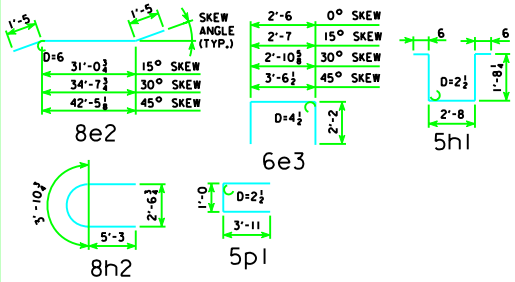
## BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 80' BRIDGE

| LOCATION \ SKEW | SHAPE | BAR | 0° NO. | 0° LENGTH | 0° WEIGHT | 15° NO. | 15° LENGTH | 15° WEIGHT | 30° NO. | 30° LENGTH | 30° WEIGHT | 45° NO. | 45° LENGTH | 45° WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SLAB LONGITUDINAL BOTTOM | | 8a1 | 39 | 18'-4 | 1910 | 39 | 18'-4 | 1910 | 39 | 18'-4 | 1910 | 39 | 18'-4 | 1910 |
| SLAB LONGITUDINAL BOTTOM | | 8a2 | 39 | 25'-0 | 2604 | 39 | 25'-0 | 2604 | 39 | 25'-0 | 2604 | 39 | 25'-0 | 2604 |
| SLAB LONGITUDINAL BOTTOM | | 8a3 | 39 | 28'-1 | 2925 | 39 | 28'-1 | 2925 | 39 | 28'-1 | 2925 | 39 | 28'-1 | 2925 |
| SLAB LONGITUDINAL BOTTOM | | 7a4 | 40 | 23'-4 | 1908 | 40 | 23'-4 | 1908 | 40 | 23'-4 | 1908 | 40 | 23'-4 | 1908 |
| SLAB LONGITUDINAL BOTTOM | | 7a5 | 20 | 23'-0 | 941 | 20 | 23'-0 | 941 | 20 | 23'-0 | 941 | 20 | 23'-0 | 941 |
| SLAB LONGITUDINAL BOTTOM, AT RAIL | | 7a6 | 8 | 29'-10 | 488 | 8 | 29'-10 | 488 | 8 | 29'-10 | 488 | 8 | 29'-10 | 488 |
| SLAB LONGITUDINAL BOTTOM, AT RAIL | | 7a7 | 4 | 27'-4 | 224 | 4 | 27'-4 | 224 | 4 | 27'-4 | 224 | 4 | 27'-4 | 224 |
| SLAB LONGITUDINAL BOTTOM, AT RAIL | | 8a8 | 8 | 20'-10 | 445 | 8 | 20'-10 | 445 | 8 | 20'-10 | 445 | 8 | 20'-10 | 445 |
| SLAB LONGITUDINAL BOTTOM, AT RAIL | | 8a9 | 4 | 23'-6 | 251 | 4 | 23'-6 | 251 | 4 | 23'-6 | 251 | 4 | 23'-6 | 251 |
| SLAB LONGITUDINAL TOP | | 6b1 | 39 | 18'-1 | 1060 | 39 | 18'-1 | 1060 | 39 | 18'-1 | 1060 | 39 | 18'-1 | 1060 |
| SLAB LONGITUDINAL TOP | | 9b2 | 39 | 20'-3 | 2686 | 39 | 20'-3 | 2686 | 39 | 20'-3 | 2686 | 39 | 20'-3 | 2686 |
| SLAB LONGITUDINAL TOP | | 9b3 | 39 | 30'-0 | 3978 | 39 | 30'-0 | 3978 | 39 | 30'-0 | 3978 | 39 | 30'-0 | 3978 |
| SLAB LONGITUDINAL TOP | | 6b4 | 40 | 6'-1 | 366 | 40 | 6'-1 | 366 | 40 | 6'-1 | 366 | 40 | 6'-1 | 366 |
| SLAB LONGITUDINAL TOP | | 8b5 | 40 | 20'-3 | 2163 | 40 | 20'-3 | 2163 | 40 | 20'-3 | 2163 | 40 | 20'-3 | 2163 |
| SLAB LONGITUDINAL TOP | | 6b6 | 20 | 16'-6 | 496 | 20 | 16'-6 | 496 | 20 | 16'-6 | 496 | 20 | 16'-6 | 496 |
| SLAB LONGITUDINAL TOP, AT RAIL | | 6b8 | 8 | 24'-7 | 296 | 8 | 24'-7 | 296 | 8 | 24'-7 | 296 | 8 | 24'-7 | 296 |
| SLAB LONGITUDINAL TOP, AT RAIL | | 9b9 | 8 | 22'-2 | 603 | 8 | 22'-2 | 603 | 8 | 22'-2 | 603 | 8 | 22'-2 | 603 |
| SLAB LONGITUDINAL TOP, AT RAIL | | 8b10 | 8 | 32'-4 | 691 | 8 | 32'-4 | 691 | 8 | 32'-4 | 691 | 8 | 32'-4 | 691 |
| SLAB TRANSVERSE, BOTTOM | | 6c1 | 77 | 32'-10 | 3798 | 77 | 34'-0 | 3933 | 66 | 32'-10 | 3255 | 54 | 32'-10 | 2664 |
| SLAB TRANSVERSE ENDS, BOTTOM | | 6c2 | - | - | - | - | - | - | 28 | VARIES | 800 | 52 | VARIES | 1426 |
| SLAB TRANSVERSE, TOP | | 5d1 | 77 | 32'-10 | 2637 | 77 | 34'-0 | 2731 | 66 | 32'-10 | 2261 | 54 | 32'-10 | 1850 |
| SLAB TRANSVERSE ENDS, TOP | | 5d2 | - | - | - | - | - | - | 28 | VARIES | 555 | 52 | VARIES | 990 |
| SLAB, TRANSVERSE AT ABUTMENT | | 8e1 | 20 | 32'-10 | 1754 | - | - | - | - | - | - | - | - | - |
| SLAB, TRANSVERSE AT ABUTMENT | | 8e2 | - | - | - | 20 | 33'-11 | 1812 | 20 | 37'-6 | 2003 | 20 | 45'-4 | 2421 |
| SLAB, HAIRPINS, AT ABUTMENT | | 6e3 | 72 | 6'-10 | 739 | 72 | 6'-11 | 748 | 72 | 7'-3 | 785 | 72 | 7'-11 | 857 |
| PIER CAP HOOPS | | 5h1 | 48 | 7'-1 | 355 | 48 | 7'-1 | 355 | 60 | 7'-1 | 444 | 72 | 7'-3 | 532 |
| PIER CAP ENDS | | 8h2 | 4 | 14'-5 | 154 | 4 | 14'-5 | 154 | 4 | 14'-5 | 154 | 4 | 14'-5 | 154 |
| PIER CAP, BOTTOM LONGITUDINAL | | 8h3 | 8 | 29'-10 | 638 | 8 | 30'-11 | 661 | 8 | 34'-5 | 736 | 8 | 42'-2 | 901 |
| PIER CAP, TOP LONGITUDINAL | | 8h4 | 4 | 32'-10 | 351 | 4 | 34'-0 | 364 | 4 | 37'-11 | 405 | 4 | 46'-6 | 497 |
| TOP OF SLAB, TRANSVERSE, AT RAIL | | 5j1 | 152 | 8'-6 | 1348 | 152 | 8'-6 | 1348 | 152 | 8'-6 | 1348 | 150 | 8'-6 | 1330 |
| WING VERTICAL | | 5m1-4 | 32 | SHOWN | 117 | 32 | SHOWN | 117 | 32 | SHOWN | 117 | 32 | SHOWN | 117 |
| WING, HORIZONTAL | | 5n1 | 24 | 6'-8 | 167 | 24 | 6'-8 | 167 | 24 | 6'-8 | 167 | 24 | 6'-8 | 167 |
| PAVING SUPPORT, TRANSVERSE | | 5p1 | 30 | 8'-10 | 277 | 32 | 8'-10 | 295 | 34 | 8'-10 | 314 | 42 | 8'-10 | 387 |
| PAVING SUPPORT LONGITUDINAL | | 5p3 | 6 | 30'-2 | 189 | 6 | 31'-3 | 196 | 6 | 34'-10 | 218 | 6 | 42'-7 | 267 |
| SUB TOTAL - LBS. | | | | | 36,559 | | | 36,916 | | | 37,597 | | | 38,595 |
| BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06 | | | | | 5156 | | | 5156 | | | 5156 | | | 5156 |
| OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06 | | | | | 5261 | | | 5261 | | | 5261 | | | 5261 |
| TOTAL - LBS. WITH MONOLITHIC PIER CAP | | WITH BARRIER RAIL | | | 41,715 | | | 42,072 | | | 42,753 | | | 43,751 |
| | | WITH OPEN RAIL | | | 41,820 | | | 42,177 | | | 42,858 | | | 43,856 |
| TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP | | WITH BARRIER RAIL | | | 40,217 | | | 40,538 | | | 41,014 | | | 41,667 |
| SAME AS ABOVE EXCEPT ALL "h" BARS DELETED | | WITH OPEN RAIL | | | 40,322 | | | 40,643 | | | 41,119 | | | 41,772 |

## BENT BAR DETAILS




NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

## ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 80' BRIDGE

| ITEM | | SKEW | WITH MONOLITHIC PIER CAP 0° | 15° | 30° | 45° | WITH NON-MONOLITHIC PIER CAP 0° | 15° | 30° | 45° |
|---|---|---|---|---|---|---|---|---|---|---|
| WITH BARRIER RAIL | *STRUCTURAL CONCRETE (BRIDGE) | C.Y. | 158.7 | 159.7 | 163.3 | 171.2 | 153.7 | 154.6 | 157.7 | 164.3 |
| | REINFORCING STEEL | LBS. | 41,715 | 42,072 | 42,753 | 43,751 | 40,217 | 40,538 | 41,014 | 41,667 |
| CONCRETE BARRIER OR OPEN RAIL | | LIN. FT. | 182.0 | 182.2 | 182.9 | 184.5 | 182.0 | 182.2 | 182.9 | 184.5 |
| WITH OPEN RAIL | *STRUCTURAL CONCRETE (BRIDGE) | C.Y. | 158.5 | 159.6 | 163.2 | 171.0 | 153.5 | 154.5 | 157.5 | 164.2 |
| | REINFORCING STEEL | LBS. | 41,820 | 42,177 | 42,858 | 43,856 | 40,322 | 40,643 | 41,119 | 41,772 |

* INCLUDES 4 WINGS @ 0.71 C.Y. EACH; EXCLUDES RAIL CONCRETE.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
80'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-05B-06