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OFFICIAL PROCEEDINGS OF THE 29^{th} ANNUAL INTERNATIONAL BRIDGE CONFERENCE $^{\otimes}$ June $10-13,\,2012$

David L. Lawrence Convention Center, Pittsburgh, Pennsylvania, USA

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IBC 2012 Technical Program by Session

Keynote

Monday, June 11, 2012

Chair: Matthew P. McTish, P.E., International Bridge Conference® 2012 General Chair

WELCOME REMARKS N/A

Rich Fitzgerald, Allegheny County Chief Executive, County of Allegheny, Pittsburgh, PA

MODOT'S BFYD (BOLDER 5-YEAR DIRECTION) N/A

Don Hillis, Assistant Chief Engineer, Missouri Department of Transportation, Jefferson City, MO

AASHTO UPDATE N/A

Malcolm T. Kerley, P.E., Chief Engineer, Virginia Department of Transportation, Richmond, VA

BRIDGES ARE FAILING FASTER NOW – WHY IS THIS HAPPENING? N/A Timothy G. Galarnyk, CEO, Construction Risk Management, Inc., St. Paul, MN

BRIDGE DESIGN AND THE ART OF APPROPRIATION N/A

Keith Brownlie, RIBA RIAS FRSA, Architect, Toller Porcorum, Dorset, United Kingdom

FEDERAL PERSPECTIVE N/A

Victor M. Mendez, Federal Highway Administrator, FHWA, Washington, DC

THE STATE OF TRANSPORTATION FUNDING N/A

Kirk T. Steudle, P.E., State Transportation Director, Michigan Department of Transportation, Lansing, MI

Featured Agency - Missouri Department of Transportation

Monday, June 11, 2012

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THE STATE OF MISSOURI BRIDGES

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- **IBC 12-87** REPAIRING AND PRESERVING BRIDGE STRUCTURE BY INNOVATIVE CRACK ARREST REPAIR SYSTEM 1097

Len Reid, Fatigue Technology, Seattle, WA

IBC 12-88 REHABILITATION OF HISTORIC WELLS STREET BASCULE BRIDGE, CHICAGO, ILLINOIS 1106

Dipal Vimawala, S.E., P.E., AECOM, Chicago, IL; Daniel Burke, S.E., P.E., CDOT, Division of

Engineering, Chicago, IL

Construction Topics, Part 2 Session

Wednesday, June 13, 2012

Session Chair: Richard L. Connors, P.E. PMP, Bureau Veritas North America, Inc., Pittsburgh, PA

IBC 12-89 SURGICAL DEMOLITION OF THE PASEO BRIDGE 1116

David D. Byers, Ph.D., P.E. and Lisa Matchulat, Genesis Structures, Kansas City, MO; Terrence J. Colombatto and Patrick Byrne, Massman Construction Co., Kansas City, MO

IBC 12-90 STRANK MEMORIAL BRIDGE VALUE ENGINEERING 1122

Kevin O'Connor, P.E. and Chuck Nelms, L.R. Kimball, Pittsburgh, PA Ralph DeStefano, P.E., Pennsylvania DOT District 9-0, Hollidaysburg, PA; Ed Jones, P.E., L.R. Kimball, Ebensburg, PA

IBC 12-91 DESIGN & CONSTRUCTION OF FOOTHILLS PARKWAY BRIDGE NO. 2 N/A

John Corven, P.E., Corven Engineering, Inc., Tallahassee, FL; Jean-Claude Demosthenidy, Interactive Design Systems, San Diego, CA

NOT AVAILABLE AT TIME OF PUBLICATION

IBC 12-92 EFFECTS OF SUPPORT SKEW ON THE BEHAVIOR OF STEEL I-GRINDER BRIDGES DURING CONSTRUCTION 1135

Andres Sanchez, Ph.D., HDR Engineering, Inc., Pittsburgh, PA; Donald White, Georgia Institute of Technology, Atlanta, GA

IBC 12-93 CONSTRUCTION LIVE LOAD RESPONSE AND PROGRESSIVE CALIBRATION OF THE VGCS CABLE STAY BRIDGE MODEL 1144

Parag Nimse, The University of Toledo, Houston, TX; Douglas Nims, Ph.D., P.E., University of Toledo, Toledo, OH; Robert Ward, Owens-Illinios, Perrysberg, OH; Arthur Helmicki and Victor Hunt, University of Cincinnati, Cincinnati, OH

Rail Session

Wednesday, June 13, 2012

Session Chair: W. Jay Rohleder Jr., P.E. S.E., FIGG, West Chester, PA

IBC 12-94 HONOLULU TRANSIT BRIDGE DESIGN-BUILD PROJECT, A SUSTAINABLE BRIDGE FOR

HAWAII N/A

Jose Rodriguez, P.E., PMP, Figg Bridge Engineers, Inc., Tallahassee, FL

NOT AVAILABLE AT TIME OF PUBLICATION

IBC 12-95 RIUDELLOTS BRIDGE: AN EXAMPLE OF HIGH SPEED RAILWAY SKEW BRIDGE 1156

Romo Josã Prof., FHECOR Ingenieros Consultores SA, Madrid, Spain

IBC 12-96 DART ORANGE LINE - A DESIGN/BUILD PRECAST SPLICEDGIRDER BRIDGE SOLUTION 1164

Thomas W. Stelmack, P.E., Parsons, Denver, CO; Jonathan Kempfer, Kiewit Infrastructure

South Co., Irving, TX

IBC 12-97 RAPID REPLACEMENT OF TIMBER APPROACH TRESTLES OF NS RAILROAD BRIDGE 1174

Harold Plott, P.E. and Andrew Burkholder, AECOM, Roanoke, VA; Jonathan Hocker,

Norfolk Southern Railway Corporation, Atlanta, GA

IBC 12-98 DESIGN AND CONSTRUCTION OF GRADE SEPARATION AT 71ST STREET AND

CSXT/B&OCT/IHB RAILROADS IN BRIDGEVIEW, IL N/A

Bradley Radovich, AECOM, Chicago, IL

NOT AVAILABLE AT TIME OF PUBLICATION

Research/Evalutation, Part 2 Session

Wednesday, June 13, 2012

Session Chair: M. Myint Lwin, P.E., S.E., Federal Highway Administration, Washington, DC

IBC 12-99 A STUDY OF THE IMPACT STRENGTH OF STEEL FIBER R.C. BRIDGE COLUMN ELEMENTS

FOR PRECAST SEGMENTAL BRIDGE CONSTRUCTION IN SEISMIC REGIONS

Nasi Zhang, University at Buffalo, Buffalo, NY; George Lee, State University of New York

at Buffalo, Buffalo, NY

IBC 12-101 EVALUATION OF ADVANCED ANALYSIS TECHNIQUES FOR SKEWED REINFORCED

CONCRETE RIGID FRAME BRIDGES "

William Farrow III, P.E., Greenman-Pedersen, Inc., Lebanon, NJ; Daren Dong, P.E., Gannett Fleming, New York, NY; Chelsea Stachura, Gannett Fleming, Newark, NJ

IBC 12-102 PREDICTION OF GUSSET PLATE LIMIT-STATES ...

Justin Ocel, Ph.D., P.E. and Rob Zobel, Federal Highway Administration, McLean, VA;

Don White, Georgia Institute of Technology, Atlanta, GA

IBC 12-103 ACOUSTIC IMAGING TO ENHANCE BRIDGE INSPECTION AND BRIDGE REPAIR DESIGN ...

David Reser, P.E. and Jeff Rowe, P.E., Infrastructure Engineers, Inc., Spartanburg, SC

Design and Evalutation Session

Wednesday, June 13, 2012

Session Chair: Stephen G. Shanley, P.E., Allegheny County, Department of Public Works, Pittsburgh, PA

IBC 12-104 DESIGN AND CONSTRUCTION OF CHIBOUGAMAU BRIDGE ...

Victor Egorov, Ph.D., Louis-Philippe Poirier, and Mario Levesque, SNC-LAVALIN,

Montreal, Quebec, Canada

IBC 12-105 SOUTH NORFOLK JORDAN BRIDGE DESIGN AND CONSTRUCTION "V"

Charles Silcox, P.E., Figg Bridge Engineers, Inc., Tallahassee, FL; Thomas Jenkins, Figg

Bridge Builders LLC, Tallahassee, FL

NOT AVAILABLE AT TIME OF PUBLICATION

IBC 12-106 ANALYTICAL MODEL FOR OPTIMIZING THE DESIGN OF ISOLATED AND DAMPED BRIDGE

STRUCTURES "

Viacheslav Koval, P.Eng. and Constantin Christopoulos, University of Toronto, Toronto,

Ontario, Canada; Robert Tremblay, Ecole Polytechnique de Montreal, Montreal,

Quebec, Canada

IBC 12-107 THE DESIGN/BUILD REPLACEMENT OF MCNAIR ROAD BRIDGE

Laura Anderson, Pennoni Associates Inc., Newark, DE

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IBC POS-1	APPLYING DISPLACEMENT-BASED METHODS IN SEISMIC DESIGN OF THE SR21-I69 BRIDGE $\ddot{}$
	Ali Hajihashemi and Shahram Pezeshk, Department of Civil Engineering, The University of Memphis, Memphis, TN
IBC POS-2	SHEAR CAPACITY OF EXISTING REINFORCED CONCRETE SLAB BRIDGES UNDER TRAFFIC LOADS $$
	Eva O.L. Lantsoght, Cor van der Veen, Joost C. Walraven, Department of Design & Construction: Concrete Structures, Faculty of Civil Engineering and Geosciences, Delft University of Technology, The Netherlands
IBC POS-3	TRACK-STRUCTURE INTERACTION ANALYSIS FOR HIGH SPEED RAIL AND TRANSIT BRIDGES " Paul Belchamber, LUSAS, Surrey, United Kingdom
IBC POS-4	STAY CABLE MONITORING WITH FIBER OPTICS " Tom Weinmann, Geocomp Corporation, Buffalo Grove, IL
IBC POS-5	STATISTICAL ANALYSIS OF THE SUFFICIENCY RATINGS OF THE I-35W BRIDGE
	Leslie N.O. Mills and Nii Attoh-Okine, University Of Delaware, Newark, DE
IBC POS-6	RAPID NON-CONTACT TENSION FORCE MEASUREMENTS OF STAY CABLES
	Marcus Schmieder, Metro Testing Laboratories Limited, Burnaby, British Columbia, Canada
IBC POS-7	BEN FRANKLIN BRIDGE DECK TRUSS REHABILITATION "
	Patrick Miner, HNTB Corporation, Philadelphia, PA
IBC POS-8	RAPID SAMPLING OF STANDARD, SINGLE-COIL VIBRATING-WIRE SENSORS "
	Richard Andrus, Campbell Scientific, Inc., Logan, UT
IBC POS-9	INFLUENCE OF RIVERBED SCOUR ON SEISMIC PERFORMANCE OF BRIDGES
	Shin-Tai Song, Wen-Hsiu Huang, and Wei-Li Tan, Department of Civil Engineering, National Chung-Hsing University, Taiwan, R.O.C.