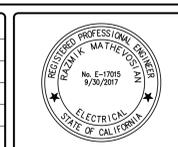


ABBREVIATIONS				SYMBOLS				GENERAL NOTES	SCOPE OF WORK																																																																																																						
<p>AC ALTERNATING CURRENT AC AIR CONDITIONER AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE ASC AMPERES INTERRUPTING CAPACITY SYM A AMPERE AMP AMPERE ANN FIRE ALARM ANNUNCIATOR ATS AUTOMATIC TRANSFER SWITCH</p> <p>BATT BATTERY BLDG BUILDING BRKR BREAKER</p> <p>C CONDUIT CB CIRCUIT BREAKER CR CIRCUIT CXT CIRCUIT CO CONDUIT ONLY WITH PULLWIRE COM COMMON COMM COMMUNICATION CONN CONNECT CONT CONTINUE CT CURRENT TRANSFORMER CU COPPER</p> <p>DB DIRECT BURIED DEF DUAL ELEMENT FUSE DISC DISCONNECT DN DOWN DPDT DOUBLE-POLE DOUBLE-THROW DPST DOUBLE-POLE SINGLE-THROW</p> <p>EM EMERGENCY EMER EMERGENCY EMT ELECTRICAL METALLIC TUBING ENC ENCLOSURE EOL END OF LINE EQIP EQUIPMENT EX EXISTING EXIST EXISTING</p> <p>F FUSE FACP FIRE ALARM CONTROL PANEL FLA FULL LOAD AMPERES FLEX FLEXIBLE METALLIC TUBING</p> <p>G GROUND GRD GROUND GND GROUND GFCI GROUND FAULT CIRCUIT INTERRUPTER</p> <p>HOA HAND-OFF-AUTO SWITCH HP HORSEPOWER HZ HERTZ</p> <p>IC INTERRUPTING CAPACITY IN AMPS RMS ISOLATED GROUND</p> <p>J JUNCTION BOX JB JUNCTION BOX J-BOX JUNCTION BOX</p> <p>K KILO KQML THOUSAND CIRCULAR MILS KVA KILOVOLT-AMPERES KW KILOWATT KWH KILOWATT-HOUR KVAR KILOVAR</p> <p>LCL LONG CONTINUOUS LOAD LRA LOCKED ROTOR AMP LGT LIGHTING</p> <p>M MAGNETIC STARTER COIL M MOTOR M METER MCC MOTOR CONTROL CENTER MCM THOUSAND CIRCULAR MILS MNT MOUNTING MTG MOUNTING MIS MANUAL TRANSFER SWITCH</p> <p>N NEUTRAL NEUT NEUTRAL NEC NATIONAL ELECTRIC CODE NF NONFUSED NTS NOT TO SCALE</p> <p>2P 2 POLE, SIMILAR FOR OTHER QTY PB PULLBOX PNL PANEL PT POTENTIAL TRANSFORMER PVC POLYVINYL CHLORIDE PWR POWER PH PHASE</p> <p>SCA SHORT CIRCUIT AMPS SQ FT SQUARE FEET SW SWITCH SWB SWITCHBOARD SWCR SWITCHGEAR</p> <p>TC TIME CLOCK TEL TELEPHONE TEMP TEMPORARY XFMR TRANSFORMER TMR TRANSFORMER TYP TYPICAL</p> <p>UG UNDERGROUND UNLESS OTHERWISE NOTED UPS UNINTERRUPTIBLE POWER SYSTEM VFD VARIABLE FREQUENCY DRIVE WP WEATHERPROOF WT WATER TIGHT</p>	<p><b>FLOOR</b> <b>CEILING</b> <b>WALL</b></p> <p><b>VOICE/DATA COMMUNICATION</b></p> <p>TELEPHONE OUTLET, 1" CONDUIT TO THE CLOSEST TELEPHONE TERMINAL POINT WITHOUT INTERMEDIATE BOXES. "W" INDICATES WALL MOUNTED @ +48".</p> <p>DATA OUTLET, 1" CONDUIT TO THE CLOSEST TELEPHONE TERMINAL POINT WITHOUT INTERMEDIATE BOXES. "W" INDICATES WALL MOUNTED @ +48".</p> <p>TEL/DATA OUTLET, 1" CONDUIT TO THE CLOSEST TELEPHONE TERMINAL POINT WITHOUT INTERMEDIATE BOXES. "W" INDICATES WALL MOUNTED @ +48".</p> <p>SYSTEM FURNITURE TEL/DATA FEED, REFER TO DETAILS FOR RACEWAY REQUIREMENTS</p> <p>1" VOICE/DATA COMMUNICATION CONDUIT ONLY. 1 1/2" VOICE/DATA COMMUNICATION CONDUIT ONLY. 1 1/2" VOICE/DATA COMMUNICATION CONDUIT ONLY. 2" VOICE/DATA COMMUNICATION CONDUIT ONLY.</p> <p><b>FLOOR</b> <b>CEILING</b> <b>WALL</b></p> <p><b>LIGHTING</b></p> <p>EXTERIOR SINGLE HEAD POLE MOUNTED FIXTURE AS INDICATED BY FIXTURE TYPE.</p> <p>EXTERIOR DOUBLE HEAD POLE MOUNTED FIXTURE AS INDICATED BY FIXTURE TYPE.</p> <p>LIGHTING STANDARD AS INDICATED BY FIXTURE TYPE.</p> <p><b>FLOOR</b> <b>CEILING</b> <b>WALL</b></p> <p><b>SWITCHING</b></p> <p>MANUAL MOTOR STARTER WITH THERMAL OVERLOAD NUMBER OF POLES AS REQUIRED</p> <p>SWITCH, 42" UON, SUBSCRIPT INDICATES: X=NONE - SINGLE POLE X=3 - THREE WAY X=OUT - OUTLET CONTROLLED X=2 - DOUBLE POLE X=PK - KEY OPERATED WITH PILOT LIGHT X=R - MOMENTARY RELAY ON/OFF</p> <p>2-SINGLE POLE SWITCHES, UNDER COMMON PLATE, 42" UON. 3-SINGLE POLE SWITCHES, ETC. UNDER COMMON PLATE, 42" UON.</p> <p>DIMMER WITH INTEGRAL SWITCH, 42" U.O.N. '600' INDICATES RATING IN WATTS</p> <p>ROOM TYPE OCCUPANCY SENSOR, ARROW INDICATES DIRECTION, SUBSCRIPT INDICATES SWITCH LEG OR CIRCUIT TO BE CONTROLLED.</p> <p>ROOM TYPE OCCUPANCY SENSOR, ARROWS INDICATE DIRECTION, SUBSCRIPT INDICATES SWITCH LEG OR CIRCUIT TO BE CONTROLLED.</p> <p><b>FLOOR</b> <b>CEILING</b> <b>WALL</b></p> <p><b>POWER</b></p> <p>SIMPLEX RECEPTACLE, 5-20R UON</p> <p>DUPLEX RECEPTACLE, 5-20R UON</p> <p>QUADRUPLEX RECEPTACLE, 5-20R UON</p> <p>THREE PHASE RECEPTACLE</p> <p>SPECIAL RECEPTACLE, REFER TO SPECIAL RECEPTACLE SCHEDULE, THIS SHEET</p> <p>QUADRUPLEX SPECIAL RECEPTACLE, REFER TO SPECIAL RECEPTACLE SCHEDULE, THIS SHEET</p> <p>DUPLEX ISOLATED GROUND WITH DEDICATED GREEN/YELLOW CONDUCTOR BACK TO ISOLATED GROUND BUS AT PANEL. 5-20R UON.</p> <p>QUADRUPLEX ISOLATED GROUND WITH DEDICATED GREEN/YELLOW CONDUCTOR BACK TO ISOLATED GROUND BUS AT PANEL. 5-20R UON.</p> <p>CLOCK RECEPTACLE. 5-20R UON.</p> <p>JUNCTION BOX 4" SQUARE MINIMUM FOR WALL OR CEILING MOUNTED</p> <p>JUNCTION BOX SIZE AS REQUIRED FOR NUMBER OF WIRES</p> <p>SYSTEM FURNITURE POWER FEED, REFER TO DETAILS FOR ADDITIONAL INFORMATION.</p>	<p><b>NUMBER OF WIRES AND CONDUIT SIZE</b></p> <table border="1"> <tr> <td>3#12, 1/2" C</td> <td>8</td> <td>2#8, 1#10, 1/2" C</td> </tr> <tr> <td>4#12, 1/2" C</td> <td>8</td> <td>3#8, 1#10, 1/2" C</td> </tr> <tr> <td>5#12, 1/2" C</td> <td>8</td> <td>4#8, 1#10, 1" C</td> </tr> <tr> <td>6#12, 1/2" C</td> <td>8</td> <td>5#8, 1#10, 1" C</td> </tr> <tr> <td>7#12, 1/2" C</td> <td>8</td> <td>6#8, 1#10, 1" C</td> </tr> <tr> <td>8#12, 1/2" C</td> <td>8</td> <td>7#8, 1#10, 1 1/2" C</td> </tr> <tr> <td>9#12, 1/2" C</td> <td>8</td> <td>8#8, 1#10, 1 1/2" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>2#6, 1#10, 3/4" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>3#6, 1#10, 1" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>4#6, 1#10, 1" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>5#6, 1#10, 1 1/2" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>6#6, 1#10, 1 1/2" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>7#6, 1#10, 1 1/2" C</td> </tr> <tr> <td>10</td> <td>6</td> <td>8#6, 1#10, 1 1/2" C</td> </tr> </table> <p><b>LETTER RATING NEMA SPECIAL RECEPTACLE SCHEDULE</b></p> <table border="1"> <tr> <td>A</td> <td>125V, 15, 30A, 2P, 3W</td> <td>5-30R</td> <td>WITH 5-30P PLUG</td> </tr> <tr> <td>B</td> <td>125V, 15, 50A, 2P, 3W</td> <td>5-50R</td> <td>WITH 5-50P PLUG</td> </tr> <tr> <td>C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>D</td> <td>125/250V, 15, 20A, 3P, 4W</td> <td>14-20R</td> <td>WITH 14-20P PLUG</td> </tr> <tr> <td>F</td> <td>125/250V, 15, 30A, 3P, 4W</td> <td>14-30R</td> <td>WITH 14-30P PLUG</td> </tr> <tr> <td>GF</td> <td>125V, 15, 20A, 2P, 3W</td> <td>5-20R</td> <td>GROUND FAULT INTERRUPTING</td> </tr> <tr> <td>H</td> <td></td> <td></td> <td></td> </tr> <tr> <td>J</td> <td>250V, 15, 20A, 2P, 3W</td> <td>6-20R</td> <td>WITH 6-20P PLUG</td> </tr> <tr> <td>K</td> <td>250V, 15, 30A, 2P, 3W</td> <td>6-30R</td> <td>WITH 6-30P PLUG</td> </tr> <tr> <td>L</td> <td></td> <td></td> <td>'L' INDICATES ASSOCIATED RECEPTACLE IS LOCKING TYPE, PROVIDE MATCHING PLUG FOR EACH RECEPTACLE.</td> </tr> <tr> <td>M</td> <td>250V, 15, 50A, 2P, 3W</td> <td>6-50R</td> <td>WITH 6-50P PLUG</td> </tr> <tr> <td>N</td> <td>250V, 30, 20A, 3P, 4W</td> <td>15-20R</td> <td>WITH 15-20P PLUG</td> </tr> <tr> <td>P</td> <td>250V, 30, 30A, 3P, 4W</td> <td>15-30R</td> <td>WITH 15-30P PLUG</td> </tr> <tr> <td>R</td> <td>250V, 30, 50A, 3P, 4W</td> <td>15-50R</td> <td>WITH 15-50P PLUG</td> </tr> <tr> <td>S</td> <td>480V, 30, 30A, 3P, 4W</td> <td>L16-30R</td> <td>WITH L12-30P PLUG</td> </tr> <tr> <td>T</td> <td>125V, 15, 20A, 2P, 3W</td> <td>5-20R</td> <td>ISOLATED GROUND WITH INTEGRAL TRANSIENT SUPPRESSOR AND DEDICATED GREEN/YELLOW CONDUCTOR BACK TO GROUND BUS AT PANEL.</td> </tr> </table> <p><i>NOTE: CONDUIT SIZES ARE MINIMUM. PROVIDE EQUIPMENT GROUND (NOT INDICATED IN WIRE HATCH COUNTS). FOR ISOLATED GROUND DEVICES INCLUDE ADDITIONAL ISOLATED GROUND CONDUCTOR.</i></p> <p><i>NOTE: NUMBER OF WIRES INCLUDES GROUND.</i></p>	3#12, 1/2" C	8	2#8, 1#10, 1/2" C	4#12, 1/2" C	8	3#8, 1#10, 1/2" C	5#12, 1/2" C	8	4#8, 1#10, 1" C	6#12, 1/2" C	8	5#8, 1#10, 1" C	7#12, 1/2" C	8	6#8, 1#10, 1" C	8#12, 1/2" C	8	7#8, 1#10, 1 1/2" C	9#12, 1/2" C	8	8#8, 1#10, 1 1/2" C	10	6	2#6, 1#10, 3/4" C	10	6	3#6, 1#10, 1" C	10	6	4#6, 1#10, 1" C	10	6	5#6, 1#10, 1 1/2" C	10	6	6#6, 1#10, 1 1/2" C	10	6	7#6, 1#10, 1 1/2" C	10	6	8#6, 1#10, 1 1/2" C	A	125V, 15, 30A, 2P, 3W	5-30R	WITH 5-30P PLUG	B	125V, 15, 50A, 2P, 3W	5-50R	WITH 5-50P PLUG	C				D	125/250V, 15, 20A, 3P, 4W	14-20R	WITH 14-20P PLUG	F	125/250V, 15, 30A, 3P, 4W	14-30R	WITH 14-30P PLUG	GF	125V, 15, 20A, 2P, 3W	5-20R	GROUND FAULT INTERRUPTING	H				J	250V, 15, 20A, 2P, 3W	6-20R	WITH 6-20P PLUG	K	250V, 15, 30A, 2P, 3W	6-30R	WITH 6-30P PLUG	L			'L' INDICATES ASSOCIATED RECEPTACLE IS LOCKING TYPE, PROVIDE MATCHING PLUG FOR EACH RECEPTACLE.	M	250V, 15, 50A, 2P, 3W	6-50R	WITH 6-50P PLUG	N	250V, 30, 20A, 3P, 4W	15-20R	WITH 15-20P PLUG	P	250V, 30, 30A, 3P, 4W	15-30R	WITH 15-30P PLUG	R	250V, 30, 50A, 3P, 4W	15-50R	WITH 15-50P PLUG	S	480V, 30, 30A, 3P, 4W	L16-30R	WITH L12-30P PLUG	T	125V, 15, 20A, 2P, 3W	5-20R	ISOLATED GROUND WITH INTEGRAL TRANSIENT SUPPRESSOR AND DEDICATED GREEN/YELLOW CONDUCTOR BACK TO GROUND BUS AT PANEL.	<p><b>WIRING</b></p> <p>HOMERUN TO PANELBOARD, CABINET OR TERMINAL BOARD AS INDICATED.</p> <p>HOMERUN TO SWITCHBOARD OR MCC AS INDICATED. REFER TO SINGLE LINE FOR CONDUIT AND WIRE SIZES.</p> <p>HOMERUN TO PANEL VIA INDICATED RELAY PANEL. REFER TO RELAY SCHEDULE FOR ADDITIONAL INFORMATION.</p> <p>CONDUIT END CAP. PROVIDE MARKER TO UNDERGROUND CONDUITS</p> <p>CONDUIT DOWN</p> <p>CONDUIT UP</p> <p>CONDUIT RUN EXPOSED, PARALLEL WITH STRUCTURE</p> <p>CONDUIT RUN UNDERGROUND OR BELOW FLOOR.</p> <p>CONDUIT CONCEALED IN WALL OR CEILING.</p> <p>SURFACE WIREMOLD RACEWAY</p> <p>MULTIOUTLET RACEWAY. NUMBER IN (X) INDICATES OUTLET SPACING. WHERE MULTIPLE CIRCUITS ARE INDICATED, ALTERNATE CIRCUITS FOR OUTLETS ALONG RACEWAY.</p> <p><b>GENERAL ELECTRICAL SYMBOLS</b></p> <p>DISCONNECT SWITCH, 30 AMP MINIMUM UON</p> <p>COMBINATION DISCONNECT SWITCH AND MOTOR STARTER</p> <p>MOTOR, 5HP</p> <p>TRANSFORMER</p> <p>SURFACE MOUNTED MISCELLANEOUS CABINET AS INDICATED ON PLANS</p> <p>FLUSH MOUNTED MISCELLANEOUS CABINET AS INDICATED ON PLANS</p> <p>SURFACE MOUNTED PANELBOARD</p> <p>FLUSH MOUNTED PANELBOARD</p> <p>SWITCHBOARD</p> <p>MULTIPLE COMPARTMENT FLOOR BOX</p> <p>EXISTING EQUIPMENT/RACEWAYS TO REMAIN</p> <p>EXISTING EQUIPMENT/RACEWAYS TO BE REMOVED</p> <p>NEW EQUIPMENT/RACEWAYS</p> <p>ELECTRICAL EQUIPMENT DESIGNATED 'SHA'</p> <p>SEE NOTE A OR 1 ON THE SAME SHEET</p> <p>LIGHTING FIXTURE DESIGNATION F1 = TYPE 100 = FIXTURE WATTAGE</p> <p>MECHANICAL EQUIPMENT DESIGNATED 'AH-1'</p> <p>EQUIPMENT NAME OR NUMBER</p> <p>MOUNTING HEIGHT FROM FINISHED FLOOR TO CENTERLINE OF OUTLET OR EQUIPMENT</p> <p>MH=4'-6"</p> <p>MH=4'-6"</p> <p><b>SINGLE LINE DIAGRAM</b></p> <p>TRANSFORMER, AS NOTED ON SINGLE LINE</p> <p>LOW VOLTAGE CIRCUIT BREAKER, 3P UON</p> <p>LOW VOLTAGE CIRCUIT BREAKER WITH GROUND FAULT RELAY AND SHUNT TRIP.</p> <p>NON-FUSED DISCONNECT SWITCH, 30A, 3P UON</p> <p>FUSED DISCONNECT SWITCH, 3P UON</p> <p>DRAW-OUT MEDIUM-VOLTAGE CIRCUIT BREAKER</p> <p>COMBINATION STARTER</p> <p>CONTACTOR, SIZE 2 INDICATED (SIZE-1 MIN.)</p> <p>MOTOR OVERLOAD PROTECTION</p> <p>MAGNETIC MOTOR STARTER, SIZE-2 INDICATED (SIZE-1 MIN.)</p> <p>DEMAND TYPE KWH METER</p> <p>PROVISION FOR UTILITY COMPANY KWH METER</p> <p>KIRK-KEY INTERLOCK BETWEEN DEVICES</p> <p>TRANSFER SWITCH NOTED AT'S WHEN AUTOMATIC</p> <p>CURRENT TRANSFER, RATIO AS NOTED</p> <p>PROTECTIVE RELAY, FUNCTION PER ANSI STANDARD DESIGNATION</p> <p>AMMETER SWITCH</p> <p>AMMETER</p> <p>ELECTRONIC METER, CUTLER HAMMER IQ ANALYZER CAT. NO. IQA6430, UON.</p> <p>TEST SWITCH, ABB</p> <p>SEPARABLE CONNECTOR(S)</p> <p>GROUND</p>	<p>A. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION BE PROVIDED FOR ALL THE EQUIPMENT DESCRIBED OR SHOWN AS BEING IN THIS CONTRACT. TOWARD THIS END FURNISH ALL LABOR AND TOOLS NECESSARY AND FURNISH AND INSTALL ALL APPARATUS, MATERIALS, AND EQUIPMENT IN A MANNER COMPLYING WITH ALL APPLICABLE CODES, INCLUDING ITEMS REQUIRED BUT NOT NORMALLY SHOWN, SUCH AS LAMPS, COUPLINGS, HANGERS, BRACKETS, CLAMPS, BOXES, CONNECTORS AND HARDWARE.</p> <p>B. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SUBMITTALS, TESTING, START-UP, TRAINING AND PROJECT CLOSOUT.</p> <p>C. PROCURE ALL PERMITS FROM LEGALLY CONSTITUTED AUTHORITIES, ARRANGE FOR ALL INSPECTIONS AND PAY ALL COSTS FOR FEES AND TESTS IN CONNECTION THEREWITH.</p> <p>D. ALL WORK SHALL COMPLY WITH THE 2016 CALIFORNIA ELECTRICAL CODE BASED UPON THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES. WHERE THE PLANS SHOW MORE RESTRICTIVE REQUIREMENTS, THE PLANS SHALL GOVERN BUT NOTHING ON THESE PLANS SHALL BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.</p> <p>E. ALL ELECTRICAL EQUIPMENT SHALL BE UL APPROVED.</p> <p>F. COORDINATE ROUTING OF FEEDERS AND HOMERUNS IN COOPERATION WITH OTHER TRADES TO SIMPLIFY INSTALLATION.</p> <p>G. DO NOT PENETRATE STRUCTURAL ITEMS WITHOUT PRIOR APPROVAL OF STRUCTURAL ENGINEER. WHERE EXISTING STRUCTURAL WALLS, CEILING OR FLOOR ARE TO BE CORED FOR NEW CONDUIT RUNS, CONTRACTOR SHALL SCAN THE SURFACE TO AVOID CUTTING ANY STRUCTURAL ELEMENTS SUCH AS REBAR. SEPARATION BETWEEN CORED HOLES SHALL BE THREE INCHES FROM NEW OR EXISTING HOLES, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.</p> <p>H. INSTALL EXPOSED CONDUITS PARALLEL AND AT RIGHT ANGLES TO NEARBY SURFACES AND STRUCTURAL MEMBERS.</p> <p>I. ALL CONDUCTORS SHALL BE COPPER, TYPE "THIN/THIN" 90 DEGREE INSULATION. ALL LUGS SHALL BE 75 DEGREE RATED, MINIMUM.</p> <p>J. USE OF NONMETALLIC SHEATHED CABLE (NM OR NMC), ARMORED CABLE (AC) OR METAL CLAD CABLE (MC) IS NOT ALLOWED.</p> <p>K. INSTALL GREEN INSULATED COPPER GROUNDING CONDUCTOR AND CONNECT TO EACH OUTLET, ENCLOSURE, DEVICE, FIXTURE, ETC. THE RACEWAYS SHALL NOT BE RELIED UPON FOR 'EQUIPMENT GROUNDING'.</p> <p>L. PROVIDE BARRIER BETWEEN NORMAL AND EMERGENCY POWER WHEN INSTALLED IN THE SAME ENCLOSURE.</p> <p>M. LABEL RECEPTACLES, J-BOXES, DISCONNECT SWITCHES AND CONTROL DEVICES WITH THEIR SERVING CIRCUIT NUMBERS.</p> <p>N. GANG DEVICES OCCURRING IN THE SAME LOCATION, SET DEVICES NOT GANGED IN THE SAME PLATE AT THE SAME HEIGHT WITH EQUAL SPACING BETWEEN EACH PLATE.</p> <p>O. PROVIDE FIRE STOPPING AT ALL CONDUIT PENETRATIONS OF CEILINGS AND RATED WALLS.</p> <p>P. NO SPLICING OF FEEDERS OR BRANCH CIRCUITS SHALL BE DONE WITHOUT PRIOR APPROVAL.</p> <p>Q. INSTALL WIRING AS INDICATED ON PLANS. DO NOT COMBINE HOMERUNS WITHOUT PRIOR APPROVAL.</p> <p>R. ALL UNDERGROUND CONDUITS SHALL BE ENTIRELY ENCASED IN CONCRETE 3" THICK ON ALL SIDES WITH MULTIPLE CONDUITS SPACED NOT LESS THAN 24" BELOW FINISHED GRADE TO THE TOP OF CONCRETE ENVELOPE.</p> <p>S. CONTRACTOR MUST EXERCISE CARE TO AVOID DAMAGE TO EXISTING LANDSCAPING AND REPAIR ANY DAMAGE IF IT OCCURS AS A RESULT OF HIS/HER WORK.</p> <p>T. CONTRACTOR SHALL REMOVE ALL DEMOLISHED MATERIAL PROMPTLY AND DISPOSE OF LEGALLY OFF SITE.</p> <p>U. SURFACE MOUNT CONDUIT OUTSIDE THE BUILDING SHALL BE GALVANIZED RIGID STEEL.</p> <p>V. CONTRACTOR SHALL MAINTAIN ON THE JOB A SET OF PRINTS ON WHICH ALL CHANGES IN LOCATION OR RUNS SHALL BE CAREFULLY INDICATED. CONTRACTOR SHALL TRANSFER ALL FIELD CHANGES FROM THE FIELD DRAWINGS TO CAD AND DELIVER TO THE ENGINEER FOR REVIEW PRIOR TO DELIVERY TO THE OWNER AT THE CONCLUSION OF THE PROJECT.</p>	<p>ANTELOPE VALLEY COMMUNITY COLLEGE (AVCC) INTENDS TO REPLACE EXISTING POLE MOUNTED LUMINAIRES IN MULTIPLE AREAS OF THE CAMPUS WITH NEW LIGHT EMITTING DIODE (LED) LUMINAIRES AND IN CERTAIN AREAS WITH LED RETROFIT KITS. IN CERTAIN AREAS OF THE CAMPUS, NEW POLES AND LUMINAIRES ARE TO BE PROVIDED AND INSTALLED.</p> <p>PROVIDE ALL MATERIAL, LABOR, EQUIPMENT AND SUPERVISION TO PERFORM ALL WORK IN STRICT CONFORMANCE WITH CONTRACT DOCUMENTS INCLUDING DRAWINGS, APPLICABLE CODES, STANDARDS AND SPECIFICATION.</p> <p>SCOPE OF WORK CONSISTS BUT IS NOT LIMITED TO THE FOLLOWING:</p> <ol style="list-style-type: none"> <li>WHERE EXISTING LIGHT FIXTURES ARE INDICATED TO BE DEMOLISHED, REMOVE THE FIXTURE, ASSOCIATED POLE AND DISPOSE OFFSITE.</li> <li>WHERE INDICATED ON THE DRAWINGS, PROVIDE AND INSTALL ALL NEW PULLBOXES TO INTERCEPT EXISTING CONDUIT.</li> <li>WHERE INDICATED ON THE DRAWINGS PROVIDE WIRELESS CONTROL MODULES FOR THE FIXTURES.</li> <li>WHERE ONLY THE EXISTING FIXTURE HEAD AND OR THE HEAD AND THE POLE ARE TO BE REPLACED, FIELD VERIFY BRANCH CIRCUIT(S) FEEDING EXISTING FIXTURES AND CONFIRM THAT THE VOLTAGE IS 277 VOLTS. WHERE REQUIRED MAKE ADJUSTMENTS TO CONVERT TO 277 VOLTS. INSTALL CONTRACTOR FURNISHED NEW POLE AND LUMINAIRE AS IT MAY APPLY.</li> <li>WHERE NEW POLES ARE TO BE INSTALLED ON EXISTING FOUNDATIONS CONTRACTOR OR POLE VENDOR SHALL CONFIRM THAT THE NEW POLE BASE PLATE SHALL FIT EXISTING BOLT PATTERN AT EACH PEDESTAL BEFORE ORDERING. MANUFACTURER MAY NEED TO MODIFY PLATE BEFORE SHIPPING.</li> <li>WHERE LED RETROFIT KITS ARE TO BE INSTALLED INSIDE EXISTING FIXTURES, INSTALLATION SHALL BE PER MANUFACTURER REQUIREMENTS. MANUFACTURER MAY ASK FOR THE REFLECTOR TO BE REMOVED FROM FIXTURE. REMOVE REFLECTOR, BUT MAINTAIN OR REINSTALL ACCENT PIECE.</li> <li>WORK WILL BE LIMITED TO CERTAIN AREAS OF THE CAMPUS AT A TIME.</li> <li>UPON AWARD OF CONTRACT AND FIELD VERIFICATION OF EXISTING CONDITIONS, CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE OF WORK, INDICATING TIME, DURATION AND THE IMPACT OF NEW WORK AT EACH AREA OF WORK AND PRESENT IT TO THE COLLEGE FOR APPROVAL.</li> <li>WHERE NEW FIXTURES ARE TO BE MOUNTED ON EXISTING POLES, USE APPROVED HARDWARE BY FIXTURE MANUFACTURER.</li> <li>PROVIDE SERVICES OF AN APPROVED CONTROL SYSTEM MANUFACTURER'S AGENT TO PERFORM REQUIRED PROGRAMMING TO CONNECT NEW FIXTURES INTO EXISTING CONTROL SYSTEM.</li> <li>TEST AND COMMISSION THE ENTIRE NEW LIGHTING SYSTEM AND ASSOCIATED WIRELESS CONTROLLER BY THE MANUFACTURER CERTIFIED AGENT.</li> <li>TRAIN COLLEGE PERSONAL IN OPERATION AND MAINTENANCE</li> </ol>
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10	6	6#6, 1#10, 1 1/2" C																																																																																																													
10	6	7#6, 1#10, 1 1/2" C																																																																																																													
10	6	8#6, 1#10, 1 1/2" C																																																																																																													
A	125V, 15, 30A, 2P, 3W	5-30R	WITH 5-30P PLUG																																																																																																												
B	125V, 15, 50A, 2P, 3W	5-50R	WITH 5-50P PLUG																																																																																																												
C																																																																																																															
D	125/250V, 15, 20A, 3P, 4W	14-20R	WITH 14-20P PLUG																																																																																																												
F	125/250V, 15, 30A, 3P, 4W	14-30R	WITH 14-30P PLUG																																																																																																												
GF	125V, 15, 20A, 2P, 3W	5-20R	GROUND FAULT INTERRUPTING																																																																																																												
H																																																																																																															
J	250V, 15, 20A, 2P, 3W	6-20R	WITH 6-20P PLUG																																																																																																												
K	250V, 15, 30A, 2P, 3W	6-30R	WITH 6-30P PLUG																																																																																																												
L			'L' INDICATES ASSOCIATED RECEPTACLE IS LOCKING TYPE, PROVIDE MATCHING PLUG FOR EACH RECEPTACLE.																																																																																																												
M	250V, 15, 50A, 2P, 3W	6-50R	WITH 6-50P PLUG																																																																																																												
N	250V, 30, 20A, 3P, 4W	15-20R	WITH 15-20P PLUG																																																																																																												
P	250V, 30, 30A, 3P, 4W	15-30R	WITH 15-30P PLUG																																																																																																												
R	250V, 30, 50A, 3P, 4W	15-50R	WITH 15-50P PLUG																																																																																																												
S	480V, 30, 30A, 3P, 4W	L16-30R	WITH L12-30P PLUG																																																																																																												
T	125V, 15, 20A, 2P, 3W	5-20R	ISOLATED GROUND WITH INTEGRAL TRANSIENT SUPPRESSOR AND DEDICATED GREEN/YELLOW CONDUCTOR BACK TO GROUND BUS AT PANEL.																																																																																																												

H:\AVCC\12326 AVCC LED Lighting Upgrade Phase 4\Drawings\Elect\12326E000.dwg, Plotted: June 21, 2017 11:02 AM Alex, (Last Saved: June 21, 2017 10:35 AM Alex)

REV	DATE	DESCRIPTION
-	-	-

SCALE	NONE
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



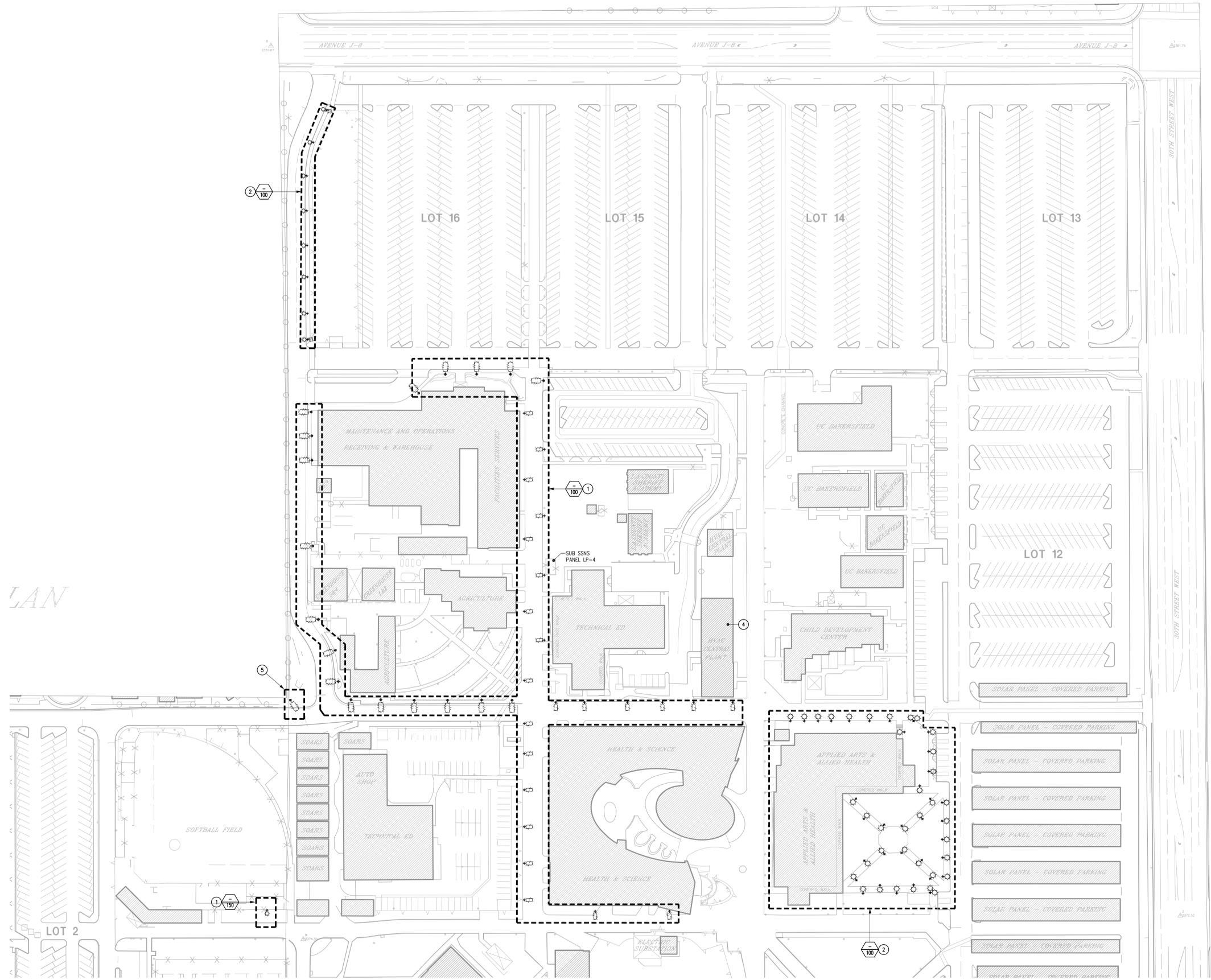
**KOCHER SCHIRRA GOHARZI**  
Consulting Engineers  
111 N JACKSON SUITE 121 GLENDALE CA 91206  
PHONE: 818.240.5630 FAX: 818.240.5144

PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4  
ANTELOPE VALLEY  
COLLEGE  
LANCASTER, CA**

DRAWING TITLE  
**ABBREVIATIONS,  
SYMBOLS AND  
GENERAL NOTES**

**E-001**

K:\AVCC\12326 AVC LED Lighting Upgrade P&ID Drawings\Elec\12326E000.dwg - Plotter: June 26, 2017 9:05 AM Plot: (User: Suresh, June 26, 2017 9:05 AM Plot)



**GENERAL NOTES:**

- A. PRIOR TO REMOVAL OF ANY LUMINAIRE, FIELD VERIFY EXISTING BRANCH CIRCUIT(S) FEEDING THE PARTICULAR LOT. IDENTIFY ALL CHANGES IF ANY REQUIRED FOR CONVERSION FROM EXISTING VOLTAGE LEVEL TO 277 VOLTS. IDENTIFY ANY OTHER FIXTURE OR EQUIPMENT THAT MAY BE FED FROM THE SAME BRANCH CIRCUIT AND IF ANY NOTIFY THE ENGINEER. IDENTIFY ALSO ANY MOTOR LOAD THAT IS FED FROM THE SAME PANELBOARD. DO NOT CONNECT ANY LIGHTING CIRCUIT(S) TO PANELBOARDS SERVING MOTORIZED EQUIPMENT.
- B. WHEN CONVERTING AN EXISTING CONDUCTOR TO A NEUTRAL FOR NEW VOLTAGE LEVEL, THE SAID CONDUCTOR SHALL BE IDENTIFIED IN ALL ACCESSIBLE AREAS SUCH AS PANELBOARDS, PULL BOXES AND LIGHTING POLE. WRAP UP WITH GRAY TAPE FOR MINIMUM OF 12" IN PANELBOARDS AND PULL BOXES AND 6" INSIDE POWER POLES. THE NEUTRAL LOAD SHALL BE VERIFIED AND RESPECTIVE PANEL BOARD PHASES SHALL BE BALANCED.
- C. ALL WORK SHALL BE PHASED AND SCHEDULED AT COLLEGE CONVENIENCE TO PROVIDE MINIMUM IMPACT TO CAMPUS ACTIVITY. WORK SHALL BE COMPLETED IN EACH LOT PRIOR TO MOVING TO NEXT ONE. UPON THE AWARD OF CONTRACT AND FIELD VERIFICATION PROVIDE A DETAILED SCHEDULE, IDENTIFYING EACH TASK, TIME AND DURATION OF IMPACT FOR APPROVAL BY COLLEGE.
- D. ALL NEW LUMINAIRES SHALL BE ATTACHED TO EXISTING POLES BY HARDWARE APPROVED FOR THE PURPOSE PROVIDED BY FIXTURE MANUFACTURER.

**NOTES:**

- 1 REMOVE POLE MOUNTED LUMINAIRE. MAINTAIN AND SAFE-OFF WIRING AT TERMINATION POINT. MAINTAIN CONNECTION HARDWARE FOR RECONNECTION OF NEW LUMINAIRE WHERE APPLICABLE.
- 2 REMOVE EXISTING POLE AND POLE MOUNTED LUMINAIRE. MAINTAIN EXISTING FOUNDATION, WIRING AND CONDUIT FOR RECONNECTION TO NEW LUMINAIRE/POLES.
- 3 NOT USED
- 4 EXISTING POWER REBEL UNIT INSIDE THE CENTRAL PLANT IS TO BE REMOVED. REFER TO SHEET E-401 FOR DETAILS AND REQUIREMENTS.
- 5 REMOVE EXISTING POLE, POLE MOUNTED LUMINAIRE AND FOUNDATION. SAFE-OFF EXISTING WIRING AND CAP CONDUITS. BACKFILL HOLE AFTER FOUNDATION IS REMOVED.

REV	DATE	DESCRIPTION

SCALE	1" = 60'-0"
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



**KSC**  
**KOCHER SCHIRRA GOHARRI**  
 Consulting Engineers  
 111 N. JACKSON DRIVE, 121 GARDEN DR. #108  
 PHONE: 818.240.5630 FAX: 818.240.5144

PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4**  
**ANTELOPE VALLEY COLLEGE**  
**LANCASTER, CA**

DRAWING TITLE  
**LIGHTING PLAN**  
**DEMOLITION CONDITION**

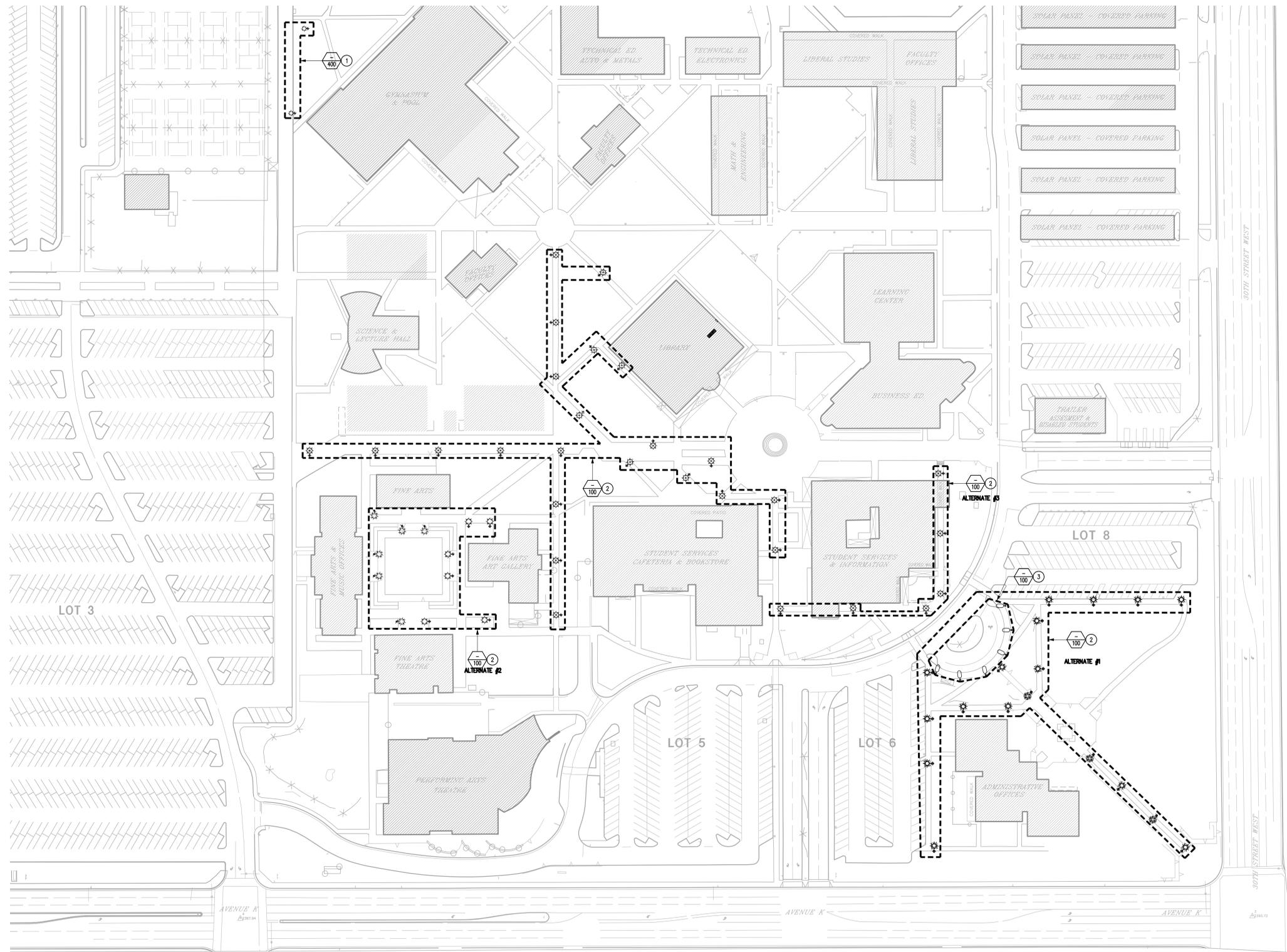
**E-100**

**GENERAL NOTES:**

- A. PRIOR TO REMOVAL OF ANY LUMINAIRE, FIELD VERIFY EXISTING BRANCH CIRCUIT(S) FEEDING THE PARTICULAR LOT. IDENTIFY ALL CHANGES IF ANY REQUIRED FOR CONVERSION FROM EXISTING VOLTAGE LEVEL TO 277 VOLTS. IDENTIFY ANY OTHER FIXTURE OR EQUIPMENT THAT MAY BE FED FROM THE SAME BRANCH CIRCUIT AND IF ANY NOTIFY THE ENGINEER. IDENTIFY ALSO ANY MOTOR LOAD THAT IS FED FROM THE SAME PANELBOARD. DO NOT CONNECT ANY LIGHTING CIRCUIT(S) TO PANELBOARDS SERVING MOTORIZED EQUIPMENT.
- B. WHEN CONVERTING AN EXISTING CONDUCTOR TO A NEUTRAL FOR NEW VOLTAGE LEVEL, THE SAID CONDUCTOR SHALL BE IDENTIFIED IN ALL ACCESSIBLE AREAS SUCH AS PANELBOARDS, PULL BOXES AND LIGHTING POLE. WRAP UP WITH GRAY TAPE FOR MINIMUM OF 12" IN PANELBOARDS AND PULL BOXES AND 6" INSIDE POWER POLES. THE NEUTRAL LOAD SHALL BE VERIFIED AND RESPECTIVE PANEL BOARD PHASES SHALL BE BALANCED.
- C. ALL WORK SHALL BE PHASED AND SCHEDULED AT COLLEGE CONVENIENCE TO PROVIDE MINIMUM IMPACT TO CAMPUS ACTIVITY. WORK SHALL BE COMPLETED IN EACH LOT PRIOR TO MOVING TO NEXT ONE. UPON THE AWARD OF CONTRACT AND FIELD VERIFICATION PROVIDE A DETAILED SCHEDULE, IDENTIFYING EACH TASK, TIME AND DURATION OF IMPACT FOR APPROVAL BY COLLEGE.
- D. ALL NEW LUMINAIRES SHALL BE ATTACHED TO EXISTING POLES BY HARDWARE APPROVED FOR THE PURPOSE PROVIDED BY FIXTURE MANUFACTURER.

**NOTES:**

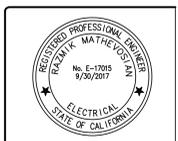
- ① REMOVE POLE MOUNTED LUMINAIRE. MAINTAIN AND SAFE-OFF WIRING AT TERMINATION POINT. MAINTAIN CONNECTION HARDWARE FOR RECONNECTION OF NEW LUMINAIRE WHERE APPLICABLE.
- ② REMOVE EXISTING POLE AND POLE MOUNTED LUMINAIRE. MAINTAIN EXISTING FOUNDATION, WIRING AND CONDUIT FOR RECONNECTION TO NEW LUMINAIRE/POLES.
- ③ LUMINAIRE TO BE MODIFIED WITH NEW LED KIT.



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REV	DATE	DESCRIPTION
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SCALE	1" = 100'-0"
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



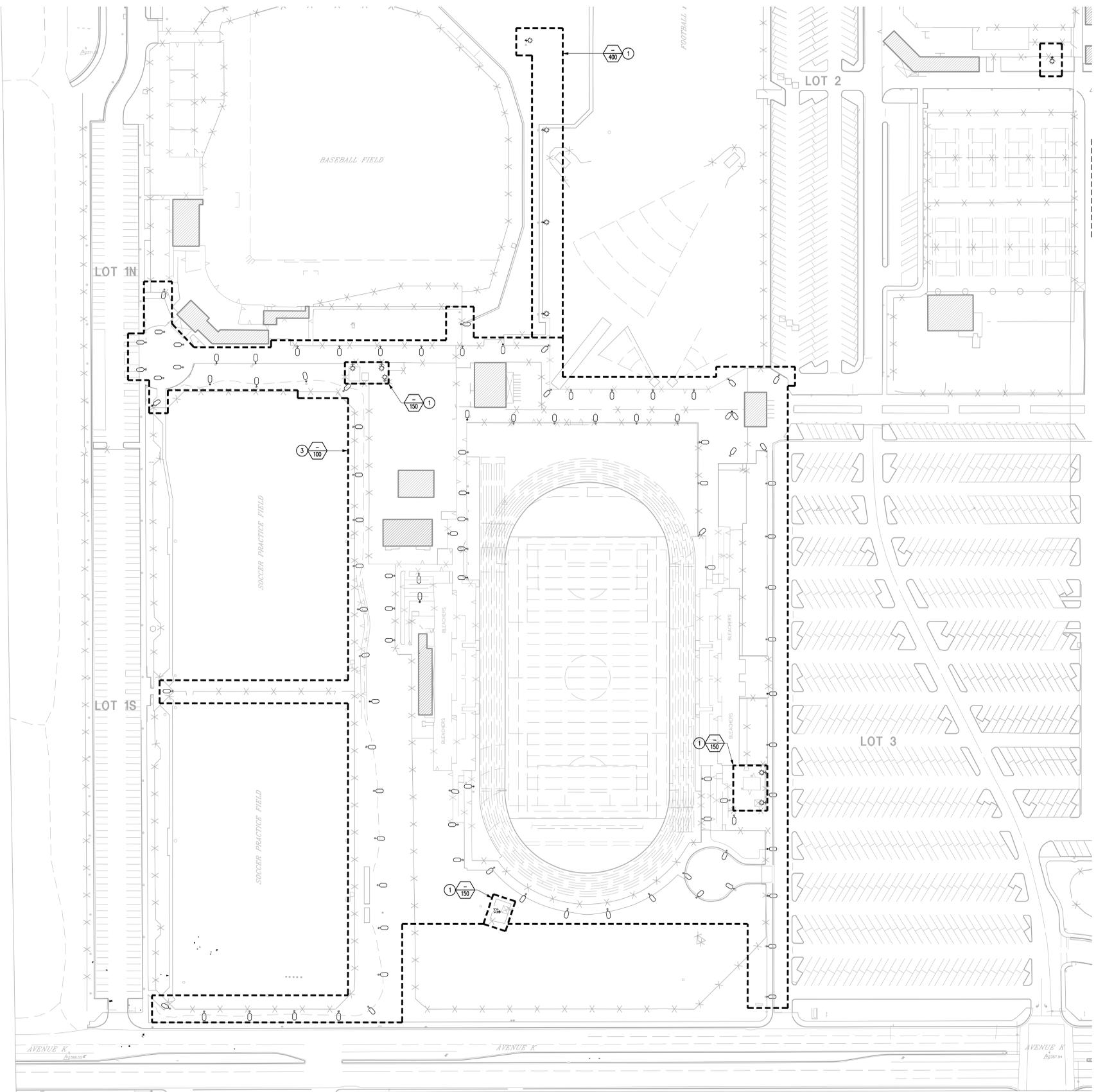
**ksb**  
**KOCHER SCHIRRA GHARIZI**  
 Consulting Engineers  
 111 N JACKSON SUITE 121 GLENDALE CA 91206  
 PHONE: 818.242.5630 FAX: 818.242.5144

PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4**  
**ANTELOPE VALLEY COLLEGE**  
**LANCASTER, CA**

DRAWING TITLE  
**LIGHTING PLAN**  
**DEMOLITION CONDITION**

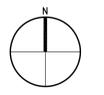
**E-101**





- GENERAL NOTES:**
- PRIOR TO REMOVAL OF ANY LUMINAIRE, FIELD VERIFY EXISTING BRANCH CIRCUIT(S) FEEDING THE PARTICULAR LOT. IDENTIFY ALL CHANGES IF ANY REQUIRED FOR CONVERSION FROM EXISTING VOLTAGE LEVEL TO 277 VOLTS. IDENTIFY ANY OTHER FIXTURE OR EQUIPMENT THAT MAY BE FED FROM THE SAME BRANCH CIRCUIT AND IF ANY NOTIFY THE ENGINEER. IDENTIFY ALSO ANY MOTOR LOAD THAT IS FED FROM THE SAME PANELBOARD. DO NOT CONNECT ANY LIGHTING CIRCUIT(S) TO PANELBOARDS SERVING MOTORIZED EQUIPMENT.
  - WHEN CONVERTING AN EXISTING CONDUCTOR TO A NEUTRAL FOR NEW VOLTAGE LEVEL, THE SAID CONDUCTOR SHALL BE IDENTIFIED IN ALL ACCESSIBLE AREAS SUCH AS PANELBOARDS, PULL BOXES AND LIGHTING POLE. WRAP UP WITH GRAY TAPE FOR MINIMUM OF 12" IN PANELBOARDS AND PULL BOXES AND 6" INSIDE POWER POLES. THE NEUTRAL LOAD SHALL BE VERIFIED AND RESPECTIVE PANEL BOARD PHASES SHALL BE BALANCED.
  - ALL WORK SHALL BE PHASED AND SCHEDULED AT COLLEGE CONVENIENCE TO PROVIDE MINIMUM IMPACT TO CAMPUS ACTIVITY. WORK SHALL BE COMPLETED IN EACH LOT PRIOR TO MOVING TO NEXT ONE. UPON THE AWARD OF CONTRACT AND FIELD VERIFICATION PROVIDE A DETAILED SCHEDULE, IDENTIFYING EACH TASK, TIME AND DURATION OF IMPACT FOR APPROVAL BY COLLEGE.
  - ALL NEW LUMINAIRES SHALL BE ATTACHED TO EXISTING POLES BY HARDWARE APPROVED FOR THE PURPOSE PROVIDED BY FIXTURE MANUFACTURER.

- NOTES:**
- REMOVE POLE MOUNTED LUMINAIRE. MAINTAIN AND SAFE-OFF WIRING AT TERMINATION POINT. MAINTAIN CONNECTION HARDWARE FOR RECONNECTION OF NEW LUMINAIRE WHERE APPLICABLE.
  - NOT USED
  - LUMINAIRE TO BE MODIFIED WITH NEW LED KIT.



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REV	DATE	DESCRIPTION
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SCALE	1" = 100'-0"
KSP PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



**kgb**

**KOCHER SCHIRRA SHARIZI**  
Consulting Engineers I

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PHONE: 818.242.5630 FAX: 818.242.5144

PROJECT NAME

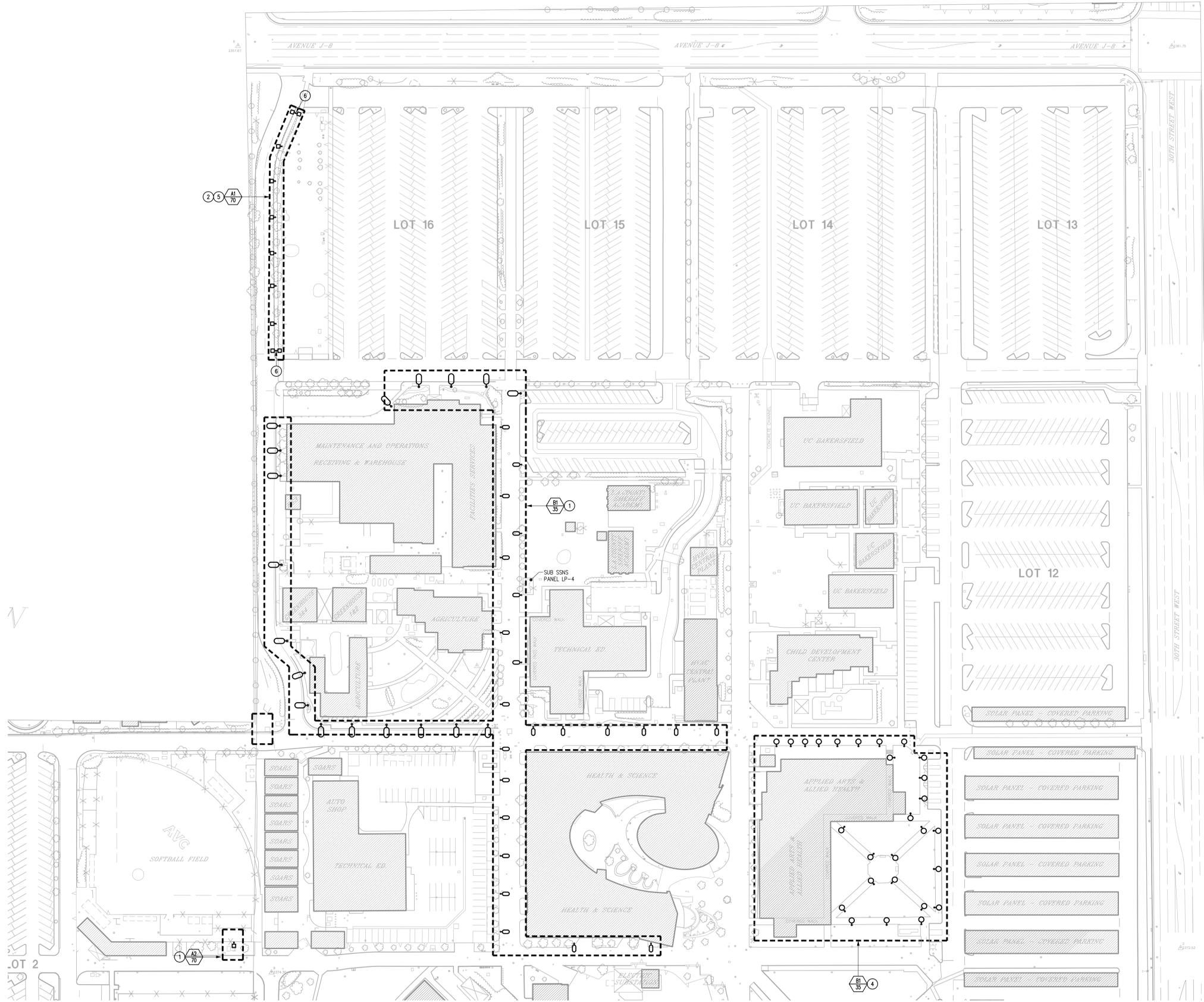
**AVC LED LIGHTING UPGRADE PHASE 4  
ANTELOPE VALLEY  
COLLEGE  
LANCASTER, CA**

DRAWING TITLE

**LIGHTING PLAN  
DEMOLITION CONDITION**

**E-102**

H:\AVCC\12326 AVCC LED Lighting Upgrade Phase 4\Drawings\Electrical\12326E200.dwg, Plotted: June 21, 2017 11:02 AM Alex, (Last Saved: June 6, 2017 10:43 AM Alex)



- GENERAL NOTES:**
- PRIOR TO REMOVAL OF ANY FIXTURE, FIELD VERIFY EXISTING BRANCH CIRCUIT(S) FEEDING THE PARTICULAR LOT. IDENTIFY ALL CHANGES REQUIRED FOR CONVERSION FROM EXISTING VOLTAGE LEVEL TO 277 VOLTS. IDENTIFY ANY OTHER FIXTURE OR EQUIPMENT THAT MAY BE FED FROM THE SAME BRANCH CIRCUIT AND IF ANY NOTIFY THE ENGINEER. IDENTIFY ALSO ANY MOTOR LOAD THAT IS FED FROM THE SAME PANELBOARD. DO NOT CONNECT ANY LIGHTING CIRCUIT(S) TO PANELBOARDS SERVING MOTORIZED EQUIPMENT.
  - WHEN CONVERTING AN EXISTING CONDUCTOR TO A NEUTRAL FOR NEW VOLTAGE LEVEL, THE SAID CONDUCTOR SHALL BE IDENTIFIED IN ALL ACCESSIBLE AREAS SUCH AS PANELBOARDS, PULL BOXES AND LIGHTING POLE WRAP UP WITH GRAY TAPE FOR MINIMUM OF 12" IN PANELBOARDS AND PULL BOXES AND 6" INSIDE POWER POLES. THE NEUTRAL LOAD SHALL BE VERIFIED AND RESPECTIVE PANEL BOARD PHASES SHALL BE BALANCED.
  - ALL WORK SHALL BE PHASED AND SCHEDULED AT COLLEGE CONVENIENCE TO PROVIDE MINIMUM IMPACT TO CAMPUS ACTIVITY. WORK SHALL BE COMPLETED IN EACH LOT PRIOR TO MOVING TO NEXT ONE. UPON THE AWARD OF CONTRACT AND FIELD VERIFICATION PROVIDE A DETAILED SCHEDULE IDENTIFYING EACH TASK, TIME AND DURATION OF IMPACT FOR APPROVAL BY COLLEGE.
  - ALL NEW FIXTURES SHALL BE ATTACHED TO EXISTING POLES BY HARDWARE APPROVED FOR THE PURPOSE PROVIDED BY FIXTURE MANUFACTURER.
  - WHERE NEW POLES ARE TO BE INSTALLED ON EXISTING FOUNDATIONS CONTRACTOR OR POLE VENDOR SHALL CONFIRM THAT THE NEW POLE BASE PLATE SHALL FIT EXISTING BOLT PATTERN AT EACH PEDESTAL BEFORE ORDERING. MANUFACTURER MAY NEED TO MODIFY PLATE BEFORE SHIPPING.
  - WHERE LED RETROFIT KITS ARE TO BE INSTALLED INSIDE EXISTING FIXTURES, INSTALLATION SHALL BE PER MANUFACTURER REQUIREMENTS. MANUFACTURER MAY ASK FOR THE REFLECTOR TO BE REMOVED FROM FIXTURE. REMOVE REFLECTOR, BUT MAINTAIN OR REINSTALL ACCENT PIECE.
  - AT THE COMPLETION OF THE PROJECT, CONTRACTOR IN COORDINATION WITH LIGHTING CONTROL SYSTEM SUPPLIER AND COLLEGE FACILITIES SHALL NUMBER EACH LIGHTING POLE AND PROVIDE AN IDENTIFICATION PLATE WITH LOT NUMBER AND POLE NUMBER AS PER DETAIL 8/E-400.

- NOTES:**
- INSTALL NEW LED LUMINAIRE ON EXISTING POLE. RECONNECT TO EXISTING WIRING. SEE LUMINAIRE SCHEDULE ON SHEET E-400.
  - INSTALL NEW POLE AND LUMINAIRE ON EXISTING FOUNDATION. RECONNECT TO EXISTING WIRING. SEE LUMINAIRE SCHEDULE ON SHEET E-400.
  - NOT USED
  - INSTALL NEW POLE AND LUMINAIRE ON EXISTING FOUNDATION. RECONNECT TO EXISTING WIRING. SEE SHEET E-300 FOR MORE INFORMATION AND SEE SHEET E-400 FOR LUMINAIRE SCHEDULE.
  - NEW LED LUMINAIRE WITH WIRELESS CONTROL MODULE PER SCHEDULE ON SHEET E-400 AND SPECIFICATION TO BE FURNISHED, INSTALLED AND COMMISSIONED BY CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN SERVICES OF A FACTORY AUTHORIZED TECHNICIAN TO PROGRAM, TEST AND COMMISSION INDIVIDUAL AND COMPLETE LIGHTING SYSTEM TO ENSURE A TROUBLE FREE OPERATION.
  - CONTRACTOR SHALL PROVIDE MOUNTING HARDWARE FOR POLE WITH TWO FIXTURES.



REV	DATE	DESCRIPTION
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SCALE	1" = 100'-0"
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



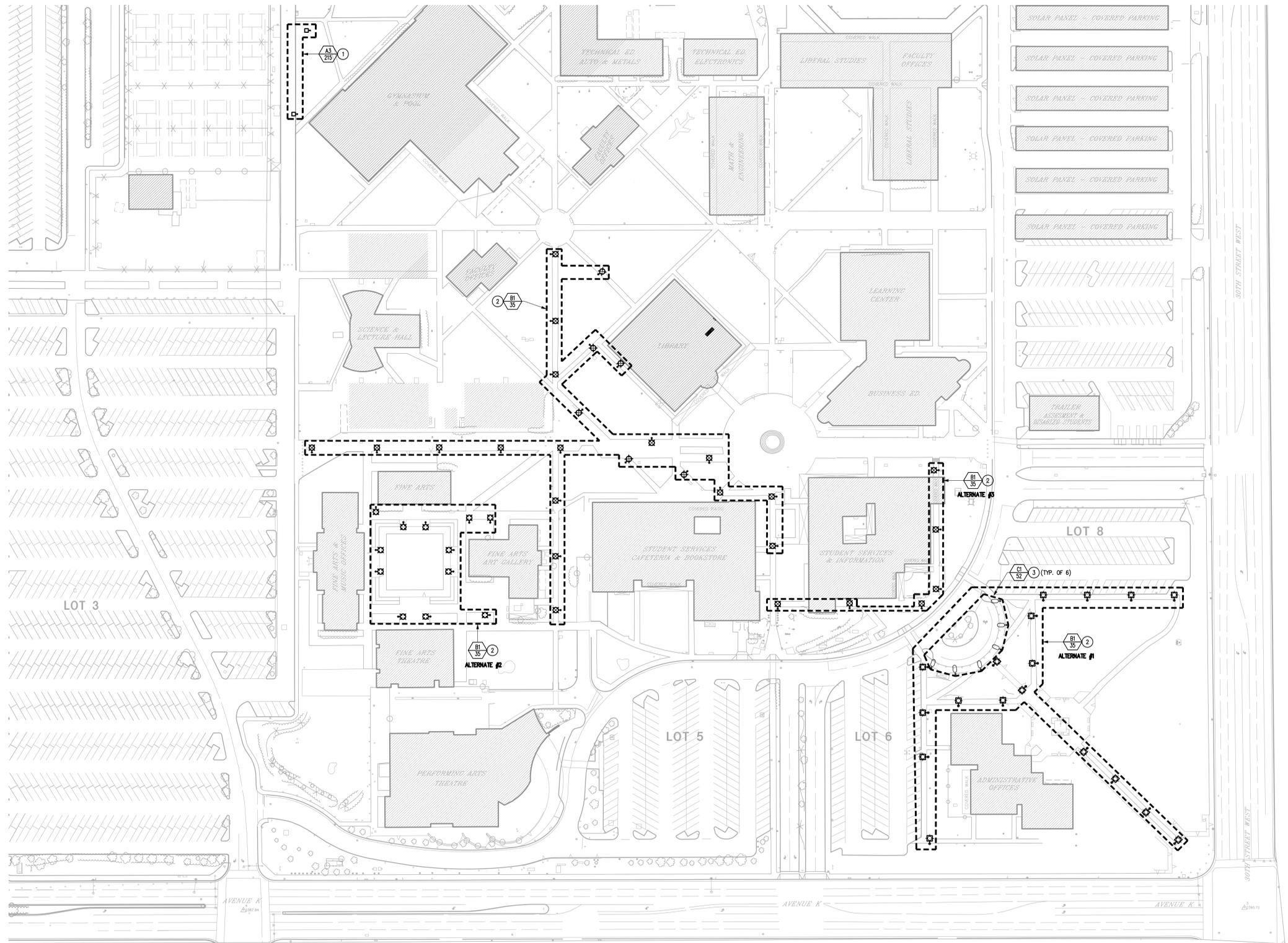
**kgb**  
**KOCHER SCHIRRA SCHARZI**  
 Consulting Engineers  
 111 N JACKSON SUITE 121 GLENDALE CA 91206  
 PHONE: 818.242.5630 FAX: 818.242.5144

PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4**  
**ANTELOPE VALLEY COLLEGE**  
**LANCASTER, CA**

DRAWING TITLE  
**LIGHTING PLAN**  
**NEW CONDITION**

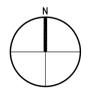
**E-200**

H:\AVCC\12326 AVC LED Lighting Upgrade Phase 4\Drawings\Elect\12326E201.dwg, Plotted: June 21, 2017 11:02 AM Alex, (Last Saved: June 21, 2017 10:57 AM Alex)



- GENERAL NOTES:**
- PRIOR TO REMOVAL OF ANY FIXTURE, FIELD VERIFY EXISTING BRANCH CIRCUIT(S) FEEDING THE PARTICULAR LOT. IDENTIFY ALL CHANGES REQUIRED FOR CONVERSION FROM EXISTING VOLTAGE LEVEL TO 277 VOLTS. IDENTIFY ANY OTHER FIXTURE OR EQUIPMENT THAT MAY BE FED FROM THE SAME BRANCH CIRCUIT AND IF ANY NOTIFY THE ENGINEER. IDENTIFY ALSO ANY MOTOR LOAD THAT IS FED FROM THE SAME PANELBOARD. DO NOT CONNECT ANY LIGHTING CIRCUIT(S) TO PANELBOARDS SERVING MOTORIZED EQUIPMENT.
  - WHEN CONVERTING AN EXISTING CONDUCTOR TO A NEUTRAL FOR NEW VOLTAGE LEVEL, THE SAB CONDUCTOR SHALL BE IDENTIFIED IN ALL ACCESSIBLE AREAS SUCH AS PANELBOARDS, PULL BOXES AND LIGHTING POLE. WRAP UP WITH GRAY TAPE FOR MINIMUM OF 12" IN PANELBOARDS AND PULL BOXES AND 8" INSIDE POWER POLES. THE NEUTRAL LOAD SHALL BE VERIFIED AND RESPECTIVE PANEL BOARD PHASES SHALL BE BALANCED.
  - ALL WORK SHALL BE PHASED AND SCHEDULED AT COLLEGE CONVENIENCE TO PROVIDE MINIMUM IMPACT TO CAMPUS ACTIVITY. WORK SHALL BE COMPLETED IN EACH LOT PRIOR TO MOVING TO NEXT ONE. UPON THE AWARD OF CONTRACT AND FIELD VERIFICATION PROVIDE A DETAILED SCHEDULE, IDENTIFYING EACH TASK, TIME AND DURATION OF IMPACT FOR APPROVAL BY COLLEGE.
  - ALL NEW FIXTURES SHALL BE ATTACHED TO EXISTING POLES BY HARDWARE APPROVED FOR THE PURPOSE PROVIDED BY FIXTURE MANUFACTURER.
  - WHERE NEW POLES ARE TO BE INSTALLED ON EXISTING FOUNDATIONS CONTRACTOR OR POLE VENDOR SHALL CONFIRM THAT THE NEW POLE BASE PLATE FITS EXISTING BOLT PATTERN AT EACH PEDIestal. BEFORE ORDERING, MANUFACTURER MAY NEED TO MODIFY PLATE BEFORE SHIPPING.
  - WHERE LED RETROFIT KITS ARE TO BE INSTALLED INSIDE EXISTING FIXTURES, INSTALLATION SHALL BE PER MANUFACTURER REQUIREMENTS. MANUFACTURER MAY ASK FOR THE REFLECTOR TO BE REMOVED FROM FIXTURE. REMOVE REFLECTOR, BUT MAINTAIN OR REINSTALL ACCENT PIECE.
  - AT THE COMPLETION OF THE PROJECT, CONTRACTOR IN COORDINATION WITH LIGHTING CONTROL SYSTEM SUPPLIER AND COLLEGE FACILITIES SHALL NUMBER EACH LIGHTING POLE AND PROVIDE AN IDENTIFICATION PLATE WITH LOT NUMBER AND POLE NUMBER AS PER DETAIL 8/E-400.

- NOTES:**
- INSTALL NEW LED LUMINAIRE ON EXISTING POLE. RECONNECT TO EXISTING WIRING. SEE LUMINAIRE SCHEDULE ON SHEET E-400.
  - INSTALL NEW POLE AND LUMINAIRE ON EXISTING FOUNDATION. RECONNECT TO EXISTING WIRING. SEE LUMINAIRE SCHEDULE ON SHEET E-400.
  - MODIFY EXISTING LUMINAIRE WITH NEW RETROFIT KIT. SEE SHEET E-400 FOR SCHEDULES.
  - NOT USED



REV	DATE	DESCRIPTION
-	-	-

SCALE	1" = 100'-0"
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



**kgb**

**KOCHER SCHIRRA GHARZI**  
Consulting Engineers

111 N JACKSON SUITE 121 GLENDALE CA 91206  
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PROJECT NAME

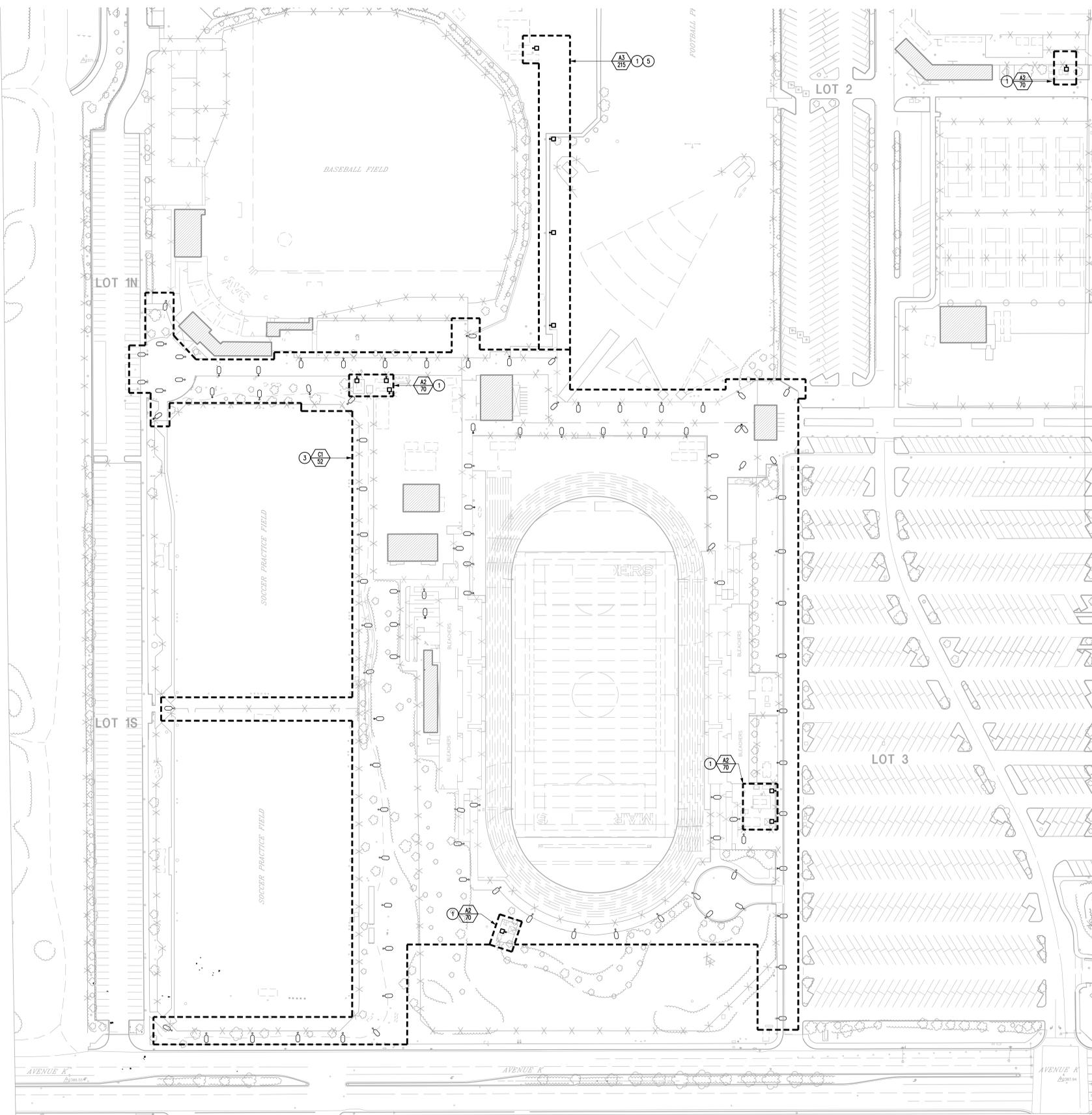
**AVC LED LIGHTING UPGRADE PHASE 4  
ANTELOPE VALLEY  
COLLEGE  
LANCASTER, CA**

DRAWING TITLE

**LIGHTING PLAN  
NEW CONDITION**

**E-201**

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- GENERAL NOTES:**
- A. PRIOR TO REMOVAL OF ANY FIXTURE, FIELD VERIFY EXISTING BRANCH CIRCUIT(S) FEEDING THE PARTICULAR LOT. IDENTIFY ALL CHANGES REQUIRED FOR CONVERSION FROM EXISTING VOLTAGE LEVEL TO 277 VOLTS. IDENTIFY ANY OTHER FIXTURE OR EQUIPMENT THAT MAY BE FED FROM THE SAME BRANCH CIRCUIT AND IF ANY NOTIFY THE ENGINEER. IDENTIFY ALSO ANY MOTOR LOAD THAT IS FED FROM THE SAME PANELBOARD. DO NOT CONNECT ANY LIGHTING CIRCUIT(S) TO PANELBOARDS SERVING MOTORIZED EQUIPMENT.
  - B. WHEN CONVERTING AN EXISTING CONDUCTOR TO A NEUTRAL FOR NEW VOLTAGE LEVEL, THE SAID CONDUCTOR SHALL BE IDENTIFIED IN ALL ACCESSIBLE AREAS SUCH AS PANELBOARDS, PULL BOXES AND LIGHTING POLE. WRAP UP WITH GRAY TAPE FOR MINIMUM OF 12" IN PANELBOARDS AND PULL BOXES AND 6" INSIDE POWER POLES. THE NEUTRAL LOAD SHALL BE VERIFIED AND RESPECTIVE PANEL BOARD PHASES SHALL BE BALANCED.
  - C. ALL WORK SHALL BE PHASED AND SCHEDULED AT COLLEGE CONVENIENCE TO PROVIDE MINIMUM IMPACT TO CAMPUS ACTIVITY. WORK SHALL BE COMPLETED IN EACH LOT PRIOR TO MOVING TO NEXT ONE. UPON THE AWARD OF CONTRACT AND FIELD VERIFICATION PROVIDE A DETAILED SCHEDULE IDENTIFYING EACH TASK, TIME AND DURATION OF IMPACT FOR APPROVAL BY COLLEGE.
  - D. ALL NEW FIXTURES SHALL BE ATTACHED TO EXISTING POLES BY HARDWARE APPROVED FOR THE PURPOSE PROVIDED BY FIXTURE MANUFACTURER.
  - F. WHERE NEW POLES ARE TO BE INSTALLED ON EXISTING FOUNDATIONS CONTRACTOR OR POLE VENDOR SHALL CONFIRM THAT THE NEW POLE BASE PLATE SHALL FIT EXISTING BOLT PATTERN AT EACH PEDESTAL BEFORE ORDERING. MANUFACTURER MAY NEED TO MODIFY PLATE BEFORE SHIPPING.
  - G. WHERE LED RETROFIT KITS ARE TO BE INSTALLED INSIDE EXISTING FIXTURES, INSTALLATION SHALL BE PER MANUFACTURER REQUIREMENTS. MANUFACTURER MAY ASK FOR THE REFLECTOR TO BE REMOVED FROM FIXTURE. REMOVE REFLECTOR, BUT MAINTAIN OR REINSTALL ACCENT PIECE.
  - H. AT THE COMPLETION OF THE PROJECT, CONTRACTOR IN COORDINATION WITH LIGHTING CONTROL SYSTEM SUPPLIER AND COLLEGE FACILITIES SHALL NUMBER EACH LIGHTING POLE AND PROVIDE AN IDENTIFICATION PLATE WITH LOT NUMBER AND POLE NUMBER AS PER DETAIL 8/E-400.

- NOTES:**
- 1. INSTALL NEW LED LUMINAIRE ON EXISTING POLE. RECONNECT TO EXISTING WIRING. MAINTAIN EXISTING CONTROLS. SEE LUMINAIRE SCHEDULE ON SHEET E-400.
  - 2. NOT USED
  - 3. MODIFY EXISTING LUMINAIRE WITH NEW RETROFIT KIT. SEE SHEET E-400 FOR SCHEDULES.
  - 4. NOT USED
  - 5. NEW LED LUMINAIRE WITH WIRELESS CONTROL MODULE PER SCHEDULE ON SHEET E-400 AND SPECIFICATION TO BE FURNISHED, INSTALLED AND COMMISSIONED BY CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN SERVICES OF A FACTORY AUTHORIZED TECHNICIAN TO PROGRAM, TEST AND COMMISSION INDIVIDUAL AND COMPLETE LIGHTING SYSTEM TO ENSURE A TROUBLE FREE OPERATION.

REV	DATE	DESCRIPTION
-	-	-

SCALE	1" = 100'-0"
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17

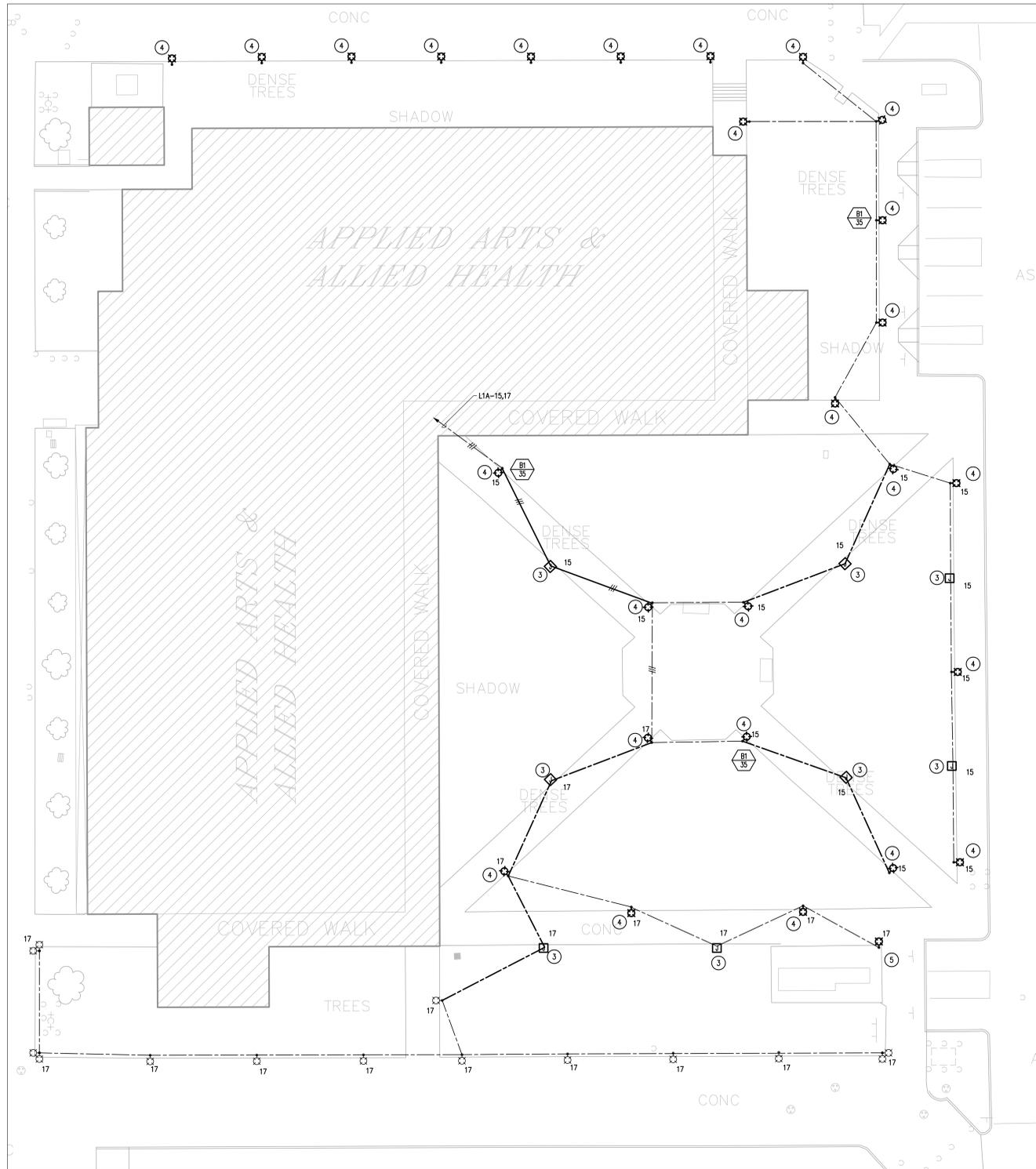
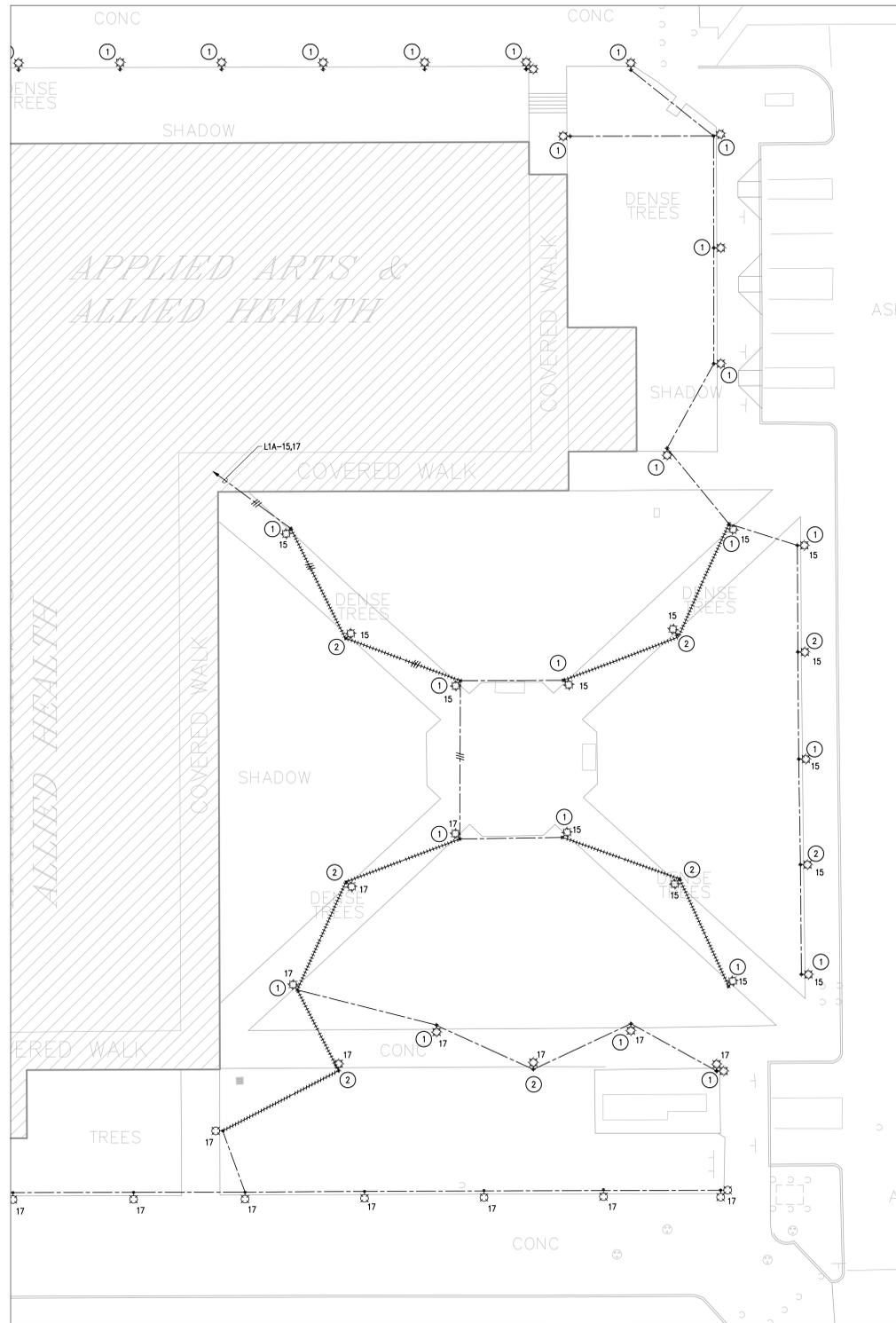


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PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4  
 ANTELOPE VALLEY COLLEGE  
 LANCASTER, CA**

DRAWING TITLE  
**LIGHTING PLAN  
 NEW CONDITION**

**E-202**



- GENERAL NOTES**
- PRIOR TO ANY DIGGING OR EXCAVATION TO INSTALL NEW INTERCEPT PULLBOXS, CONTRACTOR REFER TO COLLEGE RECORD DRAWINGS OF EXISTING UNDERGROUND UTILITIES AND USE THEM AS GUIDE FOR LOCATING EXISTING UNDERGROUND LINES (ELECTRIC, SEWER, WATER, ETC.). CONTRACTOR SHALL VERIFY EXACT LOCATION OF LINES ALONG THE NEW UNDERGROUND CONDUIT RUNS BY USING ELECTRONIC LOCATING DEVICES.
  - INCLUDE COST OF LOCATING THE UNDERGROUND LINES IN THE BID. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO EXISTING UNDERGROUND LINES DUE TO NEGLIGENCE.
  - ALL AREAS TO BE EXCAVATED FOR INSTALLATION OF NEW INTERCEPT PULLBOXS SHALL BE BARRICADED FOR THE SAFETY AND PROTECTION OF PEDESTRIANS. BARRICADES SHALL BE CHAIN LINK FENCE PANELS OF 6' BY 10', WITH STAKES AND TIED TOGETHER END TO END WITH MINIMUM # 8 WIRE. BARRICADES WILL REMAIN IN PLACE UNTIL THE SURFACE IS RESTORED BACK TO ORIGINAL.
  - MINIMIZE NOISE FROM EXCAVATION AND BACKFILL OPERATIONS DURING SCHOOL HOURS WHEN WORKING IN PROXIMITY TO THE BUILDINGS.
  - MINIMIZE PRODUCTION AND SPREAD OF DUST BY WATERING WHEN EXCAVATING OR BACKFILLING.
  - ALL CONDUIT RUNS PASSING EXISTING CONCRETE SIDE WALKS SHALL BE INSTALLED BY HORIZONTAL BORING TO AVOID CUTTING EXISTING SIDEWALKS UNLESS NOTED OTHERWISE.
- SHEET NOTES**
- REMOVE EXISTING POLE AND LUMINAIRE.
  - REMOVE EXISTING POLE AND LUMINAIRE AND DEMOLISH EXISTING FOUNDATION. MAINTAIN EXISTING CONDUIT AND REMOVE WIRING FROM POLES TO POLE.
  - EXCAVATE ON BOTH SIDES TO EXPOSE EXISTING CONDUITS, PROVIDE PULLBOX (SEE DETAIL 4/E-400) AT INTERCEPTION POINT AND PULL NEW WIRING.
  - INSTALL NEW POLE AND LUMINAIRE ON EXISTING FOUNDATION. RECONNECT TO EXISTING WIRING.
  - INSTALL NEW POLE AND TWO NEW LUMINAIRE ON EXISTING FOUNDATION. RECONNECT TO EXISTING WIRING.

H:\AVCC\12326 AVC LED Lighting Upgrade PH4\Drawings\Elec\12326E-300.dwg, Plotted: June 21, 2017 11:03 AM Alex, (Plot Size: 10.35 AM Alex)

DEMO CONDITION NTS 1

NEW CONDITION NTS 2

REV	DATE	DESCRIPTION
-	-	-

SCALE	1/16" = 1'-0"
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



**kgb**

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PROJECT NAME

**AVC LED LIGHTING UPGRADE PHASE 4  
ANTELOPE VALLEY  
COLLEGE  
LANCASTER, CA**

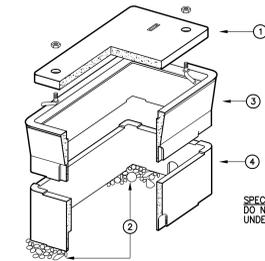
DRAWING TITLE

**ENLARGED  
PLANS**

**E-300**

**ANTELOPE VALLEY SITE REPLACEMENT**

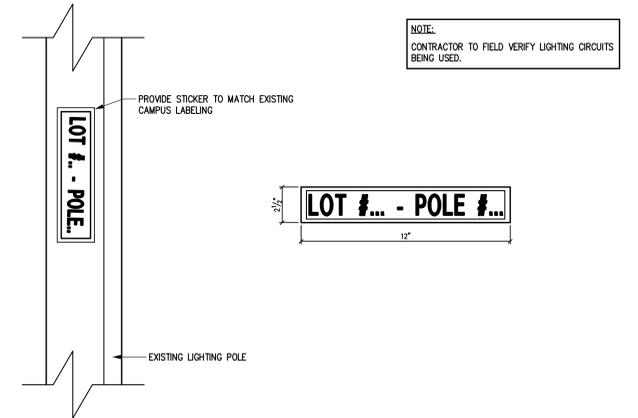
TYPE	DESCRIPTION	FINISH	LAMP(S)	BALLAST	WATTAGE	VOLTS	MANUFACTURER & PART NUMBER	REMARKS
A1	LUMINAIRE WITH ONE PIECE ALUMINUM HOUSING WITH INTEGRAL ARM AND SEPARATE, SELF-RETAINED HINGED, ONE PIECE DIECAST DOOR FRAME. RETROFIT ARM MOUNT TO ELIMINATE ADDITIONAL POLE DRILLING.	NATURAL PAINT	1 - 69W LED NW 4K	0-10V INTEGRATED	69	277	GARCOO - ECF-DIM-1-2-70LA-3270-NW-UNV-NP-RAM-IS-LUMEWAVE PCR KIT WITH LEADS OR APPROVED EQUAL BASED ON FIXTURE SCHEDULE AND SPECIFICATIONS FIXTURE PROVIDED WITH LUMEWAVE TOP 900 SERIES REMOTE CONTROL MODULE AND ANSI 136.41 STANDARD 7-PIN TWIST LOCK PHOTOCELL RECEPTACLE	FIXTURE PROVIDED WITH ALL MOUNTING HARDWARE.
A2	LUMINAIRE WITH ONE PIECE ALUMINUM HOUSING WITH INTEGRAL ARM AND SEPARATE, SELF-RETAINED HINGED, ONE PIECE DIECAST DOOR FRAME. RETROFIT ARM MOUNT TO ELIMINATE ADDITIONAL POLE DRILLING.	NATURAL PAINT	1 - 69W LED 4K	0-10V INTEGRATED	69	277	GARCOO - ECF-DIM-1-4-13SLA-6470-NW-UNV-NP-RAM-LUMEWAVE PCR KIT WITH LEADS OR APPROVED EQUAL BASED ON FIXTURE SCHEDULE AND SPECIFICATIONS FIXTURE PROVIDED WITH ANSI 136.41 STANDARD 7-PIN TWIST LOCK PHOTOCELL RECEPTACLE	FIXTURE PROVIDED WITH ALL MOUNTING HARDWARE.
A3	LUMINAIRE WITH ONE PIECE ALUMINUM HOUSING WITH INTEGRAL ARM AND SEPARATE, SELF-RETAINED HINGED, ONE PIECE DIECAST DOOR FRAME. RETROFIT ARM MOUNT TO ELIMINATE ADDITIONAL POLE DRILLING.	NATURAL PAINT	1 - 215W LED 4K	0-10V INTEGRATED	215	277	GARCOO - ECF-DIM-1-4-215LA-641A-NW-UNV-NP-RAM-LUMEWAVE PCR KIT WITH LEADS OR APPROVED EQUAL BASED ON FIXTURE SCHEDULE AND SPECIFICATIONS FIXTURE PROVIDED AND ANSI 136.41 STANDARD 7-PIN TWIST LOCK PHOTOCELL RECEPTACLE	FIXTURE PROVIDED WITH ALL MOUNTING HARDWARE.
B1	CAMPUS WALKWAY LUMINAIRE WITH ONE PIECE AND DUEL HEAD	NATURAL PAINT	1 - 35W LED 4K	0-10V INTEGRATED	35	277	LUMEC-MPTC-35W32LED4K-R-LE3 OR APPROVED EQUAL BASED ON FIXTURE SCHEDULE AND SPECIFICATIONS	FIXTURE PROVIDED WITH ALL MOUNTING HARDWARE.
C1	WEST CAMPUS WALKWAY LUMINAIRE LED RETROFIT KIT	NATURAL PAINT	1 - 55W LED 4K	0-10V INTEGRATED	55	277	REMPHOS TECHNOLOGIES: RPT-LEDLOCK-100L-750 OR APPROVED EQUAL BASED ON FIXTURE SCHEDULE AND SPECIFICATIONS	
POLE	CAMPUS POLES	NATURAL PAINT					LUMEC-APRMF-12-LB4C-1S	PROVIDE 14 POLES



- NOTE:
- REINFORCED BOLT DOWN CONCRETE COVER. (IN TRAFFIC AREAS PROVIDE STEEL PLATE TRAFFIC BOLT DOWN COVER.)
  - PROVIDE 12" MINIMUM DEPTH OF CRUSHED ROCK OR PEA GRAVEL BELOW BOX FOR DRAINAGE.
  - PRECAST CONCRETE BOTTOMLESS PULL BOX. MINIMUM OUTSIDE DIMENSIONS 13"x19"x12" DEEP.
  - PROVIDE EXTENSIONS AS REQUIRED TO MEET FIELD CONDITIONS.
  - IDENTIFICATIONS PER SPECIFICATIONS.

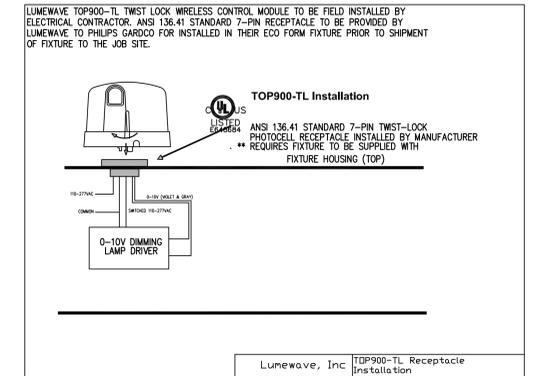
SPECIAL NOTE:  
DO NOT SPLICE CONDUCTORS IN UNDERGROUND PULL BOXES

- NTS 3 PRECAST JUNCTION BOX NTS 4



NOTE:  
CONTRACTOR TO FIELD VERIFY LIGHTING CIRCUITS BEING USED.

FIXTURE SCHEDULES NTS 6 - NTS 7 LIGHTING POLE CIRCUIT LABELING NTS 8



LUMEWAVE TOP900-TL TWIST LOCK WIRELESS CONTROL MODULE TO BE FIELD INSTALLED BY ELECTRICAL CONTRACTOR. ANSI 136.41 STANDARD 7-PIN RECEPTACLE TO BE PROVIDED BY LUMEWAVE TO PHILIPS GARCOO FOR INSTALLATION IN THEIR ECO FORM FIXTURE PRIOR TO SHIPMENT OF FIXTURE TO THE JOB SITE.

Lumewave, Inc. TOP900-TL Receptacle Installation

- NTS 9 NEW FIXTURE MOUNTED CONTROL MODULE NTS 10 - NTS 11 NEW FIXTURE MOUNTED CONTROL MODULE NTS 12

- NTS 13 - NTS 14 - NTS 15 - NTS 16

REV	DATE	DESCRIPTION
-	-	-

SCALE	NTS
KSC PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17

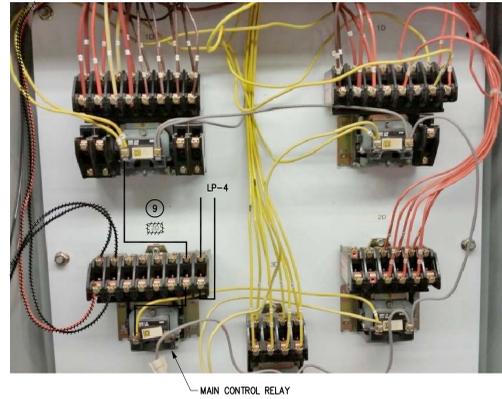


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PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4  
ANTELOPE VALLEY COLLEGE  
LANCASTER, CA**

DRAWING TITLE  
**FIXTURE AND PANEL SCHEDULES**

**E-400**



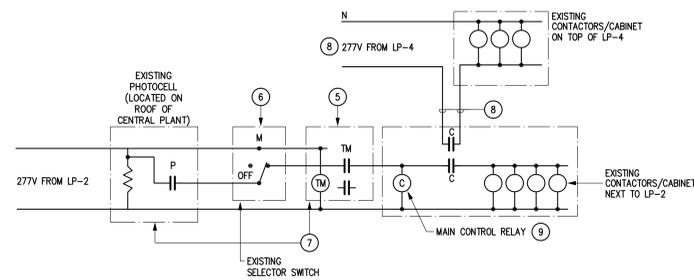
CONTACTOR CABINETS LP-2



CONTACTOR CABINETS AND BYPASS SWITCH

NTS

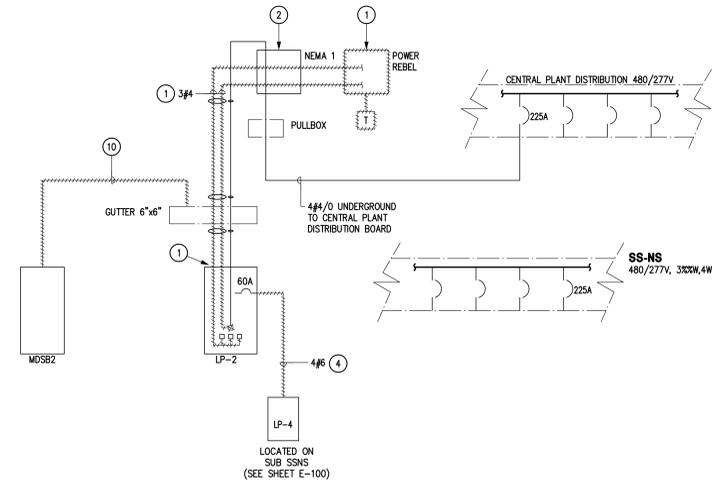
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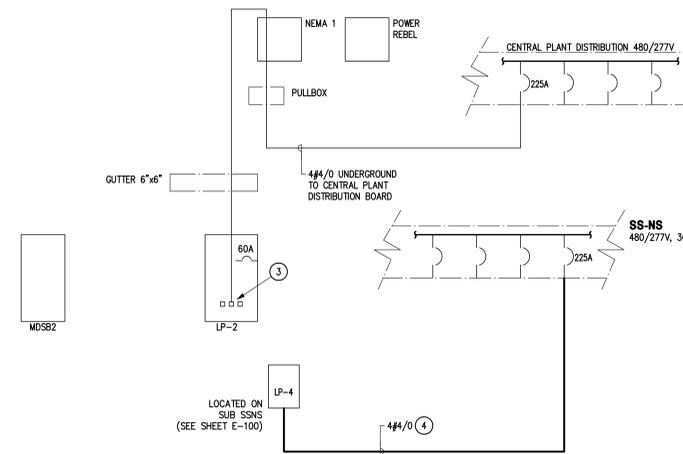
EXISTING LIGHTING CONTROL WIRING

NTS

3



DEMOLITION CONDITION



NEW CONDITION

GENERAL NOTES

A. ALL EQUIPMENT ARE EXISTING UNLESS NOTED OTHERWISE.

SHEET NOTES

- 1 EXISTING POWER REBEL ASSOCIATED TRANSFORMER IS TO BE REMOVED, DISCONNECT AND REMOVE ALL WIRING INCLUDING CONTROL WIRING (NOT SHOWN) TO THE EXTENT REQUIRED.
- 2 REMOVE ANY CONDUIT WORK BETWEEN POWER REBEL AND THE EXISTING NEMA PULL BOX. PROVIDE KNOCKOUT SEAL FOR OPENINGS AS REQUIRED.
- 3 CONNECT EXISTING 4/0 CONDUCTORS DIRECTLY TO PANELBOARD MAIN LUGS. IN NEW CONDITIONS PANELBOARD WILL BE FED DIRECTLY FROM THE DISTRIBUTION PANELBOARD IN THE NEW CENTRAL PLANT. PROVIDE A BREAKER IDENTIFICATION PLATE MATCHING PANELBOARD ID AT THE DISTRIBUTION BOARD.
- 4 REMOVE EXISTING WIRING BETWEEN LP-2 PANELBOARD AND THE LP-4 PANELBOARD AT THE SS-NS SUBSTATION. PROVIDE NEW WIRING BETWEEN THE LP-4 AND THE EXISTING CIRCUIT BREAKER IDENTIFIED AS LP-4 IN THE SUBSTATION.
- 5 PROVIDE AND INSTALL A NEW 365-DAY ASTRONOMIC TIME CLOCK IN NEMA 3R ENCLOSURE IN PROXIMITY OF LP-2 PANELBOARD.
- 6 ONLY ONE PHOTO CELL AND BYPASS SWITCH IS TO BE FUNCTIONAL FOR CONTROL OF LIGHTING. REMOVE OBSOLETE SELECTOR SWITCHES AND SEAL ANY UNUSED OPENINGS.
- 7 EXISTING PHOTO CELL AND NEW TIMER ARE TO CONTROL LIGHTING CONTACTORS IN EXISTING CABINETS AT LP-2 AND LP-4.
- 8 TRACE AND IDENTIFY 277 CONTROL CIRCUIT FROM LP-4 PANEL AND PROVIDE FOR REQUIRED MODIFICATIONS AS SHOWN.
- 9 PROVIDE A WARNING SIGN INSIDE CABINET ON TOP OF MAIN CONTROL RELAY READING: "WARNING TWO CIRCUITS FROM DIFFERENT SOURCES ARE CONTROLLED BY THIS CONTACTOR".
- 10 REMOVE EXISTING OBSOLETE WIRING.

SINGLE LINE DIAGRAM

NTS

4

REV	DATE	DESCRIPTION
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SCALE	AS NOTED
KSP PROJECT NO.	12326
DESIGNED BY	AK
DRAWN BY	JA
CHECKED BY	RM
DATE	02.23.17



PROJECT NAME  
**AVC LED LIGHTING UPGRADE PHASE 4  
 ANTELOPE VALLEY  
 COLLEGE  
 LANCASTER, CA**

DRAWING TITLE  
**NORTH CENTRAL PLANT  
 POWER REBEL REMOVE**

**E-401**