Steel In Action: Featuring Innovative, Resilient and Cost-Effective Case Study Projects Webinar Series

July 8, 10, 15, 17 - 1:00-2:00pm EDT

AIA Approved Continuing Education

ENGINEERING RCEP REGISTERED CONTINUING EDUCATION PROGRAM

Case Study Projects

July 8, 1 pm ET	Tools and Resources for Designing Cost-Effective Steel Bridges Steel Girder Bridges: Franklin County, MO
July 10, 1 pm ET	Modular Steel Bridges: Piney Creek Bridge, Somerset County, PA Buried Steel Bridges
July 15, 1 pm ET	Buffalo Creek Bridge, Buchanan County, Iowa Press-Brake Formed Tub Girders: TR-251 Bridge, Champaign County, IL
July 17, 1 pm ET	Galvanized Steel Bridge with Grid Decking: Tait Road Bridge, Mercer County, PA Simple for Dead, Continuous for Live Designs: FARM Project, MO

Tools & Resources to Designing Cost-Effective Steel Bridges

Steel In Action:
Featuring Innovative, Resilient and Cost-Effective Case Study Projects
July 8, 2025

Dr. Michael G. Barker, PE
University of Wyoming &
SSSBA, Director of Education

www.shortspansteelbridges.org

Short Span Steel Bridge Alliance

A group of **bridge** and **buried soil structure** industry leaders who have joined together to provide **educational information** on the design and construction of short span steel bridges in installations up to **140 feet in length**.

Membership


Producers
Fasteners
Coaters
Service Centers
Fabricators
SHORT SPAN STEEL
BRIDGE ALLIANCE
American Galvanizers Association
NCSPA
American Iron and Steel Institute
Trade Organizations
Design Firms
Contractors
NACE
Bridge Owners
Universities

Short Span Steel Bridge Solutions

Buried Bridges

Rolled Beam & Plate Girders

Press-Brake-Formed Tub Girders

Truss Bridges

What Do We Provide?

- Education
  - Workshops, Webinars, Newsletter
- Technical Resources
  - Standards, best practices, case studies
- Simple Design Tools (eSPAN140)
- Project Assistance
- Find a Supplier
- Networking / SSSBA Semiannual Meeting

Tools & Resources to Designing Cost-Effective Steel Bridges

- Summary on Initial and LCC – *Preconception that Concrete Less Expensive*
- eSPAN140 Design Tool – *Steel Bridge Design Made Easy*
- Coming Soon New Simple Span Design Software – *Optimized Design*
- Workshops, Resources & Opportunities Through the SSSBA

Summary – Initial Cost & Life Cycle Cost Studies

Typical Concrete and Steel Bridges are Competitive on Initial Cost, Future Costs, Life Cycle Costs and Bridge Life

Owners Should Consider Both Steel and Concrete Alternatives for Individual Bridge Projects

Superstructure	Steel						Concrete				
Bridge Number	061	140	149	152	710	AVG	028	057	069	520	AVG
Year Built	2008	2008	2008	2009	2010	AVG	2009	2010	2011	2006	AVG
Span Length	50	50	40	62	64	53.2	36	36	38	40	37.5
Skew	0	0	0	30	35	13	0	15	20	30	16.25
Cost Summary											
- Labor	$14,568	$21,705	$15,853	$24,765	$31,949	$21,768	$12,065	$15,379	$14,674	$19,044	$15,291
- Material	$56,676	$53,593	$46,282	$92,821	$69,357	$63,746	$51,589	$54,450	$50,576	$46,850	$50,866
- Rock	$6,170	$6,216	$3,694	$8,235	$6,501	$6,163	$5,135	$7,549	$5,378	$3,621	$5,421
- Equipment	$7,487	$12,026	$7,017	$19,579	$15,266	$12,275	$5,568	$10,952	$11,093	$14,742	$10,589
- Guardrail	$4,715	$7,146	$3,961	$7,003	$7,003	$5,966	$4,737	$4,663	$5,356	$3,323	$4,520
Construction Cost	$89,616	$100,686	$76,807	$152,403	$130,076	$109,918	$79,094	$92,993	$87,077	$87,580	$86,686
CONST. COST PER FT²	$74.68	$83.91	$80.01	$102.42	$84.68	$86.09	$91.54	$107.63	$95.48	$91.23	$96.32

State Bridge (Designed by eSPAN140)

Kansas Department of Transportation
- Shawnee County
- 112 feet (5 plate girder bridge)
- Competitive bid process (steel vs. concrete)
- DOT used eSPAN140 for preliminary design
- Constructed in summer 2014

1 Steel Bridge Bid
3 Concrete Bridge Bids

Steel = $ 1.240 mil

Concrete = $ 1.243 – $ 1.425 mil

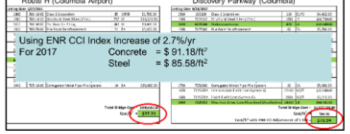
County Bridge (Designed by eSPAN140)

- Boone County, Missouri (Local)
  - High Point Lane Bridge
  - 102 feet (2 lane rural road plate girder bridge)
  - 44" weathering steel plate girders (4 lines)
  - Constructed in summer 2013

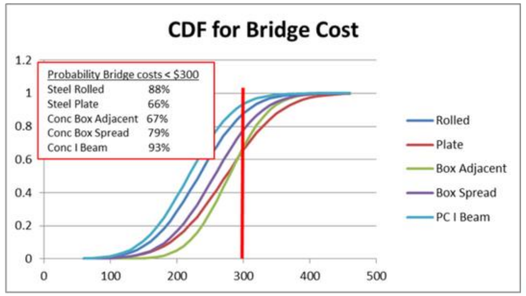
Two MoDOT Bridges Crossing US 63 in Boone County

Concrete P/S: 92 ft – 92 ft
Route H (Columbia Airport)

Steel Plate Girder: 98 ft – 98 ft
Discovery Parkway (Columbia)

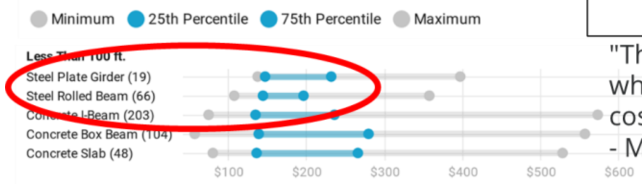


Capitalized Costs – All Bridges



National Bridge Cost by Beam Subtype ($/SF)

(#) indicates number of bridges for each beam type



"These conclusions come as a surprise to the authors, who assumed that concrete bridges would be more cost-competitive than steel bridges."
- Mike Digregorio, HDR

https://www.aisc.org/nsba/hdr-pricing-study/

Life Cycle Costs– Length<140 ft

Short Length Bridges
Short Span Steel Bridge Alliance

	# Bridges	PPVC	Initial Cost	Future Cost	Avg Length	Avg # Spans	Avg Year Built	Avg Life
Steel I Beam	27	$266.24	$222.08	$0.16	84	1.26	1978	82
Steel I Girder	18	$311.26	$257.19	$0.29	119	1.00	1977	81
P/S Box - Adjacent	240	$292.38	$235.03	$0.95	69	1.09	1987	74
P/S Box - Spread	325	$272.20	$225.14	$2.16	64	1.23	1986	81
P/S I Beam	98	$281.64	$231.20	$0.05	104	1.08	1987	77

↑
Steel Rolled
Precast Box Spread

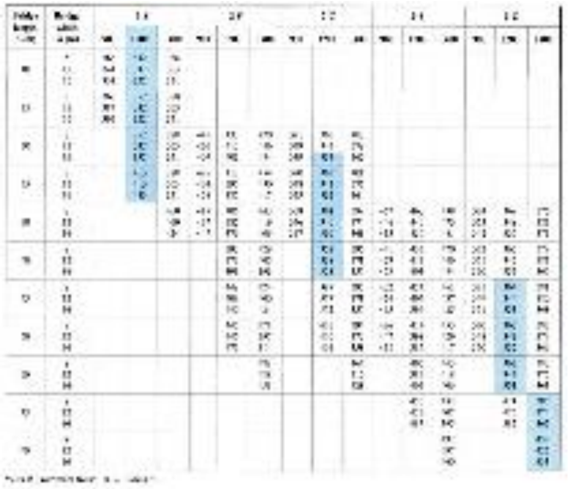
Reports on ShortSpanSteelBridges.org

Owners Should Consider Both Steel and Concrete Alternatives for Individual Bridge Projects

The Design Process

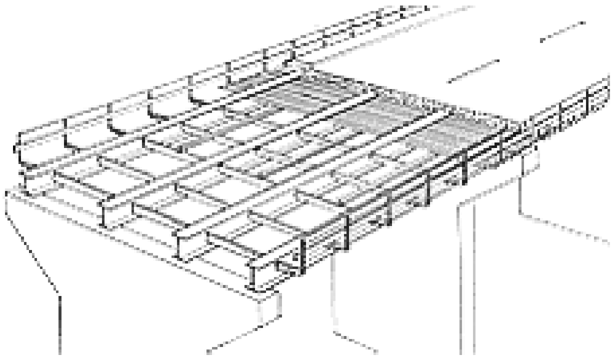
Concrete Bridge Design Tables

Quick & Easy



Steel Original Piece of Art

Time & Cost

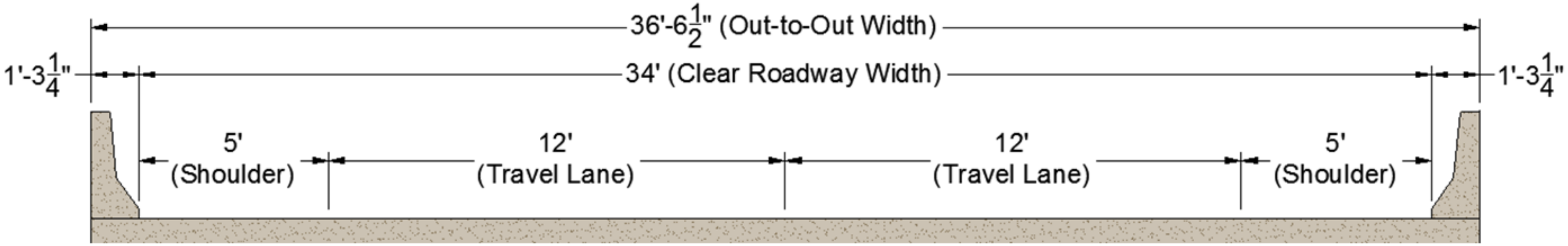


Traditional Fabricated Steel Bridge

Design Superstructure for Two-Lane, 80 ft Simple Span Bridge

Decided by Owner/Engineer:

- 80 ft Simple Span Composite – Steel Girders
- Two 12 ft Travel Lanes, ADT = 5600
- 34 ft Roadway Width
- Jersey Barriers (1 ft – 3 ¼ in wide)



Need a Quick & Easy Initial Design for the Bridge SuperStructure

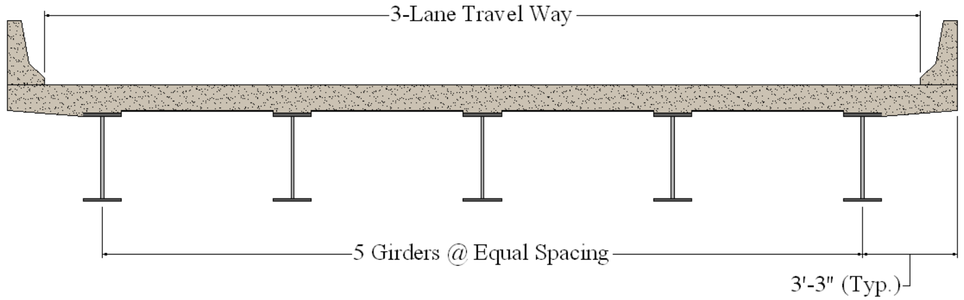
eSPAN140 - Standard Designs for Short Span Steel Bridges - www.ShortSpanSteelBridges.org

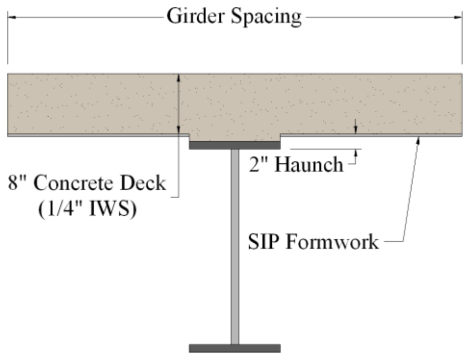
Free Resource

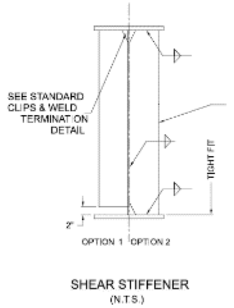
Span lengths 20 ft to 140 ft (in 5 ft increments)

Four girder spacing: 6'-0", 7'-6", 9'-0" and 10'-6",

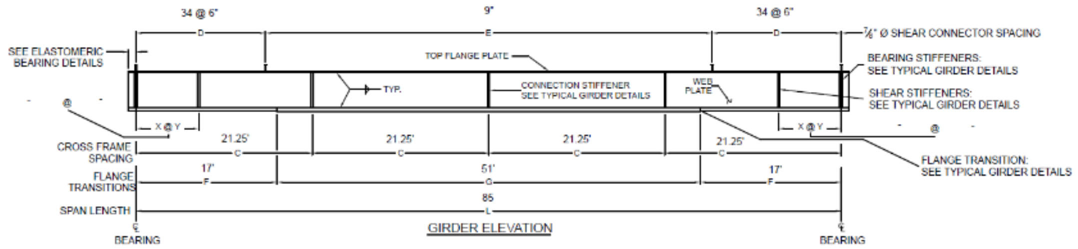
For each of these increments: **Steel girders, Shear stud & stiffener layouts, Welding and fabrication details, Elastomeric bearings, and Concrete deck design**

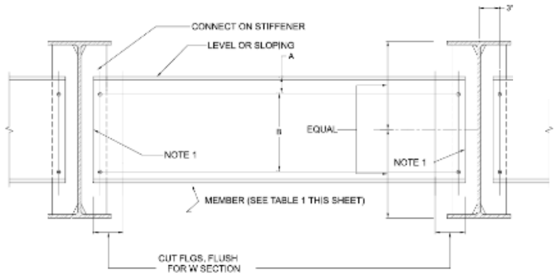






COMPOSITE PLATE GIRDER WITH PARTIALLY STIFFENED WEB - 4 GIRDERS AT 8' 10" GIRDER SPACING, HOMOGENEOUS





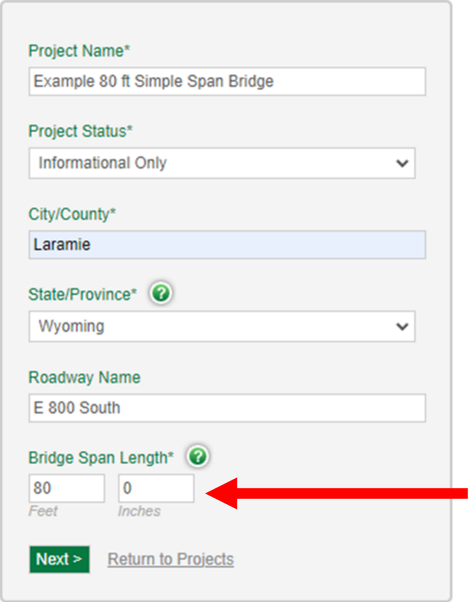
eSPAN140 Preliminary Design

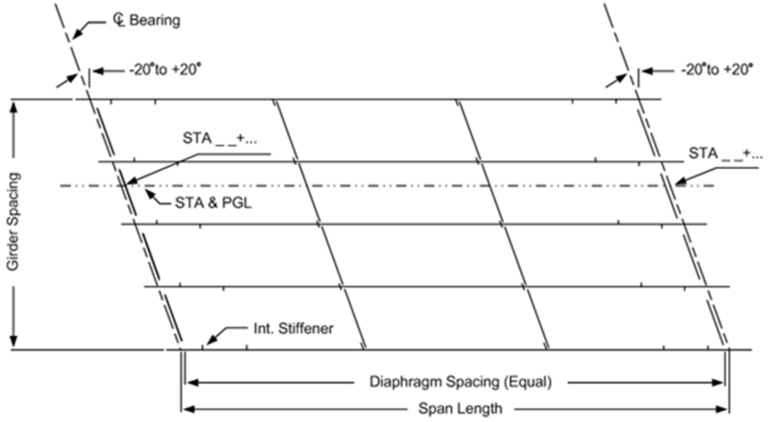
Solution Type*	Bridge Span Length 0'	20'	40'	60'	80'	100'	120'	140'	Skew Angle	Overhang Width
Rolled Beam (40' to 100')**									+/- 20 degrees	3'3" or less
Homogeneous Plate Girder (60' to 140')**									+/- 20 degrees	3'3" or less
Press Brake Tub Girders (0' to 80')									+/- 20 degrees	3'3" or less
Buried Bridges (all)***									+/- 35 degrees****	N/A

* For bridges outside of this range, standard designs will not appear in your solutions book.
** Standard designs for rolled beam and plate girder solutions are rounded in five (5) foot increments.
*** Depending on project requirements this solution will require multiple spans.
**** Can be greater if site geometry allows.

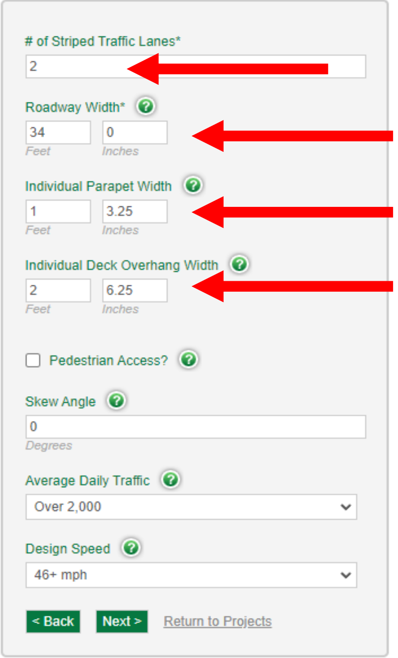
**** Can be greater if site geometry allows.

eSPAN140 Preliminary Design

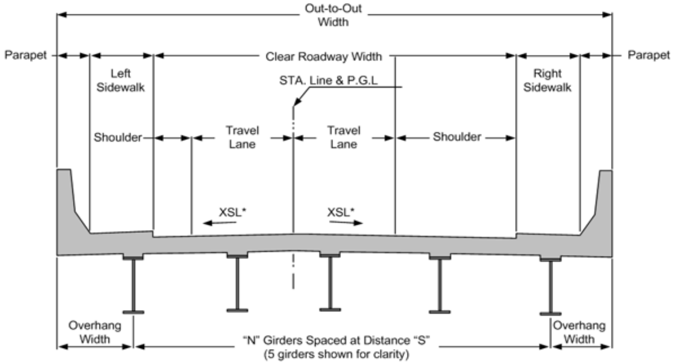

Project Name*
Example 80 ft Simple Span Bridge
Project Status*
Informational Only
City/County*
Laramie
State/Province*
Wyoming
Roadway Name
E 800 South
Bridge Span Length*
80 Feet
0 Inches
Next >
Return to Projects



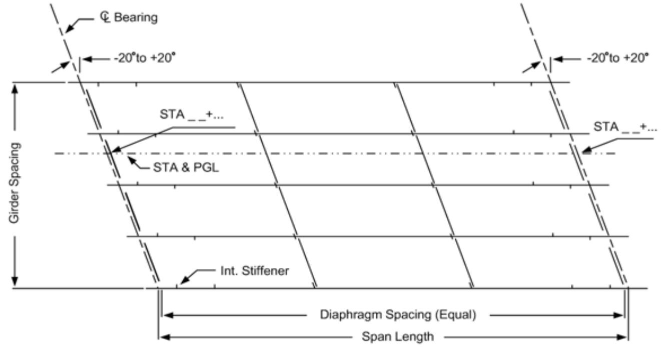
Skew Angle (Overhead View)


# of Striped Traffic Lanes*
2
Roadway Width*
34 Feet
0 Inches
Individual Parapet Width
1 Feet
3.25 Inches
Individual Deck Overhang Width
2 Feet
6.25 Inches
Pedestrian Access?
Skew Angle
0 Degrees
Average Daily Traffic
Over 2,000
Design Speed
46+ mph
< Back
Next >
Return to Projects

* Required



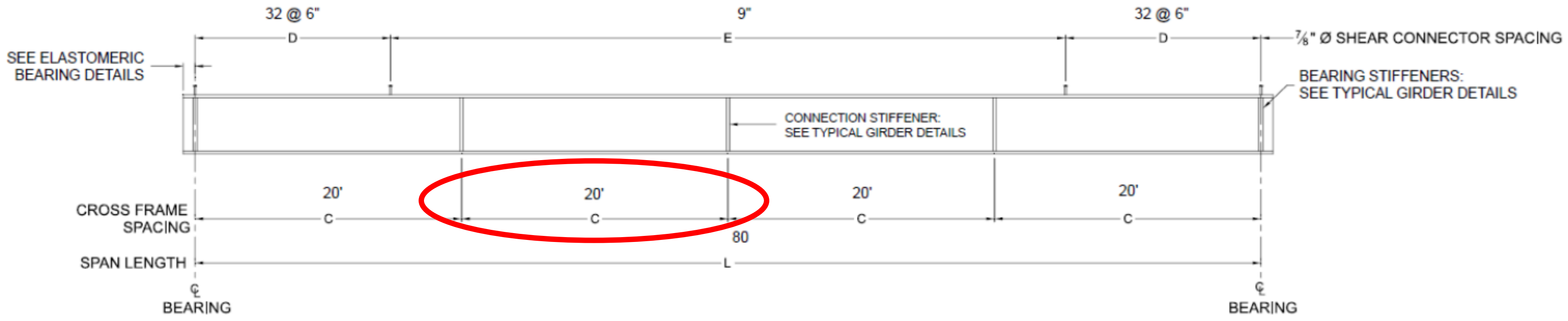
Cross-section of Bridge



Rolled Beam Recommendation

COMPOSITE ROLLED BEAM WITH PARTIALLY STIFFENED WEB - 4 GIRDERS AT 10' 6" GIRDER SPACING, LIGHTEST WEIGHT

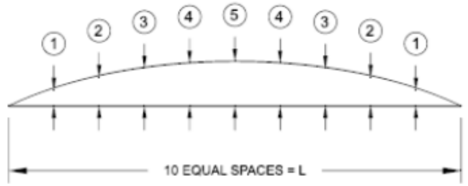
The selected rolled beam section is based on the widest (10'-6") girder spacing used in the development of the standards. The steel industry generally recommends the use of the widest girder spacing possible to reduce the potential number of girder lines for optimum economy.



BEAM ELEVATION

SPAN (L) - ft	ROLLED BEAM	DIAPHRAGM SPACING (C) - ft	SHEAR CONNECTOR MAX. SPACING		WEIGHT
			D	E	
80	W36x210	20'	32 @ 6"	9"	16,800 lbs

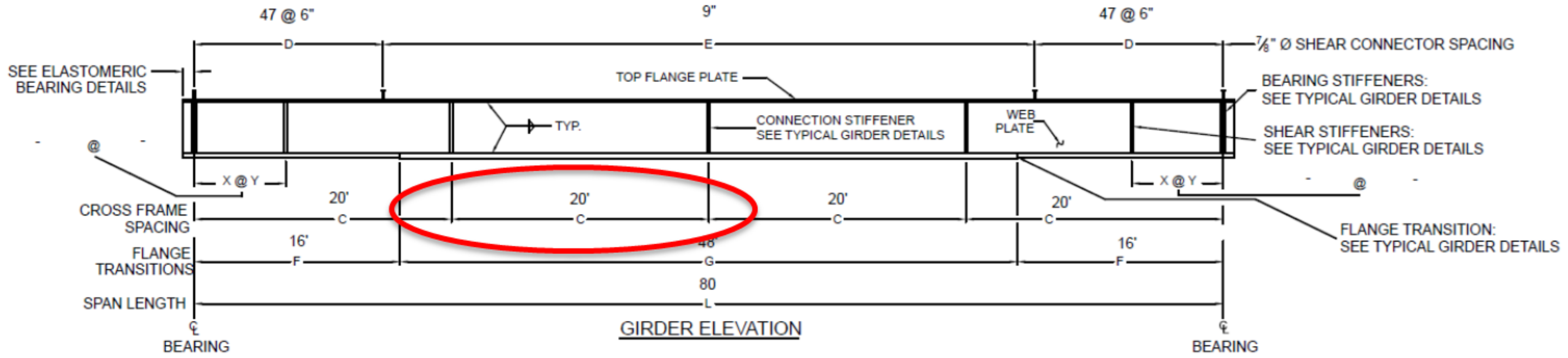
STEEL D.L. CAMBER - in					TOTAL D.L. CAMBER - in				
1	2	3	4	5	1	2	3	4	5
0.178"	0.337"	0.461"	0.540"	0.567"	1.255"	2.375"	3.250"	3.807"	3.997"



D.L. CAMBER

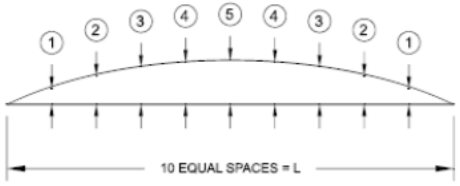
Plate Girder Recommendation

COMPOSITE PLATE GIRDER WITH PARTIALLY STIFFENED WEB - 4 GIRDERS AT 10' 6" GIRDER SPACING, HOMOGENEOUS



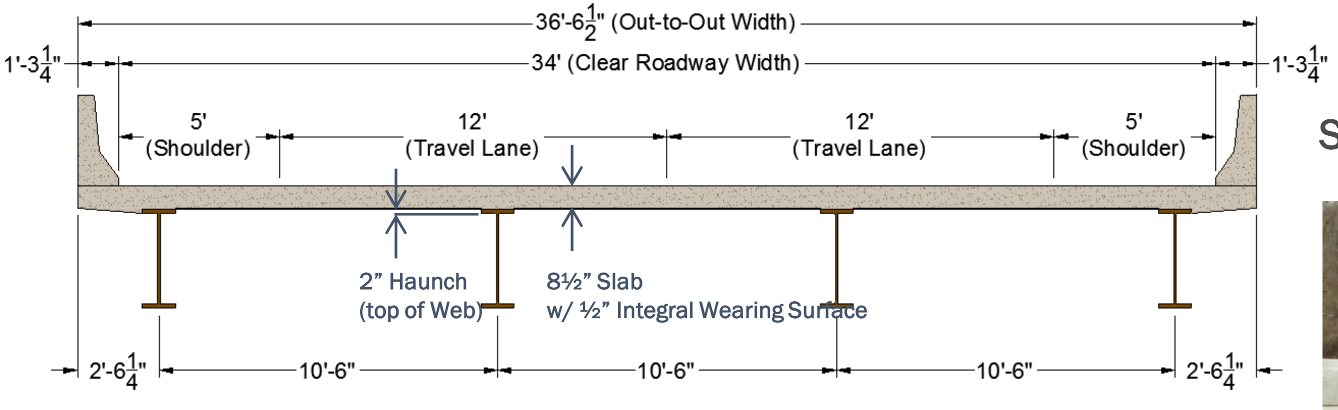
SPAN (L) - ft	PLATE GIRDER SIZE						DIAPHRAGM SPACING (C) - ft	SHEAR STIFFENERS		SHEAR CONNECTOR MAX. SPAC-ING		INDIVIDUAL GIRDER WEIGHT
	TOP FLANGE - in	BOTTOM FLANGE (F)		BOTTOM FLANGE (G)		WEB PLATE- in						
		PLATE - in	LENGTH - Ft	PLATE - in	LENGTH - Ft			X (NO. REQ'd)	Y - ft. (SPACING)	D	E	
80	16 x 1"	16 x 1"	16'	16 x 1 1/2"	48'	32 x 1/2"	20'	-	-	47 @ 6"	9"	14,373 lbs

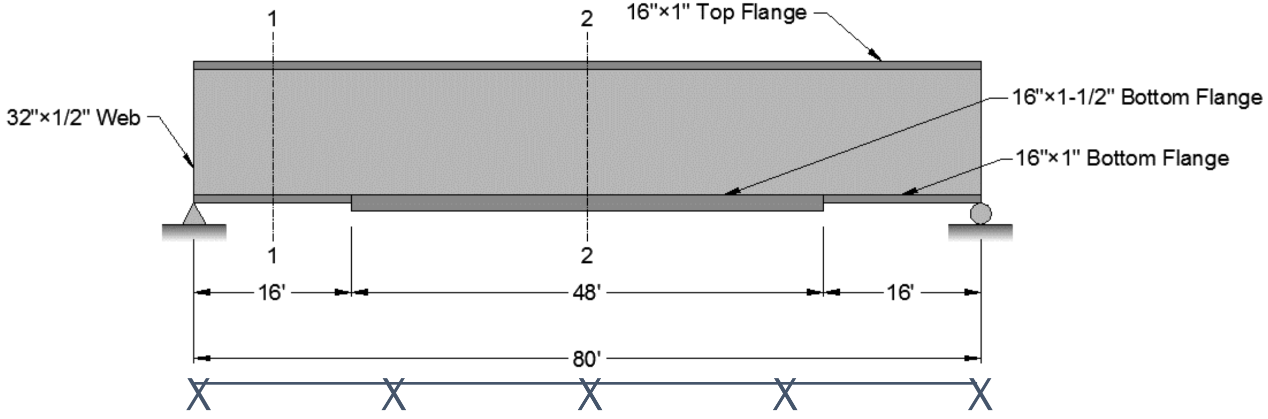
STEEL D.L. CAMBER - in					TOTAL D.L. CAMBER - in				
1	2	3	4	5	1	2	3	4	5
0.178"	0.334"	0.454"	0.530"	0.557"	1.397"	2.618"	3.554"	4.149"	4.355"



D.L. CAMBER

Design for Homogeneous Plate Girder Bridge





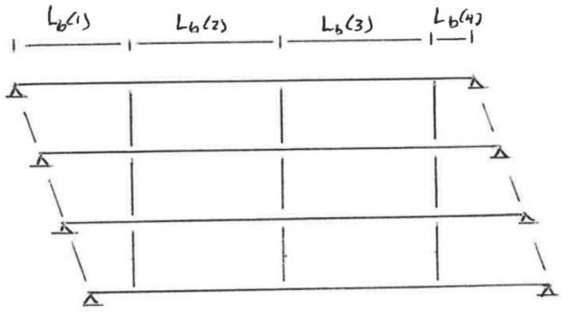
Diaphragm Bracing at 20 ft

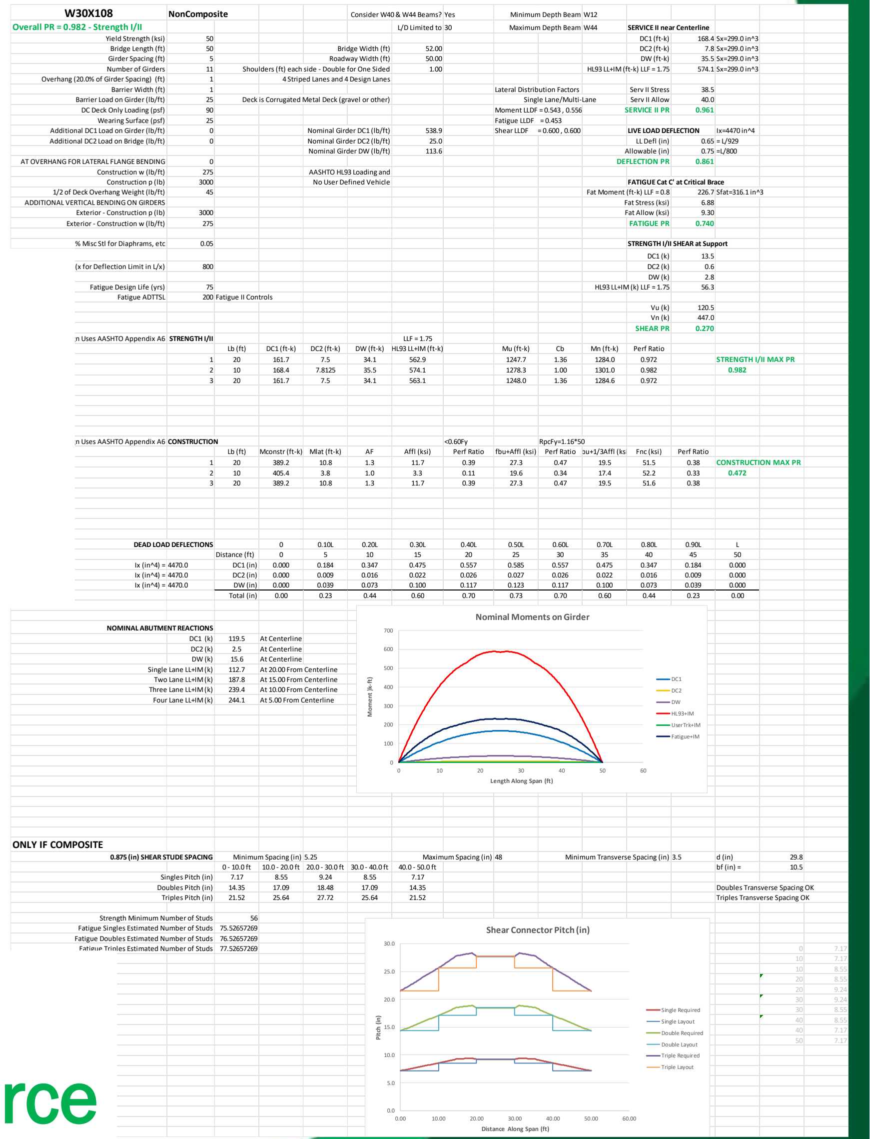
Superstructure Design for Two-Lane, 80 ft Simple Span Bridge

New Optimized Design Software – Coming Soon

Excel Based Simple Span Design Software

- NonComposite Design
- Composite Design
- Up to 4-Lanes
- 50, 65 or 70 ksi Steel
- Bridge Layout
    - Specific Bridge Length
    - Roadway Width
    - Striped & Design Lanes
    - Specific Girder Spacing (w/ Guidance)
    - Barrier Width
    - Variable Overhangs (w/ Guidance)





Will Be Free Resource

Design Software

Excel Based Simple Span Design Software

- Diaphragm Variable Along Span: up to 7 Unbraced Lengths: Skewed Bridges
  - Compression Flange Bracing During Construction
  - Compression Flange Bracing for Final State
- Any Decking: Wood, Grid, CMD, Noncomposite Concrete, Composite Concrete
  - For Composite: f'c, full depth or SIP, haunch, sacrificial surface, shear connector design
  - Additional Dead Load (DC1 - Utilities, etc)
  - Variable Bridge Railing
  - Steel Beams Individually Considered in Dead Load
- Wearing Surface
- Additional Dead Load (DC2 – Utilities, etc)

Design Software

Excel Based Simple Span Design Software

- Vehicular Loading
  - AASHTO HL93 truck, Tandem and Lane
  - User Defined Vehicle (i.e., U-80)

    User Live Load Factor (Strength II)

    Optional Lane Load

    Single or Multi-Lane Distribution

    User Impact Factor
- Live Load Distribution Factors
  - Moment & Shear (Based on Decking)
  - Lever Rule if Necessary
  - Single & Multi-Lane
  - Rigid Rotational Analysis
  - User Input LLDF

Design Software

Excel Based Simple Span Design Software

- Limit L/D Ratio
- Minimum Depth (diaphragms)
- Maximum Depth (approaches/clearance)
- Option on W40/44
- User Defined Deflection Limit
- Add % Steel for Miscellaneous
- Applies AASHTO 6.10.8 (conservative) or Appendix A6 (optimal)
- Calculated Cb for Each Unbraced Length - AASHTO 10
    - User defined Cb

Design Software

Excel Based Simple Span Design Software

- Fatigue I or Fatigue II Based on ADTT – AASHTO 10
  - Variable Design Life
- Performs Dead, Construction & Live Load Analysis for Each Unbraced Length
- Strength I/II & Constructability Design for Each Unbraced Length
- Service II Near Centerline (Maximum Moment)
- Fatigue at Critical Diaphragm Location (Detail C’)

Design Software

Excel Based Simple Span Design Software

- Allows User to Investigate Alternatives to
  - Diaphragm Spacing
  - Alternate Shape Solution – Readily Available Sections
  - Sections Just Above Design Performance Ratio

ENTER W SECTION FOR MORE INFORMATION

W30X116 **NonComposite**

OVERALL PERFORMANCE FOR W30X116

Strength I/II PR	Service II PR	Construction PR	Fatigue PR	Deflection PR	Overall PR
0.898	0.971	0.153	0.788	1.207	1.207
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to	Deflection
2		1		L/663	

ERFORMANCE BY UNBRACED LENGTH FOR W30X116

Compression Flange Laterally Braced for Final State

nbraced Length	Unbraced Length (ft)	Lb Range	Strength I/II PR	Mn/My	Cb
1	26	0 - 26 ft	0.898	1.149	1.254
2	26	26 - 52 ft	0.898	1.149	1.254

LIST OF ALL W SHAPES RANKED FROM STRENGTH I, SERVICE II & CONSTRUCTION

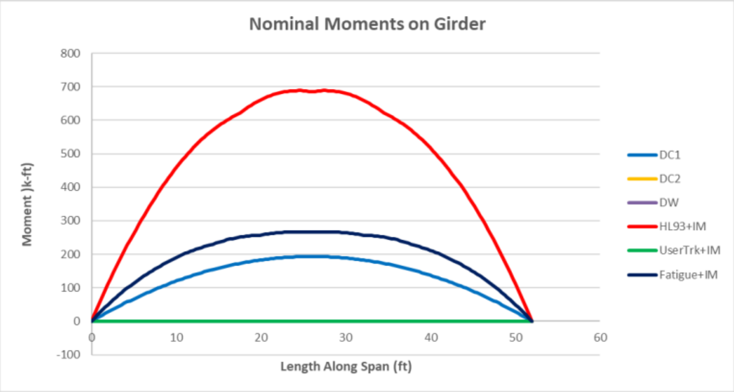
Top 20 That Meet Min Depth, Max Depth & W40 & W44 Limits

Shape	Strength I/II PR	Service II PR	Construction PR	Fatigue PR	Deflection PR	Overall PR
W30X116	0.90	0.97	0.15	0.79	1.21	1.21
W33X118	0.82	0.89	0.14	0.73	1.01	1.01
W30X124	0.83	0.90	0.14	0.73	1.11	1.11
W27X129	0.86	0.93	0.15	0.73	1.25	1.25
W33X130	0.73	0.79	0.13	0.64	0.89	0.89
W24X131	0.92	0.98	0.16	0.77	1.48	1.48
W30X132	0.78	0.85	0.14	0.67	1.03	1.03
W36X135	0.67	0.73	0.12	0.60	0.76	0.76
W33X141	0.67	0.72	0.12	0.58	0.80	0.80
W27X146	0.74	0.78	0.13	0.62	1.05	1.05
W24X146	0.82	0.87	0.15	0.67	1.30	1.30
W21X147	0.92	0.98	0.16	0.75	1.64	1.64
W30X148	0.69	0.74	0.12	0.58	0.89	0.89
W36X150	0.59	0.64	0.11	0.52	0.66	0.66
W33X152	0.61	0.66	0.11	0.53	0.73	0.73
W36X160	0.55	0.60	0.10	0.48	0.61	0.61
W27X161	0.67	0.71	0.12	0.55	0.94	0.94
W24X162	0.74	0.78	0.13	0.60	1.15	1.15
W21X166	0.80	0.85	0.15	0.63	1.39	1.39
W33X169	0.55	0.59	0.10	0.46	0.64	0.64

Design Software

Excel Based Simple Span Design Software

- Design Summary
  - All Superstructure Design Results Specific to Limit States, Unbraced Lengths, etc.
  - Dead Load Deflections for Camber
  - Abutment Reaction Cases for Multi-Lane
  - If Composite: Strength and Fatigue Stud Design

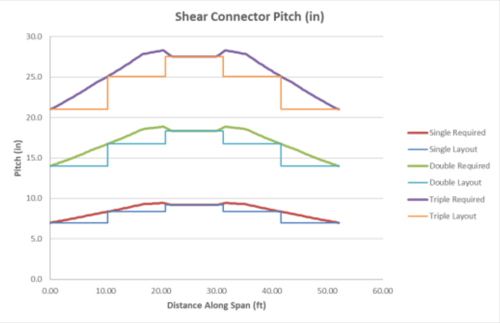


SERVICE II near Centerline		
DC1 (ft-k)	193.3	Sx=329.0 in^3
DC2 (ft-k)	0.0	Sx=329.0 in^3
DW (ft-k)	0.0	Sx=329.0 in^3
HL93 LL+IM (ft-k) LLF = 1.75	670.5	Sx=329.0 in^3
Serv II Stress	38.8	
Serv II Allow	40.0	
SERVICE II PR	0.971	
LIVE LOAD DEFLECTION		Ix=4930 in^4
LL Defl (in)	0.94	= L/663
Allowable (in)	0.78	=L/800
DEFLECTION PR	1.207	PR Exceeds 1.0
FATIGUE Cat C' at Critical Brace		
Fat Moment (ft-k) LLF = 0.8	265.8	Sfat=348.4 in^
Fat Stress (ksi)	7.32	
Fat Allow (ksi)	9.30	
FATIGUE PR	0.788	
STRENGTH I/II SHEAR at Support		
DC1 (k)	14.9	
DC2 (k)	0.0	
DW (k)	0.0	
HL93 LL+IM (k) LLF = 1.75	60.6	
Vu (k)	124.6	
Vn (k)	463.7	
SHEAR PR	0.269	

Strength Design Uses AASHTO Appendix A6	STRENGTH I/II		Compression Flange Laterally Braced for Fi			LLF = 1.75								
		Lb (ft)	DC1 (ft-k)	DC2 (ft-k)	DW (ft-k)	HL93 LL+IM (ft-k)		Mu (ft-k)	Cb	Mn (ft-k)	Perf Ratio			
	1	26	193.3	0	0.0	670.4		1414.7	1.25	1575.0	0.898		STRENGTH I/II MAX PR	
	2	26	193.3	0	0.0	670.5		1415.0	1.25	1575.0	0.898		0.898	

Strength Design Uses AASHTO Appendix A6	CONSTRUCTION		Compression Flange Laterally Braced for Construction				<0.60Fy		RpcFy=1.15*50					
		Lb (ft)	Mconstr (ft-k)	Mlat (ft-k)	AF	Affl (ksi)	Perf Ratio	fbu+Affl (ksi)	Perf Ratio	bu+1/3Affl (ksi	Fnc (ksi)	Perf Ratio		
	1	26	241.6	0.0	1.0	0.0	0.00	8.8	0.15	8.8	57.4	0.15	CONSTRUCTION MAX PR	
	2	26	241.6	0.0	1.0	0.0	0.00	8.8	0.15	8.8	57.4	0.15	0.153	

NOMINAL ABUTMENT REACTIONS		
DC1 (k)	70.2	At Centerline
DC2 (k)	0.0	At Centerline
DW (k)	0.0	At Centerline
Single Lane LL+IM (k)	114.3	At 9.00 From Centerline
Two Lane LL+IM (k)	190.4	At 4.00 From Centerline



Summary

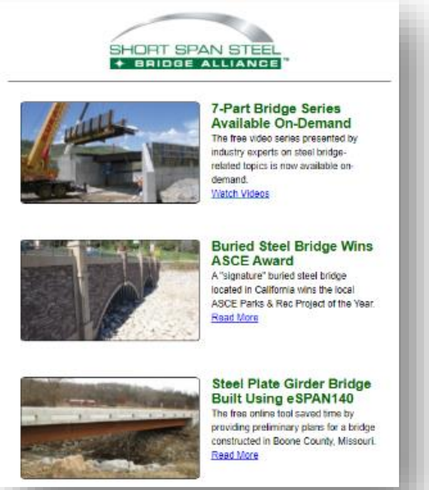
Rolled Shape Bridge Design: Composite & NonComposite

- User Manual & Examples
- Currently Under Testing/Review
- Release:
  - Fall SSSBA Meeting
  - AGA/SSSBA Building Better Bridges in 2025 Webinar, Sept 10th, 2025

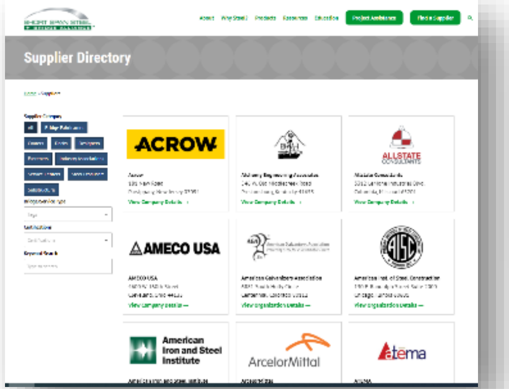
Manufacturer Solutions & Accelerated Bridge Construction

5 Ways to Keep Learning About Steel Bridges

1. Subscribe to the Weekly Newsletter



2. Find a Supplier



3. Design a Bridge in 5-Minutes

eSPAN140™

4. Receive Free Project Assistance

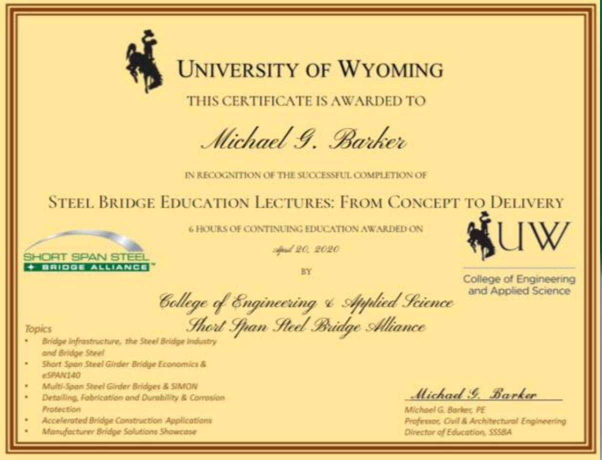
5. Schedule a Workshop/Webinar

www.ShortSpanSteelBridges.org

Questions? **Dan Snyder,** Director, SSSBA, dsnyder@steel.org, (301) 367-6179

Website: ShortSpanSteelBridges.org
Twitter: @ShortSpanSteel
Facebook: Short Span Steel Bridge Alliance

Online University Lecture Part I: Steel Bridges From Concept to Delivery


University of Wyoming

This certificate is awarded to

Michael G. Barker

In recognition of the successful completion of

Steel Bridge Education Lectures: From Concept to Delivery

6 hours of continuing education awarded on

April 20, 2020

by

College of Engineering & Applied Science

Short Span Steel Bridge Alliance

Topics

- Bridge Infrastructure, the Steel Bridge Industry and Bridge Steel
- Short Span Steel Girder Bridge Economics & eSPAN140
- Multi-Span Steel Girder Bridges & SIMON
- Detailing, Fabrication and Durability & Corrosion Protection
- Accelerated Bridge Construction Applications
- Manufacturer Bridge Solutions Showcase

Michael G. Barker

Michael G. Barker, PE

Professor, Civil & Architectural Engineering

Director of Education, SSSBA

Getting Students, Faculty and Young Engineers Familiar with Steel Bridges and Instill a Positive Opinion of Steel Bridges is Imperative for the Future of Steel Bridges

Updated and Improved 2025

Steel Bridge Education Lectures: From Concept to Delivery

Lecture 1: Bridge Infrastructure & the Steel Bridge Industry

Lecture 2: Short Span Steel Girder Economics & eSPAN140

Lecture 3: Multi-Span Steel Girder Bridges & SIMON

Lecture 4: Detailing, Fabrication and Durability & Corrosion Protection

Lecture 5: Accelerated Bridge Construction Applications

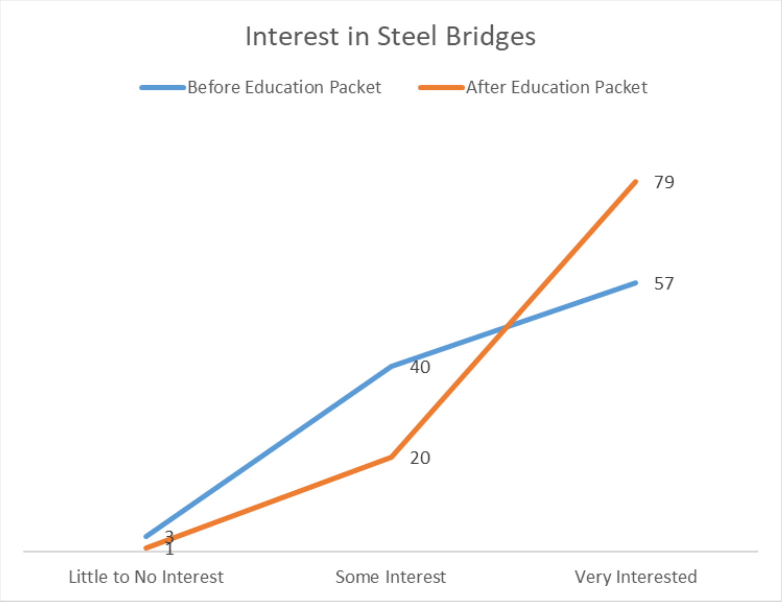
Lecture 6: Manufacturer Bridge Solutions Showcase

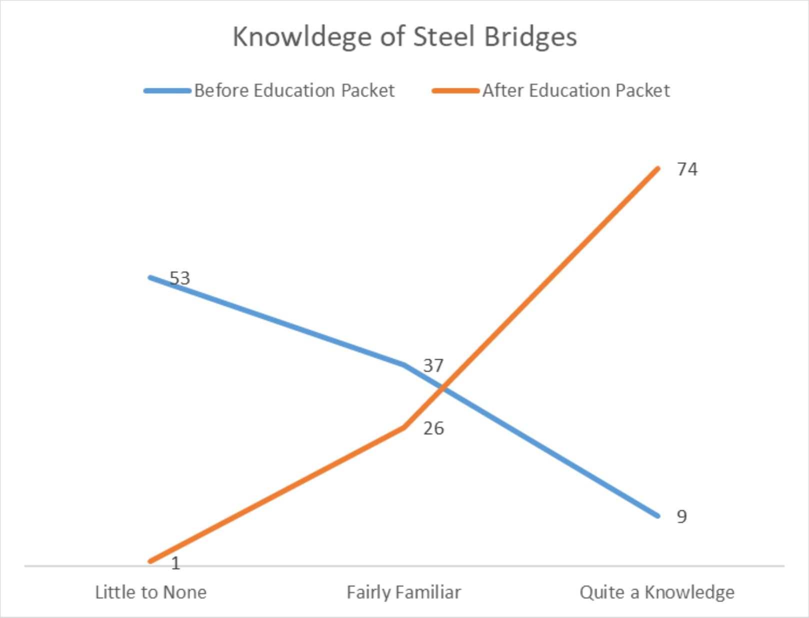
11 Workshops

Over 1600 Certificates Awarded

Over 3500 Registered

One More Planned for Fall 2025





New Online University Lecture Part II: Simple Span Bridge Design

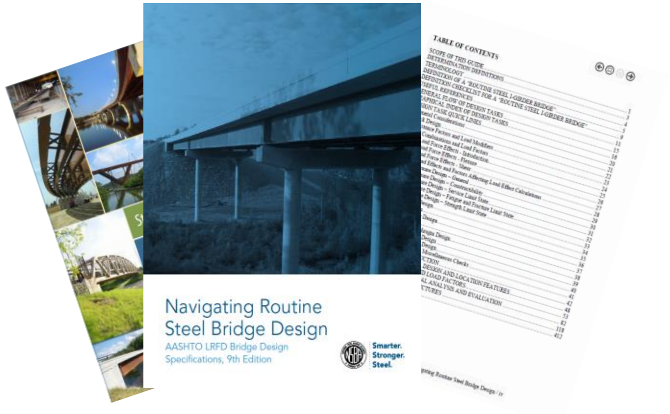
6-part steel bridge design education packet based on NSBA Navigating Routine Steel Bridge Design

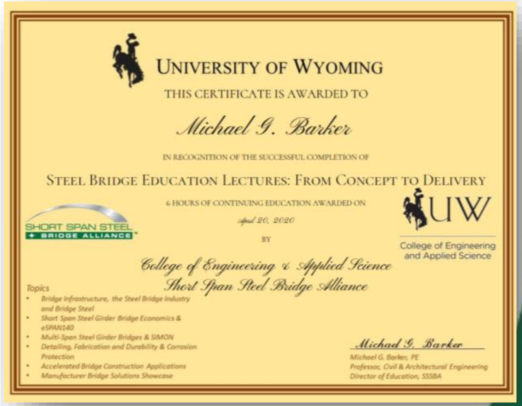
Similar Online Certificate Program to Steel Bridges from Concept to Delivery

Target Audience:

University Students

Young Professionals

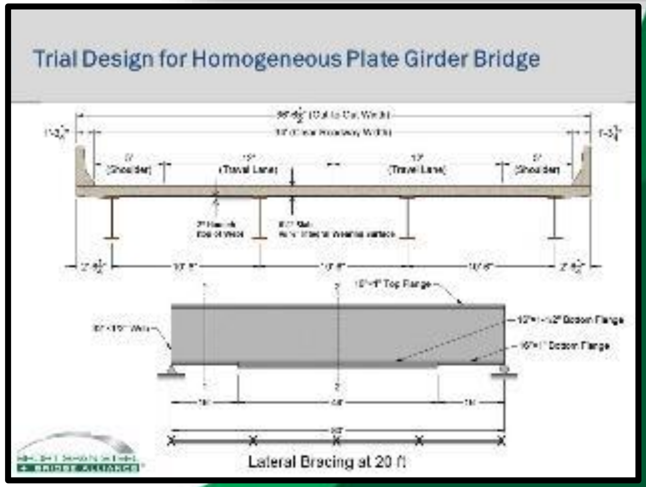




First Offering in 2025

80 ft Simple Span Plate Girder Design

- Lecture 1: Introduction & Trial Bridge Design
- Lecture 2: Bridge Design
- Lecture 3: Bridge Analysis & Design Limit States
- Lecture 4: Strength Design
- Lecture 5: Serviceability & Construction Design
- Lecture 6: Detailing & Final Thoughts



Building Better Bridges in 2025 Webinar Series

NEW - Quarterly Webinars on AGA Platform

AGA American Galvanizers Association
Protecting Steel for a Sustainable Future

SHORT SPAN STEEL BRIDGE ALLIANCE™

Building Better Bridges in 2025: Webinar Series

AIA Approved Continuing Education

ENGINEERING RCEP REGISTERED CONTINUING EDUCATION PROGRAM

Feb 19, 1 pm ET	Steel vs Concrete Life Cycle Performance and Costs	~500 Certificates!!
April 23, 1 pm ET	Unlocking the Potential of Buried Steel Structures	~500 Certificates!!
Sept 10, 1 pm ET	Next-Gen Steel Bridge Design Tools for Smarter Solutions	New Software for Optimized Design
Dec 10, 1 pm ET	Simple for Dead, Continuous for Live Designs for Optimal Performance	

Workshops: Professional

Free Customized Workshops for Counties, DOTs, and Design Firms

Topics: Education, Events, Professional, Recommended

Short span bridges provide vital links in the nation's infrastructure network. Yet, nearly a quarter of these bridges are classified as structurally deficient or functionally obsolete.

According to ASCE, more than 30% of existing bridges have exceeded their 50-year design life. This situation presents a significant challenge for cash-strapped state and local governments.

The SSSBA has developed technological and design innovations for bridges under 140 feet that save significant time and costs for county and state bridge officials.

Over the past 10-years, over 5,000 bridge owners and designers have learned about the cost and time advantages of short span steel bridges in SSSBA workshops and conferences throughout North America.

And now, the SSSBA is offering **complimentary** customized educational guest speakers/webinars and workshops (on-site or virtual) specifically for county engineers, state DOTs, and design firms. The webinars/workshops are taught by industry experts with decades of experience in the cost-effective design and construction of short span bridges.

The workshops can be set up as:

- 1-2 hour webinar on a specific topic (can be used as a "guest speaker" for your event).

SHORT SPAN STEEL + BRIDGE ALLIANCE

Short Span Steel Bridge Workshops

Over the past 10-years, over 5,000 bridge owners and designers have learned about the cost and time advantages of short span steel bridges in SSSBA workshops and conferences throughout North America.

And now, the SSSBA is offering **complimentary** customized educational workshops (on-site or virtual) specifically for county engineers, state DOTs, and design firms. The workshops are taught by industry experts with decades of experience in the cost-effective design and construction of short span bridges.

The workshops can be set up as:

- 1-2 hour webinar on a specific topic.
- 3-4 hour (half-day) workshop to provide practical information on the safe and cost-effective design, detail, fabrication and installation of short span steel bridges.
- 6 hours (full-day) session to provide an in-depth overview of short span steel bridges.

Suggested topics to select from include:

- Practical & Cost-Effective Steel Bridge Design
- Free Design Tools (eSPAN140 and SIMON)
- Pre-engineered Bridge Solutions
- Coating Solutions (galvanized, painted, and weathering steel)
- Accelerated Bridge Construction Options
- Case Studies (from local counties)
- Buried Soil Steel Bridge Structure Alternatives
- Life-Cycle Analysis

Sample Workshop Agenda (can also be altered for a virtual meeting)

4-Hour Workshop Agenda

00:00 (40 min) Introduction, Short Span Steel Bridge Overview & Design Tools (eSPAN140)
00:40 (35 min) Bridge Economy & Life Cycle Costs
01:15 (35 min) Steel Bridge Case Study
01:50 (25 min) Break (networking)
02:15 (35 min) National Steel Bridge Alliance Design Resources & SIMON (design software)
02:50 (35 min) Buried Steel Bridges Design & Construction
03:25 (35 min) Pre-Fabricated Steel Bridges & Accelerated Bridge Construction
04:00 Adjourn
** Each presentation will allow 5-10 minutes of Q&A*

Larimer County, CO

Workshop: DIY County Bridges in 6 Steps

6-part Education to Potentially 3000 Counties on How They Can Build Their Own Bridges

Based on Whitman County, WA, Experience

2022 NACE

Invited Back for NACE 2023

Workshop Benefits

- Save Money and Build More Bridges!
- Workforce Development
- Minimize Public Inconvenience
- Accelerate Construction
- Use/Share County Equipment

Agenda (4 hours, including breaks)

- Module 1: Can My County Build This Bridge? (35 minutes)
- Module 2: Permits, Environmental Issues and Geotech Considerations (35 minutes)
- Module 3: Selecting Bridge Type and Bidding an Award (35 minutes)
- Module 4: Foundation and Substructure Design/Installation (35 minutes)
- Module 5: Installing the Bridge (35 minutes)
- Module 6: Commissioning and Opening to Traffic (35 minutes)

So You Want to Build a Bridge (and Save Money)?

DIY County Bridges in 6 Steps

SHORT SPAN STEEL BRIDGE ALLIANCE

Workshop Overview

Our nation is facing an infrastructure crisis. More than 220,000 bridges in the United States need major repair work or should be replaced. Nationwide, counties own and maintain 40 percent of the nation's bridges, making them the single largest stakeholder in local road and bridge construction, rehabilitation, expansion and maintenance.

This situation presents a significant challenge for cash-strapped state and local governments. To responsibly fix our nation's county bridges, cost-effective and sustainable solutions are needed – one option is to use county crews to assist with steel bridge installations. For example, Whitman County, Washington officials saved over $30,000 by using local crews to install a prefabricated steel bridge (watch video). Audrain County, Missouri officials saved nearly 20 percent in the total cost of the structure using county crews to install a short span steel beam bridge (watch video).

To assist counties in saving time and money by using local crews, the Short Span Steel Bridge Alliance (SSSBA) developed an educational workshop to explain and simplify the process. Input from Whitman County officials and several other counties was collected to develop the workshop, "So You Want to Build a Bridge? DIY County Bridges in 6 Steps."

"I think we can build a bridge for about half of what the contracting community can do."
Mark Storey, P.E.
Director/County Engineer
Whitman County, Washington Public Works

In the past 10 years, more than 15,000 bridge owners and designers have attended SSSBA workshops to learn about the cost and time advantages of short span steel bridges. Please join us for this entertaining and engaging educational adventure certain to save you time and money in future county bridge installations.

Sample Video
https://www.shortspansteelbridges.org/county-saves-steel/

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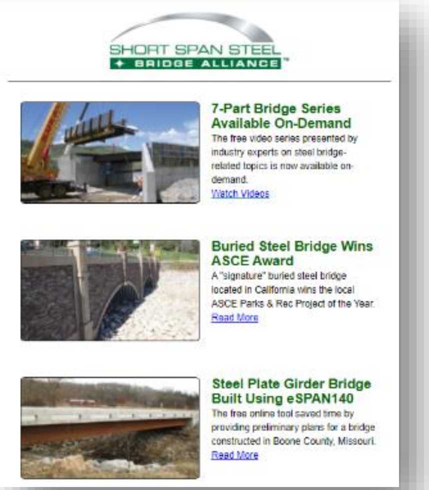

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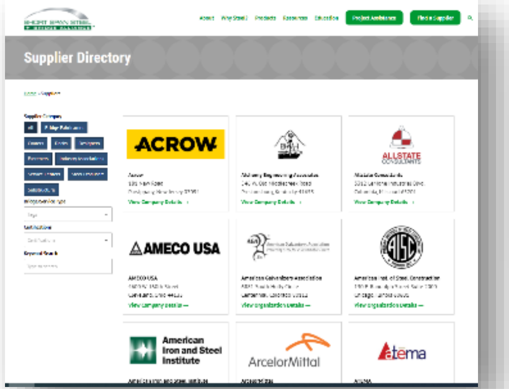

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Facebook: Short Span Steel Bridge Alliance