Strauss Rail Yard Built To Last in N.M. Desert

The first new Union Pacific rail yard in nearly a century is almost complete and will soon link the railroad's East and West operations **BY JOHN GUZZON**

In the desert just outside Santa Teresa, N.M., a 12-mile-long, $400-million railroad service and intermodal facility is nearing the end of construction. The Strauss Rail Yard is the first new yard to be developed by Union Pacific Railroad in nearly a century, and it is big.

"There really is nothing to compare it to. This has been a real renaissance," says Zoe Richmond, director of public affairs for United Pacific's Phoenix office. "Trains have gotten a lot more efficient, but they are also a lot longer."

Driven by an inability to expand its landlocked operation in El Paso, Texas, United Pacific has carved out a city from the desert approximately 20 miles northwest of El Paso.

"Building a facility like this is really like building a small city where there wasn't a city before," says Mike Zucker, civil engineer and terminal-design project manager with United Pacific.

Construction occurred in two phases. The first began in 2011 and involved excavation and the relocation of a 345-kV power line, roads and other infrastructure. Construction on the second phase began in July 2012 and included mechanical, electrical, architectural, utilities, track and civil engineering portions of the project.

Union Pacific and its internal construction team, led by Dan King, performed most of the track construction, while traditional vertical buildings were done by outside specialists.

"We have to perform much of the work in-house be-

DESERT OASIS The Strauss Rail Yard in Santa Teresa, N.M., was built in an area of uninhabited desert.

PHOTO COURTESY OF UNION PACIFIC, BY AERIAL PHOTO BY EAGLESEYEPHOTO.COM

CONCRETE AND ASPHALT More than 212,000 tons of concrete and 115,000 tons of asphalt were used to construct the rail yard.

UNDERGROUND WORKS Three boxed culverts were built to divert stormwater to retention basins.

cause there are certain tasks at our facilities that take a specific expertise," Richmond said.

Wilson & Co., Albuquerque, is the designer of the facility and primary constructing consultant to Union Pacific. Nearly 100 other subcontractors have performed substantial work on the project.

Dave Olson, associate vice president of Wilson & Co., says that despite the project's large scale, relationships between Union Pacific and contractors on Strauss Yard follow the dynamic found on most rail projects. Construction management is supervised by Union Pacific with support from Wilson & Co. and Irvine, Calif.-based RailPros Inc.

"This is a 12-mile-long project, so there is a lot of rail and a lot of material on site," Olson says. "UP's full-time construction manager on site is complemented by construction management who go out and do inspections and observations and make sure that things are being constructed according to the plans and specifications."

A MASS-GRADE SCENARIO

The carving operation during Phase 1 was massive. Nearly 5.8 million cu yd of soil have been scraped from the development area since construction began. Zucker says all of the dirt remained on the site and was redistributed in an effort to create the flattest surface possible for the flat-track facility. In rail applications, "flat" is defined as no more than a 0.3% grade.

"We had the challenge to make sure it was level," Zucker says. "The west end had more cut and the east side more fill, but we balanced it all out. It was a mass-grade scenario."

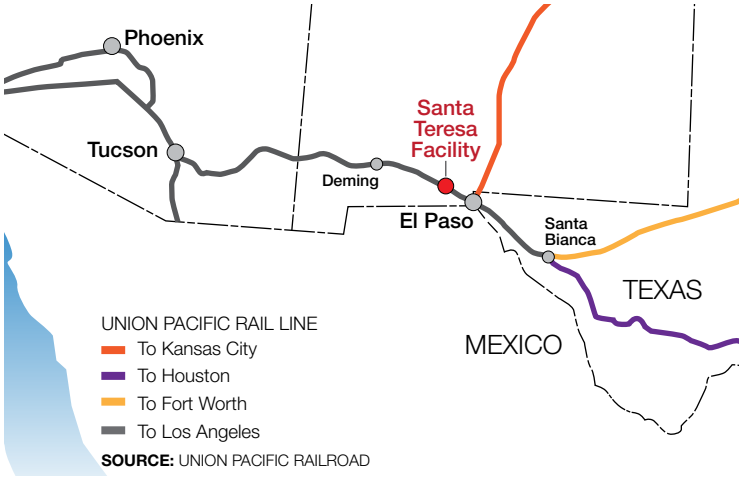
Richmond, putting the excavation into perspective, says if that dirt was stacked on trains, "that train would go from Santa Teresa to Albuquerque."

While the excavation proceeded, work to extend and relocate the power line that feeds the city of El Paso was being completed in coordination with El Paso Electric. The line originally traversed the site.

"We had to put a 90° turn [in the line] to get it clear of the site, and now it goes around the far southwest [corner] of our site," Zucker said.

The line was moved a total of more than 1.5 miles and took more than six months to complete.

County roads were also relocated as part of the project, with 16 miles of roadway constructed outside of the facility.



SOURCE: UNION PACIFIC RAILROAD

FINISHING WHAT WAS STARTED

Phase 2 of construction was launched in July 2012 with Sundt New Mexico LLC, a division of Tucson-based Sundt Construction, as the general contractor.

As part of this phase, crews built-out the crew change point, fueling station, yard office, the intermodal facilities and all of the other buildings on the site as well as the tracks and utilities.

Part of the impetus for the development of the yard was to have space that could grow along with rail demand over the next century. As a result, many more facilities and miles of track are anticipated to be laid and erected at undetermined points in the future.

Elements such as drainage and retention were con-

PHOTOS: (LEFT) COURTESY OF UNION PACIFIC; (RIGHT) COURTESY OF SUNDT CONSTRUCTION

sidered to maximize the eventual built-out infrastructure. Triangular retention basins flank the track on the north and south.

"To maximize our capability to grow over the long term, we wanted to move all of our stormwater retention ponds out into those [areas]," Zucker says of the stormwater culverts and utility encasements that were installed under main tracks. "That caused us to put some large culverts in to drain our fueling facility, intermodal facility and for future growth. We put in three large boxed culverts."

The three culverts—two are nearly identical at 6 ft high by 6 ft wide and about 1,500 ft long and one at 5 ft by 5 ft and about 6,000 ft long—will move all of the stormwater from the site.

More than 40,000 cu yd of concrete have been placed on site—equivalent to about 12,270 Olympic-size swimming pools. In total, more than 212,000 tons of concrete and 115,144 tons of asphalt have been placed.

"We did put in a lot of underdrain systems to drain our tracks, especially with all of the asphalt out there," Zucker says. "It can cause a bathtub effect."

More than 23 buildings are being constructed during Phase 2, although some of the structures are only buildings in the sense that they have four walls and a roof. Zucker says there are some structures that will be rarely—if ever—inhabited.

"It is hard to define buildings out here because not all of them are occupied," he says.

The yard office and intermodal facility are designed for LEED-Silver certification. The crew change buildings will serve as home base for Union Pacific employees operating long-haul trains out of the area. The intermodal ramp will be regionally focused and will permit both local and regional businesses more immediate access to the efficiencies of freight trains.

SPECIALIZED CONSTRUCTION **Nearly all of the track work on the rail yard was performed and completed by Union Pacific's in-house construction crews.**

PHOTO COURTESY OF WILSON & CO.

TRAIN SERVICES
Part of the mission of the Strauss Rail Yard will be to provide fuel, water and effluent services for trains, crews and passengers.

The crown jewel of the yard is the driving force behind its very development: the two refueling and maintenance stations. Positioned on the east and west sides of the site—about two miles apart—the stations will provide fuel and fluid/maintenance services for trains. Effluent will be unloaded at the stations, and water and other necessities will be provided.

The above-ground tanks are fed by a nearby interstate pipeline that was extended to the site during Phase 1.

BUILDING FOR THE FUTURE

On such a large project that is spread over so much distance, it's not like many vertical construction projects that have an official turnover date. Rather, it is more like a checklist process.

"It's such a large facility, it's not just like turning on a switch. Some folks are already out there kicking the tires, but on the construction it is still wrapping up," Richmond says. "We are not like a Wal-Mart or Target."

As such, some operational activities have begun, including crew changes and fueling on some locomotives. Other parts of the facility, such as the intermodal facility, are still in progress.

The overall economic impact of the Strauss Rail Yard on the New Mexico economy is estimated at $500 million. The facility will have created approximately 3,000 jobs by the end of the construction phase in 2015 and will eventually be the headquarters for more than 600 permanent jobs.

With more than 50 contractors involved in the current portion of the project, there is an average of 350 workers on site daily. Of the current subcontractors, about 40% are from New Mexico.

For years into the future—perhaps a century—Strauss Rail Yard will provide a key inland port and a strategic focal point for Union Pacific in the Southwest U.S. ■

PHOTO COURTESY OF WILSON & CO.