Gannett Fleming continues to receive both national and international recognition for our innovation, expertise, and leadership in bridges and structures, and is consistently ranked among the top 25 firms in the *Engineering News-Record* Bridge category.

**Connecting People and Places**

A cornerstone of the firm’s transportation services is our bridge practice, which offers extensive experience and some of the best and brightest talent in the design, rehabilitation, inspection, and construction management of bridges and structural systems. On this cornerstone, Gannett Fleming has built a reputation for technical innovation and award-winning design among a variety of municipal, state, and federal clients.

**From Small Town to Downtown**

We focus on safe, efficient, and cost-effective solutions to meet or exceed our clients’ mobility challenges, with experience that spans a vast number of settings. From rural locations to bustling metropolises, small streams to major river crossings, and simple grade separations to multi-level interchanges, we have developed a proven bridge design philosophy that emphasizes a balanced blend of aesthetics and economy. Our staff also has developed context-sensitive rehabilitations for a variety of historic restoration projects.

Gannett Fleming’s experience spans all types of bridge design, including routine bridge design, complex highway bridges, transit and rail structures, and the inspection and rating of all structure types. In addition, we provide unique design services to the construction community, including design-build, alternative design considerations at the bid phase, and construction engineering. We offer practical engineering solutions and the combined, in-house resources of structural, geotechnical, and highway engineering. Gannett Fleming specializes in providing reduced life-cycle cost solutions and accelerated construction techniques.
Structural Services

- Bridge Design and Inspection
- Value Engineering
- Construction Inspection
- Concrete and Steel Bridge Rehabilitation
- Seismic Design and Retrofit
- Design-Build
- Contractor Designs
- Design and Construction Partnering
- Bridge Design Training
- Bridge Standards
- Staged Construction
- Design Review
- Fiber Reinforced Polymer Strengthening
- Risk Assessments

Structural Types

- Vehicular Bridges
- Heavy and Light Rail Bridges
- Pedestrian Bridges
- Multi-girder Steel I-Beam Bridges
- Prestressed Concrete I-Beam Bridges
- Rigid Frame Bridges
- Steel Arch and Steel Truss Bridges
- Post Tensioned Concrete Slab and Beam Bridges
- Segmental Concrete Bridges
- Steel Box Girder Bridges
- Tranverse Concrete Inverted T-Beams
- Concrete Arches
- Wooden Bridges
- Roll-In Structures
- Temporary Structures
- Sound Barriers, Retaining Walls, Sign Structures, and Cofferdams

Unique Expertise

In addition to our conventional design capabilities, Gannett Fleming maintains significant experience in a variety of highly specialized areas, including:

- Forensic Engineering
- Construction Engineering
- Constructability Reviews
- Bridge Asset Evaluation
- Technical Training
- Expert Witness Testimony
- Software Beta Testing and Evaluation
- Computer Programming.
Award-Winning Solutions

Joe Montana Bridges, Washington County, Pa.

Gannett Fleming provided preliminary and final design services for this structure, formerly the Mingo Creek Viaduct, which was renamed in honor of the local football legend who attended high school a mile from the site. It is the tallest, third-longest bridge on the Pennsylvania Turnpike.

The final alignment of the bridge was chosen to minimize the impact of ongoing area coal-mining operations. After a geotechnical reconnaissance study revealed that approximately 20 percent of the structure foundations would overlay abandoned mine workings, a mine-grouting program was initiated to provide adequate foundations. The piers, flared, single shafts, were designed to meet aesthetic considerations. A 2-D finite element model of the pier was developed to determine tension reinforcement requirements. The horizontally curved superstructure was analyzed using 3-D finite element methodology and designed using the load-factor design philosophy. A complete construction and erection simulation was conducted to provide adequate construction access.

Key Features
- Dual, horizontally curved expressway viaducts (approximately 2,400-feet long)
- Maximum span of 300 feet
- Pier supports that are 250-feet high, a requirement due to wide valleys and a regulation to span an existing 200-foot-tall historic railroad trestle

Awards and Recognition
- International Bridge Conference – Gustav Lindenthal Medal 2004
- NSBA/AISC Prize Bridge Competition – Congruous Span Category 2003
- PPHQ Structures Award – 150 feet or Greater 2003
- ASCE Pittsburgh Civil Engineering Achievement Award 2002

I-78 & Garden State Parkway Interchange 142 Improvement, Essex and Union counties, N.J.

The $165 million Interstate 78 (I-78) and Garden State Parkway (GSP) Interchange 142 Project improved the daily commute for 23,000 motorists by providing the long-awaited missing movements between the GSP and I-78. It significantly improves traffic flow and safety around the interchange of these two superhighways.

The bridge components included three multi-span flyover ramp bridges, two simple-span ramp bridges, and 10 bridge widenings along I-78.
The completion of this project eliminates approximately 1,200 vehicles per hour from making a two mile U-turn and reduces the need for approximately 250 vehicles per hour to exit the GSP to use local roads to access I-78. Eliminating these inconvenient maneuvers with flyover ramps in both directions saves motorists 10 to 20 minutes at peak travel times and keeps highway traffic on the highway.

Gannett Fleming provided civil, structural, facilities design, environmental services, and construction engineering.

- ACEC/NJ 2012 Engineering Excellence Awards – Grand Honor Award
- Roads & Bridges 2011 Top 10 Bridges – Ranked #2

George Street Bridge – N.J. Route 18 Reconstruction, New Brunswick, N.J.

The George Street Bridge is one of several bridges constructed as part of the New Jersey Department of Transportation’s (NJDOT’s) $215 million reconstruction of Route 18 in the city of New Brunswick, N.J. The multi-interchange project improved safety and operations for regional travel and provided much needed multi-modal service improvements and local access to downtown New Brunswick, Rutgers University, the Raritan River waterfront, Boyd Park, and various neighborhoods adjacent to the corridor.

From the onset of the Final Scope Development phase, a Context Sensitive Design (CSD) approach was initiated to define a collaborative design solution that met transportation needs, environmental obligations, and community values. The resulting bridge truly complements the historical charm of the city of New Brunswick.

The George Street Bridge is one of the largest structures of its kind in North America. Designed as a precast concrete barrel arch bridge that measures 593 feet in length and 60.7 feet in width, it features eight arch barrels, each with a span of 66 feet and a rise of 20 feet. The arch pieces were constructed using 5,500-pounds-per-square-inch concrete and were cast with crown ends to allow them to mate properly.

The George Street Bridge became the first in the world to combine precast concrete arches with a lightweight cellular concrete overfill. Although a unique application, the use of long-span precast concrete arches with a lightweight cellular concrete overfill represents an engineering innovation that proved economical and exceeded the client’s and community’s expectations.

- 2010 Eugene C. Figg Jr. Medal for Signature Bridges: International Bridge Conference
- Roads & Bridges 2010 Top 10 Bridges – Ranked #6
Meander Reservoir Bridge Replacement, Mahoning County, Ohio

The I-80 Meander Reservoir project was one of the largest and most challenging projects in the history of the Ohio Department of Transportation’s District 4. The new twin 2,500-foot bridges crossing the reservoir significantly improved highway safety and are integral components of an innovative spill containment system designed to keep hazardous roadway runoff from flowing into the reservoir. This innovative containment system protects the drinking water supply for more than 220,000 people and provides a cost effective solution to watershed protection problems faced by transportation officials around the world when bridges cross high-quality waterways.

Gannett Fleming provided the design for 4.5 miles of the I-80 widening, the new twin bridges, replacement and widening of the mainline bridges, the spill containment system, emergency access, and a new 12.5-acre wetland habitat that was used to mitigate environmental impacts caused by the project.

- ACEC 2011 Engineering Excellence Awards – National Finalist
- ACEC/Ohio 2010 Engineering Excellence Awards – Outstanding Achievement Award
- Association for Bridge Construction and Design Northeastern Ohio Chapter – 2010 Outstanding New Major Bridge Award

I-4 Spanning Reedy Creek, Osceola County, Fla.

The twin, six-span bridges on Interstate 4 (I-4) spanning Reedy Creek, an environmentally sensitive waterway were identified by the Florida Department of Transportation as scour-critical. Bridge inspections revealed insufficient pile embedment during an extreme scour event, which would render the structures unstable. I-4 is a major regional highway linking the main metropolitan and tourist areas of Tampa and Orlando, Fla., and needed to remain open during construction with limited nighttime lane closures and minimal impacts to traffic. In addition, stringent water quality requirements, such as daily turbidity monitoring, needed to be followed to protect Reedy Creek from construction contamination.

The firm’s design required a set of two steel piles at the ends of each cross-beam, as opposed to the concept plans, that required a four-pile cluster at each beam end. This enabled shortening the length of the support beams, which reduced their depth and subsequently made construction easier. The end result was twin bridges that are stable against future scour events and improve public safety.

- Florida Institute of Consulting Engineers 2012 Excellence in Engineering Awards – Grand Award
PHX Sky Train™ Bridge over Taxiway R, Phoenix, Ariz.

Taxiway R is the first transit bridge in the world to be built above an active airport taxiway. The bridge is part of the first stage of construction of the PHX Sky Train™ at the Phoenix Sky Harbor International Airport. The Airport train, which is expected to reduce vehicular traffic by 20 percent, will transport passengers between the local METRO light rail, airport terminal and parking facilities, and the rental car center. Gannett Fleming is providing design services for all facilities, including stations and guideways.

The bridge rises approximately 100 feet above the taxiway with a clear span of 340 feet, an opening large enough to accommodate all aircraft that currently operate on the taxiway. Design challenges included aircraft and airspace operational clearances and a short construction window. To ensure the taxiway is ready for the airport’s peak travel times, an aggressive six-month taxiway closure schedule for construction was accomplished.

- Women’s Transportation Seminar 2010 Innovative Transportation Solutions Award

Route U.S. 1 & 9: Rahway River Bridge and Sections 1K & 3M, Woodbridge, Rahway, and Linden, N.J.

The Route U.S. 1 & 9: Rahway River Bridge and Sections 1K & 3M project required improvements to vital infrastructure and the reconstruction of a historic bridge spanning the Rahway River. Two new bridges were designed that retain the historic signatures of the old bridge that spanned the Rahway River. The project team ensured that the important architectural features of the deck on the historic bridge were incorporated into the new designs. The completed structures are bridges that improve traffic flow for motorists while remaining true to the historical elements of the architecture.

- ACEC/NJ 2010 Engineering Excellence Awards – Honor Award
- Roads & Bridges 2009 Top 10 Roads – Ranked #2
- American Society of Highway Engineers North Central and Southern New Jersey Sections 2009 Project of the Year Awards – Honorable Mention
Gannett Fleming is a global infrastructure firm that provides planning, design, technology, and construction management services for a diverse range of markets and disciplines. With 2,000 highly qualified individuals across a global network of 60 offices, we are united in our passion to deliver excellence. We have played a part in shaping infrastructure and improving communities in more than 65 countries, specializing in transportation, environmental, water, energy, and facility-related projects.

Founded in 1915, we embrace sustainability and innovation in our projects and internal activities, achieving results while being responsible stewards of our environment. Our culture of service, ingenuity, and responsiveness empowers us to fulfill our key mission: make our clients successful.

Gannett Fleming is consistently ranked in the top 10 percent on Engineering News-Record’s Top 500 Design Firms list.

Cover photos:
PHX Sky Train(TM), Phoenix, Ariz.
George Street Bridge, New Brunswick, N.J.