

KLEIN CREEK BOOSTER STATION—WINFIELD

Client: Village of Winfield

To obtain Lake Michigan water from the DuPage Water Commission, the Village was required to construct an elevated water tank and booster pumping station. The water pressure from the DuPage water system varied widely due to variability of water demands on the system and required analysis of system pressures and flow to determine the extreme operating conditions and to select the proper pumping equipment.

Rempe-Sharpe:

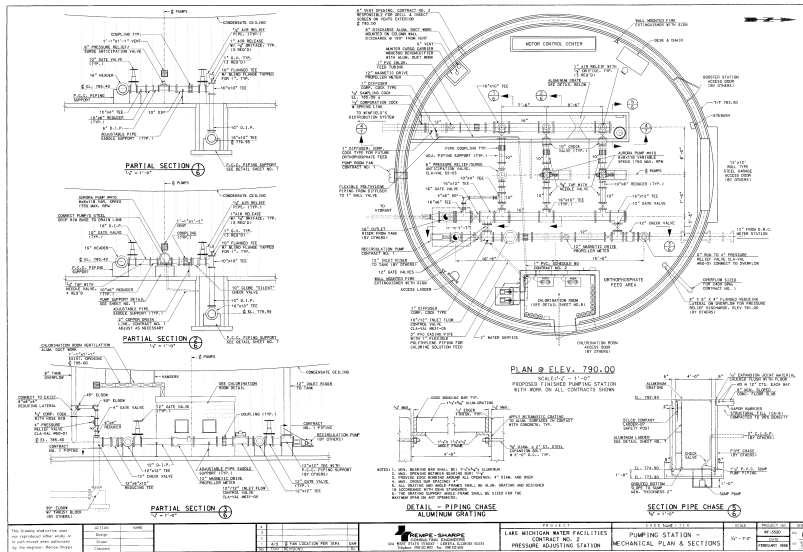
- ◆ Worked with the DuPage Water Commission to obtain expected water flow and pressure during anticipated extreme conditions to develop system head curves .
- ◆ Constructed a computer model of the water distribution system and ran the model at Minimum Daily Demands, Average Daily Demand, and Maximum Daily Demand to develop system head curves.
- ◆ Evaluated various pump and impeller sizes, and various rotational speeds of the pumps.
- ◆ Prepared Distribution System Head Curves and Pump Curves for the various pumping rates and demand conditions.
- ◆ Determined the expected extreme conditions and selected the pumping equipment and “rpm” range required to meet conditions.
- ◆ Prepared design drawings and specifications reflecting the recommended equipment and layout.
- ◆ Provided Shop Drawing reviews and construction related services.

The extended distance from the Klein Creek Water Booster Pumping Station and Winfield’s main distribution system required the Engineer to consider measures to reduce the likelihood of water hammer and reduce pump cycling. The Engineer selected variable speed pumping equipment which eliminated extreme pressure spikes during start-up and shut-down and allowed more uniform withdrawal rates from the DuPage system. Also, the pumping station was constructed within the base of the elevated tank and thereby eliminated the cost and footprint of another building.

Construction Cost: \$506,700

REFERENCES:

Tye Loomis
Superintendent of Public Works,
630.933.7141



DuPage Water Commission Connection Dictates Booster Station



On-Schedule and On-Budget Delivery

