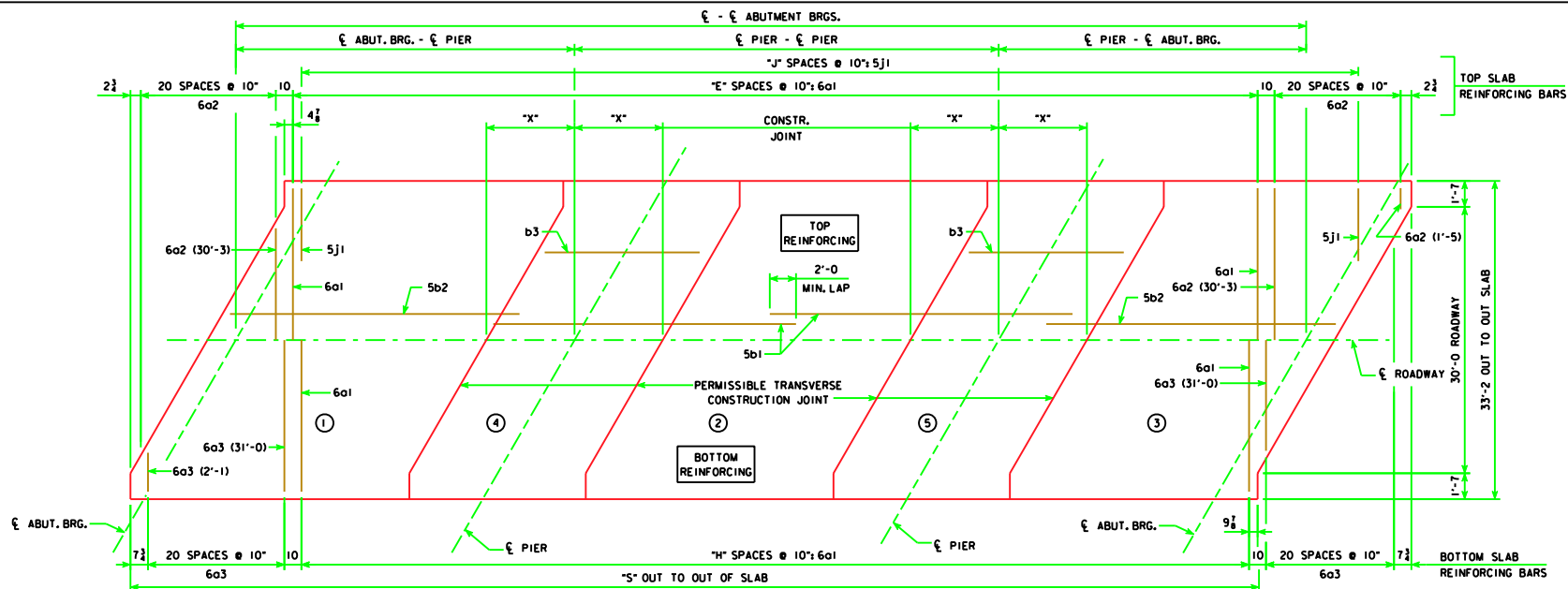




SLAB LAYOUT

(LEFT AHEAD SKEW SHOWN, RIGHT AHEAD SKEW SIMILAR)

THE ROADWAY SLAB IS TO BE PLACED CONTINUOUSLY FROM ONE END OF THE BRIDGE TO THE OTHER. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT EVIDENCE THAT THE NECESSARY EQUIPMENT AND FACILITIES ARE AVAILABLE TO ACCOMPLISH THE REQUIRED RESULT. PERMISSIBLE TRANSVERSE SLAB CONSTRUCTION JOINTS MAY BE USED, AT LOCATION SHOWN.

ESTIMATED QUANTITIES (SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS)		ℰ-ℰ 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.	175.9	186.4	205.1	215.8	226.7	248.2	258.9	270.4	285.2
	WITH OPEN RAIL	C.Y.	178.4	189.1	208.1	219.0	230.1	251.7	262.6	274.3	289.4
STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES)	***	C.Y.	29.5	29.5	29.4	29.3	29.3	-----	-----	-----	-----
STRUCTURAL CONCRETE ABUTMENTS (w/ STEEL H PILES)	***	C.Y.	30.8	30.8	30.8	30.8	30.8	38.4	38.4	38.4	38.4
PRETENSIONED PRESTRESSED CONCRETE BEAM, CENTER SPAN	NO.	5-A50	5-A55	5-B59	5-B63	5-B67	5-C71	5-C75	5-C80	5-C80	5-C80
PRETENSIONED PRESTRESSED CONCRETE BEAM, END SPAN	NO.	10-A42	10-A46	10-B50	10-B55	10-B59	10-C63	10-C67	10-C71	10-C80	10-C80
CONCRETE RAIL (BARRIER OR OPEN)	L.F.	312.6	337.6	362.6	387.6	412.6	456.7	481.7	506.7	540.0	540.0
STRUCTURAL STEEL (w/ PILE BENT PIERS & DRAINS)	L.B.	3873	3873	3961	3961	3961	3965	3965	3965	3965	3965
STRUCTURAL STEEL (w/ PILE BENT PIERS & NO DRAINS)	L.B.	3305	3305	3305	3305	3305	3229	3229	3229	3229	3229
STRUCTURAL STEEL (w/ TEE PIERS & DRAINS)	L.B.	4769	4769	4857	4857	4857	5023	5023	5023	5023	5023
STRUCTURAL STEEL (w/ TEE PIERS & NO DRAINS)	L.B.	4201	4201	4201	4201	4201	4287	4287	4287	4287	4287
REINFORCING STEEL (w/ WOOD PILES & BARRIER RAIL)	L.B.	50,237	53,735	57,391	61,361	64,782	-----	-----	-----	-----	-----
REINFORCING STEEL (w/ WOOD PILES & OPEN RAIL)	L.B.	50,486	53,931	57,718	61,846	65,188	-----	-----	-----	-----	-----
REINFORCING STEEL (w/ STEEL H PILES & BARRIER RAIL)	L.B.	50,367	53,865	57,414	61,279	64,700	70,890	75,034	78,468	82,942	82,942
REINFORCING STEEL (w/ STEEL H PILES & OPEN RAIL)	L.B.	50,616	54,061	57,741	61,764	65,106	71,844	75,888	79,501	84,004	84,004
NO. OF WOOD PILES, TREATED FOR TWO ABUTMENTS	NO.	22	22	24	26	26	-----	-----	-----	-----	-----
NO. OF STEEL H-PILES, HP 10 x 57 FOR TWO ABUTMENTS	NO.	12	12	12	12	12	16	16	18	18	18
PREBORED HOLES (w/ WOOD PILES)	L.F.	220	220	240	260	260	-----	-----	-----	-----	-----
PREBORED HOLES (w/ STEEL H-PILES)	L.F.	120	120	120	120	120	160	160	180	180	180

CONCRETE PLACEMENT QUANT.		ℰ-ℰ 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	C.Y.	95.2	101.2	112.2	118.4	124.6	139.4	145.8	152.6	167.4
	WITH OPEN RAIL	C.Y.	96.5	102.6	113.8	120.1	126.4	141.3	147.8	154.7	169.8
SLAB INCLUDING HAUNCH, SECTION 2	WITH BARRIER RAIL	C.Y.	33.5	36.2	38.9	41.6	44.1	47.0	49.7	52.4	52.4
	WITH OPEN RAIL	C.Y.	34.2	37.0	39.7	42.5	45.1	48.0	50.7	53.5	53.5
SLAB INCLUDING HAUNCH & PIER DIAPHRAGM, SECTIONS 4 & 5	WITH BARRIER RAIL	C.Y.	40.0	41.8	46.8	48.6	50.8	54.6	56.2	58.2	58.2
	WITH OPEN RAIL	C.Y.	40.5	42.3	47.4	49.2	51.4	55.2	56.9	58.9	58.9
ABUTMENT WINGS	C.Y.	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
ABUTMENT FOOTINGS (w/ WOOD PILES)	***	C.Y.	29.5	29.5	29.4	29.3	29.3	-----	-----	-----	-----
ABUTMENT FOOTINGS (w/ STEEL H PILES)	***	C.Y.	30.8	30.8	30.8	30.8	30.8	38.4	38.4	38.4	38.4

GENERAL DATA		ℰ-ℰ ABUT. BRG.	138'-10"	151'-4"	163'-10"	176'-4"	188'-10"	201'-4"	213'-10"	226'-4"	243'-0"
VERTICAL	TOP OF SLAB TO ABUT. CONSTR. JT. AT C.L. ABUT. BRG.	"U"	3'-7 $\frac{1}{2}$	3'-7 $\frac{1}{2}$	4'-2 $\frac{1}{2}$	4'-2 $\frac{1}{2}$	4'-3	4'-8 $\frac{1}{2}$	4'-8 $\frac{1}{2}$	4'-9	4'-9 $\frac{1}{2}$
CURVE	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6 $\frac{1}{2}$	3'-6 $\frac{1}{2}$	4'-1 $\frac{1}{2}$	4'-1 $\frac{1}{2}$	4'-1 $\frac{1}{2}$	4'-7 $\frac{1}{2}$	4'-7 $\frac{1}{2}$	4'-7 $\frac{1}{2}$	4'-7 $\frac{1}{2}$
STRAIGHT	TOP OF SLAB TO ABUT. CONSTR. JT. AT C.L. ABUT. BRG.	"U"	3'-8 $\frac{1}{2}$	3'-7 $\frac{1}{2}$	4'-2 $\frac{1}{2}$	4'-2 $\frac{1}{2}$	4'-3 $\frac{1}{2}$	4'-8 $\frac{1}{2}$	4'-8 $\frac{1}{2}$	4'-9 $\frac{1}{2}$	4'-10
GRADE	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6 $\frac{1}{2}$	3'-6 $\frac{1}{2}$	4'-1 $\frac{1}{2}$	4'-1 $\frac{1}{2}$	4'-2 $\frac{1}{2}$	4'-7 $\frac{1}{2}$	4'-7 $\frac{1}{2}$	4'-8 $\frac{1}{2}$	4'-8 $\frac{1}{2}$
D.L. PIER REACTION (D.L. + F.W.S.)		KIPS	357.3	385.4	440.8	470.4	500.2	599.2	632.4	666.1	698.8
L.L. PIER REACTION (HS25-44) NO IMPACT		KIPS	169.0	170.6	171.9	179.5	187.5	195.5	203.4	211.4	221.0
NO. OF SPACES FOR 6a1 BARS (TOP)		"E"	149	164	179	194	209	224	239	254	274
NO. OF SPACES FOR 6a1 BARS (BOTTOM)		"H"	148	163	178	193	208	223	238	253	273
NO. OF SPACES FOR 5j1 BARS (TOP)		"J"	166	181	196	211	226	241	256	271	291
OUT TO OUT OF SLAB		"S"	142'-3 $\frac{1}{2}$	154'-9 $\frac{1}{2}$	167'-3 $\frac{1}{2}$	179'-9 $\frac{1}{2}$	192'-3 $\frac{1}{2}$	204'-9 $\frac{1}{2}$	217'-3 $\frac{1}{2}$	229'-9 $\frac{1}{2}$	246'-5 $\frac{1}{2}$
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 $\frac{1}{4}$ INCH DEFLECTION OF THE 1 INCH NEOPRENE BEARING PAD. AT EXPANSION PIER LOCATIONS ADD $\frac{3}{4}$ INCHES TO "U" VALUES SHOWN.

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

*** SEE SHEET H30-24-06 FOR ADDITIONAL CONCRETE REQUIRED IN ABUTMENT FOOTINGS.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Thomas E. McQuill



Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 30' ROADWAY, THREE SPAN BRIDGES

PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGES

HL93 SUPERSTRUCTURE DECEMBER, 2006 HS25 SUBSTRUCTURE

SUPERSTRUCTURE DETAILS
30° SKEW

H30-22-06