ELECTRICAL SPECIFICATIONS

GENERAL NOTES:

1. ELECTRICAL INSTALLATION SHALL COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, INCLUDING THE FOLLOWING:
TITLE 24, CCR, PART 2, 2013 CBC
TITLE 24, CCR, PART 3, 2013 CEC
TITLE 24, CCR, PART 4, 2013 CMC
TITLE 24, CCR, PART 9, 2013 CFC
ALL APPLICABLE LOCAL CODES.

2. ELECTRICAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES, ETC. REQUIRED TO CARRY ON AND COMPLETE THE WORK. PERMIT BY OWNER.

3. PROVIDE ALL LABOR, MATERIALS, TOOLS, PLANT EQUIPMENT, TRANSPORTATION AND PERFORM ALL OPERATIONS NECESSARY FOR ANY REASONABLE INCIDENTAL TO PROPER EXECUTION AND COMPLETION OF ALL "ELECTRICAL WORK" WHETHER SPECIFICALLY MENTIONED OR NOT; ALL AS INDICATED, SPECIFIED HEREIN, AND/OR IMPLIED THEREBY TO CARRY OUT THE APPARENT INTENT THEREOF.

4. ALL ELECTRICAL MATERIALS SHALL BE NEW AND LISTED WITH THE UNDERWRITERS' LABORATORIES, INC., SHALL MEET THEIR REQUIREMENTS AND SHALL BEAR THEIR LABEL WHEREVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS REGULARLY FURNISHED BY THAT AGENCY.

5. ELECTRICAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH THE SIZE AND LOCATIONS OF EQUIPMENT ARE SHOWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL MAKE USE OF ALL DATA IN ALL CONTRACT DOCUMENTS AND VERIFY THIS INFORMATION AT THE SITE. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT AND INSTALLING HIS WORK TO AVOID INTERFERENCE WITH OTHER TRADES.

6. CONDUCTORS SHALL BE COPPER CONDUCTORS TYPE THWN UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.

7. ALL LUMINAIRES AND BALLASTS SHALL BE CERTIFIED BY THE MANUFACTURER TO THE CALIFORNIA ENERGY COMMISSION. ALL FLUORESCENT FIXTURES TO BE LAMPED WITH FO32, T8, 3500K LAMPS OR APPROVED EQUAL, AND HAVE AN ENERGY SAVING "A" SOUND RATING ELECTRONIC BALLAST OR APPROVED EQUAL UNLESS OTHERWISE SHOWN. ALL H.I.D. LIGHT FIXTURES SHALL HAVE HIGH POWER FACTOR BALLASTS.

8. FLASH AND COUNTER FLASH ALL ITEMS PASSING THROUGH THE ROOF. ANY ROOF PENETRATIONS WILL BE APPROVED BY THE OWNER. ROOFING MFG. HAS SPECS. AS TO NOT VOID 20 YEAR WARRANTED.

9. WORK SHOWN ON THE DRAWINGS TO BE INSTALLED UNDERGROUND SHALL BE INSTALLED AT LEAST 24" BELOW GRADE. BACKFILL IN 6" THICK, PROPERLY MOISTENED LAYERS, SOLIDLY PACKED AND IRON TAMPED TO A DENSITY NOT LESS THAN THAT OF ADJACENT, UNDISTURBED EARTH. RESTORE SURFACES, ROADWAYS, WALKS, CURBS, WALLS, EXISTING UNDERGROUND INSTALLATIONS TO ORIGINAL CONDITION IN AN ACCEPTABLE MANNER.

10. THE OWNER RESERVES THE RIGHT TO RELOCATE ALL LIGHTING, OUTLETS AND SWITCHES BEFORE THEY ARE ROUGHED IN AT NO EXTRA COST.

11. ALL EXIT SIGNS TO BE UNSWITCHED.

NAMEPLATES & IDENTIFICATION:

INSTALL ENGRAVED NAMEPLATES FOR EACH PANELBOARD, CABINET, DISCONNECT, ETC. NAMEPLATES SHALL BE SECURELY FASTENED TO THE EQUIPMENT WITH #4 PHILLIPS ROUND HEAD CADMIUM PLATED SELF-TAPPING SCREWS, BRASS BOLT, OR WITH A PLASTIC RESIN ADHESIVE GLUE, GOODYEAR "PLIEBOND" OR EQUAL.

HVAC UNIT DISCONNECTS:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS OF ALL HVAC UNITS, DISCONNECTS AND DEVICES IN FIELD. VERIFY AND CONFIRM THE ACTUAL MOUNTING LOCATION ON THE HVAC UNIT FOR THE DISCONNECT.

2. THE RATING OF THE DISCONNECT SHALL BE SUCH AS TO ENABLE THE LARGEST FUSE SIZE ON THE UNIT NAMEPLATE TO BE INSTALLED IN THE DISCONNECT. PROVIDE FUSES OF THIS RATING.

3. FURNISH AND INSTALL ALL LINE VOLTAGE AND LOW VOLTAGE CONDUITS AND LINE VOLTAGE WIRING (LOW VOLTAGE WIRING BY OTHERS) TO HVAC EQUIPMENT AND ASSOCIATED CONTROLS AND DEVICES AS SHOWN ON THE ELECTRICAL AND MECHANICAL PLANS, UNLESS OTHERWISE NOTED.

WIRING METHODS:

1. ALL WIRING SHALL BE INSTALLED IN STEEL CONDUITS, CONCEALED IN WALL AND CEILING U.O.N.

2. MINIMUM CONDUIT SIZE SHALL BE 1/2". MINIMUM ACCEPTABLE CONDUITS ARE
   A. GALVANIZED RIGID STEEL.
   B. GALVANIZED STEEL EMT.
   C. LIQUID TIGHT STEEL FLEX - FOR FINAL CONNECTION TO OUTDOOR EQUIPMENT.
   D. FLEXIBLE STEEL CONDUIT - FOR INDOOR FINAL CONNECTIONS TO MECHANICAL EQUIPMENT (NOT TO EXCEED 36").
   E. PVC CONDUIT SCHEDULE 40, UNDERGROUND.

3. NMC AND MC CABLING SYSTEMS ARE NOT ALLOWED IN THIS BUILDING.

WIRING DEVICES:

UNITS SHALL BE EQUAL TO THE DEVICES SET FORTH HEREIN, IN STANDARD COLORS (BROWN, WHITE, GREY, BEIGE OR IVORY) AS SELECTED BY THE ARCHITECT:

A. WIRING DEVICES	LEVITON #	HUBBELL #	P & S #
SINGLE POLE SWITCH	1221	1221	20AC1
THREE WAY SWITCH	1223	1223	20AC3
DUPLEX CONV. OUT. 15A	5262	5262	5262
DUPLEX GFI CONV. OUT.		GF5262	

DEVICE PLATES:

1. ALL DEVICE PLATES FOR INDOOR USE SHALL BE SMOOTH NYLON OR APPROVED EQUAL UNLESS OTHERWISE NOTED. ALL DEVICE PLATES FOR OUTDOOR USE SHALL BE RAISED METAL.

2. DEVICE COVERS FOR SURFACE MOUNTED BOXES SHALL BE 1/2" RAISED STEEL PLATES. WEATHERPROOF COVERS TO BE SNAP TYPE COVERS.

3. DEVICE PLATES FOR TELEPHONE AND COMPUTER OUTLETS TO BE PROVIDED BY OWNER'S VENDOR. ALL TELEPHONE AND COMPUTER SYSTEM WIRING BY OWNER'S VENDOR.

SUPPORTS:

1. FURNISH ALL NECESSARY FOUNDATIONS, SUPPORTS, BACKING, ETC., FOR ALL ELECTRICAL ENCLOSURES, CONDUITS AND EQUIPMENT.

2. ATTACH ALL BOXES, CABINETS, ETC. TO WOOD WITH WOOD OR LAG SCREWS, TO METAL WITH MACHINE SCREWS OR BOLTS AND TO CONCRETE WITH EXPANSION ANCHORS AND MACHINE SCREWS OR BOLTS.

GROUNDING:

1. GROUND AND BOND ALL EQUIPMENT AS REQUIRED BY GOVERNING CODES AND SPECIFICALLY INCLUDING SWITCHBOARD, PANELBOARDS, MOTOR CASES, ETC.

WORKING CLEARANCES FOR PANELS & SWITCHBOARDS

1. COORDINATE WITH OTHER TRADES TO ENSURE CODE REQUIRED WORKING CLEARANCES, ACCESS, ETC. FOR PANELS AND SWITCHBOARDS PER C.E.C. SECTIONS 110-16 AND 384-4.

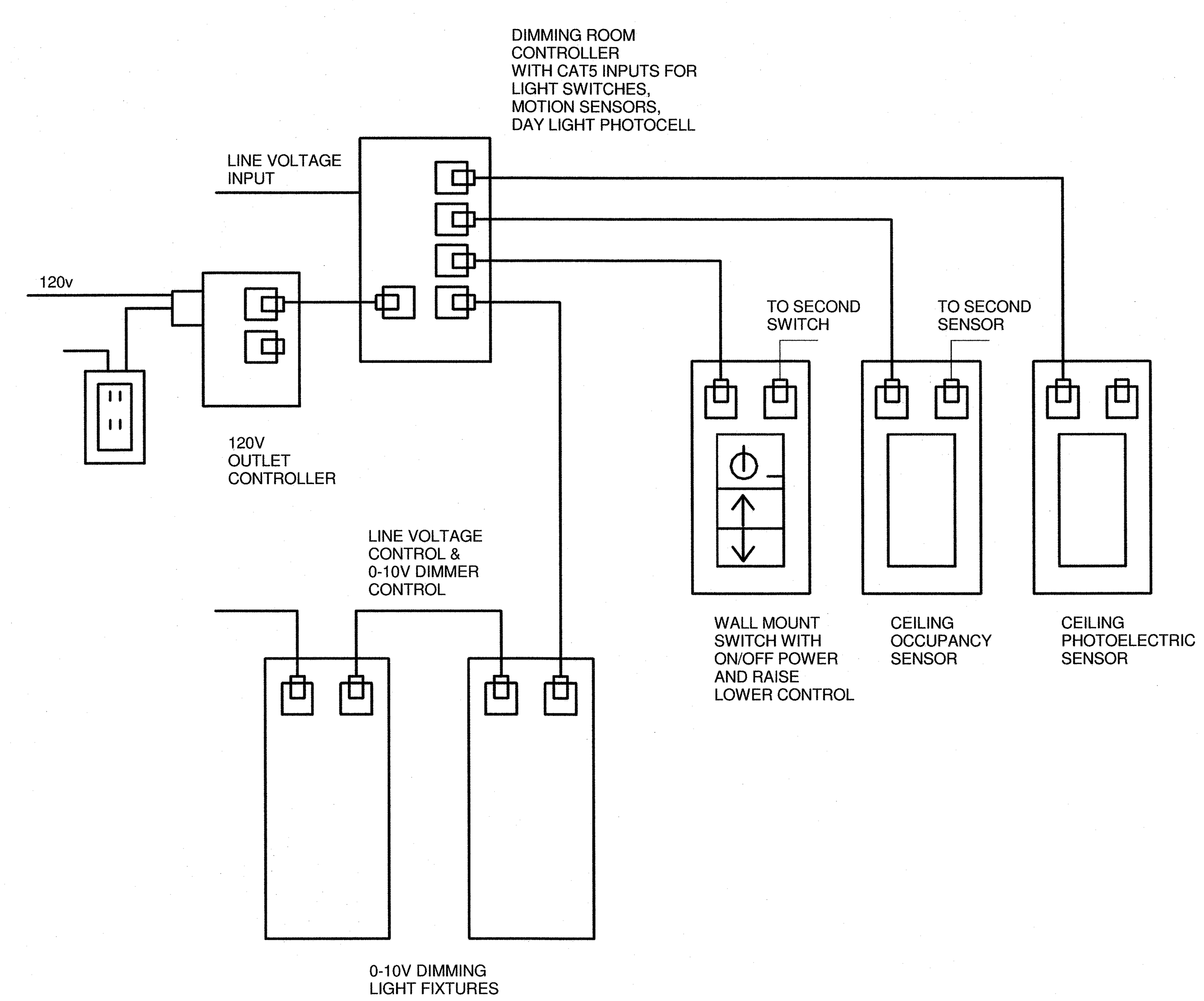
PANELBOARDS:

UNITS SHALL BE FLUSH OR SURFACE MOUNTED AS INDICATED ON THE PANEL SCHEDULE, WITH THE NUMBER AND SIZE OF BREAKERS INDICATED ON THE PANEL SCHEDULE. SINGLE POLE, TWO POLE AND THREE POLE BREAKERS SHALL BE BOLT-ON TYPE. THE PANEL DOORS SHALL HAVE FLUSH TYPE LOCKS, ALL LOCKS SHALL BE KEYED ALIKE AND HAVE TYPEWRITTEN DIRECTORIES INDICATING FIXTURES, EQUIPMENT, OR OUTLETS SERVICED BY EACH BREAKER. ALL BUSSING SHALL BE COPPER.

TESTING:

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE FREE FROM SHORT CIRCUITS AND IMPROPER GROUNDS. TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS BEFORE ANY FIXTURES OR EQUIPMENT ARE CONNECTED AND WHETHER SUCH TESTS INDICATE FAULTY INSULATION OR OTHER DEFECTS, THEY SHALL BE LOCATED, REPAIRED AND RETESTED AT THE CONTRACTOR'S EXPENSE.

2. DEMONSTRATE TO THE OWNER AND THE ARCHITECT, THAT THE ENTIRE INSTALLATION IS COMPLETE, IN PROPER OPERATING CONDITION AND THAT THE CONTRACT HAS BEEN PROPERLY AND FULLY EXECUTED. PROVIDE ALL INSTRUMENTS TO MAKE SUCH TESTS.



1 LIGHTING CONTROLS DETAIL
SCALE: 12" = 1'-0"

LIGHTING CONTROLS

- (solid line) LINE VOLTAGE (HOT, SWITCH HOT, NEUTRAL, GROUND & 3#4 DIMMING)
- —D— 0-10V CONTROL CABLE (3#14)
- —N— CAT-5 CONTROL CABLE
- $OS CEILING MOUNT OCCUPANCY SENSOR
- $PE PHOTOCELL
- $D DIMMING SWITCH WITH ON/OFF RAISE /LOWER CONROLS 2 WHERE SHOWN.
- $DRC DIMMING RELAY CONTROLLER
- $R RELAY FOR PLUG LOAD

NOTES:

1. FOR SUBMITTAL INCLUDE FACTORY CONTROL DRAWINGS.

2. CONDUCT A CONTROLS PRE-CONSTRUCTION MEETING WITH CONTROLS STARTUP TEAM. PROVIDE AGENDA AND ATTENDEES AS A SUBMITTAL. INCLUDE DEVICE I.D. TAGS, PROGRAMMING, CABLE ROUTING, PROGRAM AND TIME SCHEDULES AND DATE OF PROGRAMMING AND TESTING.

3. CONTRACTOR TO HAVE SYSTEM FACTORY SUPPORT FOR START UP, PROGRAMMING AND COMMISSIONING. VERIFY OPERATIONAL HOURS WITH OWNER PRIOR TO COMMISSIONING.

ELECTRICAL L E G E N D

SOLID LINE IS CONDUIT, 1/2"C-2#12+1#12 GND UNLESS OTHERWISE NOTED SHORT TICKS = # OF HOTS, LONG TICKS = NEUTRALS, LINES WITH DOTS INDICATE GROUNDS

LIGHT FIXTURES

- RECESSED TROFFER
- RECESSED CAN
- SURFACE MOUNT FLUORESCENT FIXTURE
- TRACK LIGHTING
- LINEAR FLUORESCENT
- SURFACE AND/OR PENDANT FIXTURE
- WALL MOUNT FIXTURE +7'-6" AFG, U.O.N.
- EXIT — EXIT SIGN MOUNT ABOVE DOOR, L = LOW LEVEL, EACH UNIT TO HAVE 90 MINUTE BATTERY BACK-UP
- EMERGENCY EGRESS WALL MOUNT LIGHT UNIT, 90 MINUTE BATTERY BACK-UP. INSTALL AT +7'-6" U.O.N.
- EXIT — COMBINATION EXIT SIGN/EGRESS LIGHT UNIT, 90 MIN. BATTERY BACK-UP
- CEILING EXHAUST FAN

OUTLETS

S, D, GFI, T, F

DUPLEX CONVIENCE OUTLET +15" (TO BOTTOM OF BOX)
LETTER DESIGNATES SPECIAL PURPOSE OUTLET
S = SHOW WINDOW OUTLET (ABOVE WINDOW/ ON CEILING)
D = DISPLAY CABINET OUTLET +72" (VERIFY WITH DISPLAY)
GFI = GROUND FAULT INTERUPTER OUTLET +48"
T = TV OUTLET FOR HIGH LEVEL +96"
F = FLOOR OUTLET, W/ FIRE RATED POKE THRU IN RATED FLOORS

$, $ LV, $ OS, $ US, $ 3,4, $ D, $ P, $ PC, $ TC

LIGHT SWITCH, +48" TO TOP OF BOX
LETTER DESIGNATES SPECIAL PURPOSE SWITCH
LV = LOW VOLTAGE LIGHT SWITCH
OS = OCCUPANCY SENSOR WALL SWITCH
US = CEILING MOUNT OCCUPANCY SENSOR SWITCH
3 OR 4 = 3-WAY OR 4-WAY LIGHT SWITCH
D = DIMMMER SWITCH
P = PILOT LIGHIT SWITCH
PC = PHOTOCELL SWITCH
TC = TIME CLOCK SWITCH

- J — JUNCTION BOX
- DISCONNECT

ELECTRICAL DISTRIBUTION EQUIPMENT

- PANELBOARD
- SB — SWITCHBOARD
- T — TRANSFORMER
- ATS — AUTOMATIC TRANSFER SWITCH

COMMUNICATION L E G E N D

COMMUNICATION CABINETS

- IDF — INTERMEDIATE DISTRIBUTION FRAME
- TELEPHONE TERMINAL BOARD

COMMUNICATION OUTLETS

- PHONE +15" TO BOTTOM, W = WALL PHONE +48", F = FLOOR
- DATA +15" TO BOTTOM, F= FLOOR
- HALF FILLED IS BOTH PHONE AND DATA, F = FLOOR

TRIANGLE INDICATED COMMUNICATION OUTLET, LETTER DESIGNATES COMMUNICATION SYSTEM
T = TV OUTLET, +15", W = +96"
S = SPEAKER OUTLET +96"
M = MICROPHONE OUTLET +15"

Reviewed for Code Compliance
CSG CONSULTANTS INC.
DEC 04 2015
Reviewed By

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-17
ELECTRICAL
STATE OF CALIFORNIA

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CONSULTING ELECTRICAL ENGINEERS
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STOCKTON, CA 95219 (209) 478-8270
email address richard@hcs-eng.com

Revision Description	Revision Date

COMMERCIAL ARCHITECTURE INC.
THEODORE J. BRANDVOLD, ARCHITECT
616 14TH STREET, MODESTO, CA 95354
PH (209) 571-8158 FAX (209) 571-8160

PROJECT: WAREHOUSE & MAINTENANCE BUILDING
CLIENT: KEYSTONE CORPORATION
LOCATION: PATTERSON, CA

ELECTRICAL INFORMATION

DRAWN	
CHECKED	
DATE	9-17-15
SCALE	As indicated
JOB NO	
SHEET	E1

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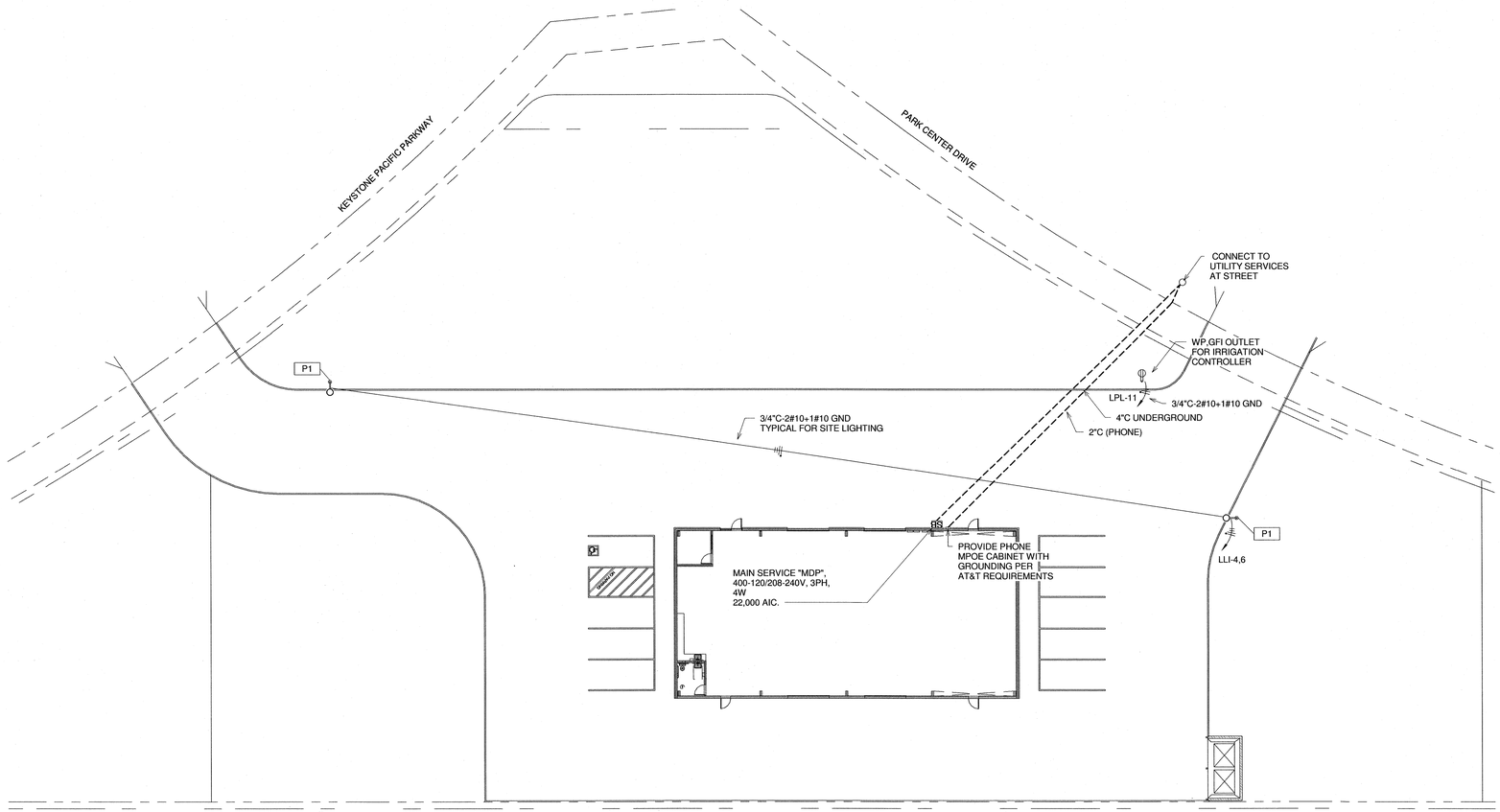
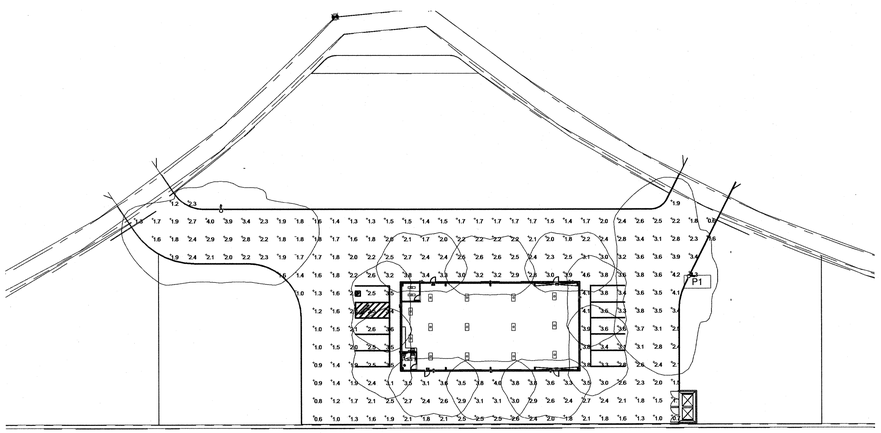


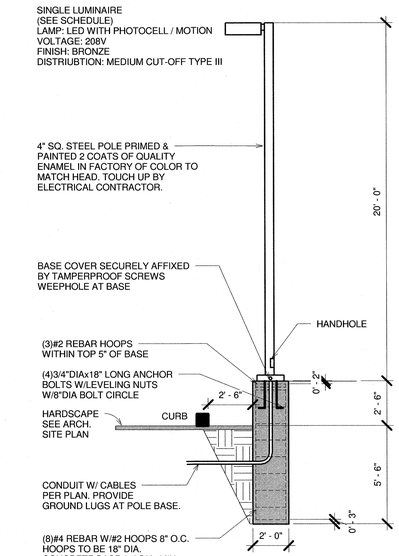
1 ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"



2 PHOTOMETRIC STUDY

SCALE: 1" = 40'-0"



3 LIGHT STANDARD RAISED BASE

SCALE: 1/4" = 1'-0"

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616 14TH STREET, MODESTO, CA 95354
PH (209) 571-8158 FAX (209) 571-8160

PROJECT: WAREHOUSE & MAINTEANCE BUILDING
CLIENT: KEYSTONE CORPORATION
LOCATION: PATTERSON, CA

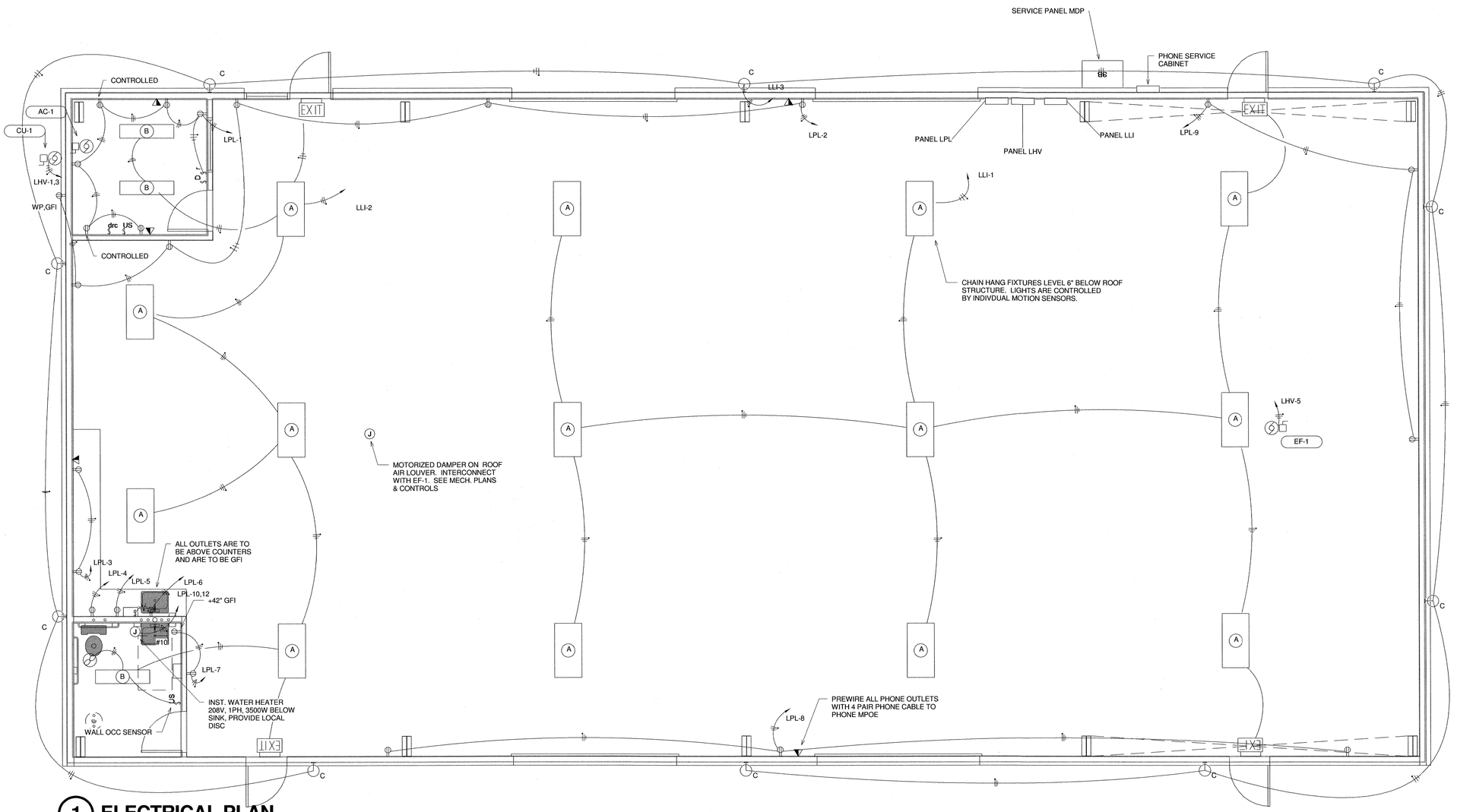
DRAWN	
CHECKED	
DATE	9-17-15
SCALE	As indicated
JOB NO	
SHEET	E2

SITE ELECTRICAL PLANS

HVAC EQUIPMENT SCHEDULE						
Mark	Electrical Data	AMP	DISCONNECT	FUSE	Circuit Number	BRANCH CIRCUIT
CU-1	200 V/2-2496 VA	12	30/2	15	LHV-1,3	3/4"C-2#12+1#12 GND
AC-1	200 V/2-208 VA	1	MANUAL MOTOR DISC	1		3/4"C-2#12+1#12 GND TO CU-1
EF-1	115 V/1-696 VA	5.8	MANUAL MOTOR DISC	-	LHV-5	1/2"C-2#12+1#12 GND

FIXTURE SCHEDULE

Type Mark	Lamp	Description	Manufacturer	Model	Apparent Load
					52 VA
A	LED	CHAIN HUNG LED INDUSTRIAL FIXTURE WITH LENS AND MOTION SENSOR	LITHONIA	IBL 1L WD - LP840 - MVOLT - OCC	125 VA
B	LED	4' SURFACE MOUNT LED WRAP	LITHONIA	STL4 - 40L - 40W- LP840	40 VA
C	LED	WALL MOUNT LED AREA LIGHT WITH PHOTOCELL CONTROL	LITHONIA	DSXW2 LED 30C 700 40K T4M MVOLT	71 VA
EXIT	LED	COMBINATION EXIT SIGN/EGRESS LIGHT UNIT, 90 MINUTE BATTERY BACKUP, UNIVERSAL MOUNT WITH REMOTE EMERGENCY HEAD	LITHONIA	LHQM SW1R120/277 ELN WITH LED REMOTE	1 VA
P1	LED	20' SQUARE POLE MOUNTED TO 2'6" BASE SEE LIGHT STANDARD DETAIL, FIXTURE TO HAVE PHOTOCELL AND MOTION SENSOR	LITHONIA	DSX1 LED 60C 700 50K T3M MVOLT	131 VA



1 ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

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CSG CONSULTANTS INC.
DEC 04 2015
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PH (209) 571-8158 FAX (209) 571-8160

PROJECT: WAREHOUSE & MAINTEANCE BUILDING
CLIENT: KEYSTONE CORPORATION
LOCATION: PATTERSON, CA

DRAWN	
CHECKED	
DATE	9-17-15
SCALE	1/4" = 1'-0"
JOB NO	
SHEET	E3

ELECTRICAL PLAN

PANEL LLI

Location: Room 2
Supply From: PANEL MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000
Mains Type: MLO
Mains Rating: 60 A
MCB Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
LLI-1	Lighting	20 A	1	1125 VA	796 VA					1	20 A	LIGHTING	LLI-2
LLI-3	Lighting	20 A	1			710 VA	262 VA			2	20 A	LIGHT STANDARDS	LLI-4
LLI-5									0 VA	--	--	--	LLI-6
LLI-7													LLI-8
LLI-9													LLI-10
LLI-11													LLI-12
LLI-13													LLI-14
LLI-15													LLI-16
LLI-17													LLI-18
LLI-19													LLI-20
LLI-21													LLI-22
LLI-23									0 VA	1	20 A	Spare	LLI-24
LLI-25					0 VA					1	20 A	Spare	LLI-26
LLI-27							0 VA			1	20 A	Spare	LLI-28
LLI-29									0 VA	1	20 A	Spare	LLI-30
			Total Load:	1921 VA		972 VA		0 VA					
			Total Amps:	17 A		9 A		0 A					

Legend:

PANEL LHV

Location:
Supply From: PANEL MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000
Mains Type: MLO
Mains Rating: 200 A
MCB Rating: 200 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
LHV-1	CU-1	20 A	2	1248 VA									LHV-2
LHV-3	--	--	--			1248 VA							LHV-4
LHV-5	EF-1	20 A	1					696 VA					LHV-6
LHV-7													LHV-8
LHV-9													LHV-10
LHV-11													LHV-12
LHV-13													LHV-14
LHV-15													LHV-16
LHV-17													LHV-18
LHV-19													LHV-20
LHV-21													LHV-22
LHV-23									0 VA	1	20 A	Spare	LHV-24
LHV-25					0 VA					1	20 A	Spare	LHV-26
LHV-27							0 VA			1	20 A	Spare	LHV-28
LHV-29									0 VA	1	20 A	Spare	LHV-30
			Total Load:	1248 VA		1248 VA		696 VA					
			Total Amps:	11 A		11 A		6 A					

Legend:

PANEL LPL

Location:
Supply From: PANEL MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

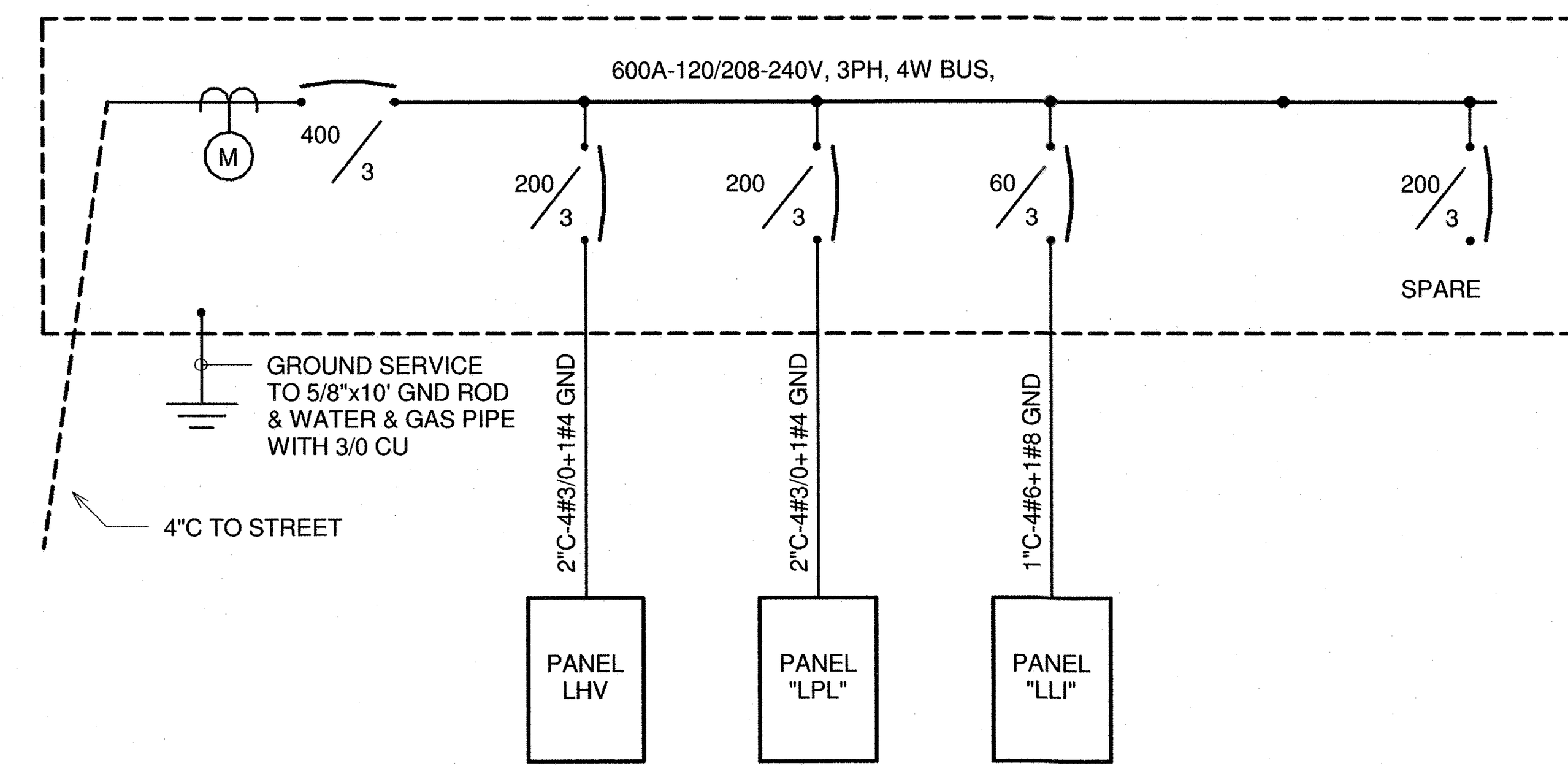
A.I.C. Rating: 10,000
Mains Type: MLO
Mains Rating: 200 A
MCB Rating: 200 A

Notes:

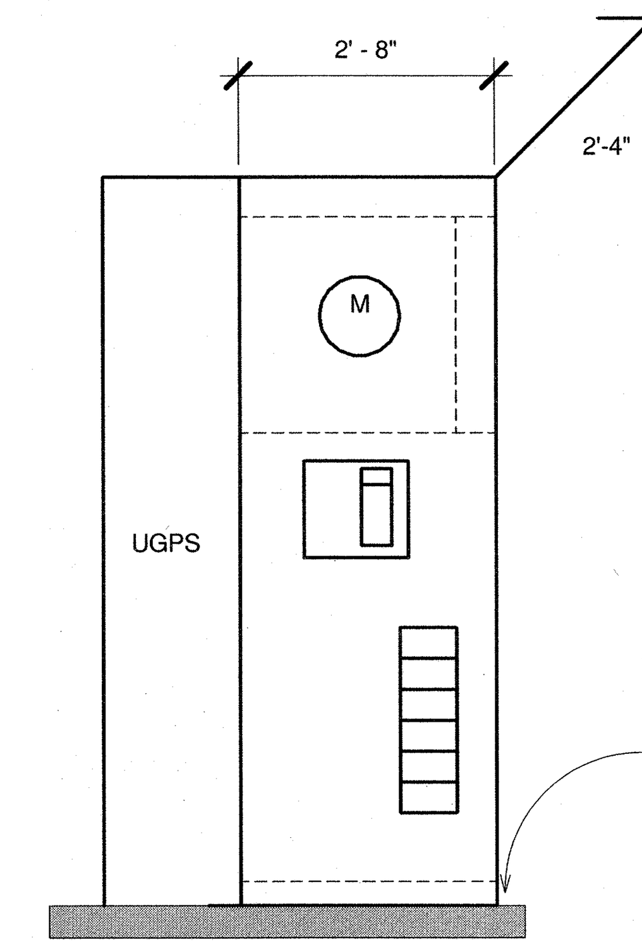
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
LPL-1	OUTLETS	20 A	1	1080 VA	1080 VA					1	20 A	Receptacle	LPL-2
LPL-3	Receptacle	20 A	1			360 VA	180 VA			1	20 A	Receptacle	LPL-4
LPL-5	Receptacle	20 A	1					180 VA	864 VA	1	20 A	OUTLETS	LPL-6
LPL-7	Receptacle	20 A	1	360 VA	540 VA					1	20 A	Receptacle	LPL-8
LPL-9	Receptacle	20 A	1			540 VA	250 VA			2	30 A	WATER HEATER	LPL-10
LPL-11	IRRIGATION CONTROLLER	20 A	1					180 VA	250 VA	--	--	--	LPL-12
LPL-13													LPL-14
LPL-15													LPL-16
LPL-17													LPL-18
LPL-19													LPL-20
LPL-21							0 VA			1	20 A	Spare	LPL-22
LPL-23									0 VA	1	20 A	Spare	LPL-24
LPL-25					0 VA					1	20 A	Spare	LPL-26
LPL-27							0 VA			1	20 A	Spare	LPL-28
LPL-29									0 VA	1	20 A	Spare	LPL-30
			Total Load:	3060 VA		1330 VA		1474 VA					
			Total Amps:	26 A		11 A		12 A					

Legend:

MAIN DISTRIBUTION PANEL "MDP" : NEMA 3R



1 ONE LINE DIAGRAM
SCALE: 12" = 1'-0"



NOTES: MAIN SERVICE SWITCHBOARD

1. ALL DIMENSIONS ARE NOMINAL.
2. THE COMPLETE SWITCHBOARD SHALL HAVE A SYMMETRICAL SHORT CIRCUIT RATING EQUAL TO OR GREATER THAN THAT AVAILABLE FROM THE UTILITY COMPANY.
3. MINIMUM INTEGRAL A.I.C. RATING OF SWITCHBOARD AND FEEDER CIRCUIT BREAKERS TO BE 22,000 AMPS.
4. BOLT SECTIONS OF THE SWITCHBOARD TOGETHER WITH 1/2" BOLT AND NUTS AT 4 PLACES PER SECTION.
5. BOLT EACH SECTION OF SWITCHBOARD TO FLOOR WITH (4) 1/2"x3" ANCHOR BOLTS.

2 SERVICE ELEVATION
SCALE: 1/2" = 1'-0"

PANEL MDP

Location:
Supply From:
Mounting: FREESTANDING
Enclosure: NEMA 3R

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22,000
Mains Type:
Mains Rating: 400 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip Rating	Number of Poles	Load	Remarks
MDP-1	PANEL LPL	200 A	3	5864 VA	
MDP-2	PANEL LHV	200 A	3	3192 VA	
MDP-3	PANEL LLI	60 A	3	2862 VA	
MDP-4					
MDP-5					
MDP-6					
MDP-7					
MDP-8					
MDP-9					
MDP-10					
MDP-11					
MDP-12					
			Total Conn...:	11951 VA	
			Total Amps:	33 A	

Legend:

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CSG CONSULTANTS INC.
DEC 04 2015
Reviewed By

REGISTERED PROFESSIONAL ENGINEER
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email address richard@hcs-eng.com

Revision Description	Revision Date

COMMERCIAL ARCHITECTURE INC.
THEODORE J. BRANDVOLD, ARCHITECT
616 14TH STREET, MODESTO, CA 95354
PH (209) 571-8158 FAX (209) 571-8160

PROJECT: WAREHOUSE & MAINTEANCE BUILDING
CLIENT: KEYSTONE CORPORATION
LOCATION: PATTERSON, CA

ELECTRICAL DETAILS

DRAWN	
CHECKED	
DATE	9-17-15
SCALE	As indicated
JOB NO	
SHEET	E4

K:\2015\301-400\CA KeyStonePatterson\KeyStone Electrical.rvt

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 3 of 6)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

YES	NO	Form/Title	
	✓	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
	✓	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ Field Inspector
	✓	NRCA-LTI-04-A - 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 Schedule is only for:
☐ 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.
☐ 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
☐ Also include track lighting in schedule, and submit the track lighting compliance form (NRCC-LTI-05-E) when line-voltage track lighting is installed.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 2 of 6)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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
1.	**Installed** Lighting NRCC-LTI-01-E, page 4	+	80	**Installed** Lighting NRCC-LTI-01-E, page 4	+	1,790
2.	PORTABLE ONLY FOR OFFICES NRCC-LTI-01-E, page 3	+				
3.	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	32	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0
4.	Adjusted **Installed** Lighting Power (row 1 plus row 2 minus row 3)	=	48	Adjusted **Installed** Lighting Power (row 1 minus row 3)	=	1,790
5.	Complies ONLY if **Installed ≤ Allowed**			Complies ONLY if **Installed ≤ Allowed**		
6.	**Allowed** Lighting Power Conditioned NRCC-LTI-03-E, page 1		60	**Allowed** Lighting Power Unconditioned NRCC-LTI-03-E, page 1		2,820

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

YES	NO	Form/Title	
✓		NRCI-LTI-01-E - Must be submitted for all buildings	☐ Field Inspector
	✓	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
	✓	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
	✓	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
✓		NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

E. Declaration of Required Certificates of Acceptance
Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 1 of 6)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

A. General Information

Climate Zone: 12	Conditioned Floor Area : 100					
	Unconditioned Floor Area : 4,700					
Building Type:	☑	Nonresidential	☐	High-Rise Residential	☐	Hotel/Motel
☐ Schools	☐	Relocatable Public Schools	☑	Conditioned Spaces	☑	Unconditioned Spaces
Phase of Construction:	☑	New Construction	☐	Addition	☐	Alteration
Method of Compliance:	☑	Complete Building	☐	Area Category	☐	Tailored
Project Address:						

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	FORM	TITLE
✓		NRCC-LIT-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
✓		NRCC-LIT-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
✓		NRCC-LIT-03-E	Indoor Lighting Power Allowance
	✓	NRCC-LIT-04-E	Tailored Method Worksheets
	✓	NRCC-LIT-05-E	Line Voltage Track Lighting Worksheets

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 6 of 6)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Richard Smith, PE #E14303	Documentation Author Signature:
Company: HCS Engineering, Inc.	Signature Date: 10/6/2015
Address: 4512 Feather River Dr #F	CEA Certification Identification (if applicable): E14303
City/State/Zip: Stockton, CA 95219	Phone: 209-478+8270

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: Richard Smith	Responsible Designer Signature:
Company : HCS Engineering, Inc.	Date Signed:
Address: 4512 Feather River Dr #F	License: PE E14303
City/State/Zip: Stockton, CA 95219	Phone: 209-478-8270

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5 of 6)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule		Installed Watts					Location	Field Inspector [1]	
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	Pass	Fail
A	CHAIN HUNG LED INDUSTRIAL FIXTURE	125.0	☑	☐	14	1,750	Commercial, Industrial Storage	☐	☐
B	4' SURFACE LED WRAP LIGHT	40.0	☑	☐	1	40	Corridor/Restroom/Support	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
INSTALLED WATTS PAGE TOTAL:						1,790	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5 of 6)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule		Installed Watts					Location	Field Inspector [1]	
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	Pass	Fail
B	4' SURFACE LED WRAP LIGHT	40.0	☑	☐	2	80	Office <= 250 sqft	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
INSTALLED WATTS PAGE TOTAL:						80	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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

MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (K x L)	✓ if Acceptance Test Required		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Location in Building	Type/ Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
OFFICE	Occ Sensor - <= 125 sqft							✓		80	0.40	32	✓	☐	☐
														☐	☐
														☐	☐
														☐	☐
														☐	☐
														☐	☐
														☐	☐
Control Credit PAGE TOTAL (Sum of Column M):												32			
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):												32			
												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(d) = 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.

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 1 of 3)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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

Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
	✓	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 Section 110.9.
	✓	Lighting shall be controlled by a lighting control a system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
	✓	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 Section 130.4(b).
	✓	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
✓		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 Section 130.1.
	✓	All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
✓		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 Section 130.1(a)4.
	✓	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 Section 130.1(b).
	✓	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
	✓	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
	✓	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
✓		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 Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

Reviewed for Code Compliance
CSG CONSULTANTS INC.
DEC 04 2015
Reviewed By

REGISTERED PROFESSIONAL ENGINEER RICHARD C. SMITH No. E14303 Exp. 6-30-17 ELECTRICAL STATE OF CALIFORNIA

H C S ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
4512 FEATHER RIVER DRIVE, SUITE F
STOCKTON, CA 95219 (209) 478-8270
email address richard@hcs-eng.com

Revision Description	Revision Date

COMMERCIAL ARCHITECTURE INC.
THEODORE J. BRANDVOLD, ARCHITECT
616 14TH STREET, MODESTO, CA 95354
PH (209) 571-8158 FAX (209) 571-8160

PROJECT: WAREHOUSE & MAINTENANCE BUILDING
CLIENT: KEYSTONE CORPORATION
LOCATION: PATTERSON, CA

LIGHTING COMPLIANCE

DRAWN	
CHECKED	
DATE	9-17-15
SCALE	
JOB NO	
SHEET	ET24A

K:\2015\301-400\CA KeyStonePatterson\KeyStone Electrical.rvt

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

ALLOWED LIGHTING POWER
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☐ CONDITIONED spaces ☑ UNCONDITIONED spaces

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.
☐ 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)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)	2,820	
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		
3. Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E		
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1	2,820	

☑ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A	B		C		D
TYPE OF BUILDING (From §140.6 Table 140.6-B)	WATTS PER (ft^2)	x	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Comp Bldg Com & Ind Storage	0.60		4,700		2,820
			Total Area:		
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C -1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C-2 plus C-3)	Watts
Total from section C-2 .	
Total from section C-3 .	
Total Watts. Enter Total Watts into section A, row 2 (Above on this page) .	

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

ALLOWED LIGHTING POWER
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

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.
☐ 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)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)	60	
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		
3. Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E		
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1	60	

☑ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A	B		C		D
TYPE OF BUILDING (From §140.6 Table 140.6-B)	WATTS PER (ft^2)	x	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Comp Bldg Com & Ind Storage	0.60		100		60
			Total Area:		
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C -1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C-2 plus C-3)	Watts
Total from section C-2 .	
Total from section C-3 .	
Total Watts. Enter Total Watts into section A, row 2 (Above on this page) .	

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Richard Smith, PE #E14303	Documentation Author Signature:	
Company:	HCS Engineering, Inc.	Signature Date:	10/6/2015
Address:	4512 Feather River Dr #F	CEA Certification Identification (if applicable):	E14303
City/State/Zip:	Stockton, CA 95219	Phone:	209-478+8270

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:	Richard Smith	Responsible Designer Signature:	
Company:	HCS Engineering, Inc.	Date Signed:	
Address:	4512 Feather River Dr #F	License:	PE E14303
City/State/Zip:	Stockton, CA 95219	Phone:	209-478-8270

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

Schedule of luminaires exempt from the outdoor lighting power requirements in §140.7	
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

Schedule of luminaires exempt from the cutoff requirements in §130.2(b)	
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

Schedule of luminaires exempt from the outdoor lighting control requirements in §130.2(c)	
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 1 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

Project Address: PATTERSON, CA	Total Illuminated Hardscape Area 26,200

General Information
Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration
Outdoor Lighting Zone (OLZ) ☐ OLZ-1 ☐ OLZ-2 ☑ OLZ-3 ☐ OLZ-4
I have confirmed with the AHJ which OLZ applies to this site. For default lighting zone designations, see Title 24 Part 6, §10-114

LIGHTING COMPLIANCE DOCUMENTS (check box 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.
☑ NRCC-LTO-01-E Certificate of Compliance
☑ NRCC-LTO-02-E Outdoor Lighting Controls Certificate of Compliance
☑ NRCC-LTO-03-E Outdoor Lighting Power Allowance Certificate of Compliance

Summary of Allowed Outdoor Lighting Power		Watts
1. Sum Total ALLOWED Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1	=	3,620
Complies ONLY if Installed ≤ Allowed		↕
2. Sum Total INSTALLED Outdoor lighting Wattage from NRCC-LTO-01-E, page 3		972

Declaration of Required Installation Certificates – Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)
☑ NRCI-LTO-01-E - Must be submitted for all buildings ☐ Field Inspector
☑ NRCI-LTO-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
Declaration of Required Certificates of Acceptance – Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)
☑ NRCA-LTO-02-A - Must be submitted for outdoor lighting controls. ☐ Field Inspector

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Richard Smith, PE #E14303	Documentation Author Signature:	
Company:	HCS Engineering, Inc.	Signature Date:	10/6/2015
Address:	4512 Feather River Dr #F	CEA Certification Identification (if applicable):	E14303
City/State/Zip:	Stockton, CA 95219	Phone:	209-478+8270

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City/State/Zip:	Stockton, CA 95219	Phone:	209-478-8270

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 4 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

A. OUTDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule		Installed Watts					Location	Cutoff	Field Inspector	
A	B	C	D		E	F	G	H	I	
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	BUG Rating	Pass	Fail
P1	LED POLE MOUNTED LIGHT	131.0	☑	☐	2	262	Automotive Hardscape		☐	☐
C	LED WALL MOUNTED AREA LIGHT	71.0	☑	☐	10	710	Automotive Hardscape		☐	☐
			☐	☐					☐	☐
			☐	☐					☐	☐
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			☐	☐					☐	☐
			☐	☐					☐	☐
INSTALLED WATTS PAGE TOTAL:						972	Enter sum total of all pages (**Sum Total INSTALLED** Outdoor lighting wattage) into NRCC-LTO-01-E; Page 1	972		

Reviewed for Code Compliance
CSG CONSULTANTS INC.
DEC 04 2015
Reviewed By

REGISTERED PROFESSIONAL ENGINEER RICHARD C. SMITH No. E14303 Exp. 6-30-17 ELECTRICAL STATE OF CALIFORNIA

H C S ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
4512 FEATHER RIVER DRIVE, SUITE F
STOCKTON, CA 95219 (209) 478-8270
email address richard@hcs-eng.com

Revision Description	Revision Date

COMMERCIAL ARCHITECTURE INC.
THEODORE J. BRANDVOLD, ARCHITECT
616 14TH STREET, MODESTO, CA 95354
PH (209) 571-8158 FAX (209) 571-8160

PROJECT: WAREHOUSE & MAINTENANCE BUILDING
CLIENT: KEYSTONE CORPORATION
LOCATION: PATTERSON, CA

DRAWN
CHECKED
DATE 9-17-15
SCALE
JOB NO
SHEET
LIGHTING COMPLIANCE
ET24B

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STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 1 of 4)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

A. OUTDOOR LIGHTING POWER ALLOWANCE SUMMARY

1. General Hardscape Lighting Power Allowance (Sbe Total from Section II of NRCC-LTO-03-E)								1.	3,620
2. Additional Specific "use it or lose it" Lighting Power Allowances listed in each of these cells shall be identical to total allowed watts determined in Section C-1 to C-4 of NRCC-LTO-03-E.									
PER APPLICATION from Section C-1		PER UNIT LENGTH (SALES FRONTAGE) from Section C-2		PER HARDSCAPE AREA (ORNAMENTAL LIGHTING) from Section C-3		PER SPECIFIC AREA from Section C-4.			
0	+	0	+	0	+	0	=	2.	0
3. Sum Total ALLOWED Outdoor Lighting Wattage (add rows 1 and 2)								3.	3,620

B. GENERAL HARDSCAPE LIGHTING POWER ALLOWANCE FROM TABLE 140.7-A

Area Wattage Allowance (AWA)				Linear Wattage Allowance (LWA)			Initial Wattage Allowance (IWA)	Total General Hardscape Lighting Allowance
A	B	C	D	E	F	G	H	I
Name of area	Illuminated Hardscape Area	AWA Per Square Foot	AWA (B x C)	Perimeter Length of General Hardscape	LPA per Linear Foot	LWA (E x F)	IWA (Watts)	D + G + H
AUTOMOTIVE HARDSCAP	26,200	0.090	2,358	820	0.600	492	770	3,620
							TOTAL	3,620

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 3 of 3)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 1 of 3)
Project Name: KEYSTONE CORPORATION	Date Prepared: 10/6/2015

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

Mandatory Outdoor Lighting Control Declaration Statements
Check all that apply:

- ☐ 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(a).
- ☐ 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).
- ☑ 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
- ☐ Part-Night Outdoor Lighting Controls, as defined in Section 100.1(b), shall meet the requirements in Section 110.9(b)5
- ☐ All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c), shall be controlled by a motion sensor.
- ☐ All outdoor luminaires rated for use with lamps greater than 150 lamp watts, determined in accordance with Section 130.0(c), shall comply with Backlight, Uplight, and Glare (collectively referred to as "BUG") in accordance with Section 130.2(b)
- ☐ All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control in accordance with Section 130.2(c)1
- ☑ All installed outdoor lighting shall be circuited and independently controlled from other electrical loads by an automatic scheduling control in accordance with Section 130.2(c)2
- ☐ All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls in accordance with Section 130.2(c)3
- ☐ For Outdoor Sales Frontage, Outdoor Sales Lots, and Outdoor Sales Canopies lighting, an automatic lighting control in accordance with Section 130.2(c)4
- ☐ For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control in accordance with Section 130.2(c)5
- ☑ 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). Outdoor lighting controls shall comply with the applicable requirements of Section 130.2(c) and Reference Nonresidential Appendix NA7.8

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

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