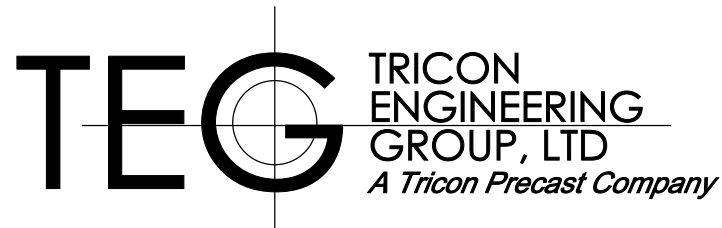


# CON-STRUCT PREFABRICATED BRIDGE SYSTEM

## STANDARD PLANS

### SINGLE TUB SERIES - 30' THROUGH 60'



1009 44th STREET, SUITE A-2  
 WYOMING, MI 49509  
 PH. (616) 261-8630

SHEET INDEX	
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## TRICON PRECAST LTD.

15055 HENRY ROAD  
 HOUSTON, TEXAS 77060  
 (281) 931-9832

**Con-Struct** PREFABRICATED BRIDGE SYSTEM



<p align="center"><b>NOTICE:</b></p> <p>THE DESIGN CONTAINED IN THESE DRAWINGS IS BASED ON THE TRICON PRECAST, LTD. SPECIFICATIONS AND THE INFORMATION PROVIDED BY THE OWNER.</p> <p>THESE DRAWINGS ARE FURNISHED ONLY FOR THE USE OF THIS PROJECT. THE PROPRIETARY INFORMATION SHOWN HEREIN IS NOT TO BE TRANSMITTED TO ANY OTHER ORGANIZATION WITHOUT AUTHORIZATION FROM TRICON PRECAST, LTD.</p>	<p align="center"><b>TRICON PRECAST LTD.</b></p> <p align="center">HOUSTON, TEXAS (281) 931-9832</p>	<p align="center"><b>TEG</b> TRICON ENGINEERING GROUP, LTD  <i>A Tricon Precast Company</i></p> <p align="center">1009 44th STREET, SUITE A-2          WYOMING, MI 49509          PH. (616) 261-8630</p>	<p align="center">REVISIONS</p> <table border="1"> <thead> <tr> <th>DATE</th> <th>MARK</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		DATE	MARK	DESCRIPTION													<p align="center"><b>CON-STRUCT PREFABRICATED BRIDGE SYSTEM</b></p> <p align="center"><b>TITLE SHEET</b></p> <p align="center"><b>STANDARD PLANS</b></p>	
			DATE	MARK	DESCRIPTION																
<p>D.O.T. PROJECT NO.:</p>		<p>CONTRACT NO.:</p>		<p>LOCATION NO.:</p>	<p>TRICON JOB NO.:</p> <p align="center">TPL</p>	<p>DATE:</p> <p align="center">02/09/09</p>	<p>SHEET</p> <p align="center">1 of 4</p>														

TABLE OF VARIABLE VALUES

SPAN LENGTH	SECTION DEPTHS		HAUNCH
	*X*	*Y*	*H*
FT	In	In	In
30	9 1/4"	22 1/4"	6"
35	9 1/4"	22 1/4"	6"
40	9 1/4"	22 1/4"	6"
45	11 5/8"	24 5/8"	6"
50	11 5/8"	24 5/8"	6"
55	17 5/8"	30 5/8"	6"
60	17 5/8"	30 5/8"	6"

GENERAL NOTES:

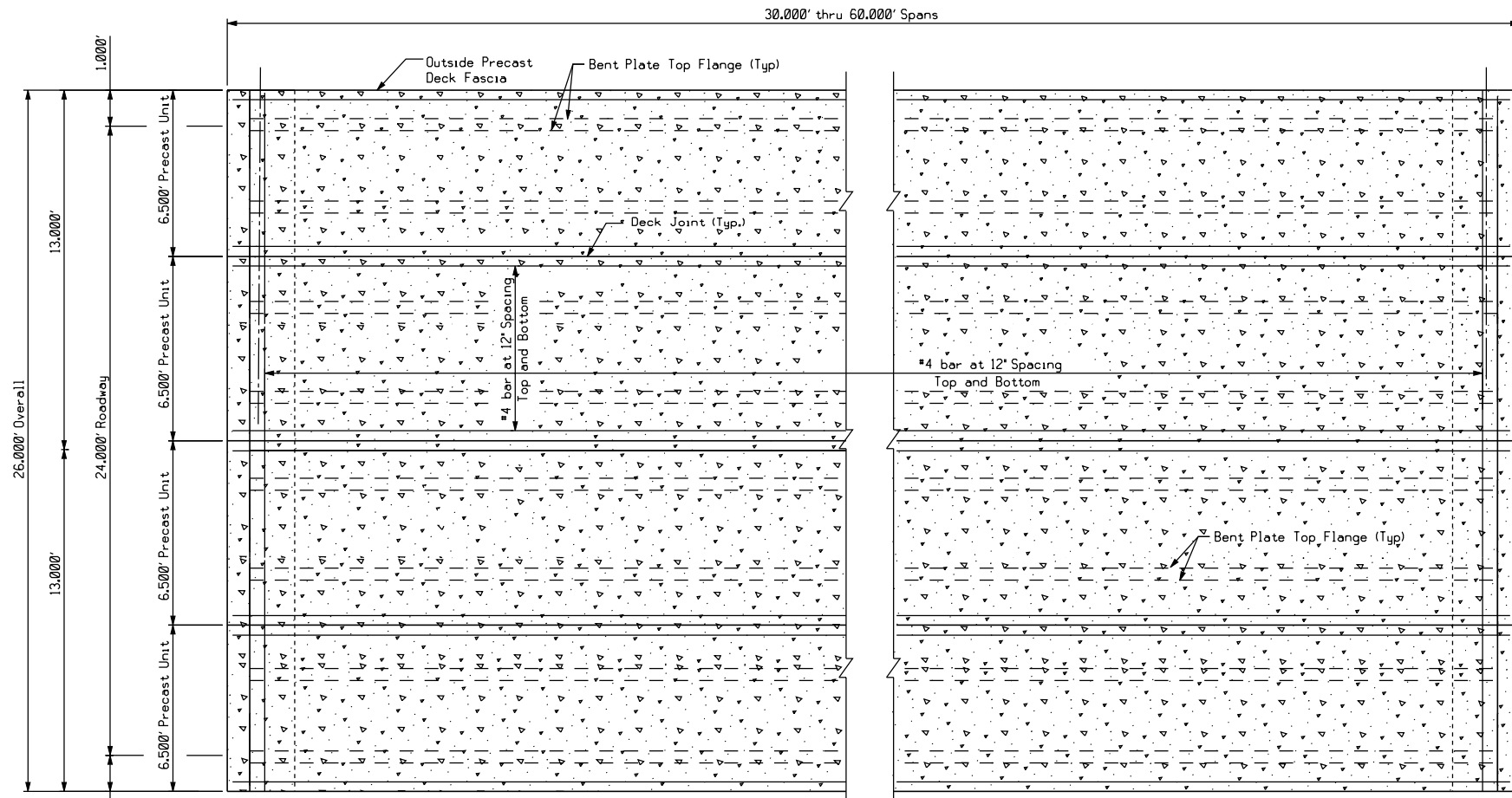
Fill shear keys in deck slab, full diaphragm and partial diaphragm with packaged non-metallic, non-shrink cementitious grout that is certified by the manufacturer to meet the requirements of ASTM C 1107, free of chlorides, and capable of a compressive strength of 5,000 psi after 24 hours of curing at anticipated temperatures. Surface preparation, mixing and consistency of grout, placing, and curing grout must follow the manufacturer's recommendations. Curing compounds are not allowed.

Methods of transverse load transfer include, but are not limited to:  
 - cast-in-place closure pour of no less than 10" in depth  
 - transversely post-tensioned concrete intermediate diaphragm  
 - welded lateral connector

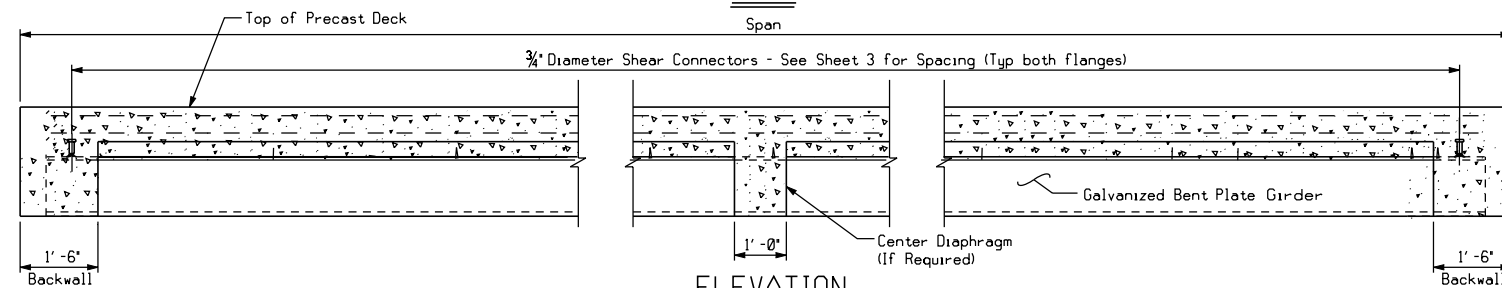
Transverse connections details shall be provided with fabrication shop drawings submittal.

For grouted keyway longitudinal joints, if no other method of transverse load transfer is provided, transverse post-tensioning shall be required. The compressive stress due to transverse post-tensioning shall not be less than 150 psi through the deck keyway.

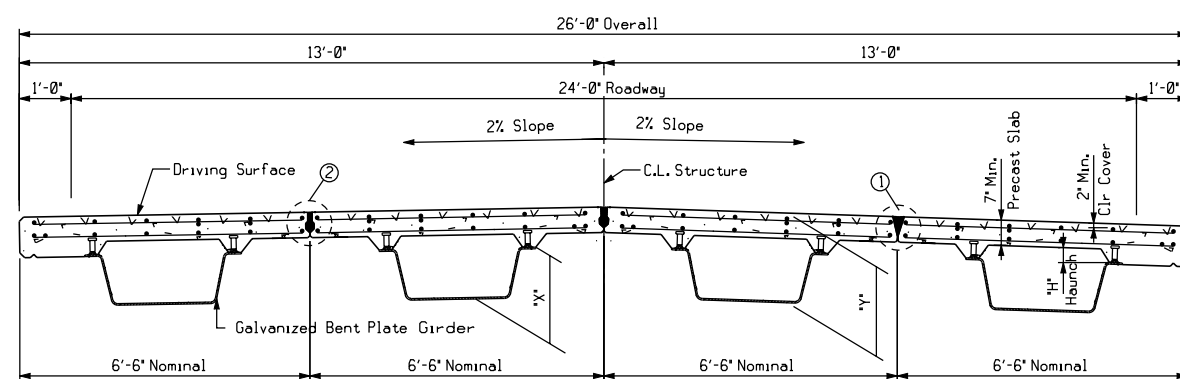
Prior to post-tensioning, grout between deck and diaphragm elements must attain a minimum compressive strength of 3000 psi.



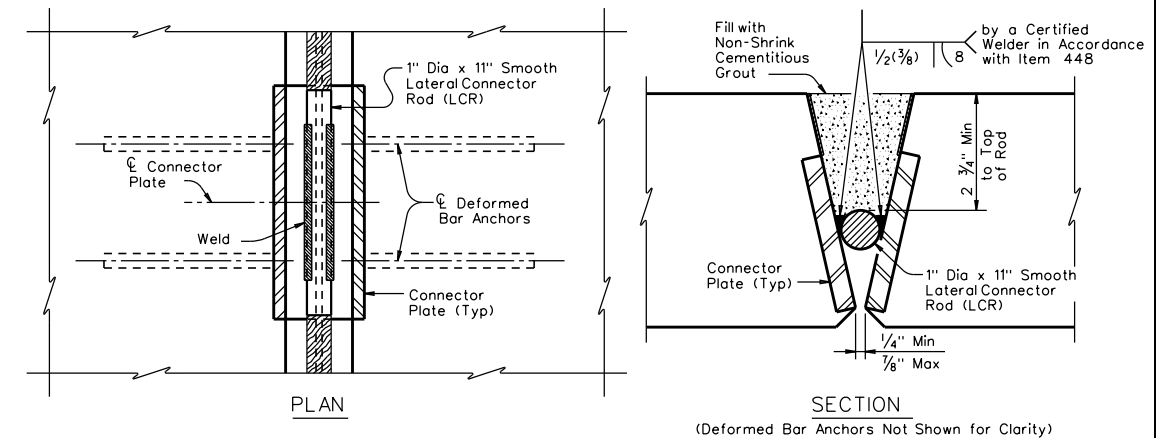
PLAN



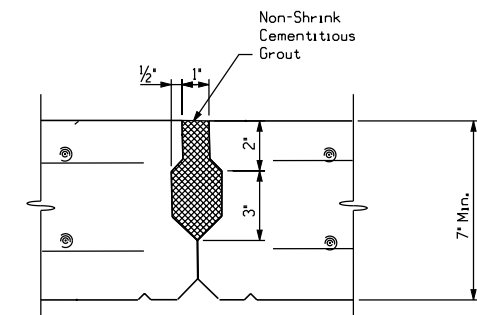
ELEVATION



TYPICAL TRANSVERSE SECTION



① WELDED LATERAL CONNECTOR DETAIL



② GRouted KEYWAY

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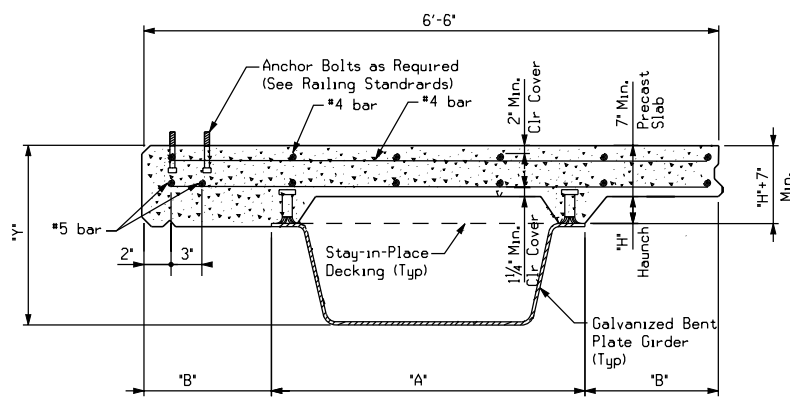
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CON-STRUCT PREFABRICATED BRIDGE SYSTEM			
SPANS 30' THRU 60'			
TRICON PRECAST, LTD.			
PROJECT NO.:		CONTRACT NO.:	
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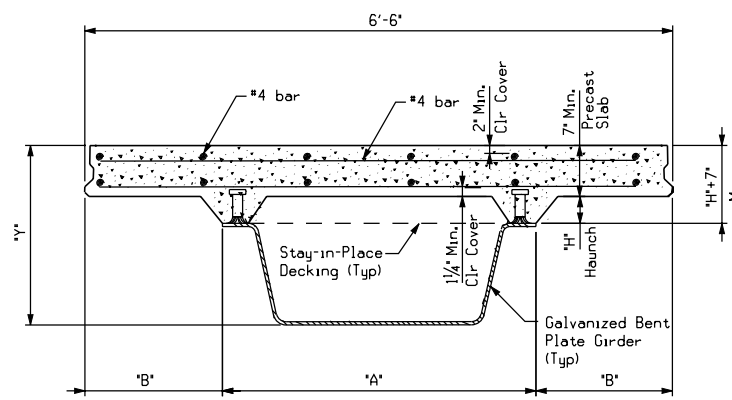


TABLE OF VARIABLE VALUES

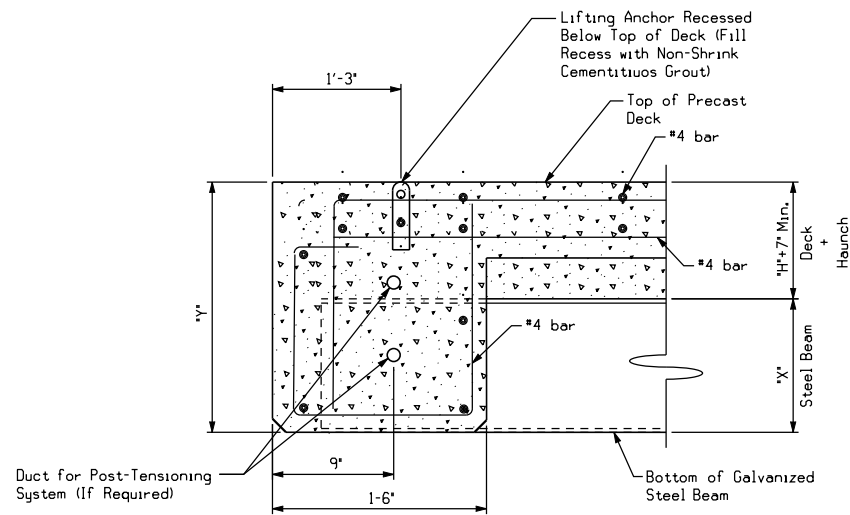
SPAN LENGTH	Total Weight	SECTION DEPTHS			
		'A'	'B'	'H'	'Y'
FT	Tons	In	In	In	In
30	12	38 1/2"	19 3/4"	6"	22 1/4"
35	14	38 1/2"	19 3/4"	6"	22 1/4"
40	16	38 1/2"	19 3/4"	6"	22 1/4"
45	19	45 5/8"	16 1/4"	6"	24 5/8"
50	21	45 5/8"	16 1/4"	6"	24 5/8"
55	23	46 5/8"	15 1/4"	6"	30 5/8"
60	25	46 5/8"	15 1/4"	6"	30 5/8"



EXTERIOR BEAM



INTERIOR BEAM



BACKWALL SECTION

TYPICAL SECTIONS

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications, HL-93 live load.

Concrete strength ~ f'c = 6,000 psi.

All reinforcing shall be Grade 60.

Bar laps, where required, shall be as follows:

- Uncoated ~ #4 = 1'-5"
- ~ #5 = 1'-9"
- Epoxy coated ~ #4 = 2'-1"
- ~ #5 = 2'-7"

See railing details and standards for rail anchorage.

See bearing standards for bearing details and dimensions.

Multi-span units, with the slab continuous over Interior Bents, may be formed with the details on this standard.

Payment for packaged non-metallic, non-shrink cementitious grout, for worked performed, materials furnished and curing time, is considered subsidiary to other bid items.

Lifting the prefabricated bridge units shall be by equal loads to each pair of lifting devices. The lifting device recess shall be grouted with non-shrink cementitious grout after units are erected.

If post-tensioning is required:

Post-Tensioning System shall include post-tensioning duct, high-strength steel strand, anchorage, anchorage zone reinforcement and steel bearing plates.

Post-Tensioning strand shall be 0.6" diameter, 270 ksi steel that meets the requirements of ASTM A722.

Payment for furnishing the Post-Tensioning System is included with the Con-Struct Prefabricated Superstructure System.

After tensioning, the post-tensioning duct shall be pressure grouted with cementitious grout.



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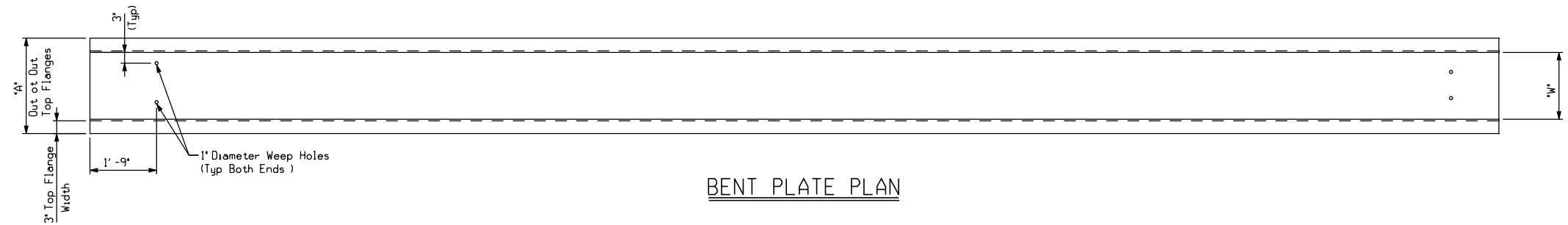
REVISIONS		
DATE	MARK	DESCRIPTION

DRAWN BY:  
CHECKED BY:  
APPROVED BY:

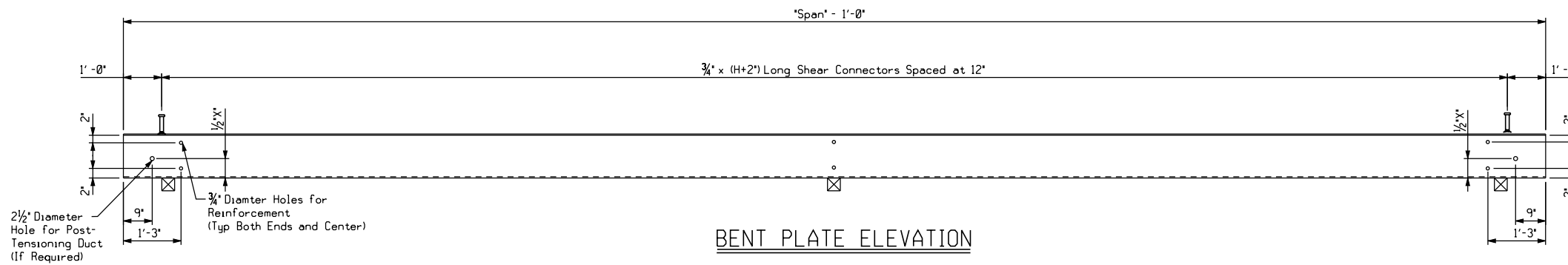
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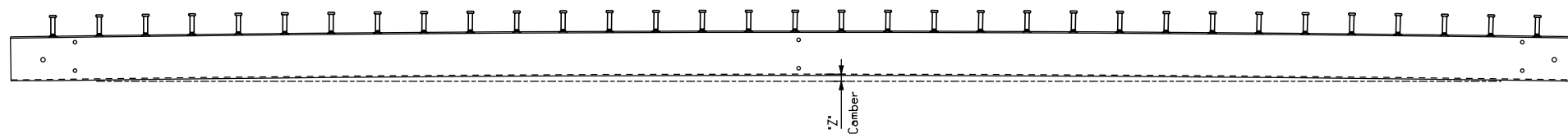
SPAN LENGTH	SECTION DEPTHS				STEEL SECTION PROPERTIES	
	*A*	*W*	*X*	*Z*	A	Wt./ft
FT	In	In	In	In	In <sup>2</sup>	#/ft
30	38 1/2"	18"	9 1/4"	2 1/4"	18.00	62
35	38 1/2"	18"	9 1/4"	2 1/4"	18.00	62
40	38 1/2"	18"	9 1/4"	2 1/4"	18.00	62
45	45 5/8"	25"	11 5/8"	2 3/4"	22.50	77
50	45 5/8"	25"	11 5/8"	3"	22.50	77
55	46 5/8"	26"	17 5/8"	3 1/4"	27.00	92
60	46 5/8"	26"	17 5/8"	3 1/2"	27.00	92



BENT PLATE PLAN



BENT PLATE ELEVATION



CAMBER ELEVATION

FABRICATION NOTES:

Use galvanized ASTM A709, Grades 36, 50 or 50W, for all steel. Steel shall be hot-dipped galvanized according to ASTM A123.

Shear developers shall be 3/4" diameter studs and meet the tolerances specified in AWS D1.5, Section 7.4.5.

Shear developer spacing is based on an ADT of 10,000 vehicles per lane with 2% Truck Traffic. Spacing will be varied based on site specific traffic data.

All dimensions in Beam Elevation are measured horizontally.

\*Z\* is an approximate value, based on theoretical camber, dead load deflection and constant grade (i.e. no vertical curve).

Beam bottom flanges and webs are classified as tension components and are subject to the impact testing requirements.

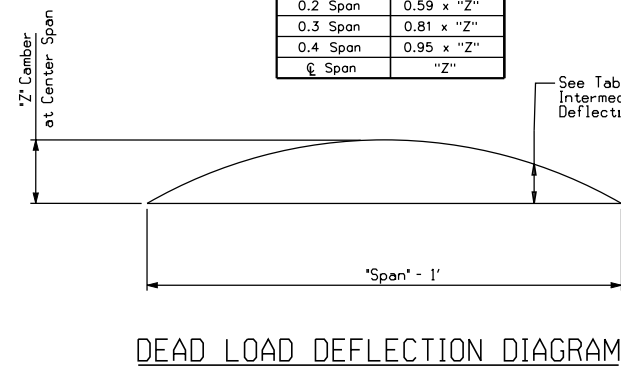
One optional shop splice is permissible for beam lengths in excess of 50'. Do not locate the optional splice within 0.20L of either side of the centerline of span where L is the span length between centers of bearing. Optional shop splices must be made by full penetration groove welds.

Beams are cambered for total dead load deflection plus long term creep effects.

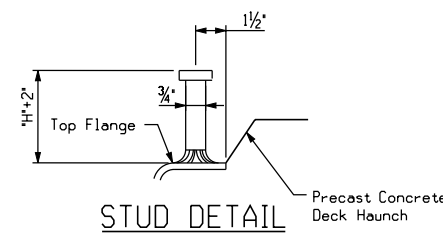
Produce camber using pressure, or a combination of heat and pressure.

Beams shall be supported at 10' minimum intervals during the casting of the concrete deck.

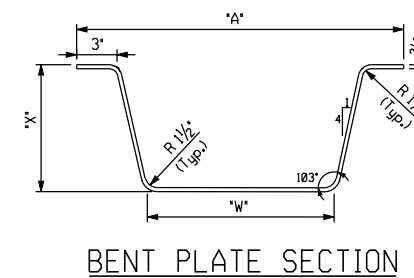
TABLE OF DEFLECTIONS ③	
Location	Deflection
€ Brg	0.0
0.1 Span	0.31 x "Z"
0.2 Span	0.59 x "Z"
0.3 Span	0.81 x "Z"
0.4 Span	0.95 x "Z"
€ Span	"Z"



DEAD LOAD DEFLECTION DIAGRAM



STUD DETAIL



BENT PLATE SECTION

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