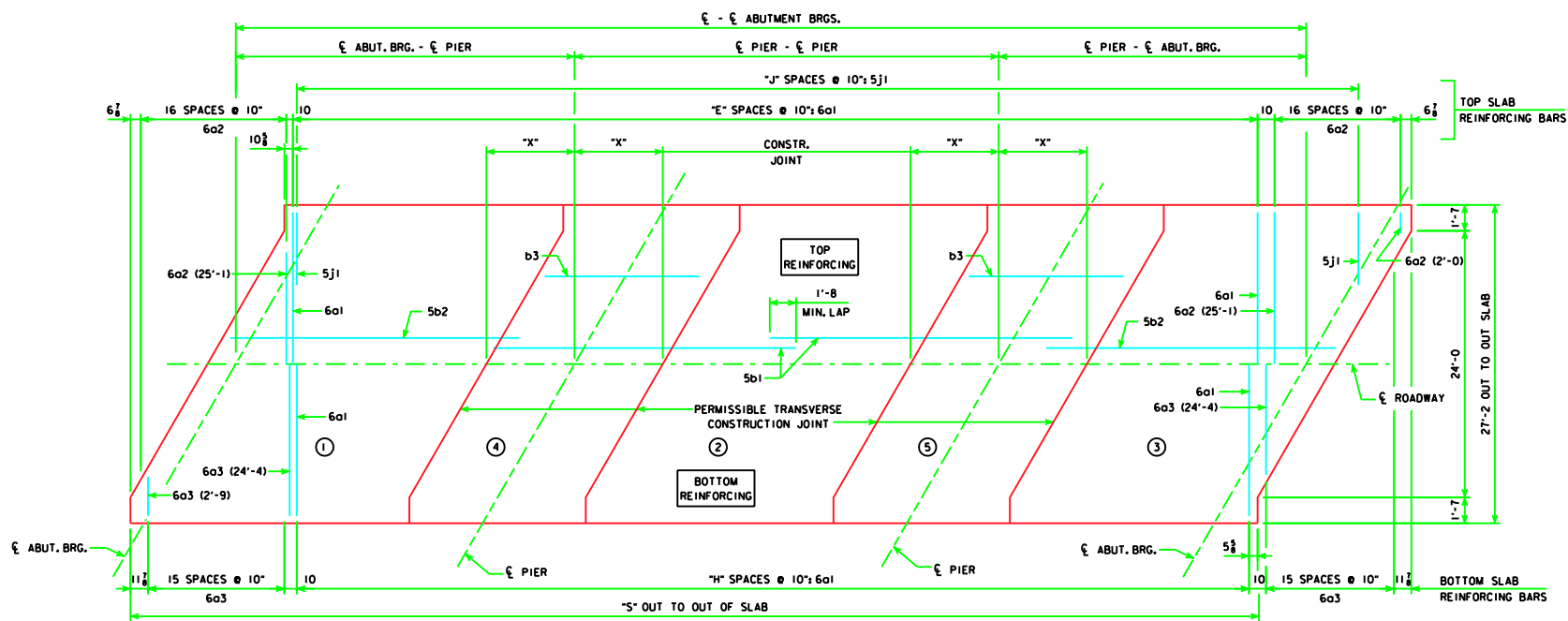




SLAB LAYOUT

(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.

GENERAL DATA		ℓ-ℓ 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"	4'-2"	4'-2"	4'-2"	4'-8"	4'-8"	4'-9"	4'-9"
	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6"	3'-6"	4'-1"	4'-1"	4'-1"	4'-7"	4'-7"	4'-7"	4'-7"
STRAIGHT GRADE	TOP OF SLAB TO ABUT. CONSTR. JT. AT C.L. ABUT. BRG.	"U"	3'-8"	3'-7"	4'-2"	4'-2"	4'-3"	4'-8"	4'-8"	4'-9"	4'-9"
	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6"	3'-6"	4'-1"	4'-1"	4'-2"	4'-7"	4'-7"	4'-8"	4'-8"
D.L. PIER REACTION (D.L. + F.W.S.)	KIPS		299.4	323.0	368.5	393.4	418.5	498.6	526.5	554.6	581.9
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"		152	167	182	197	212	227	242	257	277
NO. OF SPACES FOR 6a1 BARS (BOTTOM)	"H"		153	168	183	198	213	228	243	258	278
NO. OF SPACES FOR 5j1 BARS (TOP)	"J"		165	180	195	210	225	240	255	270	290
OUT TO OUT OF SLAB	"S"		142'-3"	154'-9"	167'-3"	179'-9"	192'-3"	204'-9"	217'-3"	229'-9"	246'-5"
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"

CONCRETE PLACEMENT QUANT.		ℓ-ℓ ABUT. BRG.	138'-10"	151'-4"	163'-10"	176'-4"	188'-10"	201'-4"	213'-10"	226'-4"	243'-0"
(SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS)											
SLAB INCL. HAUNCH, ABUT. DIAPHR., & WINGWALLS** , SECT. 1 & 3	C.Y.		79.7	84.8	94.0	99.3	104.6	117.7	123.2	128.9	141.4
SLAB INCLUDING HAUNCH, SECTION 2	C.Y.		28.4	30.7	33.0	35.3	37.5	39.9	42.1	44.5	44.5
SLAB INCLUDING HAUNCH & PIER DIAPHRAGM, SECTIONS 4 & 5	C.Y.		33.1	34.5	38.8	40.2	42.0	45.0	46.5	48.1	48.1
ABUTMENT WINGS	C.Y.		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.	23.8	23.8	23.7	23.7	23.6	-----	-----	-----	-----
ABUTMENT FOOTINGS (w/ STEEL H PILES)	***	C.Y.	25.0	25.0	25.0	25.0	25.0	32.6	32.6	32.6	32.6

ESTIMATED QUANTITIES		ℓ-ℓ ABUT. BRG.	138'-10"	151'-4"	163'-10"	176'-4"	188'-10"	201'-4"	213'-10"	226'-4"	243'-0"
(SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS)											
STRUCTURAL CONCRETE SUPERSTRUCTURE (INCLUDES ABUT. WINGS)	C.Y.		148.4	157.2	173.0	182.0	191.3	209.8	219.0	228.7	241.2
STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES)	***	C.Y.	23.8	23.8	23.7	23.7	23.6	-----	-----	-----	-----
STRUCTURAL CONCRETE ABUTMENTS (w/ STEEL H PILES)	***	C.Y.	25.0	25.0	25.0	25.0	25.0	32.6	32.6	32.6	32.6
PRETENSIONED PRESTRESSED CONCRETE BEAM, CENTER SPAN	NO.		4-A50	4-A55	4-B59	4-B63	4-B67	4-C71	4-C75	4-C80	4-C80
PRETENSIONED PRESTRESSED CONCRETE BEAM, END SPAN	NO.		8-A42	8-A46	8-B50	8-B55	8-B59	8-C63	8-C67	8-C71	8-C80
CONCRETE RAIL	L.F.		312.6	337.6	362.6	387.6	412.6	456.7	481.7	506.7	540.0
STRUCTURAL STEEL (w/ PILE BENT PIERS)	L.B.		2555	2555	2555	2555	2555	2498	2498	2498	2498
STRUCTURAL STEEL (w/ TEE PIERS)	L.B.		3272	3272	3272	3272	3272	3344	3344	3344	3344
REINFORCING STEEL (w/ WOOD PILES)	L.B.		42,602	45,391	48,747	52,143	55,079	-----	-----	-----	-----
REINFORCING STEEL (w/ STEEL H PILES)	L.B.		42,599	45,388	48,640	52,036	54,865	61,041	64,398	67,481	71,305
NO. OF WOOD PILES, TREATED FOR TWO ABUTMENTS	NO.		20	20	22	22	24	-----	-----	-----	-----
NO. OF STEEL H-PILES, HP 10 x 57 FOR TWO ABUTMENTS	NO.		10	10	10	10	16	-----	-----	-----	-----
PREBORED HOLES (w/ WOOD PILES)	L.F.		200	200	220	220	240	-----	-----	-----	-----
PREBORED HOLES (w/ STEEL H-PILES)	L.F.		100	100	100	100	160	160	160	160	160

* VALUES SHOWN ARE FOR FIXED PIERS ONLY AND ALLOW FOR 1/4 INCH DEFLECTION OF THE 1 INCH NEOPRENE BEARING PAD, AT EXPANSION PIER LOCATIONS ADD 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 L. McDaniel



Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 24' ROADWAY, THREE SPAN BRIDGE

PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGES

HL93 SUPERSTRUCTURE DECEMBER, 2006 HS25 SUBSTRUCTURE

SUPERSTRUCTURE DETAILS
30° SKEW

H24-22-06