C5.3 Haunches

Note that there have been many adjustments in haunch policy, not all of which were made through the Methods Memos listed in this section of the commentary.

C5.3.1 General

C5.3.1.1 Policy overview

Partially revised: Methods Memo No. 62: Beam Line Haunch Elevations for PPCB and Steel Girder Bridges
28 August 2002

C5.3.1.2 Design information

C5.3.1.3 Definitions

C5.3.1.4 Abbreviations and notation

C5.3.1.5 References

C5.3.2 PPCB bridges

C5.3.2.1 Analysis and design

Methods Memo No. 26: Haunch Reinforcement for PCBM
24 July 2003

Methods Memo No. 115: Revised Haunch Policies (This memo made changes to MM Nos. 62 and 89.)
4 August 2005

Diagrams for CWPG bridges have been moved to C5.3.3.2.

Haunch Policy Summary ~ 21 August 2013

Policy Item	PPCB (A-D and BTB-BTE beams)	CWPG and RSB
Shear steel and shear connectors	Shear steel projects above top flange 4.5 inches (115 mm) for A-D, 5.0 inches (125) for BTB-BTE. See Options (1) and (2) for special cases [BDM 5.3.2.1]. Min. embedment in deck 2.5 inches (65 mm) [BDM 5.3.1.1, 5.3.2.1, MM No. 62] Min. cover from top of deck to top of shear steel 2.5 inches (65 mm) [BDM 5.3.2.1, MM No. 115]	Shear stud heights for selection are 3½, 4, 5, and 6 inches (90, 100, 125, and 150 mm) [BDM 5.5.2.4.1.8]. Min. embedment in deck 2.0 inches (50 mm) [BDM 5.3.3.1, 5.3.4.1, MM No. 115] Min. cover from top of deck to top of shear stud 2.5 inches (65 mm) [BDM 5.3.3.1, 5.3.4.1, MM No. 115]]
Design haunch	Min. at edge of top flange 0 inches (0 mm) and preferred min. at centerline 0.5 inches (13 mm) [BDM 5.3.2.1] Max. at centerline 3.0 inches (75 mm); see Options (1) and (2) if haunch exceeds 2.0 inches (50 mm) [BDM 5.3.2.1].	Min. at edge of top flange 0 inches (0 mm) and preferred min. at centerline 0.5 inches (13 mm) [BDM 5.3.3.1, 5.3.4.1] CWPG: Max. at centerline 2.0 inches (50 mm) [BDM 5.3.3.1, 5.5.2.4.1.8] RSB: Max. at centerline 3.0 inches (75 mm) [BDM 5.3.4.1]
Field haunch	Max. embedment at edge of top flange 0.5 inch (13 mm) [BDM 5.3.2.1, MM No. 62] Max. haunch at centerline 3.5 inches (90 mm) [BDM 5.3.2.1]	Max. embedment at edge of top flange 0.5 inch (13 mm) [BDM 5.3.3.1, 5.3.4.1, MM No. 62] Max. haunch at centerline 3.5 inches (90 mm) [BDM 5.3.3.1, 5.3.4.1]
Detailing	OBS SS 1065 ”Slab Thickness Details” [BDM 5.3.2.2, MM No. 62] • “Beam Camber Data” • “Slab Thickness at Beams (T)” • “Slab Thickness Details OBS SS 1066 “Slab Haunch Data Details” [BDM 5.3.2.2, MM No. 62] • “Table of Beam Line Slab Haunch Elevations” • “Miscellaneous Data Table” • A note for “Haunch Locations” • “Haunch Detail”	CWPG: Non-standard sheet [BDM C5.3.3.2, MM No. 115] • “Dead Load Deflection Diagram” • “Girders as Fabricated Horizontally” • “Theoretical Haunch Diagram” CWPG: OBS SS 4305, 4308, 4309, or 4310 [BDM 5.3.2.2, MM No. 115] • “Typ. Slab & Haunch Detail” CWPG: OBS SS 1066 “Slab Haunch Data Details” [BDM 5.3.3.2, MM No. 62] • “Table of Beam Line Slab Haunch Elevations” • “Miscellaneous Data Table” • A note for “Haunch Locations” • “Haunch Detail” RSB: OBS SS 5252 series “Misc. Details” [BDM 5.3.4.2] • “Beam Camber” • “Haunch Thickness Diagram” • “Typ. Slab & Haunch Detail” RSB: OBS RS40-061-10 series “Beam Deflections” [BDM 5.3.4.2] • “Dead Load Deflection Diagram” RSB: OBS SS 5264 series “Beam Line Haunch Data” [BDM 5.3.4.2] • “Table of Beam Line Haunch Elevations” • “Miscellaneous Data Table” • “Haunch Detail”

C5.3.2.2 Detailing

Partially revised: Methods Memo No. 62: Beam Line Haunch Elevations for PPCB and Steel Girder Bridges
28 August 2002 (Manual text changed provisions of this memo on 14 July 2005.)

C5.3.3 CWPG bridges

C5.3.3.1 Analysis and design

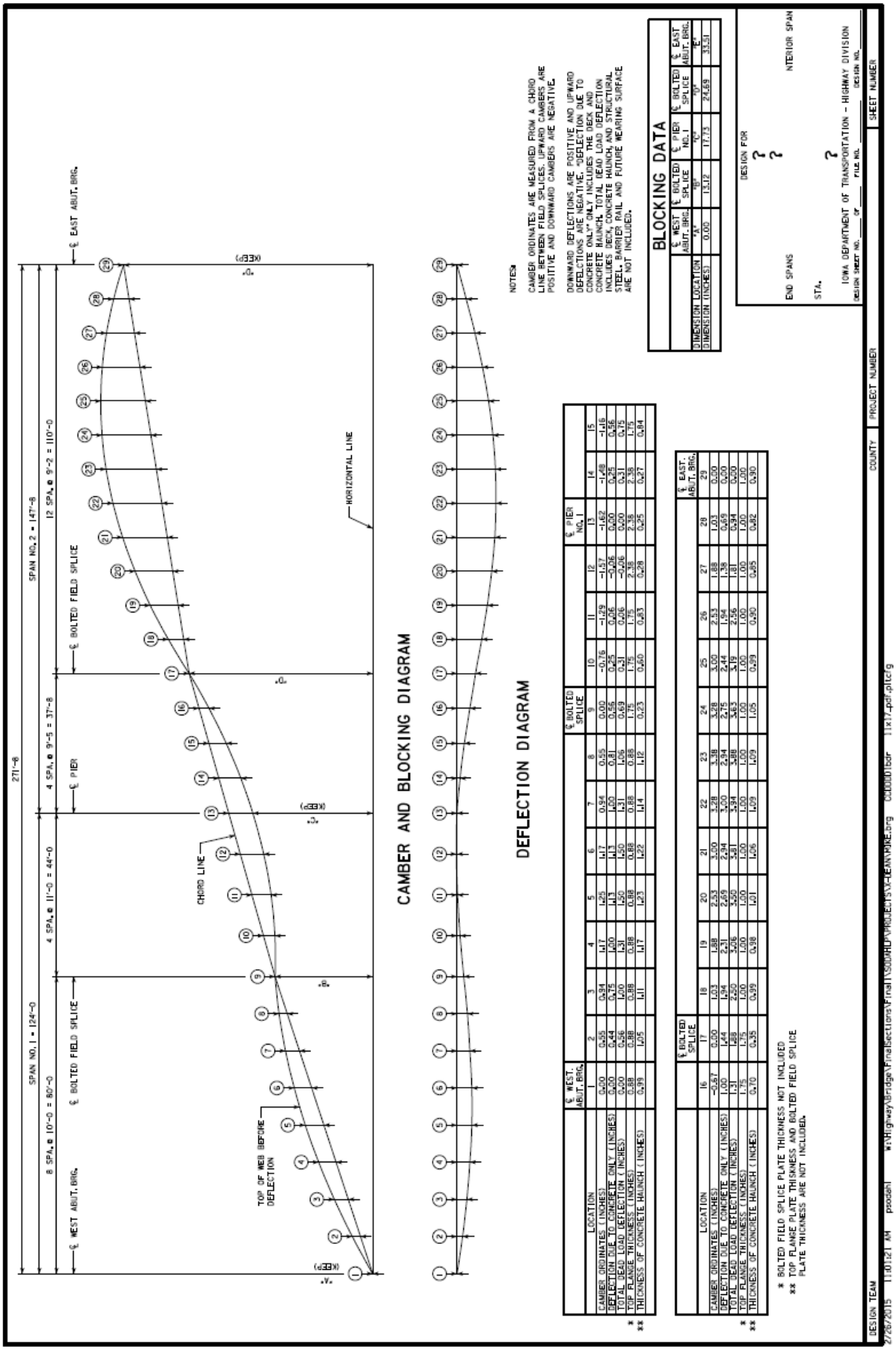
Partially revised: Methods Memo No. 89: Shear Stud Lengths and Haunch Requirements for Steel Girders
26 January 2004

Methods Memo No. 115: Revised Haunch Policies
19 May 2005

C5.3.3.2 Detailing

Methods Memo No. 115: Revised Haunch Policies
19 May 2005

The example diagrams (updated on 01 July 2015) shown below are for a two-span CWPG bridge. The designer should develop the diagrams using spacing intervals consistent with the intervals of the “Top of Slab Elevations” view for the bridge.



LOCATION	℄ WEST ABUT. BRG.	2	3	4	5	6	7	8	℄ BOLTED SPLICE 9	10	11	12	℄ PIER NO. 1 13	14	15
CAMBER ORDINATES (INCHES)	0.00	0.45	0.84	1.17	1.43	1.61	0.94	0.95	0.90	0.76	1.79	1.57	1.62	1.48	1.46
DEFLECTION DUE TO CONCRETE ONLY (INCHES)	0.00	0.45	0.75	1.00	1.13	1.00	1.00	0.81	0.69	0.51	0.26	−0.26	0.00	0.25	0.46
TOTAL DEAD LOAD DEFLECTION (INCHES)	0.00	0.56	1.00	1.31	1.50	1.51	1.31	1.06	0.69	0.51	0.26	−0.26	0.00	0.31	0.75
* TOP FLANGE THICKNESS (INCHES)	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	1.75	1.75	1.75	2.38	2.38	2.38	1.75
** THICKNESS OF CONCRETE HAUNCH (INCHES)	0.99	1.05	1.11	1.17	1.23	1.22	1.14	1.12	0.23	0.60	0.83	0.28	0.25	0.27	0.84

LOCATION	℄ BOLTED SPLICE 16	17	18	19	20	21	22	23	24	25	26	27	28	℄ EAST. ABUT. BRG. 29
CAMBER ORDINATES (INCHES)	−0.67	0.00	1.03	1.88	2.53	3.00	3.28	3.38	3.28	3.00	2.53	1.88	1.03	0.00
DEFLECTION DUE TO CONCRETE ONLY (INCHES)	1.00	1.44	1.44	1.31	1.19	1.06	0.94	0.81	0.69	0.56	0.44	0.31	0.19	0.00
TOTAL DEAD LOAD DEFLECTION (INCHES)	1.75	1.69	1.44	1.06	0.69	0.50	0.31	0.31	0.69	1.06	1.44	1.69	1.44	0.00
* TOP FLANGE THICKNESS (INCHES)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
** THICKNESS OF CONCRETE HAUNCH (INCHES)	0.70	0.35	0.99	0.98	1.01	1.06	1.09	1.09	1.05	0.99	0.90	0.95	0.82	0.90

* BOLTED FIELD SPLICE PLATE THICKNESS NOT INCLUDED
** TOP FLANGE PLATE THICKNESS AND BOLTED FIELD SPLICE PLATE THICKNESS ARE NOT INCLUDED.

Partially revised: Methods Memo No. 62: Beam Line Haunch Elevations for PPCB and Steel Girder Bridges
28 August 2002

C5.3.4 RSB bridges

C5.3.4.1 Analysis and design

Methods Memo No. 115: Revised Haunch Policies
19 May 2005

C5.3.4.2 Detailing