Short Span Steel Bridge Alliance

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Download Presentation Slides, Resources, Contact Info

www.shortspansteelbridges.org

Short Span Steel Bridge Alliance

ESTABLISHED 2007

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**.

115 Members

To join, contact Dan Snyder, Director, SSSBA, dsnyder@steel.org, (301) 367-6179

SSSBA Supports All Steel Solutions

Buried Bridges

Rolled Beam & Plate Girders

Press-Brake-Formed Tub Girders

Truss Bridges

SSSBA Leadership

Dr. Michael Barker

Univ. of Wyoming

Education

Myrissa Welch

SSAB

Chair

Dan Snyder

AISI

Director

SSSBA Organizational Structure

Short Span Steel Bridge Alliance Executive Council

Marketing & Education Council

Topics:

- University Outreach
- Professional Outreach
- Trade Shows, Webinars
- Case Study Development
- Bridge Bundling
- County Built Bridges
- Buried Bridge Solutions
- Communications (digital marketing)

Technical Council

Topics:

- eSPAN140, eBEAM140, ePLATE140
- Innovative Bridge Systems
- Pre-Engineered Solutions
- Folded and Press Brake Tub Girders
- Decks (including Orthotropic)
- Research (resilience, economical plate solutions, other…)

What Do We Provide?

- Education
  - Workshops, Webinars, Newsletter
- Technical Resources
  - Standards, best practices, case studies
- Simple Design Tools (eSPAN140, eBEAM140)
- Project Assistance
- Find a Supplier
- Networking / SSSBA Semiannual Meeting

Request a Complimentary Workshop!

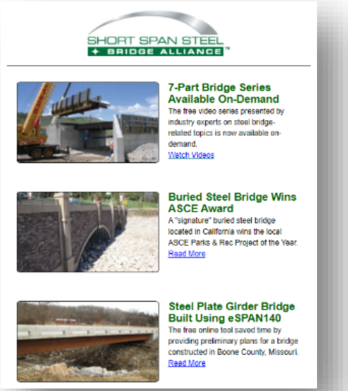
The SSSBA has educated over 40,000 bridge owners and designers

- o Free “customized” workshops for counties & DOTs (from 1 to 6 hours)
- o In-Person & Virtual
- o Topics Include:
  - Bridge Economy & Life Cycle Costs
  - Design Tools, Fabrication, Installation
  - Accelerated Bridge Construction
  - Practical Detailing
  - Resiliency
  - Steel Protection Systems

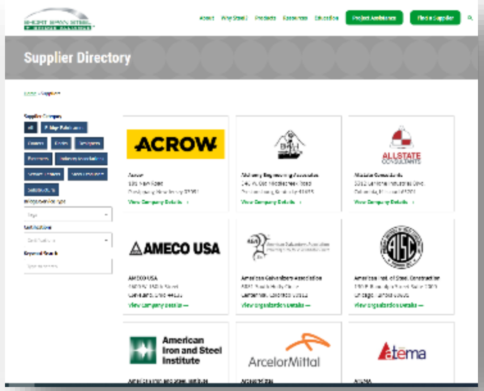
  And more….

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™

eBEAM140

4. Receive Free Project Assistance

5. Schedule a Workshop/Webinar

Download Presentation Slides, Resources, Contact Info

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

This is SSAB

10.6 BILLION USD

Revenue in 2025

1878

Steelmaking since

15,000

Employees in more than 50 countries

9.7 MILLION TONS

Production capacity crude steel

Headquarters Stockholm, Sweden

SSAB Special Steels
SSAB Europe
SSAB Americas
Tibnor
Ruukki Construction

Divisions and subsidiaries

A stronger, lighter and more sustainable world

SSAB

Leader in market driven decarbonization initiatives

Decarbonized steel

SSAB Fossil-free™ steel

Made using hydrogen-reduced sponge iron based on HYBRIT® technology and fossil-free energy

Target less than 0.05 kg CO_2e/kg steel in Scope 1 and 2, and for iron ore upstream Scope 3, of the GHG Protocol

Decarbonized steel

SSAB Zero™

High quality end products are made with SSAB Zero™ – using recycled steel and fossil-free energy – without compromising on performance. Around 90,000 tons of shipments in 2025. Third-party verified EPDs are available

Less than 0.05 kg CO_2e/kg steel in Scope 1 and 2 of the GHG Protocol

World’s first near-zero emissions steel

SSAB is the world’s first steel company to meet near-zero emissions steel thresholds (IEA guidelines as used by FMC)*

Integrating hydrogen-reduced sponge iron based on HYBRIT® technology into SSAB Zero™ production process

* FMC = First Movers Coalition; IEA = International Energy Agency

Hydrogen-reduced sponge iron based on HYBRIT® technology

New patented product with close to 100% metallization rate

Significantly higher value-in-use in EAF steelmaking compared to NG-HBI

Building Bridges: Short Span Steel Bridges

NASCC
Exhibitor Presentation
Short Span Steel Bridge Alliance
April 23, 2026

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

www.shortspansteelbridges.org

SSSBA Education – The 5 Cs

Cost

- Case Studies
- Cost Studies
- Life Cycle Costs
- Economical & Practical Design

Convenience

- eSPAN140 & eBEAM140
- Standard Designs
- State Standards
- Design Software

Construction

- Accelerated Bridge Construction
- Case Studies / Manufacturer Solutions
- Equipment

County Built

- DIY County Bridges
- Case Studies

Carbon – CO_2e

- Sustainability of Rural Bridges

Plus Resiliency

Today's Session

Initial Costs – *Dealing with the Preconception on Steel Bridge Costs*

Life Cycle Cost Comparison Steel vs Concrete – *Long Term Performance & Costs*

eSPAN140 & eBEAM140 Design Tools – *Steel Bridge Design Made Easy*

Bridge Manufacturer Solutions/ABC – *I Need a Bridge, Bring Me One*

Resilience – *Important in Today's Infrastructure*

Workshops, Resources & Opportunities Through the SSSBA

We Only Have Time to Quickly Address These Today:
More Information and Reports at ShortSpanSteelBridges.org

Initial Costs: Steel & Concrete

Preconception that Concrete is Less Expensive than Steel for Typical Bridges

- Many Times Steel is Not Even Considered
- Owners Paying More Than They Could for Bridges
- Unwarranted Lack of Competition Not Good

Summary on Initial Costs

SSSBA Conducted Case Studies:

- County & State Bridges
- Bids & Actual Costs
- Case Studies of County Bridges
- **Others Not Shown Here**

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

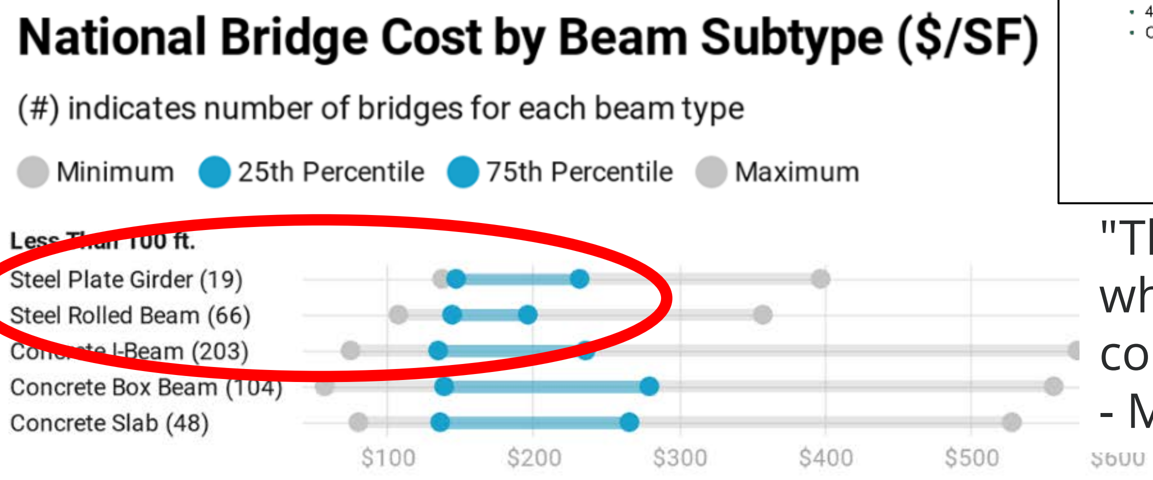
Two MoDOT Bridges Crossing US 63 in Boone County

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

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

Using ENR CCI Index Increase of 2.7%/yr
For 2017 Concrete = $ 91.18/ft²
Steel = $ 85.58/ft²

NSBA Cost Study



"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/

Steel Bridges Compete and Win!

Studies at:
ShortSpanSteelBridges.org

What About Life Cycle Costs?

As owners replace their bridge infrastructure, the question of Life Service and Life Cycle Costs routinely comes up between concrete and steel bridge options

The bridge industry ~~does~~ did not have a good answer:

Both steel and concrete bridge advocates claim an advantage

Anecdotal information is not convincing

Historical Life Cycle Costs of Steel & Concrete Girder Bridges

Examine Historical Life Service (Performance and Maintenance) and Agency Life Cycle Costs (True Agency Costs for a Bridge) of Steel and Concrete Bridges in Pennsylvania

Example Bridge Life Cycle

OMB Circular A-94 2011 30 yr Discount Rate = 2.3%

Present Value Cost for 1 Cycle

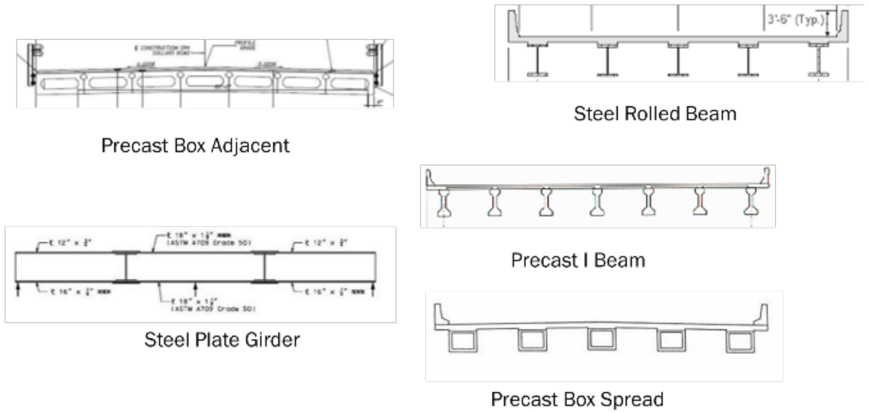
$$PVC = \$143.45 + \$16.63(1.023)^{-19} + \$0.28(1.023)^{-40} + \$0.34(1.023)^{-44} = \$154.49/ft^2$$

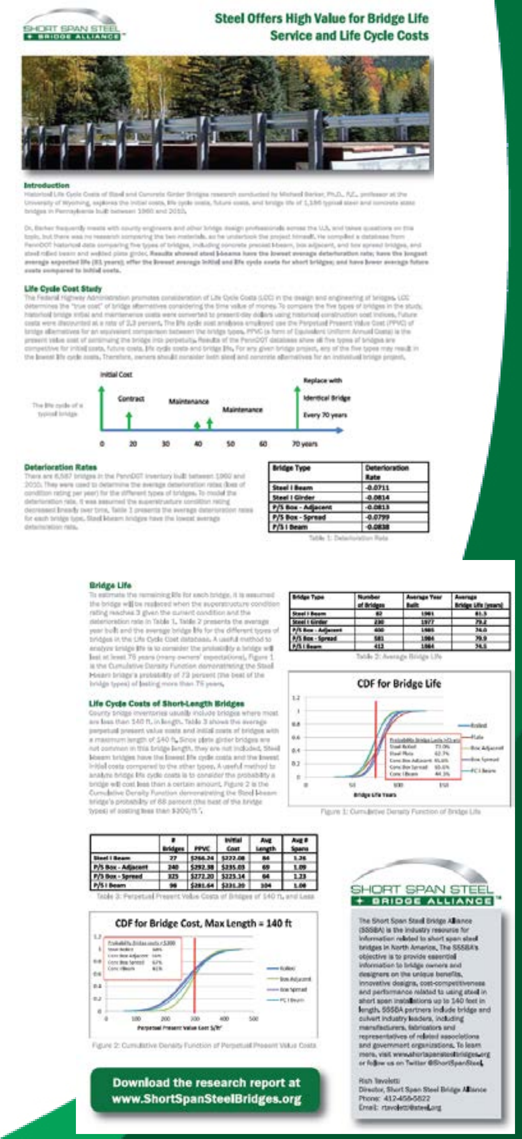
Perpetual Present Value Cost = Capitalized Cost

$$PPVC = \$154.49\left[\frac{(1+0.023)^{70}}{(1+0.023)^{70}-1}\right] = 1.256(\$154.49) = \$193.97/ft^2$$

With Capitalized Costs, Can Compare Bridges Directly

Which Type of Bridge is Best?





Large Database of Steel & Concrete Bridges

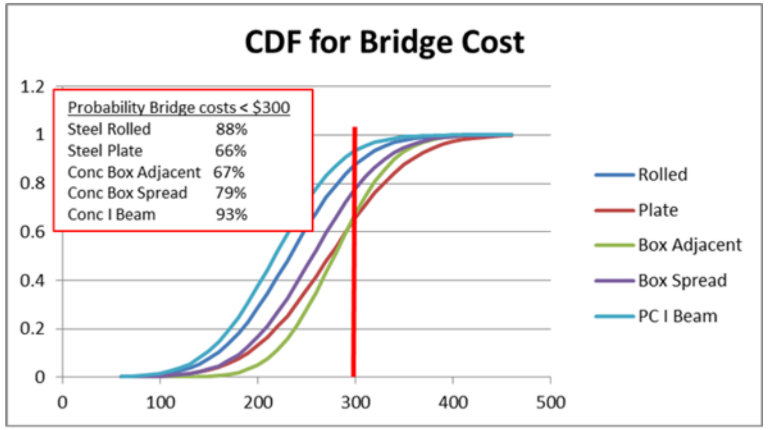
Thank You to PennDOT professionals for their participation
Support from AISI, NSBA and AGA

Conclusions

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

Capitalized Costs – All Bridges



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

Report on ShortSpanSteelBridges.org
Additional Report on LCC Galvanizing

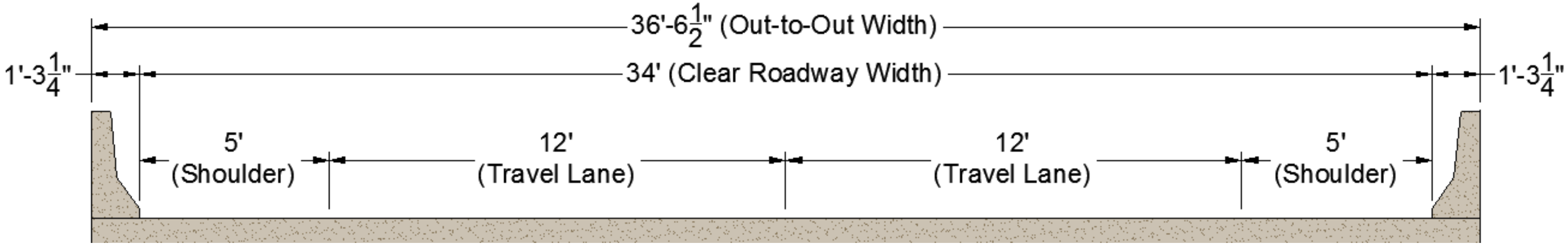
All are “similar” with None “Way Out” of Balance

Traditional Fabricated Steel Bridges

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

Bridge Need and Basic Information

- Decided by Owner/Engineer:
  - 80 ft Simple Span Composite – Steel Girders
  - Two 12 ft Travel Lanes, ADT = 5600 one direction
  - 34 ft Roadway Width
  - Jersey Barriers (1 ft – 3 ¼ in wide)



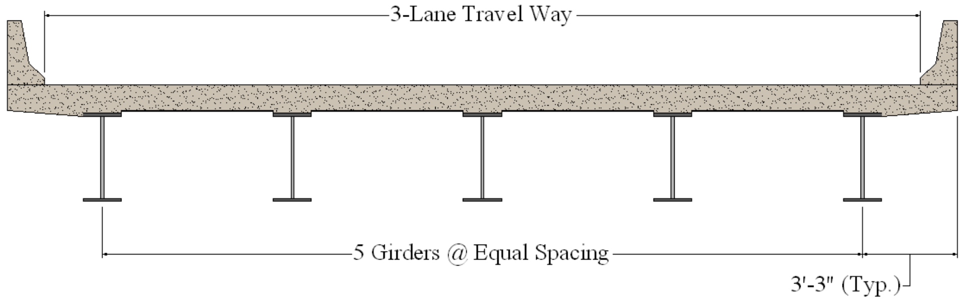
Need an Initial Design for the Bridge SuperStructure

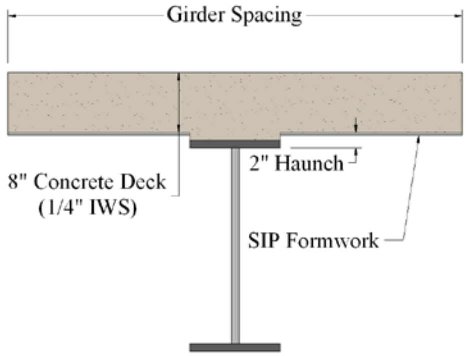
eSPAN140 - Standard Designs for Short Span Steel Bridges - www.ShortSpanSteelBridges.org

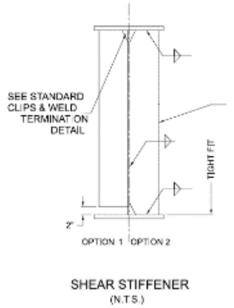
Span lengths 20 ft to 140 ft (in 5 ft increments)

Four girder spacing: 6’-0”, 7’-6”, 9’-0” and 10’-6”,

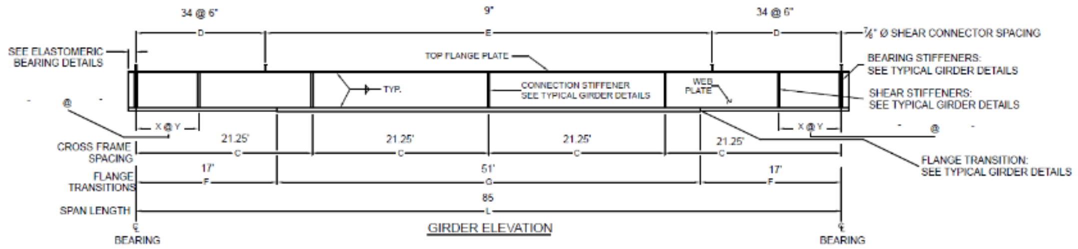
- For each of these increments: Steel girders, Shear stud & stiffener layouts, Welding and fabrication details, Elastomeric bearings, and Concrete deck design

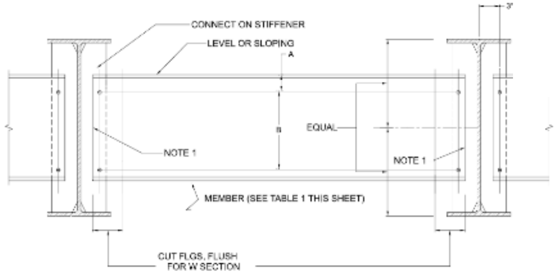






COMPOSITE PLATE GIRDER WITH PARTIALLY STIFFENED WEB - 4 GIRDERS AT 8' 10" GIRDER SPACING, HOMOGENEOUS





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')**	40' to 100'	+/- 20 degrees	3'3" or less
Homogeneous Plate Girder (60' to 140')**	60' to 140'	+/- 20 degrees	3'3" or less
Press Brake Tub Girders (0' to 80')	0' to 80'	+/- 20 degrees	3'3" or less
Buried Bridges (all)***	0' to 140'	+/- 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.

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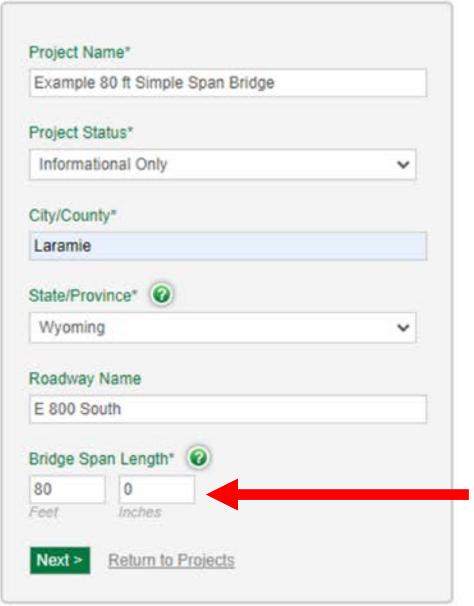
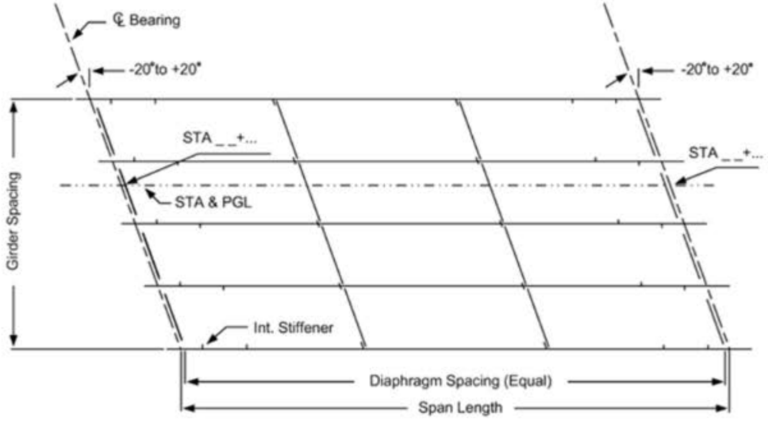
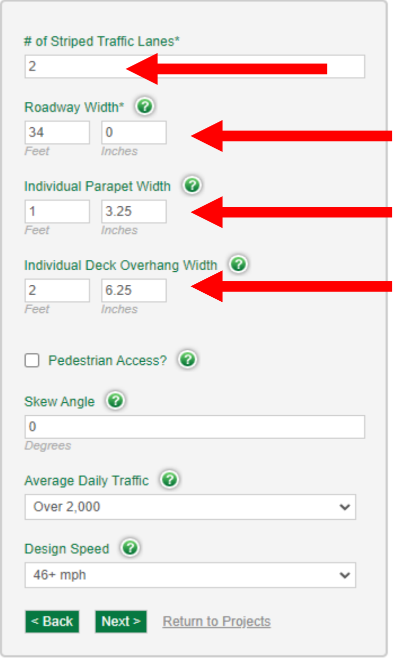
eSPAN140 Preliminary Design

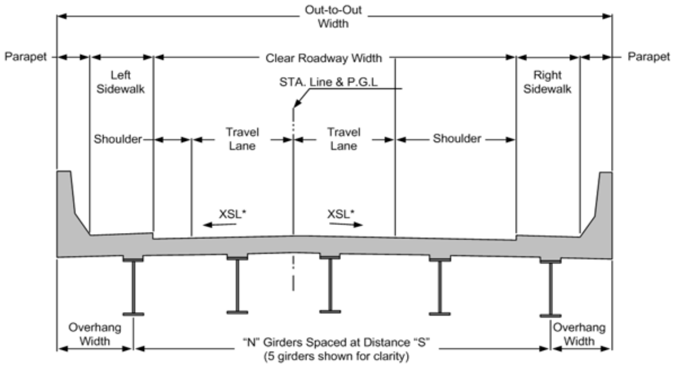




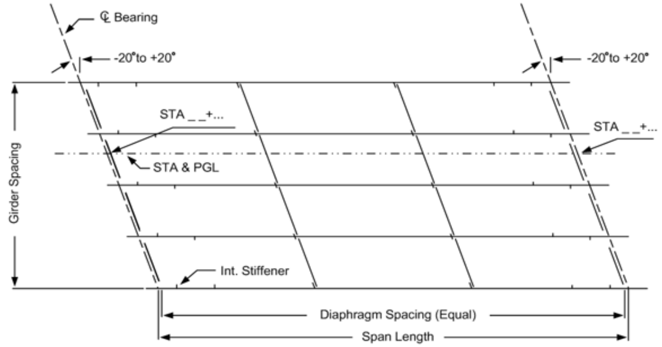
Skew Angle (Overhead View)



* Required



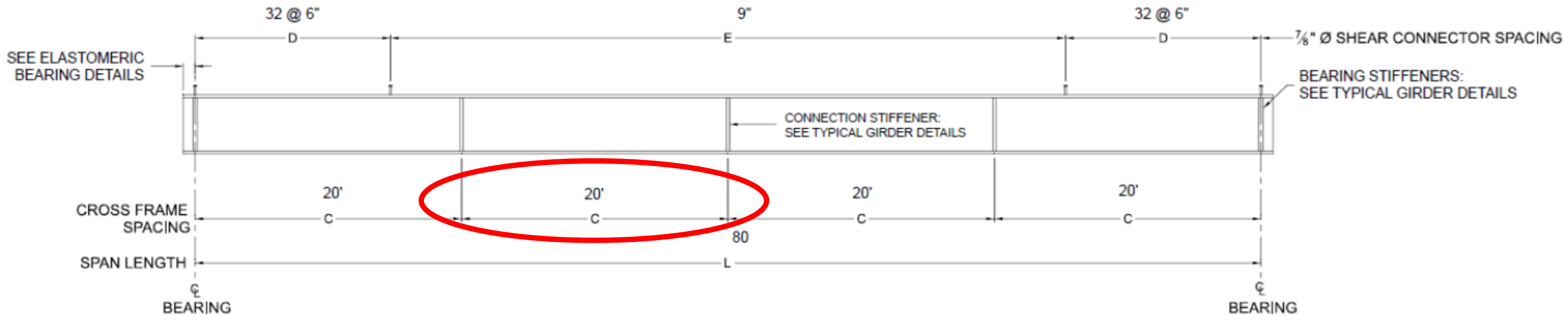
Cross-section of Bridge



Rolled Beam Recommendation

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

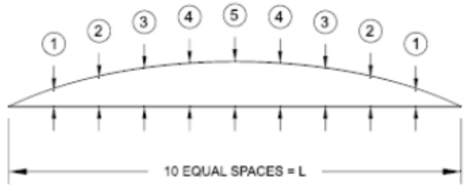
The selected rolled beam section is based on the widest (10'-6") girder spacing used in the development of the standards. The steel industry generally recommends the use of the widest girder spacing possible to reduce the potential number of girder lines for optimum economy.



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

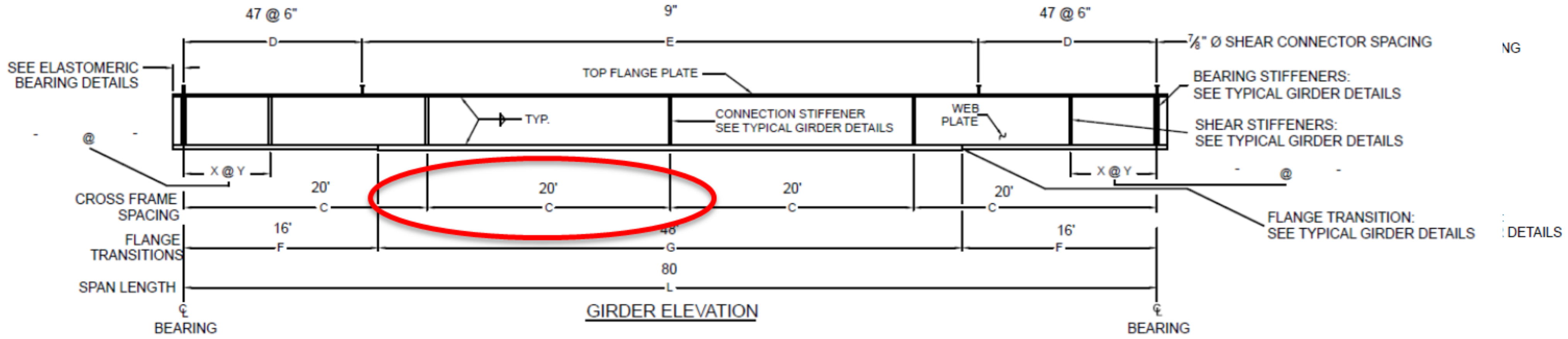
STEEL D.L. CAMBER - in					TOTAL D.L. CAMBER - in				
1	2	3	4	5	1	2	3	4	5
0.178"	0.337"	0.461"	0.540"	0.567"	1.255"	2.375"	3.250"	3.807"	3.997"



D.L. CAMBER

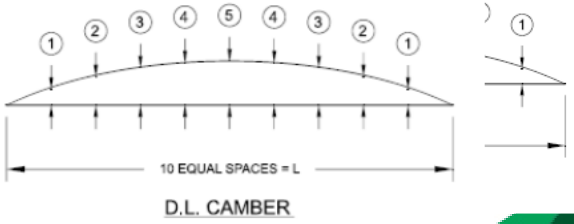
Plate Girder Recommendation

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

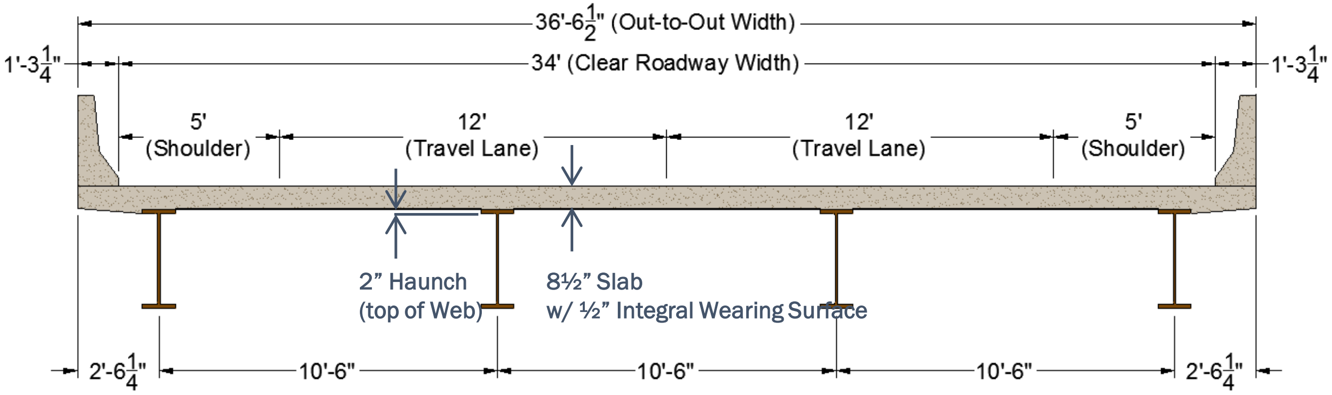


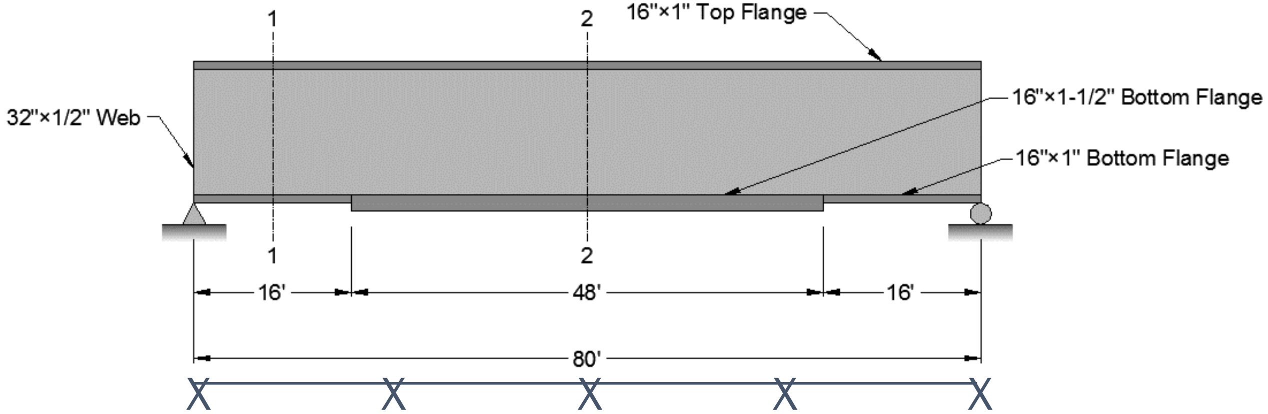
SPAN (L) - ft	PLATE GIRDER SIZE: TOP FLANGE - in	BOTTOM FLANGE (F): PLATE - in	BOTTOM FLANGE (F): LENGTH - Ft	BOTTOM FLANGE (G): PLATE - in	BOTTOM FLANGE (G): LENGTH - Ft	WEB PLATE- in	DIAPHRAGM SPACING (C) - ft	SHEAR STIFFENERS: X (NO. REQ'd)	SHEAR STIFFENERS: Y - ft. (SPACING)	SHEAR CONNECTOR MAX. SPACING: D	SHEAR CONNECTOR MAX. SPACING: E	INDIVIDUAL GIRDER WEIGHT
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"



Design for Homogeneous Plate Girder Bridge





Lateral Bracing at 20 ft

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

eSPAN140 Summary

Composite Rolled Beam and Plate Girder Designs

1000’s of Designs Performed

Has Worked Well

What’s Next?

Update to AASHTO 10th Edition

Adding NonComposite Bridges

Including Additional Solution Options

Release TBD

NEW Short Span Steel Bridge Alliance eBEAM140

Noncomposite and Composite Simple-Span Rolled-Section Steel Bridge Design

Excel Based Rolled Beam Design Software

Version 1.0 - Beta

https://www.shortspansteelbridges.org/ebeam140/

eBEAM140 Disclaimer: *This document has been prepared in accordance with information available to the American Iron and Steel Institute (AISI) and its Short Span Steel Bridge Alliance (SSSBA) program, at the time of preparation. While it is believed to reasonably reflect the present state of knowledge as to the subject, it has not been prepared for conventional use as an engineering or construction document and should not be used or relied upon for any specific application without competent professional examination and verification of its accuracy, suitability, and applicability by a licensed engineer, architect or other professional. AISI and the SSSBA disclaim any liability arising from information provided by others or from the unauthorized use of the information contained in this document, and do not accept any obligation to issue supplements or corrections in the event of errors being discovered or advances being made in the techniques discussed in the document.*

Start With Demonstration

NonComposite Bridge

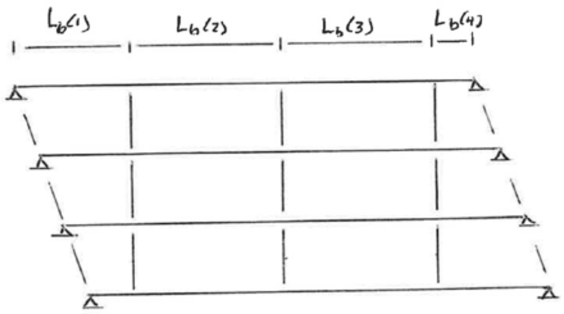
- 52 ft Length
- Two 12 ft Lanes
- 6 Girders at 5’-6” Spacing
- Overhang 1’ – 3”
- Barriers 1’ – 0” (50 lb/ft – 50% on Exterior Girder)
- Roadway Width = 28 ft (4 ft of shoulder)
- Bridge Width 30 ft
- Diaphragm (Centerline) at 26 ft
- Unbraced
- Corrugated Metal Deck & Gravel (80 psf)
- No Additional DC1 or DC2 Loading
- No Wearing Surface
- No Construction Load (No Lateral Flange)
- Misc Steel of 5%
- 50 ksi Steel, L/D limit 30, Min d = 12
- L/800 Deflection Limit
- Compression Flange not Braced
- Use AASHTO Appendix A6
- 75 Year Design Life & $ADTT_{SL}$ = 200
    - Fatigue II – Finite Life
- No User Defined Vehicle

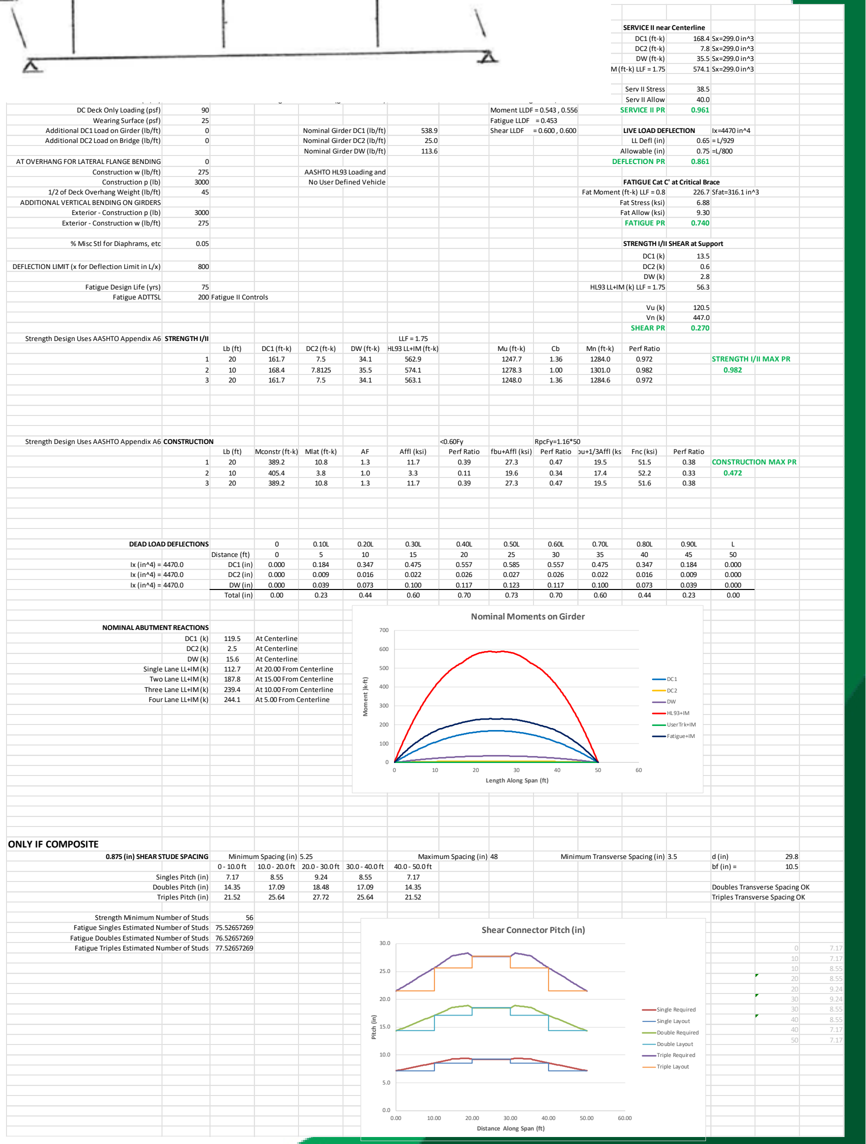
W36x135 Strength I PR = 0.993

Design Software

Excel Based Rolled Beam Design Software

- NonComposite & Composite Design
- 33, 36, 50, 65 or 70 ksi Steel
- Bridge Layout
- Diaphragm Variable Along Span
- Any Decking: Wood, Grid, CMD, NonComposite Concrete, Composite Concrete
- Vehicular Loading: AASHTO HL93 & User Defined Vehicle (i.e., U-80)
- User Defined Design Characteristics
- “What-If” Analysis





Design Software

Excel Based Rolled Beam Design Software

- Allows User to Investigate Alternatives to
  - Diaphragm Spacing
  - Lightest Weight Solution
  - Other Readily Available Sections

ENTER W SECTION FOR MORE INFORMATION

W36X135		NonComposite			Weight (lb/ft) 135	
	OVERALL PERFORMANCE FOR W36X135					
Strength I/II	Service II	Construction	Fatigue	Deflection		Overall
PR	PR	PR	PR	PR		PR
0.993	0.727	0.161	0.599	0.763		0.993
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to		Strength I/II
1		1		L/1049		

PERFORMANCE BY UNBRACED LENGTH FOR W36X135

Unbraced Length	Unbraced Length (ft)	Lb Range	Strength I/II PR	Mn/My	Cb
1	26	0 - 26 ft	0.993	0.778	1.255
2	26	26 - 52 ft	0.993	0.778	1.256

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

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

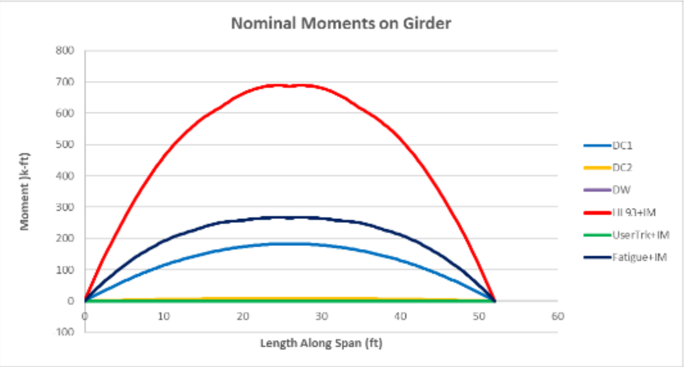
Shape	Strength I/II PR	Service II PR	Construction PR	Fatigue PR	Deflection PR	Overall PR
W36X135	0.99	0.73	0.16	0.60	0.76	0.99
W33X141	0.92	0.71	0.15	0.58	0.80	0.92
W27X146	0.79	0.77	0.14	0.62	1.05	1.05
W30X148	0.95	0.73	0.16	0.58	0.89	0.95
W40X149	0.90	0.62	0.15	0.51	0.61	0.90
W36X150	0.81	0.64	0.13	0.52	0.66	0.81
W33X152	0.81	0.66	0.14	0.53	0.73	0.81
W36X160	0.73	0.59	0.12	0.48	0.61	0.73
W27X161	0.71	0.70	0.13	0.55	0.94	0.94
W24X162	0.77	0.78	0.14	0.60	1.15	1.15
W40X167	0.70	0.54	0.12	0.43	0.51	0.70
W33X169	0.69	0.59	0.12	0.46	0.64	0.69
W36X170	0.66	0.56	0.11	0.44	0.57	0.66
W30X173	0.59	0.60	0.11	0.47	0.72	0.72
W24X176	0.70	0.72	0.13	0.54	1.05	1.05
W27X178	0.63	0.64	0.12	0.50	0.85	0.85
W36X182	0.61	0.52	0.11	0.41	0.53	0.61
W40X183	0.59	0.48	0.10	0.38	0.45	0.59
W30X191	0.53	0.54	0.10	0.42	0.65	0.65
W24X192	0.63	0.66	0.12	0.50	0.95	0.95

Design Software

Excel Based Rolled Beam 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

W44	SERVICE II near Centerline		
	DC1 (ft-k)	183.1	Sx=439.0 in^3
	DC2 (ft-k)	8.5	Sx=439.0 in^3
	DW (ft-k)	0.0	Sx=439.0 in^3
	HL93 LL+IM (ft-k)	670.5	Sx=439.0 in^3
	Serv II Stress	29.1	
Lane	Serv II Allow	40.0	
	SERVICE II PR	**0.727**	
	LIVE LOAD DEFLECTION		Ix=7800 in^4
	LL Defl (in)	0.60	= L/1049
	Allowable (in)	0.78	=L/800
	DEFLECTION PR	**0.763**	
	FATIGUE Cat C' at Critical Brace		
	Fat Moment (ft-k) LLF = 0.8	265.8	Sfat=458.6 in^3
	Fat Stress (ksi)	5.57	
	Fat Allow (ksi)	9.30	
	FATIGUE PR	**0.599**	
	STRENGTH I/II SHEAR at Support		
	DC1 (k)	14.1	
	DC2 (k)	0.7	
	DW (k)	0.0	
	HL93 LL+IM (k) LLF = 1.75	60.6	
	Vu (k)	124.5	
	Vn (k)	591.9	
	SHEAR PR	**0.210**	



Strength Design Uses AASHTO Appendix A6	**STRENGTH I/II**					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	183.1	8.45	0.0	670.4		1412.6	1.26	1422.9	0.993		**STRENGTH I/II MAX PR**
	2	26	183.1	8.45	0.0	670.5		1412.9	1.26	1423.3	0.993		**0.993**

Strength Design Uses AASHTO Appendix A6	**CONSTRUCTION**						<0.60Fy		RpcFy=1.16*50				
		Lb (ft)	Mconstr (ft-k)	Mlat (ft-k)	AF	Affl (ksi)	Perf Ratio	fbu+Affl (ksi)	Perf Ratio	ɔu+1/3Affl (ks	Fnc (ksi)	Perf Ratio	
	1	26	228.9	0.0	1.0	0.0	0.00	6.3	0.13	6.3	38.9	0.16	**CONSTRUCTION MAX PR**
	2	26	228.9	0.0	1.0	0.0	0.00	6.3	0.13	6.3	38.9	0.16	**0.161**

NOMINAL ABUTMENT REACTIONS			
DC1 (k)	84.5	At Centerline	
DC2 (k)	2.6	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	

Modify Demonstration

NonComposite Bridge

- 52 ft Length
- Two 12 ft Lanes
- 6 Girders at 5’-6” Spacing
- Overhang 1’ – 3”
- Barriers 1’ – 0” (50 lb/ft – 50% on Exterior Girder)
- Roadway Width = 28 ft (4 ft of shoulder)
- Bridge Width 30 ft
- Diaphragm (Centerline) at 26 ft
- Unbraced
- Corrugated Metal Deck & Gravel (80 psf)
- No Additional DC1 or DC2 Loading
- No Wearing Surface
- No Construction Load (No Lateral Flange)
- Misc Steel of 5%
- 50 ksi Steel, L/D limit 30, Min d = 12
- L/800 Deflection Limit
- Compression Flange not Braced
- Use AASHTO Appendix A6
- 75 Year Design Life & $ADTT_{SL}$ = 200
  - Fatigue II – Finite Life
- No User Defined Vehicle

W36x135 Strength I PR = 0.993

Demonstration: 52 ft Span, CMD/Gravel, 6 Girders @ 5.5 ft

NonComposite Bridge: W36 x 135

- What if add additional diaphragm: L_b = 19, 14, 19 ft

ENTER W SECTION FOR MORE INFORMATION					Weight (lb/ft)	
W36X135		NonComposite			135	
	OVERALL PERFORMANCE FOR		W36X135			
Strength I/II	Service II	Construction	Fatigue	Deflection		Overall
PR	PR	PR	PR	PR		PR
0.993	0.727	0.161	0.599	0.763		0.993
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to		Strength I/II
1		1		L/1049		
PERFORMANCE BY UNBRACED LENGTH FOR			W36X135			
			Strength I/II			
Unbraced Length	Unbraced Length (ft)	Lb Range	PR	Mn/My	Cb	
1	26	0 - 26 ft	0.993	0.778	1.255	
2	26	26 - 52 ft	0.993	0.778	1.256	

ENTER W SECTION FOR MORE INFORMATION					Weight (lb/ft)	
W33X118		NonComposite			118	
	OVERALL PERFORMANCE FOR		W33X118			
Strength I/II	Service II	Construction	Fatigue	Deflection		Overall
PR	PR	PR	PR	PR		PR
0.981	0.883	0.155	0.703	1.009		1.009
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to		Deflection
2		2		L/793		
PERFORMANCE BY UNBRACED LENGTH FOR			W33X118			
			Strength I/II			
Unbraced Length	Unbraced Length (ft)	Lb Range	PR	Mn/My	Cb	
1	19	0 - 19 ft	0.781	1.139	1.391	
2	14	19 - 33 ft	0.981	0.957	1.005	
3	19	33 - 52 ft	0.781	1.140	1.392	

W33x118 – 5400 lbs Girder Steel Saved

But Additional Diaphragm

Deflection = L/793

Demonstration: 52 ft Span, CMD/Gravel, 6 Girders @ 5.5 ft

NonComposite Bridge: W36 x 135

- What if compression flange braced: Lb = 0 Corrugated Metal Decking

ENTER W SECTION FOR MORE INFORMATION					Weight (lb/ft)	
W36X135		NonComposite			135	
	OVERALL PERFORMANCE FOR	W36X135				
Strength I/II	Service II	Construction	Fatigue	Deflection		Overall
PR	PR	PR	PR	PR		PR
0.993	0.727	0.161	0.599	0.763		0.993
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to		Strength I/II
1		1		L/1049		
PERFORMANCE BY UNBRACED LENGTH FOR			W36X135			
			Strength I/II			
Unbraced Length	Unbraced Length (ft)	Lb Range	PR	Mn/My	Cb	
1	26	0 - 26 ft	0.993	0.778	1.255	
2	26	26 - 52 ft	0.993	0.778	1.256	

ENTER W SECTION FOR MORE INFORMATION					Weight (lb/ft)	
W30X116		NonComposite			116	
	OVERALL PERFORMANCE FOR	W30X116				
Strength I/II	Service II	Construction	Fatigue	Deflection		Overall
PR	PR	PR	PR	PR		PR
0.892	0.963	0.161	0.788	1.207		1.207
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to		Deflection
2		1		L/663		
PERFORMANCE BY UNBRACED LENGTH FOR			W30X116			
Compression Flange Laterally Braced for Final State			Strength I/II			
Unbraced Length	Unbraced Length (ft)	Lb Range	PR	Mn/My	Cb	
1	26	0 - 26 ft	0.892	1.149	1.255	
2	26	26 - 52 ft	0.892	1.149	1.256	

W30x116 – 6000 lbs Girder Steel Saved
Deflection = L/663

Another Demonstration

Composite Bridge

- 62 ft Length
- Two 12 ft Lanes
- 4 Girders at 9'-0" Spacing
- Overhang 2' – 0"
- Barriers 1' – 6" (250 lb/ft – 50% on Exterior Girder)
- Roadway Width = 28 ft (4 ft of shoulder)
- Bridge Width 31 ft
- Diaphragms at 21 ft & 41 ft
- 8" Structural Deck, ½" Sacrificial, 2" Haunch
- 2" Stay-in-Place Forms (15 psf)
- 7/8" Shear Studs; f'_c = 4000 psi
- Additional DC1 Loading = 40 lb/ft
  - 100% on Girder
- 25 lb/ft^2 Wearing Surface
- Construction Load (w = 275 lb/ft & p = 3000 lb)
- Misc Steel of 5%
- 50 ksi Steel, L/D limit 30, Min d = 12
- L/800 Deflection Limit
- Compression Flange not Braced - Construction
- Use AASHTO Appendix A6
- 75 Year Design Life & $ADTT_{SL}$ = 1000
  - Fatigue I – Infinite Life
- No User Defined Vehicle

W36x135 Fatigue PR = 0.961

Demonstration: 62 ft Span, 8” Deck w/SIP, 4 Girders @ 9 ft

Composite Bridge

W36X135	**Composite**					Consider W40 & W44 Beams?	Yes		Minimum Depth Beam	W12				
Overall PR = 0.961 - Fatigue						L/D Limited to	25		Maximum Depth Beam	W44	**SERVICE II near Centerline**			
Yield Strength (ksi)	50										DC1 (ft-k)	492.3	Sx=439.0 in^3	
Bridge Length (ft)	62				Bridge Width (ft)	31.00					DC2 (ft-k)	60.1	S3n=600.0 in^3	
Girder Spacing (ft)	9				Roadway Width (ft)	28.00					DW (ft-k)	84.1	S3n=600.0 in^3	
Number of Girders	4				Shoulders (ft) each side - Double for One Sided	2.00					HL93 LL+IM (ft-k)	1093.4	Sn=675.0 in^3	
Overhang (22.2% of Girder Spacing) (ft)	2				2 Striped Lanes and 2 Design Lanes									
Barrier Width (ft)	1.5							Lateral Distribution Factors			Serv II Stress	41.6		
Barrier Load on Girder (lb/ft)	125				8 in Structural Deck with 2 in SIP Forms			Single Lane/Multi-Lane			Serv II Allow	47.5		
DC Deck Only Loading (psf)	106.25				Deck f'c (psi)	4000		Moment LLDF = 0.660 , 0.767			**SERVICE II PR**	**0.876**		
Wearing Surface (psf)	25				Haunch from Top of Web (in)	2		Fatigue LLDF = 0.550						
Additional DC1 Load on Girder (lb/ft)	40				Nominal Girder DC1 (lb/ft)	1024.6		Shear LLDF = 0.720 , 0.884			**LIVE LOAD DEFLECTION**		In=21650.2 in^4	
Additional DC2 Load on Bridge (lb/ft)	0				Nominal Girder DC2 (lb/ft)	125.0					LL Defl (in)	0.57	= L/1295	
					Nominal Girder DW (lb/ft)	175.0					Allowable (in)	0.93	=L/800	
AT OVERHANG FOR LATERAL FLANGE BENDING	0										**DEFLECTION PR**	**0.618**		
Construction w (lb/ft)	275				AASHTO HL93 Loading and									
Construction p (lb)	3000				No User Defined Vehicle						**FATIGUE Cat C' at Critical Brace**			
1/2 of Deck Overhang Weight (lb/ft)	108.75										Fat Moment (ft-k) LLF = 1.75	380.0	Sfat=692.0 in^3	
ADDITIONAL VERTICAL BENDING ON GIRDERS											Fat Stress (ksi)	11.53		
Exterior - Construction p (lb)	3000										Fat Allow (ksi)	12.00		
Exterior - Construction w (lb/ft)	275										**FATIGUE PR**	**0.961**		
% Misc Stl for Diaphrams, etc	5%										**STRENGTH I/II SHEAR at Support**			
											DC1 (k)	31.8		
DEFLECTION LIMIT (x for Deflection Limit in L/x)	800										DC2 (k)	3.9		
											DW (k)	5.4		
Fatigue Design Life (yrs)	75					179298.4375					HL93 LL+IM (k) LLF = 1.75	89.4		
Fatigue ADTTSL	1000	Fatigue I Controls												
											Vu (k)	209.2		
											Vn (k)	591.9		
											SHEAR PR	**0.353**		

Demonstration: 62 ft Span, 8” Deck w/SIP, 4 Girders @ 9 ft

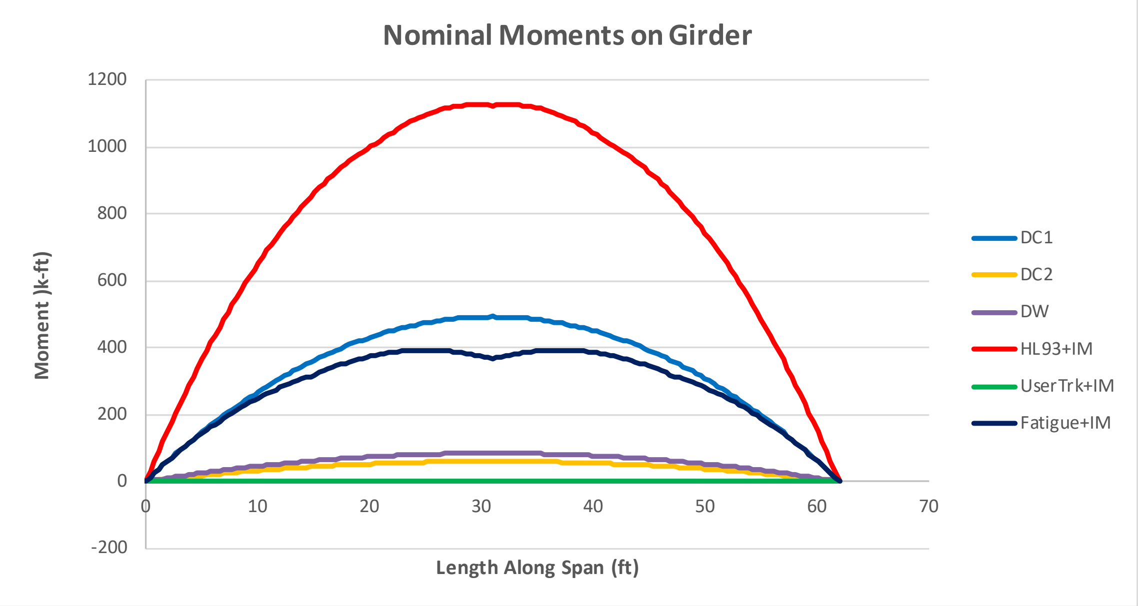
Composite Bridge

	STRENGTH I/II		Compression Flange Laterally Braced for F			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	21	441.1	53.8125	75.3	1000.4		2482.4	1.42	3444.0	0.721		**STRENGTH I/II MAX PR**
	2	20	492.3	60.0625	84.1	1093.4		2730.1	1.01	3444.0	0.793		**0.793**
	3	21	441.1	53.8125	75.3	1000.7		2482.8	1.43	3444.0	0.721		
Strength Design Uses AASHTO Appendix A6	**CONSTRUCTION**						<0.60Fy		RpcFy=1.16*50				
		Lb (ft)	Mconstr (ft-k)	Mlat (ft-k)	AF	Affl (ksi)	Perf Ratio	fbu+Affl (ksi)	Perf Ratio	ɔu+1/3Affl (ks	Fnc (ksi)	Perf Ratio	
	1	21	791.4	21.6	1.4	18.6	0.62	40.2	0.80	27.8	55.9	0.50	**CONSTRUCTION MAX PR**
	2	20	883.3	19.9	1.8	23.2	0.77	47.4	0.95	31.9	40.9	0.78	**0.947**
	3	21	791.4	21.6	1.4	18.6	0.62	40.2	0.80	27.8	55.9	0.50	
	DEAD LOAD DEFLECTIONS (Max Loaded Girder)		0	0.10L	0.20L	0.30L	0.40L	0.50L	0.60L	0.70L	0.80L	0.90L	L
		Distance (ft)	0	6.2	12.4	18.6	24.8	31	37.2	43.4	49.6	55.8	62
Ix (in^4) =	7800.0	DC1 (in)	0.000	0.473	0.894	1.224	1.434	1.506	1.434	1.224	0.894	0.473	0.000
I3n (in^4) =	15409.5	DC2 (in)	0.000	0.029	0.055	0.076	0.089	0.093	0.089	0.076	0.055	0.029	0.000
I3n (in^4) =	15409.5	DW (in)	0.000	0.041	0.077	0.106	0.124	0.130	0.124	0.106	0.077	0.041	0.000
		Total (in)	0.00	0.54	1.03	1.41	1.65	1.73	1.65	1.41	1.03	0.54	0.00

Demonstration: 62 ft Span, 8” Deck w/SIP, 4 Girders @ 9 ft

Composite Bridge

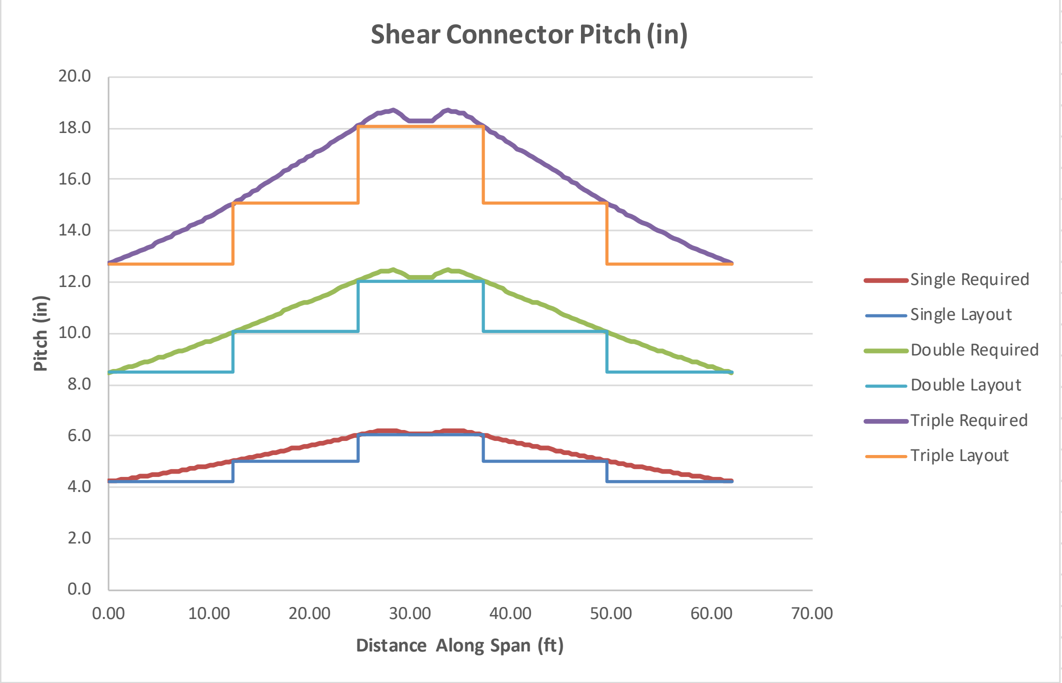
NOMINAL ABUTMENT REACTIONS		
DC1 (k)	123.3	At Centerline
DC2 (k)	15.5	At Centerline
DW (k)	21.7	At Centerline
Single Lane LL+IM (k)	121.4	At 9.00 From Centerline
Two Lane LL+IM (k)	202.4	At 4.00 From Centerline



Demonstration: 62 ft Span, 8” Deck w/SIP, 4 Girders @ 9 ft

Composite Bridge – Shear Studs

ONLY IF COMPOSITE									
0.875 (in) SHEAR STUDE SPACING	Minimum Spacing (in)	3.5		Maximum Spacing (in)	48	Minimum Transverse Spacing (in)	3.5	d (in)	35.6
	0 - 12.4 ft	12.4 - 24.8 ft	24.8 - 37.2 ft	37.2 - 49.6 ft	49.6 - 62.0 ft			bf (in) =	12
Singles Pitch (in)	4.23	5.03	6.03	5.03	4.23				
Doubles Pitch (in)	8.47	10.05	12.06	10.05	8.47			Doubles Transverse Spacing	
Triples Pitch (in)	12.70	15.08	18.08	15.08	12.70			Triples Transverse Spacing C	
Strength Minimum Number of Studs	127								
Fatigue Singles Estimated Number of Studs	155.172541								0
Fatigue Doubles Estimated Number of Studs	156.172541								12.4
Fatigue Triples Estimated Number of Studs	157.172541								12.4
									24.8
									24.8
									37.2
									37.2
									49.6
									49.6
									62



eBEAM140 Summary

Rolled Shape Bridge Design: Composite & NonComposite

- User Manual & Examples
- Released on www.ShortSpanSteelBridges.org September 2025

https://www.shortspansteelbridges.org/ebeam140/

Plate Girder Bridge Design in 2026

SOON Short Span Steel Bridge Alliance ePLATE140

Noncomposite and Composite Simple-Span Plate-Girder Steel Bridge Design

ePLATE140

Excel Based Rolled Beam Design Software

Version 1.0 - Beta

SIMILAR

eBEAM140 Disclaimer: *This document has been prep … accordance with information*
available to the American Iron and Steel Institute … Short Span Steel Bridge
Alliance (SSSBA) program, at the time of pr… is believed to reasonably
reflect the present state of knowledge … ot been prepared for
conventional use as an engineerin… and should not be used or
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the document.

ePLATE140 Design Software - 2026

Excel Based Plate Girder Design Software

- Allows User to Investigate Alternatives to
  - Diaphragm Spacing
  - Lightest Weight Solution
  - Other Readily Available Flanges & Webs

Target L/D:
- Target L/D – 2”
- Target L/D
- Target L/D + 2”
- Target L/D + 4”
- Target L/D + 6””

5100 possible design combinations for
- 5 different Web Depths

User Specified Solution

ENTER SECTION FOR MORE INFORMATION

bfc	tfc	D	tw	bft	tft	Weight (lb/ft)	Total Wt (tons)
13.00	0.750	38.00	0.500	17.00	0.750	141	22.6

bfc>=D/6 OK
bfc/2tfc<=12 OK
D/tw<=150 OK
2Dcp/tw<=lrw OK
Iyc/Iyt>=0.3 OK

Meets Reqrments for A6?
Yes
Construction Uses A6

OVERALL PERFORMANCE FOR TF:13 x 0.75 Web:38 x 0.5 BF:17 x 0.75

Strength I/II	Service II	Construction	Fatigue	Deflection	Overall
PR	PR	PR	PR	PR	PR
0.917	0.973	0.933	0.703	0.807	0.973
In Lb #	At Centerline	In Lb #	At Critical Brace	At Centerline Equal to	Service II
3		2		L/992	

PERFORMANCE BY UNBRACED LENGTH FOR TF:13 x 0.75 Web:38 x 0.5 BF:17 x 0.75

Compression Flange Laterally Braced for Final State			Strength I/II		
Unbraced Length	Unbraced Length (ft)	Lb Range	PR	Mn/My	Cb
1	20	0 - 20 ft	0.703	1.995	1.509
2	20	20 - 40 ft	0.917	1.995	1.052
3	20	40 - 60 ft	0.917	1.995	1.052
4	20	60 - 80 ft	0.703	1.995	1.509

LIST OF GIRDERS RANKED FROM STRENGTH I, SERVICE II & CONSTRUCTION

Shape	Strength I/II	Service II	Construction	Fatigue	Deflection	Overall	Total Wt
	PR	PR	PR	PR	PR	PR	(tons)
TF:13 x 0.75 Web:38 x 0.5 BF:17 x 0.75	0.92	0.97	0.93	0.70	0.81	0.97	22.6
TF:13 x 0.75 Web:38 x 0.5 BF:13 x 1	0.91	0.97	0.93	0.69	0.80	0.97	22.7
TF:14 x 0.75 Web:36 x 0.5 BF:18 x 0.75	0.95	0.99	0.87	0.72	0.87	0.99	22.9
TF:13 x 0.75 Web:38 x 0.5 BF:18 x 0.75	0.89	0.94	0.93	0.68	0.78	0.94	23.0
TF:14 x 0.75 Web:38 x 0.5 BF:17 x 0.75	0.92	0.97	0.81	0.70	0.81	0.97	23.0
TF:14 x 0.75 Web:34 x 0.5 BF:15 x 1	0.97	0.99	0.93	0.71	0.91	0.99	23.1
TF:14 x 0.75 Web:36 x 0.5 BF:14 x 1	0.94	0.97	0.86	0.70	0.85	0.97	23.1
TF:15 x 0.75 Web:36 x 0.5 BF:18 x 0.75	0.95	0.99	0.78	0.72	0.87	0.99	23.3
TF:13 x 0.75 Web:38 x 0.5 BF:14 x 1	0.88	0.92	0.92	0.66	0.76	0.92	23.3
TF:14 x 0.75 Web:38 x 0.5 BF:18 x 0.75	0.89	0.94	0.81	0.68	0.78	0.94	23.4
TF:15 x 0.75 Web:38 x 0.5 BF:17 x 0.75	0.92	0.97	0.73	0.70	0.81	0.97	23.4
TF:15 x 0.75 Web:34 x 0.5 BF:15 x 1	0.97	0.99	0.83	0.71	0.91	0.99	23.5
TF:14 x 0.75 Web:34 x 0.5 BF:16 x 1	0.94	0.94	0.93	0.68	0.87	0.94	23.7
TF:12 x 1 Web:36 x 0.5 BF:18 x 0.75	0.95	0.99	0.88	0.72	0.87	0.99	23.7
TF:14 x 0.75 Web:36 x 0.5 BF:15 x 1	0.91	0.93	0.86	0.67	0.81	0.93	23.7
TF:16 x 0.75 Web:36 x 0.5 BF:18 x 0.75	0.96	0.99	0.72	0.72	0.87	0.99	23.7
TF:14 x 0.75 Web:38 x 0.5 BF:14 x 1	0.88	0.92	0.80	0.66	0.76	0.92	23.7

ePLATE140 Plans

Plate GirderBridge Design: Composite & NonComposite

AASHTO 10th Edition

Develop Users Manual & Examples

Industry Review

Release Sept 2026

Manufacturer Solutions & Accelerated Bridge Construction

Prefabricated & ABC Steel Bridges

4 Different Steel Bridges

Bridge Case Studies

- Buried Steel Bridge
- Modular Beam Bridge
- Press-Brake Tub Girder Bridge
- Truss Bridge

<u>The 5 C's</u>

Cost

Convenience

Construction (ABC)

County Built

Carbon Footprint

Prefabricated Bridges

Accelerated Bridge Construction

County Built

Corrugated Steel Buried Bridges – Tribal Workcrew

Craig, AK

Fabricator: BigR/Contech

Contractor: Tribal Workforce

Pre-Fabricated Modular Beam – County Crew Built

Lighter Structure, Smaller Equipment & Local Crew Workforce Development

Accelerated Bridge Construction

Bridge Placed in Two Days

Seltice-Warner Bridge, White Road, Whitman County, WA

Fabricator:	BigR/Contech Engineered Solutions
Contractor:	Whitman County Crew
Design Engineer:	Mark Storey, County Engineer

Press-Brake Tub Girder – Contractor Built

Barron County, WI

Fabricator: Valmont

Contractor: Larson Construction

Pre-Fabricated Truss – Contractor Built

Truss Elements
Bridge in a Garden, Kauai, HI

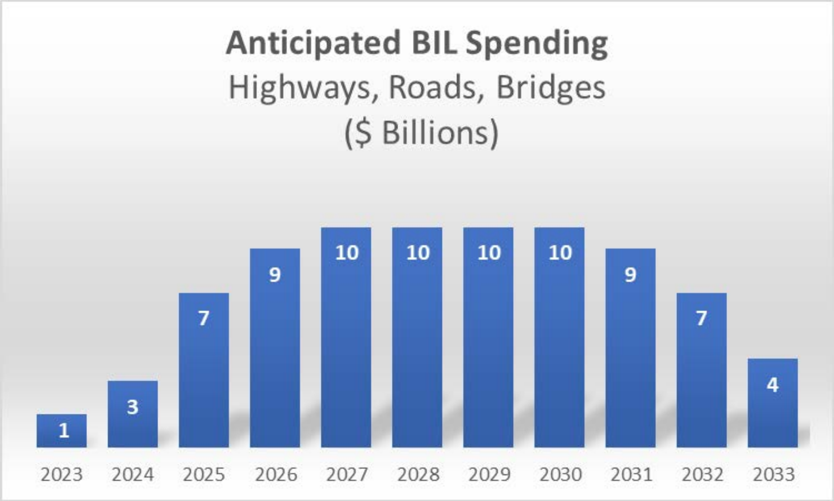
Fabricator: Acrow
Contractor: Macon

Modular Truss
Morovis Liberty Bridge, Puerto Rico

Fabricator: US Bridge
Contractor: Del Valle Group

Resiliency – Infrastructure

- Bipartisan Infrastructure Law
  - $39.5 billion over 5 years to repair or replace as many as 15,000 bridges
  - Minimum 15% must be used to build off-system bridges



* Source: McKinsey Insights

- PROTECT ($7.2 billion)
  - BIL establishes the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program
    - Make surface transportation more resilient to natural hazards (support of planning activities, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure).

U.S. Department of Transportation
Federal Highway Administration

Resiliency

Challenge

Because of deterioration, individual bridge components and systems such as bearings, decks, joints, columns, and girders require frequent and costly inspections, maintenance, and repairs that are often difficult to conduct. These activities cause lane closures that create congestion and impact safety for road workers and motorists. Bridge engineers need improved design options so they can deliver bridges that are operational for 100 years or more.

What is a Resilient Bridge?

Learn more - https://www.shortspansteelbridges.org/steel-bridges-beyond-100-years

- Service Life & Life Cycle Performance – New Target is 100 Years Life
- Robustness for Unexpected Demands: Seismic, Natural, Man-Made
- Inspectable & Repairable
- Rehabilitation & Strengthening
- Sustainable

Resilience - Service Life & Life Cycle Performance

1000’s of Steel Bridges Over 100 Years Old

Steel Bridge Longevity

- **Practical and Effective Design**
- **Durable Materials**
- **Inspection, Maintenance & Repair**
- **Corrosion Protective Systems – Steel Chemistry and Protective Coatings**

Resilience: Robustness for Unexpected Demands

Steel bridge robustness is a bridge's ability to withstand damage and maintain its structural integrity, especially in the face of unexpected events or local failures: **Seismic, Natural, Man-Made**

- **Ductility**
Steel can deform significantly without breaking

- **Redundancy**
Alternate load paths and ability for load redistribution

- **Lightweight Yet Strong**
Steel structures are lighter, reducing seismic forces

- **Bolted and Welded Connections**
Steel bridges use high-strength bolted or welded joints

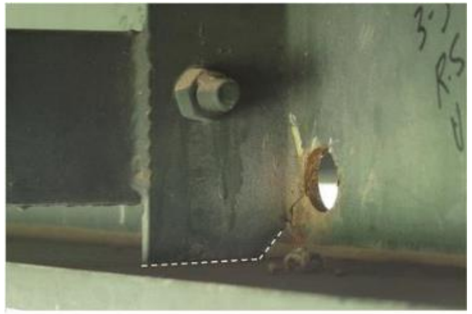
- **Ease of Retrofitting**
Steel bridges can be easily repaired, rehabilitated & retrofitted

Resilience - Inspectable & Repairable

Structural Steel Bridge Damage or Deterioration

- Overload
- High or wide vehicle collision
- Fire
- Structural vandalism
- Fatigue
- Corrosion

- **Accessibility -** Exposed structural components
- **Ease of Nondestructive Testing (NDT)**
  - o Steel is compatible with NDT techniques
- **Repairable Characteristics of Steel Bridges**
  - o **Modular Repairs of** Damaged sections
  - o **Fatigue Management** Fatigue cracks can be fixed
  - o **Corrosion Repair** repainted or metalized



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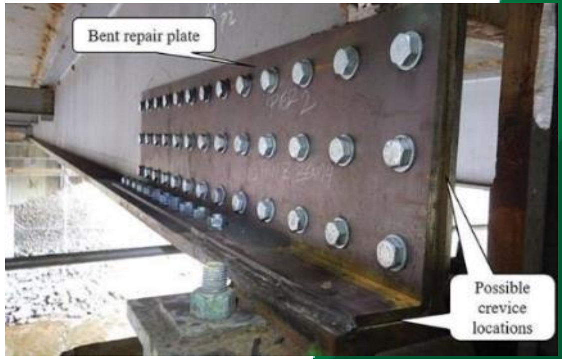
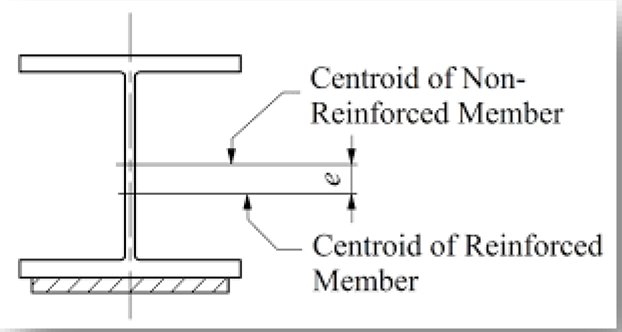


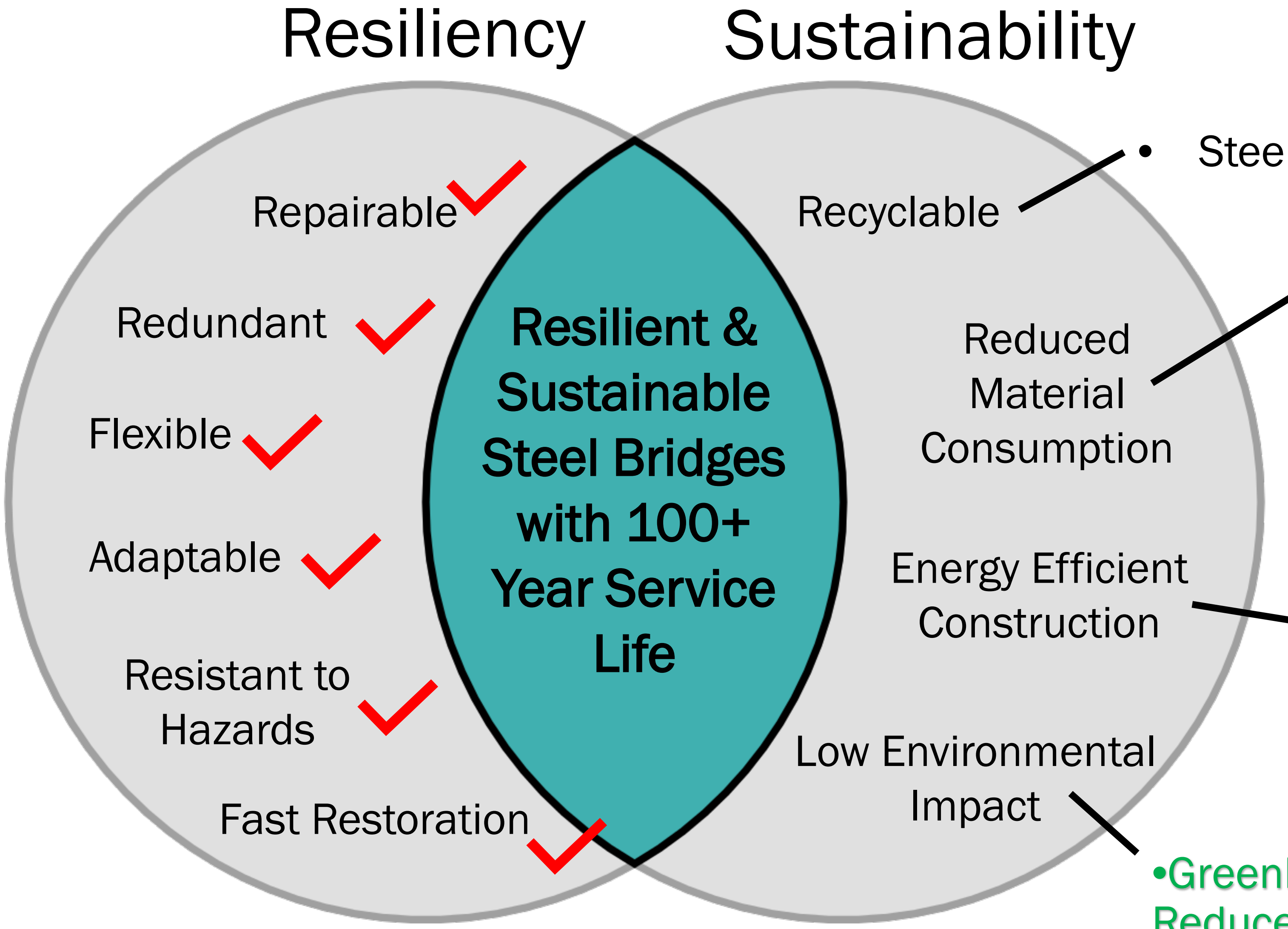
Resilience - Rehabilitation & Strengthening

Rehabilitation & Strengthening

- Extend service life
- Restore or increase load capacity
- Prevent or mitigate corrosion and fatigue
- Upgrade for seismic or traffic demands
- Improve safety and user experience



Crossover Between Resiliency & Sustainability



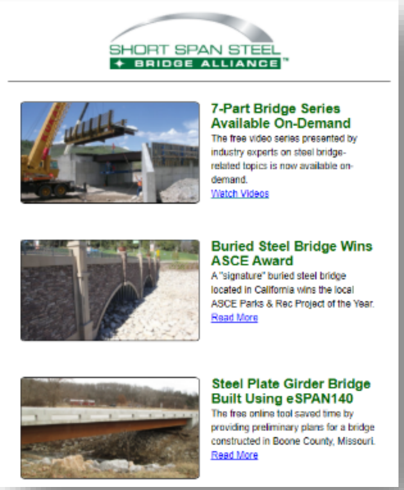
- Steel is North America's #1 Recycled Material
- High Strength to Weight Ratio
- Optimal Weight while Maintaining Strength, Durability & Safety
- Recycled Steel Conserves Energy, enough to power 18 million homes
- Steel's Energy Use Reduced 33% Since 1990
- Greenhouse Gas Emissions Reduced by 45% since 1975

Steel Advantages for Resiliency

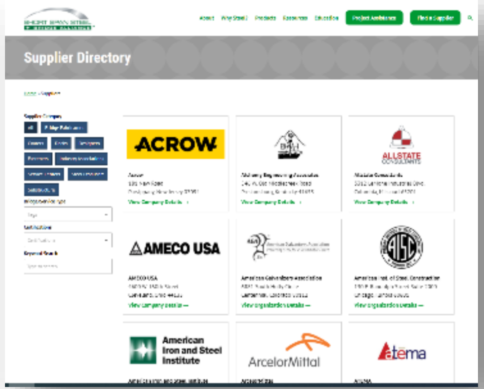
- Strength and Durability
  - High strength-to-weight ratios, which allows steel bridges to resist structural damage.
  - Ductile, Redundant and Robust Structure
- Ease of Inspection/Repair
  - Signs of problems are clearly apparent at an early stage, making steel bridges easier to inspect and repair.
- Rehabilitation & Strengthening for Increased Loads
  - Quickly rehabilitate & strengthen a steel bridge, while keeping the bridge in service with minimal traffic disruption.
- Long Service Life
  - Thousands of 100-year-old steel bridges still in service.
  - Innovative new systems have life expectancy of 100+ years.
- Sustainability

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™

eBEAM140

4. Receive Free Project Assistance

5. Schedule a Workshop/Webinar

www.ShortSpanSteelBridges.org

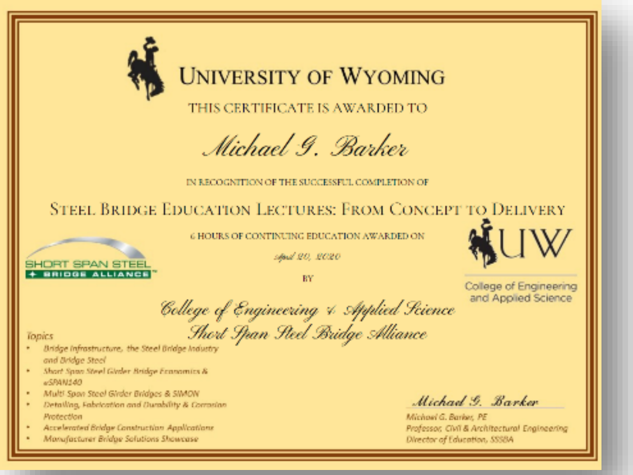
Questions? Dan Snyder, Director, SSSBA, dsnyder@steel.org, (301) 367-6179

Website:ShortSpanSteelBridges.org

Twitter: @ShortSpanSteel

Facebook: Short Span Steel Bridge Alliance

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



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**

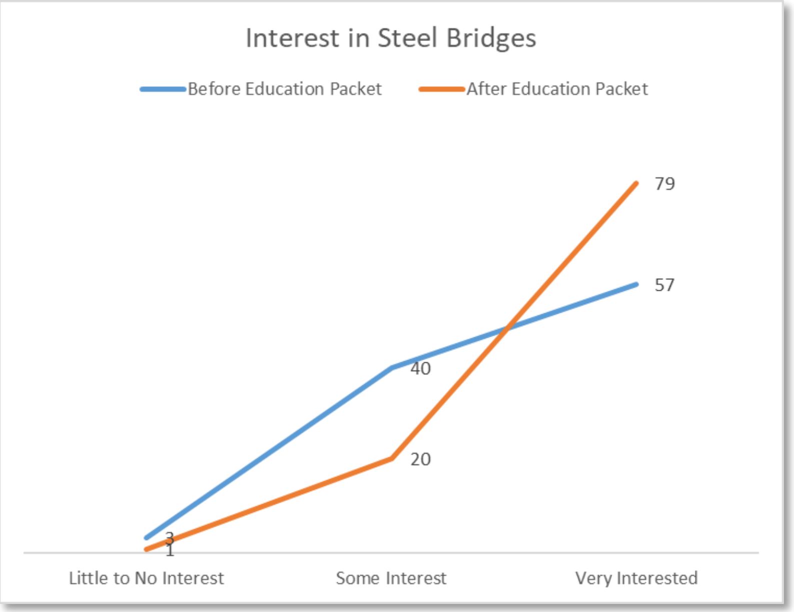
Lecture 6: **Manufacturer Bridge Solutions Showcase**

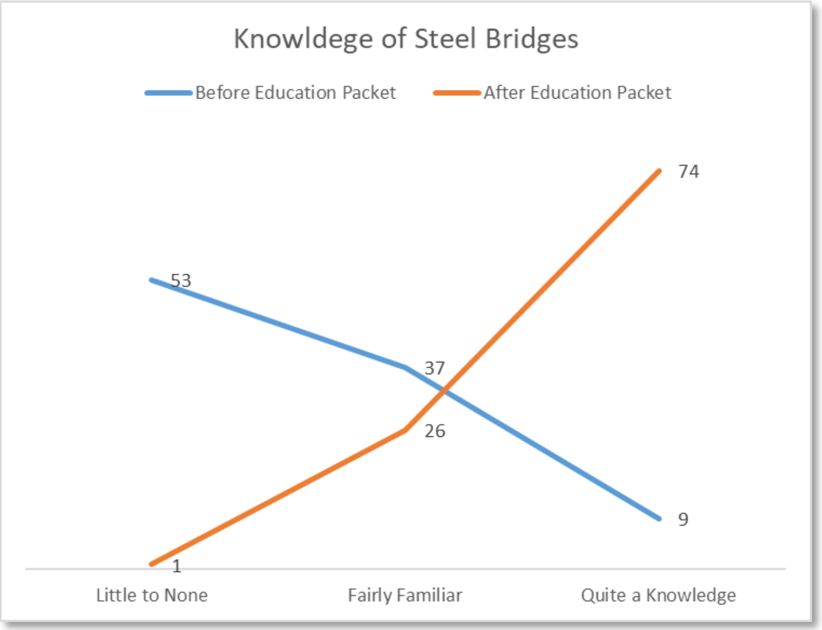
12 Workshops

Over 1800 Certificates Awarded

Over 3800 Registered

More Planned for 2026





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

80 ft Simple Span Plate Girder Design

Lecture 1: Introduction & Trial Bridge Design

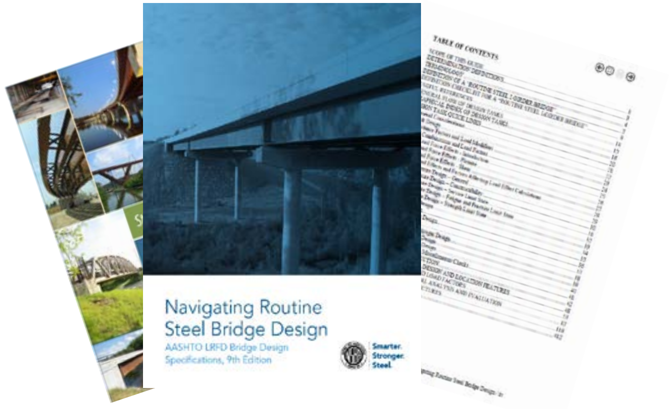
Lecture 2: Bridge Design

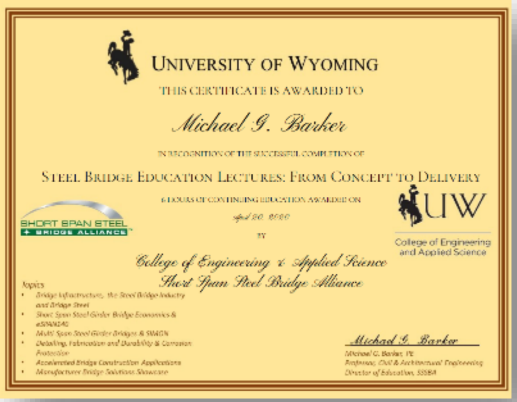
Lecture 3: Bridge Analysis & Design Limit States

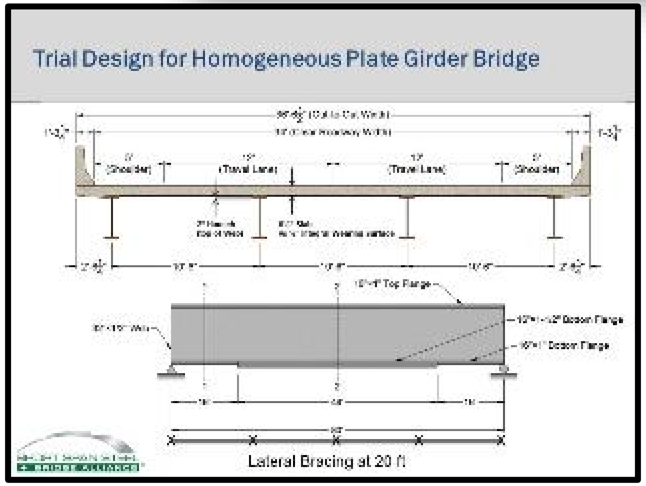
Lecture 4: Strength Design

Lecture 5: Serviceability & Construction Design

Lecture 6: Detailing & Final Thoughts







Another Offering in 2026

ShortSpanSteelBridges.org for Registration

2026 Steel Bridge Playbook

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 24, 1 pm ET	Essential Bridge Design Resources
May 7, 1 pm ET	Galvanized Bridge Preservation Tools
Sept 10, 1 pm ET	Next-Gen Steel Bridge Design Approached
Dec 10, 1 pm ET	Bridge Success Stories & Lessons Learned

ShortSpanSteelBridges.org for Registration

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

2025: July 8, 10, 15, 17 - 1:00-2:00pm EDT

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

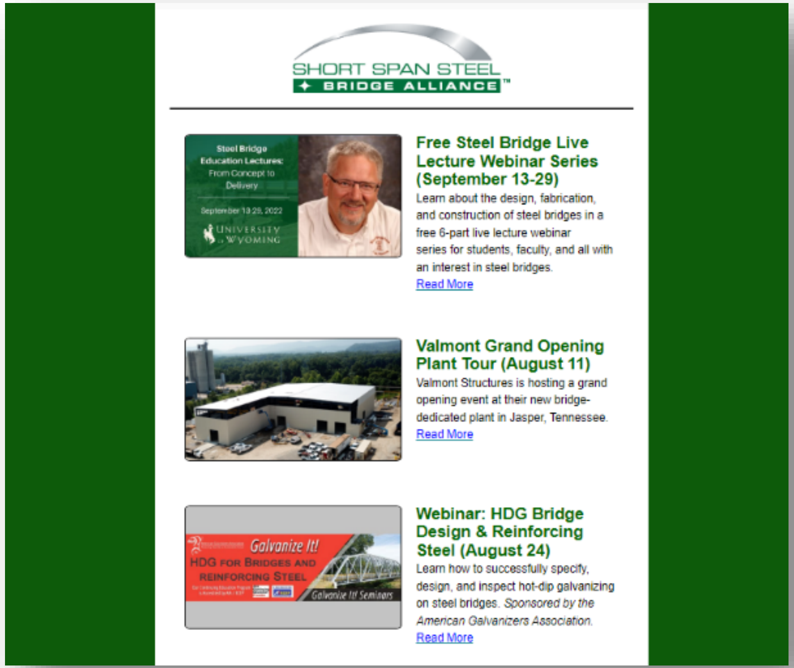
July 8, 1 pm ET	Tools and Resources for Designing Cost-Effective Steel Bridges Steel Plate Girder / Rolled Beam Bridge
July 10, 1 pm ET	Modular Steel Bridges Buried Steel Bridges
July 15, 1 pm ET	Galvanized Steel Bridge with Grid Decking Press-Brake Formed Tub Girders
July 17, 1 pm ET	Truss Bridges Simple for Dead, Continuous for Live Designs

Case Study Projects

Will Have Another in 2026

ShortSpanSteelBridges.org for Registration

SSSBA Newsletter – Last 365 Days



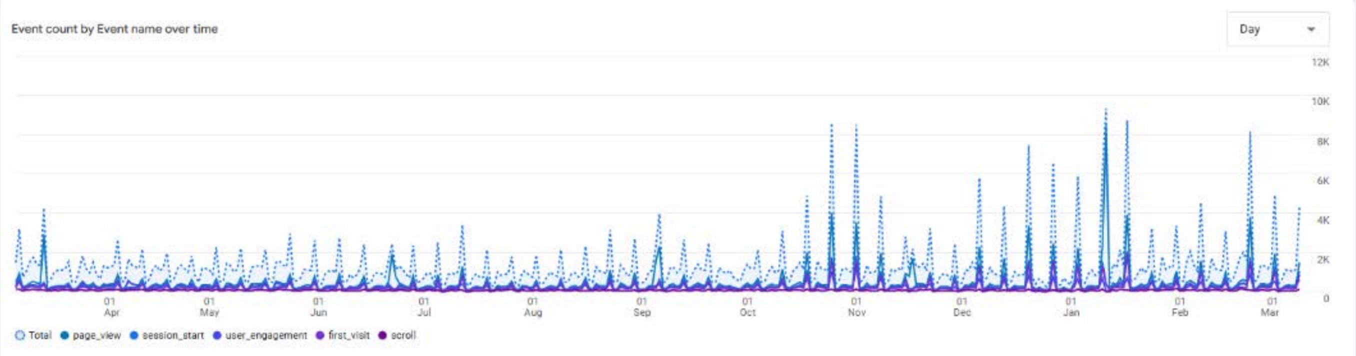
SHORT SPAN STEEL BRIDGE ALLIANCE™

Free Steel Bridge Live Lecture Webinar Series (September 13-29)
Learn about the design, fabrication, and construction of steel bridges in a free 6-part live lecture webinar series for students, faculty, and all with an interest in steel bridges.
Read More

Valmont Grand Opening Plant Tour (August 11)
Valmont Structures is hosting a grand opening event at their new bridge-dedicated plant in Jasper, Tennessee.
Read More

Webinar: HDG Bridge Design & Reinforcing Steel (August 24)
Learn how to successfully specify, design, and inspect hot-dip galvanizing on steel bridges. *Sponsored by the American Galvanizers Association.*
Read More

- Every Friday at 9:15AM
- 17,200 Subscribers
- 830,000 Sent Last 365 Days
- 220,000 Opens (26.5%)
- 30,000 clicks



Spikes = Friday/Newsletters Distributed

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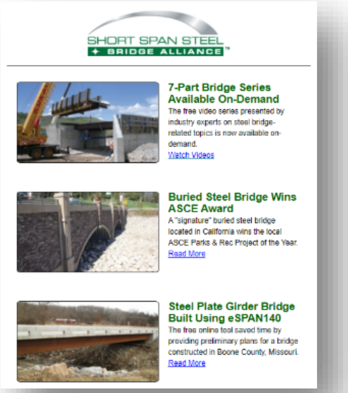

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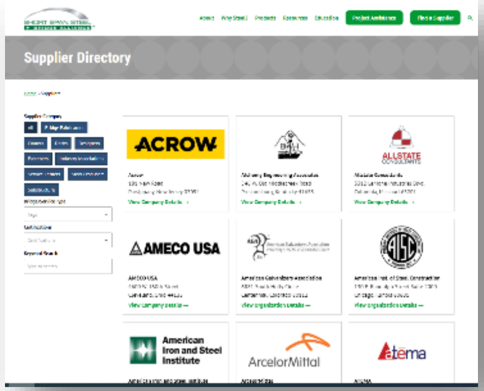

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Twitter: @ShortSpanSteel

Facebook: Short Span Steel Bridge Alliance

Download Presentation Slides, Resources, Contact Info