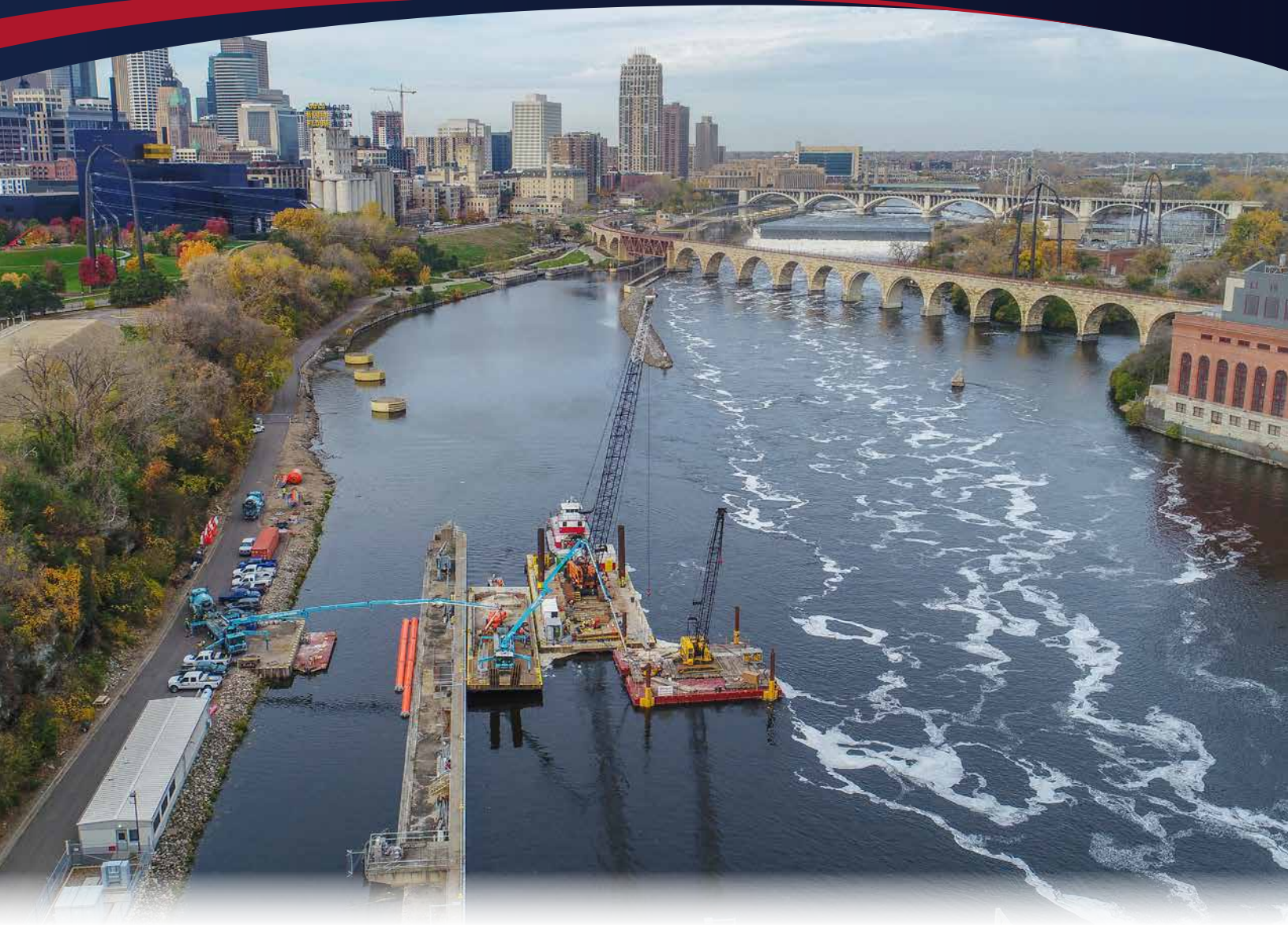


MARINE CONSTRUCTION SERVICES





Marine Professionals Since 1919

J.F. Brennan Company, Inc. (Brennan) is a marine construction and environmental remediation contractor that specializes in providing safe construction and repair services in and along the inland waters of the United States. For nearly 100 years we have delivered quality services on all types of marine-based infrastructure such as barge terminals, dock facilities, deep foundation structures, and bridges for both private industry and government entities.

What sets Brennan apart?

- » Everything we do takes place around the water, and as a result we have the right people, equipment, and programs necessary to mitigate associated risks.
- » We provide construction services both above and below the waterline which enables us to self-perform work on the entire structure.
- » Our fleet of well-maintained marine equipment is the largest of its kind in the Upper Midwest. We can offer both portable equipment for remote jobsites as well as load-line equipment for navigable waterways.

Our Services

- » Industrial Docks and Barge Terminals
- » Mooring Structures and Protection Cells
- » Dredging
- » Underwater Construction
- » Marine Support
- » Scour and Erosion Remediation
- » Underwater Inspections and Survey

Our Goal

At Brennan we strive to successfully complete challenging projects safely and on time, and provide services that deliver maximum quality and value to owners of water-based infrastructure.



When our founder, Jim Brennan, started in the contracting business he used teams of horses to drive piling. Since the early days of the 20th century, Brennan has continued as an industry leader in installing deep foundation structures for marine-based infrastructure. Our services go beyond pile driving with expertise in concrete placement, embedments, mechanical assembly, and more.

- » Closed Cell Heavy-Lift docks
- » Open Cell® Structures
- » Sheet Pile Walls with Tieback Systems
- » Cantilevered Sheet Pile Walls
- » Pipe Pile Structures
- » King Pile Wall Systems



We have the ability to build heavy lift docks and barge terminals from both the water and the land. Our experience covers dry bulk terminals, liquid bulk terminals, loading docks, marinas, and more.



MOORING STRUCTURES AND PROTECTION CELLS

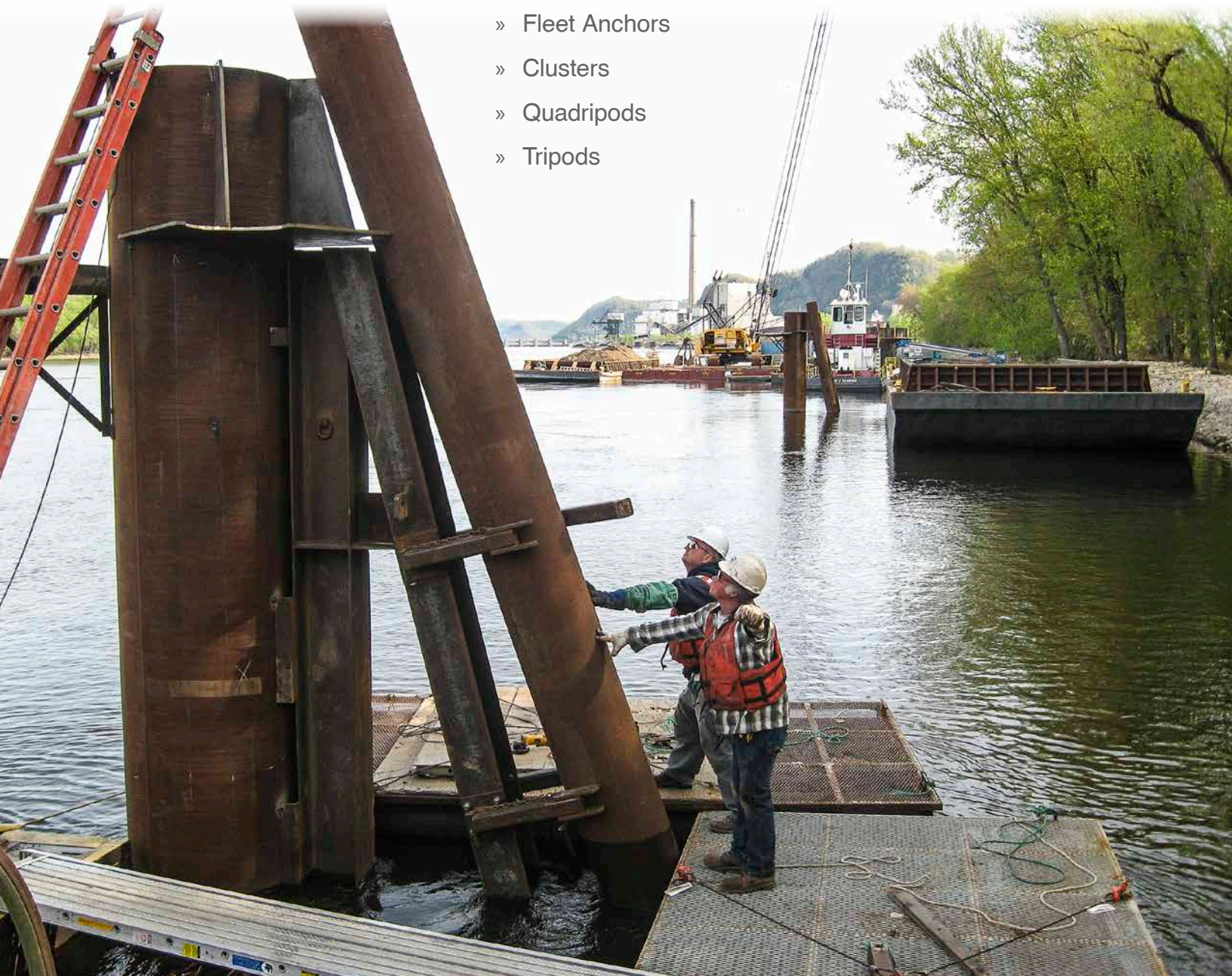
Mooring Structures

As a specialty marine contractor that has worked along the inland waterways for nearly a century, Brennan understands the importance of correctly placed dolphins and the impact they can have on harbor operations. As a marine contractor with licensed pilots we not only build these structures, we use them in our daily activities. We have expertise on which types and layouts work the best, and can assist with the design and self-perform the construction.



Types of Dolphins

- » Cellular Structures
- » Fleet Anchors
- » Clusters
- » Quadripods
- » Tripods



Protection Cells

Navigation can be unpredictable and it is important to protect your infrastructure. Protection cells can provide a robust, long lasting solution that can save critical infrastructure from unintended barge or vessel impacts. Brennan can install reinforced protection cells for bridges, industrial docks, dams, and other water-based infrastructure.



Cofferdams

Since the 1930's Brennan has been installing cofferdams to carry out water-based construction and repair services. We can fabricate, install, and dewater several types that will best fit each unique project.



DREDGING

A properly dredged harbor and navigation channel will ensure efficient transport of bulk commodities, ultimately resulting in lower operational costs. Our crews of experienced marine professionals have the expertise needed to dredge, transport, and dispose of material using the following methods.

Mechanical Dredging

With over 50 years of mechanical dredging experience, Brennan can add value and know-how to your project. We have several sizes of excavators and duty cycle cranes, as well as an array of deck barges that can safely support dredging operations.



Hydraulic Dredging

Brennan also has several sizes of hydraulic dredges ranging from 8-inch to 16-inch diameter discharges that can carry out mass removal or surgical, strategic removal. All of our dredges are portable and can be transported efficiently to locations across the country. Each dredge is well maintained and outfitted with state-of-the-art navigational equipment and dredging software.



Material Transport

Every project is different and to maximize value, there must be a high level of flexibility. Brennan can offer several methods of material transport including barge transport, hydraulic pipeline transport, or a combination of both to safely support dredge operations of all sizes.



Dewatering and Disposal

Typically, areas designated for spoils and dewatering are limited in size, creating difficulties for material disposal. Brennan has specialized equipment to speed the dewatering process, eliminating the need for large settling ponds. Using either passive or mechanical dewatering methods, Brennan can quickly prepare dredged material for immediate off-site transport and disposal.



UNDERWATER CONSTRUCTION

Our divers have the construction experience necessary to facilitate critical repairs on underwater infrastructure. Pricey cofferdams are not always required to carry out an effective repair or construction project. Brennan can offer alternative methods that will result in a high quality repair that delivers value to our clients.

- » Concrete Repairs
- » Dock and Seawall Repairs
- » Grouting
- » Intake and Outfalls
- » Masonry Structures
- » Pipelines
- » Timber Structures
- » Welding & Cutting



MARINE SUPPORT & SALVAGE

Demolition

Demolition over the water requires a high-level of expertise to eliminate environmental impacts on the surrounding, sensitive ecosystem. Brennan can systematically remove critical infrastructure while maintaining a safe and environmentally friendly work zone.

Marine Support

Brennan owns one of the largest fleets of heavy marine equipment north of St. Louis and can provide marine support for span switch outs, heavy picks, and salvage operations. We cover the entire length of the Upper Mississippi River and its tributaries, and can assist owners, engineers and other contractors.



SCOUR AND EROSION REMEDIATION

Brennan can detect, assist in design, and repair scour and erosion issues that may be occurring underneath and around infrastructure, or along embankments. We offer several methods of repair to accommodate any budget.

- » Breakwaters
- » Seawalls
- » Revetments
- » Groynes
- » Embankment Protection
- » Dikes
- » Channels
- » Vanes



Precast Articulating Block Mats

Brennan can safely install articulating concrete block mats to aid in long-term scour protection. These blocks can be cast on-site or pre-fabricated in several different configurations. Once placed, we can use aggregate to “choke” the crevices to secure the blocks in place and create an aesthetic embankment. If desired, vegetation can also be planted in and among the blocks for environmental benefits.



Rip Rap

Placing rock is the most economical method of scour and erosion control. Brennan can source, transport and place rock efficiently along embankments or in underwater locations to remediate scour and erosion and provide long-lasting protection.



Fabric-formed Revetment Mats

This method of scour and erosion control uses cast-in-place, grout-filled fabric revetment mats to cover and protect areas that experience aggressive levels of scour and erosion. Placement does not require heavy equipment, making it ideal for remote job sites and areas with limited access. This matting can be placed both above and below the waterline.



Concrete Bags

Cast-in-place, grout filled concrete bags are used in areas of extreme scour and erosion. They are often placed on top of an articulating grout-filled revetment mat to create a long-lasting repair without the need for heavy equipment.



Before

After

Several tools to get the information you need!

- » Dive Inspections
- » Imaging Sonar
- » ROV Inspections
- » Detailed Reporting
- » Bathymetric Surveys

Divers Who Know Infrastructure

Brennan divers are experienced, certified commercial divers with the knowledge necessary to perform a thorough underwater inspection. Outfitted with state-of-the-art equipment, our divers can handle even the most challenging environments. Each inspection will be well documented in a detailed, organized report, and delivered to our client in a timely manner.



Imaging Sonar



When underwater visibility is limited, 360-degree scanning sonar can help clear things up. This technology uses acoustics to create an underwater image of the structure to help detect structural problems and scour issues. Typically these images can be combined with above water digital photography or CAD drawings to create a pictorial reference of the entire structure.

Remotely Operated Vehicles

Our ROV's can be used to gather information when underwater conditions are unknown. They can be outfitted with HD video systems and sonar imaging equipment to navigate and collect valuable information. These vehicles are ideal for pipeline penetrations, or deployment in conditions unsafe for diver entry.

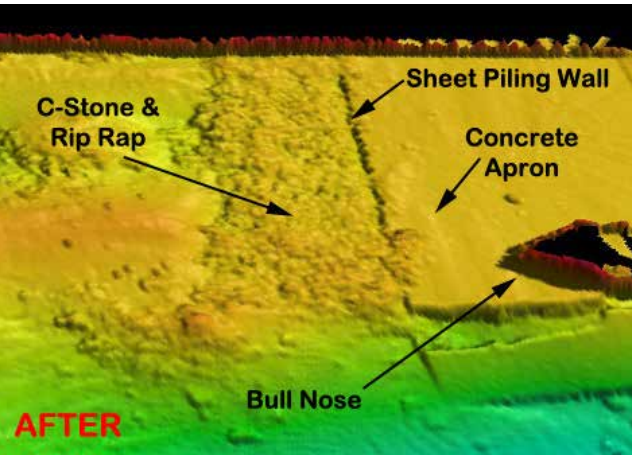
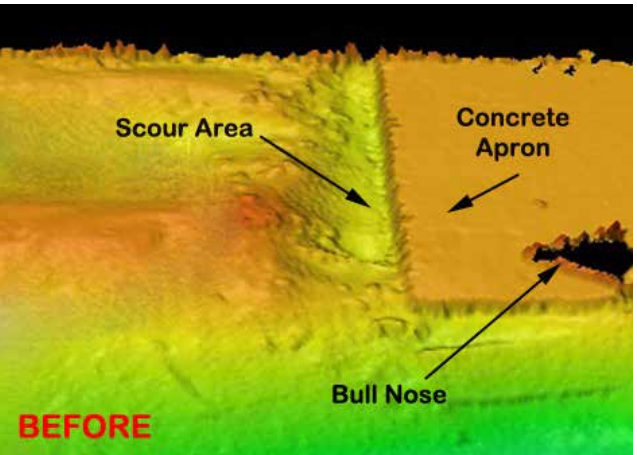


Detailed Reporting

We understand that an inspection is only as good as the information communicated. Brennan divers can investigate, record, and effectively report critical information. These reports contain detailed descriptions, CAD drawings, images, and underwater video documentation to help identify any structural concerns.

Bathymetric Surveys

It is invaluable to know the conditions surrounding marine based infrastructure, and our multi-beam bathymetric surveys create an accurate 3-dimensional model of the riverbed and underwater structures. This system can also be used to investigate and quantify areas of scour or sediment buildup.





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