

- MEDIUM VOLTAGE "THRU" BUS
- DISCONNECT SWITCH
- BARRIERS TO COMPLETELY ISOLATE CABLE COMPARTMENT FROM MAIN
- NON-METALLIC CABLE SUPPORT BRACKET
- COMPRESSION LUGS FOR OVERHEAD OR BELOW GRADE CABLE CONNECTIONS (NEMA STANDARD 2 HOLE)
- "BUS RUN BACK"
- GROUND BUS, CONTINUOUS THROUGHOUT SUBSTATION.
- KIRK KEY MAIN INTERLOCK

- THE FIRE PUMP DISCONNECTING MEANS SHALL BE IN A DEDICATED FULLY-BARRIERED VERTICAL SECTION.
 - * PAINT THE ENCLOSURE RED
 - * THE BREAKER SHALL BE CAPABLE OF BEING LOCKED IN THE CLOSED (ON) POSITION
 - * CONCEAL CIRCUIT BREAKER TRIP BUTTONS BEHIND CUBICLE DOOR, OR PROVIDE COVERS OVER TRIP **BUTTONS TO PREVENT INADVERTENT TRIPS**
 - * EQUIP WITH A REDUCED ENERGY LET-THROUGH FEATURE, TO REDUCE ARC FLASH HAZARD DURING FIRE PUMP CONTROLLER MAINTENANCE
 - * Equip with an auxiliary dry contact to change state when the breaker has been opened, FOR REMOTE SUPERVISORY MONITORING BY THE BUILDING MANAGEMENT SYSTEM (BMS)
 - * THE CELL POSITION SHALL BE MONITORED BY THE BMS, TO CHANGE STATE WHEN THE BÉREAKER HAS BEEN WITHDRAWN FROM THE CUBICLE

 - * THE BREAKER SHALL ALARM ONLY (NOT TRIP) UPON DETECTION OF A GROUND FAULT
 * THE KEY FOR THE FIRE PUMP CIRCUIT BREAKER LOCK SHALL BE STORED IN A KEY BOX WITHIN THE SUBSTATION ROOM. UM UTILITIES WILL PROVIDE THE KEY BOX.

- PHASING THROUGHOUT SHALL BE: X, Y, Z (A, B, C) LEFT TO RIGHT, TOP TO BOTTOM AND/OR FRONT TO BACK.
- IF SECONDARY VOLTAGE IS GREATER THAN 208/120 VOLTS, PROVIDE CONTROL POWER TRANSFORMER (CPT) WITH PRIMARY AND SECONDARY FUSES.
- IF SECONDARY VOLTAGE IS GREATER THAN 208/120 VOLTS, PROVIDE POTENTIAL TRANSFORMER FOR METERING WITH PRIMARY AND SECONDARY FUSES.
- SEE SPECIFICATIONS FOR SPECIAL CT, AMMETER AND KWH METER REQUIREMENTS.

SINGLE ENDED SUBSTATION **ELECTRICAL ONE-LINE DIAGRAM**

NO SCALE - REVERSE END-TO-END WHEN APPROPRIATE TO MATCH PLAN VIEW

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The University of Michigan Standard Electrical Details

One-Line Diagram Single Ended Substation

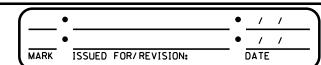
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THE UNIVERSITY OF MICHIGAN

PLANT EXTENSION ARCHITECTURE, ENGINEERING & CONSTRUCTION

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