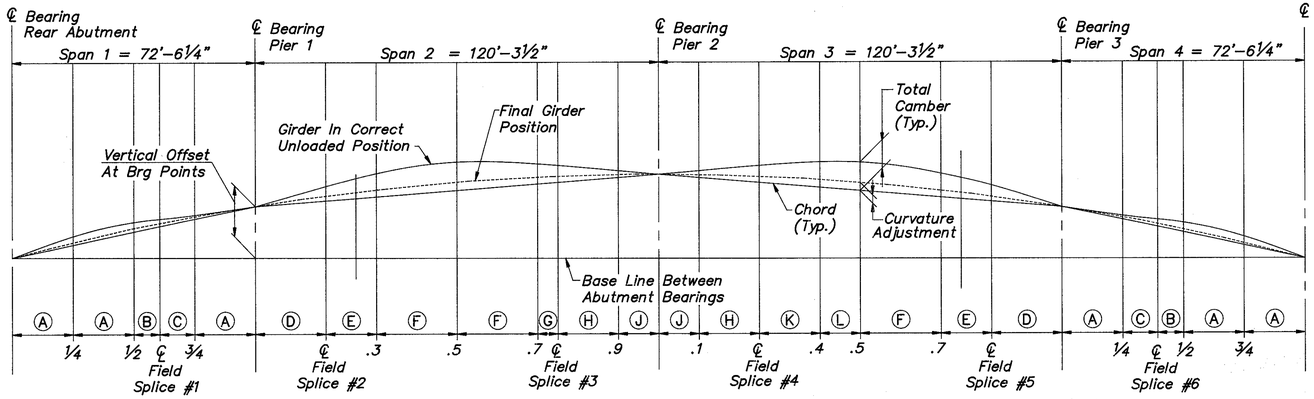
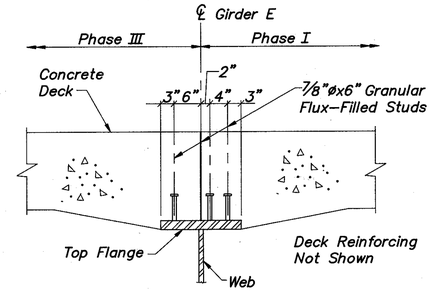
CALC. BY		LAK – 306 – 6.82	OHIO	83
CHKD. BY			FHWA REGION 5	92
DATE				



CAMBER DIAGRAM

Deflection Point Dimensions
Ⓐ = 18'–1 9/16"
Ⓑ = 7'–8 7/8"
Ⓒ = 10'–4 11/16"
Ⓓ = 21'–0"
Ⓔ = 15'–1 1/16"
Ⓕ = 24'–0 11/16"
Ⓖ = 6'–1 1/16"
Ⓗ = 17'–11 5/8"
Ⓙ = 12'–0 3/8"
Ⓚ = 18'–1 7/16"
Ⓛ = 12'–0 5/16"

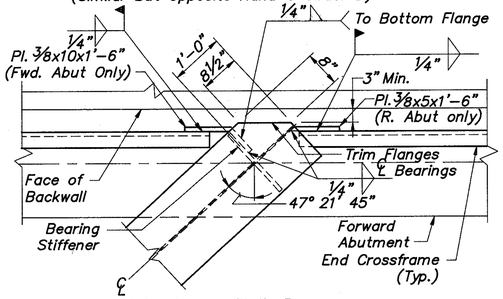
Vertical Offsets @ Bearing Points				
R. Abut.	Pier 1	Pier 2	Pier 3	F. Abut.
0	10 15/16"	1'–5 7/8"	10 7/8"	0



TYPICAL SECTION @ CONSTRUCTION JOINTS

SHEAR CONNECTOR DETAIL

(Similar But Opposite Hand @ Girder D)



DETAIL B

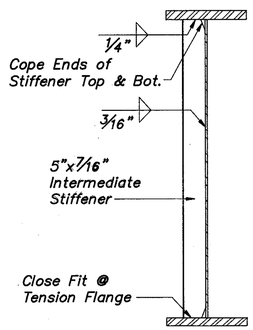
(Fwd. Abutment Shown, Rear Abutment Similar)

Dead Load Deflection And Camber (New Girder Only)																			
Span	1				2						3						4			
Point	¼	½	℄ Field Splice #1	¾	℄ Field Splice #2	.3	.5	.7	℄ Field Splice #3	.9	.1	℄ Field Splice #4	.4	.5	.7	℄ Field Splice #5	¼	℄ Field Splice #6	½	¾
Deflection Due To Weight of Steel	1/16	1/16	–1/16	–1/16	1/8	3/16	1/4	3/16	1/8	1/16	1/16	1/8	3/16	1/4	3/16	1/8	–1/16	–1/16	1/16	1/16
Deflection Due To Remaining Dead Load	1/8	1/8	1/16	1/16	3/8	1 1/16	7/8	9/16	7/16	1/8	1/8	7/16	3/4	7/8	1 1/16	3/8	1/16	1/16	1/8	1/8
Adjustment Required For Vertical Curve	1/2	1 1/16	1 1/16	1/2	1 1/16	1 7/16	1 3/4	1 7/16	1 1/4	9/16	9/16	1 1/4	1 5/8	1 11/16	1 7/16	1 1/16	9/16	5/8	5/8	7/16
Required Shop Camber	1 1/16	7/8	1 1/16	1/2	1 9/16	2 5/16	2 7/8	2 3/16	1 13/16	3/4	3/4	1 13/16	2 9/16	2 13/16	2 5/16	1 9/16	9/16	5/8	13/16	5/8

Notes: Deflections And Vertical Curve Adjustments Are Given To The Nearest 1/16 Inch.

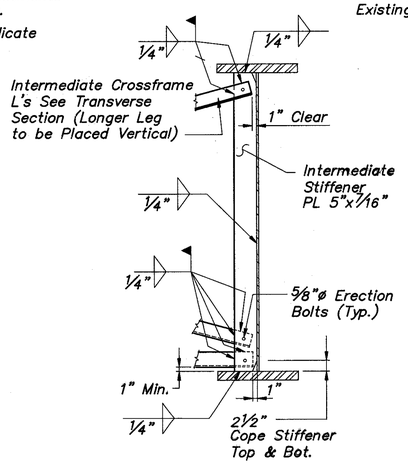
Negative Values For Deflections Indicate Deflections Above Chord Line.

For Approximate Dead Load Deflections of The Existing Girders, See Sheet 21/29



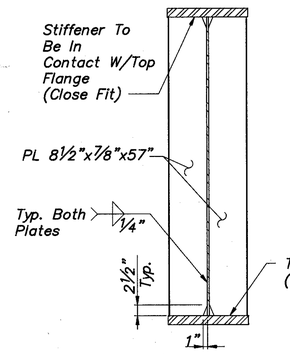
INTERMEDIATE STIFFENER DETAIL

(With No Crossframe Connection)

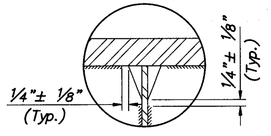


DETAIL A

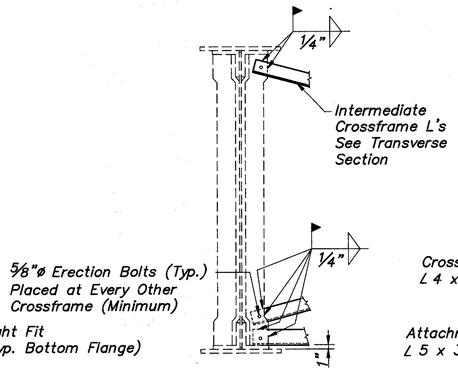
Intermediate Crossframe PL's Detail



BEARING STIFFENER DETAIL

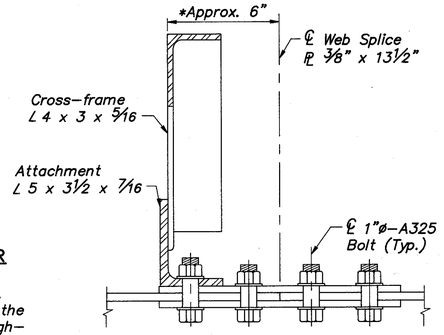


WELD TERMINATION DETAIL



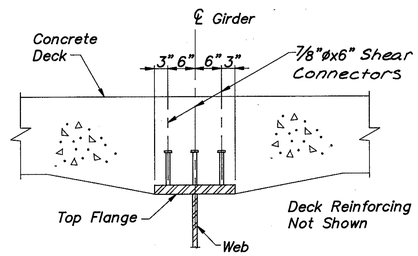
INTERMEDIATE CROSSFRAME ATTACHMENT TO EXISTING GIRDER

Use Existing Stiffener to Attach Crossframes. Where It Is Necessary to Add a Stiffener to the Existing Girder, It Shall Be Installed Using High–Strength Bolts Similarly to The Existing Riveted Stiffeners. Stiffeners Shall Be Comprised of a L5x3½x5/16 (4'–7¼" Long) And a Pl.3½x⅞ Filler Plate (3'–11" Long). Remove one Ex. Rivet From Top & Bottom Flange Angles And Replace With a Bolt Through The Stiffener Angle. Drill And Bolt Through Web Using ⅞" Dia. Bolts (8 Ea.) Spaced At 5" c/c. Shop Drawings Shall Be Based On Field Measurements.



SPECIAL CROSS–FRAME ATTACHMENT DETAIL

*Note: Protruding Legs On Attachment L's Of Proposed And Existing Girders May Be Bent In Order To Attach A Slightly Skewed Cross–frame. Proposed Attachment Angle May Be Positioned Other Than Shown Here To Optimize Attachment Location With Respect To Adjacent Existing Girder.



TYPICAL SECTION

SHEAR CONNECTOR DETAIL

Notation: Bot. – Bottom; Typ. – Typical

Note: For OBT Duct Supports and Connection Details, See Sheet 21/29

ERECTION BOLTS: Hole diameter in the crossframes and girder stiffeners shall be respectively 1/16" and ¼" larger than the diameter of the erection bolts. Unless replaced by permanent high strength bolts, erection bolts shall remain in place. Lock washers shall be furnished for other than fully torqued high strength erection bolts. Bolts shall be furnished as part of 513.

In lieu of erection bolts and at the option of the Contractor, alternative means of temporary bracing may be used subject to the approval of the Director (501.06).

CT Consultants, Inc. Engineers • Architects • Planners
Willoughby • Mentor • Columbus • North Canton • Youngstown

20/29

GIRDER DETAILS
BRIDGE NO. LAK–306–0691
OVER STATE ROUTE 2
LAKE COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.E.A.	M.T.W.	M.T.W.	J.P.R.	BJA	3/31/10	