Steel Bridge Solutions

Sample Project

Andy Locke

RL Bridges

8/7/2024 11:33 AM

www.ShortSpanSteelBridges.org | www.eSPAN140.com

About Short Span Steel Bridge Alliance

eSPAN 140 is a product of the Short Span Steel Bridge Alliance (SSSBA). The SSSBA is 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.

For more information about the SSSBA, please contact:

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Short Span Steel Bridge Alliance
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Washington, DC 20001
Work Phone: (202) 452-7100
Email: dsnyder@steel.org

Design Support

The Short Span Steel Bridge Alliance offers complimentary design support for questions relating to bridge and buried soil structure design. Design support is offered by the following organizations (to submit an inquiry, please visit www.ShortSpanSteelBridges.org):

Standard Design and Details of Short Span Bridges (Plate Girder & Rolled Beam Bridges)

The Bridge Technology Center is a complimentary resource available for questions specific to standard design and detail solutions of short span steel bridges (refer to the section of this Solutions Book on plate girder and rolled beam standards, if applicable). It is a resource provided by West Virginia University and the Marshall University.

Standard Design and Details of Buried Soil Structures

The National Corrugated Steel Pipe Association provides complimentary design support for questions pertaining specifically to standard design and detail solutions of buried soil structures (refer to the section of this Solutions Book on buried soil structures, if applicable).

User Name:	Andy Locke
User Company:	RL Bridges
User Input Date:	08/07/2024
Project Name:	Sample Project
City:	Washington
State/Province:	DC
Roadway:	Route 36
Span Length:	70' 0"
Number of Striped Traffic Lanes:	2
Roadway Width:	30'
Individual Parapet Width:	3'
Individual Deck Overhang Width:	2'
Pedestrian Access:	No
Number of Sidewalks:	Not provided
Total Width of Each Sidewalk:	Not provided
Skew Angle:	degrees
Average Daily Traffic (ADT):	501-2,000
Design Speed:	46+ mph
Waterway Area:	Not provided
Minimum Span:	Not provided
Height from Invert to Bottom Of Road:	Not provided

Disclaimer

This document has been prepared in accordance with information made available to the Short Span Steel Bridge Alliance (SSSBA) at the time of its 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. SSSBA disclaims any liability arising from information provided by others or from the unauthorized use of the information contained in this document, and does 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.

Notes

- Short span standards for rolled beam solutions are only available for input lengths between 40 and 100 feet and skew angles under 20 degrees.*
- Short span standards for homogeneous plate girder solutions are only available for input lengths between 60 and 140 feet and skew angles under 20 degrees.*
- Short span standards for hybrid plate girder solutions are only available for input lengths between 80 and 140 feet and skew angles under 20 degrees.*
- Design standards for rolled beam and plate girder solutions are rounded in five (5) foot increments.
- Short span standards for press-brake-formed steel tub girder solutions are only available for input lengths up to 80 feet and skew angles under 20 degrees.
- Buried soil structures standards are only available for input lengths under 85 feet.*
- Customized prefabricated manufacturer solutions are available for all lengths and skew angles. Visit ShortSpanSteelBridges.org for more information.

** For bridges/buried soil structures outside of this range, standard designs will not appear in your solutions book.*

Pricing Inquiries

To obtain budget estimates or pricing information, contact a Short Span Steel Bridge Alliance Fabricator (for contact information, go to the last section of this document or visit ShortSpanSteelBridges.org).

Standard Design and Details of Short Span Steel Bridge Solutions

General

These plans are intended to serve as a guide to state, county, and local highway departments in the development of suitable and economical steel bridge superstructure designs. The plans should be particularly valuable to the smaller highway departments with limited engineering staff.

Specifications

Specifications for design, materials, and construction are included in the following:

- AASHTO LRFD bridge design specifications, fifth edition with 2010 interim revisions. 2010. Adopted and published by the American Association of State Highway and Transportation Officials. Washington, DC
- AASHTO/NSBA Collaboration Standard S2.1. Steel Bridge Fabrication Guide Specifications, 2008. Developed by the AASHTO/NSBA Steel Bridge Collaboration. Washington, DC
- AASHTO/NSBA Collaboration Standard G1.4. Guidelines for design details. 2006. Developed by the AASHTO/NSBA Steel Bridge Collaboration, Washington, DC
- ASTM Standards. Published by the American Society for Testing and Materials. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 USA.

Design Loading

AASHTO HL-93 Vehicular Live Loading was used throughout.

Design Method

Load and Resistance Factor Design (LRFD) method was employed throughout. Designs were originated using 5 girders with equal spacing. However, plate sizes and beam selections are adequate for any increment of girder layout. Designs will accommodate skews up to 20° from perpendicular, and are intended to be parallel.

Three options are available for steel superstructure composite I-girders. These options are as follows:

1. Homogenous plate girders comprised of ASTM A709-50W steel. These designs are available for a span range of 60’-140’.
2. Hybrid plate girders comprised of ASTM A709-50W and A709-70W steel. A709-50W steel is utilized for the top flange and web. A709-70W steel is utilized for the bottom flange. These designs are available for a span range of 80’-140’.
3. Rolled beams comprised of ASTM A709-50W steel. These designs are available for a span range of 40’-100’.

Structural Steel

All structural steel shall conform to AASHTO M270 (ASTM A709) grade 50, 65, 50W, 70W, or 50CR as applicable. Refer to “Design Method.”

Concrete

Concrete for deck and parapet shall have a minimum 28-day compressive strength (f’c) of 4,000 PSI.

Concrete Deck

The deck thickness employed for design was 8”. This includes a 1/4” integral wearing surface which is not considered part of the structural depth. The owner shall specify the required deck cross slope and grade.

Reinforcing Steel

Reinforcing steel shall conform to ASTM A615 grade 60.

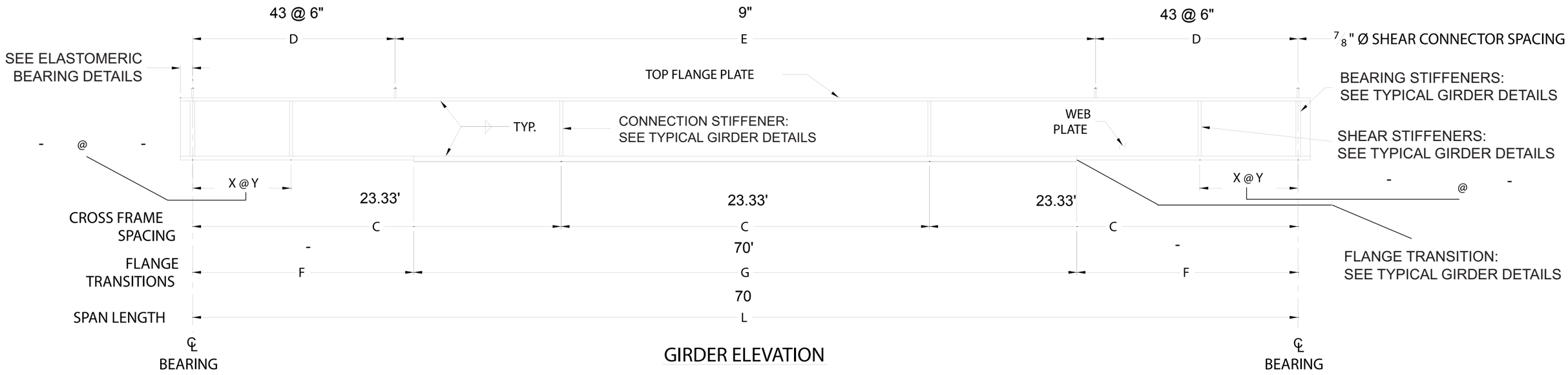
Shear Connectors

Welded stud shear connectors shall conform to the requirements of ASTM A108.

Elastomeric Bearings

See Elastomeric Bearing Details.

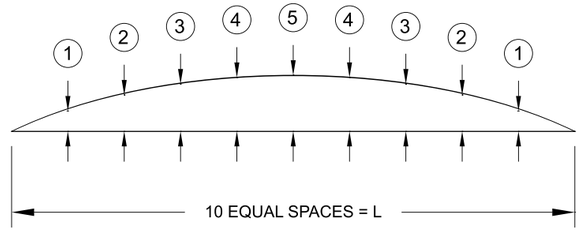
COMPOSITE PLATE GIRDER WITH PARTIALLY STIFFENED WEB - 5 GIRDERS AT 8' 0" GIRDER SPACING, HOMOGENEOUS



GIRDER ELEVATION

SPAN (L) - ft	PLATE GIRDER SIZE						DIAPHRAGM SPACING (C) - ft	SHEAR STIFFENERS		SHEAR CONNECTOR MAX. SPACING		INDIVIDUAL GIRDER WEIGHT
	TOP FLANGE - in	BOTTOM FLANGE (F)		BOTTOM FLANGE (G)		WEB PLATE- in		X (NO. REQ'd)	Y - ft. (SPACING)	D	E	
		PLATE - in	LENGTH - in	PLATE - in	LENGTH - in							
70	14 x 1"	-	-	16 x 1 1/2"	70'	24 x 1/2"	23.33'	-	-	43 @ 6"	9"	11,910 lbs

STEEL D.L. CAMBER - in					TOTAL D.L. CAMBER - in				
1	2	3	4	5	1	2	3	4	5
0.181"	0.343"	0.470"	0.550"	0.578"	1.303"	2.465"	3.375"	3.952"	4.152"



D.L. CAMBER

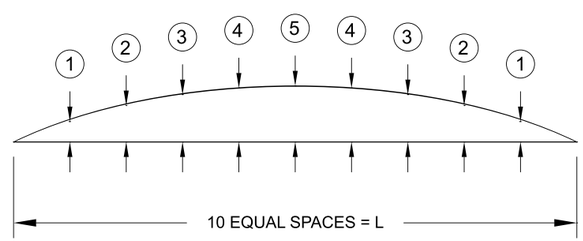
COMPOSITE ROLLED BEAM WITH PARTIALLY STIFFENED WEB - 5 GIRDERS AT 8' 0" GIRDER SPACING, LIGHTEST WEIGHT

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	
70	W40x149	23.33'	16 @ 6"	9"	11,690 lbs

STEEL D.L. CAMBER - in					TOTAL D.L. CAMBER - in				
1	2	3	4	5	1	2	3	4	5
0.097"	0.184"	0.252"	0.295"	0.309"	0.700"	1.325"	1.814"	2.125"	2.231"



D.L. CAMBER

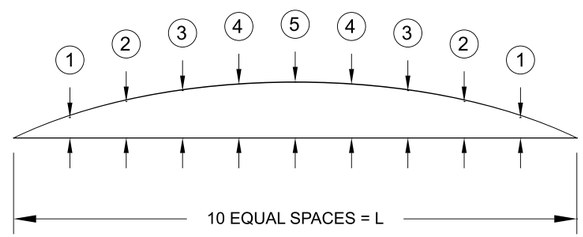
COMPOSITE ROLLED BEAM WITH PARTIALLY STIFFENED WEB - 5 GIRDERS AT 8' 0" GIRDER SPACING, LIMITED DEPTH

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

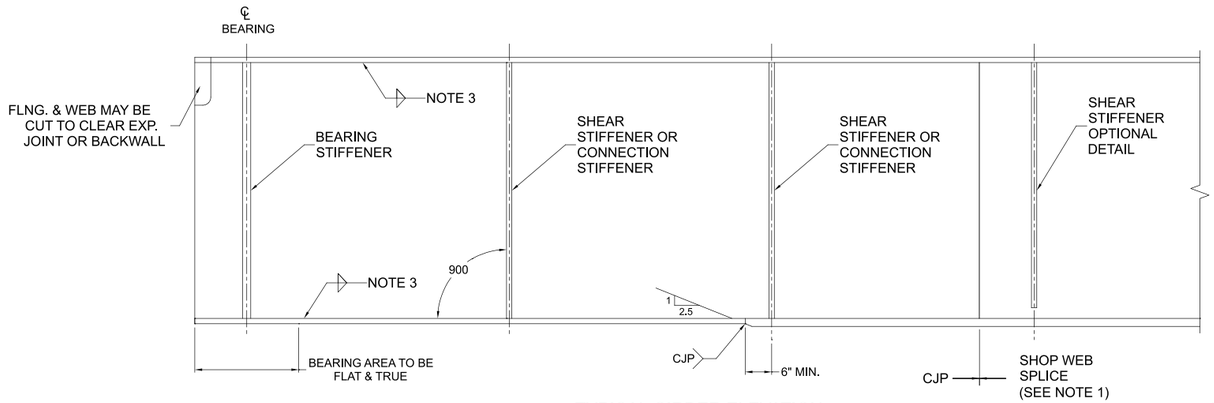
SPAN (L) - ft	ROLLED BEAM	DIAPHRAGM SPACING (C) - ft	SHEAR CONNECTOR MAX. SPACING		WEIGHT
			D	E	
70	W27x178	23.33'	43 @ 6"	9"	13,580 lbs

STEEL D.L. CAMBER - in					TOTAL D.L. CAMBER - in				
1	2	3	4	5	1	2	3	4	5
0.164"	0.310"	0.424"	0.496"	0.521"	1.057"	1.998"	2.735"	3.204"	3.363"

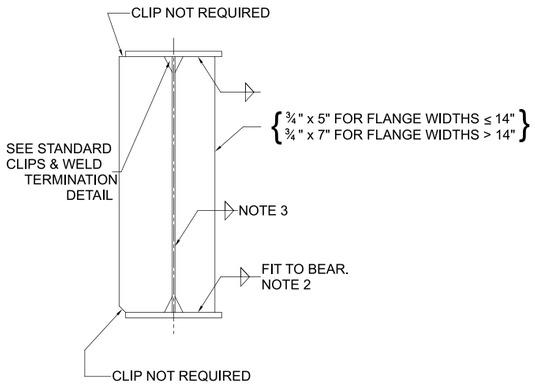


D.L. CAMBER

Typical Girder Details

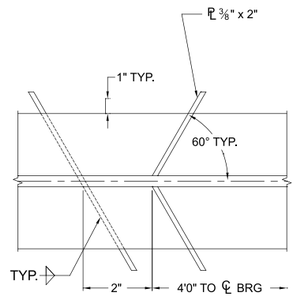


TYPICAL GIRDER ELEVATION
(N.T.S.)



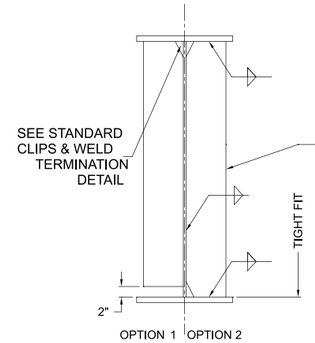
BEARING STIFFENER
(N.T.S.)

BEARING STIFFENER TO FLANGE WELDING IS REQUIRED IF A DIAPHRAGM OR CROSS FRAME IS ATTACHED TO THE STIFFENER

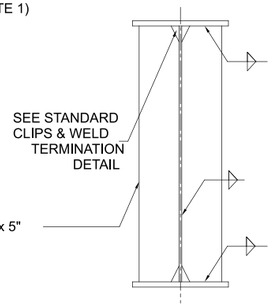


DRIP BAR DETAIL
(N.T.S.)

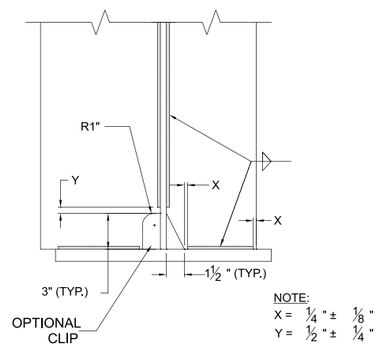
SEAL GAPS AT WEB W/ CAULK MATCHING COLOR OF WEATHERED STEEL



SHEAR STIFFENER
(N.T.S.)



CONNECTION STIFFENER
(N.T.S.)

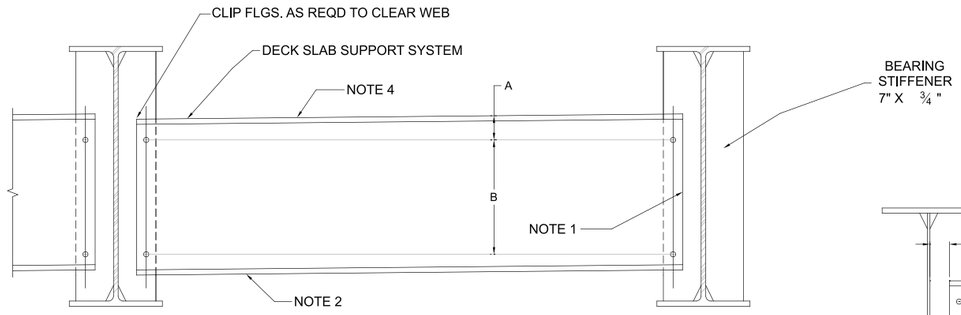


STANDARD CLIP & WELD TERMINATION DETAIL
(N.T.S.)

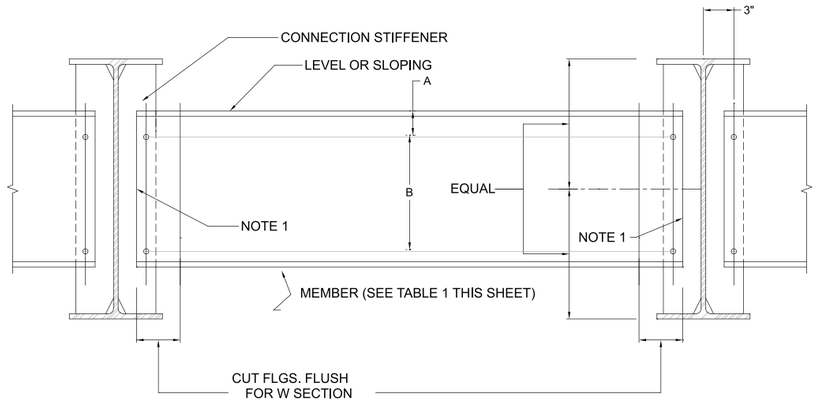
NOTES:

1. All CJP welds to be ground and tested per state specifications.
2. Fit to bearing is to be 50% in contact with flange and within 1/16” for remainder.
3. MT 1’ of every 10’ (extents of mag particle inspection for fillet welds) -OR- see state specs.

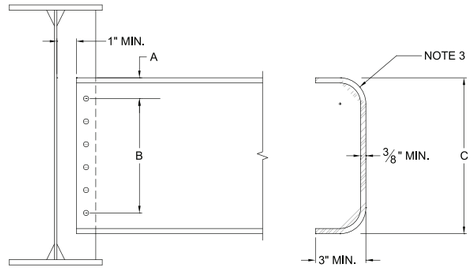
Rolled Shape and Bent Plate Diaphragm Details



END DIAPHRAGM
(N.T.S.)

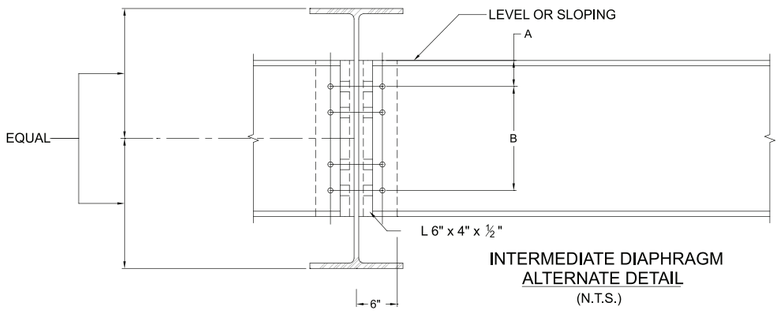


INTERMEDIATE DIAPHRAGM
(N.T.S.)



BENT PLATE DIAPHRAGM
(N.T.S.)

(CAN BE USED AS ALTERNATE TO ROLLED SHAPE DIAPHRAGM)



INTERMEDIATE DIAPHRAGM
ALTERNATE DETAIL
(N.T.S.)

TABLE 1

DEPTH OF STRINGER OR GIRDER WEB	DIAPHRAGM SIZE	DIMENSIONS		
		A	B	C
≤ 30"	C15x33.9	3"	3 @ 3"	15"
30" < X ≤ 36"	MC18x42.7	3"	4 @ 3"	18"
> 36"	W30x90	5"	5 @ 4"	30"

NOTES:

1. Slope diaphragm and keep holes vertical in stiffener at constant dimensions (to keep all stiffeners the same) and cut ends of diaphragm square.

2. At expansion joint, orient channel flanges away from joint opening.

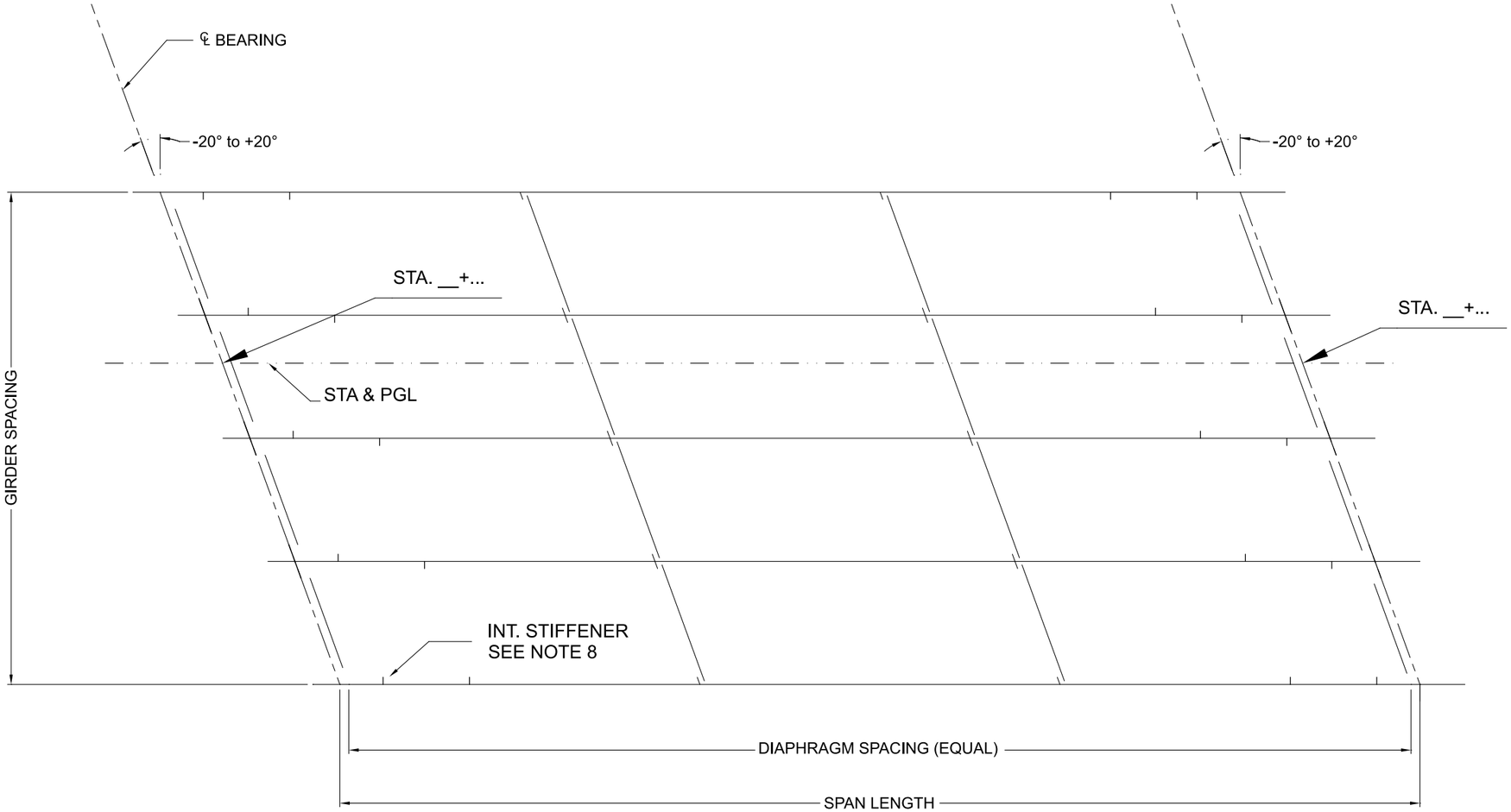
3. Minimum radius as per AASHTO/NSBA fabrication S2.1 table 4.3.2-1. Per section 4.3.2, if the bend is parallel to direction of rolling, multiply the minimum radii by 1.5.

4. All holes to be 15/16” ø for 7/8” ø HS bolts, ASTM A325 type 3 w/ F436-3 washers (RCT).

5. Threads excluded from shear plane.

6. Application of the Intermediate Diaphragm Alternate Detail is limited to rolled beams in straight bridges with composite reinforced decks whose supports are normal or skewed not more than 10 degrees from normal and when the intermediate diaphragms are placed in contiguous lines parallel to the supports.

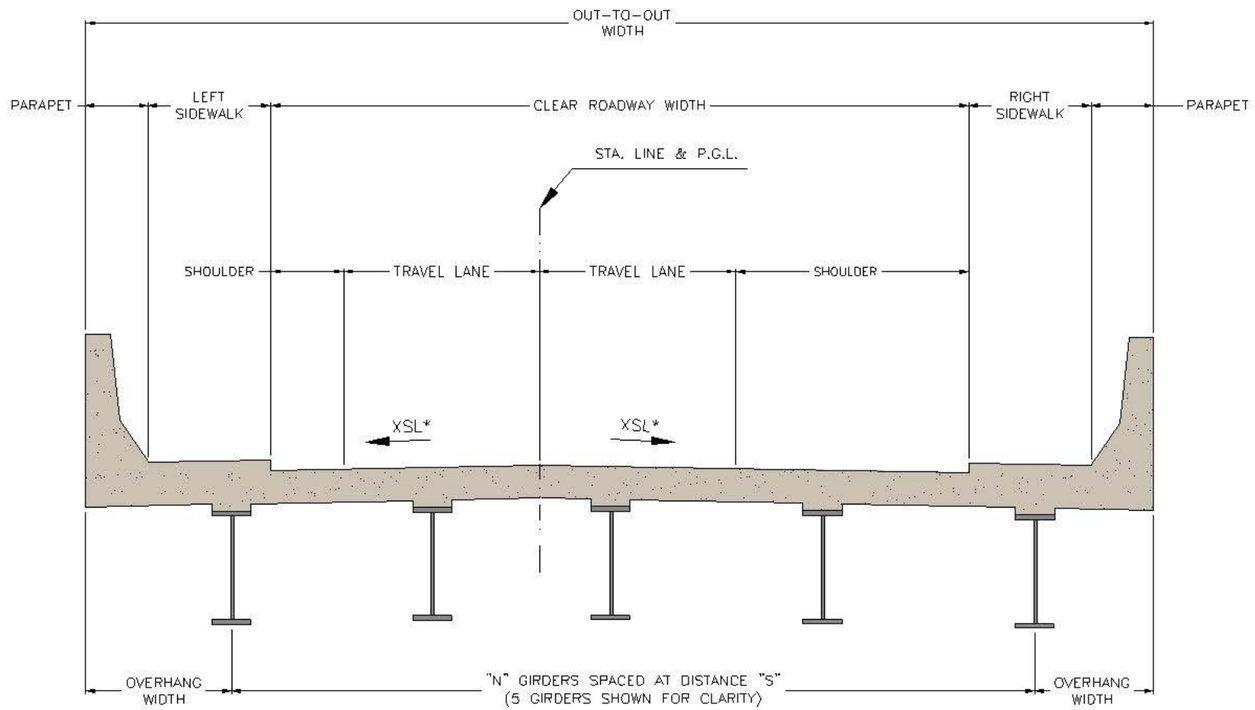
Framing Plan



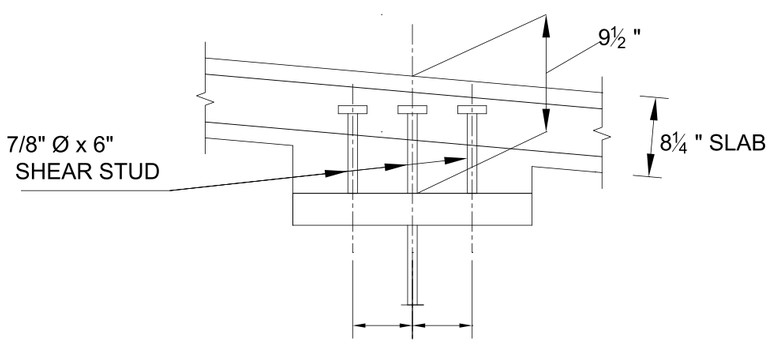
NOTES:

1. Superstructure may sit on existing bridge seats. Contractor to verify spacing in field.
2. Design will accommodate skews up to 20° from ⊥, but are intended to be parallel.
3. Station line is intended to be on a tangent alignment.
4. Max grade at bearing is ± 5%.
5. Orient toes of channel diaphragm down grade.
6. Diaphragms may be placed on either side of connection plate at the contractor's discretion.
7. Keep diaphragm lines parallel to bearing lines.
8. Int. stiffeners are required on one side of web only. On fascia girders, orient stiffeners to the inside of the girder. On interior girders, stiffeners should alternate sides. See Girder Elevations for spacing.

Typical Section



*NOTE: XSL - Cross slope can vary from -.06% to +.06%.

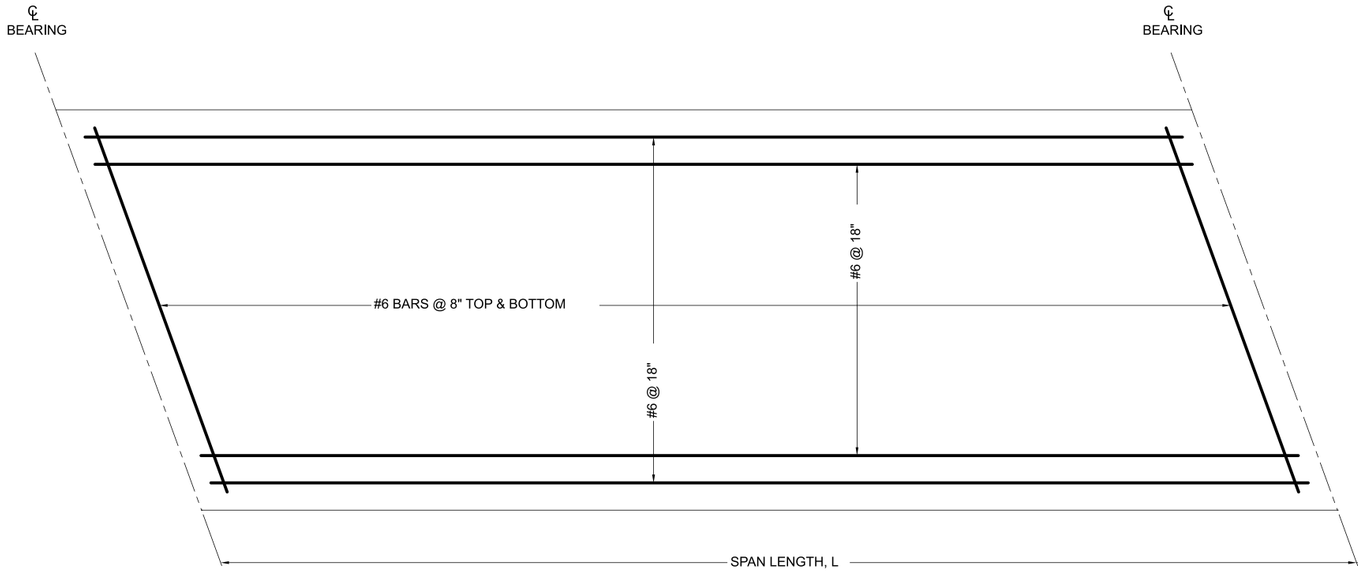


DETAIL A

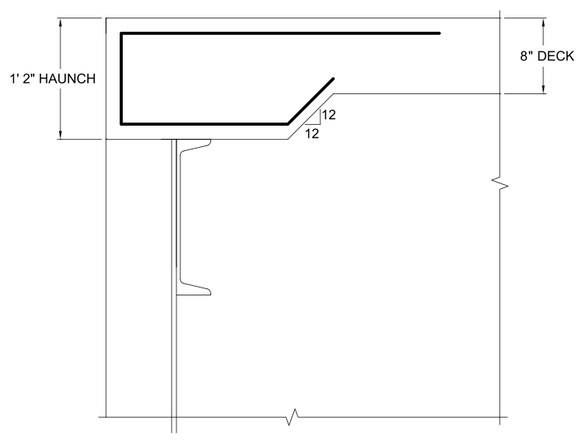
NOTES:

1. For shear stud spacing, see Girder Elevations.
2. Parapets per state DOT requirements, if cast in place, provide 2'-0" lap with transverse bars.

Deck Design



REINFORCING PLAN
(N.T.S.)

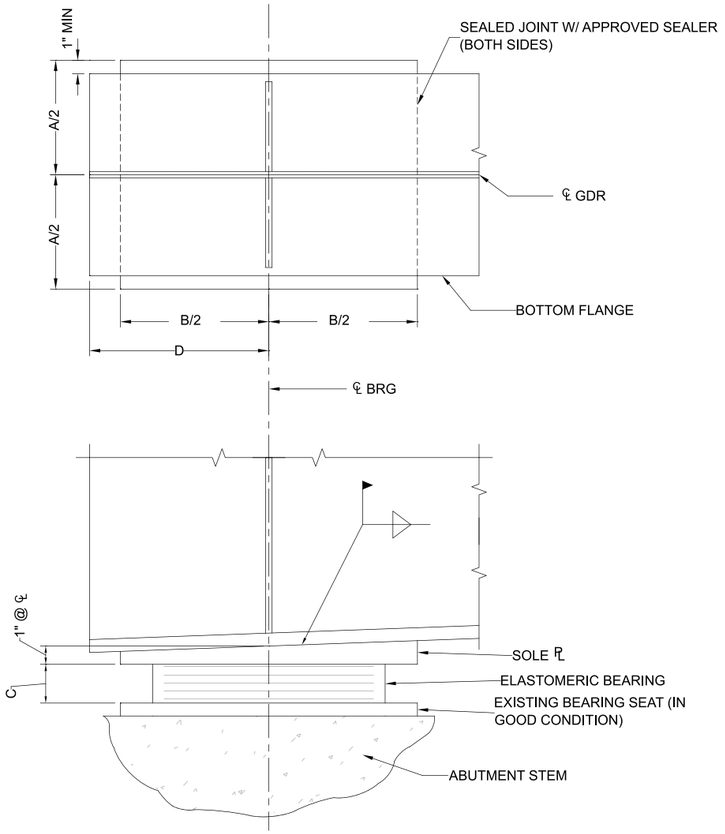


HAUNCH DETAIL
(N.T.S.)

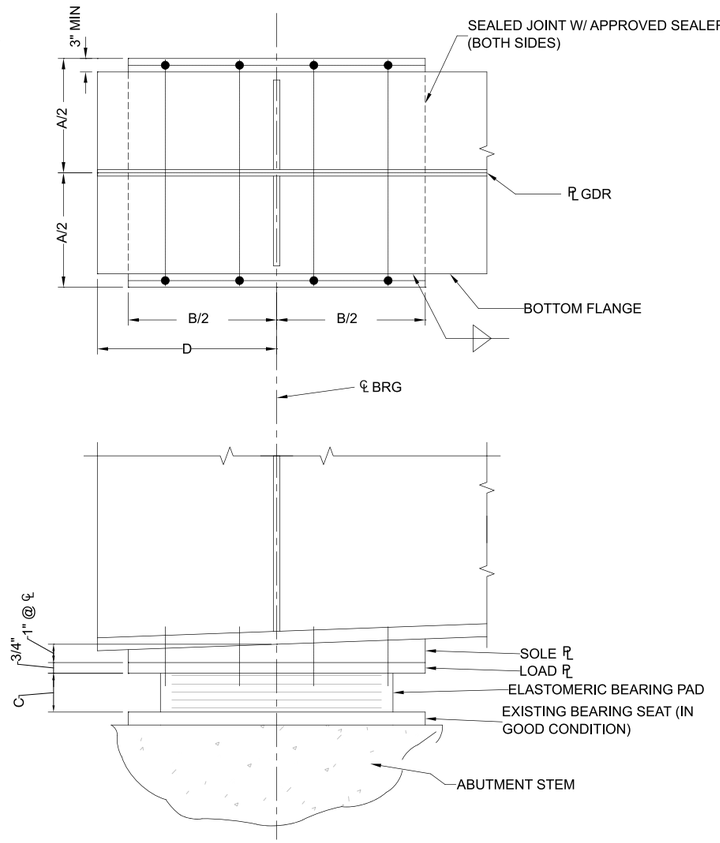
NOTES:

1. Forming brackets must extend to bottom flange.

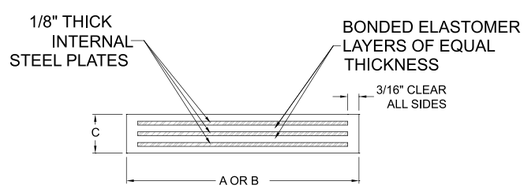
COMPOSITE PLATE GIRDERS - 8' 0" GIRDER SPACING, HOMOGENEOUS



BEARING ELEVATION
OPTION "A"
(N.T.S.)



BEARING ELEVATION
OPTION "B"
(N.T.S.)



SECTION VIEW OF ELASTOMERIC BEARING
(N.T.S.)

NOTES:

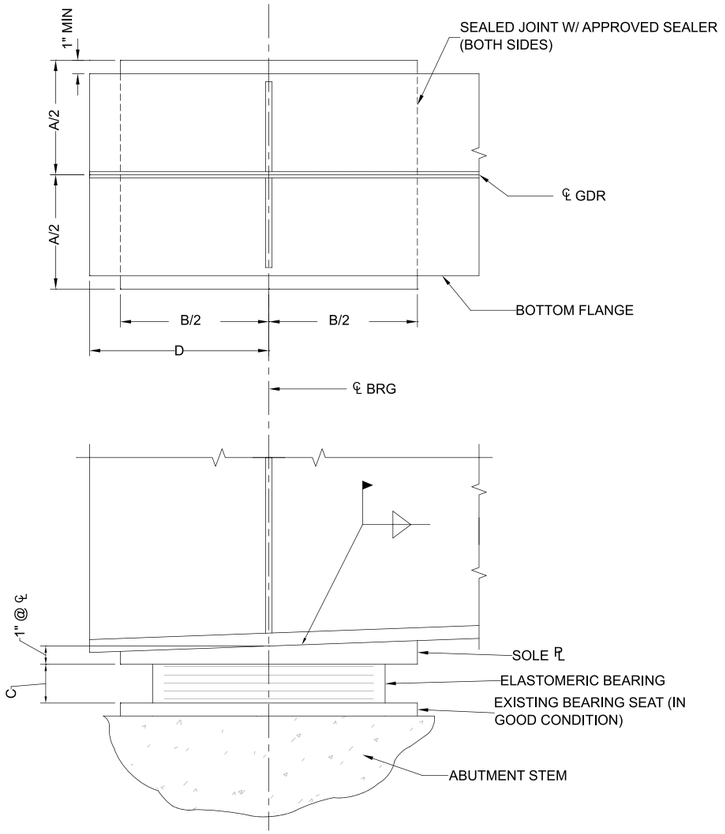
1. Bevel sole ℄ if grade exceeds ± 1%.
2. Max Grade is ± 5%.
3. Sole ℄ to be factory vulcanized to elastomeric bearing pad.
4. Holes to be 1 1/16" Ø in sole ℄ for 7/8" Ø bolt.
5. All elastomeric cover layers are 1/4" thick.

COMMENTARY:

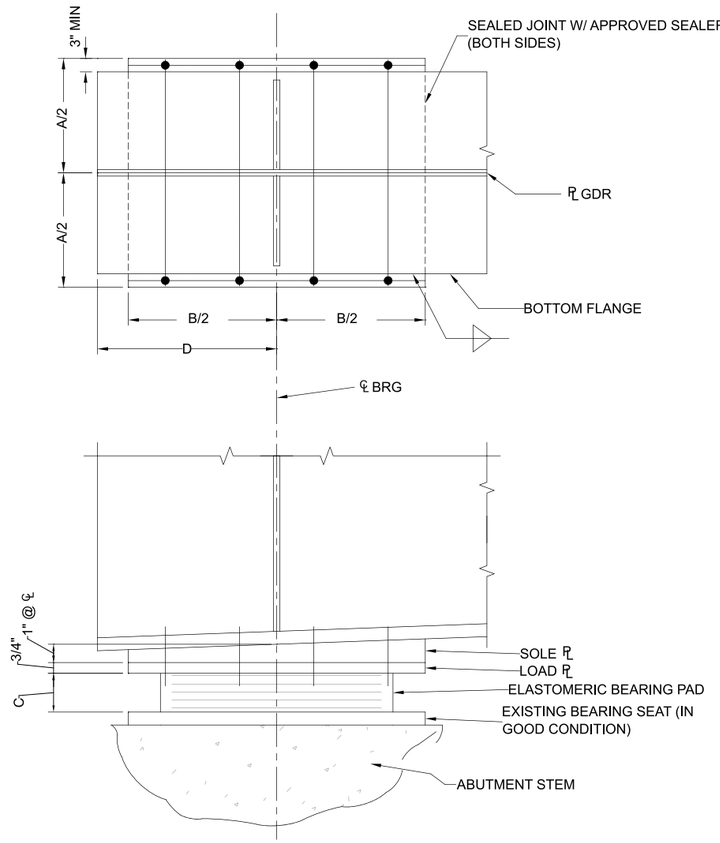
1. Care must be exercised with the field welding. The temperature of the steel adjacent to the bearing must be kept below 250°F (120°C). Temperature crayons should be used to monitor the steel temperature during welding.

ELASTOMETRIC BEARING DETAILS - in					
A	B	C	D	INTERNAL ELASTOMER LAYERS	
				NO. OF LAYERS	THICKNESS - in
14"	16"	3.125"	12"	4	0.5"

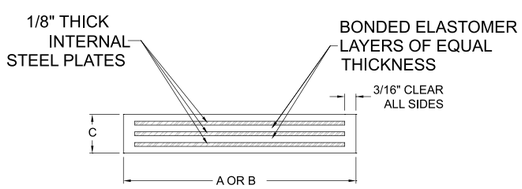
COMPOSITE ROLLED BEAM - 8' 0" GIRDER SPACING, LIGHTEST WEIGHT



BEARING ELEVATION
OPTION "A"
(N.T.S.)



BEARING ELEVATION
OPTION "B"
(N.T.S.)



SECTION VIEW OF ELASTOMERIC BEARING
(N.T.S.)

NOTES:

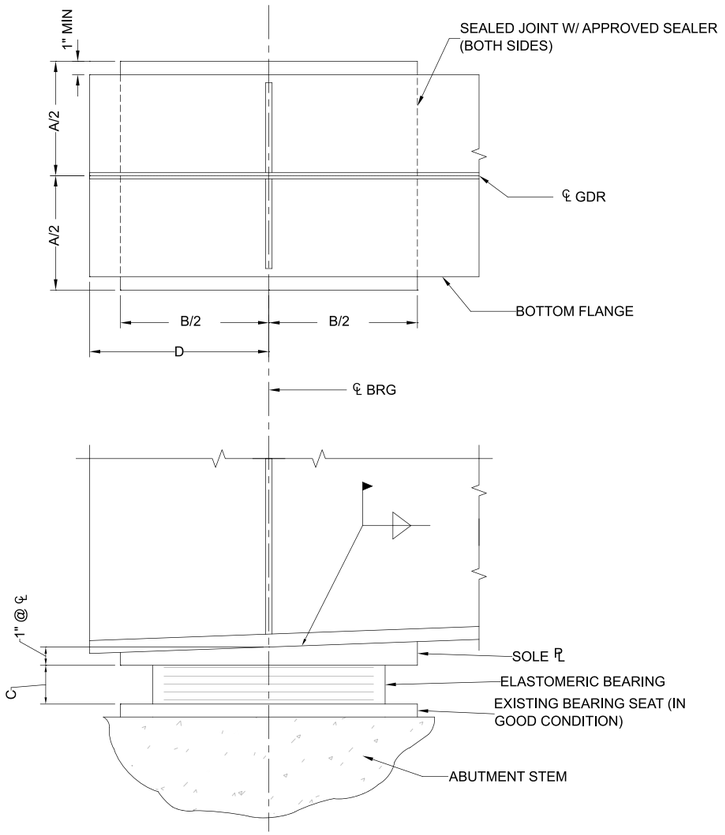
1. Bevel sole ℄ if grade exceeds ± 1%.
2. Max Grade is ± 5%.
3. Sole ℄ to be factory vulcanized to elastomeric bearing pad.
4. Holes to be 1 1/16" Ø in sole ℄ for 7/8" Ø bolt.
5. All elastomeric cover layers are 1/4" thick.

COMMENTARY:

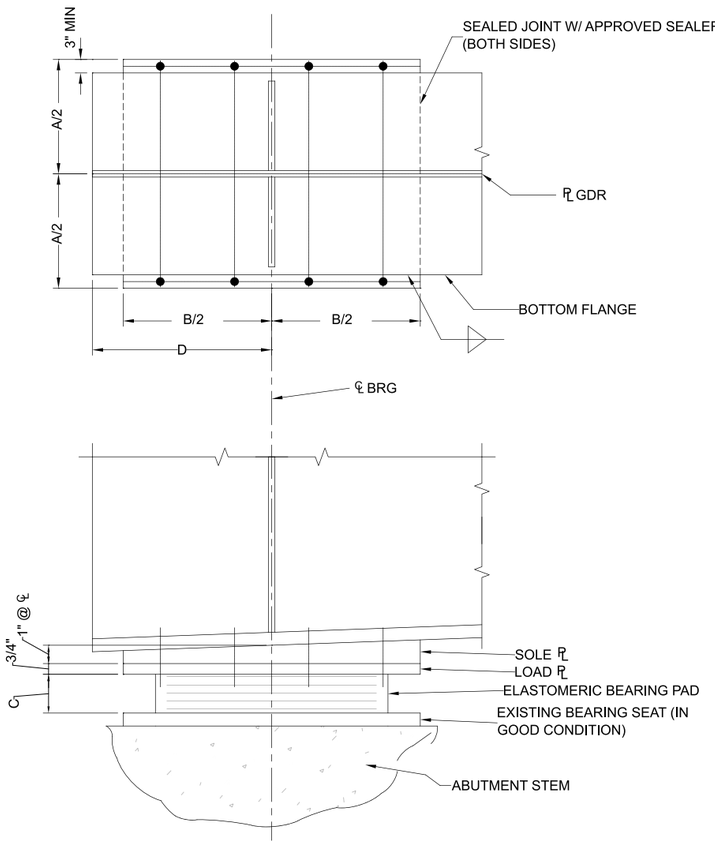
1. Care must be exercised with the field welding. The temperature of the steel adjacent to the bearing must be kept below 250°F (120°C). Temperature crayons should be used to monitor the steel temperature during welding.

ELASTOMETRIC BEARING DETAILS - in					
A	B	C	D	INTERNAL ELASTOMER LAYERS	
				NO. OF LAYERS	THICKNESS - in
14"	16"	3.125"	12"	4	0.5"

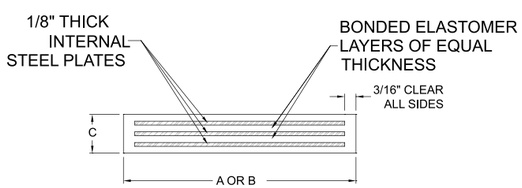
COMPOSITE ROLLED BEAM - 8' 0" GIRDER SPACING, LIMITED DEPTH



BEARING ELEVATION
OPTION "A"
(N.T.S.)



BEARING ELEVATION
OPTION "B"
(N.T.S.)



SECTION VIEW OF ELASTOMERIC BEARING
(N.T.S.)

NOTES:

1. Bevel sole ℄ if grade exceeds ± 1%.
2. Max Grade is ± 5%.
3. Sole ℄ to be factory vulcanized to elastomeric bearing pad.
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5. All elastomeric cover layers are 1/4" thick.

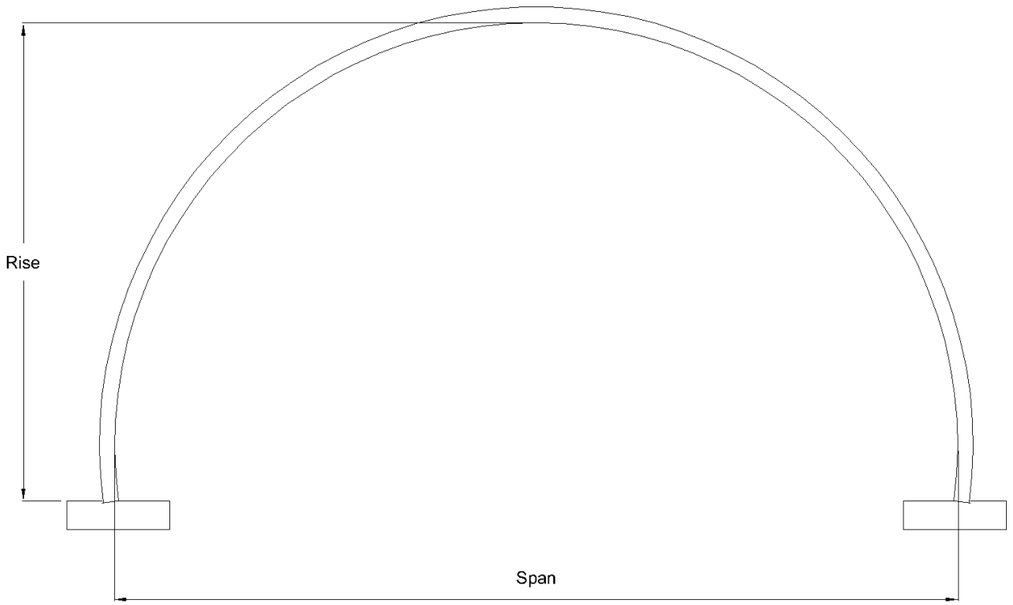
COMMENTARY:

1. Care must be exercised with the field welding. The temperature of the steel adjacent to the bearing must be kept below 250°F (120°C). Temperature crayons should be used to monitor the steel temperature during welding.

ELASTOMETRIC BEARING DETAILS - in					
A	B	C	D	INTERNAL ELASTOMER LAYERS	
				NO. OF LAYERS	THICKNESS - in
14"	16"	3.125"	12"	4	0.5"

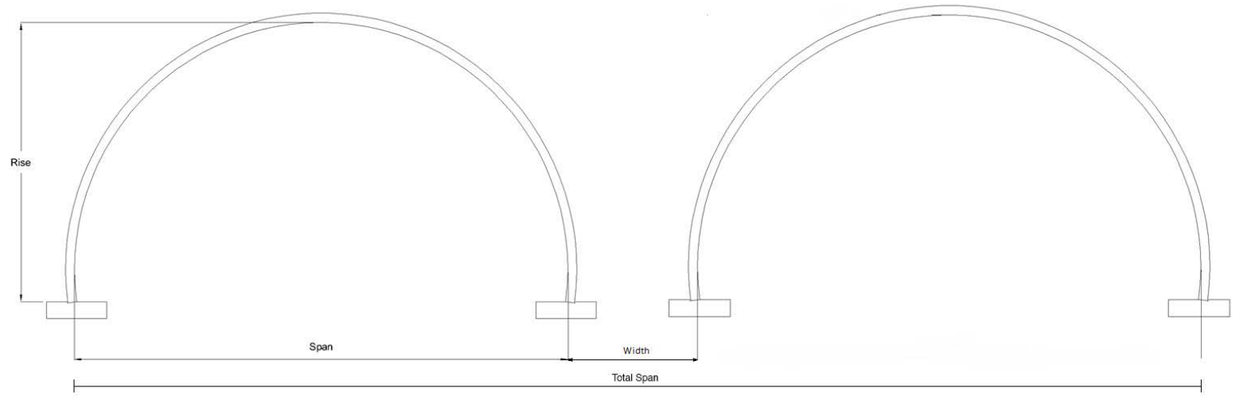
Standard Design and Details of Buried Soil Structure Solutions

Single-Radius Arch 15x5.5



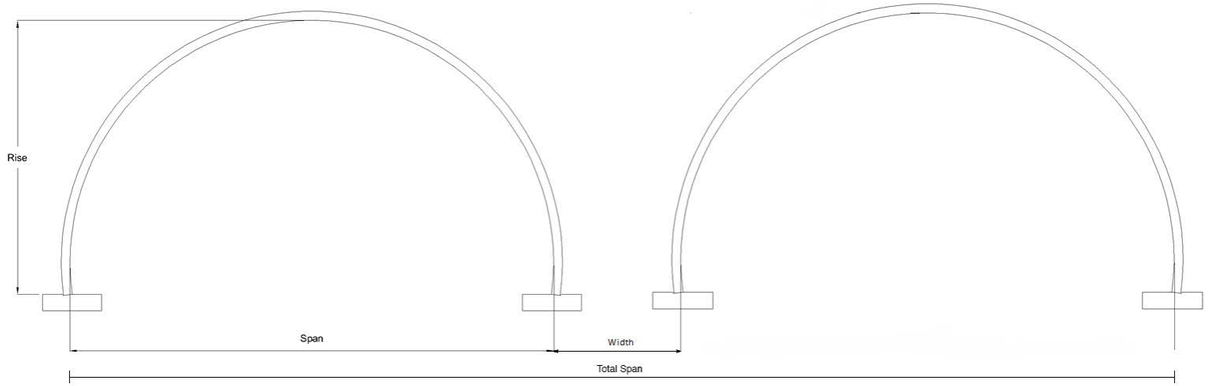
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	RADIUS - in	
			Rt	Rs
73' 0"	36' 6"	2094'	36' 6"	86

Single-Radius Arch 15x5.5 - Multiple



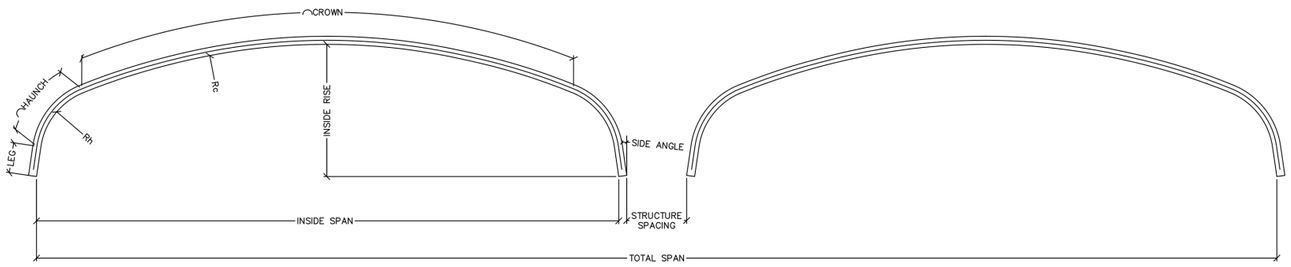
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	RADIUS - in		SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
			Rt	Rs			
34' 0"	17' 0"	453'	17' 0"	40	2'	70'	906.000

Single-Radius Arch 16x6 - Multiple



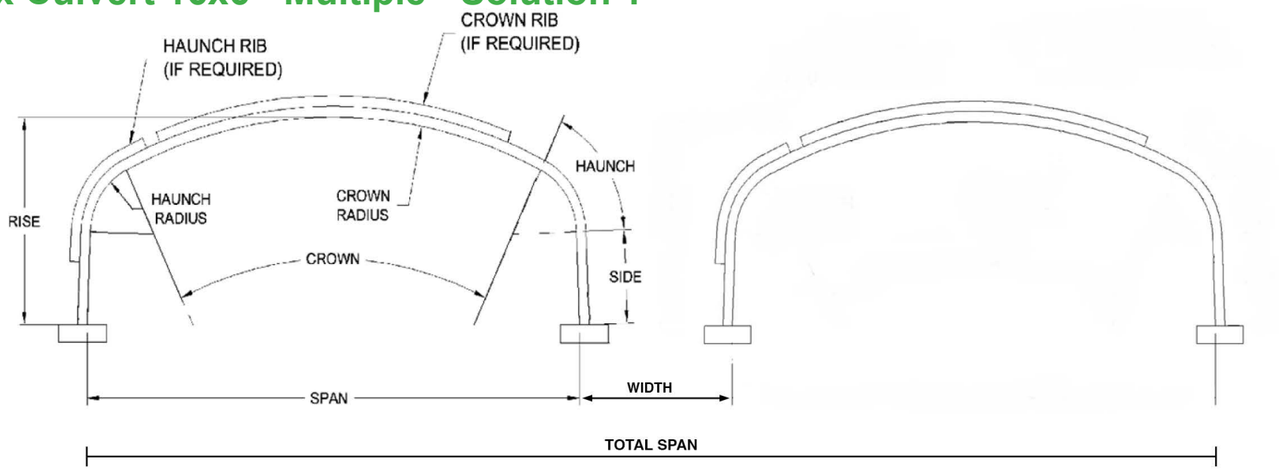
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	RADIUS (Rt) - in	SOIL WIDTH - ft - in	TOTAL SPAN - ft - in	TOTAL WATERWAY AREA - ft ²
34 – 5"	17 - 5"	473.1'	207"	2'	70' 10"	946.200

Box Culvert 15x5.5 - Multiple



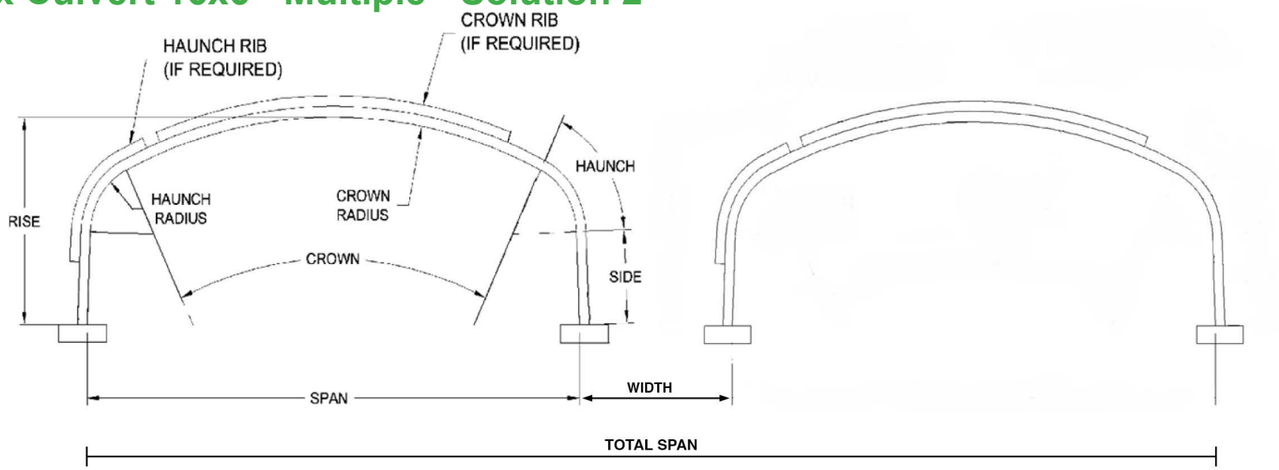
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	CROWN RADIUS (Rc) -in	HAUNCH RADIUS (Rh) - in	SIDE ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
34'-3 7/8"	7'-6"	209.1'	450.0"	40"	1.89	2'	70' 7.75"	418.200

Box Culvert 16x6 - Multiple - Solution 1



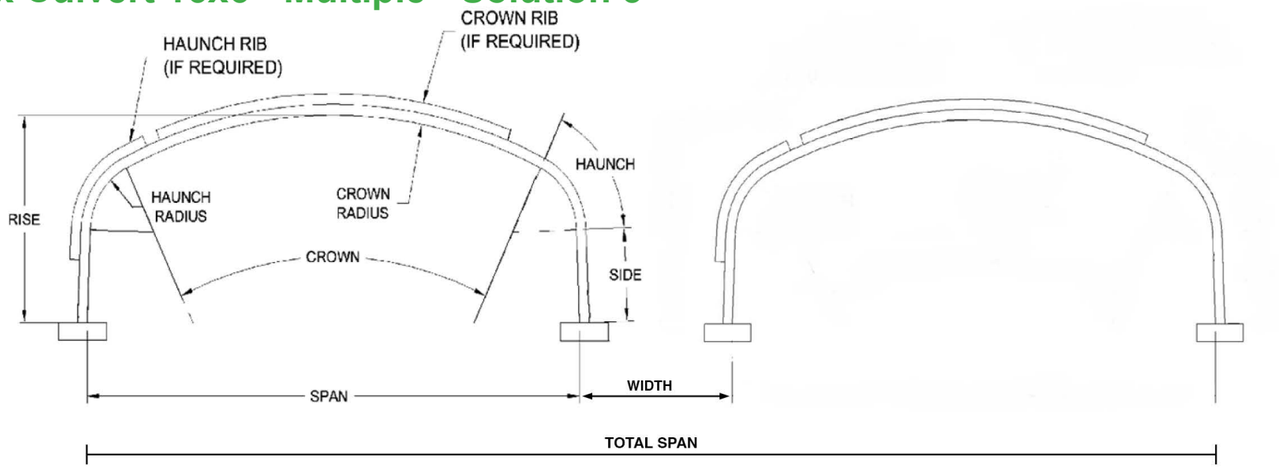
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	CROWN RADIUS (Rc) -in	HAUNCH RADIUS (Rh) - in	SIDE ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
36 - 1"	7 - 11"	231.0'	477	49	0.5	2'	74' 2"	462.000

Box Culvert 16x6 - Multiple - Solution 2



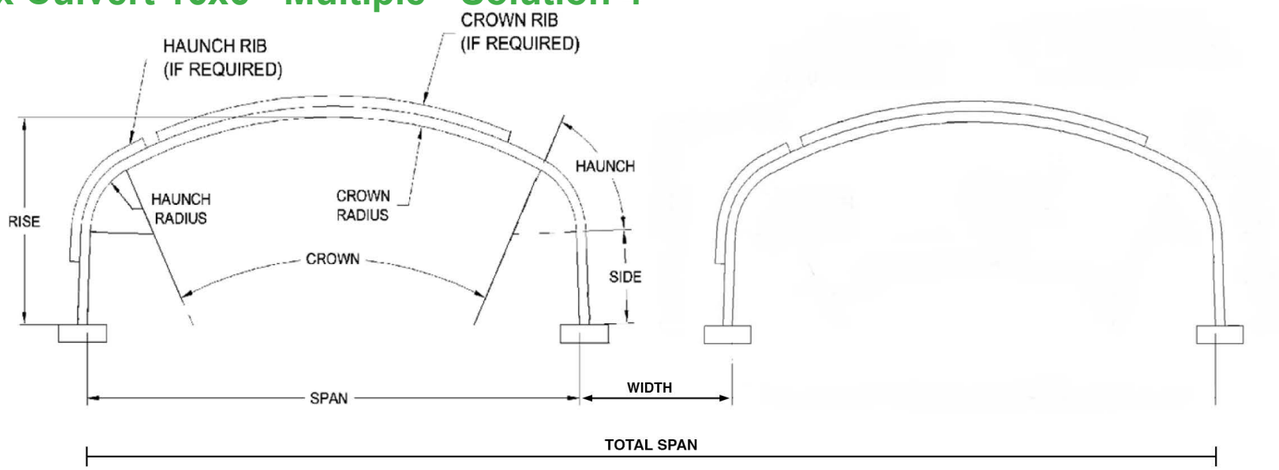
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	CROWN RADIUS (Rc) -in	HAUNCH RADIUS (Rh) - in	SIDE ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
36 - 1"	9 - 2"	266.6'	402	49	1.35	2'	74' 2"	533.200

Box Culvert 16x6 - Multiple - Solution 3



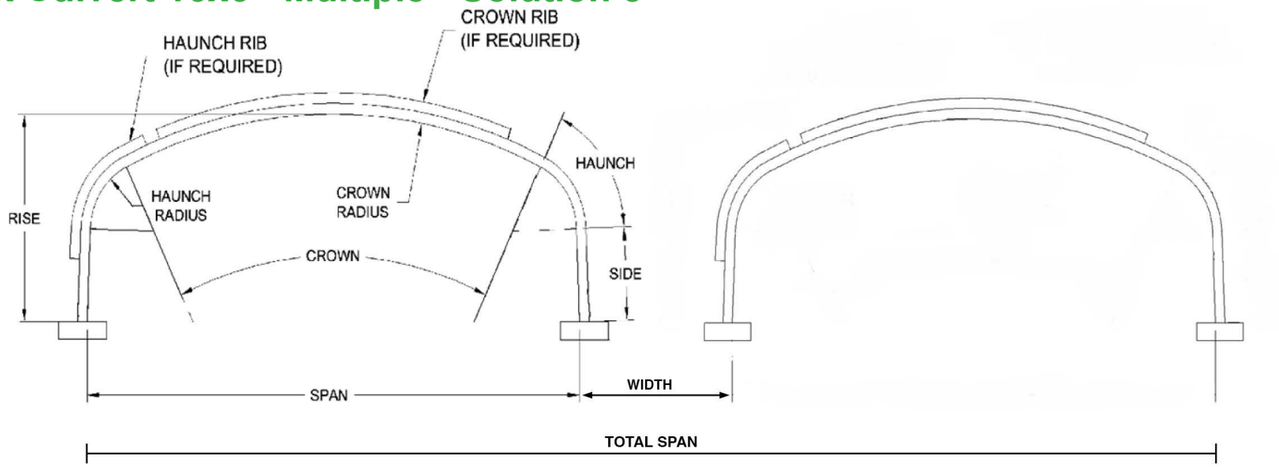
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	CROWN RADIUS (Rc) -in	HAUNCH RADIUS (Rh) - in	SIDE ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
36 - 1"	9 - 10"	291.9'	418	49	2.1	2'	74' 2"	583.800

Box Culvert 16x6 - Multiple - Solution 4



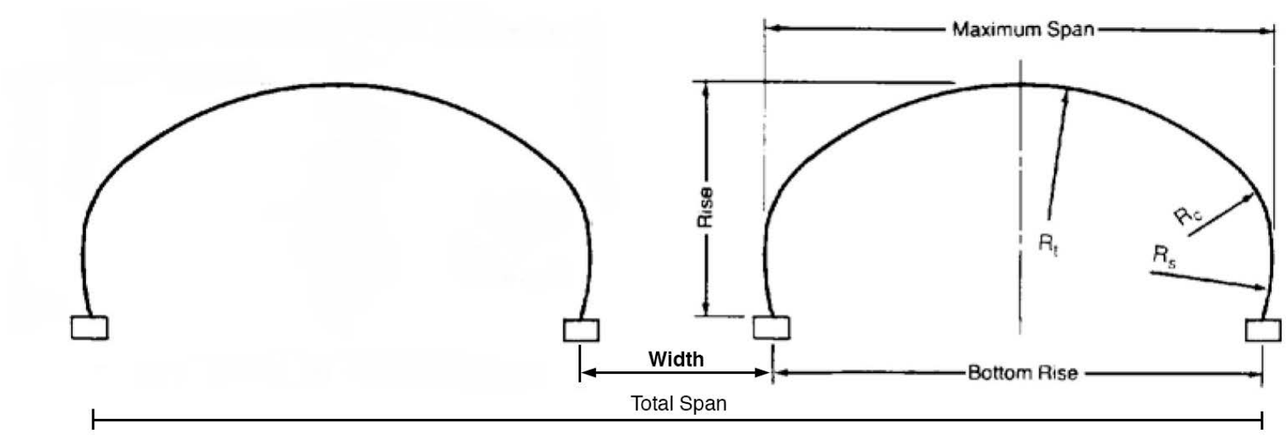
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	CROWN RADIUS (Rc) -in	HAUNCH RADIUS (Rh) - in	SIDE ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
36 - 1"	10 - 6"	315.8'	419	49	2.45	2'	74' 2"	631.600

Box Culvert 16x6 - Multiple - Solution 5



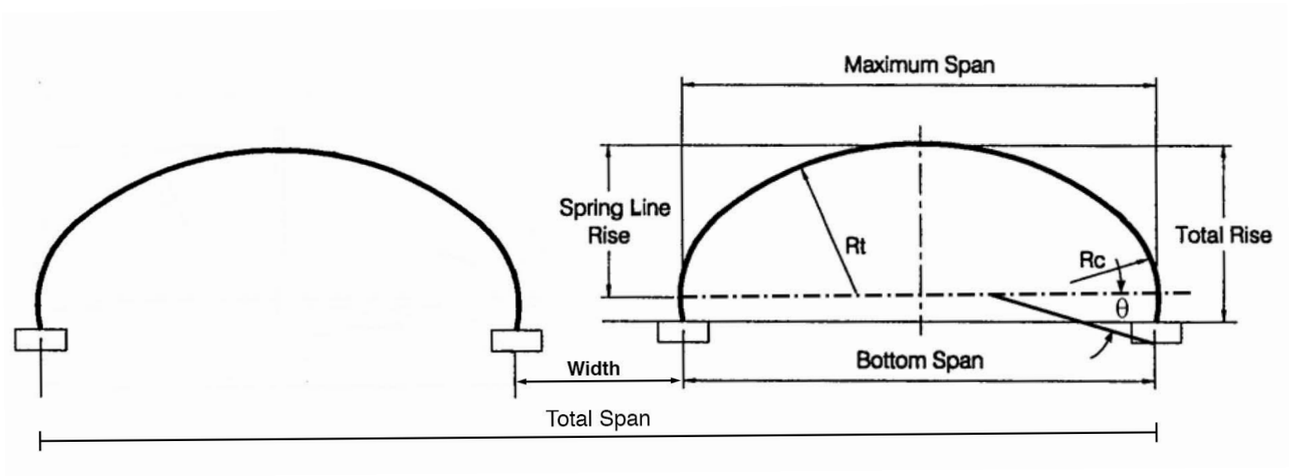
SPAN - ft - in	RISE - ft - in	WATERWAY AREA - ft²	CROWN RADIUS (Rc) -in	HAUNCH RADIUS (Rh) - in	SIDE ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
36 - 1"	11 - 2"	341.1'	441	49	3.25	2'	74' 2"	682.200

High Profile Arch 6x2 - Multiple



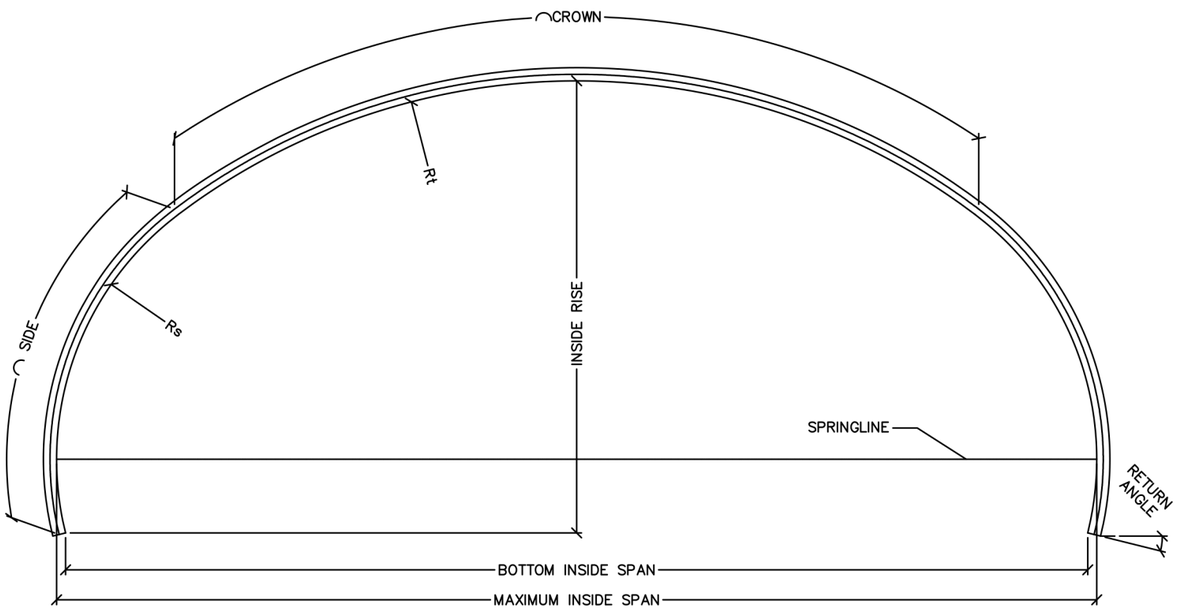
SPAN - ft - in	RISE - ft - in	BOTTOM SPAN - ft - in	WATERWAY AREA - ft²	RADIUS - ft - in			SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
				Rt	Rc	Rs			
34-0"	17-8"	31-2"	514'	23-5"	5-5"	23-5"	2'	70'	1028.000

Low Profile Arch 6x2 - Multiple



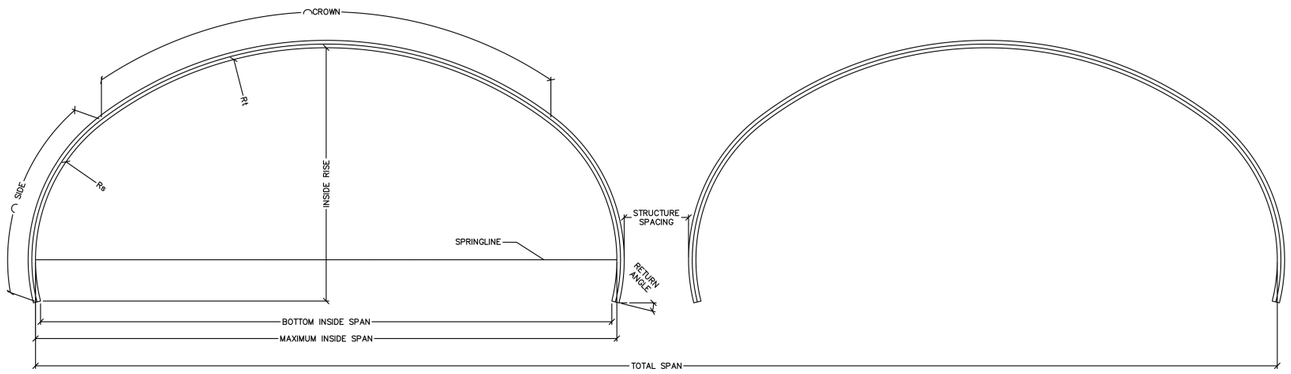
SPAN - ft - in	RISE - ft - in	BOTTOM SPAN - ft - in	WATERWAY AREA - ft²	RADIUS - ft - in		SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
				Rt	Rc			
34-5"	13-3"	34-1"	377'	22-3"	8-2"	2'	70' 10"	754.000

Multi-Radius Arch 15x5.5



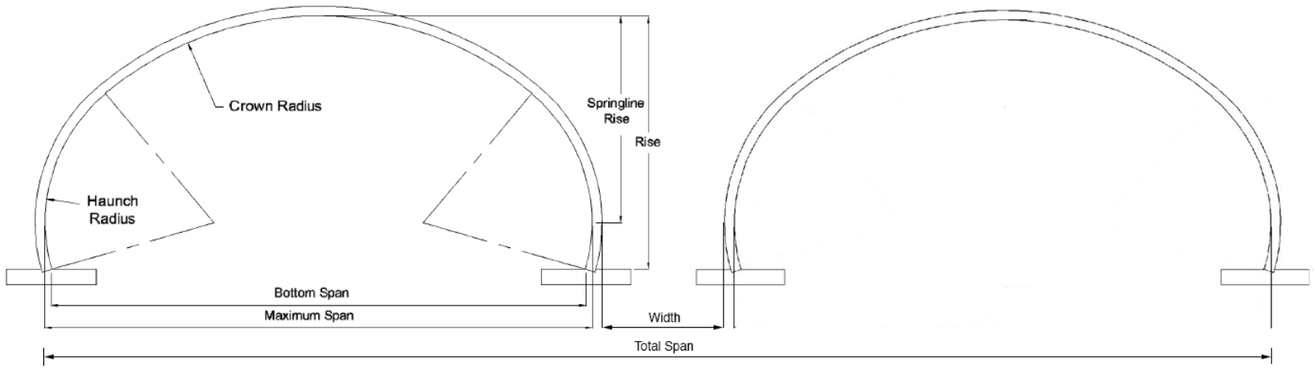
SPAN - ft - in	RISE - ft - in	BOTTOM SPAN - ft - in	WATERWAY AREA - ft²	RADIUS - in		RETURN ANGLE
				Rt	Rc	
70' 6"	22' 9"	70' 4"	1240.4'	548"	135"	8.8

Multi-Radius Arch 15x5.5 - Multiple



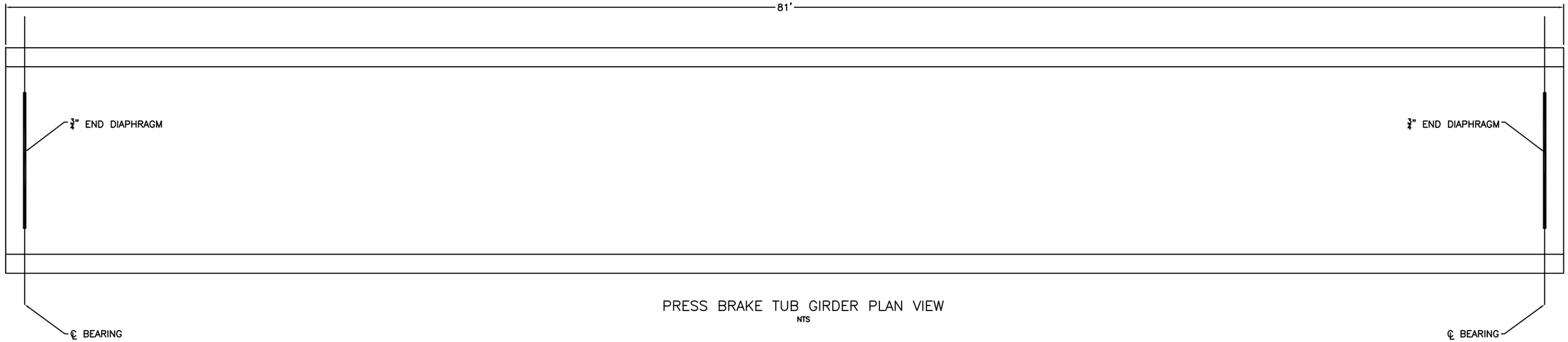
SPAN - ft - in	RISE - ft - in	BOTTOM SPAN - ft - in	WATERWAY AREA - ft²	RADIUS - in		RETURN ANGLE	SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
				Rt	Rc				
34' 5"	13' 9"	34' 4"	374.0'	391"	135"	4.8	2'	70' 10"	748.000

Multi-Radius Arch 16x6 - Multiple

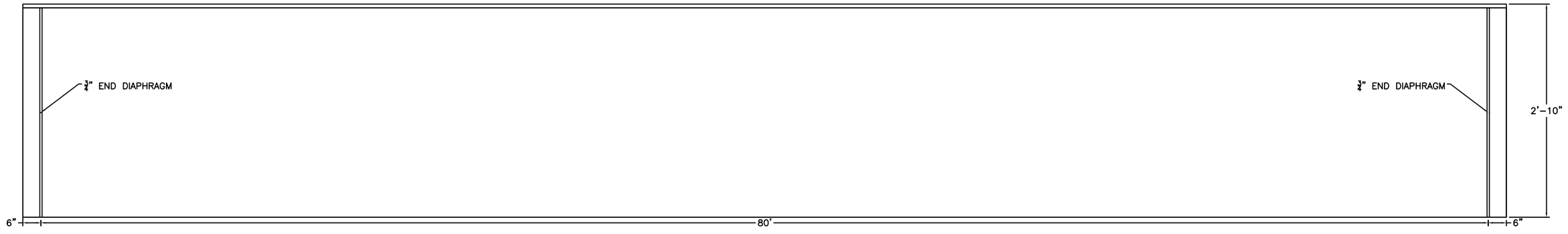


SPAN - ft - in	RISE - ft - in	BOTTOM SPAN - ft - in	WATERWAY AREA - ft²	RADIUS - in		SOIL WIDTH ft - in	TOTAL SPAN ft - in	TOTAL WATERWAY AREA - ft ²
				Rt	Rc			
33 - 12"	12 - 9"	33 - 10"	345.8'	260"	102"	2'	70'	691.600

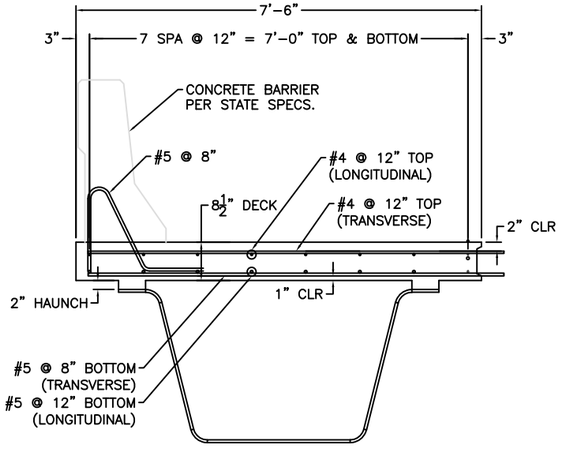
Press Brake Tub Girder Sizing Recommendation



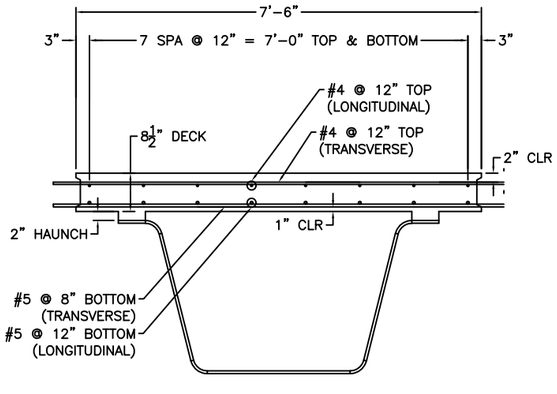
PRESS BRAKE TUB GIRDER PLAN VIEW
NTS



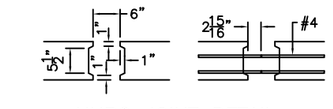
PRESS BRAKE TUB GIRDER ELEVATION VIEW
NTS



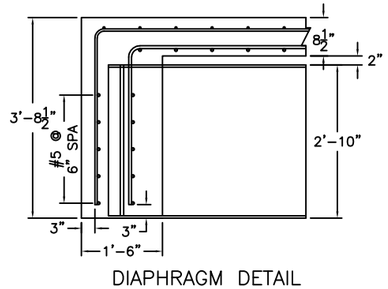
EXTERIOR MODULE
NTS



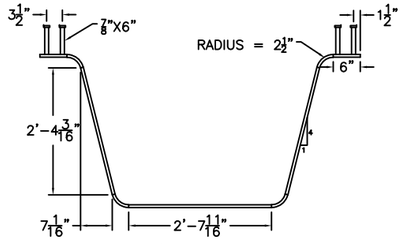
INTERIOR MODULE
NTS



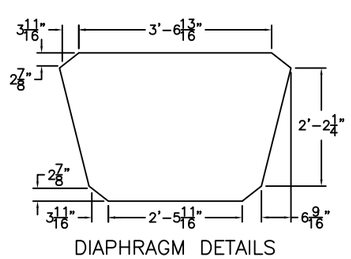
UHPC JOINT DETAIL
NTS



DIAPHRAGM DETAIL
NTS



SECTION VIEW
NTS



DIAPHRAGM DETAILS
NTS

120 X 5/8 PRESS BRAKE TUB GIRDER
USED FOR SPANS 60–80 FEET

Short Span Steel Bridge Alliance Member Contact Information

The following members of the Short Span steel Bridge Alliance are available to assist you with questions or information in regards to short span bridges.

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jhahm@conteches.com

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Dlee@high.net

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CLR, Inc.
Karen Brewer
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CIANBRO
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Contractors Materials Company
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J.R. Hoe and Sons
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Richard Morales
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The following members of the Short Span steel Bridge Alliance are available to assist you with questions or information in regards to short span bridges.

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Valmont Industries
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V&S Galvanizing
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South Atlantic
Taylor Boggs
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The following members of the Short Span steel Bridge Alliance are available to assist you with questions or information in regards to short span bridges.

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American Iron and Steel Institute Dan Snyder *Director Business Development* www.steel.org	25 Massachusetts Ave NW Suite 800 Washington, DC 20001 301-367-6179 dsnyder@steel.org
National Steel Bridge Alliance Brandon Chavel *Director of Market Development* www.steelbridges.org	130 East Randolph Suite 2000 Chicago, IL 60601 412-889-9066 chavel@aisc.org
National Corrugated Steel Pipe Association Diana Brooks *Marketing & Communications Manager* www.ncspa.org	14070 Proton Road Suite 100 Dallas, TX 75244 (540) 743-1354 dbrooks@ncspa.org
National Association of County Engineers Kevan Stone *Executive Director* www.countyengineers.org	660 North Capitol Street, NW Washington, DC 20001 202.393.5041 kstone@countyengineers.org

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International Zinc Association Kevin Irving www.zinc.org	2530 Meridian Parkway Durhan, NC 27713 815.693.4242 kevin@abidinggroup.com
Bridge Grid Flooring Manufacturers Association Mike Riley *Executive Director* www.bgfma.org	300 E Cherry Street North Baltimore, OH 45872 724.355.1878 www.bgfma@bgfma.org

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Nucor-Yamato Steel Company
Shane Vernon
Plant Metallurgist
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SSAB Americas-Montpelier Caster
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Steelmaking Marketing Manager
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The following members of the Short Span steel Bridge Alliance are available to assist you with questions or information in regards to short span bridges.

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Skyline Steel
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Delta Steel, Inc.
Steve Mize
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The following members of the Short Span steel Bridge Alliance are available to assist you with questions or information in regards to short span bridges.

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Gardner-Watson Studs
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The following members of the Short Span steel Bridge Alliance are available to assist you with questions or information in regards to short span bridges.

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