Peralta Community College District (PCCD)

College of Alameda - Aviation - Lighting and Security Repairs at Site Exterior

970 Harbor Bay Pkwy.
Alameda, CA 94502

2 PROJECT SITE OVERVIEW SCALE : N.T.S. NORTH

SHEET INDEX

APPLICABLE CODES

(MOST CURRENT VERSIONS AS ADOPTED BY CITY OF WOODLAND, CA AS OF JUNE 2022)

TITLE 24 C.C.R. PART 2, CALIFORNIA BUILDING CODE (CBC)
TITLE 24 C.C.R. PART 3, CALIFORNIA ELECTRICAL CODE (CEC)
TITLE 24 C.C.R. PART 4, CALIFORNIA MECHANICAL CODE (CMC)
TITLE 24 C.C.R. PART 5, CALIFORNIA PLUMBING CODE (CPC)
TITLE 24 C.C.R. PART 6, CALIFORNIA ENERGY CODE (CEC)
TITLE 24 C.C.R. PART 9, CALIFORNIA FIRE CODE (CFC)
TITLE 24 C.C.R. PART 10, CALIFORNIA EXISTING BUILDING CODE (CEBC)
TITLE 24 C.C.R. PART 11, CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen) AND BUILDING ENERGY EFFICIENCY STANDARDS
NFPA 70E, STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
NFPA 70, NATIONAL ELECTRICAL CODE
NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE
NFPA 101, LIFE SAFETY CODE
NFPA 110, STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS.

DEFERRED SUBMITTALS

NONE.

PROJECT GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK. IMMEDIATELY NOTIFY PROJECT TEAM OF ALL DISCREPANCIES BETWEEN DRAWINGS AND THE PROJECT SITE CONDITIONS.
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY CHANGES WITHOUT THE APPROVAL OF PROJECT TEAM.
3. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR JOB CONDITIONS ON THE JOB SITE INCLUDING SAFETY OF PUBLIC, WORKERS, PROPERTY, AND ENSURE COMPLIANCE WITH STATE OSHA AND DISTRICT GUIDELINES AND SAFETY REQUIREMENTS.
4. THE CONTRACTOR SHALL ENSURE THAT ALL WORK PERFORMED MEETS OR EXCEEDS THE REQUIREMENTS OF THE LATEST ADOPTED EDITIONS OF THE APPLICABLE CODES REFERENCED AS PART OF THESE CONSTRUCTION DOCUMENTS.
5. THE CONTRACTOR SHALL PROTECT THE EXISTING STRUCTURES AND LANDSCAPING ADJACENT TO THE CONSTRUCTION SITE, AND THEIR EQUIPMENT, FINISHES, AND FURNISHINGS FROM ANY DAMAGE DURING THE COURSE OF CONSTRUCTION. PUBLIC ACCESS TO ALL AREAS MUST BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL REPAIR ALL DAMAGES TO THE ORIGINAL CONDITIONS.
6. THE CONTRACTOR SHALL COORDINATE WITH THEIR SUBCONTRACTORS TO IDENTIFY ALL LONG LEAD MATERIALS. THE CONTRACTOR AND THEIR SUBCONTRACTORS SHALL SUBMIT SHOP DRAWINGS AND SUBMITTALS FOR APPROVAL.
7. THE CONTRACTOR AND THEIR RESPECTIVE SUBCONTRACTORS SHALL BE COMPLETELY RESPONSIBLE FOR ALL GENERAL NOTES, SPECIFICATIONS, AND OTHER PERTINENT INFORMATION AS INDICATED WITHIN THE RESPECTIVE CONSTRUCTION DRAWINGS FOR THEIR DISCIPLINE. DO NOT DELAY IF CLARIFICATION IS REQUIRED, SUBMIT REQUESTS FOR INFORMATION TO THE DESIGN CONSULTANT FOR THE RESPECTIVE DISCIPLINE AND FOLLOW FORMAL CONSTRUCTION INFORMATION EXCHANGE PRACTICES.
8. ACCESS TO THE JOB SITE AND STAGING AREAS (IF REQUIRED) ON ROADS AND PARKING LOTS SHALL BE ARRANGED BETWEEN CONTRACTORS AND DISTRICT REPRESENTATIVE.
9. THE CONTRACTOR SHALL SCHEDULE WORK WITH MINIMUM INTERFERENCE TO PROJECT SITE AND THE ACTIVITIES AND OPERATIONS OF ITS FACILITIES, COORDINATE WITH OWNER TO CLEARLY UNDERSTAND THE IMPACTS DURING THE COURSE OF CONSTRUCTION. LEGALLY DISPOSE OF DEBRIS AFTER EACH WORKING DAY SO AS TO NOT DISTURB THE NORMAL FUNCTION AND ACTIVITIES AT THE PROJECT SITE, DO NOT OBSTRUCT FIRE LANES AND EXITS.
10. AFTER THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL COMPLETELY DEMOBILIZE FROM AND CLEAN THE PROJECT SITE.

ABBREVIATIONS

SEE E0.1 & E6.2

SYMBOLS

SEE E0.1 & E6.2

PROJECT SCOPE

BACKGROUND:

PERALTA COMMUNITY COLLEGE DISTRICT IS REQUESTING REPLACEMENT OF (E) MALFUNCTIONING EXTERIOR LIGHTING FIXTURES W/(N) LIKE-FOR-LIKE REPLACEMENT AS SPECIFIED TO ACCOMMODATE (E) SITE CONDITIONS AND IN-LINE W/PRESENT DAY INDUSTRY STANDARDS.

SCOPE:

THE SCOPE OF THIS PROJECT IS PRIMARILY ELECTRICAL.

THE CONTRACTOR SHALL SYSTEMATICALLY AND WITH MINIMAL IMPACT TO THE PROJECT SITE REPLACE THE (E) EXTERIOR LIGHTING FIXTURES AS SPECIFIED.

CONTRACTOR SHALL COORDINATE DEMOLITION AND NEW CONSTRUCTION SCOPE AND SCHEDULE WITH DISTRICT REPRESENTATIVE AND OTHER TRADES.

ALL PERMIT AND DISPOSAL FEES ARE CONTRACTORS RESPONSIBILITY. ALL WASTE MATERIAL RESULTING FROM DEMOLITION SHALL BE DISPOSED OF PER STATE AND FEDERAL REGULATIONS.

DSA:

THIS PROJECT HAS BEEN DETERMINED BY DISTRICT TO NOT BE SUBJECT TO DSA REVIEW PER DSA IR A-22 SECTION 1.3.1 – MAINTENANCE WORK PER CAC SECTION 4-315 AS DEFINED IN CAC SECTION 4-314.

1 VICINITY MAP SCALE : N.T.S. NORTH

REV.	DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP:09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE: COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER: PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE: COVER SHEET

DATE:	03/01/2023
SCALE:	AS NOTED
DRAWN BY:	S. PAREDES
JOB NO.	HLP2022-001
SHEET NO.	G0.1
REV.	0

ANSI D (22.00 X 34.00 INCHES)

BESS
UTILITY SOLUTIONS
2463 Tripaldi Way | Hayward, CA 94565
Phn: (408) 988-0101 | Fax: (408) 988-0103
www.besstestlab.com

GENERAL NOTES

THIS PLAN SET REPRESENTS A DIGITAL FIELD SKETCH OF AVAILABLE UTILITY RECORDS INFORMATION WITH FIELD VERIFICATION WHERE POSSIBLE USING INDUSTRY ACCEPTABLE METHODS, SUPPLEMENTED WITH INFORMATION DERIVED FROM SUBMITTED UTILITY RECORDS INFORMATION. UTILITY PAINT MARKS WERE DOCUMENTED USING A COMBINATION OF RTK GPS, ROBOTIC TOTAL STATION, IPS2 MOBILE LIDAR, FARO X300 SCANNER, IDS STREAM EM (GPR UTILITY MAPPER) AND UAV PHOTOGRAMMETRY.

THE UTILITY LOCATIONS DEPICTED WITHIN THESE DRAWINGS REFLECT FIELD WORK COMPLETED DURING THE MONTH OF AND ARE INTENDED TO COMPLY WITH CI/ASCE 38-02, STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA:

- ☐ QUALITY LEVEL "D", 38-02.5.1
- ☐ QUALITY LEVEL "C", 38-02.5.2
- ☑ QUALITY LEVEL "B", 38-02.5.3
- ☐ QUALITY LEVEL "A", 38-02.5.4

GENERAL LINETYPE LEGEND

- E — ELECTRICAL LINE
- FO — FIBER OPTIC LINE
- G — GAS LINE
- S — SANITARY SEWER LINE
- D — STORM SEWER LINE
- W — WATER LINE
- IRR — IRRIGATION LINE
- COMM — TELEPHONE LINE
- TS — TRAFFIC SIGNAL LINE
- SL — STREET LIGHT LINE
- JT — JOINT TRENCH
- GPR — GPR / UNKNOWN
- OH — OVERHEAD LINE

N

SCALE: 1" = 20'
0 10 20 40

811 Know what's below. Call before you dig.

NO.	REVISION/ISSUE	DATE

PROJECT: 970 HARBOR BAY PKWY, ALAMEDA, CA.
DATE: 11-28-2022
SCALE: 1" = 20'
SHEET 1
DRAWN BY: EM
CHECKED BY: JZ
PROJECT NO.: BTL# 44-2-2203

11/29/22 Utility_Map_44-2-2203.dwg by Eddie

REV.	REVISION/ISSUE DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE: COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA. 94502
PROJECT OWNER: PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA. 94606
DRAWING TITLE: BESS UTILITY SURVEY (REF. ONLY)

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022-001
SHEET NO. C0.1
REV. 0

ANSI D (22.00 X 34.00 INCHES)

ELECTRICAL SHEET INDEX:

DESIGN TEAM:

SARA PAREDES (SDP) – BIM TECHNICIAN
GREG LIGHT (GWL) – PROJECT COORDINATOR
SERGEY KOROLEV, P.E. (SVK) – ELECTRICAL ENGINEER

CONTACT US:

INFO@VEKTORENGINEERINGINC.COM
+1 (925) 835-8671

ELECTRICAL SYMBOLS:

T	TRANSFORMER
	DISTRIBUTION PANEL OR SWITCHBOARD
	GROUND CONNECTION
J	SURFACE JUNCTION BOX – WALL
	SURFACE & FLUSH MOUNTED PANEL BOARD

SHEET ANNOTATION SYMBOLS:

	LINE CONTINUE BREAK
# / X0.0	DETAIL REFERENCE: TOP DESIGNATES DETAIL NUMBER BOTTOM DESIGNATES SHEET NUMBER "–" FOR SHEET NUMBER INDICATES CURRENT SHEET
#	KEY NOTE DESIGNATION
PNL / 00X	EQUIPMENT DESIGNATION: TOP DESIGNATES EQUIPMENT ABBREVIATION BOTTOM DESIGNATES EQUIPMENT NUMBER
REFER / X0.0	PLAN CONTINUATION DESIGNATION AS REFERENCED BY MATCH LINE
#	REVISION NUMBER DESIGNATION
#	ROOM NUMBER DESIGNATION
# / X0.0	SECTION REFERENCE: TOP DESIGNATES SECTION NUMBER BOTTOM DESIGNATES SHEET NUMBER "–" FOR SHEET NUMBER INDICATES CURRENT SHEET

ABBREVIATIONS:

(ALL ABBREVIATIONS SHOWN ARE NOT NECESSARILY ON DRAWINGS)

A	AMPERE
A/C	AIR CONDITIONER
AC	ALTERNATING CURRENT
ADJ	ADJACENT
AIC	MINIMUM AMPERE INTERRUPTING CAPACITY
AF	AMPERE FRAME OR FUSE
AF/AT	AMP FRAME/AMP TRIP
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFS	AUTOMATIC FIRE SPRINKLER
AHJ	AUTHORIZES HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH	ARCHITECT/ARCHITECTURAL
AS	AMPERE SWITCH
AS/AF	AMP SWITCH/AMP FUSE
ASSY	ASSEMBLY
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BD	BOARD
BJ	BONDING JUMPER
BLDG	BUILDING
BOF	BOTTOM OF FIXTURE
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAT	CATEGORY
CATV	CABLE TELEVISION
CAB	CABINET
CB	CIRCUIT BREAKER
CBC	CALIFORNIA BUILDING CODE
CCTV	CLOSED CIRCUIT TELEVISION
CFC	CALIFORNIA FIRE CODE
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CNTL	CONTROL
CO	CONDUIT ONLY
COAX	COAXIAL CABLE
CONT	CONTINUATION
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
CWP	COLD WATER PIPE
COL	COLUMN
COMM	COMMUNICATIONS
CONC	CONCRETE
CONT	CONTINUOUS
CDP	CONDENSATE DRAIN PUMP
DC	DIRECT CURRENT
DCW	DOMESTIC COLD WATER
DEMO	DEMOLITION
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EACH
EBJ	EQUIPMENT BONDING JUMPER
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
EJ	EXPANSION JOINT
EL	ELEVATION
ELECT/ELEC	ELECTRICAL
EMERG	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE
EQUIPT	EQUIPMENT
EQUIV	EQUIVALENT
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FAPS	FIRE ALARM POWER SUPPLY
FATC	FIRE ALARM TERMINAL CABINET
FBO	FURNISHED BY OTHER DIV. OF WORK
FC	FAN COIL
FDR	FEEDER
FF	FINISHED FLOOR
FIXT	FIXTURE
FL	FLOOR
FLA	FULL LOAD AMPS
FLASH'G	FLASHING
FLEX	FLEXIBLE
FP	FIRE PROTECTION
FPL(S)	FIRE ALARM POWER LIMITED (SHIELDED)
FS	FLOW SWITCH
FSD	FIRE SMOKE DAMPER
FT	FEET/FOOT
FTC	FIRE ALARM TERMINAL CABINET
G	GROUND
GC	GROUNDED CONDUCTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI (GFCI)	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL CONDUIT
GYP	GYPSUM
HACR	HEATING, AIR CONDITIONING AND REFRIGERATION
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSE POWER, HEAT PUMP
HT	HEIGHT
HV	HIGH VOLTAGE
HZ	HERTZ
IBC	INTERNATIONAL BUILDING CODE
IC	INTERRUPTING CAPACITY
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ICC	INTERNATIONAL CODE COUNCIL
IDF	INTERMEDIATE DISTRIBUTION FRAME
IMC	INTERMEDIATE METALLIC CONDUIT
ISC	SHORT CIRCUIT CURRENT
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATT
LCP	LIGHTING CONTROL PANEL
LTG	LIGHTING
LV	LOW VOLTAGE
M	METER
MAX	MAXIMUM
MBJ	MAIN BONDING JUMPER
MBS	MANUAL BY–PASS SWITCH
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MDF	MAIN DATA FRAME
MECH	MECHANICAL
MFD	MULTI–FUNCTION DEVICE (TYP. PRINTER/SCANNER)
MFR	MANUFACTURER
MGB	MAIN GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUG(S) ONLY
MOCP	MAXIMUM OVER CURRENT PROTECTION
MSG	MAIN SWITCHGEAR
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
MV	MEDIUM VOLTAGE
(N)	NEW
N	NEUTRAL CONDUCTOR
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NETA	INTERNATIONAL ELECTRICAL TESTING ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OFR	OVER FLOOR RACEWAY
OH	OVERHEAD
OL	OVERLOAD
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX
PC	PHOTOCELL
PH,ϕ	PHASE
PIV	POST INDICATOR VALVE
PM	PLUG MOLD
PNL	PANEL
POC	POINT OF CONNECTION
PSF	POUNDS PER SQUARE FEET
PT	POTENTIAL TRANSFORMER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE DUCT
PWR	POWER
RAD	RADIUS
RAP	REMOTE ANNUNCIATOR PANEL
RCP	RELAY CONTROL PANEL
REC	RECESSED
RECEPT	RECEPTACLE
REF	REFERENCE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RSC	RIGID STEEL CONDUIT
RTU	ROOF TOP UNIT
SAD	SEE ARCHITECTURAL DOCUMENTS
SBJ	SYSTEM BONDING JUMPER
SSD	SEE STRUCTURAL DOCUMENTS
SEC	SECURITY
SECT	SECTION
SF	SUPPLY FAN
SHT	SHEET
SLD	SEE LANDSCAPE DRAWINGS
SM	SINGLE–MODE
SMD	SEE MECHANICAL DRAWINGS
SPECS	SPECIFICATIONS
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SSBJ	SUPPLY SIDE BONDING JUMPER
STBY	STANDBY
STC	SIGNAL TERMINAL CABINET
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMBOL
SYS	SYSTEM
T	TRANSFORMER
TBB	TELEPHONE BACKBOARD
TELE	TELEPHONE
TEMP	TEMPERATURE
THERM	THERMOSTAT
TOP	TOP OF PANEL
TRANSF	TRANSFORMER
TS	TAMPER SWITCH
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TX	TRANSFORMER
TYP	TYPICAL
UC	UNDER COUNTER
UGPS	UNDERGROUND PULL SECTION
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UMC	UNIFORM MECHANICAL CODE
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTED POWER SUPPLY
V	VOLT/VOLTAGE
VA	VOLT AMPERE(S)
VAV	VARIABLE AIR VOLUME
VDC	VOLTAGE DIRECT CURRENT
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VM	VOLT METER
W	WATT
WAP	WIRELESS ACCESS POINT
WAO	WORK AREA OUTLET
W/	WITH
W/O	WITHOUT
WH	WATER HEATER
WM	WIRE MOLD
WP	WEATHERPROOF
WT	WEIGHT
WW	WIRE WAY
XFMR	TRANSFORMER

DISCLAIMER:

ELECTRICAL SCOPE OF WORK:

THE FOLLOWING IS A GENERAL DESCRIPTION OF THE ELECTRICAL SCOPE OF WORK ASSOCIATED WITH THE COLLEGE OF ALAMEDA – AVIATION – LIGHTING AND SECURITY REPAIRS AT SITE EXTERIOR PROJECT. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW AND CLEARLY UNDERSTAND ALL ELECTRICAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS; AND, FURTHERMORE IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO CLARIFY ANY ASPECT OF THE DESIGN AS PRESENTED ON THESE CONSTRUCTION DOCUMENTS WITH THE PROJECT TEAM, INCLUDING THE ELECTRICAL ENGINEER OF RECORD (EEOR), AND DURING CONSTRUCTION, ACCORDING TO FORMAL CONSTRUCTION DOCUMENTATION AND INFORMATION EXCHANGE PROCESS BASED ON AIA STANDARDS. ALL CONTRACTORS PERFORMING CONSTRUCTION SHALL GIVE THE DESIGN TEAM REASONABLE TIME TO RESPOND TO SUCH INQUIRIES.

GENERAL ELECTRICAL SCOPE OF WORK:

A. RECEIVE THE LATEST SET(S) OF CONSTRUCTION DOCUMENTS INCLUDING CONSTRUCTION DRAWINGS, PARTIAL SUBMITTALS, AND SPECIFICATIONS.

B. REVIEW ALL PROJECT RELATED DOCUMENTATION AND SEEK COMPLETE UNDERSTANDING OF WHAT IS REQUIRED TO COMPLETELY SATISFY ALL PROJECT REQUIREMENTS AS DETERMINED BY THE PROJECT TEAM.

C. THE CONTRACTOR SHALL NOT PROCEED WITH ANY CHANGES WITHOUT THE APPROVAL OF THE OWNER REPRESENTATIVE AND THE PROJECT TEAM.

D. PROVIDE SUBMITTAL PACKAGE FOR ALL (N) EQUIPMENT AND (N) MATERIALS TO EEOR FOR REVIEW AND APPROVAL PRIOR TO FURNISHING AND ANY INSTALLATION, DO NOT PROCEED WITH INSTALLATION WITHOUT APPROVAL.

E. PROVIDE ALL SHOP DRAWINGS TO EEOR FOR REVIEW PRIOR TO INSTALLATION, DO NOT PROCEED WITH INSTALLATION WITHOUT APPROVAL.

F. VISIT SITE AS NEEDED TO ASSESS (E) ELECTRICAL CONDITIONS AND REVIEW FEASIBILITY OF PROPOSED (N) CONSTRUCTION, ALTERATION, AND OR MODIFICATION, AND INFORM THE PROJECT TEAM OF ANY DISCREPANCIES OR ADVERSE SITE CONDITIONS FOUND.

G. DEVISE A PLAN, COORDINATED WITH DISTRICT REPRESENTATIVE AND ALL OTHER DISCIPLINES OF THE CONSTRUCTION TEAM, FOR TEMPORARY OWNER AND LIGHTING DURING THE COURSE OF CONSTRUCTION WHEN NORMAL POWER SHUTOFF IS REQUIRED FOR ELECTRICAL WORK, PROVIDE TEMPORARY POWER AND LIGHTING ACCORDING TO THE DEVISED AND COORDINATED PLAN FOR THE ELECTRICAL SCOPE OF WORK AND ALL OTHER DISCIPLINES THAT REQUIRE TEMPORARY POWER AND LIGHTING DURING EXECUTION. REMOVE ALL TEMPORARY PROVISIONS WHEN NO LONGER REQUIRED OR UPON DEMOBILIZATION FROM SITE.

H. DEMOLISH (E) LIGHTING FIXTURES AT EXTERIOR OF BLDG. A AND BLDG. B WHERE WHERE SHOWN.

I. PROVIDE (N) LIGHTING FIXTURES AND PROVIDE (N) EXTENSIONS OF (E) BRANCH CIRCUITS THAT WERE USED BY (E) LIGHTING FIXTURES TO THE (N) LIGHTING FIXTURES.

J. PROVIDE ALL ADDITIONAL MATERIALS AND LABOR WHEN REQUIRED BY THE COMPLIANCE RULES, CODES OR REGULATIONS, WHETHER INDICATED ON RESPECTIVE CONSTRUCTION DRAWINGS OR SPECIFICATIONS OR NOT.

K. COORDINATE WITH OTHER TRADES, AND ASSIST THEM WITH INSTALLATION, INTERCONNECTION, AND COMMISSIONING FOR (N) EQUIPMENT THAT REQUIRES (N) ELECTRICAL CONNECTIONS.

L. COORDINATE WITH DISTRICT REPRESENTATIVE, CITY OF ALAMEDA DBI, AND OTHER THIRD PARTIES AS REQUIRED TO COMPLETE THE SCOPE OF WORK.

M. TEST AND COMMISSION THE (N) LIGHTING AND CONTROL SYSTEM, COMPLETE ALL ENERGY COMPLIANCE FORMS AS REQUIRED.

N. PROVIDE ALL UPDATED AS–BUILT DRAWINGS TO EEOR FOR REVIEW AND APPROVAL. AS–BUILT DRAWINGS AND APPROVAL IS REQUIRED FOR PROJECT COMPLETION.

CONDUIT & GROUNDING SYMBOLS:

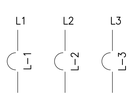
	CONDUIT WITH CONDUCTORS CONCEALED IN CEILING OR WALL, 3/4" GALV. EMT CONDUIT, USE COMPRESSION FITTINGS, W/(2) #12AWG + (1) #12AWG GND., U.O.N. – CONCEAL CONDUITS AS MUCH AS POSSIBLE, SURFACE MOUNTED RACEWAYS ARE EXPLICITLY CALLED OUT ON THE RESPECTIVE DRAWINGS
	CONDUIT WITH CONDUCTORS OR CABLE CONCEALED UNDER FLOOR OR GROUND, 3/4" RPVC CONDUIT W/(2) #12AWG + (1) #12AWG GND., U.O.N.
	CABLE OR CONDUIT TURNING DOWN
	CABLE OR CONDUIT TURNING UP
A–13	BRANCH CIRCUIT HOMERUN TO PANEL "A" CKT. "13" IN 3/4" GALV. EMT CONDUIT, USE COMPRESSION FITTINGS, W/(2) #12AWG + (1) #12AWG GND., U.O.N. NOTE: HOMERUN "TAIL" ONLY SHOWN FOR BRANCH CIRCUITS CONTAINING MULTIPLE DEVICES, HOMERUN ALL BRANCH CIRCUITS WHETHER A "TAIL" IS SHOWN OR NOT
	FLEXIBLE CONDUIT OR MC CABLE, 3/4" USE WATER TIGHT FOR EXTERIOR OR WET LOCATIONS, LAST 6" OF CONDUIT RUN TO EASE PLACEMENT, E.G. LIGHTS OR MOTORS
	END OF MAJOR CONDUIT RUN, PROVIDE FINAL CONNECTION, COORDINATE WITH RESPECTIVE DISCIPLINES FOR FINAL CONNECTION REQUIREMENTS
GEC	CONNECTION TO PHYSICAL EARTH, SIZE GEC PER NEC
	COPPER CLAD GROUND ROD, 3/4" DIA. x 10'–0" LONG
	COPPER GROUND BUS BAR, 4" WIDE x 24" LONG IN THICK MIN., U.O.N.
PHASE CONDUCTOR, EGC, #12, NEUTRAL CONDUCTOR	NO HASH MARK INDICATES 3/4" CONDUIT W/(2) #12AWG + (1) #12AWG GND., HASH MARKS ON CONDUIT INDICATES NUMBER OF UNGROUNDED CONDUCTORS AND HOOK INDICATES GND. CONDUCTORS, NUMBER BELOW INDICATES AWG SIZE OF UNDERGROUND CONDUCTORS, SIZE EGC AND OTHER GND. CONDUCTORS PER NEC

TYP. USA WIRE COLOR CODE:

TYPE	120/208/240VAC	277/480VAC	208VAC OR 480VAC (L–L)
L1	BLACK	BROWN	BLACK
L2	RED	ORANGE	RED
L3	BLUE	YELLOW	–
NEUT.	WHITE	GREY	–
GND.	GREEN, GREEN/YELLOW, BARE	GREEN, GREEN/YELLOW, BARE	–

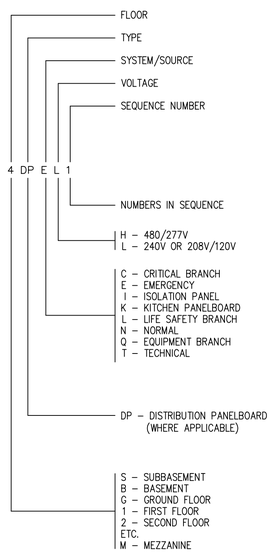
NOTES:

1. IF CONDUCTORS DO NOT HAVE INSULATION OF APPROPRIATE COLOR OR ARE ONLY AVAILABLE IN BLACK INSULATION, THEN WRAP ELECTRICAL TAPE AT BOTH ENDS TO COLOR CODE, USE AT LEAST 10 WRAPS MINIMUM AT EITHER END.
2. TYPICAL CKT. BREAKER ORIENTATION:



3. MEASURED PHASE ROTATION ONLY SPECIFIES THE ROTATION OF THE PHASES "CCW" OR "CW" IN RELATION TO THE CHANNELS OF THE PHASE ROTATION METER AND HOW THEY WERE ARE ATTACHED TO THE PHASES CONNECTED TO THE ACTUAL EQUIPMENT, TAKE CARE WHEN MEASURING.

ELECTRICAL PANEL LABEL LOGIC:



REV.	DATE	CHK. BY
0	09/15/2023	SVK
	PERMIT SET	

REVISION/ISSUE DESCRIPTION

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
SHEET INDEX, SCOPE, SYMBOLS AND ABBREVIATIONS

DATE:	03/01/2023
SCALE:	AS NOTED
DRAWN BY:	S. PAREDES
JOB NO.	HLP2022–001
SHEET NO.	REV.
E0.1	0

ANSI D (22.00 X 34.00 INCHES)

SHORTHAND ELECTRICAL SPECIFICATIONS:

PART 1 – GENERAL:

1.01 FURNISH ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SUPERINTENDENCE, SERVICES, EQUIPMENT, FACILITIES AND TEMPORARY CONSTRUCTION REQUIRED AND NECESSARY TO PROVIDE ALL ELECTRICAL SYSTEMS INDICATED ON THESE CONSTRUCTION DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS TO COMPLETELY UNDERSTAND THE SCOPE OF WORK, AND ACCOUNT FOR ALL ADDITIONAL RESOURCES AND EQUIPMENT NOT SPECIFICALLY INDICATED, BUT INFERRED AND IMPLIED, FOR A COMPLETE AND FUNCTIONAL INSTALLATION INCLUDING, BUT NOT LIMITED TO, ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING AND COMMISSIONING THE VARIOUS SYSTEMS. ALL ELECTRICAL SYSTEMS MENTIONED IN THESE CONSTRUCTION DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE AND SHALL BE INSTALLED AS COMPLETE, FUNCTIONAL AND FULLY OPERATIONAL SYSTEMS.

A. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. SEE E0.1 FOR A SUMMARY OF THE ELECTRICAL SCOPE OF WORK.
2. THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK PRIOR TO SUBMITTING BID. IMMEDIATELY NOTIFY OWNER REPRESENTATIVE AND PROJECT TEAM OF ALL DISCREPANCIES BETWEEN THESE CONSTRUCTION DOCUMENTS AND THE PROJECT SITE CONDITIONS. THE PRIME CONTRACTOR SHALL INCLUDE THE COST TO CORRECT THESE DISCREPANCIES IN THEIR BID. NO EXTRA COST SHALL BE CHARGED AFTER BID AWARD.
3. THE CONTRACTOR SHALL NOT PROCEED WITH ANY CHANGES WITHOUT THE APPROVAL OF OWNER REPRESENTATIVE AND PROJECT TEAM.
4. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR JOB CONDITIONS AT THE JOB SITE INCLUDING SAFETY OF PUBLIC, WORKERS, PROPERTY, AND ENSURE COMPLIANCE WITH STATE OSHA AND OWNER'S GUIDELINES AND SAFETY REQUIREMENTS.
5. THE CONTRACTOR SHALL ENSURE THAT ALL WORK PERFORMED MEETS OR EXCEEDS THE REQUIREMENTS OF THE LATEST ADOPTED EDITIONS OF THE APPLICABLE CODES REFERENCED AS PART OF THESE CONSTRUCTION DOCUMENTS.
6. THE CONTRACTOR SHALL PROTECT THE EXISTING BUILDINGS ADJACENT TO THE CONSTRUCTION SITE, THEIR EQUIPMENT, SYSTEM, FINISHES, AND FURNISHINGS FROM ANY DAMAGE DURING THE COURSE OF CONSTRUCTION. PUBLIC ACCESS TO ALL BUILDING AREAS MUST BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL REPAIR ALL DAMAGES TO THE ORIGINAL CONDITIONS AT NO COST. THIS COST SHALL BE PAID BY THE PRIME CONTRACTOR.
7. THE CONTRACTOR SHALL COORDINATE WITH THEIR SUBCONTRACTORS TO IDENTIFY ALL LONG LEAD MATERIALS IMMEDIATELY UPON BEING AWARDED THE CONTRACT. THE CONTRACTOR AND THEIR SUBCONTRACTORS SHALL SUBMIT SHOP DRAWINGS AND SUBMITTALS FOR APPROVAL TO THEIR RESPECTIVE DESIGN CONSULTANT WITHIN (2) WEEKS TIME AFTER BID AWARD OTHERWISE CONTRACTOR SHALL BARE THE COSTS CAUSED BY THE DELAY.
8. THE CONTRACTOR AND THEIR RESPECTIVE SUBCONTRACTORS SHALL BE COMPLETELY RESPONSIBLE FOR ALL GENERAL NOTES, SPECIFICATIONS, AND OTHER PERTINENT INFORMATION AS INDICATED WITHIN THE RESPECTIVE CONSTRUCTION DRAWINGS FOR THEIR DISCIPLINE AND FOLLOW FORMAL CONSTRUCTION INFORMATION EXCHANGE PRACTICES.
9. ACCESS TO THE JOB SITE ON ROADS, PATHWAYS, AND PARKING LOTS SHALL BE ARRANGED BETWEEN CONTRACTOR AND OWNER REPRESENTATIVE. THE CONTRACTORS' ENTRANCE TO THE BUILDING WILL BE LIMITED TO LOCATIONS AS DESIGNATED BY OWNER REPRESENTATIVE. DO NOT OBSTRUCT FIRE LANES AND EXITS.
10. THE CONTRACTOR SHALL SCHEDULE WORK WITH MINIMUM INTERFERENCE TO THE PROJECT SITE AND THE ACTIVITIES AND OPERATIONS OF ITS FACILITIES, COORDINATE WITH OWNER TO CLEARLY UNDERSTAND THE IMPACTS DURING THE COURSE OF CONSTRUCTION. LEGALLY DISPOSE OF DEBRIS AFTER EACH WORKING DAY SO AS TO NOT DISTURB THE NORMAL FUNCTION AND ACTIVITIES AT THE PROJECT SITE, DO NOT OBSTRUCT FIRE LANES AND EXITS.
11. THE CONTRACTOR SHALL PROVIDE WITHOUT EXTRA CHARGE, ALL ADDITIONAL MATERIALS AND LABOR WHEN REQUIRED BY THE COMPLIANCE RULES, CODES OR REGULATIONS, WHETHER INDICATED ON RESPECTIVE CONSTRUCTION DRAWINGS OR SPECIFICATIONS OR NOT. NO CHANGE ORDERS SHALL BE ALLOWED FOR ANY MISINTERPRETATION OF THE REQUIREMENTS OF THESE DOCUMENTS.
12. THE CONTRACTOR SHALL PROVIDE SUBMITTAL PACKAGE FOR ALL EQUIPMENT AND MATERIALS TO ELECTRICAL ENGINEER OF RECORD FOR REVIEW PRIOR TO FURNISHING.
13. THE CONTRACTOR SHALL PROVIDE ALL AS-BUILT DRAWINGS TO ELECTRICAL ENGINEER OF RECORD FOR REVIEW PRIOR TO COMPLETION OF PROJECT, DO NOT RELEASE RETENTION OR CLOSE PROJECT WITHOUT FINAL APPROVAL.
14. AFTER COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL CLEAN THE PROJECT SITE BEFORE ACCEPTANCE BY OWNER REPRESENTATIVE AND DEMOBILIZATION.

1.02 CODES AND STANDARDS (ADDITIONAL TO THOSE ON E0.3):

WORK SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING:

1. TITLE 24 C.C.R. PART 2, CALIFORNIA BUILDING CODE (CBC)
2. TITLE 24 C.C.R. PART 3, CALIFORNIA ELECTRICAL CODE (CEC)
3. TITLE 24 C.C.R. PART 4, CALIFORNIA MECHANICAL CODE (CMC)
4. TITLE 24 C.C.R. PART 5, CALIFORNIA PLUMBING CODE (CPC)
5. TITLE 24 C.C.R. PART 6, CALIFORNIA ENERGY CODE (CEC)
6. TITLE 24 C.C.R. PART 9, CALIFORNIA FIRE CODE (CFC)
7. TITLE 24 C.C.R. PART 10, CALIFORNIA EXISTING BUILDING CODE (CEBC)
8. TITLE 24 C.C.R. PART 11, CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen) AND BUILDING ENERGY EFFICIENCY STANDARDS
9. NFPA 70E, STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
10. NFPA 70, NATIONAL ELECTRICAL CODE
11. NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE
12. NFPA 101, LIFE SAFETY CODE
13. NFPA 110, STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS
14. ILLUMINATING ENGINEERING SOCIETY (IES) LIGHTING HANDBOOK, 10TH EDITION

1.03 CONTRACTOR SHALL BECOME FAMILIAR WITH THE CONDITIONS OF THE JOB SITE, CONSTRUCTION DRAWINGS AND SPECIFICATIONS, AND PLAN THE INSTALLATION OF THE ELECTRICAL WORK TO CONFORM WITH THE EXISTING CONDITIONS AND THOSE SHOWN AND SPECIFIED SO AS TO PROVIDE THE BEST POSSIBLE ASSEMBLY OF THE COMBINED WORK OF THE TRADES.

1.04 CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS REQUIRED, AND DISPOSAL FEES.

1.05 CONTRACTOR AND THEIR SUB-CONTRACTORS SHALL VISIT THE SITE AS NECESSARY PRIOR TO SUBMITTING BID TO VERIFY EXISTING CONDITIONS, DIMENSIONS, LOCATIONS, AND ANY OTHER PERTINENT INFORMATION SHOWN ON PLANS AND ADJUST BID TO COVER ALL WORK SHOWN OR REASONABLY IMPLIED ON PLANS AND ANY ADDITIONAL WORK DISCOVERED THAT IS REQUIRED IN FIELD. REQUIRED CHANGES DUE TO EXISTING CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGEMENT TEAM.

1.06 CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DURING DEMOLITION OR CONSTRUCTION.

1.07 ALL MATERIALS SHALL BE UL LISTED AND AS SPECIFIED. ANY SUBSTITUTIONS SHALL BE SUBMITTED AND APPROVED PRIOR TO FURNISHING.

1.08 WARRANTIES:

A. ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS SPECIFICATION AND/OR CONSTRUCTION DRAWINGS SHALL BE GUARANTEED BY CONTRACTOR IN WRITING FOR A PERIOD OF AT LEAST (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST DEFECTIVE MATERIALS, DESIGN AND WORKMANSHIP. CONTRACTOR SHALL APPLY FOR ALL REQUIRED EQUIPMENT AND MATERIAL WARRANTIES WITH RESPECTIVE MANUFACTURER'S AND REMAIN DIRECTLY RESPONSIBLE FOR FULFILLING THE MANUFACTURER WARRANTY OBLIGATIONS FOR THE FULL DURATION LISTED BY EACH MANUFACTURER FOR THE RESPECTIVE MATERIALS OR EQUIPMENT.

B. UPON RECEIPT OF NOTICE FROM THE OWNER OF FAILURE OF ANY MATERIAL OR EQUIPMENT OR SECTIONS OF THE ELECTRICAL SYSTEM, DURING THE WARRANTY PERIOD, THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENT AND CORRECTIONS PROMPTLY AND WITHOUT EXPENSE OR INCONVENIENCE TO THE OWNER. REPLACE OR REPAIR MATERIALS AND EQUIPMENT IN THIS SCOPE OF WORK AND ANY DAMAGE RESULTING THEREFROM.

1.09 VERIFY ELECTRICAL RATING, LOAD, CIRCUIT REQUIREMENTS, AND CONNECTIONS FOR ALL EQUIPMENT SHOWN ON CONSTRUCTION DRAWINGS, AND FURNISHED BY OTHER DISCIPLINES PRIOR TO ROUGH IN, NOTIFY ELECTRICAL ENGINEER OF RECORD AND THE ENGINEER OF RECORD OF THE RESPECTIVE DISCIPLINE OF THIS CHANGE.

1.10 PROVIDE WIRING TEST UPON COMPLETION OF WORK AND MAKE ADJUSTMENTS AS NECESSARY FOR SATISFACTORY OPERATION OF ALL ELECTRICAL SYSTEMS AS DETERMINED BY CONSTRUCTION MANAGEMENT TEAM.

1.11 DEFINITIONS

A. "CONNECT": CONSTRUED TO MEAN MAKE FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE INSTALLATION OF A FULLY OPERATING PIECE OF EQUIPMENT WITH NECESSARY ACCESSORIES.

B. "AS DIRECTED": AS COMMUNICATED BY THE OWNER OR THEIR AUTHORIZED REPRESENTATIVE.

C. "WORK": CONSTRUED TO MEAN ALL LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES, AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION TO REALIZE INTENDED FUNCTION OF THE EQUIPMENT TO BE INSTALLED.

D. "WIRING": RACEWAY, FITTINGS, CONDUCTORS, CABLE, BOXES AND OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE ELECTRICAL CONNECTION.

E. "CONCEALED": HIDDEN FROM SIGHT AS OBSERVED BY A REGULAR USER OF THE FACILITY OR PREMISES.

E. "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

F. "INDICATED", "SHOWN" OR "NOTED": AS INDICATED, SHOWN, OR NOTED ON RESPECTIVE CONSTRUCTION DRAWINGS OR SPECIFICATIONS.

G. ALL OTHER DEFINITIONS AS PER THE ACCEPTED DEFINITIONS OF THE AMERICAN INSTITUTE OF ARCHITECTS (AIA).

1.12 SAFETY AND INDEMNITY:

A. SAFETY: THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. SEE ALSO THOSE REQUIREMENTS DESCRIBED BY THE GENERAL NOTES ON E0.3 AND SCOPE OF WORK ON E0.1.

B. NO ACT, SHOP DRAWING REVIEW OR CONSTRUCTION REVIEW BY THE OWNER, THE ENGINEERS OR THEIR CONSULTANTS IS INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURE, IN, ON, OR NEAR THE CONSTRUCTION SITE.

C. INDEMNITY: THE CONTRACTOR SHALL HOLD HARMLESS, INDEMNIFY AND DEFEND THE OWNER, THEIR CONSULTANTS AND EACH OF THEIR OFFICERS, EMPLOYEES AND AGENTS, FROM ANY AND ALL LIABILITY CLAIMS, LOSSES OR DAMAGE ARISING OR ALLEGED TO ARISE FROM THE PERFORMANCE OF THE WORK DESCRIBED HEREIN, BUT NOT INCLUDING THE SOLE NEGLIGENCE OF THE OWNER, AND THEIR CONSULTANTS, AND EACH OF THEIR OFFICERS, EMPLOYEES AND AGENTS.

1.13 SUBMITTALS:

ELECTRICAL CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS FOR MATERIALS AND EQUIPMENT, AND RESPECTIVE SPECIFICATION SHEETS (IN A SINGLE COMPLETE SUBMITTAL) FOR REVIEW BY ELECTRICAL ENGINEER OF RECORD, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

A. LIGHTING FIXTURES.

B. LIGHTING CONTROL SYSTEM AND DEVICES.

C. WIRING DEVICES.

D. WIRE, CONDUCTORS AND CABLES.

E. CONDUIT, RACEWAYS, PULL BOXES, BOXES, FITTINGS, HANGERS AND SUPPORTS.

F. TRANSFORMERS, PANELS AND DISCONNECTS.

G. OTHER MAIN EQUIPMENT AS PART OF THIS WORK.

1.14 PROJECT CLOSEOUT:

A. SEE REQUIREMENTS ON E0.3.

1.15 CLEAN-UP AND DEMOBILIZATION:

A. REMOVE AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS, TRASH AND DEBRIS DURING CONSTRUCTION AND TOWARDS COMPLETION OF THE PROJECT. LEAVE THE PREMISES AND SURROUNDING AREA IN A CLEAN AND ORDERLY CONDITION AS DIRECTED BY THE CONSTRUCTION MANAGEMENT TEAM. ALL MATERIALS AND EQUIPMENT SHALL BE DISPOSED OF PER GOVERNMENT REGULATIONS.

PART 2 – BASIC MATERIALS AND METHODS:

2.01 GENERAL:

A. MATERIALS AND EQUIPMENT SHALL BE NEW, CURRENT MODELS THAT ARE SUPPORTED BY MANUFACTURER'S, AND SHALL BEAR COMPLETE IDENTIFICATION AND LABELS. PANELS AND DISCONNECT SHALL BEAR SHORT CIRCUIT CURRENT STUDY LABELS IDENTIFYING APPROACH DISTANCES AND P.P.E. REQUIRED.

2.02 CONDUITS:

A. ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED WITH COMPRESSION STYLE FITTINGS. COUPLINGS, FITTINGS AND CONNECTORS SHALL BE INSULATED THROAT TYPE AND GALVANIZED. SETSCREW TYPE FITTINGS ARE NOT PERMITTED.

B. RIGID (RMC) OR INTERMEDIATE METAL CONDUIT (IMC) SHALL BE GALVANIZED WITH THREADED STYLE FITTINGS. COUPLINGS AND CONNECTORS SHALL BE INSULATED THROAT TYPE AND GALVANIZED.

C. FLEXIBLE CONDUIT SHALL BE STEEL METAL STRIP INTERLOCK CONSTRUCTION, ZINC COATED OR WITH EXTERNAL PLASTIC ARMOR, INCLUDING SUITABLE ACCESSORIES. AND SHALL BE WATER TIGHT IN WET OR EXTERIOR LOCATIONS.

D. ALL EXTERIOR CONDUITS SHALL BE GALVANIZED RIGID (GALV. RMC) OR GALVANIZED INTERMEDIATE METAL CONDUIT (GALV. IMC). LAST 6' MAY BE FLEXIBLE CONDUIT TO EASE DEVICE PLACEMENT.

E. ALL UNDERGROUND CONDUIT SHALL BE RIGID PVC SCHEDULE 80.

F. ALL INTERIOR BRANCH CIRCUIT CONDUIT SHALL BE ELECTRICAL METAL TUBING (EMT) 3/4" MIN.

G. ALL CONDUIT FITTINGS IN WET LOCATIONS, AND FOR EXTERIOR OR UNDERGROUND CONDUIT SHALL BE WATER TIGHT TYPE SPECIFIED FOR THE TYPE OF CONDUIT TO BE INTERCONNECTED AT THOSE LOCATIONS.

2.03 CONDUCTORS AND CABLE:

A. ALL CONDUCTORS AND CABLE SHALL BE COPPER. ALUMINUM CONDUCTORS ARE NOT PERMITTED.

B. CONDUCTORS: PROVIDE SOFT DRAWN, ANNEALED COPPER WIRE 98% CONDUCTIVITY OR BETTER, BARING THE UL LABEL, WITH 600V MIN. ELECTRICAL INSULATION RATING, #12AWG MINIMUM (USE #10AWG FOR BRANCH CIRCUIT RUNS OVER 100' OR AS INDICATED ON RESPECTIVE CONSTRUCTION DRAWINGS).

C. CONDUCTORS #1AWG AND SMALLER USED IN DRY LOCATIONS SHALL HAVE THHN TYPE INSULATION, U.O.N.

D. CONDUCTORS #1AWG AND SMALLER USED IN WET LOCATIONS SHALL HAVE THWN TYPE INSULATION, U.O.N.

E. INSULATED EQUIPMENT GROUNDING CONDUCTORS, EQUIPMENT OR SYSTEM BONDING JUMPERS, AND OTHER INSULATED GROUNDING CONDUCTORS SHALL HAVE THHN TYPE INSULATION FOR DRY LOCATIONS AND THWN INSULATION FOR WET LOCATIONS, U.O.N.

F. ALL BARE GROUNDING SYSTEM OR RING CONDUCTORS SHALL BE STRANDED COPPER #4AWG MIN. U.O.N.

G. ALL BARE GROUNDING ELECTRODE CONDUCTORS SHALL BE STRANDED COPPER #6AWG.

H. UNGROUNDED AND NEUTRAL CONDUCTORS #1/0AWG THROUGH #4/0AWG SHALL HAVE XHHW (55 MILS) INSULATION OR THICKER AND MORE DURABLE.

I. UNGROUNDED AND NEUTRAL CONDUCTORS #250MCM (KCMIL) AND LARGER SHALL HAVE XHHW (65 MILS) INSULATION OR THICKER AND MORE DURABLE.

J. ALL INSULATION SHALL HAVE A TEMPERATURE RATING OF 75 DEG. C MINIMUM.

K. #8AWG AND LARGER SHALL BE STRANDED COPPER CONDUCTORS. SOLID CONDUCTORS MAY BE USED FOR #10AWG AND SMALLER WHERE VIBRATION IS PRESENT OR SPECIAL FLEXIBILITY IS REQUIRED; HOWEVER, ELECTRICAL ENGINEER OF RECORD SHALL APPROVE USE OF ANY SOLID CONDUCTORS PRIOR TO INSTALLATION.

L. ALL SPLICES SHALL HAVE IN-LINE COLD SHRINK CONNECTION INSULATORS.

M. WIRING CONNECTORS:

1. #8AWG AND SMALLER INTERIOR WIRING SHALL BE CONNECTED WITH CONNECTORS HAVING INSULATED PRESSURE TYPE LIVE SPRING, WITH INSULATION RATED FOR 600V, 105 DEG. C MIN., USE INSULATION RATING OF 1000V, 105 DEG. C MIN. FOR LIGHTING BRANCH CIRCUITS.
2. #6AWG AND LARGER SHALL BE CONNECTED WITH COMPRESSION TYPE CONNECTORS WITH #33+ OR SUPERIOR ELECTRICAL TAPE TO COVER PER INDUSTRY STANDARDS.

N. GROUNDING SHALL COMPLY WITH CEC REQUIREMENTS.

2.04 PANELS:

A. ENCLOSURES SHALL BE SINGLE DOOR, DEAD FRONT OF CODE GAUGE STEEL WITH TRIM AND DOOR OF 12 GAUGE STRETCHER-LEVELED STEEL. ENCLOSURES SHALL BE 20" (MIN.) WIDE BY 5-3/4" DEEP (MAX.), U.O.N. ALL PANELS FOR THIS PROJECT SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

1. FINISH SHALL CONSIST OF ONE COAT RUST RESISTANT PRIMER, ONE COAT GRAY ENAMEL INSIDE AND OUT.
2. ENCLOSURES SHALL BE LOCKABLE WITH FLUSH TYPE COMBINATION LATCH, AND TWO KEYS SHALL BE FURNISHED. NO PLASTIC PARTS IN THE LATCH AND LOCK MECHANISM ARE PERMITTED.
3. PANEL RATING AND BUS CAPACITIES PER RESPECTIVE PANEL SCHEDULES. BUSSES SHALL BE MADE OF 98% CONDUCTIVITY OR BETTER COPPER BARS SIZED FOR CURRENT DENSITY OF 1,000 AMP/SQ. INCH OF CROSS SECTION (OR EQUIVALENT CURRENT DENSITY RATING TIN PLATED ALUMINUM).
4. CIRCUIT BREAKERS SHALL BE BOLT ON ONLY.

2.05 WIRING DEVICES:

A. ALL WIRING DEVICES AND COVER PLATES SHALL BE COORDINATED TO MATCH FINISHES PROPOSED BY ARCHITECT PRIOR TO BEING FURNISHED AND INSTALLED.

B. ASIDE FROM THE ENLIGHTED LIGHTING CONTROL DEVICES, SWITCHES, RECEPTACLES, PLATES, ETC. SHALL BE PURCHASED FROM THE SAME MANUFACTURER.

2.06 BOXES:

A. OUTLET BOXES SHALL BE 4 INCH SQUARE BY 1-1/2 INCH DEEP (OR LARGER) GALVANIZED SHEET STEEL KNOCK-OUT TYPE WITH PLASTER RING AND COVER FOR GENERAL INTERIOR USE, AND CAST METAL, FERRIS STANDARD OR SHALLOW, OR FERRIS BOX DEEP WITH MATCHING SCREW COVERS FOR EXTERIOR LOCATIONS OR LOCATIONS EXPOSED TO WATER, PROVIDE GASKETED COVERS IN EXTERIOR, WET OR DAMP LOCATIONS.

B. COVERS FOR WEATHER PROOF EXTERIOR SERVICE OR CONVENIENCE RECEPTACLES NEAR HVAC EQUIPMENT SHALL BE IN-USE WEATHER PROOF.

C. NEW BRANCH CIRCUIT JUNCTION BOXES SHALL USE THE SAME TYPE OF BOX AS THOSE USED FOR NEW RECEPTACLES, COORDINATE TYPE WITH OTHER DISCIPLINES.

D. ALL EXTERIOR PULL BOXES SHALL BE OF TRAFFIC RATED CONSTRUCTION AND SHALL HAVE A TRAFFIC RATED COVER. COVER SHALL HAVE PRE-CAST OR ENGRAVED SIGN INDICATING TYPE OF CONDUCTORS OR CABLING INSIDE, E.G. "ELECTRIC" OR "COMMS".

2.07 CONDUIT HANGERS (SEE SUPPORT AND ANCHORAGE REQUIREMENTS ON E0.3):

A. INDIVIDUAL CONDUIT RUNS 1 INCH AND SMALLER SHALL BE ATTACHED TO STRUCTURAL MEMBERS DIRECTLY USING CONDUIT CLAMPS WITH FASTENERS ON BOTH SIDES OF THE CLAMP. USE ROD HANGERS WHEN CONDUIT RUN NEEDS TO BE EXTENDED LOWER THAN THE DIRECT ATTACHMENT TO STRUCTURAL MEMBERS ALLOWS.

B. INDIVIDUAL CONDUIT RUNS 1-1/4 INCH AND LARGER, OR MULTIPLE PARALLEL RUNS OF CONDUIT, SHALL BE ATTACHED TO STRUCTURAL MEMBERS USING A GALVANIZED METAL CHANNEL WITH MULTIPLE FASTENERS AS REQUIRED TO SUPPORT THE ASSEMBLY AND AN APPROPRIATELY SIZED CONDUIT CLAMP SPECIFIED FOR THE SIZE CONDUIT BY MANUFACTURER OF THE METAL CHANNEL.

C. CONTRACTOR SHALL USE METAL CHANNEL TRAPEZE TYPE CONDUIT SUPPORT FOR CONDUIT RUNS THAT REQUIRE CONDUIT RUNS 1-1/4 INCH AND LARGER, OR MULTIPLE PARALLEL RUNS OF CONDUIT, WHERE CONDUIT RUNS NEED TO BE EXTENDED LOWER THAN THE DIRECT ATTACHMENT TO STRUCTURAL MEMBERS ALLOWS.

D. CONDUIT SUPPORT SYSTEMS SHALL BE DESIGNED FOR A MAXIMUM DEFLECTION NOT GREATER THAN 1/8 INCH.

E. DIAMETER OF HANGER ROD SHALL NOT BE LESS THAN 3/8 INCH.

2.08 LIGHTING AND RECEPTACLE COMPLIANCE:

A. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONING LIGHTING CONTROL SYSTEM THAT COMPLIES WITH THE REQUIREMENTS OF THE CALIFORNIA ENERGY COMMISSION TITLE 24 REQUIREMENTS.

B. CONTRACTOR SHALL PROVIDE ADDITIONAL LIGHTING CONTROL DEVICES AND COMMISSIONING TO ACCOMMODATE OCCUPANCY CONTROL OF VARIOUS RECEPTACLES THROUGHOUT.

2.09 LIGHTING

A. INSTALL EMERGENCY EGRESS LIGHTING FIXTURES AS INDICATED ON RESPECTIVE PLANS ALONG THE EGRESS PATH IDENTIFIED BY ARCHITECT. PROVIDE EMERGENCY EGRESS LIGHTING FIXTURE CONTROL AND COMPLY WITH REQUIREMENTS OF UL924. PROVIDE A UL924 COMPLIANT CENTRAL LIGHTING INVERTER WITH 90-MINUTE BATTERY CAPACITY.

B. CONTRACTOR SHALL COORDINATE WITH CONSTRUCTION MANAGEMENT TEAM FOR ACCESS, QUANTITY, TRANSPORTATION AND STORAGE OF THE EXIT SIGNS, LIGHTING FIXTURES AND LIGHTING CONTROL DEVICES TO BE RE-USED.

PART 3 – EXECUTION:

3.01 GENERAL:

A. ELECTRICAL CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC AND SHALL BE USED AS CLOSELY AS POSSIBLE AS ACTUAL CONSTRUCTION OF OTHER TRADES WILL PERMIT. VERIFY EXACT ROUTING OF CONDUITS AND RACEWAYS IN FIELD. EXACT LOCATIONS, DISTANCES, DIMENSIONS SHALL BE TAKEN FROM FIELD MEASUREMENTS. REPORT ALL MAJOR DEVIATIONS AND DISCREPANCIES THAT RESULT IN A 15% INCREASE IN ROUTE LENGTH TO ELECTRICAL ENGINEER OF RECORD.

B. CONTRACTOR SHALL VERIFY ALL SCALED DIMENSIONS AND REPORT CONFLICTS TO ELECTRICAL ENGINEER OF RECORD.

C. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER DISCIPLINES, AND SHALL PLAN ADDITIONAL TIME TO ACCOUNT FOR ANY DEPENDENCY REQUIRED OF THEM OR REQUIRED BY THEM PRIOR TO SUBMITTING BID.

D. ALL HOME RUNS TO RESPECTIVE PANELS ARE INDICATED AS STARTING FROM THE OUTLET CLOSEST TO THE PANEL, THE BRANCH CIRCUIT CONTINUES TOWARDS THE NEXT CLOSEST OUTLET WITH THE SAME BRANCH CIRCUIT DESIGNATION, AND SO ON, CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED.

E. CONTRACTOR SHALL NOT CUT, NOTCH OR BORE HOLES THROUGH ANY STRUCTURAL MEMBERS WITHOUT PERMISSION OF STRUCTURAL ENGINEER OF RECORD.

3.02 CONDUIT:

A. CONTRACTOR SHALL USE GALVANIZED RIGID METAL CONDUIT (RMC) FOR ALL WIRING EXCEPT IN OR UNDER CONCRETE, IN EARTH, FILL, MASONRY WALLS, CONCRETE WALLS WHICH SHALL BE RIGID SCHEDULE 80 PVC.

B. CONTRACTOR SHALL USE ELECTRICAL METAL TUBING (EMT) OR METAL CLAD (MC) CABLES IN TYPICAL WALLS AND CEILING AREAS.

C. USE FLEXIBLE CONDUIT TO EASE FINAL CONNECTION, BUT IT SHALL NOT EXCEED 6' AS MEASURED FROM FINAL CONNECTION ALONG ROUTE.

D. CONCEAL ALL CONDUIT IN WALLS AND ABOVE CEILING SPACES WHERE POSSIBLE. PROVIDE SLEEVES AND CHASES WHERE RACEWAYS PASS THROUGH WALLS. KEEP RACEWAYS WITHIN FURRING LINES ESTABLISHED ON THE DRAWINGS UNLESS SHOWN EXPOSED. AVOID OBSTRUCTION OF OPENINGS, PASSAGEWAYS AND REQUIRED CLEARANCES. ROUTE CONDUITS TO AVOID CONFLICTS WITH DUCTS, PIPING, LIGHTING FIXTURES, ETC. LOCATE ALL ADDITIONAL OPENINGS AND SPACES AND COORDINATE WITH OTHER DISCIPLINES.

E. CONTRACTOR SHALL ALLOW FOR THE REQUIRED TIME TO PLAN AND NEATLY LAYOUT ROUTES TO AVOID UNNECESSARY CUTTING AND FITTING.

F. CONTRACTOR SHALL INSTALL CONDUIT ROUTES PARALLEL TO EACH OTHER AND OTHER EXISTING CONDUIT ROUTES THAT ARE TO REMAIN AS PART OF THIS PROJECT. PARALLEL CONDUITS AND RACEWAYS SHALL RUN STRAIGHT AND TRUE WITH OFFSETS THAT ARE UNIFORM AND SYMMETRICAL.

G. CONTRACTOR SHALL INSTALL CONDUIT ROUTES PERPENDICULAR TO STRUCTURAL MEMBERS IN WALLS AND ABOVE CEILINGS TO SPREAD THE WEIGHT OF THE CONDUIT THROUGH ANCHORS AND SUPPORTS AMONGST MULTIPLE STRUCTURAL MEMBERS ALONG ROUTE. DO NOT CONCENTRATE WEIGHT ON A SINGLE STRUCTURAL MEMBER.

H. SEAL AND CAP ALL SPARE CONDUITS AT BOTH ENDS.

I. PROVIDE #4 PULL CORD IN ALL CONDUITS.

3.03 CONDUCTORS AND CABLE:

A. PROVIDE NO CONDUCTORS SMALLER THAN #12AWG. PROVIDE STRANDED CONDUCTORS LARGER THAN #10AWG.

B. ALL CONDUCTORS, INCLUDING, BUT NOT LIMITED TO UNGROUNDED CONDUCTORS, EQUIPMENT GROUNDING CONDUCTORS, BONDING JUMPERS, NEUTRALS, GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AND INSTALLED PER CEC.

3.04 OUTLET AND JUNCTION BOXES:

A. INSTALL BOXES SECURELY TO THE STRUCTURE. LOCATE BOXES SUCH THAT THE EXTENSION RING IS FLUSH WITH THE SURFACE.

B. INSTALL JUNCTION AND PULL BOXES IN ACCESSIBLE LOCATION AS REQUIRED FOR SPLICING, CONNECTIONS AND PULLING OF CONDUCTORS.

C. BOXES SHALL BE MOUNTED ON ADJUSTABLE BAR HANGERS ABOVE SUSPENDED CEILING AND ADJACENT TO STRUCTURAL MEMBERS IN WALLS.

3.05 DEVICES:

A. INSTALL SWITCH, RECEPTACLE AND OTHER FLUSH DEVICE PLATES WITH THE VERTICAL CENTER LINE PLUMB WITH ALL EDGES OF THE PLATE IN CONTACT WITH THE FINISHED SURFACE. COORDINATE COLOR WITH ARCHITECT BASED ON SURROUNDING FINISHES AT RESPECTIVE MOUNTING LOCATION.

B. BOXES FOR SWITCHES SHALL BE LOCATED WHERE INDICATED ON THE RESPECTIVE CONSTRUCTION DRAWINGS AT A MOUNTING HEIGHT OF 48" U.O.N.

3.06 PENETRATIONS

A. PROVIDE FIRE STOP SYSTEMS AT ALL PENETRATIONS THROUGH EXTERIOR AND FIRE RATED WALLS AND CEILINGS, FINAL ASSEMBLY SHALL MEET OR EXCEED THE FIRE RATING OF THE WALL BEING PENETRATED.

B. ALL PENETRATIONS TO THE EXTERIOR SHALL BE SLEEVED AND CAULKED WITH WATER PROOFING MATERIALS TO ENSURE A WATER TIGHT SEAL.

C. PROVIDE SEAL FITTINGS FOR CONDUIT PENETRATIONS ENTERING PLENUMS.

3.07 LIGHTING FIXTURES

A. INSTALL LIGHTING FIXTURES OF THE TYPES, SIZES, ETC. AS SHOWN IN THE LIGHTING FIXTURE SCHEDULE.

1. CONSTRUCTION DRAWINGS INDICATE FIXTURE TYPES THAT SHALL BE INSTALLED AT LOCATION BY MEANS OF FIXTURE TAG, WHERE NO TAG IS SHOWN, FIXTURE TYPE INDICATED FOR A SIMILAR AREA SHALL BE INSTALLED. CONSULT WITH ELECTRICAL ENGINEER OF RECORD IF ANY QUESTIONS OR CONFLICTS ARISE.
2. LOCATION OF FIXTURES SHOWN ON RESPECTIVE CONSTRUCTION DRAWINGS IS GENERAL, CONTRACTOR SHALL VERIFY LOCATIONS OF LIGHTING FIXTURES TO BE INSTALLED WITH ARCHITECTURAL REFLECTED CEILING PLANS AND OTHER REFERENCE DATA TO DETERMINE EXACT AND FINAL LOCATION PRIOR TO INSTALLATION, INCLUDING HEADROOM CLEARANCES, AND INTERFERENCE WITH CEILING COMPONENTS, DUCTS OR OPENINGS.

B. CONTRACTOR SHALL COORDINATE BETWEEN ELECTRICAL AND CEILING TRADES TO VERIFY THAT ACCEPTED LIGHTING FIXTURES ARE FURNISHED IN THE PROPER SIZES, AND INSTALLED WITH THE PROPER HANGERS, CLIPS, TRIM, FRAMES, FLANGES, ETC. TO BE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED.

C. CONTRACTOR SHALL ALIGN, MOUNT, AND LEVEL LIGHTING FIXTURES UNIFORMLY. FINAL DECISION FOR ACCEPTANCE OF INSTALLATION IS RESERVED FOR THE ARCHITECT.

D. CONTRACTOR SHALL NOT INTERFERE WITH AND PROVIDE CLEARANCES FOR EQUIPMENT BEING INSTALLED BY OTHER TRADES, COORDINATE WORK WITH OTHER DISCIPLINES PRIOR TO INSTALLATION. REPORT ALL CONFLICTS TO ELECTRICAL ENGINEER OF RECORD, THE REPORT SHALL INDICATE A NEW PLAN TO ADJUST INDICATED LOCATIONS FOR LIGHTING FIXTURES BY THE MINIMUM DISTANCES NECESSARY AS ACCEPTED BY ARCHITECT.

E. PROVIDE 12 GAUGE WIRE HANGERS AT EACH CORNER OF MOUNTING BOX FOR LIGHTING FIXTURES RECESSED IN SUSPENDED OR HARD LID CEILING EXTENDED TO STRUCTURAL MEMBERS ABOVE.

F. PROVIDE ALL NECESSARY SEISMIC RESTRAINTS FOR PENDANT OR SUSPENDED MOUNTED LIGHTING FIXTURES TO RESTRAIN LIGHTING FIXTURE FROM SWINGING INTO WALLS, ADJACENT LIGHTING FIXTURES OR OTHER DEVICES OR EQUIPMENT IN A 45 DEG. SWAY PATH IN ANY DIRECTION.

G. LIGHTING FIXTURE SUPPORTS SHALL MAINTAIN FIXTURE POSITION AFTER CLEANING AND MAINTENANCE. SUPPORTS SHALL BE INSTALLED SUCH TO NOT DEFLECT THE CEILING OR PARTITION THE LIGHTING FIXTURE IS MOUNTED IN.

3.08 GROUNDING:

A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS SIZED PER CEC.

B. PROVIDE A GROUNDING BUS, OR FURNISH EQUIPMENT WITH GROUNDING BUS ALREADY INSTALLED, FOR ALL PANELS, TRANSFORMERS AND DISCONNECT SWITCHES. PROVIDE CONNECTION OF EQUIPMENT GROUNDING CONDUCTORS, BONDING JUMPERS, GROUNDING ELECTRODE CONDUCTORS AS INDICATED ON CONSTRUCTION DRAWINGS.

REV.	REVISION/ISSUE DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
ELECTRICAL SHORTHAND SPECIFICATIONS

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022-001
SHEET NO. E0.2 REV. 0

ANSI D (22.00 X 34.00 INCHES)

GENERAL NOTES:

1. EVERYONE'S SAFETY IS ALWAYS THE TOP PRIORITY! BE RESPONSIBLE FOR WORKING CONDITIONS ON THE JOB SITE; INCLUDING, BUT NOT LIMITED TO, THE SAFETY OF ALL PERSONS AND PROPERTY DURING PROJECT PLANNING AND CONSTRUCTION, AND WORK THAT IS PERFORMED OUTSIDE OF NORMAL WORKING HOURS.

2. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER UPON DISCOVERY OF CONFLICTS, ADVERSE SITE CONDITIONS OR DISCREPANCIES. ALL QUESTIONS REGARDING THIS PROJECT AND THE CONSTRUCTION DOCUMENTS, INCLUDING THOSE ADDRESSED TO THE ENGINEER OF RECORD FOR VARIOUS CONDITIONS, SOME OF WHICH ARE LISTED FURTHER IN THE GENERAL NOTES, SHALL BE COORDINATED THROUGH THE CONSTRUCTION MANAGER BY FORMAL CONSTRUCTION ADMINISTRATION PROCESS.

3. THE LATEST EDITION OF THE OWNER'S AND OR ARCHITECT'S GENERAL, SPECIAL AND SUPPLEMENTARY CONDITIONS, ESPECIALLY SPECIFICATION SECTIONS OF CONSTRUCTION SPECIFICATION INSTITUTE'S (CSI) DIVISIONS 25, 26, 27, 28 AND 48, AS WELL AS SEPARATE SPECIFICATIONS OR PROJECT MANUALS REQUIRED FOR THIS PROJECT, AND THESE CONSTRUCTION DRAWINGS, TOGETHER AS A COMPLETE SET ARE A PART OF THE CONSTRUCTION DOCUMENTS; AND, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN, INTERPRET AND COMPLETELY UNDERSTAND THE LATEST EDITIONS OF THESE CONSTRUCTION DOCUMENTS PRIOR TO ANY PROPOSAL, BID AND EXECUTION OF WORK. THIS INCLUDES CONSTRUCTION DOCUMENTS APPLICABLE TO OTHER DIVISIONS WHICH MAY INTERFERE OR OTHERWISE AFFECT THE WORK OF THE CONTRACTOR AND THEIR DISCIPLINE AND OR THEIR SUB-CONTRACTORS AND THEIR RESPECTIVE DISCIPLINES; THIS IS ESPECIALLY IMPORTANT TO COORDINATE FOR THE CONTRACTOR AND THEIR SUB-CONTRACTORS.

4. IF ANY CONSTRUCTION DOCUMENTS ARE UNCLEAR, THEN THE CONTRACTOR SHALL NOT PROCEED WITH ANY CONSTRUCTION AFFECTED BY THE PORTION OF THE CONSTRUCTION DRAWINGS IN QUESTION. INCONSISTENCIES AND OR DISCREPANCIES IN THE CONSTRUCTION DRAWINGS OR SPECIFICATIONS SHALL BE CLARIFIED WITH THE ENGINEER OF RECORD THROUGH FORMAL CONSTRUCTION ADMINISTRATION PROCESS IMMEDIATELY UPON DISCOVERY AND PRIOR TO INSTALLATION.

5. AFTER ACHIEVING A COMPLETE UNDERSTANDING OF THE CONSTRUCTION DOCUMENTS AND THE SCOPE OF THIS PROJECT, THE CONTRACTOR SHALL VISIT THE JOBSITE PRIOR TO SUBMITTING A FINAL PROPOSAL OR BID TO BECOME FAMILIAR WITH EXISTING CONDITIONS, AND INFORM THE ENGINEER OF RECORD OF ANY ADVERSE CONDITIONS, CONFLICTS OR INCONSISTENCIES DISCOVERED WITH THE PLANNED WORK AS DESCRIBED BY THE CONSTRUCTION DOCUMENTS THROUGH FORMAL WRITTEN CONSTRUCTION ADMINISTRATION PROCESS.

6. THESE GENERAL NOTES AND THE MINIMAL REQUIREMENTS THEY DESCRIBE FOR ELECTRICAL WORK SHALL ENCOMPASS AND SHALL ALSO BE REQUIREMENTS TO SUB-DISCIPLINES OF ELECTRICAL WORK SUCH AS FIRE ALARM, SECURITY, COMMUNICATION, AND OTHER ELECTRICAL SPECIALTY TRADES. HOWEVER, IT SHALL BE NOTED THAT, THERE MAY BE ADDITIONAL SPECIFIC REQUIREMENTS IDENTIFIED BY THESE CONSTRUCTION DOCUMENTS FOR THAT SPECIFIC SUB-DISCIPLINE AND ARE LISTED UNDER THE RESPECTIVE CONSTRUCTION DOCUMENT SECTIONS RELEVANT TO THAT SUB-DISCIPLINE OR TRADE.

7. THESE GENERAL NOTES ARE INTENDED TO ASSIST THE CONTRACTOR DURING CONSTRUCTION. HOWEVER, THEY DO NOT COVER ALL POSSIBLE SCENARIOS AND THE DOCUMENTS USED TO MAKE UP THE OVERALL CONSTRUCTION DOCUMENTS COME FROM MULTIPLE SOURCES. IF ANY CONFLICTS OR CONTRADICTIONS EXIST BETWEEN SPECIFICATIONS, PROJECT MANUALS, CONSTRUCTION DRAWINGS OR ANY OTHER CONSTRUCTION DOCUMENTS, THEN THE STRICTER REQUIREMENT SHALL GOVERN AS DETERMINED BY THE ENGINEER OF RECORD FOR THE BENEFIT OF THE CLIENT UNDER OVERSIGHT BY THE AHJ.

8. THE SCOPE OF WORK SHALL INCLUDE LABOR, MATERIALS, EQUIPMENT, TOOLS AND OTHER SERVICES REQUIRED FOR ALL NECESSARY DEMOLITION AND COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS AS INDICATED AND OR SPECIFIED BY THE CONSTRUCTION DOCUMENTS.

9. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR DAMAGES INCURRED TO WALLS, FLOORS, CARPET, PAVEMENT, SIDEWALK, FENCES, CEILINGS AND OR OTHER SURFACES DURING CONSTRUCTION; AND THE CONTRACTOR SHALL PATCH, REPAIR, AND PAINT DAMAGED SURFACES TO RETURN THEM TO THEIR ORIGINAL CONDITION.

10. ELECTRICAL CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL JUNCTION BOXES, PULL BOXES, OFFSETS, BENDS, ELBOWS OR OTHER SPECIFIC ELEMENTS WHICH MAY BE REQUIRED FOR PROPER INSTALLATION. SIZE, LOCATION OF EQUIPMENT AND WIRING ARE SHOWN TO SCALE WHERE POSSIBLE, BUT IN SOME CASES, SUCH AS LARGE SCALE SITE PLANS, ETC. NOT TO SCALE TO ENSURE OVERALL CLARITY.

11. CONTRACTOR SHALL MAINTAIN HEADROOM, AND KEEP OPENINGS, ACCESS AREAS, ACCESS HATCHES OR DOORS, PATHS OF EGRESS, AND PASSAGEWAYS CLEAR DURING ALL PERIODS OF CONSTRUCTION AND ENSURE THAT THE INSTALLED EQUIPMENT AND SYSTEMS DO NOT CREATE ANY OBSTRUCTION.

12. ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED. EQUIPMENT SHALL BE LISTED, LABELED, AND INSTALLED PER A RECOGNIZED ELECTRICAL TESTING LABORATORY ADHERING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND THE MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS OF ANSI, NEMA & NBFU. CONTRACTOR SHALL REPLACE NONCOMPLIANT, DEFECTIVE AND OR DAMAGED MATERIALS AS DETERMINED BY THE ENGINEER OF RECORD FOR THE BENEFIT OF THE CLIENT UNDER OVERSIGHT BY THE AHJ.

13. DEFINITIONS:
    - A. "FURNISH": SUPPLY AND DELIVER TO PROJECT SITE, UNLOAD, UNPACK AND ASSEMBLE, AND PUT IN PLACE.
    - B. "INSTALL": OPERATIONS AT PROJECT SITE INCLUDING, TEMPORARILY STORING, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS.
    - C. "PROVIDE": FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
    - D. "SHALL": USED TO QUALIFY AN ACTION WHICH IS MANDATORY.

14. CONTRACTOR SHALL PROVIDE SEISMIC SUPPORT DEVICES, RESTRAINTS AND APPURTENANCES INCLUDING HANGERS, ANCHORS, SLEEVES, INSERTS, SEALS, FOR ELECTRICAL EQUIPMENT AND SYSTEMS REQUIRING SUCH SEISMIC SUPPORT IN ACCORDANCE WITH STATE, COUNTY, CITY, AND LOCAL CODES. SEISMIC RESTRAINTS AND ATTACHMENTS FOR ELECTRICAL EQUIPMENT AND SYSTEM COMPONENTS SHALL BE PROVIDED IN ACCORDANCE WITH CBC AND SMACNA REQUIREMENTS, SEE RESPECTIVE STRUCTURAL CONSTRUCTION DRAWINGS FOR REQUIREMENTS. SEE EQUIPMENT ANCHORAGE AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTES.

15. CONTRACTOR SHALL PROVIDE MEANS TO KEEP CONSTRUCTION MATERIALS SUCH AS CONDUITS, CONDUIT OR PIPE OPENINGS, SURFACE FINISHES, CABLES, ASSEMBLIES, FIXTURES, EQUIPMENT, CONDUCTORS, ETC. PROTECTED DURING CONSTRUCTION TO PREVENT ENTRY OF FOREIGN MATTER AND EXPOSURE TO THE ELEMENTS. CONTRACTOR SHALL RESTORE OR REPLACE ANY CONSTRUCTION MATERIALS THAT ARE DAMAGED BY NEGLECTING THESE MEANS.

16. CONTRACTOR SHALL DELIVER CONSTRUCTION MATERIALS TO THE CONSTRUCTION SITE AS REQUIRED; AND, THE CONTRACTOR SHALL ENSURE THE DELIVERED CONSTRUCTION MATERIAL IS PROPERLY PACKED, CRATED AND STORED ON SITE. COORDINATE STORAGE LOCATION WITH OWNER THROUGH CONSTRUCTION MANAGER.

17. UNDERTAKE THE WORK IN ITS ENTIRETY IN ACCORDANCE WITH ITS DESIGN AND PURPOSE. WORK SHALL BE CARRIED OUT IN A PROFESSIONAL MANNER WITH MAXIMUM EFFICIENCY, EXCELLENT WORKMANSHIP AND SHALL MEET THE REQUIREMENTS OF, BUT NOT LIMITED TO, THE LATEST EDITION FOR THE FOLLOWING:
    - A. CALIFORNIA CODE OF REGULATIONS:
        - TITLE 8 – INDUSTRIAL RELATIONS (ELEVATOR SAFETY ORDERS).
        - TITLE 19 – PUBLIC SAFETY.
        - TITLE 22 – SOCIAL SECURITY.
        - TITLE 24 – CALIFORNIA BUILDING STANDARDS CODE, (PARTS 1, 2 (CALIFORNIA BUILDING CODE), 3 (CALIFORNIA ELECTRICAL CODE), 4, 5, 6 (CALIFORNIA ENERGY CODE), 7, 8, 9, 10 & 11).
    - B. CALIFORNIA STATE AND LOCAL FIRE MARSHAL.
    - C. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
    - D. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
    - E. INSTITUTE OF CABLE ENGINEERS ASSOCIATION (ICEA).
    - F. NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION STANDARDS FOR CONSTRUCTION (NECA).
    - G. UNDERWRITERS LABORATORIES, INC, (UL).
    - H. INSTRUMENT SOCIETY OF AMERICA (ISA).
    - I. NFPA 70E, 70, 72, 101, 110.
    - J. STATE INDUSTRIAL ACCIDENT COMMISSION.
    - K. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
    - L. NATIONAL ELECTRICAL TESTING ASSOCIATION (NETA).
    - M. ALL AMENDMENTS TO THE ITEMS ABOVE AS ADOPTED BY AUTHORITIES HAVING JURISDICTION.

18. CONTRACTOR SHALL SECURE AND PAY FOR PERMITS AND FEES NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING BUT NOT LIMITED TO, CHARGES BY STATE, COUNTY, CITY, AND LOCAL GOVERNMENT AND AGENCIES. OBTAIN REQUIRED CERTIFICATES OF INSPECTION FOR THE ELECTRICAL WORK AND DELIVER THE COMPLETED DOCUMENTS TO THE OWNER BEFORE REQUESTING ACCEPTANCE AND FINAL PAYMENT FOR WORK.

19. ALL DEMOLISHED MATERIALS SHALL BE DISPOSED OF PER STATE AND FEDERAL REGULATIONS BY CONTRACTOR AND OR THEIR SUB-CONTRACTORS. THE RESPECTIVE CONTRACTORS ARE RESPONSIBLE FOR ALL DISPOSAL FEES APPLICABLE TO THEIR TRADE.

20. CONTRACTOR SHALL CAREFULLY LAY OUT WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. STRUCTURAL MEMBERS SHALL NOT BE CUT OR DRILLED WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD AND OWNER. HOWEVER, WHERE SUCH WORK IS NECESSARY PROVIDE CUTTING, CORING AND PATCHING OF THE CONSTRUCTION WORK WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE ELECTRICAL WORK, PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP AND FINISH, AND SHALL ACCURATELY MATCH SURROUNDING WORK. AFTER COMPLETION OF WORK, CLEAN UP RESULTANT DEBRIS AND REMOVE FROM SITE.

21. EQUIPMENT, ENCLOSURES, J-BOXES, GUTTERS, ETC., INSTALLED OUTDOORS OR SUBJECT TO WEATHER SHALL BE WEATHER PROOF AND UL LISTED FOR SUCH USE. RECEPTACLES INSTALLED OUTDOORS SHALL BE GFCI TYPE WITH "IN USE" TYPE WEATHERPROOF ENCLOSURES. GFCI TYPE RECEPTACLES LOCATED ON ROOF SHALL HAVE "IN USE" TYPE WEATHER PROOF ENCLOSURES, AND MUST BE LOCATED WITHIN 25' OF ROOF MOUNTED EQUIPMENT.

22. CONTRACTOR SHALL INSTALL EXPOSED CONDUITS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW SURFACE CONTOURS AS MUCH AS POSSIBLE.

23. CONTRACTOR SHALL PROVIDE ELECTRICAL FINAL CONNECTIONS TO ELECTRICAL EQUIPMENT AND OUTLETS FOR A COMPLETE AND OPERABLE SYSTEM UNLESS OTHERWISE SPECIFICALLY NOTED ON THE RESPECTIVE CONSTRUCTION DRAWINGS.

24. PENETRATIONS OF FLOORS, ROOF, WALLS, AND WALL MEMBRANES REQUIRED TO HAVE A FIRE RESISTANCE RATING SHALL BE PROTECTED WITH THROUGH PENETRATION FIRE STOPS SUITABLE FOR THE METHOD OF PENETRATION. THROUGH PENETRATION FIRE STOPS SHALL BE TESTED IN ACCORDANCE WITH UL AND CBC REQUIREMENTS.

25. CONTRACTOR SHALL PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES FOR THE FOLLOWING EQUIPMENT INCLUDING BUT NOT LIMITED TO: METERS, PANELBOARDS, SWITCHBOARDS INCLUDING EACH INDIVIDUAL DEVICE OR PIECE OF EQUIPMENT WITHIN THE SWITCHBOARD, MOTOR CONTROL CENTERS (MCC) INCLUDING EACH DEVICE WITHIN THE MCC, ENCLOSED SWITCHES, STARTERS, CONTACTORS, CIRCUIT BREAKERS AND TRANSFORMERS.

26. EQUIPMENT SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH STATE, COUNTY, CITY, AND LOCAL CODES, APPLICABLE CODES AND JURISDICTIONS. REFER TO SPECIFICATIONS FOR DETAILS. ALL FEEDERS AND BRANCH CIRCUIT CONDUITS SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

27. EQUIPMENT SHALL BE FULLY RATED FOR THE MAXIMUM AVAILABLE SHORT CIRCUIT CURRENT, REFER TO FEEDER LOAD SUMMARY AND CALCULATIONS TABLES FOR VOLTAGE DROP AND AVAILABLE FAULT CURRENT VALUES. FEEDER LENGTHS SHOWN ARE ESTIMATES FOR CALCULATION PURPOSES ONLY. CONTRACTOR SHALL DETERMINE ACTUAL LENGTHS BASED ON ROUTING AND FIELD CONDITIONS.

28. CONTRACTOR AND THEIR SUB-CONTRACTORS SHALL BE LICENSED IN THE STATE OF CALIFORNIA AND WORKERS SHALL BE CERTIFIED IN ACCORDANCE WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF APPRENTICESHIP STANDARDS AND CALIFORNIA LABOR CODE SECTION 3099.

29. CONTRACTOR SHALL PROVIDE ADDITIONAL HARDWARE FOR CONNECTION TO DEVICES WHICH LUGS THAT DO NOT ACCEPT OVERSIZED CONDUCTORS, WHICH MAY BE REQUIRED DUE TO VOLTAGE DROP CALCULATIONS OR DUE TO OTHER REASONS. CONTRACTOR SHALL SUBMIT SPECIFICATIONS OR PROPOSAL FOR THIS ADDITIONAL HARDWARE TO ENGINEER OF RECORD FOR REVIEW AND APPROVAL.

30. WHERE THE CONDUCTOR SIZE IS NOT SPECIFIED, CONTRACTOR SHALL PROVIDE BRANCH CIRCUIT CONDUCTORS SIZED SO THAT VOLTAGE DROP DOES NOT EXCEED 3% TO THE LAST DEVICE BASED ON OVERALL LENGTH OF CONDUCTORS.

31. WHERE NOT SPECIFIED, BRANCH CIRCUITS WITH MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT SHALL HAVE THEIR AMPACITY DERATED PER ELECTRICAL CODE SECTION 315(B)(2), AND BASED ON THIS, THE CONTRACTOR SHALL PROVIDE APPROPRIATELY SIZED CONDUCTORS AND CONDUITS.

32. POWER RECEPTACLES SHALL BE 20A RATED, HEAVY DUTY, UNLESS OTHERWISE NOTED.

33. ELECTRICAL BOXES FOR POWER RECEPTACLES OR DATA OUTLETS SHALL NOT BE INSTALLED IN A BACK TO BACK CONFIGURATION, BUT SHALL BE INSTALLED SEPARATED HORIZONTALLY BY A MINIMUM OF 18" IN NOT FIRE RATED WALLS, AND A MINIMUM OF 24" IN FIRE RATED WALLS. WHERE THESE SEPARATIONS ARE NOT POSSIBLE TO MAINTAIN, THE CONTRACTOR SHALL PROVIDE SOUND DEADENING, FIRE RATED PADS AROUND THE BOXES, AND SEAL ALL GAPS WITH APPROPRIATE FIRE RATED SEALANT.

34. 125 VOLT, 20 AMPERE RATED, SINGLE PHASE DUPLEX RECEPTACLES WITH GROUND FAULT CIRCUIT INTERRUPTER PROTECTION SHALL BE INSTALLED OUTDOORS, WITHIN 6 FEET OF A SINK OR WET EQUIPMENT OR OTHER SOURCE OF WATER, ELEVATOR MACHINE ROOMS AND PITS, KITCHENS, AND IN SURFACE METAL RACEWAYS OR ENCLOSURES. FEED THROUGH WIRING OF GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLES SHALL NOT BE PERMITTED, UNLESS NOTED OTHERWISE.

35. ALL POWER RECEPTACLES AND DATA OUTLETS SHALL BE MOUNTED 18" A.F.F. TO THE CENTER OF THE OUTLET BOX, UNLESS OTHERWISE NOTED.

36. POWDER ACTUATED FASTENERS ARE NOT PERMITTED FOR USE ON THIS PROJECT.

37. FOR EQUIPMENT THAT DOES NOT HAVE SPECIFIC STRUCTURAL CONSTRUCTION DRAWINGS, DETAILS AND OR CALCULATIONS, THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR CALIFORNIA BASED PROJECTS AND PROVIDE THE REQUIRED HARDWARE NECESSARY FOR A COMPLETE INSTALLATION. SEE EQUIPMENT ANCHORAGE AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTES.

38. MINIMUM CONDUIT SIZE SHALL BE 3/4" STEEL, UNLESS OTHERWISE NOTED.

39. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED.

40. EXECUTION OF WORK SHALL BE COORDINATED WITH ALL TRADES TO AVOID CONFLICTS AND/OR DELAYS.

41. WHEN NECESSARY ADJUST FIXTURE PLACEMENT TO FIELD CONDITIONS, NOTIFY ARCHITECT OF PROPOSED CHANGES.

42. ALL WIRE SHALL BE STRANDED COPPER WITH 75 DEG. THHN/THWN INSULATION, UNLESS OTHERWISE NOTED, OR REQUIRED BY CODE FOR SPECIAL SYSTEMS AND APPLICATIONS, SUCH AS FIRE ALARM AND COMMUNICATION, ETC.

43. STRUCTURAL INFORMATION SHOWN IN DETAILS SHALL BE FOR REFERENCE ONLY. VERIFY STRUCTURAL DETAILS WITH STRUCTURAL CONSTRUCTION DRAWINGS, DETAILS AND CALCULATIONS, AND REQUEST CLARIFICATION FROM STRUCTURAL ENGINEER AS NEEDED.

44. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER 24 HOURS PRIOR TO PLANNED INSPECTIONS.

45. SEE SPECIFICATION SECTION 26 08 00 (IF PROVIDED, OTHERWISE SEE RESPECTIVE DRAWINGS) FOR "TITLE 24" TESTING AND SYSTEM COMMISSIONING REQUIREMENTS.

46. COMPLETE, POST, SUBMIT, OR MAKE AVAILABLE TO THE ENFORCEMENT AGENCY AND BUILDING OWNER FOR ALL APPLICABLE INSPECTIONS, DOCUMENTATION IN ACCORDANCE WITH TITLE 24 PART 6 SECTION 120 AND 130 TO INCLUDE, BUT NOT BE LIMITED TO:
    - A. INSTALLATION CERTIFICATE(S) IN COMPLIANCE WITH CEC SECTION 110.9, 130.0–130.5, 140.6–150.0, 150.2 AND APPENDIX NA7.
    - B. CERTIFICATE(S) OF ACCEPTANCE FORMS. LIGHTING AND POWER SYSTEMS AND DEVICES SHALL BE TESTED AND FORMS MUST BE FILED BY A CERTIFIED ACCEPTANCE TEST TECHNICIAN TO MEET TITLE 24 PART 1 AND PART 6 REQUIREMENTS.
    - C. APPROPRIATE CERTIFICATE(S) OF COMPLIANCE AND A LIST OF THE FEATURES, MATERIALS, AND COMPONENTS INSTALLED IN THE BUILDING(S) SHALL BE DELIVERED TO THE OWNER WITH INSTRUCTIONS ON HOW TO OPERATE THEM EFFICIENTLY.
    - D. MAINTENANCE INFORMATION FOR ALL FEATURES, MATERIALS, COMPONENTS, AND MANUFACTURED DEVICES THAT REQUIRE ROUTINE MAINTENANCE FOR EFFICIENT OPERATION.
    - E. COMMISSION SUBMITTALS AND REPORT.

47. CONTRACTOR SHALL DELIVER A COMPLETE AND ACCURATE SET OF RECORD DRAWINGS DEPICTING THE COMPLETE, FULLY FUNCTIONING, AND FINAL STATE OF THE INSTALLATION, SOMETIMES REFERRED TO AS AS-BUILT DRAWINGS BY INDUSTRY TERMINOLOGY, TO BUILDING OWNER WITHIN 90 DAYS OF RECEIVING FINAL OCCUPANCY PERMIT OR FINAL INSPECTION SIGNOFF FROM THE ENFORCING AGENCY AND OR AUTHORITY HAVING JURISDICTION. IF ANY ENERGY COMPLIANCE OR EFFICIENCY CHARACTERISTICS CHANGE, THROUGH MATERIAL SUBSTITUTION OR OTHERWISE, BEFORE FINAL CONSTRUCTION AND INSTALLATION, SUCH THAT THE BUILDING NO LONGER COMPLIES WITH TITLE 24, PART 6; THE BUILDING AND OR INSTALLATION MUST BE BROUGHT BACK INTO COMPLIANCE, AND THE CHANGE SHALL BE INDICATED ON AMENDED PLANS, SPECIFICATIONS, AND CERTIFICATE(S) OF COMPLIANCE BY ENGINEER OF RECORD AND SHALL BE RE-SUBMITTED TO THE ENFORCEMENT AGENCY AND OR AUTHORITY HAVING JURISDICTION FOR VERIFICATION AND SIGNOFF, AND RE-ACCEPTED BY CONTRACTOR FOR INSTALLATION, AND RE-CERTIFIED BY THIRD PARTY FOR COMPLIANCE.

48. SEE ADDITIONAL SPECIFICATIONS AND REQUIREMENTS ON E0.2.

EQUIPMENT ANCHORAGE NOTES:

ALL ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER RESPECTIVE MOUNTING DETAILS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE LATEST EDITION OF CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVEABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 LBS. ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED CONDUIT OR RACEWAY.

1. COMPONENTS WEIGHING LESS THAN 400 LBS. AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
2. COMPONENTS WEIGHING LESS THAN 20 LBS., OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTES:

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6 AND THE LATEST EDITION OF CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL BE DETAILED ON THE APPROVED DRAWINGS TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

COPIES OF THE MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

REV.	DATE	REVISION/ISSUE DESCRIPTION	CHK. BY
0	09/15/2023	PERMIT SET	SWK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP:09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE: COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER: PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE: ELECTRICAL GENERAL NOTES

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022-001
SHEET NO. E0.3
REV. 0

ANSI D (22.00 X 34.00 INCHES)

NEW LIGHTING FIXTURE SCHEDULE

TAG	SYMBOL	(APPROXIMATE) QUANTITY	DESCRIPTION	MANUFACTURER CATALOG NUMBER	VOLTAGE	NOMINAL LUMEN OUTPUT	WATTS	LM/ WATT	MOUNTING TYPE	APPROXIMATE WEIGHT (LBS.)	REMARKS & AREA OF USE
A		3	SIGNIFY–GARDCO ARCHITECTURAL ADJUSTABLE FLOOD LIGHT FIXTURE, MADE OF LOW COPPER CAST ALUMINUM ALLOY (A360) FOR A HIGH RESISTANCE TO CORROSION, 0.100" MINIMUM THICKNESS. SIDE RAIL EXTRUSIONS MADE OF CORROSION RESISTANT LOW COPPER EXTRUDED ANODIZED ALUMINUM ALLOW (ANODZIED 6063–T5). A33 ASYMETRIC 33 DEGREES FLOOD DISTRIBUTION, WARM WHITE 3,000K, 70 CRI GENERATION 2, 0–10V DIMMING DRIVER, UL AND DLC/DLC PREMIUM LISTED, IP66, 5–YEAR WARRANTY. ADJUSTABLE YOKE WITH 9' OF AWG 16–5 SEOOW CORD, IP66 CORD SEAL, YOKE MADE OF HIGH STRENGTH STEEL, GALVANIZED AND PAINTED FOR HIGH RESISTANCE TO CORROSION, 5 DEG. AIMING INCREMENTS WITH BOLTS TO SECURE AIMING IN PLACE, TILT UP 60 DEGREES.	PFF–138L–700–WW–G2–YK–A33–UNV–NONE–F1–BLANK–NONE–BLANK–BK W/F1	UNV	42,433	289	146.8	SURFACE MOUNT TO EXTERIOR WALL, FIXTURE TILTS ON YOKE	66	EXTERIOR WALL OF BLDG. A & B, FLOOD LIGHT FOR AIRPLANE WORK AREA

NOTES:

1. ALL LIGHTING FIXTURES SHALL BE OF LED SOURCE TYPE.
2. ALL EXTERIOR LIGHTING FIXTURE SHALL BE OF BLACK TRIM. REFER TO LIGHTING FIXTURE BINDER FOR DETAILS.
3. ALL FIXTURES SHALL BE RATED FOR RECEIVING POWER FROM 120VAC AND 277VAC BRANCH CIRCUITS, U.O.N.
4. MOUNT FIXTURES ACCORDING TO MANUFACTURER'S REQUIREMENT AND PROVIDE MOUNTING ACCESSORIES PER MANUFACTURER'S STANDARDS.

NEW LIGHTING CONTROL DEVICES SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER CATALOG NUMBER	INPUT VOLTAGE	MOUNTING TYPE	REMARKS & AREA OF USE
FSP	WATTSTOPPER ON/OFF/0–10 VOLT DIMMING OUTDOOR EXTERIOR FIXTURE CONTROLLER, PROVIDES MULTI–LEVEL CONTROL BASED ON MOTION AND/OR DAYLIGHT CONTRIBUTION, UL LISTED.	FSP–311B–S–L3–B	UNV	STRAIGHT NIPPLE, J–BOX	LOCAL DIMMING CONTROL
TM–X	TORK NSI ASTRONOMICAL TIMER, DWZ SERIES, 365/7 DAY ADVANCED MULTIPURPOSE CONTROLS 2 CHANNELS, SCHEDULING, SUNSET ASTRONOMIC, ADJUSTS FOR DAYLIGHT SAVING, LEAP YEAR, EQUIPPED WITH MANUAL OVERRIDE, 7–DAY POWER OUTAGE BACKUP, UL LISTED. "X" IN TM–X INDICATES TIMER NUMBER IN SEQUENCE, NEMA 3R NORYL INDOOR/OUTDOOR ENCLOSURE.	DWZ200B	120VAC, 208–240VAC, 277VAC	SURFACE MOUNT	LOCAL ASTRONOMIC TIMER AND MANUAL OVERRIDE

NOTES:

1. ELECTRICAL CONTRACTOR SHALL PROGRAM AND CONFIGURE THE LIGHTING CONTROL SYSTEM TO BE PER SEQUENCE OF OPERATION SPECIFIED AND THE FINISHED INSTALLATION SHALL MEET OR EXCEED TITLE 24 REQUIREMENTS.
2. ELECTRICAL CONTRACTOR SHALL REFER TO TYPICAL WIRING DIAGRAMS AND PROVIDE REQUIRED CABLING SHOWN. FOLLOW PROPER WIRING TERMINATION PER MANUFACTURER'S INSTALLATION REQUIREMENTS.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE ADDITIONAL LIGHTING CONTROL COMPONENTS, CABLING AND/OR HARDWARE TO CONSTRUCT AND COMMISSION A COMPLETE AND FUNCTIONING LIGHTING CONTROL SYSTEM.
4. ELECTRICAL CONTRACTOR SHALL INSTALL LIGHTING CONTROL DEVICES ACCORDING TO MANUFACTURER'S REQUIREMENT AND ENVIRONMENT CONDITIONS BASED ON DEVICE LOCATION AND INTENDED USE SHOWN ON RESPECTIVE DRAWINGS.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE AND SCHEDULE A 1–DAY SITE VISIT WITH EEOR AT LEAST 2–WEEKS IN ADVANCE TO DEMONSTRATE COMPLIANCE OF THE LIGHTING CONTROL SYSTEM FUNCTIONALITY WITH SEQUENCE OF OPERATION UNDER NORMAL CONDITIONS, AND WITH CALIFORNIA ENERGY AND EMERGENCY EGRESS REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND SCHEDULE ADDITIONAL SITE VISITS UNTIL THE EEOR DEEMS THE LIGHTING CONTROL SYSTEM TO BE IN AN ACCEPTABLE STATE AND READY FOR THIRD PARTY COMMISSIONING. SEE NOTE 46 ON E0.3.

CODE COMPLIANCE AND COMMISSIONING:

AS REQUIRED PRIOR TO APPLYING FOR SUBSTANTIAL COMPLETION; ALL APPLICABLE REQUIREMENTS, TESTING, DOCUMENTATION AND RECORD OF CONFORMANCE SHALL BE SUBMITTED IN ACCORDANCE WITH CALIFORNIA ENERGY CODE 10–103(A); INCLUDING, BOT NOT LIMITED TO, THE INSTALLATION CERTIFICATE FOR THE LIGHTING CONTROL SYSTEM AS PER CALIFORNIA ENERGY CODE SECTION 130.4(B).

BEFORE AN OCCUPANCY PERMIT IS GRANTED, INDOOR AND OUTDOOR LIGHTING CONTROLS SERVING THE BUILDING SHALL BE CERTIFIED AS MEETING THE ACCEPTANCE REQUIREMENTS FOR CODE COMPLIANCE IN ACCORDANCE WITH CALIFORNIA ENERGY CODE SECTION 130.4(A).

THE COMPLIANCE FORMS FOUND AS PART OF THIS SET ON RESPECTIVE ENERGY COMPLIANCE DRAWINGS SHALL BE SIGNED BY THE ELECTRICAL ENGINEER FOR THE DESIGN, THE ELECTRICAL CONTRACTOR FOR THE INSTALLATION, AND THE COMMISSIONING PARTY FOR COMPLIANCE.

*REVIEW AND COMPLY WITH ANY ADDITIONAL REQUIREMENTS OF NOTE 46 ON E0.3.

LIGHTING TYPICAL SEQUENCE OF OPERATIONS:

EXTERIOR AREAS

- MANUAL OVERRIDE OF AUTOMATIC FUNCTION ON OR OFF FROM ASTRONOMICAL TIMER CONTROL PANEL.
- ALL LIGHTING CIRCUITS AUTOMATICALLY TURN ON BASED ON ASTRONOMICAL TIMER SETTINGS.
- ALL LIGHTING CIRCUITS AUTOMATICALLY TURN OFF BASED ON ASTRONOMICAL TIMER SETTINGS.
- ALL TIMERS AT SITE SHALL BE PROGRAMMED WITH THE SAME SETTINGS TO ENSURE ALL FIXTURES TURN ON OR OFF AT THE SAME TIME.

REV.	DATE	CHK. BY
0	09/15/2023	SVK
	PERMIT SET	

REVISION/ISSUE DESCRIPTION

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP:09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

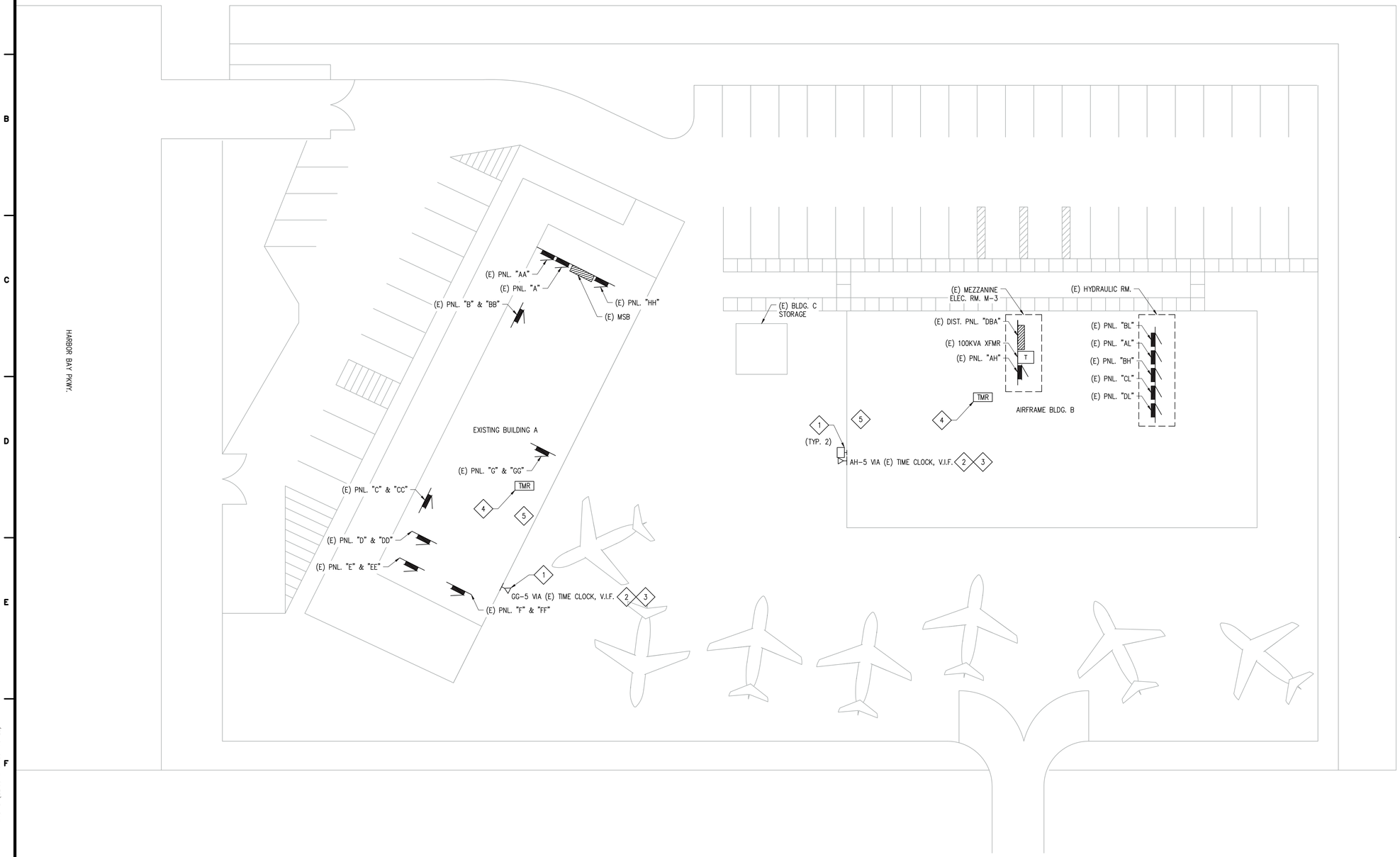
PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
LIGHTING FIXTURE AND CONTROL SCHEDULE, SEQUENCE OF OPERATIONS

DATE:	03/01/2023
SCALE:	AS NOTED
DRAWN BY:	S. PAREDES
JOB NO.	HLP2022–001
SHEET NO.	E0.4
REV.	0

ANSI D (22.00 X 34.00 INCHES)



1 DEMO SITE PLAN

SCALE : 1" = 20'

NORTH

DEMOLITION GENERAL NOTES

1. THE QUANTITY AND LOCATION OF (E) ELECTRICAL DEVICES, PATHWAYS AND EQUIPMENT THAT SHALL BE REMOVED AS PART OF THIS PROJECT ARE SHOWN ON RESPECTIVE ELECTRICAL DEMOLITION DRAWINGS BASED ON OLDER AND PARTIAL AS-BUILT DRAWINGS, AND SITE OBSERVATIONS, NOT EVERYTHING COULD BE VERIFIED WITHOUT REMOVING DEAD FRONTS AND DISTURBING EQUIPMENT FUNCTION. THEREFORE, THE CONTRACTOR SHALL USE THIS INFORMATION FOR REFERENCE ONLY, AND PRIOR TO BID, SHALL VISIT THE SITE AND FURTHER OBSERVE (E) CONDITIONS AS NECESSARY TO VERIFY THE RESPECTIVE DEMOLITION DRAWINGS TO PERFORM THE DEMOLITION OF THE (E) ELECTRICAL SYSTEMS ACCORDING TO THE RESPECTIVE DEMOLITION DRAWINGS AND AS NECESSARY TO SWITCH OVER TO THE (N) ELECTRICAL SYSTEMS SHOWN ON RESPECTIVE (N) CONSTRUCTION DRAWINGS, NOTIFY THE ELECTRICAL ENGINEER OF RECORD OF ANY DISCREPANCIES FOUND.
2. CONTRACTOR SHALL COORDINATE AND PLAN ALL DEMOLITION WORK WITH DISTRICT REPRESENTATIVE, ALL OTHER DISCIPLINES ASSIGNED TO THIS PROJECT, AND UTILITY OR SERVICE PROVIDERS, INCLUDING, BUT NOT LIMITED TO THE ELECTRICAL AND TELCO UTILITY PROVIDER.
3. IF APPLICABLE AND OR REQUIRED, THEN CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH REQUIREMENTS OF TECHNICAL SPECIFICATIONS FOR HAZARDOUS MATERIALS ABATEMENT REPORT PREPARED BY INDUSTRIAL HYGIENE CONSULTANT.
4. CONTRACTOR SHALL MAINTAIN AND VERIFY CONTINUITY OF UPSTREAM AND DOWNSTREAM ELECTRICAL CIRCUITS DURING AND AFTER WORK IS COMPLETE.
5. DEMOLITION WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, SPECIFIC DEMOLITION WORK SHOWN ON THESE DEMOLITION DRAWINGS AND THE FOLLOWING:

   A. DISCONNECT AND REMOVE (E) EXTERIOR LIGHTING FIXTURES.

   B. DISCONNECT AND REMOVE (E) CONDUCTORS AND RACEWAYS WHERE SPECIFIED TO DO SO.

   C. REMOVE AND DISPOSE OF ALL REMOVED CONDUITS, RACEWAYS AND WIRING FROM THE PREMISES ACCORDING TO FEDERAL AND STATE REGULATIONS.

   D. PATCH, REPAIR AND PAINT ALL SURFACES ON WALLS AND CEILINGS THAT ARE TO REMAIN, WHERE PATHWAYS HAVE BEEN REMOVED TO MATCH (E) ADJACENT CONDITIONS AND MAINTAIN FIRE RATED CONSTRUCTION.
6. ALL (E) LIGHTING FIXTURES BEING REMOVED SHALL REMAIN AS THE PROPERTY OF THE DISTRICT AND SHALL BE PREPARED FOR STORAGE BY CONTRACTOR AND RETURNED TO THE DISTRICT. CONTRACTOR SHALL COORDINATE WITH THE DISTRICT REP. FOR STORAGE LOCATION AND METHOD, AND STORE THE EQUIPMENT AS DIRECTED.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING AND POWER CONNECTIONS FOR THEMSELVES AND OTHER DISCIPLINES AS REQUIRED DURING THE CONSTRUCTION EFFORT.
8. ALL (E) SURVEILLANCE, COMMUNICATION, AND SECURITY DEVICES SHALL REMAIN AND BE PROTECTED DURING CONSTRUCTION.
9. ALL (E) ELECTRICAL, SIGNAL, AND FIRE ALARM EQUIPMENT, SERVICES AND RACEWAYS SHOWN ON THIS DEMOLITION PLAN AND ANY OTHER ADDITIONAL EQUIPMENT IDENTIFIED OR OTHERWISE DISCOVERED IN FIELD SHALL REMAIN AND BE PROTECTED DURING THE CONSTRUCTION EFFORT UNLESS OTHERWISE INSTRUCTED BY THE EEOR DURING CONSTRUCTION.
10. SEE AKOL AND YOSHII AIA ARCHITECTS AND ENGINEERS AS-BUILT SET DATED 03/29/1977.

DEMOLITION PLAN KEY NOTES

1. REMOVE (E) LIGHTING FIXTURE, PREP. (E) LIGHTING BRANCH CIRCUIT FOR EXTENSION TO (N) LIGHTING FIXTURES, PROVIDE ALL (N) REQUIRED HARDWARE FOR INTERCONNECTION.
2. PROVIDE CKT. TRACE, IDENTIFY ENTIRE (E) BRANCH CIRCUIT ROUTE, (E) SOURCE PNL., AND (E) CIRCUIT BREAKER DESIGNATION AS REQ. FOR THE (N) INSTALLATION, REPORT FINDINGS AS A SUBMITTAL TO THE DESIGN TEAM FOR REVIEW.
3. REMOVE SECTIONS OF (E) BRANCH CIRCUIT ALONG IDENTIFIED ROUTE AS REQ. FOR THE (N) INSTALLATION.
4. LOCATE AND REMOVE (E) TIME CLOCK, PREPARE (E) INTERCONNECTIONS AS REQ. FOR INSTALLATION OF (N) ASTRONOMICAL TIMER. TAKE NOTE OF (E) SETTINGS OF (E) TIME CLOCK.
5. REMOVE SECTIONS OF (E) WOOD SHEATHING AT INTERIOR AS REQ. FOR (N) INSTALLATION, COORDINATE WITH DISTRICT REPRESENTATIVE FOR RELOCATION OF (E) EQUIPMENT TO CLEAR AREA. LOCATE (E) HORIZONTAL METAL STUDS BEHIND (E) CORRUGATED EXTERIOR WALL.

REV.	DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

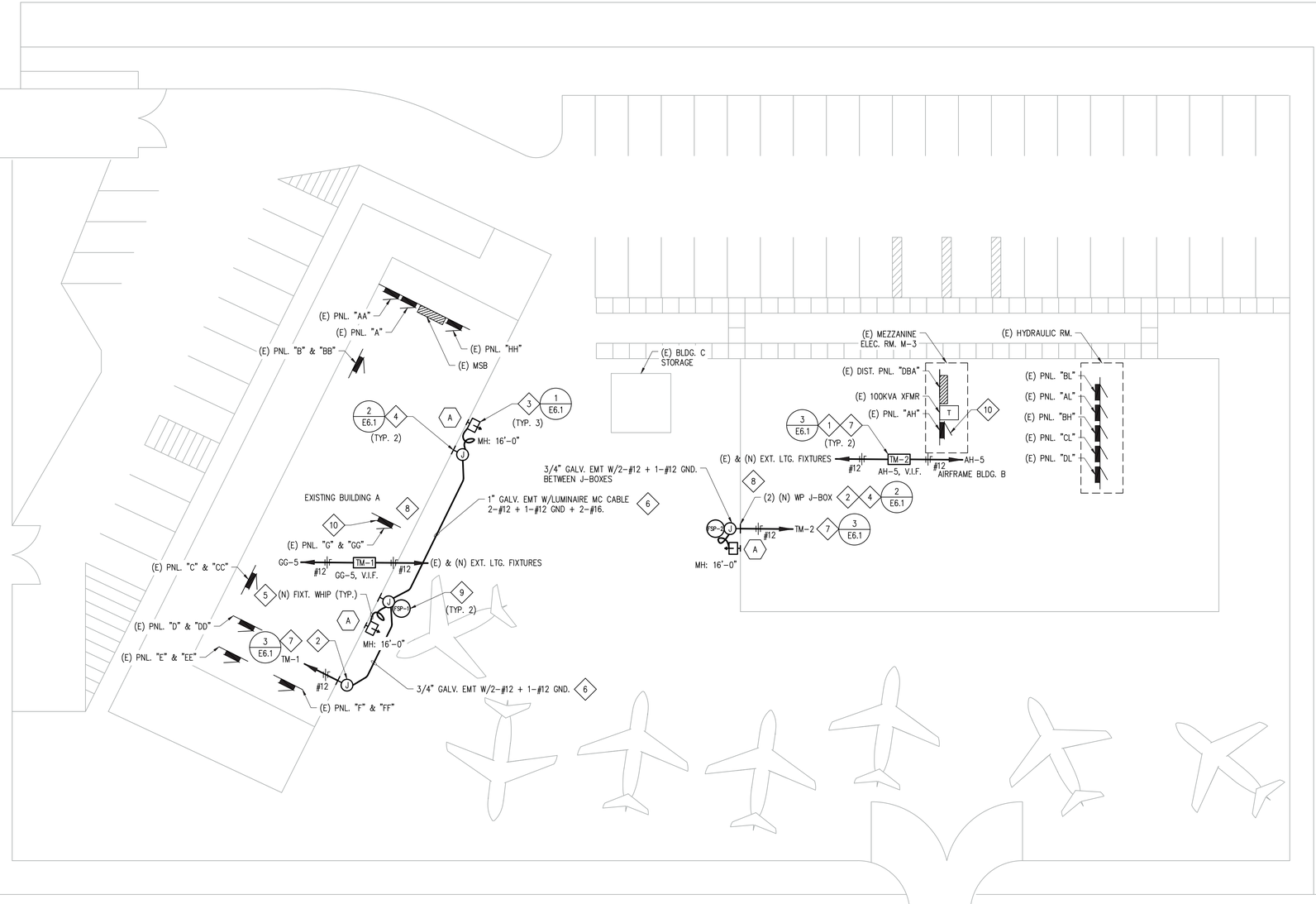
PROJECT TITLE: COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER: PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE: DEMO SITE PLAN

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022-001
SHEET NO. E1.1D
REV. 0

ANSI D (22.00 X 34.00 INCHES)



1 SITE PLAN

SCALE : 1" = 20'

NORTH

PLAN GENERAL NOTES

1. WORK SHALL NOT INTERFERE WITH FACILITY USE. CONTRACTOR SHALL COORDINATE WITH OWNER AT LEAST 2-WEEKS PRIOR TO STARTING WORK TO ESTABLISH A MUTUALLY AGREED UPON SCHEDULE.
2. CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER DISCIPLINES.
3. CONTRACTOR SHALL MAINTAIN AND VERIFY CONTINUITY OF UPSTREAM AND DOWNSTREAM ELECTRICAL CIRCUITS DURING AND AFTER WORK IS COMPLETE.
4. INFORMATION PROVIDED ON THESE CONSTRUCTION DOCUMENTS WAS GATHERED FROM FIELD OBSERVATION AND PREVIOUS RECORD DRAWINGS AND SHALL BE USED WITH CAUTION; CONTRACTOR SHALL FIELD VERIFY ALL QUANTITIES, ESPECIALLY THE EXACT COUNT OF DEVICES, ROUTING, SIZES, LENGTHS AND COUNTS OF CONDUIT AND CONDUCTORS PRIOR TO STARTING THE RESPECTIVE WORK.
5. CONTRACTOR SHALL FOLLOW MANUFACTURER'S MOUNTING, WIRING AND INSTALLATION INSTRUCTIONS FOR ALL ASSEMBLIES AND DEVICES UNLESS OTHERWISE NOTED.
6. IF NOT THEMSELVES QUALIFIED, THE CONTRACTOR SHALL HIRE A DATA COMMUNICATION SPECIALIST TO PULL, TERMINATE, TEST AND COMMISSION THE LOW VOLTAGE CABLES FOR LTG. AND LTG. CTRL.
7. COORDINATE WITH DISTRICT REPRESENTATIVE FOR THE EXACT LOCATION OF ELECTRICAL EQUIPMENT INSIDE BLDGS., AND DIMMING LEVEL AND FLOOD LIGHT FIXTURE TILT.

PLAN KEY NOTES

1. PROVIDE (N) ASTRONOMICAL TIMER, INTERCEPT (E) BRANCH CIRCUITS AND PROVIDE (N) INTERCONNECTION, COORDINATE SETTINGS W/DISTRICT REPRESENTATIVE.
2. PROVIDE (N) WP J-BOX AT LOCATION WHERE (E) EXTERIOR LIGHTING FIXTURE WAS LOCATED, CONSOLIDATE AND PREPARE (E) BRANCH CIRCUITS FOR EXTENSION AND INTERCONNECTION.
3. PROVIDE (N) LIGHTING FIXTURE, (N) LIGHTING BRANCH CIRCUIT EXTENSION, AND ALL (N) HARDWARE AS REQ. FOR A FULLY FUNCTIONING SYSTEM. ADJUST MOUNTING HEIGHT AS REQUIRED TO ATTACH TO (E) METAL STUD.
4. PROVIDE (N) WP J-BOX ADJACENT TO (N) LIGHTING FIXTURE, SURFACE MOUNT DIRECTLY TO (E) CORRUGATED EXTERIOR WALL USING SHEET METAL SCREWS INTO (E) METAL STUD AT HIGH POINTS. PROVIDE (N) INTERCONNECTIONS FOR (N) POWER BRANCH CIRCUIT AND (N) DIMMING LIGHTING CONTROL CIRCUIT FROM (N) SENSOR TO (N) DIMMING DRIVER AT FIXTURE.
5. PROVIDE (N) WP GLAND AND INSTALL (N) LIGHTING FIXTURE WHIP THROUGH TO INSIDE J-BOX.
6. PROVIDE (N) BRANCH CIRCUIT, ROUTE ALONG (E) EXTERIOR CORRUGATED WALL AT SAME HEIGHT A.F.G. AS THE (N) LIGHTING FIXTURES AND OTHER (N) HARDWARE AND (N) J-BOXES. ATTACH (N) HORIZONTAL AND (N) VERTICAL SUPPORTS ALONG ROUTE DIRECTLY TO (E) CORRUGATED EXTERIOR WALL USING SHEET METAL SCREWS INTO (E) METAL STUD AT HIGH POINTS, SPACING AS REQ.
7. PROVIDE (N) INTERCONNECTION, BYPASS, AND OR EXTENSION OF (E) BRANCH CIRCUIT(S) AS REQ. FOR (N) INSTALLATION, RE-USE (E) BRANCH CIRCUIT(S) AND (E) HARDWARE AS MUCH AS POSSIBLE. REPORT ANY MISSING OR SHARED NEUTRAL OR GROUNDING CONDUCTORS, AND OTHER DISCREPANCIES, TO EEOR THROUGH RFI.
8. UPON SUBSTANTIAL COMPLETION, REPLACE REMOVED SECTIONS OF (E) WOOD SHEATHING AT INTERIOR AS REQ., COORDINATE WITH DISTRICT REPRESENTATIVE FOR RELOCATION OF (E) EQUIPMENT BACK TO AREA.
9. PROVIDE (N) LIGHTING CONTROL DEVICE, THREAD STRAIGHT NIPPLE INTO (N) LB FROM (N) J-BOX SUCH THAT LENS OF SENSOR IS PERPENDICULAR TO GROUND PLANE.
10. REPLACE (E) EXTERIOR LIGHTING BRANCH CIRCUIT OCPD BY PROVIDING (N) EQUIVALENT GFCI OCPD, V.I.F. SOURCE (E) ELEC. PNL. AND SLOT, ASSUME 20A RATED OCPD, SEE SHEET E5.1 FOR ADDITIONAL REQUIRED WORK AND REPORTING.

REV.	REVISION/ISSUE DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

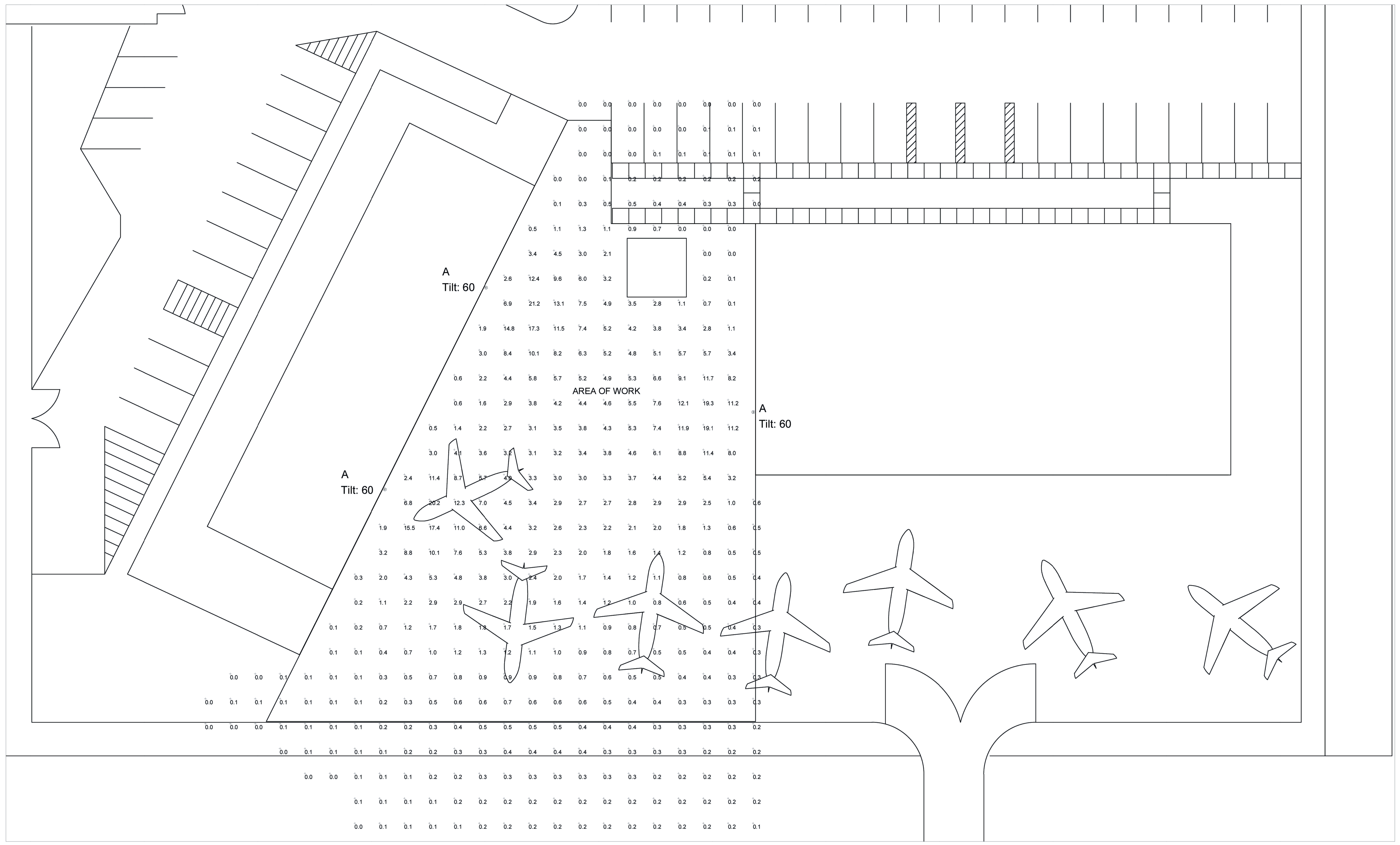
PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
SITE PLAN

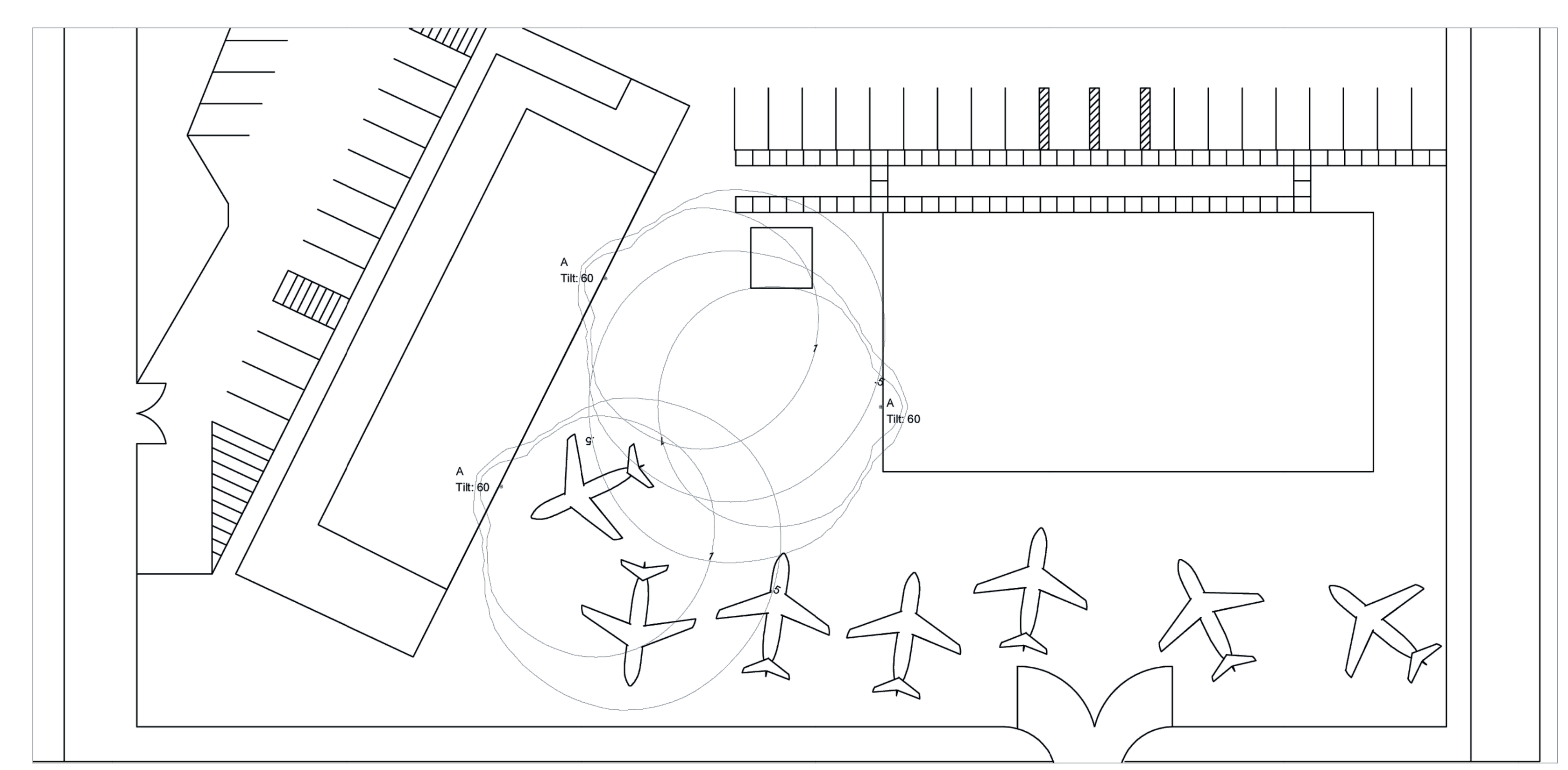
DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022-001
SHEET NO. E1.1
REV. 0

ANSI D (22.00 X 34.00 INCHES)



SCALE: 1" = 20'

PLAN VIEW



SCALE: 1" = 40'

PLAN VIEW

Luminaire Schedule								
Project: COLLEGE OF ALAMEDA - AVIATION - SITE								
Symbol	Qty	Label	Arrangement	Lum. Lumens	LLF	Description	Filename	Lum. Watts
	3	A	Single	43064	0.850	GARDCO PFF-138L-700-WW-G2-YK-A33-UNV-BK - 16' M.H.	A-pff-138l-700-ww-g2-a33.ies	289.3281

Calculation Summary								
Project: COLLEGE OF ALAMEDA - AVIATION - SITE								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	# Pts
AREA OF WORK	Illuminance	Fc	3.3	21.2	0.0	N.A.	N.A.	284

Note: Unless otherwise specified - the lamp lumen depreciation (LLD) for legacy sources used in these calculations is based on published mean lumen ratings by major lamp manufacturers; 0.80 LLD for pulse start metal halide; 0.90 LLD for high pressure sodium; 0.95 LLD for linear T8 and T5 fluorescent; 0.86 LLD for compact fluorescent and induction; 0.88 LLD for Cosmo and Elite lamps. 0.94 LDD for all LED sources. Unless otherwise noted - 0.90 luminaire dirt depreciation (LDD) is commonly applied. In cases where appropriate - ballast factor (BF) is applied. Additional user defind factors (UDF) may be applied if necessary to represent luminaire performance to a higher degree of accruracy. Total light loss factor (LLF) is the product of all multiplied loss factors.

LIGHTING PLAN - PHOTOMETRIC ANALYSIS - LAYOUT VERIFICATION

(ALL VALUES SHOWN ARE MAINTAINED HORIZONTAL FOOTCANDLES AT FINISHED GRADE, U.O.N.)

PRELIMINARY - NOT FOR CONSTRUCTION
NOT FOR QUOTING PURPOSES

Associated Lighting Representatives, Inc.

Oakland, CA
7777 Pardee Lane
94621
510-638-3800

Sacramento, CA
1912 Del Paso Rd.
95834
916-383-4545

Fresno, CA
2720 North Grove
93727
559-453-0444

Reno, NV
9070 Double Diamond Pkwy.
89521
775-849-9770

Calculations have been performed according to IESNA standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

PHOTOMETRIC DATA USED AS INPUT FOR THESE CALCULATIONS IS BASED ON ESTABLISHED IESNA TESTING PROCEDURES AND PUBLISHED LAMP RATINGS. FIELD PERFORMANCE WILL DEPEND ON ACTUAL LAMP, BALLAST, ELECTRICAL, AND SITE CHARACTERISTICS.

Lighting Analysts
illumination engineering software

AGI32 VERSION 20.1
AGI (C) 2023 LIGHTING ANALYSTS, INC.
10268 W CENTENNIAL ROAD, SUITE 202, LITTLETON, CO USA 80127

REPORT FOR :
VEKTON ENGINEERING AND CONSULTING SERV.

SALES REPRESENTATIVE :
TIM HALEY
ASSOCIATED LIGHTING REPRESENTATIVES, INC.

APPLICATION ENGINEERING :
GILBERTO RODRIGUEZ
ASSOCIATED LIGHTING REPRESENTATIVES, INC.

PROJECT DESCRIPTION
COLLEGE OF ALAMEDA - AVIATION - SITE
ALAMEDA, CA

DRAWING NO. / INPUT FILE
22236HAL-R1.DWG/AGI32

REV	SHEET	DATE	SCALE
1	1 OF 1	09/08/2023	AS NOTED

REV.	REVISION/ISSUE DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

[illegible]

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
GENERAL SITE LIGHTING PHOTOMETRICS

DATE:	03/01/2023
SCALE:	AS NOTED
DRAWN BY:	S. PAREDES
JOB NO.	HLP2022–001
SHEET NO.	REV.
EP1.1	0

ANSI D (22.00 X 34.00 INCHES)

PANELS GENERAL NOTES

1. ONCE CKT. TRACE IS COMPLETE FOR (E) EXTERIOR LIGHTING BRANCH CIRCUIT, REMOVE (E) PNL. DEAD FRONT AND VERIFY SCHEDULE. REPORT FINDINGS TO EEOR THROUGH SUBMITTAL, (E) PANEL SCHEDULES SHALL BE INCLUDED AS PART OF AS-BUILT DRAWINGS.
2. CONTRACTOR SHALL PROVIDE (N) TYPED PANEL SCHEDULE FOR EACH (N) OR (E) ELECTRICAL PANEL, PLACE IN CLEAR PLASTIC SLEEVE AND ATTACH TO INNER SURFACE OF PANEL DOOR.

PLACEHOLDER - PANEL SCHEDULES SHALL BE INCLUDED W/ AS-BUILTS

REV.	REVISION/ISSUE DESCRIPTION	DATE	CHK. BY
0	PERMIT SET	09/15/2023	SVK

PROFESSIONAL STAMP(S):

REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP:09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

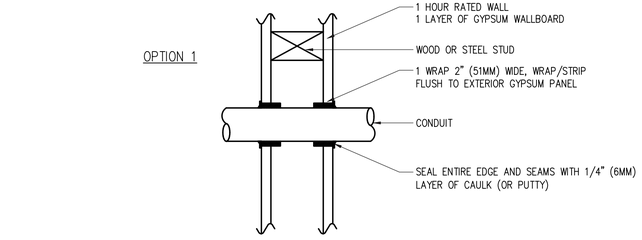
PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
PANEL SCHEDULES

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022-001
SHEET NO. E5.1
REV. 0

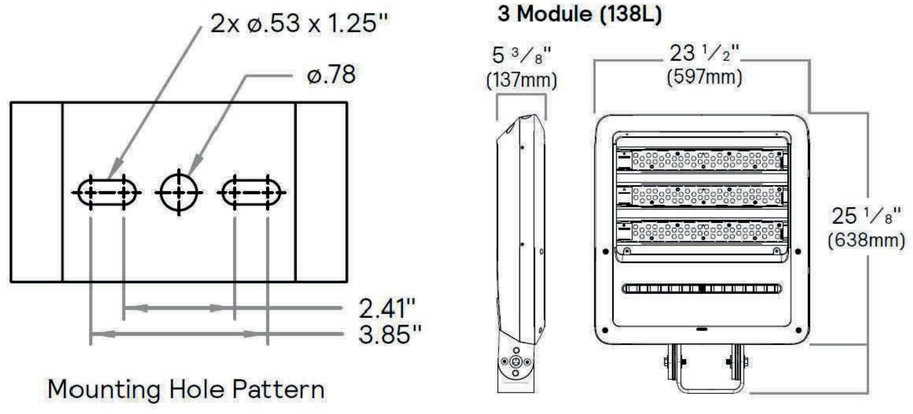
ANSI D (22.00 X 34.00 INCHES)



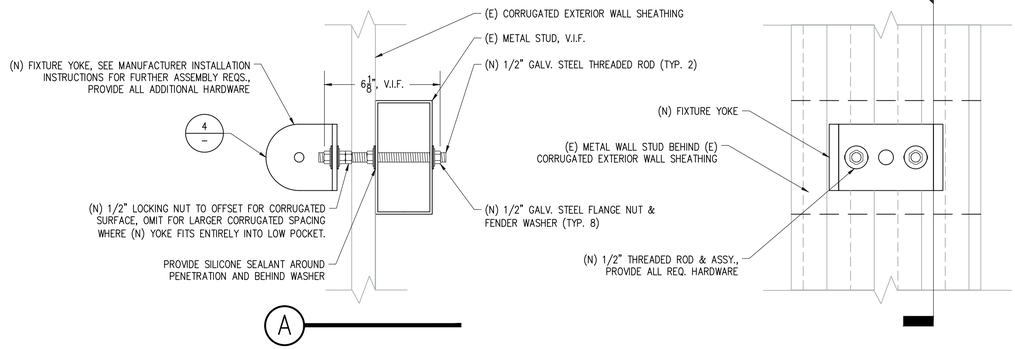
GENERAL NOTES FOR SINGLE CONDUIT PENETRATION OF 1 HOUR FIRE RATED GYPSUM WALLBOARD WALL:

1. INSTALL FIRESTOP ON BOTH SIDES OF WALL.
2. RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) TIME TEMPERATURE FIRE ENCLOSURE CURVE.
3. OPTIONS FOR MASKING TAPE TO PREVENT SAGGING:
   A. INSTALL ADDITIONAL DAMMING MATERIAL INSIDE WALL AND OVER PRODUCT TO HOLD WITHIN OPENING.
   B. REMOVE PRODUCT FROM CONTAINER AND ALLOW TO AIR CURE IN SMALL BATCHES FOR 12 HOURS, THEN HAND FORM INTO OPENING..

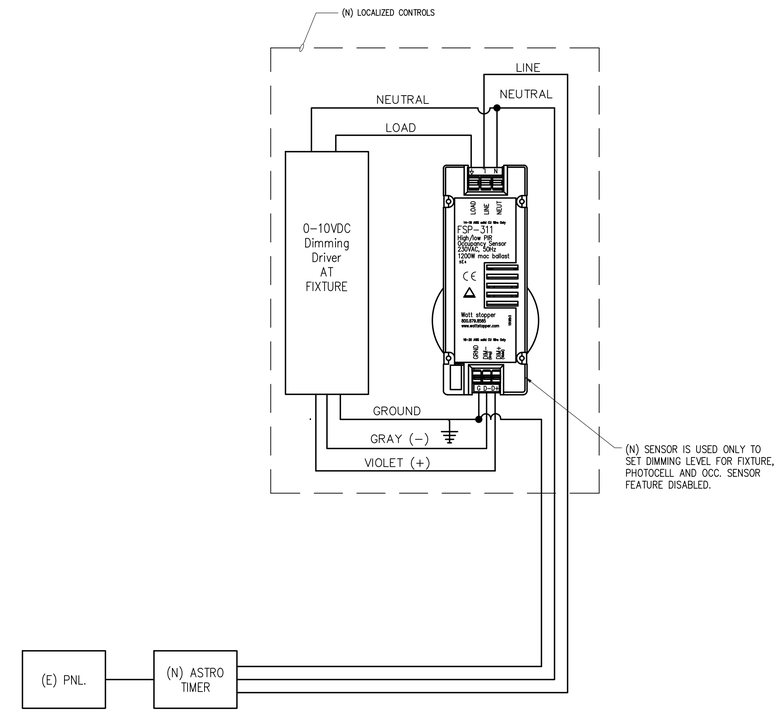
3 SINGLE COND. 1-HR FIRE RATED WALL PEN. (TYP.) SCALE : N.T.S.



4 FIXT. "A" DIMS AND YOKE (TYP.) SCALE : N.T.S.



1 FIXTURE "A" MOUNTING (TYP.) SCALE : N.T.S.



2 EXTERIOR LTG. CTRL. (TYP) SCALE : N.T.S.

REV.	DATE	REVISION/ISSUE DESCRIPTION	CHK. BY
0	09/15/2023	PERMIT SET	SVK

PROFESSIONAL STAMP(S): REGISTERED PROFESSIONAL ENGINEER SERGEY V. KOROLEV E20491 EXP:09/30/25 ELECTRICAL STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE: COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502
PROJECT OWNER: PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606
DRAWING TITLE: ELECTRICAL DETAILS

DATE:	03/01/2023
SCALE:	AS NOTED
DRAWN BY:	S. PAREDES
JOB NO.	HLP2022-001
SHEET NO.	REV.
E6.1	0

ANSI D (22.00 X 34.00 INCHES)

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 3 of 7)
	Date Prepared: 2023-09-10T20:30:10-04:00

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total Number Luminaires [2]	Luminaire Status[3]	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4]	Field Inspector	
										Pass	Fail
A	ARCH. SPOT LIGHT	☐ Linear	289	Mfr. Spec	2	Existing Alteration	☒	---	NA: Facade, monument, statue, bridge, public art	☐	☐
							Total Design Watts:	0			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 2 of 7)
	Date Prepared: 2023-09-10T20:30:10-04:00

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv												Compliance Results		
01		02		03		04		05		06		07		08	09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
0	+	---	+	---	+	---	+	578	OR	---	=	578	≥	0	COMPLIES
Shielding Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.	
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 1 of 7)
Project Address: 970 Harbor Bay Pkwy., Alameda, CA 94502	**Date Prepared:** 2023-09-10T20:30:10-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Alameda	04	Total Illuminated Hardscape Area (ft²)	11619
02	Climate Zone	3			
03	Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):				
☐	LZ-0: Very Low - Undeveloped Parkland	☐ LZ-2: Moderate - Urban Clusters	☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval		
☐	LZ-1: Low - Rural Areas	☒ LZ-3: Moderately High - Urban Areas			
05	Occupancy Types within Project				
• Classroom					

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.

My Project Consists of:

01	02		
☐ New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6		
☒ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	● Yes	○ No
03	04	05	
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method	
☐ < 10% ☐ >= 10% and < 50% ☒ >= 50%	3	% of Existing Luminaires Being Altered	

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 6 of 7)
	Date Prepared: 2023-09-10T20:30:10-04:00

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no NRCA forms required for this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 5 of 7)
	Date Prepared: 2023-09-10T20:30:10-04:00

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This table includes areas using the wattage allowance per specific area from Table 140.7-B /Table 170.2-S. More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
Area Description	Specific Area Type per Table 140.7-B	CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				Additional Allowance (Watts)
		Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	
AIRPLANE WORK AREA	ServiceStationHardscape	11215	0.13	1547.67	A	289	2	578	578
							Total Design Watts for this Area:	578	
							Total Allowance (Watts) All Areas:	578	

[1] FOOTNOTES: See Table 140.7-B /Table 170.2-S for rules for calculating the specific areas (ft²) for these additional lighting allowances.
[2] For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 4 of 7)
	Date Prepared: 2023-09-10T20:30:10-04:00

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
AIRPLANE WORK AREA: "A"	Astronomical Timer	Provided	NA: Industrial Sites Lighting	☐	☐

[1] FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.
[2] Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.
[3] Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

	01				
	"Use it or lose it" Allowance (select all that apply) (select all that apply)				
☐ General Hardscape Allowance Table I (below)	☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☒ Per Specific Area Table M	

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: College of Aviation - Bldg. A	**Report Page:** (Page 7 of 7)
Project Address: 970 Harbor Bay Pkwy., Alameda, CA 94502	**Date Prepared:** 2023-09-10T20:30:10-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Sergey Korolev	Documentation Author Signature:
Company: Vektor Engineering and Consulting Services, Inc.	Signature Date: 9/10/2023
Address: 2603 Camino Ramon, Suite 417	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Ramon, CA 94583	Phone: (925) 698-8067

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: Sergey Korolev, P.E.	Responsible Designer Signature:
Company: Vektor Engineering and Consulting Services, Inc.	Date Signed: 9/10/2023
Address: 2603 Camino Ramon, Suite 417	License: CA E20491
City/State/Zip: San Ramon, CA 94583	Phone: (925) 698-8067

REV.	DATE	CHK. BY
0	09/15/2023	SVK
	PERMIT SET	

REVISION/ISSUE DESCRIPTION

PROFESSIONAL STAMP(S):
REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
NRCC - LTO-01E BLDG. A

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022–001
SHEET NO. E7.1
REV. 0

ANSI D (22.00 X 34.00 INCHES)

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 3 of 7)**
	Date Prepared:	2023-09-10T20:28:24-04:00

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1,2]	How is Wattage determined	Total Number Luminaires [2]	Luminaire Status[3]	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4]	Field Inspector	
										Pass	Fail
A	ARCH. SPOT LIGHT	☐ Linear	289	Mfr. Spec	1	Existing Alteration	☒	---	NA: Facade, monument, statue, bridge, public art	☐	☐
								Total Design Watts:	0		

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 2 of 7)**
	Date Prepared:	2023-09-10T20:28:24-04:00

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv												Compliance Results		
01		02		03		04		05	06		07		08	09
General Hardscape Allowance 140.7/d1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7/d12 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
0	+	---	+	---	+	---	+	289	OR	---	=	289	≥	0	COMPLIES
Shielding Compliance (See Table G for Details)												N/A			
Controls Compliance (See Table H for Details)												COMPLIES			

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 1 of 7)**
Project Address: 970 Harbor Bay Pkwy., Alameda, CA 94502	**Date Prepared:**	2023-09-10T20:28:24-04:00

This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

A. GENERAL INFORMATION

01	Project Location (city)	Alameda	04	Total Illuminated Hardscape Area (ft²)	11619
02	Climate Zone	2			
03	Outdoor Lighting Zone per Title 24 Part 1	10.114 or as designated by Authority Having Jurisdiction (AHJ):			

☐ LZ-0: Very Low - Undeveloped Parkland ☐ LZ-2: Moderate - Urban Clusters ☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval
☐ LZ-1: Low - Rural Areas ☒ LZ-3: Moderately High - Urban Areas

05	Occupancy Types within Project
●	Classroom

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.

My Project Consists of:

01	02	
☐ New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6	
☒ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	● Yes ○ No
03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☒ >= 50%	289W	% of Existing Luminaires Being Altered

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 6 of 7)**
	Date Prepared:	2023-09-10T20:28:24-04:00

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no NRCA forms required for this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 5 of 7)**
	Date Prepared:	2023-09-10T20:28:24-04:00

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This table includes areas using the wattage allowance per specific area from Table 140.7-B /Table 170.2-S. More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
AIRPLANE WORK AREA	ServiceStationHardscape	5607	0.13	773.77	A	289	1	289	289
							Total Design Watts for this Area:	289	
							Total Allowance (Watts) All Areas:		289

[1] FOOTNOTES: See Table 140.7-B /Table 170.2-S for rules for calculating the specific areas (ft² for these additional lighting allowances.
[2] For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 4 of 7)**
	Date Prepared:	2023-09-10T20:28:24-04:00

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
AIRPLANE WORK AREA: "A"	Astronomical Timer	Provided	NA: Industrial Sites Lighting	☐	☐

[1] FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.
[2] Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.
[3] Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

	01				
	"Use it or lose it" Allowance (select all that apply) (select all that apply)				
☐ General Hardscape Allowance Table I (below)	☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☒ Per Specific Area Table M	

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: College of Aviation - Bldg. B	**Report Page:**	**(Page 7 of 7)**
Project Address: 970 Harbor Bay Pkwy., Alameda, CA 94502	**Date Prepared:**	2023-09-10T20:28:24-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Sergey Korolev	Documentation Author Signature:
Company: Vektor Engineering and Consulting Services, Inc.	Signature Date: 9/10/2023
Address: 2603 Camino Ramon, Suite 417	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Ramon, CA 94583	Phone: (925) 698-8067

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: Sergey Korolev, P.E.	Responsible Designer Signature:
Company: Vektor Engineering and Consulting Services, Inc.	Date Signed: 9/10/2023
Address: 2603 Camino Ramon, Suite 417	License: CA E20491
City/State/Zip: San Ramon, CA 94583	Phone: (925) 698-8067

REV.	DATE	CHK. BY
0	09/15/2023	SVK
PERMIT SET		

REVISION/ISSUE DESCRIPTION

PROFESSIONAL STAMP(S):
REGISTERED PROFESSIONAL ENGINEER
SERGEY V. KOROLEV
E20491
EXP: 09/30/25
ELECTRICAL
STATE OF CALIFORNIA

Vektor Engineering & Consulting Services, Inc.
"Where engineering and technology drive innovation"
2603 Camino Ramon, Suite 417
San Ramon, CA 94583
+1 (866) VEKTOR1 (835-8671)

PROJECT TITLE:
COLLEGE OF ALAMEDA - AVIATION
970 HARBOR BAY PKWY., ALAMEDA, CA 94502

PROJECT OWNER:
PERALTA COMMUNITY COLLEGE DISTRICT
333 E. 8TH ST., OAKLAND, CA 94606

DRAWING TITLE:
NRCC - LTO-01E BLDG. B

DATE: 03/01/2023
SCALE: AS NOTED
DRAWN BY: S. PAREDES
JOB NO. HLP2022–001
SHEET NO. E7.2
REV. 0

ANSI D (22.00 X 34.00 INCHES)