

Transferring the Body of Knowledge Through an Institute Publication

Inside the ASBI *Construction Practices Handbook*

by Tim Barry, RS&H Inc.

In 2019, the American Segmental Bridge Institute (ASBI) published an update to one of its most valued publications, *Construction Practices Handbook for Concrete Segmental and Cable-Supported Bridges*.¹ This third edition of the handbook is a “how-to” guide for the industry and a comprehensive summary of the important aspects of concrete segmental bridge construction. It examines the different types and methods of concrete segmental construction along with important details used in this unique construction technology. Because the industry has evolved since the previous edition was published in 2008, the handbook required a complete overhaul to update information regarding new specifications and include new techniques, new procedures, up-to-date photographs and diagrams, and current industry resources.

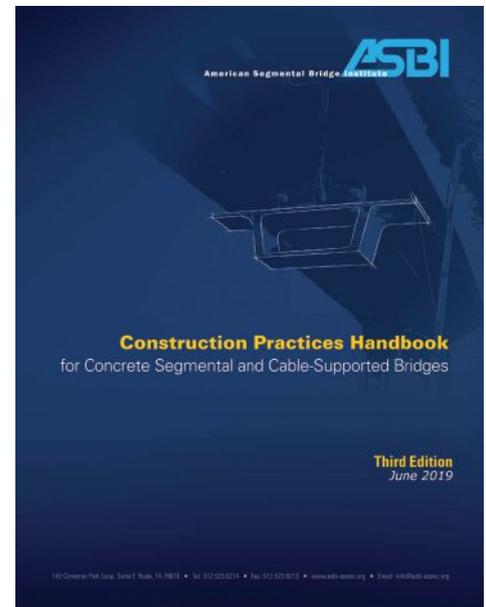
The handbook is a comprehensive examination of all aspects of concrete segmental bridge construction. It includes valuable information on the unique characteristics of concrete segmental bridge technology. There are chapters on cable-stayed, span-by-span, balanced-cantilever, and incremental-launch erection methods including both precast and cast-in-place concrete segments. The manual dives deeper into the details of concrete segmental bridge construction with chapters on segment casting yard setup and operation, specialty erection equipment, bridge bearings and expansion joints, geometry control, post-tensioning and grouting details, and overall project management and inspection. Included throughout the manual is guidance on best practices and, of course, lessons learned.

Industry Expertise

The Construction Subcommittee responsible for producing the handbook includes segmental subject matter experts representing academia, the contracting community, owners, designers, construction managers, and suppliers. The goal of the subcommittee was to ensure that the handbook was developed by the people who are immersed in this industry every day. With 22 members currently, the subcommittee is constantly seeking new members who are willing to join their colleagues in advancing the success of the segmental bridge industry. This collection of talent ensures that the information is up to date and relevant in a constantly changing construction world. It is these professionals who are responsible for developing and reviewing the content in the handbook. The time and resources invested and the information collected are what make this an essential document for anyone involved in the construction, and even the design, of a concrete segmental bridge.

The Process

The handbook with its 17 chapters provides a comprehensive overview of segmental bridge construction and touches on all important details and techniques. It defines, identifies, and explains different techniques; explains the details of how segmental bridges are built; and identifies the proper terminology unique to the industry. For each chapter of the handbook, the subcommittee assigned one or more industry experts to review the content and highlight the most important elements that readers need to comprehend.



Once each chapter was fully reviewed and edited, it was then peer reviewed by an independent group of industry experts. Finally, the ASBI Executive Board reviewed the content before final publication. At each stage of review, individuals representing the best this industry has to offer provided their insight and expertise. It is the goal of the subcommittee and ASBI to provide the most up-to-date, relevant, and useful information available.

A Useful Tool

The handbook is a complete overview of segmental bridge construction. The target audience is as diverse as those who are responsible for its content. The handbook can be used by newcomers with zero industry experience as a “beginner’s guide” to segmental bridges, or it can be used by seasoned professionals as a useful reference. With this current edition,



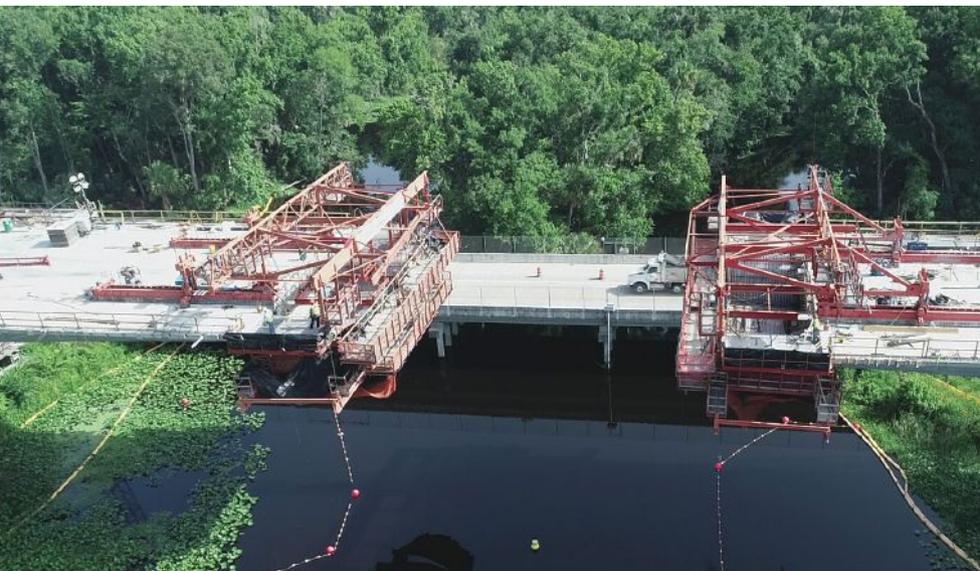
Precast concrete box-girder segments being erected for the Lesner Bridge project in Virginia Beach, Va. All Photos: RS&H Inc.

ASBI decided to make the digital version of the handbook free to download for the first time. This was a logical decision considering the reasons for which the handbook was produced, which are, according to ASBI's leadership, "to educate and inform the industry. We want this information out there and we want people to use it." ASBI hopes that this handbook achieves that goal.

Construction Practices Seminars

In addition to producing the handbook, ASBI holds a yearly Construction Practices Seminar that presents

information from the handbook in a formal group setting. It is held in a different city each year and has been attended by hundreds of professionals. Billed as "Segmental Bridges 101," the seminar addresses both the basics and the details that make this technology unique. Many of the same experts who contributed the information contained in the handbook also present at the seminar. This provides an invaluable opportunity for attendees to further expand their knowledge by hearing industry experts explain current construction practices in greater depth. In addition to covering the content of



Construction of the main span cantilevers for the first of three cast-in-place segmental bridges for the Wekiva Parkway project in Sorrento, Fla. (see the Project article in the Fall 2020 issue of *ASPIRE*®).

the handbook, presenters are eager to share valuable lessons learned from years of project experience with the next generation of industry professionals. Another bonus for attending the seminar is that all attendees receive a printed copy of the handbook to take home. It is the desire of ASBI that all segmental bridge professionals have a copy of this handbook sitting on their desks.

Along with everything else in our lives, COVID-19 has disrupted the Construction Practices Seminar. In the interest of continuing to educate the industry, ASBI held its first virtual seminar this past year as a three-week series of online presentations. Presenters still gave an overview of the handbook and provided their expertise and lessons learned, but in an online setting. According to ASBI executive director Gregg Freeby, "We felt it was important to continue the seminars in any way we could." Because ASBI values personal interactions and information sharing, in-person seminars will resume when conditions allow.

Improving the Industry

The mission of ASBI has remained steadfast since the institute's creation in 1989:

To advance, promote, and innovate segmental bridging technology; share the knowledge; educate stakeholders; build professional relationships; and increase the value of our infrastructure by providing sustainable solutions.

The development and continual improvement of the *Construction Practices Handbook* and its accompanying yearly seminar is just one more way that ASBI continues to achieve that mission.

Reference

1. American Segmental Bridge Institute (ASBI). 2019. *Construction Practices Handbook for Concrete Segmental and Cable-Supported Bridges*. 3rd ed. Buda, TX: ASBI. 

Tim Barry is a vice president with RS&H Inc., in Virginia Beach, Va., and the chair of the ASBI workgroup that produces the Construction Practices Handbook.