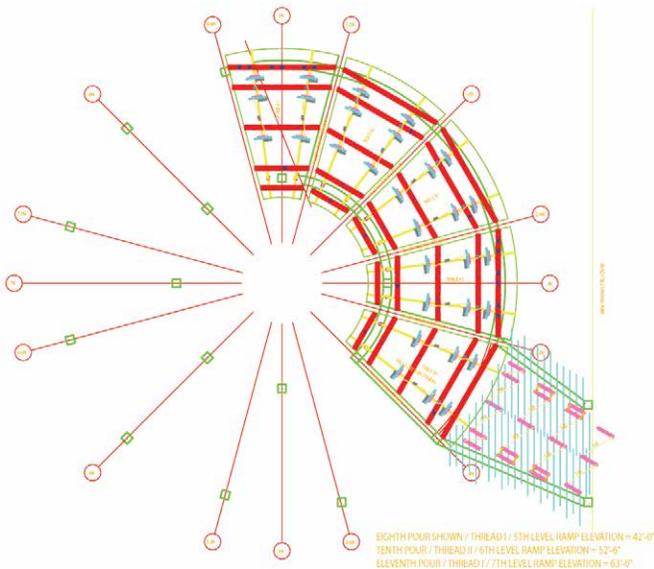


Forming with a Twist



Wedge-shaped Truss tables provided support for the construction of the helical access ramps.



The wedge-shaped Truss tables turned and sloped as planned.

The contract for a new 3,000 space parking structure at the General Mitchell International Airport in Milwaukee, Wisconsin, was won by C.D. Smith Construction. Because of previous experience with parking garage projects, they were already familiar with the Garage Beam System. They had no doubt that it was right for this structure, but there was a trickier part of the project – the two helical ramps to access the new and existing parking structures – that caused them concern.

These cast-in-place elements presented C.D. Smith with a major challenge. Each coiled ramp starts 180 degrees from the other, with levels rising 10'-6" every half turn on the ramp. One ramp was designed to allow drivers access to levels 3 and 5 and the other provided access to levels 2 and 4.

Symons proposed Flying Truss and Symons Soldier Beam equipment in conjunction with a few customized pieces to support the helical ramp construction. The proposal included seven wedge-shaped, sloped tables to form 210 degrees of helix at a time.

The next challenge was the transition ramps at each level between the helical ramp and parking levels. The transitions needed to be poured with the helical slabs because they had post-tension cables in them. Symons provided FrameFast™ Shoring to support these areas.

Part of the ramp design included a 4' high barrier wall that needed to be poured within 24 hours of each helix slab pour. Symons provided 4' Flex-Form® panels to do this portion on the job. The Flex-Form provided the true radius and smooth finish that C.D. Smith needed.

Because one curled ramp rotated clockwise and the other rotated counter-clockwise, plans included adjusting the slope of the tables after the first ramp was completed.

C.D. Smith was faced with some very challenging concrete forming situations in this project, but Symons provided the solutions at every turn!



Symons Soldier Beams and a custom washer with a curved surface were part of the support assembly that allowed the tables to achieve a slope.

Additional product information is available online at www.daytonsuperior.com. Contact your Dayton Superior representative at 888-977-9600, or send an email to info@daytonsuperior.com if you would like to discuss how these or other innovative systems can make your construction projects more productive.



Flex-Form panels were used to form the curved 4' high barrier wall.



The slope of the Truss tables was reversed from one helical ramp to the other, with the same successful result.