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Mr. James Damato
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The feeders from the new service entrance switchgear to the new main distribution panels are planned to be run above the ceilings within the main building. Although the space above the ceilings is congested in some areas, potential routes were investigated and it was deemed possible to route conduit from the new electrical building to the existing electrical rooms where the new main distribution panels will be located. The possibility of running raceways or busways over the roof was investigated, but eventually eliminated due to cost considerations and potential problems concerning roofing, roof penetrations, and avoidance of potential future photovoltaic equipment (aka solar panels).

As required by the utility company (PSE&G), a new electrical service point will replace the existing 4,160 volts service point at the utility pole adjacent to the gymnasium. Per present utility company policy, a 13,000 volts primary service is required and will be located on grade adjacent to the proposed electrical building. The service will consist of a dual disconnect switch and two (2) transformers, all mounted on grade with a 480 volts underground secondary from the transformers to the service entrance switchgear in the electrical building. The service entrance switchgear will distribute the five (5) feeders as discussed above.

In order to address the lack of capacity in the existing distribution system, the scope of work includes the addition of five (5) computer panelboards and associated transformers and feeders, as an alternate. These computer panelboards will contain branch circuit breakers that can be used to feed circuits for future computers and printers to be furnished by the District when the budget permits.

In order to manage the construction budget, the bid documents were organized with three (3) Add Alternates to the Base Bid. The base bid consists of the new electrical service located on grade, the new service entrance switchgear located in the new electrical building, the new main distribution panels replacing the existing unit substations in the four (4) existing electrical rooms/vault, and the feeder and transformer required for the existing 208 volts switchboard.

Alternate AE1: This add alternate is for replacing the old 480 volt feeders with new 480 volt feeders, which will run from the four (4) new main distribution panels (in the base bid) to their respective existing transformers and panelboards throughout the building. This alternate has a high dollar value attached to it, but is important because in the event this alternate is not accepted, failure of the existing feeders would create a life safety hazard, be extremely disruptive to the operations of the school as discussed above, and the repair/replacement costs of this equipment on an emergency basis is cost prohibitive. The primary concern is the age of the insulating jackets on the old feeders. Further, there will certainly be logistical concerns in performing this work at a later date.

Alternate AE2: The second add alternate is for the addition of five (5) new computer panels. While the addition of these panels could be done any time after the completion of the base bid work, it should be noted that there are cost savings to be had in doing this work now as part of the larger project. Cost savings are due to the contractor already being mobilized for the base project and the ability of the equipment to be purchased as part of the larger overall equipment buyout. Economies of scale are definitely available due to the size of the project. There will also be some logistical concerns in adding these panels at a later date.

Alternate AE3: The last alternate is for the replacement of the distribution panel and associated transformer in the underground electrical vault near the main rear entrance. The cost savings to do this work now are similar to that described for add Alternate AE2. In addition, there is a life safety aspect in that this equipment is seriously deteriorated, and poses a danger to maintenance personnel servicing it, and in turn, the larger school population in general. It could, however, be replaced at a later date with the same