

ELECTRICAL SPECIFICATIONS

GENERAL NOTES:

- 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.
- ELECTRICAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES, ETC. REQUIRED TO CARRY ON AND COMPLETE THE WORK. PERMIT BY OWNER.
- 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.
- 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.
- 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.
- CONDUCTORS SHALL BE COPPER CONDUCTORS TYPE THWN UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
- ALL LUMINAIRES AND BALLASTS SHALL BE CERTIFIED BY THE MANUFACTURER TO THE CALIFORNIA ENERGY COMMISSION. ALL FLUORESCENT FIXTURES TO BE LAMPED WITH F302, 18, 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.
- 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.
- 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.
- THE OWNER RESERVES THE RIGHT TO RELOCATE ALL LIGHTING, OUTLETS AND SWITCHES BEFORE THEY ARE ROUGHED IN AT NO EXTRA COST.
- 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:

- 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.
- 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.
- 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:

- ALL WIRING SHALL BE INSTALLED IN STEEL CONDUITS, CONCEALED IN WALL AND CEILING U.O.N.
- MINIMUM CONDUIT SIZE SHALL BE 1/2". MINIMUM ACCEPTABLE CONDUITS ARE
  - GALVANIZED RIGID STEEL.
  - GALVANIZED STEEL EMT.
  - LIQUID TIGHT STEEL FLEX - FOR FINAL CONNECTION TO OUTDOOR EQUIPMENT.
  - FLEXIBLE STEEL CONDUIT - FOR INDOOR FINAL CONNECTIONS TO MECHANICAL EQUIPMENT (NOT TO EXCEED 36").
  - PVC CONDUIT SCHEDULE 40, UNDERGROUND.
- 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.		GFI5262	

DEVICE PLATES:

- 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.

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

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

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

WORKING CLEARANCES FOR PANELS & SWITCHBOARDS

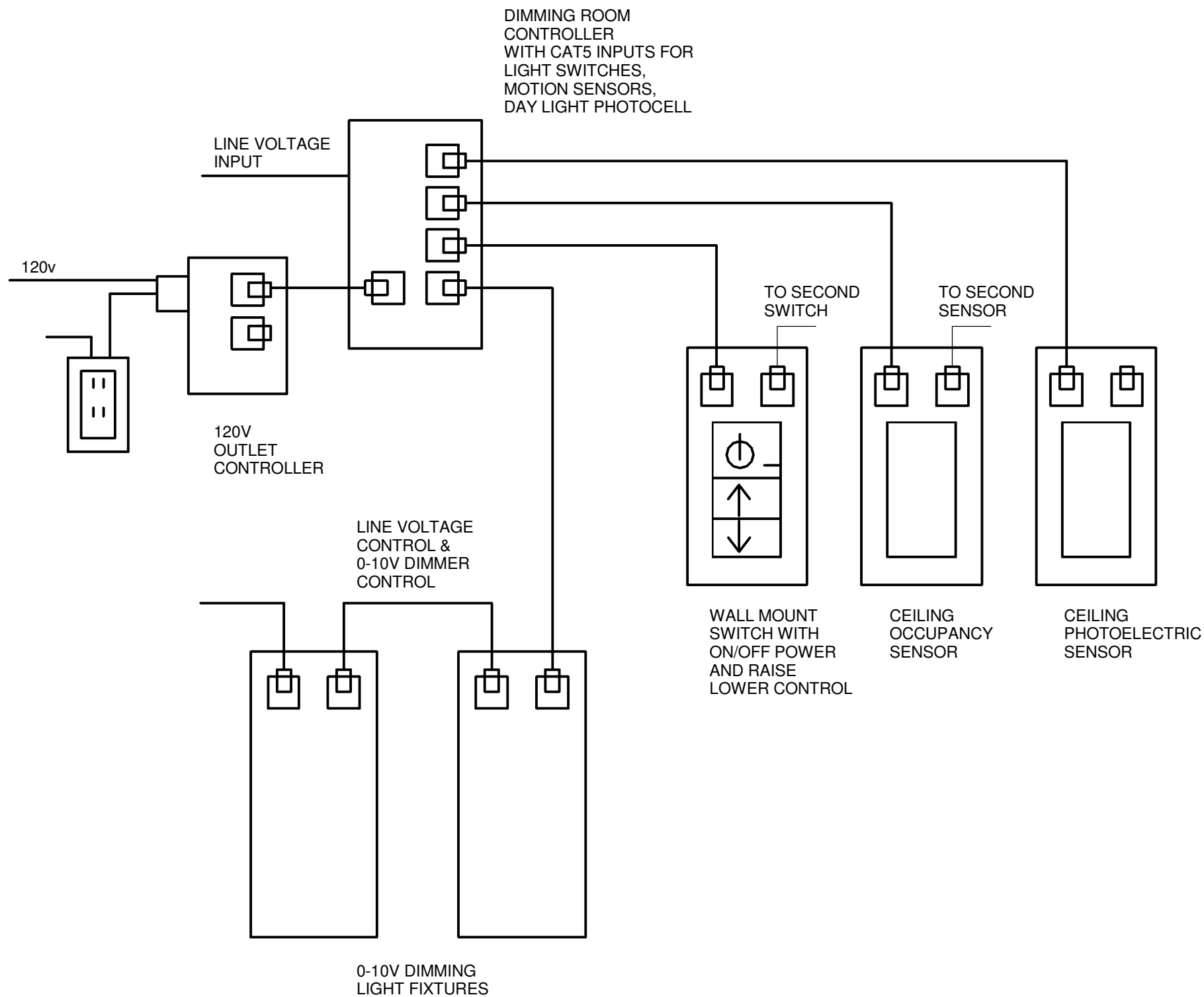
- COORDINATE WITH OTHER TRADES TO ENSURE CODE REQUIRED WORKING CLEARANCES, ACCESS, ETC. FOR PANELS AND SWITCHBOARDS PER C.E.C. SECTIONS 110-16 AND 384-4.

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 KEYPED ALIKE AND HAVE TYPEWRITTEN DIRECTORIES INDICATING FIXTURES, EQUIPMENT, OR OUTLETS SERVICED BY EACH BREAKER. ALL BUSSING SHALL BE COPPER.

TESTING:

- 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.
- 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: 1/2" = 1'-0"

LIGHTING CONTROLS

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

NOTES:

- FOR SUBMITTAL INCLUDE FACTORY CONTROL DRAWINGS.
- 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.
- 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 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.
  - COMBINATION EXIT SIGN/EGRESS LIGHT UNIT, 90 MIN. BATTERY BACK-UP
  - CEILING EXHAUST FAN
- OUTLETS
  - DUPLEX CONVENIENCE 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 INTERRUPTER OUTLET +48"
    - T = TV OUTLET FOR HIGH LEVEL +96"
    - F = FLOOR OUTLET, W/ FIRE RATED POKE THRU IN RATED FLOORS
  - 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 = DIMMER SWITCH
    - P = PILOT LIGHT SWITCH
    - PC = PHOTOCELL SWITCH
    - TC = TIME CLOCK SWITCH
  - JUNCTION BOX
  - DISCONNECT
- ELECTRICAL DISTRIBUTION EQUIPMENT
  - PANELBOARD
  - SWITCHBOARD
  - TRANSFORMER
  - AUTOMATIC TRANSFER SWITCH

COMMUNICATION L E G E N D

COMMUNICATION CABINETS

- 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"

Revision Description  
Revision Date

COMMERCIAL ARCHITECTURE INC.

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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

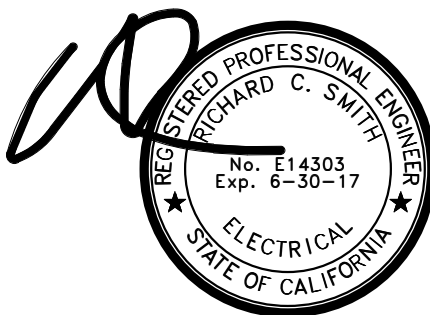
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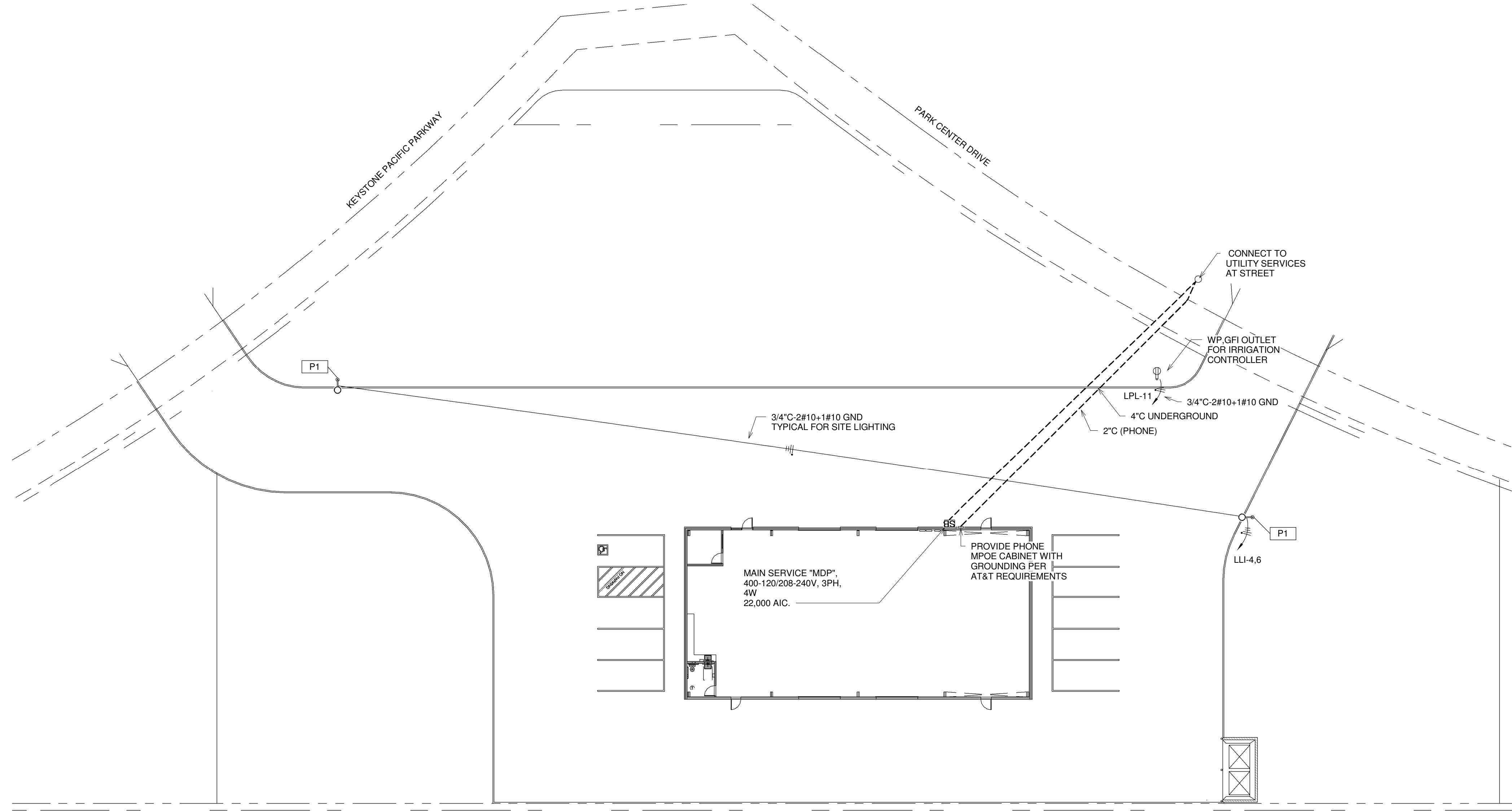
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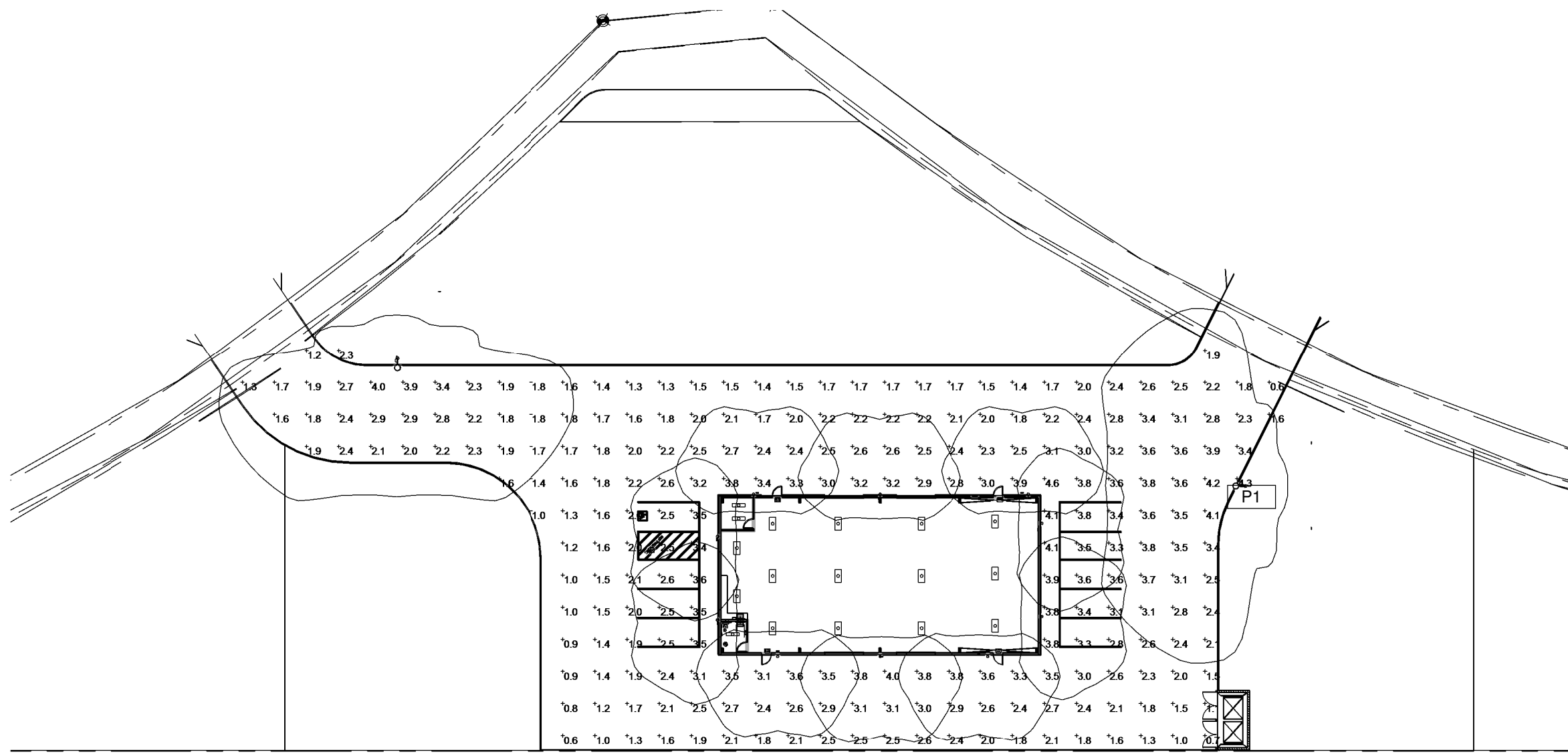
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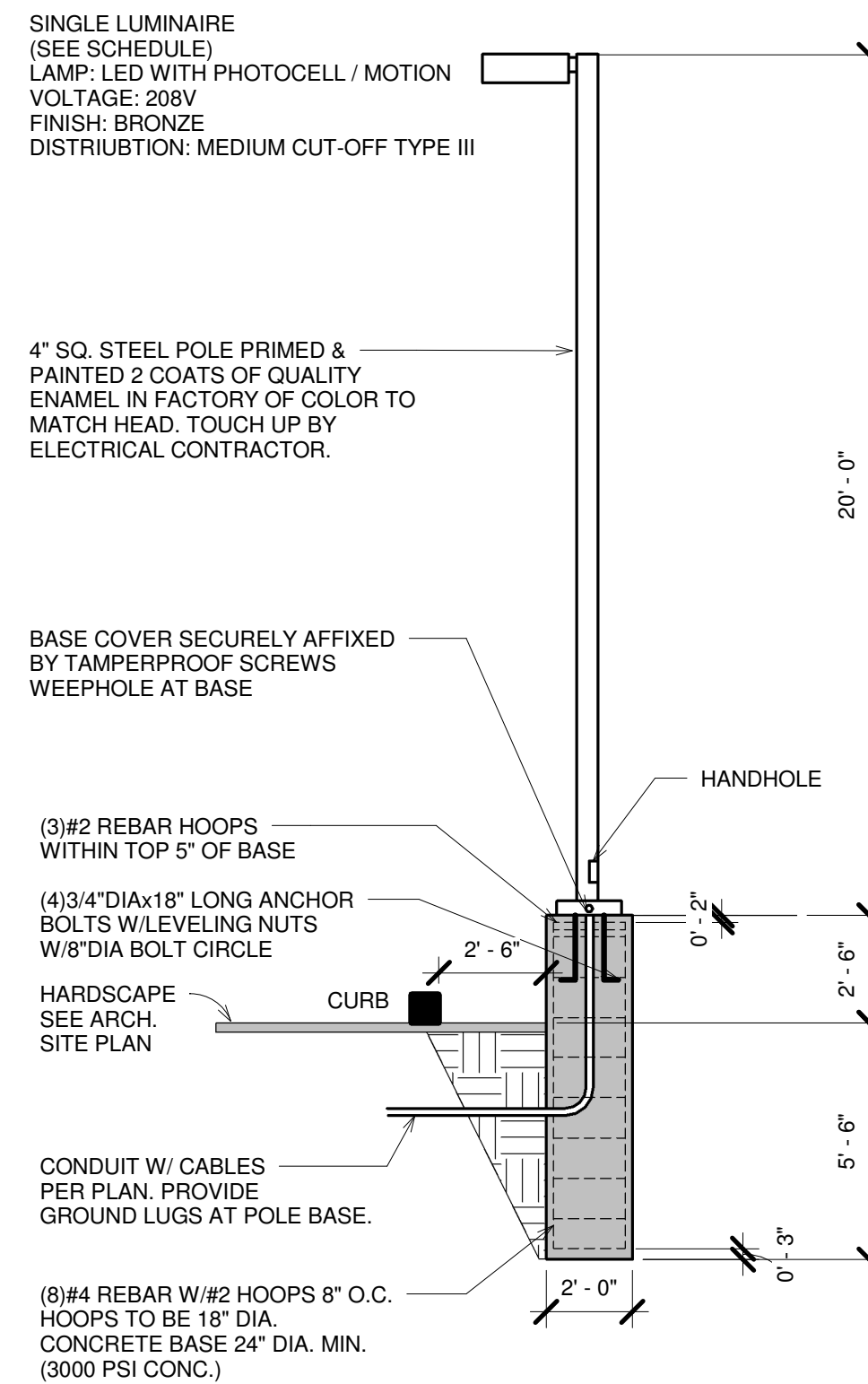
HCS ENGINEERING, INC.  
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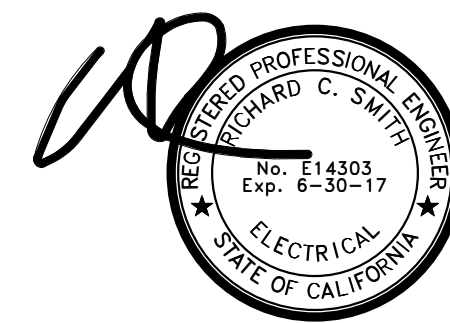
**1 ELECTRICAL SITE PLAN**  
SCALE: 1" = 20'-0"



**2 PHOTOMETRIC STUDY**  
SCALE: 1" = 40'-0"



**3 LIGHT STANDARD RAISED BASE**  
SCALE: 1/4" = 1'-0"



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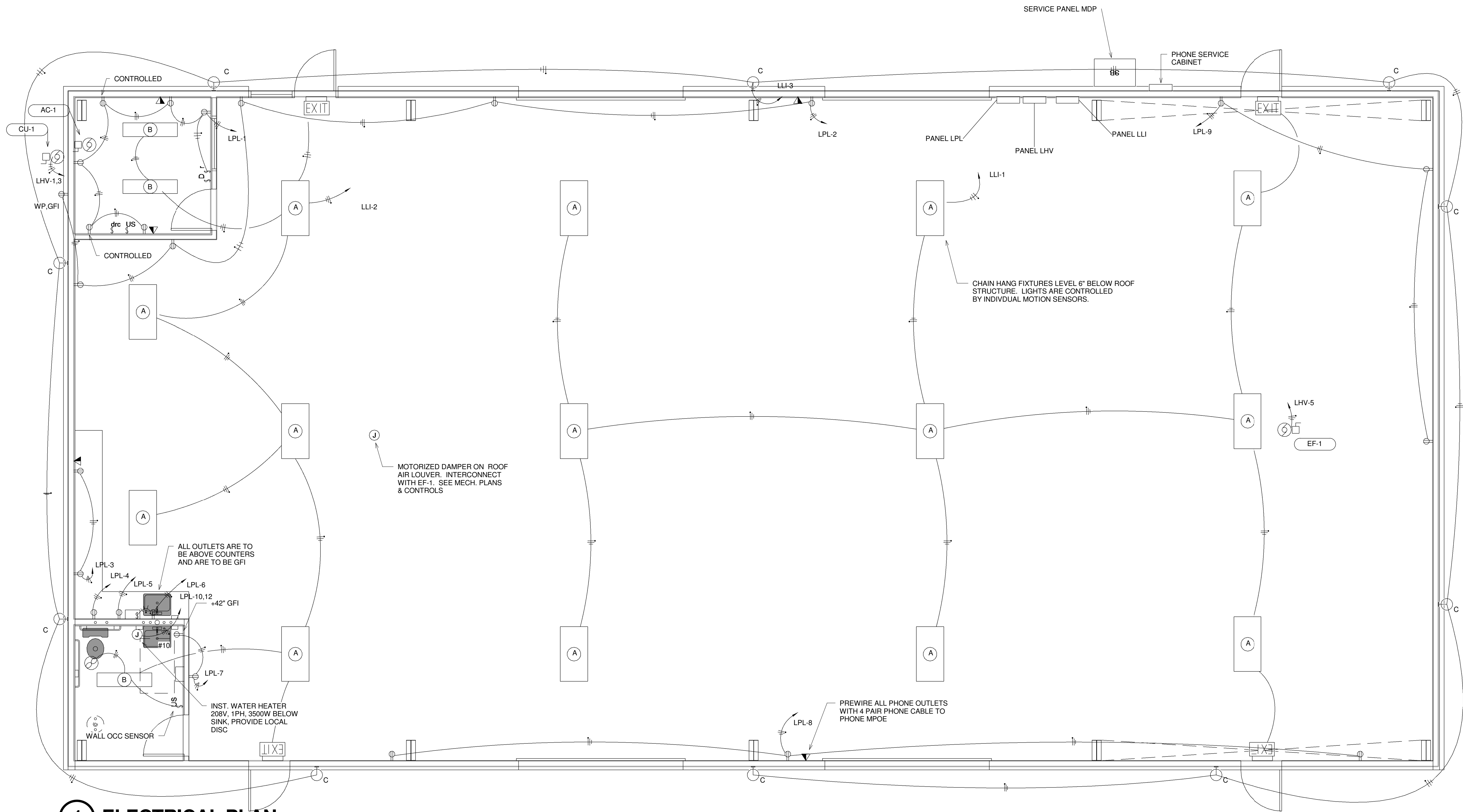
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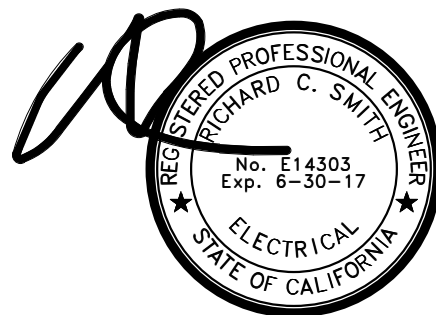
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**E2**

HVAC EQUIPMENT SCHEDULE						
Mark	Electrical Data	AMP	DISCONNE CT	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
A	LED	CHAIN HUNG LED INDUSTRIAL FIXTURE WITH LENS AND MOTION SENSOR	LITHONIA	IBL 1L WD - LP840 - MVOLT - OCC	52 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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1/4" = 1'-0"  
JOB NO

SHEET

**E3**

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		20 A	LIGHT STANDARDS	LLI-4
LLI-5										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										LLI-24
LLI-25				0 VA		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

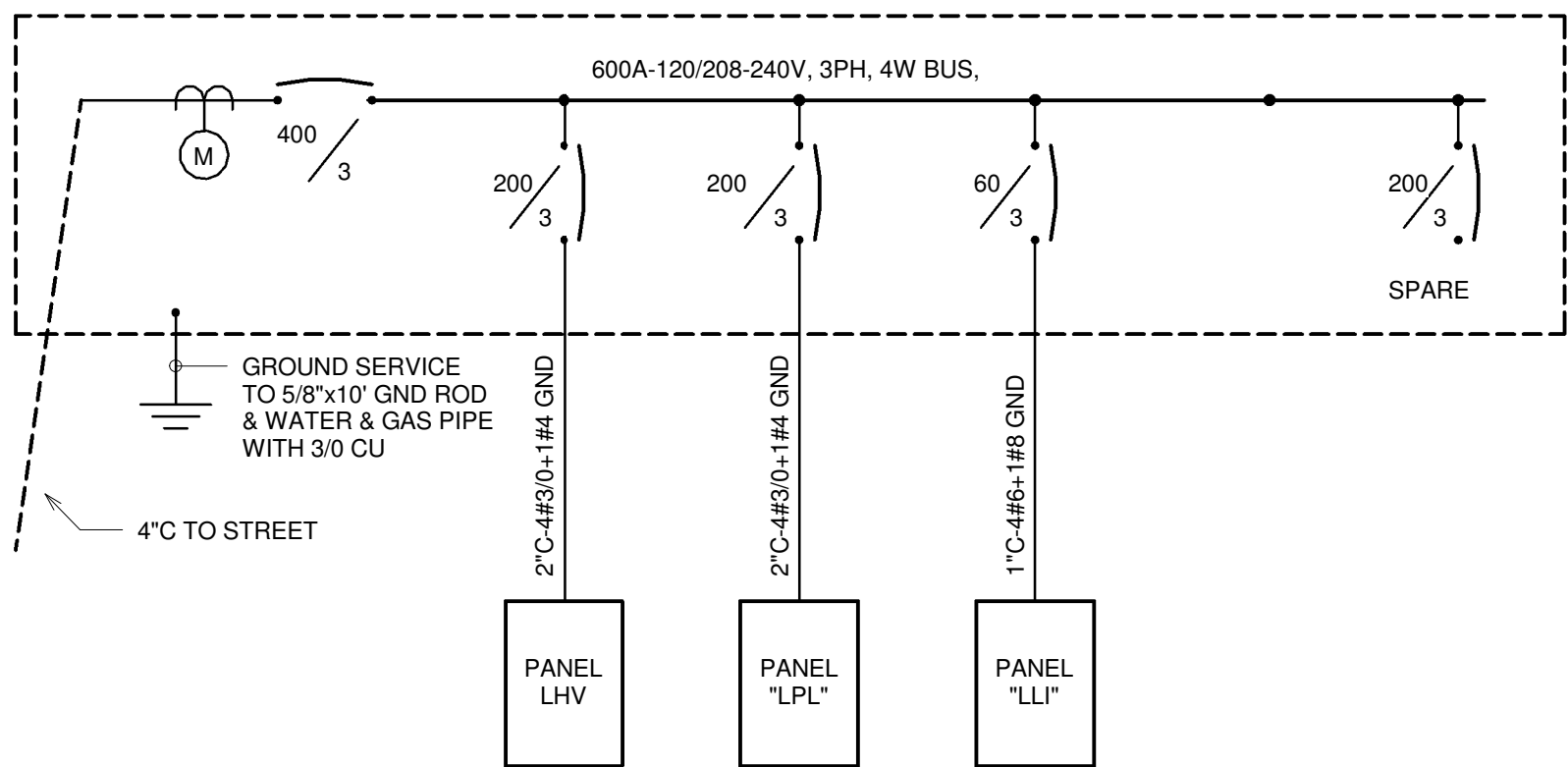
A.I.C. Rating: 10,000  
Mains Type: MLO  
Mains Rating: 200 A  
MCB Rating: 200 A

Notes:

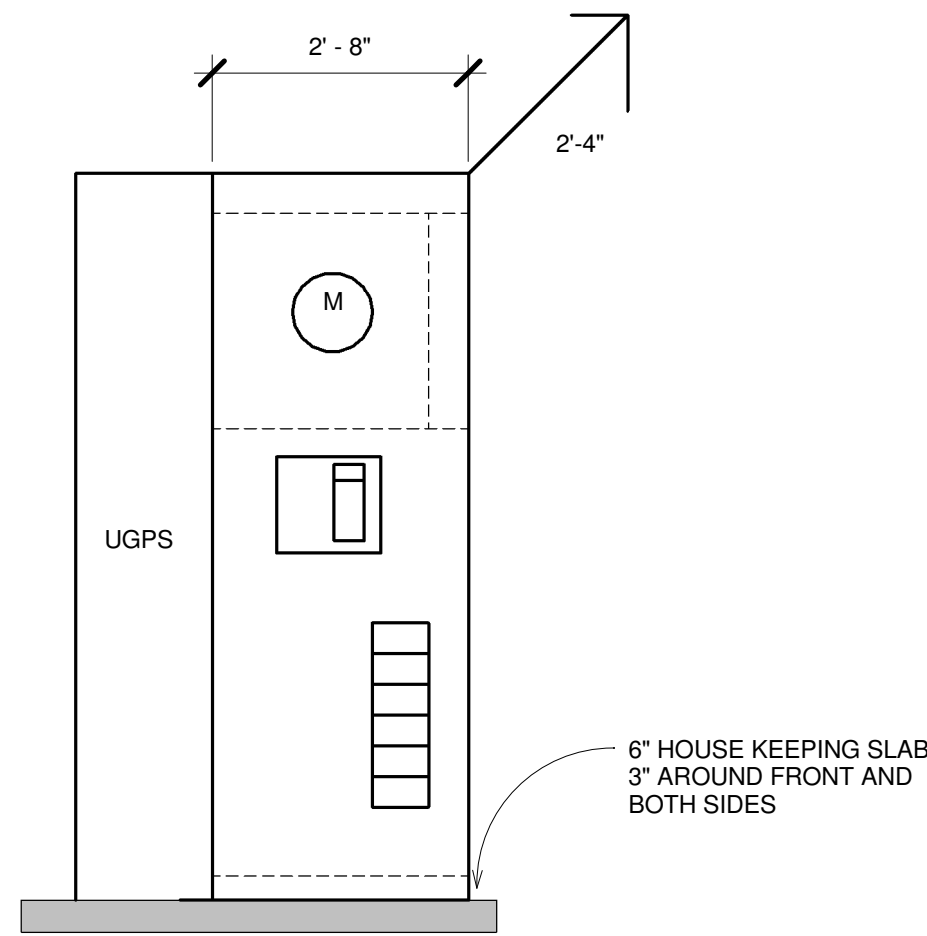
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
LPL-1	OUTLETS	20 A	1	1080 VA	1080 VA		1	20 A	Receptacle	LPL-2
LPL-3	Receptacle	20 A	1		360 VA	180 VA	1	20 A	Receptacle	LPL-4
LPL-5	Receptacle	20 A	1			180 VA	1	20 A	OUTLETS	LPL-6
LPL-7	Receptacle	20 A	1	360 VA	540 VA		1	20 A	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	--	--	--	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

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

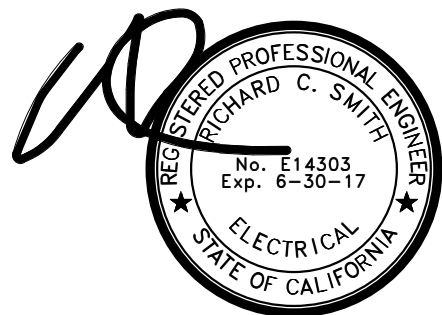
Volts: 120/208 Wye  
Phases: 3  
Wires: 4

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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PROJECT: WAREHOUSE & MAINTENANCE BUILDING

CLIENT: KEYSTONE CORPORATION

LOCATION: PATTERSON, CA

DRAWN

CHECKED

DATE  
9-17-15

SCALE  
As indicated

JOB NO

SHEET

E4

ELECTRICAL DETAILS