

EXAMPLES OF BRIDGE SEAT AND STEP CALCULATIONS:

THE DESIGNER SHALL SHOW ON THE PLANS THE 5 ELEVATIONS AND THE 4 STEP DIMENSIONS REQUIRED FOR EACH OF THE PIER TOP AND ABUTMENT BRIDGE SEATS.

THE BOXED IN DETAILS IN THE FOLLOWING EXAMPLES SHOW HOW THE INFORMATION SHOULD BE INDICATED ON THE PLANS.

EXAMPLE NO. 1

A STRAIGHT GRADE OF -3.25% WITH THE P.I. STATION OF 103+75.00 AND ELEVATION OF 653.29. THE BRIDGE LENGTH IS 213'-10" TO E OF ABUTMENT BEARINGS WITH 30° SKEW RIGHT AHEAD.

STATIONS			
E BRIDGE STA.	=	105+85.00	
± ½ OF L2	=	38.67	
E PIER BRGS.	=	105+46.33	106+23.67
± LI	=	68.25	
E ABUTMENT BRGS.	=	104+78.08	106+91.92

ELEVATIONS ALONG PROFILE GRADE LINE (P.G.L. ELEV.)

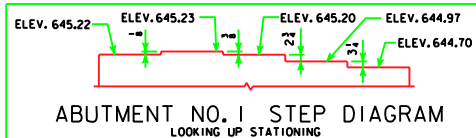
E ABUT. BRG. =	653.29 - [(104+78.08) - (103+75.00)] X 0.0325	=	649.94
E PIER BRG. =	653.29 - [(105+46.33) - (103+75.00)] X 0.0325	=	647.72
E PIER BRG. =	653.29 - [(106+23.67) - (103+75.00)] X 0.0325	=	645.21
E ABUT. BRG. =	653.29 - [(106+91.92) - (103+75.00)] X 0.0325	=	642.99

ELEVATIONS TOP OF SLAB FACING ALONG THE STATIONING

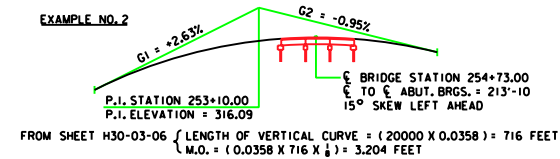
(BEAM SPACING X TAN. SK. Δ X GRADE) = (6.75' X TAN 30° X 0.0325) = 0.13'

ABUTMENT NO. 1

BEAMS	EXTERIOR	INTERIOR	CENTER	INTERIOR	EXTERIOR
PGL ELEV.	649.94	649.94	649.94	649.94	649.94
SK. Δ CORRECT	+0.26	0.13	0.00	-0.13	-0.26
SLAB CROWN	-0.24	-0.10	0.00	-0.10	-0.24
TOP SLAB ELEV.	649.96	649.97	649.94	649.71	649.44
-U" (4'-8 1/2")	-4.74	-4.74	-4.74	-4.74	-4.74
BR. SEAT ELEV.	645.22	645.23	645.20	644.97	644.70



EXAMPLE NO. 2



STATIONS

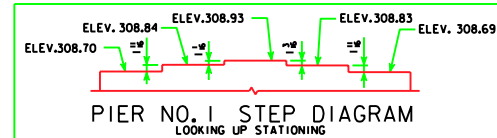
E BRIDGE STA.	=	254+73.00	
± ½ OF L2	=	39.67	
E PIER BRGS.	=	254+34.33	255+11.67
± LI	=	68.25	
E ABUTMENT BRGS.	=	253+66.08	255+79.92

ELEVATIONS TOP OF SLAB FACING ALONG THE STATIONING

(BEAM SPACING X TAN. SK. Δ) = (6.75' X TAN 15° = 1.81'

PIER NO. 1

BEAMS	EXTERIOR	INTERIOR	CENTER	INTERIOR	EXTERIOR
STATION	254+37.95	254+36.14	254+34.33	254+32.52	254+30.71
PGL ELEV.	+313.55	+313.55	313.54	313.54	313.54
SLAB CROWN	-0.24	-0.10	0.00	-0.10	-0.24
TOP SLAB ELEV.	313.31	313.45	313.54	313.44	313.30
-U" (4'-7 1/2")	-4.61	-4.61	-4.61	-4.61	-4.61
BR. SEAT ELEV.	308.70	308.84	308.93	308.83	308.69



LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER



Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 30' ROADWAY, THREE SPAN BRIDGES
**PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGES**
HL93 SUPERSTRUCTURE DECEMBER, 2006 HS25 SUBSTRUCTURE

GENERAL INFORMATION

H30-02-06