

# MSL Electric, LLC

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Work Order 2-4710 CSS 19796 NY0023 Ft. Totten , 123 Duane Road, Bayside, NY 11359

The following is a detailed report of the findings in the above mentioned repair.

## 1- Exterior wiring for the Vault:

- A- As previously known the vault requires power of 240 volts at 100 amps. Presently the vault is tied into a 500 volt feeder as shown in picture 2C.e and f. Since the Vault's circuit breakers are only designed to handle 250 volts max there is a potential for a catastrophic failure of the equipment and a potential hazard of someone being severely injured.
- B- The conduit that was installed, picture 1B and 1B.a, is not within the guidelines of the local code or the security requirements set by the Army. The conduit run for vaults is required to be installed underground and in galvanized conduit where exposed. The use of PVC conduit for commercial is not permitted within the New York City codes. Following National Code the Schedule 40 PVC conduit, picture 1B.a, is not permitted to be installed in exposed areas, it must be Schedule 80 PVC. Since the Army requires all local codes to be adhered to Ft. Totten is within the city limits and rigid metal conduit must be installed in outside areas.

## 2- Interior wiring for the Vault:

- A- Picture 2A shows the overall installation of the conduit and switches for the Vault feeders. The conduit is not adequately fastened and the 240 volt disconnect switch is not fastened to the wall as shown in picture 2B.a.
- B- Picture 2B shows the interior 240 volt disconnect for the Vault
- C- Picture 2C.a shows the 600 volt safety disconnect switch which the 240 volt wires were installed into on the line (powered) side of the switch and double lugged. The equipment is not designed to receive 2 wires under each lug. Pictures 2C.b through g shows the Brown Orange and Yellow connections that are associated with 277/480 volts. This is where the installation is receiving the power source from. This disconnect is also bonded to the neutral bus which is also a violation. Only the main disconnect is the neutral to be bonded to the grounding conductor.

## 3- Room 1007 Main Electrical Distribution Room for Building 123.

- A- Within the main distribution room a 240 Panel exist which can service the Vault .

Unfortunately at this time there is no immediate solution for this issue. The installation as a whole needs to be replaced.