



**SLAB LAYOUT**

(LEFT AHEAD SKEW SHOWN, RIGHT AHEAD SKEW SIMILAR)

NOTE: CONCRETE DECK SLAB SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING SLAB CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS.

ESTIMATED QUANTITIES (SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS)		℄-℄ ABUT. BRG.	138'-10	151'-4	163'-10	176'-4	188'-10	201'-4	213'-10	226'-4	243'-0
STRUCTURAL CONCRETE SUPERSTRUCTURE (INCLUDES ABUTMENT WINGS)	WITH BARRIER RAIL WITH OPEN RAIL	C.Y.	219.5	233.4	256.9	270.8	284.9	311.9	326.0	340.5	359.5
STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES) ***	C.Y.	34.8	34.7	34.5	34.5	34.4	-----	-----	-----	-----	-----
PRETENSIONED PRESTRESSED CONCRETE BEAM, CENTER SPAN	NO.	6-A50	6-A55	6-B59	6-B63	6-B67	6-C71	6-C75	6-C80	6-C80	6-C80
PRETENSIONED PRESTRESSED CONCRETE BEAM, END SPAN	NO.	12-A42	12-A46	12-B50	12-B55	12-B59	12-C63	12-C67	12-C71	12-C80	12-C80
CONCRETE RAIL (BARRIER OR OPEN)	L.F.	311.9	336.9	361.9	386.9	411.9	456.7	481.7	506.7	540.0	540.0
STRUCTURAL STEEL (w/ PILE BENT PIERS & DRAINS)	L.B.	5143	5143	5231	5231	5231	5215	5215	5215	5215	5215
STRUCTURAL STEEL (w/ PILE BENT PIERS & NO DRAINS)	L.B.	4463	4463	4463	4463	4463	4367	4367	4367	4367	4367
STRUCTURAL STEEL (w/ TEE PIERS & DRAINS)	L.B.	6218	6218	6306	6306	6306	6485	6485	6485	6485	6485
STRUCTURAL STEEL (w/ TEE PIERS & NO DRAINS)	L.B.	5538	5538	5538	5538	5538	5637	5637	5637	5637	5637
EPOXY COATED REINF. STEEL (w/ WOOD PILES & BARRIER RAIL)	L.B.	62,243	66,718	71,256	76,158	80,528	-----	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ WOOD PILES & OPEN RAIL)	L.B.	62,908	67,339	72,024	77,102	81,402	-----	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & BARRIER RAIL)	L.B.	62,274	66,640	71,071	75,973	80,168	87,621	92,904	97,171	102,972	102,972
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & OPEN RAIL)	L.B.	62,939	67,261	71,839	76,917	81,042	89,465	94,657	99,121	104,968	104,968
NO. OF WOOD PILES, TREATED FOR TWO ABUTMENTS	NO.	28	30	32	32	34	-----	-----	-----	-----	-----
NO. OF STEEL H-PILES FOR TWO ABUTMENTS (HP 10 x 57)	NO.	14	14	14	14	16	20	20	20	20	22
PREBORED HOLES (w/ WOOD PILES)	L.F.	280	300	320	320	340	-----	-----	-----	-----	-----
PREBORED HOLES (w/ STEEL H-PILES)	L.F.	140	140	140	140	160	200	200	200	200	220

CONCRETE PLACEMENT QUANT.		℄-℄ ABUT. BRG.	138'-10	151'-4	163'-10	176'-4	188'-10	201'-4	213'-10	226'-4	243'-0
SLAB INCLUDING HAUNCH, ABUT. DIAPHRAGM, & WINGWALLS** , SECTIONS 1 & 3	WITH BARRIER RAIL WITH OPEN RAIL	C.Y.	119.6	127.6	141.2	149.2	157.2	174.8	183.2	191.8	210.8
SLAB INCLUDING HAUNCH, SECTION 2	WITH BARRIER RAIL WITH OPEN RAIL	C.Y.	43.5	47.0	50.5	54.0	57.3	61.1	64.6	68.1	68.1
SLAB INCLUDING HAUNCH & PIER DIAPHRAGM, SECTIONS 4 & 5	WITH BARRIER RAIL WITH OPEN RAIL	C.Y.	49.7	51.6	57.6	60.0	62.8	67.6	69.8	72.2	72.2
ABUTMENT WINGS	C.Y.	7.2	7.2	7.6	7.6	7.6	8.4	8.4	8.4	8.4	8.4
ABUTMENT FOOTINGS (w/ WOOD PILES) ***	C.Y.	34.8	34.7	34.5	34.5	34.4	-----	-----	-----	-----	-----
ABUTMENT FOOTINGS (w/ STEEL H PILES) ***	C.Y.	36.4	36.4	36.4	36.4	36.4	44.2	44.2	44.2	44.2	44.2

GENERAL DATA		℄-℄ ABUT. BRG.	138'-10	151'-4	163'-10	176'-4	188'-10	201'-4	213'-10	226'-4	243'-0
VERTICAL CURVE	TOP OF SLAB TO ABUT. CONSTR. JT. AT C.L. ABUT. BRG.	"U"	3'-8	3'-7 <sup>1</sup> / <sub>2</sub>	4'-2 <sup>1</sup> / <sub>2</sub>	4'-2 <sup>1</sup> / <sub>2</sub>	4'-2 <sup>1</sup> / <sub>2</sub>	4'-8 <sup>1</sup> / <sub>2</sub>	4'-8 <sup>1</sup> / <sub>2</sub>	4'-9 <sup>1</sup> / <sub>2</sub>	4'-9 <sup>1</sup> / <sub>2</sub>
STRAIGHT GRADE	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6 <sup>1</sup> / <sub>2</sub>	3'-6 <sup>1</sup> / <sub>2</sub>	4'-1 <sup>1</sup> / <sub>2</sub>	4'-1 <sup>1</sup> / <sub>2</sub>	4'-2 <sup>1</sup> / <sub>2</sub>	4'-7 <sup>1</sup> / <sub>2</sub>	4'-7 <sup>1</sup> / <sub>2</sub>	4'-7 <sup>1</sup> / <sub>2</sub>	4'-7 <sup>1</sup> / <sub>2</sub>
D.L. PIER REACTION (D.L. + F.W.S.) SERVICE LOADS	KIPS		438.8	473.4	540.5	577.1	613.9	733.7	774.7	816.2	856.5
L.L. PIER REACTION (HL93) NO IMPACT SERVICE LOADS	KIPS		264.7	274.5	283.9	293.1	302.2	311.0	322.9	341.9	362.6
NO. OF SPACES FOR 6a1 BARS (TOP)	"E"		156	171	186	201	216	231	246	261	281
NO. OF SPACES FOR 6a1 BARS (BOTTOM)	"H"		155	170	185	200	215	230	245	260	280
NO. OF SPACES FOR 5J1 BARS (TOP)	"J"		167	182	197	212	227	242	257	272	292
OUT TO OUT OF SLAB	"S"		141'-11 <sup>1</sup> / <sub>2</sub>	154'-5 <sup>1</sup> / <sub>2</sub>	166'-11 <sup>1</sup> / <sub>2</sub>	179'-5 <sup>1</sup> / <sub>2</sub>	191'-11 <sup>1</sup> / <sub>2</sub>	204'-5 <sup>1</sup> / <sub>2</sub>	216'-11 <sup>1</sup> / <sub>2</sub>	229'-5 <sup>1</sup> / <sub>2</sub>	246'-11 <sup>1</sup> / <sub>2</sub>
SLAB TRANSVERSE CONSTR. JT. DISTANCE FROM C.L. PIER	"X"		6'-7	7'-1	7'-7	8'-1	8'-8	9'-2	9'-8	10'-2	10'-2

\* VALUES SHOWN ARE FOR FIXED PIERS ONLY AND ALLOW FOR 1/8 INCH DEFLECTION OF THE 1 INCH NEOPRENE BEARING PAD. AT EXPANSION PIER LOCATIONS ADD 3/8 INCHES TO "U" VALUES SHOWN.

\*\* WINGWALLS APPLY ONLY TO BRIDGES USING "C" BEAMS.  
\*\*\* SEE SHEET H40-17-06 FOR ADDITIONAL CONCRETE REQUIRED IN ABUTMENT FOOTINGS.

LATEST REVISION DATE  
05-13  
Approved by Bridge Engineer  
Thomas E. Mc Donald

**Iowa Department of Transportation**  
Highway Division

STANDARD DESIGN - 40' ROADWAY, THREE SPAN BRIDGE

**PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES**

AUGUST, 2009

<b>SUPERSTRUCTURE DETAILS</b> 15° SKEW	<b>H40-15-06</b>
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REVISED 05-13 - REVISION FOR LRFD PILE DESIGN.