



Mechanization

The two main buildings on this project house over \$13 million dollars worth of state of the art computer controlled manufacturing and conveying equipment. Controller and data cabling requirements were met via underslab feeds whenever possible, requiring a high degree of accuracy in formwork and layout. The main systems, each by a separate supplier, were as follows:



Concrete Batch plant and conveyors: The plant had its own batch plant, which receives and mixes raw materials on a continuous basis. Fully computer-controlled robotic hoppers travel via an overhead rail conveyors, dispatched based on production needs.

Reinforcement welders and conveyors: Automatic welding equipment manufactures product-specific reinforcing from bulk steel wire, and stores and conveys the units as needed for production.



Small-diameter pipe unit: A single fabrication line of fully automated sub-systems fabricate and place reinforcing mesh; cast and trowel pipe weighing several tons; remove, clean, store and convey steel forms as needed via a variety of overhead cranes and robotic conveyors; and clean, test and sort pipe.

Kiln system: Freshly cast pipe is conveyed to a series of curing kilns, with controlled humidity and temperature levels. Tolerances on cast-in-place embedded steel items were as close as one millimeter for this area! Roll-up steel doors in these areas were also controlled by the computerized production system.

Large-diameter production stations: Housed in the second building were product-specific equipment stations used for making large-size culvert and pipe. These were fed by the same robotic concrete conveyors, and have additional material handling equipment at each station.



Overhead cranes: In both of the buildings, a wide range of overhead cranes were also installed in addition to other overhead conveyor systems related to the production equipment.