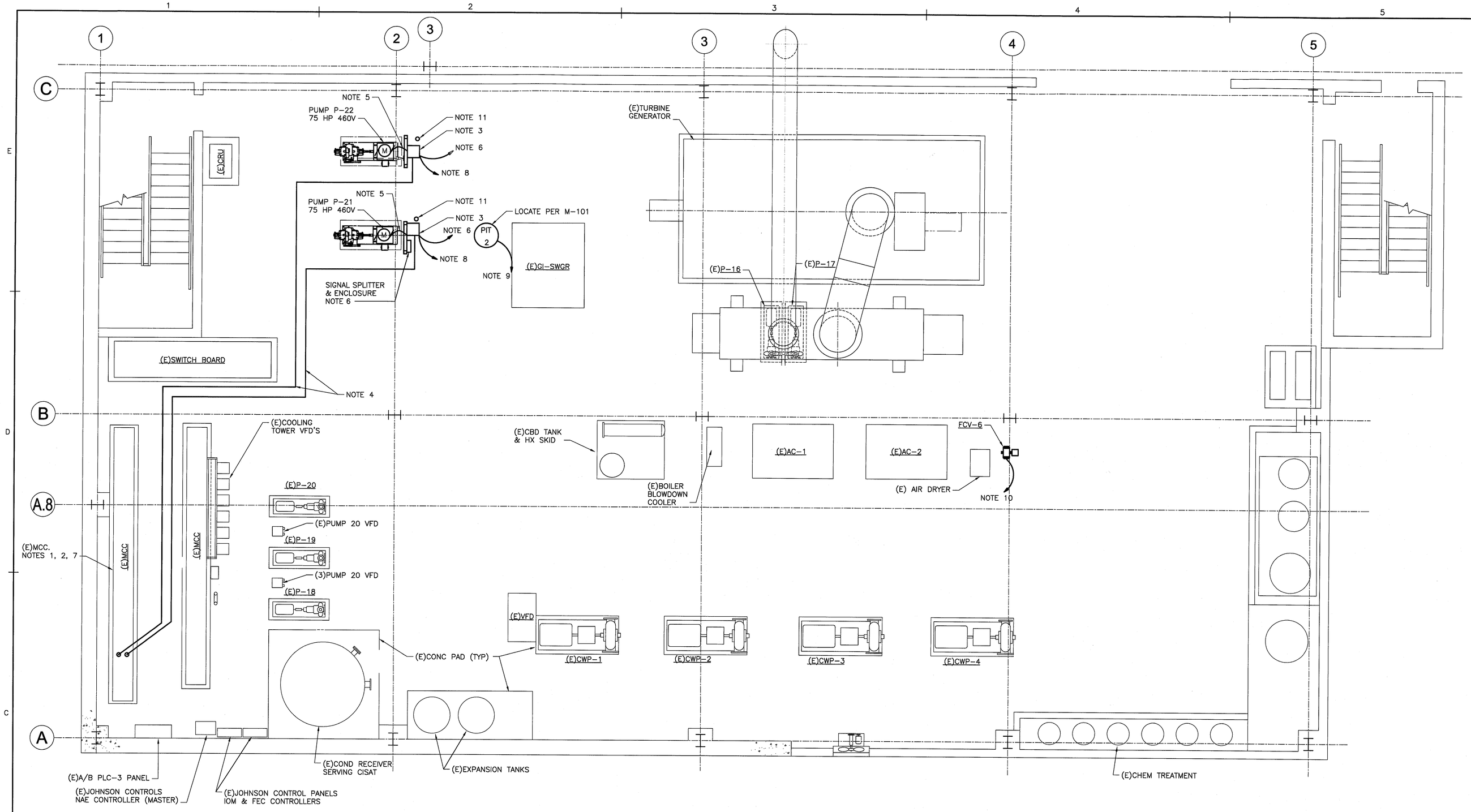
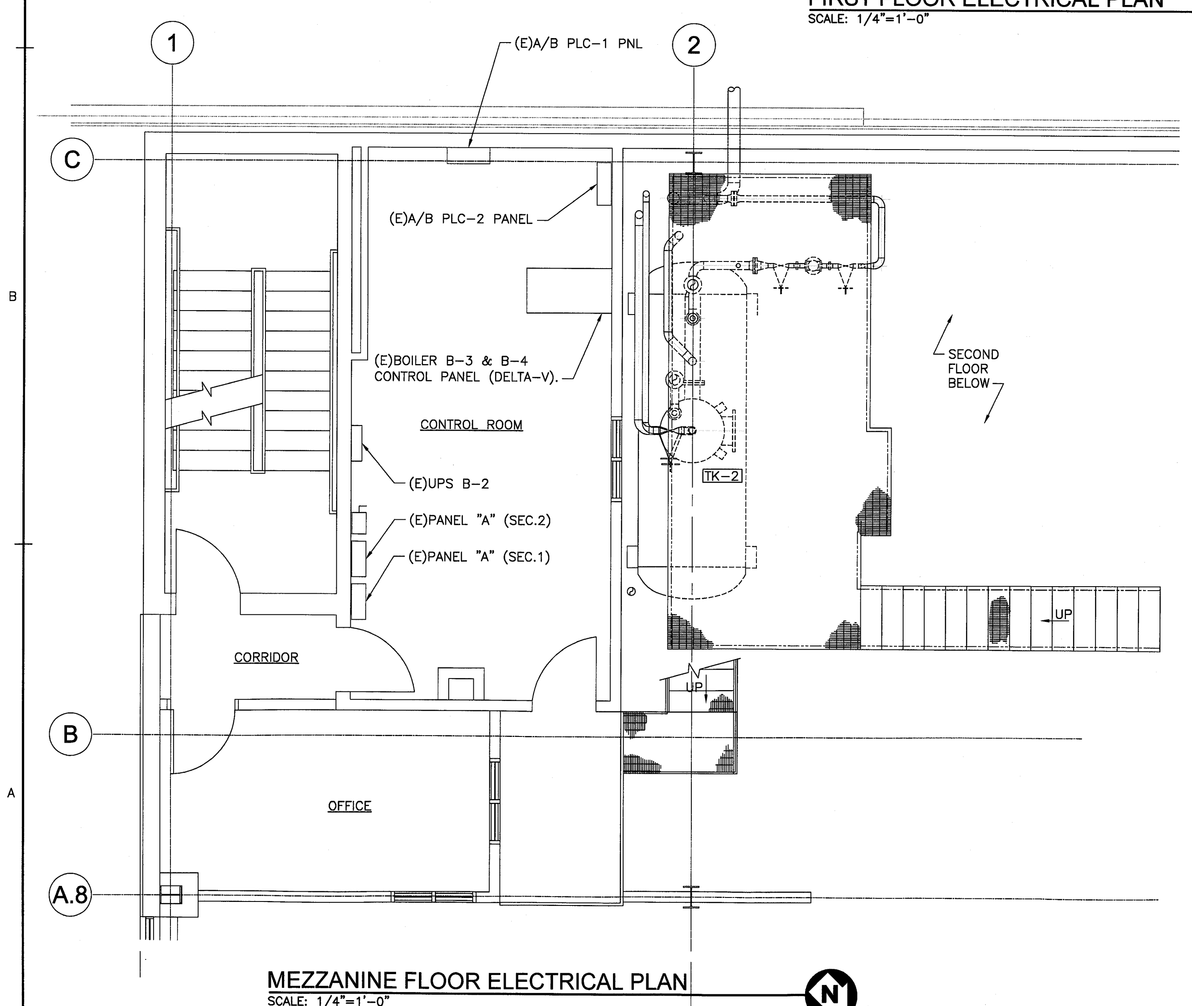



## FIRST FLOOR ELECTRICAL PLAN

SCALE: 1/4"=1'-0"




## MEZZANINE FLOOR ELECTRICAL PLAN

SCALE: 1/4"=1'-0"

## NOTES

1. REMOVE EXISTING STARTER AND MOTOR STARTER PROTECTOR FROM EXISTING PUMP P-22 STARTER COMPARTMENT IN EXISTING MCC. PROVIDE A NEW 150A CIRCUIT BREAKER IN EXISTING P-22 MCC COMPARTMENT TO FEED NEW REPLACEMENT PUMP P-21 (REPLACE EXISTING LABEL ACCORDINGLY). EXISTING MCC IS BY SQUARE D MODEL 6.
2. REMOVE EXISTING STARTER AND MOTOR STARTER PROTECTOR FROM EXISTING PUMP P-23 STARTER COMPARTMENT IN EXISTING MCC. PROVIDE A NEW 150A CIRCUIT BREAKER IN EXISTING P-23 MCC COMPARTMENT TO FEED NEW REPLACEMENT PUMP P-22 (REPLACE EXISTING LABEL ACCORDINGLY). EXISTING MCC IS BY SQUARE D MODEL 6.
3. PROVIDE A NEW VFD MOUNTED TO A UNISTRUT SUPPORT THAT IS ANCHORED TO THE FLOOR. REFER TO MECHANICAL DRAWINGS FOR SUPPORT STAND.
4. PROVIDE THREE 1/0AWG AND ONE 6AWG EGC IN NEW 1-1/2" RSC ROUTED OVERHEAD FROM THE NEW CIRCUIT BREAKER LOCATED IN THE EXISTING MCC TO THE NEW VFD.
5. PROVIDE THREE 1/0AWG AND ONE 6AWG EGC IN LIQUID TIGHT FLEX FROM THE NEW VFD TO THE PUMP MOTOR.
6. PROVIDE ONE BELDEN 8760 MULTI-CONDUCTOR SHIELDED TWISTED PAIR IN A 1/2" RSC FROM THE NEW VFD TO SIGNAL SPLITTER FOR ANALOG PRESSURE INPUT AND VFD "SPEED CONTROL" (SEE M-601). TERMINATE TO THE FIELD DEVICE AND TO THE SIGNAL SPLITTER. PROVIDE 12"x12"x4", NEMA 12, ENCLOSURE.
7. PROVIDE CURRENT SENSORS IN THE MCC BUCKET TO MONITOR PUMP P-21 AND P-22 FOR MOTOR RUN STATUS. PROVIDE TWO 16AWG IN A 1/2" RSC FROM EACH CURRENT SENSOR TO THE BOILER CONTROL PANEL "DELTA-V". CONTRACTOR IS TO TERMINATE TO THE FIELD DEVICE AND TO THE BOILER CONTROL PANEL "DELTA-V".
8. PROVIDE TWO 16AWG IN A 3/4" RSC FROM THE NEW VFD TO THE BOILER CONTROL PANEL "DELTA-V" FOR VFD STATUS DIGITAL INPUT, PROVIDE TWO 16AWG IN A 3/4" RSC FROM THE NEW VFD TO TK-2 LOW LEVEL SWITCH INTERLOCK (SEE M-601). TERMINATE TO THE FIELD DEVICES AND TO THE BOILER CONTROL PANEL "DELTA-V".
9. PROVIDE ONE BELDEN 8760 MULTI-CONDUCTOR SHIELDED TWISTED PAIR IN A 1/2" RSC FROM THE PRESSURE INDICATION TRANSMITTER (PIT-2) TO THE SIGNAL SPLITTER FOR ANALOG SIGNAL. TERMINATE TO FIELD DEVICE AND TO THE SIGNAL SPLITTER.
10. PROVIDE TWO BELDEN 8760 MULTI-CONDUCTOR SHIELDED TWISTED PAIR IN A 3/4" RSC FROM (FCV-6) TO THE BOILER CONTROL PANEL "DELTA-V" ONE OF THE CABLES IS FOR ANALOG CONTROL OF THE VALVE AND THE OTHER BEING ANALOG SIGNAL OF VALVE POSITION (SEE M-601). TERMINATE TO FIELD DEVICE AND TO THE BOILER CONTROL PANEL "DELTA-V".
11. DISCONNECT WIRING FROM EXISTING PUMP AND REMOVE WIRING BACK TO MCC. CUT CONDUIT FLUSH WITH FLOOR AND PLUG WATER TIGHT WITH CONCRETE.

## GENERAL NOTES

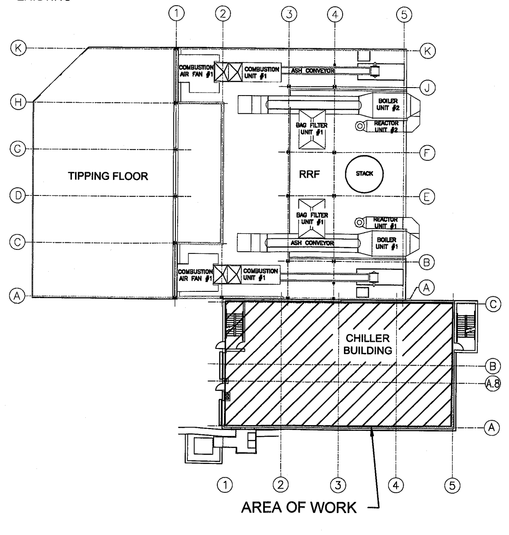
1. REFER TO JMU CISAT FEEDWATER SYSTEM P&ID DRAWING M-601
2. REFER TO DRAWING M-101 FOR EXACT LOCATIONS OF DEVICES.
3. COORDINATE TERMINATION OF CABLES AND WIRING IN THE BOILER CONTROL PANEL "DELTA-V" WITH "CONTROL DYNAMICS".

## ABBREVIATIONS

| | |
|---|---|
| A | AMP, AMPERE |
| AWG | AMERICAN WIRE GAUGE |
| A/B | ALLEN BRADLEY |
| CBD | CONTINUOUS BLOW DOWN |
| COND | CONDENSATE |
| (E) | EXISTING |
| EGC | EQUIPMENT GROUNDING CONDUCTOR |
| FCV | FLOW CONTROL VALVE |
| HX | HEAT EXCHANGER |
| MCC | MOTOR CONTROL CENTER |
| NEMA | NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION |
| PH | PHASE |
| PIT | PRESSURE INDICATION TRANSMITTER |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PNL | PANEL |
| RSC | RIGID STEEL CONDUIT |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| V | VOLTAGE |
| VFD | VARIABLE FREQUENCY DRIVE |

## LEGEND

- CONDUIT
- EXISTING CONDUIT
- HOMERUN TO ELECTRICAL SOURCE
- (M) MOTOR
- CONDUIT TURNUP
- AS INDICATED ON DRAWING
- (E) EXISTING




## KEY PLAN

NO SCALE

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.

4' 2' 0 4'

1/4" = 1'-0"

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8/14/2013
PROFESSIONAL ENGINEER

CITY OF HARRISONBURG RRF
JMU BOILER FEED PUMP
REPLACEMENT

HARRISONBURG, VA

| MRK | DATE | REVISION DESCRIPTION |
|---|---|---|

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|---|---|
| COMM NO: 212272.00 | |
| DATE: AUGUST 14, 2013 | |
| DRAWN: WAT | DESIGN: WAT |
| CHECK: MJG | |
| CAD FILE: E101.dwg | |
| SHEET TITLE | |
| FIRST FLOOR AND MEZZANINE FLOOR ELECTRICAL PLAN - CHILLER BUILDING | |
| SHT. NO. E-101 | REV. NO. 0 |

ATTACHMENT C

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