

AASHTO/NSBA Steel Bridge Collaboration

Fall Meeting Minutes - Combined

Austin, TX

October 8 – 10, 2018



The AASHTO/NSBA Steel Bridge Collaboration is a joint effort between the American Association of State Highway and Transportation Officials (AASHTO) and the National Steel Bridge Alliance (NSBA) with representatives from state departments of transportation, the Federal Highway Administration, academia, and various industry groups related to steel bridge design, fabrication and inspection. The mission of the Collaboration is to provide a forum where professionals can work together to improve and achieve the quality and value of steel bridges through standardization of design, fabrication and erection.

Table of Contents

Task Group List.....	1
TG 1 – Detailing.....	2
Introductions.....	2
G1.1 Ballot Comments	2
G1.2 Update	3
BIM for Bridges and Structures Pooled Fund Study.....	3
2019 NASCC Presentation on Communication of Design Requirements	3
TG 2 – Fabrication	4
TG 4 - QA/QC.....	6
Address AASHTO T-14 Comments on G4.1 Document	6
G4.2 Recommendations for the Qualifications of Bolting Inspectors	6
Discussion on what’s next for TG4 and what QC/QA	6
Other Items	6
TG 8 – Coatings	7
Ballot Discussion	7
TG 10 – Erection.....	8
Introductions.....	8
S10.1 Revisions.....	8
Bolting for Bolter Update.....	8
Subcommittee on Geometric Tolerances	8
Additional Business	9
TG 11 – Design	10
Opening Remarks.....	10
Introductions.....	10
Administrative Items.....	10
Technical Presentations	10
Guidelines for the Design of Cross-frames and Diaphragms progress	10
Interim meetings between Collaboration Meetings, Go-To Meetings.....	12
Open Discussion for TG regarding design issues	12
TG 12 - Design for Economy and Constructability	13
Introductions.....	13

G12.1 Guidelines to Design for Constructability and Fabrication – Path Forward	13
General Announcements	13
TG 13 - Analysis of Steel Bridges	14
Introductions.....	14
General Announcements	14
G13.1 Guidelines for Steel Girder Bridge Analysis – Path Forward	15
Presentation: “Accelerated CSX Truss Bridge Replacement”	15
TG 15 - Data Modeling for Interoperability	16
Opening Remarks.....	16
Introductions.....	16
DOT Pool Fund Introduction	16
TG 16 - Orthotropic Deck Panels.....	17
Acceptance of 2018 Minnesota meeting minutes.....	17
Vigor Orthotropic Deck Fabrication Presentation	17
Task Group 2 Updates – Guidance for Manufacturing Orthotropic Decks	17
Collaboration Main Committee	18
TG1 - Brad Dillman	18
TG2 - Heather Gilmer	18
TG4 - Jamie Hilton	18
TG8 - Jeff Carlson	19
TG9 - Ronnie Medlock for Mike Culmo	19
TG10 - Jason Stith.....	19
TG2/TG4/TG10 Combined - Jason Stith	19
TG11 - Brandon Chavel	19
TG 12 - Allan Berry	20
TG13 - Frank Russo.....	20
TG15 – Aaron Costin	20
TG16 – Duncan Paterson.....	20
NSBA Technical Committee Update - Ronnie Medlock	21
Administration - Ronnie Medlock	21
Appendix A – Meeting Agendas.....	22
Appendix B – Attendee Registration List	33

Task Group List

Group Name	Chair	Chair Company	Chair Email	Vice Chair	Vice Chair Company	Vice Chair Email
Main Committee	Ronnie Medlock	High Steel Structures	RMedlock@high.net	Brandon Chavel	HDR	Brandon.Chavel@hdrinc.com
TG 1 Detailing	Brad Dillman	High Steel Structures	bdillman@high.net			
TG 2 Fabrication	Heather Gilmer	HRV	hgsteelfab@gmail.com			
TG 4 QC/QA	Jamie Hilton	KTA-Tator, Inc.	jhilton@kta.com			
TG 8 Coatings	Tim McCullough	Florida Department of Transportation	Timothy.McCullough@dot.state.fl.us			
TG 9 Bearings	Michael Culmo	CME Engineering	culmo@cmeengineering.com			
TG 10 Erection	Brian Witte	Parsons	brian.witte@parsons.com			
TG 11 Design	Brandon Chavel	HDR	brandon.chavel@hdrinc.com			
TG 12 Design for Economy & Constructability	Allan Berry	RS&H	allan.berry@rsandh.com			
TG 13 Analysis of Steel Bridges	Deanna Nevling	Michael Baker International	DNevling@mbakerintl.com			
TG 14 Field Repairs and Retrofits	Kyle Smith	GPI	ksmith@gpinet.com			
TG 15 Data Modeling for Interoperability	Sammy Elsayed	Skanska	sae44@msn.com	Aaron Costin	University of Florida	aaron.costin@ufl.edu
TG 16 Orthotropic Deck Panels	Duncan Paterson	HDR	Duncan.Paterson@hdrinc.com			

TG 1 – Detailing

Brad Dillman – High Steel Structures

Introductions

There were approximately 50 people in attendance at this meeting.

G1.1 Ballot Comments

Review and Disposition of Comments

There were over 100 comments received from the recent balloting only a select few were reviewed. Appendix A would benefit from being an electronic check list. Brad Dillman will send Domenic Coletti a Word version of the checklist. The checklist would exist within the G1.1 and as a separate downloadable electronic editable version. There are many portions within section 4 that need to be revised before Domenic can start working on the checklist.

Reformat the commentary to be in a box at the bottom of the page (for example) rather than the 2-column format. This would eliminate much of the whitespace that exists now and make the document more readable. Other specifications have similar layout.

Find and reuse the definition of “detailer” that is currently in the AISC code of standard practices. “Steel detailer. The entity that produces the approval documents.” This would then result in having to include the definition “Approval documents. The structural steel shop drawings, erection drawings, and embedment drawings, or where the parties have agreed in the contract documents to provide digital model(s), the fabrication and erection models. A combination of drawings and digital models also may be provided.”

Since this is a guide instances of “shall” should be replaced with “should”.

With regards to section 5.1.2, some states are not allowing designers to note shop drawings as “Approved” and only “Reviewed with Comments” or “Make Comments Noted”. Minnesota DOT has definitions of the terms that can be used and how they are defined. The (“Approved as Noted”, “Approved as Corrected”, “Accepted Subject to Comments”, etc.) may make better sense in the commentary. The purpose, which is to move production along, is not clear however the goal is to not have to resubmit drawings. The section may benefit from re-wording.

Instances of “Approver” may need to be changed to “Reviewer”.

Jon Stratton will look at 3.5 – 3.6 and reword it for electronic submittal and remove references or implied use of paper submissions.

Add preface that explains the context of the document as design-bid-build and that portions of it may not be applicable to alternate delivery methods.

Next Steps for G1.1 Approval

Comments to be resolved by October 24.

G1.2 Update

Outline of path forward

Should G1.2 and G1.4 be combined was a point of discussion. The history of why they were both separate was not known. It is possibly a result of acceptance of the document information if they were combined would be lower. Another possible scenario might have been developing a consensus for the details in G1.4 might have been more contentions.

BIM for Bridges and Structures Pooled Fund Study

Brief Overview and TG15/TG1 Subtask Group

Aaron Costin – University of Florida gave an overview the BIM pooled fund study that he is leading. A combined TG1/TG15 sub-committee is being formed to assist and lead the development of the data exchange between designers and detailers/fabricator. Aaron reviewed the process of exchanging digital information between software applications.

Ronnie Medlock – High Steel Structures reviewed a real world need and application of the data exchange with the goal of fabricating a girder or component. Aaron is looking to recruit members for the TG1/TG15 sub-committee to work on the definition for design to fabricator exchange. A sign-up sheet was circulated for participants.

2019 NASCC Presentation on Communication of Design Requirements

Brad Dillman went through the presentation that he recently gave at the Symposium which outlined the top 8 errors that fabricators commonly see in design drawings. This presentation will be given again in 2019. Brad is looking for more input regarding common errors that other fabricators are seeing.

TG 2 – Fabrication

Heather Gilmer - HRV

- The committee debated if the code should extend to include pedestrian bridges. Concern was raised regarding the size of some pedestrian bridges and what the effect of excluding them would be on design and fabrication. Specifically, concern was raised regarding tubular structures.
 - To ensure the document can be completed on time, phase 1 will focus on vehicular bridges. Phase 2 will focus on pedestrian and tubular structures and Phase 3 will focus on ancillary components.
- The committee discussed including field erection in the new document.
 - The committee will remain silent in the new document.
- The committee discussed moving language regarding a prefabrication meeting to the commentary section. Heather suggested asking AASHTO DOT members to review section for what should be in code and commentary. Additionally, it was decided language regarding “improving material” should be tightened. That language is interpreted by DOTs in various ways.
- The committee discussed the term “verification” as it relates to Q/A. Members expressed concern that the term can be interpreted in various ways.
 - A new definition will be added for “verification”.
- The committee discussed the terms “Acceptance” and “Reject” as it relates to the document. T17 members expressed concern regarding the legal interpretation and using the terms in the new document.
 - The committee decided the terms will remain, allowing for future comment.
- The committee discussed the definition of shop drawing. Technology changes may require a broader definition of the term.
 - The committee decided the term will remain and define later if needed.
- The committee discussed how much material specification language is needed in the new document. The current S2.1 document includes language for information purposes only. Additional comments were raised regarding referencing M270 and if it is needed.
 - The committee will allow AASHTO to lead changes with M270 and will reference current AASHTO material equivalents until a change is made.
- An informational comment was raised regarding ensuring AASHTO references are still current.
- S2.1 section 6.3 references material limits to ensure changes do not affect design. The committee discussed leaving that section.
 - The committee decided the section will remain for comment but the information should be moved to commentary.
- The committee discussed updating S2.1 section 4.1.1 limits of grinding. The information currently conflicts with AASHTO limits.
 - The committee agrees grinding should be limited to ¼ inch.
- The committee discussed covering RCSC for connections. Concern was raised from members that including too much information could lead to a high number of owner exceptions. In those

instances including the information is unnecessary and could lead to confusion. The committee also noted RCSC is reorganizing their document therefore any reference numbers would have to be updated.

- RCSC discussion led to a discussion of pre-installation bolt testing.
 - No action was taken.
- The committee discussed including the heat curve equation present in S2.1. A question was raised if it should be addressed by AASHTO T14.
 - T17 committee chair will speak with T14 committee chair regarding who should cover heat curving.
- The committee discussed large diameter (2 inch) holes in pins. Concern was raised if it is a design issue or a fabrication issue.
 - T17 committee chair will speak with T14 committee chair regarding who should cover large diameter holes in pins.
- The committee discussed addressing post-weld heat treatment.
 - The committee recommended allowing D1.5 to address.
- The committee discussed contractor construction plans for curved girders.
 - The committee recommended leaving in Chapter 11 of AASHTO.
- The committee discussed if ultrasonic heat treatment should be addressed.
 - The committee decided to leave the language as it currently stands.

TG 4 - QA/QC

Jamie Hilton – KTA-Tator, Inc.

Address AASHTO T-14 Comments on G4.1 Document

- No comments received from T-14 to date. No need for discussion. Table this item for now.
- Should we survey people who use S4.1 to see what it is they like/need? Survey could be done through T-14, but may not be worthwhile. Maybe just ask the few people we know of that are using it to see what they like.
- TxDOT still references this document.
- S4.1 is embedded into the PennDOT specifications.
- Interest in a subtask group to look at Part 3 (third party inspection)? Heather Gilmer can help, but can't lead a subgroup. Phil Dzikaski, Teresa Michalk, Todd Speck, and Ray Monson can help.

G4.2 Recommendations for the Qualifications of Bolting Inspectors

- Discussion on where it belongs. Remain in TG4 or move to the new TG2-TG4-TG10 Collaboration
- Should the year be left on the Section 1 "References" on the RCSC reference? Heather agreed to remove it. No disagreements from the TG.
- Should references to RCSC within the document be made more generic removing the specific sections and tables? Consensus is yes. No disagreements.
- G4.2, Section 5.3 modifications were made by TG to improve wording of qualifications for inspection. Section 5.3 needs further revising – Assigned to Heather Gilmer, Karl Frank, Tim McCullough, Art Bustos, Anna Petroski, and Eric Rau.
- G4.2 belongs in this group.

Discussion on what's next for TG4 and what QC/QA

- Possible subjects: TG decided to Revise G4.3 – assigned to group lead by Phil Dzikaski.
- Develop a sample QC Plan
- Develop a sample QA Plan
- Advance inspection techniques

Other Items

- Karl Frank – as processes become more and more paperless, the TG may need to consider how this affects inspectors in the shop and how that affects QC/QA.
- What does the inspector want?
- What does the owner want for their verification? Should the TG set up an owners group to see what they will want? What will the owners want to "feel comfortable" with the automated and paperless processes?

TG 8 – Coatings

Anna Petroski - Atema

Ballot Discussion

Hot Dip Galvanizing Spec is out for ballot. Ballots close October 19.

Anna has reviewed the comments and they are summarized below.

Here is where the majority of the comments fall so far:

- Discussion around the term Highway. Going to add highway structure component.
- Title of the document - “guide” has been removed from the title following the example set by the thermal spray document. More work is needed to make the informative portion more clear.
- SP6
 - Clarify the nature of this direction and how and to what it is applied.
 - Including SP6 was for dealing with reactive steel for bridge beams.
 - There was an argument for saying that it should be an either or
 - Karl F. feels that we should not worry about blasting and reactive and non reactive and just deal with isolated flaking issues with touch up.
- Chemistry restrictions
 - Clarify the nature of this direction and how to apply it
 - Discussion around non reactive and reactive steel
 - Dr. Bennett suggested added commentary to 9.2 about the reason to include this section.
 - Heather wanted to add the adverb “extremely” to non reactive section of 9.2.
- DFT limitations
 - Minimum and maximum. This is one of the main reasons for clarity in this document because bridge product needs more specific values.
- Distortion control
 - Clarify this section to allow room for fabricators to address
- Duplex
 - Reorder the discussion to mirror the sequence of operations in production.
 - There is evidently an NCHRP study on duplex coatings per Tom Schwerdt and Tim from FDOT offered to review the duplex coating section as they have done some research on the topic.

Related to the galvanizing spec, Ronnie Medlock providing some information regarding the balloting process and interaction with T14. Ronnie also gave congratulations to Anna Petroski for her leadership with the galvanizing group. Jeff Carlson gave an update on the TxDOT research related to some TSC testing that is ongoing in both their salt fog chamber and also their our door facility in Corpus Christi. Jeff also made an announcement to the group that TG8 needs a new chair. Tim from FDOT said he was interested.

TG 10 – Erection

Jason Stith – Michael Baker International

Introductions

There were approximately 50 people in attendance at this meeting. See sign-in sheet (Appendix A – Sign-in Sheet).

S10.1 Revisions

Cover Pictures

Soliciting input for cover page images.

Next Steps (Collaboration Balloting, AASHTO review, etc.)

Document is currently being prepared for collaboration wide balloting. It is expected that this should be mailed out in the next week or so (e.g. by Friday, October 12).

Bolting for Bolter Update

System exist to qualify welders, need a system to qualify bolters. Group is looking to develop some guidance or series of videos that would help define the basics.

Group to develop a document that describes the qualifications for bridge bolters to be chaired by Anna Petroski. RCSC is looking at solving the same problem, however they have not made much progress. The thought is that the TG10 Collaboration and members of the RCSC could combine efforts and move the process along.

AISC is developing a certification program for both welding and bolting inspector for buildings. The question is what level of oversight is needed. Is it the designer level, installer level or the inspector level. Similarly, it should be considered whether this applies to shop installation or field installation.

The AISC committee is going to be looking for volunteers from the TG10 to contribute bridge knowledge; Larry Kruth is involved in this effort and will help involve TG10. Snugging of bolts is a fundamental and most important topic to cover.

Installer training or certification might involve the on-site testing and verification of the ability to properly install bolts (similar to PAUT operator certification). Guidance might be necessary to state whether certification is on a job level, or an annual certification which might require retesting.

Group to develop initial training outline to use chaired by Karl Frank. Karl Frank has past teaching experience that lends itself to the initial development of a training outline. No update on progress was available at this meeting.

Subcommittee on Geometric Tolerances

The subcommittee did not meet since the last collaboration meeting. Other industries and disciplines (e.g. welding) have tolerance suggested, however there are no guidance for tolerances for erection (e.g. sweep). The first step would be to look at common issues from contractors, erectors and fabricators.

Only tolerances that can be affected in the field would be defined. Anything set during fabrication cannot be changed.

The question was raised as to which DOTs have adopted the documents in whole. It may make sense to survey the DOTs to see what their adoption of this or any documents is.

Additional Business

Jason Stith is stepping down as TG10 Chair and will be replaced by Brian Witte – Parsons.

TG 11 – Design

Brandon Chavel – HDR, Inc.

Opening Remarks

Committee members and attendees were asked to briefly introduce themselves and a sign-in sheet was circulated.

Introductions

There were approximately 40 people in attendance at this meeting.

Administrative Items

The Task Group name was changed at the spring meeting from “Steel Bridge Handbook” to “Design” which better aligns with the task that the group currently works on. There were no concerns raised about this change. Additionally, the TG mission and vision were reviewed and similarly there were not comments or concerns raised by the group.

Technical Presentations

NCHRP 20-07/415, Proposed AASHTO Guidelines for Bottom Flange Limits of Steel Box – Don White, PhD, Georgia Tech.

Don White is soliciting input for non-composite box sections. AASHTO provides general not to exceed b/t flange limits for I-girders and this is intended to provide similar guidance for composite box sections. Don will be distributing a survey looking for input and ranking. Garrell will distribute the information to the attendees.

Guidelines for the Design of Cross-frames and Diaphragms progress

Review status and revisions, and open comments from 1st draft

Brandon Chavel reviewed the chapters and major sections of the new cross frame guideline. The new guideline is a comprehensive document that includes layout and types (common and specialized) through material selection/availability and design/analysis. There is also a “comprehensive example” included in the document which will likely be removed as the types and configurations of cross frames is too broad to capture in a single example.

The problems exists that there is rarely any uniformity of cross frame designs across states and designs. This document is intended to help resolve this issue and the “randomness” of design. Ongoing NCHRP 12-113 research work at UT Austin looking at fatigue in cross frames may need to be referenced or included. The fatigue section will likely reference this work and be updated depending on the results of the UT Austin study. This study is also looking at analysis techniques. However the TG document most likely will not look at global analysis and specific focus on the design of the cross frame members whose forces were obtained from a global analysis.

There were more than 100 comments received on the draft of the document. About 80% of the comments were editorial and organizational related. Select comments were reviewed and discussed to determine course of action.

Consistency between the TG12 and new TG11 documents needs to be assessed. Allan Barry, Chair of TG12, will look at the G12.1 and see if there are any inconsistencies.

Channel type diaphragms were not included amongst the types of typical cross-frame options for shallow sections. However, they can also offer an economical option. Similarly channels might be an option which should be mentioned. There may be a need for a section entirely related to shallow depth sections.

Back-to-back cross-frames for high load applications. Similarities exist with back-to-back cross angle scenarios and the same concerns should be highlighted in this section also. These will tend to have limited usage and guidance which lists advantages and disadvantages. Erection was a concern raised and maybe there is reason enough to also include some guidance.

Lean-on bracing section provides a general overview and direction for where more information can be found. Maybe this section should be moved to the framing arrangement section. The concern with erection was raised and it may be advisable to provide some commentary on stability during erection procedures for lean-on bracing.

Varying workpoints and min/max locations based upon design. Often engineers will receive RFIs asking to have workpoints altered. If a range was provided, the fabricator and detailer would be able to re-use the same cross-frame in more locations. When a cross-frame is being laid out it is beneficial to have the workpoints converge on a location that is part of the cross-frame gusset plate rather than the center of the girder (for example) which the fabricator cannot measure to. Similarly defining the work point along the CG of the cross frame members also can make fabrication difficult. However, if it was changed to a physical location like the back face of the angle it would make the calculations more difficult for the designer. Context is needed for why workpoints are defined in the first place and they are really there to accommodate the detailing and fabrication of cross-frames. Designers need to be made aware the minimal variations in workpoints does not affect the design.

Comments regarding section 2.2.5.2.2 may benefit from a discussion with Ted Zoli (HNTB).

Full document prepared 1-month prior to spring meeting which would be the end of April. 2nd full draft to be done in early March. It would be beneficial to set a publishing date of 2020. There are 4-sections currently in need of writing (specifically sections on design for channels, tubes, wide flange beams, built-up and bent plate). Goal is to have a final draft for T-14 meeting in January 2020. So, have a draft ready for ballot within the collaboration mid-summer 2019.

Question regarding if a section on galvanizing belongs in the document or should be part of a detailing or coatings document. This section may be removed.

A new section to consider is routing of utilities through cross frames.

Timeline for 2nd draft of document

The group is targeting mid-summer 2019 for a final draft.

Interim meetings between Collaboration Meetings, Go-To Meetings.

Dates to be scheduled.

Open Discussion for TG regarding design issues

Shane Beabes – AECOM raised a question regarding superimposed dead loads (e.g. sound barriers) and distributing the load and calculating the detailing camber; deflection effects versus camber. When casting the deck when you have already accounted for the future superimposed dead load may make casting of the deck difficult. Maybe this is more of a deflection of the completed system. Cambers are more a non-composite concept.

TG 12 - Design for Economy and Constructability

Allan Berry –RS&H

Introductions

There were approximately 25 people in attendance. A sign-in sheet was circulated and is attached.

G12.1 Guidelines to Design for Constructability and Fabrication – Path Forward

Change title of document to keep in line with the document being fabricated related. Suggested as “Guidelines to Design for Constructability and Fabrication”.

- Document is looking for publication in 2020. The timing for document development will be ballot at the end of summer 2019, work through comments at fall collaboration meeting, provide a finalized version of document to T14 in November/December for review at the T14 meeting at the end of January. From that point the document will ideally be approved and forwarded to COBS for final approval and sent to AASHTO for publishing.
- Section 2.2.5 field lengths.
- Future twin tub girder work. Awaiting finalization of research by Todd Helwig.
- Weight savings factor table. Date on it says 2001 which would imply that it needs to be looked at and see if it requires updating to reflect new costs. Move the table to the commentary and remove the date? Garrell will send out a survey to fabricators to review the table and comment. The survey will remain open for 2-weeks.
- Next steps will be working towards ballot for publishing in 2020.

General Announcements

Don White - NCHRP 20-07 Non-composite box girders. Collecting input and limited analytical study regarding concerns on composite box girders. Don White intends to distribute a survey for designers to rank bottom flange thickness or slenderness limits.

TG 5. Reviewed typical details. Develop a survey of DOTs for their typical details.

TG 13 - Analysis of Steel Bridges

Frank Russo— Michael Baker International

Frank Russo— Michael Baker International filled in Deana Nevling – Michael Baker International who was unable to attend. Committee members and attendees were asked to briefly introduce themselves and a sign-in sheet was circulated.

Introductions

There were approximately 40 people in attendance at this meeting.

General Announcements

Conferences, IBC will take place June 10-13, 2019 at the Gaylord National Resort & Convention Center in National Harbor, Maryland. There is currently a call for papers out for the conference. The conference will be back in Pittsburgh in 2020 and then rotate from there. NSBA World Steel Bridge Symposium will take place April 3-5, 2019 in St. Louis, MO.

Todd Helwig – UT Austin provided an update on his NCHRP research. Helwig is also looking into improved details for tub girders; moving top flange locations, and improved cross-frame layout.

Don White – GA Tech gave an update on the status of collaborative work with HDR and MA Grubb regarding non-composite box sections (arch ribs, straddle bents and etc...) which is currently wrapping-up. This work is looking to go to ballot at T14 in 2019. NCHRP 20-07 is an extension of the composite box study. Looking into developing “not to exceed” values for box sections. White will be distributing a survey looking for input from designers. White is also looking at straight skewed bridges and how far a line girder analysis can be accurate the results are. Is there room for further application of line girder analysis? They are currently about a year into this work for Florida DOT.

Caroline Bennett – Kansas University, galvanized distortion induced cracking research. The main focus is sign structures at this time. Bennett is also research cross frame behavior and layout in skewed bridges.

Matt Hebden – Virginia Tech, is researching cross sections with corrosion and section loss and also repair.

Sougata Roy – Rutgers, just started a new position at Rutgers.

Domenic Coletti – HDR, the TRB AFF20 is looking for research needs statements. At this time there are approximately 10 whereas there should be around 20. Domenic and Mike Culm are looking at contributing to the TRB centennial.

Frank Russo – Michael Baker International, provided an overview of the new internal and system redundancy guides. Additionally, he discussed the affect this is having on DOT and specifically WisDOT who recently received an exemption for a few of their twin tub girders.

G13.1 Guidelines for Steel Girder Bridge Analysis – Path Forward

Domenic Coletti – HDR, currently there has been no further comment from T14 regarding the recently balloted version. The TG is awaiting comment before moving forward.

Presentation: “Accelerated CSX Truss Bridge Replacement”

Joshua Orton - CDM Smith, gave a presentation on the accelerated CSX truss bridge replacement.

Replacement span slid in through the existing truss on rail, the supporting ends of the truss were cut and the truss plus the new span were supported on temporary jacking towers and the truss was ultimately lowered around the new span. The existing truss was altered to support the construction loads.

TG 15 - Data Modeling for Interoperability

Aaron Costin - University of Florida

Opening Remarks

Aaron Costin - University of Florida filled in for Sammy Elsayed - Skanska who was not able to attend the meeting. Aaron will be considered the new Vice Chair for TG15 and lead the initiatives between TG1 and TG15.

Introductions

There were approximately 30 people in attendance at this meeting. See sign-in sheet (Appendix A – Sign-in Sheet).

DOT Pool Fund Introduction

The meeting began with an overview of the BIM process and justification for the work being done both by the TG15 and the DOT pool fund. It is important to make sure that the use of the term “model” is appropriate when discussing data exchange. Similarly, it is important to keep in mind that when talking about the exchange to detailer, the information coming from a designer would be processed by the detailer so that it is properly formatted for use by CNC machines (for example).

There were many new attendees at this meeting and it was beneficial to discussion and review what BIM is and how information is defined and exchanged. Aaron then went through the development of an actual schema for defining objects, concepts and processes. The final format definition will be an IFC file once the schema is defined for the specific exchange. This is an opportunity for design practitioners to define the basics of bridge definition rather than leaving it to the software vendors. The scope of work for this stage is intended to address the most common bridge types like I-girder bridges. More complex structures will be added later. Concerns were raised regarding exposure to liability and the level of model development (e.g. what level of BIM is needed when).

The next steps will be to form a small group that will actively participate in development of the schema. Attendees should be able to make a dedicated commitment to the process moves along quickly.

Targeting IFC v5 and hoping to have the data definitions completed within a year.

TG 16 - Orthotropic Deck Panels

Duncan Paterson – HDR, Inc.

Duncan Paterson brought the meeting to order at 2:02pm and offered his welcomes. 22 individuals were in attendance.

Acceptance of 2018 Minnesota meeting minutes

- Meeting minutes from Minneapolis will be distributed to current members via email. Minutes for Minneapolis and Austin will be approved at the Spring 2019 TG16 Collaboration meeting.

Vigor Orthotropic Deck Fabrication Presentation

- Tom Hickman, VP of Marketing and Sales, presented on orthotropic deck panel fabrication for the Wittpenn Bridge.
- Discussion ensued regarding the tolerances required on the project versus what is practical and economical. Tom stated there was a number of upstart costs that would not be required on other projects, helping bring costs down.

Task Group 2 Updates – Guidance for Manufacturing Orthotropic Decks

- Duncan has created a general outline of the final document and is available on the Google Docs. Authors have the opportunity to provide text for their sections. Document is available for viewing to all committee members.
- Sougata provided an update of chapters, sections and assigned authors. Many sections still require authors.
 - Duncan will assume responsibilities for writing section 3.
 - Terry Logan is approximately 35% complete on section 4.2, 4.3, 4.5. He is targeting 75% completion by March 2019.
 - Terry is going to add a new section, section 5, regarding inspection and testing. He is targeting 75% completion by March 2019.
 - Duncan is targeting 100% completion of section 4.4 by March 2019.
 - Hannah Cheng will lead a new section regarding owner perspectives. Targeting 50% completion March 2019.
 - Daniel Stansecu provided section 4.1.4 cold roll formed fabrication. The information is available in the Google Doc for review.
 - Hannah will lead the section regarding barrier rail (MASH) testing. Targeting 50% completion March 2019.

The meeting concluded at 4:13 pm.

Collaboration Main Committee

TG1 - Brad Dillman

- Report provided in advance by Brad Dillman
- Strong attendance; total attendance of 43
- Overview of TG15/TG1 Subtask Group work by Ronnie Medlock and Aaron Costin. Three individuals volunteered to participate in subtask group. Aaron is looking for participants to this sub-task group; it is particularly important to have fabricators and detailers involved in this effort.
- Review of G1.1 Ballot Comments - Total of 129 comments received; select comments were reviewed and discussed; target is to update G1.1 per the comments by the end of October, in time for submission to AASHTO for ballot in January, 2019. This is aggressive, as there are a number of comments to incorporate, but this is the target nevertheless.
- Update of G1.2 - Discussed the option of merging G1.2 and G1.4 in the next update. It was decided to keep these as separate documents so as to avoid potential delays in approval of a merged guide document (debate over details in G1.4 may delay approval of items in G1.2). Therefore, work will continue on the G1.2 update. First round of comments received, but comments were limited. Chair is currently speaking with an individual to lead the G1.2 effort as work continues on the G1.1 update. Discussions ongoing . . .
- WSBS Presentation on Clear Communication of Design Requirements - Chair solicited items to include in the presentation for the 2019 Symposium. Presentation was given at 2018 Symposium, and will be given again at the 2019 conference.

TG2 - Heather Gilmer

- S2.1 is going to be combined with Chapter 11 from AASHTO Construction specification and D1.5 fabrication provisions. This will be “owned” by T-17.
- The first version will just cover vehicular bridges. Then in next phases they will incorporate pedestrian bridges, tubular structures, etc.
- Discussed when notification actually occurs. Cutting of material is notification.
- Rocap testing. This is already done by the manufacturer or distributor. Resolved that we do not need to do a field test except that it can be required on demand if there are issues. The FHWA is ok with this.
- Mandatory torque tests will remain mandatory.
- Alex Bardow and other T-17 members also agreed with these positions.

TG4 - Jamie Hilton

- 33 people on sign in sheet
- DOT involvement is good.
- G4.1 document went to T14, but haven’t heard back yet.
- Started looking at other documents. Original S4.1 may be archived. But there may be some parts that should be kept. Organized a task group to look into this document.

- G4.2 – qualifications on bolting inspectors. They are going to take another look and some revisions.
- Discussed how new technology will affect QA/QC. There may be no shop drawings in the future.
- Why check shop drawings? To give the owner/consultant the chance to confirm that the design drawings have been interpreted correctly. The main question is what kind of deliverable from the fabricator do owners/consultants actually need?

TG8 - Jeff Carlson

- Reviewed galvanizing spec. It is out for ballot and it closes in a few weeks.
- After ballots close then Anna will evaluate what the next steps should be. Rewrite or move forward.
- Tim McCullough from FDOT is going to be new chair.
- TxDOT has some TSC tests going on in their salt fog chamber and at Corpus Christi.

TG9 - Ronnie Medlock for Mike Culmo

- Mike is getting the task group going again.
- Should consider AASHTO construction specification section 19 and testing needs.
- Mike is looking for members; Josh Orton and Jihshya Smith expressed interest.

TG10 - Jason Stith

- 40 attendees
- Don White presented about bottom flange slenderness and min thickness.
- S10.1 – has been updated and sent out for ballot. Will try to get to T14 by January.
- Discussed geometric tolerance requirements/guidelines.
- Jason thinks that others may add some good new ideas. Brian Witte will be new chair. Brian will try to get more contractors involved.

TG2/TG4/TG10 Combined - Jason Stith

- Bolting for Bolters
- Will focus on two tracks.
- Qualification system (Anna)
- Instructional videos (Karl) – funded by RCSC/Larry to be completed in High Steel facility.
- Will consider use of the old FHWA material.

TG11 - Brandon Chavel

- About 40 in attendance
- Don White presented about bottom flange slenderness and min thickness.
- Discussed new document for “Guidelines for design of cross-frames and diaphragms”.
- Received comments back on document and they discussed the major items in the meeting. Still need a couple of sections that need authors. Will hopefully put up for ballot in mid to late summer 2019.

TG 12 - Allan Berry

- Attendance of 27.
- Change name of task group to “Design for constructability and fabrication”
- Discussed status of document. Have received comments and many of the comments have been taken care of, but about 25 still left outstanding.
- Goal is to get new version of G12.1 published by 2020.
- Regular discussion around table for extending flanges to support. Old date reference of 2001 was discussed. Chris said that he would survey fabricators on this topic.
- Don White presented about bottom flange slenderness and min thickness.
- Jason Lloyd presented regarding internal redundancy.
- Discussed TG14 about common steel bridge repairs (Kyle Smith is chair). “Repair and rehabilitation”.
 - Update from Kyle Smith
 - This was their initial brainstorming meeting.
 - Virginia Tech is doing some relevant research on the topic.
 - This is for repairs for existing steel bridge, not in the shop.
 - Ronnie is going to get AWS D1.7 to Kyle.

TG13 - Frank Russo

- 38 in attendance
- 1st half was administrative related. Each professor in the room was allowed to talk about research at their Universities and also DOTs were allowed to speak about ongoing steel related research.
- Frank provided an update on passage of IRM and SRM documents.
- Discussed the group on auto exception of twin tub girder
- Don White presented about bottom flange slenderness and min thickness.
- Domenic Colletti provided G13.1. Out for T14’s consideration.
- Josh Orton presented on Accelerated CSX Truss Bridge Replacement.
- Discussed editorial comments for next document: “Guidelines for steel truss bridge analysis”

TG15 – Aaron Costin

- Did not meet
- See TG1 regarding joint task group

TG16 – Duncan Paterson

- Presentation from Tom Hickman on fabrication of Whitpenn bridge.
- Discussion of why orthotropic fabrication goes overseas.
- Sub task group 2 – “Guidance for manufacturing orthotropic decks”
 - Writing of this document is in process.
 - Goal of March 1, 2019 for finishing document internally within group.

NSBA Technical Committee Update - Ronnie Medlock

- 4 research / development topics were identified at the AISC powwow in New Orleans; these will be discussed and moved along at the TC meeting
- Meeting on October 29, 2018.
- Started redundancy task group in August. Position on tub girders should be finalized in January at next meeting of this task group.
- Gave an update on new NSBA re-organization.
- Going to be a proposal for how membership on TG's moving forward.
 - Voting
 - Who gets listed on front cover of specifications?
 - Asked Chairs to provide a recommended membership list.
 - Committee secretaries will help following up with action items, agendas, notes.

Administration - Ronnie Medlock

- With reorganization of NSBA and AISC, AISC has stepped up to help Collaboration operations, including
 - Assigned secretaries for TG to take notes, develop agendas, and keep action items moving
 - Travel funding for some participants, including owners and academics
 - Increased staff support at meetings
 - Organization – AISC is recommending changes, including defined membership on TGs and associated two-year terms with infinite renewals; this will be written up for review by the Collaboration Main Committee; such members are eligible for travel funds, except for industry members.
- Next meeting – looking at last 2 weeks of April (usually Tuesday through Thursday).

Appendix A – Meeting Agendas



NSBA Collaboration – Fall 2018

Task Group TG 1: Detailing

Sheraton Austin Hotel at the Capitol

701 East 11th Street.

Austin, TX 78701

Task Group Mission: This Task Group is specifically responsible for the creation and maintenance of guidelines and best practices for the creation of clear concise design and fabrication drawings.

Task Group Chair: Brad Dillman - High Steel Structures (bdillman@high.net)

Meeting Agenda - Tuesday, October 9 (1:00 PM to 3:00 PM)

1. Attendee Introductions - All (1:00 PM – 1:05 PM)
2. G1.1 Ballot Comments (1:10 PM – 2:00 PM)
 - a. Review and Disposition of Comments
 - b. Next Steps for G1.1 Approval
3. G1.2 Update (2:00 PM – 2:30 PM)
 - a. Outline of path forward
 - b. G1.2 Drawing Files – Establish team to update or develop new files
 - c. G1.2 Comments Received to-date – Brief review and call for additional comments
4. BIM for Bridges and Structures Pooled Fund Study (2:30 PM – 2:45 PM)
 - a. Brief Overview
 - b. Establish TG15/TG1 Subtask Group (led by Aaron Costin)
5. 2019 NASCC Presentation on Communication of Design Requirements (2:45 PM – 2:55 PM)
6. Final Discussion
7. Adjourn



NSBA Collaboration – Fall 2018
Task Group TG 2: Fabrication and Repair
Sheraton Austin Hotel at the Capitol
701 East 11th Street.
Austin, TX 78701

Task Group Mission: This Task Group aims to achieve quality and value in the fabrication of steel bridges through standardization of steel bridge fabrication across the nation. Historically, State Departments of Transportation (DOTs) have written their specifications based on AASHTO standards and their own individual experiences.

Task Group Chair: Heather Gilmer - HRV (hgsteelfab@gmail.com)

Meeting Agenda - Monday, October 8 (1:00 PM to 5:00 PM)

1. Attendee Introductions - All
2. Don White to briefly discuss upcoming study of bottom flange thickness limits for steel box girders
3. Updates
 - a. S2.1
 - b. Joint bolting TG
 - c. T-17 meeting
4. AASHTO steel fabrication specification—resolution, in general terms, of discrepancies between S2.1 and AASHTO Chapter 11 approaches
5. Other topics as time permits
 - a. S2.1 Scribing/etching markings
 - b. G2.2 Improper preheat
 - c. S2.1 Slip coefficients
 - d. S2.1 Preinstallation verification
 - e. S2.1 Procedures/submittals
 - f. G2.2 Framing members too short

g. G2.2 Orthotropic deck repairs

h. S2.1 Splice gap

Adjourn



NSBA Collaboration – Fall 2018
Task Group TG 2, TG 4, TG 10: Collaborative
Meeting

Sheraton Austin Hotel at the Capitol
701 East 11th Street.
Austin, TX 78701

Task Group Mission: The Task Group itself is a collaboration of other Task Groups like TG2, TG4 and TG10.

Task Group Chairs: - Heather Gilmer – HRV (hgsteelfab@gmail.com), Steve Duke - Florida DOT (Steve.Duke@dot.state.fl.us) and Jason Stith - Michael Baker International (Jason.Stith@mbakerintl.com)

Meeting Agenda - Wednesday, October 10 (10:00 AM to 12:00 PM)

1. Attendee Introductions - All (10:00 AM – 10:15 AM)
2. Review Subcommittee Direction (10:15 – 10:30)
 - a. Change of direction at last meeting with new theme:

We have a system to qualify welders, why not something similar for bridge bolters?
 - b. Formed to subcommittee 2 subcommittees chaired by Anna Petroski and Karl Frank
3. Qualification of Bridge Bolters (Chair: Anna Petroski) (10:30 – 11:15)
 - a. Summary of interim meetings
 - b. Current action items
 - c. Path forward / Discussion
4. Outline of Instructional Material (Chair: Karl Frank) (11:15 – 11:45)
 - a. Current action items
 - b. Path forward/ Discussion
5. General Discussion (11:45 – 11:55)
6. Adjourn (11:55 – 12:00)



NSBA Collaboration – Fall 2018

Task Group TG 10: Erection

Sheraton Austin Hotel at the Capitol

701 East 11th Street.

Austin, TX 78701

Task Group Mission: This Task Group develops guidelines that establish and define the basic, minimum requirements for the transportation, handling and erection of steel bridge components to ensure safe and accurate steel erection as well as quality and value in the completed bridge structure.

Task Group Chair: Jason Stith - Michael Baker International (Jason.Stith@mbakerintl.com)

Brian Witte – Parsons (Brian.Witte@Parsons.com) **Future Chair**

Meeting Agenda - Tuesday, October 9 (3:00 PM to 5:00 PM)

1. Attendee Introductions - All (3:00 PM – 3:15 PM)
2. NCHRP 20-07/Task 415 Bottom Flange Limits for Steel Boxes (3:15 – 3:45)
 - a. Introduction and investigation inquiry
 - b. Pass out and complete survey
 - c. Open discussion
3. S10.1 Revisions (3:45 – 4:00)
 - a. Updates to Appendix A-C (align with new ASTM F3125)
 - b. Cover Pictures
 - c. Next Steps (Collaboration Balloting, AASHTO review, etc.)
4. Bolting for Bolter Update (4:00 – 4:20)
 - a. System exist to qualify welders, need a system to qualify bolters
 - b. Group to develop a document that describes the qualifications for bridge bolters to be chaired by Anna Petroski
 - c. Group to develop initial training outline to use chaired by Karl Frank.
5. Subcommittee on Geometric Tolerances (4:20 – 4:50)
 - a. Did not meeting in the interim.
 - b. Need to identify point person for group.
 - c. Next steps
6. Adjourn and summary (4:50 – 5:00)



NSBA Collaboration – Fall 2018
Task Group TG 11: Design
Sheraton Austin Hotel at the Capitol
701 East 11th Street.
Austin, TX 78701

Task Group Mission: This Task Group is primarily responsible for the development and maintenance of consensus guidelines to assist with the design of steel bridges and their components.

Task Group Chair: Brandon Chavel - HDR (brandon.chavel@hdrinc.com)

Meeting Agenda - Tuesday, October 9 (8:00 AM to 10:00 AM)

1. Attendee Introductions - All (8:00 AM – 8:10 AM)
2. Administrative Items (8:10 AM – 8:15 AM)
 - a. The Task Group name has been changed to “Design”
 - b. Review of Vision and Mission of the Task Group.
3. Don White (8:15 AM – 8:30 AM)
 - a. NCHRP 20-07/415, Proposed AASHTO Guidelines for Bottom Flange Limits of Steel Box Girders.
 - b. Discussion and Survey
4. Guidelines for the Design of Cross Frames progress (8:30 AM – 9:30 AM)
 - a. Review status and revisions, and open comments from 1st draft
 - b. Timeline for 2nd draft of document
 - c. Interim meetings between Collaboration Meetings, Go-To Meetings. Dates to be scheduled.
5. Open Discussion for TG regarding design issues (9:30 AM – 9:55 AM)
6. Adjourn



NSBA Collaboration – Fall 2018
Task Group TG 12: Design for Constructability
and Fabrication

Sheraton Austin Hotel at the Capitol
701 East 11th Street.
Austin, TX 78701

Task Group Mission: This Task Group primarily focuses on addressing the questions that have been and are continually asked concerning the constructability of steel bridges according to the latest practice for steel mills, fabrication, detailing, erection, and design.

Task Group Chair: Allan Berry - RS&H (allan.berry@rsandh.com)

Meeting Agenda - Monday, October 8 (1:00 PM to 5:00 PM)

1. Attendee Introductions - All (1:00 PM – 1:10 PM)
2. Updated G12.1 Guidelines to Design for Constructability and Fabrication – Allan Berry, RS&H (1:10 PM – 2:10 PM)
 - a. Status of document revisions.
 - b. Process and timetable for document review and approval by the full Collaboration, AASHTO T-14, SCOBS, and AASHTO publishing.
 - c. Discussion of outstanding comments and issues.
3. NCHRP 20-07/415, Proposed AASHTO Guidelines for Bottom Flange Limits of Steel Box Girders Fabrication – Don White, Georgia Institute of Technology (2:10 PM – 2:30 PM)
 - a. Summarize the project and request input from the group.
4. Break (2:30 PM – 2:45 PM)
5. New Task Group 5: Develop a Steel Repair and Rehabilitation document – Kyle Smith, GPI (2:45 PM – 4:30 PM)
 - a. Discuss objectives and determine mission statement.
 - b. Outline list of topics to be addressed and discuss potential additional/replacement items.
 - c. Solicit volunteers for writing assignments.
6. *AASHTO Guide Specification for Internal Redundancy of Mechanically-fastened Built-up Steel Members* - Jason Lloyd, NSBA (4:30 PM – 5:00 PM)
 - a. Presentation for a proposed evaluation guide.
7. Open-floor discussion for feedback on proposed guide.



NSBA Collaboration – Fall 2018
Task Group TG 13: Analysis of Steel Bridges
Sheraton Austin Hotel at the Capitol
701 East 11th Street.
Austin, TX 78701

Task Group Mission: This Task Group focus has been the development of guidance on the issues related to steel girder bridge analysis and to educate Engineers so that they can better make decisions for their own projects.

Task Group Chair: Deanna Nevling - Michael Baker International (DNevling@mbakerintl.com)

Fall 2018 Meeting Chair: Frank Russo – Michael Baker International

Meeting Agenda - Wednesday, October 10 (8:00 AM to 12:00 PM)

1. Attendee Introductions - All (8:00 AM – 8:15 AM)
2. Housekeeping (8:15 AM – 8:30 AM)
 - a. Sign-in Sheet
 - b. Turn Off/Mute Cell Phones and Type Softly on Computers
 - c. Meeting Minutes – Minneapolis, MN – May 1, 2018
3. General Announcements (8:30 AM – 9:00 AM)
 - a. Conferences/Research/Publications
 - b. NSBA Update
 - c. FHWA Update – Dayi Wang, FHWA Steel Specialist
 - d. TRB AFF20 (Steel Bridges Committee) Update – Domenic Coletti, Chair
 - e. AASHTO SCOBS Update (T-14 Structural Steel Design) – Frank Russo
4. G13.1 *Guidelines for Steel Girder Bridge Analysis* – Domenic Coletti (9:00 AM – 9:30 AM)
 - a. Path Forward
5. Presentation: ““Accelerated CSX Truss Bridge Replacement,” – Joshua Orton (9:30 AM – 10:00 AM)

6. Break (10:00 AM – 10:15 AM)
7. G13.2 *Guidelines for Steel Truss Bridge Analysis* (10:15 AM – 12:00 PM)
 - a. Purpose Statement: *The Guidelines for Steel Truss Bridge Analysis provides engineers with guidance on methods of analysis for steel trusses and can be used for analyzing the trusses for design, erection, rehabilitation, or load rating.*
 - b. Volunteers to Write Sections
 - c. Review Comments Received from TG 13
 - d. Path Forward: Submit New and Revised Section by January 31, 2019

Revised Document Sent out for Review by February 28, 2019

Comments Complied and Discussed During Spring 2019 Meeting
8. Adjourn (12:00 PM)



NSBA Collaboration – Fall 2018
Task Group TG 16: Orthotropic Deck Panels
Sheraton Austin Hotel at the Capitol
701 East 11th Street.
Austin, TX 78701

Task Group Mission: This Task Group aims to establish an Orthotropic Steel Deck (OSD) panel design that can be cost effectively produced in the United States for the bridge market.

Task Group Chair: Duncan Paterson - HDR (Duncan.Paterson@hdrinc.com)

Meeting Agenda - Tuesday, October 9 (1:00 PM to 5:00 PM)

1. Attendee Introductions - All (1:00 PM – 1:10 PM)
2. General updates and announcements, review of previous meeting minutes (1:10 PM – 1:25 PM)
3. Presentation from Vigor on Orthotropic Deck Fabrication (1:25 PM – 2:00 PM)
4. Task Group updates (2:00 PM – 4:00 PM)
 - a. Rolled formed ribs
 - b. State of Practice Synthesis
5. Old business and additional discussion (4:30 PM – 5:00 PM)
 - a. Floorbeam and diaphragm details
 - b. Rib Standardization
6. Adjourn

Appendix B – Attendee Registration List

Last Name	First Name	Company
Armijos-Moya	Stalin	The University of Texas at Austin
Bardow	Alexander	MassDOT
Beabes	Shane	AECOM
Bennett	Caroline	University of Kansas
Berry	Allan	RS&H
Blakemore	Frank	Garver
Bustos	Art	AISC
Butz	Travis	Burgess and Niple
Carlson	Jeff	NSBA
Cervo	Nicholas	HDR
Cheng	Xiaohua "Hannah"	New Jersey DOT
Chronister	James	Stupp Bridge Company
Coletti	Domenic	HDR
Collins	Rich	V&S Galvanizing
Collins	William	University of Kansas
Costin	Aaron	University of Florida
Crosby	Chris	Cianbro Fabrication and Coating
Culmo	Michael	CME Associates, Inc.
Cummings	Terry	TRC Engineers, Inc
Daugherty	Leslie	Alaska DOT&PF
Dillman	Brad	High Steel
Dreyer	Jason	Oates Associates, Inc.
Dunlap	Robin	high Steel Structures
Duran	Bernardo	AZZ Metal Coatings
Dzikowski	Philip	Wood Environment & Infrastructure Solutions
Engelhardt	Michael	University of Texas Ferguson Laboratory
Farris	Jamie	TxDOT
Fish	David	Texas Department of Transportation
Frank	Karl	NSBA
Freeman	Christina	FDOT
Garcia	Richard	TXDOT
Garrell	Christopher	NSBA
Gast	John	CONWELD
Ge	Xiaomeng	UT Austin
Gilbert	Paul	Metalplate Galvanizing, LP
Gilmer	Heather	HRV
Golabek	Dennis	WSP
Gunter	Caleb	South Carolina Department of Transportation
Haberle	Christian	Haberle Steel
Harrison	Randy	W&W AFCO Steel - Hirschfeld Division
Hartle	Teresa	Georgia Department of Transportation
Hawkins	Chad	SCDOT

Last Name	First Name	Company
Hebdon	Matt	Virginia Tech
Helwig	Todd	University of Texas at Austin
Hill	Jenelle	Chicago Department of Transportation
Hilton	Jamie	KTA-Tator
Holt	John	HDR
Horwhat	Robert	TRC
Jacobi	Steven	Oklahoma Department of Transportation
Jamshidi	Amir	Supreme Group
Jensen	Rick	Idaho Transportation Department
Johnson	Bruce	Oregon DOT
Kavoura	Florentia	University of Texas at Austin
Kochersperger	Greg	HDR
Kotha	Srinivasa (Sri)	PGH Wong Engineering Inc.
Kumar	Pradeep	HDR
Langill	Tom	American Galvanizers Association
Lin	Jihshya	MnDOT - Bridge Office
Liu	Yangqing	University of Texas at Austin
Lloyd	Jason	NSBA
Loftus	Pat	Industrial Steel Construction (ISC)
McEleney	Bill	Consultant
McKenna	Rob	HDR
Medlock	Ronnie	High Steel
Messler	Robert	V&S Galvanizing
Michalk	Teresa	TxDOT
Miller	Christopher	Texas Department of Transportation
Monson	Raymond	Pennoni
Mullins	Randall	Alabama Department of Transportation
Nelson	James	Iowa Department of Transportation
Noernberg	Dennis	W&W AFCO Steel
O'Daniel	Kyle	Stupp Bridge Company
Orton	Joshua	CDM Smith
Park	Sunghyun	The University of Texas at Austin
Percassi	Stephen	Bergmann
Petroski	Anna	DOT Quality Services
Poynter	Chris	Stupp Bridge Company
Ream	Tony	HDR
Reichenbach	Matthew	University of Texas at Austin
Samaras	Vasilis	LJA Engineering
Sauser	Phillip	US Army Corps of Engineers
Sheppard	Ted	The DuRoss Group
Slein	Ryan	Georgia Tech
Smith	Kyle	GPI
Snyder	Dan	SMDI

Last Name	First Name	Company
Speck	Todd	TxDOT
Stachel	Robert	HRV Conformance Verification Associates, Inc.
Stine	Tabitha	AISC
Stith	Jason	Michael Baker
Stratton	Jonathan	The Hales Group - Structural Steel Products Corp.
Streeter	Brad	D.S. Brown Company
Tayarani	Maury	Pennoni
Tilahun	Addisu	Texas Department of Transportation
Tucker	Jason	TxDOT
Turco	Gregory	Texas Department of Transportation
Walker	Justin	Mississippi DOT
Wang	Dayi	FHWA, Office of Bridges and Structures
Wang	Yang	University of Texas at Austin
White	Don	Georgia Tech
William	Gergis	AECOM
Wilson	Nathan	Georgia DOT
Witte	Brian	Parsons
Wolfe	Brian	Maryland Transportation Authority
Zecchin	Esteban	UT Austin