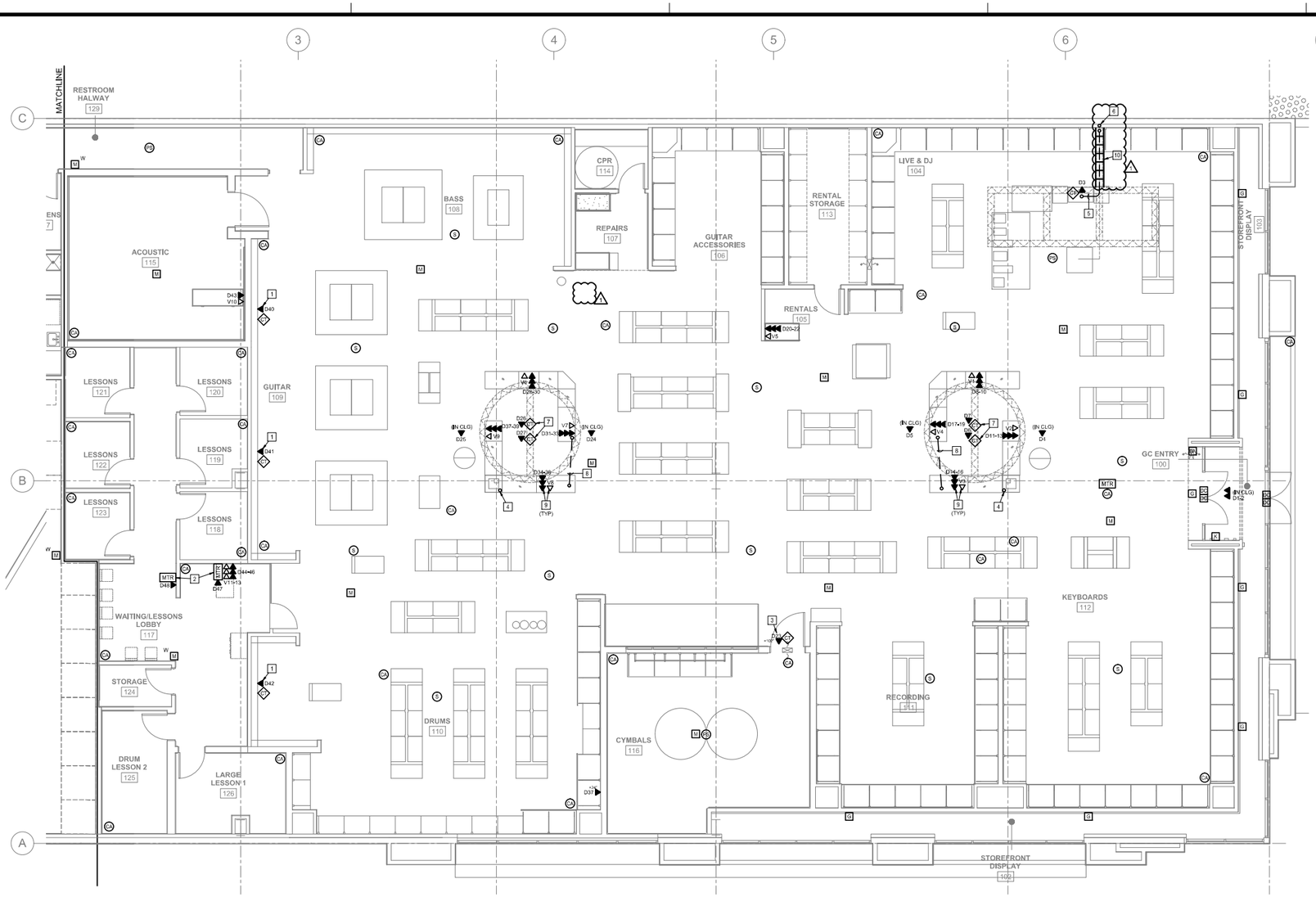
REGISTERED PROFESSIONAL ENGINEER DAVID D. HAAKE E 16137 ELECTRICAL STATE OF CALIFORNIA
Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
POWER FLOOR PLAN

SHEET NO:
E2.0B



NOTE: REFER TO SHEET E2.0 FOR ALL POWER DEVICES. POWER DEVICES SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND SHOWN FOR COORDINATION PURPOSES.

REFER TO GENERAL NOTES ON SHEET E2.0A FOR ALL RECEPTACLE AND SWITCH COVER PLATE FINISHES.

1 SPECIAL SYSTEM FLOOR PLAN
SCALE: 3/16"=1'-0"

SPECIAL SYSTEMS GENERAL NOTES:

1. REFER TO DETAIL 2 ON SHEET E2.1 TO TYPICAL OUTLET INSTALLATION DIAGRAM.
2. ALL DATA BACKBOXES SHALL BE SINGLE GANG BOXES OR DOUBLE GANG WITH SINGLE GANG MUD RING.
3. ALL CCTV CAMERA LOCATIONS SHALL BE PROVIDED WITH FULLY SUPPORTED DOUBLE GANG (4" SQUARE) JUNCTION BOXES. IN AREA WITH LAY-IN CEILING, PROVIDE CADDY 512 (OR EQUAL) SUPPORT CAMERAS IN LESSON ROOMS TO BE PLACED 12" FROM BOTH WALLS.
4. TECHNOLOGY CONTRACTOR TO PROVIDE INTERCONNECTION TO FIRE ALARM CONTROL PANEL TO ENSURE GUITAR CENTER SOUND SYSTEM IS MUTED IN THE EVENT OF A FIRE ALARM. PROVIDE ALL COMPONENTS REQUIRED AND COORDINATE CONNECTION WITH FIRE ALARM CONTRACTOR.

SPECIAL SYSTEMS PLAN NOTES:

1. PROVIDE SINGLE GANG OUTLET BOX FOR AV SERVICE TO TV. MOUNT HORIZONTALLY ADJACENT TO RECEPTACLE FOR TV WITH TOP OF OUTLET AT 151" AFF.
2. MOUNT RECEPTACLE AND DATA OUTLET AT 6'-8" ABOVE FINISHED FLOOR FOR SECURITY MONITOR.
3. PROVIDE AV OUTLET ADJACENT TO RECEPTACLE SERVING TV ABOVE CYMBALS DOOR.
4. PROVIDE (3) 1-1/2" CONDUITS FOR DATA AND AV CABLING IN COLUMN TO ABOVE ACCESSIBLE CEILING.
5. SAWCUT EXISTING FLOOR FOR 6"Ø CONDUIT. COORDINATE EXACT LOCATION WITH EXISTING STRUCTURAL FOOTINGS, DOCUMENT EXACT LOCATION ON AS-BUILT DRAWINGS. REFER TO DETAIL 3 ON SHEET E2.1B.
6. PROVIDE 3" PVC CONDUIT IN WALL TO 12" ABOVE CEILING, REFER TO DETAIL 5 ON SHEET E2.1B.
7. PROVIDE CONDUIT AND PULLSTRING FOR VIDEO AND AUDIO TO CASH WRAP COUNTER. ROUTE FROM ABOVE CEILING TO NEAREST WALL TO ROUTE UNDERSLAB TO COUNTER.
8. SAWCUT FOR ELECTRICAL AND DATA CONDUIT TO CASEWORK. PROVIDE (3)1-1/2" CONDUITS FOR DATA AND AV CABLING.
9. VERIFY EXACT LOCATION OF POWER DEVICES WITHIN CASEWORK WITH EQUIPMENT MANUFACTURER. TYPICAL.
10. PROVIDE WIRERUN COBRA 2"H X 6"W X 79"L CABLE TRAY IN BLACK FINISH FOR AUDIO CABLING FROM WALL TO TRUSS AT 14'-6" AFF. CONFIRM LENGTH REQUIRED AND SUSPEND WITH THREADED RODS AND UNISTRUT.

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FOR COORDINATION PURPOSES ONLY

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MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

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REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

ELECTRICAL SPECIAL SYSTEMS PLAN

SHEET NO:

E2.1A

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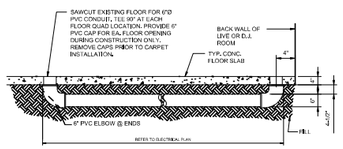
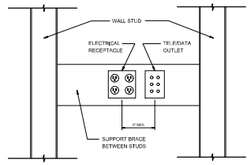
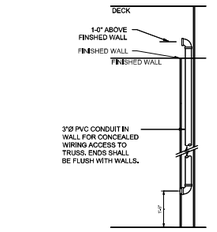


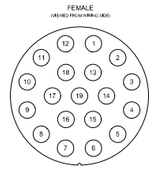
3 LIVE ROOM FLOOR CONDUIT DETAIL
NOT TO SCALE



2 TYPICAL OUTLET INSTALLATION DIAGRAM
NOT TO SCALE



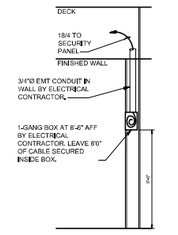
5 LIVE ROOM WALL CONDUIT
NOT TO SCALE



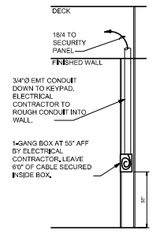
PIN 1	LIVE 1
PIN 2	NEUTRAL 1
PIN 3	LIVE 2
PIN 4	NEUTRAL 2
PIN 5	LIVE 3
PIN 6	NEUTRAL 3
PIN 7	LIVE 4
PIN 8	NEUTRAL 4
PIN 9	LIVE 5
PIN 10	NEUTRAL 5
PIN 11	LIVE 6
PIN 12	NEUTRAL 6
PIN 13	EARTH 1
PIN 14	EARTH 2
PIN 15	EARTH 3
PIN 16	EARTH 4
PIN 17	EARTH 5
PIN 18	EARTH 6
PIN 19	NOT USED

NOTE: PURCHASE SOCAPEX OUTLET PREWIRED WITH 8' WHIP AND COVER PLATE MODEL #WP2-CBI19PW-8 FROM CBI PROFESSIONAL WIRING SYSTEMS (800) 346-3462. (TYPICAL)

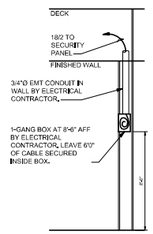
4 SOCAPEX WIRING DIAGRAM
NOT TO SCALE



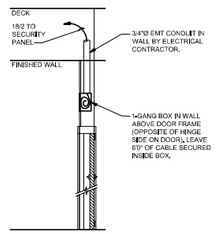
7 WALL MOUNTED MOTION DETECTOR (M) DETAIL
NOT TO SCALE



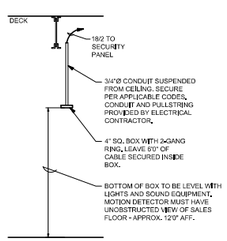
6 KEYPAD (KP) DETAIL
NOT TO SCALE



9 BURGLAR ALARM SIREN (BA) DETAIL
NOT TO SCALE



8 DOOR CONTACT (DC) DETAIL
NOT TO SCALE



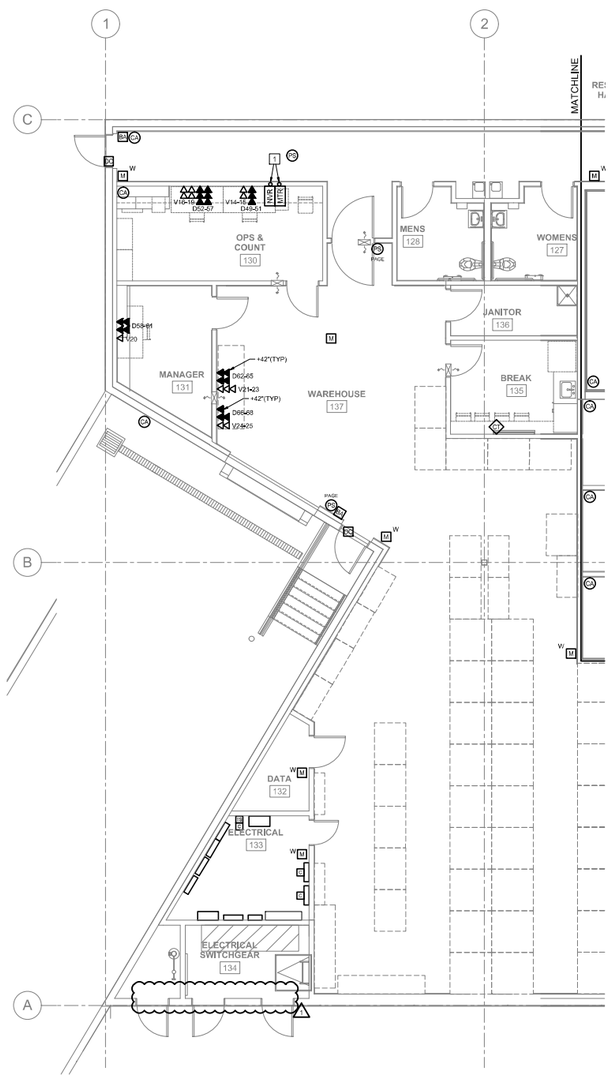
10 CEILING MOUNTED MOTION DETECTOR (M) AND CAMERA (CA) DETAIL
NOT TO SCALE

SPECIAL SYSTEMS GENERAL NOTES:

1. REFER TO SHEET E2.1A FOR SPECIAL SYSTEMS GENERAL NOTES.

SPECIAL SYSTEMS PLAN NOTES:

1. PROVIDE 4-GANG LOW VOLTAGE RECESSED WALL BOX HUBBELL #HBLW5CS4MMO AND TRIM RING #HBLTRIMWWA AT 66" AFF FOR CCTV CABLING. PROVIDE (2) 1-3/4" CONDUITS IN WALL FROM BOX LOCATION TO ABOVE SUSPENDED CEILING.



1 SPECIAL SYSTEM FLOOR PLAN
SCALE: 3/16"=1'-0"

NOTE: REFER TO SHEET E2.0 FOR ALL POWER DEVICES. POWER DEVICES SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND SHOWN FOR COORDINATION PURPOSES.

REFER TO GENERAL NOTES ON SHEET E2.0 FOR ALL RECEPTACLE AND SWITCH COVER PLATE FINISHES.

FOR COORDINATION PURPOSES ONLY

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MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

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CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

ELECTRICAL SPECIAL SYSTEMS PLAN

SHEET NO:

E2.1B 2

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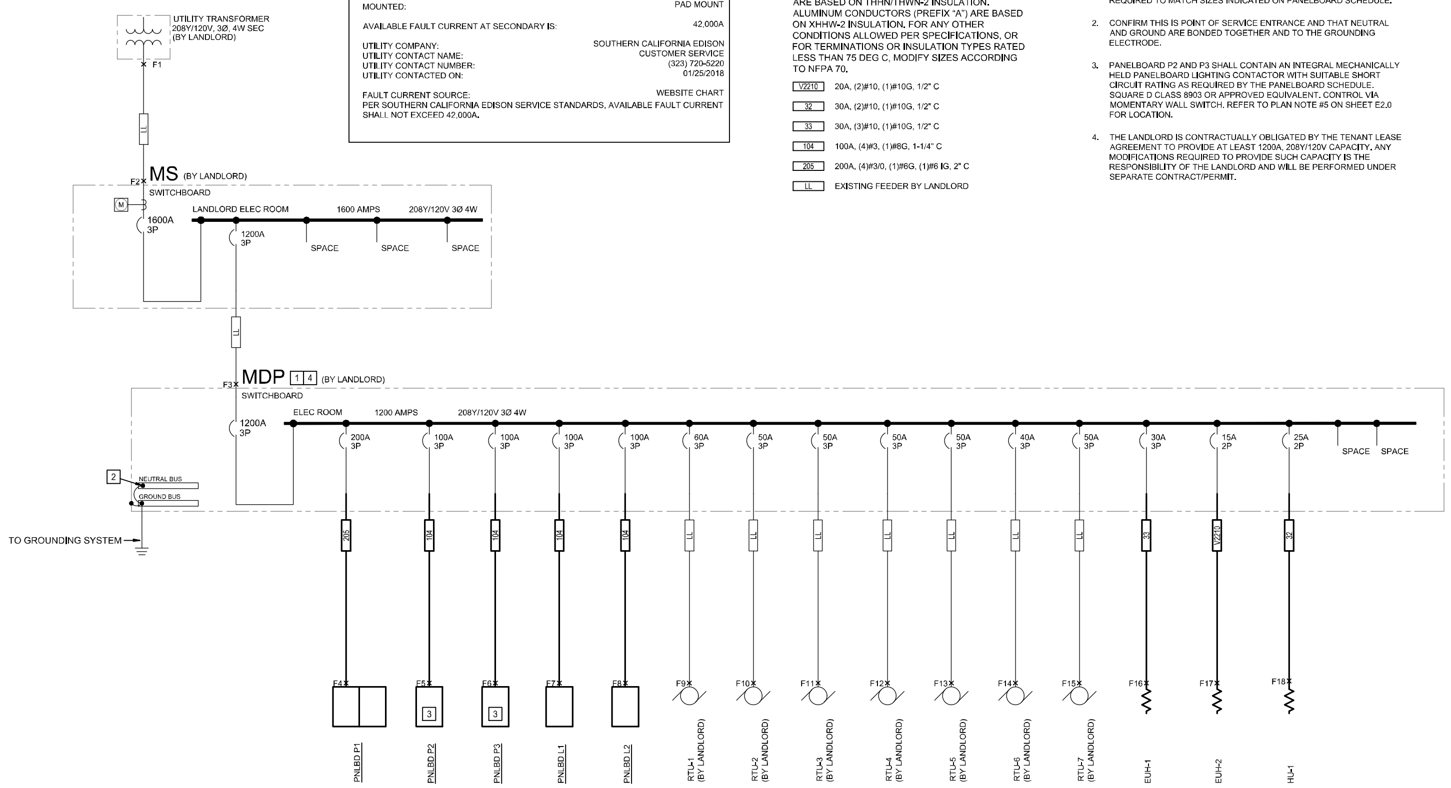

UTILITY TRANSFORMER:

SIZE:	300 kVA
IMPEDENCE:	5.0%Z
VOLTS:	208Y/120V
MOUNTED:	PAD MOUNT
AVAILABLE FAULT CURRENT AT SECONDARY IS:	42,000A
UTILITY COMPANY:	SOUTHERN CALIFORNIA EDISON
UTILITY CONTACT NAME:	CUSTOMER SERVICE
UTILITY CONTACT NUMBER:	(323) 720-5220
UTILITY CONTACTED ON:	01/25/2018
FAULT CURRENT SOURCE:	WEBSITE CHART

PER SOUTHERN CALIFORNIA EDISON SERVICE STANDARDS, AVAILABLE FAULT CURRENT SHALL NOT EXCEED 42,000A.

CIRCUIT SCHEDULE:

ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS. COPPER CONDUCTORS ARE BASED ON THHN/THWN-2 INSULATION. ALUMINUM CONDUCTORS (PREFIX "A") ARE BASED ON XHHW-2 INSULATION. FOR ANY OTHER CONDITIONS ALLOWED PER SPECIFICATIONS, OR FOR TERMINATIONS OR INSULATION TYPES RATED LESS THAN 75 DEG C, MODIFY SIZES ACCORDING TO NFPA 70.

V2210	20A, (2)#10, (1)#10G, 1/2" C
32	30A, (2)#10, (1)#10G, 1/2" C
33	30A, (3)#10, (1)#10G, 1/2" C
104	100A, (4)#3, (1)#8G, 1-1/4" C
205	200A, (4)#3/0, (1)#6G, (1)#6 IG, 2" C
LL	EXISTING FEEDER BY LANDLORD

ONE LINE DIAGRAM PLAN NOTES:

1. LANDLORD TO PROVIDE NEW 1200A MCB 208Y/120V 3Ø, 4W PANELBOARD. PROVIDE NEW BRANCH CIRCUIT BREAKERS AS REQUIRED TO MATCH SIZES INDICATED ON PANELBOARD SCHEDULE.
2. CONFIRM THIS IS POINT OF SERVICE ENTRANCE AND THAT NEUTRAL AND GROUND ARE BONDED TOGETHER AND TO THE GROUNDING ELECTRODE.
3. PANELBOARD P2 AND P3 SHALL CONTAIN AN INTEGRAL MECHANICALLY HELD PANELBOARD LIGHTING CONTACTOR WITH SUITABLE SHORT CIRCUIT RATING AS REQUIRED BY THE PANELBOARD SCHEDULE. SQUARE D CLASS 8903 OR APPROVED EQUIVALENT. CONTROL VIA MOMENTARY WALL SWITCH. REFER TO PLAN NOTE #5 ON SHEET E2.0 FOR LOCATION.
4. THE LANDLORD IS CONTRACTUALLY OBLIGATED BY THE TENANT LEASE AGREEMENT TO PROVIDE AT LEAST 1200A, 208Y/120V CAPACITY. ANY MODIFICATIONS REQUIRED TO PROVIDE SUCH CAPACITY IS THE RESPONSIBILITY OF THE LANDLORD AND WILL BE PERFORMED UNDER SEPARATE CONTRACT/PERMIT.

ELECTRICAL RESPONSIBILITY SCHEDULE

ITEM	FURNISHED BY: GUITAR CENTER	FURNISHED BY: LANDLORD	FURNISHED BY: CONTRACTOR	INSTALLED BY: GUITAR CENTER	INSTALLED BY: LANDLORD	INSTALLED BY: CONTRACTOR	RE-USE EXISTING	REMARKS
ELECTRICAL SERVICE, SERVICE EQUIPMENT & METER AT LL ELECTRICAL ROOM		X			X			UPGRADE PER GUITAR CENTER ELECTRICAL DRAWINGS.
FUSIBLE DISCONNECT AT LANDLORD'S SERVICE EQUIPMENT		X			X			VERIFY EXISTING AND IN PLACE PRIOR TO BID.
CONDUIT FOR COPPER FEED FROM LL'S SERVICE EQUIPMENT TO TENANT ELEC ROOM		X			X			
COPPER FEED FROM LL'S SERVICE EQUIPMENT TO TENANTS ELECTRICAL ROOM		X			X			
MAIN DISTRIBUTION PANELS IN TENANT'S ELECTRICAL ROOM		X			X			UNLESS OTHERWISE NOTED.
DATA AND TELEPHONE SERVICE TO PREMISIES		X			X			
CONDUIT WITH PULLSTRING FROM LL'S PHONE CLOSET TO TENANT'S DATA ROOM		X			X			GENERAL CONTRACTOR TO PROVIDE CONDUIT AND PULL STRING FOR DATA, PHONE, ALARM AND CCTV.
ALL PATCH PANELS AND WIRE MANAGEMENT			X			X		
CIRCUITS CONSECUTIVELY LABELED			X			X		
CONTINUITY TEST REPORT FINISHED TO OWNER			X			X		
ALL EQUIPMENT ON TENANT RISER DIAGRAM NOT OTHERWISE INDICATED			X			X		
WIRING AND CONDUIT WITHIN LEASE SPACE			X			X		
BELL AT EMPLOYEE			X			X		
CEILING FAN (@ ACOUSTIC ROOM)			X			X		
LIGHT FIXTURES	X					X		
LAMPS FOR LIGHT FIXTURES	X					X		
LIGHTING CONTROL PANELS	X					X		
FLOOR BOXES	X					X		
TELEPHONE AND DATA EQUIPMENT	X			X				
CABLING FOR TELEPHONE DATA EQUIPMENT	X			X				INSTALLING BUT NOT LIMITED TO POS DATA AND PHONES. UNLESS OTHERWISE NOTED.
SIGNAGE	X			X				ELECTRICAL SERVICE AND CONNECTIONS BY GENERAL CONTRACTOR.
SECURITY SYSTEM	X			X				
LOW VOLTAGE CABLE FOR SECURITY SYSTEM	X			X				GENERAL CONTRACTOR TO PROVIDE CONDUIT AND PULL STRING FOR DATA, PHONE, ALARM & CCTV.
LAN / AUDIO CABINET	X			X				
SPEAKERS & SPEAKER WIRING	X			X				UNLESS OTHERWISE NOTED.

FIRE PROTECTION RESPONSIBILITY SCHEDULE

ITEM	FURNISHED BY: GUITAR CENTER	FURNISHED BY: LANDLORD	FURNISHED BY: CONTRACTOR	INSTALLED BY: GUITAR CENTER	INSTALLED BY: LANDLORD	INSTALLED BY: CONTRACTOR	RE-USE EXISTING	REMARKS
SPRINKLER MAIN TO PREMISES		X			X			
SPRINKLER BRANCHES, DROPS AND HEADS			X			X		INCLUDING MODIFICATION OF ANY EXISTING HEAD LOCATIONS AND/OR BRANCH LINES LOCATIONS.
FIRE ALARM SYSTEM (WITHIN TENANT SPACE ONLY, BUT TIED INTO LANDLORD BUILDING FIRE ALARM SYSTEM)			X			X		FIRE ALARM DESIGN IS BY GUITAR CENTER'S FIRE ALARM ENGINEER AND PROVIDED TO GENERAL CONTRACTOR FOR THEIR USE, GENERAL CONTRACTOR SHALL SUBMIT FOR SEPARATE PERMIT AND PROVIDE ALL MATERIALS AND LABOR FOR A COMPLETE INSTALLATION OF THE FIRE ALARM WITHIN THE TENANT SPACE.
LOW VOLTAGE CABLE FOR FIRE ALARM SYSTEM			X			X		GENERAL CONTRACTOR TO PROVIDE CONDUIT AND PULL STRING FOR DATA, PHONE, ALARM & CCTV.
FIRE EXTINGUISHERS (COORDINATE LOCATIONS W/ FIRE MARSHALL & OWNER'S REP)			X			X		
SMOKE AND HEAT DETECTORS		X			X			

TENANT ELECTRICAL SERVICE LOAD SUMMARY

TENANT OCCUPANCY TYPE:	M	SERVICE DESCRIPTION:
TENANT SQUARE FOOTAGE:	14,920	208Y/120V, 3PH

LOAD DESCRIPTION	Connected KVA	Demand FACTOR	Demand KVA
HVAC - SUMMER	76.77	100%	76.77
HVAC - WINTER	0.00	100%	0.00
LIGHTING (PER NEC-220)	37.85	125%	47.31
RECEPTACLES	48.42	100%;50%	29.21
MOTOR LOADS	22.36	100%	22.36
LARGEST MOTOR LOAD	3.96	125%	4.95
MISCELLANEOUS EQUIPMENT	37.94	100%	37.94
DISPLAY CASE/SIGNAGE	3.60	125%	4.50
SHOW WINDOW / TRACK LIGHTING	49.14	PER NEC	58.67
TOTAL LOAD	280.03	KVA	281.70
TOTAL AMPACITY	777.29	AMPS	781.92
SERVICE AMPACITY	1200	AMPS	1200.00
SPARE CAPACITY		AMPS	418

1 ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:

$ISC_{(2)} = ISC_{(1)} \times M_{(1)}$ $M = 1/(1+f)$

$ISC_{(1)}$ = short circuit current at fault point 1

$ISC_{(2)}$ = short circuit current at fault point 2

Feeder: $f_{(3Ø)} = \frac{1.732 \times L \times Isc}{C \times E}$

Feeder: $f_{(1Ø)} = \frac{2 \times L \times Isc}{C \times E}$

XFMR: $f_{(3Ø)} = \frac{IP(sca) \times Vp \times 1.73 \times \%Z}{100{,}000 \times KVA}$

XFMR: $f_{(1Ø)} = \frac{IP(sca) \times Vp \times \%Z}{100{,}000 \times KVA}$

$IS_{(sca)} = \frac{Vp \times M \times IP_{(sca)}}{Vs}$

VOLTAGE DROP (3Ø):
$\%VD = ((R \times cos(arccos(pf)) + X \times sin(arccos(pf))) \times L/\# \times I \times 1.73) / E$

VOLTAGE DROP (1Ø):
$\%VD = ((R \times cos(arccos(pf)) + X \times sin(arccos(pf))) \times 2 \times L/\# \times I) / E$

IP = Primary short circuit current
Vp = Primary voltage
IS = Secondary short circuit current
Vs = Secondary voltage
L = Length of circuit   E = Line to line volts
C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot

%VD CUM = Cumulative Voltage Drop from Fault Point 1 to Fault Point #
R = resistance in ohms per LF
X = reactances in ohms per LF

Feeder Types =
NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer

Fault Point (F#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder: Conduit Type/ TX	Feeder: Material	Feeder: Quantity of Parallel Sets and Bus/ Phase & Neutral Size				Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)
1	Utility Service Point			42,000	at the secondary of the utility transformer											
	Motor Contribution			300	The connected full load motor amps (includes compressors) on the system											
2	To MS	1	3	43800	NM	CU	5	Set(s) of	400	kcmil	24297	--	208	100	0.9	1280
3	To MDP	2	3	33686	M	CU	4	Set(s) of	350	kcmil	19704	--	208	40	0.9	960
4	To P1	3	3	29488	M	CU	1	Set(s) of	3/0	AWG	12844	--	208	45	0.9	160
5	To P2	3	3	29488	M	CU	1	Set(s) of	3		4774	--	208	35	0.9	80
6	To P3	3	3	29488	M	CU	1	Set(s) of	3		4774	--	208	40	0.9	80
7	To L1	3	3	29488	M	CU	1	Set(s) of	3		4774	--	208	45	0.9	80
8	To L2	3	3	29488	M	CU	1	Set(s) of	3		4774	--	208	50	0.9	80
9	To RTU-1	3	3	29488	M	CU	1	Set(s) of	4	AWG	3806	--	208	205	0.85	48
10	To RTU-2	3	3	29488	M	CU	1	Set(s) of	6	AWG	2425	--	208	160	0.85	40
11	To RTU-3	3	3	29488	M	CU	1	Set(s) of	8		1557	--	208	105	0.85	40
12	To RTU-4	3	3	29488	M	CU	1	Set(s) of	6	AWG	2425	--	208	155	0.85	40
13	To RTU-5	3	3	29488	M	CU	1	Set(s) of	8		1557	--	208	100	0.85	40
14	To RTU-6	3	3	29488	M	CU	1	Set(s) of	8		1557	--	208	85	0.85	32
15	To RTU-7	3	3	29488	M	CU	1	Set(s) of	8		1557	--	208	70	0.85	40
16	To EUH-1	3	3	29488	M	CU	1	Set(s) of	10		981	--	208	60	1	24
17	To EUH-2	3	1	29488	M	CU	1	Set(s) of	10	AWG	981	--	208	205	1	12
18	To HU-1	3	1	29488	M	CU	1	Set(s) of	10		981	--	208	95	0.85	20

Fault Point (F#)	Conductor: Resistance (R)	Conductor: Reactance (X)	Conductor: Arccos (pf) (Radians)	Transformer: Type	Transformer: Degree Rise	Transformer: kVA	Transformer: New Xfmr Z	Transformer: Existing Xfmr Z	Transformer: Secondary Voltage	Transformer: Tap Setting	f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (F#)
1											Source Isc + 6X Motor Contribution =		43800			1
2	0.000033	0.000040	0.451027								0.300	0.77	33686			2
3	0.000039	0.000050	0.451027								0.142	0.88	29488	-0.45%	-0.45%	3
4	0.000079	0.000052	0.451027								0.860	0.54	15851	-0.56%	-1.02%	4
5	0.000250	0.000059	0.451027								1.800	0.36	10531	-0.58%	-1.04%	5
6	0.000250	0.000059	0.451027								2.057	0.33	9645	-0.67%	-1.12%	6
7	0.000250	0.000059	0.451027								2.315	0.30	8896	-0.75%	-1.21%	7
8	0.000250	0.000059	0.451027								2.572	0.28	8256	-0.84%	-1.29%	8
9	0.000310	0.000060	0.554811								13.226	0.07	2073	-2.42%	-2.87%	9
10	0.000490	0.000064	0.554811								16.202	0.06	1714	-2.40%	-2.85%	10
11	0.000780	0.000065	0.554811								16.560	0.06	1679	-2.44%	-2.89%	11
12	0.000490	0.000064	0.554811								15.695	0.06	1766	-2.32%	-2.78%	12
13	0.000780	0.000065	0.554811								15.771	0.06	1758	-2.32%	-2.78%	13
14	0.000780	0.000065	0.554811								13.405	0.07	2047	-1.58%	-2.03%	14
15	0.000780	0.000065	0.554811								11.040	0.08	2449	-1.63%	-2.08%	15
16	0.001200	0.000063									15.019	0.06	1841	-1.44%	-1.89%	16
17	0.001200	0.000063									59.252	0.02	489	-2.84%	-3.29%	17
18	0.001200	0.000063	0.554811								27.458	0.04	1036	-1.92%	-2.38%	18

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
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1750003949

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

1

MONTEREY PARK
STORE 135 - PRIMARY

3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER
DAVID D. HAAKE
E 16137
ELECTRICAL
STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
ELECTRICAL ONE-LINE

SHEET NO:
E3.0

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001\Elec\1750003949E30.dwg, Plot, 3/28/2018 1:41:04 PM, MarkAnderson, 1:1
DAVID D. HAAKE

PANELBOARD: P1 (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: MDP
AIC RATING: 22000 FULLY RATED
SERVES: GUITAR CENTER
MOUNTING: SURFACE
LOCATION: ELECTRICAL, ROOM #:133

EQUIPMENT GROUND BUS
ISOLATED GROUND BUS

	CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.	
	1	RCPT-DATA N	360			12	20	1	1	20	12	400			PWR-WH ROLL-UP DOOR	2	
	3	RCPT-DATA E		360		12	20	1	1	20	12		400		PWR-CORR ARM-A-DOOR	4	
	5	RCPT-DATA S			360	12	20	1	1	20	12			200	PWR-BUZZER	6	
RP	7	PWR-SIGNAGE A	1,200			8	20	1	1	20	12	200			PWR-CONTACTORS	8	
RP	9	PWR-SIGNAGE B		1,200		8	20	1	1	20	12		400		PWR-ENTRY ROLL-UP DOOR	10	
RP	11	PWR-SIGNAGE C			1,200	8	20	1	1	20	12			180	RCPT-ENTRY CCTV MON	12	
IG	13	RCPT-ACOUSTIC DESK	360			12	20	1	1	20	12	720			RCPT-RECEIVING DESK	14	
	15	RCPT-ACOUSTIC N		360		12	20	1	1	20	12		540		RCPT-MGR GEN	16	
	17	RCPT-ACOUSTIC E			720	12	20	1	1	20	12			720	RCPT-MGR CONTROLLED	18	
	19	RCPT-ACOUSTIC S	720			12	20	1	1	20	12	720			RCPT-OPS GEN	20	
	21	RCPT-ACOUSTIC W		720		12	20	1	1	20	12		900		RCPT-OPS CONTROLLED	22	
	23	RCPT-LESSONS 121 & 122			720	12	20	1	1	20	10			1,200	PWR-MEN'S HAND DRYER	24	
	25	RCPT-LESSONS 119 & 120	720			12	20	1	1	20	10	1,200			PWR-WOMEN'S HAND DRYER	26	
	27	RCPT-LESSONS 118 & 123		720		12	20	1	1	20	12		900		RCPT-BACK OF HOUSE GEN	28	
	29	RCPT-DRUM LESSON			720	12	20	1	1	20	12			360	RCPT-BREAK GEN	30	
	31	RCPT-LARGE LESSON	720			12	20	1	1	20	12	360			RCPT-BREAK CONTROLLED	32	
IG	33	RCPT-LESSONS DESK		360		12	20	1	1	20	12		180		RCPT-BREAK TV	34	
	35	RCPT-LESSONS MONITORS			360	12	20	1	1	20	12			800	RCPT-REFRIGERATOR	36	GF
	37	RCPT-LESSONS GEN	720			12	20	1	1	20	12	440			RCPT-WATER COOLER	38	GF
	39	SPARE					20	1	1	20	12		720		PLGMLD-NVR	40	
	41	SPARE					20	1	1	20	12			200	PWR-FACP	42	FA
	SECTION: 2																
	43	RCPT-BASS	1,080			10	20	1	1	20	12	360			RCPT-S CORRAL TV	44	
	45	RCPT-GUITARS		1,080		10	20	1	1	20	12		720		RCPT-S CORRAL POS A	46	IG
	47	RCPT-GUITARS TVS			540	12	20	1	1	20	12			720	RCPT-S CORRAL POS B	48	IG
	49	RCPT-DRUMS S	720			12	20	1	1	20	12	360			RCPT-S CORRAL	50	
	51	RCPT-DRUMS E		720		12	20	1	1	20	12		360		RCPT-N CORRAL TV	52	
	53	RCPT-DRUMS N			720	12	20	1	1	20	10			720	RCPT-N CORRAL POS A	54	IG
	55	RCPT-CYMBALS TV	180			12	20	1	1	20	10	720			RCPT-N CORRAL POS B	56	IG
	57	RCPT-CYMBALS W		720		12	20	1	1	20	12		360		RCPT-N CORRAL	58	
1	59	SPARE					20	1	1	20	10			720	RCPT-CPR	60	
	61	SPARE					20	1	1	20	12	250			RCPT-CCTV MONITOR	62	
	63	RCPT-FNT DISPLAY		360		12	20	1	1	20					SPARE	64	
	65	RCPT-DJ/LIVE TV			180	12	20	1	1	20					SPARE	66	
	67	RCPT-RENTAL STORAGE	360			12	20	1	1						EQUIPPED SPACE	68	
IG	69	RCPT-RENTAL DESK		360		12	20	1	1	20	12		200		PWR-CF1	70	
	71	RCPT-GCS N			720	10	20	1	2	30	10			2,250	WH	72	
	73	RCPT-GCS W	720			10	20	1				2,250				74	
	75	RCPT-GCS S		720		10	20	1	1	20	12		696		HU-1 PUMP	76	
	77	RCPT-GCS CORNER			360	12	20	1	1	20	12			528	EF-1	78	C1
	79	RCPT-CPR	720			10	20	1	1	20	12	528			EF-2	80	C1
	81	RCPT-N RTU CONV.		540		12	20	1	1	20	12		528		VF-1	82	
	83	RCPT-S RTU CONV.			720	12	20	1	1	20	12			528	VF-2	84	
		SUBTOTAL	8,580	8,220	7,320							8,508	6,904	9,126	SUBTOTAL		

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	17,088	COOLING		1.00	REFRIG		1.00	
AMPS	142	HEATING		0	SIGN/DISP	3,600	1.25	
TOTAL PHASE B - VA	15,124	LIGHTING		1.25	KITCHEN		1.00	
AMPS	126	RECEPTACLES	31,860	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	16,446	MOTORS	2,480	1.00	LRG MOTOR	528	1.25	TOTAL DEMAND
AMPS	137	SUPP HEAT		1.00	SHOW WNDW		1.25	38,760 VA
TOTAL PNLBD - VA	48,658	MISC EQUIP	10,190	1.00	LTG TRACK		1.00	108 A
AMPS	135							

PANELBOARD NOTES

FA - RED/HANDLE-ON CLAMP
GF - GFCI TYPE CIRCUIT BREAKER
RP - VIA LIGHTSTAT CONTACTOR PANEL
IG - ISOLATED GROUND CIRCUIT
C# - VIA LTG CONTACTOR #
FEED THRU CONNECTION: #4/0
SIGN/DISPLAY - SIGNAGE & DISPLAY CASE

PANELBOARD: P2 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: MDP
AIC RATING: 22000 FULLY RATED
SERVES: GUITAR CENTER
MOUNTING: SURFACE
LOCATION: ELECTRICAL, ROOM #:133

EQUIPMENT GROUND BUS

	CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
	1	FLRBX-USED	360			12	20	1	1	20	12	360			PLGMLD-REPAIRS	2
	3	FLRBX-GUITARS A		360		12	20	1	1	20	12		360		PLGMLD-RENTALS	4
	5	FLRBX-GUITARS B			360	12	20	1	1	20	10			540	PLGMLD-LIVE,DJ A	6
	7	FLRBX-GUITARS, BASS A	360			12	20	1	1	20	10	540			PLGMLD-LIVE,DJ B	8
	9	FLRBX-GUITARS, BASS B		360		12	20	1	1	20	10		540		PLGMLD-LIVE,DJ C	10
	11	FLRBX-BASS, DISPLAY			720	12	20	1	1	20	10			540	PLGMLD-LIVE,DJ D	12
	13	FLRBX-ACCESSORIES	720			12	20	1	1	20	10	540			PLGMLD-LIVE,DJ E	14
	15	FLRBX-CYMBALS		720		12	20	1	1	20	10		540		PLGMLD-LIVE,DJ F	16
	17	FLRBX-REC, KYBDS			720	10	20	1	1	20	12			540	PLGMLD-KEYBOARDS A	18
	19	FLRBX-ENTRY	360			12	20	1	1	20	12	540			PLGMLD-KEYBOARDS B	20
	21	FLRBX-FLOOR DISPLAYS		720		10	20	1	1	20	10		720		PLGMLD-KEYBOARDS C	22
	23	FLRBX-LIVE, DJ			720	10	20	1	1	20	10			720	PLGMLD-KEYBOARDS D	24
1	25	FLRBX LIVE, DJ 2	720			10	20	1	1	20	10	900			PLGMLD-RECORDING A	26
	27	SPARE					20	1	1	20	12		540		PLGMLD-RECORDING B	28
	29	SPARE					20	1	1	20	12			720	PLGMLD-RECORDING C	30
	31	SPARE					20	1	1	20	12	720			PLGMLD-CYMBALS DISPLAY	32
	33	SPARE					20	1	1	20					SPARE	34
	35	EQUIPPED SPACE						1	1						EQUIPPED SPACE	36
	37	EQUIPPED SPACE						1	1						EQUIPPED SPACE	38
	39	EQUIPPED SPACE						1	1						EQUIPPED SPACE	40
	41	EQUIPPED SPACE						1	1						EQUIPPED SPACE	42
		SUBTOTAL	2,520	2,160	2,520							3,600	2,700	3,060	SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	6,120	COOLING		1.00	REFRIG		1.00	
AMPS	51	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	4,860	LIGHTING		1.25	KITCHEN		1.00	
AMPS	41	RECEPTACLES	16,560	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	5,580	MOTORS		1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	47	SUPP HEAT		1.00	SHOW WNDW		1.25	13,280 VA
TOTAL PNLBD - VA	16,560	MISC EQUIP		1.00	LTG TRACK		1.00	37 A
AMPS	46							

PANELBOARD NOTES

PANELBOARD: P3 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: MDP
AIC RATING: 22000 FULLY RATED
SERVES: GUITAR CENTER
MOUNTING: SURFACE
LOCATION: ELECTRICAL, ROOM #:133

EQUIPMENT GROUND BUS

	CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.	
HT1	1	SOCAPEX-LIVE TRUSS "a"	800			10	20	1	1	20	10	800			SOCAPEX-LIVE TRUSS "h"	2	HT8
HT1	3	SOCAPEX-LIVE TRUSS "a"		800		10	20	1	1	20	10		800		SOCAPEX-LIVE TRUSS "h"	4	HT8
HT2	5	SOCAPEX-LIVE TRUSS "b"			800	10	20	1	1	20	10			800	SOCAPEX-LIVE TRUSS "g"	6	HT7
HT2	7	SOCAPEX-LIVE TRUSS "b"	800			10	20	1	1	20	10	800			SOCAPEX-LIVE TRUSS "g"	8	HT7
HT3	9	SOCAPEX-LIVE TRUSS "c"		800		10	20	1	1	20	10		800		SOCAPEX-LIVE TRUSS "f"	10	HT6
HT3	11	SOCAPEX-LIVE TRUSS "c"			800	10	20	1	1	20	10			800	SOCAPEX-LIVE TRUSS "f"	12	HT6
HT4	13	RCPT-LIVE TRUSS "d"	800			10	20	1	1	20	10	800			RCPT-LIVE TRUSS "e"	14	HT5
HT4	15	RCPT-LIVE TRUSS "d"		800		10	20	1	1	20	10		800		RCPT-LIVE TRUSS "e"	16	HT5
	17	SPARE					20	1	1	20					SPARE	18	
	19	SPARE					20	1	1	20					SPARE	20	
	21	SPARE					20	1	1	20					SPARE	22	
	23	SPARE					20	1	1	20					SPARE	24	
	25	SPARE					20	1	1	20					SPARE	26	
	27	SPARE					20	1	1	20					SPARE	28	
	29	SPARE					20	1	1	20					SPARE	30	
	31	SPARE					20	1	1	20					SPARE	32	
	33	SPARE					20	1	1	20					SPARE	34	
	35	EQUIPPED SPACE						1	1						EQUIPPED SPACE	36	
	37	EQUIPPED SPACE						1	1						EQUIPPED SPACE	38	
	39	EQUIPPED SPACE						1	1						EQUIPPED SPACE	40	
	41	EQUIPPED SPACE						1	1						EQUIPPED SPACE	42	
		SUBTOTAL	2,400	2,400	1,600							2,400	2,400	1,600	SUBTOTAL		

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	4,800	COOLING		1.00	REFRIG		1.00	
AMPS	40	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	4,800	LIGHTING		1.25	KITCHEN		1.00	
AMPS	40	RECEPTACLES		1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	3,200	MOTORS		1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	27	SUPP HEAT		1.00	SHOW WNDW		1.25	12,800 VA
TOTAL PNLBD - VA	12,800	MISC EQUIP	12,800	1.00	LTG TRACK		1.00	36 A
AMPS	36							

PANELBOARD NOTES

HT - PROVIDE HANDLE-TIE PER NEC

PANELBOARD: L1 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: MDP
AIC RATING: 10000 FULLY RATED
SERVES: GUITAR CENTER
MOUNTING: SURFACE
LOCATION: ELECTRICAL, ROOM #:133

EQUIPMENT GROUND BUS

	CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
EM	1	LTG-WAREHOUSE	1,288			12	20	1	1	20	8	1,000			RCPT-SHOW WINDOW A	2
	3	LTG-BACK OF HOUSE		956		12	20	1	1	20	8		1,000		RCPT-SHOW WINDOW B	4
EM,RP	5	LTG-RR CORR, LSNS LBY, ACCT			948	12	20	1	1	20	8			1,100	RCPT-SHOW WINDOW C	6
EM,RP	7	LTG-SALES (BASS, GTR, DRUM)	896			10	20	1	1	20	8	1,100			RCPT-SHOW WINDOW D	8
EM,RP	9	LTG-SALES (GEN, CYMBALS)		1,063		10	20	1	1	20	8		1,000		RCPT-SHOW WINDOW E	10
EM,RP	11	LTG-SALES (GEN, RCRD, KYBD)			972	10	20	1	1	20	8			1,100	RCPT-SHOW WINDOW F	12
EM,RP	13	LTG-LIVE/DJ	250			12	20	1	1	20	8	1,100			RCPT-SHOW WINDOW G	14
RP	15	LTG-CASH WRAPS		240		12	20	1	1	20	8		1,000		RCPT-SHOW WINDOW H	16
	17	SPARE					20	1	1	20	8			1,200	RCPT-SHOW WINDOW I	18
	19	SPARE					20	1	1	20	8	1,200			RCPT-SHOW WINDOW J	20
	21	SPARE					20	1	1	20	8		1,200		RCPT-SHOW WINDOW K	22
	23	SPARE					20	1	1	20	8			1,800	RCPT-SHOW WINDOW L	24
	25	SPARE					20	1	1	20	8	1,800			RCPT-SHOW WINDOW M	26
	27	SPARE					20	1	1	20	8		1,800		RCPT-SHOW WINDOW N	28
	29	PWR-INV			1,241	12	20	1	1	20	8			1,800	RCPT-SHOW WINDOW O	30
	31	PWR-C	200			12	20	1	1	20					SPARE	32
	33	PWR-CL		200		12	20	1	1	20					SPARE	34
	35	EQUIPPED SPACE						1	1						EQUIPPED SPACE	36
	37	EQUIPPED SPACE						1	1						EQUIPPED SPACE	38
	39	EQUIPPED SPACE						1	1						EQUIPPED SPACE	40
	41	EQUIPPED SPACE						1	1						EQUIPPED SPACE	42
		SUBTOTAL	2,634	2,459	3,161							6,200	6,000	7,000	SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	8,834	COOLING		1.00	REFRIG		1.00	
AMPS	74	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	8,459	LIGHTING	6,613	1.25	KITCHEN		1.00	
AMPS	70	RECEPTACLES		1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	10,161	MOTORS		1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	85	SUPP HEAT		1.00	SHOW WNDW	19,200	1.25	33,907 VA
TOTAL PNLBD - VA	27,454	MISC EQUIP	1,641	1.00	LTG TRACK		1.00	94 A
AMPS	76							

PANELBOARD NOTES

RP - VIA LIGHTSTAT CONTACTOR PANEL   EM - EMERG LTG HANDLE-ON CLAMP

PANELBOARD: L2 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: MDP
AIC RATING: 10000 FULLY RATED
SERVES: GUITAR CENTER
MOUNTING: SURFACE
LOCATION: ELECTRICAL, ROOM #:133

EQUIPMENT GROUND BUS

	CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.	
RP,CL	1	LTG-KEYBOARDS CSWK TRACK	572			12	20	1	1	20	12	300			LTG-GEN TRACK NORTH	2	RP,CL
RP,CL	3	LTG-RECORDING CSWK TRACK		494		12	20	1	1	20	12		360		LTG-DISPLAY TRACK SOUTH	4	RP,CL
RP,CL	5	LTG-CYMBALS CSWK TRACK			156	12	20	1	1	20	12			435	LTG-DRUMS TRACK	6	RP,CL
RP	7	LTG-BASS CSWK	400			12	20	1	1	20	12	510			LTG-KYBD & REC DISP TRACK	8	RP,CL
RP	9	LTG-GUITAR CSWK		400		12	20	1	1	20	12		288		LTG-KYBD & REC GEN TRACK	10	RP,CL
RP	11	LTG-USED CSWK			240	12	20	1	1	20	12			435	LTG-ENTRY, SHOW TRACK	12	RP,CL
RP	13	LTG-LIVE & DJ RGB CSWK	120			12	20	1	1	20	12	360			LTG-BASS TRACK	14	RP,CL
RP	15	LTG-LIVE, DJ, GACS CSWK		408		12	20	1	1	20	12		360		LTG-GUITAR WALL TRACK	16	RP,CL
RP	17	LTG-DRUM CSWK			96	12	20	1	1	20	12			195	LTG-USED TRACK	18	RP,CL
	19	SPARE					20	1	1	20	12	330			LTG-ACOUSTIC GTRS TRACK	20	RP,CL
	21	SPARE					20	1	1	20	12		540		LTG-SHOW TRACK	22	RP,CL
	23	SPARE					20	1	1	20	12			117	LTG-STUDIO CORRIDOR	24	RP,CL
	25	SPARE					20	1	1	20					SPARE	26	
	27	SPARE					20	1	1	20					SPARE	28	
	29	SPARE					20	1	1	20					SPARE	30	
	31	SPARE					20	1	1	20					SPARE	32	
	33	SPARE					20	1	1	20					SPARE	34	
	35	EQUIPPED SPACE						1	1						EQUIPPED SPACE	36	
	37	EQUIPPED SPACE						1	1						EQUIPPED SPACE	38	
	39	EQUIPPED SPACE						1	1						EQUIPPED SPACE	40	
	41	EQUIPPED SPACE						1	1						EQUIPPED SPACE	42	
		SUBTOTAL	1,092	1,302	492							1,500	1,548	1,182	SUBTOTAL		

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	2,592	COOLING		1.00	REFRIG		1.00	
AMPS	22	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	2,850	LIGHTING	7,116	1.25	KITCHEN		1.00	
AMPS	24	RECEPTACLES		1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	1,674	MOTORS		1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	14	SUPP HEAT		1.00	SHOW WNDW		1.25	19,935 VA
TOTAL PNLBD - VA	7,116	MISC EQUIP		1.00	LTG TRACK	11,040	1.00	55 A
AMPS	20							

PANELBOARD NOTES

CL - VIA CURRENT LIMITING PANEL   RP - VIA LIGHTSTAT CONTACTOR PANEL

LTG TRACK - TRACK LENGTH

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER DAVID D. HAAKE E 16137 ELECTRICAL STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

ELECTRICAL SCHEDULES

SHEET NO:

E3.1

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001\Elec\1750003949E31.dwg, Plot, 3/28/2018 1:41:31 PM, MarkAnderson, 1:1
DAVID D. HAAKE

<u>**Division 26: GENERAL ELECTRICAL REQUIREMENTS**</u>

1. GENERAL INSTRUCTIONS

A. GENERAL REQUIREMENTS

All requirements under Division 01 and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 01, this section and division take precedence. Become thoroughly familiar with all its contents as to requirements that affect this division, section, or both. Work required under this division includes all material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate the function of each system as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and any portion of work described in one shall be provided as if described in both. In the event of discrepancies, notify the Engineer and request clarification prior to proceeding with the Work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They convey the scope of work, indicating the intended general arrangement of the systems without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory, and properly operating system.

B. DEFINITIONS

Division: References contained in this specification follow the numbering system defined in the Construction Specifications Institute (CSI) MasterFormat 2004 Edition. Specification Divisions 01 through 13 provided with this project may reference the CSI MasterFormat 1995 Edition. The corresponding division references between the 2004 Edition and 1995 Edition are as follows:

	2004 Edition	1995 Edition
1.	Division 21 - Fire Suppression	Division 15
2.	Division 22 - Plumbing	Division 15
3.	Division 23 - HVAC	Division 15
4.	Division 26 - Electrical	Division 16
5.	Division 27 - Communications	Division 16
6.	Division 28 - Electronic Safety and Security	Division 16

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembling, installing, and similar operations."

Install: "to perform all operations at the project site including, but not limited to, the actual unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use."

Provide: "to furnish and install."

Furnished by Owner (or Owner-Furnished) or Furnished by Others: "an item furnished by the Owner or under other divisions or contracts, and installed under the requirements of this division, complete, and ready for the intended use, including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division.

Engineer: Where referenced in this Division, "Engineer" is the Engineer of Record and the Design Professional for the work under this division, and is a consultant to, and an authorized representative of the Architect, as defined in the General and/or Supplementary Conditions. When used in this division, Engineer means increased involvement by and obligations to the Engineer, in addition to involvement by and obligations to the Architect.

AHJ: The local code and/or inspection agency (Authority) Having Jurisdiction over the Work.

NRTL: Nationally Recognized Testing Laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project. Nationally recognized testing laboratories and standards listed are used only to represent the characteristics required and are not intended to restrict the use of other NRTLs that are acceptable to the AHJ and standards that meet the specified criteria.

Homerun: That portion of an electrical circuit originating at a junction box, termination box, receptacle, or switch with termination at an electrical panelboard. Note: Where MC cable is utilized for receptacle and/or lighting branch circuiting loads, the originating point of the homerun shall be at the first load in the circuit or at a junction box located in an accessible ceiling space as close as possible to the first load.

Substitution: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Substitutions include Value Engineering proposals.
1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the Engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, certified, or all three, by an NRTL, and acceptable to the AHJ over this project.

C. PRE-BID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to comply with this requirement shall not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

D. MATERIAL AND WORKMANSHIP

Provide new material, equipment, and apparatus under this contract unless otherwise stated herein, of best quality normally used for the purpose in good commercial practice, and free from defects. Model numbers listed in the specifications or shown on the drawings are not necessarily intended to designate the required trim, written descriptions of the trim govern model numbers.

Provide markings or a nameplate for all material and equipment identifying the manufacturer and providing sufficient reference to establish quality, size, and capacity. All workmanship shall be of the finest possible by experienced mechanics of the proper trade. In general, provide the following quality grade(s) for all materials and equipment.

Commercial specification grade:

Provide all hoists, scaffolds, staging, runways, tools, machinery, and equipment required for the performance of the electrical work. Store and maintain material and equipment in clean condition, and protected from weather, moisture, and physical damage.

Furnish only material and equipment that are listed, labeled, certified, or all three, by an NRTL whenever any listing or labeling exists for the types of material and equipment specified.

At a minimum, general work practices for electrical construction shall be in accordance with NECA 1 (latest edition), "Standard Practices for Good Workmanship in Electrical Construction".

E. MANUFACTURERS

In other articles where lists of manufacturers are introduced, subject to compliance with requirements, provide products by one of the manufacturers specified.

Where a list is provided, manufacturers are listed alphabetically and not in accordance with any ranking or preference.

Where manufacturers are not listed, provide products subject to compliance with requirements from manufacturers that have been actively involved in manufacturing the specified product for no less than 5 years.

F. COORDINATION

Coordinate all work with other divisions and trades so that various components of the systems are installed at the proper time, fit the available space, and allow proper service access to those items requiring maintenance. Components which are installed without regard to the above shall be relocated at no additional cost to the Owner.

Unless otherwise indicated, the General Contractor shall provide chases and openings in building construction required for installation of the systems specified herein. Contractor shall furnish the General Contractor with information where chases and openings are required. Contractor shall keep informed as to the work of other trades engaged in the construction of the project and shall execute work in a manner as to not interfere with or delay the work of other trades.

Figured dimensions shall be taken in preference to scale dimensions. Contractor shall take his own measurements at the building, as variations may occur. Contractor shall be held responsible for errors that could have been avoided by proper checking and inspection.

Provide materials with trim that will properly fit the types of ceiling, wall, or floor finishes actually installed. Model numbers listed in the specifications or shown on the drawings are not intended to designate the required trim.

Make all offsets required to clear equipment, beams, and other structural members, and to facilitate concealing raceways in the manner anticipated in the design. Provide materials with trim that will fit properly the types of ceiling, wall, or floor finishes actually installed.

G. ORDINANCES AND CODES

Work performed under this contract shall, at a minimum, be in conformance with applicable national, state and local codes having jurisdiction. Equipment furnished and associated installation work performed under this contract shall be in strict compliance with current applicable codes adopted by the local AHJ, including any amendments and standards as set forth by the following:
1. National Fire Protection Association (NFPA)
2. Underwriters Laboratories (UL)
3. Occupational Safety and Health Administration (OSHA)
4. American National Standards Institute (ANSI)
5. American Society of Testing Materials (ASTM)
6. Rules and regulations of public utilities and municipal departments affected by connection of services.
7. Other national standards and codes where applicable.

Where the contract documents exceed the requirements of the referenced codes, standards, etc., the contract documents shall take precedence. Where conflicts between various codes, ordinances, rules, and regulations exist, comply with the most stringent.

Promptly bring all conflicts observed between codes, ordinances, rules, regulations, referenced standards, and these documents to the attention of the Architect and Engineer for final resolution. Contractor will be held responsible for any violation of the law.

Procure and pay for permits and licenses required for the accomplishment of the work herein described. Where required, obtain, pay for, and furnish certificates of inspection to Owner. Provide all safety lights, guards, and warning signs required for the performance of the work and for the safety of the public.

H. PROTECTION OF EQUIPMENT AND MATERIALS

Store and protect from damage equipment and materials delivered to job site. For materials and equipment susceptible to changing weather conditions, dampness, or temperature variations, store inside in conditioned spaces. For materials and equipment not susceptible to these conditions, cover with waterproof, tear-resistant, heavy tarp or polyethylene plastic as required to protect from plaster, dirt, paint, water, or physical damage. Equipment and material damaged by construction activities shall be rejected, and Contractor shall furnish new equipment and material of a like kind at his own expense.

Keep premises broom clean of foreign material created during work performed under this contract. Conduit, equipment, etc. shall have a neat and clean appearance at the termination of the work.

Plug or cap open ends of conduits while stored and installed during construction when not in use to prevent the entrance of debris into the systems.

I. SUBSTITUTIONS

Materials, products, equipment, and systems described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by the proposed substitution. The base bid shall include only the products from manufacturers specifically named in the drawings and specifications. To request a substitution, request the Substitution Request Form from the Architect or Engineer. Complete and send the Substitution Request From for each material, product, equipment, or system that is proposed to be substituted. The burden of proof of the merit of the proposed substitution is upon the proposer.

Unless stated otherwise in writing to the Engineer by the Contractor, Contractor warrants to the Engineer, Architect, and Owner the following:
1. Proposed substitution has been fully investigated and determined to meet or exceed the specified Work in all respects unless stated otherwise in the substitution request.
2. Proposed substitution is consistent with the Contract Documents and will produce indicated results, including functional clearances, maintenance service, and sourcing of replacement parts.
3. Proposed substitution has received necessary approvals of authorities having jurisdiction.
4. Same warranty will be furnished for proposed substitution as for specified Work.
5. If accepted substitution fails to perform as required, Contractor shall replace substitute material or system with that originally specified and bear costs incurred thereby.
6. Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

No substitutions will be considered unless the Substitution Request Form is completed and attached with the appropriate substitution documentation. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by the Engineer at least ten (10) calendar days prior to the date for receipt of bids.

If the proposed substitution is approved prior to receipt of bids, such approval will be stated in an addendum. Bidders shall not rely upon approvals made in any other way. Verbal approval will not be given. No substitutions will be considered after the contract is awarded unless specifically provided in the contract documents.

Provide factory generated point-by-point calculations for all exterior light fixtures (photometric files supplied so the engineer can generate a point-by-point do not suffice for the point-by-point calculations). Provide interior point-by-point calculations at the discretion of the engineer.

J. SUBMITTALS

Assemble and submit for review shop drawings, material lists, manufacturer product literature for equipment to be furnished, and items requiring coordination between contractors under this contract. Provide submittals in sufficient detail so as to demonstrate compliance with these Contract Documents and the design concept. Prior to transmitting submittals, verify that the equipment submitted is mutually compatible with and suitable for the intended use, will fit the available space, and maintain manufacturer recommended service clearances. If the size of equipment furnished makes necessary any change in location or configuration, submit a shop drawing showing the proposed layout.

Transmit submittals as early as required to support the project schedule. Allow two weeks for Engineer review time, plus to/from mailing time via the Architect, plus a duplication of this time for resubmittals, if required. Only resubmit those sections requested for resubmittal.

Submittals shall contain the project name, applicable specification section, submittal data, equipment identifications acronym as used on the drawings, and the Contractor's stamp. The stamp shall certify that the submittal has been checked by the Contractor, complies with the drawings and specifications, and is coordinated with other trades. Manufacturer product literature shall include shop drawings, product data, performance sheets, samples, and other submittals required by this division. Highlight, mark, list, or indicate the materials, performance criteria, and accessories that are being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without review.

Submittals and shop drawings shall not contain firm name, logo, the seal, or signature of the Engineer. They shall not be copies of the work product of the Engineer. If the Contractor desires to use elements of such product, refer to paragraph "Electronic Drawing Files" for procedures to be used.

Separate submittals according to individual specification sections. Illegible submittals will be rejected and returned without review. Catalog data shall be properly bound, identified, indexed and tabbed in a 3-ring binder. Each item or model number shall be clearly marked and accessories indicated. Label the catalog data with the equipment identification acronym or number as used on the drawings and include performance curves, capacities, sizes, weights, materials, finishes, wiring diagrams, electrical requirements and deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if the above mentioned requirements are not met.
Provide the quantity of submittals required by Division 01. If not indicated and hard-copy sets are provided, submit a minimum of six (6) copies. Refer to Division 01 for acceptance of electronic submittals for this project. For electronic submittals, Contractor shall submit the documents in accordance with the procedures specified in Division 01. Contractor shall notify the Architect and Engineer that the submittals have been posted. If electronic submittal procedures are not defined in Division 01, Contractor shall include the website, user name, and password information needed to access the submittals. For submittals sent by e-mail, Contractor shall copy the designated representatives of the Architect and Engineer. Contractor shall allow for the Engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the submittal.

The checking and subsequent acceptance of submittals by the Engineer and/or Architect shall not relieve the Contractor from responsibility for deviations from the drawings and specifications, errors in dimensions, details, sizes of equipment, or quantities, omissions of components or fittings, coordination of electrical requirements, and not coordinating items with actual building conditions and adjacent work. Contractor shall request and secure written acceptance from the Engineer and Architect prior to implementing any deviation.

K. ELECTRONIC DRAWING FILES

In preparation of shop drawings or record drawings, Contractor may, at his option, obtain electronic drawing files in AutoCAD or DXF format on CD-ROM disk, DVD disk, flash drive, or direct download, as desired, from the Engineer for a shipping and handling fee of $200 for a drawing set up to 12 sheets and $15 per sheet for each additional sheet. Contact the Architect for written authorization and Engineer for the necessary agreement form and to specify shipping method and drawing format. In addition to payment, the written authorization from the Architect and release agreement form from the Engineer must be received before electronic drawing files will be sent.

L. RECORD DRAWINGS (AS-BUILT DRAWINGS)

During progress of the work in this division, Contractor shall maintain an accurate record of all changes made during the installation of the system. Upon completion of the work, accurately transfer all record information to three identical sets of the approved shop drawings. Insert one set into each copy of the manual described below.

See Division 01 and General Conditions for additional information.

M. OPERATION AND MAINTENANCE INSTRUCTIONS

During the course of construction, collect and compile a complete brochure of equipment furnished and installed on this project. Include operational and maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved submittals and shop drawings, warranties, and descriptive literature as furnished by the equipment manufacturer. Include an inside cover sheet that lists the project name, date, Owner, Architect, Engineer, General Contractor, Sub-Contractor, and an index of contents.

Submit three copies of literature bound in approved binders with index and tabs separating equipment types to the Architect, for Engineer's review, at the termination of the work. Paper clips, staples, rubber bands, loose-leaf binding, and mailing envelopes are not considered approved binders. Final approval of systems installed under this contract shall be withheld until this equipment brochure is received and deemed complete by the Architect and Engineer. Instruct workmen to save required literature shipped with the equipment itself for inclusion in this brochure.

Include Record Drawings as described above.

Refer to Division 01 for acceptance of electronic manuals for this project. For electronic manuals, refer to paragraph "Submittals" for requirements.

N. TRAINING

At a time mutually agreed upon between the Owner and Contractor, provide the services of a factory trained and authorized representative to train Owner's designated personnel on the operation and maintenance of the equipment provided for this project.

Provide training to include, but not be limited to, an overview of the system and/or equipment as it relates to the facility as a whole; operation and maintenance procedures and schedules related to startup and shutdown, troubleshooting, servicing, preventive maintenance and appropriate operator intervention; and review of data included in the operation and maintenance manuals.

Submit a certification letter to the Architect stating that the Owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees and subject of training. The Contractor and the Owner's representative shall sign the certification letter indicating agreement that the training has been provided.

Schedule training with Owner with at least 7 days advance notice.

O. WARRANTIES

Warrant each system and each element thereof against all defects due to faulty workmanship, design, or material for a period of 12 months from date of Substantial Completion, unless specific items are noted to carry a longer warranty in these construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects occurring within the warranty period(s) as stated in the General Conditions and Division 01.

Warranties shall include labor and material, including travel expenses. Make repairs or replacements without any additional costs to the Owner, and to the satisfaction of the Owner, Architect, and Engineer.

Perform the remedial work promptly, upon written notice from the Engineer or Owner.

Also warrant the following additional items:
1. All raceways are free from obstructions, holes, crushing, or breaks of any nature.
2. All raceway seals are effective.
3. The entire electrical system is free from all short circuits and unwanted open circuits and grounds.

At the time of Substantial Completion, deliver to the Owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the one year period and any actions the Owner must take in order to maintain warranty status. Each warranty instrument shall be addressed to the Owner and state the commencement date and term.

2. GENERAL MATERIALS AND INSTALLATION

A. BUILDING OPERATION

Comply with the schedule of operations as outlined in the architectural portions of this specification. Building shall be in operation during normal workday hours. Accomplish work requiring interruption of building operation at a time when the building is not in operation and only with written approval of building Owner and/or tenant. Coordinate interruption of building operation with the Owner and/or tenant a minimum of seven (7) days in advance of work.

B. EXISTING EQUIPMENT REUSE AND REMOVAL

Provide all demolition of existing electrical systems and new electrical system modifications required because of building remodeling, as noted on the Drawings, or necessary for proper operation and new construction. Remove all abandoned cables and wiring and conduit above accessible ceilings and ventilation shafts.

Remove all existing wiring, light fixtures, exposed conduits, and other electrical installations not reused prior to substantial completion of the work.

Existing raceways may be reused if their points of terminations are suitable; if they are clean inside with no evidence of rust or burrs; if free from cracks, flattened sections, or sharp bends; and, if suitably located to avoid conflicts with other trades or installations. Carefully "fish" all existing conduits reused under this contract to remove all debris and obstructions, and swab until all moisture is removed.

Cut, patch, and repair where required for new electrical installations, and patch and repair all surface damage resulting from this work. Cut flush with the floor and plug at both ends raceways stubbed above the floor and not used at substantial completion of the work.

Relocate all existing electrical systems required to be in operation at substantial completion of the contract, if required, as a result of work included under this contract, even if not specifically indicated in the drawings or specifications.

Existing service entrance conductors and feeder conductors may be reused if all of the following conditions are met:
1. Conductor sizes meet or exceed the sizes specified on the drawings.
2. Conductor insulation is in good or better condition.
3. Conductor insulation is the correct type for the conditions.

C. COINCIDENTAL DAMAGE

Repair streets, sidewalks, drives, paving, walls, finishes, and other facilities damaged in the course of this Work. Repair materials shall match existing construction. Repair work shall meet all requirements of the Owner, local authorities having jurisdiction, and meet the satisfaction of the Architect. Repair work shall be thoroughly first class.

D. CUTTING AND PATCHING

Conform to the requirements in Division 01. Cut walls, floors, ceilings, and other portions of the facility as required to install work under this division. Obtain permission of the Architect prior to cutting. Do not cut or disturb structural members without prior approval from the Architect. Cut holes as small as possible. Patch walls, floors, and other portions of the facility as required by work under this division. Patching shall match the original material and construction including fire ratings, if applicable. Repair and refinish areas disturbed by work to the condition of adjoining surfaces in a manner satisfactory to the Architect.

E. ROUGH-IN

Coordinate without delay all roughing-in with other divisions. Conceal all conduit and raceways except in unfinished areas and where otherwise indicated on the drawings.

F. SUPPORT SYSTEMS

Steel Slotted Support Systems (Slotted Channel): Comply with MFMA-3, factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch.

Finishes:
1. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-3.
2. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane or polyester coating applied according to MFMA-3.
3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-3.

Aluminum Slotted Support Systems (Slotted Channel): Comply with MFMA-3, Type 6063-T6, per ASTM B221; factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch.

Manufacturers: Cooper B-Line, ERICO International, Hilti, Power-Strut, Thomas and Betts, or Unistrut.

Field Fabrication:

Where field cutting of standard lengths of channel are required, make cuts straight and perpendicular to manufactured surfaces.

For field-cut or damaged surfaces of coated channels, dress cut ends, damaged surfaces, or both, with an abrasive material (e.g., file, grinding stone, or similar) and cleanser to remove oils, rust, sharp edges, and shards.

For channel with a factory-applied coating, re-finish cut edges with a coating compatible with the factory finish and as recommended by the manufacturer (e.g., manufacturer's touch-up paint or zinc-rich cold-galvanizing compound, as applicable).

G. ACCESS DOORS

Provide access doors for all concealed equipment where indicated or as required, except where above lay-in ceilings. Access doors shall be adequately sized for the devices served with a minimum size of 18 inches x 18 inches. Access doors must be of the proper construction for the type of construction in which it is installed. Obtain Architect's approval of type, size, location and color before ordering. Provide factory-fabricated and assembled units, complete with attachment devices and fasteners ready for installation, concealed hinges, flush screwdriver-operated cam lock, and anchor straps. Provide access doors manufactured by: Bar-Co, J.L. Industries, Karp Associates, Milcor, Nystrom Building Products, Wade, or Zum.

H. PENETRATIONS

Coordinate sleeve selection and application with selection and application of fire-stopping specified in Division 07 section "Through-Penetration Firestop Systems."

Roofs:
1. Coordinate all roof penetrations with Engineer, Owner, and as applicable, the roofing contractor providing a roof warranty.

2. Keep all raceway penetrations within mechanical equipment curbs wherever possible. Coordinate with Division 01.

3. Flash and counterflash all openings through roof, and/or provide pre-fabricated molded seals compatible with the roof construction installed, or as required by the Engineer, Owner, or roofing contractor. All roof penetrations shall be leaktight at the termination of the work and shall not void any new or existing roof warranties.

Walls and Floors:
1. Steel Pipe Sleeves for Raceways and Cables: ASTM A53/A53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends, and drip rings.

2. Cast-Iron Pipe Sleeves for Raceways and Cables: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

3. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.052 inch thickness and of length to suit application.

I. FIRESTOPPING

Sealants and accessories shall have fire-resistance ratings indicated, as established by testing identical assemblies in accordance with UL 2079 or ASTM E 814, or other NRTL acceptable to AHJ.

Manufacturers: Hilti, RectorSeal, Specified Technologies Inc., United States Gypsum Company, or 3M corp.

Through and Membrane Penetration Firestopping Systems Product Schedule: Provide UL listing, location, wall or floor rating, and installation drawing for each penetration fire stop system.

Where project conditions require modification to qualified testing and inspecting agency's illustrations for a particular firestopping condition, submit illustration, with modifications marked, approved by penetration firestopping manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly. Include qualifications data for testing agency.

J. EQUIPMENT FURNISHED BY OTHERS

Provide necessary equipment and accessories that are not provided by the equipment supplier or Owner to complete installation of equipment furnished by others in locations as indicated on the drawings, specified herein, or both. Equipment and accessories not provided by the equipment supplier may include, but not be limited to, flexible cords and plugs as required for proper operation of the complete system, in accordance with the manufacturers' instructions.

Contractor shall be responsible for correct rough-in dimensions, and verify them with Architect and/or equipment supplier prior to rough-in and service installations.

K. SYSTEM TESTING AND ADJUSTING

Adjust, align, and test all electrical equipment on this project provided under this division and all electrical equipment furnished by others for installation or wiring under this division for proper operation.

Test all systems and equipment according to the requirements in NETA ATS (latest edition) and all additional requirements specified in following sections.

Maintain the following on the project premises at all times: a true RMS reading voltmeter, a true RMS reading ammeter, and a megohmmeter insulation resistance tester. Provide test data readings as requested or as required by the Engineer.

L. SEISMIC CONTROLS FOR MEPF SYSTEMS

Seismic Protection Criteria:

Risk/Occupancy Category:	I, II or III
Site Soil Category:	Contractor's Seismic Engineer To Determine.
Seismic Design Category:	Contractor's Seismic Engineer To Determine.
Component Importance Factor:	Determined From ASCE 7-2010.

The Contractor shall be responsible for determining the requirements for seismic bracing of mechanical, electrical, and plumbing systems. Seismic protection criteria used to determine seismic bracing requirements of all mechanical, electrical, and plumbing systems shall be determined by the applicable code adopted in the project jurisdiction. Where not already determined within the contract documents, the Contractor shall be responsible for contracting a licensed professional engineer to establish building site class, seismic design category, seismic zone, or any other criteria necessary to determine the requirements for seismic bracing on mechanical, electrical, and/or plumbing systems.

Seismic bracing of fire protection systems shall be installed in strict accordance with the provisions of NFPA 13 (2010 or later edition).

The Contractor shall determine the type and location of seismic bracing required for the mechanical, electrical, and plumbing elements shown on the drawings based on the established seismic criteria, the size and weight of the supported element, and the distance from structure of the supported element.

The Contractor shall submit the following shop drawing information to the AHJ and the Engineer for review and approval:
1. Seismic analysis listing all applicable seismic design criteria.
2. Descriptive catalog data of seismic bracing materials.
3. Shop drawings showing bracing type and location.
4. Installation details of all bracing used.
5. Calculations showing that the seismic restraints meet the seismic requirements.

Shop drawings and calculations shall be signed and sealed by a registered professional engineer, licensed in the state of the project and employed by the manufacturer of the seismic bracing products. Calculations shall include dead loads, static seismic loads, and capacity of materials utilized for connections.

Seismic bracing, restraints, isolators, and isolation materials shall be of the same manufacturer and shall be certified by the manufacturer. Approved manufacturers are: Amber/Booth Company, Inc., B-Line/Tolco, Kinetics Noise Control, Inc., Loos & Company, Inc., Mason Industries, Inc., Uni-strut, or Vibro-Acoustics. Each device shall have a pre-approval number from California OSHPD or other recognized government agency showing maximum restraint ratings.

Seismic bracing measures to be applied to mechanical, electrical, and plumbing equipment/systems and shall be installed in strict accordance with all applicable local, state, and/or federal codes as well as manufacturer's requirements. The most stringent criteria shall apply. All anchor connections to structure for support of mechanical and electrical equipment, regardless of the need for seismic restraints, shall be shown on shop drawings.

M. EQUIPMENT IDENTIFICATION

Provide equipment identification nameplates on all switchboards, panelboards, electrical equipment enclosures, access doors, transformers, disconnect switches, enclosed circuit breakers, motor starters, feeder devices in switchboards, distribution panelboards, and motor control centers.

Nameplates:
1. Engraved, contrasting color, three-layer, laminated plastic, indicating the name of the equipment, load, or circuit as designated on the drawings and in the specifications.
2. Field-applied permanent epoxy adhesive, compatible with the equipment finish.

Attachment method shall be acceptable to the manufacturers of the equipment to which the nameplates are being applied.

Nameplate Color:
1. Black background with white letters for Normal Power;
2. Red background with white letters for Emergency Power.
Letter height: 3/8-inch minimum.

B. SYSTEM START UP

Perform the following prior to starting up the electrical systems:
1. Check all components and devices and lubricate items accordingly.
2. Tighten screws and bolts for connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
3. Adjust taps on each transformer for rated secondary voltage when the transformer is at minimum load.
4. Check and record building's service entrance voltage, grounding conditions, grounding resistance, and proper phasing.
5. Replace all burned-out lamps and lamps used for temporary construction lighting in permanent light fixtures.
6. After all systems have been inspected and adjusted, confirm all operating features required by the drawings and specifications and make final adjustments as necessary.

3. ACCEPTANCE TESTING

Perform acceptance test procedures in accordance with the specifications listed in the Reference Joint Appendices for the Building Energy Efficiency Standards of California. Reference the Non-Residential Certificate of Compliance (NRCC) forms on the drawings for the systems which shall be tested. Submit Non-Residential Certificate of Acceptance (NRCA) forms for each system for which the CLCATT is responsible.

<u>**END OF GENERAL ELECTRICAL REQUIREMENTS**</u>

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 **FAX** (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET
BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER
DAVID D. HAAKE
E 16137
ELECTRICAL
STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
ELECTRICAL SPECIFICATIONS

SHEET NO:
E4.0

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DAVID D. HAAKE

Division 26: BASIC ELECTRICAL MATERIALS AND METHODS

1. RACEWAYS

A. METALLIC CONDUIT AND TUBING

Electrical Metallic Tubing, Couplings, and Fittings (EMT): ANSI C80.3, UL 797. Only steel products allowed. Reduced wall EMT is not allowed.

Flexible Metal Conduit (FMC): Zinc-coated steel or aluminum, UL 1. Reduced-wall FMC is not allowed.

Intermediate Metal Conduit (IMC): Hot-dip Galvanized Rigid Steel Conduit, ANSI C80.6, UL 1242.

Liquidtight Flexible Metal Conduit (LFMC): Flexible steel conduit with PVC jacket, UL 360; fittings: NEMA FB 1.

Rigid Metal Conduit (RMC): Hot-dip Galvanized Rigid Steel Conduit (GRS): ANSI C80.1, UL 6.
Plastic-Coated IMC, RMC, and Fittings: NEMA RN 1, NRTL listed. Coating thickness of 0.04 inches minimum.

IMC and RMC Fittings: NEMA FB 1; compatible with conduit type and material, NRTL listed.

Manufacturers: AFC Cable, Alflex, Anamet Electrical, Electri-Flex, Indalex, Manhattan/CDT/Cole-Flex, O-Z/Gedney, Republic Raceway, Tyco International, Western Tube and Conduit, or Wheatland Tube.

B. NON-METALLIC CONDUIT AND TUBING

Rigid Nonmetallic Conduit (RNC): Schedule 40 PVC, 90 deg C rated, NEMA TC-2, UL 651

Fittings: NEMA TC 3, TC 6; UL 651, compatible with conduit/tubing type and material, NRTL listed.

Manufacturers: AFC Cable, American International, Anamet Electrical, Amco, Cantex, Certainteed, Condux International, Elecsys, Electri-Flex, Lamson and Sessions, Manhattan/CDT/Cole-Flex, Prime Conduit, Raco, Spiralduct, Superflex Ltd, or Thomas and Betts.

2. RACEWAY INSTALLATION

A. GENERAL RACEWAY INSTALLATION REQUIREMENTS

Install raceways parallel and perpendicular to building lines.

Install raceways to requirements of structure, to requirements of all other work on the project, and to clear all openings, depressions, pipes, ducts, reinforcing steel, and other immovable obstacles.

Install raceways set in forms for concrete structure in such a manner that installation will not affect the strength of the structure.

Except where approved in writing by the Engineer, install no raceway in a slab-on-grade. Locate raceway below granular fill below slabs-on-grade.

Install raceways continuous between connections to outlets, boxes, and cabinets with a minimum possible number of bends and not more than the equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- and 90-degree bends, unless approved by the Engineer in advance. Make other bends smooth and even and without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible and never shorter than the corresponding trade elbow.

Use long radius elbows for all underground installations, where necessary, or where otherwise indicated.

Securely fasten raceways in place with approved straps, hangers, and steel supports as required. Attach raceway supports to the building structure. Hang single raceways for feeders with malleable split ring hangers with rod and turnbuckle suspension from inserts spaced not over 10 feet apart in construction above. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of the bends. Do not support raceways from suspended ceiling components.

Ream raceway ends, thoroughly clean raceways before installation, and keep clean after installation. Plug or cover openings and boxes as required to keep raceways clean during construction and fish all raceways clear of obstructions before pulling conductor wires. Provide raceways of ample size for pulling of wire, not smaller than code requirements and not less than 1/2-inch in size, unless indicated otherwise on Drawings. Homeruns containing more than one branch circuit shall not be less than 3/4-inch in size.

Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet Engineer's approval without additional cost to the Owner.

Align and install true and plumb all raceway terminations at panelboards, switchboards, motor control equipment, and junction boxes.

Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints, and when using RNC or RAC in exposed environments in accordance with NFPA 70 and expansion/contraction properties of RNC or RAC.

Install a pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 24 inches of slack at each end of pull wire.

Make all joints and connections in a manner that will ensure mechanical strength and electrical continuity.

B. ABOVE GROUND RACEWAY USE:

Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. Provide GRS for all conduits exposed to weather or other hazardous conditions.

Unless noted otherwise, all other raceway may be EMT where approved by local code. Use compression type fittings for EMT, with all fittings NRTL listed for the environment in which they are used. Unless noted otherwise, set-screw type fittings are not allowed.

C. UNDERGROUND RACEWAY USE:

Provide GRS installed below grade with a corrosion-resistant bonded-plastic or approved mastic coating. This shall include the 90-degree elbow below grade and the entire vertical transition to above grade.

RNC conduit may be used underground where permitted by local code and where not specifically restricted by these documents. When used, provide plastic-coated GRS, as specified above, for all bends greater than 30 degrees, including the 90-degree elbows below grade and the entire vertical risers for transitions from below to above grade or above slab.

D. EQUIPMENT CONNECTIONS

Use FMC for final connection to each motor, transformer, and any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors, or sunlight. Provide all FMC and LFMC with an insulated bonding conductor.

Use only metal raceways for all power wiring from the output of variable frequency drives to their respective motors.

3. BUSHINGS AND LOCKNUTS

Rigidly terminate conduits entering sheet metal enclosures to the enclosure with a bushing and locknut on the inside and a locknut or an approved hub on the outside. Conduit shall enter the enclosure squarely.

Provide bushings and locknuts made of galvanized malleable iron with sharp, clean-cut threads.

Where EMT enters a box, provide approved EMT compression connectors.

Use insulated, grounding, or combination bushings wherever connection is subject to vibration or moisture, when required by NFPA 70, or both.

4. CONDUCTORS AND CABLES

Annealed (soft) copper complying with ICEA S-95-658/NEMA WC70 and UL standards 44 or 83 as applicable.

Conductor Insulation Types: 90-degree C-rated, Type THHN/THWN-2 or XHHW-2 complying with ICEA S-95-658/NEMA WC70.

Sizes of conductors and cables indicated or specified are in American Wire Gage (AWG - Brown and Sharpe).

All feeder and branch circuit conductors No. 8 AWG and larger: Stranded.

All conductors, No. 10 AWG and smaller: Solid copper.

All Branch Circuit Wiring: Not smaller than No. 12 AWG. If no conductor size is indicated on the Drawings for a branch circuit, provide conductors and conduit sized per NFPA 70 and based on the indicated branch circuit overcurrent protective device (OCPD) rating and number of poles. Where no circuit size (i.e., conductors and OCPD) is indicated on the drawings for a branch circuit, provide three No. 12 AWG conductors, in 3/4-inch raceway, and a 20A circuit breaker.

Control Wiring: Stranded copper conductors, 600V insulation, of the proper type, size, and number as required to accomplish specified function. Minimum size: No. 14 AWG, unless noted otherwise.

Flexible Cords and Cables: Stranded copper conductors for all, unless noted otherwise.

Special Purpose Conductors And Cables, Such As Low Voltage Control And Shielded Instrument Wiring: As recommended by the system equipment manufacturer unless indicated otherwise.

Copper Conductor Manufacturers: Advance Wire and Cable, AFC Cable, Alan Wire, Alflex, American Insulated Wire, Encore Wire, Northern Cables, Okonite, or Southwire.

Connections: Apply a zinc based anti_oxidizing compound to connections. Do not use terminals on wiring devices to feed through to the next device.

5. CONDUCTORS AND CABLES INSTALLATION

Install all wiring in approved raceway and enclosures, except
where specified or indicated for low-voltage wiring, where specified or indicated for direct-buried cables, or where type MC cable is indicated or specified as acceptable.

Install all conductors and cables in raceways continuous without taps or splices. Splice or tap only in approved boxes and enclosures with approved solderless connectors, or crimp connectors and terminal blocks for control wiring, and keep to the minimum required. Insulate all splices, taps, and joints as required by codes.

All materials used to terminate, splice, or tap conductors: designed for, properly sized for, and NRTL listed for the specific application and conductors involved, and installed in strict accordance with the manufacturer's recommendations, using the manufacturer's recommended tools.

Where wiring is indicated as installed, but the connection is indicated "FUTURE" or "BY OTHER DIVISION, TRADES, OR CONTRACTS", leave a minimum 3-foot "Pigtail" at the box, tape the ends of the conductors, and cover the box.

In general, the direction of branch circuit "home run" routing is indicated on the drawings, complete with circuit numbers and panelboard designation. Continue all such "home run" wiring to the designated panelboard, as though "circuit runs" were indicated in their entirety.

The number of conductors in a specific raceway "home run" is indicated with cross lines (tick marks) on each "circuit run" on the drawings.

Common or shared neutrals are not allowed unless shown on the drawings to be used or specifically noted to be allowed.

Where multi-wire branch circuits (i.e., shared neutral) are allowed, they shall be provided with a means that will simultaneously disconnect all ungrounded conductors at the point the branch circuit originates. Multi-pole breakers or 3 single-pole breakers with a handle tie are two examples.

When multiple home runs are combined into a single raceway such that the number of conductors exceeds four (conductor count is made up of any combination of phase and neutral conductors), the following restrictions apply, which are in addition to those in NFPA 70:

Normal or Non-Essential circuits:

1. Maximum of 16 conductors in a single raceway. For up to eight conductors in a raceway, minimum raceway size: 3/4-inch. For greater than eight conductors, minimum raceway size: 1-inch. Do not install any other type of circuit in this raceway.

2. Minimum wire size for all conductors in this raceway: No. 10 AWG.

3. Only 15A and 20A branch circuit homeruns may be combined into one raceway.

GFCI circuits:

1. Do not use multi-conductor circuits, with a shared neutral, for any GFCI circuit breaker or receptacle circuit.

For branch circuits fed from GFCI circuit breakers, limit the one-way conductor length to 100 feet between the panelboard and the most remote receptacle or load on the GFCI circuit.

Properly identify all terminal blocks and wire terminals for control wiring with vinyl stick-on markers or equivalent. Provide Engineer with a list of proposed identifying numbers for review prior to installing markers.

Provide an equipment-grounding conductor or bonding jumper, as applicable, in all feeders and branch circuits, sized in accordance with NFPA 70 Tables 250.66 or 250.122, as applicable, unless indicated as larger on the drawings.

Wiring shall have insulation of the proper color to match color code system in the table below unless there is a color system currently in use by the facility, in which case the colors are to match the existing system. In larger sizes where properly colored insulation is not available, use vinyl plastic electrical tape of the appropriate color around each conductor at all termination points, junctions, and pull boxes.

System Voltage:

240V and under, including 208Y/120, 120/240, 120/208, and 240D/120 systems:
1. Phase A: Black.
2. Phase B: Red.
3. Phase C: Blue.
4. Neutral: White.
5. Equipment Ground: Green.
6. Isolated Ground: Green with yellow stripe.

6. MC CABLE

A. CABLE SPECIFICATIONS

Metal-clad cable (MC Cable): 600V, unjacketed; UL Standard 83, 1569, and 1685; NFPA 70 Article 330; aluminum or galvanized steel interlocked armor; THHN- or XHHW-insulated conductors; color code: ICEA Method 1, with green insulated grounding conductor; listed for use in UL 1, 2, and 3 hour through-penetration firestop systems. MC Cable manufacturers: AFC Cable Systems, Encore Wire Corporation, Kaf-Tech, or Southwire.

B. APPLICATIONS OF MC CABLE

1. In lieu of flexible conduit and wiring from light fixtures located in accessible ceilings to junction boxes attached to building structure directly above the ceiling. Provide cable whips of sufficient lengths to allow for relocating each light fixture within a 5 foot radius of its installed location, but not exceeding 6 feet in unsupported lengths.

2. For vertical drops in stud walls.

C. PROHIBITED USE OF MC CABLE UNLESS NOTED ABOVE

Examples of those uses include, but are not limited to the following:
1. Homeruns to panelboards (refer to Section 26: Definitions).
2. Where exposed to view.
3. Where exposed to damage.
4. Hazardous locations.
5. Wet locations.
6. When restricted otherwise.
7. When specifically disallowed by the local AHJ.
8. When specifically disallowed by the landlord.
9. Circuits supplied by an emergency or standby power source.

7. MC CABLE INSTALLATION

Secure and support cable per NFPA 70 Article 330. Secure cable within 12 inches of every box or fitting. Securing and supporting intervals shall not exceed six feet. Maintain consistent spacing to avoid derating due to bundling per NFPA 70 Section 310.15. Utilize steel cable hangers, Arlington SMC series or equivalent, to support wherever possible so cables can be routed in a neat and workmanship like manner.

8. JUNCTION BOXES, PULL BOXES, CABINETS, AND WIREWAYS

Provide junction boxes, pull boxes, cabinets, and wireways wherever necessary for proper installation of various electrical systems according to NFPA 70 and where indicated on the drawings. Size as required for the specific function or as required by NFPA 70, whichever is larger. Construction shall be of a NEMA design suitable for the environment installed.

Junction boxes installed behind wall cases and in or on other store fixtures, except where otherwise specified, shall be 4 inches square or larger with galvanized covers.

Horizontally mount junction boxes under center fixtures (and cases), handy boxes or 4-inch square boxes with tops of boxes not more than 3-1/2 inches above the floor. Size junction boxes to adequately contain all required conductors and splices.

9. OUTLET BOXES

All outlets including light fixture, switch, receptacle, and similar outlets: galvanized steel knockout boxes, suitable in design to the purpose they serve and the space they occupy. Size as required for the specific function or as required by NFPA 70, whichever is larger. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush with the finished surface, accurately set, and rigidly secured in position. Provide plaster rings, extension rings and/or masonry rings as required for flush mounting. Provide approved cast outlet boxes with hubs and weatherproof covers in all areas subject to damp, wet, or harsh conditions.

Manufacturers: Appleton, Cooper, Erikson Electrical, Hoffman, Killark Electric, O-Z/Gedney, Raco, Robroy Industries, Scott Fetzer, Spring City Electrical, Thomas and Betts, Walker Systems, or Woodhead.

10. OUTLET LOCATIONS

Coordinate locations of outlet boxes. Outlets are only approximately located on the small scale drawings. Use great care in the actual location by consulting the various large scale detailed drawings used by other division trades, and by securing definite locations from the Architect.

11. MOUNTING HEIGHTS

Unless noted otherwise, install wiring devices vertically aligned at height indicated on construction drawings.

A. RECEPTACLES

Unless indicated otherwise, install vertically with the ground slot mounted at the top.

Where installed horizontally, install with the neutral slot mounted at the top.

Above counter: mount vertically aligned.

Mechanical and electrical equipment rooms and janitors closets: mount vertically aligned.

Weatherproof exterior receptacles: horizontally aligned.

GFCI receptacles: Same as general receptacles.

Concrete Block Walls: As long as ADA requirements are maintained, dimensions above may be adjusted slightly as required to compensate for variable joint dimensions such that bottom or top of boxes, as applicable, are at block joints.

B. SWITCHES

General: All switches shall be mounted at the same height throughout the project unless noted otherwise.

Above Counters: Same as for receptacles.

Concrete Block Walls: As long as ADA requirements are maintained, dimensions above may be adjusted slightly as required to compensate for variable joint dimensions, such that bottom or top of boxes, as applicable, are at block joints.

Walls with Wainscoting: 6 inches minimum above wainscoting, but not exceeding 48 inches above finished floor.

C. MULTI-OUTLET ASSEMBLIES

As indicated on the drawings.

D. TELEPHONE/DATA OUTLET BOXES

General: Match mounting height of adjacent wiring device listed above.

Wall-mounted Telephone (Public): One at 48 inches above finished floor and one at 36 inches above finished floor.

For other than wiring devices, refer to paragraphs, articles, sections, divisions, or drawings to obtain mounting heights for specific equipment or systems.

12. WIRING DEVICES

The catalog numbers listed for wiring devices are generally for 20A rated devices. Where 15A rated devices are indicated on the drawings or required for circuit rating limitations, provide wiring devices equivalent to those specified for 20A, but rated for 15A.

Type of Device	Hubbell	Pass & Seymour	Leviton	Cooper Wiring Devices
Duplex Receptacles - Commercial Grade				
Duplex Receptacle	BR20	CR20	CR20	CR20
Duplex Receptacle - Weather resistant	BR20WR	WR20TRW	WBR20	WRBR20
Isolated Ground (IG) Receptacle	IG20CR	IG5362	5362-IG	IG5362
Other Receptacles				
GFCI Receptacle	GF20LA	2095	7899-H	VGF20
GFCI Receptacle - Weather resistant	GFTR20	2095TRWR	W7899	WRVGF20
Quad/4-Plex	HBL 420	420H	21254	N/A
Switches - Commerical Grade				
Single Pole Switch	DS120	CS20AC1	CSB1-20	CSB120
Double Pole Switch	DS220		CSB2-20	CSB220
Three-way Swtch	DS230	CS20AC3	CSB3-20	CSB320

All receptacles located outdoors or in damp or wet locations: Listed as 'weather Resistant', designated by a 'WR' on the faceplate.

Minor changes relative to the location of electrical equipment may be made to comply with structural and building requirements as determined in the course of construction. Provide all wiring devices of the same manufacturer and not mixed on the project, to the maximum extent possible. Provide color of toggles and receptacles as requested by the Architect.

Automatic Load Control Relay (ALCR) (also referred to as emergency shunt relay): UL 924 listed as emergency lighting and power equipment. Connect ALCR in parallel with a lighting control device. Loss of normal power shall cause relay to automatically shunt emergency power to lighting circuit regardless of lighting control device position. Emergency lighting circuit shall continue to operate at full power until normal power has been restored. Provide a two-gang junction box with separation barrier and plaster ring for the ALCR, and install it adjacent to its associated lighting control device or above accessible ceiling. Provide Acuity (Lighting Controls and Design) Model GR2001 ALCR, or equivalent by Bodine, Cooper, Hubbell, Legrand, or Leviton.

13. SWITCH AND OUTLET COVER PLATES

Switch and Outlet Plates: Colored, smooth nylon; by the same manufacturer as the wiring devices, wherever possible. Verify desired materials and colors with Architect before installation. Switch plates in unfinished rooms and spaces: Stamped steel, cadmium plated. Install groups of switches under one ganged-plate, usually horizontally; or, where required by details, vertically. Set all cover plates plumb, parallel, and finished flush with the wall.

14. WEATHERPROOF COVER PLATES

Provide GFCI receptacles for designated weatherproof receptacles, unless indicated otherwise on the drawings.

Unattended Exterior, Wet Locations or Other Locations as Indicated: In-use, NEMA 3R, recessed or flush mount, NRTL labeled plates molded from a clear high impact ultraviolet stabilized polycarbonate material for easy verification that cords are plugged in and that the GFCI is functioning. Back box must be suitable for conduit connecting. Coordinate back box with wall depth. Intermatic WP1000RC/HRC or equal.

Attended Wet Or Damp Locations: Weatherproof cover plates NRTL listed for wet locations with cover(s) closed; die-cast aluminum or Type 302 stainless steel; single-cover for switches and vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing covers.

Cover Plates: By the same manufacturer as the wiring devices; complying with NFPA 70 ARTICLES 406.9 (A) or (B) requirements for attended or unattended use as applicable.

15. ELECTRICAL SERVICE AND GROUNDING

A. ELECTRICAL SERVICE

See drawings for type, size, voltage, phase, and other requirements.

Provide, or arrange with the serving utility for installation to provide, a recording voltmeter at the service point, on the first day the facility is open for business, for a 24-hour voltage test. If voltage and regulation are not within acceptable limits, arrange with the utility for proper voltage. Submit to the Owner a report of maximum and minimum voltage and a copy of the recording voltmeter chart.

B. CONNECTION TO SERVING UTILITIES

Provide raceways, terminations, metering provisions, and miscellaneous equipment as required for electrical and telephone services for connection by the serving utility, in strict compliance with the requirements of all applicable codes and of the serving utility involved. Verify all service terminations and connection points in the field and work in conjunction with the utility involved in the installation of all services. Provide all materials and equipment required for complete utility connection but not furnished by the serving utility. Notify the utility companies involved within two weeks after notice to proceed of all required information necessary for the utility to supply the project without delay. Pay all charges of the serving utility for the electrical service(s).

C. GROUNDING

Permanently and effectively ground and bond the electrical installation in a thorough and efficient manner, and in conformance, at a minimum, with NFPA 70, or these documents, where they exceed code requirements. Use bare or insulated conductors as specified herein, and other materials indicated on the Drawings.

D. LIGHTING AND APPLIANCE PANELBOARDS

Panelboards: Complete with bolt-on thermal magnetic, molded case circuit breakers assembled in a dead-front finished cabinet containing a typewritten card directory indicating exactly what each circuit breaker controls; fully-rated and with the integrated short circuit current ratings indicated on the drawings. Plug-in type breakers will not be acceptable. All two- and three-pole breakers: Common trip type.

1. Type SWD Circuit Breakers: Use when breaker serves as a switch for 120V or 277V lighting circuits.

2. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip). Use as indicated on drawings.

3. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip). Use as indicated on drawings.

4. Handle Clamp: Loose attachment for holding circuit breaker handle in "on" position. Use for all circuits containing emergency lighting loads, fire alarm loads, and as indicated on drawings. Breakers serving fire alarm loads must have a permanently-affixed red label stating "FA" in white letters adjacent to the circuit breaker.

5. Handle padlocking device: fixed attachment for locking circuit breaker handle in "on" or "off" position. Use as indicated on drawings.

Manufacturers: Square D Type NQOD or NF (as applicable, based on voltage and ampere ratings and required short-circuit interrupting ratings as scheduled on the drawings) or approved equal by Eaton, G.E., or Siemens.

E. CIRCUIT BREAKERS IN EXISTING PANELBOARDS

Provide new circuit breakers for installation in existing panelboards, of the same manufacturer and type as the existing panelboard circuit breakers. Short circuit current interrupting rating of any new breaker shall be the larger of the existing panel rating or the available fault current indicated on the drawings.

F. DISCONNECT (SAFETY) SWITCHES

Disconnect (Safety) Switches: Heavy-duty, fused or non-fused (as indicated on drawings or required) NEMA KS1, externally operated, visible-blade safety switches; NEMA enclosure type indicated on the drawings or suitable for the environment in which installed, based on fusible switch and fuse sizes indicated, include Class R, J, or L fuse provisions as applicable.

Where indicated, provide fusible switches permanently labeled as suitable for use as service entrance equipment, with integral and separate neutral and ground assemblies, suitable for the sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor.

Provide switches where not furnished with the starting equipment, at all other points required by NFPA 70, and where indicated on the drawings.

Manufacturers: Eaton, G.E., Siemens, or Square D.

G. FUSES

Provide each circuit and set of fuse clips throughout the work with sizes and types as required or indicated. All fuses larger than 600A: UL Class L, similar to type KRP-C Bussmann Low Peak or equal. Fuses used to protect motors: UL Class RK5, Bussmann Fusetron or equal. Fuses used to protect all other electrical equipment: UL Class RK1, dual element, Bussmann LPS/LPN or equal. All fused devices shall be labeled as to type and size of fuse required.

Furnish three spare fuses of each size and type used on the project (except for main switch fuses, furnish one spare), neatly contained in a properly labeled cabinet.

Manufacturers: Bussmann, Edison Fuse, Mersen/Ferraz Shawmut, or Littlefuse.

H. FRACTIONAL HORSEPOWER MANUAL CONTROLLER

Manual motor starters for fractional horsepower single-phase motors shall consist of a manually operated toggle switch equipped with melting alloy type overload relay. Thermal unit shall be of one piece construction and interchangeable. Starter shall be inoperative if thermal unit is removed. Provide flush mounted units in finished areas and surface mounted units in unfinished areas. Starters shall have NEMA I general purpose enclosure, unless otherwise indicated, and be rated for the motor horsepower required. Provide with handle guard with locking provisions and an integral pilot light.

Manufacturers: Square D Class 2510 Type F, Eaton 9101 series, G.E. CR101 series, Siemens MSF series, or Westinghouse MST series.

I. MOTOR STARTING SWITCHES

Motor starting switches shall consist of a toggle operated two- or three-pole switch. Contacts shall be double break silver alloy, visible from both sides of the switch, and shall have a direct linkage to the operator for positive break. Provide flush mounted units in finished areas and surface mounted units in unfinished areas. Starters shall have NEMA I general purpose enclosure, unless otherwise indicated, and be rated for the motor horsepower required. Provide handle guard with locking provisions.

Manufacturers: Square D Class 2510 Type K, Eaton 9115 series, G.E. TC2000 series, Siemens MS series, or Westinghouse MST series.

16. LIGHT FIXTURES, LAMPS AND BALLASTS

A. LIGHT FIXTURE LOCATIONS

Light fixtures shown on the drawings represent general arrangements only. Refer to architectural drawings for more exact locations. Coordinate location with all other trades before installation to avoid conflicts. Coordinate light fixture locations in mechanical rooms with final installed piping and ductwork layouts.

B. LIGHT FIXTURES

Provide light fixtures as scheduled on drawings, including all lamps, all necessary accessories, material and labor to securely hang, clean, and make light fixtures completely ready for use. Light fixture model numbers scheduled on the drawings show only the manufacturer, grade, and style of light fixtures required. Provide all hangers, supports, and miscellaneous hardware required to install light fixtures, proper trim to fit each ceiling condition actually encountered, and additional tie wires connected to structure to conform to seismic requirements where required by the applicable building code.

Packaging of light fixtures will not be allowed. Only those luminaires listed in the Light Fixture Schedule or approved in accordance with substitutions of these specifications will be accepted. Where the Light Fixture Schedule indicates an allowance for a specific light fixture, the price is a Contractor price. Include all additional costs for freight, lamps, and installation of light fixture and lamps.

Surface-mount all light fixtures located in areas with a ceiling but without suspended ceilings unless otherwise indicated on the drawings. Provide rigid metal spacers finished in white enamel between the top of each light fixture and the ceiling above to maintain a 1-1/2 inch space. Spacers shall be approved before installation.

Install all light fixtures located in areas without ceilings immediately below the roof-framing members, or suspended from chain hangers suitable in length to provide the indicated mounting height. Hangers: "Hydee" hanger type for outlet box mounting, complete with grounding receptacle, plug, 3-wire cord, and necessary chain.

Through-wiring of recessed light fixtures in suspended ceilings is not permitted. Connect each light fixture by a whip to a junction box. Provide cable whips of sufficient lengths to allow for relocating each light fixture within a 5-foot radius of its installed location, but not exceeding 6 feet in unsupported lengths.

C. EMERGENCY LIGHTING UNITS AND EXIT SIGNS

Description: Self-contained units complying with UL 924.

Battery: Sealed, maintenance-free, lead-acid type. The batteries shall be of suitable rating and capacity to supply and maintain at not less than 87-1/2 percent of the nominal battery voltage for the total lamp load associated with the unit for a period of at least 1-1/2 hours, or the unit equipment shall supply and maintain not less than 60 percent of the initial emergency illumination for a period of at least 1-1/2 hours.

Charger: Fully automatic, solid-state type with sealed transfer relay.

Operation: Relay automatically turns lamp on when power supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.

Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power, and demonstrates unit operability.

LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge, and bright glow indicates charging at end of discharge cycle.

D. LAMPS

Provide lamps and color temperatures as indicated on the drawings for all light fixtures; or, if not indicated, per the Architect and/or lighting designer. Lamps shall be by the same manufacturer for color consistency. Lamps shall be compatible with the specified light fixture. Fluorescent, metal halide, and incandescent lamp manufacturers: Eiko, G.E., Osram/Sylvania, Philips, Soraa, or Venture.

LED Lamps and Luminaires: Comply with ANSI C78.377 for white light LED color range; minimum CRI of 80 unless noted otherwise; LED binning specification tolerance to be within 3 macadam ellipses of rated values; all LEDs used for same fixture type throughout the project must originate from the same production bin; minimum average rated life of 20,000 hours for LED lamps and 50,000 hours for LED luminaires; Rohs compliant. LED lamp manufacturers: Bridgelux, Cree, Nichia, Osram, or Xicato.

E. BALLASTS

LED Drivers: Comply with NRTL requirements and ANSI C82.77; designed for type and quantity of lamps served; sound levels not exceeding Class A ambient noise levels; lamp current crest factor of 1.5 or less; 90-percent power factor or greater; line transient withstand ratings as defined in ANSI/IEEE C62.41, Category A.; total harmonic distortion less than 20 percent; shall tolerate sustained open circuit and short circuit output conditions without damage; shall not over-drive LEDs at a current or voltage above LED rated values; ROHS compliant; meets EN610000 requirements for input harmonics.

F. DIMMABLE LIGHT FIXTURES

For dimmable light fixtures provide both control and power wiring between light fixture and control device and between light fixtures. Quantity of low voltage and line voltage wiring and wire type shall be per manufacturer's recommendations. Coordinate light fixture and control device dimming types for compatibility.

17. MISCELLANEOUS ELECTRICAL

A. WIRING OF MECHANICAL EQUIPMENT

Provide all raceways and power wiring for all Division 23 equipment requiring electrical connections, including but not limited to pumps, water heaters, and HVAC equipment, and all line-voltage control and interlock wiring not provided under Division 23. Connect per manufacturers' wiring diagrams. Coordinate with Division 23 for disconnects and variable frequency drives (VFD) furnished with equipment, and provide all disconnect switches and final connections as required. If VFD is separate or does not have an integral disconnect feature, provide disconnect switch with auxiliary contact such that motor will be turned off if switch is off. provide VFD cable, Belden or approved equivalent, for connection of VFD to motor when required. After installing wiring, verify that each motor load has the correct phase rotation.

Verify the actual "Maximum Overcurrent Protection" (MOCP) device ratings and "Minimum Circuit Ampacity" (MCA) conductor sizing for mechanical equipment from the equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from the conductor and equipment sizes shown on the drawings; however, in no case, reduce the size of conductors indicated on the drawings without authorization from the Engineer. Provide properly sized electrical wiring and equipment without extra cost to the Owner. Notify the Engineer of all changes required in the electrical installation due to equipment variances so that the effects on feeders, branch circuits, panelboards, fuses and circuit breakers can be checked prior to purchasing and installation. Be responsible for coordinating with Division 23 to verify the actual ampacities and correct sizes of all conductors and overcurrent protective devices for all equipment, and correct overload heaters for all motors, when starters are provided under Division 26.

B. WIRING OF THERMOSTATS, TIME AND TEMPERATURE CONTROLS

Provide all raceways, power wiring, and line-voltage control and interlock wiring not provided under Division 23, for all thermostats, temperature control devices, and controls, including, but not limited to, night-stats, water heater interlocks, time switches and override timers. See mechanical drawings for locations and temperature control diagrams. Low-voltage conductors for thermostats and temperature control system may be run exposed above finished accessible ceilings, if approved and listed for this purpose, but shall be installed in conduit within walls and where exposed in the work areas.

C. TELEPHONE SYSTEM PROVISIONS

Provide incoming telephone service raceways as indicated on drawings or as required by the serving telephone company. Provide 3/4-inch thick plywood board, fire-retardant-treated and stamped FRT, securely anchored to the wall, at the location and of the size as indicated on the drawings. Provide flush mounted telephone outlet boxes with 1 inch conduit stub-up with pull-string concealed to accessible ceiling space at locations as indicated on the drawings.

D. DATA SYSTEM PROVISIONS

Provide flush mounted data outlet boxes with 1 inch conduit stub-up with pull-string concealed to accessible ceiling space at locations as indicated on the drawings.

E. ELECTRICAL CONTROL POWER AND LOW VOLTAGE WIRING

Provide input/output control wiring as required for interlock between equipment and for communication between equipment and control devices. RTD wiring shall be three-wire or four-wire twisted, shielded, minimum number 22 gauge. Other analog inputs shall be a minimum of number 22 gauge, twisted, shielded. Binary control function wiring shall be a minimum of number 18 gauge. Analog output control functions shall be a minimum of number 22 gauge, twisted, shielded. Binary input wiring shall be a minimum of number 22 gauge. Thermistors shall be equipped with the manufacturers' calibrated lead wiring. 120V control wiring shall be #14 THHN in 3/4 inch conduit. Provide for 20 percent fill extra wire in each conduit. Splices in shielded cables shall consist of terminations and the use of shielded cable couplers that maintain the integrity of the shielding. Terminations shall be in accessible locations. Cables shall be harnessed with cable ties as specified herein. Conduit for control wiring, control cable and transmission cable shall be electrical metallic tubing (EMT) with compression fittings, cold rolled steel, zinc coated or zinc-coated rigid steel with threaded connections.

Relays other than those associated with digital output cards shall be general purpose, enclosed plug-in type with 8-pin octal plug and protected by a heat and shock resistant duct cover. Number of contacts and operational function shall be as required. Solid state relays (SSR) for input/output isolation shall be greater than 10 e9 ohms with a breakdown voltage of 1500V root mean square or greater at 60 Hz. The contact life shall be 10 x 10 e6 operations or greater. The ambient temperature range of SSRs shall be -20 to +140F. Input impedance shall not be less than 500 ohms. Relays shall be rated for the application. Operating and release time shall be for 100 milliseconds or less. Transient suppression shall be provided as an integral part of the relay.

Contactors shall be of the single coil, electrically operated, mechanically held type. Positive locking shall be obtained without the use of hooks, latches, or semi-permanent magnets. Contactor shall be double-break, silver-to-silver type protected by arcing contacts. The number of contacts and rating shall be selected for the application. Operating and release times shall be 100 milliseconds or less. Contactors shall be equipped with coil transient suppression devices.

END OF BASIC ELECTRICAL MATERIALS AND METHODS

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER DAVID D. HAAKE E 16137 ELECTRICAL STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
ELECTRICAL SPECIFICATIONS

SHEET NO:
E4.1

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001\Elec\1750003949E41.dwg, Plot, 3/28/2018 1:41:59 PM, MarkAnderson, 1:1
DAVID D. HAAKE

LIGHTSTAT INC.

BARKHAMSTED, CT 06063
1- 800-292-2444
FAX: 860-738-4123

ADDITIONAL LIGHTSTAT INFORMATION MAY BE OBTAINED FROM THE CAD DEPARTMENT OR TECHNICAL SUPPORT PROMPT #2

LIGHTSTAT AUTOMATIC LIGHTING CONTROL

FACTORY SUPPLIED AS A COMPLETE SYSTEM AND INCLUDES THE FOLLOWING COMPONENTS:

LIGHTING CONTROL CONTACTOR PANEL
4 POLE 20 AMP CONTACTORS, MAGNETICALLY HELD, 120 VOLT AC COILS

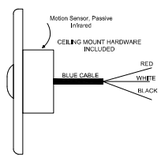
MOTION SENSOR(S)
8 REMOTE SENSORS PRECALIBRATED FOR MINIMUM ON OPERATION, UNITS SHALL BE CEILING MOUNTED, BLUE COLOR KEYED LOW VOLTAGE PLENUM RATED CABLE SHALL BE INCLUDED,

OPEN/CLOSED PUSHBUTTON
1 REMOTE SINGLE PUSH BUTTON UNIT FOR ACTIVATION OF SALES LIGHTS, UNIT SHALL HAVE METAL ENCLOSURE, YELLOW COLOR KEYED LOW VOLTAGE PLENUM RATED CABLE SHALL BE INCLUDED,

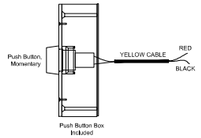
OUTSIDE LIGHT SENSOR
1 VARIABLE PHOTO DIODE TYPE REMOTE SENSOR WITH ADJUSTABLE SENSITIVITY, SENSOR SHALL BE PREMOUNTED IN WEATHERPROOF BOX FOR 1/2" THREADED CONNECTION, GREEN COLOR KEYED, SHIELDED, LOW VOLTAGE PLENUM RATED CABLE SHALL BE INCLUDED,

SECURITY ALARM INTERFACE
1 REMOTE ALARM INTERFACE, ORANGE COLOR KEYED LOW VOLTAGE PLENUM RATED CABLE FOR CONNECTION TO A 12VDC OUTPUT FROM SECURITY SYSTEM.

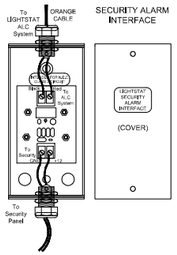
MOTION SENSOR ASSEMBLY



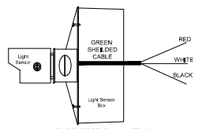
PUSH BUTTON ASSEMBLY



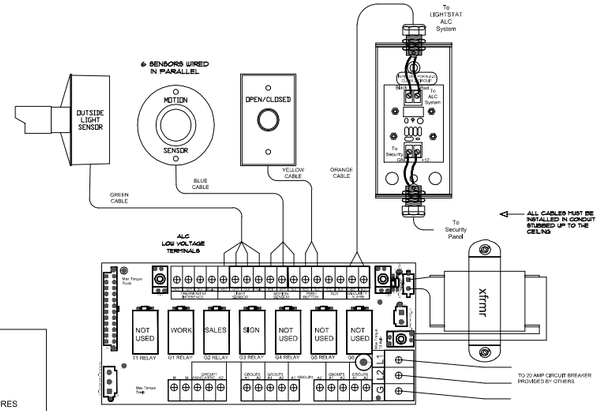
SECURITY ALARM INTERFACE



LIGHT SENSOR ASSEMBLY

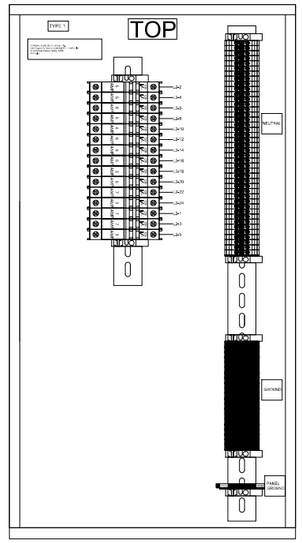


FOR EXTERIOR MOUNTING
WEATHERPROOF BOX INCLUDED



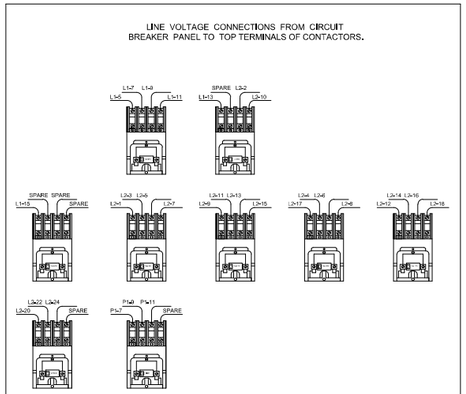
M	Motion sensor -	REFER TO E1.0A FOR LOCATIONS (6).
DLS	Outside light sensor -	REFER TO E1.0B FOR LOCATION. MOUNT ON EXTERIOR WALL HIGH AND AWAY FROM ARTIFICIAL LIGHT PREFERABLY FACING NORTH.
PB	Open / Close push button -	REFER TO E1.0B FOR LOCATION.
SAI	Security Alarm Interface -	MOUNT NEXT TO THE SECURITY PANEL.

AUTOMATIC LIGHTING CONTROL LOW VOLTAGE CONNECTIONS



LIGHTSTAT TRACK MISER

LINE VOLTAGE CONNECTIONS FROM CIRCUIT BREAKER PANEL TO TOP TERMINALS OF CONTACTORS.



LOAD CONNECTIONS TO LIGHTS ON BOTTOM TERMINALS
SPARE CONTACTOR POLES WILL ALLOW FOR FUTURE LOADS.

LIGHTING CONTACTOR SCHEDULE

General Notes

No.	Revision/Issue	Date

Firm Name and Address
LIGHTSTAT INC.
22 W. WEST HILL ROAD
PLEASANT V, CT 06063
800-292-2444

Project Name and Address
GUITAR CENTER #135
MONTEREY PARK
MONTEREY PARK, CA.

Project
Date 2-7-18
Scale
Sheet L-1

FOR INFORMATION PURPOSES ONLY
CONTACT MANUFACTURER FOR FURTHER INSTALLATION INSTRUCTIONS

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS
930 CARLETON STREET
BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
1	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

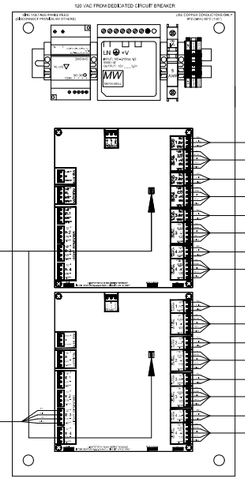
LIGHTING DETAILS

SHEET NO:

E5.0

DS

POWER & SIGNAL WIRE
TO INTERIOR LIGHT SENSOR
(PLENUM RATED PINK 18-3 SHIELDED CABLE)



THE BLACK AREA REPRESENTS
THE ACTUAL MOVING PART OF
THE SWITCH

SWITCH 1: NOT USED

SWITCH 2: IF ON, DIMMING ZONES WILL ONLY BE ABLE TO REDUCE TO 20% MINIMUM FOR ZONES 1 - 4

SWITCH 3: IF ON, ZONE 1 WILL REQUIRE MOTION SENSOR(S) FOR 50% REDUCTION

(SWITCHES ARE FACTORY SET PER PROJECT DO NOT ADJUST)

1 LIGHTSTAT DIMMING PANEL DETAILS
NOT TO SCALE

THE CABLE RUNS FOR THIS SYSTEM ARE NOT CIRCUIT RUNS THEY ARE FOR LOW VOLTAGE DIMMING PURPOSES ONLY TO BE WIRED FROM BALLAST TO BALLAST WITH THE SUPPLIED PLENUM RATED CABLE FOR THE 0-10 VOLT DIMMING CONNECTIONS. THESE CABLE RUNS ARE TO BE WIRED IN ADDITION TO THE CIRCUIT RUNS SHOWN ON THE LIGHTING PLAN.

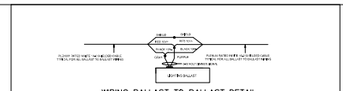
TO LIGHTING FIXTURES IN DIMMER ZONE #1 | TO LIGHTING FIXTURES IN DIMMER ZONE #2 | TO LIGHTING FIXTURES IN DIMMER ZONE #3 | TO LIGHTING FIXTURES IN DIMMER ZONE #4 | TO LIGHTING FIXTURES IN DIMMER ZONE #5 | TO LIGHTING FIXTURES IN DIMMER ZONE #6 | TO LIGHTING FIXTURES IN DIMMER ZONE #7 | TO LIGHTING FIXTURES IN DIMMER ZONE #8

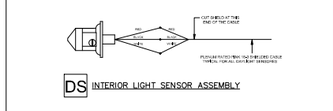
$1 $2 $3 $4 $5 $6 $7 $8

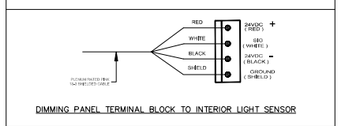
TO DIMMER CONTROL ZONE #1 | TO DIMMER CONTROL ZONE #2 | TO DIMMER CONTROL ZONE #3 | TO DIMMER CONTROL ZONE #4 | TO DIMMER CONTROL ZONE #5 | TO DIMMER CONTROL ZONE #6 | TO DIMMER CONTROL ZONE #7 | TO DIMMER CONTROL ZONE #8

0 - 10 VOLT SIGNAL WIRE
DAISY CHAINED FIXTURE TO FIXTURE
(PLENUM RATED WHITE 18-2 SHIELDED CABLE)

POWER & SIGNAL WIRE
TO DIMMER CONTROL PUSH BUTTON
(PLENUM RATED WHITE 18-4 SHIELDED CABLE)







General Notes

No.	Revision/Issue	Date
2		
1		

Name and Address
LIGHTSTAT INC.
22 W. WEST HILL ROAD
BARKHAMSTED, CT. 06063
800-292-2444

Project Name and Address
GUITAR CENTER #135
MONTEREY PARK
MONTEREY PARK, CA.

Project
Date 2-7-18
Scale
Sheet

FOR INFORMATION PURPOSES ONLY
CONTACT MANUFACTURER FOR FURTHER INSTALLATION INSTRUCTIONS

NOTE TO CONTRACTORS
ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES
CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS
930 CARLETON STREET
BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

LIGHTING DETAILS

SHEET NO:
E5.1

CERTIFICATE OF COMPLIANCE — NRCC-ELC-01-E

Electrical Power Distribution (Page 1 of 4)

General Information

Project Name: Guitar Center - Monterey Park, CA		Date Prepared: 3/28/2018
Project Address: 3000 Market Place Dr Monterey Park, CA 91755	Climate Zone: 9	Conditioned Floor Area: 14,753 / Unconditioned Floor Area: 0

Building Type: [X] Nonresidential [ ] High-Rise Residential [ ] Hotel/Motel [ ] Schools [ ] Relocatable Public Schools [X] Conditioned Spaces [ ] Unconditioned Spaces

Phase of Construction: [X] New Construction [ ] Addition [ ] Alteration

In the table below icentify all applicable construction documents that specify the requirements for the scope of responsibility reported by this certificate. Use additional pages as needed to list all construction documents related to compliance of Section 130.5.

Document Number	Document Title/Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Indicate which subsection of Section 130.5 is related to the document (i.e. 130.5(a) for metering)
1	One-Line Diagram	E3.0	130.5(a),(b)
2	Electrical Power Plan	E2.0B	130.5(c),(d)

A. Electrical Service Metering

Check one of the three boxes below if the electrical power distribution system is in compliance with Section 130.5(a).

[X] For newly installed electrical service in newly constructed buildings, Service Electrical Metering is required according to Section 130.5(a). Fill out Column 1 through 6 of the table below.

[ ] For new or replacement electrical service equipment in existing buildings, Service Electrical Metering is required according to Section 141.0(b)2Pi. Fill out Column 1 through 6 of the table below.

[ ] EXCEPTION to Electrical Service Metering: Service or feeder for which the utility company provides a metering system that indicates instantaneous kW demand and kWh for a utility-defined period. Fill out Column 1, 2 and 6 of the table below.

Fill out a separate line for each electrical service that is connected to the building.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (Check all that are present)				Exception to 130.5(a)	Field Inspector
01	02	03	04	05	06	07	08
Designation/location in building/description	KVA	Instantaneous (at the time) kW Demand	Historical Peak Demand (kW)	Tracking kWh for a user-defined period	kWh per Rate Period	Utility Metering System	Check that Metering Complies
MS (Provided by landlord under separate project)	432	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

CERTIFICATE OF COMPLIANCE — NRCC-ELC-01-E

Electrical Power Distribution (Page 2 of 4)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

B. Separation of Electrical Circuits for Electrical Energy Monitoring

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(b).

[X] The electrical power distribution system meets the separation of electrical circuits for electrical energy monitoring requirement of Section 1305.5(b). The electrical power distribution system is designed so that measurement devices can monitor the electrical energy usage of load types according to TABLE 130.5-B.

[X] Describe the electrical power distribution system installed and the compliance method chosen in meeting the requirement of Section 130.5(b). Use the space below to include the information. Examples of compliance methods are detailed in Nonresidential Compliance Manual Chapter 8.

Fill out Column 1 thru 3 with compliance information

General Information	Electrical Power Distribution System Information and Method of Compliance	Electrical Service Rating	Enforcement Agency
01	02	03	04
Electrical Service Designation/Location/Description	Designation/location in building/description	kVA	Check that the system complies
MS	MDP	432	[ ]
MS	P1	432	[ ]
MS	P2	432	[ ]
MS	P3	432	[ ]
MS	L1	432	[ ]
MS	L2	432	[ ]
			[ ]
			[ ]
			[ ]
			[ ]
			[ ]
			[ ]
			[ ]
			[ ]
			[ ]

Field Inspector Notes:

CERTIFICATE OF COMPLIANCE — NRCC-ELC-01-E

Electrical Power Distribution (Page 3 of 4)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

C. Voltage Drop — Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(c).	Enforcement Agency (Check that the system complies)
[X] The electrical power distribution system meets the voltage drop requirement of Section 130.5(c). The maximum combined voltage drop on feeder conductors and branch circuit conductors to the farthest connected load or outlet, do not exceed 5%.	[ ]
[X] Voltage drop calculation documents showing compliance to Section 130.5(c) are submitted as part of the compliance document submittal.	[ ]

D. Circuit Controls for 120-Volt Receptacles and Controlled Receptacles — Check one or more boxes below for applicable requirements of Section 130.5(d) for the electrical power distribution system.	Field Inspector (Check that the system complies)
[X] The control if capable of automatically shutting OFF the controlled receptacles when the space is typically unoccupied, either at the receptacle or circuit level. For the automatic time switch control, it incorporates an override control that allows the controlled receptacle to remain ON for no more than 2 hours when an override is initiated and an automatic holiday "shut-off" feature that turns OFF all loads for at least 24 hours and then resumes the normally schedules operation. Countdown timer switches are not to be used to comply with the automatic time switch control requirements. The controls meet the requirements of Section 130.5(d)1.	[ ]
[X] There is at least one controlled receptacle within 6 ft from each uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	[ ]
[X] There are installed split wired receptacles with at least one controlled and one uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	[ ]
[X] Permanent and durable marking for controlled receptacles or circuits to differentiate them from un-controlled receptacles or circuits provided. The markings meet the requriement of Section 130.5(d)3.	[ ]
[ ] For hotel and motel guest rooms, there are controlled receptacles for at least one-half of the 120-volt receptacles in each guest room. Electric circuits serving controlled receptacles in guestrooms are installed to have captive key controls, occupancy sensing controls, or automatic controls so the power is switched off no longer than 30 minutes after the guest room has bee vacated. The receptacles meet the requirement of Section 130.5(d)4.	[ ]
[X] Receptacles that are only for the following purposes are excepted from Section 130.5(d): -Receptacles specifically for refrigerators or water dispensers in kitchen areas -Receptacles located a minimum of six ft above the floor that are specifically for clocks -Receptacles for network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms. -Receptacles on circuits rated more than 20 amperes. -Receptacles connected to an uninterruptible power supply(UPS) that are intended to be in continuous use, 24 hours per day/365 days per year, and are marks to differentiate then from other uncontrolled receptacles or circuits.	[ ]

CERTIFICATE OF COMPLIANCE — NRCC-ELC-01-E

Electrical Power Distribution (Page 4 of 4)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

Documentation Author's Declaration Statement

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

Documentation Author Name: Jacob Lengquist	Documentation Author Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

Responsible Person's Declaration Statement

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

1) The information provided on this Certificate of Compliance is true and correct.
2) I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3) The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4) The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5) I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	License: 16137 — Mar 28 2018
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 1 of 6)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

A. General Information

Climate Zone: 9 — Conditioned Floor Area: 14,753 — Unconditioned Floor Area:

Building Type: [X] Nonresidential [ ] High-Rise Residential [ ] Hotel/Motel [ ] Schools [ ] Relocatable Public Schools [X] Conditioned Spaces [ ] Unconditioned Spaces

Phase of Construction: [X] New Construction [ ] Addition [ ] Alteration

Method of Compliance: [ ] Complete Building [X] Area Category [ ] Tailored

Project Address: 3000 Market Place Dr, Monterey Park, CA 91755

B. Lighting Compliance Documents (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

Yes	No	Comp. Doc.	Title
X		NRCC-LTI-01-E	Certificate of Compliance. All pages required on plans for all submittals.
X		NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All pages required on plans for all submittals.
X		NRCC-LTI-03-E	Indoor Lighting Power Allowance
X		NRCC-LTI-04-E	Tailored Method Worksheets
X		NRCC-LTI-05-E	Line Voltage Track Lighting Worksheets
	X	NRCC-LTI-06-E	Indoor Lighting Existing Conditions

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 2 of 6)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

C. Summary of Allowed Lighting Power

Conditioned and Unconditioned space lighting must not be combined for compliance.

	Indoor Lighting Power for Conditioned Spaces		Watts		Indoor Lighting Power for Unconditioned Spaces		Watts
01	**Installed** Lighting NRCC-LTI-01-E, Table H, page 5	+	16,363	1	**Installed** Lighting NRCC-LTI-01-E, Table H, page 4	+	
02	Portable Only for Offices NRCC-LTI-01-E, Table G, page 4	+	0	2			
03	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0	3	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	
04	Adjusted **Installed** Lighting Power (row 1 plus row 2 minus row 3)	=	16,363	4	Adjusted **Installed** Lighting Power (row 1 minus row 3)	=	
	Complies ONLY if **Installed** ≤ **Allowed** (Box 04 < Box 05)						
05	Allowed Lighting Power Conditioned NRCC-LTI-03-E, page 1	=	16,455	6	Allowed Lighting Power Unconditioned NRCC-LTI-03-E, page 1	=	
	Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 1.				Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 1.		

D. Declaration of Required Certificates of Installation

Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

Yes	No	Form	Title	
X		NRCI-LTI-01-E	Must be submitted for all buildings.	[ ] Field Inspector
X		NRCI-LTI-02-E	Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	[ ] Field Inspector
X		NRCI-LTI-03-E	Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	[ ] Field Inspector
	X	NRCI-LTI-04-E	Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	[ ] Field Inspector
	X	NRCI-LTI-05-E	Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	[ ] Field Inspector
	X	NRCI-LTI-06-E	Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	[ ] Field Inspector

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 3 of 6)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

E. Declaration of Required Certificates of Acceptance

Declare by selecting yes for each Certificate of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

Yes	No	Form	Title	
X		NRCA-LTI-02-E	Must be submitted for occupancy sensors and automatic time switch controls.	[ ] Field Inspector
X		NRCA-LTI-03-E	Must be submitted for automatic daylight controls	[ ] Field Inspector
X		NRCA-LTI-04-E	Must be submitted for demand responsive lighting controls.	[ ] Field Inspector

A separate lighting schedule must be filled out for conditioned and unconditioned spaces. Installed lighting power listed on this lighting schedules is only for:

[X] **Conditioned Space** [ ] **Unconditioned Space**

F. Indoor Lighting Schedule and Field Inspection Energy Checklist

[ ] The actual indoor lighting power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.

[ ] When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.

[X] When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines.

[X] Also include track lighting in schedule, and submit the track lighting compliance form (NRCC-LTI-05-E) when line-voltage track lighting is installed.

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 4 of 6)

Project Name: Guitar Center - Monterey Park, CA — Date Prepared: 3/28/2018

G. Installed Portable Luminaires in Offices - Exception to §140.6(a)

- This section shall be filled out ONLY for portable luminaires in offices (as defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance form.
- This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office.
- Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire Watts/ft²							Office Location	Field Inspector	
01	02	03	04	05	06	07	08	09	10	
Complete luminaire description (i.e. LED, undercabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (G02xG03)	Square feet of this office	Watts per square foot (G04 / G05)	If G06 ≤ 0.3,enter zero If G06 > 0.3,enter (G06-0.3)	G05 x G07	Identify office area in which these portable luminaires are installed	Pass	Fail
									[ ]	[ ]
									[ ]	[ ]
									[ ]	[ ]
									[ ]	[ ]
									[ ]	[ ]
									[ ]	[ ]
Total installed portable luminaire watts that are greater than 0.3 watts/ft² per office								Enter sum total of all pages into NRCC-LTI-01-E, Page 2		

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001\Elec\1750003949E60.dwg, Plot, 3/28/2018 2:19:29 PM, MarkAnderson, 1:1
DAVID D. HAAKE

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER — DAVID D. HAAKE — E 16137 — ELECTRICAL — STATE OF CALIFORNIA
Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE: ENERGY CODE COMPLIANCE

SHEET NO: E6.0

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 5 of 6)

Project Name: Guitar Center - Monterey Park CA | Date Prepared: 3/28/2018

A separate lighting schedule must be filled out for Conditioned and Unconditioned Spaces. Installed lighting power listed on this lighting schedule is only for:

[X] Conditioned Space [ ] Unconditioned Space

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

1 Name or Item Tag	2 Complete luminaire description (i.e. 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	3 Watts per luminaire	4 How wattage was determined: CEC Default from NA8	4 According to §130.0(c)	5 Number of luminaires	6 Total installed watts in this area (H03xH05)	7 Primary function area in which these luminaires are installed	8 Field Inspector: Pass	Fail
A	LED Downlight	16		X	10	160	Retail		
A2	LED Downlight	29		X	10	290	Classroom and Training		
A3/A3-EM	LED Downlight	37		X	3	111	Lounge Area		
A4	LED Downlight	29		X	2	58	Retail		
C/C-EM	LED Troffer (EM driver as indicated)	48		X	16	768	Corridor, restroom, and support		
C2-EM	LED Troffer (EM driver as indicated)	48		X	2	96	Corridor, restroom, and support		
D	LED Suspended	40		X	53	2,120	Retail		
G	LED Strip Light	82		X	13	1,066	Commercial Storage Area		
G4	LED Strip Light	41		X	3	123	Electrical, Mechanical, Tele.		
H3	LED Under Shelf Light	10		X	42	420	Retail		
J	LED Tape Light	1.4		X	114	160	Retail		
J2	LED RGB Tape Light	4.3		X	24	103	Retail		
P	LED Downlight	29		X	14	406	Retail		
P2	LED Downlight	9		X	25	225	Retail		
T	LED Spot Light	17		X	12	204	Retail		
Track	Gen Track North	600		X	1	600	Retail		
Track	Display Track South	775		X	1	775	Retail		
Track	Drums Track	720		X	1	720	Retail		
INSTALLED WATTS PAGE TOTAL						8,405	Enter sum total of all pages into NRCC-LTI-01-E, Page 2		

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 5B of 6)

Project Name: Guitar Center - Monterey Park, CA | Date Prepared: 3/28/2018

A separate lighting schedule must be filled out for Conditioned and Unconditioned Spaces. Installed lighting power listed on this lighting schedule is only for:

[X] Conditioned Space [ ] Unconditioned Space

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

1 Name or Item Tag	2 Complete luminaire description (i.e. 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	3 Watts per luminaire	4 How wattage was determined: CEC Default from NA8	4 According to §130.0(c)	5 Number of luminaires	6 Total installed watts in this area (H03xH05)	7 Primary function area in which these luminaires are installed	8 Field Inspector: Pass	Fail
Track	Kybd & Rec Disp Track	1238		X	1	1,238	Retail		
Track	Kybd & Rec Gen Track	480		X	1	480	Retail		
Track	Entry, Show Track	720		X	1	720	Retail		
Track	Bass Track	720		X	1	720	Retail		
Track	Guitar Wall Track	600		X	1	600	Retail		
Track	Used Track	360		X	1	360	Retail		
Track	Acoustic Gtrs Track	600		X	1	600	Retail		
Track	Show Track	840		X	1	840	Retail		
Track	Keyboards Cswk Track	840		X	1	840	Retail		
Track	Recording Cswk Track	840		X	1	840	Retail		
Track	Cymbals Cswk Track	360		X	1	360	Retail		
Track	Studio Corridor	360		X	1	360	Retail		
INSTALLED WATTS PAGE TOTAL						7,958	Enter sum total of all pages into NRCC-LTI-01-E, Page 1		

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E

Indoor Lighting (Page 6 of 6)

Project Name: Guitar Center - Monterey Park, CA | Date Prepared: 3/28/2018

Documentation Author's Declaration Statement

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

Documentation Author Name: Jacob Lengquist	Documentation Author Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

Responsible Person's Declaration Statement

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

1) The information provided on this Certificate of Compliance is true and correct.
2) I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3) The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4) The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5) I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	License: 16137 Mar 28 2018
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E

Indoor Lighting - Lighting Controls (Page 1 of 3)

Project Name: Guitar Center - Monterey Park, CA | Date Prepared: 3/28/2018

A. Mandatory Lighting Control Declaration Statements

Indicate if the measure applies by checking yes or no below:

Yes	No	Control Requirements
X		Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with §110.9.
X		Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with §130.4(b).
X		One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with §130.4(b).
	X	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with §130.4(b).
X		All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with §130.1.
X		All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with §130.1(a).
X		General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled in accordance with §130.1(a)4.
X		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 multi-level lighting control requirements in accordance with §130.1(b).
X		All installed indoor lighting shall be equipped with controls that meet the applicable shut-OFF control requirements in §130.1(c).
X		Lighting in all Daylit Zones shall be controlled in accordance with the requirements in §130.1(d) and daylit zones are shown on the plans.
X		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 accordance with §130.1(e).
X		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 normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with §130.4(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E

Indoor Lighting - Lighting Controls (Page 2 of 3)

Project Name: Guitar Center - Monterey Park CA | Date Prepared: 3/28/2018

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

[X] Conditioned Spaces [ ] Unconditioned Spaces

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

01 Location in Building	02 Type/Description of Lighting Control (i.e. occupancy sensor, automatic time switch, dimmer, automatic daylight, etc.)	03 # of Units	04 §130.1(a)	05 §130.0(b)	06 §130.1(c)	07 §130.1(d)	08 §130.1(e)	09 §140.6(a)2	10 §140.6(d)	11 Watts of Controlled Lighting	12 PAF	13 Control Credit (B11 x B12)	14 Check if Acceptance Test Required	15 Pass	Fail
RR, Jan, Lessons, CPR	Occupancy Sensor Switch	14	X		X										
Warehouse, Offices	Ceiling Mounted Occupancy Sensor	7	X		X										
Sales floor, Hallway, Storage	Occupancy Sensor	6			X										
Sales floor, Hallway, Storage	LV Switches	8	X	X	X										
Electrical	Dimming Relay Panel	1		X			X								
Break	Dimming occupancy sensor switch	1	X	X	X										
Entry	Daylight sensor	1				X									

Columns 04–10: Standards Complying With[1] (check all that apply or leave blank if exempted); columns 11–13: PAF Credit Calculation[2]; column 15: Field Inspector.

Control Credit PAGE Total (Sum of Column 13)

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

Enter Control Credit total into NRCC-LTI-01-E, page 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 responsive; §140.6(a)2=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, an Installation Certificate is also required to be filled out, signed, and submitted.

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E

Indoor Lighting Controls (Page 3 of 3)

Project Name: Guitar Center - Monterey Park, CA | Date Prepared: 3/28/2018

Documentation Author's Declaration Statement

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

Documentation Author Name: Jacob Lengquist	Documentation Author Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

Responsible Person's Declaration Statement

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

1) The information provided on this Certificate of Compliance is true and correct.
2) I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3) The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4) The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5) I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	License: 16137 Mar 28 2018
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

CERTIFICATE OF COMPLIANCE — NRCC-LTI-03-E

Indoor Lighting Power Allowance (Page 1 of 4)

Project Name: Guitar Center - Monterey Park, CA | Date Prepared: 3/28/2018

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

[X] Conditioned Space [ ] Unconditioned Space

A. 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.

[X] 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.

	(a)	(b)
01 Complete Building Method Allowed Watts, documented in section B of NRCC-LTI-03-E (below on this page).		N/A
02 Area Category Method Allowed Watts, documented in section C-1 of NRCC-LTI-03-E (below on this page).	N/A	3,356
03 Tailored Method Allowed Watts, documented in section A of NRCC-LTI-04-E.	N/A	13,099
Total Allowed Building Watts — **Enter number into correct cell on NRCC-LTI-01-E, Page 2, Row 1**		16,455

[ ] Check here if building contains both conditioned and unconditioned areas.

B. Complete Building Method Lighting Power Allowance

01 Type of building (from §140.6 Table 140.6-B)	02 Watts per ft²	X	03 Complete Bldg. Area	=	04 Allowed Watts
	Total Area				N/A
Total Watts. Enter number into section (a), row 1 (above on this page)					

C-1. Area Category Method Lighting Power Allowances

	Watts
Total from section C-2	3,356
Total from section C-3	
Total watts. Enter number into section (a), row 2 (above on this page)	3,356

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.

CERTIFICATE OF COMPLIANCE — NRCC-LTI-03-E

Indoor Lighting Power Allowance (Page 2 of 4)

Project Name: Guitar Center - Monterey Park, CA | Date Prepared: 3/28/2018

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

[X] Conditioned Space [ ] Unconditioned Space

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.

01 Area Category (from §140.6 Table 140.6-C): Location in Building	Primary Function Area per Table 140.6-C	02 Watts per Sq. Ft.	X	03 Area ft²	=	04 Allowed Watts
Lesson Rooms	Classroom and Training	1.2		630		756
Break	Lounge Area	0.9		109		98
Warehouse, Storage, Janitor, CPR	Commercial Storage Area	0.7		2,131		1,492
Electrical, Data	Electrical, Mechanical, and Tele.	0.55		153		84
Manager, Ops & Count	Office Area (<250 square feet)	1		287		287
Hallway, Men's, Women's	Corridor, Restroom, and Support	0.6		669		401
Waiting/Lessons Lobby	Waiting Area	0.8		298		238
		Total Area		4,277		N/A
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document)						3,356 Watts

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WWW.HENDERSONENGINEERS.COM
1750003949

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER DAVID D. HAAKE E 16137 ELECTRICAL STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE: ENERGY CODE COMPLIANCE

SHEET NO: E6.1

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001\Elec\1750003949E61.dwg, Plot, 3/28/2018 2:19:55 PM, MarkAnderson, 1:1
DAVID D. HAAKE

CERTIFICATE OF COMPLIANCE — NRCC-LTI-03-E

Indoor Lighting Power Allowance (Page 4 of 4)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Documentation Author's Declaration Statement

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

Documentation Author Name: Jacob Lengquist	Documentation Author Signature:
Company: Henderson Engineers, Inc.	Signature Date:
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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.
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Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	License: 16137 — Mar 28 2018
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

CERTIFICATE OF COMPLIANCE — NRCC-LTI-04-E

Indoor Lighting - Tailored Method (Page 1 of 7)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Complete separate documents for Conditioned and Unconditioned Spaces. This page is used to document:

[X] Conditioned Space [ ] Unconditioned Space

A. Tailored Method Lighting Power Allowance Summary

01 General lighting power (Building Total from section B of NRCC-LTI-04-E). — 01: 8,492

02 General lighting power special function areas (Building Total from section C of NRCC-LTI-04-E). — 02:

03 Additional "use it or lose it" lighting power (watts listed in each of these cells shall be identical to total allowed watts determined in section D of NRCC-LTI-04-E).

Wall Display from Section D-1		Combined Floor Display and Task Lighting from Section D-2		Combined Ornamental and Special Effects Lighting from Section D-3		Very Valuable Merchandise from Section D-4			
4,415	+	192	+		+		=	03	4,607

4) Total Allowed Watts using Tailored Method (add lines 1, 2, and 3) — 04: 13,099

B. Tailored Method Allowed General Lighting Power from Table 140.6-D

01 Room Number	02 Primary Function Area	03 Illuminance Value (Lux)	04 Room Cavity Ratio	05 Allowed LPD	06 Floor Area	07 Allowed Watts (B05 x B06)
115, Acoustic	Retail	400	3.8	1.34	382	512
116, Cymbals	Retail	400	3.5	0.98	642	629
Sales Floor	Retail	400	1.5	0.78	8,155	6,361
102, 103, Storefront	Retail	400	12.3	2.08	476	990
					Page Total	8,492
					If multiple pages are used, enter building total here	8,492

C. Tailored Method Allowed General Lighting Power for Special Function Areas per §140.6(c)3H

[ ] This section shall be used to determine allowed general lighting power ONLY for the following primary function areas: exercise center; gymnasium; medical and clinical care; police stations and fire stations; public rest areas along state and federal roadways; other primary function areas that are listed in neither Table 140.6-C nor Table 140.6-D.

01 Room Number	02 Primary Function Area	03 Illuminance Value (Lux)	04 Room Cavity Ratio	05 Allowed LPD	06 Floor Area	07 Allowed Watts (C05 x C06)
					Page Total	
					If multiple pages are used, enter building total here	

CERTIFICATE OF COMPLIANCE — NRCC-LTI-04-E

Indoor Lighting - Tailored Method (Page 2 of 7)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Complete separate document for Conditioned and Unconditioned Spaces. This page is used to document:

[X] Conditioned Space [ ] Unconditioned Space

D. Tailored Method Additional "Use It or Lose It" Lighting Power Allowances

[X] Use this section to document and calculate additional lighting power for wall display, floor display, task, ornamental, special effects, or very valuable display case lighting.

[X] The additional lighting power allowance shall be the smaller of the allowed lighting power or the actual lighting power used.

[X] These additional lighting power allowances shall not be available when using §140.6(c)3H to determine the general lighting power allowance, when using the Complete Building Method, or for any areas using the Area Category Method.

D-1. Additional Allowed Lighting Power for Wall Display Lighting

[X] Floor displays shall not qualify for the wall display lighting power allowance.

[X] Qualifying wall lighting complies with the applicable requirements in §140.6(c)3I.

01	02	03	04	05	06	07	08	09	10	11
	ALLOTTED WATTS			DESIGN WATTS						Allowed
Primary Area Function	Wall Display Length in Linear Ft.	Wall Display Power W/Lin. Ft.	Allotted Watts (02 x 03)	Luminaire Code	Mounting Height	Mounting Height Factor	Watts per Luminaire	# of Luminaires	Design Watts (07 x 08 x 09)	Watts (Smaller of 04 or 10)
Retail	129	14.00	1,806	F	< 12 feet	1.00	41	20	820	
				Total for this Primary Function Area					820	820
					< 12 feet	1.00				
					12 feet to	0.87				
					≥ 16 feet	0.77				
				Total for this Primary Function Area						
					< 12 feet	1.00				
					12 feet to	0.87				
					≥ 16 feet	0.77				
				Total for this Primary Function Area						

Sum total power for wall display lighting for all function areas: 4,415

CERTIFICATE OF COMPLIANCE — NRCC-LTI-04-E

Indoor Lighting - Tailored Method (Page 2B of 7)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Complete separate documents for Conditioned and Unconditioned Spaces. This page is used to document:

[X] Conditioned Space [ ] Unconditioned Space

D-1. Additional Allowed Lighting Power for Wall Display Lighting

01	02	03	04	05	06	07	08	09	10	11
	ALLOTTED WATTS			DESIGN WATTS						Allowed
Primary Area Function	Wall Display Length in Linear Ft.	Wall Display Power W/Lin. Ft.	Allotted Watts (02 x 03)	Luminaire Code	Mounting Height	Mounting Height Factor	Watts per Luminaire	# of Luminaires	Design Watts (07 x 08 x 09)	Watts (Smaller of 04 or 10)
Retail	472	14.00	6,608	E	< 12 feet	1.00	12	82	984	
				F	< 12 feet	1.00	41	25	1,025	
				S	< 12 feet	1.00	10	94	940	
				H3	< 12 feet	1.00	10	42	420	
				J	12 feet to	0.87	1	112	136	
				J2	12 feet to	0.87	4	24	90	
					12 feet to	0.87				
					12 feet to	0.87				
					≥ 16 feet	0.77				
					≥ 16 feet	0.77				
					≥ 16 feet	0.77				
					≥ 16 feet	0.77				
				Total for this Primary Function Area					3,595	3,595
					< 12 feet	1.00				
					< 12 feet	1.00				
					< 12 feet	1.00				
					< 12 feet	1.00				
					12 feet to	0.87				
					12 feet to	0.87				
					12 feet to	0.87				
					12 feet to	0.87				
					≥ 16 feet	0.77				
					≥ 16 feet	0.77				
					≥ 16 feet	0.77				
					≥ 16 feet	0.77				
				Total for this Primary Function Area						

Sum total power for wall display lighting for all function areas: 4,415

CERTIFICATE OF COMPLIANCE — NRCC-LTI-04-E

Indoor Lighting - Tailored Method (Page 3 of 7)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Complete separate documents for Conditioned and Unconditioned Spaces. This page s used to document:

[X] Conditioned Space [ ] Unconditioned Space

D-2. Additional Allowed Lighting Power for Combined Floor Display and Task Lighting

[X] Displays that are installed against a wall shall not qualify for the floor display lighting power allowances.

[X] Lighting internal to display cases shall be counted EITHER as floor display lighting in accordance with §140.6(c)3J; or as very valuable display case lighting in accordance with §140.6(c)3L(iii and iv).

[X] Additional allowed power for floor display lighting, and additional allowed power for task lighting, may be used by qualifying floor display lighting systems, qualifying task lighting systems, or a combination of both. For floor areas qualifying for both floor display and task lighting power allowances, the additional allowed power shall be used only once for the same floor area, so that the allowance shall not be additive.

[X] Qualifying floor display lighting complies with the applicable provision in §140.6(c)3J(v and vi).

[X] Additional allowed power for a combination of floor display lighting and task lighting shall be available only for (I) floors having floor displays; or (II) floors not having floor displays but having tasks having illuminance recommendations that appear in the Tenth Edition of the IES Lighting Handbook and that are higher than the general lighting level in column 2 of Table 140.6-D. The square footage of floor display or the square footage of task areas shall be determined in accordance with §140.6(c)3C and D, except that any floor area designed to not have floor displays or tasks, such as floor areas designated as a path of egress, shall not be included for the floor display allowance.

01	02	03	04	05	06	07	08	09	10	11
	ALLOTTED WATTS			DESIGN WATTS						Allowed
Primary Area Function	Area Square Ft.	Lighting Power W/Ft^2	Allotted Watts (02 x 03)	Luminaire Code	Mounting Height	Mounting Height Factor	Watts per Luminaire	# of Luminaires	Design Watts (07 x 08 x 09)	Watts (Smaller of 04 or 10)
Retail	214	1.00	214	E	< 12 feet	1.00	12	16	192	
				Total for this Primary Function Area					192	192
					< 12 feet	1.00				
					12 feet to	0.87				
					≥ 16 feet	0.77				
				Total for this Primary Function Area						
					< 12 feet	1.00				
					12 feet to	0.87				
					≥ 16 feet	0.77				
				Total for this Primary Function Area						

Sum total power for combined floor display and task lighting: 192

CERTIFICATE OF COMPLIANCE — NRCC-LTI-04-E

Indoor Lighting - Tailored Method (Page 6 of 7)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Room Cavity Ratio (RCR) Worksheet

Rectangular Spaces

01 Room Number	02 Task/Activity Description	03 Room Length (L) (Ft.)	04 Room Width (W) (Ft.)	05 Room Cavity Height (H) (Ft.)	06 RCR 5xHx(L+W)/(LxW)
115, Acoustic	Retail	20.8	19.0	7.5	3.8
116, Cymbals	Retail	23.8	19.8	7.5	3.5

Non-Rectangular Spaces

01 Room Number	02 Task/Activity Description	03 Room Area (A) (ft^2)	04 Room Perimeter (P) (Ft.)	05 Room Cavity Height (H) (Ft.)	06 RCR 2.5xHxP/A
Sales Floor	Retail	8,155.1	672.8	7.5	1.5
102, 103, SF	Retail	475.9	312.5	7.5	12.3

CERTIFICATE OF COMPLIANCE — NRCC-LTI-04-E

Indoor Lighting - Tailored Method (Page 7 of 7)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Documentation Author's Declaration Statement

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

Documentation Author Name: Jacob Lengquist	Documentation Author Signature:
Company: Henderson Engineers, Inc.	Signature Date:
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Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
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CERTIFICATE OF COMPLIANCE — NRCC-LTI-05-E

Indoor Lighting Line-Voltage Track Lighting Worksheet (Page 1 of 2)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

[X] There are four different methods available for determining how many watts of line-voltage track or line-voltage busway has been installed. One or more methods may be used to determine how many watts of track or busway has been installed. Use this worksheet to separately calculate the input wattage for each system.

[X] Separately enter each row of this worksheet into the Luminaire Schedule in section C of NRCC-LTI-01-E.

[ ] Method 1 is the only option available for determining wattage for track or busway rated for more than 20 amperes.

[ ] A. Method 1: Volt-Ampere (VA) Rating of the Branch Circuit(s)

01 Branch Circuit Name or ID	02 Volt-Ampere (VA) Rating of the Branch Circuit

[ ] B. Method 2: Use the Higher of 45 Watts per 'Linear Foot of Track or Total Rated Wattage of All Luminaires

01 Track or Name #	02 Linear Feet of Track	03 Watts/Linear Ft.	04 B02 x B03 (W)	05 Total Rated Wattage of All Luminaires	06 Larger of (B04 or B05)
		45			
		45			
		45			

[X] C. Method 3: Use the Higher of 12.5 Watts/Linear Foot of Track or VA Rating of Integral Current Limiter

[X] Only integral current limiters which are certified to the Energy Commission shall be recognized by the Standards.

[X] This method shall not be recognized if an Installation Certificate is not submitted.

01 Track or Name #	02 Linear Feet of Track	03 Watts/Linear Ft.	04 C02 x C03 (W)	05 VA Rating of Integral Current Limiter	06 Larger of (C04 or C05)
Gen Track North	43	12.5	531	600	600
Display Track South	62	12.5	775	600	775
Drums Track	57	12.5	713	720	720

[ ] D. Method 4: Dedicated Track Lighting Supplementary Overcurrent Protection Panel

[ ] This method shall not be recognized if an Installation Certificate is not submitted.

[ ] This method shall be only for line-voltage track lighting, and shall not be recognized for any other lighting systems. If any other lighting systems or devices are installed, the supplementary overcurrent protection panel shall not be recognized for compliance with the Standards.

01 Track or Name #	02 Voltage of the Branch Circuit	03 Sum of the Ampere Rating of all Devices installed in the Panel	04 Wattage = Sum of the Ampere Ratings of the devices times the Branch Circuit Voltage (D02 x D03)

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DATE: 01/11/2018
JOB NO: 135 — PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER — DAVID D. HAAKE — E 16137 — ELECTRICAL — STATE OF CALIFORNIA

Mar 28 2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE: ENERGY CODE COMPLIANCE

SHEET NO: E6.2

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001Elec\1750003949E62.dwg, Plot, 3/28/2018 2:20:21 PM, MarkAnderson, 1:1
DAVID D. HAAKE

CERTIFICATE OF COMPLIANCE — NRCC-LTI-05-E

Indoor Lighting Line-Voltage Track Lighting Worksheet (Page 1B of 2)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

☐ A. Method 1: Volt-Ampere (VA) Rating of the Branch Circuit(s)

01	02
Branch Circuit Name or ID	Volt-Ampere (VA) Rating of the Branch Circuit

☐ B. Method 2: Use the Higher of 45 Watts per 'Linear Foot of Track or Total Rated Wattage of All Luminaires

01	02	03	04	05	06
Track or Name #	Linear Feet of Track	Watts/Linear Ft.	B02 x B03 (W)	Total Rated Wattage of All Luminaires	Larger of (B04 or B05)
		45			
		45			
		45			
		45			
		45			
		45			
		45			

☒ C. Method 3: Use the Higher of 12.5 Watts/Linear Foot of Track or VA Rating of Integral Current Limiter

01	02	03	04	05	06
Track or Name #	Linear Feet of Track	Watts/Linear Ft.	C02 x C03 (W)	VA Rating of Integral Current Limiter	Larger of (C04 or C05)
Kybd & Rec Disp Track	99	12.5	1,238	720	1,238
Kybd & Rec Gen Track	37	12.5	456	480	480
Entry, Show Track	48	12.5	600	720	720
Bass Track	51	12.5	638	720	720
Guitar Wall Track	44	12.5	544	600	600
Used Track	23	12.5	288	360	360
Acoustic Gtrs Track	36	12.5	450	600	600

☐ D. Method 4: Dedicated Track Lighting Supplementary Overcurrent Protection Panel

01	02	03	04
Track or Name #	Voltage of the Branch Circuit	Sum of the Ampere Rating of all Devices installed in the Panel	Wattage = Sum of the Ampere Ratings of the devices times the Branch Circuit Voltage (D02 x D03)

CERTIFICATE OF COMPLIANCE — NRCC-LTI-05-E

Indoor Lighting Line-Voltage Track Lighting Worksheet (Page 1C of 2)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

☐ A. Method 1: Volt-Ampere (VA) Rating of the Branch Circuit(s)

01	02
Branch Circuit Name or ID	Volt-Ampere (VA) Rating of the Branch Circuit

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		45			
		45			
		45			
		45			
		45			
		45			
		45			

☒ C. Method 3: Use the Higher of 12.5 Watts/Linear Foot of Track or VA Rating of Integral Current Limiter

01	02	03	04	05	06
Track or Name #	Linear Feet of Track	Watts/Linear Ft.	C02 x C03 (W)	VA Rating of Integral Current Limiter	Larger of (C04 or C05)
Show Track	50	12.5	619	840	840
Keyboards Cswk Track	64	12.5	800	840	840
Recording Cswk Track	54	12.5	675	840	840
Cymbals Cswk Track	12	12.5	144	360	360
Studio Corridor	20	12.5	250	360	360
		12.5			
		12.5			

☐ D. Method 4: Dedicated Track Lighting Supplementary Overcurrent Protection Panel

01	02	03	04
Track or Name #	Voltage of the Branch Circuit	Sum of the Ampere Rating of all Devices installed in the Panel	Wattage = Sum of the Ampere Ratings of the devices times the Branch Circuit Voltage (D02 x D03)

CERTIFICATE OF COMPLIANCE — NRCC-LTI-05-E

Indoor Lighting Line-Voltage Track Lighting (Page 2 of 2)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Documentation Author's Declaration Statement

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

Documentation Author Name: Jacob Lengquist	Documentation Author Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

Responsible Person's Declaration Statement

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

1) The information provided on this Certificate of Compliance is true and correct.
2) I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3) The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4) The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5) I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	License: 16137 — Mar 28 2018
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

CERTIFICATE OF COMPLIANCE — NRCC-LTS-01-E

Sign Lighting (Page 1 of 5)

A. General Information

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Project Address: 3000 Market Place Dr, Monterey Park, CA 91755

Location of Sign: ☒ Outdoor Signs ☐ Indoor Signs

Phase of Sign Construction: ☒ New Signs ☐ Sign Alterations

Type of Lighting Control: ☒ New Lighting Controls ☐ Replaced Lighting Controls ☐ Not Installing Lighting Controls

This Certificate of Compliance includes the following components (check all that apply)
☒ Mandatory Measures (Lighting Controls) ☒ Maximum Allowed Lighting Power ☐ Specific Lighting Sources

1. Mandatory Sign Lighting Controls

NOTES:

1) The same responsible person may install both the sign lighting power and the sign lighting controls, or a different responsible person may install the sign lighting controls than the responsible person installing the sign lighting power.
2) The Mandatory Measures (sign lighting controls) are required for compliance with the sign lighting Standards. If the person responsible for installing the sign lighting power is not also responsible for the sign lighting controls, then the owner of the sign, general contractor, or architect shall be responsible to have the sign lighting controls installed.
3) If more than one person has responsibility for compliance, each responsible person shall prepare and sign a Certificate of Compliance and an Installation Certificate applicable to the portion of construction for which they are responsible; alternatively, the person with chief responsibility for construction shall prepare and sign the Certificate of Compliance Declaration Statement for the entire construction. (e.g. a C-10 contractor may complete parts 1a and 1b on one compliance document and a C-45 contractor may complete parts 2a and 2b on a separate compliance document - the Responsible Designer shall submit the two compliance documents together for the same complete installation).

I have responsibility for installing the sign lighting controls:
☐ Yes, I have responsibility for the sign lighting controls, and will complete parts 1a and 1b of this document.
☒ No, I do not have responsibility for installing the sign lighting controls. Some else will complete parts 1a and 1b.

1a. Check Yes or No for all of the following

1	There are existing sign lighting controls that comply with the applicable provisions of §110.9 and §130.3. ☐ Yes ☐ No	
2	There are no existing sign lighting controls and I will be installing sign lighting controls that comply with the applicable provisions of §110.9 and §130.3. ☐ Yes ☐ No	
3	There are existing sign lighting controls that do not comply with the applicable provision of §110.9 and §130.3 and I will be installing sign lighting controls that comply with the applicable provisions of §110.9 and §130.3. ☐ Yes ☐ No	

CERTIFICATE OF COMPLIANCE — NRCC-LTS-01-E

Sign Lighting (Page 2 of 5)

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

1b. Mandatory Sign Lighting Controls: If the person signing the Certificate of Compliance Declaration Statement on this NRCC-LTS-01-E is responsible for complying with the sign lighting control requirements, that person shall answer all of the following questions.

If there are construction documents, indicate where on the building plans the mandatory measures (sign lighting control) note block can be located: This Sheet

#	Requirement	Y	N	N/A
1	**§130.3(a)1**. All **indoor sign lighting** is controlled with an automatic time-switch control or astronomical time-switch control.	☐	☐	☐
2	**§130.3(a)2A**. All **outdoor sign lighting** is controlled with photocontrol in addition to an automatic time-switch control, or an astronomical time-switch control.	☐	☐	☐
	EXCEPTION to §130.3(a)2A. Outdoor signs in tunnels, and signs in large permanently covered outdoor areas that are intended to be continuously lit, 24 hours per day and 365 days per year.	☐		☐
3	**§130.3(a)2B**. All **outdoor sign lighting** that is ON both day and night is controlled with a dimmer that provides the ability to automatically reduce sign lighting power by a minimum of 65 percent during nighttime hours. Signs that are illuminated at night and for more than 1 hr during daylight hours shall be considered ON both day and night.	☐	☐	☐
	EXCEPTION to §130.3(a)2B. Outdoor signs in tunnels and large covered areas that are intended to be illuminated both day and night.	☐		☐
4	**§130.3(a)3. Demand Responsive Electronic Message Center Control.** An Electronic Message Center (EMC) having a new connected lighting power load greater than 15 kW has a control installed that is capable of reducing the lighting power by a minimum of 30 percent when receiving a demand response signal.	☐	☐	☐
	EXCEPTION to §130.3(a)3. Lighting for EMCs that is not permitted by a health or life safety statute, ordinance, or regulation to be reduced by 30 percent.	☐		☐

Field Inspector Notes:

Sign Lighting Mandatory Measures

A. The mandatory features and devices are required for all sign lighting projects as applicable. The mandatory measures require that lighting controls are certified by the manufacturers to the Energy Commission, and that sign lighting systems have controls for efficient operation. Mandatory features also set requirements for how lighting systems are classified according to technology, and how to calculate installed wattage.

B. Mandatory measures for signs are specified in §110.9, §130.0, and §130.3. These mandatory measures for signs are similar to the mandatory measures for the other indoor and outdoor lighting Standards.

CERTIFICATE OF COMPLIANCE — NRCC-LTS-01-E

Sign Lighting (Page 3 of 5

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

2. Mandatory Sign Lighting Measures

I have responsibility for installing the sign lighting
☐ Yes, I have respnsibility for the sign lighting and will complete parts 2a and 2b of this compliance document
☒ No, I do not have responsibility for installing the sign lighting. Someone else will complete parts 2a and 2b of this compliance document.

2a. Maximum Allowed Lighting Power Method of Compliance

Certificate of Compliance and Field Inspection Energy Checklist
Complete this part if there are signs using the maximum allowed lighting power method of compliance. (Complete part 2b of this Certificate of Compliance if there are signs using the Specific Lighting Source method of compliance)

A	B	C	D	E	F	G	H	I	J
			Allotted Watts				Design Watts	Complies Y/N	
Symbol or Code	Description of the Sign	OPTIONAL - Energy Verified Label (see instructions below)	Sign Areas (ft²)	Internally (I) or Externally (E) Illuminated	Allowed LPD (I=12 W/ft²) (E=2.3 W/ft²)	Allowed Watts (D x F)	Total Installed Watts for Sign	Complies if H ≤ G	Field Inspector Check that Sign Complies
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐
		☐							☐

A	Symbol or code used on the plans (when plans are required) and other documents.
B	A description of the sign, or location of sign on the building; and the location of sign on construction documents.
C	OPTIONAL - Check this box only if this sign has a permanent, pre-printed, factory-installed, ENERGY VERIFIED label, confirming that the sign complies with §140.8 of the California 2013 Title 24, Part 6 Standards, using the Maximum Allowed Power Allowance method of compliance. The only labels that will be recognized for this purpose are ENERGY VERIFIED Certification Marks authorized by Underwriters Laboratories (UL) or other Product Certification Body accredited to ISO/IEC Guide 65 by the American National Standards Institute in accordance with ISO/IEC 17011. Surveillance by the Accredited Certification Body shall be an ongoing annual inspection program carried out by a Type A Inspection body in accordance with ISO/IEC 17020. For signs with such an ENERGY VERIFIED label, columns 'D through 'I' are not required to be filled out. Note: Using an ENERGY VERIFIED label is an optional method to validate compliance. An ENERGY VERIFIED label is not needed for compliance.
D	The sign area in square feet.
E	List "I" if the sign is internally illuminated. List "E" if the sign is externally illuminated.
F	Allowed watts per square foot. Enter 12 if the sign is listed as "I" in column E. Enter 2.3 if sign is listed as "E" in column E.
G	Multiply the square footage in column D times the allowed Lighting Power Density (LPD = watts) in column F.
H	Show the total installed watts in the sign, as determined according to the applicable provisions of §130(c).
I	Enter Y if the number in column H is less than or equal to the number in column G. Otherwise, the sign does not comply.
J	This page doubles as a field inspection checklist.

Field Inspector Notes:

CERTIFICATE OF COMPLIANCE — NRCC-LTS-01-E

Sign Lighting (Page 5 of 5

Project Name:	Date Prepared:
Guitar Center - Monterey Park, CA	3/28/2018

Documentation Author's Declaration Statement

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Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

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Responsible Designer Name: David D Haake	Responsible Designer Signature:
Company: Henderson Engineers, Inc.	Signature Date:
Address: 8345 Lenexa Drive, Suite 300	License: 16137 — Mar 28 2018
City/State/Zip: Lenexa, KS 66214	Phone: (913) 742-5000

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER — DAVID D. HAAKE — E 16137 — ELECTRICAL — STATE OF CALIFORNIA

Mar 28 2018

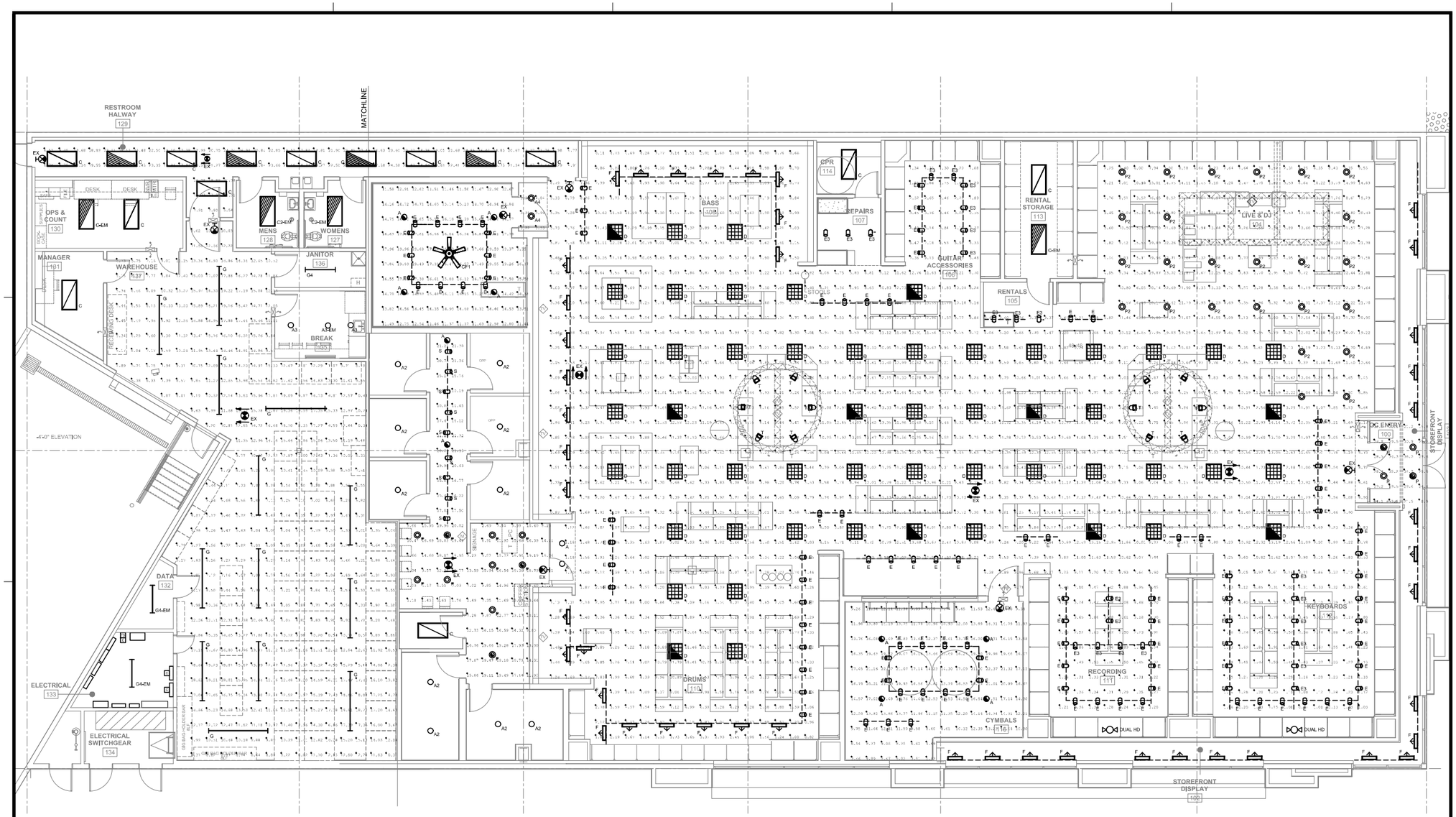
REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE: ENERGY CODE COMPLIANCE

SHEET NO: E6.3

J:\Lenexa\Programs\F-J\Guitar Center\1750003949 Guitar Center - Monterey Park CA\001\Elec\1750003949E63.dwg, Plot, 3/28/2018 2:20:44 PM, MarkAnderson, 1:1
DAVID D. HAAKE



1 EMERGENCY EGRESS PHOTOMETRIC PLAN
SCALE: 3/16"=1'-0"

Luminaire Schedule					
Symbol	Qty	Label	Lum. Lumens	LLF	Description
	15	A	3539	0.509	R6NC630K12D-C6322M-CLR
	10	D	4502	0.900	RG22-LED45DMV40
	4	C	5078	0.900	RG24-LED48DMV50
	4	Dual HD	80	1.000	ELM2 LED
	4	G	8399	0.900	
	4	P	3539	0.850	R6NC630K12D-C6322M-CLR

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Acoustic_Floor	Illuminance	Fc	15.30	19.96	9.35	1.64	2.13
Drums_Floor	Illuminance	Fc	13.70	22.37	1.63	8.40	13.72
Entry_Floor	Illuminance	Fc	26.05	36.0	14.1	1.85	2.55
Restroom Corridor	Illuminance	Fc	19.43	28.48	4.77	4.07	5.97
Sales Floor_Floor	Illuminance	Fc	7.13	23.02	0.66	10.80	34.88
Studio Hallway_Workplane	Illuminance	Fc	13.99	21.36	1.18	11.86	18.10
Warehouse_Workplane	Illuminance	Fc	10.86	19.59	3.04	3.57	6.44

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL (913) 742-5000 FAX (913) 742-5001
WWW.HENDERSONENGINEERS.COM
1750003949

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET BERKELEY, CA 94710

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Guitar Center

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CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REGISTERED PROFESSIONAL ENGINEER DAVID D. HAAKE E 16137 ELECTRICAL STATE OF CALIFORNIA

Mar 28 2018

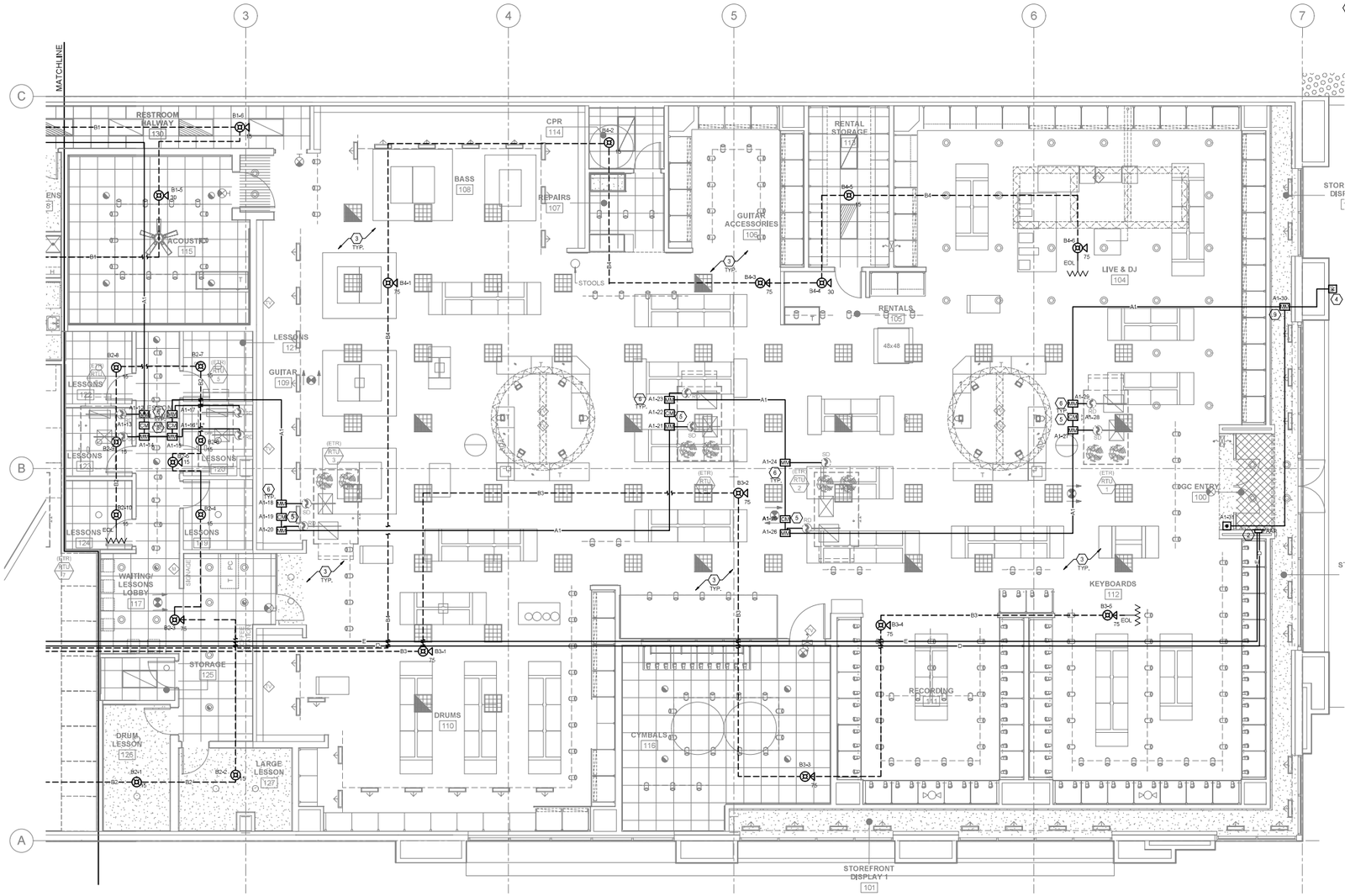
REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:

PHOTOMETRIC PLAN

SHEET NO: E7.0



1 FIRE ALARM FLOOR PLAN
SCALE: 3/16"=1'-0"

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

FIRE ALARM PLAN NOTES:

NOTE: NOT ALL PLAN NOTES ARE USED ON EVERY SHEET

1. PROVIDE NEW FIRE ALARM CONTROL PANEL. PROVIDE A SMOKE DETECTOR ABOVE THE PANEL IN ACCORDANCE WITH NFPA 72.
2. PROVIDE NEW REMOTE FIRE ALARM ANNUNCIATOR PANEL.
3. MOUNT NOTIFICATION APPLIANCE TO BOTTOM OF JOIST OR AT 30 FT AFF, WHICHEVER IS LOWER, IN ACCORDANCE WITH NFPA 72 REQUIREMENTS.
4. PROVIDE FIRE DEPARTMENT KEY BOX FOR FIRE DEPARTMENT ACCESS. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO MONITOR KEY BOX INTERNAL SUPERVISORY SWITCH(ES), AS REQUIRED.
5. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO SHUTDOWN FAN POWERED MECHANICAL EQUIPMENT. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
6. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO MONITOR EXISTING DUCT DETECTOR FOR FAN POWERED MECHANICAL EQUIPMENT. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
7. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO SHUTDOWN AUDIO SYSTEM. FIELD COORDINATE EXACT LOCATION.
8. PROVIDE EQUIPMENT AND CONNECTIONS TO SEND AND RECEIVE SIGNALS FROM THE LANDLORD FIRE ALARM SYSTEM (AS REQUIRED).
9. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO MONITOR KNOX BOX. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
10. CONNECT FIRE SPRINKLER MONITORING DEVICES TO FIRE ALARM SYSTEM. COORDINATE QUANTITY AND LOCATION OF DEVICES WITH FIRE PROTECTION SYSTEMS.

FIRE ALARM GENERAL NOTES:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS. SYSTEM SHALL ALSO MEET ALL APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND INSURANCE CARRIER. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL.
3. INFORMATION ON CONTRACT DOCUMENTS IS GENERAL INFORMATION AND FOR BID PURPOSES ONLY. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE FINAL SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS, COORDINATION WITH ALL OTHER TRADES, AND SYSTEM CALCULATIONS REQUIRED FOR APPROVAL BY THE AUTHORITY HAVING JURISDICTION, ENGINEER, AND OWNER'S INSURER.
4. THE CONTRACTOR SHALL FOLLOW THE ENGINEER OF RECORD'S SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS EXCEPT WHERE MODIFICATION TO THE DESIGN IS NECESSARY. MODIFICATIONS SHALL BE REFLECTED IN THE CONTRACTOR'S SHOP DRAWINGS AND CALCULATIONS.
5. DEVIATIONS FROM ENGINEER'S DESIGN WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED AND APPROVED.
6. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.
7. PROVIDE ADDITIONAL MATERIALS AND LABOR REQUIRED DUE TO LACK OF COORDINATION OR TO MEET AUTHORITY HAVING JURISDICTION AND INSURANCE CARRIER REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
8. FORWARD COMPLETED CERTIFICATE OF COMPLETION AND CONTRACTOR MATERIAL TEST CERTIFICATES TO THE OWNER.
9. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MONTEREY PARK FIRE DEPARTMENT GENERAL NOTES:

1. BEFORE MAKING A REQUEST FOR A FIRE INSPECTION, PLEASE READ AND COMPLY WITH THE APPLICABLE MONTEREY PARK FIRE DEPARTMENT NOTES. ADDITIONALLY, THE PERSON REQUESTING THE INSPECTION IS RESPONSIBLE FOR MEETING THE INSPECTOR ON TIME, PROVIDING ACCESS TO THE AREA REQUIRING INSPECTION AND HAVING AN APPROVED SET OF PLANS AND SUPPORTING DOCUMENTS AVAILABLE AT THE TIME OF THE INSPECTION.
2. A FIRE INSPECTION AND FINAL APPROVAL IS REQUIRED BEFORE THE BUILDING DEPARTMENT WILL ACCEPT A BUILDING FINAL INSPECTION REQUEST. PLEASE FAX IN YOUR INSPECTION REQUEST TO THE MONTEREY PARK FIRE DEPARTMENT, FIRE PREVENTION DIVISION AT (626) 307-2590 ON OUR INSPECTION REQUEST FORM. THE PERSON DOING THE WORK AUTHORIZED BY A PERMIT SHALL NOTIFY THE FIRE DEPARTMENT THAT SUCH WORK IS READY FOR A FIRE INSPECTION. THE INSPECTION REQUEST FORM IS ON OUR WEBSITE AT: http://ca-montereypark.civicplus.com/405/Forms-Standards-Guidlines
3. FIRE DEPARTMENT ACCESS ROADS AND PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED AND MAINTAINED DURING CONSTRUCTION, ALTERATION, OR DEMOLITION OF A BUILDING. CFC 3310.1 & 3315.
4. APPROVED KNOX BOXES MUST BE PROVIDED FOR THE BUILDING. THE KNOX BOX APPLICATION FORM CAN BE OBTAINED FROM THE MONTEREY PARK FIRE PREVENTION DIVISION AT 320 W NEWMARK AVE. CFC 506
5. THE FIRE SPRINKLER SYSTEM REQUIREMENTS AND/OR MODIFICATIONS REQUIRE A SEPARATE DEFERRED PLAN CHECK SUBMITTAL AND APPROVAL. WORK SHALL NOT COMMENCE UNTIL A PERMIT IS OBTAINED. INSPECTION OF THE ROUGH PIPING MUST BE PERFORMED PRIOR TO CONCEALMENT. A LIFT IS REQUIRED FOR MOST INSPECTIONS. CEILING TILES MUST NOT BE INSTALLED UNLESS APPROVED BY THE FIRE INSPECTOR.
6. THE FIRE ALARM SYSTEM REQUIREMENTS AND/OR MODIFICATIONS REQUIRE A SEPARATE PLAN CHECK SUBMITTAL AND APPROVAL. WORK SHALL NOT COMMENCE UNTIL A PERMIT IS OBTAINED.
7. THE AUTOMATIC KITCHEN EXTINGUISHING SYSTEM REQUIREMENTS AND/OR MODIFICATIONS REQUIRE A SEPARATE PLAN CHECK SUBMITTAL AND APPROVAL. WORK SHALL NOT COMMENCE UNTIL A PERMIT IS OBTAINED.
8. FIRE EXTINGUISHERS MUST BE INSTALLED PER CFC SECTION 906. START THE PLACEMENT OF FIRE EXTINGUISHERS NEAR THE EXTERIOR EXIT DOORS. MOUNT THE FIRE EXTINGUISHER IN A VISIBLE AND ACCESSIBLE LOCATION, 3-1/2' TO 5' ABOVE THE FINISH FLOOR TO THE HANDLE. BUILDINGS WITH MULTIPLE FLOORS MUST HAVE AT LEAST ONE FIRE EXTINGUISHER PER FLOOR.
   - 8.1. ORDINARY HAZARD (RETAIL STORAGE AND DISPLAY, LIGHT MANUFACTURING, WAREHOUSES WITHOUT HPS) OCCUPANCIES REQUIRE "3A40BC" FIRE EXTINGUISHERS. THE MAXIMUM COVERAGE AREA IS 3,000 SF PER EXTINGUISHER AND THE MAXIMUM TRAVEL DISTANCE IS 75'.
9. ADDITIONAL EXIT SIGNS MAY BE REQUIRED AT THE TIME OF FINAL INSPECTION. IF THE ONES SHOWN ON THE PLANS DO NOT MEET THE INTENT OF THE CODE, CFC 1011.1
10. IF AS-BUILT PLANS ARE REQUIRED, ADDITIONAL FEES WILL BE DUE FOR REVIEW OF THE AS-BUILT PLANS.

CIRCUIT SCHEDULE

CIRCUIT DESIGNATION	CIRCUIT ORIGINATION	CIRCUIT DESCRIPTION	CLASS/ STYLE
A	FACP	ONE #16/2 AWG FPLP CABLE <40sec 815SLUX/DSI EXLENT FOR (Class B Style B) CIRCUIT	CLASS B
B	FACP	ONE #16/2 AWG FPLP CABLE <40sec 815SLUX/DSI EXLENT FOR NOTIFICATION APPLIANCE CIRCUIT	CLASS B
C	FACP	ONE #16/2 AWG FPLP CABLE <40sec 815SLUX/DSI EXLENT FOR (Class B Style B) CIRCUIT	CLASS B
D	FACP	ONE #16/2 AWG FPLP CABLE <40sec 815SLUX/DSI EXLENT FOR FIRE ALARM ANNUNCIATOR PANEL	CLASS B
E	FACP	ONE #16/2 AWG FPLP CABLE <40sec 815SLUX/DSI EXLENT FOR (24VDC POWER) CIRCUIT	CLASS B

FOR REFERENCE ONLY

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

LABELED REMOTE TEST STATION

PROVIDE LABELED REMOTE TEST STATION FOR SMOKE DETECTORS AND AUDIO VISUAL DEVICE WITH KEYED RESET. LOCATE REMOTE TEST STATION NEXT TO ASSOCIATED THERMOSTAT. COORDINATE LOCATION FOR AUDIO VISUAL DEVICE WITH OWNERS REPRESENTATIVE.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS
930 CARLETON STREET
BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

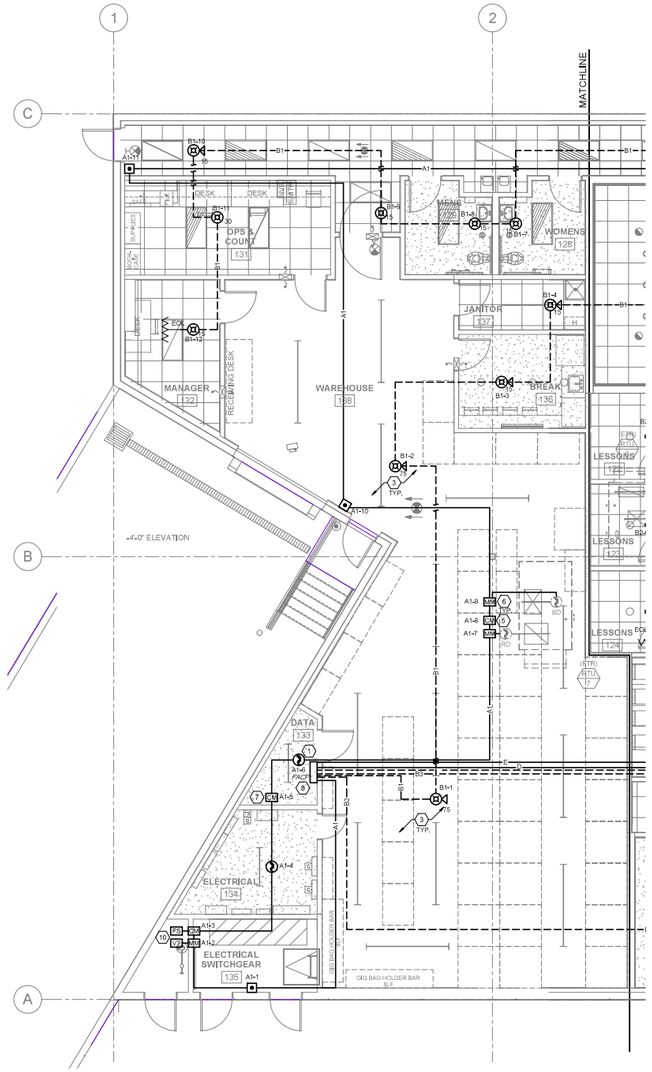
CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
FIRE ALARM PLAN

SHEET NO:
FP1.0A



1 FIRE ALARM FLOOR PLAN
SCALE: 3/16"=1'-0"

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

FIRE ALARM PLAN NOTES:

NOTE: NOT ALL PLAN NOTES ARE USED ON EVERY SHEET

1. PROVIDE NEW FIRE ALARM CONTROL PANEL. PROVIDE A SMOKE DETECTOR ABOVE THE PANEL IN ACCORDANCE WITH NFPA 72.
2. PROVIDE NEW REMOTE FIRE ALARM ANNUNCIATOR PANEL.
3. MOUNT NOTIFICATION APPLIANCE TO BOTTOM OF JOIST OR AT 30 FT AFF, WHICHEVER IS LOWER, IN ACCORDANCE WITH NFPA 72 REQUIREMENTS.
4. PROVIDE FIRE DEPARTMENT KEY BOX FOR FIRE DEPARTMENT ACCESS. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO MONITOR KEY BOX INTERNAL SUPERVISORY SWITCH(ES), AS REQUIRED.
5. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO SHUTDOWN FAN POWERED MECHANICAL EQUIPMENT. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
6. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO MONITOR EXISTING DUCT DETECTOR FOR FAN POWERED MECHANICAL EQUIPMENT. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
7. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO SHUTDOWN AUDIO SYSTEM. FIELD COORDINATE EXACT LOCATION.
8. PROVIDE EQUIPMENT AND CONNECTIONS TO SEND AND RECEIVE SIGNALS FROM THE LANDLORD FIRE ALARM SYSTEM (AS REQUIRED).
9. PROVIDE EQUIPMENT AND CONNECTIONS NECESSARY TO MONITOR KNOX BOX. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
10. CONNECT FIRE SPRINKLER MONITORING DEVICES TO FIRE ALARM SYSTEM. COORDINATE QUANTITY AND LOCATION OF DEVICES WITH FIRE PROTECTION SYSTEMS.

FIRE ALARM GENERAL NOTES:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS. SYSTEM SHALL ALSO MEET ALL APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND INSURANCE CARRIER. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL.
3. INFORMATION ON CONTRACT DOCUMENTS IS GENERAL INFORMATION AND FOR BID PURPOSES ONLY. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE FINAL SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS, COORDINATION WITH ALL OTHER TRADES, AND SYSTEM CALCULATIONS REQUIRED FOR APPROVAL BY THE AUTHORITY HAVING JURISDICTION, ENGINEER, AND OWNER'S INSURER.
4. THE CONTRACTOR SHALL FOLLOW THE ENGINEER OF RECORD'S SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS EXCEPT WHERE MODIFICATION TO THE DESIGN IS NECESSARY. MODIFICATIONS SHALL BE REFLECTED IN THE CONTRACTOR'S SHOP DRAWINGS AND CALCULATIONS.
5. DEVIATIONS FROM ENGINEER'S DESIGN WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED AND APPROVED.
6. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.
7. PROVIDE ADDITIONAL MATERIALS AND LABOR REQUIRED DUE TO LACK OF COORDINATION OR TO MEET AUTHORITY HAVING JURISDICTION AND INSURANCE CARRIER REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
8. FORWARD COMPLETED CERTIFICATE OF COMPLETION AND CONTRACTOR MATERIAL TEST CERTIFICATES TO THE OWNER.
9. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

CIRCUIT SCHEDULE

CIRCUIT DESIGNATION	CIRCUIT ORIGINATION	CIRCUIT DESCRIPTION	CLASS STYLE
A	FACP	ONE #14/2 AWG FPLP CABLE +24ga+ #22SHLD OR EQUIVALENT FOR [ ] BUS [ ] BUS	CLASS B
B	FACP	ONE #14/2 AWG FPLP CABLE +24ga+ #12SLU OR EQUIVALENT FOR HORN STROBE [ ] BUS	CLASS B
C	FACP	ONE #14/2 AWG FPLP CABLE +24ga+ #12SLU OR EQUIVALENT FOR [ ] BUS [ ] BUS	CLASS B
D	FACP	ONE #14/2 AWG FPLP CABLE +24ga+ #22SHLD OR EQUIVALENT FOR FIRE ALARM APPLIANCE (FOR PANEL	CLASS B
E	FACP	ONE #14/2 AWG FPLP CABLE +24ga+ #12SLU OR EQUIVALENT FOR 24VDC POWER [ ] BUS	CLASS B

FOR REFERENCE ONLY

NOTE TO CONTRACTORS

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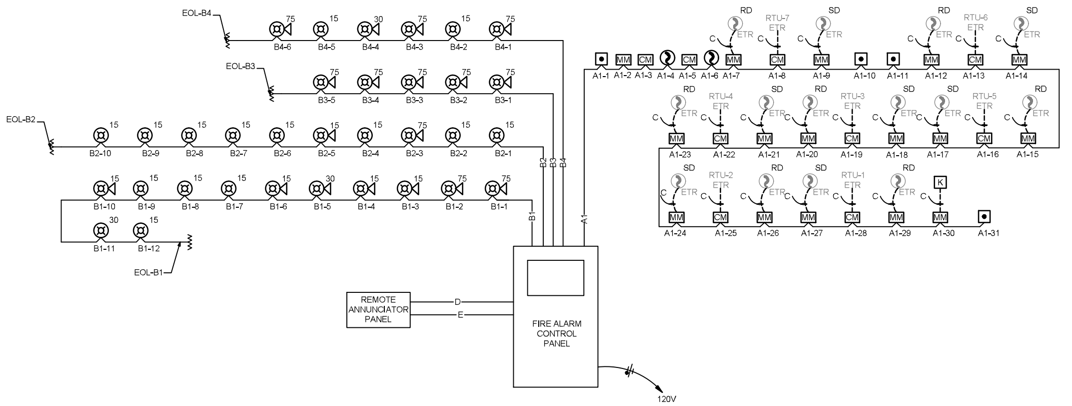
SHEET TITLE:
FIRE ALARM PLAN

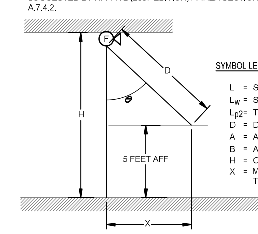
SHEET NO:
FP1.0B



4 FIRE ALARM RISER DIAGRAM - ADDRESSABLE SYSTEM (NON-VOICE)
NOT TO SCALE

NOTES:

1. THESE CALCULATIONS ARE DERIVED FROM THE SFPE HANDBOOK OF FIRE PROTECTION ENGINEERING (THIRD EDITION) SECTION 4-1; AND FROM APPLICATIONS AS SUGGESTED BY NFPA 72 (2007 EDITION) ANNEX SECTION A.7.4.2.



EQUATIONS:

$L_w = L + 20\log_{10}(3.05) + 11$

$L_w = L_{p2} + 20\log_{10}(D) + 11 - A - B$

SOLVE FOR D: $D = 10^{\left(\frac{L_w - L_{p2} - 3}{20}\right)}$

THEN SOLVE FOR X: $X = \sqrt{\left(\frac{D}{0.3048}\right)^2 - (H-5)^2}$

SYMBOL LEGEND:

- L = SOUND LEVEL OF THE AUDIBLE APPLIANCE @ 10 FT (dBA)
- L_W = SOUND LEVEL OF THE AUDIBLE APPLIANCE (dBA)
- L_{p2} = TARGET SOUND LEVEL (dBA)
- D = DISTANCE FROM AUDIBLE APPLIANCE (METERS)
- A = ADJUSTMENT FOR MOUNTING POSITION OF AUDIBLE APPLIANCE(5dBA)
- B = ADJUSTMENT FOR MULTIPLE AUDIBLE APPLIANCE (3 dBA)
- H = CEILING HEIGHT (FEET)
- X = MAXIMUM HORIZONTAL DISTANCE FROM AUDIBLE APPLIANCE TO ACHIEVE TARGET SOUND LEVEL (FEET)

80 dBA @ 5 FT AFF, X FEET FROM APPLIANCE					
Height (ft)	SPEAKER OUTPUT RATING				
	80dBA @10 FT	84dBA @10 FT	88dBA @10 FT	89dBA @10 FT	90dBA @10 FT
8	25.0	39.7	63.1	70.8	79.4
9	24.8	39.6	63.0	70.7	79.4
10	24.6	39.5	62.9	70.7	79.3
11	24.4	39.4	62.9	70.6	79.3
12	24.1	39.2	62.7	70.5	79.2
13	23.8	39.0	62.6	70.4	79.1
14	23.5	38.8	62.5	70.3	79.0
15	23.1	38.6	62.3	70.1	78.9
16	22.6	38.3	62.2	70.0	78.7
17	22.1	38.0	62.0	69.8	78.6
18	21.5	37.7	61.8	69.6	78.4
19	20.9	37.3	61.6	69.4	78.2
20	20.2	36.9	61.3	69.2	78.1
21	19.4	36.5	61.1	69.0	77.9
22	18.5	36.0	60.8	68.8	77.6
23	17.5	35.5	60.5	68.5	77.4
24	16.5	35.0	60.2	68.2	77.2
25	15.2	34.5	59.9	68.0	76.9
26	13.8	33.9	59.5	67.7	76.7
27	12.2	33.2	59.2	67.3	76.4
28	10.1	32.5	58.8	67.0	76.1
29	7.5	31.8	58.4	66.7	75.8
30	2.6	31.0	58.0	66.3	75.5

2 CEILING MOUNTED AUDIBLE DISTANCE CALCULATIONS
NOT TO SCALE

SYSTEM INPUTS	ALARM	SUPERVISORY	TROUBLE	REPORT TO FIRE ALARM CONTROL PANEL	SIGNAL SUPERVISING STATION	ACTIVATE GENERAL FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCES	SHUTDOWN INDIVIDUAL FAN POWERED MECHANICAL AIR HANDLING EQUIPMENT AND DAMPER(S)	SHUTDOWN ALL FAN POWERED MECHANICAL AIR HANDLING EQUIPMENT FOR AFFECTED HVAC SYSTEM	SHUTDOWN ALL FAN POWERED MECHANICAL AIR HANDLING EQUIPMENT	SHUTDOWN TENANT AUDIO / VIDEO SYSTEM(S) IN COMMON AREAS
	PRIORITY			SYSTEM OUTPUTS						
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - OPEN			●	●	●					
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - SHORT			●	●	●					
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - GROUND			●	●	●					
FIRE ALARM CONTROL PANEL LOSS OF POWER			●		●					
MANUAL PULL STATION	●			●	●	●			●	●
SMOKE DETECTOR - SPOT TYPE	●			●	●	●			●	●
SMOKE DETECTOR - DUCT MOUNTED		●		●	●		●	●		
WATERFLOW ALARM SWITCH	●			●	●	●			●	●
VALVE TAMPER SWITCH		●		●	●					
FIRE DEPARTMENT KEY BOX VALVE TAMPER SWITCH (KNOX BOX)		●		●	●					

CONTRACTOR TO PROVIDE ALL NECESSARY EQUIPMENT AND CONNECTIONS REQUIRED TO ACCOMPLISH THE FUNCTIONS INDICATED, AT MINIMUM.

SEQUENCE OF OPERATIONS INDICATED IS SCHEMATIC. MODIFY TO SUIT CONDITIONS AND MEET APPLICABLE CODE REQUIREMENTS.

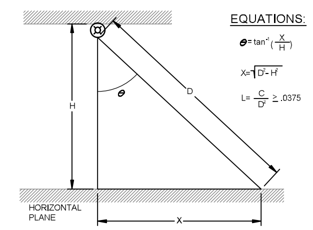
3 FIRE ALARM SEQUENCE OF OPERATIONS
NOT TO SCALE

NOTES:

1. ALL DISTANCES ("X") ARE CALCULATED USING 5° INCREMENTS. THEREFORE, COVERAGE DISTANCE WILL FLUCTUATE TO MEET THE MINIMUM LIGHT INTENSITY OF 0.0375 LUMENS/SQ.FT.

SYMBOL LEGEND:

- C = LIGHT OUTPUT (CANDELA) AT UL 1971 ANGLE
- θ = ANGLE OFF THE AXIS FROM UL 1971
- D = DISTANCE FROM SOURCE (FEET)
- L = LIGHT INTENSITY (MINIMUM 0.0375 LUMENS/SQ.FT.) (NFPA 72, 2007 ANNEX SECTION A.7.5.4.5)
- X = HORIZONTAL DISTANCE OFF THE AXIS (FEET)
- H = VERTICAL DISTANCE OF LIGHT SOURCE FROM FLOOR (FEET)



EQUATIONS:

$\theta = \tan^{-1}\left(\frac{X}{H}\right)$

$X = \sqrt{D^2 - H^2}$

$L = \frac{C}{D^2} \geq .0375$

	DISTANCE CHART					
H(FT)	X (FEET)					
	15 CD	30CD	75 CD	95 CD	115 CD	177 CD
14'	9.8	14.0	24.2	24.2	24.2	30.0
4'-4"	8.3	14.3	20.5	24.8	24.8	30.7
14'-8"	8.5	14.7	21.0	25.4	25.4	31.5
15'	8.7	15.0	21.4	26.0	26.0	32.2
15'-4"	7.1	15.3	21.9	26.6	26.6	32.9
15'-8"	7.3	15.7	22.4	27.1	27.1	33.6
16'	7.5	16.0	22.9	22.9	27.7	34.3
16'-4"	7.6	16.3	23.3	23.3	28.3	35.0
16'-8"	7.8	16.7	23.8	23.8	28.9	35.7
17'	7.9	17.0	24.3	24.3	29.4	36.5
17'-4"	6.3	14.5	20.7	24.7	30.0	30.0
17'-8"	6.4	14.8	21.1	25.2	25.2	30.6
18'	4.8	15.1	21.5	25.7	25.7	31.2
18'-4"	3.2	15.4	21.8	26.2	26.2	31.7
18'-8"	3.3	15.7	22.3	26.7	26.7	32.3
19'	0.0	13.3	22.6	27.1	27.1	32.9
19'-4"	0.0	13.5	23.0	27.6	27.6	33.5
19'-8"	0.0	13.8	23.4	23.4	28.1	34.1
20'	0.0	14.0	23.8	23.8	28.6	34.6
20'-4"	N/A	11.7	24.2	24.2	29.0	35.2
20'-8"	N/A	11.9	24.6	24.6	29.5	35.8
21'	N/A	12.1	25.0	25.0	30.0	36.4
21'-4"	N/A	9.9	21.3	25.4	25.4	36.9
21'-8"	N/A	10.1	21.7	25.8	25.8	37.5
22'	N/A	10.3	22.0	26.2	26.2	31.4
22'-4"	N/A	10.4	22.3	26.6	26.6	31.9
22'-8"	N/A	10.6	22.7	27.0	27.0	32.4
23'	N/A	10.7	23.0	27.4	27.4	32.8

UL TABLE FOR CANDELA OUTPUT							
ANGLE	UL%	C(CANDELA)					
		15CD	30CD	75CD	95CD	115CD	177CD
0	100%	15.0	30.0	75.0	95.0	115.0	177.0
5	90%	13.5	27.0	67.5	85.5	103.5	159.3
10	90%	13.5	27.0	67.5	85.5	103.5	159.3
15	90%	13.5	27.0	67.5	85.5	103.5	159.3
20	90%	13.5	27.0	67.5	85.5	103.5	159.3
25	90%	13.5	27.0	67.5	85.5	103.5	159.3
30	75%	11.3	22.5	56.3	71.3	86.3	132.8
35	75%	11.3	22.5	56.3	71.3	86.3	132.8
40	75%	11.3	22.5	56.3	71.3	86.3	132.8
45	75%	11.3	22.5	56.3	71.3	86.3	132.8
50	55%	8.3	16.5	41.3	52.3	63.3	97.4
55	45%	6.8	13.5	33.8	42.8	51.8	79.7
60	40%	6.0	12.0	30.0	38.0	46.0	70.8
65	35%	5.3	10.5	26.3	33.3	40.3	62.0
70	35%	5.3	10.5	26.3	33.3	40.3	62.0
75	30%	4.5	9.0	22.5	28.5	34.5	53.1
80	30%	4.5	9.0	22.5	28.5	34.5	53.1
85	25%	3.8	7.5	18.8	23.8	28.8	44.3
90	25%	3.8	7.5	18.8	23.8	28.8	44.3

1 CEILING MOUNTED STROBE DISTANCE CALCULATIONS
NOT TO SCALE

FIRE PROTECTION SYMBOLS

THIS IS A MASTER LEGEND, NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED.

FIRE ALARM

- FACP — FIRE ALARM CONTROL PANEL/UNIT
- FACP — RECESSED FIRE ALARM CONTROL PANEL/UNIT
- FAAP — FIRE ALARM ANNUNCIATOR PANEL
- FAAP — RECESSED FIRE ALARM ANNUNCIATOR PANEL
- AMP — AMPLIFIER PANEL
- RPS — REMOTE POWER SUPPLY
- RT — REMOTE TEST STATION WITH INDICATING LIGHT
- RL — REMOTE INDICATING LIGHT
- PS — PRESSURE SWITCH LOW/HIGH
- FS — WATERFLOW ALARM SWITCH
- VT — CONTROL VALVE TAMPER SWITCH
- DH — MAGNETIC DOOR HOLD OPEN DEVICE
- CM — CONTROL MODULE
- MM — MONITOR MODULE
- K — FIRE DEPARTMENT KEY BOX
- PULL STATION
- F — FIREFIGHTER'S PHONE JACK
- HEAT DETECTOR (E INDICATES ELEVATOR RECALL)
- SMOKE DETECTOR (E INDICATES ELEVATOR RECALL)
- SINGLE STATION SMOKE DETECTOR
- PROJECTED BEAM SMOKE DETECTOR
- RD — DUCT MOUNTED SMOKE DETECTOR (SD=SUPPLY/RD=RETURN)
- CO — CARBON MONOXIDE DETECTOR
- AREA OF REFUGE 2-WAY COMMUNICATION SYSTEM
- ## — WALL MOUNTED VISIBLE NOTIFICATION APPLIANCE — ## INDICATES CANDELA
- ## — WALL MOUNTED AUDIBLE/VISIBLE NOTIFICATION APPLIANCE — ## INDICATES CANDELA
- ## — CEILING MOUNTED VISIBLE NOTIFICATION APPLIANCE — ## INDICATES CANDELA
- ## — CEILING MOUNTED AUDIBLE/VISIBLE NOTIFICATION APPLIANCE — ## INDICATES CANDELA
- END OF LINE RESISTOR
- ABORT SWITCH
- BELL

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AFG	ABOVE FINISHED GRADE	OC	ON CENTER
CD	CANDELA	PIV	POST INDICATOR VALVE
DI	DUCTILE IRON	PROVIDE	FURNISH AND INSTALL
ESFR	EARLY SUPPRESSION FAST RESPONSE	PRV	PRESSURE REDUCING VALVE
ETR	EXISTING TO REMAIN	RD	RETURN DUCT
FHC	FIRE HOSE CABINET	REV	REVISION
FP	FIRE PROTECTION	SD	SUPPLY DUCT
GC	GENERAL CONTRACTOR	SF	SQUARE FEET
GPM	GALLONS PER MINUTE	TYP	TYPICAL
JB/J-BOX	JUNCTION BOX	UNO	UNLESS NOTED OTHERWISE
MAX	MAXIMUM	V	VOLT(S)
MIN	MINIMUM	W	WATTS
N/A	NOT APPLICABLE	WP	WEATHERPROOF

ANNOTATION

- 1 — FIRE PROTECTION PLAN NOTE CALLOUT
- CONNECTION POINT OF NEW WORK TO EXISTING
- 1 / F1 — DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- 1 / F1 — SECTION CUT DESIGNATION

STANDARD MOUNTING HEIGHTS

FIRE ALARM	
AUDIBLE APPLIANCES (CENTERLINE)	90"
FIRE ALARM ANNUNCIATOR PANEL (DISPLAY)	60"
FIRE ALARM BELL (EXTERIOR)	120"
FIRE ALARM CONTROL PANEL/UNIT (DISPLAY)	60"
PULL STATIONS (HANDLE)	48"
VISIBLE APPLIANCES (CENTERLINE)	84"

USE THE DEFAULT MOUNTING HEIGHTS SHOWN ABOVE UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS OR ELSEWHERE. MOUNTING HEIGHTS LISTED ARE ABOVE FINISHED FLOOR (AFF) OR ABOVE FINISHED GRADE (AFG). ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.

CIRCUIT SCHEDULE

CIRCUIT DESIGNATION	CIRCUIT ORIGINATION	CIRCUIT DESCRIPTION	CLASS/ STYLE
A	FACP	ONE #16/2 AWG FPLP CABLE - Belden 6220FK OR EQUIVALENT FOR SIGNALING LINE CIRCUIT	CLASS B
B	FACP	ONE #14/2 AWG FPLP CABLE - Belden 6120UJ OR EQUIVALENT FOR NOTIFICATION APPLIANCE CIRCUIT	CLASS B
C	FACP	ONE #14/2 AWG FPLP CABLE - Belden 6120UJ OR EQUIVALENT FOR INITIATION DEVICE CIRCUIT	CLASS B
D	FACP	ONE #16/2 AWG FPLP CABLE - Belden 6220FK OR EQUIVALENT FOR FIRE ALARM ANNUNCIATOR PANEL	CLASS B
E	FACP	ONE #14/2 AWG FPLP CABLE - Belden 6120UJ OR EQUIVALENT FOR 24VDC POWER CIRCUIT	CLASS B

FACP VOLTAGE DROP CALCULATIONS

Project Name:	Guitar Center- Monterey Park, CA	Date:	01.31.2018
Project Number:	1750003949	Panel:	FIRE-LITE MS-9200UDLS
Nominal system voltage:	20.4	Min. device voltage:	16.5

Circuit Number:	NAC1-1	Device	Current Draw (A)	Qty.	Subtotal Current Draw (A)
Area Covered:	BACK OF HOUSE				
Wire Type:	#16/2 fplp cable (6220ul)				
Wire Resistance:	3.85 ohms/1000'	15 CD Strobe	0.041	5	0.205
Circuit Length:	213 feet	15 CD Horn/Strobe	0.079	4	0.316
Device Mfg:	System Sensor	30 CD Horn/Strobe	0.107	1	0.107
Circuit Output (Amps):	2	75 CD Horn/Strobe	0.176	2	0.352
Circuit Results:					0.000
Voltage Drop:	1.61 volts				0.000
End of line Voltage:	18.79 PASS		Totals:	12	0.980
Voltage Drop %:	7.88%	Max. Circuit Length: 517 feet			
Total circuit resistance:	1.640 ohms				
Resistance Max:	3.98 ohms				

Circuit Number:	NAC1-2	Device	Current Draw (A)	Qty.	Subtotal Current Draw (A)
Area Covered:	BACK OF HOUSE				
Wire Type:	#16/2 fplp cable (6220ul)	15 CD Strobe	0.041	8	0.328
Wire Resistance:	3.85 ohms/1000'	15 CD Horn/Strobe	0.079	1	0.079
Circuit Length:	139 feet	75 CD Horn/Strobe	0.176	1	0.176
Device Mfg:	System Sensor				0.000
Circuit Output (Amps):	2				0.000
Circuit Results:					0.000
Voltage Drop:	0.62 volts				0.000
End of line Voltage:	19.78 PASS		Totals:	10	0.583
Voltage Drop %:	3.06%	Max. Circuit Length: 869 feet			
Total circuit resistance:	1.070 ohms				
Resistance Max:	6.69 ohms				

Circuit Number:	NAC1-3	Device	Current Draw (A)	Qty.	Subtotal Current Draw (A)
Area Covered:	EAST SALES				
Wire Type:	#16/2 fplp cable (6220ul)	75 CD Horn/Strobe	0.176	5	0.880
Wire Resistance:	3.85 ohms/1000'				0.000
Circuit Length:	214 feet				0.000
Device Mfg:	System Sensor				0.000
Circuit Output (Amps):	2				0.000
Circuit Results:					0.000
Voltage Drop:	1.45 volts		Totals:	5	0.880
End of line Voltage:	18.95 PASS	Max. Circuit Length: 576 feet			
Voltage Drop %:	7.11%				
Total circuit resistance:	1.648 ohms				
Resistance Max:	4.43 ohms				

Circuit Number:	NAC1-4	Device	Current Draw (A)	Qty.	Subtotal Current Draw (A)
Area Covered:	NAC CIRCUITS	15 CD Strobe	0.041	2	0.082
Wire Type:	#16/2 fplp cable (6220ul)	30 CD Horn/Strobe	0.107	1	0.107
Wire Resistance:	3.85 ohms/1000'	75 CD Horn/Strobe	0.176	3	0.528
Circuit Length:	232 feet				0.000
Device Mfg:	System Sensor				0.000
Circuit Output (Amps):	2				0.000
Circuit Results:					0.000
Voltage Drop:	1.28 volts		Totals:	6	0.717
End of line Voltage:	19.12 PASS	Max. Circuit Length: 706 feet			
Voltage Drop %:	6.28%				
Total circuit resistance:	1.786 ohms				
Resistance Max:	5.44 ohms				

NOTE:
THE CURRENT DRAWS FOR THE ABOVE CALCULATIONS HAVE BEEN ASSUMED BASED ON TYPICAL FIRE ALARM APPLIANCES. CONTRACTOR IS REQUIRED TO PROVIDE UPDATED CALCULATIONS FOR VERIFICATION IF EQUIPMENT SPECIFICATIONS DO NOT MATCH EQUIPMENT CURRENT DRAWS AS ANTICIPATED.

BATTERY CALCULATIONS

Project:	GUITAR CENTER- MONTEREY PARK, CA	Prj. No:	1750003949
Panel:	FIRE-LITE MS-92UDLS		
Location:	DATA ROOM 132		

Quantity	Device	Standby (Amps) Current	Standby (Amps) Total Current	Alarm (Amps) Current	Alarm (Amps) Total Current
1	FIRE ALARM CONTROL PANEL	0.2430	0.2430	3	3.0000
2	SPOT TYPE SMOKE DETECTOR	0.0003	0.0006	0.0065	0.0130
16	MONITOR MODULES	0.0004	0.0060	0.0050	0.0800
9	CONTROL MODULES	0.0004	0.0038	0.0065	0.0065
1	ANNUNCIATOR	0.0150	0.0150	0.0400	0.0400
4	PULL STATION	0.0003	0.0012	0.2500	1.0000
1	NAC1-1		0.0000	0.9800	0.9800
1	NAC1-2		0.0000	0.5830	0.5830
1	NAC1-3		0.0000	0.8800	0.8800
1	NAC1-4		0.0000	0.7170	0.7170
			0.0000		0.0000
			0.0000		0.0000
			0.0000		0.0000
			0.0000		0.0000
			0.0000		0.0000
			0.0000		0.0000
		Totals:	0.2696		7.2995

Standby	
Total System Standby Current (Amps)	0.270
x Required Standby Time (hr)	24
Required Standby Capacity (Amp-hr):	6.469

Alarm	
Total System Alarm Current (Amps)	7.300
x Required Alarm Time (hr)[1]	0.083
Required Alarm Capacity (Amp-hr):	0.606
(1) Expressed in decimals of an hour.	

Total Required Capacity (Amp-hr) =	7.075
Optional Safety Factor	20%
Required Battery Capacity (Amp-hr)	**9.0**

2 FOR REFERENCE ONLY

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS
930 CARLETON STREET
BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
FIRE ALARM SCHEDULES & DETAILS

SHEET NO:
FP2.0

Division 28: FIRE ALARM SYSTEM

1. GENERAL INSTRUCTIONS

A. GENERAL REQUIREMENTS

All requirements under Division 01 (General Requirements) and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 01 (General Requirements), this section and division take precedence. Become thoroughly familiar with all its contents as to requirements that affect this division, section, or both. Work required under this division includes all material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate the function of each system as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and any portion of work described in one shall be provided as if described in both. In the event of discrepancies, notify the Engineer and request clarification prior to proceeding with the work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They convey the scope of work, indicating the intended general arrangement of the systems without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory, and properly operating system.

Installation of devices shall be performed or supervised by a National Institute for Certification of Engineering Technologies (NICET) Level 2 or higher fire alarm technician. Submit copies of the certification for employees through shop drawing submittals.

B. DEFINITIONS

Division: References contained in this specification follow the numbering system defined in the Construction Specifications Institute (CSI) MasterFormat 2004 Edition. Specification Divisions 01 through 13 provided with this project may reference the CSI MasterFormat 1995 Edition. The corresponding division references between the 2004 Edition and 1995 Edition are as follows:

	2004 Edition	1995 Edition
1.	Division 21 - Fire Suppression	Division 15
2.	Division 22 - Plumbing	Division 15
3.	Division 23 - HVAC	Division 15
4.	Division 26 - Electrical	Division 16
5.	Division 27 - Communications	Division 16
6.	Division 28 - Electronic Safety and Security	Division 16

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembly, installation and similar operations."

Install: "to perform all operations at the project site including, but not limited to, the actual unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use."

Provide: "to furnish and install, complete and ready for the intended use."

Furnished by Owner (or Owner-Furnished) or Furnished by Others: "an item furnished by the Owner or under other divisions or contracts, and installed under the requirements of this division, complete and ready for the intended use, including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division."

Engineer: Where referenced in this division, "Engineer" is the Engineer of Record and the Design Professional for the work under this division, and is a consultant to, and an authorized representative of the Architect, as defined in the General and/or Supplementary Conditions. When used in this division, Engineer means increased involvement by and obligations to the Engineer, in addition to involvement by and obligations to the Architect.

AHJ: The local code and/or inspection agency (Authority) Having Jurisdiction over the work.

NRTL: Nationally recognized testing laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project. Nationally recognized testing laboratories and standards listed are used only to represent the characteristics required and are not intended to restrict the use of other NRTLs that are acceptable to the AHJ and standards that meet the specified criteria.

The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the Engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, or both, by an NRTL, and acceptable to the AHJ over this project.

C. PREBID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to comply with this requirement shall not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

D. SCOPE OF WORK

The scope of work in this section includes fire alarm control panels, remote annunciator panels, manual fire alarm pull stations, automatic smoke detectors, fire alarm notification appliances, auxiliary fire alarm equipment, sprinkler system waterflow and valve tamper alarms, and air handling unit shutdown.

E. CODES AND STANDARDS

Provide an integrated fire alarm system, which meets the current versions of NFPA 70, National Electrical Code; NFPA 72, National Fire Alarm Code; and all local building and fire codes. All fire alarm equipment shall be Underwriters Laboratory (UL) or Factory Mutual (FM) approved for the type and class of service performed.

F. SYSTEM DESCRIPTION

The fire alarm system shall be a non-coded manual and automatic fire alarm system with connections to a remote supervising station. Control panel shall be micro-processor based, with fully addressable alarm devices.

G. COORDINATION

Coordinate work with that of other trades so that the various components of the systems are installed at the proper time, will fit the available space, and will allow proper service access to those items requiring maintenance. Components installed without regard to the above shall be relocated at no additional cost to the Owner.

H. SUBMITTALS

Upon being awarded a contract, submit to the Architect for approval, six (6) copies of manufacturer's shop drawings for equipment to be furnished under this contract, items requiring coordination between contractors, and sheet metal ductwork fabrication drawings. Before submitting shop drawings and material lists, verify that equipment submitted is mutually compatible and suitable for the intended use, and will fit the available space and allow ample room for maintenance. Highlight, mark, list or indicate the materials, performance criteria and accessories that are being proposed. Submit shop drawings as early as required to support the project schedule. Allow for two weeks Engineer review time plus mailing time plus a duplication of this time for resubmittal if required.

Submittals and shop drawings shall not contain the firm name, logo, seal, or signature of the Engineer. They shall not be copies of the work product of the Engineer. If the Contractor desires to use elements of such product, refer to paragraph "Electronic Drawing Files" for procedures to be used.

The checking and subsequent approval of such shop drawings by the Engineer shall not relieve the Contractor from responsibility for errors in dimensions, details, size of members, quantities, omissions of components or fittings; coordination of electrical requirements; or for coordinating items with actual building conditions. Proceed with the procurement and installation of equipment only after receiving approved shop drawings relative to each item.

Submit a detailed sequence of operation. Pre-printed, generic material will not be accepted and will be rejected. Highlight, mark, list or indicate the materials, performance criteria and accessories that are being proposed.

Submit shop drawings showing fire alarm floor plans and a full tenant riser diagram. Fire alarm floor plans and riser diagram shall show fire alarm control panel, annunciator, all fire alarm initiating devices and notification appliances. Show typical wiring diagrams of control panel/s, annunciator and each device and wiring connections required. Show all interfaces to other systems, such as temperature control systems, and security systems.

Where required by the AHJ, Contractor is responsible for obtaining a professional engineer or NICET stamp and signature on their shop drawing submittal. The Engineer is not responsible and will not provide this.

Shop drawings shall be produced using Computer Aided Design. Hand drawn documents will not be reviewed or approved.

Shop drawing scale shall match the Engineer's drawings where possible. Scale shall not be less than 3/32" = 1'-0".

Submit a bill of material and manufacturers product data for all devices and equipment.

Refer to Division 01 for acceptance of electronic submittals for this project. For electronic submittals, Contractor shall submit the documents in accordance with the procedures specified in Division 01. Contractor shall notify the Architect and Engineer that the shop drawings have been posted. If electronic submittal procedures are not defined in Division 01, Contractor shall include the website, user name and password information needed to access the submittals. For submittals sent by e-mail, Contractor shall copy the designated representatives of the Architect and Engineer. Contractor shall allow the Engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the electronic submittal and shall clearly indicate the materials, performance criteria and accessories being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without review.

I. ELECTRONIC DRAWINGS

In preparation of shop drawings or record drawings, Contractor may, at his option, obtain electronic drawing files in AutoCAD or DXF format on CD-ROM disk, DVD disk, flash drive, or direct download, as desired, from the Engineer for a fee of $200 for a drawing set up to 12 sheets and $15 per sheet for each additional sheet. Contact the Architect for written authorization and Engineer for the necessary release agreement form and to specify shipping method and drawing format. In addition to payment, written authorization from the Architect and release agreement from the Engineer must be received before electronic drawing files will be sent.

J. RECORD DRAWINGS (AS-BUILT DRAWINGS)

During progress of the work in this division, Contractor shall maintain an accurate record of all changes made during the installation of the system. Upon completion of the work, accurately transfer all record information to three identical sets of the approved shop drawings. Insert one set into each copy of the manual described below.

See Division 01 and General Conditions for additional information.

K. QUALIFICATIONS

The manufacturer shall be a company specializing in manufacturing the products specified in this section with minimum three years documented experience. The installer shall be a company specializing in installing the products specified in this section with minimum three years documented experience, be a bonded and licensed contractor and merchant of electronic automated fire alarm systems, and employ full-time factory-trained installers and technicians. The equipment manufacturer's service department shall be fully stocked in standard parts and components and engaged in the maintenance of fire alarm systems. On-the-premises service shall be available within 4 hours of notification, 7 days a week, 24 hours a day. Furnish service and maintenance of fire alarm system for one year from date of substantial completion.

L. WARRANTIES

Warrant each system and each element thereof against all defects due to faulty workmanship, design, or material for a period of 12 months from date of Substantial Completion, unless specific items are noted to carry a longer warranty in the construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects, occurring within the warranty period(s), as stated in the General Conditions and Division 01.

All corrective software modifications made during warranty periods shall be updated on all user documentation and on user and manufacturer archived software disks.

Warranties shall include labor and material, including travel expenses. Make repairs or replacements without any additional costs to the Owner, and to the satisfaction of the Owner, Architect, and Engineer.

Perform the remedial work promptly, upon written notice from the Engineer or Owner.

At the time of Substantial Completion, deliver to the Owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the one year period and any actions the Owner must take in order to maintain warranty status. Each warranty instrument shall be addressed to the Owner and state the commencement date and term.

2. MATERIALS AND INSTALLATION

A. MANUFACTURERS

Subject to compliance with requirements, provide products manufactured by the following manufacturers: Notifier; SimplexGrinnell; Siemens-Cerberus Division; Kidde/Edwards; Gamewell-FCI; FIKE Corporation; Farenhyt or Engineer approved equal.

B. FIRE ALARM CONTROL PANEL

The fire alarm system shall be a microprocessor-based system designed specifically for fire applications. The system shall be UL listed under Standard 864 (Control Units for Fire-Protective Signaling Systems). Modular construction with a flush mounted enclosure.

Remote Annunciator: Provide supervised remote annunciator(s) where shown on the plans, including audible and visible indication of fire alarm by address, and audible and visible indication of system trouble and supervisory. Install in flush mounted enclosure.

Power Supply: Provide two separate and reliable power supplies. The control panel shall receive 120 Vac power via a dedicated branch circuit of the building's electrical system. Each shall have adequate capacity for the system. The fire alarm contractor shall submit battery calculations for review and approval. The calculations shall indicate each device and the load required in stand-by and alarm mode. The secondary power system shall be a battery_operated emergency power supply and charger with capacity for operating system in standby mode for 24 hours followed by alarm mode for 5 minutes.

System Supervision: Automatically detects and reports open circuits, shorts, and grounds of wiring for initiating device, signaling line, and notification appliance circuits. Alarm, supervisory and trouble signals shall be monitored by the landlords fire alarm control panel.

Initiating Device Circuits: Provide circuitry, which meets the performance requirements during abnormal conditions, based upon the style and class of the circuitry selected. Initiating device circuits shall be Class B.

Notification Appliance Circuits: Provide circuitry, which meets the performance requirements during abnormal conditions, based upon the style and class of the circuitry selected. Notification appliance circuits shall be Class B.

Signaling Line Circuits: Provide circuitry, which meets the performance requirements during abnormal conditions, based upon the style and class of the circuitry selected. Signaling line circuitry shall be Class B.

Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts to provide accessory functions specified.

Provide trouble acknowledge, drill, and alarm silence switch.

The control panel and remote annunciator panel shall have dedicated alarm, supervisory and trouble LED's and dedicated alarm, supervisory and trouble acknowledge switches.

Lamp Test: Manual lamp test function causes each LED to function at fire alarm control panel.

Drill Sequence of Operation: Manual drill function causes alarm mode operation as described above.

Addressable systems shall have silent walk test, history logging for a minimum of 400 events, 80 character LCD display.

C. SEQUENCE OF OPERATIONS

Trouble Sequence of Operation: System or circuit trouble places system in trouble mode, which causes the following system operations:

1. Visible and audible trouble alarm indicated at fire alarm control panel and remote annunciator panel (if provided).
2. Trouble signal transmitted to supervising station.
3. Manual acknowledge function at fire alarm control panel silences audible trouble alarm; visible alarm is displayed until initiating failure or circuit trouble is cleared.

Supervisory Sequence of Operation: The activation of any sprinkler valve tamper switch or duct-mounted smoke detector places system in supervisory mode, which causes the following system operations:

1. Visible and audible supervisory alarm indicated by address at fire alarm control panel and remote annunciator panel (if provided).
2. Supervisory signal transmitted to supervising station.
3. Duct-mounted smoke detectors shall shutdown their respective unit upon detection of smoke and remain down until manually reset.
4. Fan-powered terminal units that are less than 2,000 cfm and are not provided with duct detection shall shutdown when its respective air handling unit is shutdown.
5. Manual acknowledge function at fire alarm control panel and remote annunciator panel silences audible supervisory alarm; visible alarm is displayed until device is returned to its normal position/supervisory condition is cleared.

Alarm Sequence of Operation: Actuation of an alarm initiating device places system in alarm mode, which causes the following system operations.

1. Audible notification appliances shall sound until silenced by the alarm silence switch at the control panel.
2. All visible alarm notification appliances shall display a continuous synchronized pattern until reset by the Alarm Reset Switch.
3. Alarm signal transmitted to supervising station.
4. All fan-powered air-handling equipment shall shutdown and remain down until the fire alarm control panel is reset.
5. Audio system is shut down.
6. The alarm LED shall flash on the control panel and remote annunciator panel until the alarm has been acknowledged at the control panel/remote annunciator panel. Once acknowledged, this same LED shall latch on and the custom label for the address in alarm shall be displayed on the alphanumeric LCD readout. A subsequent alarm received from another address after acknowledged shall flash the alarm LED on the control panel showing the new alarm information.
7. A pulsing alarm tone shall occur within the control panel until acknowledged.

D. INITIATING DEVICES

Manual Pull Station: Provide semi_flush, non-coded type, double action manual pull station.

Smoke Detector (Photoelectric type): Device shall have visible indication of detector actuation, self-restoring, plug-in with an integral addressable module indicating the detector status. Photoelectric detectors shall have sensitivity between 0.5 and 3.5 percent/foot smoke obscuration.

E. NOTIFICATION APPLIANCES

Alarm Horn: Surface type fire alarm horn. Sound rating: 90 dB at 10 feet.

Visible Alarm Notification Appliances (Strobes): Strobes shall be xenon or equivalent, unfiltered or clear filtered white light, intensity as indicated on drawings, flash rate range from 1 to 3 Hz, a maximum pulse duration of 0.2 sec with a maximum duty cycle of 40 percent. Strobe shall meet all requirements of the Americans with Disabilities Act.

Audible/Visible Alarm Notification Appliances (Horn/Strobes): Combination units shall provide a common enclosure for the fire alarm audible and visible alarm appliances and be UL listed for its purpose. Minimum audible level and strobe intensity shall meet all requirements for separate appliances.

Provide flush or recessed devices unless otherwise noted.

F. AUXILIARY DEVICES

Waterflow Alarm Switches: Is existing to remain and shall be wired, complete and ready for use, by the Fire Alarm System Installer. Switch shall have an adjustable delay to minimize false alarms due to fluctuations in water pressure.

Gate Valve (Tamper) Switches: Is existing to remain and shall be wired complete and ready for use by the Fire Alarm System Installer.

Monitor Module: Addressable microelectronic module providing a system address for alarm initiating devices for wired applications with normally open contacts. Include address setting means on the module.

Control Relay Module: Provide intelligent control relay modules. The control relay module shall provide one form "C" dry relay contact rated at 2 amps at 24 Vdc to control external appliances or equipment shutdown. The control relay shall be rated for pilot duty and releasing systems. The position of the relay contact shall be confirmed by the system firmware.

Fire Department Key Box: By Knox Company. Provide with an internal switch to indicate a supervisory condition at the fire alarm control and annunciator panels when the lid is removed.

G. FIRE ALARM WIRE AND CABLE

Fire Alarm Power Branch Circuits: Building wire as specified in Division 26.

Signaling Line, Initiating Device, and Notification Appliance Circuits: Power limited fire_protective signaling cable, solid copper conductor, 300 Volts insulation, suitable for temperature, conditions and location installed. Minimum wire size for initiating device circuits, control circuits and notification appliance circuits shall be determined by calculations and manufacturer's requirements or recommendations. Wire and cable shall be twisted and shielded if recommended by the system manufacturer. Initiating, notification, and control circuits shall be sized based on 20 percent additional power consuming devices. The conductors shall meet the requirements of NEC Article 760.

All wiring provided on this project shall be UL listed for the intended use. All wiring including wiring to existing modified devices and appliances shall be new.

3. EXECUTION

A. GENERAL

Install, program, and test all new equipment identified in this contract and revise existing equipment as noted.

The installation supervisor shall be on the job site during the entire installation. The installation supervisor shall maintain marked up copies of the drawings at the job site showing as-built conditions. These drawings shall be updated daily and available for Owner review.

Provide all required conduit and all associated hardware and install (pull), connect, and test all cable for a complete fire alarm system. Install all wiring in accordance with the guidelines of these specifications and documents as well as the NFPA codes and standards listed in these specifications.

B. INSTALLATION

Install all wiring in conduit. Minimum allowable conduit size shall be 3/4 inch. Size the conduit so that conduit fill does not exceed 75 percent of NFPA 70 maximum fill requirements. Cables in vertical risers shall not exceed 50 percent of NFPA 70 maximum fill requirements. Conduit installation shall be as required by the Contractor's layout and as described in these specifications. All conduit field routing shall be acceptable to the Owner. Routing not acceptable shall be rerouted and replaced without expense to the Owner.

Conceal all wire, cable, conduit, and raceways in walls, ceiling spaces, electrical shafts, or closets in finished areas except as specifically noted otherwise. Conduit and raceways may be exposed in unfinished areas or where specifically approved by the Owner.

Except as otherwise specified or indicated on the drawings, Install all conduit parallel or perpendicular to dominant surfaces with right angle turns made of symmetrical bends or fittings. Except where prevented by the location of other work, a single conduit or a conduit group shall be centered on structural members.

Locate conduit at least six inches from hot water or steam pipes and from other hot surfaces. Conduit shall not block access to any existing equipment or fixtures.

Label all conduits and junction boxes as specified in Division 26.

Terminate all wiring at devices or panels using terminal connectors for screw type terminals. All terminal connectors for conductors shall be pre-insulated ring type or pre-insulated spade type. Pre-insulated terminal connectors shall include a vinyl sleeve, color coded to indicate conductor size. Pre-insulated terminal connectors shall include a metallic support sleeve bonded to the vinyl-insulating sleeve and designed to grip the conductor insulation.

Mount end_of_line device in box with last device or separate box adjacent to last device in circuit for conventional hardwired Class B initiating and notification appliance circuits.

Securely fasten conduit to all boxes and cabinets. Threads on metallic conduit shall project through the wall of the box to allow the bushing to butt against the end of the conduit. The locknuts both inside and outside shall then be tightened sufficiently to bond the conduit securely to the box. Conduit shall enter cabinets from the bottom and sides only.

Install manual stations with operating handle 48 inches above floor unless noted otherwise on drawings.

Install ceiling mounted initiating devices in areas with exposed structure tight to underside of floor/roof deck.

Install ceiling mounted visible and audible/visible notification appliances in areas with exposed structure to bottom of floor/roof structure or at 30 ft AFF, whichever is lower.

Install ceiling mounted visible and audible/visible notification appliances in areas with finished ceilings flush with bottom of ceiling or at 30 ft AFF, whichever is lower.

Make conduit and wiring connections to equipment provided by others.

Provide strobe synchronization as required per NFPA 72.

C. FIELD QUALITY CONTROL

Systems shall be checked and tested in accordance with the instructions provided by the manufacturer to ensure that the system functions as required and is free of grounds, opens, and shorts. Each device shall be tested. Smoke detectors shall be tested with products of combustion.

Upon completion of the system installation and before the date of final acceptance, a factory-trained technician shall perform all necessary tests and adjustments and shall file a Letter of Certification and a Certificate of Completion (NFPA 72) with the Owner indicating that the system functions and conforms to the specifications.

Test in accordance with NFPA 72 and local fire department requirements.

D. MANUFACTURER'S FIELD SERVICES

Include services of factory trained and certified technician to supervise installation, adjustments, final connections, and system testing as performed by the Contractor's factory-trained technicians.

The equipment supplier's factory trained technician shall train the Owner's personnel in the proper use and maintenance of the system. Training sessions shall be conducted as needed, not to exceed a total of 2 sessions, with each session lasting a maximum of 4 hours each.

E. ACCEPTANCE TESTING

Upon completion of the system installation, a factory-trained technician shall perform all necessary tests and adjustments in the presence of the Owner's designated personnel.

END OF SECTION 28

CALIFORNIA FIRE CODE – MATRIX ADOPTION TABLE
CHAPTER 33 – FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

(Matrix Adoption Tables are non-regulatory, intended only as an aid to the user. See Chapter 1 for state agency authority and building applications.)

Adopting Agency	BSC	BSC-CG	SFM		HCD			DSA		OSHPD				BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
			T-24	T-19*	1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter			X																		
Adopt Entire Chapter as amended (amended sections listed below)																					
Adopt only those sections that are listed below																					
[California Code of Regulations, Title 19, Division 1]																					
Chapter / Section																					

* The *California Code of Regulations* (CCR), Title 19, Division 1 provisions that are found in the *California Fire Code* are a reprint from the current CCR, Title 19, Division 1 text for the code user's convenience only. The scope, applicability and appeals procedures of CCR, Title 19, Division I remain the same.

CHAPTER 33
FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

SECTION 3301
GENERAL

3301.1 Scope. This chapter shall apply to structures in the course of construction, alteration or demolition, including those in underground locations. Compliance with NFPA 241 is required for items not specifically addressed herein.

3301.2 Purpose. This chapter prescribes minimum safeguards for construction, alteration and demolition operations to provide reasonable safety to life and property from fire during such operations.

SECTION 3302
DEFINITIONS

3302.1 Terms defined in Chapter 2. Words and terms used in this chapter and defined in Chapter 2 shall have the meanings ascribed to them as defined therein.

SECTION 3303
TEMPORARY HEATING EQUIPMENT

3303.1 Listed. Temporary heating devices shall be listed and labeled in accordance with the *California Mechanical Code*. Installation, maintenance and use of temporary heating devices shall be in accordance with the terms of the listing.

3303.2 Oil-fired heaters. Oil-fired heaters shall comply with Section 603.

3303.3 LP-gas heaters. Fuel supplies for liquefied-petroleum gas-fired heaters shall comply with Chapter 61 and the *California Mechanical Code*.

3303.4 Refueling. Refueling operations for liquid-fueled equipment or appliances shall be conducted in accordance with Section 5705. The equipment or appliance shall be allowed to cool prior to refueling.

3303.5 Installation. Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement or overturning in accordance with the manufacturer's instructions.

3303.6 Supervision. The use of temporary heating devices shall be supervised and maintained only by competent personnel.

SECTION 3304
PRECAUTIONS AGAINST FIRE

3304.1 Smoking. Smoking shall be prohibited except in approved areas. Signs shall be posted in accordance with Section 310. In approved areas where smoking is permitted, approved ashtrays shall be provided in accordance with Section 310.

3304.2 Combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall comply with the requirements of Sections 3304.2.1 through 3304.2.4.

3304.2.1 Combustible waste material accumulation. Combustible debris, rubbish and waste material shall not be accumulated within buildings.

3304.2.2 Combustible waste material removal. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.

3304.2.3 Rubbish containers. Where rubbish containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15 m^3) are used for temporary storage of combustible debris, rubbish and waste material, they shall have tight-fitting or self-closing lids. Such rubbish containers shall be constructed entirely of materials that comply with either of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m^2 when tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.

3304.2.4 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.

3304.3 Burning of combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site unless approved.

3304.4 Open burning. Open burning shall comply with Section 307.

3304.5 Fire watch. Where required by the fire code official for building demolition, or building construction during working hours that is hazardous in nature, qualified personnel shall be provided to serve as an on-site fire watch. Fire watch personnel shall be provided with not less than one approved means for notification of the fire department and their sole duty shall be to perform constant patrols and watch for the occurrence of fire.

3304.6 Cutting and welding. Operations involving the use of cutting and welding shall be done in accordance with Chapter 35.

3304.7 Electrical. Temporary wiring for electrical power and lighting installations used in connection with the construction, alteration or demolition of buildings, structures, equipment or similar activities shall comply with *the California Electrical Code.*

SECTION 3305
FLAMMABLE AND COMBUSTIBLE LIQUIDS

3305.1 Storage of flammable and combustible liquids. Storage of flammable and combustible liquids shall be in accordance with Section 5704.

3305.2 Class I and Class II liquids. The storage, use and handling of flammable and combustible liquids at construction sites shall be in accordance with Section 5706.2. Ventilation shall be provided for operations involving the application of materials containing flammable solvents.

3305.3 Housekeeping. Flammable and combustible liquid storage areas shall be maintained clear of combustible vegetation and waste materials. Such storage areas shall not be used for the storage of combustible materials.

3305.4 Precautions against fire. Sources of ignition and smoking shall be prohibited in flammable and combustible liquid storage areas. Signs shall be posted in accordance with Section 310.

3305.5 Handling at point of final use. Class I and II liquids shall be kept in approved safety containers.

3305.6 Leakage and spills. Leaking vessels shall be immediately repaired or taken out of service and spills shall be cleaned up and disposed of properly.

SECTION 3306
FLAMMABLE GASES

3306.1 Storage and handling. The storage, use and handling of flammable gases shall comply with Chapter 58.

3306.2 Cleaning with flammable gas. Flammable gases shall not be used to clean or remove debris from piping open to the atmosphere.

3306.2.1 Pipe cleaning and purging. The cleaning and purging of flammable gas piping systems, including cleaning new or existing piping systems, purging piping systems into service and purging piping systems out of service, shall comply with NFPA 56.

Exceptions:

1. Compressed gas piping systems other than fuel gas piping systems where in accordance with Chapter 53.
2. Piping systems regulated by the *California Mechanical Code.*
3. Liquefied petroleum gas systems in accordance with Chapter 61.

SECTION 3307
EXPLOSIVE MATERIALS

3307.1 Storage and handling. Explosive materials shall be stored, used and handled in accordance with Chapter 56.

3307.2 Supervision. Blasting operations shall be conducted in accordance with Chapter 56.

3307.3 Demolition using explosives. Approved fire hoses for use by demolition personnel shall be maintained at the demolition site whenever explosives are used for demolition. Such fire hoses shall be connected to an approved water supply and shall be capable of being brought to bear on post-detonation fires anywhere on the site of the demolition operation.

SECTION 3308
OWNER'S RESPONSIBILITY
FOR FIRE PROTECTION

3308.1 Program superintendent. The owner shall designate a person to be the fire prevention program superintendent who shall be responsible for the fire prevention program and ensure that it is carried out through completion of the project. The fire prevention program superintendent shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided, the superintendent shall be responsible for the guard service.

3308.2 Prefire plans. The fire prevention program superintendent shall develop and maintain an approved prefire plan in cooperation with the fire chief. The fire chief and the fire code official shall be notified of changes affecting the utilization of information contained in such prefire plans.

3308.3 Training. Training of responsible personnel in the use of fire protection equipment shall be the responsibility of the fire prevention program superintendent.

3308.4 Fire protection devices. The fire prevention program superintendent shall determine that all fire protection equipment is maintained and serviced in accordance with this code. The quantity and type of fire protection equipment shall be approved.

3308.5 Hot work operations. The fire prevention program superintendent shall be responsible for supervising the permit system for hot work operations in accordance with Chapter 35.

3308.6 Impairment of fire protection systems. Impairments to any fire protection system shall be in accordance with Section 901.

3308.7 Temporary covering of fire protection devices. Coverings placed on or over fire protection devices to protect them from damage during construction processes shall be immediately removed upon the completion of the construction processes in the room or area in which the devices are installed.

SECTION 3309
FIRE REPORTING

3309.1 Emergency telephone. Readily accessible emergency telephone facilities shall be provided in an approved location at the construction site. The street address of the construction site and the emergency telephone number of the fire department shall be posted adjacent to the telephone.

SECTION 3310
ACCESS FOR FIRE FIGHTING

3310.1 Required access. Approved vehicle access for fire fighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet (30 480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

3310.2 Key boxes. Key boxes shall be provided as required by Chapter 5.

SECTION 3311
MEANS OF EGRESS

[B] 3311.1 Stairways required. Where a building has been constructed to a building height of 50 feet (15 240 mm) or four stories, or where an existing building exceeding 50 feet (15 240 mm) in building height is altered, not less than one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses.

3311.2 Maintenance. Required means of egress shall be maintained during construction and demolition, remodeling or alterations and additions to any building.

Exception: Approved temporary means of egress systems and facilities.

SECTION 3312
WATER SUPPLY FOR FIRE PROTECTION

3312.1 When required. An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site.

SECTION 3313
STANDPIPES

3313.1 Where required. In buildings required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding 40 feet (12 192 mm) in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairways. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

3313.2 Buildings being demolished. Where a building is being demolished and a standpipe is existing within such a building, such standpipe shall be maintained in an operable condition so as to be available for use by the fire department. Such standpipe shall be demolished with the building but shall not be demolished more than one floor below the floor being demolished.

3313.3 Detailed requirements. Standpipes shall be installed in accordance with the provisions of Section 905.

Exception: Standpipes shall be either temporary or permanent in nature, and with or without a water supply, provided that such standpipes comply with the requirements of Section 905 as to capacity, outlets and materials.

SECTION 3314
AUTOMATIC SPRINKLER SYSTEM

3314.1 Completion before occupancy. In buildings where an automatic sprinkler system is required by this code or the *California Building Code*, it shall be unlawful to occupy any portion of a building or structure until the automatic sprinkler system installation has been tested and approved, except as provided in Section 105.3.4.

3314.2 Operation of valves. Operation of sprinkler control valves shall be allowed only by properly authorized personnel and shall be accompanied by notification of duly designated parties. Where the sprinkler protection is being regularly turned off and on to facilitate connection of newly completed segments, the sprinkler control valves shall be checked at the end of each work period to ascertain that protection is in service.

SECTION 3315
PORTABLE FIRE EXTINGUISHERS

3315.1 Where required. Structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with Section 906 and sized for not less than ordinary hazard as follows:

1. At each stairway on all floor levels where combustible materials have accumulated.
2. In every storage and construction shed.
3. Additional portable fire extinguishers shall be provided where special hazards exist including, but not limited to, the storage and use of flammable and combustible liquids.

SECTION 3316
MOTORIZED CONSTRUCTION EQUIPMENT

3316.1 Conditions of use. Internal-combustion-powered construction equipment shall be used in accordance with all of the following conditions:

1. Equipment shall be located so that exhausts do not discharge against combustible material.
2. Exhausts shall be piped to the outside of the building.
3. Equipment shall not be refueled while in operation.
4. Fuel for equipment shall be stored in an approved area outside of the building.

SECTION 3317
SAFEGUARDING ROOFING OPERATIONS

3317.1 General. Roofing operations utilizing heat-producing systems or other ignition sources shall be conducted in accordance with Sections 3317.2 and 3317.3 and Chapter 35.

3317.2 Asphalt and tar kettles. Asphalt and tar kettles shall be operated in accordance with Section 303.

3317.3 Fire extinguishers for roofing operations. Fire extinguishers shall comply with Section 906. There shall be not less than one multipurpose portable fire extinguisher with a minimum 3-A 40-B:C rating on the roof being covered or repaired.

2

2 FOR REFERENCE ONLY

NOTE TO CONTRACTORS

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

CONTRACTOR VERIFICATION RESPONSIBILITIES

CONTRACTOR SHALL REPORT ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES ON THE DRAWINGS TO THE ARCHITECT FOR VERIFICATION BEFORE STARTING CONSTRUCTION. OWNER, ARCHITECT, AND ENGINEER ARE NOT RESPONSIBLE FOR ANY EFFORTS IN CONSTRUCTION WHERE SUCH DISCREPANCIES, OMISSIONS OR INCONSISTENCIES HAVE NOT BEEN REPORTED IN A TIMELY MANNER.

DATE: 01/11/2018
JOB NO: 135 – PRIMARY
DRAWN: STAFF
CHECKED BY: TB

AD+ASSOCIATES
INTERNATIONAL DESIGN CONSULTANTS | 930 CARLETON STREET
BERKELEY, CA 94710

MONTEREY PARK
STORE 135 - PRIMARY
3000 MARKET PLACE DR.
MONTEREY PARK, CA 91755

CONTRACTOR SHALL BUILD ONLY FROM SETS STAMPED "CONSTRUCTION SET" HEREIN

CONSTRUCTION SET
ISSUE DATE: 02/12/2018

REVISIONS:

1	ADDENDUM 1	3.28.2018
2	BUILDING RESUBMITTAL	3.28.2018

SHEET TITLE:
FIRE ALARM SPECIFICATIONS

SHEET NO:
FP3.0