

DRAWING INDEX

SHEET NUMBER	SHEET TITLE	PERMIT DATE: 01/16/01	△	△	△	△
E000	SYMBOL LIST, SPECIFICATIONS AND DRAWING INDEX	●				
E001	PARTIAL SINGLE LINE DIAGRAM AND PANEL SCHEDULE	●				
E002	LIGHTING FIXTURE SCHEDULE	●				
E201	POWER AND SIGNAL PLAN	●				
E300	LIGHTING PLAN	●				
	TOTAL	5				

SPECIFICATIONS

- DEFINITION: THE WORD "PROVIDE" MEANS FURNISH, INSTALL, FEED AND CONNECT WITH ALL ACCESSORIES AND ANCILLARY EQUIPMENT FOR A COMPLETE AND OPERABLE INSTALLATION.
2. CODES: ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL ADOPTED APPLICABLE CODES AND ORDINANCES.
3. COMPLETE INSTALLATION: PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, ACCESSORIES, ETC., NECESSARY TO ACCOMPLISH A COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
4. GROUNDING: TEST EXISTING SERVICE NEUTRAL FOR ADEQUACY AND FOR GROUND CONTINUITY. GROUND THE EQUIPMENT AND SYSTEM NEUTRAL IN ACCORDANCE WITH ARTICLE 250 OF THE NEC. PROVIDE CODE SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUIT RACEWAYS, WHERE ISOLATED GROUNDS ARE INDICATED, PROVIDE INSULATED CONDUCTOR.
5. CIRCUITING: ALL WIRING SHALL BE IN CONDUIT, CONCEALED EXCEPT WHERE NOTED. EMT WITH DIE CAST SET SCREW FITTINGS MAY BE USED IN DRY, PROTECTED INTERIOR LOCATIONS. PVC SCHEDULE 40 SHALL BE USED BELOW GRADE AT MINIMUM 1" DIA. UNFARMED RIGID ELBOWS AND RISERS SHALL BE USED ABOVE GRADE. TRANSITS AND STUB-UPS, RGS OR IMC CONDUIT WITH THREADED FITTINGS SHALL BE USED IN ALL LOCATIONS WHERE EXPOSED TO THE ELEMENTS OR SUBJECT TO PHYSICAL DAMAGE. METAL-CLAD CABLE (TYPE MC) MAY BE USED WHERE ALLOWED BY CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL TERMINUS SHALL BE IN CONDUIT AND INSTALLED PER ARTICLE 330 OF THE NEC. EXIT RACEWAYS IS NOT ALLOWED. CONNECT RECESSED AND SUSPENDED LIGHT FIXTURES, MOTORIZED AND VIBRATING EQUIPMENT WITH STEEL FLEX. ALL CONDUIT SHALL HAVE FULL CORRD IF OTHERWISE EMPT.
6. WIRING: WIRE SHALL BE COPPER UNLESS OTHERWISE NOTED, STRANDED IN SIZES #8 AWG AND LARGER. WHERE ALUMINUM IS INDICATED, WIRE SHALL BE COMPACTED-STRAND TYPE WITH JOIN CORDS. ALL WIRING SHALL BE IN CONDUIT. WIRING SHALL BE TYPE THN, THHN OR THWN (XHHW FOR ALUMINUM). ALUMINUM CONDUCTORS SHALL NOT BE USED IN SIZES SMALLER THAN #0 (100% EQUIPMENT FEEDER), AND WHEN USED SHALL BE TERMINATED IN INSULATED COMPRESSION TYPE C/JAL FITTING ("MAC-ADAPT" OR EQUAL).
7. NEW RUSES AND CIRCUIT BREAKERS: RUSES AND CIRCUIT BREAKERS SHALL BE SIZED PER ACTUAL NAMEPLATE OF EQUIPMENT SERVED. CIRCUIT BREAKERS SHALL BE RATED FOR THEIR RESISTIVE AND INDUCTIVE LOADS. CIRCUIT BREAKERS SHALL BE TYPE THN OR THHN (XHHW FOR INTERRUPTER, ARC FAULT CIRCUIT INTERRUPTER, ETC.). RUSES SHALL BE DUAL ELEMENT, CURRENT-LIMITING, AND SHALL BE INTERCHANGEABLE BETWEEN FRAME SIZES WITH STANDARD FACTORY FUSE REDUCERS. PROVIDE LOCKABLE SPARE FUSE CABINET WITH THREE (3) SPARE FUSES OF EACH SIZE AVAILABLE.
8. EXISTING CONDITIONS: THE DRAWINGS INDICATE NEW WORK TO BE PERFORMED AND DOES NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND FAMILIARIZE HIMSELF WITH ALL EXISTING AND PROPOSED CONDITIONS WHICH MAY AFFECT THE COURSE OF HIS WORK. CONTRACTOR SHALL REPORT ALL DISCREPANCIES AND UNDESIRABLE CONDITIONS PRIOR TO BID. NO CHANGE ORDERS WILL BE ALLOWED FOR FAILURE TO COMPLY WITH THIS REQUIREMENT.
9. EXISTING SWITCHGEAR: REUSE EXISTING SWITCHGEAR AND PANELS IN PLACE WHERE SO INDICATED, MODIFY AS REQUIRED TO ACCOMMODATE NEW REQUIREMENTS. PROVIDE NEW CIRCUIT BREAKERS AND/OR RUSES AS REQUIRED WITH A.I.C. RATING TO MEET OR EXCEED THAT OF EXISTING DEVICES. REARRANGE EXISTING CIRCUITS WITHIN PANELS TO AGREE WITH NEW PANEL SCHEDULES. TRACE AND IDENTIFY ALL EXISTING CIRCUITS ON NEW AS-BUILT PANEL SCHEDULES.
10. NEW EQUIPMENT STANDARDS: ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF THE HIGHEST QUALITY AVAILABLE ("SPECIFICATION GRADE"). LIGHTING FIXTURES SHALL HAVE CLASSB "IP" BALLASTS AND ACRYLIC LENSES. SERVICE EQUIPMENT SHALL BE FACTORY-ASSEMBLED COMMERCIAL-GRADE, CONFIGURED PER SERVING UTILITY STANDARDS. PANEL COVERS SHALL BE "SPECIFICATION GRADE" CIRCUIT BREAKERS. WIRING DEVICES SHALL BE "SPECIFICATION GRADE" WITH NYLON PLATES, IVORY UNLESS NOTED. RAISED STEEL BOX COVERS MAY BE USED IN UTILITY AREAS.
11. PERMITS: OBTAIN AND PAY FOR ALL BUILDING AND WORKING PERMITS AND INSPECTION FEES REQUIRED FOR THIS PROJECT.
12. LOCATIONS: INDICATED LOCATIONS OF ALL OUTLETS AND EQUIPMENT ARE SUBJECT TO CHANGE. SHIFT/RELOCATE/RECONFIGURE ANY OUTLET, EQUIPMENT OR CONNECTION POINT TO 10' AS DIRECTED BY ENGINEER, AT NO ADDED COST.
13. SUBMITTALS: SUBMIT EIGHT COPIES OF FACTORY SHOP DRAWINGS FOR ALL NEW LIGHTING FIXTURES, SWITCHGEAR, PANELS, MOTOR CONTROL, WIRING DEVICES, ETC. PROPOSED FOR THE PROJECT. ALL SUBMITTALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS IN ALL RESPECTS. DETERMINATION OF EQUALITY RESBS SOLELY WITH ENGINEER.
14. FIRE STOPPING: ALL PENETRATED FIRE RATED SURFACES SHALL BE FIRE SEALED WITH APPROVED UL LISTED SEALANTS AS LISTED WITHIN ARCHITECTURAL SPECIFICATIONS. DO NOT EXCEED MAXIMUM ALLOWABLE SURFACE PENETRATIONS DEPENDENT ON RATING OF SURFACES. REFER TO ARCHITECTURAL DRAWINGS FOR DETERMINATION OF PENETRATION LOCATIONS THROUGH FIRE RATED SURFACES.
15. GUARANTEE: THE COMPLETE ELECTRICAL SYSTEM, AND ALL PORTIONS THEREOF, SHALL BE GUARANTEED TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. PROMPTLY REMEDY SUCH DEFECTS AND ANY SUBSEQUENT DAMAGE CAUSED BY THE DEFECTS OR REPAIR THEREOF AT NO EXPENSE TO THE OWNER. LIGHT BULBS ARE EXEMPT FROM THIS GUARANTEE, BUT SHALL BE NEW AND UNUSED AT TIME OF FINAL ACCEPTANCE.
16. IDENTIFICATION: IDENTIFY ALL EQUIPMENT, SWITCHBOARD CIRCUITS AND ELECTRICALLY CONNECTED EQUIPMENT WITH ENGRAVED NAMEPLATES. NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. PANEL DIRECTORIES SHALL BE TYPED.
17. PANELBOARDS: PANELS SHALL HAVE FLUSH MONO-FLAT TRIM, PIANO HINGED DOORS AND COVER (DOOR-IN-DOOR) WITH LOCKABLE MASTER-KEYED FLUSH CATCHES AND BOLT-ON CIRCUIT BREAKERS. FLUSH-MOUNTED PANELS SHALL HAVE EMPTY CONDUITS STUBBED TO AVAILABLE ATTACHED TO RACEWAYS OR 1" CONDUIT FOR EACH 10" SPARE-SPACE CIRCUITS.
18. TAMPERPROOF: ALL EQUIPMENT AND CIRCUITING ACCESSIBLE BY THE PUBLIC SHALL BE DEMONSTRATED TO BE TAMPERPROOF AND VANDAL RESISTANT. OPENABLE DEVICES AND EQUIPMENT SHALL BE PADLOCKABLE.
19. SUPPORTS AND HANGERS: SUPPORT AND ALIGN ALL RACEWAYS, CABINETS, BOXES, BACKBOXES, FIXTURES, AND EQUIPMENT FROM STRUCTURE. SECURE ALL SUPPORTING METHODS BY MEANS OF TOGGLE BOLTS IN HOLLOW MASONRY, EXPANSION BOLTS IN SOLID MASONRY, CONCRETE PREFERRED. OR EXISTING OR NEW IN CONCRETE. MAJOR SCREWS OR BOLTS IN METAL AND WOOD SCREWS IN WOOD CONSTRUCTION. ALL SUPPORTING SYSTEMS AND COMPONENTS SHALL BE RATED FOR FIVE (5) TIMES THE ACTUAL LOAD.
20. COORDINATION: THIS PROJECT REQUIRES A HIGH LEVEL OF COORDINATION AND COOPERATION WITH OWNER, ARCHITECT, OTHER TRADES, VENDORS AND SPECIALTY CONTRACTORS. THIS CONTRACTOR SHALL OBTAIN AND STUDY SHOP DRAWINGS OF ALL ELECTRICALLY CONNECTED EQUIPMENT AND SHALL IDENTIFY POINTS OF CONNECTION, LOCATIONS AND MOUNTING HEIGHTS AS EARLY AS POSSIBLE PRIOR TO REQUEST FOR PROPOSAL.
21. BIDDING, THE CIVIL, ARCHITECTURAL, MECHANICAL, KITCHEN AND INTERIOR DRAWINGS CONTAIN DETAILED DESCRIPTIONS, CIRCUITING AND CONNECTION REQUIREMENTS WHICH ARE PART OF DIVISION 16 RESPONSIBILITIES. THIS CONTRACTOR SHALL NOT SUBMIT BIDS ON THIS PROJECT BEFORE REVIEWING ALL PROJECT DRAWINGS, SPECIFICATIONS AND ADDENDA.
22. FIRE ALARM: EXISTING FIRE ALARM SYSTEM TO REMAIN: MAINTAIN IN CONSTANT OPERATION DURING THIS PROJECT. NEW COMPONENTS AND CIRCUITING SHALL ALL CONNECTIONS CERTIFIED AS BEING PROJECT-SPECIFIC COMPATIBLE WITH EXISTING SYSTEM. ALL FACTORY TO EXISTING BIDDING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS AS ACCEPTED BY OWNER'S SYSTEM MONITORING AGENCY. THE CONTRACTOR SHALL PROVIDE A COMPLETE FIRE ALARM SYSTEM AND SHALL BE IN FULL ACCORDANCE WITH LOCAL, STATE AND ADA REQUIREMENTS. THESE DOCUMENTS DO NOT INDICATE DEVICES, OUTLETS, CONNECTIONS, AND CIRCUITING NEGATIVE TO THE EXISTING FIRE ALARM SYSTEM. OBTAIN FIRE RATED AND APPROVED SHOP DRAWINGS PRIOR TO COMMENCEMENT OF ROUGH-IN. PROVIDE COMPLETE SYSTEM TESTING UPON COMPLETION OF INSTALLATION AND PRIOR TO FIELD ACCEPTANCE BY OWNER.
23. ADDITIONAL SYSTEMS AND EQUIPMENT CONNECTIONS: IN ADDITION TO EQUIPMENT POWER FEEDERS AND CONNECTIONS INDICATED ON THE ELECTRICAL DRAWINGS, PROVIDE 120V CONTROL CIRCUITS TO THE CONNECTIONS TO THE TAMPERPROOF VAV OUTLETS, TEMPERATURE CONTROL, AND FIRE ALARM PANELS. DOOR HOLDING/LATCHING DEVICES, ETC. AS INDICATED IN THE PROJECT DRAWINGS AND SPECIFICATIONS AS WELL AS ALL DESIGN-BUILD SYSTEM DRAWINGS.
- | ITEM | POWER SOURCE | NO. PER 20A CIRCUIT | PROVIDE SHOCK DETECTORS |
|-------------------------------|--------------------|---------------------|-------------------------|
| FIRE/SHOCK DAMPER | EMERGENCY | 1 | NO |
| VAV TERMINAL (NO FAN) | NORMAL (VERIFY) | 10 | NO |
| TEMPERATURE CONTROL PANEL | EMERGENCY (VERIFY) | 1 | NO |
| FIRE ALARM PANEL | EMERGENCY | 1 | NO |
| DOOR HOLDING/LATCHING DEVICES | EMERGENCY | 10 | NO |
24. 24-HOUR OPERATION: CONDUCT WORK TO MINIMIZE DISRUPTION OF OWNER'S ONGOING 24-HOUR OPERATIONS. PROVIDE BARRICADES, NOISE ABATEMENT AND DUST CONTAINMENT MEASURES TO ENSURE THE SAFETY AND COMFORT OF PATRONS, STAFF AND WORKERS. INTERRUPTIONS OF EXISTING POWER/COMMUNICATION OF FIRE ALARM SYSTEMS SHALL BE PERFORMED ONLY AT SHUT-TOWNS AS REQUESTED BY THE PATRONS. PROVIDE VAV OUTLETS, TEMPERATURE CONTROL, AND EACH SUCH OUTAGE (OR OPERATION WHICH MAY POSE RISK OF AN ACCIDENTAL OUTAGE) SHALL BE SCHEDULED 48 HOURS IN ADVANCE.
25. COMMUNICATION SYSTEMS: THE ELECTRICAL CONTRACTOR SHALL PROVIDE OUTLETS AND RACEWAYS FOR COMMUNICATION SYSTEMS AS INDICATED HEREIN, INCLUDING TELEPHONE, DATA AND POINT-OF-SALE. ALL COMMUNICATIONS SHALL BE INSTALLED AND TERMINATED IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE COMMUNICATIONS INDUSTRY. OTHER COMMUNICATION SYSTEMS (i.e. SOUND, SECURITY, AUDIO/VISUAL, CCTV, MAT, ETC.) SHALL BE DESIGNED AND INSTALLED BY OTHERS.

ELECTRICAL SYMBOL LIST

NOTE: THIS IS A MASTER SCHEDULE. NOT ALL SYMBOLS CONTAINED HEREIN MAY APPEAR ON THE DRAWINGS.

[illegible]

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	DRAWN BY: MSA	ISSUE DATE 07.16.07	
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SYMBOL LIST, SPECS AND DRAWING INDEX			