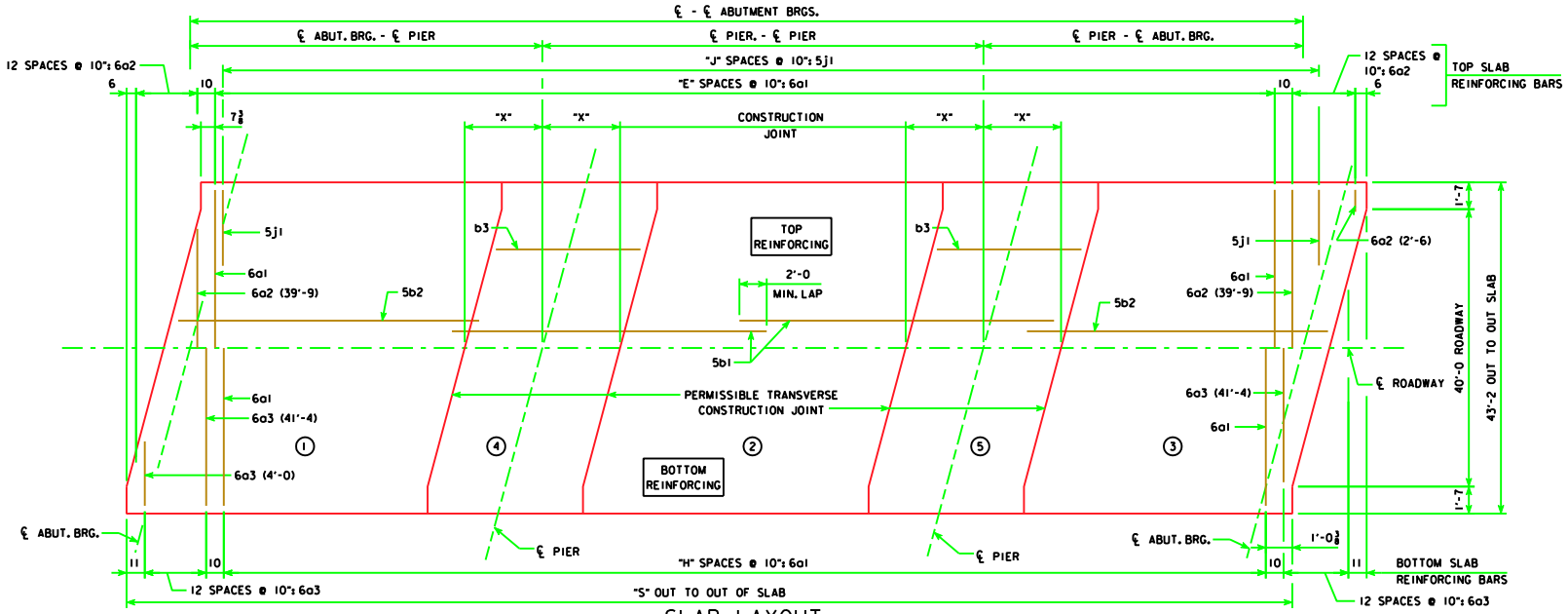

SLAB LAYOUT

(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.	219.5	233.4	256.5	270.4	284.5	310.7	324.8	339.3	358.3
(INCLUDES ABUTMENT WINGS)	WITH OPEN RAIL	C.Y.	222.0	236.1	259.5	273.6	288.0	314.2	328.5	343.3	362.5
STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES) ***		C.Y.	34.9	34.8	34.7	34.5	34.5	-----	-----	-----	-----
STRUCTURAL CONCRETE ABUTMENTS (w/ STEEL H PILES) ***		C.Y.	36.4	36.4	36.4	36.4	36.4	44.2	44.2	44.2	44.2
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.	311.9	336.9	361.9	386.9	411.9	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.	62,304	66,250	70,764	75,771	80,032	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ WOOD PILES & OPEN RAIL)		LB.	62,553	66,446	71,091	76,256	80,438	-----	-----	-----	-----
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & BARRIER RAIL)		LB.	61,933	66,299	70,707	75,609	79,870	86,994	92,277	96,544	102,342
EPOXY COATED REINF. STEEL (w/ STEEL H PILES & OPEN RAIL)		LB.	62,182	66,495	71,034	76,094	80,276	87,948	93,131	97,577	103,404
NO. OF WOOD PILES, TREATED FOR TWO ABUTMENTS		NO.	26	28	30	32	32	-----	-----	-----	-----
NO. OF STEEL H-PILES, HP10 x 57 FOR TWO ABUTMENTS		NO.	14	14	14	14	14	20	20	20	22
PREBORED HOLES (w/ WOOD PILES)		L.F.	260	280	300	320	320	-----	-----	-----	-----
PREBORED HOLES (w/ STEEL H-PILES)		L.F.	140	140	140	140	140	200	200	200	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.	119.6	127.6	141.2	149.2	157.2	174.8	183.2	191.8	210.8
& WINGWALLS** , SECTIONS 1 & 3	WITH OPEN RAIL	C.Y.	120.9	129.0	142.8	150.9	159.1	176.7	185.2	194.0	213.2
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.	49.2	51.6	57.6	60.0	62.8	67.6	69.8	72.2	72.2
PIER DIAPHRAGM, SECTIONS 4 & 5	WITH OPEN RAIL	C.Y.	49.7	52.1	58.2	60.6	63.4	68.2	70.5	72.9	72.9
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.	34.9	34.8	34.7	34.5	34.5	-----	-----	-----	-----
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

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 15/16	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 3/8	4'-1 3/8	4'-1 1/2	4'-1 5/8	4'-7 5/8	4'-7 3/4	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 25/32	4'-2 29/32	4'-3	4'-8 3/4	4'-8 7/8	4'-9 5/16	4'-9 7/8
GRADE	TOP OF SLAB TO PIER TOP AT C.L. PIER*	"U"	3'-6 3/8	3'-6 1/4	4'-1 3/8	4'-1 15/32	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	438.8	473.4	540.5	577.1	613.9	733.7	774.7	816.2	856.5
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"	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 1/4	154'-5 1/4	166'-11 1/4	179'-5 1/4	191'-11 1/4	204'-5 1/4	216'-11 1/4	229'-5 1/4	246'-1 1/4
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 H40-17-06 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
15° SKEW

H40-15-06