

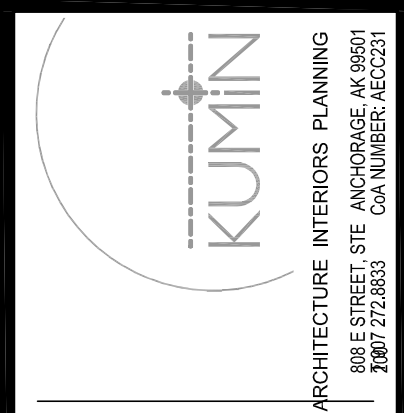
TYPE	DESCRIPTION	LAMPS	BALLAST/DRIVER	MOUNTING
A	PEERLESS 10CRM4L-LP-8FT-MSLB-8OCRI-SSH-TUWH-RHYR-I700LMF-300LMF DARK-NLIGHT-277-DCT-F1/12-C110 8'L LED, EXTRUDED ALUMINUM HOUSING, METAL REFLECTOR, 2 CIRCUITS TUNABLE WHITE	LED - TUNABLE WHITE	2Ø 0-10V DIMMING DRIVER NOTE 1	SUSPENDED 12" FROM CEILING
B	GOTHAM EVO-TUWH-ATMR/10-4AR-MD-LSS-277-DMX 4" DIAMETER LED, TUNABLE WHITE, SEMI-SPECULAR FINISH, GALVANIZED STEEL CONSTRUCTION	LED - TUNABLE WHITE	WITH UNIT	RECESSED CEILING
C	TECH LIGHTING 700-ECP-S-C-W-LED927 LED, WHITE CANOPY, TRANSPARENT CYLINDER SHADE	LED 3500K	0-10V DIMMING DRIVER	PENDANT
D	HYDREL PLACER LED PLACER-3LED16-40K-12-NFL-FLC-CNS-S4512-C3-DMA 4000K, 12V, NARROW FLOOD, FLAT CLEAR LENS, 12" STEM AT 45 DEGREES 45 ANGLE CUT EXTERNAL CAP, NATURAL ALUMINUM FINISH	LED 4000K	TE75 ABOVE ACCESSIBLE CEILING	WALL
E	VOLT PL35K-24V 3500K LOW OUTPUT LEDHESIVE, LINEAR LED LIGHTING LENGTH AS SHOWN ON AS SHOWN ON DRAWINGS	LED 3500K	VOLT ULV96 ABOVE ACCESSIBLE CEILING	CLOUD
F	VISA LIGHTING CV1980PSX-L35K-24VDC-TW9016-46" VAR 4'L LEDEXTRUDED ALUMINUM HOUSING, ACRYLIC DIFFUSER, ACRYLIC POWDER COAT, DAMP LOCATION RATED	LED 3500K	PS-24VDC90W02	WALL CENTERED Ø 5FT AFF

FIXTURE SCHEDULE NOTES	
1	TYPE A FIXTURES SHALL BE PROVIDED WITH THE ABILITY TO SWITCH AND DIM EACH 4 FOOT SECTION INDEPENDENTLY FROM THE OTHER.
2	REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS REGARDING LIGHT FIXTURES.

LOADS AND CIRCUIT BREAKERS ARE EXISTING TO REMAIN, UNLESS OTHERWISE NOTED.

* NEW LOAD CONNECTED TO EXISTING SPARE CIRCUIT BREAKER *

SECTION 16000 - ELECTRICAL	SECTION 16000 - ELECTRICAL
<p>1) PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR COMPLETE, SAFE WORKABLE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL, STATE AND NATIONAL CODES AND STANDARDS.</p> <p>2) MATERIALS SHALL BE NEW, FULL WEIGHT AND BEAR THE UL LABEL.</p> <p>3) USE THE DRAWINGS AS A GUIDE FOR QUANTITY, APPROXIMATE EQUIPMENT LOCATIONS AND DESIGN CRITERIA. COORDINATE WORK WITH OTHER TRADES AND ARCHITECTURAL FEATURES TO PROVIDE SYMMETRICAL APPEARANCE. IMMEDIATELY NOTIFY THE OWNER IN WRITING SHOULD CLARIFICATION BE REQUIRED DUE TO A CONFLICT OF QUANTITY, COORDINATION, LOCATION, ETC. THE OWNER'S DECISION IS FINAL AND BINDING. EXTRA COSTS INVOLVED TO COMPLY WITH THE SPECIFICATIONS AND DRAWINGS CAUSED BY A CONFLICT NOT BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY UPON DISCOVERY SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR UNLESS EXTRA COST IS APPROVED IN WRITING.</p> <p>4) CONDUCT A SITE VISIT PRIOR TO SUBMISSION OF BID AND EXAMINE DRAWINGS AND SPECIFICATIONS FOR DISCREPANCIES BETWEEN THIS AND OTHER DIVISIONS OF THE WORK AND THE SITE. REPORT IN WRITING FIVE WORKING DAYS PRIOR TO BID OPENING ANY DISCREPANCIES WHICH THE CONTRACTOR BELIEVES ARE CONTRARY TO CODE OR THAT WILL NOT FUNCTION AS SHOWN. IF NONE ARE REPORTED IT IS ASSUMED THAT THE ABOVE CONDITIONS HAVE BEEN MET AND THE CONTRACTOR WILL BE RESPONSIBLE FOR A COMPLETE INSTALLATION WITH NO ADDITIONAL COST TO THE OWNER.</p> <p>5) OBTAIN AND PAY FOR ALL PERMITS AND REQUIRED INSPECTIONS.</p> <p>6) EMPLOY WORKMEN SKILLED IN THE TRADE AND FAMILIAR WITH TECHNIQUES REQUIRED TO COMPLETE THE WORK IN A NEAT AND WORKMANLIKE MANNER. WORKMANSHIP IS SUBJECT TO APPROVAL BY THE OWNER.</p> <p>7) FURNISH A ONE YEAR GUARANTEE FOR ALL ELECTRICAL MATERIALS AND LABOR. GUARANTEE SHALL COMMENCE AT FINAL PAYMENT. MAKE ALL NECESSARY REPAIRS IN A TIMELY MANNER AT NO COST TO THE OWNER.</p> <p>8) WIRING SHALL BE COPPER, THHN/THWN INSULATION MINIMUM. MINIMUM WIRE SIZE #12 AWG. ALL CONDUCTORS USED ON THIS PROJECT SHALL BE COPPER, SOLID OR STRANDED FOR WIRING #10 OR SMALLER, STRANDED FOR #8 OR LARGER.</p> <p>9) WIRING SHALL BE IN METAL RACEWAYS. FITTINGS SHALL BE STEEL/MALLEABLE IRON. (DIE CAST NOT APPROVED. SET SCREW TYPE NOT ACCEPTABLE). PROVIDE PROPERLY SIZED AND BONDED GROUNDING CONDUCTORS WITH POWER CIRCUITS.</p> <p>10) WIRING DEVICES SHALL BE SPECIFICATION GRADE. COLOR SELECTED BY THE CONTRACTING AGENCY. SUBMIT FOR APPROVAL.</p> <p>11) FURNISH NEATLY TYPED, FULLY DETAILED BRANCH CIRCUIT DIRECTORY IN PANEL. ODD CIRCUITS ON LEFT, EVEN ON RIGHT.</p> <p>12) LIGHTING FIXTURES SHALL COMPLY WITH THE REQUIREMENTS OF N.E.C. ARTICLE 410. PROVIDE SAFETY HANGAR WIRES FOR FIXTURES, AS FOLLOWS:</p> <p>a) PROVIDE SAFETY WIRES (A MINIMUM OF TWO 12 GAUGE HANGERS) OR EQUIVALENT CHAINS FOR EACH LIGHT FIXTURE WEIGHING LESS THAN 56 POUNDS INSTALLED IN T-BAR OR OTHER CEILING SUSPENSION SYSTEMS. SAFETY WIRES AND CHAINS SHALL BE SECURELY ATTACHED TO DIAGONALLY OPPOSITE CORNERS OF EACH FIXTURE AND TO STRUCTURE. FIXTURES WEIGHING 56 POUNDS OR MORE SHALL BE SUPPORTED FROM STRUCTURE.</p> <p>b) SURFACE MOUNTED LIGHTING FIXTURES SUPPORTED FROM T-BAR GRID SHALL BE ATTACHED TO THE GRID WITH A POSITIVE CLAMP DEVICE THAT COMPLETELY SURROUNDS THE SUPPORTING MEMBER SIMILAR TO CADDY "IDS". PROVIDE SAFETY WIRES AS SPECIFIED IN THE FOREGOING.</p> <p>c) PROVIDE SAFETY WIRES (A MINIMUM OF TWO 12 GAUGE HANGERS) OR EQUIVALENT AIRCRAFT CABLE FOR EACH PENDANT MOUNTED FIXTURE. HANGARS OR CABLE SHALL BE SECURELY ATTACHED TO FIXTURE, THEN ROUTED THROUGH STEM AND SECURELY ATTACHED TO STRUCTURE.</p> <p>13) TELECOMMUNICATIONS OUTLETS SHALL HAVE THE FOLLOWING MINIMUM FEATURES:</p> <p>a) BE PROVIDED COMPLETE WITH BOXES, BOX MUD RINGS, RACEWAYS, BUSHINGS, AND UNTERMINATED CABLES WITH SLACK AT BOTH ENDS. AT HEAD END, PROVIDE ADEQUATE SLACK FOR TERMINATION.</p> <p>b) BOXES SHALL BE MINIMUM 4" SQ BY 2-1/8" DEEP.</p> <p>c) RACEWAYS SHALL BE MINIMUM 1" EMT.</p> <p>d) RACEWAY STUBS AND SLEEVES SHALL BE EQUIPPED WITH INSULATING BUSHINGS.</p> <p>e) RACEWAYS SHALL BE PROVIDED INSIDE WALLS AND FOR TRANSITION FROM ABOVE CEILING TO THE HEAD END EQUIPMENT. ALL RACEWAYS SHALL BE PROPERLY FIRESTOPPED. OPEN FLEET- RATED CABLE SHALL BE PROVIDED ABOVE THE CEILING. SUPPORT OPEN CABLES IN BRIDAL RINGS.</p> <p>f) THE INSTALLER OF THE TELECOM RACEWAYS SHALL HAVE AT LEAST FIVE (5) YEARS EXPERIENCE WITH SIMILAR INSTALLATIONS.</p> <p>g) ALL WORK SHALL COMPLY WITH APPLICABLE ANSI/TIA/EIA AND BICSI STANDARDS, SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, AND SHALL BE ACCEPTABLE TO THE DATA SYSTEM AND THE TELEPHONE SYSTEM PROVIDERS.</p> <p>14) TELECOMMUNICATIONS OUTLETS SHALL HAVE THE FOLLOWING MINIMUM FEATURES:</p> <p>a) TELECOMMUNICATIONS OUTLETS WITH ASSOCIATED FACEPLATE AND JACKS SHALL MAKE UP A 4 POSITION MODULAR ASSEMBLY RATED FOR CATEGORY 6A USE WITH INTEGRAL AT&T 110 TYPE TERMINATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.</p> <p>b) JACKS SHALL BE OF TYPE TIA 568B FOR ALL DATA CONNECTIONS.</p> <p>c) EACH JACK SHALL BE LABELED ON THE OUTLET FACEPLATE WITH BOTH SOURCE AND DESTINATION INFORMATION CONSISTENT WITH ANSI/TIA/EIA-606A SPECIFICATIONS.</p> <p>15) DEMOLITION</p> <p>a) EXAMINATION: DRAWINGS INVOLVING EXISTING CONDITIONS ARE BASED ON BUILDING RECORD DRAWINGS AND/OR LIMITED FIELD OBSERVATION. CONDUCT A SITE INSPECTION PRIOR TO SUBMISSION OF BID TO BECOME THOROUGHLY FAMILIARIZED WITH THE SCOPE OF WORK. REPORT DISCREPANCIES TO OWNER BEFORE DISTURBING EXISTING INSTALLATION. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS. VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES. BEGINNING OF DEMOLITION IMPLIES CONTRACTOR ACCEPTS EXISTING CONDITIONS.</p> <p>16) PREPARATION</p> <p>a) DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.</p> <p>b) COORDINATE UTILITY SERVICE OUTAGES WITH UTILITY COMPANY AND CONTRACTING AGENCY.</p> <p>c) PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.</p> <p>17) FIRE ALARM SYSTEM</p> <p>a) EXISTING FIRE ALARM SYSTEM: MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS ACCEPTED. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. NOTIFY OWNER AND APPLICABLE FIRE DEPARTMENT AUTHORITIES AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.</p> <p>b) PROVIDE, REMOVE OR RELOCATE EXISTING FIRE ALARM DEVICES AS SHOWN ON THE PLANS. NEW DEVICES SHALL BE IDENTICAL TO EXISTING SIMILAR DEVICES AND UL LISTED WITH THE EXISTING FIRE ALARM SYSTEM.</p> <p>c) PROVIDE REQUIRED EQUIPMENT, CARDS, PROGRAMMING, BATTERIES, ETC. AT THE EXISTING FIRE ALARM SYSTEM CONTROL PANEL(S) AND THE REMOTE SYSTEM FRONT END TERMINALS TO SUPPORT REVISED FIRE ALARM SYSTEM. SUBMIT BATTERY CALCULATIONS FOR REVISED SYSTEM. FIRE ALARM WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72.</p> <p>d) PERFORM REACCEPTANCE TESTING OF THE FIRE ALARM SYSTEM IN ACCORDANCE WITH NFPA 72, CHAPTER 7. COORDINATE TESTING WITH THE OWNER. PROVIDE A MINIMUM OF 72 HOURS NOTICE. CONTRACTOR SHALL NOT BE ENTITLED TO ANY ADDITIONAL COMPENSATION DUE TO INABILITY OF OWNER TO SCHEDULE TEST AT THE DESIRED TIME. SUBMIT FINAL TEST RESULTS.</p> <p>18) DEMOLITION OF EXISTING ELECTRICAL WORK</p> <p>a) REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.</p> <p>b) REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY.</p> <p>c) REMOVE EXPOSED ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONCEALED CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES.</p> <p>d) DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT</p>	<p>SERVICING THEM IS ABANDONED AND REMOVED. PROVIDE BLANK COVER FOR ABANDONED OUTLETS WHICH ARE NOT REMOVED. IN FINISHED AREAS, BLANK COVERS SHALL BE BLANK PLATES MATCHING THE DEVICE PLATES SPECIFIED FOR NEW WORK, UNLESS OTHERWISE NOTED OR SPECIFIED.</p> <p>e) DISCONNECT AND REMOVE ABANDONED PANELBOARDS AND DISTRIBUTION EQUIPMENT.</p> <p>f) DISCONNECT AND REMOVE ELECTRICAL DEVICES AND EQUIPMENT SERVING UTILIZATION EQUIPMENT THAT HAS BEEN REMOVED.</p> <p>g) DISCONNECT AND REMOVE ABANDONED LUMINAIRES. REMOVE BRACKETS, STEMS, HANGERS, AND OTHER ACCESSORIES.</p> <p>h) REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK.</p> <p>i) MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANELS AS APPROPRIATE.</p> <p>j) RESTORE CIRCUITS AND SYSTEMS THAT REMAIN THAT ARE AFFECTED IN ANY WAY BY DEMOLITION WORK SUCH AS LOADS DOWNSTREAM OF DEMOLISHED EQUIPMENT, SWITCHED LIGHTING CIRCUITS WHERE SELECTED LIGHT FIXTURES ARE DEMOLISHED, ETC.</p> <p>k) SALVAGE OR DISPOSAL OF REMOVED ITEMS SHALL BE AS NOTED ON THE DRAWINGS OR AS DIRECTED BY THE CONTRACTING AGENCY. ITEMS WHICH THE OWNER DOES NOT DESIRE TO RETAIN SHALL BE DISPOSED OF AT A LEGAL DISPOSAL SITE.</p> <p>19) CLEANING AND REPAIR</p> <p>a) CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT WHICH REMAIN OR ARE TO BE REUSED OR ARE AFFECTED BY THIS WORK.</p> <p>b) PANELBOARDS: CLEAN EXPOSED SURFACES AND INTERIOR OF CABINET AND RETORQUE ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AND PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. PROVIDE TYPED CIRCUIT DIRECTORY SHOWING REVISED CIRCUITING ARRANGEMENT.</p> <p>c) LUMINAIRES: REMOVE EXISTING LUMINAIRES FOR CLEANING. USE MILD DETERGENT TO CLEAN ALL EXTERIOR AND INTERIOR SURFACES; RINSE WITH CLEAN WATER AND WIPE DRY. REPLACE LAMPS, BALLASTS, AND BROKEN ELECTRICAL PARTS.</p> <p>20) OVERCURRENT PROTECTIVE DEVICES</p> <p>a) CIRCUIT PROTECTIVE DEVICES SHALL BE MOLDED CASE CIRCUIT BREAKERS SAME MANUFACTURER AS PANELBOARD. RATINGS SHALL BE AS SHOWN ON PANEL SCHEDULES AND/OR DRAWINGS.</p> <p>b) CIRCUIT BREAKERS SHALL HAVE A PERMANENT TRIP UNIT CONTAINING INDIVIDUAL THERMAL AND MAGNETIC TRIP ELEMENTS IN EACH POLE.</p> <p>21) FIRE RESISTIVE CONSTRUCTION</p> <p>A. PROVIDE "TENTING" OR OTHER PROTECTION ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION FOR DEVICES OR FIXTURES INSTALLED IN FIRE RESISTIVE CONSTRUCTION (I.E., CEILINGS, WALLS, ETC.) TO MAINTAIN THE FIRE RESISTIVE RATING OF THE COMPLETE ASSEMBLY.</p> <p>B. WHERE ELECTRICAL RACEWAYS OR OTHER FEATURES PENETRATE FIRE RATED BUILDING SURFACES, THEY SHALL MAINTAIN THE INTEGRITY OF THE BUILDING SURFACE BEING PENETRATED. THIS SHALL BE ACCOMPLISHED WITH EITHER OF THE FOLLOWING METHODS:</p> <p>1. SEALING THE PENETRATION WITH AN APPROVED FIRE RATED CAULK OR PUTTY.</p> <p>a. FIRE RATED CAULK OR PUTTY: 3M FIRE BARRIER CAULK NO. CP25, 3M FIRE BARRIER MOLDABLE PUTTY, OR AS APPROVED.</p> <p>2. A FIRE RATED ASSEMBLY ENCLOSING THE PENETRATION.</p> <p>a. FIRE RATED ASSEMBLY: STI EZ PATH, OR AS APPROVED.</p> <p>3. FIRESTOPPING SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, AND IN A MANNER THAT IS LISTED BY A NATIONALLY RECOGNIZED INDEPENDENT TESTING AGENCY (SUCH AS UL) AS PRESERVING THE FIRE TIME RATING OF THE CONSTRUCTION.</p>

[illegible]SHEET NO:

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