BSCES
Boston Society of Civil Engineers Section
American Society of Civil Engineers

SEI ASCE
STRUCTURAL ENGINEERING INSTITUTE
Boston Chapter

2015 Fall Lecture Series

Wicked Fast Bridge Construction

October 6, 13, 21, 27 and November 3, 2015

Tufts University, Barnum Hall, 163 Packard Avenue, Medford, MA

6:00 PM Registration; 6:30 PM – 8:30 PM Lecture

ASCE SEI Boston Chapter is pleased to present the 22nd Fall Lecture Series, entitled "Wicked Fast Bridge Construction." Topics include: The State of Wicked Fast Bridge Construction (WFBC) in New England; Detailing of WFBC; WFBC local case studies of MassDOT and MBTA bridges; durability of WFBC Bridges and The Future of WFBC (Panel Discussion). This lecture series is cosponsored by the Tufts ASCE Student Chapter.

LECTURE 1 – Tuesday, October 6, 2015

The State of Wicked Fast Bridge Construction in New England

Michael P. Culmo, PE, Vice President of Transportation and Structures, CME Associates, Inc.

All of the New England States have constructed WFBC projects and several states have instituted Accelerated Bridge Construction (ABC) programs. The design community has adapted to these new technologies using resources made available by owner agencies, industry, and the Federal Highway Administration (FHWA). The benefits of ABC or WFBC have been well documented by FHWA and others. The primary benefits include higher quality, improved safety through reduced exposure of workers and travelers to work zones, reduced mobility impacts to the traveling public, and reduced impact to the environment. This presentation will provide an overview of how the New England States are implementing WFBC, and cover topics such as decision making process, prefabricated bridge elements, bridge system installations, accelerated project delivery and ABC tolerances.

LECTURE 2 – Tuesday, October 13, 2015

Detailing of WFBC – Lessons Learned

Joseph P. Gill, PE, President, Gill Engineering Associates, Inc.

This presentation will focus on various design issues and construction details encountered on a number of accelerated bridge construction projects in Massachusetts and elsewhere. Methods of erection/placement, along with development of details compatible with construction sequence and schedule, as well as the lessons learned on these projects will be presented. Discussions will cover design approach and detailing for various bridge elements including footings, wall/column to footing connection, pier cap to wall/column connection,

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Completion of each Lecture provides 2 Professional Development Hours (PDH)

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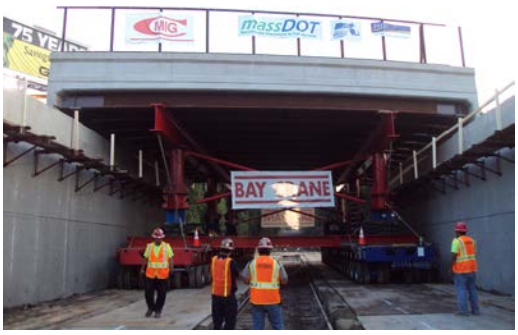
backwalls, approach slabs, superstructure connections to deck, barriers, waterproofing, membrane and wearing surfaces. The design approach to short term as well as long term (final design) loading along with the impact of tolerances will also be discussed.

LECTURE 3 – Wednesday, October 21, 2015

WFBC Local Case Study I – MassDOT Bridges



Brian Brenner, PE, Vice President, Fay, Spofford & Thorndike, Inc.

Nicholas Scenna, PE, Senior Structural Engineer, Fay, Spofford & Thorndike, Inc.

This presentation will discuss case studies of select MassDOT bridges. Topics covered will include utility relocation, utility bridge, Self-Propelled Modular Transporter (SPMT) construction, MBTA commuter rail station reconstruction and lessons learned. "Lessons learned" discussions will cover various topics including issues unique to design-bid-build procurement approach, contractor's means and methods, special specifications, precast concrete details and construction tolerances, and protection of adjacent existing structures during rapid demolition. Use of the innovative early utility relocation contract will also be discussed.

LECTURE 4 – Tuesday, October 27, 2015

WFBC Local Case Study II – MBTA Bridges

Erik J. Stoothoff, PE, Chief Engineer, MBTA

John C. Schwarz, PE, Director of Bridge & Tunnel Projects, MBTA

The primary mission of the MBTA is to move their customers safely and on schedule. The MBTA owns and maintains over 350 rail bridges, however, advanced age and condition of these structures require multiple bridges to be replaced yearly for the foreseeable future in order to maintain a good state of repair. This presentation will discuss past usage of WFBC at the MBTA using case studies to offer lessons learned from successful implementation, as well as the decision making process and future use of ABC or WFBC techniques on MBTA bridge projects. To date, MBTA has used these techniques for the construction of three bridges, and a future bridge replacement is in the final design stage. Discussion will also include the use of SPMTs, which has been very successful on MBTA projects.

LECTURE 5 – Tuesday, November 3, 2015

Durability of WFBC (ABC) Bridges

Michael P. Culmo, PE, Vice President of Transportation and Structures, CME Associates, Inc.

CME Associates has inspected several bridges constructed with various ABC methods. This session will include a discussion on what works and what does not work.

The Future of WFBC – Panel Discussion

Moderated By Alexander K. Bardow, PE, State Bridge Engineer, MassDOT

This session will include a brief update on WFBC or ABC at MassDOT followed by a panel discussion with speakers of lectures 1 through 4. The panel will answer questions from attendees.

SPEAKERS

Michael P. Culmo, PE, Vice President of Transportation and Structures, CME Associates, Inc.

Michael Culmo is the Vice President of CME Associates, Inc. responsible for directing structures and transportation design department on new expressway bridges, bridge rehabilitation and related highway structures. He has over 31 years of experience in the design of steel, concrete, pre-stressed concrete and timber bridges. He has special expertise in the field of accelerated bridge construction technologies. Mr. Culmo holds a Bachelor's degree in Civil Engineering and a Master's degree in Structural Engineering, both from the University of Connecticut.

Joseph P. Gill, PE, President, Gill Engineering Associates, Inc.

Joseph Gill is the President and Owner of Gill Engineering Associates, Inc., a local structural design firm in Needham, Massachusetts focused on the bridge infrastructure market. Before founding Gill Engineering in 2000, he had over 17 years of project experience with the Massachusetts Highway Department and the Massachusetts Turnpike Authority. As former MassHighway Bridge Engineer and MassPike Chief Engineer, Mr. Gill gained a thorough knowledge of bridge projects from inception through planning, permitting, design, construction, operation and maintenance. He was recently involved in the successful completion of various accelerated bridge construction projects, including the award-winning Wellesley Cedar Street Heavy Lift and Medford Fast 14 Bridge Replacement.

Brian Brenner, PE, Vice President, Fay, Spofford & Thorndike, Inc.

Brian Brenner is a Vice President with Fay, Spofford & Thorndike in Boston, Massachusetts. His professional practice includes technical management and structural design of bridge and transportation projects throughout New England and the New York metropolitan area. He is the lead structural engineer for three WFBC or ABC projects: River Street over MBTA, Morton Street over MBTA, and Massachusetts Avenue over Commonwealth Avenue in Boston. As a professor of the Practice at Tufts University, Mr. Brenner teaches classes in reinforced concrete design, bridge design, bridge history and aesthetics, and introduction to engineering. His research includes an NSF Partnership for Innovation project focusing on long term and sustainable bridge design. Mr. Brenner is the editor of multiple ASCE and BSCES journals and is the author of over 100 papers as well as three collection of essays, “Don’t Throw This Away”, “Bridginess”, and “Too Much Information” published by ASCE.

Nicholas Scenna, PE, Senior Structural Engineer, Fay, Spofford & Thorndike, Inc.

Nicholas Scenna is a Senior Structural Engineer and Deputy Bridge Team Leader with Fay, Spofford & Thorndike in Boston. He has over 10 years of experience in bridge planning, design, construction, inspection and rating. His work experience includes public and private sector clients, including state agencies, municipalities, railroads and private owners. Mr. Scenna has experience working on complex bridge design and construction contracts with accelerated schedules, and strict scope and budget constraints. He recently managed two high profile ABC contracts for MassDOT – the Burns Bridge Replacement D-B in Worcester and the Morton Street SPMT Bridge Replacement in Boston. He also co-authored and presented a paper entitled “When is an Historic Bridge No Longer an Historic Bridge?” at the 2014 SEI Structures Congress.

Erik J. Stoothoff, PE, Chief Engineer, MBTA

Erik Stoothoff is the Chief Engineer for the Design and Construction department of the MBTA, where he oversees all capital infrastructure projects. Prior to joining the MBTA as Chief Engineer in April 2013, he worked at Jacobs Engineering Group for the previous 13 years in various capacities as a design engineer and project manager. His work experience as a structural engineer includes designing and delivering numerous bridge and station projects for the MBTA and MassDOT. Mr. Stoothoff was the Engineer of Record for two of the rapid bridge replacement projects by the MBTA along the Fairmount Corridor at the Woodrow Avenue and Talbot Avenue crossings. He has a Bachelor’s degree in Civil Engineering from Northeastern University.

John C. Schwarz, PE, Director of Bridge & Tunnel Projects, MBTA

John Schwarz is the Director of Bridge and Tunnel Projects at the MBTA, and oversees the inspection, rehabilitation and replacement of the Authority’s bridge and tunnel infrastructure. He has over 30 years of experience in a wide range of projects. Mr. Schwartz joined the MBTA in 2003 after working in the private sector for several years. At the MBTA, he has worked on a variety of projects including Green Line Relocation at North Station, Fairmount Corridor Improvements, CNG Bus Facility Retrofits and the Redundant Elevator Program. He is a Civil Engineering graduate from Northeastern University.

Alexander K. Bardow, PE, State Bridge Engineer, MassDOT

Alexander Bardow has worked for MassDOT’s Bridge Section in various positions since 1983, and has been the Massachusetts State Bridge Engineer since 1995. In this position, he oversees the Bridge Design, Bridge Inspection, Ratings and Overloads, Metal Control, and the Geotechnical and Hydraulic Sections. Mr. Bardow is a voting member of the American Association of State Highway and Transportation Officials (AASHTO) Subcommittee on Bridges and Structures (SCOBS), and serves on following SCOBS technical committees: Welding (Chair), Timber (Vice Chair), Seismic Design, and Guard Rail and Bridge Rail. He has also been a member of the PCI New England Technical Committee since 1991. Mr. Bardow is a member of ASCE and BSCES and has served in several elected offices within BSCES, including as President in 2004-2005. He has received both his BSCE and MSCE degrees from the Massachusetts Institute of Technology.

REGISTRATION DEADLINE: Thursday, October 1, 2015

Registration Information:

Registration Fees: See registration form below.

Register to attend this seminar and pay by credit card online at http://bit.ly/SEILectureSeries. To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your BSCES member login information call 617/227-5551. You can also register for this event by completing the registration form below and mailing, emailing or faxing it to BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108, bscesreg@engineers.org or 617/227-6783, respectively. Cancellations received after October 1, 2015 and no-shows will be billed.

Directions to Lecture Hall and Parking:

Lecture Hall: Tufts University, Barnum Hall Room 008, 163 Packard Avenue, Medford, MA
http://campusmaps.tufts.edu/medford/#fid=m004
Parking: Tufts University, Dowling Hall Garage, 419 Boston Avenue, Medford, MA
http://publicsafety.tufts.edu/adminsvc/parking-services/medford-somerville-campus-parking-services/parking-garages/

Handouts: Registered attendees will be provided a website reference for downloading handouts/notes.

Pizza! New in 2015, we begin each evening with pizza starting at 6 pm during registration.

Registration Form

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Tufts University, Barnum Hall, 163 Packard Avenue, Medford, MA
6:00 PM Registration, 6:30 – 8:30 PM Lecture

Registrant Information

Name: _____

Company (if applicable): _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone _____ Fax: _____ Email:* _____

* Please note that email communications to BSCES members about this event will be sent to the email address that they have on file with ASCE.

Registration Fees

Full Series of Five Lectures

- ☐ $195 BSCES/ASCE Member
- ☐ $245 Non-Member
- ☐ $170 Public Employee Member
- ☐ $195 Public Employee Non-Member
- ☐ $70 Senior/Student

Single Lectures

- ☐ $60 BSCES/ASCE Member
- ☐ $75 Non-Member
- ☐ $55 Public Employee Member
- ☐ $60 Public Employee Non-Member
- ☐ $25 Senior/Student

Circle Lectures Attending: 1 2 3 4 5

Total Amount Enclosed $ _____

Make checks payable to "BSCES" and mail with completed form to: BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108-3616

Or Pay with (Check one): ☐ Visa ☐ Master Card ☐ American Express

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