Pickard Engineering
Barry L. Pickard, P.E., BCEE
4853 Juneway Drive, No.
Liverpool, New York 13088-5805
Phone (315) 451-8678 Fax (315) 451-8678 Email pickardbl@aol.com

June 15, 2010

Dr. Kenneth Eastwood, Superintendent of Schools
Middletown Enlarged City School District
District Offices
223 Wisner Avenue
Middletown, New York 10940

Re: New Elementary School
Sanitary Sewer Service

Dear Dr. Eastwood:

Transmitted herewith is the revised Engineer's Report which sets forth the design parameters and pipe sizes required to convey the peak day sanitary sewage flow plus allowable groundwater infiltration from the new elementary school to the school's property line where the City's collection system begins. Because the capacity of the City's downstream sanitary sewer between the school's property line and the trunk sewer at Cantrell Avenue has been questioned by the City, the analysis of this section's capability to handle the peak design sewage flows plus infiltration was revised based on better definition of the service area and reported peak groundwater infiltration.

My findings are as follows:

1) A 6-inch diameter sewer service is adequate to replace the existing service to the school's property line. It will have capacity which will be at least ten times the design flow.

2) The City's existing 8-inch diameter sewer collector has more than adequate capacity (at least seven times design flow) to transport the peak design sewage flow from the new school plus the peak design sewage flow from 112 homes connected to it plus the peak wet-weather groundwater infiltration reported in the Sewer System Evaluation Survey for the City of Middletown dated January, 2004 and prepared by Clark Patterson Associates.

The City Mayor has written in a letter to the State Education Department that the downstream sewer "line will be overtaxed, however, by the discharge of over six times more sewage (using the School District's own figures, which does not even account for peak flows) from the new school". The average and peak sewage flows from the new school will in fact be only twice that from the existing school, since the sewage flows are in proportion to the student population figures. Regardless of what the actual flow proportion is, my analysis shows that the existing downstream city sewers will not be overtaxed by the additional sewage flow from the new school.

Furthermore, a review of the SSES Report and State Environmental Conservation Department correspondence yielded no evidence to support the City's contention that the downstream sewer collector between the school's property line and the 15-inch diameter trunk sewer at Elm Street must be replaced on the basis of excessive groundwater infiltration. However, this section could be in need of replacement because of structural pipe failures, root intrusion, frequent solids deposition or other maintenance issues not caused by and not the responsibility of the school district.

The downstream sewer capacity analysis was made on the basis of the sewer being in normal operating condition, i.e. no flow restrictions from poorly maintained pipe or manholes. Based on this analysis, it is concluded that the downstream sewer does not need to be replaced with larger sized pipes to accommodate the new school.

Respectfully submitted,

Barry L. Pickard

Barry L. Pickard, P.E., BCEE

Cc: Carl Thurnau, SED
Thomas Scott, Bldgs. & Grnds. Supt.
Timothy Bonaparte, AOLA