



Steel Day 2023 – Industry Update

Brian Raff – Vice President | Market Development



Smarter.
Stronger.
Steel.



MAKING CONNECTIONS

SteelDays 2023

October 17-20

www.aisc.org/steelday



Smarter.
Stronger.
Steel.

Who We Are

Meet the NSBA Team



National Steel Bridge Alliance

Technical Institute & Trade Association

Not-for-profit: working for the advancement of steel bridge design and construction

Services: free resources, forums, AASHTO/NSBA collaboration, preliminary design & evaluation tools, continuing education

Meet the **NSBA**

Bridge Steel Specialists

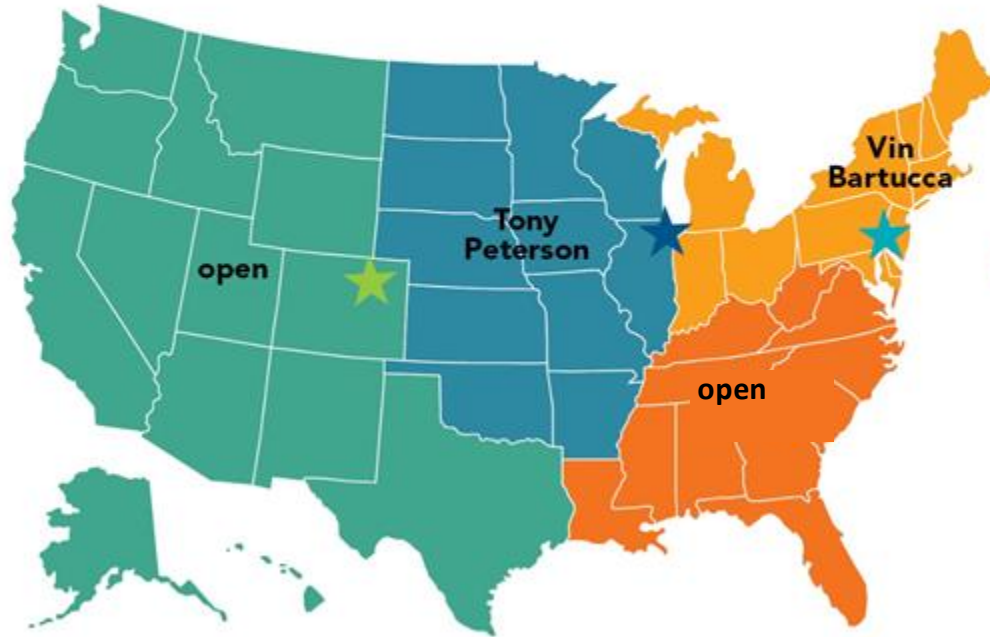
Western Market
open

Central Market
Tony Peterson

Southeast Market
open

Northeast Market
Vin Bartucca

Steel Solutions Center
Travis Hopper



Leadership Team

Senior Director of
Market Development
Jeff Carlson ★

Chief Bridge Engineer
Chris Garrell ★



STEEL SOLUTIONS CENTER

The Steel Solutions Center is your gateway to nearly 100 years of steel knowledge, and it's just a phone call or email away.

.....

aisc.org/askaisc

solutions@aisc.org

866.ASK.AISC



answer your technical questions about structural steel design.



help you understand NSBA's technical publications.



help you reduce project risk by connecting decision-makers with AISC bridge-member fabricators for price and schedule information.



provide conceptual solutions for steel girder and beam bridges, including framing plan and girder spacing concepts, preliminary girder sizes, and steel tonnage estimates.



[Home](#)

[Trade Show](#)

[Hotels](#)

[FAQs](#)

[Newsroom](#)

[For Exhibitors](#)

[More](#)

NASCC: THE STEEL CONFERENCE

World Steel Bridge Symposium
QualityCon
Architecture in Steel
SafetyCon
SEICon24
SSRC Annual Stability Conference
NISD Conference on Steel Detailing

HENRY B. GONZALEZ CONVENTION CENTER | MARCH 20–22, 2024
SAN ANTONIO

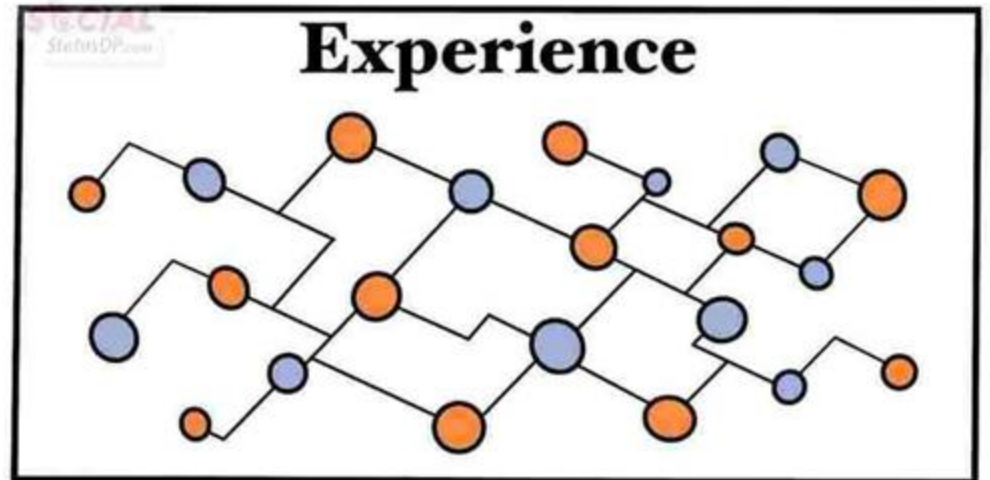
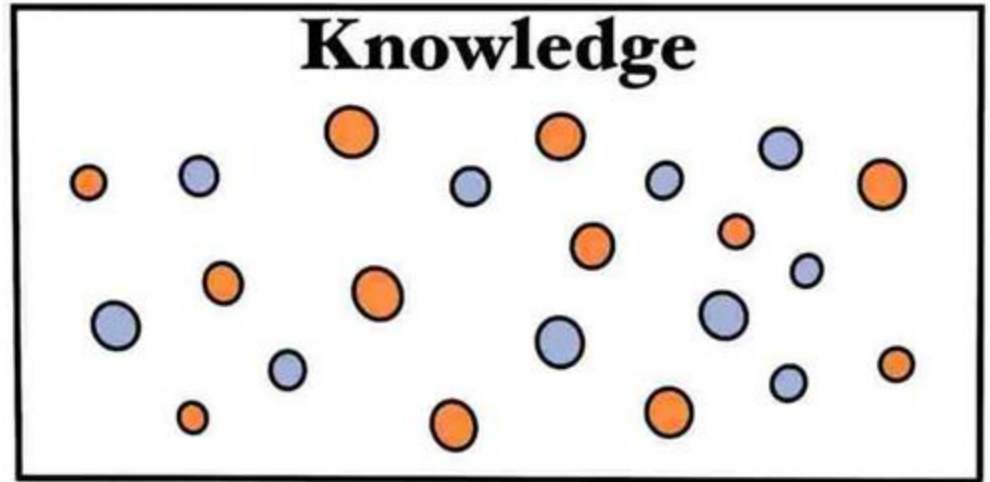
Registration for NASCC: The Steel Conference 2024 opens in January!

Knowledge Base

Before we get started...

Guidelines and such are no substitute for talking with the experienced engineers in your office, colleagues, fabricators, erectors, or NSBA.

Welding Example



Presentation Outline

- NSBA Website
 - Design & Estimating Resources
 - *Modern Steel Construction*
 - AASHTO/NSBA Collaboration
- Current Initiatives & Other Available Resources
- Market Trends





NATIONAL STEEL BRIDGE ALLIANCE

- WORLD STEEL BRIDGE SYMPOSIUM
- AASHTO/NSBA COLLABORATION
- ADVOCACY
- ABOUT NSBA

A Century of American Steel Bridges



New Interactive Bridge Timeline
Did you know that the word "dinosaur" is younger than the oldest U.S. steel bridge that's still in service? A lot happened between 1838 and 1938—including the construction of more than 25,000 U.S. steel bridges that are still in service. Check out our new interactive timeline featuring a century of steel bridges throughout history!

[VIEW NOW](#)

Featured Prize Bridge Award Winner



Governor Mario M. Cuomo Bridge
The \$3.99 billion Governor Mario M. Cuomo Bridge—the largest bridge project in New York history and one of the largest transportation design-build contracts in the United States to date—replaced the old Tappan Zee Bridge over the Hudson River. It is designed for a 100-year service life.

[LEARN MORE](#)

NSBA Website

Design and Estimating

AASHTO/NSBA Collaboration Documents



Essential reference material on contract standardization and best practices for design, fabrication, and construction.

[VIEW MORE](#)

Design Resources and Software



These are the tools you need to design a great bridge, from span to weight curves to LRFD Simon, NSBA Splice, and IRM Evaluator.

[VIEW MORE](#)

Find a Certified Fabricator



Partner with a firm that qualifies for the industry's most recognized quality certification program.

[VIEW MORE](#)

Plate Availability



Here you'll find plate availability tables.

[VIEW MORE](#)

Technical Resources and Research



Here you'll find case studies, local preferred practices and standards, and more.

[VIEW MORE](#)

Steel Bridge Design Handbook



This is the most current version of the document originally produced by US Steel in the 1970s.

[VIEW MORE](#)

Steel Solutions Center



Get expert help with technical and conceptual solutions—free of charge.

[VIEW MORE](#)

Bridge Innovations



Check out the latest bridge innovations.

[VIEW MORE](#)

Redundancy and Fracture-Critical Members



Information on redundancy and fracture-critical members.

[VIEW MORE](#)

Corrosion Protection and Durability Resources



There are several proven ways to protect steel bridges from corrosion, and no single solution is best for all circumstances.

[VIEW MORE](#)

WSBS Past Conference Proceedings



Access archival sessions and conference proceedings from past World Steel Bridge Symposiums.

[VIEW MORE](#)

Extending In-Service Life



Existing steel bridges throughout the country can get a new lease on life thanks to the many proven rehabilitation and strengthening techniques that can easily take advantage of existing steel and extend the bridge's useful life.

[VIEW MORE](#)

Designer Resources – Now Available

Achieving Speed in Steel Bridge Fabrication

Describe the best practices for executing the fabrication of a steel bridge project.

Major Chapters

- Shop drawing approval
- Shop assembly
- Quality control
- Best practices on behalf of the owner
- Best practices on the behalf of the designer
- Best practices on design-build project

About this Version: New document

Status: aisc.org/fasterbridgefab



Designer Resources – Now Available

Uncoated Weathering Steel Reference Guide

Reduce cost from fabrication & life cycle cost through long term maintenance costs

Major Chapters

- Benefits and Appropriate Use.
- Design and Detailing Recommendations.
- Fabrication and Construction Considerations
- In-Service Inspection and Maintenance.
- Preservation and Repair.

About this Version: New document

Status: aisc.org/uwsguide



Designer Resources – Now Available

Single Coat IOZ Synthesis Study

SIOZ is a cost-effective solution to corrosion protection in instances where weathering steel may not be appropriate.

Major Chapters

- Literature Review.
- Survey of Current Bridge Inventory.
- Field Assessment of In-Service Bridges.
- Recommendations for Further Research.

About this Version: New document

Status: aisc.org/sioz-report



Designer Resources – Now Available

Lean-on Bracing Guide

Easiest method for achieving cost effectiveness for straight steel I-girder bridges with little or no skew.

Major Chapters

- Stability Fundamentals.
- Available Literature and Research.
- Design Approach.
- Fabrication and Erection Consideration.
- Case Studies.
- Design Examples - Two.

About this Version: New document

Status: aisc.org/leanonbracing



Achieving Speed From Design to Delivery

Material Procurement - Plate

steelwise

Steel Plate Availability for Highway Bridges

BY CHRISTOPHER BARRELL, PE, AND THOMAS HOPPER, PE

An overview of plate sizes commonly produced by domestic mills.

A QUESTION MANY ENGINEERS encounter when designing highway bridges concerns the availability of various plate lengths, widths, and thicknesses. The production and options are more infinite

and overwhelming. However, understanding the availability of plate material while performing design assistance will ensure that the material specified can be readily sourced from domestic mill mills, which

usually yields improved fabrication speed and better accuracy for the overall bridge superstructure.

The information listed in this article is not intended to be an all-encompassing assessment of available plate that a mill may be able to produce. It is intended to provide an overview of where the thickness, width, and length produced by each mill intersect in plate availability. It is intended to provide an overview of where the thickness, width, and length produced by each mill intersect in plate availability. It is intended to provide an overview of where the thickness, width, and length produced by each mill intersect in plate availability.



Fig. 1. Intersection of plate thickness, width, and length availability.



Fig. 2. Domestic mill locations.

10 | ENR | September 14, 2015

steelwise

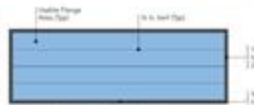


Fig. 3. Domestic mill sizes vary in flange lengths.



Fig. 4. Multiple flange lengths produce

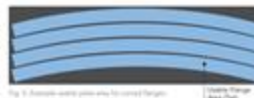


Fig. 5. Domestic mill sizes vary in flange lengths.



Fig. 6. Usable flange areas for a fixed-end

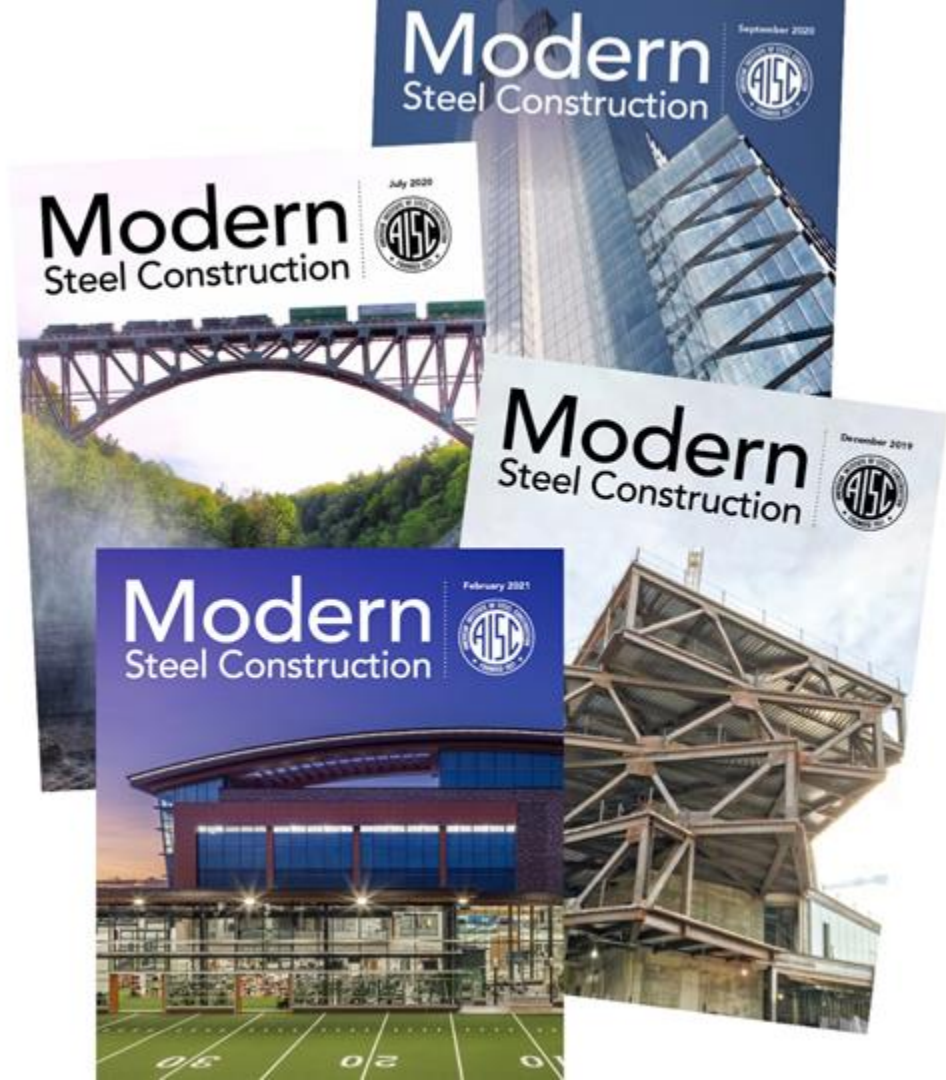
10 | ENR | September 14, 2015

AISC 360-10 Grade 50C
 1/2" 1/4" 3/8" 1/2" 5/8" 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2" 2 1/4" 2 1/2" 2 3/4" 3" 3 1/4" 3 1/2" 3 3/4" 4" 4 1/4" 4 1/2" 4 3/4" 5" 5 1/4" 5 1/2" 5 3/4" 6" 6 1/4" 6 1/2" 6 3/4" 7" 7 1/4" 7 1/2" 7 3/4" 8" 8 1/4" 8 1/2" 8 3/4" 9" 9 1/4" 9 1/2" 9 3/4" 10" 10 1/4" 10 1/2" 10 3/4" 11" 11 1/4" 11 1/2" 11 3/4" 12" 12 1/4" 12 1/2" 12 3/4" 13" 13 1/4" 13 1/2" 13 3/4" 14" 14 1/4" 14 1/2" 14 3/4" 15" 15 1/4" 15 1/2" 15 3/4" 16" 16 1/4" 16 1/2" 16 3/4" 17" 17 1/4" 17 1/2" 17 3/4" 18" 18 1/4" 18 1/2" 18 3/4" 19" 19 1/4" 19 1/2" 19 3/4" 20" 20 1/4" 20 1/2" 20 3/4" 21" 21 1/4" 21 1/2" 21 3/4" 22" 22 1/4" 22 1/2" 22 3/4" 23" 23 1/4" 23 1/2" 23 3/4" 24" 24 1/4" 24 1/2" 24 3/4" 25" 25 1/4" 25 1/2" 25 3/4" 26" 26 1/4" 26 1/2" 26 3/4" 27" 27 1/4" 27 1/2" 27 3/4" 28" 28 1/4" 28 1/2" 28 3/4" 29" 29 1/4" 29 1/2" 29 3/4" 30" 30 1/4" 30 1/2" 30 3/4" 31" 31 1/4" 31 1/2" 31 3/4" 32" 32 1/4" 32 1/2" 32 3/4" 33" 33 1/4" 33 1/2" 33 3/4" 34" 34 1/4" 34 1/2" 34 3/4" 35" 35 1/4" 35 1/2" 35 3/4" 36" 36 1/4" 36 1/2" 36 3/4" 37" 37 1/4" 37 1/2" 37 3/4" 38" 38 1/4" 38 1/2" 38 3/4" 39" 39 1/4" 39 1/2" 39 3/4" 40" 40 1/4" 40 1/2" 40 3/4" 41" 41 1/4" 41 1/2" 41 3/4" 42" 42 1/4" 42 1/2" 42 3/4" 43" 43 1/4" 43 1/2" 43 3/4" 44" 44 1/4" 44 1/2" 44 3/4" 45" 45 1/4" 45 1/2" 45 3/4" 46" 46 1/4" 46 1/2" 46 3/4" 47" 47 1/4" 47 1/2" 47 3/4" 48" 48 1/4" 48 1/2" 48 3/4" 49" 49 1/4" 49 1/2" 49 3/4" 50" 50 1/4" 50 1/2" 50 3/4" 51" 51 1/4" 51 1/2" 51 3/4" 52" 52 1/4" 52 1/2" 52 3/4" 53" 53 1/4" 53 1/2" 53 3/4" 54" 54 1/4" 54 1/2" 54 3/4" 55" 55 1/4" 55 1/2" 55 3/4" 56" 56 1/4" 56 1/2" 56 3/4" 57" 57 1/4" 57 1/2" 57 3/4" 58" 58 1/4" 58 1/2" 58 3/4" 59" 59 1/4" 59 1/2" 59 3/4" 60" 60 1/4" 60 1/2" 60 3/4" 61" 61 1/4" 61 1/2" 61 3/4" 62" 62 1/4" 62 1/2" 62 3/4" 63" 63 1/4" 63 1/2" 63 3/4" 64" 64 1/4" 64 1/2" 64 3/4" 65" 65 1/4" 65 1/2" 65 3/4" 66" 66 1/4" 66 1/2" 66 3/4" 67" 67 1/4" 67 1/2" 67 3/4" 68" 68 1/4" 68 1/2" 68 3/4" 69" 69 1/4" 69 1/2" 69 3/4" 70" 70 1/4" 70 1/2" 70 3/4" 71" 71 1/4" 71 1/2" 71 3/4" 72" 72 1/4" 72 1/2" 72 3/4" 73" 73 1/4" 73 1/2" 73 3/4" 74" 74 1/4" 74 1/2" 74 3/4" 75" 75 1/4" 75 1/2" 75 3/4" 76" 76 1/4" 76 1/2" 76 3/4" 77" 77 1/4" 77 1/2" 77 3/4" 78" 78 1/4" 78 1/2" 78 3/4" 79" 79 1/4" 79 1/2" 79 3/4" 80" 80 1/4" 80 1/2" 80 3/4" 81" 81 1/4" 81 1/2" 81 3/4" 82" 82 1/4" 82 1/2" 82 3/4" 83" 83 1/4" 83 1/2" 83 3/4" 84" 84 1/4" 84 1/2" 84 3/4" 85" 85 1/4" 85 1/2" 85 3/4" 86" 86 1/4" 86 1/2" 86 3/4" 87" 87 1/4" 87 1/2" 87 3/4" 88" 88 1/4" 88 1/2" 88 3/4" 89" 89 1/4" 89 1/2" 89 3/4" 90" 90 1/4" 90 1/2" 90 3/4" 91" 91 1/4" 91 1/2" 91 3/4" 92" 92 1/4" 92 1/2" 92 3/4" 93" 93 1/4" 93 1/2" 93 3/4" 94" 94 1/4" 94 1/2" 94 3/4" 95" 95 1/4" 95 1/2" 95 3/4" 96" 96 1/4" 96 1/2" 96 3/4" 97" 97 1/4" 97 1/2" 97 3/4" 98" 98 1/4" 98 1/2" 98 3/4" 99" 99 1/4" 99 1/2" 99 3/4" 100" 100 1/4" 100 1/2" 100 3/4" 101" 101 1/4" 101 1/2" 101 3/4" 102" 102 1/4" 102 1/2" 102 3/4" 103" 103 1/4" 103 1/2" 103 3/4" 104" 104 1/4" 104 1/2" 104 3/4" 105" 105 1/4" 105 1/2" 105 3/4" 106" 106 1/4" 106 1/2" 106 3/4" 107" 107 1/4" 107 1/2" 107 3/4" 108" 108 1/4" 108 1/2" 108 3/4" 109" 109 1/4" 109 1/2" 109 3/4" 110" 110 1/4" 110 1/2" 110 3/4" 111" 111 1/4" 111 1/2" 111 3/4" 112" 112 1/4" 112 1/2" 112 3/4" 113" 113 1/4" 113 1/2" 113 3/4" 114" 114 1/4" 114 1/2" 114 3/4" 115" 115 1/4" 115 1/2" 115 3/4" 116" 116 1/4" 116 1/2" 116 3/4" 117" 117 1/4" 117 1/2" 117 3/4" 118" 118 1/4" 118 1/2" 118 3/4" 119" 119 1/4" 119 1/2" 119 3/4" 120" 120 1/4" 120 1/2" 120 3/4" 121" 121 1/4" 121 1/2" 121 3/4" 122" 122 1/4" 122 1/2" 122 3/4" 123" 123 1/4" 123 1/2" 123 3/4" 124" 124 1/4" 124 1/2" 124 3/4" 125" 125 1/4" 125 1/2" 125 3/4" 126" 126 1/4" 126 1/2" 126 3/4" 127" 127 1/4" 127 1/2" 127 3/4" 128" 128 1/4" 128 1/2" 128 3/4" 129" 129 1/4" 129 1/2" 129 3/4" 130" 130 1/4" 130 1/2" 130 3/4" 131" 131 1/4" 131 1/2" 131 3/4" 132" 132 1/4" 132 1/2" 132 3/4" 133" 133 1/4" 133 1/2" 133 3/4" 134" 134 1/4" 134 1/2" 134 3/4" 135" 135 1/4" 135 1/2" 135 3/4" 136" 136 1/4" 136 1/2" 136 3/4" 137" 137 1/4" 137 1/2" 137 3/4" 138" 138 1/4" 138 1/2" 138 3/4" 139" 139 1/4" 139 1/2" 139 3/4" 140" 140 1/4" 140 1/2" 140 3/4" 141" 141 1/4" 141 1/2" 141 3/4" 142" 142 1/4" 142 1/2" 142 3/4" 143" 143 1/4" 143 1/2" 143 3/4" 144" 144 1/4" 144 1/2" 144 3/4" 145" 145 1/4" 145 1/2" 145 3/4" 146" 146 1/4" 146 1/2" 146 3/4" 147" 147 1/4" 147 1/2" 147 3/4" 148" 148 1/4" 148 1/2" 148 3/4" 149" 149 1/4" 149 1/2" 149 3/4" 150" 150 1/4" 150 1/2" 150 3/4" 151" 151 1/4" 151 1/2" 151 3/4" 152" 152 1/4" 152 1/2" 152 3/4" 153" 153 1/4" 153 1/2" 153 3/4" 154" 154 1/4" 154 1/2" 154 3/4" 155" 155 1/4" 155 1/2" 155 3/4" 156" 156 1/4" 156 1/2" 156 3/4" 157" 157 1/4" 157 1/2" 157 3/4" 158" 158 1/4" 158 1/2" 158 3/4" 159" 159 1/4" 159 1/2" 159 3/4" 160" 160 1/4" 160 1/2" 160 3/4" 161" 161 1/4" 161 1/2" 161 3/4" 162" 162 1/4" 162 1/2" 162 3/4" 163" 163 1/4" 163 1/2" 163 3/4" 164" 164 1/4" 164 1/2" 164 3/4" 165" 165 1/4" 165 1/2" 165 3/4" 166" 166 1/4" 166 1/2" 166 3/4" 167" 167 1/4" 167 1/2" 167 3/4" 168" 168 1/4" 168 1/2" 168 3/4" 169" 169 1/4" 169 1/2" 169 3/4" 170" 170 1/4" 170 1/2" 170 3/4" 171" 171 1/4" 171 1/2" 171 3/4" 172" 172 1/4" 172 1/2" 172 3/4" 173" 173 1/4" 173 1/2" 173 3/4" 174" 174 1/4" 174 1/2" 174 3/4" 175" 175 1/4" 175 1/2" 175 3/4" 176" 176 1/4" 176 1/2" 176 3/4" 177" 177 1/4" 177 1/2" 177 3/4" 178" 178 1/4" 178 1/2" 178 3/4" 179" 179 1/4" 179 1/2" 179 3/4" 180" 180 1/4" 180 1/2" 180 3/4" 181" 181 1/4" 181 1/2" 181 3/4" 182" 182 1/4" 182 1/2" 182 3/4" 183" 183 1/4" 183 1/2" 183 3/4" 184" 184 1/4" 184 1/2" 184 3/4" 185" 185 1/4" 185 1/2" 185 3/4" 186" 186 1/4" 186 1/2" 186 3/4" 187" 187 1/4" 187 1/2" 187 3/4" 188" 188 1/4" 188 1/2" 188 3/4" 189" 189 1/4" 189 1/2" 189 3/4" 190" 190 1/4" 190 1/2" 190 3/4" 191" 191 1/4" 191 1/2" 191 3/4" 192" 192 1/4" 192 1/2" 192 3/4" 193" 193 1/4" 193 1/2" 193 3/4" 194" 194 1/4" 194 1/2" 194 3/4" 195" 195 1/4" 195 1/2" 195 3/4" 196" 196 1/4" 196 1/2" 196 3/4" 197" 197 1/4" 197 1/2" 197 3/4" 198" 198 1/4" 198 1/2" 198 3/4" 199" 199 1/4" 199 1/2" 199 3/4" 200" 200 1/4" 200 1/2" 200 3/4" 201" 201 1/4" 201 1/2" 201 3/4" 202" 202 1/4" 202 1/2" 202 3/4" 203" 203 1/4" 203 1/2" 203 3/4" 204" 204 1/4" 204 1/2" 204 3/4" 205" 205 1/4" 205 1/2" 205 3/4" 206" 206 1/4" 206 1/2" 206 3/4" 207" 207 1/4" 207 1/2" 207 3/4" 208" 208 1/4" 208 1/2" 208 3/4" 209" 209 1/4" 209 1/2" 209 3/4" 210" 210 1/4" 210 1/2" 210 3/4" 211" 211 1/4" 211 1/2" 211 3/4" 212" 212 1/4" 212 1/2" 212 3/4" 213" 213 1/4" 213 1/2" 213 3/4" 214" 214 1/4" 214 1/2" 214 3/4" 215" 215 1/4" 215 1/2" 215 3/4" 216" 216 1/4" 216 1/2" 216 3/4" 217" 217 1/4" 217 1/2" 217 3/4" 218" 218 1/4" 218 1/2" 218 3/4" 219" 219 1/4" 219 1/2" 219 3/4" 220" 220 1/4" 220 1/2" 220 3/4" 221" 221 1/4" 221 1/2" 221 3/4" 222" 222 1/4" 222 1/2" 222 3/4" 223" 223 1/4" 223 1/2" 223 3/4" 224" 224 1/4" 224 1/2" 224 3/4" 225" 225 1/4" 225 1/2" 225 3/4" 226" 226 1/4" 226 1/2" 226 3/4" 227" 227 1/4" 227 1/2" 227 3/4" 228" 228 1/4" 228 1/2" 228 3/4" 229" 229 1/4" 229 1/2" 229 3/4" 230" 230 1/4" 230 1/2" 230 3/4" 231" 231 1/4" 231 1/2" 231 3/4" 232" 232 1/4" 232 1/2" 232 3/4" 233" 233 1/4" 233 1/2" 233 3/4" 234" 234 1/4" 234 1/2" 234 3/4" 235" 235 1/4" 235 1/2" 235 3/4" 236" 236 1/4" 236 1/2" 236 3/4" 237" 237 1/4" 237 1/2" 237 3/4" 238" 238 1/4" 238 1/2" 238 3/4" 239" 239 1/4" 239 1/2" 239 3/4" 240" 240 1/4" 240 1/2" 240 3/4" 241" 241 1/4" 241 1/2" 241 3/4" 242" 242 1/4" 242 1/2" 242 3/4" 243" 243 1/4" 243 1/2" 243 3/4" 244" 244 1/4" 244 1/2" 244 3/4" 245" 245 1/4" 245 1/2" 245 3/4" 246" 246 1/4" 246 1/2" 246 3/4" 247" 247 1/4" 247 1/2" 247 3/4" 248" 248 1/4" 248 1/2" 248 3/4" 249" 249 1/4" 249 1/2" 249 3/4" 250" 250 1/4" 250 1/2" 250 3/4" 251" 251 1/4" 251 1/2" 251 3/4" 252" 252 1/4" 252 1/2" 252 3/4" 253" 253 1/4" 253 1/2" 253 3/4" 254" 254 1/4" 254 1/2" 254 3/4" 255" 255 1/4" 255 1/2" 255 3/4" 256" 256 1/4" 256 1/2" 256 3/4" 257" 257 1/4" 257 1/2" 257 3/4" 258" 258 1/4" 258 1/2" 258 3/4" 259" 259 1/4" 259 1/2" 259 3/4" 260" 260 1/4" 260 1/2" 260 3/4" 261" 261 1/4" 261 1/2" 261 3/4" 262" 262 1/4" 262 1/2" 262 3/4" 263" 263 1/4" 263 1/2" 263 3/4" 264" 264 1/4" 264 1/2" 264 3/4" 265" 265 1/4" 265 1/2" 265 3/4" 266" 266 1/4" 266 1/2" 266 3/4" 267" 267 1/4" 267 1/2" 267 3/4" 268" 268 1/4" 268 1/2" 268 3/4" 269" 269 1/4" 269 1/2" 269 3/4" 270" 270 1/4" 270 1/2" 270 3/4" 271" 271 1/4" 271 1/2" 271 3/4" 272" 272 1/4" 272 1/2" 272 3/4" 273" 273 1/4" 273 1/2" 273 3/4" 274" 274 1/4" 274 1/2" 274 3/4" 275" 275 1/4" 275 1/2" 275 3/4" 276" 276 1/4" 276 1/2" 276 3/4" 277" 277 1/4" 277 1/2" 277 3/4" 278" 278 1/4" 278 1/2" 278 3/4" 279" 279 1/4" 279 1/2" 279 3/4" 280" 280 1/4" 280 1/2" 280 3/4" 281" 281 1/4" 281 1/2" 281 3/4" 282" 282 1/4" 282 1/2" 282 3/4" 283" 283 1/4" 283 1/2" 283 3/4" 284" 284 1/4" 284 1/2" 284 3/4" 285" 285 1/4" 285 1/2" 285 3/4" 286" 286 1/4" 286 1/2" 286 3/4" 287" 287 1/4" 287 1/2" 287 3/4" 288" 288 1/4" 288 1/2" 288 3/4" 289" 289 1/4" 289 1/2" 289 3/4" 290" 290 1/4" 290 1/2" 290 3/4" 291" 291 1/4" 291 1/2" 291 3/4" 292" 292 1/4" 292 1/2" 292 3/4" 293" 293 1/4" 293 1/2" 293 3/4" 294" 294 1/4" 294 1/2" 294 3/4" 295" 295 1/4" 295 1/2" 295 3/4" 296" 296 1/4" 296 1/2" 296 3/4" 297" 297 1/4" 297 1/2" 297 3/4" 298" 298 1/4" 298 1/2" 298 3/4" 299" 299 1/4" 299 1/2" 299 3/4" 300" 300 1/4" 300 1/2" 300 3/4" 301" 301 1/4" 301 1/2" 301 3/4" 302" 302 1/4" 302 1/2" 302 3/4" 303" 303 1/4" 303 1/2" 303 3/4" 304" 304 1/4" 304 1/2" 304 3/4" 305" 305 1/4" 305 1/2" 305 3/4" 306" 306 1/4" 306 1/2" 306 3/4" 307" 307 1/4" 307 1/2" 307 3/4" 308" 308 1/4" 308 1/2" 308 3/4" 309" 309 1/4" 309 1/2" 309 3/4" 310" 310 1/4" 310 1/2" 310 3/4" 311" 311 1/4" 311 1/2" 311 3/4" 312" 312 1/4" 312 1/2" 312 3/4" 313" 313 1/4" 313 1/2" 313 3/4" 314" 314 1/4" 314 1/2" 314 3/4" 315" 315 1/4" 315 1/2" 315 3/4" 316" 316 1/4" 316 1/2" 316 3/4" 317" 317 1/4" 317 1/2" 317 3/4" 318" 318 1/4" 318 1/2" 318 3/4" 319" 319 1/4" 319 1/2" 319 3/4" 320" 320 1/4" 320 1/2" 320 3/4" 321" 321 1/4" 321 1/2" 321 3/4" 322" 322 1/4" 322 1/2" 322 3/4" 323" 323 1/4" 323 1/2" 323 3/4" 324" 324 1/4" 324 1/2" 324 3/4" 325" 325 1/4" 325 1/2" 325 3/4" 326" 326 1/4" 326 1/2" 326 3/4" 327" 327 1/4" 327 1/2" 327 3/4" 328" 328 1/4" 328 1/2" 328 3/4" 329" 329 1/4" 329 1/2" 329 3/4" 330" 330 1/4" 330 1/2" 330 3/4" 331" 331 1/4" 331 1/2" 331 3/4" 332" 332 1/4" 332 1/2" 332 3/4" 333" 333 1/4" 333 1/2" 333 3/4" 334" 334 1/4" 334 1/2" 334 3/4" 335" 335 1/4" 335 1/2" 335 3/4" 336" 336 1/4" 336 1/2" 336 3/4" 337" 337 1/4" 337 1/2" 337 3/4" 338" 338 1/4" 338 1/2" 338 3/4" 339" 339 1/4" 339 1/2" 339 3/4" 340" 340 1/4" 340 1/2" 340 3/4" 341" 341 1/4" 341 1/2" 341 3/4" 342" 342 1/4" 342 1/2" 342 3/4" 343" 343 1/4" 343 1/2" 343 3/4" 344" 344 1/4" 344 1/2" 344 3/4" 345" 345 1/4" 345 1/2" 345 3/4" 346" 346 1/4" 346 1/2" 346 3/4" 347" 347 1/4" 347 1/2" 347 3/4" 348" 348 1/4" 348 1/2" 348 3/4" 349" 349 1/4" 349 1/2" 349 3/4" 350" 350 1/4" 350 1/2" 350 3/4" 351" 351 1/4" 351 1/2" 351 3/4" 352" 352 1/4" 352 1/2" 352 3/4" 353" 353 1/4" 353 1/2" 353 3/4" 354" 354 1/4" 354 1/2" 354 3/4" 355" 355 1/4" 355 1/2

Modern Steel Construction

Modern Steel Construction is the only magazine in the United States devoted exclusively to the design, fabrication and construction of structural steel buildings and bridges.

modernsteel.com/subscribe





AASHTO/NSBA Collaboration



Smarter.
Stronger.
Steel.

AASHTO/NSBA Steel Bridge Collaboration

<https://www.aisc.org/nsba/nsba-publications/aashto-nsba-collaboration/>

- Provides 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.

Specifications and Guidelines

Specifications:

- Written in “spec language”
- Can be adopted as a contract document

Guidelines:

- Written as a reference
- Consensus of the steel industry
- ALL ARE FREE!!!



AASHTO/NSBA Steel Bridge Collaboration

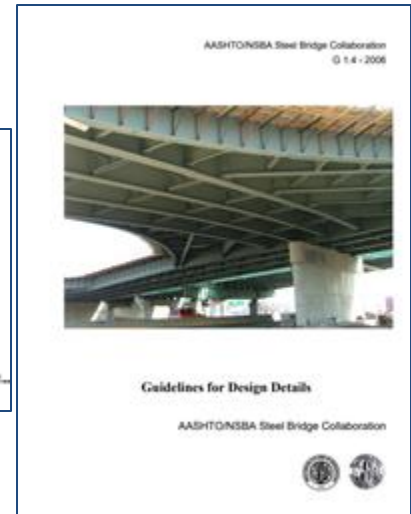
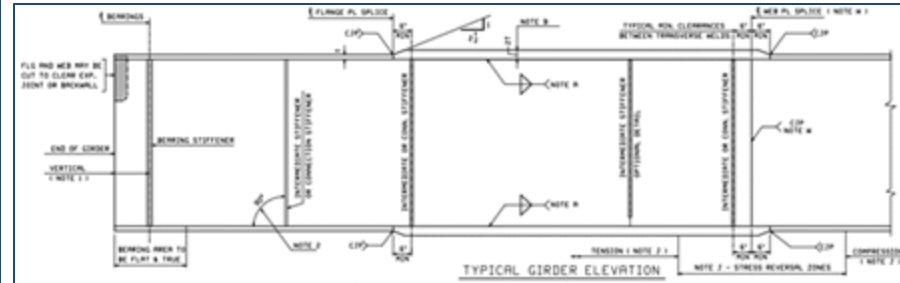
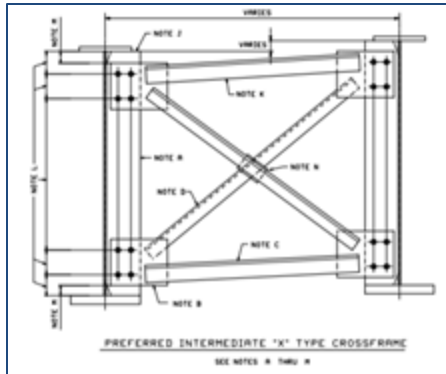
Variety of Collaboration Standards for Engineers

- Guidelines for Design Details (G1.4-2006)
- Guidelines for Design for Constructability (G12.1-2016)
- Guidelines for Steel Girder Bridge Analysis (G13.1-2019)
- Steel Bridge Erection Guide Specification (S10.1-2019)
- Steel Bridge Bearing Design and Detailing Guidelines (G9.1-2004)
- Design Drawings Presentation Guidelines (G1.2-2003)
- Shop Drawing Review/Approval Guidelines (G1.1-2000)

AASHTO/NSBA Steel Bridge Collaboration

Guidelines for Design Details (G1.4-2006)

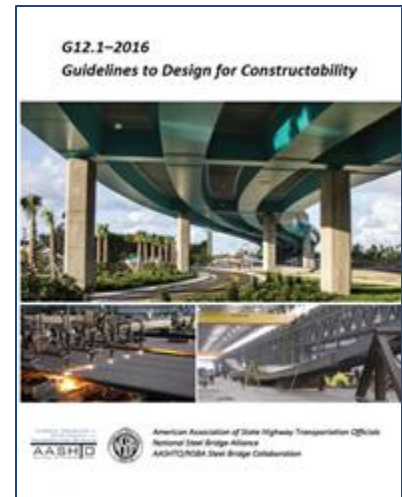
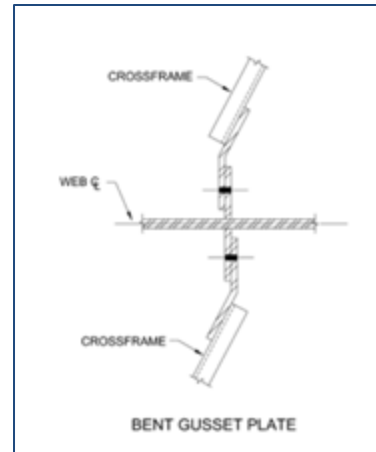
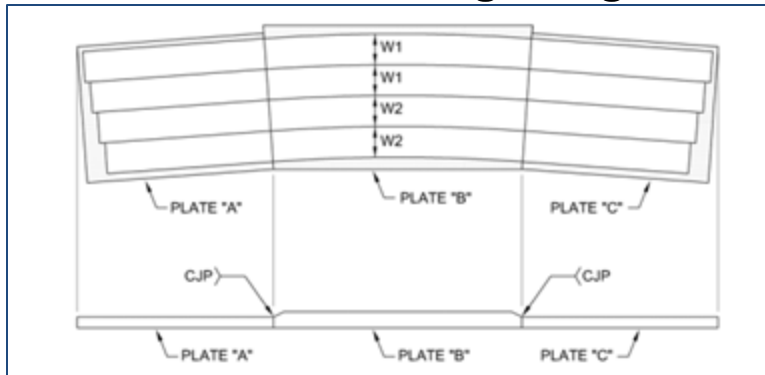
- Collection of sample design details that allow for the economical fabrication and erection of bolted splices, cross frames, and stiffeners. Guidelines for Design for Constructability (G12.1-2016)
- When in doubt regarding a specific design detail, this should be the engineer's first reference



AASHTO/NSBA Steel Bridge Collaboration

Guidelines for Design for Constructability (G12.1-2016)

- Provides engineers with design and detailing recommendations to help make steel girder type bridges more easily fabricated and constructible.
- Refer to this guideline for a better understanding of certain details can affect fabrication, and for general guidance to make better informed decisions during design.





Current NSBA Initiatives



Smarter.
Stronger.
Steel.

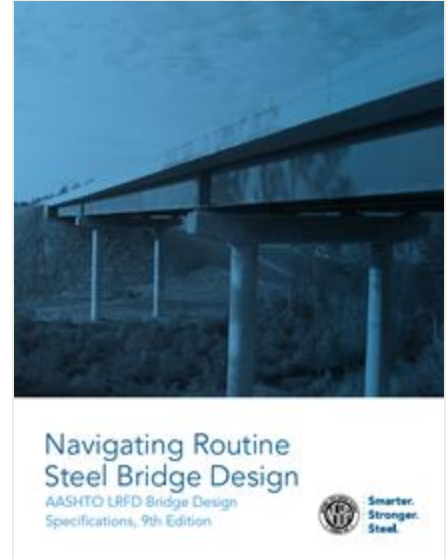
Current NSBA Initiatives

Guideline for Navigating Routine Steel Bridge Design

- for straight, low skew, <200' span steel girder bridges (“routine”)
- Implement AASHTO LRFD BDS with greater efficiency and quality
 - Released – www.aisc.org/nsba

Coatings Performance Study

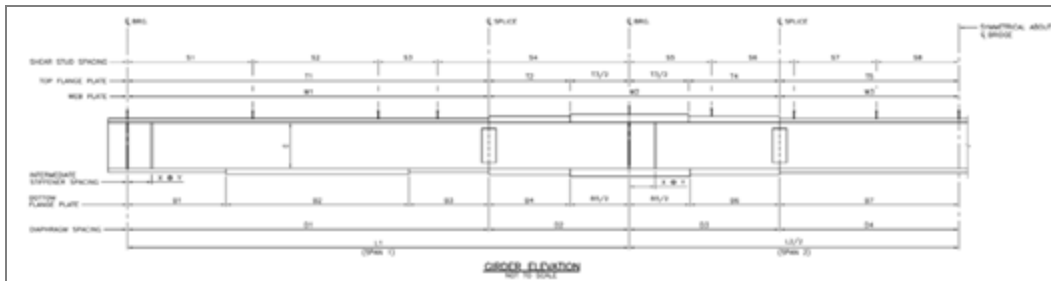
- bring more confidence for use of corrosion protection systems when they are needed
- provide better guidance on when to prescribe weathering steel or a particular coating systems



Current NSBA Initiatives

Steel Girder Bridge Design Standards

- Develop a National Standard for single span, two-span, three-span, and possibly four-span bridges.
- Apply to “typical” overpass type structures.
- Base designs on what is most constructable – fabrication and erection.
- Encourage designers to use the girder as is, no plate changes.
- Provide examples on how to use when project does not fit exactly.



Current NSBA Initiatives

Steel Bridge Design Handbook Update

- FHWA handing back to NSBA
- To be updated for AASHTO LRFD 9th Edition
- Online Publication – Feb 2022

Steel Bridge Design Class

- Create Course Syllabus and Teaching Material that can be used to administer a graduate level class
- Contract with Russo Structural Services & MA Grubb & Associates
- Estimated completion Early 2023



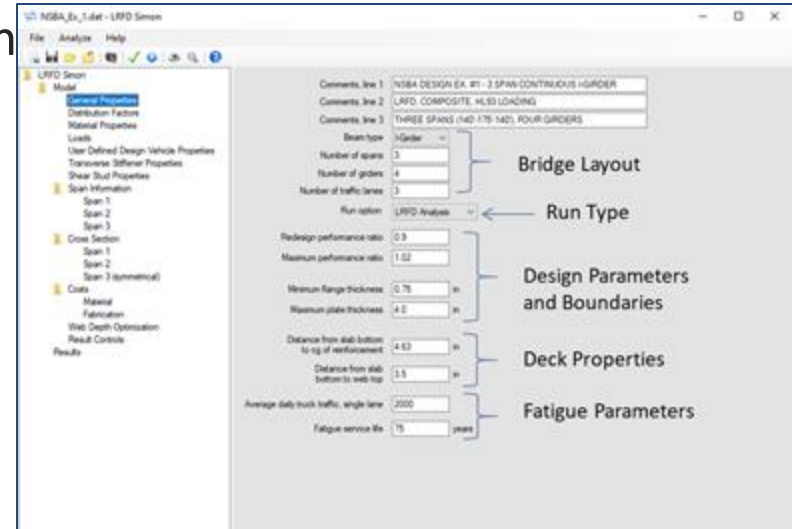
Steel Bridge
Design
Handbook



Current NSBA Initiatives

LRFD SIMON

- Free Line Girder analysis software
- Strength I, Service, Constructability, and Fatigue girder checks
- Updated to AASHTO LRFD BSD 9th Edition





Market Trends



Smarter.
Stronger.
Steel.

Common Bridge Material Today

Table 1
Plate Thickness Availability by Steel Grade (inches)

Thickness	A709 Grade 50 & 50W	A709 Grade HPS 50W	A709 Grade HPS 70W	A709 Grade HPS 100W
3/16				
1/4				
5/16				
3/8				
7/16				
1/2				
9/16				
5/8				
3/4				
7/8				
1				
1 1/16				
1 1/8				
1 1/4				
1 3/8				
1 1/2				
1 5/8				
1 3/4				
1 7/8				
2				
2 1/4				
2 1/2				
2 3/4				
3				
3 1/4				
3 1/2				
3 3/4				
4				

 Readily available from three domestic mills

 Readily available from two domestic mills

 Readily available from one domestic mill

 Not readily available

Table 2
Plate Width Availability by Steel Grade (inches)

Width	A709 Grade 50 & 50W	A709 Grade HPS 50W	A709 Grade HPS 70W	A709 Grade HPS 100W
48				
54				
60				
66				
72				
75				
78				
81				
84				
87				
90				
93				
96				
99				
102				
105				
108				
111				
114				
117				
120				
123				
126				
129				
132				
135				
138				

Table 3
Maximum Plate Length Availability (inches) — ASTM A709 Grade 50 & 50W

Plate Thickness	Plate Width—Grade 50 & 50W								
	72	78	84	90	96	102	108	114	120
3/16	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
1/4	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
5/16	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
3/8	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
7/16	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
1/2	1,034	1,034	1,034	1,034	1,034	1,034	1,026	972	923
9/16	1,034	1,034	1,034	1,034	1,034	1,030	980	680	680
5/8	1,034	1,034	1,034	1,034	1,034	1,034	790	680	680
3/4	1,034	1,034	1,034	1,034	1,034	1,034	720	680	680
7/8	1,034	1,034	1,034	1,034	1,034	995	720	680	680
1	1,034	1,034	1,034	1,034	1,034	930	720	680	680
1 1/16	1,034	1,034	980	1,034	975	865	720	680	680
1 1/8	1,034	1,034	975	925	875	825	720	680	680
1 1/4	1,034	975	900	850	800	720	700	650	625
1 3/8	970	900	825	775	725	675	650	600	575

The following key should be referenced when using Table 3 through Table 6:

-  Readily available from three domestic mills
-  Readily available from two domestic mills
-  Readily available from one domestic mill
-  Not readily available

Structural Shape Availability

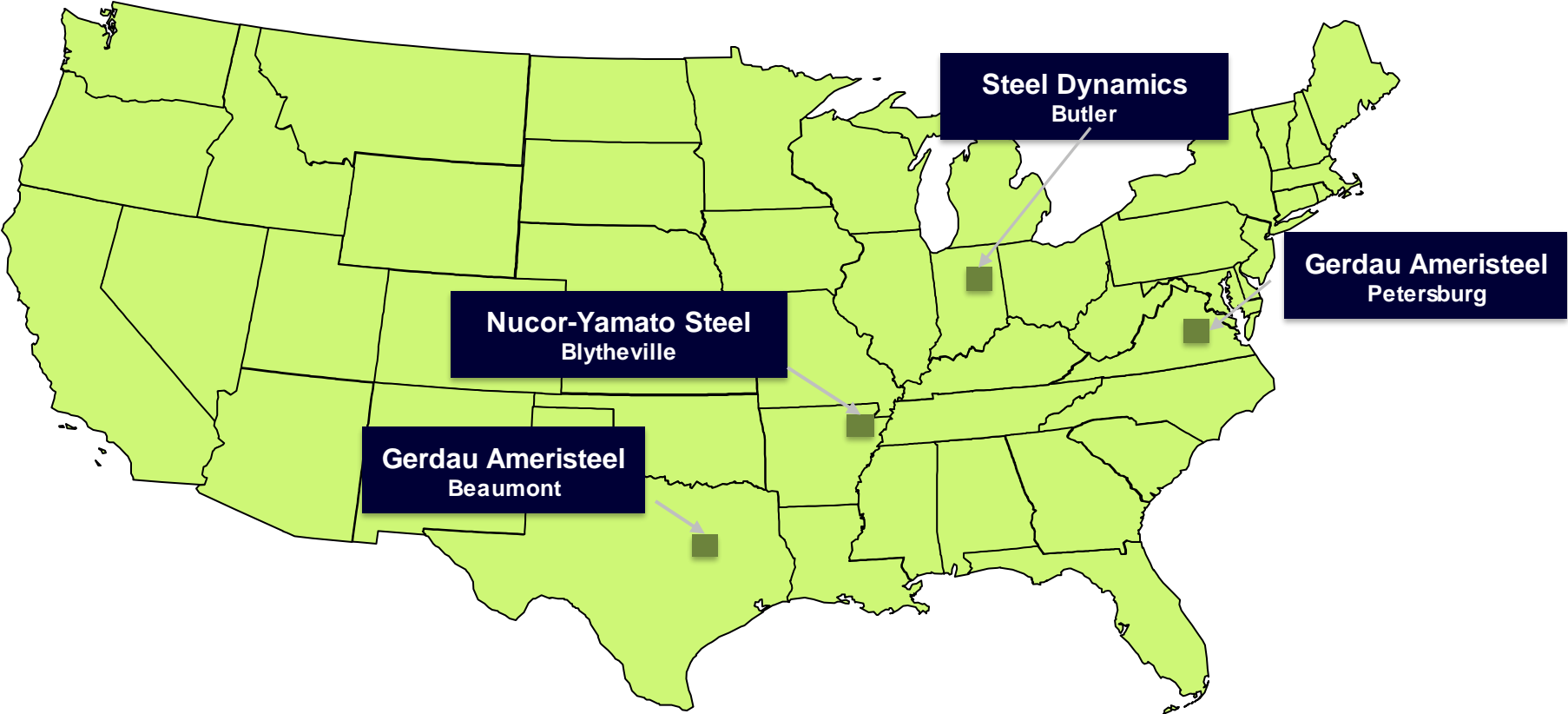
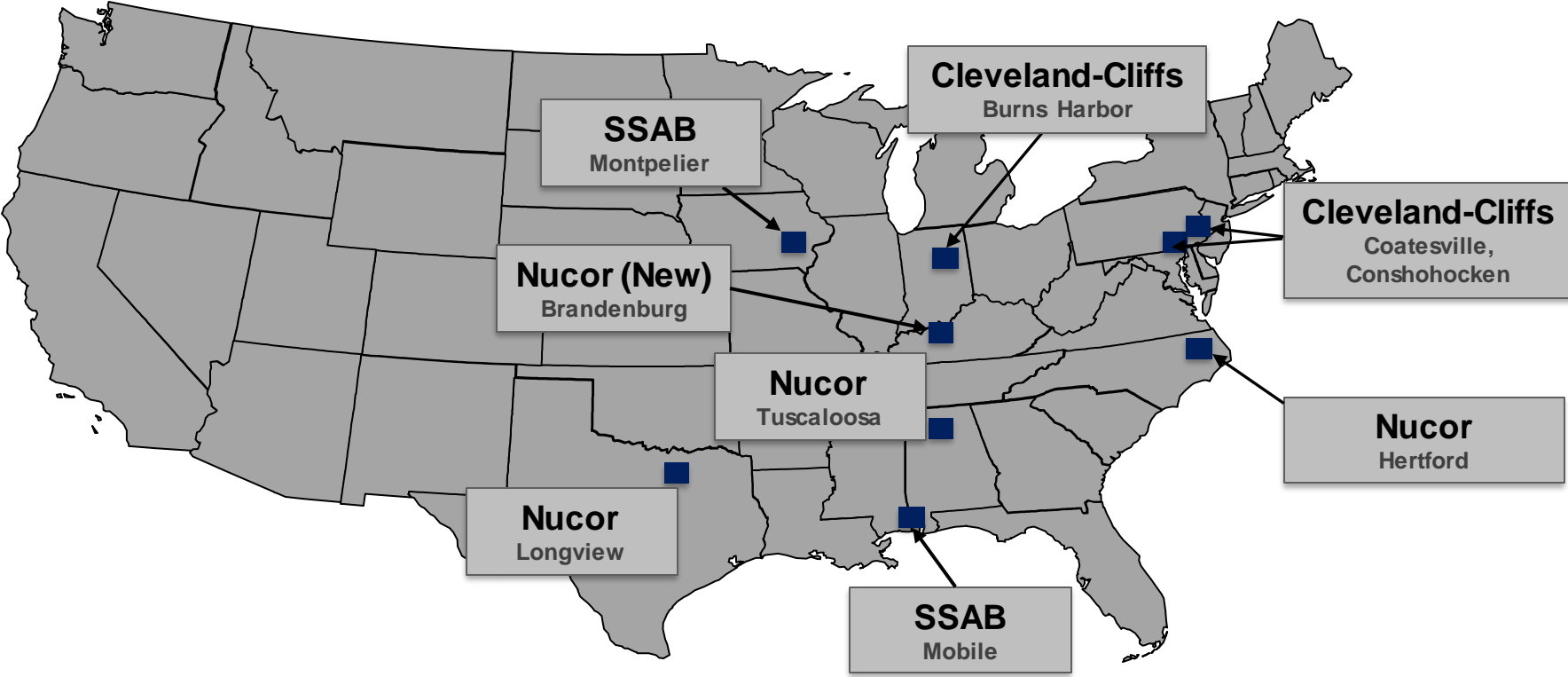


Plate Mills



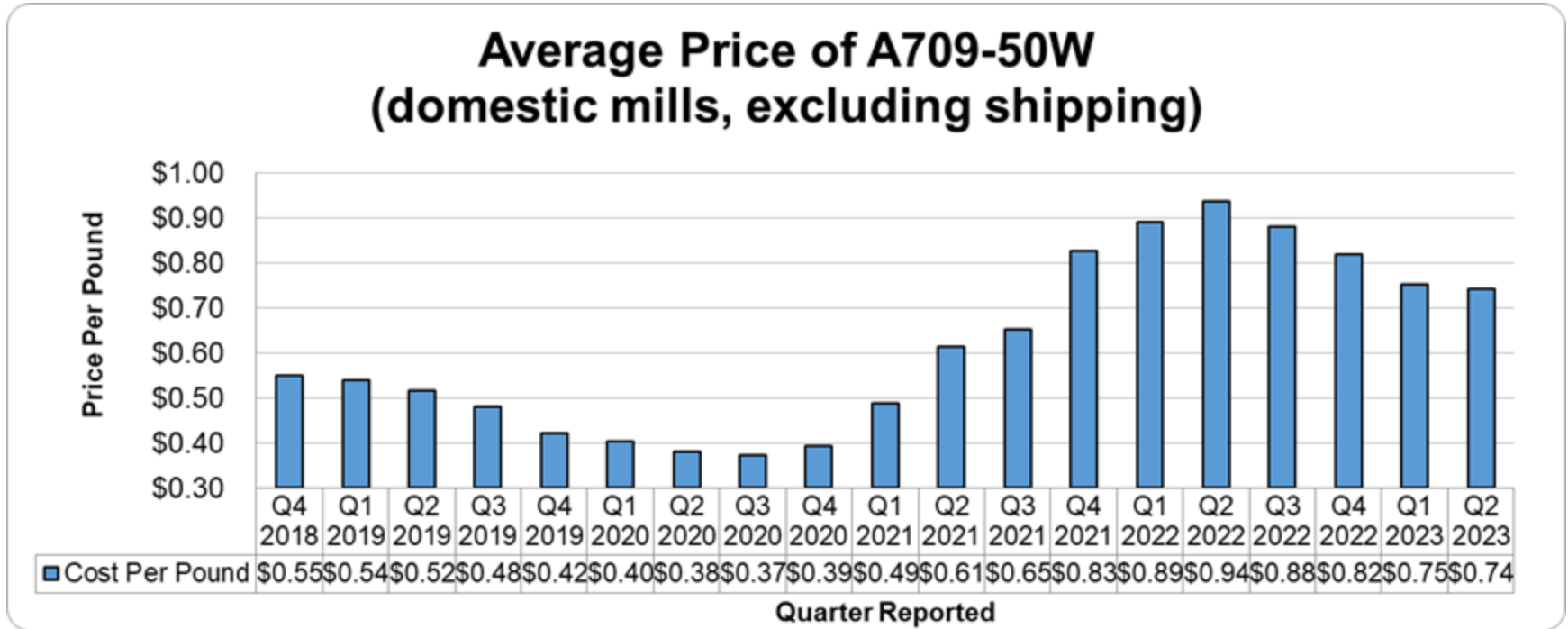
Bridge Cost Breakdown

- **Total cost to owner – General Breakdown**
 - Raw material - 33%
 - Labor - 33%
 - Erection & construction - 33%
- **Saving material (designing for least weight) can result in a greater fabrication labor cost.**
- **Consider amount of steel rebar in piers, pier caps, deck, and other substructure elements.**
- **Designers should talk with bridge fabricators about their design before finalizing it.**



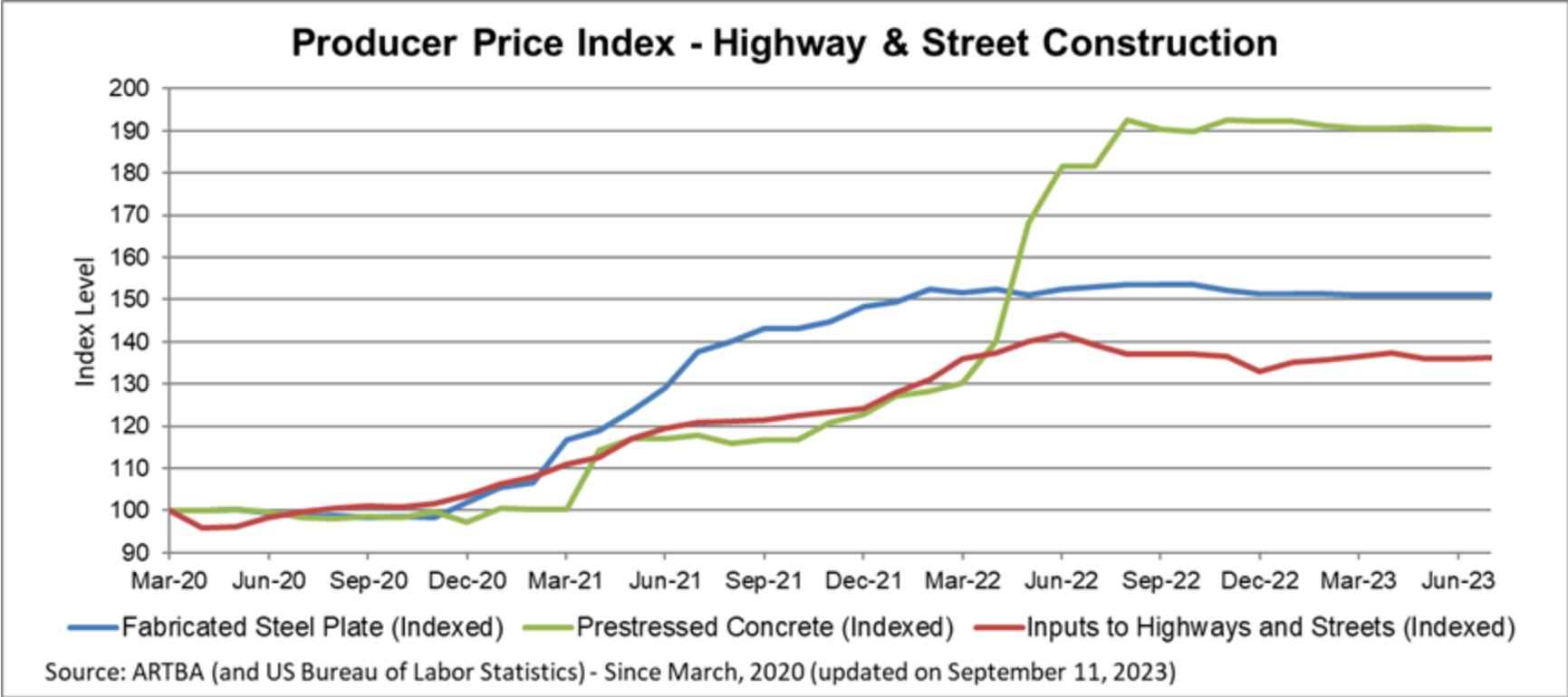
Average Mill Price of A709-50W

Size 1 ½ in. thick x 96 in. wide x 636 in. long



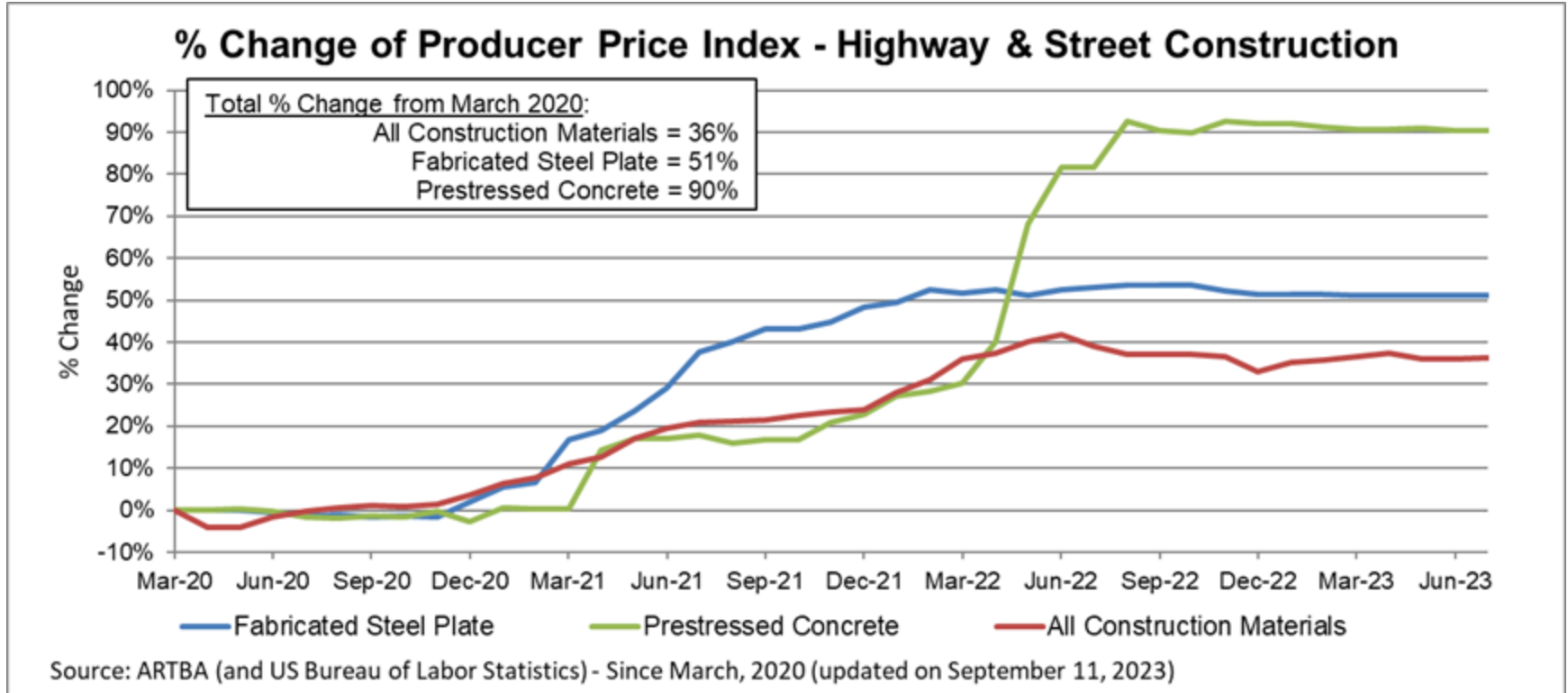
Raw material pricing presented in this chart is a small snapshot of a limited time and is not representative of long term historical and future trends.

Historical Fabricated Steel Costs



Also available at artba.org/economics/materials-dashboard/

Historical Fabricated Steel Costs



Also available at artba.org/economics/materials-dashboard/

More Information

National Steel Bridge Alliance

www.steelbridges.org

Resources for Design and Estimation

www.aisc.org/nsba/design-and-estimation-resources/

Steel Bridge Forums

www.aisc.org/nsba/steel-bridge-forum/

Bridges to Prosperity

www.aisc.org/nsba/bridges-to-prosperity/

Modern Steel Construction

www.modernsteel.com

Contact:

Brian Raff

raff@aisc.org

Vin Bartucca

bartucca@aisc.org



Smarter.
Stronger.
Steel.