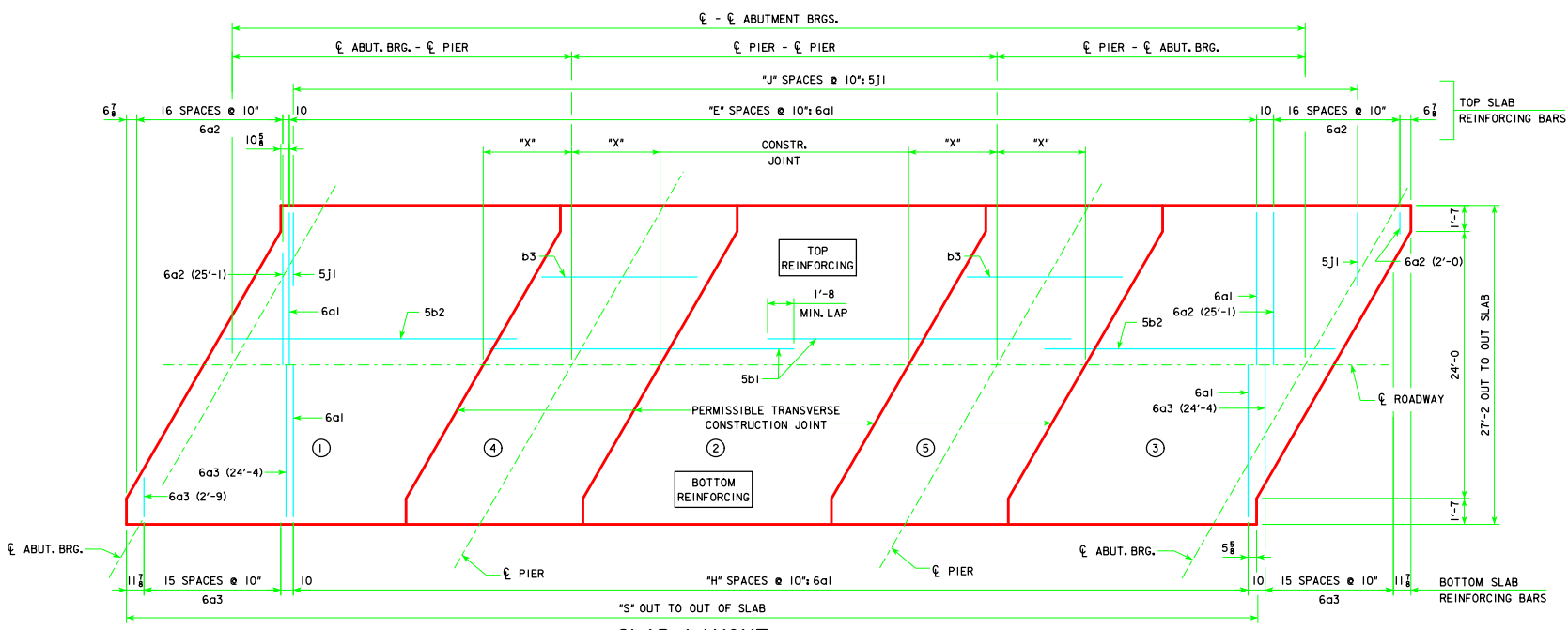


REVISED: 07-2015 - CHANGED CONCRETE PLACEMENT NOTE TO ACCOUNT FOR THE POSSIBLE ADDITION OF A RETARDING ADMIXTURE TO THE CONCRETE.



SLAB LAYOUT
(LEFT AHEAD SKEW SHOWN, RIGHT AHEAD SKEW SIMILAR)

| 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 1/4" | 4'-2 1/4" | 4'-2 1/4" | 4'-2 1/4" | 4'-8 1/2" | 4'-8 1/2" | 4'-9 1/2" | 4'-9 1/2" |
| STRAIGHT GRADE | TOP OF SLAB TO PIER TOP AT C.L. PIER* | "U" | 3'-6 3/8" | 3'-6 3/8" | 4'-1 1/8" | 4'-1 1/8" | 4'-7 1/8" | 4'-7 1/8" | 4'-7 1/8" | 4'-9 1/8" | 4'-9 1/8" |
| D.L. PIER REACTION (D.L. + F.W.S.) SERVICE LOADS | | KIPS | 299.4 | 323.0 | 368.5 | 393.4 | 418.5 | 498.6 | 526.5 | 554.6 | 581.9 |
| L.L. PIER REACTION (HL93) NO IMPACT SERVICE LOADS | | KIPS | 207.6 | 215.3 | 222.7 | 229.9 | 237.0 | 244.0 | 253.2 | 268.2 | 284.4 |
| 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 3/8" | 154'-9 1/8" | 167'-3 3/8" | 179'-9 1/8" | 192'-3 3/8" | 204'-9 1/8" | 217'-3 3/8" | 229'-9 1/8" | 246'-5 3/8" |
| 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" |

| 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 ABUT. WINGS) | C.Y. | 150.6 | 159.4 | 175.6 | 184.6 | 193.9 | 213.2 | 222.4 | 232.1 | 244.6 | |
| STRUCTURAL CONCRETE ABUTMENTS (w/ WOOD PILES) *** | C.Y. | 23.8 | 23.7 | 23.6 | 23.6 | 23.6 | ----- | ----- | ----- | ----- | |
| STRUCTURAL CONCRETE ABUTMENTS (w/ STEEL H PILES) *** | C.Y. | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | ----- | ----- | ----- | ----- | |
| 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. | 43,430 | 46,355 | 49,734 | 53,148 | 55,986 | ----- | ----- | ----- | ----- | |
| REINFORCING STEEL (w/ STEEL H PILES) | L.B. | 43,414 | 46,212 | 49,503 | 52,917 | 55,775 | 62,370 | 65,736 | 68,837 | 72,650 | |
| NO. OF WOOD PILES, TREATED FOR TWO ABUTMENTS | NO. | 20 | 22 | 24 | 24 | 24 | ----- | ----- | ----- | ----- | |
| NO. OF STEEL H-PILES (HP 10 x 57) FOR TWO ABUTMENTS | NO. | 10 | 10 | 10 | 12 | 16 | ----- | ----- | ----- | ----- | |
| PREBORED HOLES (w/ WOOD PILES) | L.F. | 200 | 220 | 240 | 240 | 240 | ----- | ----- | ----- | ----- | |
| PREBORED HOLES (w/ STEEL H-PILES) | L.F. | 100 | 100 | 100 | 100 | 120 | ----- | ----- | ----- | ----- | |

| 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 INCL. HAUNCH, ABUT. DIAPHR. & WINGWALLS** | 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 | |
| PAVING BLOCKS | C.Y. | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| 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. | 21.2 | 21.1 | 21.1 | 21.1 | 21.1 | ----- | ----- | ----- | ----- | |
| ABUTMENT FOOTINGS (w/ STEEL H PILES) *** | C.Y. | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | 30.2 | 30.2 | 30.2 | 30.2 | |

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 3/8 INCHES TO "U" VALUES SHOWN.

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

*** SEE SHEET H24-24-06 FOR ADDITIONAL CONCRETE REQUIRED IN ABUTMENT FOOTINGS.

LATEST REVISION DATE

07-15

Approved by BRIDGE ENGINEER

Thomas E. McQuinn

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 24' ROADWAY, THREE SPAN BRIDGE

PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

DECEMBER, 2006

SUPERSTRUCTURE DETAILS
30° SKEW

H24-22-06