

# PRECAST CONCRETE SHORT-SPAN BRIDGES

## DURABLE, ECONOMICAL, ENVIRONMENTALLY FRIENDLY

Get over it! That's not a piece of advice but rather an objective of what you need from a bridge. And what better way to get over it than with a precast concrete short-span bridge? Think of the possibilities. Whether you want to replace an aging, deficient bridge; span a creek or river for a golf course cart path; expand an airport tarmac over a roadway; develop a tunnel for vehicular traffic; or provide access to land once inaccessible for new development, there are many ways to solve these challenges. But a precast concrete short-span bridge is the only clear choice for each situation.

Precast concrete manufacturers offer a variety of short-span bridge systems. Designs include single-piece arch, two-piece arch and conventionally reinforced flat bridge, parapets, wingwalls, headwalls and endwalls. Each system has its own specification for span length, span height and load capacity. Another factor to consider is the weight of each bridge section that must be transported to the job site. Roadway load limits are usually the only factor that may restrict the size of these bridge sections, even though a precaster's facility may be able to produce larger sections.

### WHY PRECAST CONCRETE?

- Superior strength and durability
- High degree of quality control
- Availability and ease of installation
- Reduced weather dependency
- Aesthetics
- Environmentally friendly
- Economical



QUALITY | VALUE | PERMANENCE

# PRECAST CONCRETE SHORT-SPAN BRIDGES



Precast concrete short-span bridges have many advantages over competing materials:

## **SUPERIOR STRENGTH AND DURABILITY**

The strength of precast concrete gradually increases over time and does not deteriorate when exposed to harsh environments as some other materials do. Other materials can deteriorate, experience creep and stress relaxation, lose strength and/or deflect over time. Studies have shown that precast concrete products can provide a service life in excess of 100 years. Additional design options can extend the service life of products exposed to severe conditions.

## **QUALITY CONTROL**

Because precast concrete products are produced in a controlled plant environment, they exhibit high quality and uniformity. Problems affecting quality typically found on a job site – temperature, humidity, craftsmanship and material quality – are nearly eliminated in a plant environment.

## **AVAILABILITY AND EASE OF INSTALLATION**

Because precast concrete bridge sections are manufactured well in advance of installation, they are ready for transportation to the job site at a moment's notice. They are quickly set onto the bridge foundation in a matter of hours using a small crew and crane. Backfilling and overlaying can begin immediately rather than waiting several days for cast-in-place concrete to reach proper strength. Projects designed with precast concrete can save weeks or months over cast-in-place concrete construction.

For more information on precast concrete short-span bridges, please contact:

## **REDUCED WEATHER DEPENDENCY**

Precast concrete increases job efficiency because weather will not delay production in the plant. In addition, weather conditions at the job site do not significantly affect the schedule. Conversely, forming and placing cast-in-place concrete can result in significant delays due to poor weather.

## **AESTHETICS**

Precast concrete short-span bridges can also include spandrel and wingwall panels with architectural finishes. Finishes commonly available are: colored smooth-as-cast, textured formliner, exposed aggregate, acid etch, brick and sand blast. Each are distinctly different and provide architects and owners a broad choice in appearance to help match the surrounding environment.

## **ENVIRONMENTALLY FRIENDLY**

Precast concrete is nontoxic, environmentally safe and made from all-natural materials, making it an ideal material for use over and near natural waterways. Concrete has no proven ill effects on groundwater and surface water quality. Also, with a three-sided precast concrete bridge, disturbance of creek and river beds is significantly reduced, allowing the water environment to return to normal more quickly than other alternatives.

## **ECONOMICAL**

Precast concrete bridges offer lower long-term costs when compared with other materials. Additionally, because precast bridges require significantly less construction time, overall project cost savings can be realized. If the precast manufacturer provides a bridge design, the owner's consultant needs only to specify the design criteria, foundation and geotechnical requirements, saving on project design costs.

Precast concrete is the material of choice for short-span bridges. Precast bridge sections can be manufactured in a broad range of sizes; are durable during transportation, installation and use; can easily be installed by a small crew; are structurally sound; are environmentally safe; and are less vulnerable to damage from weather and corrosion than other materials.

