

EXAMPLES OF BRIDGE SEAT AND STEP CALCULATIONS:

THE DESIGNER SHALL SHOW ON THE PLANS THE 4 ELEVATIONS AND THE 3 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 THE ABUTMENT BEARINGS WITH 30° SKEW RIGHT AHEAD.

STATIONS			
BRIDGE STA.	=	105+85.00	
± 1/2 OF L2	=	38.67	
PIER BRGS.	=	105+46.33	106+23.67
± L1	=	68.25	+ 68.25
ABUTMENT BRGS.	=	104+78.08	106+91.92

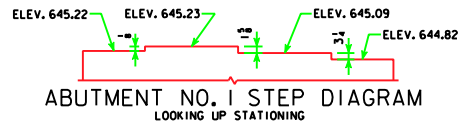
ELEVATIONS ALONG PROFILE GRADE LINE (P.G.L. ELEV.)

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

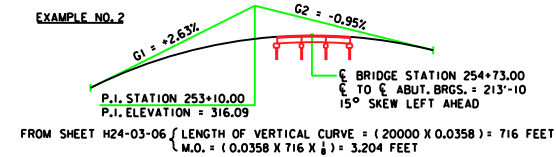
ELEVATIONS TOP OF SLAB FACING ALONG THE STATIONING
(BEAM SPACING X TAN. SK. Δ X GRADE) = (7.00' TAN 30°) (0.0325) = 0.13'

ABUTMENT NO. 1

BEAMS	EXTERIOR	INTERIOR	INTERIOR	EXTERIOR
PGL ELEV.	649.94	649.94	649.94	649.94
SK. Δ CORRECT	+0.20	+0.07	-0.07	-0.20
SLAB CROWN	-0.18	-0.04	-0.04	-0.18
TOP SLAB ELEV.	649.96	649.97	649.83	649.56
-U" (4'-8 1/2")	-4.74	-4.74	-4.74	-4.74
BR. SEAT ELEV.	645.22	645.23	645.09	644.82



EXAMPLE NO. 2



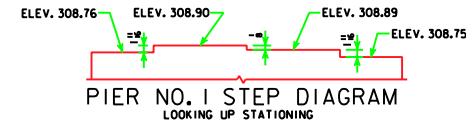
STATIONS

BRIDGE STA.	=	254+73.00	
± 1/2 OF L2	=	38.67	
PIER BRGS.	=	254+34.33	255+11.67
± L1	=	68.25	+ 68.25
ABUTMENT BRGS.	=	253+66.08	255+79.92

ELEVATIONS TOP OF SLAB FACING ALONG THE STATIONING
(BEAM SPACING X TAN. SK. Δ) = (7.00' TAN 15°) = 1.88'

PIER NO. 1

BEAMS	EXTERIOR	INTERIOR	INTERIOR	EXTERIOR
STATION	254+37.15	254+35.27	254+33.39	254+31.51
PGL ELEV.	+313.55	+313.55	313.54	313.54
SLAB CROWN	-0.18	-0.04	-0.04	-0.18
TOP SLAB ELEV.	313.37	313.51	313.50	313.36
-U" (4'-7 1/2")	-4.61	-4.61	-4.61	-4.61
BR. SEAT ELEV.	308.76	308.90	308.89	308.75



LATEST REVISION DATE	 APPROVED BY BRIDGE ENGINEER	 Iowa Department of Transportation Highway Division	STANDARD DESIGN - 24' ROADWAY, THREE SPAN BRIDGE	
			PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES	
			HL93 SUPERSTRUCTURE	DECEMBER, 2006
			HS25 SUBSTRUCTURE	
GENERAL INFORMATION		H24-02-06		