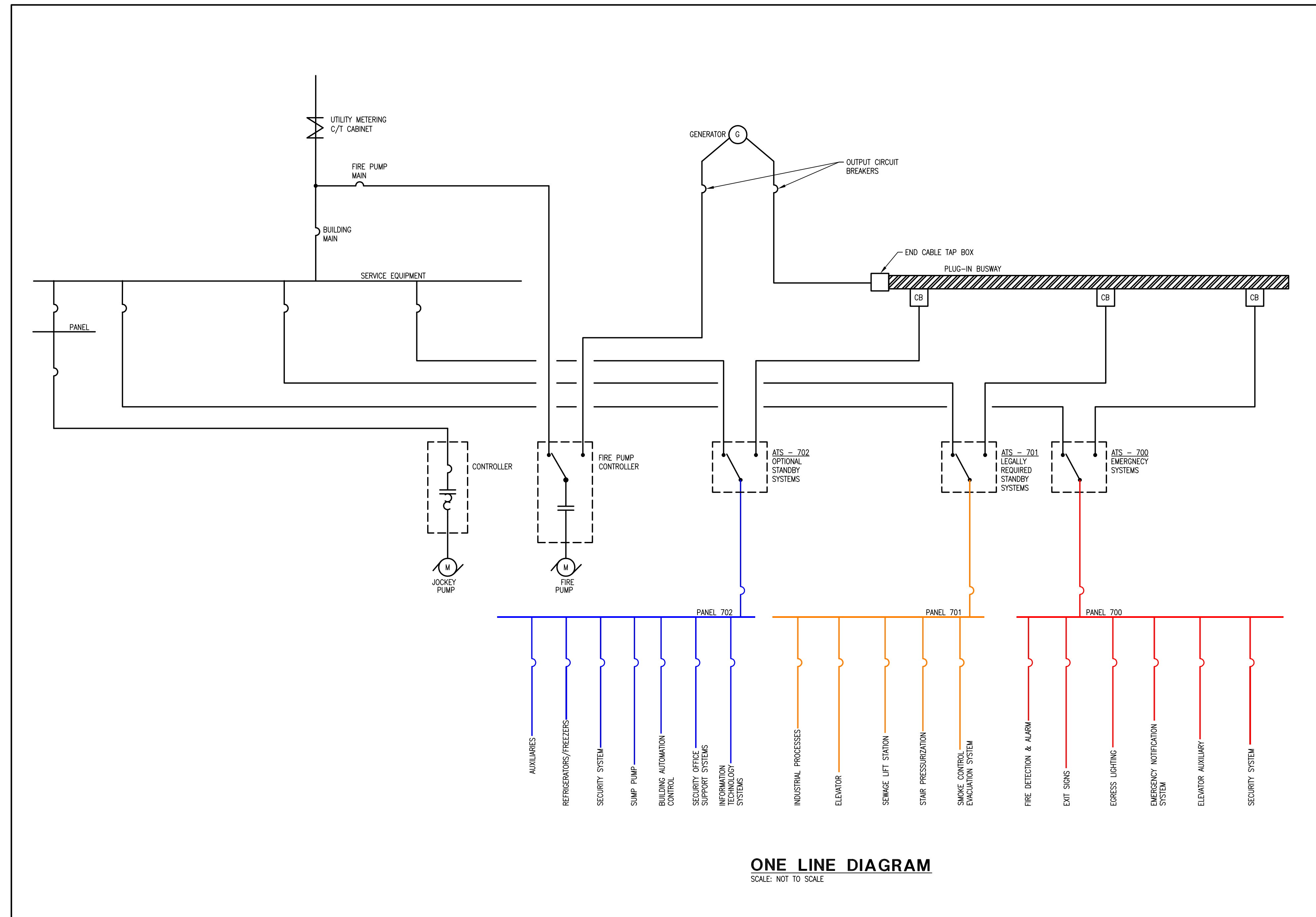
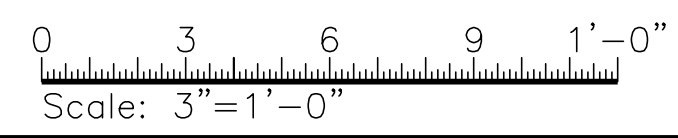
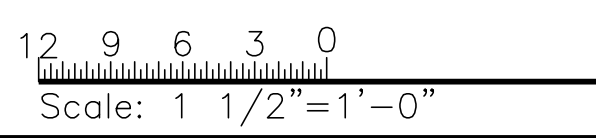
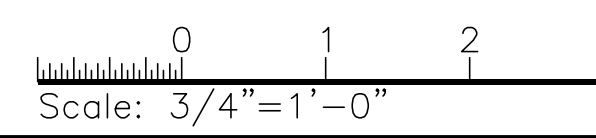
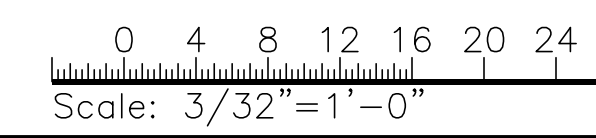
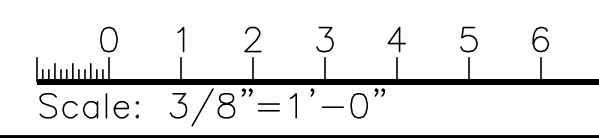
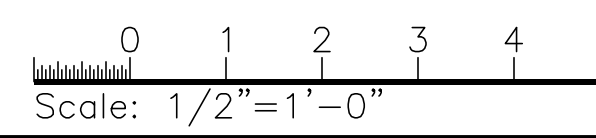
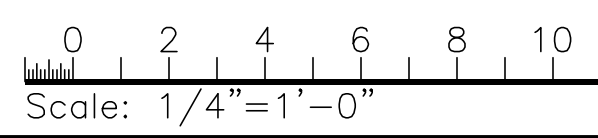
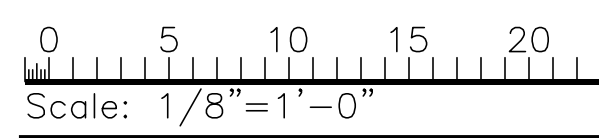


## APPENDICES

The following appendices are available on the Montgomery College website with this College Design Standards document, or at the web address indicated below. These appendices will be updated online when formal revisions to the official documents are adopted.

- A. Montgomery College Facilities Master Plan Annual Update (2011-2021)  
<http://cms.montgomerycollege.edu/EDU/Department2.aspx?id=32897>
- B. Montgomery College Utilities Master Plan (2006)  
<http://cms.montgomerycollege.edu/EDU/Department2.aspx?id=31375>
- C. Montgomery College Campus Gateway Signage (reserved)
- D. Montgomery College Landscape Master Plan (Rockville) (reserved)
- E. Montgomery College Sign System Manual (reserved)
- F. Montgomery College Office of Information Technology:
  - 1. Voice/Data/Video Cabling MDF/IDF Communications Room Standard (2011) (reserved)
  - 2. Audio Visual Standards (2009) (reserved)
  - 3. Smart Instructor Work Station Standards (reserved)
- G. MC Central Plant To Building Connections (drawing sheet M-1 "Details," revised 12/10/2012)
- H. Emergency Power Guidelines – One Line Diagram (drawing sheet E-1, "One Line Diagram," revised 6/22/2012)





**NEC ARTICLE 702-OPTIONAL STANDBY SYSTEMS**

NEC ARTICLE 702 - OPTIONAL STANDBY SYSTEMS

**...WHEN STOPPED DURING ANY POWER OUTAGE, COULD CAUSE DISCOMFORT, SERIOUS INTERRUPTION OF THE PROCESS...OR DISRUPTION OF BUSINESS.**

- DEFINITION: THESE SYSTEMS INTENDED TO SUPPLY POWER TO PUBLIC OR PRIVATE FACILITIES OR PROPERTY WHERE LIFE SAFETY DOES NOT DEPEND ON THE PERFORMANCE OF THE SYSTEM. OPTIONAL STANDBY SYSTEMS ARE INTENDED TO SUPPLY ON-SITE GENERATED POWER TO SELECTED LOADS EITHER AUTOMATICALLY OR MANUALLY.
- OPTIONAL STANDBY SYSTEMS ARE THOSE IN WHICH FAILURE CAN CAUSE PHYSICAL DISCOMFORT, SERIOUS INTERRUPTION OF AN INDUSTRIAL PROCESS, DAMAGE TO PROCESS EQUIPMENT, OR DISRUPTION OF BUSINESS. TYPICAL LOADS SERVED SUCH AS HEATING AND REFRIGERATION SYSTEMS, DATA PROCESSES THAT, WHEN STOPPED DURING ANY POWER OUTAGE, COULD CAUSE DISCOMFORT, SERIOUS INTERRUPTION OF THE PROCESS, DAMAGE TO THE PRODUCT OR PROCESS, OR THE LINE.

**NEC ARTICLE 701-LEGALLY REQUIRED STANDBY SYSTEMS**

NEC ARTICLE 701 - LEGALLY REQUIRED STANDBY SYSTEMS

**...INTERRUPTION OF THE NORMAL ELECTRICAL SUPPLY, COULD CREATE HAZARDS OR HAMPER RESCUE OR FIRE-FIGHTING OPERATIONS.**

- DEFINITION: THESE SYSTEMS REQUIRED BY THE AHJ INTENDED TO AUTOMATICALLY SUPPLY POWER TO SELECTED LOADS (OTHER THAN THOSE CLASSIFIED AS EMERGENCY SYSTEMS) IN THE EVENT OF FAILURE OF THE NORMAL SOURCE. LEGALLY REQUIRED STANDBY SYSTEMS ARE TYPICALLY INSTALLED TO SERVE LOADS, SUCH AS HEATING AND REFRIGERATION SYSTEMS, COMMUNICATIONS SYSTEMS, VENTILATION AND SMOKE REMOVAL SYSTEMS, SEWAGE DISPOSAL, LIGHTING SYSTEMS, AND INDUSTRIAL PROCESSES. THAT, WHEN STOPPED DURING ANY INTERRUPTION OF THE NORMAL ELECTRICAL SUPPLY, COULD CREATE HAZARDS OR HAMPER RESCUE OR FIRE-FIGHTING OPERATIONS.
- THE REQUIREMENTS FOR LEGALLY REQUIRED STANDBY SYSTEMS ARE MUCH THE SAME AS FOR EMERGENCY SYSTEMS, EXCEPT FOR A FEW DIFFERENCES. WHEN NORMAL POWER IS LOST, LEGALLY REQUIRED SYSTEMS MUST BE ABLE TO SUPPLY STANDBY POWER IN 60 SECONDS OR LESS, INSTEAD OF THE 10 SECONDS OR LESS REQUIRED OF EMERGENCY SYSTEMS. WIRING FOR LEGALLY REQUIRED STANDBY SYSTEMS MAY OCCUPY THE SAME RACEWAYS, CABLES, BOXES, AND CABINETS AS OTHER GENERAL WIRING, WHEREAS WIRING FOR EMERGENCY SYSTEMS MUST BE KEPT ENTIRELY INDEPENDENT OF OTHER WIRING. LEGALLY REQUIRED STANDBY SYSTEMS TAKE SECOND PRIORITY TO EMERGENCY SYSTEMS IF THEY ARE INVOLVED IN SHARING AN ALTERNATE SUPPLY AND/OR LOAD SHEDDING OR PEAK SHAVING SCHEMES.

**NEC ARTICLE 700-EMERGENCY SYSTEMS**

NEC ARTICLE 700 - EMERGENCY SYSTEMS

**...CURRENT INTERRUPTION WOULD PRODUCE SERIOUS LIFE SAFETY OR HEALTH HAZARDS.**

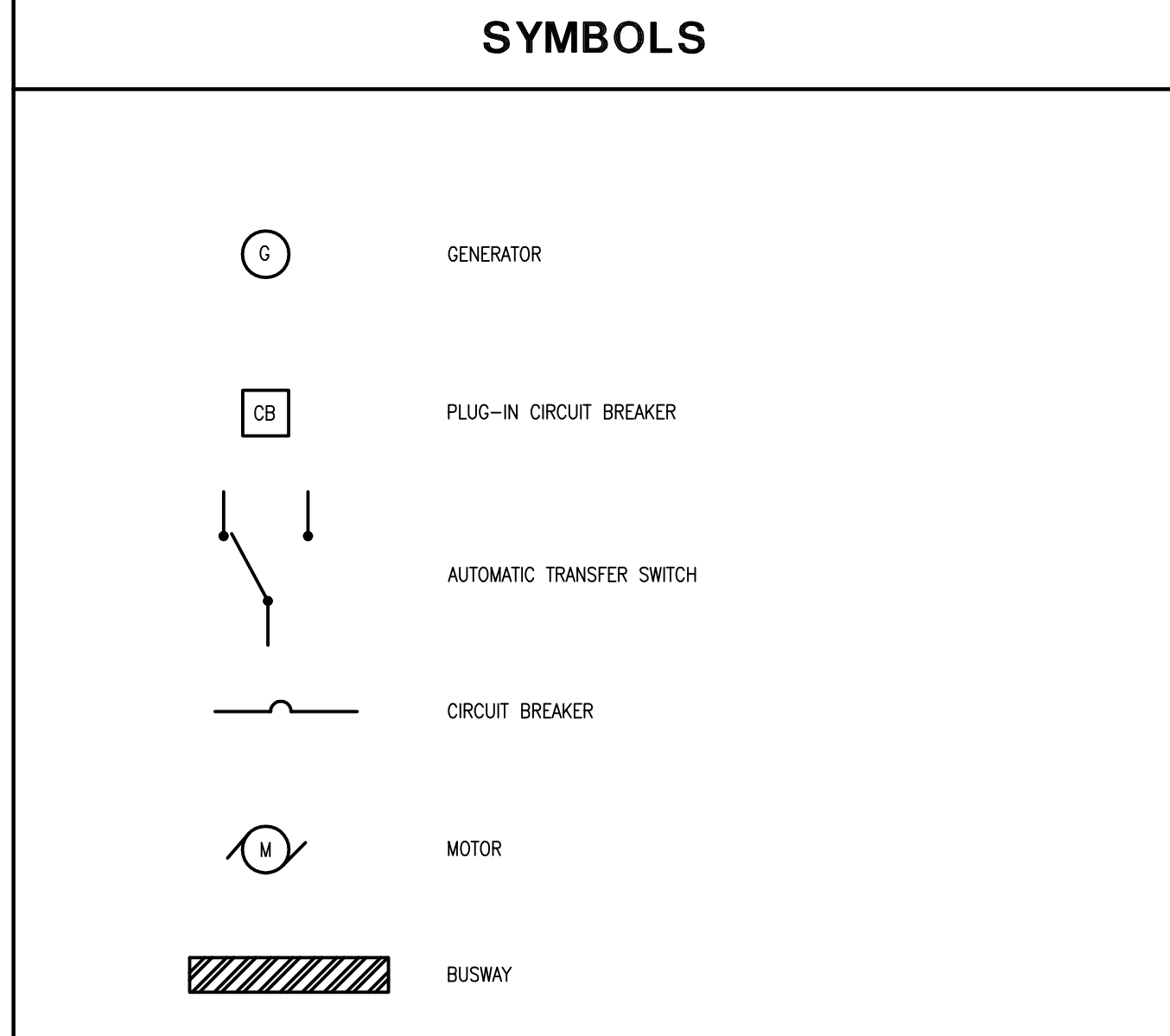
- DEFINITION: EMERGENCY SYSTEMS ARE THOSE SYSTEMS ESSENTIAL FOR SAFETY TO LIFE AND THOSE THAT ARE LEGALLY REQUIRED AND CLASSIFIED AS EMERGENCY BY THE AHJ.
- EMERGENCY SYSTEMS MAY ALSO PROVIDE POWER FOR SUCH FUNCTIONS AS VENTILATION WHERE ESSENTIAL TO MAINTAIN LIFE, FIRE DETECTION AND ALARM SYSTEMS, ELEVATORS, FIRE PUMP, PUBLIC SAFETY COMMUNICATIONS SYSTEMS, INDUSTRIAL PROCESSES WHERE CURRENT INTERRUPTION WOULD PRODUCE SERIOUS LIFE SAFETY OR HEALTH HAZARDS.

**GENERAL**

- THIS DRAWING IS REPRESENTATIVE OF AN EMERGENCY POWER DISTRIBUTION SYSTEM CONCEPT IN A SINGLE BUILDING FOR EXPECTED AND USUAL LOADS NORMALLY ENCOUNTERED FOR MONTGOMERY COLLEGE PROJECTS. MULTIPLE BUILDINGS WOULD BE A MODIFICATION OF THIS CONCEPT. WHILE A SINGLE POWER SOURCE CAN SUPPORT THE OPERATIONS OF MULTIPLE BUILDINGS, EACH BUILDING WILL REQUIRE ITS OWN SET OF AUTOMATIC TRANSFER SWITCHES AND HAVE THE ABILITY TO START UP THE GENERATOR IN EVENT OF NORMAL POWER SUPPLY INTERRUPTION.
- THE ILLUSTRATED CONCEPT SHOWS AN ON-SITE ENGINE DRIVEN GENERATOR AS THE POWER SOURCE. WHILE OTHER POWER SOURCES ARE AVAILABLE, SUCH AS A CENTRAL BATTERY PLANT, THE MULTIPLE COMPONENTS OF THE EMERGENCY POWER DISTRIBUTION SYSTEM GUIDELINES SUGGEST THAT THE MAGNITUDE AND CLASSIFICATION OF THE LOADS WILL REQUIRE A GENERATOR. DIESEL FUELED ENGINE IS PREFERRED.
- THE DIAGRAM AND NOTES ARE BASED ON NEC 2008 CODE. EXCERPTS AND VARIOUS NOTES ARE FROM THE HANDBOOK EXPLANATORY NOTES, WHERE APPROPRIATE.
- ELEVATORS: WHEN ELEVATOR(S) ARE ARRANGED FOR EMERGENCY POWER BACK UP, ALL PERIPHERAL LOADS LISTED IN NEC ARTICLE 620 - ELEVATOR, DUMBWATERS, ESCALATORS, MOVING WALKS, PLATFORM LIFTS, AND STAIRWAY CHAIR LIFTS SUPPORTING THE OPERATION OF THE ELEVATOR(S) MUST THEN BE ON THE EMERGENCY POWER SYSTEM. THIS INCLUDES AND IS NOT LIMITED TO ELEVATOR CONTROLS AND CAB LIGHTING/FAN, ELEVATOR MACHINE ROOM LIGHTING AND RECEPTACLE(S), ELEVATOR PIT LIGHTING AND RECEPTACLE(S), AND MACHINE ROOM ENVIRONMENTAL SYSTEMS. IT IS SUGGESTED THAT A PANELBOARD BE DEDICATED TO ELEVATOR AUXILIARY LOADS AND PLACED IN THE ELEVATOR MACHINE ROOM. FURTHERMORE, 10 FOOTCANDLES OF ILLUMINATION LEVEL, WILL BE REQUIRED IN ALL ELEVATOR LOBBIES AND CONNECTED FOR OPERATION ON THE EMERGENCY LIGHTING SYSTEM.

**ABBREVIATIONS**

ATS - AUTOMATIC TRANSFER SWITCH  
 PNL - PANEL  
 AHJ - AUTHORITY HAVING JURISDICTION



Drawn By: PPS Ckd By: PPS  
 Designed By: PPS Approved By: PPS

**EMERGENCY POWER DISTRIBUTION SYSTEM GUIDELINES**

No.	Description	Date
1	PRESENTATION	06/22/12

Issues  
 Seal