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# NEWS

## **ACPA Names Recipients of 2020 “Excellence in Concrete Pavements” Awards**

Rosemont, IL (December 7, 2020) – The American Concrete Pavement Association (ACPA) has named 28 recipients of its 31st Annual “Excellence in Concrete Pavements” awards, which recognize quality concrete pavements in the United States and Canada. The awards program encourages high-quality workmanship, quality, and creativity in concrete pavement construction, rehabilitation, and preservation projects.

The award-winning projects were paved by 23 different contractors. Projects are located in 14 states or regions represented by 12 ACPA-affiliated Chapters and State paving associations. Winners were determined by 56 professionals who devoted their time and expertise to serve as judges.

The program recognizes contractors, engineers, and project owners who completed outstanding projects. Companies noted with an asterisk (\*) are members of ACPA National. A link to the photos (organized by award category) may be found on the final page of this release.

### **Reliever & General Aviation Airports**

#### **Silver Award**

#### **Air Carrier & GA Apron Phase II Rehabilitation, Augusta Regional Airport, Augusta, GA**

Contractor: McCarthy Improvement Company\*  
Owner: Augusta Regional Airport  
Engineer: Mead and Hunt

Airport construction schedules are always time-sensitive because the shutdown of any part of the infrastructure affects airport operations. When the airport is a key destination for visitors to and participants in a notable golf tournament, the schedules are even more critical.

In February 2019, McCarthy Improvement Company began work on the project, which required 80,945 SY of concrete to replace 72,597 SY of failing asphalt pavement on the existing commercial and general aviation aprons.

The project was allotted 335 days initially, but at the start of the project, 14 days were added to resolve survey control issues. Another 18 days were added for the 2019 Masters Tournament shut down, which was necessary due to unusually high plane traffic prior to and during the event. In all, the project schedule allowed 367 days total to complete the work. The project schedule allowed some work to be performed prior to the shut down, and also completed with minimal impact to airport operations.

The remaining five phases were combined into three phases, which allowed for higher production rates, a continuous flow of work, and the project being completed 55 days early.

Two value engineering proposals suggested by the project team were incorporated into the project. The first deleted 4,700 SY of proposed asphalt pavement and replacing with concrete. This change produced cost savings to McCarthy and the owner due to the premium price of asphalt in the area at the time.

The second value engineering proposal recommended switching the cement-treated base (CTB) from the standard mixing and placing method, to placing all the material on grade and mixing the CTB in place using the full depth reclamation method to save time and costs. In the final analysis, McCarthy paved almost 81,000 SY of 6 in. to 18 in thick concrete with no corrective grinding required.

## **Gold Award**

### **Runway 18-36 Reconstruction, Jesse Viertel Memorial Airport, Boonville, MO**

Contractor: Ideker, Inc.\*  
Owner: City of Boonville  
Engineer: Lochner

In 1973, the City of Boonville completed a project involving site clearing, grading, drainage, and paving for a new airport facility. The original Runway 18-36 was 3,300 ft by 60 ft comprised of asphalt surface on a crushed

aggregate base. In 1999, the runway was extended and widened to produce a 4,000 ft by 75 ft asphalt runway. In 2018, it became apparent that traditional asphalt pavement maintenance procedures would no longer suffice, so a total reconstruction of the runway was planned.

Following an engineering design effort that included topographical surveys, geotechnical investigations, pavement design, and life-cycle cost analysis, concrete pavement was selected as the best option. The project plans and specifications called for a truncated timetable since this project would close the airport's only runway, effectively halting airfield operations to allow the project to be completed in a single phase.

The pavement section was constructed with 6 in. of P-501 concrete on 12 in. of aggregate and 12 in. of treated subgrade. In addition to the 40,000 SY of treated subgrade, base rock and 6,300 CY of concrete, the project included updating the entire airfield lighting system with new LED edge lights and navigational aids.

The 160-calendar-day project involved removal of existing pavement and base courses, completion of earthwork, and establishment of new grades. Ideker installed 12 in. of cement stabilized subgrade, two 6-in. lifts of aggregates subbase, and 6 in. of concrete pavement.

In addition to the runway reconstruction, three connector taxiways were constructed during the project as well – all with the same design section of subgrade, subbase, and concrete. The total project cost was about \$3.75 million with concrete paving accounting for almost \$2.95 million. The project was completed in 141 calendar days, and the new Runway 19 was able to open days ahead of schedule.

## **Commercial Service Airports**

### **Silver Award**

#### **Taxiway Foxtrot Rehabilitation, Kansas City International Airport, MO**

Contractor: Ideker, Inc.\*

Owner: Kansas City Aviation Department

Engineer: Burns & McDonnell

Taxiway F at Kansas City International Airport is the primary parallel taxiway that serves Runway 1R-19L, which is located on the east side of the airfield. Originally constructed in the early 1990s, this 9,500 ft by 75 ft taxiway

was experiencing significant foreign object debris issues attributable to aggregate durability and pop-out distresses.

The decision was made to remove and replace highly distressed pavements with a new concrete surface. This allowed for the underlying lean concrete base and other pavement layers to remain in place, significantly reducing construction costs and shortening the construction duration. The project included the removal and replacement of approximately 123,000 SY of 17 in.-thick surface concrete, full-depth construction of a new concrete cross-over taxiway, pavement geometry modifications to meet current Federal Aviation Administration standards, and asphalt shoulder pavement rehabilitation. The project also included airfield lighting and signage improvements, earthwork, drainage improvements, and pavement markings.

Several of the challenges that Ideker faced during the paving process included various grade changes encountered in the intersection of the main runway 1R-19L, the crosswind runway 9-27, connector taxiway Charlie and connector taxiway Delta. All of these pavements are joined in a large intersection.

To maintain an extremely flat surface for the aircraft and maintain the tight tolerances of the FAA, the Ideker crews had to match the new pavement grades with the underlying lean concrete while tying the pavement into the existing intersection pavement, an important process, but one that was not included in the original project scope. Use of stringless technology and analysis of 3D models before placing concrete allowed Ideker to survey the existing headers as well as the lean concrete. This helped ensure the new 17 in. concrete would match the underlying structure.

## **Gold Award**

### **Runway 16R-34L Pavement Rehabilitation, Sacramento International Airport, CA**

Contractor: Granite Construction\*

Owner: County of Sacramento, Department of Airports

Engineer: AECOM

The Sacramento International Airport's Runway Rehabilitation Project 16R-34L required a complete demolition and reconstruction of the existing runway and runway electrical systems in only 6-1/2 months.

The new runway includes a subsurface drainage system, 8 in. of P-306 lean concrete base, 16 in. of P-501 concrete pavement, saw-cut grooving, joint sealing, a new electrical lighting system, reconstruction of the ALSF

(or Approach Lighting System with Sequenced Flashing Lights) system, and reconstructed blast pads and adjoining taxiways.

Completing the project in the short time frame was imperative because the airport operates with only two runways, and 16R-34L is the only one that offers Category 3 lighting. This lighting is especially critical because it allows pilots to land in the adverse foggy conditions, typically experienced from late fall through early spring.

The aggregate base beneath the existing runway was harvested and recycled back into the lean concrete base for the new runway. An onsite batch plant was used to produce all 34,000 CY of lean concrete and 67,000 CY of concrete pavement.

On the grade, Granite Construction used a GOMACO\* PS2600 placer/spreader and a Guntert & Zimmerman\* S600 paver equipped with Trimble's PCS900 3D stringless grade controls to place pavement 18.75 ft wide and 1 in. thick. The paver was equipped with a Minnich\* Auto Vibe II system to control and monitor vibration. Paving was completed using a skip bay method, paving over pre-set dowel baskets with drilled and epoxied dowel bars in companion paving pulls. The runway pavement was constructed to a very smooth average profile index of 1.7 in. per mile with only two must-grind areas.

Crews worked six to seven days a week with 10 to 12 hour work days to meet the deadline. Despite the project scope expanding by more than \$4 million of additional work, the runway was opened on the originally scheduled date.

## **Concrete Pavement Restoration**

### **Silver Award**

#### **State Road 37 Restoration Project, Mitchell, IN**

Contractor: Milestone Contractors LP\*

Owner: Indiana Department of Transportation

Engineer: HNTB

Although the Indiana DOT initially believed the repairs to State Road 37 would be a patching project, the scope was changed during the preliminary engineering phase to a concrete pavement restoration project. The change was necessary after identifying the cause of pavement failure to be a 1/2-in. difference between the mainline edge of the pavement and the shoulder because of poor construction of the initial roadway.

Pavement treatments through the corridor included fully reconstructing six sections along State Road 37. The sections ranged from 2,500 ft to 4,500 ft in length and the project also included a 1,000 ft section through the U.S. 50 intersection, 127 standard concrete patches, and three long concrete patches measuring 412 ft, 180 ft, and 83 ft. All joints in the concrete pavement section—measuring a total of 320,000 linear feet—were cleaned and sealed.

The completed project provides the motoring public with substantial improvements to the overall ride of the pavement, safety, and operational improvements that will benefit road users for many years to come.

In collaboration with INDOT, this project was selected for a beta test of a subgrade treatment method that requires minimal excavation as designed by the Geotech team at INDOT. The shallow rock layer in one section made it a good choice for the test. Using a combination of geogrid and a wicking geofabric, the subgrade cross-section was reduced to as little as 5 in. This method was applied on a 300 ft test section. This method may be used on future projects in areas for which deeper excavation is not feasible.

An inconsistent existing subgrade presented a significant challenge. While some sections were reasonably stable, others included rock and poorly draining clay, and even sand. Early in the project INDOT's inspection team and Milestone realized that the one-size-fits-all treatment initially prescribed would not work. Overcoming this challenge required a customized approach that included removal and replacement of the existing soils with a compacted aggregate for some areas, while others, after passing compaction tests, could remain in place. Good communication was key to this pieced together approach, but ultimately was very cost effective.

## **Gold Award**

### **Runway 17R/35L Complex Pavement Rehabilitation, Denver International Airport, CO**

Contractor: Interstate Highway Construction, Inc.\*

Owner: City and County of Denver, Department of Aviation

Engineer: RS&H, Inc.\*

Runway 17R-35L at Denver International Airport is the main runway at the airport and critical to airport operations, which is why the complex pavement rehabilitation had to be completed in just 103 days. The rehabilitation included removal and replacement of airfield concrete pavement, removal and replacement of the hot mix asphalt (HMA) shoulders, total removal and replacement of pavement markings throughout the

complex, complete update of the electrical system, updating of the weather and low visibility systems, replacement of all navigational signs, and full removal and realignment of high speed taxiway M6.

The major items of work consisted of 53,000 SY of 17 in. concrete removal, 48,000 SY of 17 in. concrete replacement, 41,000 SY of concrete surface grooving, 5,500 SY of cement-treated base profile milling, and 2,500 SY of soil cement base course. It also included 185,000 LF of joint seal rehabilitation using polypropylene compression seals; silicone sealant; and 2-in. preformed expansion joint. The project also included 200,000 SF of pavement marking removal and replacement, 8,000 SY of 16-in. HMA and asphalt treated permeable base (ATPB) removal, 8,000 SY of ATPB placement, 4200 tons of HMA placement, and more than 11 acres of grade work to improve drainage, which was also improved by seeding and mulching. The difference between the removal and placed concrete was due to high speed taxiway M6 being narrowed and realigned to the new FAA standard.

Factors that made this project particularly challenging included delays due to new permitting requirements, the issuance of five change orders that increased the scope of electrical work and rearranging over 1,100 SY of paving from slip runs to single panel hand pours. One change directive required a whole new scope of work in directional boring. The project was also impacted by 86 requests for information to provide further clarification of plans, specs, and discrepancies between plans/specs and field conditions. The contractor was able to negotiate an additional 13 calendar days. Crews also worked seven-day work weeks, which resulted in a quality project completed on time.

## County Roads

### **Silver Award**

#### **Southern Hills Development, Davidsonville County, MD**

Contractor: Precision Concrete\*

Owner: Chaney Enterprises, LP

Engineer: Ronald Johnson & Associates

During the 50-year history of the Mardis Mine operated by Chaney Enterprises, the 347-acre site was mined for sand and gravel. The land provided plentiful aggregates for almost a half century, until 1999, when it was reclaimed for development as Renditions Golf Course, which features 18 holes inspired by courses considered to be the best in the world.

In addition to the golf course, 24 new homes with large lots and golf course views were also built. The neighborhood features extensive concrete pavements, including bright concrete roads and concrete driveways.

Paving began early January 2019 and among the issues the contractor faced included cold weather and snow on multiple pours. Pours were blanketed to ensure proper curing. Because the subgrade did not meet compaction requirements, the contractor decided to use soil cement subgrade on the road, which allowed the elimination of an aggregate base and a direct pour onto the subgrade.

Because the road will remain a private road that is owned and maintained by the homeowners' association, the goal was to create a pavement that will require little to no maintenance, repair costs, or reconstruction.

In a normal situation, a residential neighborhood is built with a base course of asphalt that takes the majority of the abuse throughout home construction. Upon completion of all of the houses, a surface course is installed as a final product.

In this case, durable concrete allowed the first course was the final course. Even so, quality construction was critical to safeguard against approximately two years of dumpsters, truss trucks, trash trucks, concrete mixers, and other construction vehicles using the road.

Total cost of the project was \$2,5 million with \$450,000 in concrete paving costs for 0.68 miles of road and driveway pavement, all totaling 1.36 lane miles.

## **Gold Award**

### **Ryan Road Reconstruction, Allen County, IN**

Contractor: Primco, Inc.\*

Owner: Allen County Highway Department

Engineer: DLZ Indiana

The first phase of Ryan Road was developed to connect U.S. 24 to Dawkins Road, and eventually to U.S. 30.

Major industry is already located on the south section between Dawkins and Edgerton, but the northern existing mile was a broken-down 20 ft-wide asphalt and chip seal road traveled by heavy truck traffic going up to U.S. 24.

The Ryan/Dawkins intersection had an obsolete and dangerous at-grade crossing that was nearly inaccessible to large semi-trucks and low-boy trailers, a condition that forced heavy truck traffic to travel north.

The new concrete roadway was 42 ft wide 2.2 miles long. It included all new drainage and two completely reconstructed at-grade railroad crossings that will promote new industry and provide motorists with a safer, easier route for truck traffic between through the area. It is also intended to help keep heavy truck traffic out of New Haven and off the smaller Allen County area roads. Businesses are already expanding in the area, including the addition of a Speedway Redi Mix plant and a multi-million dollar expansion at SDI La Farga, a metal fabricator.

Total cost of the project was \$8,487,190, with \$1,680,696 going to concrete paving costs. The paving included 54,216 SY of paving and tie-in of four intersections throughout the project.

Coordination with utility work crews and crews working on the railroad crossings presented scheduling challenges. Unseasonable freezing temperatures arrived six to eight weeks earlier than normal, also impacting the paving. Early freezing in both years of construction created the need to protect nearly 25% of the entire pavement from winter conditions. In spite of the unpredictable weather and other challenges, the contractor maintained intermediate goals and completed the job five months ahead of schedule.

## **Divided Highways (Rural)**

### **Silver Award**

#### **I-74 Road Reconstruction, Decatur, Franklin & Ripley Counties, IN**

Contractor: Milestone Contractors, LLP

Owner/Engineer: Indiana Department of Transportation

A pavement replacement project in Indiana called for the reconstruction of a 13-mile section of I-74 in northern Ripley County, southeast Franklin County and southwest Decatur County. The project, which extended between two interchanges with another interchange in the middle of the project, included new bridge superstructures at two different creeks.

Constructed in three phases, the total concrete replacement poured was approximately 250,000 QA/QC concrete, which was placed at 12 in. thick with contraction joints spaced 15 ft apart on 3 in. of coarse aggregate,

which was placed on woven geotextile for a separation layer that was placed on 14 in. of chemically modified soils.

A shortage of trucking for all aspects of construction presented challenges along difficulties obtaining fly ash and sand. As a result, the mix design was changed. Three different sand suppliers were used to finish the project, along with five different fly ash suppliers that provided three different types of material. Milestone had to obtain approval for the use 21 different mix designs from 2017 through 2019.

Because of a tight schedule, Milestone used a binary mix with type III cement during production. With this mixture, the contractor was able to achieve opening to traffic strengths in one day in late November and early December with an average 7-day break of 730 psi. In 2018 and 2019, Milestone used a High-Volume Fly Ash (HVFA) mixes ranging from 30 to 40% replacement. These HVFA mixtures, in conjunction with the tarantula curve (T-Curve) testing, created an ideal solution to prevent joint deterioration. This low-cost, low-permeability concrete is anticipated to provide a durable pavement for many years to come.

Smoothness bonuses were paid on 80% of the pavement in year two and 81% in year three as a result of special attention given to the track line for the pavers. Universal total stations were used to lay out removal and grading operation to give the grade crews desired widths to include the track line.

Milestone paid for the extra width outside the scope of the specs to be cement stabilized to ensure this area would hold up to the weight of the pavers and to ensure a solid track line. This track line area was also covered with the subbase stone help protect the area.

## **Gold Award**

### **Interstate 39/90, Madison, WI, to the Illinois State Line**

Contractor: Trierweiler Construction Company\*  
Owner: Wisconsin Department of Transportation  
Engineer: CORRE, Inc.

The reconstruction of I-39/90 SB from East Church Road to Church Street in Dane County, WI, was a 7.8-mile, three-lane divided highway project.

The project included over 244,000 SY of 12 in. jointed concrete pavement, nearly 28,000 SY of 12 1/2 in. jointed concrete pavement, nearly 5,400 SY of 11 in. jointed concrete pavement, and more than 400 SY of 10 in.

pavement. The project also included about 1,500 SY of concrete pavement approach slabs, as well as several miles of concrete barrier wall.

The reconstruction also included grading, embankment, base aggregate, HMA pavement, five new single span bridges, the final stage of two concrete panel retaining walls, and three box culverts.

Other project requirements included storm sewer, culvert pipes, permanent pavement markings and signing, ITS, weight-in-motion (WIM), lighting, native prairie seeding and tree/shrub installations.

The final completion of sideroads County MN, County W, County B and Drotning Road were also part of this project, with each road requiring approximately 600 linear feet of pavement reconstruction. Unique items that were completed included a new WIM system for the Madison Safety and Weight Enforcement Facility, as well as native seeding, tree, and shrub plantings, as well as several miles of living snow fence.

Coordination with an adjacent project that the north end of the project was critical and required coordinating I-39/90 lane and ramp closures and constructability of the WIM with the location of next year's mainline crossovers. Total project cost for the project was \$42,012,970 with \$13,833,379 representing the cost of concrete paving.

Extensive rock blasting and rock excavation was also completed at four different rock crops totaling around 100,000 CY. Three of these locations were efficiently used by the contractor who crushed the material onsite into select crushed material and 1-1/4 -in. base aggregate, which was used to reconstruct the new roadway structure.

## **Divided Highways (Urban)**

### **Silver Award**

#### **Interstate 40 and John Kilpatrick Turnpike Extension Interchange, Yukon, OK**

Contractor: Duit Construction Co., Inc.\*

Owner: Oklahoma Turnpike Authority

Engineer: CP&Y, Inc.

Located on the southwest side of Oklahoma City and near the city of Yukon, OK, this project was the first of four bids let by the Oklahoma Turnpike Authority (OTA) to extend the existing John Kilpatrick Turnpike (JKT), which was built in 2001. In addition to meeting the transportation needs of continual growth in this area in and around

Oklahoma City, JKT is also important to support the logistical needs of Hobby Lobby's headquarters and national distribution center.

This project included the reconstruction of ramp configurations on I-40 that tied to the JKT and added five new ramp movements to connect the two highways. This included the reconstruction of the Sara Road bridge over I-40, a bridge that was parallel to the new JKT alignment. With the movement of over 723,000 CY of virgin dirt grade, 197,000 SY of stabilized subgrade, 183,000 SY of cement treated base and five new bridges, crews had to manage construction activities at a brisk pace. The 167,453 SY of concrete paving was completed in roughly eight phases around I-40, along with construction of new ramps.

Because JKT is a toll road, scheduling played an important factor in OTA's decisions. The project was phased so that tolls could be generated even before all of the tie-ins and main elements of construction were complete. Careful scheduling of certain ramp openings and traffic movements allowed vehicles on to the turnpike to generate tolls almost eight months before the official opening.

One special change that was added to this project was related to the replacement of longitudinal joints on the ramps. Duit requested a modification to put one joint down the middle of the ramp lane with two 12.5 ft lanes. This approach eliminated or minimized potential longitudinal cracking in the future.

On the first day of opening, the interchange about 6,000 vehicles used the JKT tollway and bypass in downtown Oklahoma City.

### **Gold Award**

#### **Interstate 210 Highway Rehabilitation, Los Angeles County, CA**

Contractor: Flatiron West, Inc.\*

Owner: California Department of Transportation (Caltrans)

Engineer: Cooper Engineering Inc.

The I-210 Highway Rehabilitation Project extended pavement life, improved traffic operations, and enhanced safety in a congested urban area of Los Angeles County that stretches from Los Angeles to Pasadena. The \$126 million project involved rehabilitation of 77 lane miles of distressed pavement sections subjected to heavy traffic loading, and enhanced roadway elements, lighting, electrical systems, and signage.

The four-year project removed and replaced approximately 400,000 SY of pavement slabs, replaced approach slabs at 16 bridges, and completed more than 900,000 SY of diamond grinding along 9.7 miles of I-210. Work included full reconstruction of lanes 3 and 4 and reconstruction of lanes 1 and 2 (as needed) using slab replacement. Flatiron constructed 11 types of pavement—some experimental—including precast jointed plain concrete, two-lift composite pavement, continuously reinforced concrete pavement, and jointed plain concrete pavement (JPCP).

The project is one of the most significant uses of precast highway pavement slabs in the United States. Precast panels were installed for approximately 11 lane miles of the restoration project to minimize traffic disruptions to the traveling public in this congested, urban area. The 4,900 12.5 ft-wide by 11.33 ft-long by 1-ft thick precast panels were installed nightly and the lanes were reopened to traffic before the morning commute.

Flatiron and the Caltrans partnered with the Federal Highway Administration as part of the second Strategic Highway Research Program (SHRP2) Project R21 to install 1 mile of two-lift composite pavement system using recycled pavement on Eastbound (EB) I-210 -- its first use in the United States. Flatiron increased sustainability and reduced environmental impacts by establishing an on-site batch plant and expanded the use of *in-situ* material. More than 100,000 tons of existing pavement was recycled back into the project.

Flatiron and Caltrans' Headquarters Pavement Group collaborated to develop a viable longitudinal load transfer connection used in the fabrication and installation of the precast concrete panels. Based on the design success of the panel connection, this may be the design standard for future Caltrans projects.

## **Military Airports**

### **Silver Award**

#### **911th Air Force Reserve Station, Moon Township, PA**

Contractor: Golden Triangle Construction Company\*

Owner: U.S. Corps of Engineers, Louisville

Engineer: Pond & Company

Golden Triangle Construction (GTC) completed construction in 2019 to repair and expand an existing airport apron and construct a new fuel farm and fuel pump station access road located at this Air Force Reserve station.

The repairs consisted of demolition and excavation of an old apron that housed five recently decommissioned C-130 aircraft for the United States Air Force. With the expansion, seven new parking spots were constructed to

house new C-17 aircraft for the Air Reserve Station. An expanded taxi apron pavement was also constructed to allow the new aircraft to maneuver into their new two-bay maintenance hangar that was built in conjunction with the apron and fuel project. Along with the upgrades to the apron pavement, the Reserve Station received a new consolidated fuel hydrant system fuel farm. GTC constructed a monolithic curb and roadway surrounding the new fuel tank and pump house, as well as sidewalk and concrete drainage work.

The project called for a blend of non-typically sized aggregates compared to Pennsylvania Department of Transportation projects. The mix design for this job contained AASHTO #4 and AASHTO #67 aggregates with natural sand. The larger #4 aggregate proved to be challenging when the mix would dry quickly because of wind or hot weather, making finishing difficult at times.

A number of sustainability tactics were used on the project, including a central mix batch plant located on airport property to reduce fossil fuel use by minimizing travel time for the concrete delivery vehicles. Wash water at the settling pond was also recycled and used for dust control and for cleaning concrete trucks and equipment.

Almost 11,000 CY of old concrete pavement removed from the existing apron was used on other projects as borrow rock, including an emergency job that required material immediately.

### **Gold Award**

#### **Minot Air Force Base Mass Parking Apron – Section II, Minot, ND**

Contractor: Southwest Concrete Paving Company\*  
Owner/Engineer: U.S. Army Corps of Engineers

Minot Air Force Base is one of only two active bases for B-52 aircraft in the United States. The base is capable of supporting worldwide missions, which underscores how vital quality airport pavements are to Minot's mission.

The repair of Section 2 of the mass parking apron is the second in a succession of multiple projects intended to replace a large parking apron for B-52 bombers over several years. This multifaceted project involved the removal of contaminated soils, the replacement of cathodic test well structures, and the sourcing of aggregates.

Although there was known soil contamination from leakage in existing fuel hydrant pits, sampling and testing following the demolition phase indicated significantly higher contamination levels than had been expected. This

discovery led to a hold on activities, then a stop-work order through the construction season while more testing and study was conducted. The contractor was able to winterize paving equipment and construct winterization tents to house the equipment and leave it in place to avoid delays at the start of the next construction season.

Paving for the project commenced on July 1, 2019 and was completed by early August. The pavement section consisted of the main apron section with eighteen 680 ft long by 20 ft wide paving lanes at 18 in. thickness. The center of the apron was crowned with a doweled contraction joint. All other contraction joints were designed as undoweled, weakened plane joints, which relied on aggregate interlock for load transfer. Construction joints were doweled using a drill and epoxy method.

Because of its location in the middle of a large parking apron, this project tied into the existing apron on one side and installed new temporary asphalt transitions on the other. A 680 ft-long 22.5 in. thickened edge was constructed on the temporary asphalt transition side of the apron that will eventually tie into the next paving section. The durable concrete pavement is anticipated to provide many years of service to this important Air Force facility.

## **Municipal Streets & Intersections (<30K SY)**

### **Silver Award**

#### **Santa Fe Ave. Downtown Streetscape (Mulberry to Elm), Salina, KS**

Contractor: Smoky Hill, LLC\*

Owner: City of Salina

Engineer: HDR, Inc.\*

The Downtown Salina Streetscape Plan provided a conceptual design for infrastructure improvements to Santa Fe Avenue and adjacent streets, while also creating a vision for a transformed Santa Fe Avenue from a four-lane roadway to a two-lane roadway with one lane in each direction, median or center lane, wider sidewalks, plazas, and angled parking on both sides of the street.

New roadway pavement, stamped concrete or decorative brick sidewalks, gateway monuments and new or rehabilitated overhead structures at mid-block crossings were also included in the plan.

The plan also called for new curbs and gutters, with “bulb-outs” at intersections and mid-blocks on each side elevated to match the pedestrian crosswalks. Head-in angle parking with raised ADA accessible parking areas were constructed along each side of the roadway.

Beyond Santa Fe Avenue, roadway pavement and curbs were widened. New sidewalks were constructed, some of which featured new brick inlays with an artistic pattern to match the downtown art-deco building designs.

The \$11,016,471 project budget included \$1,698,293 for concrete paving items. In all, a total of 23,220 SY of concrete were used for the 3.4 total lane mile project.

Design elements used throughout the project were inspired by existing building façade features along the street. Overhead structure columns, corner, and entrance nodes, and raised sculpture bases were all constructed from colored precast concrete. Overhead structures were designed with laser cut metal panels that are greatly enhanced at night with computerized, programmable lighting.

The 9 in. non-reinforced dowel-jointed concrete pavement was placed over a recycled concrete base for two 11-ft driving lanes, five intersection tie-ins, and several parking areas. The design for the center lane of pavement incorporated salvaged street pavers from the project. The pavers been previously hidden beneath asphalt, which had been placed over a 5.25-in. concrete base.

Each plaza has unique design features including intricate saw patterns and surface treatments, one of which was entirely comprised of salvaged sidewalk pavers. Thanks to the vision of city planners and the construction of concrete pavement, area residents and visitors will have a durable and attractive downtown streetscape to enjoy for many years.

## **Gold Award**

### **22<sup>nd</sup> Ave. Reconstruction Phase 1, Brookings, SD**

Contractor: Timmons Construction Inc.\*

Owner: City of Brookings

Engineer: Civil Design, Inc.

Brookings’ 22nd Avenue is one of the main arterial north/south streets in the City of Brookings, SD. Originally built as a 48 ft wide, four-lane asphalt street, it was restriped in the 1980s to five lanes, creating very narrow lanes.

The City completed a corridor study for the entirety of the three miles and designated the segment from Minnesota Drive to Eastbrook Drive to be the first in several phases of the reconstruction of the entirety of 22nd Avenue through the city.

The city bid 22nd Avenue as an alternate design/alternate bid project. With a somewhat fair "equivalent" design section, Timmons Construction was able to submit a competitive bid with no need to conduct a life cycle cost analysis. The project costs for the \$2.8 million project came in lower than the hometown asphalt contractor by about \$35,000.

The 0.5 mile stretch of 22nd Avenue included a full reconstruction and widening of the 48 ft roadway to five 11 ft driving lanes. It also called for updating 5 ft and 8 ft wide concrete sidewalks and a pedestrian path; this also included a colored concrete strip between the curb and sidewalk, as specified by ADA standards. The contractor also added new curb and gutter, replaced underground utilities, and upgraded traffic signals and street lighting.

The project was originally designed to include four, small phases, which was determined to be inefficient. The contractor proposed to change the project to three phases and to work from north to south, versus south to north. This allowed the installation of the storm sewer in the lowest point of the project first. These efforts contributed to the project being completed within the original schedule, in spite of record rainfall throughout the project timeline.

## **Municipal Streets & Intersections (>30K SY)**

### **Silver Award**

#### **Arrowhead Parkway – Phase 1 Improvements, Sioux Falls, SD**

Contractor: T&R Contracting, Inc.\*

Owner: South Dakota Department of Transportation

Engineer: Infrastructure Design Group, Inc.

A multiphase improvement project began with Phase 1 improvements to Arrowhead Parkway in Sioux Falls. The improvements included reconstruction of roadway pavement, along with new sidewalks, utilities, and bike lanes.

The existing roadway was a 5-lane rural road used by approximately 18,000 vehicles per day (VPD). Arrowhead Parkway traffic projections in 2045 are estimated to be 42,000 VPD, and this aging roadway, combined with future traffic projections, drove the need to both reconstruct and increase capacity of the corridor.

The improved corridor now consists of three lanes in each direction, along with left and right turn lanes at each signalized intersection. Sidewalks were also included on both sides of the corridor.

This challenging project required the contractor and owner to accommodate through traffic and access to businesses at all times. This is because Arrowhead Parkway is one of only a couple of main east/west connections into Sioux Falls on the east side of the city.

The contractor completed the work in multiple phases to ensure access to major businesses. Stringless paving was used on all the major concrete roadway work, and more than 17,000 CY of recycled concrete surfacing were placed. There was also an additional 35,500 SY of 10 in. non-reinforced concrete pavement placed. More than 9,600 LF of edge drains and more than 54,300 SY of woven fabric was used in the project. The project also used creative median design and innovative construction to provide a unique identity to Arrowhead Parkway.

There was also extensive public involvement and outreach, which ensured communication among business owners and others in the community, along with the agency and the contractor. Thanks to coordination among multiple government agencies, private utilities, property owners, and the contractor, the first phase project represents a much needed infrastructure investment for this area.

## **Gold Award**

### **Reconstruction of Belknap Street (USH 2), Superior, WI**

Contractor: Chippewa Concrete Services\*

Owner: Wisconsin Department of Transportation

Engineer: Northern Wisconsin-Based Engineers

The reconstruction of Belknap Street, USH 2, in downtown Superior is a 1.42 mile urban project built over two construction seasons. The project is a complete reconstruction including sanitary and storm sewers, contaminated soil removal, water main, concrete pavement, curb and gutter, sidewalk, street lighting, traffic signals, pavement marking and landscaping. The pavement reconstruction included a 10 in.

concrete pavement over 4 in. of open graded base course that was placed over 4 in. of dense graded base course on top of 12 in. of select borrow material. This reconstruction was a store front to store front project that included two lanes in each direction, left turn lanes, parking lanes, curb and gutter and sidewalks.

Belknap Street is a major thoroughfare within the City of Superior. It connects USH 53 on the east end of the project and accesses the bridge across the harbor to the City of Duluth on the west end. STH 35 (Tower Avenue) intersects within the project limits. The AADT during construction was 17,000 and there are 73 businesses on the project.

Total project cost of the project was \$23,261,820 with \$2,078,304 of the costs applying to concrete paving. Total square yards of concrete used throughout the project was 58,350. The first-year project was delivered 18 days ahead of schedule and the second-year project was completed on time, minimizing impacts to stakeholders, business owners, homeowners, and visitors to the area.

## **Overlays (Airports)**

### **Silver Award**

#### **Taxiway C Repair, Grissom Air Force Base, Miami County, IN**

Contractor: E&B Paving Inc.\*  
Owner: U.S. Army Corps of Engineers  
Engineer: CEMS Engineering

Paving 23,303 SY of concrete for the 2,500 ft by 75 ft taxiway at Grissom Air Force Base took only 14 days. The contractor slipform paved a total of 9,700 CY of 16.5 in. concrete on the taxiway and placed an additional 1,940 CY using forms in the Taxiway F connector area and at each end of Taxiway C to maintain a straight expansion joint.

The base preparation for the taxiway was somewhat unusual. The pre-bid coring showed an 8 in. layer of concrete under many layers of HMA and concrete overlays placed over the years. The demolition plans called for the contractor to remove the multiple composite layers to reach the 8 in. concrete. After cleaning all the debris from the layer of concrete, a wedge and level HMA section was placed, followed by a 2 in. HMA separation layer, and then the 16.5 in. concrete pavement.

During the removal process, it was discovered that Taxiway C, which had been overlayed several times in the past, was at a slight skew from what the plans showed. To achieve a good vertical edge to pave against, the whole perimeter was saw cut again to give the paver room to make the vertical edge instead of paving against the milled shoulder. This put the full 75 ft wide taxiway back in correct alignment.

Concrete testing was vital to the success of the project. After mix proportioning studies were completed with 90 day strength results. Uniformity testing was performed at the plant to ensure the mix was uniform throughout the load by testing air, slump, yield, and paste content in three separate places in the load.

The concrete was mixed in a 12 yd. Model S RexCon\* plant located within the 15 minutes of required haul time from placement area. All of the 12,440 feet of joints were widened, beveled, and sealed with compression seal. Because of attention to detail, the air base has reliable taxiways that will provide service with little to no repair and maintenance for many years.

## **Gold Award**

### **Darlington County Airport Runway 5-23 Rehabilitation, Darlington, SC**

Contractor: Hi-Way Paving, Inc. (HPI)\*  
Owner: Darlington County Airport  
Engineer: Michael Baker International\*

The airfield at Darlington County is the closest airport—and now the closest concrete runway—to Darlington Motor Speedway, home of the Southern 500, a NASCAR Cup Series race, since 1950.

An innovative, 7 in. unbonded concrete overlay on top of milled-to-profile existing asphalt and replacement of asphalt taxiways with 8 in. of concrete pavement ensures decades of future use and expansion.

Overlays on existing asphalt present a challenge due to milling machines lacking the precision needed to achieve proper elevations, as well as the design of the overlay being less concerned with ride quality as compared to HPI's internal survey and modeling processes.

During this project, HPI helped redesign the elevations and cross slopes of the runway profile to back into a better milling design that reduced waste and increased the chances of a smoother ride and better quality runway after construction.

The contractor also used a new, state-of-the-art milling machine that allowed better laser grade control which could read off HPI's survey data/models. This resulted in a subgrade with tighter tolerances from the start and contributed to the high level of smoothness achieved by the final product.

A unique challenge for this project was the owner's acceptance of an asphalt alternate bid in case Federal Aviation Administration funds were not available for the concrete bid. At bid time, HPI's concrete option was \$1 million below the engineer's estimate, and although the asphalt option was even lower, the owner opted to improve and enhance the lifespan of the runway and airport with the concrete option.

## **State Roads**

### **Silver Award**

#### **US 287 Passing Lanes South of Lamar, CO**

Contractor: Castle Rock Construction Company (CRCC)\*  
Owner: Colorado Department of Transportation (CDOT)  
Engineer: CDOT, Region 2

The northbound side of U.S. 287 in Lamar, CO, has an average daily traffic count of 7,263, but 48% of that is truck traffic. Federal safety funding supported the construction of additional passing lane, which now allow vehicles to pass heavy trucks safely along the highway.

In 1999, CRCC rehabilitated the deteriorating U.S. 287 in the same area with an 11-in. concrete overlay. The contractor was awarded the 2019 project, which included removal of the northbound 10-ft wide shoulder, placement of an 18,000 CY embankment, minor drainage pipe extensions, construction of the road base, and placement of 11-in. concrete pavement in two different areas. The width varied from 20 ft to 22 ft.

Existing pavement was crushed onsite to use in the road base, which eliminated truck trips to remove rubble and bring base material to the project. CRCC crews used mid-sized paving equipment as well as a portable concrete batch plant on site – again minimizing the truck traffic delivering material to the project. The dirt borrow site and plant site were in the same locations as used on the 1999 project.

CRCC achieved the combined gradation with the use of a four-bin feeder and pug mill added to the concrete batch plant. The feeder allowed proper proportioning of the four aggregates to the pug mill, combining them

into a single blend of aggregate that was then fed to the batch plant. This process yielded more consistent concrete batch and a better platform for the concrete paver, and ultimately, better ride quality on the finished pavement. A V-float behind the paver is innovative in concrete paving in Colorado and CRCC has found the use of this device has reduced IRI readings by 5 to 10 points by eliminating chatter. As a result of the contractor's commitment to good mix design and other factors that impact ride quality, road users now have a safe, durable, and smooth journey through this area of Lamar.

## **Gold Award**

### **US-169 Reconstruction, Allen County, KS**

Contractor: Emery Sapp & Sons\*

Owner: Kansas Department of Transportation (KDOT)

Engineer: George Butler Associates

Constructed in the mid-1980s, the seven mile section of U.S. Highway 169 was failing because of subgrade issues. Passage of the T-Works Highway program in Kansas provided funds to fully remove and replace the pavement rather than continue the ongoing patching and grinding that has been done for many years.

The multi-phase project included over 250,000 CY of grading; 225,000 SY of concrete paving, along with sub grade improvements; aggregate base; six reinforced box culverts; and storm sewer. The work was completed in 14 months, which opened the road to traffic two months ahead of schedule. KDOT used this opportunity to test some new and innovative standard design practices and materials.

Emery Sapp & Sons and KDOT's research department worked together with The University of Kansas to place multiple test sections of subbase and equip the sections with monitoring devices. This will allow research team to evaluate the subbase sections for longevity and performance.

To address excessive water issues with the sub grade, a new standard design was used on this project. It called for placing a layer of aggregate base on top of the subgrade all the way out to the edge of slope. After the concrete pavement was placed, aggregate base was used to backfill the pavement edge. This allows for any moisture under the slab to flow freely to a ditch through the aggregate base.

The two 100 ft-long test sections will be evaluated for longevity and moisture control. The first section is a 12 in. layer of type AB-1 aggregate base; the second is a 12 in. layer of Type AB-3 aggregate base. In both test sections, the 12 in. layer of aggregate base takes the place of the typical 12 in. layer of cement treated subgrade. Also

with both sections, the base material was daylighted out to the ditch line. Under the test sections, a reinforced geotextile mat with higher than usual moisture wicking properties was used in place of a geotextile fabric separation layer typically used. Moisture sensors were placed at various depths in each section to record the moisture content and evaluate the effectiveness of the materials' wicking properties.

This project features a durable concrete pavement that will last many years, while at the same time, providing valuable data for KDOT and the contractor to use in future projects.

## **Urban Arterials & Collectors**

### **Silver Award**

#### **Homestead Lane & 207th Street Improvements, Edgerton, KS**

Contractor: Miles Excavating, Inc.\*

Owner: City of Edgerton

Engineer: Affinis Corp.

When international manufacturer Kubota approached the City of Edgerton, KS, about adding 3 million SF of new facilities to their existing facilities, the City knew the existing gravel roadways serving the company's facility would not be sufficient for the increased volume of traffic.

Transforming Homestead Lane and 207th Street (from I-35 to Waverly Road) into a four-lane, divided, concrete arterial would have to support future traffic volumes, but shorter term, would have to allow access to trucks during construction.

The scope of improvements included expansion of the existing gravel roadway to a four-lane, paved, divided facility with enclosed storm sewer, a 65 ft span precast arch bridge at the Big Bull Creek tributary, a 10 ft trail, and street lighting. Designing the roadway also required the realignment of Homestead Lane to connect 207th Street to I-35.

This complex project came with a number of challenges including crossing a waterway that falls under the United States Army Corps of Engineers' (USACE) jurisdiction. As a result, a hydraulic/hydrologic analysis had to be conducted. The team's solution ensured a no-rise condition for the flood plain, which simplified the permitting process. Working directly with the permitting agent, the contractor was able to make sure the

correct information was collected before submitting a permit request, which streamlined the process, reducing it significantly from the usual 120 to 180 days to just under 60 days.

The same proactive approach was used to obtain environmental clearances for the removal of a nearby wooded habitat and wetlands to make way for the bridge. A habitat assessment and effects determination, as well as a wetland delineation, were developed to provide USACE with the information they needed to make a Nationwide Permit 14 determination quickly.

Many challenges threatened the construction schedule, including utility relocation and right of way and easement acquisition. In one case, a property went through the condemnation process before the needed right of way was available, which delayed project completion by more than 90 days. Another challenge for the project was wetter and cooler weather in the fall and winter.

These challenges were no match for the project team, which successfully placed 36,813 SY of concrete for the project, which spanned 4 lane miles. The improvements have brought jobs to Edgerton. By investing in their infrastructure, the city supported Kubota's efforts to expand, and have since secured a new Hostess Brand Company plant on the north side of the street. In addition to exploring development opportunities for manufacturing and warehouse companies, the City is also exploring options for adding housing and local retail businesses.

## **Gold Award**

### **South Ellis Road Reconstruction, Sioux Falls, SD**

Contractor: T&R Contracting, Inc.\*

Owner: City of Sioux Falls

Engineer: KLJ

Replacing an old two lane rural highway with a four-lane urban arterial would be a difficult project under any circumstances, but the South Ellis Road Reconstruction proved to be particularly challenging.

This \$12.23 million project was the largest street capital improvement project in the history of Sioux Falls. The project involved removal of over 1.75 miles of the old county highway and replacing it with a four-lane urban arterial roadway with turn lanes at intersections with a raised median. It also included extensive dirt work, cutting dirt from the rural section into an urban section, all new city watermain, sanitary sewer and storm sewer pipe.

This project was completed in two of the wettest years on record in the Sioux Falls area, and one of the challenges was to get the sub-grade covered before each rainfall, particularly because there were sections of roadway with 18 in. of subbase with fabric and geogrid. In fact, a full closure was allowed for the project because of the large amount of dirt that had to be moved.

The combination of rain and clayey soils presented another challenge. Cutting four feet of dirt out of the old rural section to provide drainage to adjacent land would have been a challenge under any circumstances, but the soil conditions, volume of dirt, and rising groundwater resulted in areas where groundwater rose so much with the extensive rain it was in the new road grade.

As the rain continued to fall, the groundwater in this low area continued to rise and at one point, the groundwater was higher than the subgrade when it was cut to initial dirt grade in areas measuring hundreds of feet along the project. The rain never subsided, so the owner explored treating the subgrade with cement powder and even cutting more dirt out and adding geogrid and oversized rock. The geogrid and rock ended up being the less expensive solution.

There were 64,000 SY of 9 in. concrete paving, 158,000 SF of sidewalk, and 109,000 SF of colored median and splashguard, all for a total of 34,000 CY of concrete placed. In spite of the challenges, the project was a success because of the hard work and dedication of the project team, including the City of Sioux Falls, the contractor, engineer, and subcontractors.

## **Overlays (Highways)**

### **Gold Award – Interstate 8 CRCP Overlays, Imperial County, CA**

Contractor: Security Paving Company, Inc.\*

Owner/Engineer: Caltrans, District 11

To address the pavement deterioration issues on I-8 in the eastern half of Imperial County, 48 of the existing 58 centerline miles of I-8 pavement were rehabilitated between 2016 and 2019. These 48 miles were designed and constructed as five separate project segments. The first three segments included full reconstruction of the existing jointed plain concrete pavement (JPCP) with Continuously Reinforced Concrete Pavement (CRCP), while segments 4 and 5 were CRCP overlays over the existing 50-year-old undoweled JPCP.

Total bid cost of Segments 4 and 5 was \$111.85 million, which included about 1 million SY of CRCP overlay. The new overlay on the 88 lane miles of the highway also included asphalt shoulders, and gore areas with CRCP and an HMA interlayer. The result is a continuous, smooth-riding surface capable of withstanding the heaviest traffic loads and the most adverse environmental conditions.

The CRCP overlay specifications required repairs to be completed on the existing concrete pavement before the 0.2 ft HMA interlayer was paved. The contractors completed work on the existing concrete pavement to repair spalls, cracks wider than 0.25 in. and loose pavement prior to placing an overlay. Punch outs and broken slabs were removed and replaced with Jointed Plain Concrete Pavement (JCPC).

The CRCP overlay raised the grade by 0.95 feet (the HMA interlayer plus CRCP overlay). This required the addition of embankment to meet the new shoulder elevation. Material recycled from Segments 1 through 3 were used for this purpose. Pavement overlay transitions were constructed at the beginning and end of the project to tie into the existing roadway, as well as at the interchange ramps to tie into the existing ramp grades.

Keeping the existing pavement in place provided structural integrity for the new pavement. Reusing the existing pavement as a base also added significant design benefits, which resulted in savings of about \$250,000 per lane mile compared to full reconstruction.

## **Overlays (Streets & Roads)**

### **Gold Award**

#### **Eastside Parkway, Gas City, IN**

Contractor: E&B Paving, Inc.\*

Owner: Gas City, IN

Engineer: Municipal Civil Corporation

Eastside Parkway is an important roadway in Gas City, IN, as it supports heavy-duty traffic between two major distribution warehouses, as well as other traffic in the area. A thin overlay on this road was built with 6 in. of QC/QA concrete with fiber reinforcement.

The existing asphalt roadway had poor drainage, so the new roadway required a crown section to be established using a milling machine prior to the placement of the 6 in. overlay.

This project proves that thin overlays are a viable option for cities and towns of all sizes. In choosing concrete, Gas City invested in both the immediate and long-term needs of the community.

The overlay was placed on a milled asphalt surface, creating a more durable pavement that the heavy trucks and other traffic. Because the roadway is between two distribution warehouses for Walmart, the road closure for this section of road had to be as short as possible. E&B Paving developed a plan to limit the closure time to one week from start to finish.

The mix design called for the addition of macro fibers, which INDOT approved to ensure strength and long term durability for this heavily traveled section of pavement. The project specified unsealed joints to help alleviate any sodium chloride saturation, which would cause joint failure in the long term.

Almost 3,500 SY on concrete was placed in two days with a GOMACO\* CMDR III paver. The 8,546 ft of joints were cut in the typical 6 ft. x 6 ft. panel size to provide load transfer. The total cost of the project was \$305,518, with concrete representing \$147,822 of the total.

Coordination with local businesses was a critical success factor. One business owner had one way in and out for delivery trucks, and this access was provided throughout the project. The business owner postponed deliveries for a couple of days, which allowed E&B to get the first day of construction finished quickly.

## **RCC (Industrial)**

### **Gold Award**

#### **Swift Trucking Terminal, Laredo, TX**

Contractor: Andale Construction, Inc.\*

Owner: Swift Transport

Engineer: Terracon

When Swift Transport needed to replace the 92,000 SY pavement at its international intermodal, transloading, and maintenance facility in Laredo, TX, they were looking for a pavement option that would not only meet their needs under current daily loading conditions, but also to accommodate expected growth for decades to come. Roller compacted concrete met their needs.

The existing pavement had major failures through the flexible pavement system, from the subgrade on up. The pavement was simply beyond its design life and needed to be replaced.

A full depth reconstruction, along with grading improvements were needed, but the work had to be done as Swift continued normal, daily operations without significant interruptions to their business.

The solution was to divide the proposed area into two equal phases. More than 40,000 CY of grading was performed in two weeks. A 10 in. cement-stabilized subgrade was constructed using Andale's dustless slurry process. This process took only 10 days for both phases and used more than 1,000 tons of cement. The 8 in. RCC pavement was placed in only nine days for each phase.

At the peak of construction, the contractor used more than 700 tons of cement per day. The aggregates were carefully monitored because of the lack of quality component materials in the area. Most material had to be railed in from Mexico and other parts of Texas.

The finished concrete pavement at the site decreased the client's heat island effect, an important consideration in the often sweltering heat of South Texas. The reflectivity of the pavement also increases the safety of the 24 hour and night operations allowing for safer travel at night without the need of additional lighting. The lower permeability of the troweled RCC pavement also is not susceptible to damage caused by fluid leaks from trucks and other equipment using the site. The new RCC pavement will also not be susceptible to rutting, shoving, or cracking, as the flexible pavement was. RCC provided Swift Transport a durable pavement that will provide excellent service for years to come.

## **RCC (Special Application)**

### **Gold Award**

#### **East Holt Street Reconstruction, Mexico, MO**

Contractor: Andale Construction, Inc.\*

Owner: City of Mexico, Missouri

Engineer: Bartlett and West

Roller compacted concrete was specified for the reconstruction of East Holt Street in Mexico, Mo. The goal was to provide a quality, sustainable and structurally sound pavement. The use of RCC was supported by a Federal Highway Administration innovation grant.

East Holt street is a connector street from a major highway to a large grain storage, handling, and processing facility. The existing roadway was a poured-in-place concrete road constructed more than 50 years ago with no reinforcement. It was placed directly on a soft and highly plastic subgrade.

The original 5 in. to 6 in. concrete pavement remained in service for five decades but needed replacement. Adjacent facilities also need upgrades and improvement. So, in addition to the new pavement, new curb and gutter was installed for edge support and water management, while utility upgrades were also completed during as part of the complete project.

The project was challenged by heavy rains, which compounded the issue of years of saturated subgrade. To correct this problem and to avoid a major undercut operation that would have added additional delays and costs, Andale Construction was called upon to not only install the RCC, but to cement-stabilize the subgrade. Once the subgrade was stabilized, the stone base was installed in two days, and the construction of the troweled and broom finished RCC was completed.

Placement of 1,000 CU of RCC pavement, along with finishing took only one day. The continuous-mix plant was located 7 miles from the project at a local ready mix company, which supplied the cement and aggregate. The City now has a reliable, cost-effective pavement that will provide years of service.

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### **About the American Concrete Pavement Association**

The American Concrete Pavement Association is the national trade association for the concrete pavement industry. The primary mission of the ACPA is to lead the promotion of concrete paving, and align its members, chapters/state paving association affiliates and partners for effective and valued concrete pavement promotion, advocacy, and technical support on behalf of the concrete pavement industry.

Founded in 1963, the American Concrete Pavement Association is headquartered in Chicago at 9450 West Bryn Mawr Ave., Suite 150, Rosemont, Ill. 60018. Telephone: 847.966.2272. The Association's office in Washington,

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# # #

**Photos:** Photos of the complete set of award-winning projects are available by following this [link](#). This system requires no user ID or password.

**Contact information:** For more information, or if you would like specific photos and/or information, please contact: Bill Davenport, ACPA, at 847.423.8703 or [bdavenport@acpa.org](mailto:bdavenport@acpa.org).