STRUCTURAL CONCEPTS, INC.

Project Profile

Kingsdown

Location: Winchester, VA

Architect: David W. Ganse

Completion Date:
July 1999 (original facility)
Apr 2008 (Addition #1)

Area: 80,000 ft² original and 40,000 ft² addition

Construction Cost: $6.0 M

Wall System: tilt-up concrete

Floor System: concrete slab on grade

Roof System: steel joists on steel joist girders

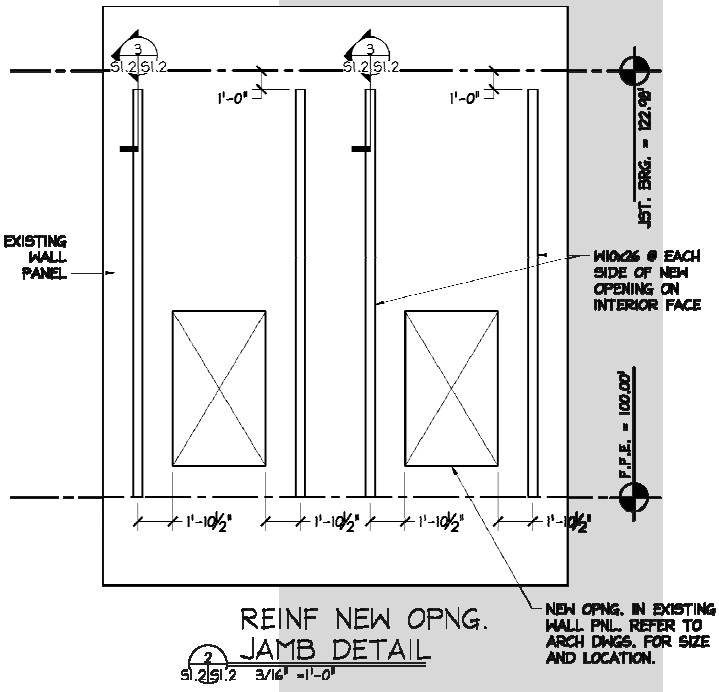
Lateral System: tilt-up walls function as shear walls

Kingsdown Manufacturing

Offices are located just inside the main entrance shown above. There is a mezzanine for storage above the offices, while the remainder of the facility is open for production equipment. When the operation outgrew the original space, an addition to the rear followed the same construction and layout as the original facility and increased floor area by 50%. Truck loading docks are built in to one side for receiving raw materials and shipping finished products.

Structural Concepts, Inc. was responsible for the design of all structural elements, including reinforcing and detailing for the concrete wall panels which were cast on top of the floor slab in the horizontal position then lifted and rotated into their final position by a large crane. When painted inside and out, these walls are the finished surface. They also support the roof and brace the structure against lateral movement.

Tilt-up walls are customized for each project with window and door openings as required. For the addition, the architect desired new windows near the front entrance. Since the original wall panels did not have extra reinforcing bars at the window jamb locations, Structural Concepts designed steel jambs to strengthen the wall panels at each new window. In the same way, door openings were created between the original portion and the addition.



132 W. Piccadilly St. | Winchester, VA 22601 | (540) 667-6174 | fax (540) 722-4748 | www.sci-engr.com