

The Colorado/Wyoming Chapter of ACPA Proudly Presents the **2022**

“Excellence in Concrete Pavement Awards”

ACPA CONCRETE PAVEMENT

AWARDS

19-page special section as featured
in *Colorado Public Works Journal*
Spring/Summer 2022



US 287 & US 40 Passing Lanes CM/GC



CATEGORY: State Roads

US 287 & 40 are part of the Ports to Plains highway, a major freight corridor stretching from Mexico to Canada, and the scope of this the project was to complete 6 passing lanes between Hugo and Eads, Colorado. Two of the sites were extensions of existing passing lanes and four of the sites were new passing lanes. Castle Rock Construction Company was selected for this alternative delivery contract with the Contract Manager/General Contractor, or CM/GC, approach and spent several months reviewing the design and working alongside CDOT to determine the most efficient and quality approach to build the project.

The goal was for all 6 of the passing lanes to be built in one season and opened prior to the expected winter storms, and this was made more difficult by significant rainy weather in the spring that impacted the schedule up front. Having so many sites spread over 70 miles presented a challenge with ensuring sufficient traffic control resources for CRCC to completing removals, grading and paving on multiple sites at once. To reduce the number of truck trips and fuel consumed to build the project, concrete from the existing shoulders was removed and crushed to be used as road base material. In addition to being a more sustainable approach, this also increased the safety of the traveling public by reducing construction truck traffic. The project team worked together to make it happen, and there were numerous examples of partnering where CDOT and CRCC came together to solve problems in a manner that best served the project goals.

Owner: CDOT Region 4
Design Engineer: CDOT Region 4
Contractor: Castle Rock Construction Company
Construction Management: Atkins
Construction Management: CDOT Region 4 - Limon Residency



2022 Excellence in Concrete Pavement Awards



US 287 & US 40 Passing Lanes CM/GC



I-80 Rock Springs East West Bound Lanes

I-80 through Wyoming is an important freight corridor, and nearly 50% of the traffic consists of trucks. This project consisted of profile milling 9-inches of the existing asphalt pavement and placing over 290,000 SY of 11-inch doweled concrete pavement. In addition to the concrete paving, the project included grading and drainage, placement of base, bridge rehabilitation and replacement, installation of cable median barrier, and rock scaling. The work stretched from RM 107.6 to RM 120.3, for a total of 12.7 miles on Interstate 80 westbound on the east side of Rock Springs, WY.

The project was awarded to IHC Scott in the fall of 2020, and work on the project began October 5, 2020. Concrete pavement placement began in early May 2021, and mainline paving was completed in mid-July.

The concrete pavement mix design utilized Type IL cement, making it the first large-scale paving project in Wyoming with portland limestone cement. This was a very successful mix design, in both performance and constructability. Non-destructive testing equipment was utilized for thickness verification and dowel bar alignment, which were both new to WYDOT projects. Through a Value Engineering Contract Proposal, the number of dowel bars placed across the transverse joints was reduced from 12 bars per lane to 8 bars, with 4 bars in each wheelpath.

This project also turned out to be incredibly smooth. Average profile index of the driving lane is around 3.56 and for the passing lane is about 3.83. This resulted in a well-deserved bonus for the contractor! The burlap-drag texture (instead of the previously specified transverse tining) contributed to the smooth and quiet ride of the final product.

Overall, this was a very successful project for both WYDOT and IHC!



CATEGORY: Divided Highways - Rural

I-80 Rock Springs East West Bound Lanes





I-80 Rock Springs East West Bound Lanes





CATEGORY: Municipal Streets & Intersections (<30k SY)

Lakeway Road in Gillette, Wyoming is one of three East-West arterials connecting Highway 59 to 4J Road and Highway 50. The project consisted of the reconstruction of a 5-lane section of Lakeway Road from 4J to Highway 59 that carries roughly 15,000 vehicles per day.

The project began in March 2021 with the replacement of sanitary sewer manholes ranging in depth from 19 feet to 24 feet to prepare for a cure in place epoxy lining of the existing 24-inch RCP sewer main below the street section. Following the removal of the existing asphalt surfacing, 24-inches of subgrade was replaced with granular fill, topped with 6-inches of recycled concrete/asphalt base, and over 25,000 SY of 9-inch concrete pavement. The project was Powder River Construction's first stringless concrete paving project after installing Leica stringless components with assistance from FAMC. Concrete paving began on June 17th and continued in phased sections to maintain access to over 40 businesses, a school, and a shopping center along the project. Concrete paving was completed on September 24th (3 weeks prior to the deadline), and the final miscellaneous concrete, including 8,500 SY of sidewalks, ADA ramps, and driveway accesses, was placed by October 19th (2 weeks early).

The project was originally bid in 2020 with asphalt as the pavement surface. Several local contractors approached the City about the costs associated with the project and it being a good candidate for concrete reconstruction. The City rejected all bids and put the project back out for bid in the winter of 2020 as a complete concrete reconstruction. It is a testament to the relationships and knowledge built by ACPA and shared with Contractors, Engineers, and project owners. Without their support this project would have been completed as an asphalt overlay.

Lakeway Road Improvements – Gillette, WY



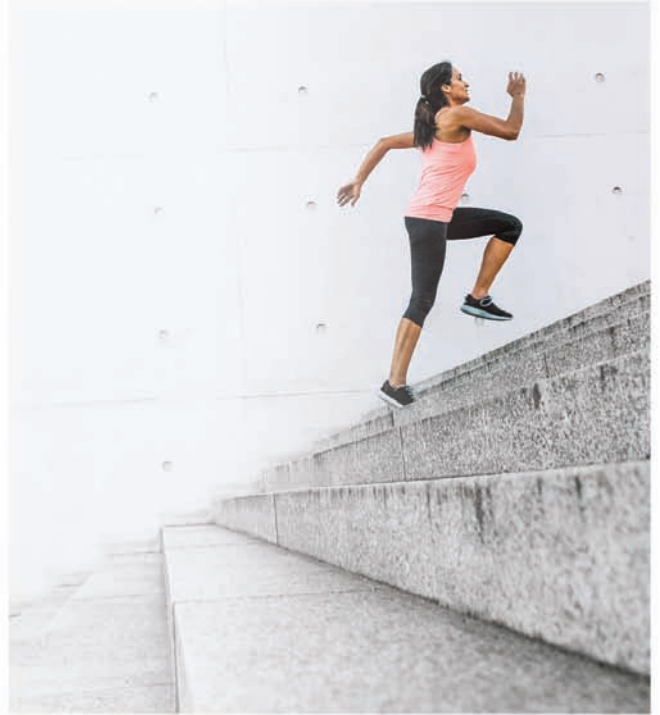
Owner: City of Gillette
Design Engineer & Construction Management: HDR
Concrete Paving Contractor: Powder River Construction
General Contractor: DRM Inc.

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CATEGORY: Commercial Service & Military Airports

Southwest Airlines' construction of a new hangar at the Denver International Airport required site work to support the overall development, and Villalobos Concrete Company paved the aircraft apron and access roads. They proactively identified upcoming hurdles and challenges before they became problems so that the project team could resolve these issues. Supply challenges, field conditions, survey coordination, plan clarification, joint layout, quality of materials, and accommodations of other trades were a few of the few items that Villalobos brought to the table during the project.

Villalobos was an active participant in all the coordination meetings leading up to and throughout construction by identifying challenges and opportunities for successful construction of the pavement. They planned and coordinated ahead of time so that proper inspections could be made, and testing could be completed so that the highest level of assurance could be provided to Southwest Airlines and DEN. When problems did arise, they were often the first to bring them to the attention of construction managers and inspectors onsite so that they could be addressed forthright and solved in a manner meeting the performance and quality standards of the project. Use of an onsite batch plant, management of the mix design, coordination of quality control and quality assurance, and efforts to achieve accurate survey control allowed Villalobos to construct the pavement at the project site without a single rejected lot of pavement. Southwest Airlines will benefit for years to come from the efforts that the entire team provided on this project.

Southwest Airlines Hangar Development – Denver International Airport

Owner: Southwest Airlines
Design Engineer: HCL Engineering & Surveying
Concrete Paving Contractor: Villalobos Concrete
Program Management: Jviation, a Woolpert Company



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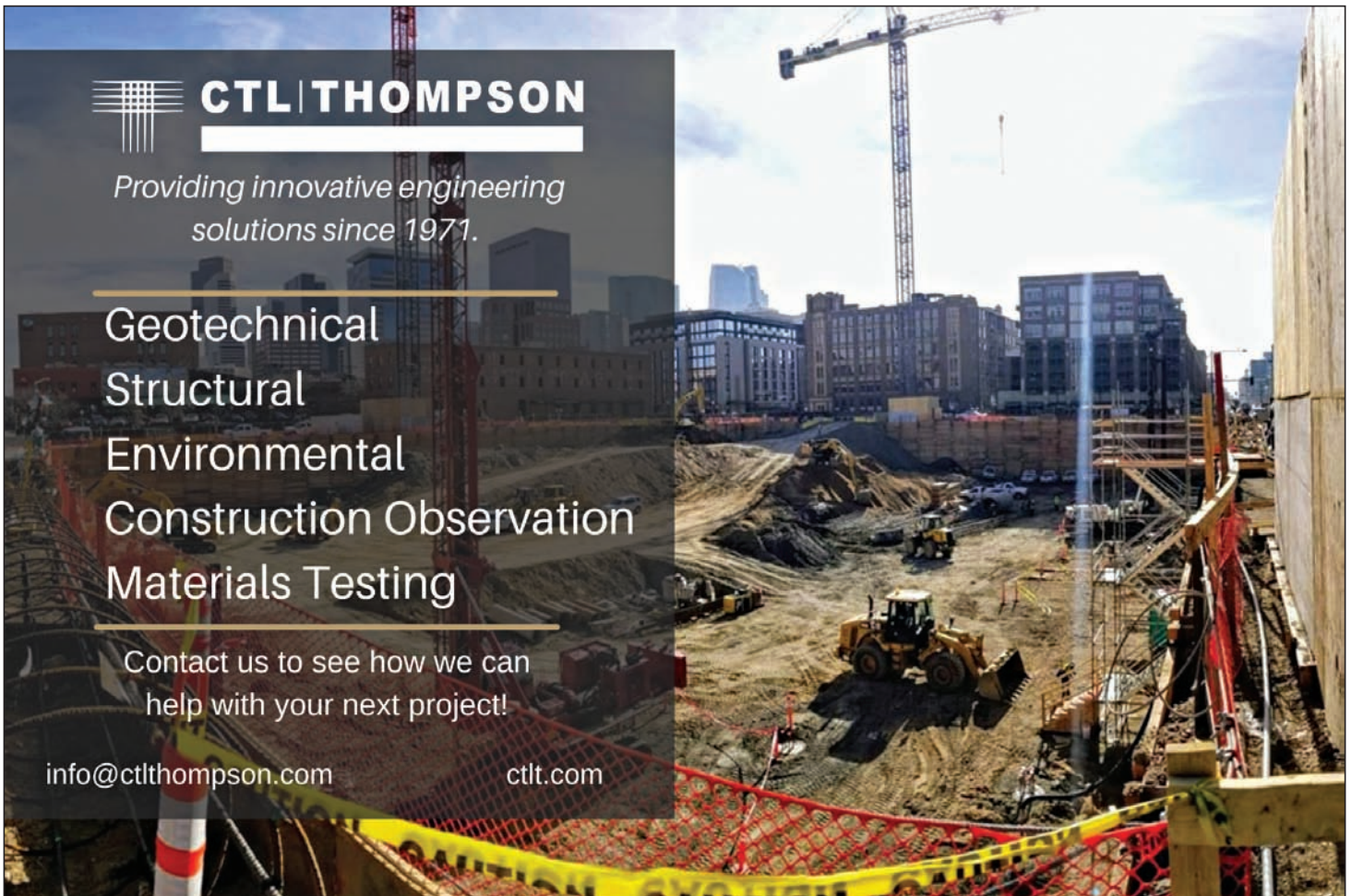
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The Northern Colorado Regional Airport (FNL) serves the rapidly growing communities of Fort Collins and Loveland in north central Colorado. FNL had primarily served small private aircraft with limited commercial airline service and an annual military air show. To attract a second airline, FNL needed to expand its existing apron and construct a new taxiway.

This 97-day project consisted of 20,000 CY of embankment, 10,000 SY of lime treated subgrade, and 5,000 SY of CTB and concrete pavement, as well as airfield electrical work, storm drainage, asphalt paving on the new taxiway, pavement marking, and landscaping.

IHC Scott successfully completed Phase 1 construction within the 90 calendar day time period. The airport issued a stop work order which was not a part of the contractual milestones to allow their yearly air show to take place during the week of October 13th through 17th. The contractor successfully completed the concrete paving ahead of the milestone to allow the airport to utilize this new paved area for staging and parking aircraft. IHC Scott also successfully completed the Phase 1B schedule by October 6th to allow for the first Avelo flight to land and use the existing concrete pavement apron. This was also another non contractual milestone IHC Scott completed to meet and exceed expectations for their project owner and team.

All aggregates were locally sourced from gravel pits within 20 miles of the project, and portland limestone cement and fly ash were used in the concrete mix to reduce the carbon content and increase durability. The project was completed just in time for the second airline, Avelo, to start its service to northern Colorado.

Owner: Northern Colorado Regional Airport
Contractor: IHC Scott
Design Engineer & Construction Management: Dibble

CATEGORY: Reliever & General Aviation Airports

Commercial Apron Expansion – Northern Colorado Regional Airport





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Owner: CDOT Region 3
Concrete Paving Contractor: IHC Scott
Design Engineer & Construction Management: CDOT Region 3 – Grand Junction Residency
General Contractor: United Companies

2022 Excellence in Concrete Pavement Awards



CATEGORY: Urban Arterials & Collectors

I-70B 1st Street & Grand Avenue in Grand Junction



The I-70 Business Loop 1st and Grand project included reconstruction and realignment of I-70B, SH 340, and North 1st Street with multimodal, drainage, lighting, traffic signal and access improvements. Over 30,000 vehicles (including 1,500 trucks) per day use this intersection, which is the main artery connecting Riverside Parkway and Interstate 70. The specifications for the project called for the intersection to be open during construction, and United Companies' phasing plan proposed the installation of temporary roundabouts – one in the SW quadrant during phase 1, and another in the NE quadrant during phase 2. This approach saved the project money by eliminating the temporary traffic signals and allowed for longer concrete pavement placements that increased efficiency. Throughout the four project phases, there were no CDOT reportable accidents on the project.

During excavation for storm sewer installation in phase 1, approximately 1,000 cubic yards of the existing material was found to contain radioactive uranium mill tailings and was removed from the project and taken to a radioactive disposal site owned by the City of Grand Junction. High quality material from other parts of the excavation area was hauled to United's site and processed and screened to use for the concrete aggregate.

IHC Scott paved nearly 39,000 SY of 9.5-inch and 10.5-inch concrete pavement to provide the City of Grand Junction and CDOT with a long-lasting, light-reflective pavement surface that provides increased visibility in this corridor with numerous businesses, pedestrian, and bicycle traffic.

CATEGORY: Concrete Pavement Restoration

I-76 Wiggins WB Concrete Pavement Rehabilitation

The I-76 rehabilitation project extended seven miles west of Wiggins, CO (MP 55 to 62) in the westbound lanes. Castle Rock Construction Company was awarded the task of removing over 33,000 SY of 30-year-old concrete panels to their full depth and replacing them with an onsite optimized concrete mix. CRCC also performed patching, spall repair and crack sealing across multiple areas.

As soon as the traffic was switched head-to-head on the EB side of I-76, CRCC started on the 100 working day project. They replaced an additional 31 panels at their own expense to increase production with the paving machine. Concrete from the removed panels was crushed onsite for use as recycled concrete aggregate, and the concrete mixture paved on most of the project implemented 100% coarse aggregate replacement. CRCC's onsite batch plant and crushing plant were set adjacent to each other,

which allowed for minimal hauling and transport, lowering the overall environmental impact to the area and the project.

To improve ride, both lanes were diamond ground for the entire length of the project. After diamond grinding 96,000 SY of pavement, approximately 185,000 LF of joints and cracks were sealed. The grinding provided an impressive smoothness result - an MRI of 41 that will minimize wear and tear on vehicles and improve driver comfort.

With a daunting timeline and critical schedule, Castle Rock Construction Company and their subcontractors contributing full resources were able to complete the project under budget and the required timeline while producing a smooth roadway and great overall product for the traveling public.





Owner: CDOT Region 4
Contractor: Castle Rock Construction Company
Design Engineer & Construction Management: CDOT Region 4 – Greeley Residency
Construction Management: RockSol Consulting Group

Revitalization Award

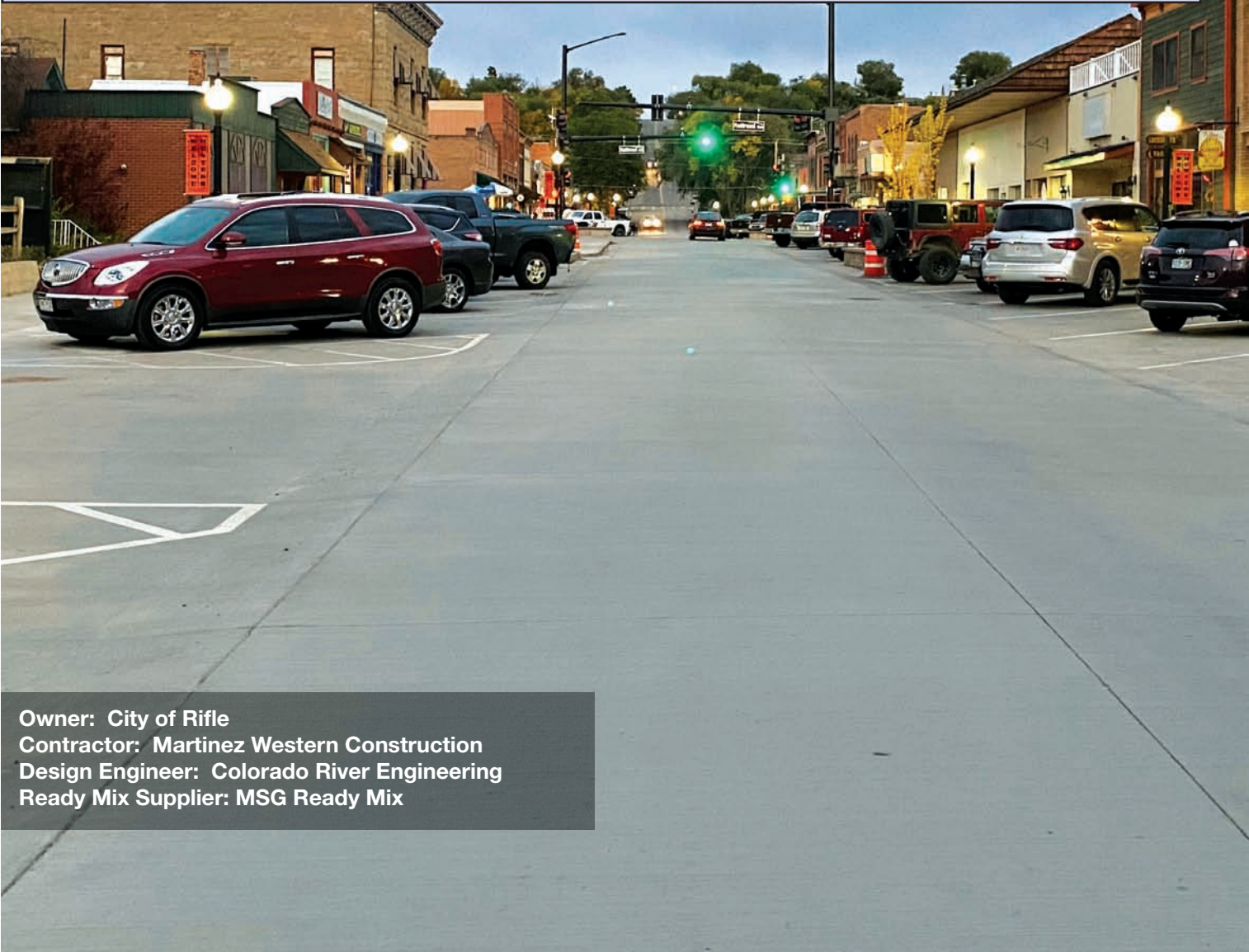
Railroad Avenue and 3rd Street Improvement Project

One hundred-year-old infrastructure. Historic buildings. Inadequate utility supply lines. A busy highway connector woven right in the middle of the downtown business district. Add in a \$4.1 M project aimed at improving the downtown business district in the aftermath of economic challenges prompted by the COVID-19 pandemic, and you have an important revitalization project based on using concrete in a variety of creative ways.

State Highway 13 (Railroad Ave) serves as the main thoroughfare connecting northwestern Colorado with I-70, directly through Rifle's downtown business district. The business district features historic buildings dating back to the early 1900's and much of the original utility infrastructure to support these businesses, most notably a half-inch water supply line, was proving insufficient for current demands. The project's goal was to upgrade the utility infrastructure to better support the downtown business district and to reconstruct the downtown district.

The project made use of concrete for elevated social/seating areas which were designated with decorative concrete walls and planters and carefully considered design and aesthetic elements, including concrete-curbed landscape islands delineating traffic lanes, colored, stamped concrete crosswalks and free-standing, decorative stamped concrete bollards instead of traditional curbs to promote accessibility from all parking areas. The concrete paved surfaces not only enhanced the cleanliness and aesthetic appeal, but the finished concrete surfaces also reflect light, dramatically increasing visibility in the downtown area.

The project came to fruition at a time when Rifle's brick and mortar businesses were struggling in the aftermath of the pandemic. Concrete contributed to increased accessibility, aesthetic revitalization, reliability, and durability to a heavy use area.



Owner: City of Rifle
Contractor: Martinez Western Construction
Design Engineer: Colorado River Engineering
Ready Mix Supplier: MSG Ready Mix





Category: Municipal Streets & Intersections (>30K SY)
 Lakeway Road Improvements – Gillette, WY
 Owner: City of Gillette
 Design Engineer & Construction Management: HDR
 Concrete Paving Contractor: Powder River Construction
 General Contractor: DRM Inc.



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 I-80 Rock Springs East WBL
 Owner: WYDOT
 Contractor: IHC Scott
 Design Engineer & Construction Management: WYDOT
 District 3 – Rock Springs



Category: Urban Arterials & Collectors
 I-70B 1st Street & Grand Avenue in Grand Junction
 Owner: CDOT Region 3
 Concrete Paving Contractor: IHC Scott
 Design Engineer & Construction Management: CDOT
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 Limon Residency

Congratulations to All the Award Winners!

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