PROJECT ELECTRICAL NOTES

1) INSTALL FIELD LIGHTNING ARRESTORS AS INDICATED AND WHERE SHOWN ON PLANS (SEE PROPOSED AIRPORT LIGHTING LAYOUT PLANS) PROVIDE NEW FIELD LIGHTNING ARRESTOR AR801309 WITHIN EXISTING MITL OR MIRL BASE FIXTURES. PROVIDE REQUIRED CONNECTORS AND HEAT SHRINK AS REQUIRED. THEY SHALL BE RATED FOR 25,000 A PEAK, INSUL RESISTANCE 2 GΩ.

2) CONTRACTOR SHALL SCHEDULE AN ON SITE VISIT FROM THE REGULATOR/EQUIP. MANUFACTURER PRIOR TO ENERGIZING SYSTEM. MANUFACTURER SHALL EVALUATE, CALIBRATE, MONITOR AND TEST ALL SYSTEM EQUIPMENT TO VERIFY PROPER OPERATION. IN ADDITION, HE SHALL EVALUATE AND CALIBRATE AND PROVIDE ALL NECESSARY REPAIRS TO THE EXISTING (SPARE) REGULATOR TO ASSURE THAT IT IS IN PROPER WORKING CONDITION FOR FUTURE USE.

ELECTRICAL NOTES (AC 150/5340-30; APPENDIX 5)

GENERAL

(1) THE ELECTRICAL INSTALLATION, AS A MINIMUM, MUST MEET THE NEC AND LOCAL REGULATIONS.

(2) THE CONTRACTOR MUST ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM (INCLUDING FAA APPROVED EQUIPMENT) ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NON-COMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR MUST BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER), THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.

(3) IN CASE THE CONTRACTOR SELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, ANY COST FOR THESE ITEMS MUST BE INCIDENTAL TO THE EQUIPMENT COST.

(4) THE CONTRACTOR-INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) MUST NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE MUST BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.

(5) WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC., OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, ETC., WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES, STYLE, CLASS, ETC., MAY BE FAA APPROVED.

(6) ANY AND ALL INSTRUCTIONS FROM THE ENGINEER TO THE CONTRACTOR REGARDING CHANGES IN, OR DEVIATIONS FROM, THE PLANS AND SPECIFICATIONS MUST BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE FAA FIELD OFFICE (ADO/AFO). THE CONTRACTOR MUST NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.

(7) A MINIMUM OF THREE COPIES OF INSTRUCTION BOOKS MUST BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC., AT A MINIMUM MUST CONTAIN THE FOLLOWING:

(A) A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.

(B) THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.

(C) INSTALLATION INSTRUCTIONS.

(D) START-UP INSTRUCTIONS.

(E) PREVENTATIVE MAINTENANCE REQUIREMENTS.

(F) CHART FOR TROUBLESHOOTING.

(G) COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT. "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OR THE NARRATIVE MUST SHOW VOLTAGES/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLESHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS MUST BE INDICATED FOR ALL THE DIFFERENT MODES.

(H) PARTS LIST WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS, SUCH AS RESISTORS, DIODES, ETC. IT MUST INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.

(I) SAFETY INSTRUCTIONS.

POWER AND CONTROL

(1) STENCIL ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO STENCIL THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT STENCILING AREA, THE STENCILING MUST BE DONE ON THE WALL NEXT TO THE UNIT. THE LETTERS MUST BE ONE INCH HIGH AND PAINTED IN WHITE OR BLACK PAINT TO PROVIDE THE HIGHEST CONTRAST WITH THE BACKGROUND.

(2) COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION MUST BE BLACK. BLACK AND RED MUST BE USED FOR SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE MUST BE USED FOR THREE-PHASE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, MUST BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL CONDUCTORS LARGER THAN NO. 6 AWG MUST BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS.

(3) ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE MUST BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING MUST EXTEND TO THE POINT OF UTILIZATION.

(4) IN CONTROL WIRING THE SAME COLOR MUST BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.

(5) ALL POWER AND CONTROL CIRCUIT CONDUCTORS MUST BE COPPER; ALUMINUM WILL NOT BE ACCEPTED. THIS INCLUDES WIRE, CABLE, BUSSES, TERMINALS, SWITCH/PANEL COMPONENTS, ETC.

(6) LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS MUST BE INSTALLED IN SEPARATE WIREWAYS.

(7) NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND PULL/JUNCTION BOXES.

(8) THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND THE SIZE OF THE CONDUCTORS SHOWN, MUST BE AS FOLLOWS:

(A) IN STRAIGHT PULLS THE LENGTH OF THE BOX MUST NOT BE LESS THAN EIGHT TIMES AND THE OPPOSITE WALL OF THE BOX MUST NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END MUST BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END. OF THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR MUST

(B) IN ANGLE OR U-PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX OF THE LARGEST CONDUIT. THIS DISTANCE MUST BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.

(9) A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, MUST NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS. CAST, CONDUIT TYPE OUTLETS MUST NOT BE TREATED AS PULL/JUNCTION BOXES.

(10) EQUIPMENT CABINETS MUST NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT MUST BE BROUGHT INTO THESE ENCLOSURES.

(11) SPLICES AND JUNCTION POINTS WILL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.

(12) CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) MUST BE THERMAL-MAGNETIC, MOLDED CASE, PERMANENT TRIP WITH 100-AMPERE, MINIMUM, FRAME.

(13) DUAL LUGS MUST BE USED WHERE TWO WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.

(14) ALL WALL MOUNTED EQUIPMENT ENCLOSURES MUST BE MOUNTED ON WOODEN MOUNTING BOARDS.

(15) WOODEN EQUIPMENT MOUNTING BOARDS MUST BE PLYWOOD, EXTERIOR TYPE, 3/4 INCH MINIMUM THICKNESS, BOTH SIDES PAINTED WITH ONE COAT OF PRIMER AND TWO COATS OF GRAY, OIL-BASED PAINT.

(16) RIGID STEEL CONDUIT MUST BE USED THROUGHOUT THE INSTALLATION UNLESS OTHERWISE SPECIFIED. THE MINIMUM TRADE SIZE SHALL BE 3/4 INCH.

(17) ALL RIGID CONDUIT MUST BE TERMINATED AT CONSTANT CURRENT REGULATORS WITH A SECTION (10" MINIMUM) OF FLEXIBLE CONDUIT.

(18) UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES WITH, THE LINES OF THE STRUCTURE.

(19) ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC., SHALL BE GALVANIZED.

(20) USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNGROUNDED WIRE IS INSTALLED, USE INSULATED BUSHINGS.

(21) USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.

(22) WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE AND COVER WITH INSULATING VARNISH FOR FULL VALUE OF CABLE INSULATION VOLTAGE.

(23) UNLESS OTHERWISE NOTED, ALL INDOOR SINGLE CONDUCTOR CONTROL WIRING MUST BE NO. 12 AWG.

(24) BOTH ENDS OF EACH CONTROL CONDUCTOR SHALL BE TERMINATED AT A TERMINAL BLOCK. THE TERMINAL BLOCK MUST BE OF PROPER RATING AND SIZE FOR THE FUNCTION INTENDED AND BE LOCATED IN EQUIPMENT ENCLOSURES OR SPECIAL TERMINAL CABINETS.

(25) ALL CONTROL CONDUCTOR TERMINATORS MUST BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYED TERMINATORS, OR TERMINATORS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

(26) IN TERMINAL BLOCK CABINETS THE MINIMUM SPACING BETWEEN PARALLEL TERMINAL BLOCKS SHALL BE 6 INCHES. THE MINIMUM SPACING BETWEEN TERMINAL BLOCK SIDES/ENDS AND CABINET SIDES/BOTTOM/TOP SHALL BE 5 INCHES. THE MINIMUM SPACING WILL BE INCREASED AS REQUIRED BY THE NUMBER OF CONDUCTORS. ADDITIONAL SPACING MUST BE PROVIDED AT CONDUCTOR ENTRANCES.

(27) BOTH ENDS OF ALL CONTROL CONDUCTORS MUST BE IDENTIFIED AS TO THE CIRCUIT, TERMINAL, BLOCK, AND TERMINAL NUMBER. ONLY STICK-ON LABELS SHALL BE USED.

(28) A SEPARATE AND CONTINUOUS NEUTRAL CONDUCTOR SHALL BE INSTALLED AND CONNECTED FOR EACH BREAKER CIRCUIT IN THE POWER PANEL(S) FROM THE NEUTRAL BAR TO EACH POWER/CONTROL CIRCUIT.

(29) THE FOLLOWING WILL APPLY TO RELAY/CONTACTOR PANEL/ENCLOSURES:

(A) ALL COMPONENTS SHALL BE MOUNTED IN DUST PROOF ENCLOSURES WITH VERTICALLY HINGED COVERS.

(B) THE ENCLOSURES MUST HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS, AND INCOMING INTERNAL WIRING.

(C) ALL INCOMING/OUTGOING WIRING SHALL BE TERMINATED AT TERMINAL BLOCKS.

(D) EACH TERMINAL ON TERMINAL BLOCKS AND ON CIRCUIT COMPONENTS MUST BE CLEARLY IDENTIFIED.

(E) ALL CONTROL CONDUCTOR TERMINATIONS MUST BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYE CONNECTORS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

(F) WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING, AND TERMINALS MUST BE EXPOSED AND ACCESSIBLE WITHOUT ANY REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.

(G) ACCESS TO, OR REMOVAL OF, A CIRCUIT COMPONENT OR TERMINAL BLOCK SHALL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.

(H) EACH CIRCUIT COMPONENT MUST BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWING AND ITS FUNCTION.

(I) A COMPLETE WIRING DIAGRAM (NOT A SCHEMATIC DIAGRAM) MUST BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM MUST REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.

(J) THE DIAGRAM MUST IDENTIFY EACH CIRCUIT COMPONENT AND NUMBERING AND COLOR OF EACH INTERNAL CONDUCTOR AND TERMINAL.

(K) ALL WIRING MUST BE NEATLY TRAINED AND LACED.

(L) MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.

FIELD LIGHTING

(1) UNLESS OTHERWISE NOTIFIED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS WHETHER DIRECT EARTH BURIAL (DEB) OR IN DUCT/CONDUIT MUST BE FAA APPROVED L-824 TYPE. INSULATION VOLTAGE AND SIZE AS SPECIFIED.

(2) NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS WILL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REILS, ETC.

(3) THERE MUST BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REILS, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE WATERTIGHT CONDUIT WITH FRANGIBLE COUPLING(S) AT GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.

(4) THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN IN FIGURE 122 OF AC 150/5340-30.

(5) THE CABLE ENTRANCE INTO THE FIELD ATTACHED L-823 CONNECTORS MUST BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE AS SHOWN IN FIGURE 122 OF AC 150/5340-30.

(6) THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS MUST MATCH THE CABLE ID TO PROVIDE A WATERTIGHT CABLE ENTRANCE. THIS ENTRANCE SHALL BE ENCAPSULATED IN A HEAT SHRINKABLE TUBING WITH CONTINUOUS FACTORY APPLIED INTERNAL ADHESIVE, AS SHOWN IN FIGURE 122 OF AC 150/5340-30.

(7) L-823 TYPE 11, TWO-CONDUCTOR SECONDARY CONNECTOR SHALL BE CLASS "A" (FACTORY MOLDED).

(8) THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURES AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.

(9) ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.

(10) DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF 10 INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION 12 INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.

(11) DEB PRIMARY CONNECTORS SHALL BE BURIED AT A DEPTH OF 10 INCHES NEAR THE ISOLATION TRANSFORMER. THEY MUST BE ORIENTATED PARALLEL WITH THE RUNWAY/TAXIWAY CENTERLINE. THERE SHALL BE NO BENDS IN THE PRIMARY CABLE 6 INCHES, MINIMUM, FROM THE ENTRANCE INTO THE FIELD-ATTACHED PRIMARY CONNECTION.

(12) A SLACK OF 3 FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.

(13) DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK FACING PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO THE RIGHT IS CODED BLUE, THIS APPLIES TO THE STAKE-MOUNTED LIGHTS AND BASE-MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.

(14) L-867 BASES SHALL BE SIZE B, 24" DEEP CLASS 1 UNLESS OTHERWISE NOTED.

(15) BASE-MOUNTED FRANGIBLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES WILL NOT BE ACCEPTABLE. IT MUST HAVE A 1/4" DIAMETER MINIMUM OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.

(16) THE ELEVATION OF THE FRANGIBLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE-MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE-MOUNTED COUPLINGS.

(17) WHERE THE FRANGIBLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL MUST BE APPLIED COMPLETELY AROUND THE LIGHT STEM OR WIREWAY AT FRANGIBLE COUPLING TO PROVIDE A WATERTIGHT SEAL.

(18) TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.

(19) PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, FRANGIBLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, WILL NOT BE ACCEPTABLE. L-867 PLASTIC TRANSFORMER HOUSINGS ARE ACCEPTABLE. THE METAL THREADED FITTING SHALL BE SET IN THE FLANGE DURING THE CASTING PROCESS. BASE COVER BOLTS SHALL BE FABRICATED FROM 18-8 STAINLESS STEEL.

(20) THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS IS ± ONE (1) INCH. IN CASE OF STAKE-MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE-MOUNTED LIGHTS. THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER. THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.

(21) THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS IS ± ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

(22) SOIL PERMITTING, THE L-867 BASES SHALL NOT BE PRE-CAST IN CONCRETE. CONCRETE AROUND THE BASES MUST BE USED AS A BACKFILL.

(23) ENTRANCES INTO L-867 BASES SHALL BE PLUGGED FROM THE INSIDE WITH DUCT SEAL.

(24) GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZED.

(25) EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.

(26) CABLE/SPLICE/DUCT MARKERS MUST BE PRE-CAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS MUST BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE WILL NOT BE ACCEPTABLE.

(27) ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLE.

(28) LOCATIONS OF ALL DEB UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, SHALL BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS SHALL BE PLACED IMMEDIATELY ABOVE THE SPLICE/CONNECTIONS.

(29) THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS WHICH THE CABLES BELONG TO, SUCH AS RWY 4-22, PAPI-4, PAPI-22, ETC.

(30) LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

(31) THE PREFERRED MOUNTING METHOD OF RUNWAY AND TAXIWAY SIGNS IS BY THE USE OF A SINGLE ROW OF LEGS. HOWEVER, TWO ROWS WILL BE ACCEPTABLE.

(32) THE PREFERRED METHOD TO BRING THE POWER CABLE INTO AN L-858 SIGN IS METHOD A, AS SHOWN IN FIGURE 126 OF AC 150/5340-30, HOWEVER, METHOD B WILL ALSO BE ACCEPTABLE.

(33) STENCIL HORIZONTAL AND VERTICAL AIMING ANGLES ON EACH REIL FLASH HEAD OR EQUIPMENT ENCLOSURE. THE NUMERALS MUST BE BLACK AND ONE INCH MINIMUM HEIGHT.

(34) ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES MUST BE TAGGED. USE EMBOSSED COPPER STRIPS ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS MUST BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE – ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.

(35) APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND FRANGIBLE COUPLING THREADS.

(36) THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.

(37) DEB SPLICES IN HOME RUNS SHALL BE OF THE CAST TYPE A, UNLESS OTHERWISE SHOWN. SEE FIG. 120 OF AC 150/5340-30 FOR DETAILS.

(38) CONCRETE USED FOR SLABS, FOOTING, OR BACKFILL AROUND TRANSFORMER HOUSINGS, MARKERS, ETC., SHALL BE 3000 PSI, MIN., AIR-ENTRAINED.

(39) HIGH AND LOW VOLTAGE CABLE SHALL BE RUN IN SEPARATE UNDERGROUND DUCTS.

(40) WHEN HIGH AND LOW VOLTAGE CABLES ARE IN A HANDHOLE OR MANHOLE, PROTECTION SHALL BE MADE AROUND THE HIGH VOLTAGE CABLE. THE METHOD OF PROTECTION SHALL BE BY SPLIT DUCT ANCHOR CLIPPED TO THE WALL.

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CHAMLIN & ASSOCIATES

PERU MORRIS ILLINOIS

ILLINOIS VALLEY REGIONAL AIRPORT (VYS)
SEPARATE RUNWAY CIRCUITS AND CONSTRUCT VAULT
PERU, ILLINOIS

ELECTRICAL NOTES

CONSTRUCTION PLANS

CURRENT AS OF: 11/16/12		
SCALE: As Noted	SHEET 6	
FILE NO.: 1000.96 Y-	OF 10	