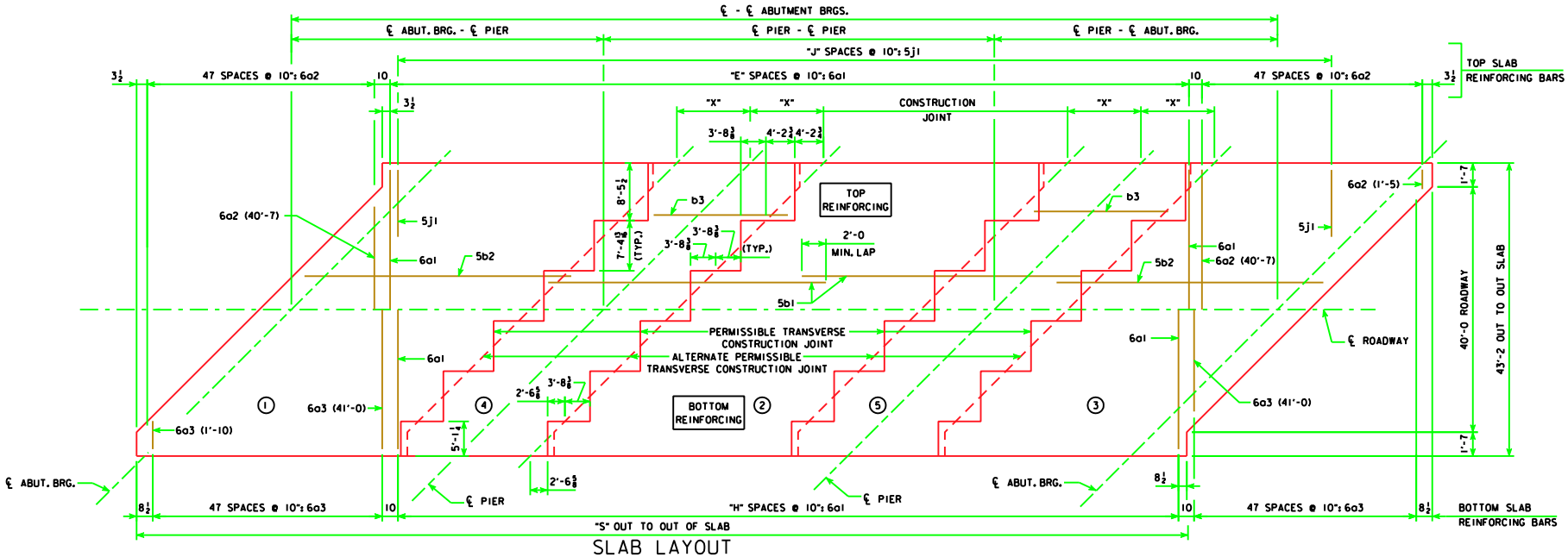

SLAB LAYOUT

(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)

		℄-℄ ABUT. BRG.	138'-10	151'-4	163'-10	176'-4	188'-10	201'-4	213'-10	226'-4	243'-0
STRUCTURAL CONCRETE SUPERSTRUCTURE	WITH BARRIER RAIL	C.Y.	242.3	256.2	282.9	297.0	311.3	338.9	353.0	367.7	386.9
(INCLUDES ABUTMENT WINGS)	WITH OPEN RAIL	C.Y.	244.8	258.9	285.9	300.2	314.7	342.4	356.7	371.6	391.1
STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES) ***		C.Y.	48.5	48.5	48.2	48.2	48.1	-----	-----	-----	-----
STRUCTURAL CONCRETE ABUTMENTS (w/ STEEL H PILES) ***		C.Y.	50.2	50.2	50.2	50.2	50.2	57.4	57.4	57.4	57.4
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
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.	314.2	339.2	364.2	389.2	414.2	456.7	481.7	506.7	540.0
STRUCTURAL STEEL (w/ PILE BENT PIERS & DRAINS)		LB.	5031	5031	5119	5119	5119	5103	5103	5103	5103
STRUCTURAL STEEL (w/ PILE BENT PIERS & NO DRAINS)		LB.	4463	4463	4463	4463	4463	4367	4367	4367	4367
STRUCTURAL STEEL (w/ TEE PIERS & DRAINS)		LB.	6106	6106	6194	6194	6194	6373	6373	6373	6373
STRUCTURAL STEEL (w/ TEE PIERS & NO DRAINS)		LB.	5538	5538	5538	5538	5538	5637	5637	5637	5637
EPOXY COATED REINF. STEEL (w/ WOOD PILES & BARRIER RAIL)		LB.	66,066	70,432	75,224	80,125	84,000	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ WOOD PILES & OPEN RAIL)		LB.	66,315	70,628	75,551	80,610	84,406	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & BARRIER RAIL)		LB.	65,870	70,236	74,729	79,630	84,102	91,182	96,465	100,941	106,303
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & OPEN RAIL)		LB.	66,119	70,432	75,056	80,115	84,508	92,136	97,319	101,974	107,365
NO. OF WOOD PILES, TREATED FOR TWO ABUTMENTS		NO.	30	30	34	34	36	-----	-----	-----	-----
NO. OF STEEL H-PILES, HP10 x 57 FOR TWO ABUTMENTS		NO.	18	18	18	18	18	22	22	22	22
PREBORED HOLES (w/ WOOD PILES)		L.F.	300	300	340	340	360	-----	-----	-----	-----
PREBORED HOLES (w/ STEEL H-PILES)		L.F.	180	180	180	180	180	220	220	220	220

CONCRETE PLACEMENT QUANT.
(SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS)

		℄-℄ 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,	WITH BARRIER RAIL	C.Y.	133.8	141.8	157.2	165.4	173.4	191.8	200.2	208.8	228.0
& WINGWALLS** , SECTIONS 1 & 3	WITH OPEN RAIL	C.Y.	135.1	143.2	158.8	167.1	175.2	193.7	202.2	210.9	230.4
SLAB INCLUDING	WITH BARRIER RAIL	C.Y.	43.5	47.0	50.5	54.0	57.3	61.1	64.6	68.1	68.1
HAUNCH, SECTION 2	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 &	WITH BARRIER RAIL	C.Y.	57.8	60.2	68.0	70.4	73.4	78.8	81.0	83.6	83.6
PIER DIAPHRAGM, SECTIONS 4 & 5	WITH OPEN RAIL	C.Y.	58.3	60.7	68.6	71.0	74.0	79.4	81.7	84.3	84.3
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.	48.5	48.5	48.2	48.2	48.1	-----	-----	-----	-----
ABUTMENT FOOTINGS (w/ STEEL H PILES) ***		C.Y.	50.2	50.2	50.2	50.2	50.2	57.4	57.4	57.4	57.4

GENERAL DATA

		℄-℄ 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'-8	3'-7 13/16	4'-2 7/8	4'-2 13/16	4'-2 7/8	4'-8 9/16	4'-8 11/16	4'-9 1/8	4'-9 7/16
CURVE	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6 3/8	3'-6 3/16	4'-1 3/8	4'-1 1/2	4'-1 7/8	4'-7 3/8	4'-7 1/4	4'-7 1/2	4'-7 1/2
STRAIGHT	TOP OF SLAB TO ABUT. CONSTR. JT. AT C.L. ABUT. BRG.	"U"	3'-8 1/16	3'-7 7/8	4'-2 15/16	4'-2 15/16	4'-3	4'-8 3/4	4'-8 7/8	4'-9 3/16	4'-9 7/8
GRADE	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6 5/8	3'-6 3/4	4'-1 9/16	4'-1 13/16	4'-2 1/4	4'-7 11/16	4'-7 11/16	4'-8	4'-8
D.L. PIER REACTION (D.L. + F.W.S.)		KIPS	456.2	490.9	561.4	598.1	635.1	756.6	797.7	839.3	879.7
L.L. PIER REACTION (HS25-44) NO IMPACT		KIPS	228.1	230.3	232.0	242.3	253.1	263.9	274.6	285.4	298.3
NO. OF SPACES FOR 6a1 BARS (TOP)		"E"	123	138	153	168	183	198	213	228	248
NO. OF SPACES FOR 6a1 BARS (BOTTOM)		"H"	122	137	152	167	182	197	212	227	247
NO. OF SPACES FOR 5j1 BARS (TOP)		"J"	164	179	194	209	224	239	254	269	289
OUT TO OUT OF SLAB		"S"	143'-0 7/8	155'-6 7/8	168'-0 7/8	180'-6 7/8	193'-0 7/8	205'-6 7/8	218'-0 7/8	230'-6 7/8	247'-2 7/8
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 1/16 INCH DEFLECTION OF THE 1 INCH NEOPRENE BEARING PAD. AT EXPANSION PIER LOCATIONS ADD 3 1/16 INCHES TO "U" VALUES SHOWN.

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

*** SEE SHEET H40-31-06 FOR ADDITIONAL CONCRETE REQUIRED IN ABUTMENT FOOTINGS.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 40' ROADWAY, THREE SPAN BRIDGE

PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

HL93 SUPERSTRUCTURE DECEMBER, 2006 HS25 SUBSTRUCTURE

SUPERSTRUCTURE DETAILS
45° SKEW

H40-29-06