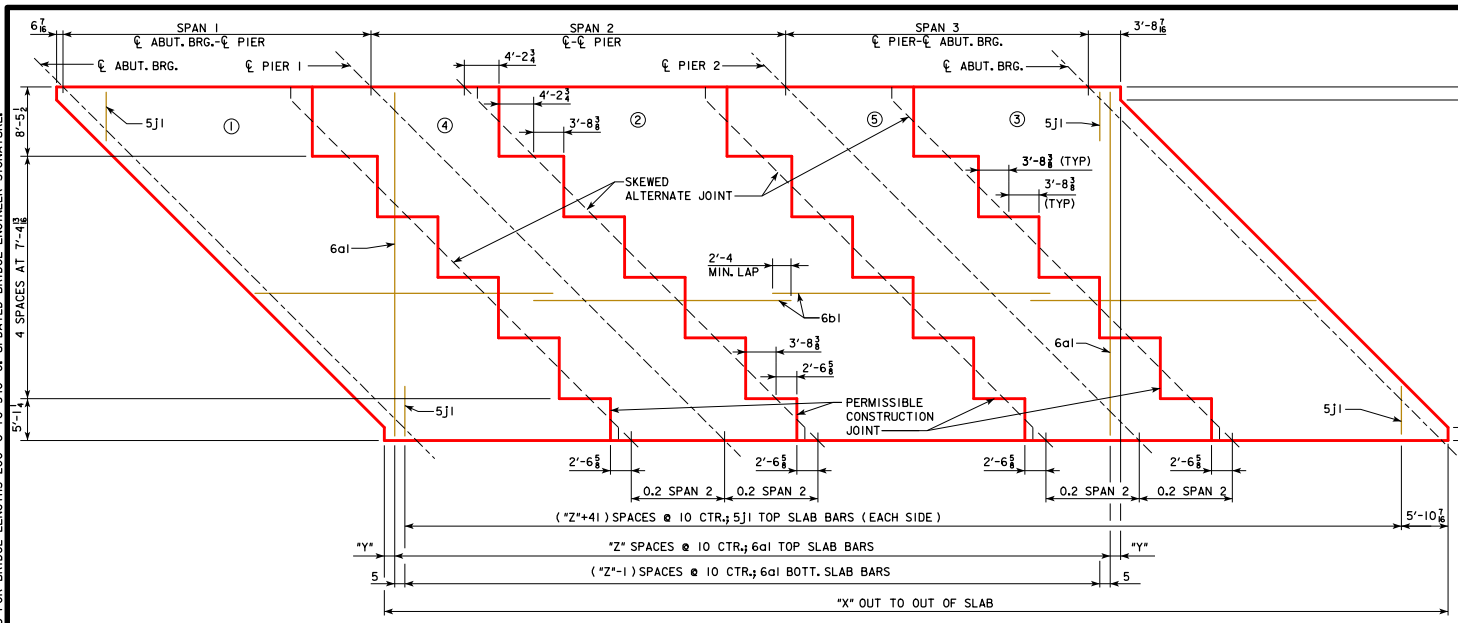
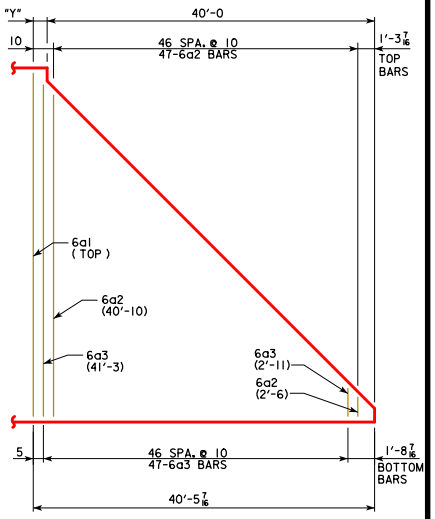


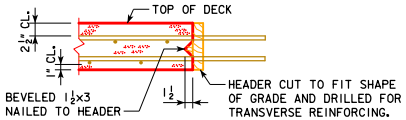

## END OF SLAB REINFORCING

(TYPICAL EACH END OF DECK)

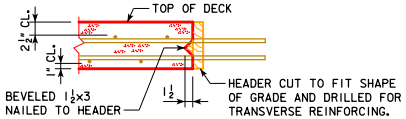
| REINFORCEMENT DIMENSIONS ℄-℄ ABUTMENT BEARINGS | 160'-0 | 180'-0 | 200'-0 | 220'-0 | 240'-0 | 260'-0 | 280'-0 | 300'-0 | 320'-0 | 340'-0 |
|---|---|---|---|---|---|---|---|---|---|---|
| X (FT.-IN.) | 164'-2 7/8 | 184'-2 7/8 | 204'-2 7/8 | 224'-2 7/8 | 244'-2 7/8 | 264'-2 7/8 | 284'-2 7/8 | 304'-2 7/8 | 324'-2 7/8 | 344'-2 7/8 |
| Y (IN.) | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 | 5 7/16 |
| Z (SPACES) | 148 | 172 | 196 | 220 | 244 | 268 | 292 | 316 | 340 | 364 |

## CONCRETE PLACEMENT DIAGRAM SHOWING SLAB REINFORCING

(RIGHT AHEAD SKEW SHOWN, LEFT AHEAD SKEW SIMILAR)




## LONGITUDINAL SLAB CONSTRUCTION JOINT




## TRANSVERSE SLAB CONSTRUCTION JOINT

NOTES:

1. 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.
2. WEIGHT OF STRUCTURAL STEEL SHOWN ON THIS SHEET INCLUDES: BEAMS, DIAPHRAGMS, SPLICES, SHEAR STUDS, BEARINGS, WELDS AND BOLT HARDWARE.
3. QUANTITY OF STRUCTURAL STEEL SHOWN ON THIS SHEET IS TABULATED FOR BENT PLATE DIAPHRAGM OPTION. PAYMENT FOR STRUCTURAL STEEL WILL BE BASED ON THE QUANTITIES SHOWN. THE CONTRACTOR MAY CHOOSE TO PROVIDE ROLLED SHAPE DIAPHRAGMS AT NO ADDITIONAL COST.
4. QUANTITY OF STRUCTURAL STEEL SHOWN ON THIS SHEET IS BASED ON THE USE OF 5" HIGH SHEAR STUDS. CONTRACTOR WILL BE PAID ON AMOUNT SHOWN, BUT IS REQUIRED TO ADJUST HEIGHT OF STUDS AS REQUIRED PER "BEAM PLAN AND ELEVATION" SHEET.

| CONCRETE PLACEMENT QTYS. (SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS) | | 160'-0 | 180'-0 | 200'-0 | 220'-0 | 240'-0 | 260'-0 | 280'-0 | 300'-0 | 320'-0 | 340'-0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SLAB, AND ABUT DIAPHRAGM, SECTION 1 & 3 | CY | 129.1 | 139.4 | 152.6 | 165.4 | 175.4 | 188.0 | 198.1 | 208.2 | 218.4 | 232.4 |
| SLAB, SECTION 2 | CY | 42.1 | 47.4 | 52.7 | 58.0 | 63.2 | 68.7 | 74.0 | 79.2 | 84.5 | 89.8 |
| SLAB, SECTION 4 & 5 | CY | 56.1 | 63.2 | 70.2 | 77.3 | 84.3 | 91.6 | 98.6 | 105.7 | 112.7 | 119.8 |
| ABUTMENT WINGS | CY | 7.2 | 7.2 | 7.2 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 13.9 |
| ABUTMENT FOOTINGS | CY | 49.5 | 49.5 | 49.5 | 49.5 | 49.5 | 49.5 | 49.5 | 49.5 | 49.5 | 57.2 |
| | | | | | | | | | | | |
| TOTAL | CY | 284.0 | 306.7 | 332.2 | 357.8 | 380.0 | 405.4 | 427.8 | 450.2 | 472.7 | 513.1 |

| ESTIMATED QTYS. (SUPERSTRUCTURE PLUS INTEGRAL ABUTMENTS) | | 160'-0 | 180'-0 | 200'-0 | 220'-0 | 240'-0 | 260'-0 | 280'-0 | 300'-0 | 320'-0 | 340'-0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. OF STEEL H-PILES FOR TWO ABUTMENTS (HP 10 X 57) | NO. | 18 | 18 | 18 | 18 | 20 | 20 | 20 | 20 | 22 | 26 |
| STRUCTURAL CONCRETE, (BRIDGE) | CY | 284.0 | 306.7 | 332.2 | 357.8 | 380.0 | 405.4 | 427.8 | 450.2 | 472.7 | 513.1 |
| REINFORCING STEEL EPOXY COATED | LB | 77,655 | 84,892 | 92,578 | 99,966 | 107,824 | 115,103 | 122,681 | 130,291 | 137,296 | 147,428 |
| BARRIER RAILS | LF | 356.5 | 396.5 | 436.5 | 476.5 | 516.5 | 556.5 | 596.5 | 636.5 | 676.5 | 734.0 |
| STRUCTURAL STEEL | LB | 119,156 | 156,264 | 192,073 | 234,553 | 293,881 | 339,538 | 391,892 | 476,520 | 526,067 | 586,972 |
| | | | | | | | | | | | |

| SPAN LENGTHS | | | |
|---|---|---|---|
| BRIDGE LENGTH | SPAN 1 | SPAN 2 | SPAN 3 |
| 160'-0 | 48'-0 | 64'-0 | 48'-0 |
| 180'-0 | 54'-0 | 72'-0 | 54'-0 |
| 200'-0 | 60'-0 | 80'-0 | 60'-0 |
| 220'-0 | 66'-0 | 88'-0 | 66'-0 |
| 240'-0 | 72'-0 | 96'-0 | 72'-0 |
| 260'-0 | 78'-0 | 104'-0 | 78'-0 |
| 280'-0 | 84'-0 | 112'-0 | 84'-0 |
| 300'-0 | 90'-0 | 120'-0 | 90'-0 |
| 320'-0 | 96'-0 | 128'-0 | 96'-0 |
| 340'-0 | 102'-0 | 136'-0 | 102'-0 |

08-2018
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES

ROLLED STEEL BEAM BRIDGES

JUNE, 2010

SUPERSTRUCTURE QUANTITIES 45° SKEW

RS40-035-10

REVISED 07-2015 - CHANGED NOTE 1, CONCRETE PLACEMENT NOTE TO ACCOUNT FOR THE POSSIBLE ADDITION OF A RETARDING ADMIXTURE TO THE CONCRETE.
REVISED 10-2016 - UPDATED ESTIMATED QUANTITY STRUCTURAL STEEL WEIGHT TO INCLUDE SHEAR STUDS AND DIAPHRAGMS FOR BRIDGE LENGTHS 240'-0 TO 340'-0.
REVISED 08-2018 - UPDATED ESTIMATED QUANTITY STRUCTURAL STEEL WEIGHT FOR DIAPHRAGM UPDATES FOR BRIDGE LENGTHS 200'-0 TO 340'-0. UPDATED BRIDGE ENGINEER SIGNATURE.