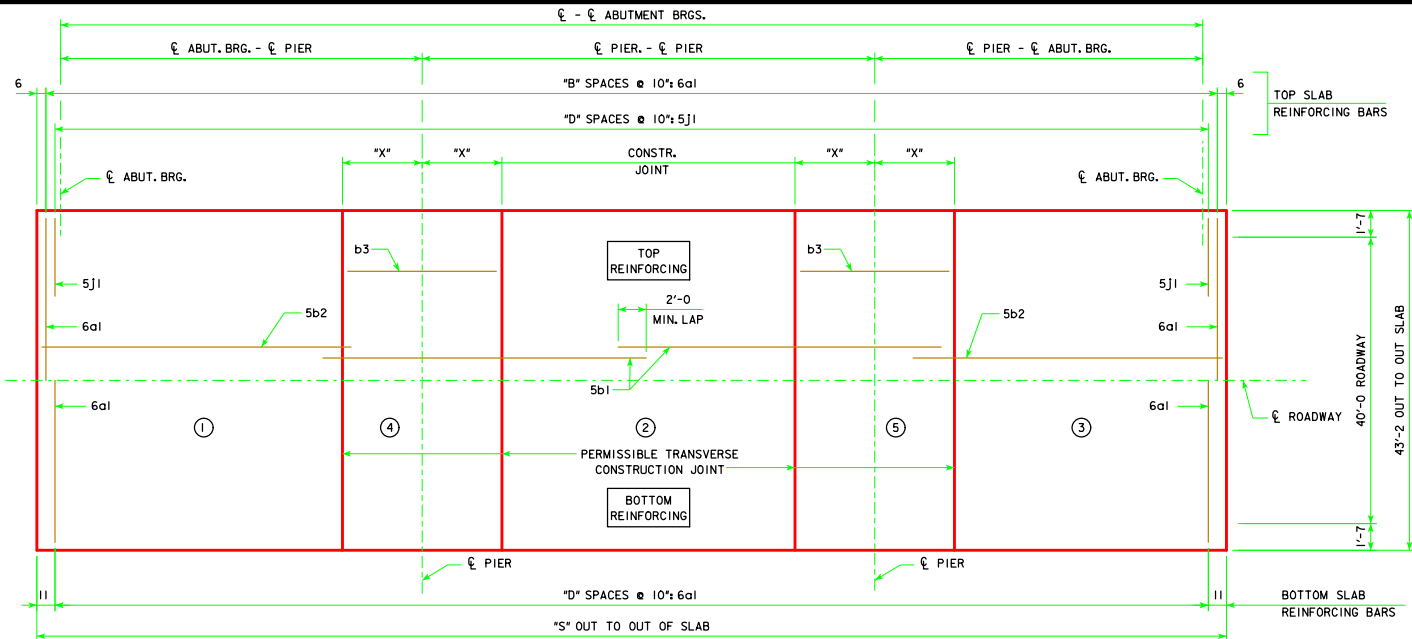


REVISED: 07-2015 - CHANGED CONCRETE PLACEMENT NOTE TO ACCOUNT FOR THE POSSIBLE ADDITION OF A RETARDING ADMIXTURE TO THE CONCRETE.



**SLAB LAYOUT**

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	C.Y.	213.7	227.6	250.1	264.2	278.3	304.5	318.6	333.1	352.1
	WITH OPEN RAIL	C.Y.	216.2	230.3	253.1	267.4	281.8	308.0	322.3	337.1	356.3
STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES)		C.Y.	33.4	33.3	33.1	33.1	33.0	-----	-----	-----	-----
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
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
CONCRETE RAIL (BARRIER OR OPEN)		L.F.	311.7	336.7	361.7	386.7	411.7	456.7	481.7	506.7	540.0
STRUCTURAL STEEL (w/ PILE BENT PIERS & DRAINS)		LB.	4935	4935	5023	5023	5023	4995	4995	4995	4995
STRUCTURAL STEEL (w/ PILE BENT PIERS & NO DRAINS)		LB.	4255	4255	4255	4255	4255	4147	4147	4147	4147
STRUCTURAL STEEL (w/ TEE PIERS & DRAINS)		LB.	6010	6010	6098	6098	6098	6265	6265	6265	6265
STRUCTURAL STEEL (w/ TEE PIERS & NO DRAINS)		LB.	5330	5330	5330	5330	5330	5417	5417	5417	5417
EPOXY COATED REINF. STEEL (w/ WOOD PILES & BARRIER RAIL)		LB.	62,023	66,285	71,036	75,938	80,308	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ WOOD PILES & OPEN RAIL)		LB.	62,688	66,906	71,804	76,882	81,182	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & BARRIER RAIL)		LB.	62,033	66,208	70,851	75,753	79,948	87,396	92,678	96,944	102,747
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & OPEN RAIL)		LB.	62,698	66,829	71,619	76,697	80,822	89,240	94,431	98,894	104,743
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.	12	14	14	14	16	20	20	20	22
PREBORED HOLES (w/ WOOD PILES)		L.F.	280	300	320	320	340	-----	-----	-----	-----
PREBORED HOLES (w/ STEEL H-PILES)		L.F.	120	140	140	140	160	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**	WITH BARRIER RAIL	C.Y.	118.2	126.2	139.6	147.8	155.8	173.2	181.6	190.2	209.2
	WITH OPEN RAIL	C.Y.	119.5	127.6	141.2	149.5	157.7	175.1	183.6	192.4	211.6
SLAB INCLUDING HAUNCH, SECTION 2	WITH BARRIER RAIL	C.Y.	43.5	47.0	50.5	54.0	57.3	61.1	64.6	68.1	68.1
	WITH OPEN RAIL	C.Y.	44.2	47.8	51.3	54.9	58.3	62.1	65.6	69.2	69.2
SLAB INCLUDING HAUNCH & PIER DIAPHRAGM, SECTIONS 4 & 5	WITH BARRIER RAIL	C.Y.	44.8	47.2	52.4	54.8	57.6	61.8	64.0	66.4	66.4
	WITH OPEN RAIL	C.Y.	45.3	47.7	53.0	55.4	58.2	62.4	64.7	67.1	67.1
ABUTMENT WINGS		C.Y.	7.2	7.2	7.6	7.6	7.6	8.4	8.4	8.4	8.4
ABUTMENT FOOTINGS (w/ WOOD PILES)		C.Y.	33.4	33.3	33.1	33.1	33.0	-----	-----	-----	-----
ABUTMENT FOOTINGS (w/ STEEL H PILES)		C.Y.	35.0	35.0	35.0	35.0	35.0	43.0	43.0	43.0	43.0

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>11</sup> / <sub>16</sub> "	4'-2 <sup>11</sup> / <sub>16</sub> "	4'-2 <sup>11</sup> / <sub>16</sub> "	4'-2 <sup>11</sup> / <sub>16</sub> "	4'-8 <sup>11</sup> / <sub>16</sub> "	4'-8 <sup>11</sup> / <sub>16</sub> "	4'-9 <sup>11</sup> / <sub>16</sub> "	4'-9 <sup>11</sup> / <sub>16</sub> "
	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>8</sub> "	4'-1 <sup>1</sup> / <sub>8</sub> "	4'-1 <sup>1</sup> / <sub>8</sub> "	4'-7 <sup>1</sup> / <sub>8</sub> "	4'-7 <sup>1</sup> / <sub>8</sub> "	4'-7 <sup>1</sup> / <sub>8</sub> "	4'-7 <sup>1</sup> / <sub>8</sub> "
STRAIGHT GRADE	TOP OF SLAB TO ABUT. CONSTR. JT. AT C.L. ABUT. BRG.	"U"	3'-8"	3'-7 <sup>11</sup> / <sub>16</sub> "	4'-2 <sup>11</sup> / <sub>16</sub> "	4'-2 <sup>11</sup> / <sub>16</sub> "	4'-3"	4'-8 <sup>11</sup> / <sub>16</sub> "	4'-8 <sup>11</sup> / <sub>16</sub> "	4'-9 <sup>11</sup> / <sub>16</sub> "	4'-9 <sup>11</sup> / <sub>16</sub> "
	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>8</sub> "	4'-1 <sup>1</sup> / <sub>8</sub> "	4'-2 <sup>1</sup> / <sub>4</sub> "	4'-7 <sup>11</sup> / <sub>16</sub> "	4'-7 <sup>11</sup> / <sub>16</sub> "	4'-8"	4'-8"
D.L. PIER REACTION (D.L. + F.W.S.) SERVICE LOADS		KIPS	430.0	464.6	530.0	566.5	603.2	722.1	763.1	804.5	844.8
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)		"B"	169	184	199	214	229	244	259	274	294
NO. OF SPACES FOR 6a1 BARS (BOTTOM) AND 5j1 BARS (TOP)		"D"	168	183	198	213	228	243	258	273	293
OUT TO OUT OF SLAB		"S"	141'-10"	154'-4"	166'-10"	179'-4"	191'-10"	204'-4"	216'-10"	229'-4"	246'-0"
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"

NOTE: CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING DECK 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. FOR APPROVED ALTERNATE PROCEDURES THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.

\* 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 3/16 INCHES TO "U" VALUES SHOWN.

\*\* WINGWALLS APPLY ONLY TO BRIDGES USING "C" BEAMS.

LATEST REVISION DATE

07-15

APPROVED BY BRIDGE ENGINEER

*Thomas E. Mc Donnell*

**Iowa Department of Transportation**  
Highway Division

STANDARD DESIGN - 40' ROADWAY, THREE SPAN BRIDGE

**PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES**

AUGUST, 2009

**SUPERSTRUCTURE DETAILS**

0° SKEW

**H40-09-06**